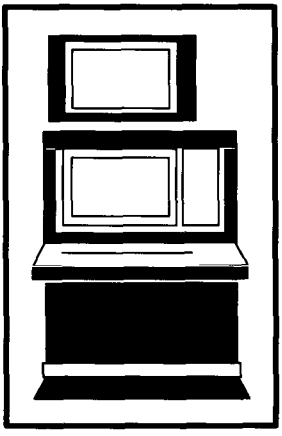
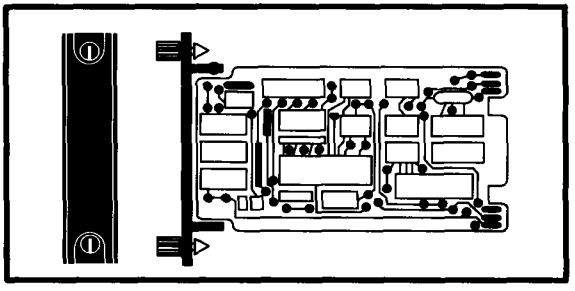
Bailey infi 90®

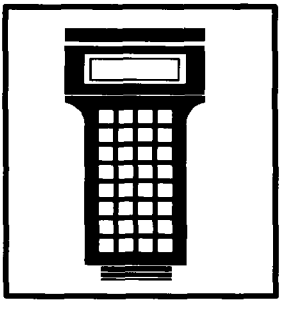
E96-105

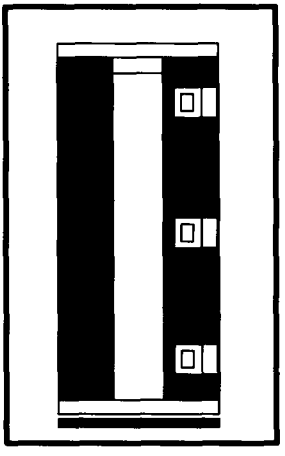
Instruction

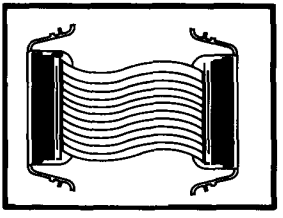
Operator Interface Station (IIOIS20) Hardware Manual

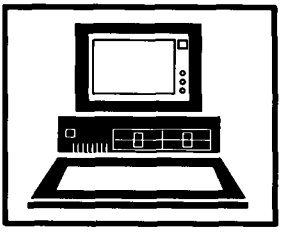












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WARNING not ces as used n th s manua app y to hazards or unsafe pract ces wh ch cou d resu t n persona njury or death

CAUTION not ces app y to hazards or unsafe pract ces wh ch cou d resu t n property damage

NOTES h gh ght procedures and conta n nformat on wh ch ass st the operator n understand ng the nformat on conta ned n th s manua

WARNING

INSTRUCTION MANUALS

DO NOT INSTALL MA NTA N OR OPERATE TH S EQU PMENT W THOUT READ NG UNDERSTAND NG AND FOLLOW NG THE PROPER **Bailey Controls** NSTRUCT ONS AND MANUAL S OTHERW SE N JURY OR DAMAGE MAY RESULT

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AVERTISSEMENT

MANUELS D'OPERATION

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Preface

The Operator Interface System (IIOIS20) provides the INFI 90® Strategic Process Management System with integrated operations interface, data acquisition and reporting capabilities. The OIS monitors and controls the process through dynamic, interactive color graphics displays

This manual explains how to install and maintain the OIS through supportive text, diagrams and drawings It provides introductory material and specific instructions for installation, maintenance and troubleshooting for the system

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List of Effective Pages

Total number of pages in this manual is 285, consisting of the following

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Safety Summary

SPECIFIC WARNINGS	Do not operate the OIC with doors or covers opened or removed Touching connections that carry current and voltage may cause injury (p 1 3, 1 11) The CRT will slide out the rear of the OIS20 and OIC202 cabinet by itself when the mounting bolts are removed Removing the rear two bolts without supporting the CRT could cause personal injury (p 5-5, 5-48, 8 4)

SPECIFIC CAUTIONS	Make sure that all labels on the power supply and the power entry panel are changed to show 240 VAC operation or equipment damage may result Make sure main power breaker is off before changing operating voltage setting or equipment damage may result (p 3 13) Do not plug modules or peripherals such as a tape drive or printer into the OIS with power applied A current surge or voltage spike could damage sensitive components on the unit (p 3 14, 3 26)

List of Tables (continued)

Safety Summary

SPECIFIC WARNINGS	Do not operate the OIC with doors or covers opened or removed Touch ng connections that carry current and voltage may cause injury. (p 1 3, 1-11) The CRT will slide out the rear of the IIOIS20 and IIOIC202 cabinet by tself when the mounting bo ts are removed Remov ng the rear two bolts without supporting the CRT could cause per sonal injury (p 5-5 5-48 8-4)

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Safety Summary

SPECIFIC CAUTIONS (cont nued)	Fa lure tɔ turn off the ma n power circuit breaker before removing or ınsert ng modu es nto the card cage may result ın equ pment fa ure (p. 4 6, 4 7, 4-38, 4 44, 4-45, 8-1) Failure to plug ın the streamıng tape dr ve rıbbon cab e before turn ng the tape dr ve power on may result ın equipment failure Read the notice on the front of the power entry pa ıel before turn ng on the power to the tape dr ve Set the streamıng tape dr ve to the same vo tage as the PEP out et or equ pme nt damage may result (p 4 38 4 42) Verify that the O C202 s set up to rece ve 240 VAC f the supp y circu t to the power entry pane s 240 VAC or equipme ɲt damage may resu t ncorrect y setting the nput power select may damage the d sk dr ve un t (p 5 34, 5-43)

Sommaire de Securite

AVERTISSEMENT D'ORDRE SPECIFIQUE	Ne faites pas fonct onner l'OIC sı les portes ou les couvercles sont *ouverts ɔu retires Tout contact avec les connex ons ou c rcule du* courant ou de a tens on rısque de provoquer des blessures (p 1 3 1-11) Lorsque es bou ons d ancrage sont ret res, ecran cathod que r sque de sort r a 'arr er de l armo re l O S20 et l OIC20 Sı es deux bou ons d ancrage arrıere sont ret res, faut retenır 'ecran afın d ev ter toute b essure (p 5 5, 5 48, 8 4)

Safety Summary (continued)

SPECIFIC CAUTIONS (continued)	Make sure ma n power breaker s off before chang ng operating vo tage sett ng or equipment damage may result Make sure that all labe s on the power supply and the power entry pane are changed to show 240 VAC operat on or equ pment damage may result. (p 3 25) Fa lure to turn off the main powe· circuit breaker before removing or inserting modules into the card cage may result in equipment failure (p 4-6, 4-7 4-38, 4-44 4 45 8-1) Fai ure to p ug in the stream ng tape dr ve r bbon cable before turn ng the tape drive power on may result in equ pment fa ure. Read the notice on the front of the power entry panel before turn ng on the power to the tape drive. Set the stream ng tape drive to the same vo tage as the PEP outlet or equ pment damage may result (p 4-38, 4-42) Verify that the IIOIC202 s set up to rece ve 240 VAC f the supply circuit to the power entry panel is 240 VAC or equipment damage may result ncorrectly setting the input power se ect may damage the d sk drive unit (p 5 34, 5-43)

Sommaire de Securite

AVERTISSEMENT D'ORDRE SPECIFIQUE	Ne faites pas fonct onner l'OIC si es portes ou es couverc es sont ouverts ou retires Tout contact avec les connexions ou circule du courant ou de la tension risque de provoquer des blessures (p 1-3, 1-11) Lorsque les boulons d'ancrage sont retires, l'ecran cathodique risque de sortir a 'arrier de armoire IIOIS20 et IIOIC20. S les deux boulons d'ancrage arr ere sont ret res, il faut retenir l'ecran afin d'eviter toute b essure (p 5-5, 5-48, 8-4)

Sommaire de Securite (continued)

ATTENTION D'ORDRE SPECIFIQUE	Assurez-vous que toutes es etiquettes apposees sur le b oc d'al - mentat o n et sur e panneau d'entree de 'al mentat on ont ete modifiees pour correspondre au fonct onnment a 240 V c a s non e materie pourra t subir des dommages Assurez vos que le disjoncteur de l'al metat on pr ncipa e est hors tension avant de modifier e reg age de la tens on de service, sinon le mater e pourrait subir des dommages (p 3-13) Ne pas inserer les cartes ni les peripheriques tels que les der- ou eurs de bande et es impr mantes dans 'O S lorsque ce dern er est sous tension Les composantes de un te r squent d etre en- dommagees par es pointes de courant ou de tens on (p 3 14, 3-26)
	Assurez-vous que e disjoncteur de l'a mentat on pr ncipale est hors tension avant de mod fier le reglage de la tens on de service, s non le mater e pourrait sub r des dommages Assurez vous que toutes les et quettes apposees sur le b oc d a i- mentation et sur le panneau d'entree de 'al mentation ont ete modifiees pour correspondre au fonctionnment a 240 V c a , s non le mater el pourra t subir des dommages (p 3-25)
	Ne pas inserer les cartes ni es peripheriques te s que les derou eurs de bande et les impr mantes dans l'OIS lorsque ce dern er est sous tension I es composantes de l unite risquent d'etre endommagees par les po ntes de courant ou de tens on 3 37
	Si l'on omet d ete ndre 'interrupteur du circuit d a mentat on prin- c pal avant de retirer es cartes ou de les nserer dans e porte-cartes, 'equ pment pourrait fa re defau t (p 4-6, 4-7, 4-38 4-44, 4-45, 8 1)
	Si l'on neglige de brancher le cable-ruban du derouleur de bande en cont nu avant d'achem ner 'a imentat on au derou eur e mate riel pourra t subir des dommages Lisez l'avis f gurant a l'avant du panneau d'entree d'al mentation avant d'acheminer 'alimentation au derou eur de bande Reg ez le derouleur en cont nu au meme n veau de tension que la sort e du panneau d'entree d'al mentat on s non le materiel pourrait subir des dommages (p 4-38. 4 42)
	Verifiez s le IIOIC202 est regle de facon a recevoir 240 V c a et s le circuit d'a imentat on au panneau d'entree est de 240 V c a s non le mater e pourra t subir des dommages (p 4-46)
	Un mauva s reglage de la selection de 'alimentat on d'entree poura t endommager l unite de disque (p 5-34, 5-43)

SECTION 1 - INTRODUCTION

OVERVIEW

This document contains directions and cautions for install ing and servicing the Operator Interface Station (IIOIS20) and the Operator Interface Console (IIOIC20).

The OIS contains a set of console electronics supporting up to two CRTs. The OIC is a remote CRT and keyboard inter face that connects to an IIOIS20 This section contains an overview of the IIOIS20 and IIOIC20.

Read all of this manual to get the greatest benefit of the information it contains Read each procedure before doing the task Call the local Bailey Controls sales office for an swers to any questions.

INTENDED USER

This manual is a reference for experienced installers with installation and maintenance experience on process monitor ing equipment It is not a tutorial

APPLICATIONS

The IIOIS20 Operator Interface Station (IIOIS20) is an integrated operator console providing a window into the process. The IIOIS20 provides the INFI 90 Strategic Process Manage ment System and Network 90 Distributed Control System with an integrated operations interface that has data acqui sition and reporting capabilities

The Operator Interface Console (IIOIC20) is the remote oper ator interface for an IIOIS20 It uses the OIS to process trend information and control the process.

Features of the IIOIS20 (OIS) and IIOIC20 (OIC) include·

- Process monitoring and process control via flexible, dynamic, interactive color graphics for up to 5000 pieces of information (tags).
- Advanced alarm management capabilities to optimize operator response.
- A trending package that offers a historical prospective of process conditions for analysis of current operations.
- A logging function that provides a paper history of process operations and customized operations summaries

- An archiving function that provides a history of process operations for subsequent analysis and process improvement studies
- On line troubleshooting and diagnostics for the INFI 90/ Network 90 systems through system status displays.
- Configuration and tuning capabilities for the INFI 90/Net work 90 modules over the communication highway

Figure 1 1 shows the communication levels of the OIS and OIC.

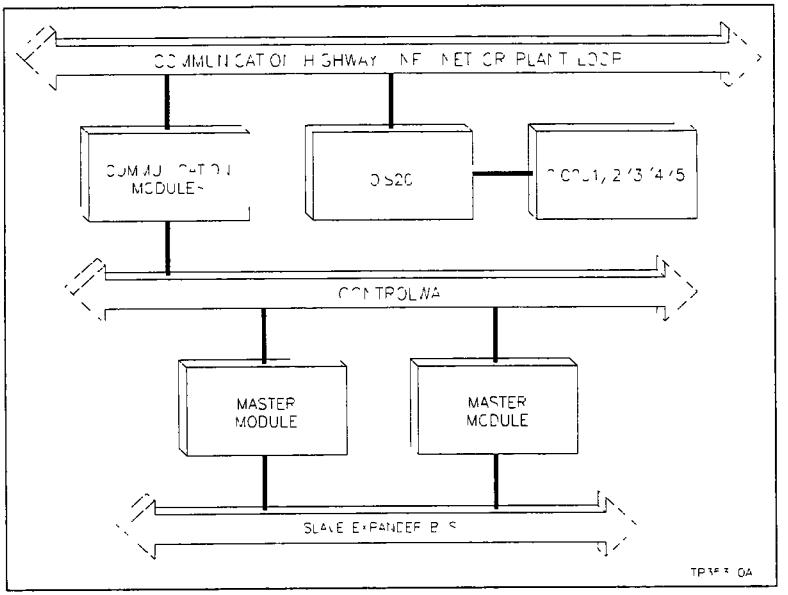

Figure 1 1 OIS and OIC Communication Levels

IIOIS20 HARDWARE OVERVIEW

The IIOIS20 interfaces to INFI NET® and Plant Loop communication highways The OIS can monitor and control a process through color graphics displays which show equipment status and process state

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Refer to Table 1-1 for the five models of the IIOIS20

Table 1 1. OIS Models

Nomenclature	Description
I OIS201	Console with cwer CRT
IIOIS202	Console with upper CRT
IIOIS203	Console with upper and ower CRT
.IOIS20A	Driver cabinet
I OIS20D	Driver cabinet 'dual electronics)

The console model may have a lower CRT, an upper CRT or both with the required power supply, card cage and interface hardware The driver cabinet model contains one or two sets of the same hardware contained in the console model. The driver cabinet has no CRT or keyboard It requires a remote OIC for operator interface

WARNING	**Do not operate the OIS with doors or covers opened or removed. Touching connections that carry current and voltage may cause injury.**
ATTENTION	**Ne faites pas fonctionner l'OIS si les portes ou les couvercles sont ouverts ou retires. Tout contact avec les connexions ou circule du courant ou de la tension risque de provoquer des blessures.**

OIS Console Hardware

The CRT. alarm display panel (ADP) and I/O panel for the keyboard are in the upper half of the console cabinet The lower half of the console cabinet contains the power supply, power entry panel (PEP), cable connector panel, multibus card cage and hard disk drive

The hardware components of an integrated IIOIS201 console cabinet are:

- 19 inch color CRT (640 x 480 pixel resolution)
- Operator keyboard with 16 user defined keys (32 keys if the shift key is used)
- INFI NET/Plant Loop
- 85 megabyte hard disk drive
- 1 2 megabyte floppy disk drive; 5¼ inch format
- Annunciator relays and audible tones

- 32 bit 25 megahertz processor
- 8 megabytes of dynamic RAM (DRAM) memory
- Battery backed real time clock
- 32 key annunciator display panel (ADP)

OIS Console Component Locations

Figure 1 2 shows the rear view of the OIS console with the door removed This figure shows the physical relationship between the subassemblies in this unit. Refer to Section 2 and Section 4 for the layout of the multibus card cage, cable connector panel and the power entry panel

NOTE: F gures 1 2 to 1 4 are shown with power removed

OIS console hardware is located in the operator console cabinet The power entry panel, cable connector panel, and hard disk are in the lower half of the cabinet with the multi bus card cage The CRT, power supply, annunciator display panel and operator keyboard interface panel are located in the upper half of the cabinet

The keyboard interface panel is located beside the CRT on the front of the cabinet It is made up of the floppy disk drive and connections for the keyboard, mouse/trackball and an engineering keyboard

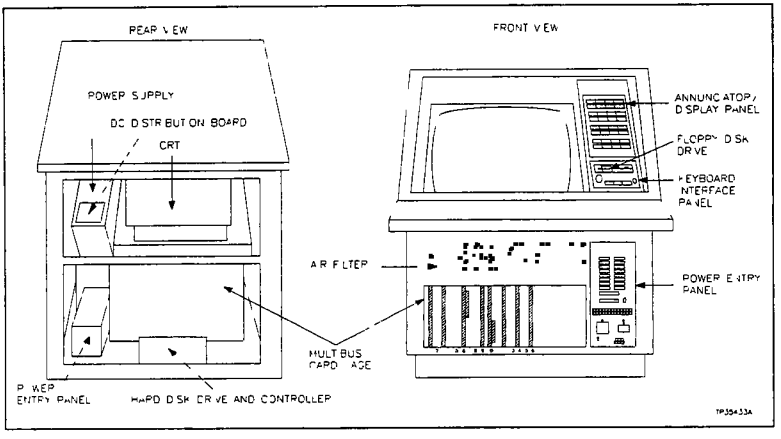


Figure 1 2 IIOIS201 Console Front and Rear Views

The power entry panel has terminals for input AC The cable connector panel has alarm contact outputs located on a terminal block and cable connectors for peripheral devices. The alarm contact relay outputs are for alarm annunciation only.

OIS Driver Cabinet Hardware

The IIOIS20A has one set of OIS driver cabinet hardware located in the bottom of the driver cabinet. The IIOIS20D has two sets of OIS electronics, the second set of hardware is located in the top half of the driver cabinet.

In the IIOIS20A, the power entry panel, cable connector panel and hard disk are in the lower half of the cabinet with the multibus card cage and power supply. There is no annuncia tor display panel and operator keyboard interface panel in the driver cabinet (see Figure 1 3)

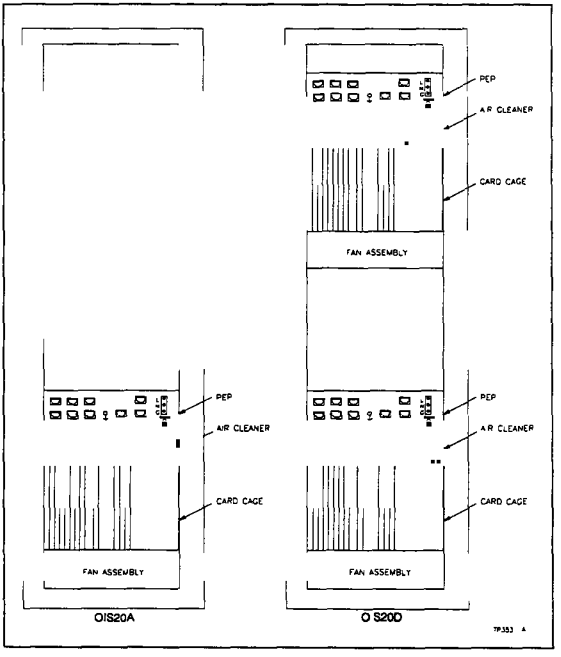


Figure 1 3. IIOIS20A/D Driver Cabinet Front View

The power entry panel has terminals for input AC The cable connector panel has alarm contact outputs and cable connectors for peripheral devices

The hardware components of an integrated IIOIS20A driver cabinet are:

- INFI NET/Plant Loop interface
- 85 megabyte hard disk drive
- 1 2 megabyte floppy disk drive; 5¼ inch format
- Annunciator relays and audible tones
- 32 bit, 25 megahertz processor
- 8 megabytes of dynamic RAM (DRAM) memory
- Battery backed real time clock

OIS Driver Cabinet Components Location

Figure 1 3 shows the front view of the OIS driver cabinet with the door removed This figure shows the location of the sub assemblies in this unit Refer to Section 4 for the layout of the multibus card cage, cable connector panel and the power entry panel Table 1 2 lists the modules in the multibus card cage of the OIS console and the OIS driver cabinet

Table 1 2 Multibus Card Cage Modules

Slot	Card	Description
Slot 1/3	IMGC01	Slot 1 The Mu tibus Graph cs Contro ler Module sends the v deo signals to the CRT S ot 3 opt ona MGC01 for a second CRT
S ot 6	IMKM01	Conso e T ne Mult bus Keyboard Modu e connects the keyboard nterface pane and touch screens to the MSM01 through an RS 232 ser a nk The MPM01 reads and processes keyboard data from the I MSM01
S ot 6	I MRM01	Driver cab net The Mu t bus Reset Modu e prov des system reset
S ot 9	MSM01	The Mu t bus Ser al nterface Modu e a lows the MPM01 to commun cate to the commun cation loop nterface, printers and keyboards
S ot 10	I MPM01	The Mu t bus Processor Modu e contains the 25 MHz 32 bit m croprocessor and 8 Mbytes of dynam c RAM memory
Slot 12	I MCP0	The Mu t bus Commun cat on Processor Modu e allows the IM M01 to commun cate w th the MPM01 through the IMSM01
S ot 14	IMLM01	The Mu t bus Loop Modu e a ows the I MCL01 and the MCP0 to commun cate together
S ot 16	MCL01	The Mu t bus Commun cat on Loop Terminat on Modu e term nates the coax or tw nax cable of the commun cation loop

IIOIC20 OPERATOR INTERFACE CONSOLE

There are five models of the Operator Interface Console (IIOIC20) remote consoles Table 1 3 lists the IIOIC20 mod els. The Operator Interface Console (IIOIC20) models are shown in Figure 1 4

Table 1 3 OIC Models

Nomenclature	Description
IIOIC201	Tabletop Operator Interface Console (19 inch CRT)
IIOIC2021	Console Model Operator Interface Conso e, Lower CRT
I OIC2022	Console Mode Operator nterface Conso e, Dual CRT
OIC2023	Console Mode Operator Interface Console, Upper CRT
IIOIC203	Environmental Cabinet Operator Interface Conso e
IIOIC204	Panel Mounted Operator nterface Conso e
IIOIC205	Tabletop Operator Interface Console (37 inch CRT)

IIOIC20 HARDWARE OVERVIEW

The OIC provides a remote operator interface for display graphics, alarm summaries, INFI 90 status, logs, trends and control stations The OIC allows more than one operator to use a single host OIS.

There are five models of OIC; console, environmental cabinet, 19 inch table top, panel mount and 33 inch table top models The console model (IIOIC20) may have a lower CRT, an upper CRT or both with a power entry panel, cable connector panel ADP panel, operator keyboard and interface board

The environmental cabinet model (IIOIC203) contains a CRT, power entry panel, cable connector panel, operator keyboard, ADP panel and interface similar to the console model, panel mount, 19 inch tabletop and 37 inch tabletop model

The OIC hardware connects to the operator interface station with minimum wiring and configuring. The OIC connects to the OIS through an RS 232 cable from the IIMKM01 board on the OIC and an RGB cable to the CRT Note that each OIC

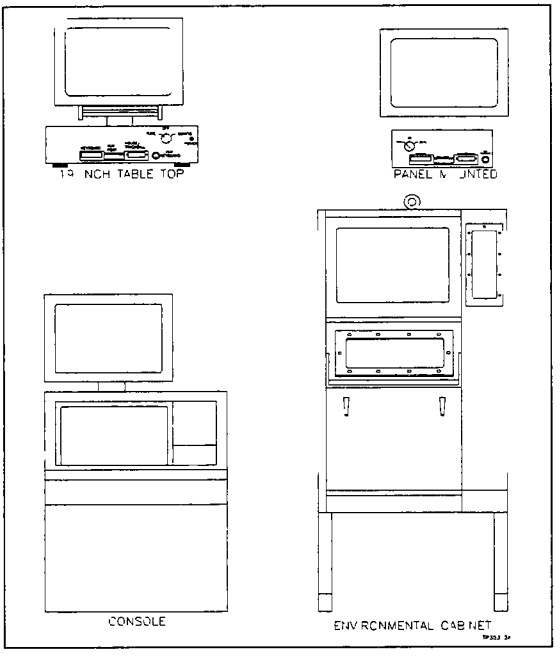


Figure 1 4 IIOIC20 Models. 19 Inch Table Top, 37 Inch Tabletop Panel Mounted, Environmental Cabinet and Console (CW)

requires two RGB cables One cable (part number 6637597 24100) connects the IIMGC01 graphics card in the OIS to the connector panel on the back of the OIS The other cable (part number NKMC01 xx) connects the connector panel on the back of the OIS to the OIC.

WARNING	**Do not operate the OIC with doors or covers opened or removed. Touching connections that carry current and voltage may cause injury.**
ATTENTION	**Ne faites pas fonctionner l'OIC si les portes ou les couvercles sont ouverts ou retires. Tout contact avec les connexions ou circule du courant ou de la tension risque de provoquer des blessures.**

OIC Tabletop (19 Inch) Hardware

OIC tabletop hardware is located in a case The power supply and Multibus Keyboard Module (IIMKM01) are in the case with the power supply The CRT is mounted on top of the case (see Figure 1 5).

NOTE: Figures 1-5 to 1-9 are shown w th power removed

The rear panel has terminals for input AC, alarm contact outputs, CRT cables and a power switch The front panel has the connectors for peripheral devices and a tune/off/config uration keyswitch

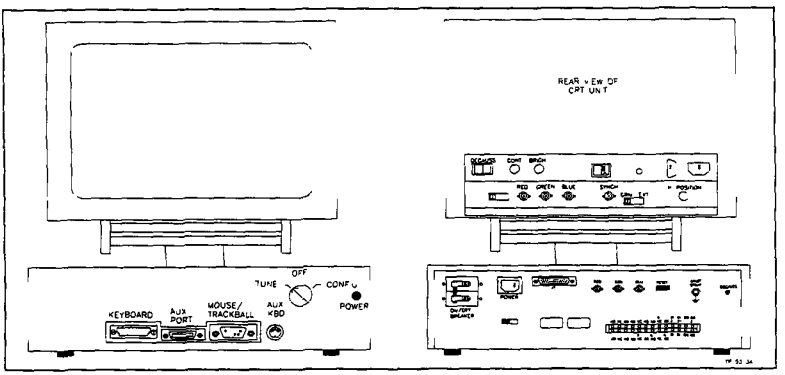


Figure 1 5 IIOIC201 Tabletop (19 Inch) Front and Rear Views

OIC Console Hardware

OIC console hardware is located in both the upper and lower sections of the operator console cabinet The IIOIC202 may include a lower, upper or dual CRTs, depending on the con figuration

The PEP and cable connector panel are in the lower half of the cabinet with the multibus card cage The CRT, power supply, annunciator display panel (ADP) and operator key board interface panel are located in the upper half of the cabinet. The keyboard interface panel is located beside the CRT on the front of the cabinet It is made up of connectors for the keyboard, mouse/trackball and an engineering key board.

The power entry panel has terminals for input AC The cable connector panel has alarm contact outputs and cable con nectors for peripheral devices. OIC console cabinet hardware consists of:

- 19 inch color CRT (640 x 480 pixel resolution)
- Operator keyboard with 16 user defined keys
- Annunciator relays (24 VDC) and audible tones
- The alarm contact relay outputs are for alarm annunciation only
- 32 key annunciator display panel (ADP)

OIC Console Component Locations

Figure 1 6 shows the front and rear view of the OIC console with the door removed This figure shows the placement of the subassemblies in this unit Refer to Section 4 for the layout of the multibus card cage, cable connector panel and the PEP

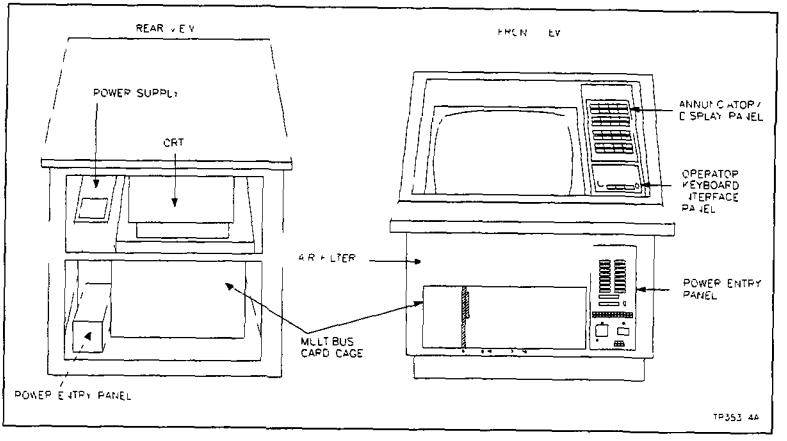


Figure 1 6. IICIC2021 Console Front and Rear Views

OIC environmental cabinet hardware is located in the bottom of the cabinet The PEP, cable connector panel and Multibus Keyboard Module (IIMKM01) are in the lower half of the cabinet with the power supply The annunciator display panel and CRT are on the front of the cabinet.

The power entry panel has terminals for input AC The cable connector panel has alarm contact outputs (24 VDC) and cable connectors for peripheral devices The alarm contact relay outputs are for alarm annunciation only

OIC Environmental Cabinet Component Locations

Figure 1 7 shows the front view of the OIC environmental cabinet This figure shows the physical relationship between the subassemblies in this unit Refer to Section 4 for the layout of the cable connector panel and the power entry panel

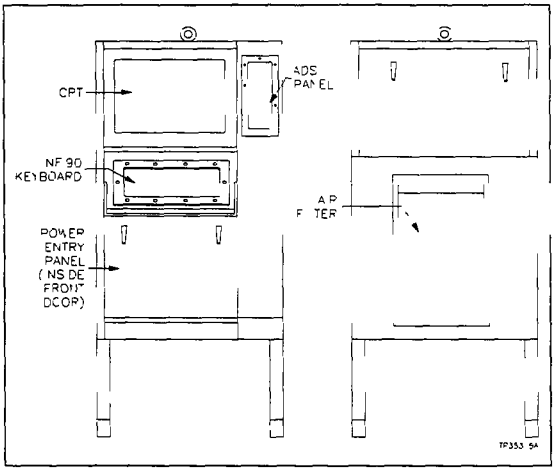


Figure 1 7 IIOIC203 Environmental Cabinet Front and Rear Views

OIC Panel Mounted Hardware

OIC panel mounted hardware is located behind the CRT and operator keyboard interface panel The power supply, power entry panel and Multibus Keyboard Module (IIMKM01) are located with the CRT.

The back of the power entry panel has terminals for input AC. alarm contact outputs (24 VDC) and the CRT cables The operator keyboard interface panel is mounted on a separate panel It has the connectors for operator devices such as keyboard, trackball or mouse, and a tune/off/configuration keyswitch The alarm contact relay outputs are for alarm annunciation only

OIC Panel Mounted Component Locations

Figure 1 8 shows the rear view of the OIC This figure shows the physical relationship between the subassemblies in this unit Refer to Section 4 for the layout of the cable connector panel and the power entry panel.

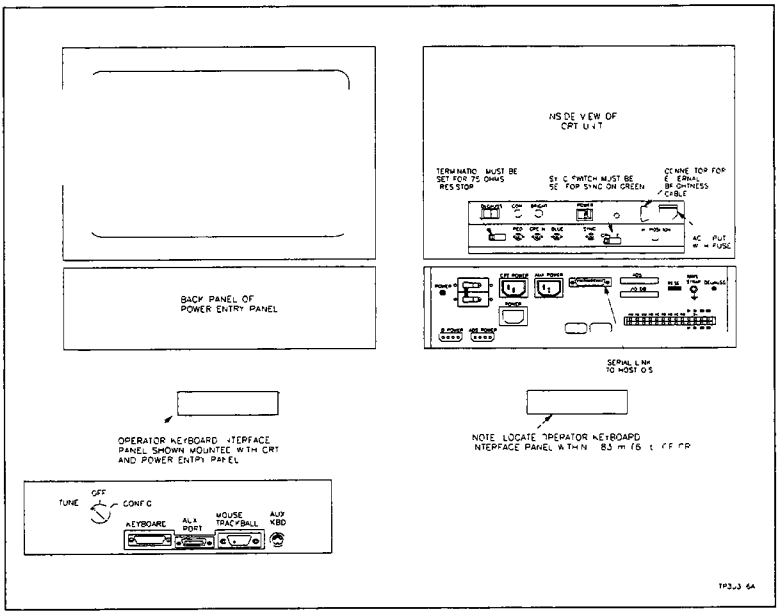


Figure 1 8 IIOIC204 Panel Mounted Model Front and Rear Views

OIC Tabletop (37 Inch) Hardware

The OIC 37 inch table top monitor is a standard package (see Figure 1 9). The power supply, Multibus Keyboard Module (IIMKM01) and keyboard are optional

The optional operator keyboard interface box (part number 6639030 2) has terminals for input AC, alarm contact outputs, a power switch and the CRT RGB cable (part number NKMC01 XX) from the OIS The front panel has the connectors for peripheral devices and a tune/off/configuration key switch The CRT part number is 1948014 7

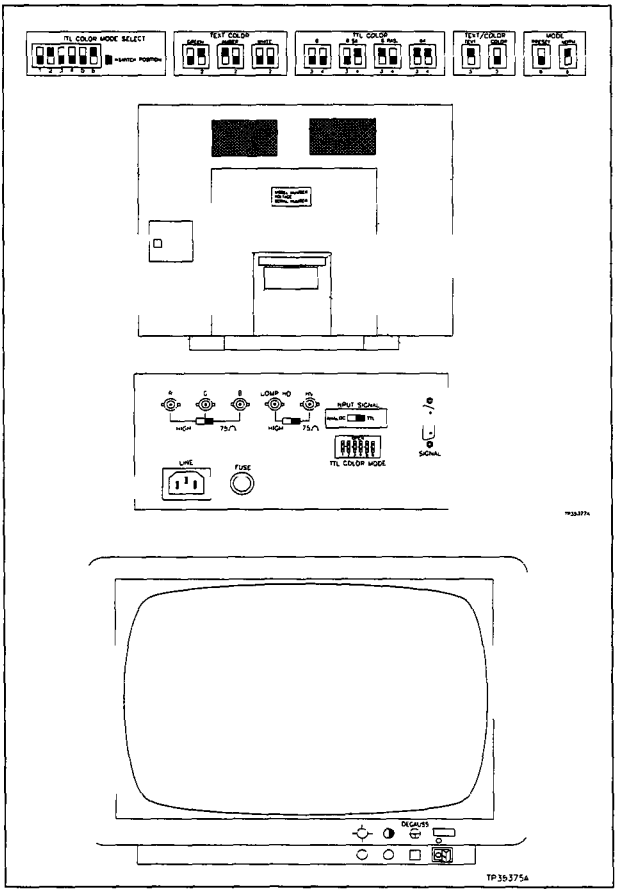


Figure 1 9 IIOIC205 Tabletop (37 Inch) Front and Rear Views

STANDARD AND OPTIONAL HARDWARE

Table 1 4 lists the hardware used in the Operator Interface Station, console (IIOIS20) and driver cabinet (IIOIS20A/D) This table also lists the hardware used for the Operator Interface Console, console (IIOIC202), environmental cabinet (IIOIC203) and tabletop (IIOIC201) The optional hardware is listed in Table 1 5

Table 1 4 Standard OIS/OIC Hardware

Part Nomenclature	Where Used							Description
	OIS		OIC					
	20	20A 20D	201	202	203	204	205	
1948002 1	X	X						Hard D sk Dr ve
1948013 1	X	X						D sk Dr ve Contro ler Modu e
1948014 7							X	Co or Mon tor (37 nch)
1948018 1	X	X						Floppy D sk Dr ve
1948023_1	X	X						SAS Modu e
1948623 1	X		X	X	X	X		Co or Mon tor (19 nch)
6637801 4				X				S xteen S ot Mult bus Card Cage (w th a slide n powe· supp y)
6637801 2	X	X						S xteen S ot Multibus Card Cage
6638235 1	X		X	X	X	X		Keyboard nterface Pane
6638353 1	X							Power Entry Panel
6638353 2				X				Power Entry Panel
6638514 1	X		X	X	X	X		Keyboard Assemb y
6638564_				X				Power Supp y
6638565 1	X	X						Power Supp y
6638564 2			X		X	X	X	Powe· Supp y
6638960 1		X						Power Entry Pane
ADP02	X			X				Annunc ator/D splay Pane
ADS03					X			Annunciator/D splay Pane
MCL01	X	X						Mult bus Commun cat on Loop Modu e
MCP0	X	X						Mult bus Commun cat ons Processor Modu e
MGC01[1]	X	X						Mult bus Graph cs Contro er Module
MKM01	X		X	X	X	X		Mult bus Keyboard Mod .e
MLM01	X	X						Mu t bus Loop Modu e
MPM01	X	X						Mu t bus Processor Modu e
MRM01		X						Multibus Reset Modu e
MSM01	X	X						Multibus Ser al nterface Modu e

NOTE 1 Mu t bus graph c contro er modu es m ount n the O S20 but are nc uded w th the O C201/2/3/4/5

Table 1-5. Optional OIS/OIC Hardware

Part Nomenclature	Where Used							Description
	OIS		OIC					
	20	20A 20D	201	202	203	204	205	
6638514 1							X	Keyboard Assembly
I ADP01	X		X	X		X	X	Annunciator/D splay Pane (tabletop)
AKB01	X		X	X	X	X	X	QWERTY Auxil ary Enq neer ng Keyboard
IIAMS01	X		X	X		X	X	Mouse
I ATB01	X		X	X		X	X	Trackbal
IATS01	X		X	X		X		Touch Screen
I DMT01		X						Magnet c Tape (rack mount)
IIDMT02	X							Magnetic Tape for Archival Storage (tabletop)
I DOP01		X						Optical Dr ve for Arch va Storage (rack mount)
DOP02	X							Tabletop Opt ca D sk
DST01	X	X						Stream ng Tape Arch va Storage
IIMGC01	X	X						Multibus Graphics Controller Card (add t onal card)
IIPRT02	X	X						B ack and Wh te Pr nter
I PRT03	X	X						Color Printer
IIPRT04	X	X						V deo Cop er (color)
PRT05	X	X						Black and Wh te Pr nter (h gh speed)
VTE01	X	X						Terminal for D agnost cs/ Start Up

INSTRUCTION CONTENT

Introduction Presents an overview of the IIOIS20, IIOIC20 and associated hardware It also provides a complete list of system specifica tions

Description and Operation Describes the physical attributes of the IIOIS20, IIOIC20 and related hardware

Installation Gives instructions on installation and wiring AC power to the PEP Be sure to read and follow all warnings and cautions

Standard Hardware Gives the configuration for an IIOIS20 and IIOIC20 Be sure to read and follow all warnings and cautions.

Optional Hardware Describes the available options and their configuration and installation procedures Be sure the model of the option being connected is compatible with the IIOIS20 or IIOIC20 and can be installed using these instructions.

Maintenance Contains preventive maintenance information.

Troubleshooting Lists troubleshooting steps and information

Repair/Replacement Procedures Describes how to replace standard and optional units and the printed circuit boards in the multibus card rack

Service and New Parts Includes a recommended spare parts list and ordering instructions

REFERENCE DOCUMENTS

References are made in this manual to the following Bailey Controls publications

Number	Document Name
E93-905 9	Enhanced Computer nterface Unit Programmer's Reference Manua
-E96 100	IIOIS20 Operation and Conf guration Manual
-E96 500	Network 90 S te Planning Preparation and Equipment Instal at on instruct ons

RELATED EQUIPMENT

INFI 90 Multi Function Processor Modules

Plant Loop and INFI NET Communications Modules

INSTALLATION SUMMARY

This section contains a summary of installation data for the IIOIS20 and IIOIC20 Refer to the site planning, preparation and installation instruction manual for more information

Table 1 6 lists the power consumption for the IIOIS20 and IIOIC20 Table 1 7 lists the cabinet dimensions for the IIOIS20 and IIOIC20

Table 1 6. IIOIS20 and IIOIC20 Power Consumption

Nomenclature	Description	Typ. Amps	Max. Amps	Max. Dissipation BTU/Hr
O S2011	Conso e Low CRT, 120 VAC	3 96	9 64	2650
IIOIS2012	Console Low CRT, 240 VAC	2 16	4 82	2650
I O S2021	Console H gh CRT, 120 VAC	3 96	9 64	2650
IIOIS2022	Console - High CRT, 240 VAC	2 16	4 82	2650
I O S2031	Console - Dual CRT, 120 VAC	5 50	10 67	3026
IIOIS2032	Console Dual CRT, 240 VAC	3.02	5 34	3026
O S20A1	Driver Cab net - 120 VAC	2 48	8 94	2274
IO S20A2	Dr ver Cab net 240 VAC	1 41	4 47	2274
O S20D1	Dua Dr ver Cab net 120 VAC	4 96	17 88	4548
IOIS20D2	Dual Dr ver Cab net - 240 VAC	2 82	8 94	4548
O C20101	19 inch CRT Tab etop, 120 VAC	1 72	4 26	992
IO C20102	19 nch CRT Tabletop 240 VAC	0 93	2 13	992
IOIC20211	Console - Low CRT 120 VAC	1 72	4 26	992
IIOIC20221	Console High CRT, 120 VAC	0 93	2 13	992
IO C20212	Conso e - Low CRT 240 VAC	1 72	4 26	992
IIOIC20222	Console - High CRT, 240 VAC	0 93	2 13	992
I O C20231	Conso e - Dual CRT, 120 VAC	2 83	5 82	1368
IIO C20232	Conso e Dual CRT, 240 VAC	1 46	2 91	1368
I O C20301	Env ronmenta , 120 VAC	2 50	10 34	3905
IOIC20302	Env ronmental 240 VAC	1 57	5 17	3905
OIC20411	Pane Mount, 120 VAC	1 72	4 26	992
IO C20412	Pane Mount 240 VAC	0 93	2 13	992
IO C20501	37 inch CRT Tabletop, 120 VAC	1 52	2 70	786
IIOIC20502	37 inch CRT Tabletop, 240 VAC	0 78	1.35	786

Table 1 7. IIOIS20 and IIOIC20 Dimensions

Nomenclature	Description	Dimensions					
		Height		Width		Depth	
		cm	inch	cm	inch	cm	inch
O S201	Conso e - Low CRT	107 27	42 23	71 12	28 00	109 01	42 92
I OIS202	Console - H gh CRT	156 94	61 99	71 12	28 00	109 01	42 92
O S203	Conso e - Dual CRT	156 94	61 99	71 12	28 00	109 01	42 92
IIOIS20A	Driver Cabinet	221 28	87 12	60 96	24 00	76 20	30 00
O S20D	Dr ver Cab net	221 28	87 12	60 96	24 00	76 20	30 00
IOIC201	19 inch Tab etop - CRT	61.00	24 00	51 30	20 00	55 90	22 00
O C2021	Conso e - Low CRT	107 27	42 23	71 12	28 00	109 01	42 92
IOIC2022	Console H gh CRT	156 94	61 99	71 12	28 00	109 01	42 92
O C2023	Conso e Dual CRT	156 94	61 99	71 12	28 00	109 01	42 92
O C203	Environmenta - CRT	177 80	70 00	30 00	76 20	77 80	30 63
IOIC204	Panel Mount CRT	48 26	19 00	50 8	20 00	50 80	20 00
IOIC205	37 inch Tab etop - CRT	78 74	31 00	78 74	31 00	58 42	23 00

GLOSSARY OF TERMS AND ABBREVIATIONS

Term	Definition
ADP	A arm annunciator/disp ay panel
Baud	Rate at wh ch data s transm tted over a serial bus n b ts per second
Bus	A channe or path for transferr ng data, electrical signa s and power
Configuration	The act of sett ng up equ pment to accomplish spec f c funct ons or a list of parameters associated w th such a setup
Dipshunt	Dua n- ne package w th short ng straps
Dipswitch	Dua n ne package that conta ns sw tches
DCE	Data Commun cat on Equipment or Data C rcu t-Term nating Equ p ment Equ pment that estab shes and terminates a commun cat on nk between two dev ces n RS 232 C commun cat on systems, the DCE nomenclature nd cates the signals that appear at spec f ed cab e connect on contacts A modem is an examp e of this type of dev ce
DMA	D rect Memory Access A method by which data gets transferred di rectly to memory w thout processor intervention
DRAM	Dynamic Random Access Memory. Contents are lost when power s removed
DTE	Data Termina Equ pment Equ pment compr s ng the data source data sink or both that prov des the communication contro funct on n RS 232 C commun cat on systems, the DTE nomenclature ind cates the signa s that appear at specified cable connection contacts Term na s and pr nters are examp es of this type of dev ce
EPROM	E ectron cally programmable read on y memory Contents remain when power is removed
ESD	E ectrostat c Sens t ve Devices E ectron c components subject to damage or fa lure when exposed to an electrostatic charge require special hand ng
Handshaking	Procedures and protoco used by two devices to estab ish and main ta n commun cat on
INFI-NET	Advanced data communication h ghway
LED	Light Emitt ng D ode.
LSB	Least Signif cant Bit The b t of a b nary number that carr es the east numerica weight

GLOSSARY OF TERMS AND ABBREVIATIONS (continued)

Term	Definition
MFP	Multi-Funct on Processor Module. A mult ple-loop controller with data acqu sit on and information processing capabilities.
MMU	Module Mounting Unit. A card cage that provides electrical and communication support for INFI 90/Network 90 modules
Module Address	A unique identifier of a specific dev ce or a commun cation channe Refers to Controlway or module bus address.
Module Bus	Peer to peer communication link used to transfer information be-tween ntel igent modules within a process control un t
MSB	Most Significant Bit The b t of a binary number that carries the most numerical weight
NVRAM	Nonvolati e Random Access Memory Retains stored information when power s removed
Node	A point of interconnection to a network
Node Address	A unique identifier of a specific dev ce or a commun cat on channel Refers to Plant Loop, Superloop or INF NET address
OIS	Operator Interface Station ntegrated operator console with data ac-quisition and reporting capabilities. It prc vides a dig tal access nto the process for flexible control and mon toring
Parity Bit	A bit added to a byte character or word to ensure that there s a ways either an even number or odd number of ones, according to the log c of the system t is used to verify the ntegrity of the data.
Parallel Data	Data transm tted simultaneously over mult ple signal l nes
PEP	Power Entry Pane
PCU	Process Contro Unit A node on the p ant-wide communication net-work containing master and slave modules
PFI	Power Fa Interrupt A signa generated by the power entry pane when there is a loss of AC or DC input power or an out of-to erance bus voltage
Plant Loop	Network 90 data commun cat on highway
PROM	Programmable Read On y Memory Contents remain when power is removed
RAM	Random Access Memory Contents are ost when power is removed

GLOSSARY OF TERMS AND ABBREVIATIONS (continued)

Term	Definition
ROM	Read Only Memory Contents remain when power is removed.
RS-232-C and RS-485	Two serial communication interface standards deve oped by the E ectronics Industry Association (EIA) spec fy ng what signa s and voltages w be used to transm t data from a computer (DTE) to a modem (DCE)
SASI	Shugart Associates Standard Interface Def nes the protocol and pe r phera nterconnection formats of a high speed parallel bus for use throughout the computer ndustry
SCSI	Sma l Computer System Interface An I/O bus standard by the Amer can Nationa Standard nstitute (ANSI) that def nes the protoco and per phera nterconnection formats of a h gh speed para e bus for use throughout the computer ndustry
Serial Data	Data transm tted sequentially on one s gna ne

NOMENCLATURE

Nomenclature	Description
IDMT01	Rack mounted n ne track magnet c tape drive for arch val storage
IDMT02	Tabletop n ne track magnetic tape dr ve for archiva storage
DOP01	Rack mount opt ca d sk drive for archival storage
DOP02	Tabletop opt ca d sk drive for archiva storage
O C201	Tabletop operator conso e with a 19 inch CRT, ti t/swive base and keyboard
I O C2021	Conso e sty e operator conso e with a lower mounted 19 nch CRT and keyboard
I O C2023	Console style operator conso e with two 19 nch CRTs (one cabinet mount and one t t/sw vel base mount) and a keyboard
IOIC2022	Console style operator conso e w th an upper mounted 19 nch CRT w th t t/sw ve base and keyboard
IO C203	Environmental operator conso e w th a 19 nch CRT and keyboard
IO C204	Pane mount operator conso e w th a 19 inch CRT and an o ot ona keyboard
IO C205	Tabletop 37 nch CRT and keyboard

NOMENCLATURE (continued)

Nomenclature	Description
I OIS20A	Operator interface station driver cabinet unit with multibus card cage, cable connector panel and PEP. An integrated unit with the same function as the OIS except for peripheral devices such as CRT and keyboard.
IIOIS20D	Operator interface station driver cabinet unit with two multibus card cages, cable panels and PEPs. An integrated unit with the same function as two IIOIS20 cabinets except for peripherals such as CRT and keyboard.
IO S201	Operator interface station integrated unit with cabinet mount CRT and optional keyboard
IIOIS202	Operator interface station integrated unit with CRT with tilt/swivel base and keyboard.
I OIS203	Operator interface station integrated unit with dual CRTs (one cabinet mount and one tilt/swivel base mount) and keyboard
IIMCL01	Multibus communication loop module
IIMCP0_	Multibus communications processor module
IIMGC01	Multibus graphics controller module
IIMKM01	Multibus keyboard module
I MLM01	Multibus loop module
IMPM01	Multibus processor module
IIMRM01	Multibus reset module
I MSM01	Multibus serial interface module
IIAKB01	QWERTY style auxiliary (engineering) keyboard.
IIATB01	Trackball cursor controller
IAMS01	Mouse cursor controller
I DST01	Streaming tape for archival data storage
IIPRT02	Black and white printer
I PRT03	Color printer (up to 64 colors).
IPRT04	Color video copier.
IIPRT05	High speed black and white printer.
NKMR01	RS232 cable from the OIC to the OIS, 25 pin to 25 pin male to male This cable was used on the OIC 202 and 204 before 4/90
NKMR02	RS232 cable from the OIC to the OIS, 9 pin to 25 pin male to male

SPECIFICATIONS FOR OPERATOR INTERFACE CONSOLE (IIOIS20)

Power

L ne Vo tage	240 V Nom na (204 VAC to 264 VAC RMS)
Line Vo tage	*120 V Nom nal (102 VAC to 132 VAC RMS)*
L ne Frequency	47 to 63 Hz
Power Consumpt on	

Model	Description	Watts
IOIS2011	Console - Low CRT, 120 VAC	775
IO S2012	Console - Low CRT, 240 VAC	775
OIS2021	Conso e High CRT, 120 VAC	775
I OIS2022	Conso e High CRT, 240 VAC	775
OIS2031	Conso e - Dua CRT, 120 VAC	885
O S2032	Conso e Dua CRT, 240 VAC	885
O S20A1	Dr ver Cab net 120 VAC	665
IO S20A2	Dr ver Cabinet - 240 VAC	665
IO S20D1	Dr ver Cab net 120 VAC	1330
O S20D2	Dr ver Cabinet 240 VAC	1330

Hardware

CPU	1 (25 MHz, 32 b t processor)
Memory	8 Mbytes
F oppy D sk	1 2 Mbytes
Hard D sk	85 Mbytes (unformatted)
CRT Reso ut on	640 x 480 p xe s
CRTs Supported per O S	I O S201 1 (plus up to 1 slave) I OIS202 - 1 (p us up to 1 slave) IIO S203 - 2 IIO S20A 0 (p us up to 2 slaves) IIO S20D - 0 (p us up to 4 slaves)
Keyboards	2 (6 output relays and 5 alarm tones per keyboard) The I OIS20D can support up to four keyboards, all other OIS models can support two keyboards

Alarm Relays	Typical	Maximum
Contact Vo tage	24 VDC	100 VDC
Contact Current	0 25 A	0 5 A
Co-tact Powe-	6 W	10 W

Conf gurat on	*Nonvolat le ROM and hard disk memory*
CRT Resolut on	640 x 480 p xe s

SPECIFICATIONS FOR OPERATOR INTERFACE CONSOLE (IIOIS20) (continued)

Attributes	
Display Screens	1,000; 200 dynamic items per screen
Control/Display Selects	200 selects from touch screen or keyboard 200 selects from keyboard
Tags	5,000
Trends	1,000
Real Time Trends	20
Operator Configurable Display	25
Logs (total, trend, trip snapshot)	100 in any combination of trend, trip and periodic logs; sequence of events logs are additional
SOE Logs/Reports	16/80
Event Log (no. of events)	1000
Environment	
Temperature	
Operating	10° to 40°C (50° to 104°F)
Storage	5° to 50°C (41° to 122°F)
Relative Humidity	
Operating	20% to 80% noncondensing
Storage	10% to 95% noncondensing
Altitude	-1,000 feet to +10,000 feet
Cooling Requirements	

Model	Description	Dissipation BTU/Hr (Max.)
IIOIS201	Console - Low CRT	2650
IIOIS202	Console - High CRT	2650
IIOIS203	Console - Dual CRT	3026
IIOIS20A	Driver Cabinet	2274
IIOIS20D	Dual OIS Driver Cabinet	4548

Weight	IIOIS201 - 174 kg (384 lbs) IIOIS202 - 191 kg (421 lbs) IOIS203 - 230 kg (506 lbs) IIOIS20A - 207 kg (456 lbs) IIOIS20D - 230 kg (506 lbs)
Certification	CSA certified for use in an ordinary (nonhazardous) location

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

SPECIFICATIONS FOR OPERATOR INTERFACE CONSOLE (IIOIC20)

Power

Line Voltage	240 V Nominal (204 VAC to 264 VAC RMS) 120 V Nominal (102 VAC to 132 VAC RMS)
Line Frequency	47 to 63 Hz
Circuit Breaker Size	20 A circuit breaker for IOC203 10 A circuit breaker for IOIC201, IIOC202 and OIC204 The IOC205 has a manufacturers on/off switch

Power Consumption

Nomenclature	Description	Watts
OC20101	19 inch Tabletop CRT, 120 VAC	290
OC20102	19 inch Tabletop - CRT, 240 VAC	290
OC20211	Console Low CRT 120 VAC	290
OC20221	Console High CRT 120 VAC	290
OC20212	Console Low CRT 240 VAC	290
OC20222	Console - High CRT, 240 VAC	290
OC20231	Console Dual CRT, 120 VAC	400
IOC20232	Console Dual CRT, 240 VAC	400
IOIC20301	Environmental CRT 120 VAC	893
IOIC20302	Environmental CRT, 240 VAC	893
OC20411	Panel Mount - CRT, 120 VAC	290
OC20412	Panel Mount CRT, 240 VAC	290
IOIC20501	37 inch Tabletop CRT 120 VAC	230
IOIC20502	37 inch Tabletop CRT, 240 VAC	230

Power Supply

OC201/02/03/04/05	+5 VDC at 20 A +12 VDC at 5 A -12 VDC at 1 A +12 VDC at 1 A (fan)

Hardware

Model	CRTs	Keyboards
OC201	1	1
OC202	1 or 2	1
IIOC203	1	1
IIOC204	1	1 (optional)
OC205	1	

SPECIFICATIONS FOR OPERATOR INTERFACE CONSOLE (IIOIC20) (continued)

Hardware (cont nued)

Keyboards — 1 (6 output relays and 5 a arm tones per keyboard)

Alarm Relays	Typical	Maximum
Contact Voltage	24 VDC	100 VDC
Contact Current	0 25 A	0 5 A
Contact Power	6 W	10 W

Attributes — OIC attributes are determ ned by the host OIS

Environment

Temperature	
Operating	10° to 50°C (40° to 104°F)
Storage	5° to 50°C (41° to 122°F)
Relative Humidity	
Operating	5% to 40% noncondens ng
Storage	5% to 95% noncondensing
Altitude	Sea evel to 1 8 m les (3km)

Cooling Requirements

Model	Description	Dissipation BTU/Hr (Max.)
IIOIC201	19 inch Tabletop	992
IOIC2021	Conso e	992
IIOIC2022	Console	992
IO C2023	Conso e	1368
IIO C203	Environmental Cabinet	3053
IO C204	Pane Mount	992
I O C205	37 nch Tab etop	786

Weight

IO C201 - 61 kg (135 bs)
IIOIC2021 - 152 kg (334 lbs)
IIOIC2022 - 168 kg (371 lbs)
IIOIC2023 211 kg (456 lbs)
IIOIC203 - 222 kg (490 lbs)
IIOIC204 - 61 kg (134 lbs
IIOIC205 - 91 kg (200 lbs)

Certification — CSA certified for use in an ordinary (nonhazardous) location

SPEC F CAT ONS SUBJECT TO CHANGE W THOUT NOT CE

SECTION 2 - DESCRIPTION AND OPERATION

INTRODUCTION

This section explains the electronic circuitry for the Operator Interface Station (IIOIS20) and the Operator Interface Con sole (IIOIC20). An operator uses the OIS to monitor and control the process The OIS shows equipment status and process states with interactive color graphics displays

The display is 640 x 480 pixels with any of the available colors. Each display can use dynamic variables and symbols allowing data to be condensed in each display Any graphic element can be mixed with any symbol on any display such as schematics, faceplates, trends and alarm summaries

OIS FUNCTIONAL OPERATION

Figure 2 1 shows a block diagram of the IIOIS20 This block diagram shows the signal flow for the IIOIS201/2/3 and IIOIS20A/D Figure 2 1 shows the logic and signal flow described in the text.

Process data from the Plant Loop or INFI-NET enters the OIS through the network interface unit (NIU) Three cards in the multibus card cage make up the NIU They are the Multibus Communication Loop Termination Module (IIMCL01), Multi bus Loop Module (IIMLM01) and Multibus Communication Processor Module (IIMCP0_) The MCL module in slot 16 of the multibus card cage connects to the loop. Front edge connectors on the MCL terminate a redundant coaxial or twinaxial cable of the loop. A ribbon cable connects the MCL to the MLM module in slot 14. The MLM converts analog loop signals to digital format for the MCP module. A ribbon cable connects the MLM to the MCP module A cable connects the MCP to the MSM serial module through the NIU connector on the cable connector panel on the PEP.

The Multibus Processor Module (IIMPM01) in slot 12 con tains the 20 megahertz 68020 microprocessor and 8 megabytes of Dynamic RAM memory. The MPM performs the controlling function for the system. Backplane connections connect the MPM to the MSM serial module and the MGC graphics card.

Modules in slots 1 to 11 communicate with each other over the backplane of the multibus card cage The Multibus Com munication Processor Module (IIMCP0_) in slot 14 interfaces the NIU to the MSM serial interface card

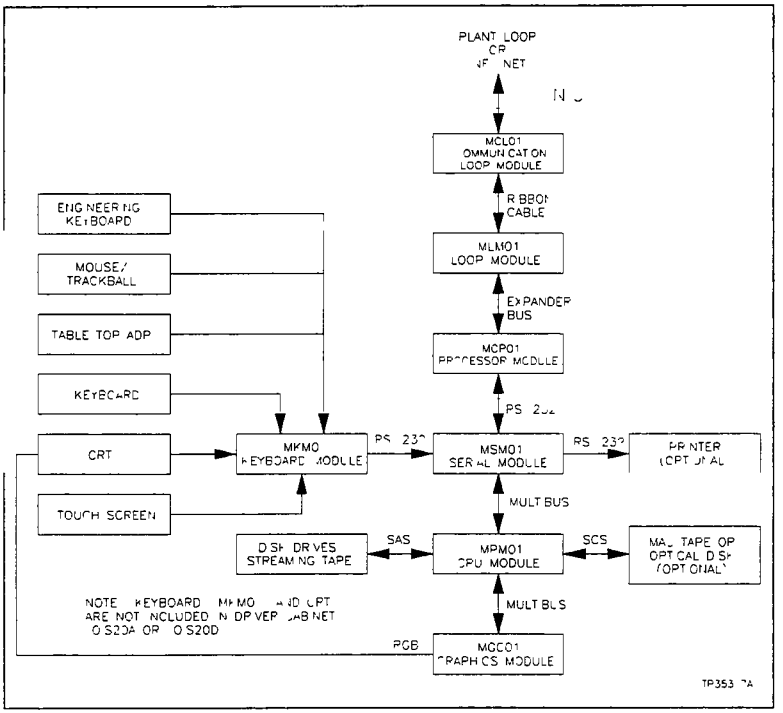


Figure 2 1 IIOIS20 Block Diagram

The Multibus Serial Interface Module (IIMSM01) in slot 11 allows the MPM processor module to communicate with the communication loop interface, printers and keyboards

The Multibus Keyboard Module (IIMKM01) in slot six connects the keyboard interface panel and touch screens to the MSM through an RS 232 serial link The MPM reads and processes keyboard data from the MSM A cable connects the MKM to the keyboard 1 connector on the cable connector panel The controller board for the touchscreen mounts to this module (two maximum)

The Multibus Graphics Controller Module (IIMGC01) in slot one or slot three sends video signals to the CRT. The optional MKM in slot three is for a second CRT on the OIS or a CRT

with remote mounting. A cable connects the MGC to the RGB connectors on the back of the CRT

Refer to Section 4 for more information on standard OIS modules and units. Refer to Section 5 for more information on optional OIS modules and units.

OIC FUNCTIONAL OPERATION

Figure 2 2 shows a block diagram of the IIOIC20 This block diagram shows the signal flow for the IIOIC201/2/3/4/5 See this figure when you read the description

The OIC controls and monitors the process through the OIS The OIC is a remote operator station with a CRT and key board Process data on the Plant Loop and INFI NET connect to the NIU modules in the OIS. The processor and serial controller card in the OIS controls the OIC

Two cables connect the OIC to the OIS. Commands from the OIC go to the OIS through a serial interface cable The serial cable connects from the MKM module serial interface port of the OIC to the cable connector panel of the OIS RGB signals from the OIS go to the OIC through a triple cable with three

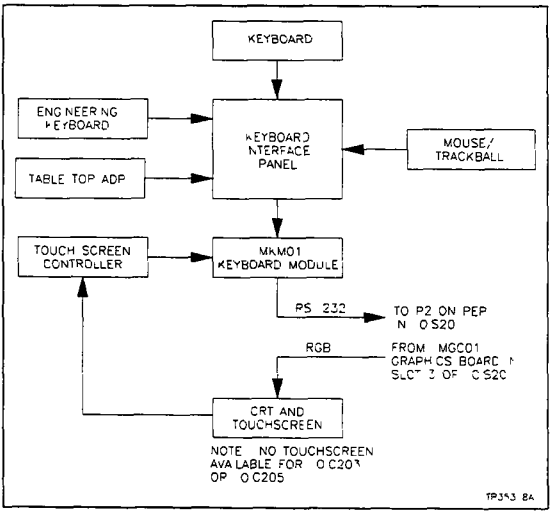


Figure 2-2 IIOIC201/2/3/4/5 Block Diagram

BNC connectors The RGB cable connects from the optional second CRT connector panel in the back of the OIS to the RGB connectors on the MGC card

The Multibus Keyboard Module (IIMKM01) connects the operator keyboard interface panel and touch screens to the MSM in the OIS through an RS 232 serial link Each MKM will support a Bailey Controls keyboard and an engineering keyboard connected through the operator keyboard interface panel. The MPM reads and processes keyboard data from the MSM A cable connects the MKM to the keyboard I connector on the cable connector panel Each OIS with a keyboard or OIC with a keyboard requires an MKM Note that the keyboard is optional for the IIOIC205

The controller board for the touchscreen mounts to the MKM module (two maximum) Note that no touch screen is available for the IIOIC205 (37 inch monitor) or IIOIC203 (environmental cabinet)

The Multibus Graphics Controller Module (IIMGC01) in slot one (or optional card in slot three) of the OIS sends video signals to the CRT A cable connects the MGC to the RGB connectors on the back of the CRT

Refer to Section 4 for more information on standard OIC modules and units Refer to Section 5 for more information on optional OIC modules and units

LOGIC POWER

An internal power supply converts the AC input to the DC voltages needed to power the OIS or OIC electronics (+5, +12 VDC)

MULTIBUS

The INFI 90 multibus is a high speed synchronous parallel bus It provides a path between cards in the multibus card cage The bus provides control signals for connecting multiple masters in either parallel or serial priority Both the P1 and P2 card edge connector of the cards connect to the bus.

The multibus has twelve parallel signal and control lines located on the multibus card cage backplane The bus allows memory and I/O data transfers, direct memory access and interrupt generating The bus is built on the master slave concept where the master device in the system takes control of the bus The slave device acts on the command from the master The handshake between the master and slave allows devices of different speeds to be interfaced through the bus Data rates up to five million transfers per second (bytes of words) to take place across the bus

SECTION 3 - INSTALLATION

INTRODUCTION

This section explains how to install and prepare the IIOIS20 (OIS) and IIOIC20 (OIC) for operation. Read and understand these steps before installing the OIS Call the local Bailey Controls sales office before starting with questions about installing or setting up the OIS/OIC.

SPECIAL HANDLING

The IIOIS20 and IIOIC202 weigh approximately 138 to 230 kilograms (304-506 pounds) Be sure to move the cabinet with equipment rated for this weight

The IIOIS20A/D and IIOIC203 weigh approximately 207 to 230 kilograms (456-506 pounds) Be sure to move the cabi net with equipment rated for this weight

HARDWARE SETUP ELECTROSTATIC DISCHARGE (ESD) CONTROL

The OIS contains circuit boards using CMOS components Before removing a module from the multibus card cage or do maintenance on equipment having static sensitive devices read this section.

Static susceptible devices (SSD) are likely to be damaged from contact with potential static charges more than 6 25 volts This potential, when placed across the leads of a SSD can damage the oxide layers within the package. Latent or immediate damage may result. Latent damage may not be detectable under normal circuit check out, but may result in a reduced life of equipment or reduced system functions

Methods for preventing damage involve equalizing the poten tials across all SSD terminals and across the SSD working area, tooling and operator. The most common method is to connect tools, assembly equipment and the operator electri cally to earth ground This procedure should be followed at all stages of handling.

Special handling procedures help avoid damage to the printed circuit boards.

1. Personnel working with or handling printed circuit boards need to be grounded by wearing conductive wrist ground straps.

NOTE. Always use the Bailey Controls field static kit (P/N 1948385A2 consisting of a wrist strap, ground cord assembly, and alligator clip) when working with the OIS or OIC. The kit is designed to connect the technician and the static dissipating work surface to the same ground point to prevent damage to the modules by electrostatic discharge.

2 Personnel wearing silk, wool or synthetic clothing shall wear a conductive material smock. Personnel shall keep all plastic and textiles which are not antistatic away from SSD and work stations.

3 Use antistatic containers and bags. Store ESD sensitive equipment in these containers/bags when they are not in the system.

4 Ground containers and bags before opening.

5 Ground test and assembly equipment.

6 Work stations need to be constructed or covered with conductive materials.

7 Keep the work area free of plastic, styrofoam, cellophane and vinyl materials (e.g., coffee cups, cup holders, cigarette packages, combs, books, folders).

8 Be sure the tools that come into contact with SSD are made of conductive materials and provide a means for connection to ground.

9 Use soldering irons with a grounded tip that are approved for use on SSD.

UNPACKING AND INSPECTION

Compare the shipment to the invoice upon receiving the OIS/OIC. Examine the shipping crate for damage. Report any damage immediately to the carrier. If immediate repair or replacement is necessary, notify the nearest Bailey Controls sales/service office.

If the OIS is not put into service immediately, store it in its original shipping package. If the OIS is to be stored, maintain the storage environment defined in the environmental specifications in Section 1 of this manual.

PLANNING AN INSTALLATION

Refer to the site planning, preparation and equipment installation manual for site selection, preparation and hardware installation of the INFI 90 control system. This document includes requirements and recommendations of load bearing for floors, space around equipment, temperature, humidity,

shock and vibration, AC power wiring, power and DC signal common grounding, line conditioning, uninterrupted power supplies, radio frequency and electromagnetic interference, electrostatic discharge, lighting, equipment protection, equipment handling and storage.

SAFETY CONSIDERATIONS

Do not remove or install circuit boards with power applied to the OIS or OIC The circuit board may be damaged. Remove power to all AC wiring when removing or connecting AC wires to prevent personal injury and equipment damage Remove DC power to all DC wiring when removing or connecting DC wires or circuit boards to prevent damage to equipment.

IIOIS202 PHYSICAL DESCRIPTION

The operator interface station (OIS) has front and rear swing out doors with individual locks The front door has slotted openings for the air intake to cool the inside of the cabinet The cabinet has a stabilizer which must be fastened to the front of the cabinet when the OIS is not secured to the floor The 6.4 centimeters (2 5 inches) diameter cable entry is located at the bottom right rear of the unit. There is also a bottom cable entry in the cabinet. The cabinet dimensions are shown on Figure 3-1.

IIOIS202 SETUP AND PHYSICAL INSTALLATION

Before the OIS is set into place in a control room, insure that the floor is level in the area where the cabinets will be set. Adjust the leveling screws on all cabinets and connecting tables until the CRT bezel of each cabinet lines up The leveling screws adjust 2.56 centimeters (1.05 inches) The dimensions for the leveling screws are shown on Figure 3-2.

After the cabinets are fastened down, put the tables on the cabinets and lock them into place by pushing the red handle above the front access door to the right until it stops at the bottom of the slot.

The tabletops are adjustable The brackets supporting the tabletops are bolted through oversize holes. Loosen the bolts and move the top up to 0.25 inches up, down, forward or back toward the cabinet to line up the tabletop.

There are two chrome table alignment pins shipped inside the brass bushings located on each side of each tabletop When two tabletops are lined up, push the pins outward into

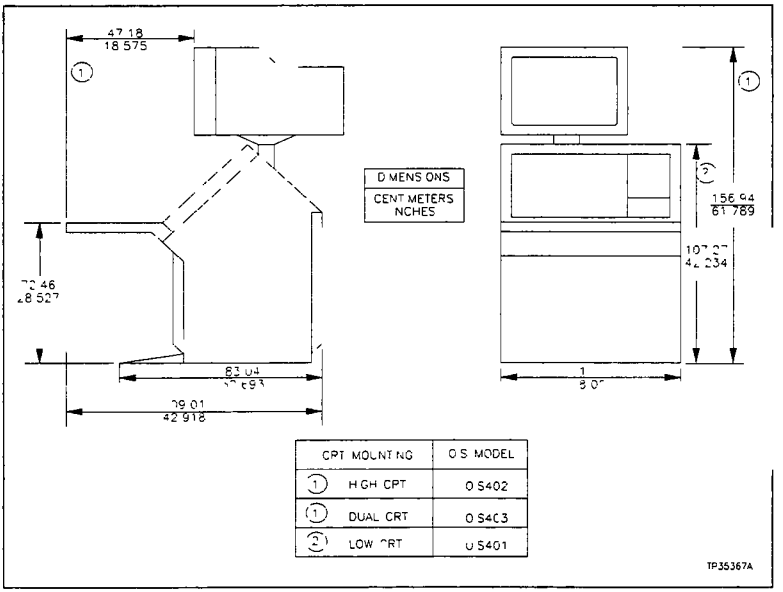


Figure 3-1 IIOIS20 Cabinet Dimensions

the bushing of the table to the right of the cabinet Tighten the three bolts on each tabletop support bracket

Protect the wires and cabling going to the OIS cabinet Run cabling through conduit to the back of the cabinet or under the floor through the bottom of the cabinet Follow local wiring codes when wiring and installing cableways or conduit Refer to the site planning, preparation and equipment installation manual for more information

Figure 3-1 and Figure 3-2 show the IIOIS20 cabinet dimensions Figure 3-3 shows the IIOIS20 keyboard table Figure 3-4 shows the 15 degree wedge table dimensions Figure 3-5 shows the 45 degree wedge table dimensions

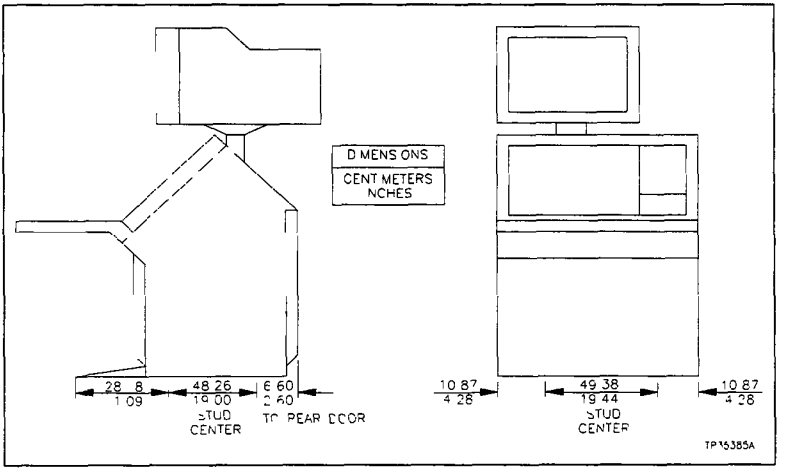


Figure 3 2. IIOIS20 Anchoring Dimensions

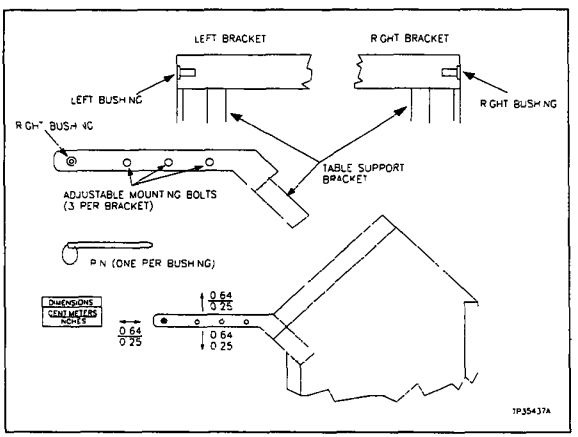


Figure 3 3. OIS/OIC Keyboard Table

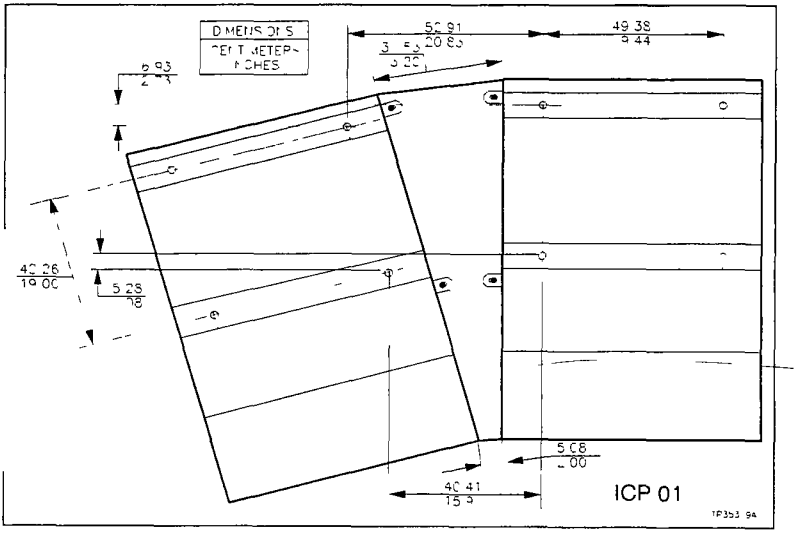


Figure 3 4 OIS/OIC 15 Degree Wedge Table Dimensions

IIOIS20A/D PHYSICAL DESCRIPTION

The Operator Interface Station Driver Cabinet (IIOIS20A/D) has a front and rear swing out door with individual locks The front and back doors seal in the air that is cooled by the internal cooling system of the unit Two cable entries are located at the bottom of the unit The cabinet dimensions are shown on Figure 3 6

IIOIS20A/D SETUP AND PHYSICAL INSTALLATION

Before the IIOIS20A/D is set into place in a control room, insure that the floor is level in the area where the cabinet will be set The unit must be secured to the floor before it is wired or operated The dimensions for locating the mounting screws are shown in Figure 3 7.

Protect the wires and cabling going to the OIS cabinet Run cabling through conduit to the back of the cabinet or under the floor through the bottom of the cabinet Follow local

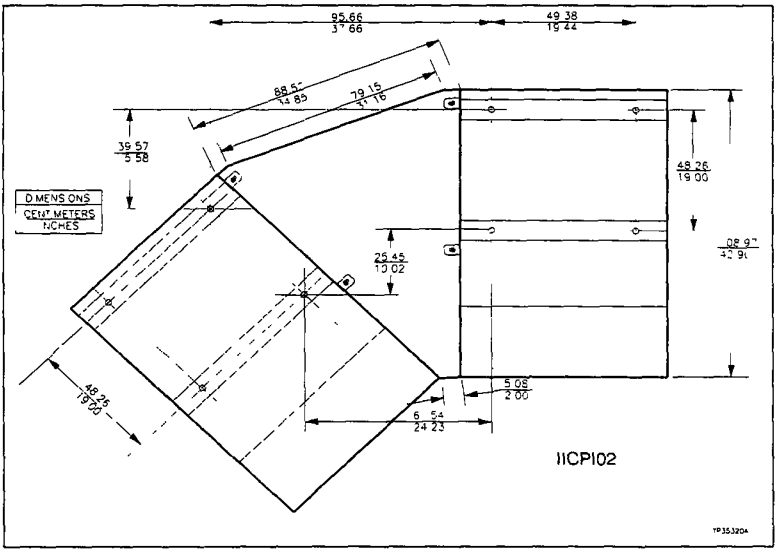


Figure 3 5. OIS/OIC 45 Degree Wedge Table Dimentsions

wiring codes when wiring and installing cableways or con duit. For more information, refer to the site planning, preparation and equipment installation manual.

IIOIS20 WIRING CONNECTIONS AND CABLINC

Table 3 1 contains the color codes for wiring the IIOIS20 or IIOIS20A/D. Table 3 2 contains a list of cables and their con nections. IIOIS20 cable connections are shown in Figure 3 8

The OIS is internally wired when it is shipped Connect the communication loop cables, AC power and any peripheral devices AC power is connected to TB1 on the power entry panel (PEP). Communication loop cables connect to the

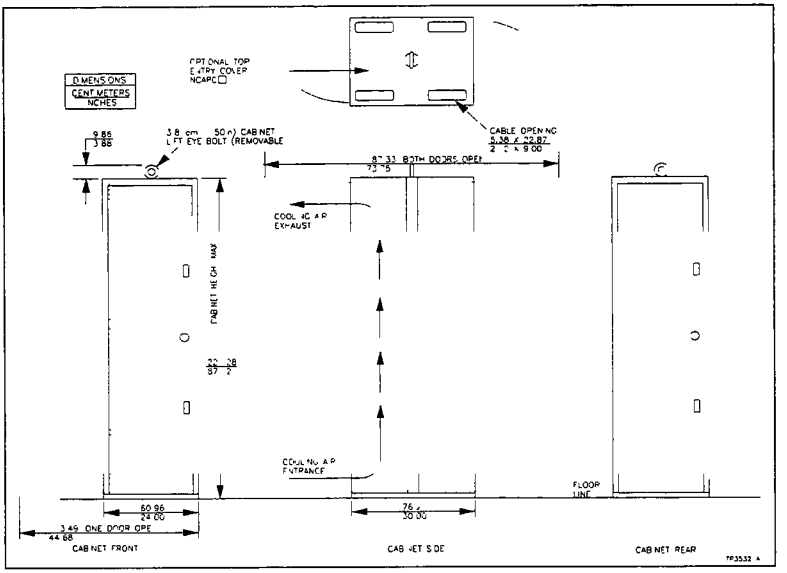


Figure 3 6 IIOIS20A/D Cabinet Dimensions

IIMCL01 module in the multibus card cage Peripheral de vices connect to the front of the PEP or to the keyboard interface panel Refer to Section 4 and Section 5 for specific instructions on installing and configuring peripheral devices and replacement components

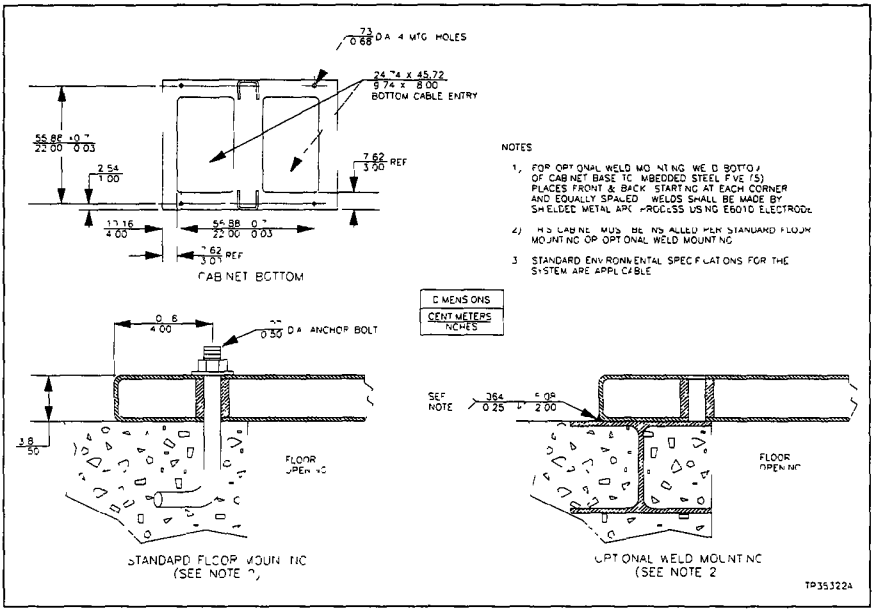


Figure 3 7 IIOIS20A/D Anchoring Dimensions

Table 3-1 OIS Wiring Color Codes

Color	Function
Brown Blue Green/Yellow	AC Hot AC Neutral AC Common
Brown White/Green Violet	+5 VDC DC Common 12 VDC
White/Violet Green White	+12 VDC Remote Voltage Sense + Remote Voltage Sense

Table 3 2 IIOIS20 Cable Connections

Cable No	Cable Name	Connect From	Connect To
6637599 1	AC Power	J1 on PEP	AC H gh on Ma n Power Supp y AC Low on Ma n Power Supp y Ground on Ma n Power Supp y
1947950 1	AC Power	J2 on PEP	CRT1 AC Power Connector
1947950 5	AC Power	J3 on PEP	CRT2 AC Power Connector
6638712 1	PF Sense	J1 on Power Supply	TB1 on Backp ane P3 on I MKM01
6638718_1	Power	Connector +12/ 12 on Backp ane	Term na Str p on DC D strıbut on Board
6638708 1	Power	TB2 on Backp ane	Term na Str p on DC D str but on Board
6638711 1	Power	CH1+, CH1 on Power Supp y	TB3, TB4 TB5 TB6 on Backp ane
6638719 1	Reset Cab e	Reset Sw tch on PEP	P4 on I MKM01
6637776 2	Wr st Ground	User	Wr st Connector on PEP
6637460 50N42	D sk Dr ve	J8 on D sk Contro er	Stream ng Tape Port on PEP
6637460 50N42	D sk Dr ve	J43 on MPM01	SCS Port on PEP
6638716 1	RS 232 Cab e	J6 on MPM01 (top ha f) (bottom ha f)	 P10 on PEP P9 on PEP
6638715 1	RS 232 Cab e	P1 P4 on PEP	Lower Connector on MSM01
6638715 1	RS 232 Cab e	P5 P8 on PEP	Upper Connector on MSM01
6638720 1	Lower CRT Br ght	9 Pın Connector on Rear of Lower CRT	CRT Beze Brightness CRT Bezel Contrast Degauss ng Sw tch on PEP
6638720 2	Upper CRT Br ght	9 P n Connector on Rear of Upper CRT	CRT Beze Br ghtness CRT Beze Contrast Degauss ng Switch on PEP
6638771 1	Power	P8 DC D str but on Board on Ma n Power Supp y	Fan
6637597 31200	Upper RGB Video	RGB on IMGC01	RGB on Upper CRT
6637597 24100	Lower RGB V deo	RGB on MGC01	RGB on Lower CRT
6634512 26N72	/O D str but on	P5 on MKM01	P1 on Keyboard nterface Board
6634512 26N72	/O D str but on	P6 on MKM01	Term na B ock on Rear of PEP

Table 3 2. IIOIS20 Cable Connections (continued)

Cable No	Cable Name	Connect From	Connect To
6638713 1	Per phera Power	J2 on Keyboard-Interface Board	P3 on DC D str but on Board on Ma n Power Supp y
6638713_2	Per phera Power	P1 on ADP Board	P4 on DC Distribut on Board on Ma n Power Supp y
6638713 3	Per pheral Power	Connector on Floppy Drive Power	P2 on DC Distribution Board on Main Power Supp y
6634328 34N48	Floppy S gna	J7 on D sk Contro er	J1 on F oppy Dr ve
6638849_1	ADP Signal	P7 on IIMKM01	P8 on Keyboard - Interface Board P2 on ADP Pane
6632686 50-1	D sk Data	J1 on D sk Contro er	J1 on SAS Modu e
6634329_20N8	Hard Dr ve Data	J4 on Disk Contro er	J2 on Hard Disk Dr ve
6634329 34N12	Hard Drive Data	J2 on D sk Controller	J1 on Hard D sk Drive
6638713 4	Per pheral Power	Power Connector on Hard D sk	P1 on DC D str bution Board on Main Power Supply
6638713_5	Per pheral Power	J10 on Disk Controller	P6 on DC Distribution Board on Ma n Power Supply
6638717 1	PFI Sense	J2 on Main Power Supply	P7 on DC Distribution Board on Ma n Power Supply
6634512_26N2	Internal I/O	P4 on IIMCP0_	P4 on IIMLM01
6634512_26N2	nterna I/O	P3 on IIMCL01	P3 on I MLM01
NKMR02 3	9-25 RS-232	P5 on I MCP0_	P4 on PEP
NKMR02 3	9 25 RS-232	P9 on IIMKM01	P1 on PEP
1948644_5	Touch Screen Extension	Touch Screen on Upper CRT	5 P n Connector on Touch Screen Module

Communication Loop Connections

Redundant communication loops can connect to the IIMCL01 module in the multibus card cage Run coaxial cables with BNC connectors or twinaxial cables to the front connections on the IIMCL01 module Cables can enter the cabinet from the floor level opening on the rear of the cabinet or through the hole in the bottom of the cabinet under the power entry panel

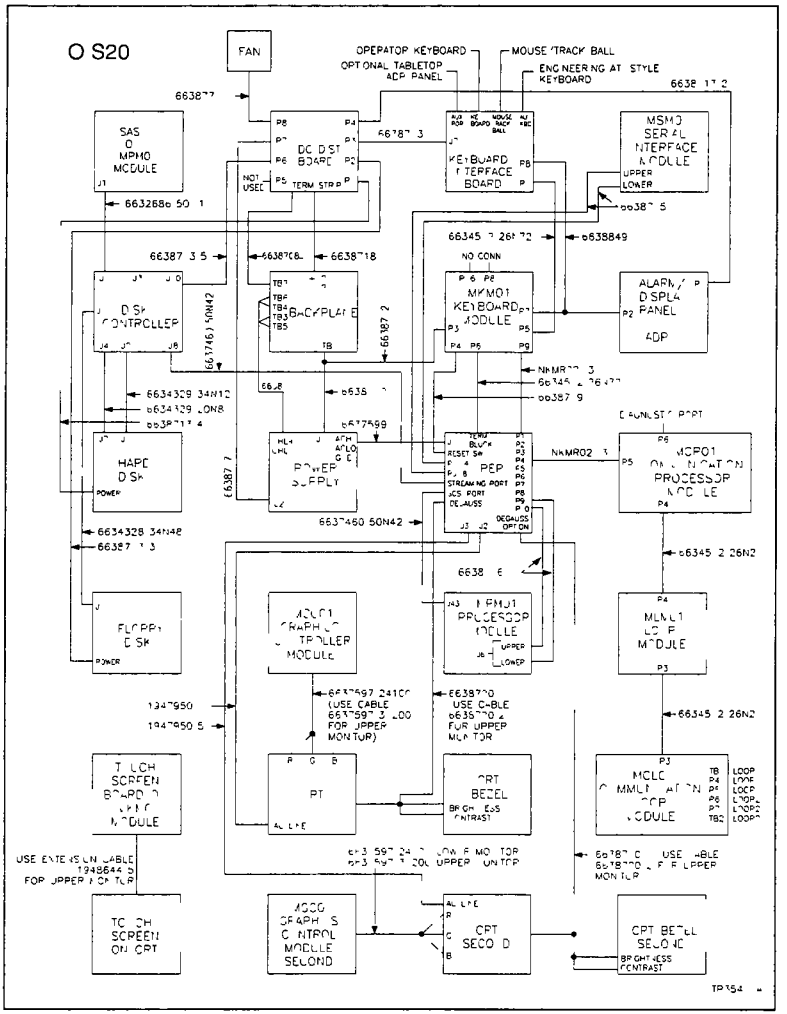


Figure 3 8 IIOIS20 Cable Connections

Peripheral Device Connections

There are peripheral device ports on the cable connector panel located above the power entry panel (PEP) and on the key board interface panel located beside the CRT. The SCSI port on the cable connector panel is not used at this time. The streaming tape port on the cable connector panel connects to an optional streaming tape reader. The keyboard port on the keyboard interface panel connects to the keyboard shipped with the OIS. The AUX 1 port on the keyboard interface panel connects to an optional tabletop annunciator display panel (ADP). The mouse/trackball port supports either a mouse or trackball cursor controller The AUX KBD port connection is for an optional engineering keyboard Refer to Section 5 for more information on peripheral devices

AC Power

IIOIS20 AC power input connects to a terminal block on the bottom front of the power entry panel The IIOIS20 can oper ate from 120/240 VAC 50/60 hertz The PEP provides line filtering, transient suppression and a 20 amp circuit breaker

SETUP FOR 240 VAC

Setting up the IIOIS20 for 240 VAC requires changing the switch setting on the DC power supply The location of this switch is shown in Figure 4 31 The Intecolor and Aydin brand color monitors are autosensing and need no changes for 240 VAC operation, although monitors by other vendors may require changes.

CAUTION	**Make sure that all labels on the power supply and the power entry panel are changed to show 240 VAC operation or equipment damage may result. Make sure main power breaker is off before changing operating voltage setting or equipment damage may result.**
ATTENTION	**Assurez-vous que toutes les etiquettes apposees sur le bloc d'alimentation et sur le panneau d'entree de l'alimentation ont ete modifiees pour correspondre au fonctionnment a 240 V c.a.,sinon le materiel pourrait subir des dommages. Assurez-vos que le disjoncteur de l'alimetation principale est hors tension avant de modifier le reglage de la tension de service, sinon le materiel pourrait subir des dommages.**

AC OUTLETS

There are four AC outlets on the IIOIS20 power entry panel Three are located on the rear for color monitors and the power supply

There are three AC outlets on the IIOIS20A power entry panel Two are located on the rear for the power supply and an auxillary device Each AC outlet is rated for a maximum of 10 amps The circuit breaker for the OIS is rated for a maximum of 20 amps

NOTE: Do not connect motors, ghts or test equ pment to the AC out ets E ectr ca no se may cause data to be lost or changed

AC WIRING

The following steps outline the required procedure to install and power up the OIS Observe and follow all related safety procedures when doing these steps (see Figure 3 9)

CAUTION	**Do not plug modules or peripherals such as a tape drive or printer into the OIS with power applied. A current surge or voltage spike could damage sensitive components on the unit**
ATTENTION	**Ne pas inserer les cartes ni les peripheriques tels que les derouleurs de bande et les imprimantes dans l'OIS lorsque ce dernier est sous tension. Les composantes de l'unite risquent d'etre endommagees par les pointes de courant ou de tension.**

NOTE: Before remov ng a module from the mu t bus card cage or do ng ma ntenance on equ pment contain ng stat c sens tive dev ces read ***HARDWARE SETUP ELECTROSTATIC DISCHARGE (ESD) CONTROL*** n th s sect on

1 Turn off the breakers for the AC supply power and verify that no power is present to the OIS when making wiring connections

2 Open the front door of the OIS cabinet This provides access to the terminals needed for wiring to the INFI 90 communication highway and AC power

3 Wire AC power to the terminals at the bottom front of the power entry panel

NOTE Ver fy that the ncom ng voltage s the same as the rat ng on the abe of TB1 on the PEP

The recommended minimum size for power wiring is 14 AWG copper wire with a 600 volt, 75 degree Celsius rating and thermoplastic insulation Wire with a 300 volt or 150 volt rating may be used if it is accepted by local wiring codes.

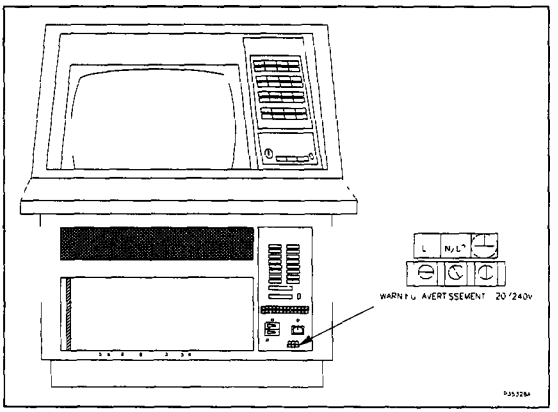


Figure 3 9 IIOIS20 and IIOIS20A/D Power Entry Panel (PEP) AC Input Terminal

Wiring must be protected by cable trays or conduit and suited for the service voltage.

The power wiring to the OIS must include a third wire grounding conductor. This grounding conductor must not be a smaller gauge than the power wiring and must be either bare, green colored or green/yellow colored if insulated The grounding conductor must be terminated at the system safety ground connection on the front of the power entry panel

Over-current protection provided for the AC distribution must be sized to allow for the inrush current required by the OIS hardware. Refer to Section 1 for the peak inrush current and duration for the OIS

For more information on power wiring and grounding, such as line conditioning, and EMI (electromagnetic interference), refer to the site planning, preparation and equipment installation manual

The power entry panel (PEP) and cable connector panel is located in the front of the cabinet in the bottom right corner Connect 120/240 VAC at 50/60 hertz into the terminal block below the circuit breaker on the PEP Refer to Section 4 of

this manual for information on wiring connections for the PEP If other power is present, a compensating transformer is required

NOTE f remote CRTs are be ng insta led, be sure they are pow ered using the same polarized power and ground as the OIS to prevent ground loops Fa ure to do so may cause display d stort on f ground oops are suspected, use optica ly so ated modems to e minate the problem

4 Vibration during shipping and handling may unseat mod ules and connections, causing problems Before applying power, do the AC and DC power up tests in Section 6 of this manual Adjust the supplies as shown if necessary

5. After AC wiring is complete, check the placement of mod ules in the multibus card cage Compare module placement to Figure 4 1 and check the switch settings on the boards shown in Section 4

6 Connect the Plant Loop or INFI NET communication link. Refer to ***Multibus Communication Loop Module (IIMCL01)*** in Section 4 of this manual for further information

7 After completing the wiring and checking the AC voltage sources apply power If problems occur, refer to the trouble shooting chart in Section 6 of this manual

OIS peripherals (keyboards, printers, etc) are connected to the cable connector panel Refer to Section 4 of this manual for wiring connections for the PEP. If the installation calls for connecting a CRT touch screen, refer to ***TOUCH SCREEN*** in Section 5 of this manual

IIOIC201 PHYSICAL DESCRIPTION

The operator interface console (OIC 19 inch tabletop) has slotted openings that accommodate the air intake for the internal cooling system of the unit Figure 3 10 shows the IIOIC201 case dimensions

IIOIC201 SETUP AND PHYSICAL INSTALLATION

Before the OIC is set into place in a control room applica tion, insure that the table is strong enough to support the CRT and OIC. Follow local wiring codes when wiring and installing cableways or conduit For more information, refer to the site planning, preparation and equipment installation manual

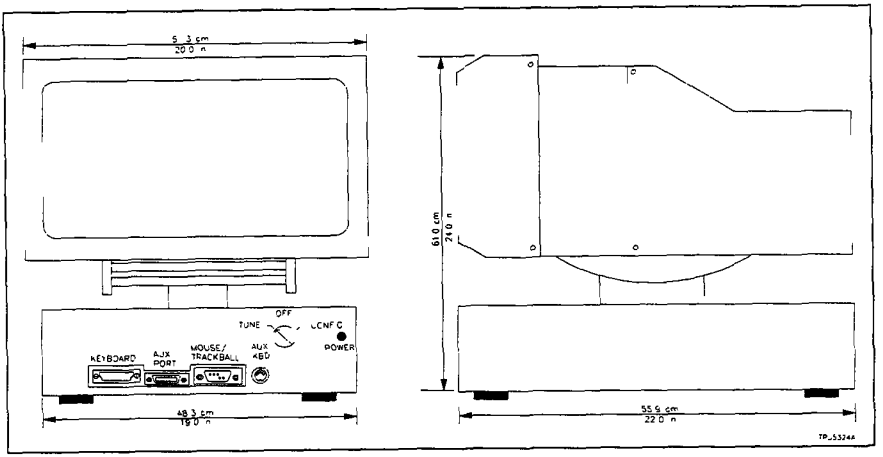


Figure 3 10. IIOIC201 Case Dimensions

IIOIC201 WIRING CONNECTIONS AND CABLING

A list of cables and their connections are in this section IIOIC201 cable connections and the chassis connections are shown later in this section.

IIOIC202 PHYSICAL DESCRIPTION

The operator interface console has front and rear swing-out doors with individual locks. The lower front access door has slotted openings to accommodate the air intake for the internal cooling system of the unit The unit has a stabilizer which must be fastened to the front of the cabinet when the IIOIC202 is not secured to the floor The 6 4 centimeters (2 5 inches) diameter cable entry is located at the bottom right rear of the unit. The cabinet dimensions for the low, high or dual mounted CRTs are shown in Figure 3 11

IIOIC202 SETUP AND PHYSICAL INSTALLATION

Before the OIC is set into place in a control room, insure that the floor is level in the area where the cabinets will be set Adjust the leveling screws on all cabinets and connecting tables until the CRT bezel of each cabinet lines up. The leveling screws adjust 2.56 cm (1.05 inches) The locating dimensions for the leveling screws are shown on Figure 3 12

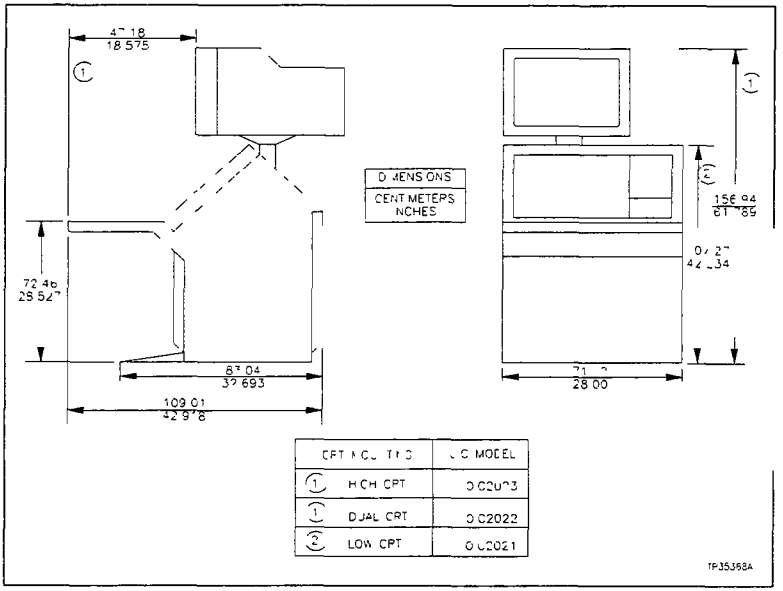


Figure 3 11 IIOIC2021/2/3 Cabinet Dimensions

After the cabinets are fastened down, put the tables on the cabinets and lock them into place by pushing the red handle above the front access door to the right until it stops at the bottom of the slot

The tabletops are adjustable The brackets supporting the tabletops are bolted through oversize holes Loosen the three bolts on each table support bracket and move the top 0 25 inches up, down, forward or back toward the cabinet

There are two chrome table alignment pins shipped inside the brass bushings located on each side of each tabletop When two tabletops are lined up, push the pins outward into the bushing of the table to the right of the cabinet Tighten the six bolts on the support brackets Figure 3 13 shows the IIOIC202 keyboard table

Protect the wires and cabling going to the IIOIC202 cabinet Run cabling through conduit to the back of the cabinet or under the floor through the bottom of the cabinet Follow local wiring codes when wiring and installing cableways or conduit

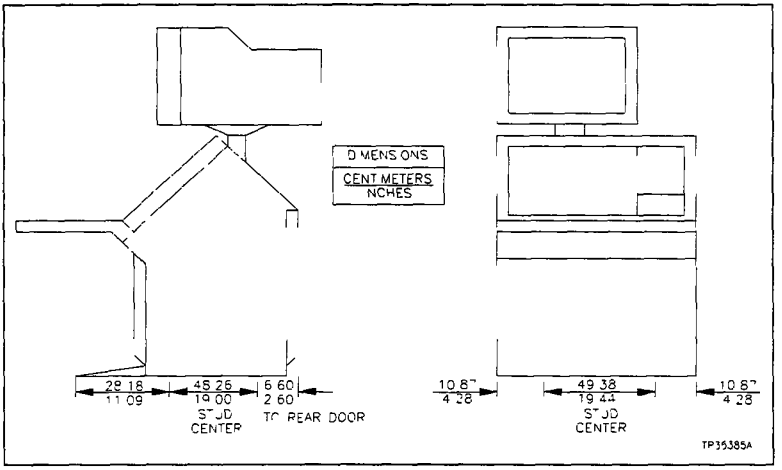


Figure 3 12 IIOIC2021/2/3 Anchoring Dimensions

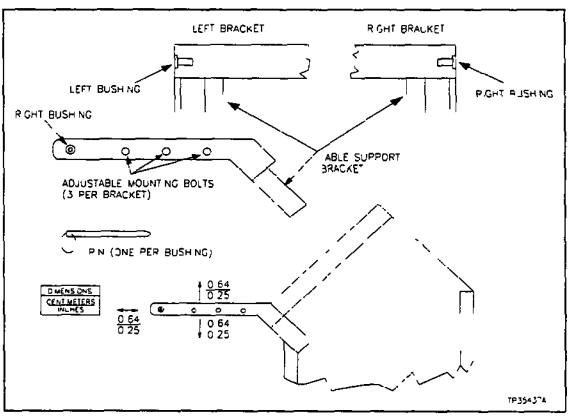


Figure 3 13. IIOIC201/2/3 Keyboard Table

IIOIC203 PHYSICAL DESCRIPTION

The operator interface console environmental cabinet has a front and rear swing out door with individual locks The front and back door seal in the air that is cooled by the unit's internal cooling system The sealed cable entry is located at the back bottom unit The cabinet dimensions are shown on Figure 3 14

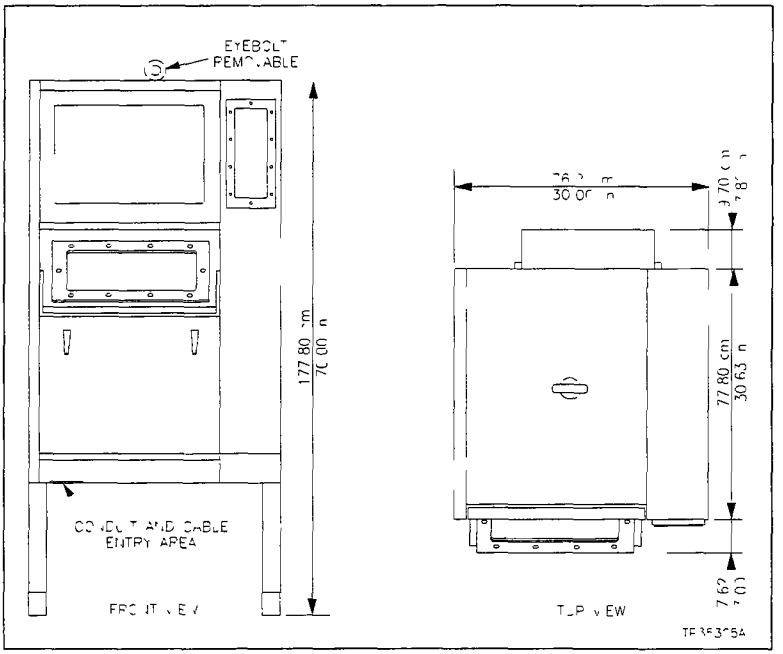


Figure 3 14 IIOIC203 Cabinet Dimensions

IIOIC203 SETUP AND PHYSICAL INSTALLATION

Before the OIC is set into place, insure that the floor is level in the area where the cabinet will be set The unit must be secured to the floor before it is wired or operated The dimensions for the mounting screws are shown in Figure 3 15

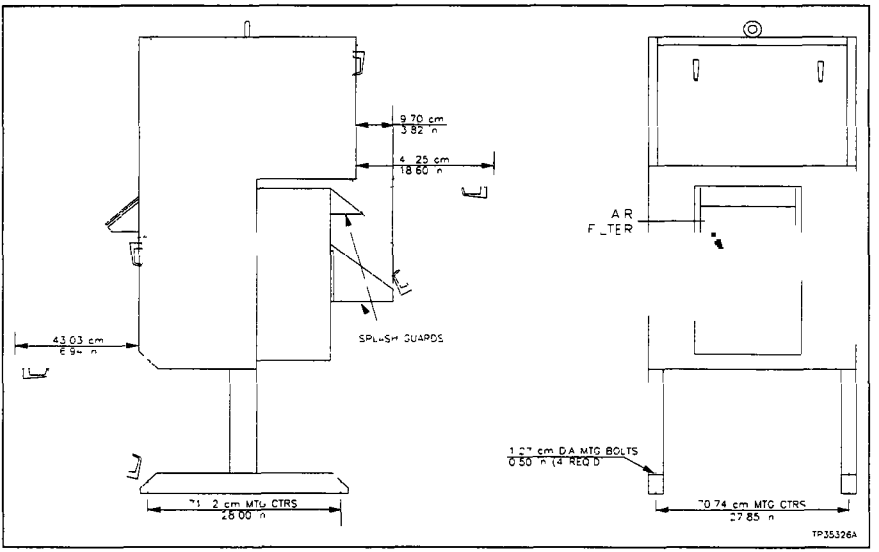


Figure 3 15 IIOIC203 Anchoring Dimensions

Protect the wires and cabling going to the OIC environmental cabinet Run cabling through conduit to the back of the cabinet or under the floor through the bottom of the cabinet Follow local wiring codes when wiring and installing cableways or conduit Refer to the site planning, preparation and equipment installation manual for more information

IIOIC204 PHYSICAL DESCRIPTION

The operator interface console (CIC panel mounted) consists of a CRT, power entry panel, operator keyboard interface and operator keyboard

IIOIC204 SETUP AND PHYSICAL INSTALLATION

Before the OIC is set into place in a control room, insure that the supporting panel is strong enough to support the CRT. Follow local wiring codes when wiring and installing cableways or conduit For more information, refer to the site . . . . . equipment installation manual Figure 3 16 shows the CRT and keyboard interface panel cut out dimensions

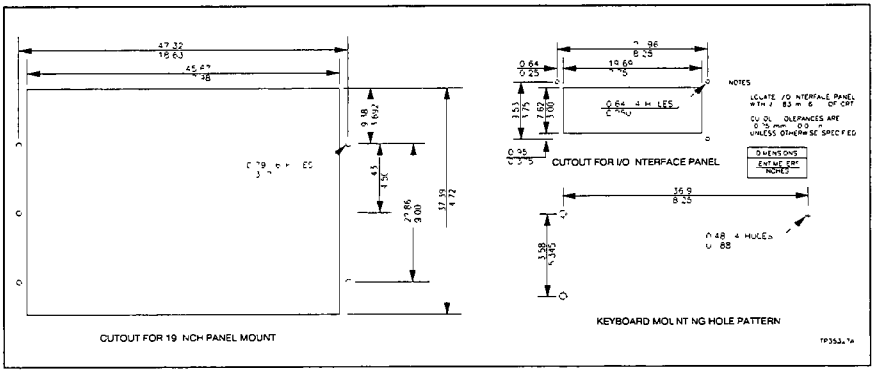


Figure 3 16 IIOIC204 Mounting Dimensions

IIOIC201 WIRING CONNECTIONS AND CABLING

For IIOIC201 wiring connections, refer to ***IIOIC204 WIRING CONNECTIONS AND CABLING*** in this section

IIOIC202 WIRING CONNECTIONS AND CABLING

The IIOIC202 is internally wired when it is shipped Connect the AC power and any peripheral devices Refer to Section 4 and Section 5 for specific instructions on installing and configuring peripheral devices and replacement components

Table 3 3 contains the color codes for the wiring Table 3 4 contains a list of cables and their connections Figure 3 17 shows the cable connections

Table 3 3 OIC Wiring Color Codes

Color	Function
Brown Blue Green/Yellow	AC Hot AC Neutra AC Common
Brown White/Green Violet	+5 VDC DC Common 12 VDC
White/Violet Green White	+12 VDC - Sense + Sense

Table 3 4. IIOIC202 Cable Connections

Cable No	Cable Name	Connect From	Connect To
6637599 1	AC Power	J1 on PEP	AC High on Ma n Power Supp y AC Low on Main Power Supply Ground on Main Power Supp y
1947950 1	AC Power	J2 on PEP	CRT1 AC Power Connector
1947950_5	AC Power	J3 on PEP	CRT2 AC Power Connector
6638709_1	PFI Sense	J1 on Power Supply	P3 of I MKM01
6638719 1	Reset Cable	Reset Switch on PEP	P4 on IIMKM01
6638720_1	Lower CRT Bright	9 Pin Connector on Rear of CRT	CRT1 Bezel Br ghtness CRT1 Bezel Contrast Degaussing Switch on PEP
6638720 2	Upper CRT Br ght	9 Pin Connector on Rear of CRT	CRT2 Bezel Br ghtness CRT2 Bezel Contrast Degausing Switch on PEP
6637597_31200	Upper RGB Video	IIMGC01	RGB on CRT
NKMC01_xx	RGB Cable	Connector Pane RGB Cable on Host IIOIS20	RGB on CRT of S ave O C202
6638771	Power	P8 on DC Distribution Board	Cool ng Fan
6634512_26N72	/O D stribut on	P5 on IIMKM01	P1 on Keyboard nterface Board
6634512_26N72	/O D stribut on	P6 on IIMKM01	Terminal B ock on Rear of PEP
6638713_1	Per pheral Power	J2 on Keyboard Interface Board	P3 on DC D str but on Board on Ma n Power Supp y
6638713_2	Peripheral Power	P1 on ADP Board	P4 on DC Distr but on Board on Ma n Power Supp y
6638849_1	ADP S gnal	P7 on IIMKM01	P8 on Keyboard - nterface Board P2 on ADP Panel
6638717_1	Power	J2 on Main Power Supp y	P7 on DC D str but on Board on Ma n Power Supp y
1948644_5	Touch Screen Extens on	Touch Screen on Upper CRT	5 Pin Connector on Touch Screen Modu e
NKMR01_xx	Keyboard Data	P1 on Connector Panel on I'O,C202	P1 or P2 on PEP of host I OIS20

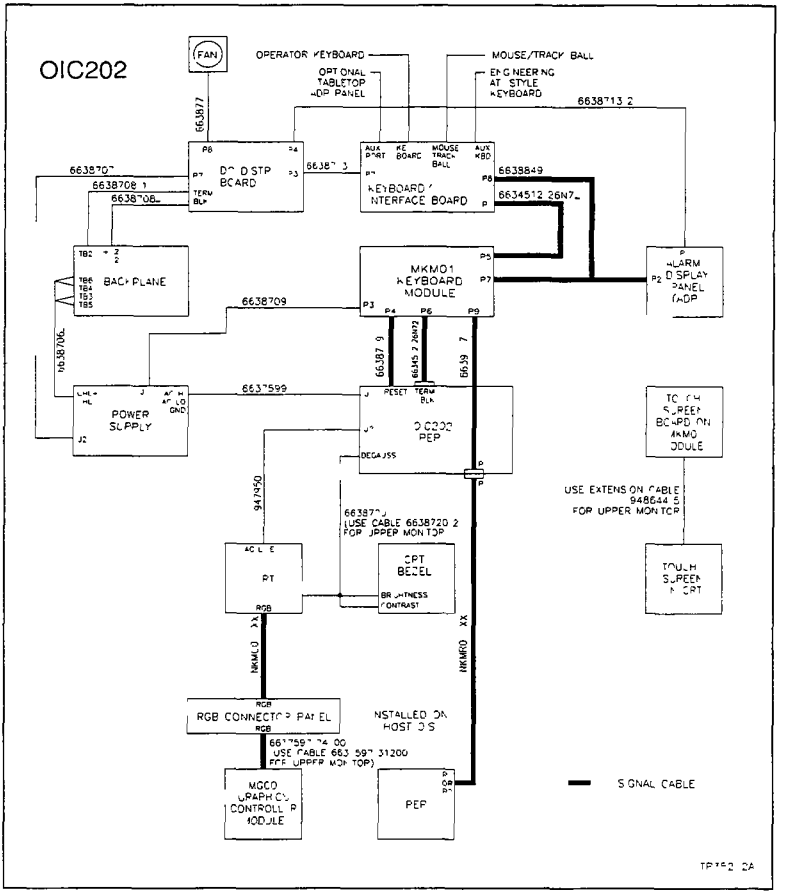


Figure 3 17 IIOIC202 Cable Connections

AC POWER

IIOIC20 AC power input connects to a terminal block on the bottom front of the power entry panel The IIOIC20 can operate from 120/240 VAC 50/60 hertz. The PEP provides line filtering, transient suppression and a 10 amp circuit breaker.

Setup for 240 VAC

Setting up the IIOIC202 for 240 VAC requires changing the switch setting on the DC power supply. The location of this switch is shown in Figure 4-31 The Intecolor and Aydin brand color monitors are autosensing and need no changes for 240 VAC operation, although monitors by other vendors may require changes

CAUTION	**Make sure main power breaker is off before changing operating voltage setting or equipment damage may result**
	Make sure that all labels on the power supply and the power entry panel are changed to show 240 VAC operation or equipment damage may result.
ATTENTION	**Assurez-vous que le disjoncteur de l'alimentation principale est hors tension avant de modifier e reglage de la tension de service, sinon le materiel pourrait subir des dommages.**
	Assurez-vous que toutes les etiquettes apposees sur le bloc d'alimentation et sur le panneau d'entree de l'alimentation ont ete modifiees pour correspondre au fonctionnment a 240 V c.a., sinon le materiel pourrait subir des dommages.

AC Outlets

There are three AC outlets on the OIC power entry panel. Two are located on the rear for color monitors and the power supply

NOTE: Do not connect motors, lights, or test equipment to the AC out ets Electrical noise may cause data to be lost or changed

AC Wiring

The following steps outline the required procedure to install and power up the OIS Observe and follow all related safety procedures when doing these steps (see Figure 3 18)

CAUTION	**Do not plug modules or peripherals such as a tape drive or printer into the OIS with power applied. A current surge or voltage spike could damage sensitive components on the unit.**
ATTENTION	**Ne pas inserer les cartes ni les peripheriques tels que les derouleurs de bande et les imprimantes dans l'OIS lorsque ce dernier est sous tension. Les composantes de l'un te risquent d'etre endommagees par les pointes de courant ou de tension.**

NOTE Before remov ng a module from the mu t bus card cage or perform ng ma ntenance on equ pment conta ning stat c sens t ve devices read ***HARDWARE SETUP ELECTROSTATIC DISCHARGE (ESD) CONTROL*** n th s section.

1 Turn off the breakers for the AC supply power and verify that no power is present to the OIC when making wiring connections

2 Open the front door of the OIC cabinet This provides access to the terminals needed for wiring to the INFI 90 communication highway and AC power

3 Wire AC power to the terminals at the bottom front of the power entry panel

NOTE· Ver fy that the incom ng voltage is the same as the rat ng on the abe of TB1 on the PEP

The recommended minimum size for power wiring is 14 AWG copper wire with a 600 volts, 75 degree celsius rating and thermoplastic insulation Wire with a 300 volt or 150 volt rating may be used if it is accepted by local wiring codes Wiring must be protected by cable trays or conduit and suited for the service voltage.

The power wiring to the OIC must include a third wire grounding conductor This grounding conductor must not be a smaller gauge than the power wiring and must be either bare, green colored or green/yellow colored if insulated. The grounding conductor must be terminated at the system safety ground connection.

Over current protection provided for the AC distribution must be sized to allow for the inrush current required by the OIC hardware Refer to Section 1 for the peak inrush current and duration for the OIC

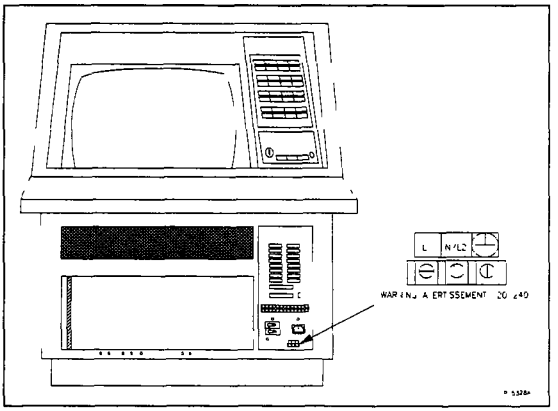


Figure 3 18 IIOIC202 Power Entry Panel (PEP) AC Input Terminal

For more information on power wiring and grounding, such as line conditioning, and EMI (electromagnetic interference), refer to the site planning, preparation and equipment instal lation manual

The power entry panel (PEP) and cable connector panel is located in the front of the cabinet in the bottom right corner. Connect 120/240 VAC at 50/60 hertz into the terminal block below the circuit breaker on the PEP Refer to ***IIOIS20 and IIOIC202 Power Entry Panel*** in Section 4 of this manual for further information If other power is present, a compensating transformer is required

NOTE: f remote CRTs are being nstalled, be sure they are pow ered using the same polarized power and ground as the O C to prevent ground loops Fa lure to do so may cause display d stortion f ground oops are suspected use opt ca y iso ated modems to e minate the prob em

4 Vibration during shipping and handling may unseat modules and connections, causing problems Before applying power, do the AC and DC power up tests in Section 6 of this manual Adjust the supplies as shown if necessary

5. After AC wiring is complete, check the placement of modules in the multibus card cage Compare module placement to Figure 4 2 and check the switch settings on the boards with Section 4

6 After completing the wiring, and checking the AC voltage sources, apply power. If problems occur, refer to the trouble shooting chart in Section 6 of this manual

OIC peripherals (keyboards, printers, etc) are connected to the cable connector panel Refer to ***IIOIS20 and IIOIC202 Power Entry Panel*** in Section 4 of this manual for wiring connections If the installation calls for a CRT touch screen, refer to ***TOUCH SCREEN*** in Section 5 of this manual

IIOIC203 WIRING CONNECTIONS AND CABLING

The IIOIC203 is internally wired when it is shipped Connect the AC power and any peripheral devices IIOIC203 AC power input connects to the power connector on the back of the case The PEP provides line filtering, transient suppression and a 20 amp circuit breaker

Table 3 3 contains the color codes for the wiring Table 3 5 contains a list of cables and their connections IIOIC203 cable connections are shown in Figure 3 19. Figure 3 20 shows the power entry panel connections

Table 3 5 IIOIC203 Cable Connections

Cable No.	Cable Name	Connect From	Connect To
6638709 1	PF Sense	J2 on Power Supply	P3 on IMKM01
6638719 1	Reset Cab e	Reset Switch on PEP	P4 on IIMKM01
NKMC01 xx	RGB	RGB on Connector Panel on Host IIOIS20	RGB on CRT S ave IIO C202
Vendor	Power	AC Connector on PEP	A r Condit oner
6634512 26\15	/O D str but on	P5 on MKM01	P1 on Keyboard Interface Board
6638713_1	Per phera Power	P2 on Keyboard nterface Board	P3 on DC D str but on Board
6638707 1	Power Cable	TB on Ma n Power Supp y	Term nal B ock on DC Distribution Board
NKMR01 xx	Keyboard Data	P1 on IIO C202 Connector Panel	P1 or P2 on PEP of Host IIO S20
6638713 1	Power	P16 on IIMKM01	P1 on DC D str but on Board
6638849_1	ADS S gnal	P7 on I MKM01	P8 on Keyboard nterface Board P2 on ADS Pane
6638713 4	ADP Power	P4 on DC D str but on Board	P1 on ADS Panel

Table 3 5. IIOIC203 Cable Connections (continued)

Cable No	Cable Name	Connect From	Connect To
6634512_26N38	Alarm Contacts	Term nal Block on PEP	P6 on IIMKM01
6639117_1	Keyboard Data	P1 on PEP (ins de PEP)	P9 on IIMKM01
1947950_5	CRT Power	AC Input on CRT	AC Out on PEP

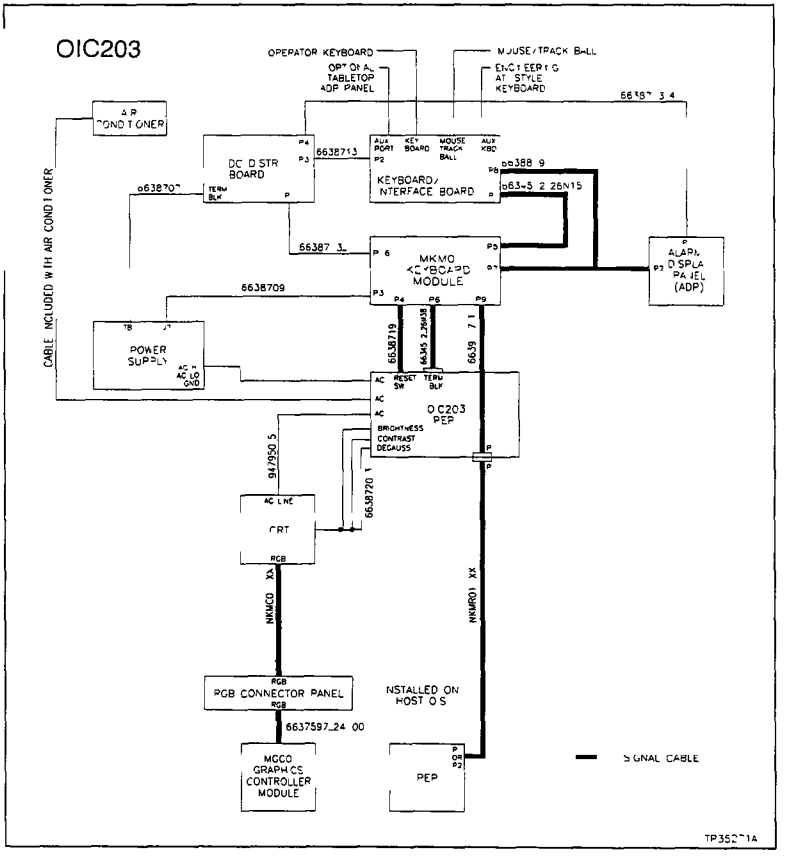


Figure 3-19. IIOIC203 Cable Connections

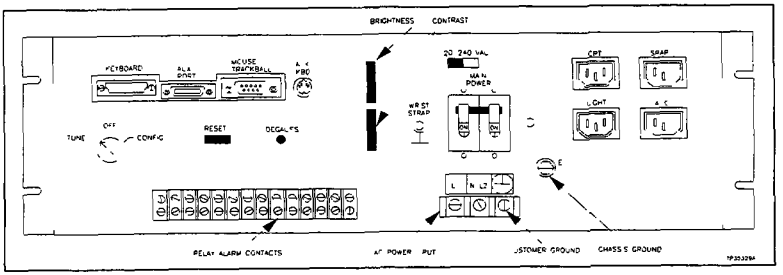


Figure 3 20 IIOIC203 Power Entry Panel (PEP)

The IIOIC201/4 is internally wired when it is shipped Con nect the AC power and any peripheral devices IIOIC201/4 AC power input connects to the power connector on the back of the case The PEP provides line filtering, transient suppression and a 10 amp circuit breaker

Table 3 3 contains the color codes for the wiring Table 3 6 contains a list of cables and their connections IIOIC201 cable connections are shown in Figure 3 21 IIOIC204 cable connections are shown in Figure 3 22 The chassis connec tions for the IIOIC201/4 are shown in Figure 3 23

Table 3 6 IIOIC201/4 Cable Connections

Cable No	Cable Name	Connect From	Connect To
6638719_1	Reset Cable	Reset Switch on PEP	P4 on IMKM01
NKMC01	RGB	RGB Connector Pane on Host O S20	RGB on Slave CRT I OIC202
6639211 1	Power	TB Power Supp y	Cool ng Fan
6634512 26N72 O C204 on y	/O Distr but o1	/O DB Connector on Chass s	P1 on Keyboard /O nterface Board
6639352 1	Per phera Power	P2 on Keyboard nterface Board	P3 on I MKM01 Board
6639213 1 IIOIC201 only	Power	J2 on Main Power S-pply	P7 on DC D stribution Board on Main Power Supply

Table 3 6. IIOIC201/4 Cable Connections (continued)

Cable No	Cable Name	Connect From	Connect To
NKMR01_xx	Keyboard Data	J1 on Rear of Base Unit	P1 or P2 on PEP of Host O S
6634512 26N72 OIC204 only	/O Distr but on	/O DB Connector on Chassis	P8 on Keyboard nterface Board
6638705 1 O C204 only	/O D stribution	P5 on IMKM01	/O DB Connector on Chassis
6638705_1 OIC204 on y	ADS S gnal	P7 on I MKM01	ADS DB Connector on Chass s
6639525 1 OIC204 only	Power	TBI on Power Supp y	Keyboard Power Connector on Chass s P16 on MKM01
6639352 1 OIC204 only	Power	P2 on Remote Keyboard Interface Board	Keyboard Power Connector on Chassis
1947950_5 OIC204 on y	CRT Power	AC In on CRT	J2 on Chass s
6639117_1	Keyboard Data	J1 on Chassis	P9 on IIMKM01
6639211_1 OIC201 only	Power	TB on Power Supp y	Fan P2 on Keyboard Interface Board P16 on I MKM01
6639212_1 O C201 on y	AC Power	AC H gh AC Low AC Ground	Power n on Chass s AC In on CRT
6639213_2	Power	J2 on Power Supply	P3 on IMKM01
6634512_26N15	Alarm Contacts	Termainal Block on Chassis	P6 on IIMKM01
6634512_26N15 OIC201 only	Alarm Contacts	P1 on Keyboard Interface Board	P5 on I MKM01
6634512_26N15 O C201 on y	I/O D stribut on	Terminal B ock on Chas s	P7 on IMKM01

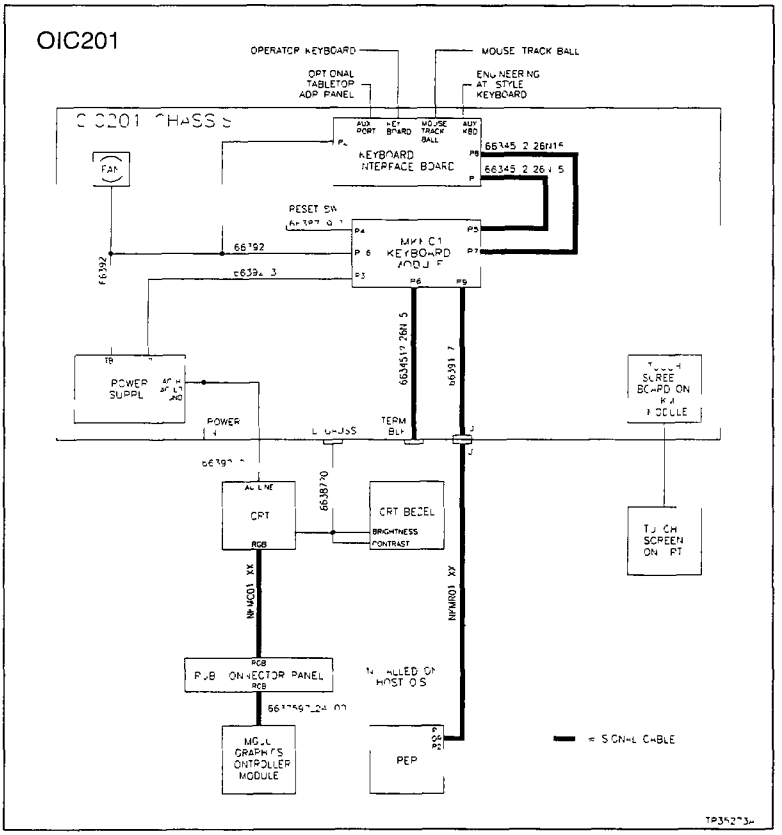


Figure 3-21 IIOIC201 Cable Connections

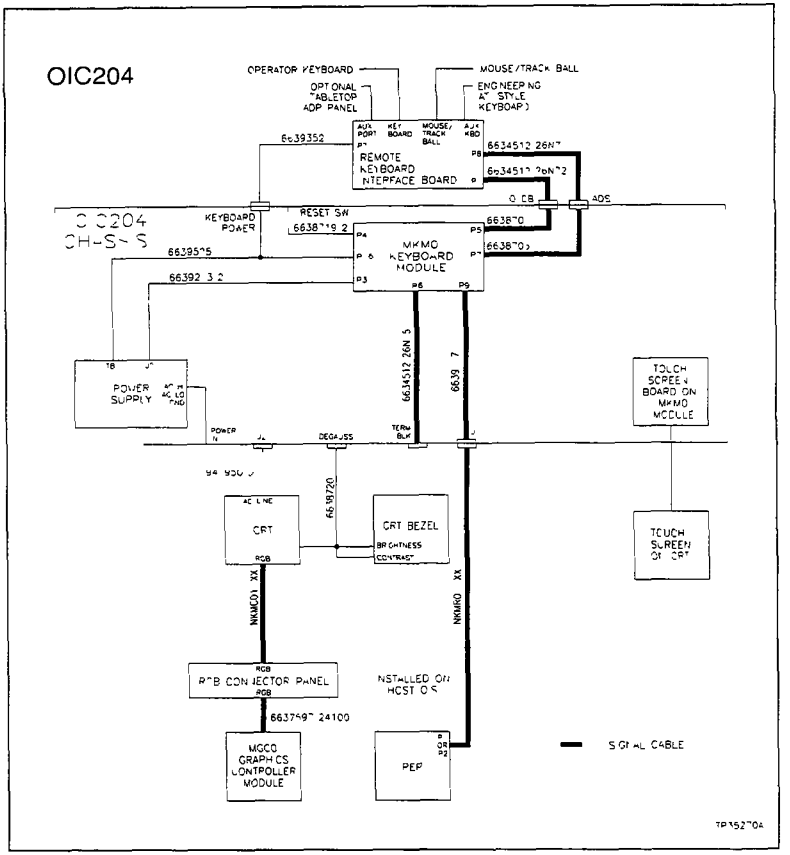


Figure 3 22 IIOIC204 Cable Connections

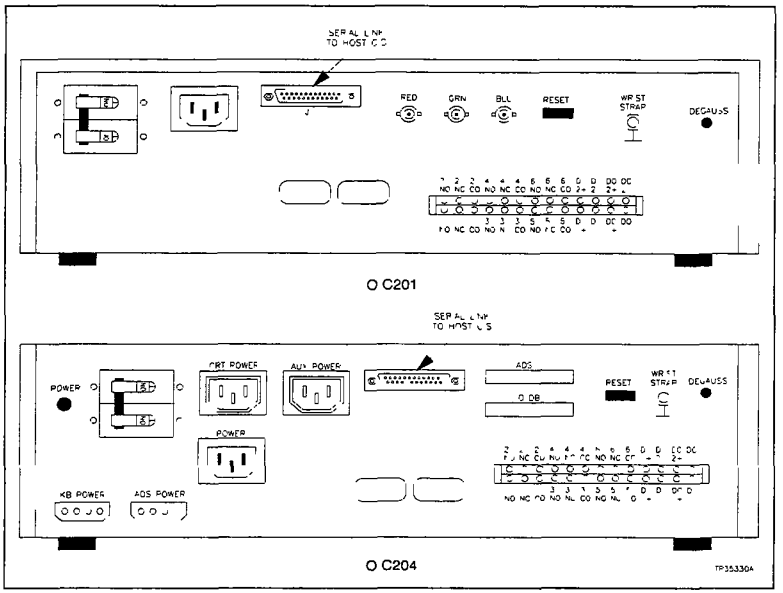


Figure 3 23. IIOIC201/4 Chassis Connections

AC POWER

After completing all other OIS and OIC connections connect the AC to the power entry panel Follow all national and local codes See the figures in this section for the location of the AC connections for the unit being installed Figure 3 24 shows the the AC wiring inside the power entry panel for the IIOIS20, IIOIS20A/D and IIOIC202 The IIOIC203 is similar except that it has a transformer and switch for 120 VAC/240 VAC for the air conditioner IIOIC201/4 have different internal AC wiring

NOTE 120 volt outlet assignments may be different for different OIS and O C models

PREOPERATING ADJUSTMENTS

Each OIS/OIC is powered up and tested before shipment All necessary power supply adjustments, CRT and touch screen alignments, and jumper connections have been made Install the OIS/OIC by following the instructions in this section

- Set it into place according to the site preparation manual
- Connect the incoming AC, equipment ground
- Connect the loop connections (OIS only)
- Connect the OIC to the OIS (OIC only)
- Check connections
- Check that doors are in place and locked to assure proper cooling

Refer to the troubleshooting steps in Section 5 to correct any problems.

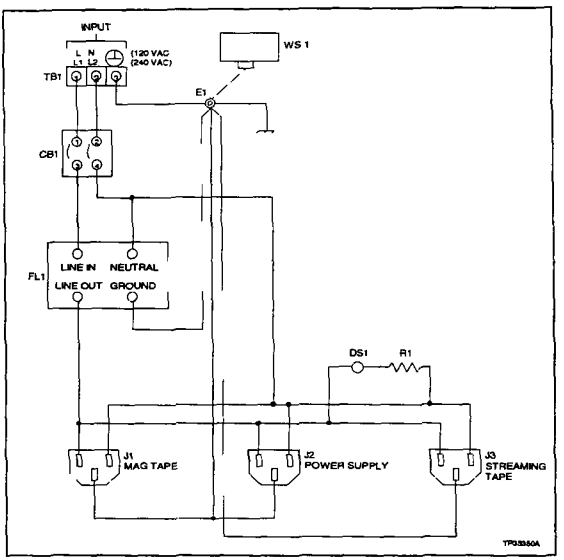


Figure 3 24. IIOIS20, IIOIS20A/D and IIOIC202 Power Entry Panel AC Wiring

SOFTWARE UPGRADE

This section contains information required to install software release E.2 onto an IIOIS20 console These procedures are grouped into two categories

- Upgrading a software release B 1 console to a software release E 2 OIS console
- General software release E 2 maintenance procedures

These procedures assume that the installer is familiar with the operation and basic troubleshooting of the console

Console upgrade procedures use command files and file con version utilities designed to upgrade software to a later release Using upgrade procedures for any other purpose may cause the system to operate erratically Use the proce dures in this section only if a console is being upgraded from software release B 1 to software release E 2

Procedures for loading and restoring software as a part of routine maintenance can be found in ***SOFTWARE RELEASE E.2 MAINTENANCE*** This section contains procedures to load the software onto a new installation, save the tag database and system configuration and load software It also contains proce dures to reload an existing configuration and software

General Notes Save a ex st ng conf gurat on before oad ng new software

f hard errors are encountered by the d sk system (9100, 9300, 9400, etc) dur ng the oad process, the hard d sk w have to be reformat-ted Bad track mapp ng must be done A new oad can be used to upgrade the machine to software release E 2 f errors pers st check the d sk system hardware nc ud ng the cab es The hard d sk may need rep ac ng

E.2 Notes Use the set t me and date funct on to estab sh GMT (Greenw ch mean t me), the f rst time the conso e s started See the operat on and conf guration manua for an exp anat on

DEVSTAT tags must be def ned for a pr nters

Before upgrading the OIS console, verify the module firmware with Table 3 7 After the firmware is verified, follow the procedures in this section

SOFTWARE RELEASE E.2

Follow the procedures in this section when upgrading soft ware release B 1 to software release E 2

Software release E 2 may be installed as an upgrade to an existing console running B 1 software. There are two load procedures for upgrading a console running B 1 software

Table 3-7. Firmware Requirements for Software Release E.2

Board Type	ID Number	Part Number	Revision
IIMGC01	238 239 240 A41	A2 A41 A1 A40	15 15 15 15
MKM01	U4	1900212C10	C 0
IIMLM01	U2	1900165E11	E 1
IIMPM01	U49 U19	1900214B12 1900214B22	B 2 B 2
IIMSM01	IC31 Vendor ID No 240028 DRV	N/A	V1 010 V1 010 V1 010
IPST01 (P ant Loop)	U23 U24	1900208B10 1900208B10	B 0 B 0
I ST01 (INFI-NET)	U23 U24	1900207E11 1900207E11	E 1 E 1
touch screen	E2/1-150	N/A	N/A

NOTE. N/A = not applicable

The full load procedure initializes the hard disk It is recommended to unfragment the disk before installing software. This procedure saves B 1 tag database and system configuration, initializes the hard disk and loads E.2 software onto the console

The partial load procedure upgrades from B.1 software It saves the current B 1 tag database and system configuration. It also upgrades the tag database and system configuration, and loads E.2 system software

Full Load OIS B.1 to OIS E.2

This procedure saves software release E.2 tag database and system configuration, initializes the hard disk, and loads software release E 2. To install the software with a full load procedure

1 Start the utility program from the SYS6 floppy disk Refer to ***Starting Off-Line Utility.***

2 If necessary log in Refer to ***Logging into Off-Line Utility.***

3 At the DDT terminal, type

0 00> **FD01**

4 Save site specific configurations from the console where software release E.2 will be installed Refer to ***SAVING SITE SPECIFIC CONFIGURATIONS.***

5 Insert SYS5 system floppy disk into the floppy drive

6 Enter the appropriate full load command from Table 3 8

Table 3 8. B.1 Full Load Configuration Files

Tag Range	Command File	Formatted Disks Required	Number of Disks
0000-2500	FULL25B1 CN	B1C1 UCF2, UCF6	3
2501 5000	FULL50B1 CN	B1C1, UCF2, UCF3 UCF6	4

For example, to full load a console for 0 to 2,500 tags, type

1 00> **INT . FULL25B1.CN**

7 Change disks when prompted

8 When the load procedure completes, reset the console The console is functional and ready for configuration

9. Restore the B.1 configuration Refer to ***Restore OIS B.1 Files***

10. Install the site specific configuration Refer to ***RESTORING SITE SPECIFIC CONFIGURATIONS***

Partial Load OIS B.1 to OIS E.2

This procedure saves the tag database and system configuration, then loads software release E.2 system software To install the software with a partial load procedure·

1 Start the utility program from the SYS6 floppy disk Refer to ***Starting Off Line Utility***

2 If necessary log in Refer to ***Logging into Off-Line Utility***

3 At the DDT terminal, type:

0 00> **FD01**

4 Save site specific configurations from the console where software will be installed Refer to **SAVING SITE SPECIFIC *CONFIGURATIONS***

5 Insert SYS5 system floppy disk into the floppy drive

6 Enter the appropriate partial load command from Table 3 9

This automatically runs the general conversion program and ***TRCONE2.CN*** If needed, run conversions for user created configurations

Table 3 9. B.1 Partial Load Configuration Files

Tag Range	Command File	Formatted Disks Required	Number of Disks
0000-2500	PART25B1 CN	B1C1, UCF2, UCF6	3
2501-5000	PART50B1 CN	B1C1, UCF2, UCF3, UCF6	4

For example, to partial load a console for 0 to 2,500 tags, type

1.00> **INT . PART25B1.CN**

7. Change disks when prompted

8. When the load procedure completes, reset the console. The console is functional

SOFTWARE RELEASE E.2 MAINTENANCE

This section contains three procedures for loading software release E 2 onto a console They are, new load, full load and reload. The reload procedure assumes that the console is currently running software release E 2.

The ***New Load Procedure*** is used for systems that are new This procedure initializes the hard disk, loads a default (blank) configuration and loads the software.

The ***Full Load Procedure*** starts by saving the tag database and system configuration Any specific configurations must be saved before running this procedure This procedure in itializes the hard disk, loads a default (blank) configuration, then loads software release E 2

The ***Reload Procedure*** is a development utility rather than a maintenance utility It is used to reload an existing system with updated software The reload procedure should ***not*** be used to update from one major release revision to another such as from software release B 1 to software release E.2

New Load Procedure

This procedure initializes the hard disk, loads software release E 2 system software, then loads a default (blank) configuration To install the software with a new load procedure

1 Start the utility program from the SYS6 floppy disk Refer to ***Starting Off-Line Utility***

2 If necessary log in Refer to ***Logging into Off-Line Utility***

3 At the DDT terminal, type

0 00> **FD01**

4 Insert SYS5 system floppy disk into the floppy drive

5 Enter the appropriate new load command from Table 3 10

Table 3 10. New Load Command Files

Tag Range	Command File
0000 2500	NEW25 CN
2501 5000	NEW50 CN

For example, to new load a console for 0 to 2,500 tags, type

1 00> **INT . NEW25.CN**

6 Change disks when prompted.

7 When the load procedure completes, reset the console. The console is functional and ready for configuration

Full Load Procedure

This procedure will save software release E.2 tag database and system configuration, initialize the hard disk and load software release E 2 onto the console To install the software with a full load procedure

1 Start the utility program from the SYS6 floppy disk Refer to ***Starting Off-Line Utility***

2 If necessary log in Refer to ***Logging into Off-Line Utility***

3 At the DDT terminal, type

0 00> **FD01**

4 Save site specific configurations from the console where software release E.2 will be installed Refer to ***SAVING SITE SPECIFIC CONFIGURATIONS***

5 Insert SYS5 system floppy disk into the floppy drive.

6 Enter the appropriate full load command from Table 3-11

Table 3-11. Full Load Configuration Files

Tag Range	Command File	Formatted Disks Required	Number of Disks
0000 2500	FULL25E2 CN	E2C1, UCF2 UCF6	3
2501-5000	FULL50E2 CN	E2C1, UCF2 UCF3, UCF6	4

For example, to full load a console for 0 to 2,500 tags, type.

1 00> **INT . FULL25E2.CN**

7 Change disks when prompted

NOTE When prompted, record the a arm descriptor f le s ze t is needed to restore the conf gurat on

8. When the load procedure completes, reset the console. The console is functional and ready for loading configurations

9. Restore the E.2 tag database and system configuration, refer to ***Restoring a Tag Database.***

10 Install the site specific configurations Refer to ***RESTORING SITE SPECIFIC CONFIGURATIONS***

Reload Procedure

The reload procedure expects the system to be loaded with software release E 2 configuration It only loads system soft ware and relevant system configuration updates to the machine.

1. Start the utility program from the SYS6 floppy disk Refer to ***Starting Off-Line Utility***

2 Remove SYS6 disk and insert SYS5 disk

3 If necessary log in Refer to ***Logging into Off-Line Utility.***

4. At the DDT terminal, type

0 00> **FD01**

5 At the DDT terminal, type

1.00> **INT . RELOAD.CN**

6 Change disks when prompted

7 When the load procedure completes, reset the console The console is operational

RESTORING B.1 CONFIGURATIONS AND FILES

There are two procedures in this section. The procedures restore the tag database and site specific files from a con sole with software release B 1 Refer to ***Restore OIS B.1 Configurations***

Restore OIS B.1 Configurations

This procedure explains how to use the off line utility to restore a B 1 configuration onto a console upgraded with the E 2 software To restore the B.1 configuration to a console with software release E 2

1 Refer to ***USING THE UTILITY*** for information on loading the utility

2 Start the utility program from the hard disk drive Refer to ***Starting Off Line Utility***

3 Log in to the console Refer to ***Logging into Off-Line Utility***

4 Use the ***Restore OIS B.1 Files*** procedure to restore the tag database

5 Use the ***RESTORING SITE SPECIFIC CONFIGURATIONS*** procedure to restore the site specific configurations (displays, trend data, log reports, etc)

6 Use the ***MANDATORY CONVERSIONS*** procedure to con vert the configurations from software release B 1 to E 2 files The B 1 to E.2 conversion command automatically runs the general conversion program If needed, run conversions for site specific created configurations

Restore OIS B.1 Files

This procedure explains how to use the off line utility to restore the tag database and system configuration To restore system and tag database from software release B 1

1 Start the utility program from the hard drive Refer to ***Starting Off-Line Utility***

2 If necessary, log in Refer to ***Logging into Off-Line Utility***

3 At the DDT terminal, type

0 00> **FD00 FF**

4 Enter the appropriate command from Table 3 12

This automatically runs the general conversion program If needed, run conversions for site specific created configura tions Refer to ***MANDATORY CONVERSIONS***

Table 3 12. B.1 to E 2 Configuration Files

Tag Range	Command File	Formatted Disks Required	Number of Disks
0000-2500	B1E2-25 CN	B1C1, UCF2, UCF6	3
2501-5000	B1E2 50 CN	B1C1, UCF2, UCF3, UCF6	4

For example, to restore a console with 0 to 2,500 tags, type

0.FF> **INT . B1E2-25.CN**

5 Change disks when prompted

6. When the configuration is restored and mandatory conversions are run, reset the console The console is functional and ready for loading site specific configurations

SAVING AND RESTORING AN E.2 TAG DATABASE

This section contains two procedures The first one saves the tag database and system configuration. The second proce dure restores the tag database and system configuration.

Saving a tag database describes how to save the current software configuration The configuration can be saved at any time Save the configuration after a load, restore or when conversions are done. Before saving, verify that all conversions have been completed and the console is running properly. To restore additional saved files refer to ***RESTORING SITE SPECIFIC CONFIGURATIONS***

Saving the configuration requires formatted floppy disks. They are E2C1 and UCF2 through UCF6. The number of

disks needed depends on the tag range of the system E2C1 and UCF6 are common to all systems

NOTE: t may be necessary to insta a new vers on of the ***SVCFG.CN*** and ***LDCFG.CN*** files on the hard drive if the number of tags on th s conso e has been changed s nce the ast software installation Th s is on y a concern if the new tag count falls nto a different 2,500 tag range than when load ng the prev ous software revision Refer to ***SVCFG CN AND LDCFG.CN*** for an exp anation

Restoring a Tag Database restores the software release E 2 tag database and system configuration saved on E2C1 and UCF2 through UCF6 disks To restore additional saved files refer to ***RESTORING SITE SPECIFIC CONFIGURATIONS***

Saving a Tag Database

This section describes how to use the off line utility to save the tag database To save a tag database

1 Start the utility program from the hard disk Refer to ***Starting Off-Line Utility***

2 If necessary log in Refer to ***Logging into Off Line Utility***

3 At the DDT terminal, type.

0 00> **FD00 FF**

4 Enter the appropriate save command from Table 3-13

Table 3 13. Saving E.2 Tag Database and System Configuration Files

Tag Range	Command File	Formatted Disks Required	Number of Disks
0000-5000	CP01CFE2 CN	E2C1, UCF2, UCF4, UCF5, UCF6	5

For example, to save the tag database for a console with 0 to 2,500 tags, type

1 00> **INT . CP01CFE2.CN**

5 Change disks when prompted

NOTE: When prompted, be sure to record ***ALMDESC.CF*** f e s ze Refer to ***ALMDESC.CF FILE***

Restoring a Tag Database

This section describes how to use the off line utility to restore the tag database To restore a tag database

1. Start the utility program from the hard disk Refer to ***Starting Off-Line Utility***

2 If necessary log in. Refer to ***Logging into Off-Line Utility***

3. At the DDT terminal, type

   0 00> **FD00 FF**

4 Enter the appropriate restore command from Table 3 14

Table 3 14. Restoring E.2 Tag and System Command Files

Tag Range	Command File	Formatted Disks Required	Number of Disks
0000 5000	CP10CFE2 CN	E2C1, UCF2, UCF4 UCF5, UCF6	5

For example, to restore the tag database for a console with 0 to 2,500 tags, type

0.FF> **INT . CP10CFE2.CN**

5. Change disks when prompted.

6 Restore the alarm descriptor file Refer to ***ALMDESC.CF FILE***

SAVING SITE SPECIFIC CONFIGURATIONS

This section describes how to save site specific displays, trend data files, sequence of events logs, etc The configuration can be saved at any time Save the configuration periodically to maintain a current backup

NOTE: Be sure to have p enty of b ank, formatted and n t a zed disks ready The number of d sks requ red var es between insta a- t ons Be sure to label the disks in the order they are saved It is important that they be restored in the same order

Saving Software Release E.2 User Displays

User display files consist of ***DT***, ***DL***, ***DU*** and ***CF*** (***CF*** files are in directory USN 0.53) files and each should be saved

NOTE: f user created ***DT*** f es must reside on the hard d sk, they should be stored n d rectory USN 0 55 Any user created ***DT*** f es not n d rectory USN 0 55 w not be saved

Saving DT Files To save ***DT*** files

1. Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0.00> **COPY 0.55:*.DT 1.55:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Saving DL Files To save ***DL*** files

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0.00> **COPY 0.44-4E:*.DL 1.*:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Saving DU Files To save ***DU*** files

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0.00> **COPY 0.04-0E:*.DU 1.*:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Saving CF Files To save ***CF*** files

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0 00> **COPY 0.53:*.CF 1:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Saving Trend Data Files

Trend data files will automatically be created at start up if they are not present Save the trend files only to keep the data Note that the format of trend data files changed at software release E.2 Be sure that ***TRCONV.CN*** was used to

convert any trend data files from previous releases prior to starting this console

NOTE: Starting this conso e with trend data f es from a previous re ease can cause unpred ctable results Software re ease E 2 trend data f es may not be used on a console runn ng a prev ous re ease

The trend data files reside in directories numbered from USN 0 14 to USN 0.2B (hexadecimal) inclusive Trend data file names are formatted this way·

T000xxxx TR

Where *xxxx* is defined as a trend index number (range 0001-1000)

Note the difference between the names of trend data files in software release E 2 and previous releases. Previously, trend files were named ***Txxxx TR*** where *xxxx* is defined as a trend index number (range 0001-1000)

To back up the trend data files.

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0 00> **COPY 0.14-2B:*.TR 1.*:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Be sure to label the disks and number them in the order that they were saved. It is important that they be restored in the same sequence

NOTE Due to a change n DDT, the trend f es w be stored in d rectories USN 1 14-2B by us r g the above command ***Do not assume*** the d sk s b ank w th no f es just because it does not conta n any f ies n directory USN 1 00

Saving Log Report Definition and Retention Files

This section contains procedures to save log report defini tion, log retention files and the log data files Several floppy disks may be required to complete the save Be sure to have enough formatted, initialized, blank disks on hand

Log Report Definition

The log report definition files reside in directories numbered from USN 0 2C to USN 0.34 (hexadecimal) inclusive Log definition file names are formatted in this way·

LOG0xxx.LF

Where *xxx* is defined as a log index number from 001 to 100 (note the leading zero)

To back up the log definition files

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type·

0 00> **COPY 0.2C-34:*.LF 1.*:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Be sure to have enough formatted, initialized, blank disks on hand Label each disk for software release E.2

Be sure to label the disks and number them in the order that they were saved It is important that they be restored in the same sequence

NOTE Due to a change n the DDT term na , the og f es w l be stored n d rector es USN 1 2C to USN 0 34 by us ng the above command ***Do not assume*** the d sk s b ank w th no f es just be cause i does not contain any f les n d rectory USN 1 00

Log Retention Files

Log retentions are in directories USN 0 35 to USN 0.3D (hexadecimal) The file and log data file names are the same but the extension becomes ***.L0, .L1, .L2, ..., .L8*** for up to nine retentions

To back up the log retention files

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type:

0.00> **COPY 0.35-3D:*.L? 1.*:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue.

Be sure to have enough formatted, initialized, blank disks on hand Label the disks and number them in the order that

they were saved. It is important that they be restored in the same sequence

NOTE Due to a change n the DDT term na the og f es w be stored in director es USN 1 35 tc USN 0 3D by us ng the above command ***Do not assume*** the d sk s b ank w th no f es just because t does not contain any f les n d rectory USN 1 00

Log Data Files In software release E.2, the log data files (in USN 0 41) should be backed up Save these files for the logging task to be able to continue data collection where it ended

To back up the log data files

1. Put a floppy disk into the floppy drive

2 At the DDT terminal, type.

0 00> **COPY 0.41:*.TM 1.*:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Be sure to label the disks and number them in the order that they were saved. It is important that they be restored in the same sequence.

Any logs which were completed but not yet processed for output, retention, or archival .***Bn*** files in USN 0 41) will be lost when system is upgraded to software release E 2

Saving Sequence of Events Log Configuration Files

Sequence of events log configuration files are stored in direc tory USN 0.02.

To back up the sequence of events log files·

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0.00> **COPY 0.2:SERDEF* 1·**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue.

Be sure to label the disks and number them in the order that they were saved It is important that they be restored in the same sequence.

Saving Trend Pen Files

Trend pen files are stored in directory USN 0 02

To back up the trend pen files

1 Put a floppy disk into the floppy drive

2 At the DDT terminal, type

0 00> **COPY 0.2:TPC* 1:**

0.00> **COPY 0.2:PIO* 1:**

3 Put in a new floppy disk when a disk full message is displayed and enter **R** for retry to continue

Be sure to label the disks and number them in the order that they were saved It is important that they be restored in the same sequence

RESTORING SITE SPECIFIC CONFIGURATIONS

This section describes how to restore the additional saved files The saved files are display files, trend data files, log definition files, log data files, sequence of events log files and trend pen files

NOTE: Be sure to have plenty of blank, formatted and initialized disks ready The number of disks required varies between installations Be sure to label the disks in the order they are saved It is important that they be restored in the same order

Restoring User Display Files

User display files consist of ***DT***, ***DL***, ***DU*** and ***CF*** (**CF** files are in directory USN 0 53) files. This procedure is only valid for display files saved from a console which is at revision B 1 or greater

Restoring DT Files To restore ***DT*** files

1 Put each ***DT*** floppy disk into the floppy drive

2 At the DDT terminal, type.

0 00> **COPY 1.55:*.DT 0.55:**

Restoring DL Files To restore ***DL*** files:

1 Put each ***DL*** floppy disk into the floppy drive

2 At the DDT terminal, type

0 00> **COPY 1.44-4E*.DL 0.*:**

Restoring DU Files To restore ***DU*** files.

1 Put each ***DU*** floppy disk into the floppy drive

2 At the DDT terminal, type

0.00> **COPY 1.4-E:*.DU 0.*:**

Restoring CF Files To restore ***CF*** files·

1. Put each ***CF*** floppy disk into the floppy drive

2 At the DDT terminal, type

0 00> **COPY 1:*.CF 0.53:**

Restoring Trend Data Files

When the load process completes, these files can be restored to recreate the same environment This is the only time these files should be restored To restore the trend data files, enter this command from the DDT terminal

0 00> **COPY 1.14-2B:*.TR 0.*:**

Restoring Logging Files

To restore the log definition files enter this command for each log definition disk·

0.00> **COPY 1.2C-34:*.LF 0.*:**

To restore the log retention files, enter this command for each log retention disk

0 00> **COPY 1.35-3D:*.L? 0.*:**

Restoring Sequence of Events Log Files

To restore the sequence of events log files, enter this com mand for each disk

0 00> **COPY 1:SERDEF* 0.02:**

Restoring Trend Pen Files

To restore the trend pen files, enter these commands for each trend pen disk

0 00> **COPY 1:TPC* 0.02:**

0 00> **COPY 1:PIO* 0.02:**

USING THE UTILITY

Use the off line utility provided and the DDT terminal to down load the configuration and load and save command files

Monitor 68K Terminal

A monitor 68K terminal is used to define configurations and load files Several of the instructions in this section will discuss input to and output from the monitor 68K terminal In further discussion, this will be named the 68K terminal

The primary purpose of the 68K terminal, when installing software, is to load and start the off line utility program The 68K terminal also outputs information and diagnostic mes sages at system startup and during operation

DDT Terminal

The DDT terminal is the interface to the off line utility and on line utility programs The DDT terminal is connected to serial I/O port eight To install software, the DDT terminal is used in its off line mode to

- Run console command files which load the system
- Provide prompts indicating that a particular floppy disk must be loaded in the floppy disk drive
- Prompt the user prior to initializing the floppy or hard drive
- Load and save tag database and site specific files

Procedures for other operations on the DDT terminal using the off line and on-line utility programs are described in the operation and configuration manual

Starting Off-Line Utility

To load and start the off line utility program, (utility for short)

1 Connect the DDT terminal to the MON 68 port

2 Reset the console

3. Wait for the system restart message on the 68K terminal It should read

SYSTEM RESTARTED
ENTER MONITOR BY PRESSING <RETURN>
OTHERWISE MTOS AUTOLOAD WILL OCCUR IN 7 SECONDS

BCCo 68020 MONITOR REV B 1 JUL, 1991
Processor ID· 1

Press **Return** at the 68K terminal to prevent autoload from continuing. The prompt *1:>* will be displayed

4 At this point, the utility program can be started from either a floppy disk or from the hard disk. To start the utility program from the hard disk (device 0), at the 68K terminal type

1:> **LF 1000 UTILITY.OB 0**

1:> **MT**

A start-up message will be displayed on the DDT terminal

The DDT terminal displays this message

BCCo. OIS Diagnostic/Debug Terminal.

NOTE: *UTILITY OB* is normally stored on the SYS6 disk

To start the utility program from the floppy disk (device 1), type

1:> **LF 1000 UTILITY.OB 1**

1:> **MT**

5 Enter the month, day, year and hour, minute, second at the prompt

...id date [DD MMM-YYYY

...is message.

...bug Terminal

...sed as both 68K term na and DDT
... cab e between ports Remember to
... d ng the cab e

...repeat the nstruct on to start up the
...) be oaded aga n once t s started

...ie password security function.
...d procedures that are run from
...re protected To perform these
...rminal with a security mainte
...rence that requires a log in will
...ection.

TOTAL

MEMORANDUM

Referred To

Location

☐ Per Your Request ☐ For Distribution
☐ Per Our Conversation ☐ For Discussion
☐ For Your Information ☐ For Your Comments
☐ For Your Approval ☐ For Follow Up
☐ For Handling ☐ For Your Signature
☐ For Your File ☐ Please Return

Remarks 560 221-6337

106|03|79596A000/1000C0089

Date From

TP MEMO

MAINT is the security maintenance password configured in the default security configuration If password security has been reconfigured, the new maintenance password should be used The password is hidden as it is typed in The message *Hello User* is displayed when the log in is successful

NOTE. t s mportant that the password secur ty conf gurat on a ways conta n at least one user ID and password wh ch s conf gured ke the defau t MA NT

The default MAINT has·

Region access	System
Access rights	Monitor
	Security maintenance
	Diagnostic debugging terminal

This combination of region access and access rights are necessary to permit security configuration and loading the next software revision

This example shows how to log in at the utility terminal Type

0 00> **LOGIN**

Enter Password: (type **MAINT**)
Hello

0 00>

MANDATORY CONVERSIONS

This section describes file conversions required whenever a previous configuration or any off line generated configura tion is loaded to a software release E 2 system

Explanation of Conversions

There are three procedures which must be performed when the console configuration is loaded onto a software release E 2 console This section describes those procedures and demonstrates how they should be run

CONVB1.CN **CONVB1.CN** is the command file which performs the general software release E.2 conversion It should be run any time any new log configuration is loaded onto the console

CONVB1.CN will skip converting a configuration which has already been converted It can be run multiple times with the same configuration Therefore, if there is a doubt that this conversion has been performed or should be performed, do it.

CONVB1.CN is primarily intended to convert the tag database to the format and content required for the current revision It

will also convert site specific configuration files depending on the requirements of the software release

To convert files from B.1

1 Start the utility program from the hard disk Refer to ***Starting Off-Line Utility***

2 At the DDT terminal, if necessary log in Refer to ***Logging into Off-Line Utility***

3. Type·

0.00> **FD00 FF**

4 Type.

0 FF> **INT . CONVB1.CN**

NOTE: To run the ***CONVE2.SP*** convers on program when the **RUN** command s used, the program parameters now have to be passed

Format *0 00>* **RUN CONVE2.SP B1 E2**

This command file prompts for the keyboard type of each keyboard which is configured. This could be useful if the system is configured for the wrong type of keyboards Mis configured keyboards will not communicate with the console

TRCONV.CN ***TRCONV.CN*** must be run to convert files used by the trend subsystem to a new format and content Like ***CONVB1.CN***, ***TRCONV.CN*** should be run anytime a new trend configura tion is loaded onto the console This includes configuration from previous releases and from SLDG programs. It can be run repeatedly with the same configuration in case there is a doubt that it was run.

Note that ***TRCONV.CN*** expects that ***CONVB1.CN*** has already been run successfully For example, to convert files from B.1

1 Start the utility program from the hard disk Refer to ***Starting Off-Line Utility.***

2 At the DDT terminal, if necessary log in. Refer to ***Logging into Off-Line Utility***

3 Type.

0.00> **FD00 FF**

4. Type·

0 FF> **INT . TRCONV.CN**

Log Configuration Files

NOTE Logs loaded onto the console may be active or inactive Inactive logs are automatically converted when they are activated Active logs are not automatically converted The conversion utility converts both inactive and active logs It is recommended to run the converSion utility whenever a SLDG generated log configuration file is loaded

1 Start the utility program from the hard disk Refer to ***Starting Off-Line Utility***

2. At the DDT terminal, if necessary log in Refer to ***Logging into Off-Line Utility***

3 Type

0.00> **FD00 FF**

4 To start the log conversion utility type

0.FF> **INT . CONVB1.CN**

Configurable Text File Conversion

This procedure may be required after a load process All software load procedures overwrite the previous version of the configurable text files on the hard disk with the default configurable text files

This procedure is required if text substitutions were made at anytime in the past, before the system was running software release E.2 It requires the B.1 disks made during the upgrade and the software release E.2 CFG2 disk

1 Start the utility program from the hard disk Refer to ***Starting Off-Line Utility***

2 At the DDT terminal, if necessary log in Refer to ***Logging into Off-Line Utility***

3 Type

0 00> **FD00 FF**

4 To start the configurable text file conversion utility, type·

0 FF> **INT . CTCONV.CN**

5 Insert and change disks when prompted

6 The program will prompt

Enter Source Release Number (K1/L1 ...)

Enter **B1**

7. The program will prompt:

   Enter Target Release Number (L1/M1...)

8. Type **E2**

SVCFG.CN AND LDCFG.CN

Some of the load procedures expect to find copies of file ***SVCFG.CN*** and ***LDCFG.CN*** residing in the USN 0.FF directory at the time of the software installation. ***SVCFG.CN*** is placed in USN 0.FF when installing system software ***SVCFG.CN*** is a copy of **SVCFG25.CN** or **SVCFG50.CN** Its saves the user database Similarly, ***LDCFG.CN*** is in USN 0 FF to restore a database

Create a new copy of ***SVCFG.CN*** to use a load procedure for a different tag range than the procedure used previously The new copy can be made from the SYS5 disk of the new soft ware Table 3-15 contains information used in the examples

Table 3 15. SVCFG.CN Files

Tag Range	SVCFG CN on Hard Drive is a Copy of	LDCFG.CN on Hard Drive is a Copy of
2500	SVCFG25 CN	LDCFG25 CN
5000	SVCFG50 CN	LDCFG50 CN

The ***LDCFG.CN*** and ***SVCFG.CN*** are database related utilities used as subroutines of other command files They are created during the initial system load process to accommodate the database size specified at that time If the size of the database is changed after the initial system load, the ***LDCFG.CN*** and ***SVCFG.CN*** files must be modified to show the change. These two examples explain how to modify those files for any data base size change that may be made Proceed with the software upgrade after doing this

Example 1 The console had a 2,500 tag database that was increased to a 5,000 tag database Enter these commands from the DDT terminal.

0.00> **COPY 0.FF:LDCFG50.CN 0.FF:LDCFG.CN**

0 00> **COPY 0.FF:SVCFG50.CN 0.FF:SVCFG.CN**

Example 2 The console had a 5,000 tag database that was reduced to a 2,500 tag database Enter these commands from the DDT terminal·

0 00> **COPY 0.FF:LDCFG25.CN 0.FF:LDCFG.CN**

0 00> **COPY 0.FF:SVCFG25.CN 0.FF:SVCFG.CN**

ALMDESC.CF FILE

The size of the alarm descriptor file (***ALMDESC.CF*** file) needs to be recorded for it to be reloaded Follow the procedures in this section to reload the alarm descriptor file.

The file size of ***ALMDESC.CF*** is no longer a strict relation to the number of tags in the console database The ***ALMDESC1.CF*** file will be saved to UCF4 and ***ALMDESC2.CF*** will be saved to UCF5 ***ALMDESC1.CF*** and ***ALMDESC2.CF*** will copy the largest ***ALMDESC.CF*** file possible

When saving software system configuration, record the file size of ***ALMDESC.CF*** for later use when prompted

0 02> **DIR ALMDESC.CF**

D rectory of FD00 02 02 ALMDESC CF

Usn	F e	Ex	Typ	Rsz	F es ze	Wrp	RDP	Upda ed
02	ALMDESC	CF	Con	0100	00000A10	00	00	1 Apr 1993

NOTE Be sure to record the *filesize*

RESTORING THE ALMDESC.CF FILE

To restore the ***ALMDESC.CF*** file either modify the ***LDALMTRD.CN*** file in the USN 0 FF directory, or restore the file manually using the elementary line editor (ELE) on the DDT terminal Copy this file, then edit that copy to restore ***ALMDESC.CF*** Refer to the operation and configuration man ual for more information

For example, to restore a ***ALMDESC.CF*** file size of A10 using ***LDALMTRD.CN***, the file should be modified to contain these entries

```
NOTE   FILE  LDALMTRD CN
NOTE
NOTE
NOTE·  Beginning with rev  R1, ALMDESC CF is a variable sized file
NOTE   SVALMTRD CN is used to save TRENDDEF CF to UCF4, and
NOTE   ALMDESC CF to UCF4 and UCF5
NOTE
NOTE   This file, LDALMTRD.CN, copies ONLY TRENDDEF CF to FD00  IT
NOTE   contains an example of the DDT commands to restore a
NOTE   full sized ALMDESC CF file  The user should make a copy of this
NOTE   file, then edit that copy to perform the restore of ALMDESC CF
NOTE   The user can also perform the restore manually  using DDT
NOTE
DSM
ACTION    INSERT DISK UCF4 INTO FLOPPY DRIVE (PROTECTED)
NOTE
VMNT 1 UCF4
COPY 1 00 TRENDDEF CF 0 02
NOTE
FD00 02
DEL ALMDESC CF -P
ACF  ALMDESC CF A10  0  0
FD00 FF
APF 1 00 ALMDESC1 CF  0 02 ALMDESC CF  0  0  9C4
DSM
NOTE
NOTE   THE FOLLOWING SECTION ONLY NEEDS TO BE DONE IF FILE SIZE
NOTE   IS GREATER THAN 9C4  REMOVE THE "NOTE " FROM "ACTION",
NOTE   "VMNT" AND "APF" LINES THAT FOLLOW
NOTE
NOTE
NOTE   ACTION  INSERT DISK UCF5 INTO FLOPPY DRIVE (PROTECTED)
NOTE
NOTE   VMNT 1 UCF5
NOTE
NOTE   WHEN FILE ERROR 1 OCCURS (END FILE) LOAD IS COMPLETE
NOTE
NOTE   APF 1 00 ALMDESC2 CF  0 02 ALMDESC CF  0 9C5
DSM
NOTE
NOTE·  CONFIGURATION FILES COPY FROM FD01 TO FD00 COMPLETE
NOTE
0 FF
```

ASCII DATABASE

SLDG program release 5 4 for the engineering work station provides tools which create and accept input from floppy disks which contain ASCII and compressed ASCII database and con figuration files Refer to the operation and configuration manual for more information. Refer to SLDG revision 5 3 docu mentation for information regarding its ASCII database tools

SECTION 4 - STANDARD HARDWARE

INTRODUCTION

This section contains the standard hardware used by the IIOIS20 and IIOIC20 operator interfaces. Each entry contains jumper and switch configurations for the IIOIS20 and IIOIC20 operator interface where it is used.

NOTE. The components in the O S and O C are conf gured at the factory Settings shown in Section 4 and Section 5 are not requ red to operate your operator interface Informat on in these sect ons s given in case sett ngs are changed or hardware needs to be replaced

The location of components and the wire and cable connec tions are also given. This section is a reference for standard equipment Information for OIS and OIC options is in Section 5 of this manual

STANDARD HARDWARE

Table 4 1 lists the hardware used in the operator interface station console (IIOIS20) and driver cabinet (IIOIS20A/D) This table also lists the hardware used for the operator interface consoles; 19 inch table top (IIOIC201), console (IIOIC202), environmental cabinet (IIOIC203), panel mounted (IIOIC204) and 37 inch tabletop (IIOIC205) Refer to Section 5 for optional hardware.

Table 4 1 Standard OIS/OIC Hardware

Part Nomenclature	Where Used							Description
	OIS		OIC					
	20	20A 20D	201	202	203	204	205	
1948002 1	X	X						Hard D sk Drive
1948013_1	X	X						D sk Drive Contro er Module
1948014 7							X	Color Mon tor (37 inch)
1948018 1	X	X						F oppy D sk Drive
1948023 1	X	X						SAS Modu e
1948623_1	X		X	X	X	X		Color Monitor (19 nch)
6637801_4				X				S xteen Slot Mult bus Card Cage (w th a slide in power supp y)
6637801_2	X	X						Sixteen S ot Mu t bus Card Cage
6638235 1	X		X	X	X	X		Keyboard Interface Pane
6638353_1	X							Power Entry Panel
6638353_2				X				Power Entry Panel

Table 4 1 Standard OIS/OIC Hardware (continued)

Part Nomenclature	Where Used							Description
	OIS		OIC					
	20	20A 20D	201	202	203	204	205	
6638514 1	X		X	X	X	X		Keyboard Assemb y
6638564 1				X				Power Supp y
6638565 1	X	X						Power Supp y
6638564 2			X		X	X	X	Power Supp y
6638960_1		X						Power Entry Panel
I ADP02	X			X				Annunciator/D sp ay Pane
NADS01					X			Annunc ator/D splay Pane
IIMCL01	X	X						Mult bus Commun cat on Loop Modu e
I MCP0_	X	X						Mu t bus Commun cations Processor Modu e
I MGC01[1]	X	X						Multibus Graph cs Contro er Module
MKM01	X		X	X	X	X		Multibus Keyboard Module
IIMLM01	X	X						Multibus Loop Module
MPM01	X	X						Mu t bus Processor Modu e
MRM01		X						Multibus Reset Module
IIMSM01	X	X						Multibus Serial Interface Module

NOTE 1 Mu t bus graph c contro er modules mount n the O S20 but are ncluded with the O C201/2/3/4/5

MULTIBUS HARDWARE

The multibus hardware consists of the multibus card cage and the modules The modules are discussed following the multibus card cage in this section

Multibus Card Cage

Bai ey Part Number - 6637801_2 (IOIS20 IOIS20A and I O S20D)
Ba ley Part Number - 6637801_4 (O C202' /2/3 w th s de n power supp y)

The multibus card cage provides the communication paths and defines the priority level for the IIOIS20 and IIOIC202 multibus modules listed in Table 4 2. The modules in the card cage are slot dependent Connect the modules into the slots shown in this section

Table 4 2 Multibus Modules

Multibus Module	Nomenclature
Mu tibus Graphics Contro er Modu e	I MGC01
Mu t bus Keyboard Modu e	MKM01
Mu t bus Ser a nterface Modu e	IMSM01
Mult bus Processor Module	IMPM01
Multibus Commun cat ons Processor Modu e	MCP0
Mu tibus Loop Modu e	MLM01
Mu tibus Communicat on Loop Term nation Modu e	MCL01

Figure 4 1 shows the maximum number of modules that will fit into the IIOIS20 multibus card cage This may be more than is in your system. The touch screen controller modules and the additional graphics module and keyboard module are options

Figure 4 2 shows the modules in the IIOIC202 multibus card cage. The touch screen controller modules and the additional graphics module and keyboard module are options

Figure 4 3 shows the modules in the IIOIC202 multibus card cage with the slide in power supply The touch screen con troller module is an option

Figure 4-4 shows the multibus card cage (back view)

The multibus processor module and multibus graphics con troller modules require priority jumpers on the back of the card cage be set. All slots are jumpered for priority interrupts when the system is shipped This allows the multibus cards to be moved to a different slot in the card cage if needed

Table 4-3 lists the multibus card cage power connections shown later in this section

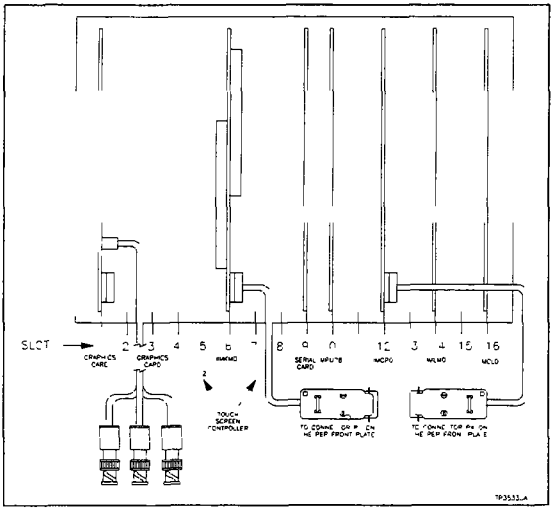


Figure 4 1 IIOIS20 Multibus Card Cage (Front View)

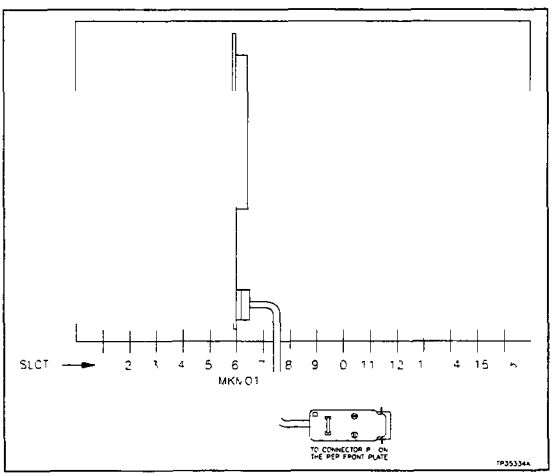


Figure 4 2 IIOIC202 Multibus Card Cage (Front View)

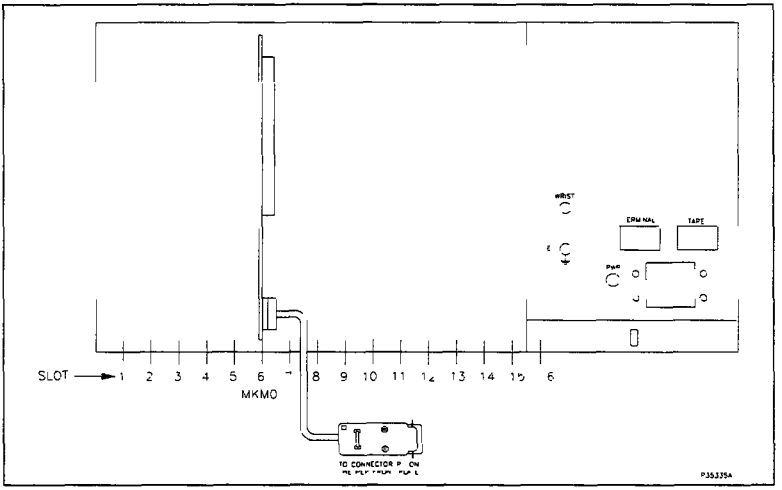


Figure 4 3 IIOIC202 Multibus Card Cage with Slide In Power Supply

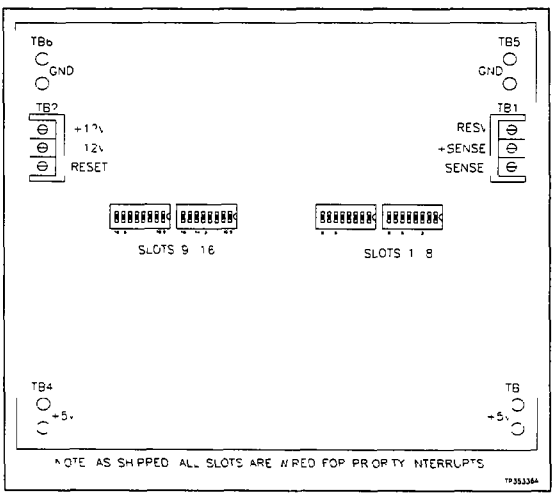


Figure 4 4. Multibus Card Cage (Back View)

Table 4 3 Multibus Wiring Connections

TB1	TB2	TB3	TB4	TB5	TB6
Use w re assemb y 6638712 1 Connect Green w re to term nal one Wh te w re to term na two Make no connect on to term na three	Use w re assemb y 6638708 1 Connect Term one no connect on V o et w re to term na two Wh te/v o et w re to term na three	Use w re assemb y 6638711 1 Connect Two brown w res from each tab pos t on to CH1 POS on power supp y	Use w re assembly 6638711 1 Connect One brown w re from each tab pos t on to CH1 POS on power supply	Use w re assemb y 6638711_1 Connect Two green/ white w re from each tab posit on to CH1 NEG on power supply	Use w re assemb y 6638711 1 Connect One green/ wh te w re from each tab pos t on to CH1 NEG on power supp y

Multibus Module Installation

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'al mentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

1 Insert the multibus modules into the card cage along the upper and lower guide rails Slide the module into the desired position, being careful to align it beneath the slot number

2 Press on the module removal tabs on the top and bottom of the card front to fully insert the module into the multibus backplane

Multibus Module Removal

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

Remove the modules by pulling the module removal tabs on the top and bottom of the card front toward you and gently sliding the module out of the rack Figure 4-5 shows how to remove the multibus modules

NOTE: Be sure not to loosen cables from the modules next to the one being removed

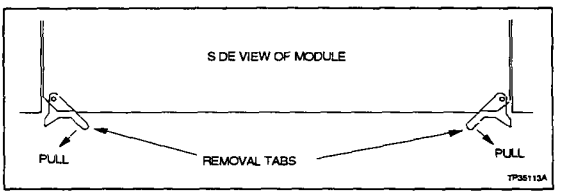


Figure 4-5 Removing Multibus Modules

Multibus Graphics Controller Module

Ba ey Nomenc ature - I MGC01

Each multibus graphics controller module can drive one OIS or OIC monitor Set the module address by wire wrapping jumpers to the appropriate pins Figure 4 6 shows the loca tion of the pins

NOTE: Refer to ***SECTION 5 - IIOIS20 OPTIONS*** for the jumper sett ngs of any add t onal multibus graphics modules Ver fy the jumper p acement to reduce the chance for an nterrupt on n the O S operat on

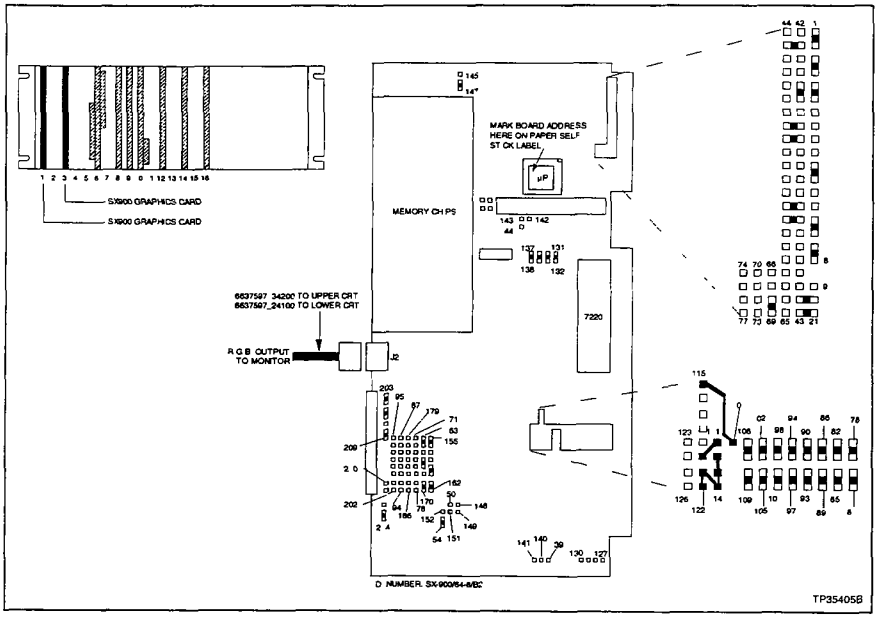


Figure 4 6 Multibus Graphics Controller Module

Multibus Keyboard Module

Bailey Nomenc ature - IMKM01

The multibus keyboard interface module interfaces the key board and other operator input devices to the OIS or OIC There are four jumpers on the MKM board to set for proper operation J1 and J2 control serial port one (P8) and two (P9) Connecting the eight pins horizontally as shown for P8 in Figure 4 7 configures the serial port as data communication equipment (DCE) For DCE, data is transmitted from the MKM on pin three of the connector and received from the connected device on pin two of the connector Connecting the eight pins vertically as shown for P9 in Figure 4 7 configures the serial port as data terminal equipment (DTE) For DTE, data is transmitted from the MKM on pin two of the connec tor and received from the connected device on pin three of the connector

J3 allows the option of resetting the entire OIS when the MKM watchdog timer circuit times out Set the jumper to J3 pins one and two for OIS reset on timeout. Set the jumper to J3 pins two and three for no OIS reset on timeout. Factory default is no reset on time out

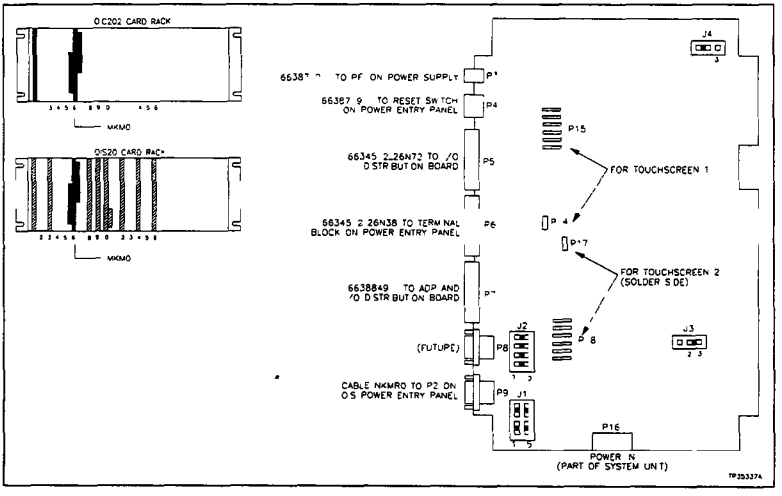


Figure 4 7. Connections for Multibus Keyboard Module

J3 allows the option of disabling the power supply out of tol erance (OOT) signal to reset the MKM Set the jumper to J4 pins one and two to disable the OOT signal Set the jumper to J4 pins two and three to enable the OOT signal Factory default is to disable OOT on all OIC20s Factory default is to enable OOT on all OIS20s

See Figure 4 7 for MKM connector locations

NOTE: Figure 4 7 shows cable connect ons for the I O S20 Cable numbers may be d fferent for other OIS and OIC mode s Refer to the w r ng d agram for the spec fic model of O S or OIC nsta ed for comp ete w r ng connections

Multibus Reset Module

Bai ey Nomenclature - I MRM01

The multibus reset module provides power fault interrupt and a reset signal to the multibus back plane through the J1 connector for an IIOIS20A or IIOIS20D See Figure 4 8 for wiring connections.

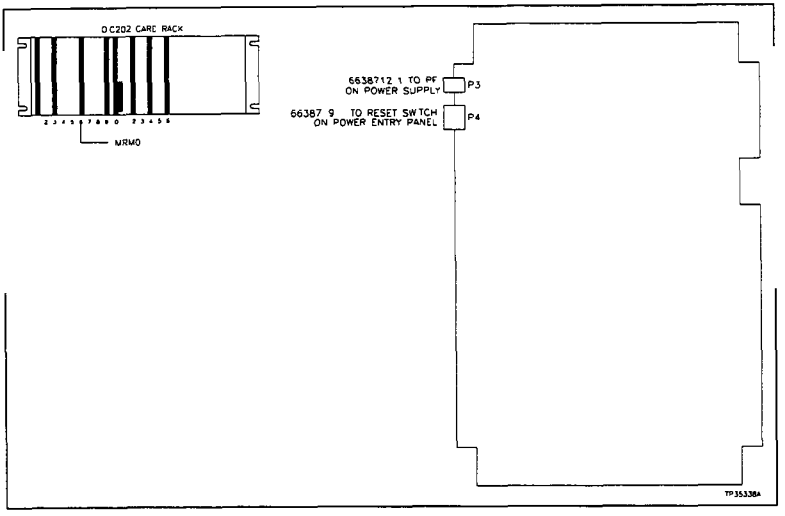


Figure 4 8. Connections for Multibus Reset Module

Multibus Serial Interface Module

Ba ley Nomenc ature - IIMSM01

The OIS nterfaces with various peripherals through the multibus serial nterface module The peripherals may in clude keyboards, printers and terminals

NOTE Use on y the per phera s recommended by Ba ley Contro s f you have quest ons contact your Ba ey Contro s sa es or serv ce off ce

Configure the multibus serial interface module by setting jumpers and dipswitches Refer to Table 4 4 for port assign ments and Figure 4 9 for module configuration.

NOTE. Jumpers located below IC32 must be set accordng to the s ze of the RAM used for IC32, 16K or 64K The number 16 or 64 (ocated w th n the chip number) s pr nted on C32 Set the jumper accord ng to th s number

Table 4 4 Multibus Serial Interface Port Assignments

Port	Assignment
1	Keyboard 1
2	Keyboard 2
3	Unused
4	Aux/N U
5	Pr nter 1
6	Unused
7	Printer 2
8	D agnostic Term na (DDT)

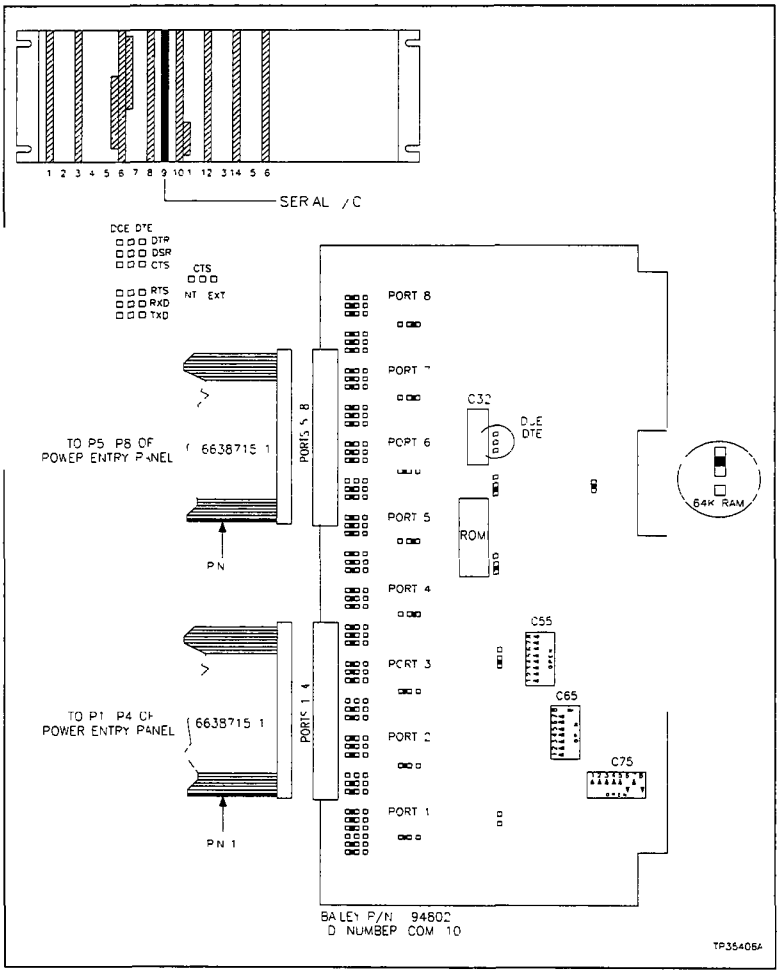


Figure 4-9. Multibus Serial Interface Module

SASI Disk Bus Interface Adapter

Ba ey Part Number 1948023_1

The disk bus interface adapter provides the Shugart Associ ates System Interface (SASI™) between the disk drives and the multibus processor module Shown in Figure 4 10, it attaches to the multibus processor module and occupies the physical space of the next module in the multibus card cage

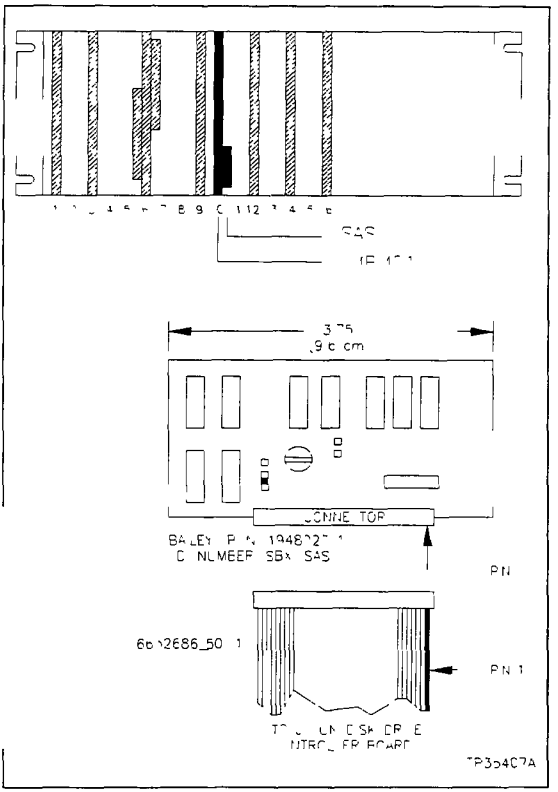


Figure 4 10 SASI Disk Bus Interface Adapter

TM SASI is a trademark of Shugart Associates

Multibus Processor Module

Ba ey Nomenc ature - MPM01

The multibus processor module has 8 megabytes of RAM on board. It also contains 64 kilobytes of read only memory (ROM), communication ports for a diagnostic terminal and SASI disk adapter and a small computer serial interface (SCSI) port for magnetic tape/optical disk storage See Figure 4-11 when setting the jumpers on the multibus processor module.

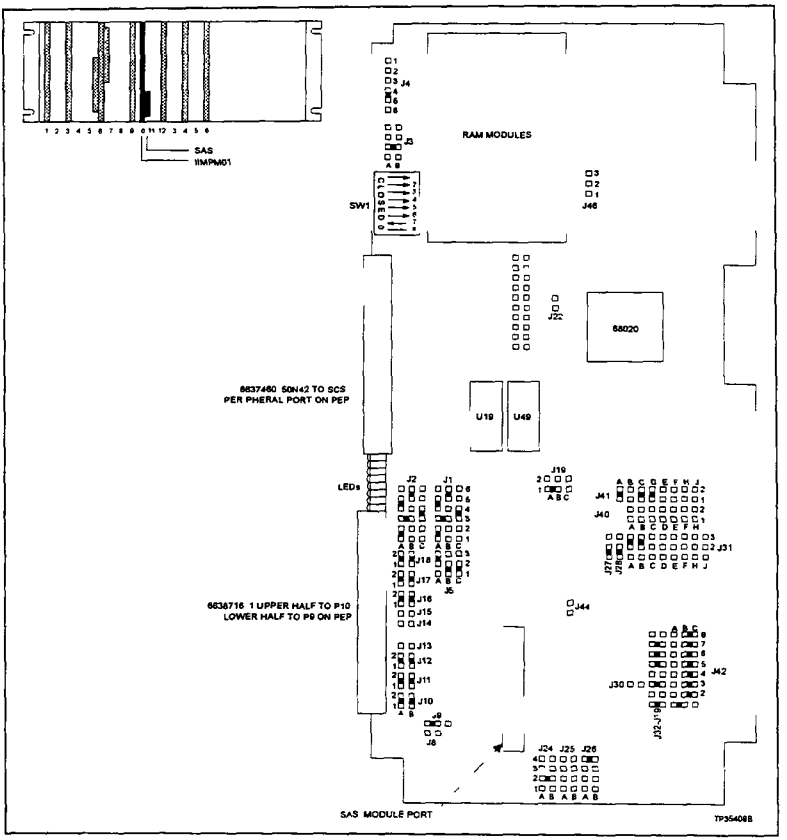


Figure 4 11 Multibus Processor Module

Multibus Loop Module

Ba ey Nomenclature MLM01

The multibus loop module, shown in Figure 4 12 allows communication between the multibus communication proc essor module (IIMCP0_) and the INFI NET or Plant Loop communication highway through the termination module (IIMCL01). The switch settings shown in the figure are de fault settings, refer to Table 4-5 for jumper and dipswitch settings Use two ribbon cables numbered 6634512 26N2 to connect the loop module to the communication processor and to the termination module

NOTE: D psw tch SW1 and SW2 se ects the oop address and r ng number of this O S and depends on your nd v dua system

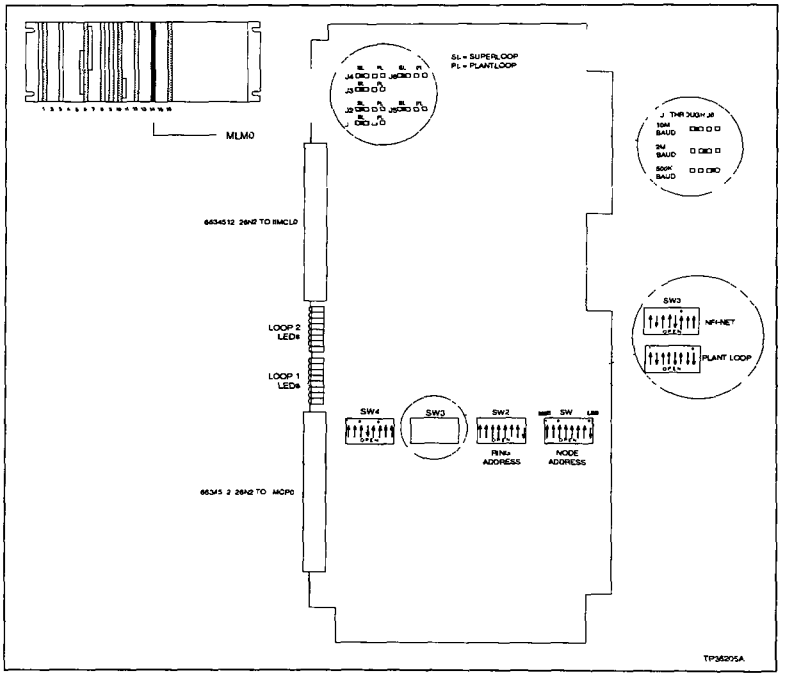
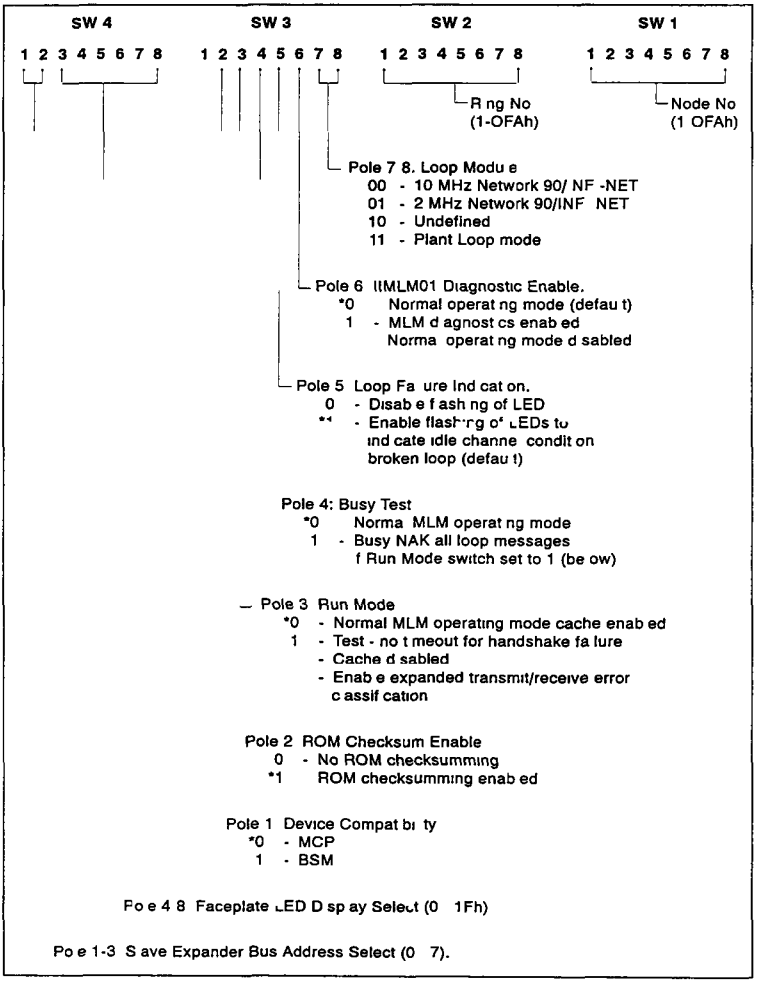


Figure 4 12 Multibus Loop Module

Table 4 5 Loop Module Configuration



NOTE Switch Open = 1 Sw tch C osed = 0

* nd cates settings for r orma operation

Multibus Communication Processor Module

Bai ey Nomenclature - I MCP0

The multibus communication processor module (Figure 4 13) contains a library of commands which send and retrieve data from other process control units and operator consoles The OIS sends commands to the multibus communication processor module requesting it to send or retrieve required data Configure the multibus communication processor module by setting dipswitches Refer to Table 4 6 for the standard module dipswitch settings

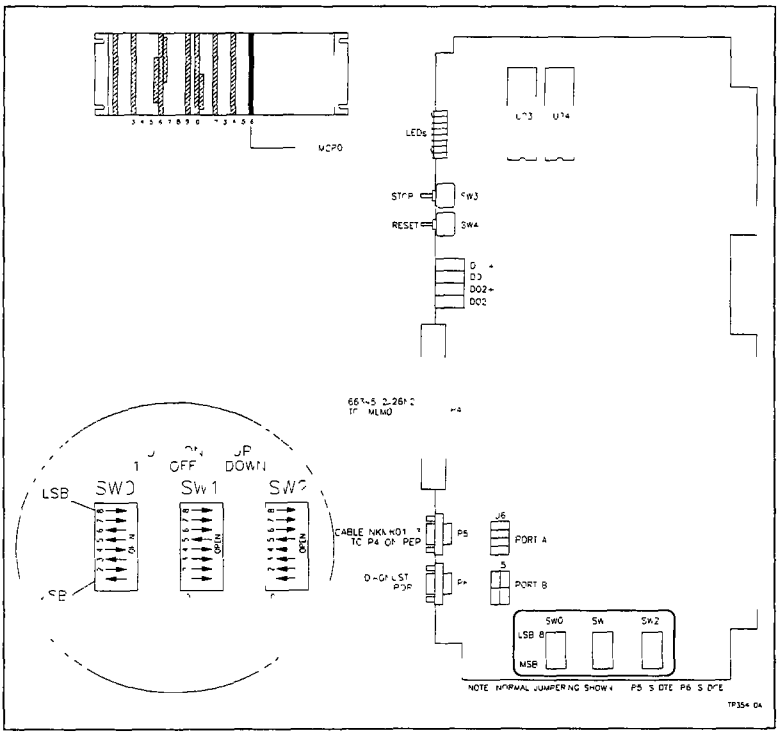


Figure 4 13 Multibus Communication Processor Module

Table 4 6. Multibus Communication Processor Configuration

Switch 0		
Poles	**Function**	**Description**
1	ROM Checksumming	* 0 = ROM Checksum Enabled 1 = ROM Checksum D sab ed
2 3	Port A Data Characteristics	00 = 8 1 N *10 = 8 1 O 01 = 8 1 E 11 = 8 1 N
4	Port B Operation Mode	0 = N U Command mode * 1 = N U Util ty Mode
5 6	Port B Data Characteristics (on y f sw tch 4 = 0)	* 00 = 8 1 N 10 = 8 1 O 01 = 8 1 E 11 = 8 1 N
7	Command Checksumm ng	0 = Command Checksum D sab ed * 1 = Command Checksum Enab ed
8	Unused	

NOTES
Closed = 0 = On = Up
Open = 1 = Off = Down
* = norma setting

Switch 1		
Poles	**Function**	**Description**
1-4	Port A Baud Rate	0000 = N/U 0001 = 1800 1000 = 75 1001 = 2000 0100 = 110 0101 = 2400 1100 = 134 5 1101 = N/U 0010 = 150 0011 = 4800 1010 = 300 1011 = N/U 0*10 = 600 011* = 9600 1110 = 1200 * 1111 = 19 2k
5-8	Port B Baud Rate	0000 = N/U 0001 = 1800 1000 = 75 1001 = 2000 0100 = 110 0101 = 2400 1100 = 134.5 1101 = N/U 0010 = 150 0011 = 4800 1010 = 300 1011 = N/U 0110 = 600 * 0111 = 9600 1110 = 1200 1111 = 19 2k

NOTES
C osed = 0 = On = Up
Open = 1 = Off = Down
* = normal setting

Table 4 6 Multibus Communication Processor Configuration (continued)

Switch 2		
Poles	**Function**	**Description**
1	Firmware Test Mode	* 0 = Disabled 1 = Enabled
2	MLM Diagnostic Mode	* 0 = Disabled 1 = Enabled
3	Loop Diagnostics	* 0 = Disabled 1 = Enabled
4 6	Unused	
7	NVRAM Installed	0 = NVRAM Not Installed * 1 = NVRAM Installed
8	RAM Component Size	0 = 32k x 8 (512k) * 1 = 128k x 8 (2m)

NOTES
Closed = 0 = On = Up
Open = 1 = Off = Down
* = normal setting

Multibus Communication Loop Module

Ba ey Nomenclature I MCL01

The multibus communication loop module is the termination unit that interfaces the OIS to the communication highway See Figure 4 14 for wiring instruction

Set jumpers J1-J6 for the type of cable used in the Network 90 or INFI 90 to either coaxial or twinaxial cable

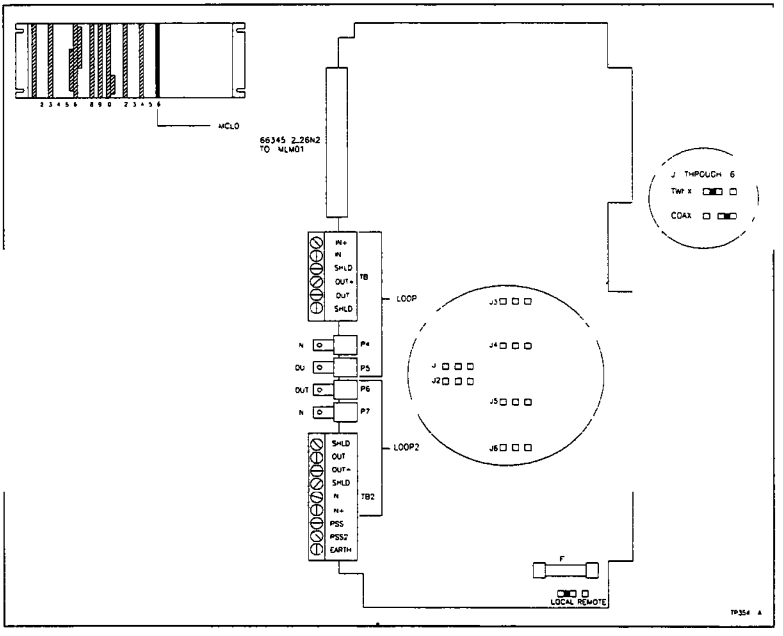


Figure 4 14 Multibus Communication Loop Module

Keyboard Interface Panel

Ba ey Part Number - 6638238

The keyboard interface panel (Figure 4 15) is located on the IIOIS20 and IIOIC202 cabinet front panel next to the CRT behind a smoked polycarbonate door The panel is located on the IIOIS20A/D on the front of the power entry panel On the IIOIC201 and IIOIC204, the panel is on the front of the case below the CRT On the IIOIC203, the panel is on the front of the power entry panel behind the front door

The keyboard socket is for the operator keyboard supplied with the OIS and OIC The AUX 1 port is for a tabletop annunciator display panel (future) The AUX KBD connector

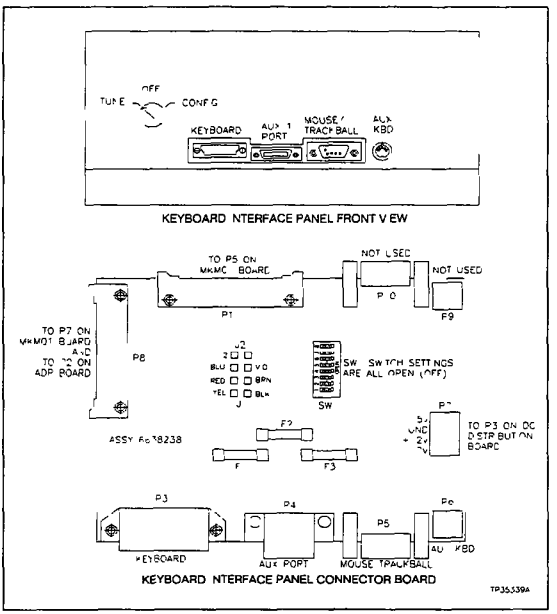


Figure 4 15 Keyboard Interface Panel

is for an engineering (IBM AT®) keyboard The keyboard interface panel connectors are listed in Table 4 7 The keyboard interface panel connectors and the floppy drive connect to the I/O distribution board. P9 and P10 are not used

NOTE: The tune/config sw tch s n a different ocat on in each O S/O C

Table 4 7 Connections to Keyboard Interface Panel

Connector P1	Connector P2	Connector P8
Connect cable No. 6634512_26N72 to P5 on the I MKM01 modu e	Connect cable No 6638713_1 to P3 on the DC d str but on board	Connect cable No 66388491_1 to P7 on the I MKM01 Module and to P2 on the ADP pane

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Operator Keyboard

Ba ey Part Number 6638514 1

The keyboard port on the keyboard interface panel is for the OIS and OIC lap top style keyboard The three foot long coiled cord can be stretched to eight feet See Figure 4 16

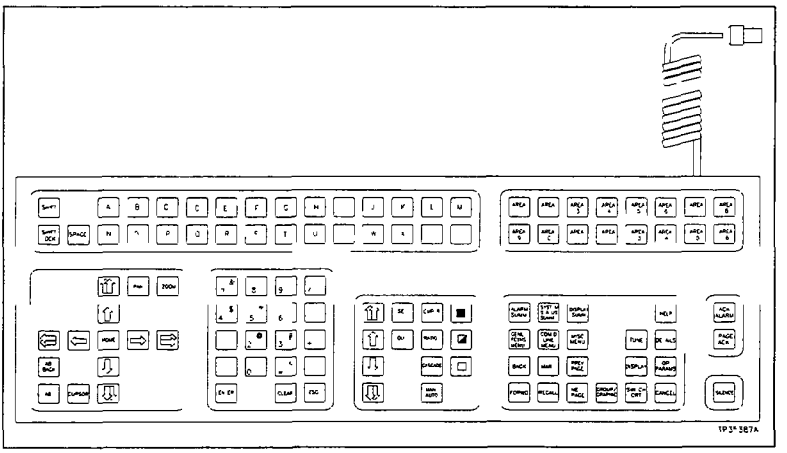


Figure 4 16. Operator Keyboard

Color Monitor

Ba ey Part Number - 1948623_6 (19- nch monitor)

The color monitor used in the OIS and OIC is an RGB monitor with a 640 x 480 pixel resolution CRT. See Figure 4 17 for more information

IIOIS20 and IIOIC202 NOTES·

1 Cab e number 6637597 24100 connects the lower mon tor of the O S20 and IO C202 to the mu tibus graph cs control er board Cab e number 6637597 34200 connects the upper mon tor to the mu t bus graph cs controller board Labels R, G and B represent red, green and b ue, respect vely

2 Max mum ength of RS-170 RC B cab es s 250 feet For distances over 250 feet, optical modems (NREM01) using up to 1000 feet of f ber opt c cable (NKFM01-xx) are requ red

3 f remote CRTs are be ng insta led nsure they are powered using the same po anzed power and grcund as the O S and O C to prevent ground loops Fai ure to do so may cause d sp ay d stort on f ground oops are st suspected, use optica ly so ated modems to e m nate the prob em

4 A 9 p n D-sub connector connects an external br ghtness, con trast and degauss contro Use cable number 6638720_1 for the lower mon tor and cab e number 6638720 2 for the upper mon tor Br ghtness and contrast contro s are mounted on the beze The degauss sw tch is mounted on the PEP

5 CRT w r ng connector ocat or may be s ght y d fferent for each model of OIS and O C

6 Br ghtness and contrast contro s are ocated on the front pane of the power entry pane of the OIC203

7 nteco or and Ayd n mon tors are autosensing and do not need to be switched f the power to the cabinet is 120 vo ts or 220 vo ts However, other mon tors may need to be switched to prevent damage from over voltage or undervo tage

8 For I OIC205, make connect ons d rect y to the mon tor

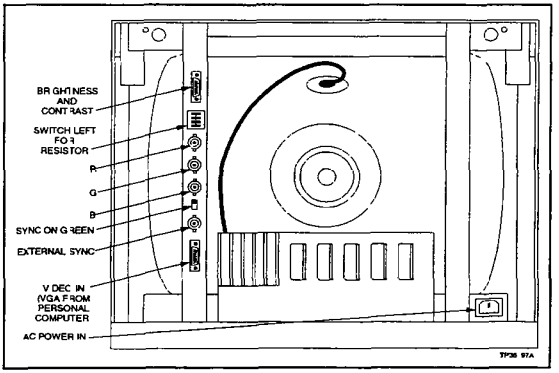


Figure 4 17 Color Monitor

Disk Drive Controller Board

Ba ley Part Number - 1948013 1

The disk drive controller board interfaces the floppy disk drive and the hard disk drive to the IIOIS20 and IIOIS20A/D Configure this module with jumper settings See Figure 4 18 for board configuration, and refer to Table 4 8 for wiring connections

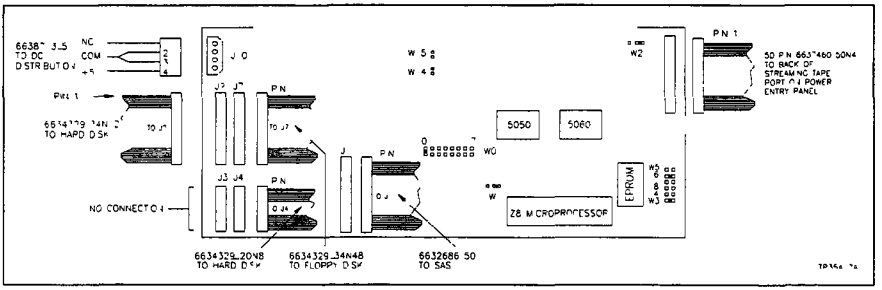


Figure 4 18. Disk Drive Controller Module

Table 4 8 Connections to Disk Drive Controller Module

From J1	From J2	From J4	From J7	From J10
To J1 connector on SASI module use w re assemb y no 6632686 50-1	To J1 connector on hard d sk dr ve use wire assemb y no 6634329_34N12	To J2 connector on hard disk dr ve, use w re assembly no 6634329_20N8	To J1 connector on f oppy disk drive use wire assemb y no 6634329 34N48	To J6 on DC distribut on board on top of ma n power supply, use wire assembly no 6638713_5

NOTE J3 s reserved for future use and has no connections

Annunciator Display Panel (ADP)

Bailey Nomenclature - I ADP01 Tab etop
ADP02 Conso e Mounted

The annunciator display panel (ADP) provides a panel of 32 lamps and pushbuttons Each lamp and pushbutton is as signed to an OIS or OIC display. When a tag on a display goes into an alarm condition, the assigned ADP lamp turns on Press the assigned pushbutton to cause the assigned display to be printed to the screen

The IIOIS20 or IIOIC202 can drive four annunciator display panels One ADP panel is console mounted, the other three ADP panels are tabletop models connected with cables

NOTE The O C203 has a 64 key ADS panel On y 32 of the keys can be accessed by software

Refer to the tabletop annunciator display entry in Section 5 for the switch settings and cable connections

Refer to Table 4 9 for wiring connections to the ADP Board. Refer to Figure 4 19 for the location of the first ADP Refer to Figure 4 20 for the dipswitch configuration of the first an nunciator display panel (IIADP02)

Table 4 9 Connections to Annunciator Display Board

From P1	From P2
To P4 socket on top of ma n power supp y, use cab e assembly number 6638713 2	To P7 connector on IMKM01 modu e, use cable number 66388491 1

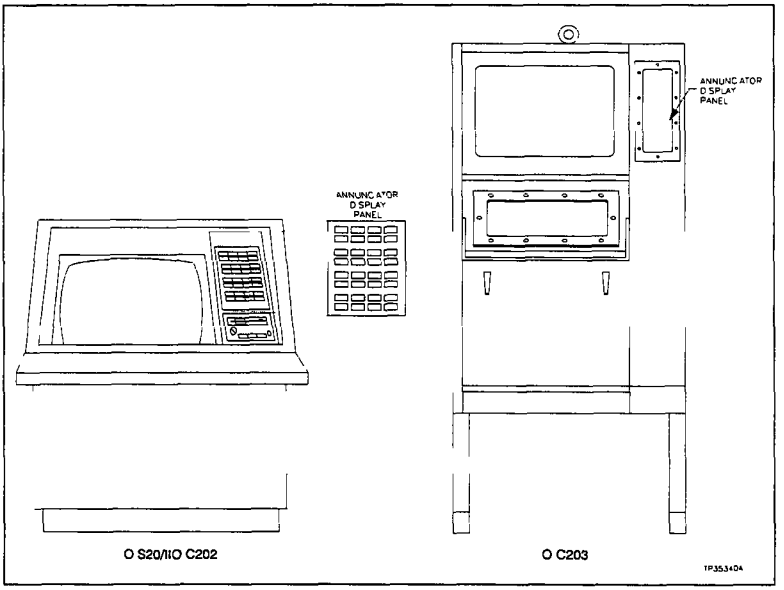


Figure 4 19 Annunciator Display Panel

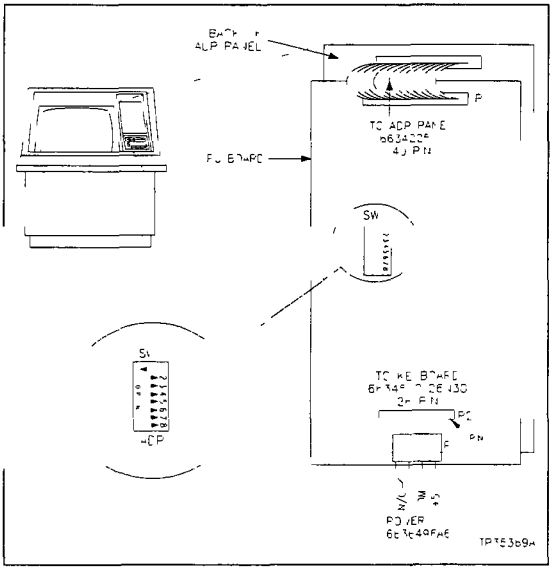


Figure 4 20 Annunciator Panel Circuit Board

Floppy Disk Drive - TEAC

Ba ey Part Number - 1948018_1

The OIS uses a high density 1 2 megabyte floppy disk drive Two drive styles are used, and each requires configuration by setting jumpers. Figure 4 21 shows the TEAC FD 55GFR 141 U and jumper configuration

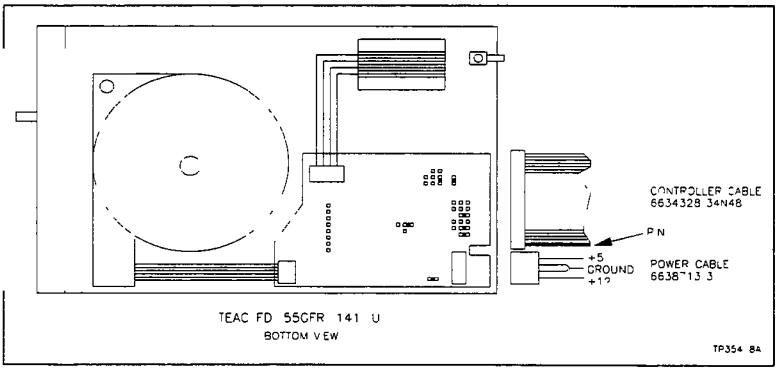


Figure 4 21. TEAC Floppy Disk Drive

Floppy Disk Drive - NEC

Bailey Part Number 1948018 1

Figure 4 22 shows the NEC FD 1157C high density 1 2 megabyte floppy disk drive and jumper configuration

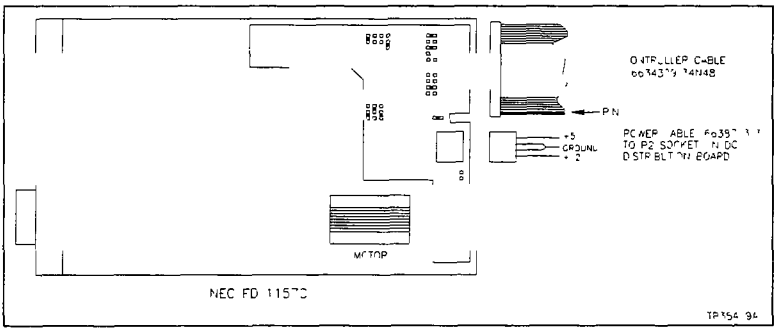


Figure 4 22 NEC Floppy Disk Drives

Hard Disk Drive - PRIAM V185A 85 Megabyte

Bailey Part Number - 1948002_2 (obsolete)

Figure 4-23 shows the required jumper configuration for the PRIAM V185A 85 megabyte hard disk drive

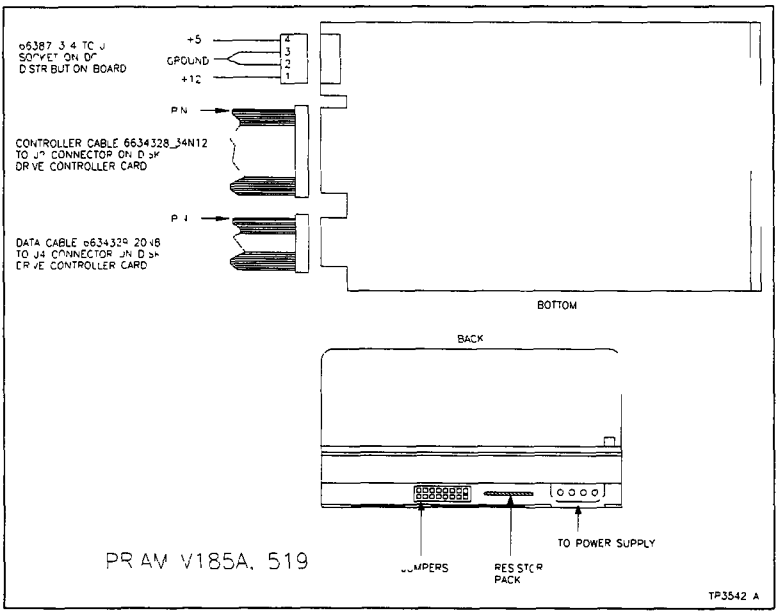


Figure 4-23. PRIAM V185A Hard Disk Drive

Hard Disk Drive - CONTROL DATA 85 Megabyte

Bailey Part Number 1948002 2 (obsolete)

Figure 4 24 shows the required jumper configuration for the Control Data 85 megabyte hard disk drive

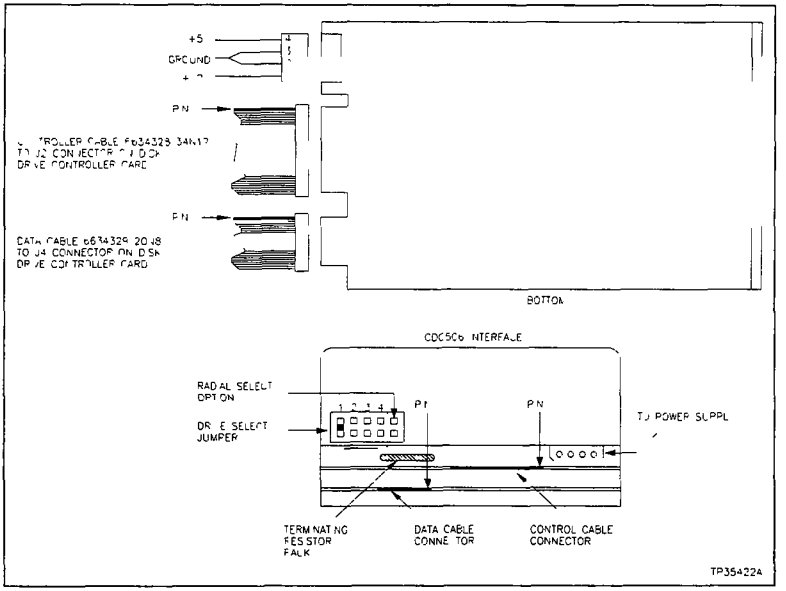


Figure 4 24 CONTROL DATA Hard Disk Drive

Hard Disk Drive - SEAGATE 85 Megabyte

Ba ley Part Number 1948002_4

Figure 4-25 shows the required jumper configuration for the Seagate ST4096 85 megabyte hard disk drive.

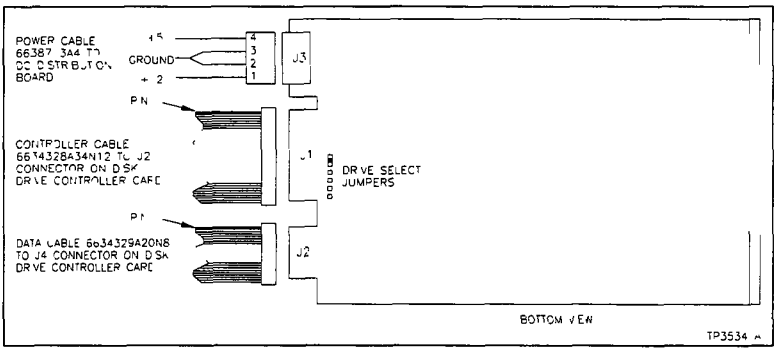


Figure 4 25. SEAGATE ST4096 Hard Disk Drive

Hard Disk Drive - MAXTOR 85 Megabyte

Ba ey Part Number 1948002 4

Figure 4 26 shows the required jumper configuration for the MAXTOR XT1085 85 megabyte hard disk drive

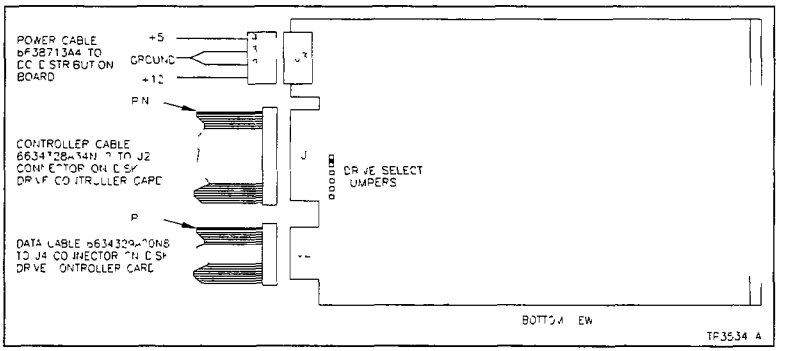


Figure 4 26. MAXTOR XT1085 Hard Disk Drive

IIOIS20 and IIOIC202 Power Entry Panel

Bai ey Part Number - 6638353_1

The power entry panel (PEP) contains the incoming AC power terminals and system circuit breakers along with ports for connecting peripheral devices, terminals for alarm contact outputs and ports for archival data storage devices The power entry panel also contains the system reset switch and the degaussing switches for the CRTs

Connectors P1 through P16 connect the PEP to the multibus processor module and peripheral devices on the OIS Only P1 is used on the OIC The connectors are assigned as shown in Table 4 10

Table 4 10 IIOIS20 and IIOIC202 PEP Connector Assignments

Connector		Connector	
Number	Use	Number	Use
P1	Keyboard 1 (O S20/OIC20)	P9	Processor Module Port 1
P2[1]	Keyboard 2	P10	Mon tor 68k
P3	Unused	P11	Unused
P4	N U Connect on	P12	Unused
P5	Printer 1	P13	Unused
P6	Unused	P14	Unused
P7	Pr nter 2	P15	Unused
P8	Dynamic Debugger Term na	P16	Unused

NOTE 1 P2 through P16 are not used on the O C202 on y P1 s used

The SCSI peripheral port (small computer system interface port) connects a magnetic tape or optical disk data storage device for the OIS

The streaming tape port connection is for a streaming tape drive used for rapid reloading of system and user configura tion files for the OIS.

NOTE: Read the notice on the panel before you p ug in the tape dr ve P ugg ng in the tape reader power cord first connects the tape reader ground to the IIOIS20 or IO C202

Use the U degauss switch to correct picture distortion due to magnetic fields on the screen of the upper (swivel mount) CRT. Use the L. degauss switch to correct picture distortion due to magnetic fields on the screen of the lower cabinet mount CRT

The reset pushbutton resets the OIS or OIC to an initial power up condition when pressed

A terminal block with six alarm contact outputs connects annunciators to user defined alarms. The terminal designation is printed on the panel beside the terminal. The digital in (DI) and digital out (DO) terminals are configured from OIS software

The power indicator is lit when the AC power is connected to the PEP and the main power circuit breaker is on

Connect your static ground wrist strap into the wrist strap connector before removing modules from the card cage.

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

The streaming tape power AC outlet on the OIS PEP is a convenience outlet for either 120/240 VAC devices Check the label on the front of the PEP before connecting anything into this outlet

CAUTION	**Failure to plug in the streaming tape drive ribbon cable before turning the tape drive power on may result in equipment failure. Read the notice on the front of the power entry panel before turning on the power to the tape drive. Set the streaming tape drive to the same voltage as the PEP outlet or equipment damage may result.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default. Lisez l'avis figurant a l'avant du panneau d'entree d'alimentation avant d'acheminer l'alimentation au derouleur de bande. Reglez le derouleur en continu au meme niveau de tension que la sortie du panneau d'entree d'alimentation sinon le materiel pourrait subir des dommages.**

Use either 120 VAC or 240 VAC power to supply power to the IIOIS20 or IIOIC202 through the terminal block at the bottom of the panel

NOTES:
1 Be sure the IOIS20 or IOIC202 is set up to receive 240 VAC if you are connecting 240 VAC to the IO S20 or IIOIC202 power entry panel

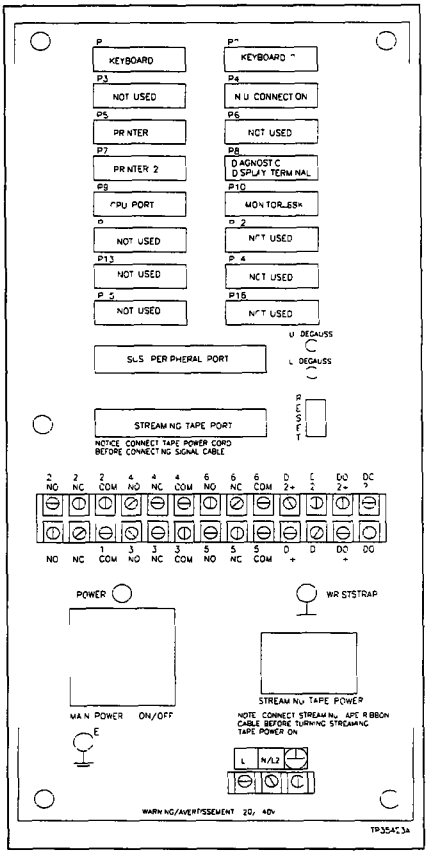


Figure 4 27 IIOIS20 and IIOIC202 Power Entry Panel

2 Wiring connections shown in Figure 4-27 and Figure 4 28 are for the IOIS20 or I OIC202 w th the exception of P2 to P16 on the PEP These connections are only used for the IIOIS20

3 Some of the connections are on the back side of the power entry panel and are accessed through the door on the back of the OIS or OIC

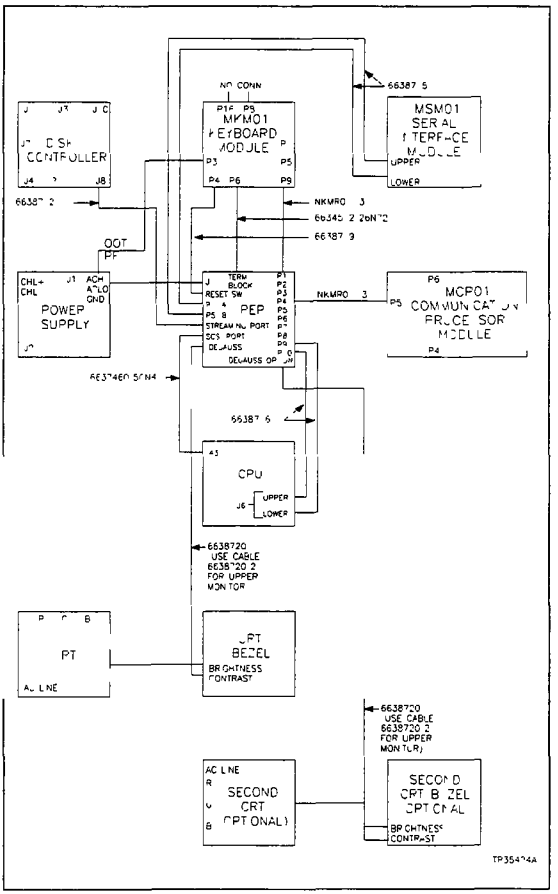


Figure 4 28 IIOIS20 and IIOIC202 Connections for Power Entry Panel

IIOIS20A/D Power Entry Panel

Ba ley Part Number - 6638960_1

The power entry panel (PEP) contains the incoming AC power terminals and system circuit breakers along with ports for connecting peripheral devices, terminals for alarm contact outputs and ports for archival data storage devices. The power entry panel also contains the system reset switch and the degaussing switches for the CRTs

Connectors P1 through P16 connect the PEP to the multibus processor module and peripheral devices on the OIS The connectors are assigned as shown in Table 4 11

Table 4 11 IIOIS20A/D PEP Connector Assignments

Connector		Connector	
Number	**Use**	**Number**	**Use**
P1	Keyboard 1	P9	Processor Modu e
P2	Keyboard 2		Port 1
P3	Unused	P10	Monitor 68k
P4	N U Connect on	P11	Unused
P5	Pr nter	P12	Unused
P6	Unused	P13	Unused
P7	Pr nter 2	P14	Unused
P8	Dynamic Debugger	P15	Unused
	Termina	P16	Unused

The SCSI peripheral port (small computer system interface port) connects a magnetic tape or optical disk data storage device for the OIS.

The streaming tape port connection is for a streaming tape drive used for rapid reloading of system and user configura tion files for the OIS

NOTE: Read the not ce on the panel before you plug in the tape drive P ugg ng in the tape reader power cord f rst connects the tape reader ground to the O S20A/D

The reset pushbutton resets the OIS to an initial power up condition when pressed.

A terminal block with six alarm contact outputs connects annunciators to user defined alarms The terminal designa tion is printed on the panel beside the terminal. The digital in (DI) and digital out (DO) terminals are configured from OIS software

The power indicator is lit when the AC power is connected to the PEP and the main power circuit breaker is on

Connect your static ground wrist strap into the wrist strap connector before removing modules from the card cage.

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

The streaming tape power AC outlet on the OIS PEP is a convenience outlet for either 120/240 VAC devices Check the label on the front of the PEP before connecting anything into this outlet

CAUTION	**Failure to plug in the streaming tape drive ribbon cable before turning the tape drive power on may result in equipment failure. Read the notice on the front of the power entry panel before turning on the power to the tape drive. Set the streaming tape drive to the same voltage as the PEP outlet or equipment damage may result.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default. Lisez l'avis figurant a l'avant du panneau d'entree d'alimentation avant d'acheminer l'alimentation au derouleur de bande. Reglez le derouleur en continu au meme niveau de tension que la sortie du panneau d'entree d'alimentation sinon le materiel pourrait subir des dommages.**

Read the notice on the front of the power entry panel before turning on the power to the tape drive Set the streaming tape drive to the same voltage as the PEP outlet or equipment damage may result.

Use either 120 VAC or 240 VAC to power the IIOIS20A/D through the terminal block at the bottom of the panel

NOTE: Be sure the O S20A/D is set up to rece ve 240 VAC f you are connect ng 240 VAC to the power entry pane

Wiring connections are shown in Figure 4 29 and Figure 4 30 Note that some of the connections are on the back side of the power entry panel and are accessed through the door on the back of the OIS

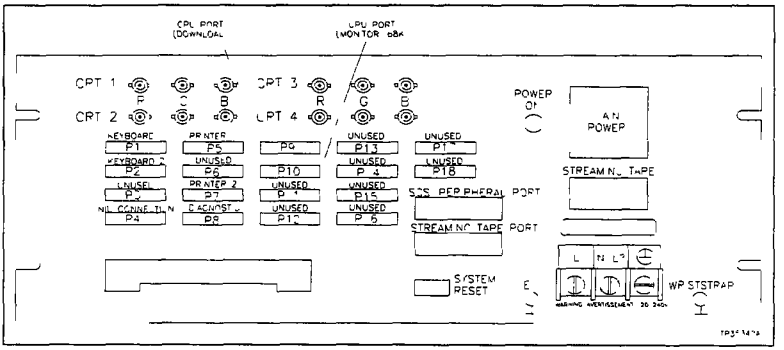


Figure 4 29. IIOIS20A/D Power Entry Panel

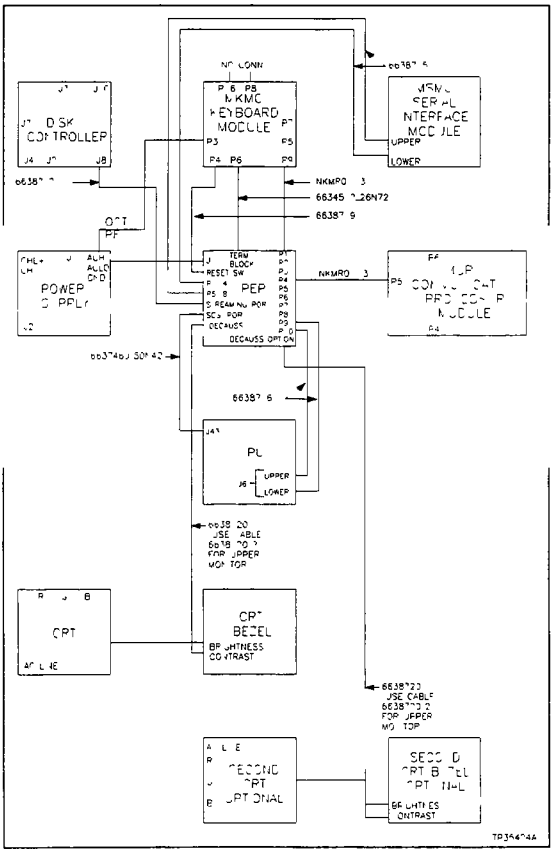


Figure 4 30 IIOIS20A/D Connections for Power Entry Panel

IIOIC202 Connector Panel for the Slide-In Power Supply

Bai ey Part Number - 6639225 1

The connector panel contains the incoming AC power termi nals, system circuit breakers, terminals for alarm contact outputs, system reset switch and the degaussing switches for the CRTs Table 4-12 contains the power entry panel cable connection

NOTE: The power entry panel is part of the s de-in power supply

On the connector panel, use the U degauss switch to correct picture distortion due to magnetic fields on the screen of the upper (swivel mount) CRT Use the L degauss switch to correct picture distortion due to magnetic fields on the screen of the lower cabinet mount CRT

Table 4 12 IIOIC202 PEP Connector Assignments

Connector Number	Use
P1 on the connector panel	Keyboard 1

The reset pushbutton resets the OIC to an initial power up condition when pressed

A terminal block with six alarm contact outputs connects annunciators to user defined alarms The terminal designa tion is printed on the panel beside the terminal The digital in (DI) and digital out (DO) terminals are configured from OIC software

On the power supply, the power indicator is lit when the AC power is connected to the PEP and the main power circuit breaker is on

Connect your static ground wrist strap into the wrist strap connector on the power supply before removing modules from the card cage.

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the card cage may result in equipment failure.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

Use either 120 VAC or 240 VAC to supply the IIOIC202 through the terminal block at the bottom of the panel

CAUTION	**Verify that the IIOIC202 is set up to receive 240 VAC if the supply circuit to the power entry panel is 240 VAC or equipment damage may result.**
ATTENTION	**Verifiez si le IIOIC202 est regle de facon a recevoir 240 V c.a. et si le circuit d'alimentation au panneau d'entree est de 240 V c.a., sinon le materiel pourrait subir des dommages.**

Wiring connections are shown in Figure 4 31 and Figure 4 32 Note that there are connections are on the back side of the power entry panel Access them through the door on the back of the OIC

The 24 volt alarm contact relay outputs are for alarm annunciation only Refer to ***SPECIFICATIONS*** in Section 1 for limits

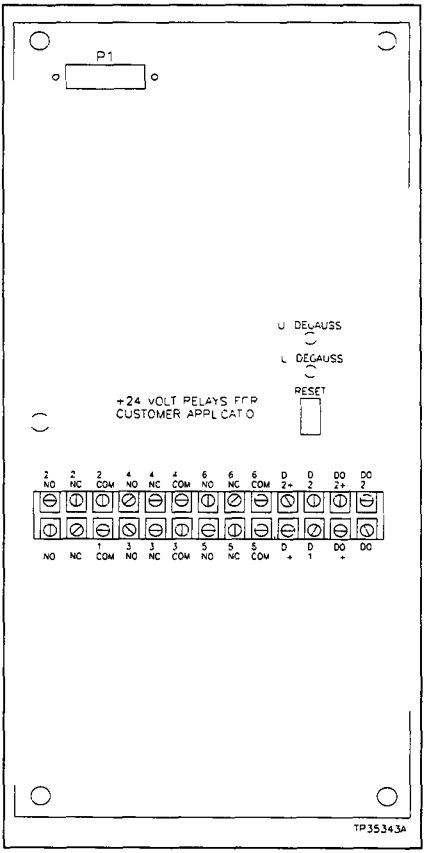


Figure 4 31. IIOIC202 Connector Panel for Slide In Power Supply

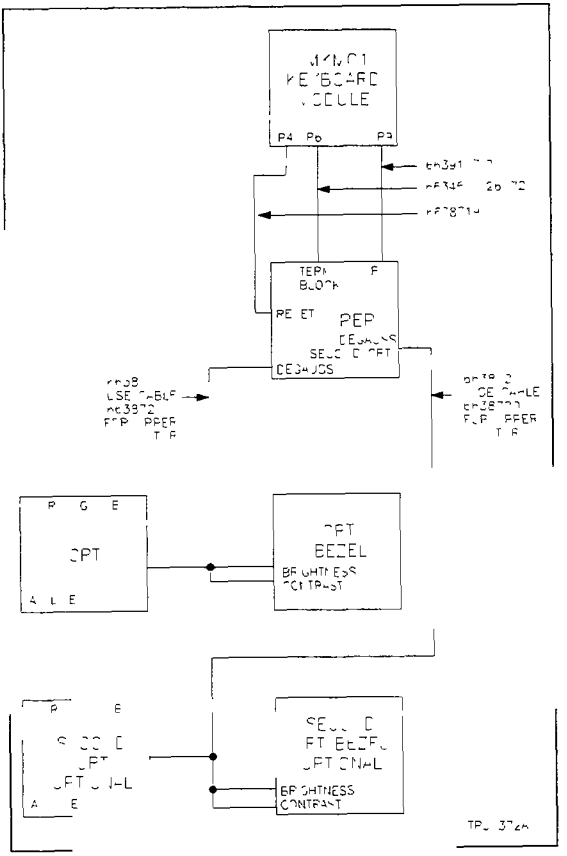


Figure 4 32 IIOIC202 Connections for Slide In Power Supply Connector Panel

IIOIS20 and IIOIS20A/D Main Power Supply

Ba ley Part Number 1948565 1

The IIOIS20 and IIOIS20A/D main power supply is a 500 watt power supply which provides power to all OIS multibus modules, disk drives and OIC multibus modules (see Figure 4-33).

Figure 4 34 shows the connections from the main power supply. Figure 4 35 shows the connections from the main power supply to the DC distribution board Figure 4 36 shows the connections from the main power supply to the backplane of the card cage Table 4-13 lists the power supply connections to the DC distribution board and the backplane of the multibus card cage.

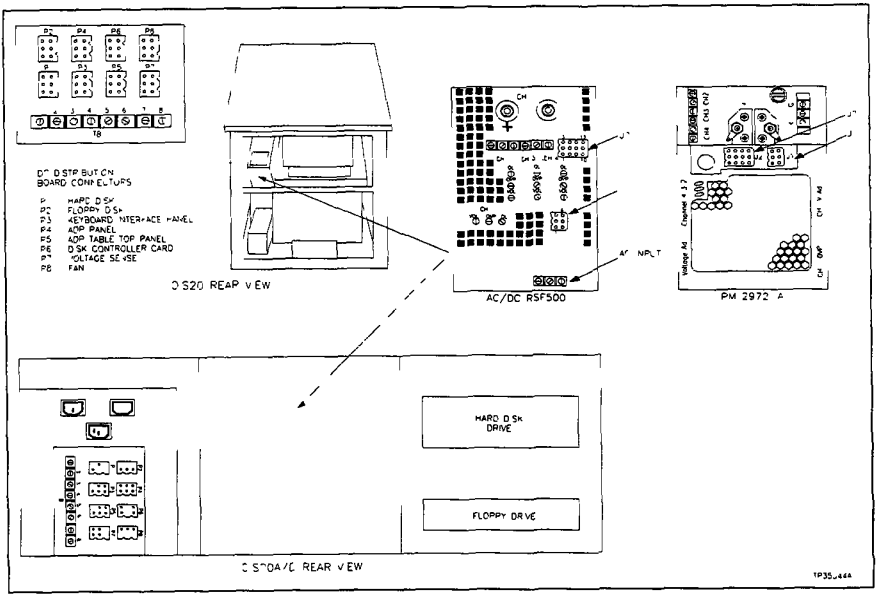


Figure 4 33. IIOIS20 and IIOIS20A/D Main Power Supply

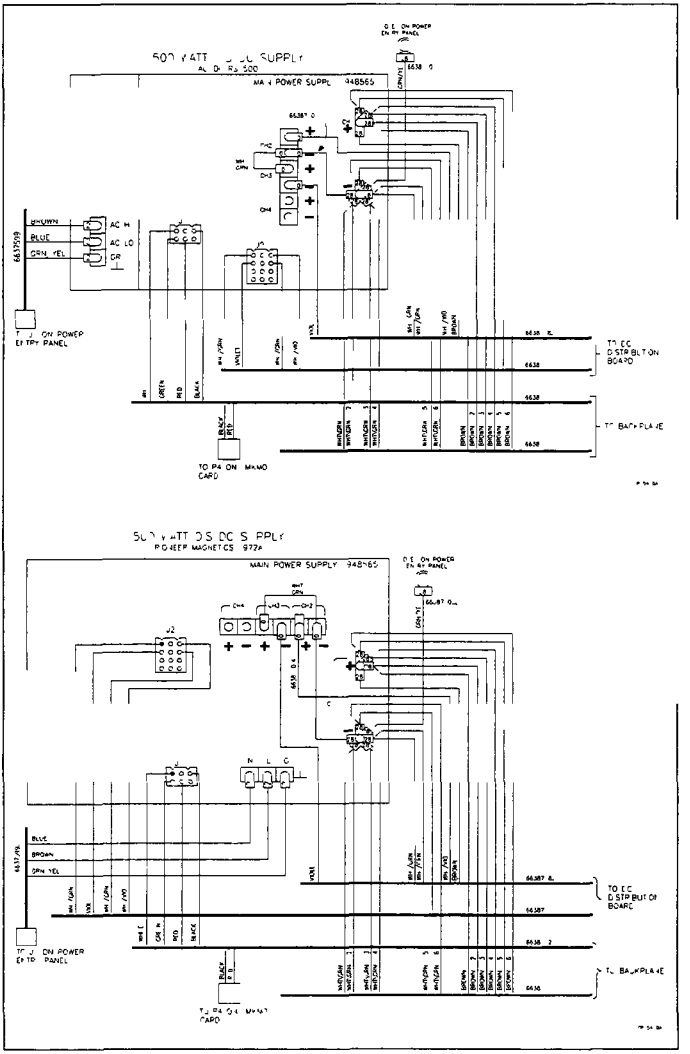


Figure 4-34 IIOIS20 and IIOIS20A/D Connections from Main Power Supply

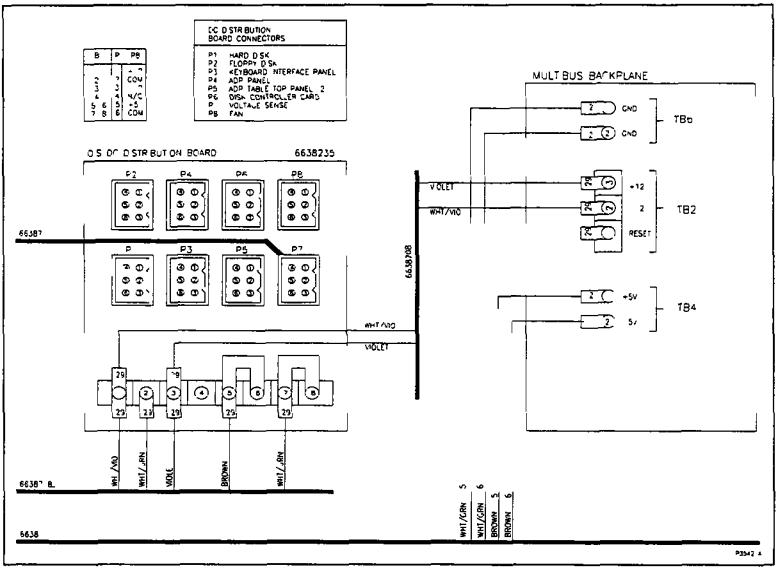


Figure 4 35. IIOIS20 and IIOIS20A/D Power Connections to DC Distribution Board

The DC distribution board is located at the top rear of the supply Each socket on the DC distribution board is wired identically Any peripheral device using power cable (6638713 1) may be plugged into any socket on this board

NOTE: This power supply is used in both the 120 volt and 240 volts OIS20 and IO S20A/D Check the switch on the side when replacing the power supply to make sure it is set for the voltage rating of the cabinet

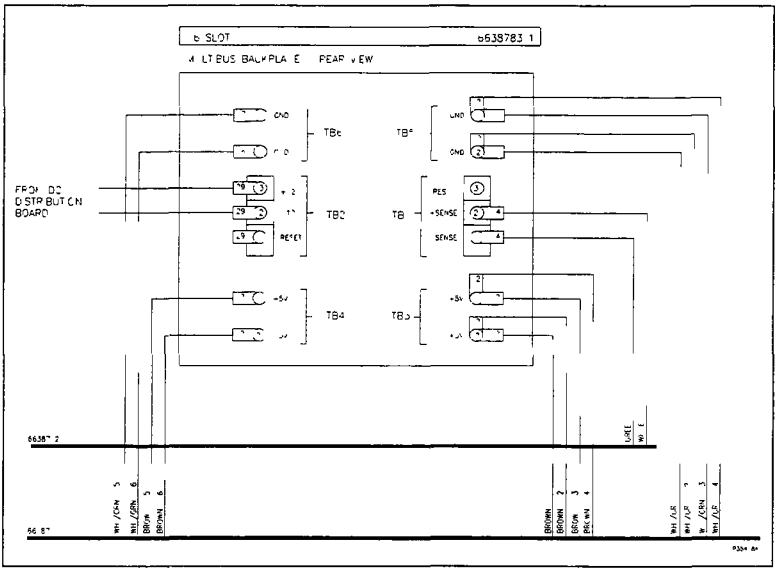


Figure 4 36 IIOIS20 and IIOIS20A/D Power Connections to Backplane

Table 4 13 IIOIS20 and IIOIS20A/D Power Supply Connections

500 W Main Power Supply DC Cable/Wire Connections					
Source			Destination		
Wire/Cable Number	From	Terminal	Wire Description	Terminal	To
6638708 1	DC D str but on	TB 1	White/V olet	TB2-3	Mult bus Backp ane
	DC D str but on	TB-3	Violet	TB2-2	
6638710 2	Ma n P/S	GND STUD	Green/Ye ow	E1	PEP
6638710_3	Ma n P/S	CH2 -	Wh te/Green	CH3 +	Ma n P/S
6638710 4	Ma n P/S	CH2-	White/Green	GND STUD	Ma n P/S
6638711 1	Ma n P/S	GND STUD	Wh te/Green White/Green White/Green Wh te/Green White/Green White/Green	TB5-2 TB5 2 TB5 1 TB5-1 TB6 1 TB6-2	Mu t bus Backp ane
		+5 V STUD	Brown Brown Brown Brown Brown Brown	TB3 2 TB3 2 TB3 1 TB3 1 TB4 1 TB4-2	
6638712 1	Ma n P/S	J1	Wh te Green	TB1-2 TB1 1	Mu tibus Backp ane
			Red Black	P3 P3	IMKM01
6638717_1	Ma n P/S	J2	Cable	P7	DC D str butution
6638718 1	Ma n P/S	+5 V Stud	Brown	TB 5	DC Distributution
		GND STUD	White/Green White/Green	TB-2 TB-7	
		CH3 - CH2 +	Vio et Wh te/V o et	TB 3 TB 1	

IIOIC202 Main Power Supply

Ba ley Part Number 1948564_1

The IIOIC202 main power supply (Figure 4 37) is a 130 watt power supply which provides power to all multibus modules and CRTs Figure 4 38 shows the connections from the main power supply Figure 4 39 shows the connections from the main power supply to the DC distribution board Figure 4 40 shows the connections from the main power supply to the backplane of the card cage Table 4 14 lists the power supply connections to the DC distribution board and the backplane of the multibus card cage

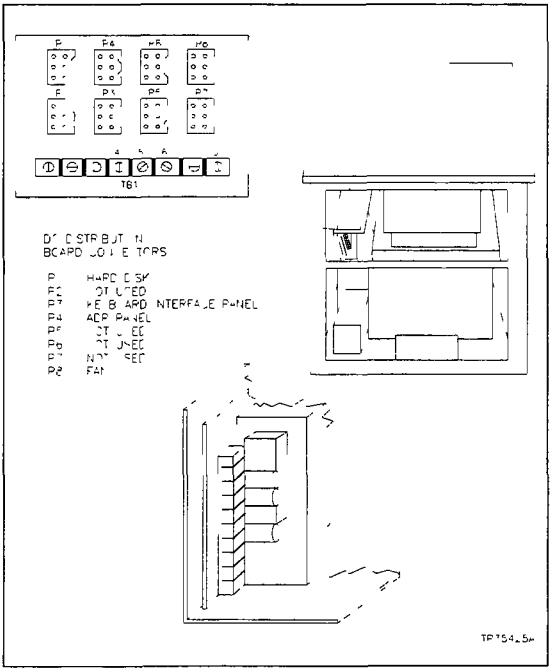


Figure 4 37. IIOIC202 Main Power Supply

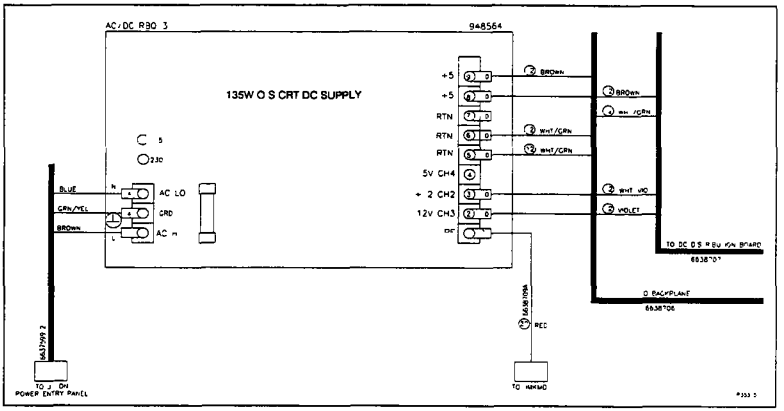


Figure 4 38 IIOIC202 Connections from Main Power Supply

The DC distribution board is located at the top-rear of the supply. Each socket on the DC distribution board is wired identically. Any peripheral device using power cable (6638713 1) may be plugged into any socket on this board

NOTE. This power supply is used in both the 120V and 240V IO C20 Check the switch on the side when replacing the power supply to make sure it is set for the voltage rating of the cabinet

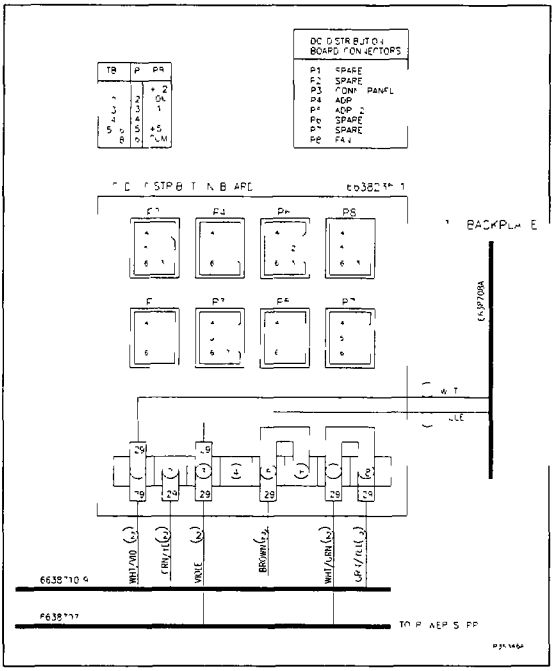


Figure 4 39 IIOIC202 Power Connections to DC Distribution Board

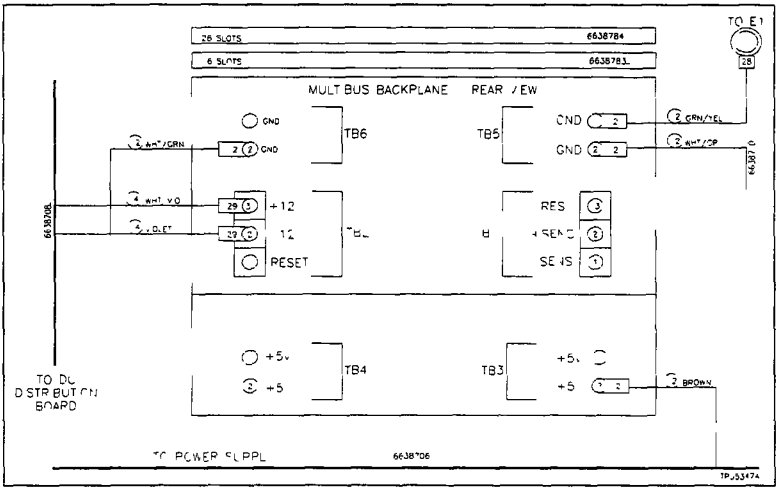


Figure 4 40 IIOIC202 Power Connections to Backplane

Table 4 14. IIOIC202 Power Supply Connections

135 W Main Power Supply DC Cable/Wire Connections					
Source			Destination		
Wire/Cable Number	From	Terminal	Wire Description	Terminal	To
6638706_1	Main P/S	TB 9 TB 6 TB 5	Brown White/Green White/Green	TB3 2 TB5 2 TB6 2	Multibus Backplane
6638707 1	Ma n P/S	TB 8 TB-7 TB-3 TB-2	Brown White/Green Wh te/V o et V olet	TB 8 TB 6 TB-1 TB 3	Multibus Backplane
6638708_1	DC D str but on	TB-1 TB 3	Wh te/V o et V o et	TB2 3 TB2-2	Mu t bus Backp ane
6638709 1	Ma n P/S	TB 1	Red	P3	MKM01
6638710 1	Mult bus Backp ane	TB5 1	Green/Ye ow	E1	PEP
6638710_9	DC Distribut on	TB-2	Green/Yel ow	TB 8	DC D str bution

IIOIC202 Slide In Power Supply

Ba ey Part Number 6639225 1

The IIOIC202 slide in power supply is a 135 watt power supply which provides power to all multibus modules and CRTs Figure 4 41 shows the connections from the slide in power supply Figure 4 42 shows the connections from the power supply to the DC distribution board Table 4 15 lists the power supply connections to the DC distribution board and the backplane of the multibus card cage

The DC distribution board is located at the rear of the power supply Each socket on the DC distribution board is wired identically Any peripheral device using power cable (6638713 0) may be plugged into any socket on this board

NOTI Th s power supp y s used n both the 120 vo ts and 240 vo ts I O C202 The supp y s autosens ng

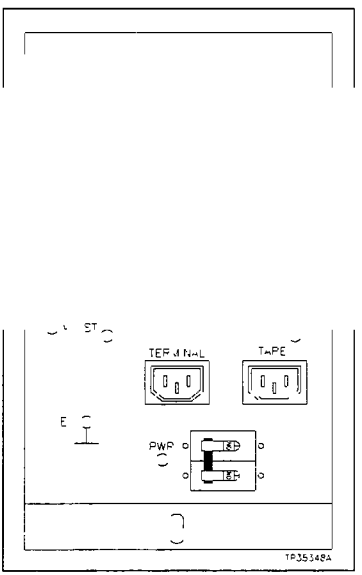


Figure 4 41 IIOIC202 Slide In Power Supply

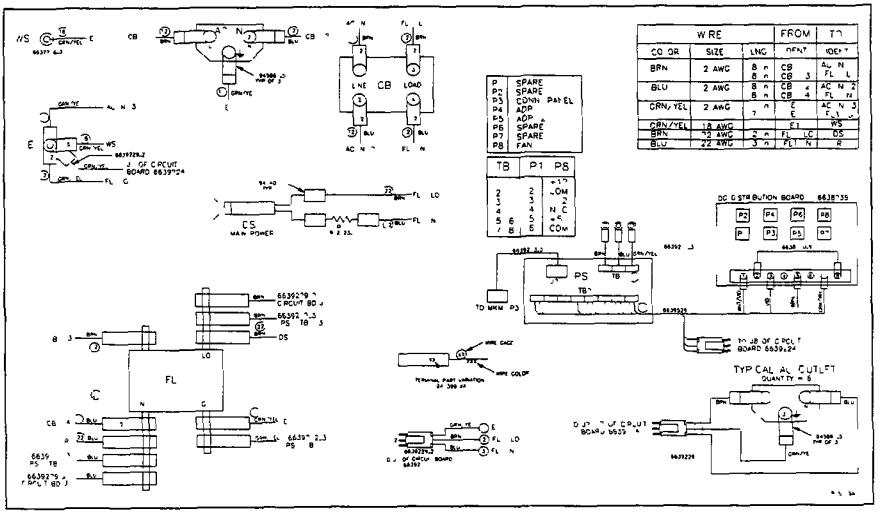


Figure 4 42. IIOIC202 Connections Inside the Slide In Power Supply

Table 4 15. IIOIC202 Power Supply Connections

135 W Main Power Supply DC Cable/Wire Connections					
Source			Destination		
Wire/Cable Number	From	Terminal	Wire Description	Terminal	To
6638708 1	DC D str but on	TB-1 TB 3	Wh te/Vıolet Vıo et	TB2-3 TB2 2	Mu t bus Backp ane
6638710 2	Main P/S	GND STUD	Green/Yellow	E1	PEP
6638710_3	Ma n P/S	CH2 -	Wh te/Green	CH3 +	Ma n P/S
6638710 4	Main P/S	CH2 -	White/Green	GN D STUD	Ma n P/S

Table 4 15 IIOIC202 Power Supply Connections (continued)

135 W Main Power Supply DC Cable/Wire Connections					
Source			**Destination**		
6638711_1	Ma n P/S	GND STUD	Wh te/Green Wh te/Green Wh te/Green Wh te/Green Wh te/Green White/Green	TB5 2 TB5 2 TB5 1 TB5 1 TB6 1 TB6 2	Mu t bus Backplane
		+5 V STUD	Brown Brown Brown Brown Brown Brown	TB3 2 TB3 2 TB3 1 TB3 1 TB4 1 TB4 2	
6638712_1	Ma n P/S	J1	Wh te Green	TB1 2 TB1 1	Mult bus Backp ane
			Red Black	P3 P3	MKN 01 MKN 01
6638717_1	Ma n P/S	J2	Red B ack	P7	DC D str button
6638718_1	Main P/S	+5 V STUD GND STUD	Brown Wh te/Green Wh te/Green	TB 5 TB 2 TB-7	DC D str but on
		CH3 CH2 +	Violet White/Vio et	TB-3 TB 1	

AC POWER

Refer to Section 3 for the location of the AC connections for the unit being installed Figure 4-43 shows the the AC wiring inside the power entry panel for IIOIS20, IIOIS20A/D and IIOIC202 The IIOIC203 is similar except that it has a trans former and switch for 120 VAC/240 VAC for the air conditioner IIOIC201/4/5 have similar internal AC wiring. The number of AC outlets is different

NOTE: Connect the dev ce on y to the out et labeled for that dev ce to prevent poss ble overloading of the outlet

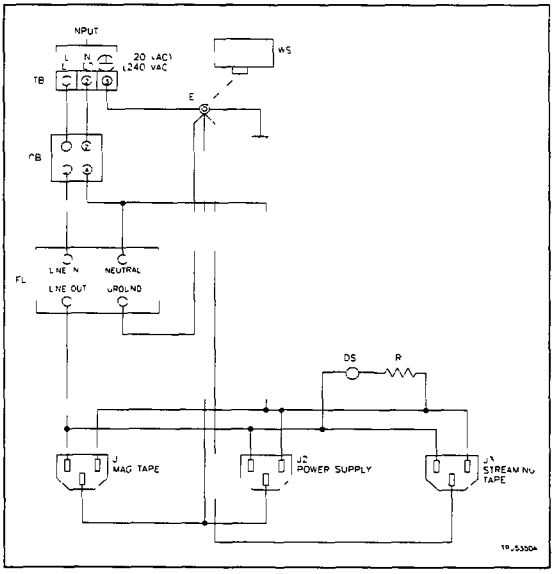


Figure 4 43 IIOIS20, IIOIS20A/D and IIOIC202/3 PEP AC Connections

SECTION 5 - OPTIONAL HARDWARE

INTRODUCTION

This section contains the optional hardware for the OIS/OIC and the installation procedures. Table 5 1 lists the optional hardware used in the Operator Interface Station, console (IIOIS20) and driver cabinet (IIOIS20A/D) This table also lists the hardware used for the Operator Interface Consoles, 19 inch table top (IIOIC201), console (IIOIC202), environmen tal cabinet (IIOIC203), panel mounted (IIOIC204), and 37 inch tabletop (IIOIC205) Refer to Section 4 for standard hardware

Table 5 1 Optional OIS/OIC Hardware

Part Nomenclature	Where Used							Description
	OIS		OIC					
	20	20A 20D	201	202	203	204	205	
6638514_1							X	Keyboard Assemb y
ADP01	X		X	X		X	X	Annunc ator/D sp ay Pane (tabletop)
AKB01	X		X	X	X	X	X	QWERTY Aux ary Eng neer ng Keyboard
AMS01	X		X	X		X	X	Mouse
ATB01	X		X	X		X	X	Trackba
ATS01	X		X	X		X	X	Touch Screen
DMT01		X						Magnetic Tape (rackmount)
IDMT02	X							Magnet c Tape Dr ve for Arch va Storage (tabletop)
IIDOP01		X						Opt cal Dr ve for Arch val Storage (rackmount)
DOP02	X							Tab etop Opt ca D sk
DST01	X	X						Streaming Tape Dr ve for Archiva Storage
MGC01	X	X						Mu t bus Graph cs Contro er Card (addit ona card)
PRT02	X	X						B ack and Wh te Pr nter
I PRT03	X	X						Color Pr nter
PRT04	X	X						V deo Cop er (co or)
PRT05	X	X						3 ack and Wh te Pr nter (h gh speed)
VTE01	X	X						Term na for D agnost cs/Start Up

OPTIONAL HARDWARE

Adding new hardware requires making the correct cable connections and making any required jumper and/or dipswitch settings. Specific installation procedures for individual components are given in the section with the option name.

Refer to Section 4 for details about standard OIS hardware.

Tabletop Annunciator Display Panel (ADP)

Bailey Nomenclature: ADP01

The tabletop annunciator display panel (ADP) provides an additional 32 lamps and pushbuttons. Each lamp and pushbutton is assigned to an OIS display. When a tag on a display goes into an alarm condition, the assigned ADP lamp turns on. Press the assigned pushbutton to cause the assigned display to be printed to the screen.

The IICIS20 and IIOIC202/3/4 can drive up to four annunciator display panels, one standard ADP and three tabletop ADPs. See Figure 5-1 for the dipswitch configuration. Refer to Table 5-2 for wiring connections to the ADP board.

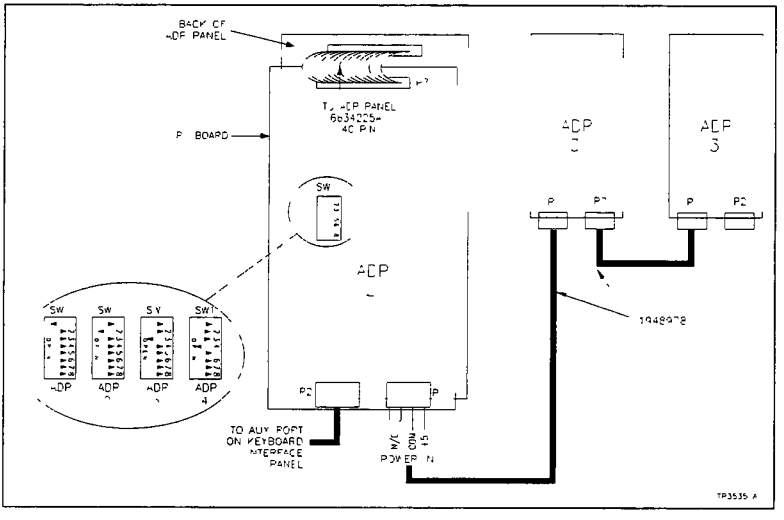


Figure 5-1. Tabletop Annunciator Display Panel

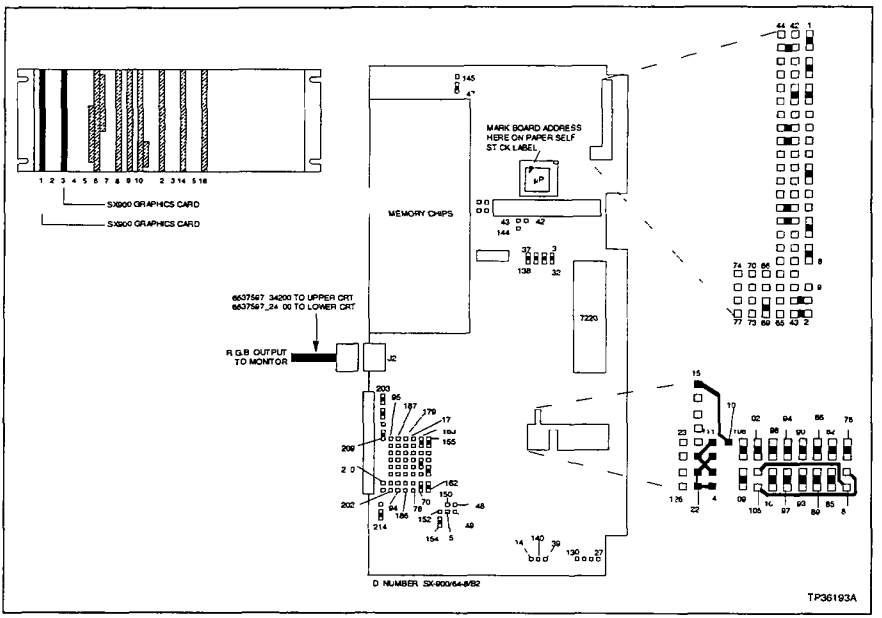
Table 5 2. Connections to Annunciator Display Board

From P1	From P2
To P1 on opt onal ADP Panel, use cab e assemb y number 1948978 1	To AUX port on keyboard interface panel use cab e number 1948978 1

Second Color Graphics Module

Ba ey Nomenc ature - MGC01

The second multibus graphics controller module is in slot three of the multibus card cage The multibus in the OIS can have up to two IMGC01 modules Up to two monitors can be connected to an IIOIS20, IIOIS20A/D or IIMGC01 A color graphics module is included for each CRT ordered. Each module must be configured by setting jumpers See Figure 5 2 for module locations and jumper settings Refer to the color monitor entry in this section for monitor wiring connections



NOTE Jumper configurations are not the same for slot 1 and slot 3

Figure 5 2. Configuring the Second Multibus Graphics Controller Module

Color Monitor

Bailey Part Number - 1948014 7 (33-inch monitor)
Ba ley Part Number - 1948623 6 (19- nch monitor)

Adding additional color monitors is model dependent. Refer to Table 5 3 for a list of available color monitor options. Refer to the color monitor entry in the part replacement procedures of Section 8 for steps to remove the monitor. See Figure 4-17 for the location of the 19 inch color monitor connections See Figure 5 2a for the location of the 33 inch color monitor connections

WARNING	**The CRT will slide out the rear of the IIOIS20 and IIOIC202 cabinet by itself when the mounting bolts are removed. Removing the rear two bolts without supporting the CRT could cause personal injury.**
AVERTISSEMENT	**Lorsque les boulons d'ancrage sont retires, l'ecran cathodique risque de sortir a l'arrier de l'armoire IIOIS20 et IIOIC20. Si les deux boulons d'ancrage arriere sont retires, il faut retenir l'ecran afin d'eviter toute blessure.**

Table 5 3 19 Inch Color Monitor Options

Nomenclature	Description
IO S202	One CRT mounted n cab net and one mounted on the upper CRT mount
IO C2022	One CRT mounted in cabinet and one mounted on the upper CRT mount

A second color monitor includes another IIMGC01 module See Figure 5-2 for module location and configuration information

1. Slide the IIMGC01 module into slot three of the host OIS multibus card cage and secure the two front latches.

2. Plug the RGB inputs into the socket on the front of the IIMGC01 module

3 Connect the cable from the IIMGC01 to the RGB connector panel in back of the host OIS below the main power supply

4 Connect the red, green and blue cable plugs to the correct connectors on the back of the monitor.

5. Plug the monitor power line into the proper socket on the back of the power entry panel

IIOIS20 and IIOIC202 NOTES:

1 Cab e number 6637597 24100 connects the lower monitor of the O S20 and OIC202 to the mult bus graph cs contro er board Cable number 6637597_34200 connects the upper mon tor to the mult bus graph cs contro er board Labe s R, G and B represent red, green and b ue, respect ve y

2 Max mum ength of RS-170 RGB Cab es s 250 feet For d s- tances over 250 feet, opt ca modems (NREM01) using up to 1000 feet of f ber opt c cab e (NKFM01 xx) are requ red

3 If remote CRTs are being nsta ed, nsure they are powered us ng the same polar zed power and ground as the O S and O C to prevent grounc oops Fa ure to do so may cause d sp ay d stort on f ground loops are stil suspected, use of opt ca ly so atec modems w l el m nate the problem

4 A n ne-p n D subconnector connects an externa br ghtness, con- trast and degauss control Use cable number 6638720 1 for the ower mon tor and cable number 6638720 2 for the upper mon tor Br ghtness and contrast contro s are mounted on the beze The degauss sw tch is mounted on the PEP

5 CRT w r ng connector ocation may be sl ght y d fferent for each model of OIS and O C

6 Br ghtness and contrast controls are ocated on the fror t pane of the power entry pane of the O C203

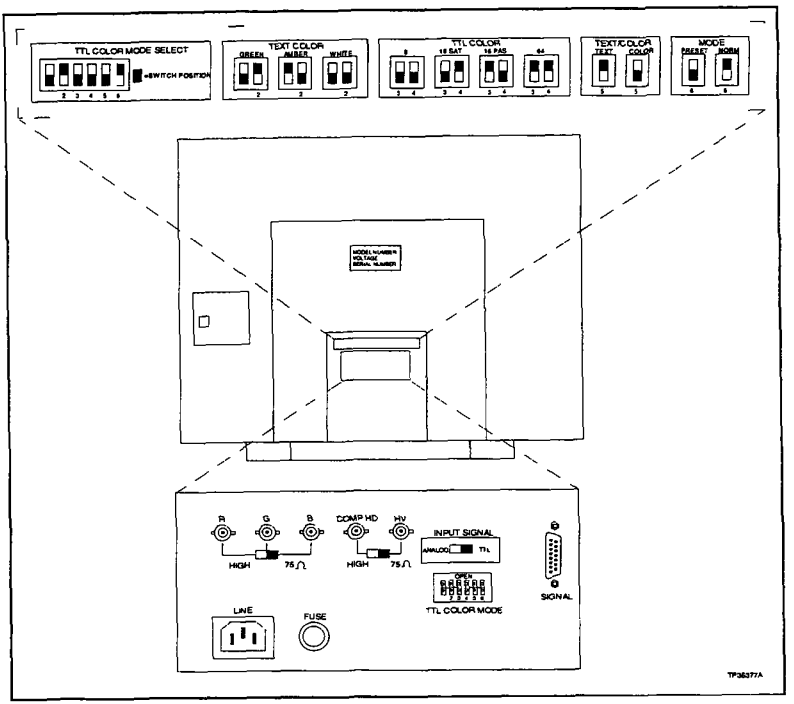


Figure 5 2a. Optional Color Monitor

Engineering Keyboard

Bailey Nomenc ature I AKB01

Each IIOIS20 and IIOIC202 console supports an additional engineering QWERTY keyboard The IIOIS20 and IIOIC202 keyboard plugs into a five pin DIN connector on the keyboard interface panel located to the right of the CRT and below the ADP panel Each OIC has a five pin DIN connector located on the keyboard interface panel. Figure 5 3 shows the IIOIS202 The connector is similar on the OIS and OIC models

Power does not have to be removed from the OIS or OIC before plugging in or unplugging the engineering keyboard Initializing the system is not needed after plugging in or unplugging the engineering keyboard.

NOTE: Some keyboards may have underside switches Set these switches to the f xed AT mode.

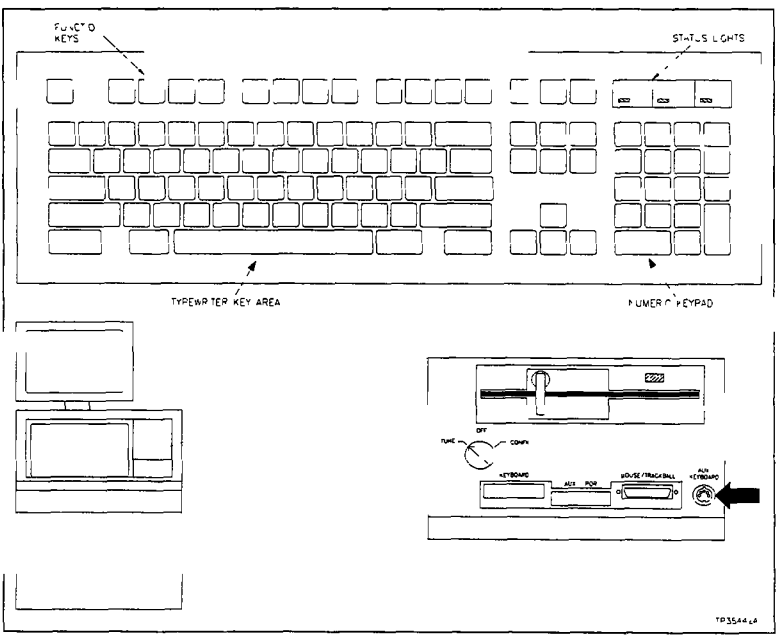


Figure 5 3. Engineering Keyboard Connector

Printer

Ba ey Nomenc ature PRT02/I PRT03/ IPRT04/ IPRT05

A maximum of two printers may be connected to the IIOIS20 or IIOIS20A/D Refer to Section 4 for socket placement on the power entry panel Plug the printer into the assigned AC receptacle on the back of the power entry panel. Table 5 4 lists the printers used by the serial interface

Table 5 4 OIS20/OIC20 Printers

Nomenclature	Description
I PRT02	B ack and White Printer
I PRT03	Co or Pr nter
PRT04	V deo Cop er (co or)
IIPRT05	Black and Wh te Pr nter (h gh speed)

NOTES
1 For d stances over 200 feet opt ca modems (us ng up to 1000 feet of f ber optic cab e) are re qu red

2 The ne cord must have so ated safety ground referenced to the same po nt as the O S e ec tron cs safety ground w thout connect on to condu t/structural ground AC receptacle must be so ated grou nd dup ex Pass and Seymour G6200, or equ va ent

SETUP

Steps 1 5 are for printers IIPRT02, IIPRT03 and IIPRT05 Printer IIPRT04 connections are in the color video copier system IIPRT04 section following this section For more information, refer to the manufacturers' documentation

1 Attach one end of cable NKMR01 to the printer DB25 serial connector Attach the other end to the OIS PEP printer port Tighten the connector hood screws

2 Turn printer power on

3 Press the **ON LINE** button on the printer to get local (Lo) mode

4 Press and hold the **PRG** button on the printer to print the current setup

5 If the setup values in this text do not agree with the printed listing for the XLS or XCQ, change the setup by pressing **1** to **9** to change the entry for that number on the listing and follow the prompts that are printed

GENICOM 3410 XLS

The Present Configuration is:
Firmware: 512621 Resolution: MED, Printhead: 18P

1 Font
Style (507339) DP 400 CPS 2/144
CPI - 10.0
Country USA
Mode Normal

2 LPI 6

3 Forms Control
Form Length 11 0
Top Margin 0 0"
Bottom Margin - 0 0

4 Interface Control
Interface Type Serial
Input buffer length 2048
Interface Straps A

0	1	2	3
123456789	0123456789	0123456789	012
000110000	0001000000	0100000001	000

Interface Straps B

0	1	2	3
123456789	0123456789	0123456789	012
110000000	0000000000	0000000000	000

Speed 9600
Parity None

5 Margin Settings
Left Margin 0 0
Right Margin 13 6

6 Horizontal Tab Stops
None

7 Vertical Tab Stops
None

8 Printer Control Straps
Printer Straps A

0	1	2	3
123456789	0123456789	0123456789	012
100010001	0110011000	0000010001	000

Printer Straps B

0	1	2	3
123456789	0123456789	0123456789	012
000001000	1000000001	0000010000	000

9 Emulation Mode Genicom ANSI X3 64

Press the number **0** to return to normal operation
To continue modification select **1 9**

GENICOM 3410 XCQ

The present configuration is:
Firmware: 512623 Resolution MED, Printhead 18P

1 Font
Style (507339) DP 400 CPS 2/144
CPI 10 0
Country USA
Mode Normal
Ribbon Type Process 4 Color

2 LPI 6

3 Forms Control
Form Length 11 0
Top Margin 0 0
Bottom Margin 0 0

4 Interface Control
Interface Type Serial
Input buffer length 2048
Interface Straps A

0	1	2	3
123456789	0123456789	0123456789	012
000110000	0001000000	0100000001	000

Interface Straps B

0	1	2	3
123456789	0123456789	0123456789	012
110000000	0000000000	0000000000	000

Speed 9600
Parity None

5 Margin Settings
Left Margin - 0 0
Right Margin 13 6

6 Horizontal Tab Stops
None

7 Vertical Tab Stops
None

8 Printer Control Straps
Printer Straps A

0	1	2	3
123456789	0123456789	0123456789	012
100010001	1110011000	0000010001	000

Printer Straps B

0	1	2	3
123456789	0123456789	0123456789	012
000001000	1001000001	0000010000	000

9 Emulation Mode Genicom ANSI X3 64

Press the number **0** to return to normal operation
To continue modification select **1** to **9**.

Color Video Copier System

Bailey Nomenclature - IIPRT04

The IIPRT04 is used to make a color hard copy of a display on the OIS CRT screen Do this by pressing the **COPY** button on the copier. Related products for the IIPRT04 are listed in Table 5-5

Table 5 5 Video Copier Related Products

Nomenclature	Description
1948439_1	Color Copier
1948440_1	V deo Processor
6634330N10	Centronics Cable
6637356_1-25	OIS Cable
1948465 1	Spare Ink Ro
1948464_1	Spare Paper 3o
NKMC01-25	RGB Cab e Assemb y
1945080_4	BNC Tee Adapter

OPERATION SUMMARY

The two parts to the color video copier are the video processor and the color copier

The function of the video processor is to capture all needed information from an OIS screen in a matter of seconds The video processor then sends this information to the color copier This frees up the OIS screen to enable an operator to continue with his work while the color copy is actually being produced The video processor has internal memory to store multiple screens When multiple screens are stored by the video processor, they are printed out in the order they were stored

The color copier is the device that makes the actual color copy It takes approximately 45 to 60 seconds to make a color copy of an OIS screen The copier makes three passes over the paper placing the yellow, red and blue colors on the paper separately. When each screen is printed, the copier aligns itself to make the next copy at which time the color copy just produced may be torn off at the perforation

INSTALLATION

After unpacking both the copier and video processor place them side by side

Configure Switches

Configure the dipswitches on the rear of the video processor (Figure 5 4) The following information may be useful when configuring the dipswitches

1 Termination for the red, green and blue video signals should be 75 ohms (S1 1 through S1 6 all down)

The signal levels for the video inputs are one volt nominal (S2 1 and S2 2 down)

2 Switch positions S2 3 and S2 4 are for setting the sync These switch positions should be set to sync on the green video input (S2 3 and S2 4 both down).

3 Switch 3 sets the attenuation of our video signals The signal levels for the video inputs are one volt nominal, set these switch positions to the high gain settings (S3 1 through S3 6 all down)

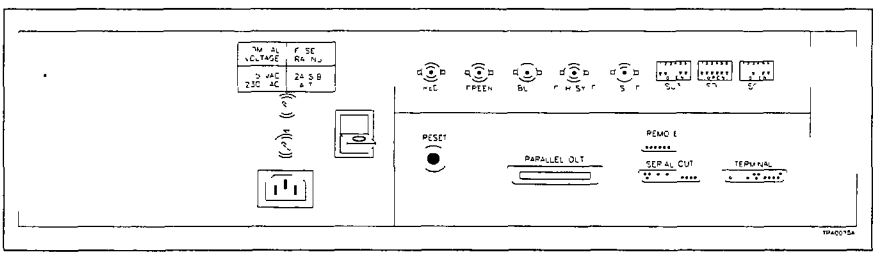


Figure 5 4 Back View of the Color Video Processor

Connect RGB Cables

Connect the red, green and blue video signals from the OIS monitor to the video processor with the NKMC01 RGB cable

If an Intecolor or other color monitor is used, use BNC tee adapters to make the connections from the graphics board to the monitor and from the monitor to the video processor To do this follow these steps

1 Connect the BNC tee adapters (P/N 1945080 1) to the red green and blue connectors on the back of the monitor Make sure the termination switch set to the high impedance setting (nonresistor) Connect the RGB output from the graphics board to one side of the BNC tee adapters

2 Connect one end of the NKMC01 RGB cable assembly to the other side of the BNC tee adapters Connect the other end of the NKMC01 cable to the red, green and blue inputs on the back of the video processor (Figure 5 4).

Connect Color Copier

Connect the video processor tc the copier with the Centronics Parallel cable (P/N 6634330 30N25)

1. Connect one end of the Centronics cable to the signal input on the back of the copier

2 Connect the other end of the Centronics cable to the parallel port connector on the back of the video processor.

3 Connect the OIS video processor cable from the remote port of the video processor to the OIS power entry panel relay contact that will be used to start the capture process Which relay contact will handle this function is user configurable. This relay contact will be controlled by the print command found on the command line menu of the OIS Bring up this menu by pressing the command line menu key on the OIS keyboard

Connect Video Processor

To complete the installation.

1. Connect the DB9 side of the OIS video processor cable to the remote connector on the back of the video processor.

2. Connect the two lugs on the other end of the cable to the relay contact to perform this function.

3 Connect the black wire tc the relay terminal labeled C (common) Connect the white wire to the relay terminal la beled NO (normally open)

Video Copier Configuration

To configure the video copier for printing·

1. Call up the *GENERAL PARAMETERS* option of the system configuration screen Refer to the operation and configuration manual

2 Select *Video Copier Relay No (1 12)* item on the screen, enter a number and press Enter

3 Press the **RESET** button on the power entry panel to restart the console after making the change The change will take effect after the console is back on line

4 From the logical relay screen:

a Select the logical relay to be used

b Select the physical relay to be used

c Select the keyboard interface to be used (1 or 2)

Printing a Screen

To print a screen display on the copier

1 Press **COM'D LINE MENU** to bring up the command line menu at the bottom of the screen

2 Enter **C** to assign a printer

3 Enter **0** to enable the copier

4 Press **COM'D LINE MENU** to bring up the command line menu bar at the bottom of the screen

5 Enter **D** to print a screen

6 Repeat Steps 1 and 2 to reset the printer assignments.

OPERATION

To make a copy, choose the *PRINT* option from the command line menu. When the **D** key is pressed, the OIS screen is frozen for approximately five seconds. As soon as the screen is frozen, the relay contact (selected in Step 3) starting the capture is closed for a minimum of 10 microseconds. This pulls the capture line on the video processor low A low on this line tells the video processor to start a screen capture The video processor then pulls all needed information off the red, green and blue lines of the OIS screen to make a color copy This takes about three seconds After all needed information is pulled from the OIS screen The screen is freed and the operator may continue with his work while the color copy is being produced

Gammadata Color Video Copier System

Ba ey Nomenc ature - PRT04 (A-s ze)

The IIPRT04 is used to make a color hard copy of a display on the OIS CRT screen Do this by pressing the up arrow on the copier until the LCD display shows the number of the monitor to be copied and then pressing the **EXE** button on the copier. Related products for the IIPRT04 are listed in Table 5 6.

Table 5 6. Video Copier Related Products

Nomenclature	Description
1948440 2	Video Processor
6637356_2 xx	O S Cab e
1948465 2	Spare Ink Roll
1948464 2	Spare Paper Ro l
NKMC01-25	RGB Cab e Assembly
*945080_4	BNC Tee Adapter

OPERATION SUMMARY

There are two main parts to the color video copier system These are the video processor and the color copier.

The function of the video processor is to capture all needed information from an OIS screen in a matter of seconds The video processor then sends this information to the color copier This frees up the OIS screen to enable an operator to continue with his work while the color copy is actually being produced The video processor has internal memory to store multiple screens. When multiple screens are stored by the video processor, they are printed out one after another in the order in which they were stored

The color copier is the device that makes the actual color copy. It takes approximately 45 to 60 seconds to make a color copy of an OIS screen. The copier makes three passes over the paper, placing the yellow, red and blue colors on the paper separately When each screen is printed, the copier aligns itself to make the next copy, at which time the color copy just produced may be torn off at the perforation

INSTALLATION

Unpack the copier with internal video processor See (Figure 5 5) There is no voltage select switch

1 Termination for the red, green and blue video signals should be 75 ohms.

The signal levels for the video inputs are one volt nominal

2. Set the monitor to sync on the green video input

3. Refer to the setup manual and setup map for the video copier. The signal levels for the video inputs are one volt nominal

Connect RGB Cables

Connect the red, green and blue video signals from the OIS monitor to the video processor with the NKMC01 RGB cable

If an Intecolor or Aydin color monitor is used, use BNC tee adapters to make the connections from the graphics board to the monitor and from the monitor to the video processor To do this, follow these steps

1 Connect the BNC tee adapters (Bailey Controls part num ber 1945080 1) to the red, green and blue connectors on the back of the monitor. Make sure the termination switch is set to the high impedance setting (no resistor) Connect the RGB output from the graphics board to one side of the BNC tee adapters.

2 Connect one end of the NKMC01 RGB cable assembly to the other side of the BNC tee adapters Connect the other end of the NKMC01 cable to the red, green and blue inputs on the back of the video processor (Figure 5 5)

Connect Video Processor

To complete the installation

1 Connect the DB9 side of the OIS video processor cable to the remote connector on the back of the video processor

2 Connect the two lugs on the other end of the cable to the relay contact to perform this function

3 Connect the black wire to the relay terminal labeled C (common) Connect the white wire to the relay terminal la beled NO (normally open)

OPERATION

Copy a screen by pressing the up arrow on the copier until the LCD display shows the number of the monitor to be copied and then pressing the **EXE** button on the copier The OIS screen is frozen for about five seconds As soon as the screen is frozen, the relay contact (selected in Step 3) starting the capture is closed for a minimum of 0.5 seconds and starts a screen capture. A screen capture takes about three seconds After all needed information is pulled from the OIS screen. The screen is freed and the operator may continue while the color copy is made.

The menu structure for the video copier is listed in Figure 5 6

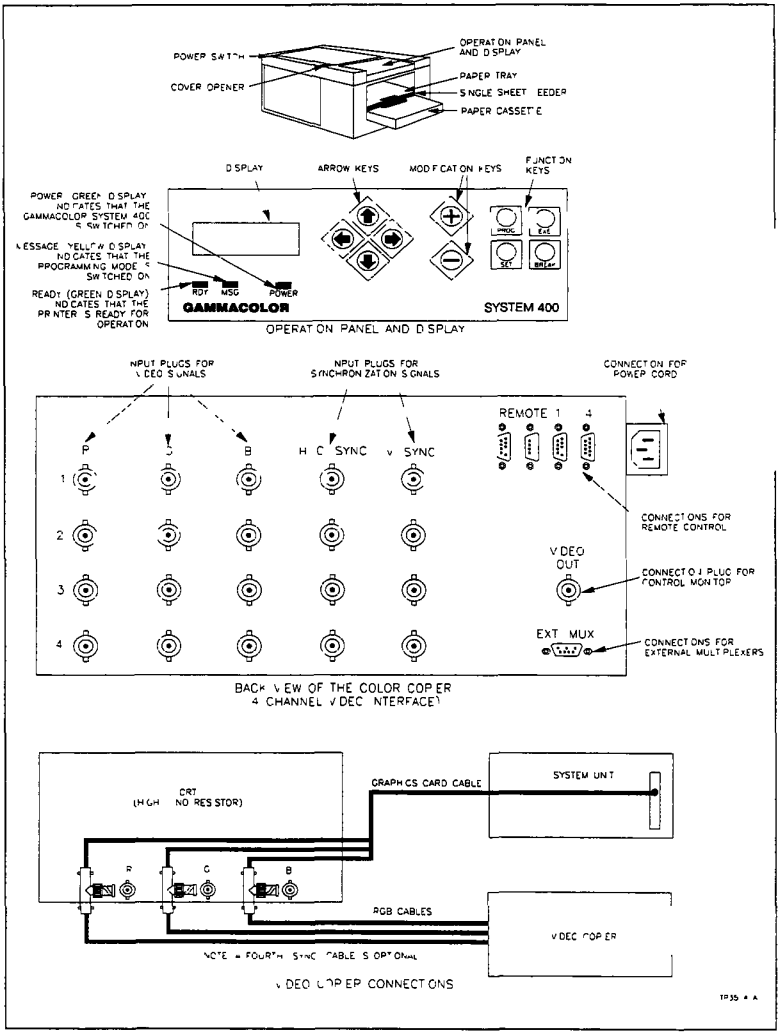


Figure 5 5 Gammadata Color Copier

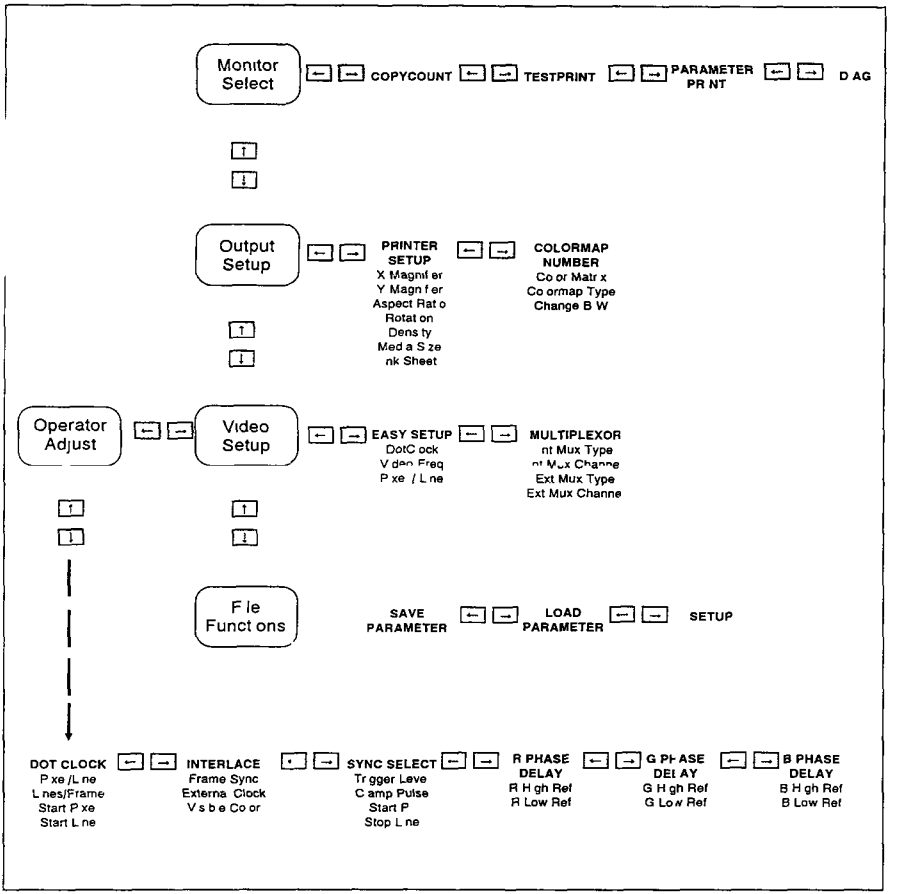


Figure 5 6 Video Copier Menu Structure

Streaming Tape Drive

Bai ey Nomenclature - DST01

The streaming tape drive peripheral consists of a 60 mega byte cartridge tape drive, interface and power supply It is used to back up the OIS hard disk with the command **BU** and restore with the command **RU** The backup/load process takes 40 minutes For 85 megabyte or greater drives, midway to completion of each command, remove the first tape and insert the second, if needed. The disk controller used by the OIS also controls the tape drive

The streaming tape unit is supplied with a Centronics D connector cable See Figure 5 7 to attach the cable (part number 6637714 1) between the power entry panel of the IIOIS20 and the streaming tape unit Centronics D connector receptacle. The IIOIS20A/D has a connector for the D recep tacle of the tape unit.

The tape drive unit contains a controller board which is configured by setting jumpers. The jumper settings are factory set and should require no further configuration. To verify the settings, see Figure 5 8

BACKUP AND RESTORE OPERATION

1. Connect a dumb terminal to P10.

2. Connect the tape drive to the streaming tape port on the IIOIS20 and IIOIS20A/D PEP.

3. Reset the OIS, and press **ENTER** on the terminal within seven seconds after the terminal displays the *SYSTEM RE START* message.

4 Enter the command **BU** to back up the OIS hard disk to tape, or the command **RU** to restore the hard disk from tape.

Backup tapes can be restored to different types of disk drives if the drive to be loaded has a larger capacity than the original Refer to Table 5 6a for hard disk drive compatibility.

Table 5 6A. Hard Disk Drive Compatibility

Model	Formatted Capacity (Bytes)
Pr am V150 M crosc ence Pr am V185	40, 427, 520 58, 720, 256 66, 863, 104
Maxtor XT-1085 Seagate ST4086 Pr am 519 Maxtor XT-2190	67, 108, 864 68, 198, 400 150, 282, 240 150, 282, 240

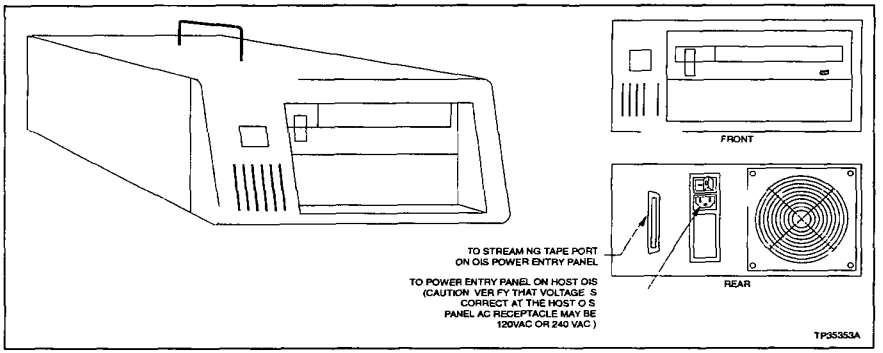


Figure 5 7. Streaming Tape IIDST01 Cable Connections

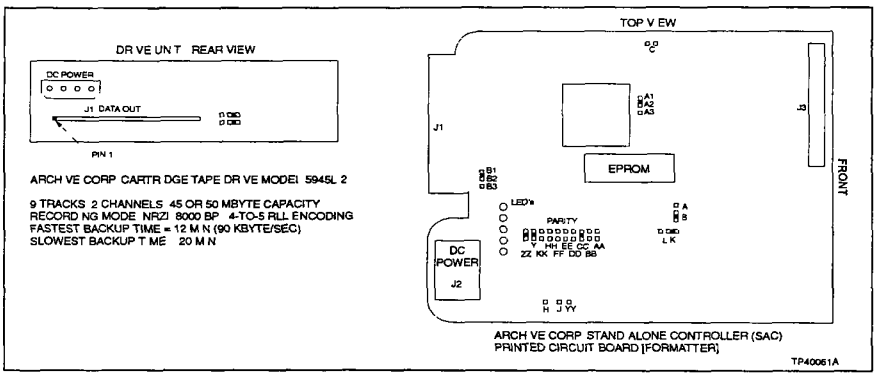


Figure 5 8. Streaming Tape Drive Jumper Settings

Nine Track Reel-to-Reel Tape Transport

Ba ey Nɔmenclature IDMT01/I DMT02

The nine track reel to reel tape transport is a nine track one half inch reel to-reel tape drive The IIDMT01 mounts in a OIS driver cabinet or IICWS01 work table base The IIDMT02 sits on a tabletop such as IICWS01 Table 5 7 lists the parts used by the IIDMT01/IIDMT02.

The IIDMT01 mounts in the IIOIS20A/D OIS driver cabinet It contains the components of the base tape drive and the parts listed in Table 5 8.

The IIDMT02 consists of the parts listed ın Table 5 9 in addition to the basic parts.

Table 5 7 Reel to Reel Tape (IIDMT01/02) Basic Parts List

Quantity	Part Number	Description
1	6637805	Prınt of Draw ng
1	194776_23001	3 A Slow B ow Fuse
1	1947950 5	Power Cord
1	1948863 50	Ribbon Cable Assemb y
1	1948380 1	Magnetic Tape Dr ve

Table 5 8 Reel to Reel Tape (IIDMT01) Parts List

Quantity	Part	Description Number
12	NTLAC19000	Lock washer
12	NMPCC16002	Nut
12	NANAU16008	Screw
4	6637702_1	Mounting P ate
1	6637701_1	Support Rod
1	6637698_1	Vent Pane
2	6637703 1	Support Pane
1	6637805 1	Base Magnet c Tape Dr ve

Table 5 9. Reel to Reel Tape (IIDMT02) Parts List

Quantity	Part Number	Description
1	1948863_50	R bbon Cab e
2	1948819_1	Magnet c Tape Un t, Tab etop Mode
3	1948604 1	Tape Reel, 2400 ft

REEL-TO-REEL TAPE UNPACKING

On the tape transport, open the hinged tape guide lid and remove the packing material (Figure 5 9) Unscrew retainers at the left and right front edges and lift the hinged transport mechanism, exposing circuit boards (Figure 5 10) Separate card frames and remove packing material from the boards Unpack CSC 100 SCSI adapter kit

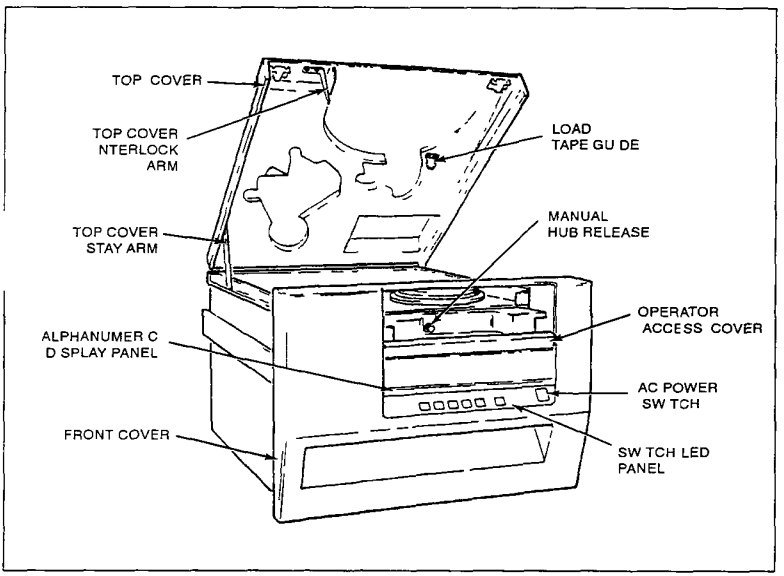


Figure 5 9 Reel to Reel Tape Drive Unit

REEL-TO REEL TAPE PREPARATION

1 At the right back of the M990 transport, locate a two pin, white nylon cable jack marked J9 and pass it out the open ing in the back of the case

2 In the event that no J9 connector is in the wiring harness, locate the provisioned J9 jack with one foot of white and black leads terminating in Faston lugs Clip the lugs, strip and splice the white and black leads to similarly colored wires in the harness Insulate with electrical tape (Feed connector through back of transport)

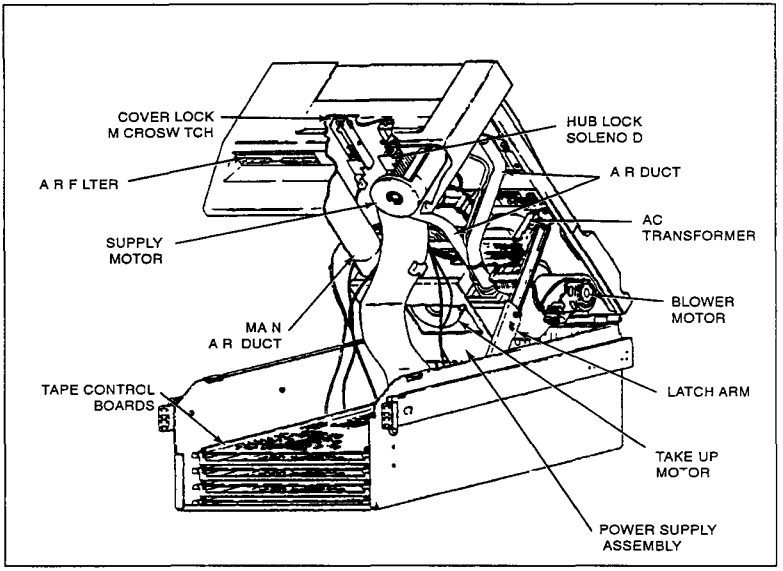


Figure 5 10. Reel to Reel Tape Transport Mechanism

3 Turn power on

4 Check for +48 VDC at white lead with respect to black ( ) Correct as needed.

5 IIOIS20A/D driver cabinet applications To install the nine track transport in a IIOIS2C A or D driver cabinet use the hardware provided with the IIDMT01 to mount the rails underneath the transport, rather than on the sides, as with the NMTP02. Locate the two support panels and orient with tabs pointing inward on each side. Open transport, unbolt the rack slide hinges and transfer them to the corresponding locations on the left and right support panels Mount support panels to transport sides, through the holes where hinges are mounted.

6 Detach and mount the rack rear section of each slide to front and back cabinet rack rails Mount it above the shelf of the NMED01 cabinet or, use the bottom rail pattern of IICWS01 work surface enclosure.

NOTE. When manua tape mounting cr serv ce is requ red the trans port must be hinged up in operat on

7 Lift transport into rail engagement in cabinet (requires a minimum of two people)

SCSI INTERFACE UNIT, CSC-100

1 Place unit upright, and remove two screws near tapered edge Lift open hinged lid.

2 Locate +48 volt power cable labeled 962031 and insert connector P1 in circuit board location J4, engaging cable plug in the chassis jack clip Seat ROMs in sockets

3 Route the loose P2 connector through the large cut out Close the box

4 Locate two six inch braided straps Put a box retaining screw through each straps lug, and fasten the box again

---

REEL-TO-REEL TAPE SETUP

1 Locate two 50 pin ribbon jumpers marked 961991. Orient the pin header P2 connector of each so striped edge located at the silk screened ½ then insert one each into board locations J1 and J2

2 Orient tapered edge of CSC 100 to view LEDs at left and dipswitches to their right (Figure 5 11) Set ID switches one through four open (up) and switch five of right most switch open

---

REEL-TO REEL TAPE SYSTEM CONNECTIONS

1 Rotate power selector at back of tape transport Set to appropriate voltage and frequency. If voltage is 200 to 240 VAC. unplug the unit and pop out (screwdriver ¼ turn counterclockwise) adjacent fuse holder and replace fuse with 3 amp slow blow fuse provided

2 Use the parallel blade cord from transport s IEC 320 receptacle to a spare receptacle as available If installed in an OIS driver cabinet, use IEC320 male to female cable part number 19447950 5 and connect to power entry panel mag tape receptacle

3 With front panel power switch rocked and left permanently on, (system running) measure voltage at transport back J9 connector. white wire and confirm that it is +50 VDC with respect to the black wire Correct as necessary

4 Turn off the OIS cabinet breaker and attach the CSC 100 units part number 962031 P2 connector to transport connector J9

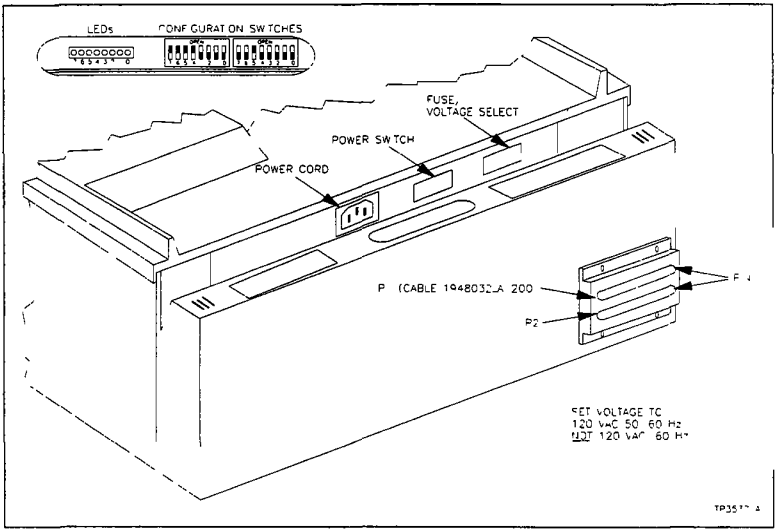


Figure 5 11. Reel to Reel Tape LED and Switch Location

5 Attach left and right ribbon cable P1 connectors to transport connectors P1 and P2 respectively Cables have stripe to right at transport back Do not cross the cables

6. Dress cable tagged 962031 and transport power cable down through trough, then hook CSC 100 on back of transport

7 Attach grounding/hanger straps to screws at left and right of transport. Arrangement needs to look like a swing, as installed

8 Dress the end of cable part number 1948863 50 having the strain relief connector down left and front sides of the card cage, striped edge down

9 Attach the other end to either connector on the back box of CSC 100, strips to right. Fully seat the connector

10 Attach cable part number 1948032 31200 to SCSI port on the OIS power entry panel

11 Remove fastener from squared off end of ½ inch tape 1200 or 2400 feet reel, and insert with tape uncoiling clockwise through hinge up doorway (Figure 5 12)

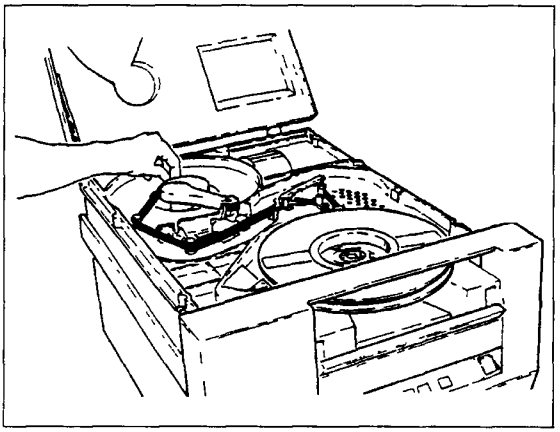


Figure 5 12 Loading Reel to Reel Tape

12 Fu ly seat tape on hub, then close door

13 Turn on power to each OIS cabinet, and immediately press transport's Load then On L ne Press the OIS Reset button a couple of seconds after turning the breaker ON Whenever the display does not confirm a successful load, load manually by

A Grasp lower left hand door release behind face plate, squeeze and slide out transport

B Lift hood (chock drops into position)

C Thread tape through maze then (holding tachome ter arm away) wrap six winds clockwise around take up hub

D Lift chock, close hood and retract transport

E While pressing Density, press Load, then press On L ne

Manual Load six wraps around takeup hub, press Dens ty, then Load

Optical Disk Storage

Bai ey Nomenclature - DOP01

Two optical disk models are available for the IIOIS20 The IIDOP01 rack mount unit used with the IIOS20A/D driver cabinet The IIDOP02 tabletop unit used with the IIOS201/2/3 console cabinet.

The IIDOP01 is a Cherokee™ optical disk drive data system with rack mount hardware. (Cherokee P/N 8831-2) Table 5 10 lists the contents of the IIDOP01.

Table 5 10. IIDOP01 Parts List

Quantity	Part Number	Description
1	6637858	Print Of Draw ng
1	1948497 1	Optical D sk Dr ve
1	1948497_3	Optica D sk Med a
1	1947950_5	Line Cord AC
1	1948863 50	R bbon Cab e Assemb y
1	6638124 1	Support Ang e
1	6638124 2	Support Ang e
2	6638125 1	Mounting C ps
12	NMPCC16002	Nut
12	NBJAU16010	Screw

The optical drive includes one blank double sided media cartridge Extra cartridges can be ordered with Bailey Con trols part number 1948497_7.

These instructions are IMPORTANT. To avoid damage to the optical disk drive unit, please read them thoroughly before attempting installation or applying power.

NOTE: In this instruction, IIDOP01 refers the disk dr ve and hard ware package When we refer to the d sk drive as a separate unit we cal the Cherokee P/N 8831 2 a disk drive un t (s ng e dr ve)

IIDOP01 UNPACKING

Carefully remove the disk drive unit drive from its shipping carton and verify its contents Save the shipping carton and packing material that accompanied the disk drive unit It can be used during moving and shipping to protect the unit against damage.

Table 5 11 lists the optical disk storage IIDOP01 carton contents

TM Cherokee s a trademark of the Cherokee Data System Inc

Table 5 11 Optical Disk Storage IIDOP01 Carton Contents

Contents	Description
M8831 2	Optical Disk Drive This self contained unit conta ns the disk dr ve SCSI contro ler and power supply n a 19 nch rack mount conf gurat on
Operators Manua	Th s manua conta ns detailed operat ng and ma ntenance instruct ons for the d sk drive unit
Power Cab e	Th s cab e connects the disk dr ve un t to a ocal power source
Optica Disk Med a	Double sided b ank disk with 320 Mbyte per side

Tools required for installation include a flat blade screw driver, a Phillips screwdriver, and a socket flat head number 4 40 wrench

IIDOP01 FEATURES

There are setup, operator and maintenance controls on the front and on the back of the optical disk drive These are the front panel controls

Power On/Off Switch

This pushbutton switch is located on the lower center of the disk drive unit Pressing the switch applies power Pressing the switch again will remove power When power is being supplied to the disk drive unit the switch is illuminated

Cartridge Release Button

This pushbutton switch is located just below the cartridge access door on the drive Depressing the switch allows you to rotate the lock/insert switch In the unlock (insert) condi tion, the select and ready lights flash alternately Refer to ***Select/Status Lights***

Figure 5 13 shows the front view of the IIDOP01 optical disk unit

Ready/Status Light

If the green ready status indicator stays on, the optical drives in the disk drive unit has optical media loaded and is await ing access from the host computer

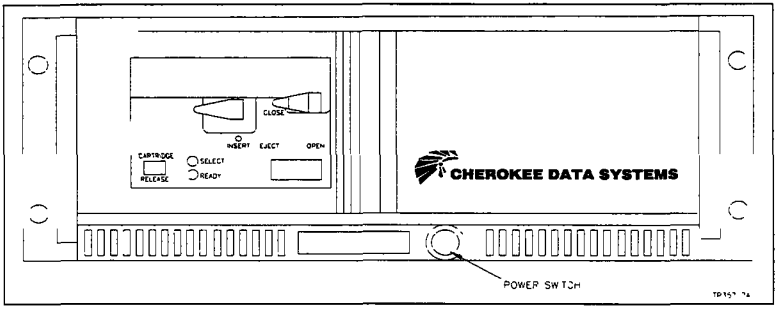


Figure 5 13. IIDOP01 Optical Disk Unit Front View

Select/Status Light

The red select status light indicates that the optical drive in the disk drive unit has been selected by the host computer which may be transferring data or status information

Media Access Door

Insert or remove storage media by opening the cartridge access door inthe front of the disk drive unit Open the door by rotating the door release knob from the close position to the open position. Prior to operation, the door release knob should be in the close position for reliable drive operation Opening or closing the door release knob does not require power to the drive

Back Panel Features

Figure 5 14 shows the back panel of the disk drive unit

This list contains the back panel features of the IIDOP01 disk drive unit

SCSI Connector
AC Power Input Connector
Fuse Holder
AC Power Input Setting
Drive Serial Number
SCSI Address Selector
Main AC Power ON/OFF Switch

SCSI Connector

The SCSI connector connects the host computer and the SCSI controller in the disk drive unit The SCSI connector is located in the right rear corner of the rear panel

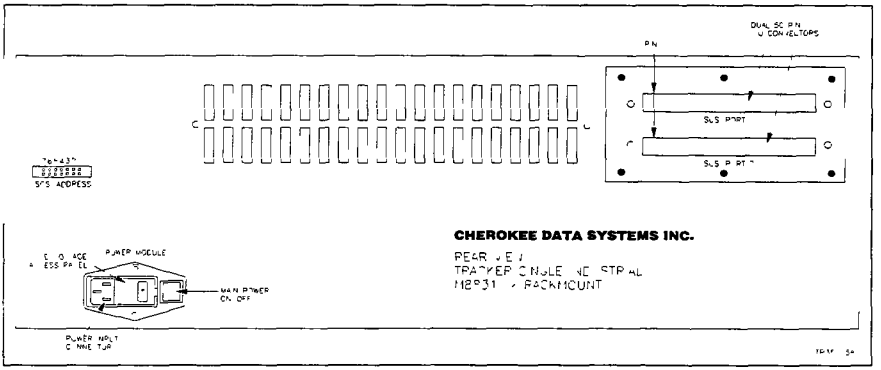


Figure 5 14 IIDOP01 Optical Disk Unit Back View

Power Input Connector

The power input connector provides power connection to the disk drive unit This connector is located next to the fuse holder at the lower left side on the rear of the disk drive unit

Fuse Holder

The fuse holder is located inside the fuse/voltage access panel on the rear panel of the disk drive unit

Power Input Setting

The power input setting is located inside the fuse/voltage access panel

SCSI Address Selector

The address selector is located on the upper left corner The SCSI address for the optical drive is assumed to be one by the system

Drive LUN Number

The factory set disk drive logical unit number (LUN) number is zero

Drive Serial Number

The disk drive unit serial number is located at the center of the back panel Figure 5 14 shows the back view of the IIDOP01 Optical Disk Unit

IIDOP01 INSTALLATION

To install the IIDOP01, first install and align the mounting bracket assembly Table 5 12 lists the required installation materials

Table 5 12. IIDOP01 Installation Hardware

Quantity	Description	Figure 5-14 Call Out
1	Print Drawing 6637858	
12	NBJAU16010 Screw	A
12	NMPCC16002 Nut	B
2	6638125_1 Mounting C p	C
1	6638124 1 Support Angle	D
1	6638124 2 Support Ang e	E

Rail Assembly

See Figure 5 15 to assemble the rack mount side rails (mounting bracket).

NOTE: Do not over t ghten the mounting cl p screws unt the ra s are adjusted to fit the r des red cab net

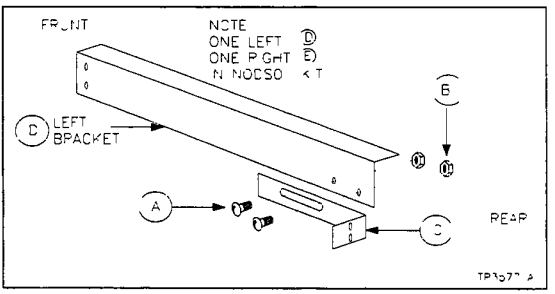


Figure 5 15 Mounting Bracket Assembly

Rail Alignment and Installation

1 Place the rails one at a time in the cabinet and adjust the length. Do this by lining up the front and rear screw holes on the bracket to the front and rear screw holes on the cabinet Figure 5 16 shows the screw hole location for bracket adjust ing Mark the mounting clip position on the support angle

2 Remove the rail assembly from the cabinet and tighten the mounting clip screws at desired length

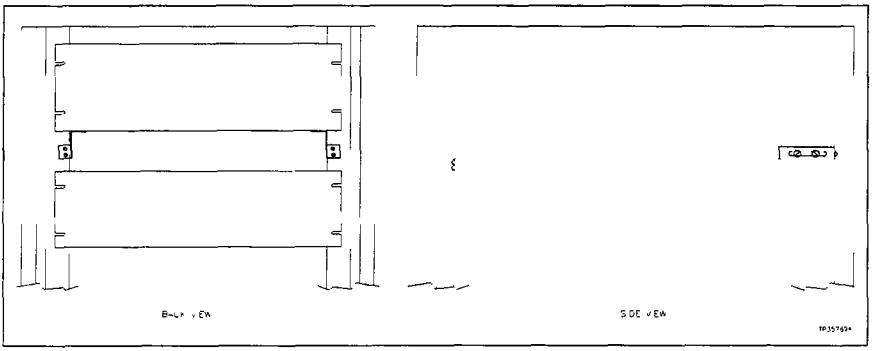


Figure 5 16 IIOIS20A/D Cabinet Mounting

3 After tightening the mounting clip screws, reinstall the rails and mount it to the cabinet using screws and nuts provided

NOTE Make sure rails are at equal heights on both sides of the cabinet

4 With rails firmly in place slide the disk drive unit in the cabinet on top of the rails and fasten the rack mount handle screws to the holes in the cabinet rack

Figure 5 17 shows the optical disk unit installed

IIDOP01 CONFIGURATION

1 Using the grounding strap to ground yourself to the computer chassis ground

2 Turn off the computer main power using power down procedures

3 Connect one end of the ribbon cable assembly to the SCSI port on the power entry panel and the other end to the I/O connector 1 or 2 of the disk drive unit.

NOTES
1 Observe pin 1 location when connecting the ribbon cable to SCSI interface board and optical disk drive
2 The SCSI ID selection for the disk drive unit has to be a one

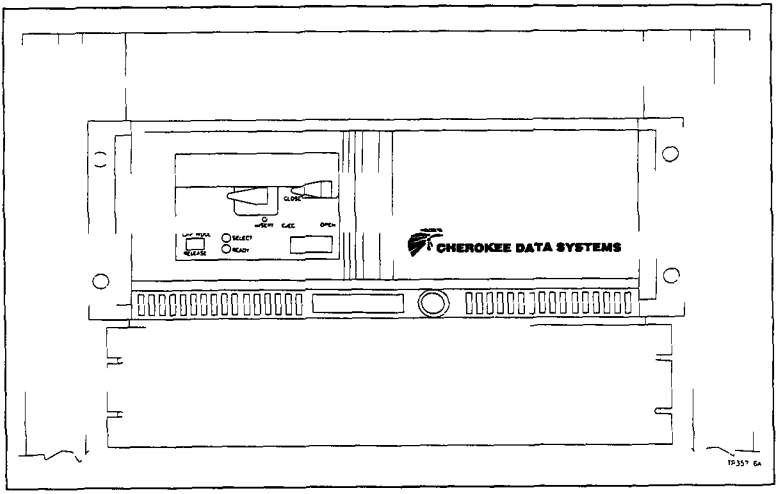


Figure 5 17. IIDOP01 Optical Disk Unit Installed

4 Plug the AC line cord into the power entry panel of the computer Termination of power is provided by the disk drive unit in all configurations.

Table 5 13 shows the SCSI ID selection jumpers

Table 5 13 SCSI ID Selection Jumpers

SCSI ID[1]	Pin 1	Pin 2	Pin 3
0	OFF	OFF	OFF
1	OFF	OFF	ON
2	OFF	ON	OFF
3	OFF	ON	ON
4	ON	OFF	OFF
5	ON	OFF	ON
6	ON	ON	OFF
7	ON	ON	ON

NOTES
1 Some rep acement un ts requ re removing the case to set a s m ar jumper pattern on the rear most circuit board

2 Th s tab e s ocated at the rear of the M8831 2 *

IIDOP01 POWER SETTINGS

The disk drive unit has been set at the factory for United States power, 120 VAC 47 to 440 hertz The disk drive unit may be operated on 120 VAC, 47 to 440 hertz or 240 VAC, 47 to 440 hertz by changing the input power setting

CAUTION	**Incorrectly setting the input power select may damage the disk drive unit.**
ATTENTION	**Un mauvais reglage de la selection de l'alimentation d'entree pourait endommager l'unite de disque.**

Changing the Power Setting

Change the input power setting by following these steps

1 Disconnect the AC power cord at the back of the disk drive unit

2 Locate the input power module at the back right corner of the disk drive unit

3 The input power access panel is below the power ON/OFF switch Using a flat blade screw driver, pry open the access panel Remove the voltage select wheel, turn to the proper voltage and replace The selected input voltage should be displayed

Fuse Replacement

The disk drive unit is protected with two fuses located at the back of the disk drive unit The fuse rating is 250 volts at 3 amps To replace a fuse, follow these steps

1 Disconnect the power cord at the back of the disk drive unit

2 Locate the input power module at the back right corner of the disk drive unit

3 Locate the fuse/voltage access panel located below the power ON/OFF switch Pry open the access panel with a flat blade screwdriver

4 Locate fuses below the power select wheel Remove the defective fuses The arrow on the fuse holder should point left

5 Close the access panel

IIDOP01 WIRING AND CABLING

1 Connect the 50 pin ribbon cable to the SCSI port on the OIS power entry panel. Connect the other end to either of the SCSI connectors on the back of the disk drive

The materials required are listed in Table 5 14

Table 5 14. Optical Disk Unit IIDOP01 Wiring Hardware

Quantity	Part Number	Description
1	1948497_1	Opt cal Disk Dr ve
1	1947950A5	AC L ne Cord
1	1948863_50	R bbon Cab e Assemb y
1		Gr3und ng Wr st Strap

NOTE. The disk drive unit should st be unplugged

2. Connect the SCSI terminator block to the other SCSI connector on the disk drive.

NOTE: This terminator must be instal ed for proper operat on

3. Plug the AC line cord into the power entry panel of the computer or into another AC outlet Power cords are provided for IEC320 and United States outlets. Be sure that the AC outlet matches the AC power selected on the disk drive

IIDOP01 OPERATION

Operation consists of using the disk drive unit and the stor age media Media types and how to use them in the disk drive unit are explained in this section

Power Up the Disk Drive

After you install the hardware with the steps in this section, turn power on by pressing the rocker switch on the back panel.

Optical Media

The disk drive unit can be used with either single sided or double sided media. The optical media is enclosed in a car tridge with spring loaded slides which open when the cartridge is inserted in the disk drive unit The banded end of the media cartridge is always inserted first into the optical drive In addition, there are arrows located on the cartridge indicating the proper orientation

Single Sided Media Single sided media permits recording on only one side of the media The user capacity of this media is in excess of 320 megabytes this does not include spare data tracks which are automatically allocated for use by the SCSI con troller defect management microcode Single sided media must be inserted A side up for proper orientation of the recorder surface to the optical recording head.

Doub e Sided Media Double sided media permits recording on both sides of the media Each side is capable of storing in excess of 320 mega bytes

Media Storage The optical media cartridge protects the media We recommend

1 When powering down the optical drive for extended peri ods of time Remove the optical media to protect it from damage.

2 The optical media cartridge should be stored in a dust free environment

3 The optical media will withstand storage temperature of 40 to + 75 degrees centigrade Do not store disks in extreme heat and sunlight

4 Optical media stored in excessively cold temperature should be given several minutes to reach temperature stabil ity before inserting it into the optical drive. This also helps eliminate condensation which may occur on an extremely cold surface.

Media Loading with Power

The media has two sides A and B. Choose which side will be used first (normally A)

If the lock/insert switch on the front panel is in the insert position, insert the optical disk cartridge (metal banded end in first) into the disk drive unit until encountering a firm stop A fully inserted cartridge will be totally contained within the drive Rotate the lock/insert switch to the lock position The optical disk will recalibrate and indicate a ready status (green light on front of panel)

Should the lock/insert switch be in the lock position, press the cartridge release button The select and ready lights will alternately flash This indicates that the lock/insert switch has been unlocked and may be rotated counter clockwise to the insert position

The lock/insert switch can only be rotated to the insert position while the select and ready lamps are flashing. If the lamps stop flashing before turning the switch to insert, the lock switch will again be locked in the lock position Press cartridge release button again and rotate the lock/insert switch to insert position while the lights are flashing, this may be repeated without damage to the disk drive unit A cartridge can now be inserted using the above procedure

Media Unloading with Power

To unload a cartridge from the disk drive unit with power applied, press the cartridge release switch. The select and ready lights will alternately flash indicating that the lock/in sert switch has been unlocked The switch may now be rotated counter clockwise to the eject position Rotate the switch until the cartridge is released and ejected from the disk drive unit The lock/insert switch is locked when it is in rotated in the lock position to prevent an accidental ejection of the cartridge The lock/insert switch may only be rotated from lock to insert when the cartridge release switch has been depressed and the select and ready lamps are flashing If the lamps stop flashing and the lock/insert switch has not been rotated, the cartridge remains loaded and the lock/in sert switch is again locked. Pressing the cartridge release switch again will unlock the lock/insert switch (select and ready flashing) and the lock switch may be rotated to the eject position ejecting the cartridge.

NOTE: If the cartridge re ease switch s pressed and the ock/ nsert switch has not been rotated, the cartridge remains oaded but the d sk drive unit is n a not ready condit c n

To bring the disk drive unit to a ready state (green light), press the cartridge release switch, wait until the select and ready lights flash, then press cartridge release again The disk drive unit will recalibrate and become ready

Media Unloading with No Power

You can remove an optical cartridge when unit power is turned off Do this by inserting a small, round rod (paper clip will be adequate), approximately one inch through the small opening above the insert label. This releases the lock/insert switch and the switch may be rotated to the eject position This method should only be used when power cannot be applied to the unit and removal of the cartridge is desired The optical disk cartridge should be removed from the unit before the unit is powered down. Leaving the cartridge in serted, leaves the media exposed with the cartridge access door open.

IIDOP01 TROUBLESHOOTING

The troubleshooting guide in Section 6 will help answer your questions. In addition, Cherokee provides assistance at (303) 776 0721 to answer additional questions on the disk drive unit When calling indicate that technical assistance is required and give the serial number of your disk drive unit.

IIDOP01 MAINTENANCE

The disk drive unit is designed for maintenance free operation There is only one maintenance procedure recommended for the disk drive unit and that is to clean the input filter This filter is located on the back panel. Remove clean and replace the filters when they are dirty by following the procedure in Section 7

Optical Disk Storage

Bailey Nomenclature - IIDOP02

Two optical disk models are available for the IIOIS20 The IIDOP01 rack mount unit used with the IIOS20A/D driver cabinet. The IIDOP02 tabletop unit used with the IIOS201/2/3 console cabinet.

The IIDOP02 Cherokee optical disk drive data system is a compact, tabletop configuration. It is used for archiving data, it cannot be used to back up the hard disk. Table 5-15 lists the IIDOP02 parts.

Table 5 15 Optical Disk Storage
IIDOP02 Parts List

Quantity	Part Number	Description
1	1948497_6	Optical D sk Dr ve Tab etop
1	1948758 1	SCSI Terminator
1	1947950A5	AC Line Cord
1	1948825_50	SCSI R bbon Cable Assembly

The optical drive includes one blank double sided media cartridge Extra cartridges can be ordered with Bailey Con trols part number 1948497_7

These instructions are IMPORTANT. To avoid damage to the optical disk drive unit, please read them thoroughly before attempting installation or applying power.

NOTE: In this instruction, I DOP02 refers the disk dr ve and hardware package. The Cherokee Model 612 is refered to as a disk drive unit

IIDOP02 UNPACKING

Carefully remove the disk drive unit drive from its shipping carton and verify its contents.

Save the shipping carton and packing material that accom panied the disk drive unit. It can be used during moving and shipping to protect the unit against damage

Table 5 16 lists the optical disk storage IIDOP02 carton contents

Table 5 16 Optical Disk Storage IIDOP02 Carton Contents

Contents	Description
M612 Opt ca D sk Dr ve	Th s se f contained unit conta ns the d sk dr ve, SCSI controller and power supp y n a 19 inch rack mount conf guration
Operators Manua	Th s manual conta ns deta ed operat ng and maintenance instructions for the d sk drive unit
Power Cab e	Th s cab e connects the disk drive un t to a oca power source
Opt ca D sk Med a	Doub e s ded blank disk w th 320 Mbyte per side

IIDOP02 FEATURES

There are setup, operator and maintenance controls on the front and on the back of the optical disk drive

Front Panel Controls

The front panel controls consist of the cartridge release button

Cartr dge Release Button This pushbutton switch is located just below the cartridge access door on the drive Press the switch and rotate the lock/insert switch In the unlock (insert) condition, the select and ready lights flash alternately Refer to ***Select/Status Lights***

Figure 5 18 shows the front panel of the IIDOP02 Optical Disk, disk drive unit

Ready/Status Light If the green ready status indicator stays on, the optical drives in the disk drive unit has optical media loaded and is await ing access from the host computer

Select/Status Light The green select status light indicates that the optical drive in the disk drive unit has been selected by the host computer which may be transferring data or status information

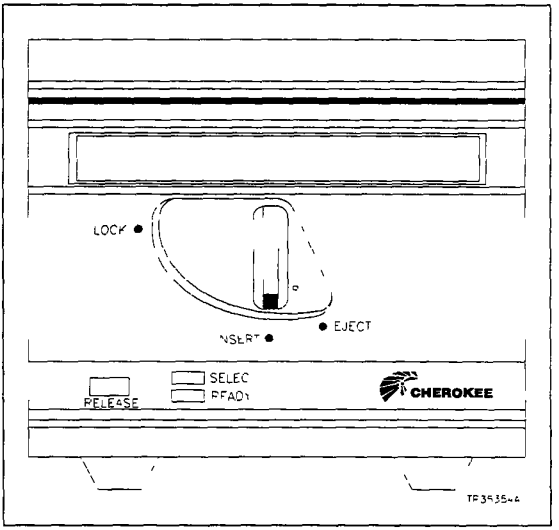


Figure 5 18 IIDOP02 Optical Disk Unit Front View

Back Panel Features

This list contains the back panel features of the IIDOP02 disk drive unit

SCSI Connector
AC Power Input Connector
Fuse Holder
Power On/Off Switch
AC Power Input Setting
Drive Serial Number
SCSI Address Selector
Main AC Power ON/OFF Switch

SCSI Connector The SCSI connector connects the host computer and the SCSI controller in the disk drive unit The SCSI connectors are located in the left back corner of the back panel

Power Input Connector The power input connector provides power connection to the disk drive unit This connector is located below the fuse holder at the lower right side on the back of the disk drive unit

Fuse Holder The fuse holder is located inside the fuse/voltage access panel on the back panel of the disk drive unit

Power On/Off Switch This pushbutton switch is located on the lower center of the disk drive unit Pressing the switch applies power. Pressing the switch again will remove power. When power is being supplied to the disk drive unit the switch is illuminated

Power Input Setting The power input setting is located inside the fuse/voltage access panel

SCSI Address Selectors The address selector is located on the upper left corner behind a sliding metal door Change the SCSI address by pressing the small button below the display.

SCSI Address The SCSI address for the optical drive is assumed to be one by the system

Drive LUN Number The factory set disk drive logical unit number (LUN) number is zero

Figure 5 19 shows the back panel of the IIDOP02 disk drive unit

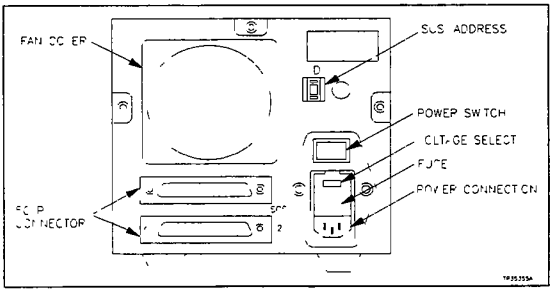


Figure 5 19 IIDOP02 Optical Disk Unit Back View

IIDOP02 DISK DRIVE SETUP

Power Settings

The disk drive unit has been set at the factory for United States power, 120 VAC 47 to 440 hertz. The disk drive unit may be operated on 120 VAC, 47 to 440 hertz or 240 VAC 47 to 440 hertz by changing the input power setting

CAUTION	**Incorrectly setting the input power select may damage the disk drive unit.**
ATTENTION	**Un mauvais reglage de la selection de l'alimentation d'entree pourait endommager l'unite de disque.**

Change the input power setting by following these steps

1. Disconnect the AC power cord at the back of the disk drive unit.

2 Locate the input power module at the back right corner of the disk drive unit

3. The input power access panel is below the power ON/ OFF switch Using a flat blade screw driver, pry open the access panel. Remove the voltage select wheel, turn to the proper voltage and replace. The selected input voltage should be displayed.

Fuse Replacement

The disk drive unit is protected with two fuses located at the back of the disk drive unit. The fuse rating is 250 volts at 3 amps To replace a fuse, follow these steps·

1 Disconnect the power cord at the back of the disk drive unit

2. Locate the input power module at the back right corner of the disk drive unit.

3 Locate the fuse/voltage access panel located below the power ON/OFF switch. Using a flat blade screwdriver, pry open the access panel.

4. Locate fuses below the power select wheel. Remove the defective fuses The arrow on the fuse holder should point left

5 Close the access panel

IIDOP02 WIRING AND CABLING

1. Use the grounding strap to ground yourself to the com puter chassis ground

2 Turn off the computer main power using power down procedures

NOTE The SCS ID selection for the d sk drive un t must be set to one for a app cations

3 Connect the 50 pin ribbon cable to the SCSI port on the OIS power entry panel Connect the other end to either of the SCSI connectors on the back of the disk drive

The materials required for Step 3 are listed in Table 5 17

Table 5 17 Optical Disk Unit IIDOP02 Wiring Hardware

Quantity	Part Number	Description
1	1948497 6	Optica D sk Drive Tab etop
1	1947950A5	AC Line Cord
1	1948825 50	Ribbon Cable Assemb y
1		Ground ng Wr st Strap

NOTE The disk drive unit should st be unp ugged

4 Connect the SCSI terminator block to the other SCSI connector on the disk drive

NOTE. Th s term nator must be nsta ed for proper operat on

5 Plug the AC line cord into the power entry panel of the computer or into another AC outlet Power cords are provided for IEC320 and United States outlets Be sure that the AC outlet matches the AC power selected on the disk drive

IIDOP02 OPERATION

Operation consists of using the disk drive unit and the stor age media Media types and how to use them in the disk drive unit are explained in this section

Power Up the Disk Drive

After You Install The Hardware With the steps in this section, turn power on by pressing the rocker switch on the back panel

Optical Media

The disk drive unit can be used with either single sided or double sided media. The optical media is enclosed in a car tridge with spring loaded slides which open when the cartridge is inserted in the disk drive unit. The banded end of the media cartridge is always inserted first into the optical drive. In addition, there are arrows located on the cartridge indicating the proper orientation.

Single Sided Media Single sided media permits recording on only one side of the media. The user capacity of this media is in excess of 320 megabytes. This does not include spare data tracks which are automatically allocated for use by the SCSI con troller defect management microcode. Single sided media must be inserted A side up for proper orientation of the recorder surface to the optical recording head

Double Sided Media Double sided media permits recording on both sides of the media. Each side is capable of storing in excess of 320 meagbytes

Media Storage The optical media cartridge protects the media We recommend

1 When powering down the optical drive for extended peri ods of time Remove the optical media to protect it from damage.

2 The optical media cartridge should be stored in a dust free environment.

3 The optical media will withstand storage temperature of 40 to + 75 degrees centigrade Do not store disks in extreme heat and sunlight.

4. Optical media stored in excessively cold temperature should be given several minutes to reach temperature stabil ity before inserting it into the optical drive This also helps eliminate condensation which may occur on an extremely cold surface

Media Loading with Power

The media has two sides A an B Choose which side will be used first (normally A)

If the lock/insert switch on the front panel is in the insert position, insert the optical disk cartridge (metal banded end in first) into the disk drive unit until encountering a firm stop. A fully inserted cartridge will be totally contained within the drive. Rotate the lock/insert switch to the lock position The optical disk will recalibrate and indicate a ready status (green light on front of panel)

Should the lock/insert switch be in the lock position, press the cartridge release button. The select and ready lights will alternately flash This indicates that the lock/insert switch has been unlocked and may be rotated counter clockwise to the insert position

The lock/insert switch can only be rotated to the insert position while the select and ready lamps are flashing If the lamps stop flashing before turning the switch to insert, the lock switch will again be locked in the lock position Press cartridge release button again and rotate the lock/insert switch to insert position while the lights are flashing This may be repeated without damage to the disk drive unit A cartridge can now be inserted using the above procedure

Media Unloading with Power

To unload a cartridge from the disk drive unit with power applied, press the cartridge release switch The select and ready lights will alternately flash indicating that the lock/insert switch has been unlocked The switch may now be rotated counter clockwise to the eject position Rotate the switch until the cartridge is released and ejected from the disk drive unit The lock/insert switch is locked when it is in rotated in the lock position to prevent an accidental ejection of the cartridge The lock/insert switch may only be rotated from lock to insert when the cartridge release switch has been depressed and the select and ready lamps are flashing If the lamps stop flashing and the lock/insert switch has not been rotated, the cartridge remains loaded and the lock/insert switch is again locked Pressing the cartridge release switch again will unlock the lock/insert switch select and ready flashing) and the lock switch may be rotated to the eject position ejecting the cartridge.

NOTE: If the cartridge release switch is pressed and the lock/insert switch has not been rotated, the cartridge remains loaded but the disk drive unit is in a not ready condition

To bring the disk drive unit to a ready state (green light), press the cartridge release switch, wait until the select and ready lights flash, then press cartridge release again The disk drive unit will recalibrate and become ready

Media Unloading with No Power

Remove an optical cartridge when unit power is turned off Do this by inserting a small, round rod (paper clip will be adequate), approximately one inch through the small opening above the insert label This releases the lock/insert switch and the switch may be rotated to the eject position

This method should only be used when power cannot be applied to the unit and removal of the cartridge is desired The optical disk cartridge should be removed from the unit before the unit is powered down. Leaving the cartridge in serted, leaves the media exposed with the cartridge access door open.

IIDOP02 TROUBLESHOOTING

The troubleshooting guide in Section 6 will help answer your questions. In addition, Cherokee provides assistance at (303) 776-0721 to answer additional questions on the disk drive unit. When calling indicate that technical assistance is required and give the serial number of your disk drive unit

IIDOP02 MAINTENANCE

The disk drive unit is designed for maintenance free opera tion. There is only one maintenance procedure recommended for the disk drive unit and that is to clean the input filter This filter is located on the back panel Remove, clean and replace the filters when they are dirty by following the proce dure in Section 7

Touch Screen

Ba ley Nomenclature IIATS01 Lower Mon tor
Bai ey Nomenc ature I ATS02 Upper Mon tor

A touch screen provides a means of selecting display options by touching the desired area on the monitor screen Up to two touchscreen controller cards can be mounted onto the IIMKM01 card The first touchscreen controller card mounts onto the component side of IIMKM01 card The second touchscreen controller card is identical to the first and mounts onto the solder side of IIMKM01 card Figure 5-20 shows the touch screen controller card connections The touch screen card interprets signals from the touchscreen CRT overlay and sends them to the IIMKM01 card. One touch screen may be installed per color monitor. This option requires the addition of a touch screen and touch screen controller card

Table 5-18 lists the parts included with the IIATS01

Table 5 18. Touch Screen Parts

Nomenclature	Description
1948026_3	19 in Touch Screen
1948027_3	Touch Screen Contro ler Module
1948644_5	Extension Cable for Touch Screen on the Upper Mon tor (IIATS02)

TOUCH SCREEN CONTROLLER CARD INSTALLATION

See Figure 5 21 for dipswitch settings and wiring connections of the touch screen controller card

NOTE Before you attach the touch screen r bbon cab e to the controller board ground the capac tive charge on the touch screen to the mon tor case ground

1 Insert one end of a straight pin or 24 AWG wire into either outside touch screen cable connector contact

2 Press the other end of the pin or wire to the monitor case ground

NOTE Fa ure to perform th s may damage the MOS FETS on the contro er by the stored charge from the 25 k lovo ts anode during p cture tube operat on

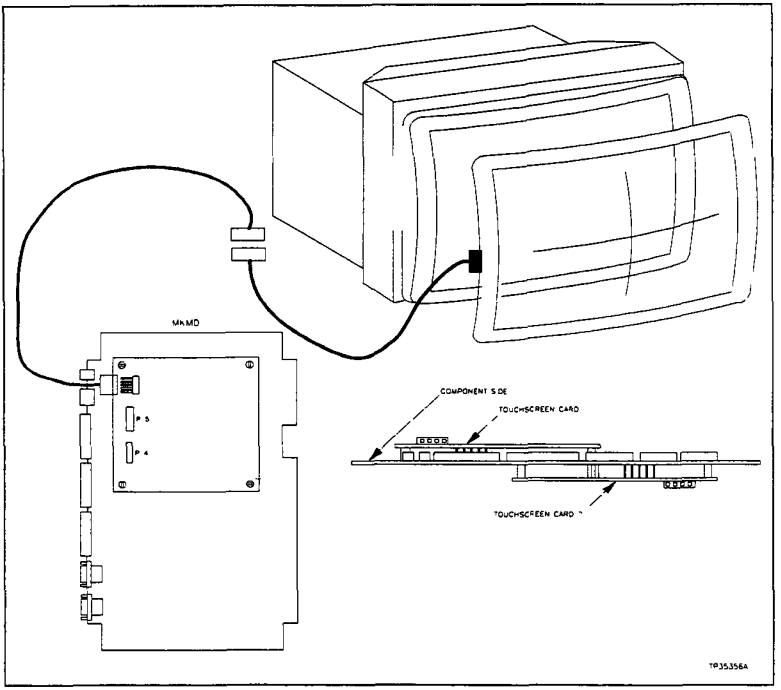


Figure 5-20. Touch Screen Controller Card Connections

TOUCH SCREEN INSTALLATION

Follow the directions in the touch screen installation kit

1 Remove the CRT by following the instructions in Section 6

WARNING	**The CRT will slide out the rear of the IIOIS20 and IIOIC202 cabinet by itself when the mounting bolts are removed. Removing the rear two bolts without supporting the CRT could cause personal injury.**
AVERTISSEMENT	**Lorsque les boulons d'ancrage sont retires, l'ecran cathodique risque de sortir a l'arrier de l'armoire IIOIS20 et IIOIC20. Si les deux boulons d'ancrage arriere sont retires, il faut retenir l'ecran afin d'eviter toute blessure.**

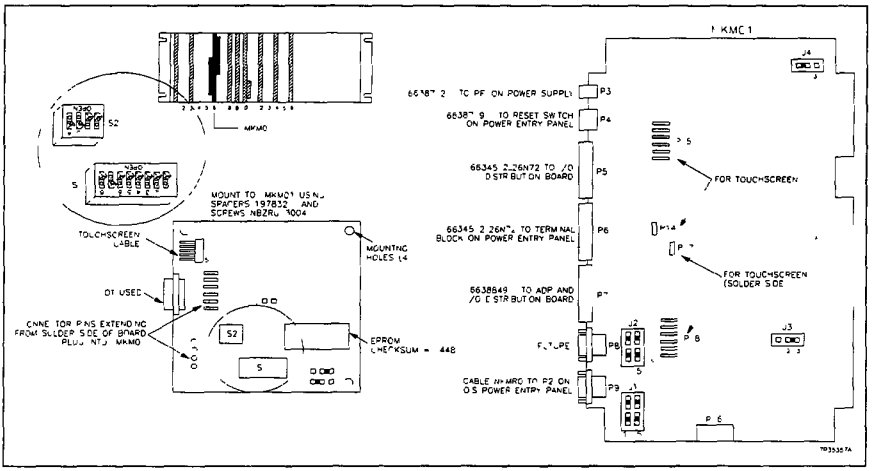


Figure 5 21 Touch Screen Controller Card Dipswitch Settings

Follow the directions in the installation kit to attach the touch screen to the face of the CRT Use the Velcro supplied in the kit

2 Connect the cable to the touch screen controller card Note that pin one on the cable has the red stripe. The touch screen controller card is attached to the IIMKM01 card with four nylon spacers and screws.

Touch Screen Calibration

Touch Screen Controller I D. Number E271-150C, part number 1947027_3

An on line calibration utility is provided in the software

NOTE: The ROM labe on the touch screen contro ler board must have the checksum 1448. If this checksum number is not on the ROM abel, contact the nearest Ba ey Controls serv ce representa tive to obta n an update

Trackball

Bai ey Nomenc ature ATB01

The trackball option permits faster cursor positioning during normal operator control or configuration The trackball plugs into the operator keyboard interface panel See Figure 5 22 for cable connections.

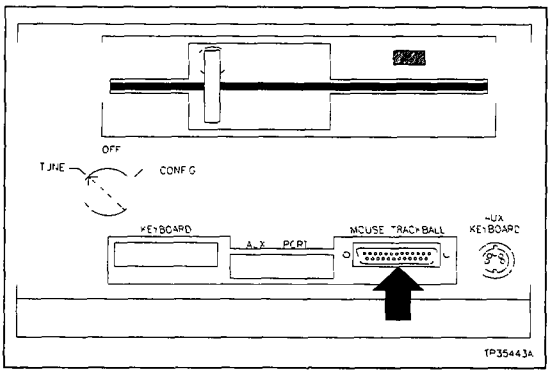


Figure 5 22. Trackball/Mouse Connections

Mouse

Bailey Nomenc ature - I AMS01

The mouse option permits faster cursor positioning during normal operator control or configuration The mouse plugs into the operator keyboard interface panel located to the right of the CRT See Figure 5 22 for cable connections

SECTION 6 - TROUBLESHOOTING

INTRODUCTION

This section explains how to troubleshoot the IIOIS20/IIOIC20. It contains troubleshooting tables, compo nent tests and firmware tests.

Replace components by following the procedures in Sec tion 8. Refer to information in Sections 4 and 5 when replacing parts. Review specific adjustments associated with replaceable parts before returning the system to normal op eration. Close and secure cabinet doors after troubleshooting or replacing parts in the IIOIS20/IIOIC20 before returning the system to normal operation

Be sure to follow all warnings, cautions and notes Put circuit boards containing MOS devices into antistatic bags when stored or shipped back to the factory. Do not repair printed circuit boards in the field. All repairs and adjustments should be performed by qualified personnel

TROUBLESHOOTING

The IIOIS20/IIOIC20 is shipped ready for operation After completing the instructions given in Section 3, prepare the unit for service. The troubleshooting guide in Table 6 1 helps identify problems and suggest solutions

Table 6 1. Troubleshooting Guide

Symptom	Possible Problem or Solution
No power ndicator on circuit	No AC power at OIS Check AC w ring on input Check AC on power entry pane Check breaker light on power entry pane
Breaker off but nd cator on	Check breaker contacts Check breaker w ring Check AC input wiring
No green ind cator (LED) on IIMPM0	Check power at supply Check ripp e at supp y Check fuses Check power at backplane Check IMPM0 LED Check a l IIMPM0 jumpers Check reset l ne and PF . Check reset sw tch (faulty?) Check remain ng modu e jumpers Check ROMs.

Table 6 1 Troubleshooting Guide (continued)

Symptom	Possible Problem or Solution
No green nd cator (LED) on I MPM0 (cont nued)	Check I MPM0_ cables Pull out modu es one by one - start with IIMGC01 module, then I MSM01 module, etc
Green LED comes on but goes off quickly	Check al power points as before Check all switch and jumper settings for all mod_les Check SAS d sk drive controller module hard disk drive floppy disk drive in combinat on, nc uding al cab es
No prompt or disk I/O or t me out	Check SASI - OMTI etc as above Check terminal sett ngs Check IMPM0_ /term na cable - RS-232 dr vers (1488, 1489) Check ROMS
Improper/ ncomp ete start up	See d agnostic message at start up for possible problems
Start up OK but no NIU response	Check N U settings (checksum on port A at 19 2 kbytes) Check N U cables Check MSM01 modu e jumpers Try us ng N U d agnost c port to test I MCL01/ MLM01/ MCP01 modules
Start-up OK but no keyboard response	Check IIMSM01 module and jumpers Check all cab es Check caps lock pos tion Check IMKM01 module Check OIS conf guration (keyboards/ pr nters) Check keyboard ass gnment
Start up OK no CRT picture	Check CRT AC power Check CRT fuse Check RGB cables Check MGC01 Check CRT switches (sync on green) Check 75 ohm term nation
No pr r ter response	Check AC power Check I MSM01 modu es Check cables Check printer setup Check OIS configuration (pr nters) Check pr nter d rectories (logg ng) for corruption

DIAGNOSTIC POWER UP TESTS

If the troubleshooting guide fails to identify a problem in the IIOIS20, IIOIS20A or IIOIC202, follow the AC and DC power test procedures. For tabletop models, refer to the manufac turers documentation. Check the IIOIC203 DC voltages on the DC distribution board and the AC voltages at the line input to the power entry panel

AC Power Test

NOTE: When the nstructions state to app y power to the O S/O C, switch the main breaker to the ON pos tion (see Figure 6 1) To turn off the power, sw tch the main circuit breaker to the OFF pos t on

1. Turn off power to the IIOIS20, IIOIS20A or IIOIC20 Dis connect AC power to all equipment inside the console by unplugging the line cords from the back of the power entry panel

2 Apply power to the OIS/OIC by switching on the line circuit breaker located at the front of the power entry panel (PEP)

3 Use a digital voltmeter to measure the AC power at each ot the outlets (J1 through J4) on the PEP. The line voltage should be 102 to 132 VAC RMS for a 120 VAC input and 224 to 252 VAC for a 240 VAC input

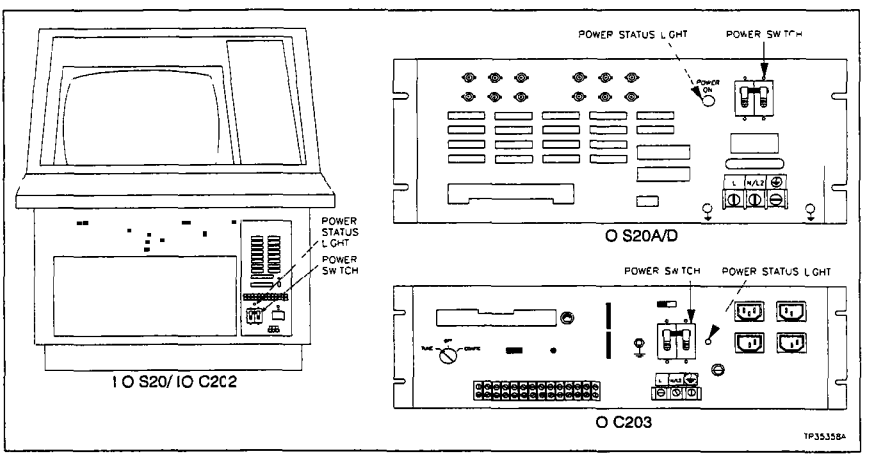


Figure 6 1. Main Circuit Breaker (CB1)

4 Use the digital voltmeter to check each outlet and insure that neutral, live and ground are wired correctly, and there are no ground faults See also Figure 4 41

5 Turn off the power to the OIS/OIC Verify that it removes power from all outlets

6 Plug the color monitor power cord into the AC socket in the rear of the PEP DO NOT plug in the main power supply yet. Apply power to the OIS/OIC Nothing will be displayed on the color monitor until the system software is loaded

DC Power Test

Necessary test equipment consists of a digital voltmeter.

1 Turn off power to the IIOIS20/IIOIS20A/IIOIC202

NOTE Do not d sconnect the power w r ng from the mu t bus card cage

2 Unplug DC power distribution cables from all peripheral devices (disk drives, disk drive controller module, ADP panel and keyboard interface board, if present) Disconnect the power cables at the distribution side of the cables.

3. Apply power to the OIS.

4 Verify operation of the output out of tolerance (OOT) sig nal by turning the main (+5 volt) power supply channel all the way down and monitor the OOT signal at pin 3 of J1 on the power supply The OOT should go from 0 volt (power good) to +5 volts (power out is not good) Verify that this causes the console to enter the reset mode Return the volt age to the normal value and verify that the OOT returns to +5 volts

NOTE. Th s step appl es on y to the OIS

5 Turn off the power to the OIS/OIC

NOTE Turn power off before removing or nsert ng mult bus modu es

6 Unplug all multibus modules from the card cage. The modules do not have to be pulled all the way out Pull them out only a few inches from the module edge connectors

7 Plug the power line cord for the power supply into the PEP.

8. Ensure that ALL power supply wiring is correct Refer to Section 4, Figures 4-32, 33 and 34, and Table 4-14 for the OIS power supply. Refer to Section 4, Figures 4-36, 37 and 38, and Table 4 15 for the OIC power supply Refer to Section 4, Table 4 15 for the OIC slide in power supply.

9 Apply power to the OIS/OIC.

10. Measure the DC voltages at the multibus card cage backplane. See Figure 4 4 for the location of the terminal blocks to measure the backplane voltages.

11 If necessary, adjust the DC voltages at the power supply (Figure 6-2).

Adjust the voltages to +0.25 VDC and 0 0 VDC of the follow ing values, if needed. A final adjustment will be made later with the power supply under load Measure the +5 00 VDC +12 00 VDC, and 12.00 VDC at the rear of the multibus backplane

NOTE:
1 Unstab e operation may result f the power supp y voltages are not in tolerance
2. DO NOT adjust the OL and OVP sett ngs. These adjustments are factory set.

12. Turn off the power to the OIS/OIC. Plug in all multibus modules.

13 Reconnect all DC power distribution cables.

14 Apply power to the OIS/OIC and check the DC voltage levels again. Adjust the power supply to obtain the voltage within a tolerance of ±0.05 volts.

MULTIBUS CARD CAGE AND SUBASSEMBLY TESTS

Multibus card cage and subassembly tests consist of running a set of software driven tests to confirm that each module or subassembly within an IIOIS20/IIOIS20A works by itself The sequence of testing first proves that lower level parts work correctly, then these parts are used to test the rest of the system. The tests assume that the power wiring is cor rect, and that the DC power levels, cable routing and cable connections are correct

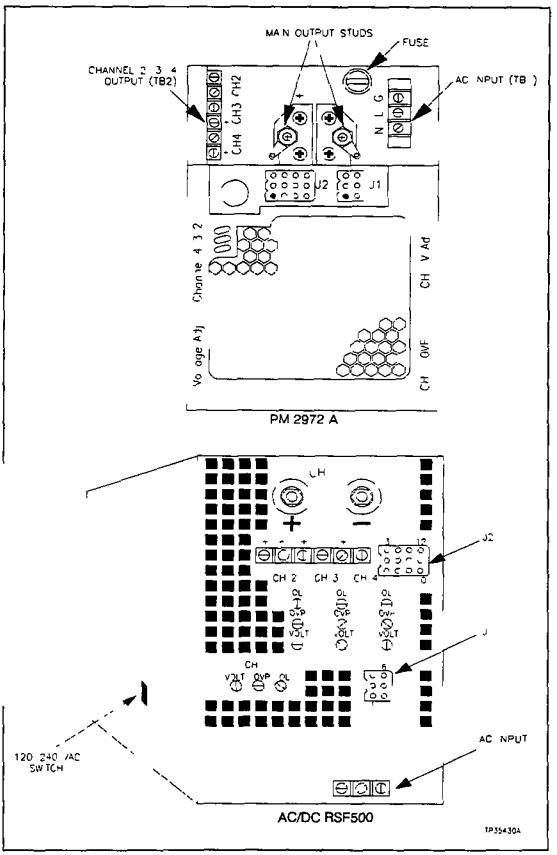


Figure 6 2 IIOIS20, IIOIS20A and IIOIC202 Main Power Supply

The equipment necessary for these tests is·

- A dumb terminal (Wyse 50, Falco 5500E or equivalent) part number: IIVTE01.
- A nine pin RS-232C cable (25 pin DB connector male to male) part number: NKMR01 25.
- A null RS 232C cable (nine pin connector with pins two and three crossed over) part number: HCBL02.

Initial Setup

Equipment set up to test the multibus.

NOTE: When a dumb terminal is connected to a mult bus processor modu e, it will be referred to as a Mon tor 68K term na

1 Connect a Monitor 68K terminal to the IIMPM0 (P10 on the PEP)

2. Using a standard nine conductor RS 232C cable with 25 pin D male connectors on each end, connect one end to the modem port of the terminal

3. Connect the other end to the channel A port on the IIMPM0 using P10 on the power entry panel.

4 Set up the Monitor-68K terminal for seven data bits one stop bit, no parity and 9600 baud.

Test Multibus Processor Module (IIMPM0_)

1 Connect the Monitor-68K terminal to the P10 connector on the PEP Apply power to the OIS

2. Enter the monitor mode by pressing Enter on the key board within seven seconds after applying power to the OIS, otherwise the operating system will load If this time frame is passed, reset the OIS and repeat this step.

After entering the monitor mode, the screen shows a new line and a *1.>* prompt

3. This is the processor self test. This is not a conclusive test of all features of the IIMPM0 Multibus Processor Module

Type. **PT** Enter

If this test is successful, the monitor shows a new line and a *1·>* prompt

If the test fails, the monitor may not respond display a memory register dump (a string of alphanumeric characters appearing on the screen) or display the message, *CPU ERROR* If the test fails, try checking all switch and jumper settings on the IIMPM0 module or try a new IIMPM0 . Re peat this test until the test passes

4 This step performs a memory block test on the memory.

Type **BT 1500 7FFFFE** Enter

Wait for a prompt or an error message If there is an error message, replace the IIMPM0 module and repeat the proces sor self test and the memory block test

If successful, this test returns a prompt in about one minute Continue when the prompt returns

Test Multibus Graphics Controller Module (IIMGC01)

Connect the Monitor 68K terminal to P10 on the power entry panel Press Enter on the terminal If this test is successful, the monitor shows a new line and a *1*-> prompt

NOTE. S nce the sw tch sett ngs d ffer on modu e one and two they are N OT nterchangeable

Test Multibus Graphics Controller Module One (IIMGC01)

This procedure describes self test status for the multibus graphics controller Use these commands to test the first multibus graphics controller module. To start the self test on the first IIMGC01 module:

Type **VT 0** Ente,
DM 3F90000 Enter

Within about six to seven seconds, the OIS monitor will display a series of blue, then green stripes The self test returns a prompt if it is successful If the self test fails, the message *Self Test Failed* will be displayed

NOTE. gnore the message *MEM ACCESS ERROR*

Refer to Table 6 2 for error codes. If the test fails, replace the card

Table 6-2 Multibus Graphics Controller Module Self Test Status

Code	Meaning	Action
10	I ega command	Ver fy syntax and enter aga n
11	Stack overf ow	Reset O S and test aga n
12	Stack underf ow	Reset O S and test aga n
13	Se f-test OK	Test complete, cont nue w th the next test
14	Program error	Reset OIS and test again
15	Circu ar buffer fu	
16	Reset comp eted	Test aga n
17	Iega track ng command	Ver fy syntax and enter aga n
18	Iega nk ng command	Reset O S and test aga n
19	I lega rubberband command	Ver fy syntax and enter aga n
1A	Do ng se f-test	Test n progress
1B	Se f-test fa	Test aga n
1C	CPU t meout	Reset O S and test aga n

If the code 1B appears a second time, repeat the IIMGC01 test after checking jumpers and wire wraps of each multibus graphics controller module.

NOTE: After the second consecut ve fa ure, replace the modu e

Test Optional Multibus Graphics Controller Module Two (IIMGC01)

This procedure describes self test status for the multibus graphics controller Use these commands to test the optional second multibus graphics controller module To start the self test on the first IIMGC01 module

Type. **VT 1** Enter

DM 3F90001 Enter

Within about six to seven seconds, the OIS monitor will display a series of blue, then green stripes The self test returns a prompt if it is successful If the self test fails, the message: *Self Test Failed* will be displayed

NOTE· gnore the message *MEM ACCESS ERROR*

Refer to Table 6 2 for a description of any error codes If the test fails, replace card

Test Multibus Serial Interface Module (IIMSM01)

1 Connect the Monitor 68K terminal to the P10 connector on the power entry panel Press Enter on the keyboard A *1:>* prompt will appear on the screen

2 Check for the presence of a multibus serial interface module by looking at memory locations in the area of each port (about 256 bytes of memory) Ability to access all ports shows that the serial interface module is properly addressed.

3 Multibus serial interface module test This test displays a list of ASCII characters The same pattern is displayed for each part of the test

Press Enter (the monitor displays a *1* > prompt)

Type		For
DM 1FA0000 100	Enter	Port 0
DM 1FA2000 100	Enter	Port 1
DM 1FA4000 100	Enter	Port 2
DM 1FA6000 100	Enter	Port 3
DM 1FA8000 100	Enter	Port 4
DM 1FAA000 100	Enter	Port 5
DM 1FAC000 100	Enter	Port 6
DM 1FAE000 100	Enter	Port 7

Test Disk System Functions

This nondestructive test returns a *1:>* prompt on a new line if successful If the test fails, one of the character codes in Table 6 3 is displayed on the monitor screen

On success of this test, the monitor displays a directory listing, one screen at a time If this test fails note the error, reset the OIS, press Enter, and repeat the directory read tests

1 To start the hard disk sector tests·

Press Enter (the monitor displays a *1*·> prompt)

Type **DT 0** (hard disk sector 0 test) and Enter.

2 To start the floppy disk sector tests

Insert a floppy disk into the floppy disk drive

Type **DT 1** (floppy disk sector 0 test) and Enter.

This nondestructive test returns a *1:>* prompt on a new line if successful. If the test fails, one of the character codes in Table 6 3 is displayed on the monitor screen

On success of this test, the monitor displays a directory listing, one screen at a time. If this test fails, the monitor displays the error messages in Table 6 3 Note the error, reset the OIS, press Enter, and repeat the directory read tests

If the test fails again check the connections to the floppy disk drive, hard disk drive, hard disk controller card, connecting cables, or the SASI card

3. To start the directory reads test. Further verify disk sys tem operation by listing the directory for each storage device

Press Enter (the monitor displays a *1:>* prompt)

Type **DI 0** (hard disk drive directory) and Enter

Insert SYS1 disk into the floppy disk drive.

Type **DI 1** (floppy disk drive directory) and Enter

A listing of file names appears with a prompt for more en tries Press Enter for more entries

If the disk system test fails, there is a
on the hard disk drive. Replace the storage device

Table 6 3. Disk Read Test Error Codes

Code	Meaning
02	Read error on the hard disk (The control er s communicat ng)
22	Read error on floppy d sk (The contro er is communicat ng)
FF	Data error on d sks T me out error on disk /O (Check the power supply and connectors)
1F	System (bus control er, d sk contro er, or d sk dr ve) error (Check the power supp y and connectors)
Vo ume not in t al zed	Directory vo ume not estab shed yet (Th s s not a prob em at th's time)

NOTES

1 f error code 02 or 22 s d sp ayed an error message can be cal ed up for more nformation Type RS0 for error code 02 and type RS1 for error coc e 22 Look up the four byte error message that is d sp ayed n the OMT d sk drive manufacturers manual for more nformation about the error

2 Error codes 02 and 22 ndicate that the controller is communicating Error codes 02 and 22 n d cate that the power supp y or dev ce connections need to be checked

EPROM DIAGNOSTICS

The OIS supports diagnostic system tests run with a termi nal The tests are located in the EPROM on the OIS multibus processor module The key functions listed in Table 6 4 are control commands for the diagnostic tests.

Commands can also be chained together when separated by semicolons (;)

Chaining the clock test command with other tests provides a timer Single tests can be chained together

To run the ROM based diagnostics, connect a Monitor 68K terminal to P10 on the power entry panel, then press the OIS reset button The message

SYSTEM RESTARTED
ENTER MONITOR BY PRESSING <RETURN>
OTHERWISE MTOS WILL AUTOLOAD IN 7 SECONDS.

will be displayed on the terminal screen Press [Enter] within seven seconds to enter the Monitor 68K terminal program A *1 >* prompt will appear on the terminal Type **DG** and press [Enter] to enter the diagnostic mode Answer the questions about the OIS configuration

Table 6 4 Control Commands for Advanced Diagnostics

Function	Purpose
[Esc]	Ex ts advanced diagnost cs and returns to mon tor evel program
[Ctr] -A	Aborts current test
[Ctrl] -C	Cop es successive characters of prev ous nput ne
[Ctrl] -R	Repr nts prev ous command nput l ne
[Ctrl] -S	Suspends current test, h t any key to cont nue
/R	Repeats the test unt error or the test s aborted ([Ctrl] A)
,	Separates a sequence of tests
\	Cont nues command inputs onto next ine
[ ]	nd cates opt ona parameters

Command Syntax

All commands consists of a two character command (upper case) and a series of operands. The operands may be optional If an operand is enclosed in < >, it is required and if enclosed in [..], it is optional Where <drive> is referred to, the valid entries are

0 - SASI/OMTI hard disk
- PRIAM V155
- PRIAM V185
- PRIAM 519/MAXTOR XT2190
- SEAGATE ST4086
- MICROSCIENCE 4090
- MAXTOR XT4085

1 - SASI/OMTI floppy disk
- TEAC FD 55GFR 141 U
- NEC FD 1157C

2 Cipher magnetic tape drive

3 Cherokee optical disk

Command Mode

The mode states where the command can be executed The terminal begins in the monitor mode. Commands which may be executed in this mode have monitor written in the mode column

Advanced diagnostic commands may be executed in DG mode Enter this mode by typing **DG** in monitor mode, press Enter and follow the prompts Press Esc to exit the DG mode and return to monitor mode, refer to Table 6 5 System error codes are listed in Tables 6-6 to 6 12 Table 6 10 contains the NIU error codes in decimal format. Refer to the enhanced computer interface unit programmer's reference manual for further information

NOTE: If DG does not respond check the d sk system or pu the mu tibus modu es one at a t me and try aga n

Table 6 5 Command Syntax Description

Command Syntax	Mode	Description
BT <start addr> <end addr>	DG	Read/wr te test of continuous segment of memory
BU	Mon tor	Load stream ng tape from hard d sk
C	DG	C U/N U test
CL	DG	C ear the d agnostic setup and start d agnost cs aga n
CM <addr1> < ength> <addr2>	Mon tor	Compare two blocks of memory
CV <dec ma num> or CV 0 <hex num>	Mon tor	Convert dec mal and hexadec mal ntegers
DF	Mon tor	Dup cate f oppy User s prompted for nput
DG	Monitor	Start Bailey Controls OIS NVRAM based advanced d agnost c ut t es
D <dr ve num> [USN]	Mon tor	D rectory l st ng of f es for spec f ed dev ce an d USN The hard d sk s dr ve number 0 and the f oppy d sk s dr ve number 1
DM [<addr> [num of bytes]]	Mon tor	D sp ay memory start ng at spec f ed ocat on
DM	Mon tor	D splay next 16 bytes
DM <address>	Monitor	D splay next 16 bytes at starting address
DM <address> <num of bytes>	Mon tor	D sp ay next <num of bytes> at start ng address
DP <d sk type>	DG	D sk parameters Refer to F0 command for d sk type
DT <dr ve>	Mon tor	D sk read test for sector 00
EL	DG	Error og for hard d sk Run th s test after the WT test
FO <dev ce>	Mon tor	Format spec f ed f e system dev ce Th s command formats either floppy d sks or the hard disk f device 0 (hard disk) s spec f ed then a menu of d fferent d sk types s d sp ayed Se ect the disk type used Current y, th s menu s d sp ayed 1 PRIAM V155 2 PR AM V185 3 - PRIAM 519/MAXTOR XT2190 4 SEAGATE ST4086 5 - M CROSCIENCE 4090 6 MAXTOR XT4085 When the system s done formatt ng the hard c sk t goes to the RT (rep ace track) mode and asks for th e cyl nder address and the head address (n dec ma) It hen ass gns an alternate track table and nforms when it is complete To ex t press Enter w th no nput to the head or cy nder f e d The system then returns to the CFG mode Upon comp etion of the CF command the system re urns to the co mand l ne pro pt
GO [<addr>] or GO [/ti <addr>]	Monitor	Starts execut on of a program
GT <board [test]>	DG	Graph cs test <board> = 0 or 1 [test] = 1 to 5
HE [command name]	ALL	He p d sp ays nformat on parameters etc for a se ected command or a commands

Table 6 5 Command Syntax Description (continued)

Command Syntax	Mode	Description
HT	Monitor	Causes mon tor to enter host transparent mode
T	DG	nterrupt test
KK <keyboard>	DG	Keyboard key test
KL <keyboard>	DG	Keyboard LED test
KR <keyboard [re ay mask]>	DG	Keyboard re ays test
KS <keyboard>	DG	Keyboard sound test
LF <addr> <f ename ex> <dr ve> [USN]	Mon tor	Loads file under spec fied drive/USN nto memory
LO <addr> <num sectors> <start sector> <dr ve>	Monitor	Load cont guous memory image to d sk
LT <pcu> <module number>	DG	Loop test
MB <source addr> <num of b ocks> <dest nat on addr>	Mon tor	Move blocks of memory (256 bytes each) from one ocat on to another
MT	DG	nvokes start up or restart of MTOS operat ng system
MT	Mon tor	nvokes start up or restart of MTOS operat ng system
MV <source addr> < ength> <dest nat on addr>	Mon tor	Move b ocks of memory
OT	DG	Opt ca disk test
PT	Mon tor	Processor test
PU <start addr> < ength>	Mon tor	Down oad (punch) processor S records to host computer
RC	DG	ROM checksum
RE	Mon tor	Up oad (read) processor S records from host computer
RM <start addr> <end addr>	DG	Long memory test
RS <dev ce> 0 = hard d sk 1 = f oppy d sk	Mon tor	Request sense error me ssage from d sk contro er for g ven f e system dev ce Th s command returns four bytes of sense information n hex format, for e ther the f oppy or hard d sk Compare the f rst byte of the error message to the first byte of the error message in the d sk contro er error code table
RT <dr ve> <bad track addr> <a t track addr>	Mon tor	Maps a ternat ve (replacement tracks) around known bad tracks on hard disk Th s command prompts the user for bad cy nder and head address (must be entered n dec mal format) t then automat cally assigns an a ternate track and prompts the user for the next bad cy nder address If [Enter] s entered a one for e ther prompt RT ex ts back to the command ne

Table 6 5 Command Syntax Description (continued)

Command Syntax	Mode	Description
RU	Monitor	Restore hard disk from streaming tape
SA <addr <num sectors> <start sector> <dr ve>	Monitor	Save cont guous mage to d sk
SB <board> <port> [C]	DG	Serial board test [C] = use loopback connector
SC	DG	SAS /d sk dr ve contro er card test
SF <addr> <f ename ex> <dev ce> [USN]	Mon tor	Saves memory data to f e under spec f ed dev ce/USN
SM [s ze] <addr> <data>	Mon tor	Store values at memory ocations Mode can ɔe changed to one of the fol ow ng B byte s ze storage (8 b ts) defau t W word size storage (16 b ts) L ong word storage (32 b ts)
ST	DG	SAS nterface adapter test
TD	Monitor	Trace display Prints the current values of all processor user reg sters PC SR USP SSP D0 to D7 A0 to A7
UT	Mon tor	Enter a ower evel of ut ty commands A menu of ut ity commands s d sp ayed Se ect a uti ty Current y on y disable/enab e (toggle) on chip cache is allowed
VT <dev ce>	Mon tor	Ca i graph cs contro er se f test The dev ce s e ther 0 or 1 for graph cs contro er 1 or 2 respect ve y D sab e ch p cache n UT before do ng VT
WT <dev ce> <d sk type> <tests> <test type> [A]	DG	Winchester test Tests the hard d sk <dev ce> = 0 (hard d sk) <d sk type> = 1 2, 3 or 4 (refer to F0 command) <tests> number of t mes to perform the test <test type> = D destruct ve N nondestruct ve [A] = rep ace w th alternate NOTE: The WT destruct ve test de etes the data on the hard d sk Backup data before perform ng th s test Upon comp et on of this test, perform the CF (conf gure) command initialize the OIS then reload files from the backup

Table 6 6. File System Error Codes

Hexadecimal Error Code	Error Description
$00	No error
$01	Logical/physical end of fi e v o at on.
$02	Timeout occurred before nitiating serv ce
$03	Device reported hard error n data b ock.
$04	Device reported hard error in file allocat on block (FAB)
$05	Device reported error in c rectory, b t map or vo ume D sectors
$06	Dev ce type not compat b e w th th s command
$07	Dev ce reported timeout error
$08	nvalid command
$09	nvalid logica un t
$0A	No file channels availab e
$0B	No units are ava lab e
$0C	Log cal unit not assigned
$0D	Fi e has been reserved against request
$0E	Dev ce has been reserved against request
$0F	nvalid option.
$10	ncompat ble option.
$11	nval d fi e descr ption
$12	Attempt to create a fi e that a ready exists
$13	F e not found
$14	Dev ce not found in D T tab e
$15	Attempt to write to a fi e opened for read or v ce versa
$16	Error in log ca record format
$17	nva id record format.
$18	Inva d key
$19	Key ength error
$1A	Insuff c ent medium space (dev ce ful).
$1B	Insuff c ent buffer space
$1C	End of directory
$1D	Key not found
$1E	Key a ready ex sts.
$1F	Buffer overflow
$20	Mount v olat on
$21	Inva id volume d smount
$22	Attempt to open or d smcunt wh e a f e s open
$23	Open fi es on vo ume
$24	Attempt to free a channel w th pend ng requests
$25	Unit has been reserved so open f es can be aborted
$26	Interna error.
$27	F e must be reserved
$28	Unit must be reserved
$29	Invalid t me un t for PAUF IN coord nat on
$2A	I legal coordinat on mode given
$2B	Size conflict dur ng write
$2C	Variab e ength record le ngth of 0
$2D	Inconsistent lock opt on
$2E	Attempt to c ose while no f e s open
$2F	No internal queue block ava lab e
$30	M smatch of label or sequence number

Table 6 6 File System Error Codes (continued)

Hexadecimal Error Code	Error Description
$41	Device error (hard error)
$42	Disk controller error
$43	Seek error
$44	Wr te error
$45	Exclus ve dev ce access denied
$46	Can not open device.
$47	Illegal operat on code
$48	Illegal request
$49	Timeout error for O S t me out of request /O routine
$4A	Bad LUN number
$4B	egal d sk address
$4C	egal memory address
$4D	No LUN for host
$4F	Reset command successfully comp eted
$50	Hash overf ow buffer s fu l
$51	Write protection error
$5F	D sk controller time out
$60	Check cond tion (sense bytes returned in sense data buffer)
$61	S gna that host issuing a c ose never had exc usive access
$62	Un t s off ne
$63	Interface device (SCS board) not present or funct on ng
$64	A track on a device was not formatted completely
$65	An unexpected SASI PIO status was returned
$101	The max mum number of f les is open
$102	The requested record length is too b g for UN X buffers
$103	nva id path name format
$104	nvalid type supplied
$105	Asked for sequent al file, file s cont guous
$106	Requested sequential record size is differe nt from ex sting f e
$107	Attempt to append at end of contiguous file

Table 6 7 Disk Controller Error Codes

Hexadecimal Error Code	Error Description
$0000	No error
$0100	No ndex s gnal
$0200	No seek complete.
$0300	Wr te fault
$0400	Dr ve not ready
$0500	Dr ve not se ected
$0600	No track zero found
$0700	Mu t p e dr ves se ected
$0900	Cartridge changed
$0D00	Operat on n progress

Table 6 7. Disk Controller Error Codes (continued)

Hexadecimal Error Code	Error Description
$1000	Tape exception
$1100	Uncorrectable error in data field
$1300	No address mark in data field.
$1400	No record found.
$1500	Seek error
$1700	Write protected
$1800	Correctable ECC error
$1900	Bad track flag set
$1A00	Incorrect interleave factor.
$1C00	Unable to read alternate track data
$1E00	I legal direct access to alternate track
$1F00	Tape drive failure.
$2000	Inva d command
$2100	egal parameters.
$2200	egal function for drive type.
$2300	Volume overflow
$3000	Power up d agnostic error.
$3100	FDC 765 error
$9100	Uncorrectable error n data f e d
$9300	No address mark n data field
$9400	No record found
$9500	Seek error
$9700	Wr te protected
$9800	Correctable ECC error
$9900	Bad track f ag set
$9A00	Incorrect interleave factor
$9C00	Unable to read alternate track data
$9E00	I legal direct access to alternate track

Table 6 8. UNIX I/O Error Codes

Hexadecimal Error Code	Error Description
$01	Mod fied buffer could not be written
$02	Could not close fi e.
$04	Could not dismount file
$08	Could not c ose fi e because End Of Tape was encountered.
$101	The maximum number of f es are open.
$102	The requested ength is too b g for UNIX
$103	Inva d path name format
$104	Invalid type suppl ed
$105	Asked for sequential f e s cont guous
$106	Requested sequent al record size s d fferent from existing f le
$107	Attempt to append to a contiguous f e at end of f le

Table 6 9 Tape File Error Codes

Hexadecimal Error Code	Error Description
$201	Attempt to mount or init alize while vo ume s mounted
$202	Attempt to d smount or open while no volume s mounted
$203	Attempt to initialize volume with invalid BPI density
$204	Attempt to d smount when task hadn't mounted
$205	End of tape (EOT) encountered before operation was completed
$206	Tape fi e system internal error
$207	Dev ce busy can not perform mount or open
$208	Volume is wr te protected.
$209	Size of f e created does not match the original create file parameter, file w be de eted on close
$20A	(for internal use)
$20E	(for interna use)
$20C	EOV mark ex sts, no recovery action taken
$20D	D rectory fu , reached max mum number of f les
$280	Unexpected sense data format
$281	Target managed to recover an error condit on
$282	Unit not ready
$283	Command terminated due to flaw in med um or error in recorded data
$284	Target detected nonrecoverab e hardware error
$285	lega request
$286	Un t attent on, medium may have been changed
$287	Data protect
$288	B ank check, read ng b ank b ock
$289	Incorrect block length

Table 6 10 NIU Error Codes

Hexadecimal Error Code	Error Description
0	No error
1	Waiting for loop.
2	Improper format.
3	lega command
4	Index already estab shed
5	Block already establ shed at another index (Loop PCU, MOD and Block are al the same as another tag)
6	Command too long
7	Bad rep y from MLM
8	Export used as Import
9	Repeat NIU restart command
10	Undefined index

Table 6 10. NIU Error Codes (continued)

Hexadecimal Error Code	Error Description
11	Memory full.
12	Host communication error
13	MLM not respond ng.
14	Import used as export
15	Timeout of loop response
16	Number out of range
17	Illegal key.
18	Need a restart command
19	Module status used as mport
20	Message active on loop
21	Import or export used as module status
22	Except on report spec ficat ons ost
23	No message queued, dequeue rece ved
24	Rep y too large
25	Illega station mode command
26	Illegal modu e number in command
27	Time out between bytes in command
28	Index already established by another node
29	Point type incompatible with command
30	Watchdog timeout.
31	Checksum compare error
32	Dest nation node off ne
33	Ca l up command required
34	NIU error
35	NIU busy
36	MCP off line.
37	Conflict with mon tor mode
38	Point type incorrect
39	Destinat on ring off l ne
40	Destination node busy
41	Destination ring busy
100	Undefined message type for target modu e
101	Busy - cannot respond at th s t me
102	Mode for command does not agree w th current modu e mode.
103	Message data out of range
104	nval d block number.
105	Undef ned b ock number - block s va id but not conf gured.
106	B ock not readable - block number is val d but has no readab e parameters.
107	Invalid function code for target module
108	Function code and block number not compat b e n target module
109	Insuff c ent memory to write b ock in nonvo at e ROM and/or RAM
110	Modu e not responding

Table 6-11. IIMCP01 Failure LED Codes

MCP Code	LED Number 8 7 6 5 4 3 2 1	Error Condition
12	0 0 0 1 0 0 1 0	MLM not responding to MCP commands
13	0 0 0 1 0 0 1 1	ROM checksum error (socket U23 or U24)
14	0 0 0 1 0 1 0 0	Expander bus message failure
15	0 0 0 1 0 1 0 1	Loop failure check for break in circuit
16	0 0 0 1 0 1 1 1	MLM loop back test failure
21	0 0 1 0 x x x x	Internal software error
31	0 0 1 1 0 0 0 1	Memory or CPU failure
32	0 0 1 1 0 0 1 0	Address or bus error
33	0 0 1 1 0 0 1 1	Illegal instruction
35	0 0 1 1 0 1 0 1	Spurious exception
36	0 0 1 1 0 1 1 0	Divide by 0/check/format error
38	0 0 1 1 1 0 0 0	MLM not configured for MCP operation (MLM switch 2, pole 1 needs to be ON)
39	0 0 1 1 1 0 0 1	Duplicate node number on loop (MLM switch 4)
3E	0 0 1 1 1 1 1 0	MLM to MCP handshake failure
3F	0 0 1 1 1 1 1 1	Stop pushbutton actuated

NOTE The LED representing the least significant bit is the bottom LED on the MCP and on the MLM module

Table 6-12. IIMLM01 Failure LED Codes

MLM Code	LED Number 8 7 6 5 4 3 2 1	Error Condition
13	0 0 0 1 0 0 1 1	ROM checksum error (socket U23 or U24)
31	0 0 1 1 0 0 0 1	Memory or CPU failure
32	0 0 1 1 0 0 1 0	Address or bus error
33	0 0 1 1 0 0 1 1	Illegal instruction
34	0 0 1 1 0 1 0 0	Trace/privilege violation
35	0 0 1 1 0 1 0 1	Spurious exception
36	0 0 1 1 0 1 1 0	Divide by 0/check/format error
37	0 0 1 1 0 1 1 1	Any trap instruction
38	0 0 1 1 1 0 0 0	MLM not configured for MCP operation (MLM switch 2, pole 1 needs to be ON)
3E	0 0 1 1 1 1 1 0	MLM to host handshake failure

Optical Disk Unit Troubleshooting

The troubleshooting suggestions in Table 6 13 will help an swer most questions In addition, Cherokee provides assistance at (303) 776 0721 to answer additional questions on the disk drive unit. When calling, indicate that technical assistance is required and give the serial number of your disk drive unit.

Table 6 13. Optical Disk Unit IIDOP02 Troubleshooting Table

Symptom	Possible Cause/ Corrective Action
Un t w not power up	Check for b own fuse refer to the nsta lat on sect on Check for power at the power entry pane Check AC nput power setting, refer to the nstallat on sect on
A cartr dge is loaded and the un t does not ind cate a ready status (green ght)	Press the cartr dge re ease, wa t until select and ready l ghts flash Press cartr dge release aga n the un t shou d return to ready status Turn power off to unit then turn power back on Wa t severa seconds for unit to return to ready status
Ready and se ect ghts are on w th a cartr dge oaded	Press the cartridge re ease sw tch wa t unt un t nd cates ready Th s is a normal condition when the the opt ca d sk s be ng written to or read by the O S
Constant un t se ect nd cat on (red ght)	This may occur when the unit is accessed but does not have a cartridge oaded Insert a cartridge, rotate ock/ nsert sw tch to the ock posit on Wait unt unit is ready and press the cartr dge re ease sw tch aga n
Disk dr ve un t cannot be accessed from host computer	(drive-not ready) Check the cable connect ons. Check the drive power, and read status
Cannot un oad cartr dge when se ect and ready f ash ng	With se ect and ready l ghts flash ng, rotate ock/insert sw tch slight y clockwise from the ock posit on then counter c ockw se to the nsert pos t on Turn un t power off, nsert rod approximate y one nch nto the left of the eject labe Whi e ho d ng rod n p ace rotate the lock/insert sw tch to the insert posit on
App cat on d agnostics w not run	Check SCS nterface to d sk drive unit SCS cab e seat ng Check ready status of d sk drive un t
Dr ve has media oaded w th constant se ect (green ght) and w not go nto a ready cond t on (green ght)	Shut off power and manual y eject the opt cal cartr dge as described in Cannot Unload Cartr dge When Select & Ready Flash ng Inspect the media to insure t is double sided Single s ded med a nserted as to expose the nondata surface to read/wr te w cause the device to be continually busy as it attempts to ocate the n tia data track wh ch is nonex stent Turn the med a to the correct s de (A up) and nsert. Th s cond t on may occur when track zero has been overwr tten and cannot be read, or the surface of the med a n d sk dr ve un t is unreadab e

SECTION 7 - MAINTENANCE

INTRODUCTION

This section contains a preventive maintenance schedule for the OIS/OIC and for the optical disk archiving unit

Be sure to follow all warnings, cautions and notes Put boards containing MOS devices into antistatic bags when stored or shipped back to the factory. Do not repair printed circuit boards in the field. All repairs and adjustments should be performed by qualified personnel

PREVENTIVE MAINTENANCE

Refer to Table 7 1 for suggested preventive maintenance procedures. Specific steps to do these procedures are found in the vendor information supplied with the unit

Table 7 1. OIS/OIC Preventive Maintenance

Component	Frequency	
	Monthly	Annually
Floppy Disk Dr ve		C ean, nspect and check a gnment[1]
Pr nter	nspect, Clean and Lubr cate	Adjust pr nter per manufacturers instruct ons
Fan Assembly	Clean Filter	Rinse filter w th water, b ow dry and reinstal
Power Suppl es	———	Check and adjust power supp y[2] if necessary
Touch Screen and CRT Setup	———	Inspect and check a gnment[3]

NOTE
1 Adjust the f oppy d sk drive using the procedure in the manufacturers documentat on

2 Adjust power supplies n O S20 I O S20A and IOIC202 only using the procedure n Section 6

3 Adjust the touch screen using the procedure in Section 5

Optical Disk Unit Maintenance

The disk drive unit is designed for maintenance free opera tion There is only one maintenance procedure recommended for the disk drive unit and that is to clean the input filter. This filter is located on the back panel Remove, clean and replace the filters when they are dirty by following certain steps

Filter Maintenance

1 Locate the air intake on the back panel.

2 Grasp the snap on type filter assembly from behind and carefully pull it away from the unit

3 Clean the filter element with a solution of water and liquid detergent and allow to dry or use high pressure air

4 Replace the filter assembly into the disk drive unit

Additional Maintenance

The disk drive unit requires operator action for.

Fuse replacement
Primary power setting
Air filter replacement

For other maintenance actions the disk drive unit should be returned to the factory

SECTION 8 - REPLACEMENT PROCEDURES

INTRODUCTION

This section explains how to replace multibus card cage modules and the units in the IIOIS20/IIOIC20 Operator In terface Station. There are no special tools required

MODULE REPLACEMENT

If a module in the multibus card cage is faulty, replace it with a new one DO NOT try to repair the module Replacing components may affect the module performance This proce dure explains how to remove a module from an IIOIS20/IIOIC202 and an IIOIS20A/D

CAUTION	**Failure to turn off the main power circuit breaker before removing or inserting modules into the module rack may result in equipment failure.**
ATTENTION	**Si l'on omet d'eteindre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les inserer dans le porte-cartes, l'equipment pourrait faire default.**

1. Open the cabinet door on the front of the cabinet and turn off the main power circuit breaker

2 To unseat a module, carefully lift the card removal tabs shown in Figure 8-1.

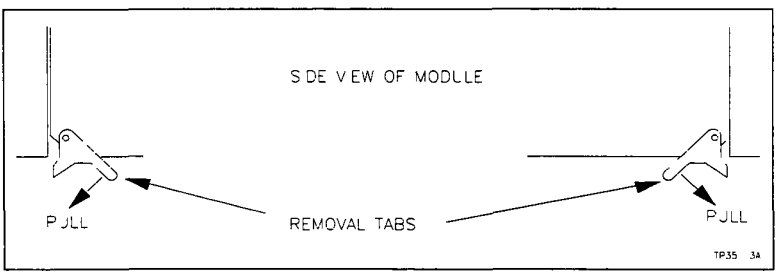


Figure 8 1. Multibus Module Removal

3 Carefully slide the module out of the multibus card cage. Be sure not to loosen cables from the modules next to the one being removed

4 Configure the replacement module switch and jumper settings Be sure they are set the same as the original module.

5 In the same slot assignment as the original module, align the replacement module beneath the slot number on the guide rail in the multibus card cage

6 Insert the multibus modules into the upper and lower guide rails Carefully slide the module in until the front panel is flush with the top and bottom of the multibus card cage frame Press on the module removal tabs shown in Figure 8 1 to fully insert the module into the multibus card cage back plane

7 Close and secure the cabinet door Return to normal operation

PART REPLACEMENT

Color Monitor for IIOIS20/IIOIC202

Ba ey Part Number - 1948623 6

See Figure 8-2 when using this procedure. Refer to the manufacturers' documentation for IIOIC20 tabletop models

1 In the front of the cabinet, turn off the main circuit breaker on the power entry panel (PEP) to shut off power to the OIS/OIC. Check the power indicator to see if power is removed from the system.

2. Unplug the optional touch screen cable from the touch screen controller card The touch screen controller card is connected to the Multibus Keyboard Module (IIMKM01)

3 In the front of the cabinet above the card cage, remove the air plenum (6638577A1) filter assembly by removing the four screws on the front Slide the assembly out the front of the cabinet

4. In the front of the cabinet of some models, above the card cage, remove the two, 7/16 inch bolts under the CRT shelf that hold the front of the CRT mounting tray to the cabinet.

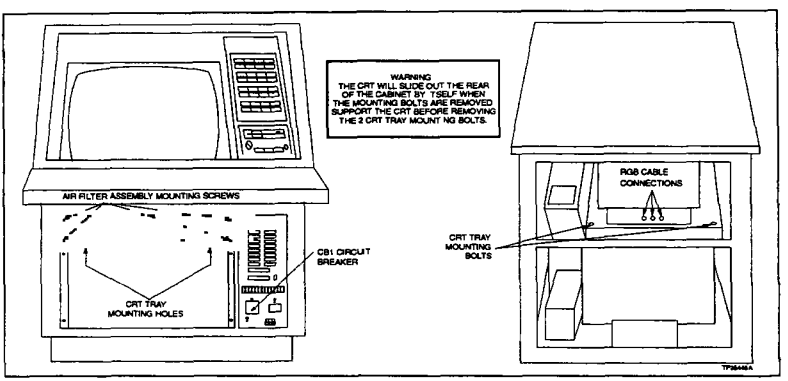


Figure 8-2. Color Monitor Removal for IIOIS20/IIOIC202

5 In the back of the cabinet, remove the power cord and RGB cable from the back of the monitor Secure the RGB cable out of the way.

WARNING	**The CRT will slide out the rear of the cabinet by itself when the mounting bolts are removed. The CRT weighs about 27 kg (60 pounds) and can cause bodily injury if it is allowed to slide out by itself. Support the CRT before removing the rear two bolts.**
AVERTISSEMENT	**Lorsque les boulons d'ancrage sont retires, l'ecran cathodique risque de sortir a l'arrier de l'armoire IIOIS20 et IIOIC20. Si les deux boulons d'ancrage arriere sont retires, il faut retenir l'ecran afin d'eviter toute blessure.**

6 Remove the bolt on each side of the CRT mounting tray at the rear of the CRT These bolts attach the tray to the cabinet shelf

7 After removal, place the CRT and tray onto a solid, flat surface

8 Remove the optional touch screen and protect it from fingerprints and dust.

9 Protect the screen of the CRT and set the CRT screen down on the protected surface

10. Remove the CRT from the mounting tray by removing the four screws under the tray

Color Monitor for IIOIC203

Bailey Part Number - 1948623 1

See Figure 8 3 when using this procedure Refer to the manufacturers' documentation for IIOIC20 tabletop models

1. In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIC Check the power indicator to see if power is removed from the system

2 Open the back door above the air conditioner Remove the two screws fastening the CRT mounting tray to the support rails

3 Slide the CRT out of the cabinet. The CRT weighs about 27 kilograms (60 pounds) Be sure it is well supported

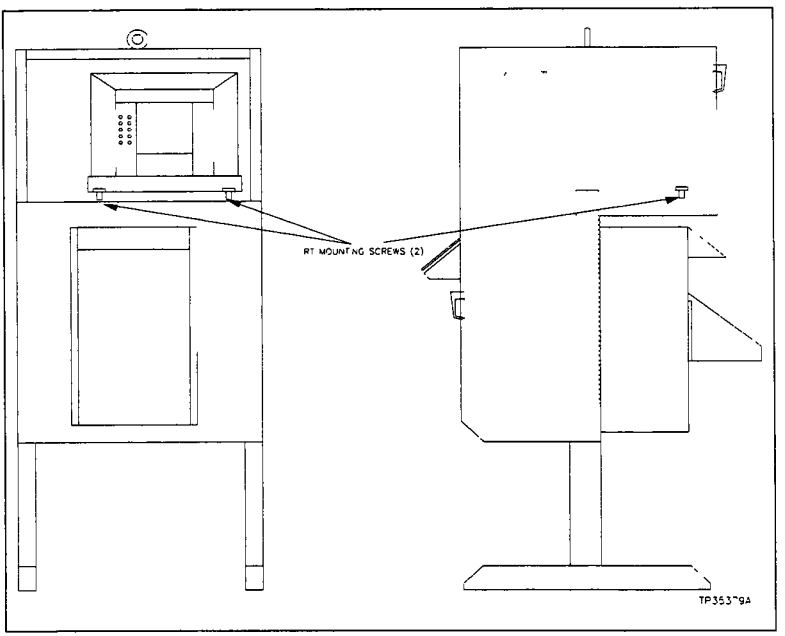


Figure 8 3. Color Monitor Removal for IIOIC203

Disk Drive Controller Card for IIOIS20

Ba ey Part Number 1948013 1

See Figure 8 4 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS. Check the power indicator to see if power is removed from the system

2 In the back of the cabinet, disconnect the ribbon cables from the disk controller card

3 Loosen the controller board attaching screws Carefully lift off the controller board Do not lose the spacers between the board and mounting posts

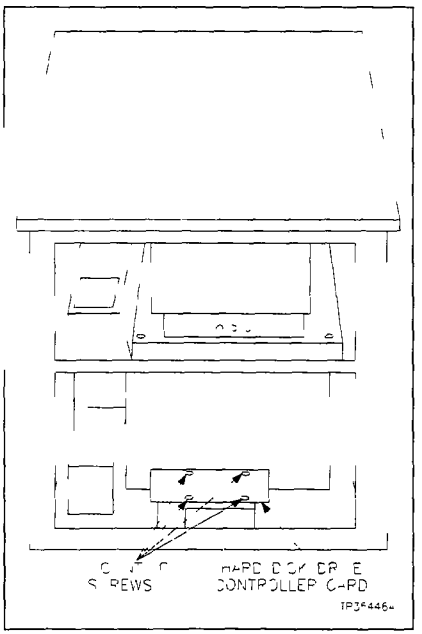


Figure 8 4 Disk Drive Controller Card Removal for IIOIS20

Disk Drive Controller Card for IIOIS20A

Ba ley Part Number - 1948013_1

See Figure 8 5 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS Check the power indicator to see if power is removed from the system

2. In the back of the cabinet, disconnect the ribbon cables from the disk controller card.

3 Loosen the controller board attaching screws Carefully lift off the controller board. Do not lose the spacers between the board and mounting posts

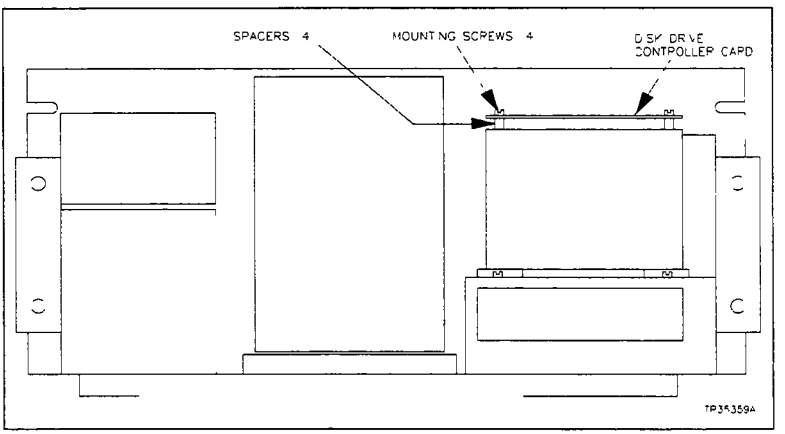


Figure 8 5 Disk Drive Controller Card Removal for IIOIC20A

Hard Disk Drive for IIOIS20

Bailey Part Number - 1948002 2

See Figure 8 6 when using this procedure.

1 Remove the disk drive controller card Use the procedure in this section

2 Disconnect all power and ribbon cables to the hard disk drive

3 Remove the two screws securing the hard disk drive to the cabinet Lift the drive out of the cabinet.

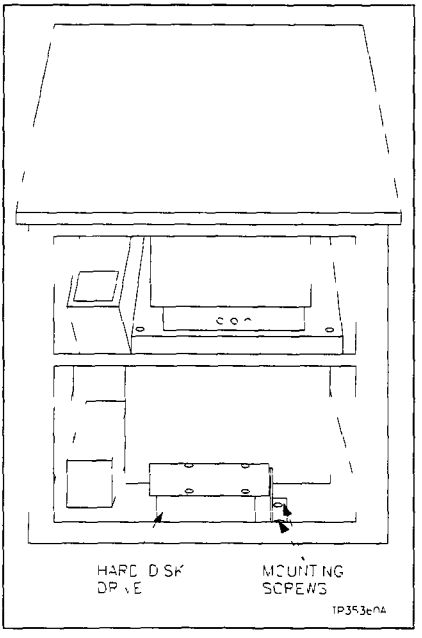


Figure 8 6 Hard Disk Drive Removal for IIOIS20

Hard Disk Drive for IIOIS20A

Bai ey Part Number - 1948002 2

See Figure 8 7 when using this procedure.

1 Remove the disk drive controller card Use the procedure in this section.

2 Disconnect all power and ribbon cables to the hard disk drive.

3 Remove the two screws securing the hard disk drive to the cabinet. Lift the drive out of the cabinet

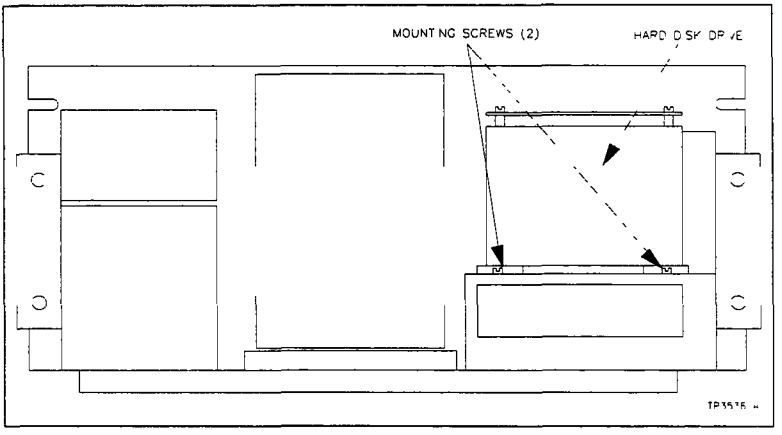


Figure 8 7 Hard Disk Drive Removal for IIOIS20A

Fan Assembly for IIOIS20/IIOIC202

Bailey Part Number - 1947419 7
A r F ter 1990006 1

See Figure 8 8 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the power entry panel to shut off power to the OIS/OIC Check the power indicator to see if power is re moved from the system

2 In the back of the cabinet, cut and remove cable ties securing the fan assembly power cord. Fan assembly 1 is removed in Step 3 and fan assembly 2 is removed in Step 4.

3 Fan assembly 1 is located under multibus card cage slots 1 8 In the back of the cabinet, remove the two screws on either side of the fan assembly and slide the fan assembly out

4 Fan assembly 2 is located under multibus card cage slots 8 16 In the back of the cabinet, remove the hard disk as described previously in this section and fan assembly 1 as described in Step 3

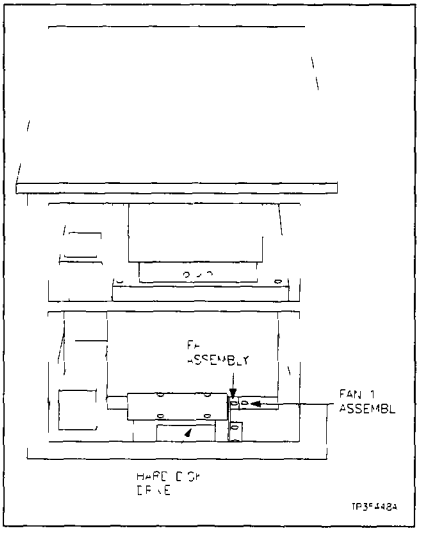


Figure 8 8 Fan Assembly Removal for IIOIS20/IIOIC202

Remove the two screws on either side of the fan assembly and slide the fan assembly out to the right around the hard disk mounting bracket.

5 Disassemble the fan subassembly by removing the four long screws.

NOTES:

1. Be sure the arrow on the fan being installed points in the direction of the air flow The fan blows downward pulling air out of the module card cage through the bottom.

2. Be sure the red striped conductor of the power cord is connected to the positive (+) terminal of the fan

Fan Assembly for IIOIS20A

Ba ley Part Number 1947419_7
A r F ter 1990006 1

See Figure 8 9 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the power entry panel to shut off power to the OIS Check the power indicator to see if power is removed from the system.

2 In the back of the cabinet, cut and remove cable ties securing the fan assembly power cord Fan assembly 1 is removed in Step 3 and fan assembly 2 is removed in Step 4

3 Fan assembly 1 is located under multibus card cage slots 1 8 In the back of the cabinet, remove the two screws on either side of the fan assembly and slide the fan assembly out

4. Remove the two screws on either side of the fan assembly and slide the fan assembly out

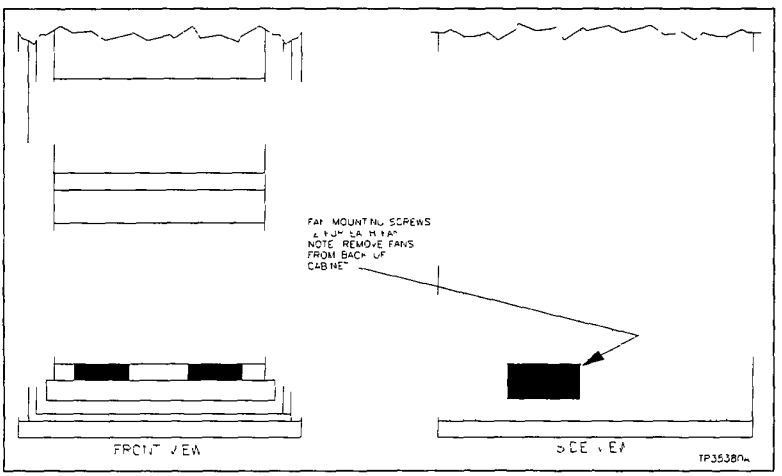


Figure 8 9 Fan Assembly Removal for IIOIS20A

5 Disassemble the fan subassembly by removing the four long screws

NOTES:

1 Be sure the arrow on the fan being nstalled po nts n the d rect on of the air flow The fan blows downward pu ing a r out of the modu e card cage through the bottom

2. Be sure the red str ped conductor of the power cord s connected to the pos tive (+) term nal of the fan

Floppy Disk Drive for IIOIS20

Ba ey Part Number 1948018_1

See Figure 8 10 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS Check the power indicator to see if power is removed from the system

2 In the rear of the cabinet, partially remove the power supply Remove the two screws on the bottom of the power supply and slide it out of the back of the cabinet Cut the cable ties as needed to set the supply on the floor out of the way

3 Unplug the operator keyboard, mouse and units connected to the front of the operator keyboard interface panel

4 Remove the peripheral power cables to the floppy disk drive from the DC distribution board

5 Remove all of the cables from the rear of the operator keyboard interface panel and floppy drive unit

6 Remove the two screws holding the floppy drive tail brace to the left wall of the cabinet

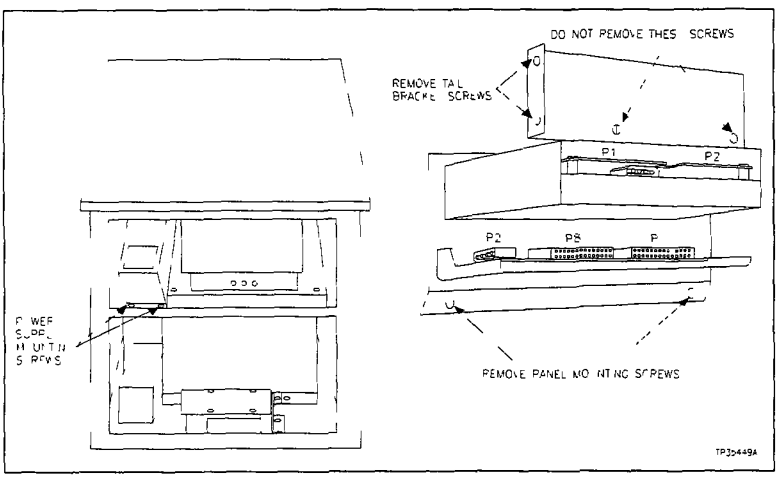


Figure 8 10 Floppy Disk Drive Removal for IIOIS20

7. Remove the two screws holding the bottom of the operator keyboard interface panel to the back side of the CRT bezel There are no screws on top or on the sides of the panel

8 Carefully remove the operator keyboard interface panel containing the floppy drive out the rear of the cabinet

9 Remove the four screws on the sides of the floppy drive and separate the bracket from the floppy drive The drive will slide out through the front of the keyboard interface panel.

Floppy Disk Drive for IIOIS20A

Bailey Part Number 1948018_1

See Figure 8 11 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS. Check the power indicator to see if power is removed from the system.

2 Remove the two screws holding the floppy drive faceplate to the front panel of the power entry panel

3 Carefully slide the drive out through the front of the panel

4. Remove and label the cables connected to the drive.

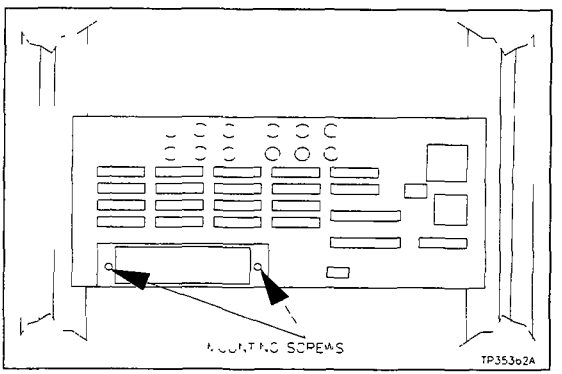


Figure 8 11 Floppy Disk Drive Removal for IIOIS20A

Multibus Card Cage for IIOIS20/IIOIC202

Bai ey Part Number 6637801_2

See Figure 8 12 when using this procedure

1. In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS/OIC Check the power indicator to see if power is removed from the system

2 In the back of the cabinet, disconnect all cables and wiring from the back of the card cage

3 Remove the four screws at the front of the card cage (two on each side).

4. Slide the cage out of the front of the cabinet

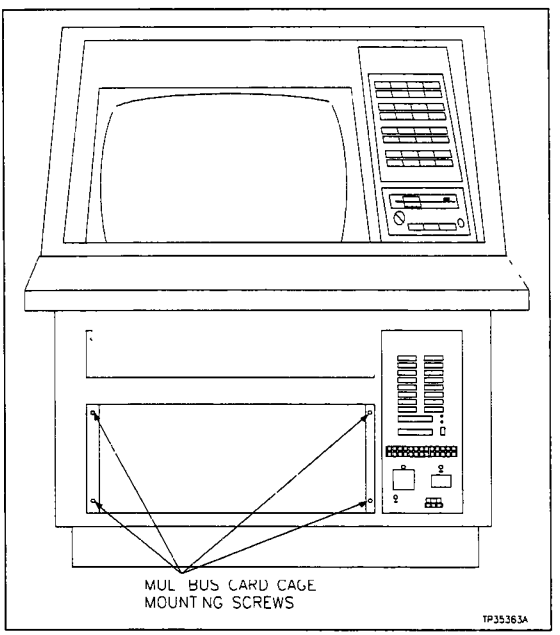


Figure 8 12. Multibus Card Cage Removal for IIOIS20/IIOIC202

Multibus Card Cage for IIOIS20A

Ba ley Part Number 6637801 2

See Figure 8 13 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS Check the power indicator to see if power is removed from the system

2 In the back of the cabinet, disconnect all cables and wiring from the back of the card cage

3 Remove the four screws at the front of the card cage (two on each side)

4 Slide the cage out of the front of the cabinet

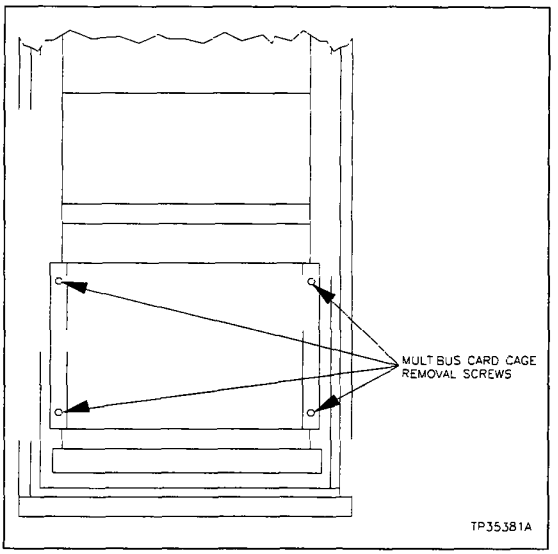


Figure 8 13. Multibus Card Cage Removal for IIOIS20A

Power Entry Panel for IIOIS20/IIOIC202

Bailey Part Number - 6638353_1 (for IIOIS20)
Ba ley Part Number - 6638353 2 (for O C202)

See Figure 8-14 when using this procedure.

1. In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS/OIC Check the power indicator to see if power is removed from the system.

2 Shut down AC line power to OIS/OIC (plant breaker) so that the AC line may be disconnected safely.

3. In the front of the cabinet, remove all cables from the front of the PEP (RS 232, SCSI, alarm contact wires, and AC input)

4 In the back of the cabinet, remove AC cables from the outlets on the PEP

5 Remove all signal cables from the multibus modules that go to the back of the PEP. Leave the cables on the PEP The new PEP comes with cables.

6 In the front of the cabinet, remove the five screws from around the edges of the PEP. Slide the PEP out the front of the cabinet.

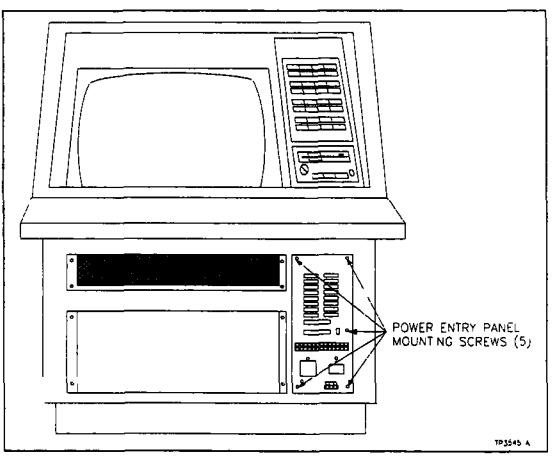


Figure 8 14. Power Entry Panel (PEP) Removal for IIOIS20/IIOIC202

Power Entry Panel for IIOIS20A

Ba ley Part Number 6638960_2

See Figure 8 15 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIS Check the power indicator to see if power is removed from the system

2 Shut down AC line power to OIS (plant breaker) so that the AC line may be disconnected safely

3 Remove all cables from the front of the power entry panel (RS 232, SCSI, alarm contact wires and AC input)

4 Remove AC cables from the outlets on the back of the PEP

5 Remove all signal cables from the multibus modules that go to the back of the PEP

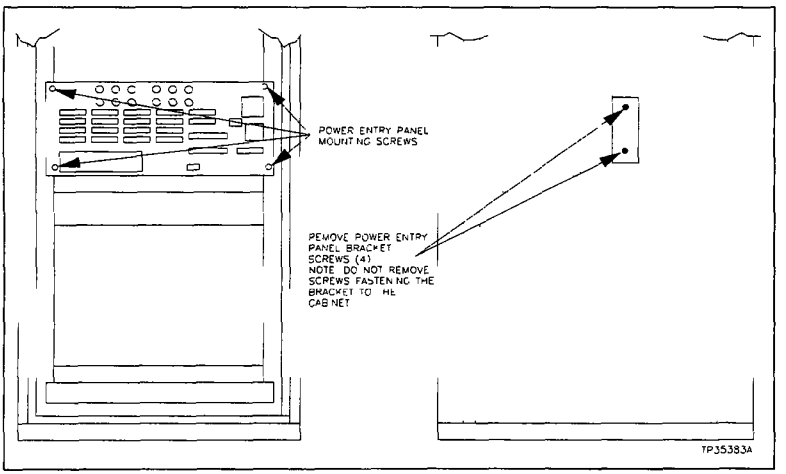


Figure 8 15. Power Entry Panel (PEP) Removal for IIOIS20A

6. In the front of the cabinet, remove the four screws from around the edges of the PEP In the back of the cabinet, remove the four screws holding the two mounting brackets to each side of the cabinet. Do not take the mounting brackets off the back of the PEP. They support the back of the PEP during removal and installation

7 Slide the PEP out the front of the cabinet Be careful the PEP weighs about 27 kilograms (60 pounds)

Power Entry Panel for IIOIC203

Bailey Part Number 6639503 1

See Figure 8 16 when using this procedure

1 In the front of the cabinet, turn off the main circuit breaker on the PEP to shut off power to the OIC Check the power indicator to see if power is removed from the system.

2 Shut down AC line power to OIC (plant breaker) so that the AC line may be disconnected safely

3 Remove all cables from the front and top of the power entry panel (RGB cable, IIMKM01 cable and AC input)

4 Remove AC cables from the outlets on the PEP

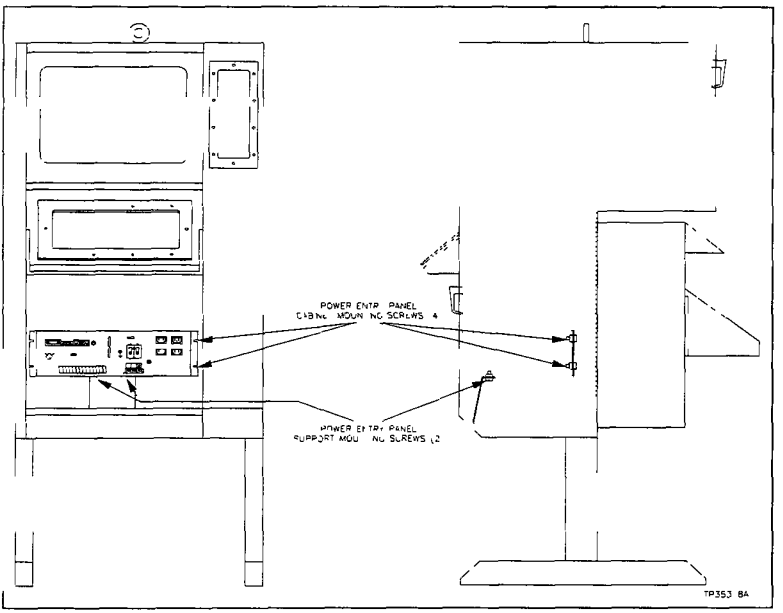


Figure 8 16 Power Entry Panel (PEP) Removal for IIOIC203

5 Remove the two screws from the PEP end of the bracket supporting the front of the PEP. If the cabinet end of the bracket is removed, seal the mounting screws with Dow Corning® 732™ RTV clear sealant or equivalent

6. In the front of the cabinet, remove the four screws from around the back edges of the PEP

7 Slide the PEP out the front of the cabinet Be careful the PEP weighs about 23 kilograms (50 pounds)

® Dow Corning is a registered trademark of Dow Corning Corporation
TM 732 is a trademark of Dow Corning Corporation

Main Power Supply for IIOIS20/IIOIC202

Ba ey Part Number 1948565A1

See Figure 8 17 when using this procedure.

1 Shut off power to the OIS/OIC

2 Remove the power supply plug from the socket on the PEP.

3 Mark and disconnect the wires between the power supply, DC distribution board and multibus card cage backplane

4. Remove the two nuts holding the power supply bracket to the CRT mounting platform and slide the unit out the rear of the cabinet

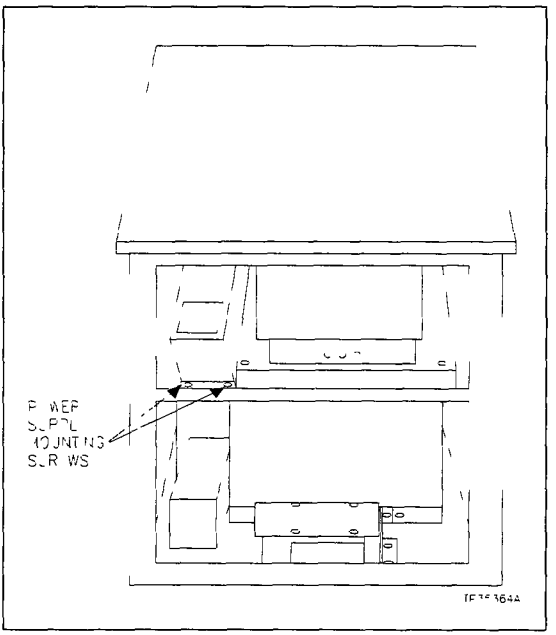


Figure 8 17 Main Power Supply Removal for IIOIS20/IIOIC202

Slide In Power Supply for IIOIC202

Bailey Part Number - 6639225 1

See Figure 8 18 when using this procedure

1 Open the front door and shut off power to the OIC

2 Remove the power supply plug from the socket on the PEP

3. Remove the bolts fastening the power supply to the multi bus card cage backplane

4. Slide the unit out the front of the cabinet.

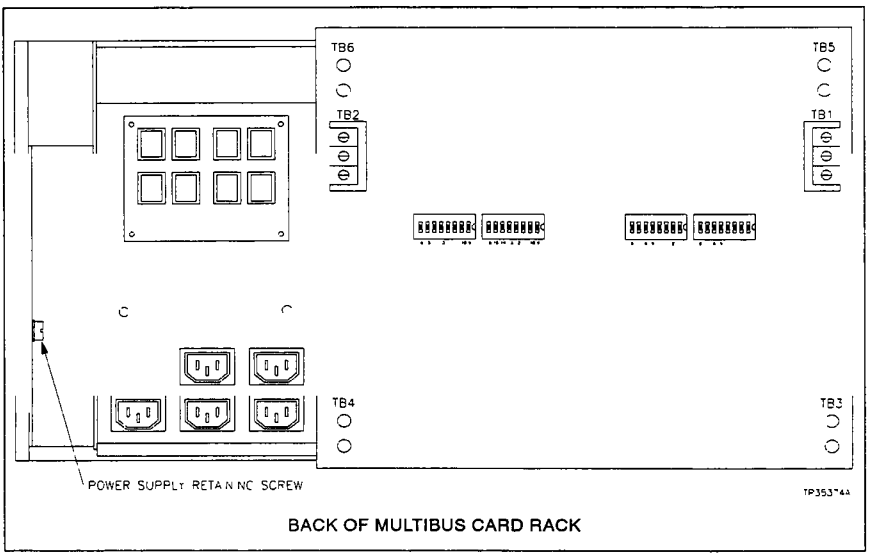


Figure 8 18 Slide In Power Supply Removal for IIOIC202

Main Power Supply for IIOIS20A

Ba ey Part Number - 1948565 1

See Figure 8 19 when using this procedure

1 Shut off power to the OIS

2 Remove the power supply plug from the socket on the PEP

3 Mark and disconnect the wires between the power supply, DC distribution board and multibus card cage backplane

4 In the back of the cabinet, remove the two screws holding the power supply bracket to the PEP and slide the unit out the rear of the cabinet

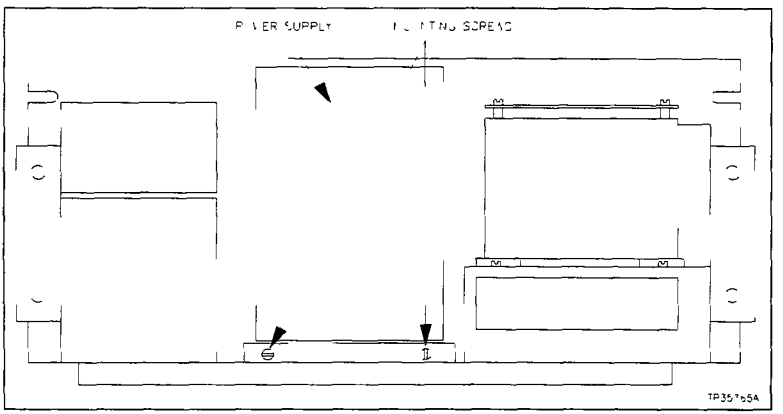


Figure 8 19 Main Power Supply Removal for IIOIS20A

Main Power Supply for IIOIC203

Ba ley Part Number - 1948564_1

See Figure 8-20 when using this procedure.

1 Follow the procedure for removing the IIOIC203 power entry panel in this section

2. Remove the IIMKM01 circuit board. Do not lose the two nonconductive washers for each standoff

3 To remove the cover from the top of the PEP. remove the nine screws shown in Figure 8-20 and disconnect the power distribution board connector

4 Mark and disconnect the wires between the power supply and incoming AC

NOTE: Check that the power distribut on board connector to the power supply is aligned correctly when replacing the cover

5. Remove the four screws holding the power supply to the center support wall of the PEP

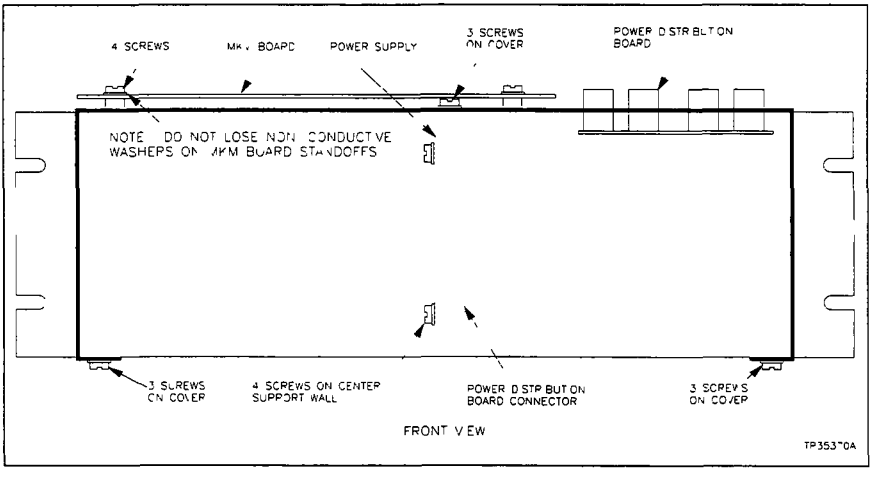


Figure 8 20 Main Power Supply Removal for IIOIC203

SECTION 9 - SUPPORT SERVICES

INTRODUCTION

Bailey Controls is always ready to assist in the operation and repair of its products. Send requests for sales or application services to your nearest sales or service office. Bailey Controls can also provide installation, repair and maintenance contract services.

REPLACEMENT PARTS AND ORDERING INSTRUCTIONS

Order replacement parts through a Bailey Controls sales or service office. We request that the following information be provided when ordering parts

1 Part description, part number and quantity.

2 Model and serial number (if applicable) and ratings of the assembly the part has been ordered for.

3. Publication number and reference used in identifying the part

When ordering parts, use part numbers and part descrip tions from renewal parts sections of equipment manuals. Parts with no commercial description must be ordered from your nearest sales or service office Recommended spare parts lists, including prices on standard assemblies are available through your nearest sales or service office.

TRAINING

Bailey Controls has a modern training center, equipped to provide service and repair instruction, which is available for training of customer personnel. Order specific information regarding course content and scheduling from your nearest sales/service representative.

TECHNICAL DOCUMENTATION

Price and delivery of additional copies of this publication can be obtained through your nearest sales or service office.

SPARE PARTS

Table 9-1 lists the recommended spare parts for the OIS. Bailey Controls suggests a stock supply of one item each to minimize the duration and cost of down time.

Table 9 1. Recommended Spare Parts List

Replacement Part		Where Used						
		OIS		OIC				
Description	Nomenclature	20	20A 20D	201	202	203	204	205
Air Filter	1990006 1	X	X		X			
Annunc ator/D sp ay Pane (tabletop)	I ADP01	X		X	X		X	X
B ack and White Pr nter	I PRT02	X	X					
Color Mon tor (19 inch)	1948623 6	X		X	X	X	X	
Co or Mon tor (33 nch)	1948014 7							X
Disk Drive Contro ler Module	1948013 1	X	X					
Fan	1947419 7	X	X		X			
Floppy D sk Dr ve	1948018 1	X	X					
Fuse, 1 A (for IMCL01)	194776_11001	X	X					
Fuse, 2 A Fast Act ng (for operator keyboard interface boa-d)	1948182 22001	X	X	X	X	X	X	
Hard D sk Dr ve	1948002 1	X	X					
Keyboard Assembly	6638514 1	X		X	X	X	X	X
Keyboard, QWERTY Aux l ary Eng neering Keyboard	IIAKB01	X		X	X	X	X	X
Mu t bus Commun cat on Loop Modu e	I MCL01	X	X					
Mu tibus Commun cat ons Processor Module	I MCP0_	X	X					
Multibus Keyboard Module	IIMKM01	X		X	X	X	X	X
Multibus Graph cs Controller Module	IIMGC01	X	X					
Mu tibus Loop Module	IIMI M01	X	X					
Mu t bus Processor Modu e	IMPM01	X	X					
Multibus Serial Interface Module	IIMSM01	X	X					
Power Supply	1948564_1				X			
Power Supply	1948564_2			X		X	X	
Power Supp y	1948565_1	X	X					
Power Supply (slide in supply)	6639225 1				X			
SASI Modu e	1948023 1	X	X					
Streaming Tape (archival storage)	IIDST01	X	X					
Touch Screen	IIATS01	X		X	X		X	

APPENDIX A - QUICK REFERENCE INFORMATION

INTRODUCTION

This section provides a source for reference information It contains the cable connections for the IIOIS20, IIOIC202 and IIOIC203.

IIOIS20/IIOIC20 WIRING CONNECTIONS AND CABLING

The OIS/OIC is internally wired when it is shipped. Connect the communication loop cables, AC power and any peripheral devices. AC power is connected to TB1 on the power entry panel (PEP). Communication loop cables connect to the IIMCL01 module in the multibus card cage. Peripheral de vices connect to the front of the PEP or to the keyboard interface panel. Refer to Section 4 and Section 5 for specific instructions on installing and configuring peripheral devices and replacement components.

Table A 1 lists the color codes for wiring the IIOIS20 IIOIS20A/D and IIOIC202/3 Table A 2 contains a list of IIOIS20 cables and their connections. These connections also apply to the IIOIS20A/D except for the operator interface peripheral devices such as the keyboard and CRT The com plete IIOIS20A wiring table is listed in Section 3.

IIOIS20 cable connections are shown in Figure A-1 IIOIC202 cable connections are shown in Figure A-2 IIOIC203 cable connections are shown in Figure A 3.

Table A 1. IIOIS20/IIOIC20 Wiring Color Codes

Color	Function
Brown B ue Green/Yellow	AC Hot AC Neutral AC Common
Brown Wh te/Green Violet	+5 VDC DC Common 12 VDC
White/Violet Green White	+12 VDC Sense + Sense

Table A 2 IIOIS20 Cable Connections

Cable No.	Cable Name	Connect From	Connect To
6637599_1	AC Power	J1 on PEP	AC High on Main Power Supply AC Low on Main Power Supply Ground on Ma n Power Supply
1947950 1	AC Power	J2 on PEP	CRT1 AC Power Connector
1947950 5	AC Power	J3 on PEP	CRT2 AC Power Connector
6638712_1	PF1 Sense	J1 on Power Supp y	TB1 on Backplane P3 on IMKM01
6638718 1	Power	+12/ 12 on Power Supp y	Terminal Str p on DC D str bution Board
6638708 1	Power	TB2 on Backp ane	Term nal Str p on DC D strıbut on Board
6638711 1	Power	CH1+, CH1 on Power Supp y	TB3, TB4, TB5, TB6 on Backplane
6638719 1	Reset Cab e	Reset sw tch on PEP	P4 on I MKM01
6637776 2	Wr st Ground	Jser	Wr st connect on on PEP
6637460 50N42	D sk Dr ve	J8 on D sk Contro er	Stream ng tape port modu e on PEP
6637460 50N42	Disk Dr ve	J43 on MCP01	SCSI Port on PEP
6638716 1	RS 232 Cable	J6 on IIMCP01 top half) bottom ha f)	 to P10 on PEP to P9 on PEP
6638715 1	RS 232 Cab e	Lower connector on P1 P4 on PEP	IMSM01
66387*5_*	RS 232 Cab e	Upper Cor ector on P5-P8 on PEP	IMSM0*
6638720_1	Lowboy Br ght	9 P n Connector on Rear of Mon tor	CRT Bezel Br ghtness CRT Beze Contrast Degauss ng Sw on PEP
6638720_2	H ghboy Br ght	9 P n Connector on Rear of Mon tor	CRT Bezel Br ghtness CRT Bezel Contrast Degaussing Switch on PEP
MKM01	RGB cable	on IIMGC01	RGB on Mon tor
6637597_31200	Upper RGB V deo	on I MGC01	RGB on Mon tor
6637597_24100	Lower RGB V deo	on MGC01	RGB on Mon tor
66374512 26N72	/O D str but on	P5 on MKM01	P1 on Keyboard /O D str but on Board

Table A 2. IIOIS20 Cable Connections (continued)

Cable No.	Cable Name	Connect From	Connect To
6634512_26N72	/O Distribut on	P6 on IIMKM01	Rear of Terminal B ock on PEP
6638713_1	Per pheral Power	J2 on Keyboard /O Distr but on Board	P3 on DC Distr but on Board on M ain Power Supp y
6638713_2	Peripheral Power	P1 on ADP Board	P4 on DC D stribut on Board on Main Power Supply
6638713_3	Periphera Power	Floppy Drive	P2 on DC Distr bution Board on Ma n Power Supp y
6634329_34N48	Floppy S gna	J7 on Disk Controller	J1 on Floppy Drive
6638849 1	ADP S gnal	P7 on I MKM01	P8 on Keyboard I/O D st Bd P2 on ADP Pane
6632686 50 1	D sk Data	J1 on D sk Control er	J1 on SASI modu e (Processor)
6634329 20N8	Hard Dr ve Data	J4 on D sk Contro er	J2 on Hard D sk Dr ve
6634329 34N12	Hard Dr ve Data	J2 on Disk Controller	J1 on Hard D sk Dr ve
6638713_4	Periphera Power	on Hard D sk	P4 on DC Distr but o- Board on Ma n Power Supp y
6638713 5	Per pheral Power	J10 on Disk Controller	F6 on DC Distr bution Board on Ma n Power Supp y
6638717 1	PF1 Sense	J2 on Main Power Supply	F7 on DC D stribut on Board on Main Power Supp y
6634512_26N2	nterna /O	P4 on MCP01	F4 on IMLM01
6634512_26N2	nterna /O	P3 on IIMCL01	P3 on I MLM01
NKMR02 3	9 25 RS-232	P5 on I MCP01	P4 on PEP
NKMR02 3	9 25 RS 232	P9 on MKM01	P1 on PEP
1948644_5	Touch Screen Extension	Touch Screen on Upper CRT	5 Pin on Touch Screen D sk Contro ler Module

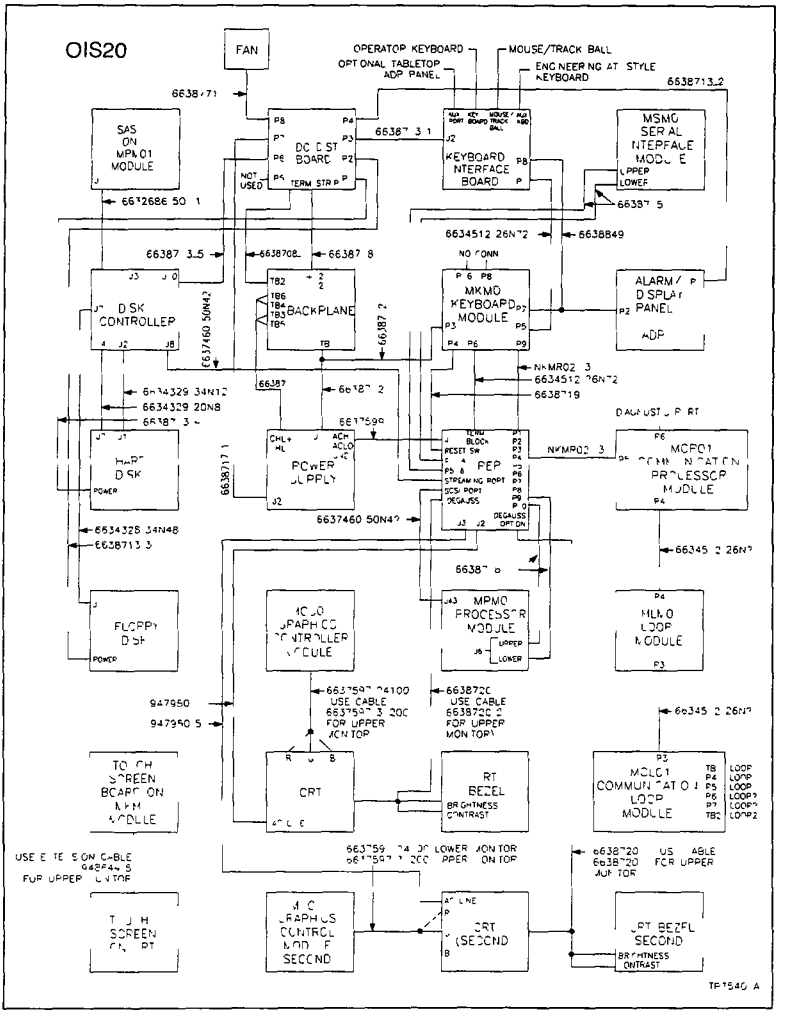


Figure A 1 IIOIS20 Cable Connections

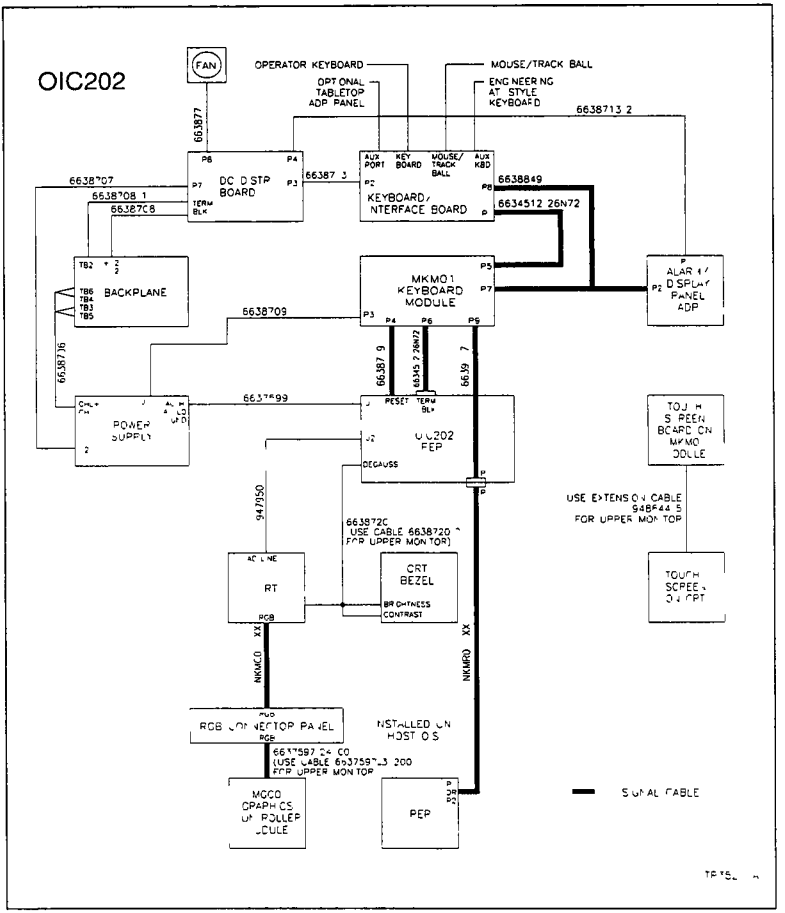


Figure A 2 IIOIC202 Cable Connections

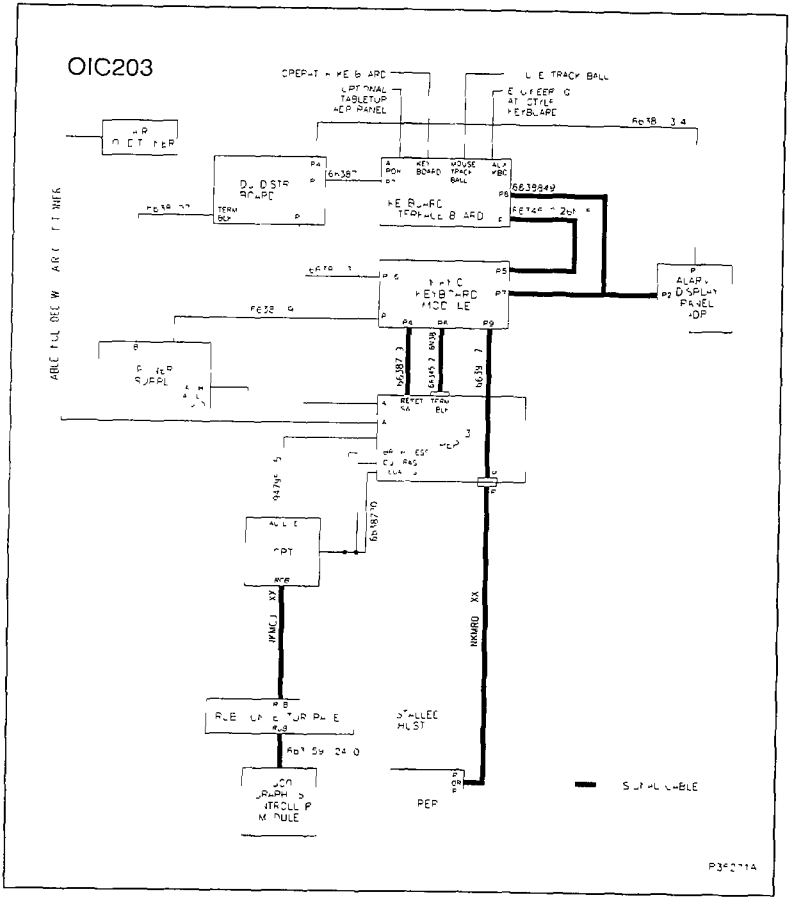


Figure A 3 IIOIC203 Cable Connections

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