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**E96-105**

**Update**

## **Operator Interface Station (IIOIS20) Hardware Manual**

This update to the operator interface station product instruction contains the IIOIS20 software release E.2 changes. Integrate the attached pages into your operator interface station manual in accordance with the following instructions

1. Replace Preface/List of Effective Pages.
2. Replace Table of Contents iii/iv through xiii/xiv
3. Replace page 3 35/3-36.
4. Add pages 3-37/3 38 through 3-59.
5. Replace page 4-7/4-8.
6. Replace page 4 15/4 16
- 7 Replace page 4-25/4-26.
8. Replace pages 5-3/5-4 and 5-5/5-6.
- 9 Add page 5 6A/5 6B
10. Replace page 5 13/5 14
11. Add page 5 14A/5-14B.
12. Replace page 5 19/5-20.
13. Replace page 6-9/6-10.
14. Replace page 8-3/8-4.
15. Replace page 9-1/9 2.

After the update has been added, insert this page of update instructions into the front of the manual immediately behind the front cover.



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## Preface

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The Operator Interface System (OIS20) 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.

## List of Effective Pages

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

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**NOTE** On an updated page, the changed text or table is indicated by a vertical bar in the outer margin of the page at the changed area. A changed figure is indicated by a vertical bar in the outer margin next to the figure caption. The date the update was prepared will appear beside the page number.

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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 O S20 and IO'C202 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)

## Safety Summary (continued)

**SPECIFIC CAUTIONS**  
(continued)

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 (p. 3-25)

Failure to turn off the main power 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)

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. (p. 4-38, 4-42)

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.

Incorrectly setting the input power select may damage the disk drive unit (p. 5-34, 5-43)

## Sommaire de Sécurité

**AVERTISSEMENT D'ORDRE SPECIFIQUE**

Ne faites pas fonctionner l'OIC si les portes ou les couvercles sont ouverts ou retirés. Tout contact avec les connexions ou circuits de courant ou de la tension risque de provoquer des blessures (p. 1-3, 1-11)

Lorsque les boulons d'ancrage sont retirés, l'écran cathodique risque de sortir à l'arrière de l'armoire IIOIS20 et l'OIC20. Si les deux boulons d'ancrage arrière sont retirés, il faut retenir l'écran afin d'éviter toute blessure. (p. 5-5, 5-48, 8-4)

## Sommaire de Securite (continued)

**ATTENTION  
D'ORDRE  
SPECIFIQUE**

Assurez-vous que toutes les étiquettes apposées sur le bloc d'alimentation et sur le panneau d'entrée de l'alimentation ont été modifiées pour correspondre au fonctionnement à 240 V c.a. sinon le matériel pourrait subir des dommages

Assurez-vous que le disjoncteur de l'alimentation principale est hors tension avant de modifier le réglage de la tension de service, sinon le matériel pourrait subir des dommages (p 3-13)

Ne pas insérer les cartes ni les périphériques tels que les dérouleurs de bande et les imprimantes dans l'OIS lorsque ce dernier est sous tension. Les composants de l'unité risquent d'être endommagés par les pointes de courant ou de tension (p 3-14, 3-26)

Assurez-vous que le disjoncteur de l'alimentation principale est hors tension avant de modifier le réglage de la tension de service, sinon le matériel pourrait subir des dommages

Assurez-vous que toutes les étiquettes apposées sur le bloc d'alimentation et sur le panneau d'entrée de l'alimentation ont été modifiées pour correspondre au fonctionnement à 240 V c.a., sinon le matériel pourrait subir des dommages (p 3-25)

Ne pas insérer les cartes ni les périphériques tels que les dérouleurs de bande et les imprimantes dans l'OIS lorsque ce dernier est sous tension. Les composants de l'unité risquent d'être endommagés par les pointes de courant ou de tension 3 37

Si l'on omet d'étendre l'interrupteur du circuit d'alimentation principal avant de retirer les cartes ou de les insérer dans le porte-cartes, l'équipement pourrait faire défaut (p 4-6, 4-7, 4-38, 4-44, 4-45, 8-1)

Si l'on néglige de brancher le câble-ruban du dérouleur de bande en continu avant d'acheminer l'alimentation au dérouleur, le matériel pourrait subir des dommages.

Lisez l'avis figurant à l'avant du panneau d'entrée d'alimentation avant d'acheminer l'alimentation au dérouleur de bande. Réglez le dérouleur en continu au même niveau de tension que la sortie du panneau d'entrée d'alimentation sinon le matériel pourrait subir des dommages (p 4-38, 4-42)

Vérifiez si le I/OIC202 est réglé de façon à recevoir 240 V c.a. et si le circuit d'alimentation au panneau d'entrée est de 240 V c.a., sinon le matériel pourrait subir des dommages (p 4-46)

Un mauvais réglage de la sélection de l'alimentation d'entrée pourrait endommager l'unité de disque (p 5-34, 5-43)

**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.

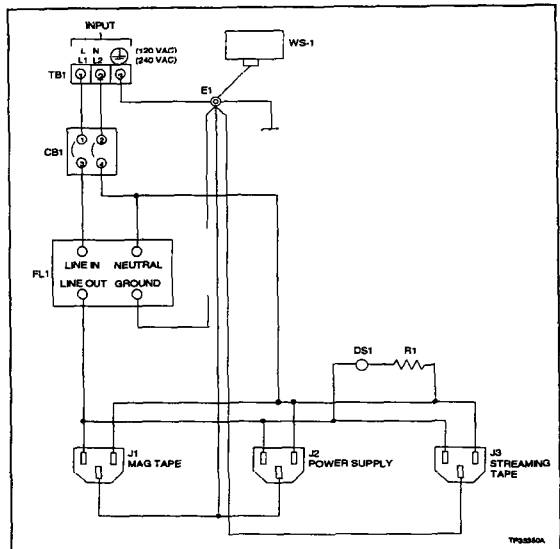


Figure 3 24. IIOIS20, IIOIS20A/D and IIOIC202 Power Entry Panel AC Wiring

---

**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 conversion 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 procedures 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 procedures to reload an existing configuration and software.

**General Notes** Save all existing configuration before loading new software

If hard errors are encountered by the disk system (9100, 9300, 9400, etc.) during the load process, the hard disk will have to be reformatted. Bad track mapping must be done. A new load can be used to upgrade the machine to software release E.2. If errors persist, check the disk system hardware including the cables. The hard disk may need replacing.

**E.2 Notes** Use the set time and date function to establish GMT (Greenwich mean time), the first time the console is started. See the operation and configuration manual for an explanation.

DEVSTAT tags must be defined for all printers.

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 software 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	A2	15
	239	A41	15
	240	A1	15
	A41	A40	15
IIMKM01	U4	1900212C10	C 0
IMLM01	J2	1900*65E*1	E 1
IMPM01	U49	1900214B12	B 2
	U19	1900214B22	B 2
IMSM01	IC31	N/A	V1 010
	Vendor ID No		V1 010
	240028 DRV		V1 010
IPST01 (Plant Loop)	U23	1900208B10	B 0
	U24	1900208B10	B 0
IIIST01 (INF -NET)	U23	1900207E11	E 1
	U24	1900207E11	E 1
Touch screen	E27*-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 initializes 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 alarm descriptor file size. It is needed to restore the configuration.

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 software 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
```

## INSTALLATION

---

- 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 console 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 convert 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 configurations. 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 procedure 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:** It may be necessary to install a new version of the *SVCFG.CN* and *LDCFG.CN* files on the hard drive if the number of tags on this console has been changed since the last software installation. This is only a concern if the new tag count falls into a different 2,500 tag range than when loading the previous software revision. Refer to *SVCFG.CN AND LDCFG.CN* for an explanation.

**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:

000> 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* files. 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 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.

**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:** If user created **DT** files must reside on the hard disk, they should be stored in directory USN 0.55. Any user created **DT** files not in directory USN 0.55 will not be saved.

## INSTALLATION

---

**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 console with trend data files from a previous release can cause unpredictable results. Software release E 2 trend data files may not be used on a console running a previous release.

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:

**T000xxx.TR**

Where xxx 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 *Txxx.TR* where xxx 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 in DDT, the trend files will be stored in directories USN 1 14-2B by using the above command. **Do not assume** the disks blank with no files just because it does not contain any files in directory USN 1 00.

---

***Saving Log Report Definition and Retention Files***

This section contains procedures to save log report definition, 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 in the DDT terminal, the log files will be stored in directories USN 1 2C to USN 0 34 by using the above command. **Do not assume** the disks blank with no files just because it does not contain any files in directory 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 in the DDT terminal the log files will be stored in directories USN 1 35 to USN 0 3D by using the above command. **Do not assume** the disk is blank with no files just because it does not contain any files in directory 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 directory USN 0 07

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 B1 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 command 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:
```

## INSTALLATION

---

### USING THE UTILITY

Use the off line utility provided and the DDT terminal to download 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 messages 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 `I->` 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

```
I:> LF 1000 UTILITY.OB 0
```

```
I:> 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:

```
I:> LF 1000 UTILITY.OB 1
```

```
I:> MT
```

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

*Please enter time and date [DD-MMM YYYY  
HH:MM:SS]?*

The DDT terminal displays this message:

*BCCo. OIS Diagnostic/Debug Terminal*

**NOTES:**

1 The same terminal can be used as both 68K terminal and DDT terminal by moving the RS-232C cable between ports. Remember to observe ESD cautions when handling the cable.

2 Some of the load instructions repeat the instruction to start up the utility, the utility does not need to be loaded again once it is started.

---

**Logging into Off-Line Utility**

With the introduction of the password security function, there are some operations and procedures that are run from the utility terminal which are protected. To perform these operations, log in to the terminal with a security maintenance password. Each occurrence that requires a log in will be noted in the appropriate section.

**INSTALLATION**

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** It is important that the password security configuration always contain at least one user ID and password which is configured as the default MAINT.

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 of 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 configuration 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** converts on program, when the **RUN** command is 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 configuration 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**. It 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 software. 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 database 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
```

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**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
```

Directory of FD00 02 02 ALMDESC CF									
Usn	F e	Ex	Typ	Rsz	F esize	Wrp	RDP	Updated	
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 manual 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 configuration files Refer to the operation and configuration manual for more information. Refer to SLDG revision 5.3 documentation for information regarding its ASCII database tools



**Multibus Module Removal**

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

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.

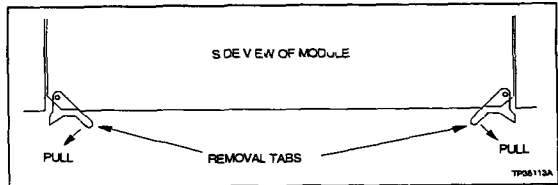


Figure 4-5. Removing Multibus Modules

STANDARD HARDWARE



Multibus Graphics Controller Module

Bay Nomenclature - 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 location of the pins.

**NOTE:** Refer to **SECTION 5 - II/OIS20 OPTIONS**, for the jumper settings of any additional multibus graphics modules. Verify the jumper placement to reduce the chance for an interrupt on the OS operation.

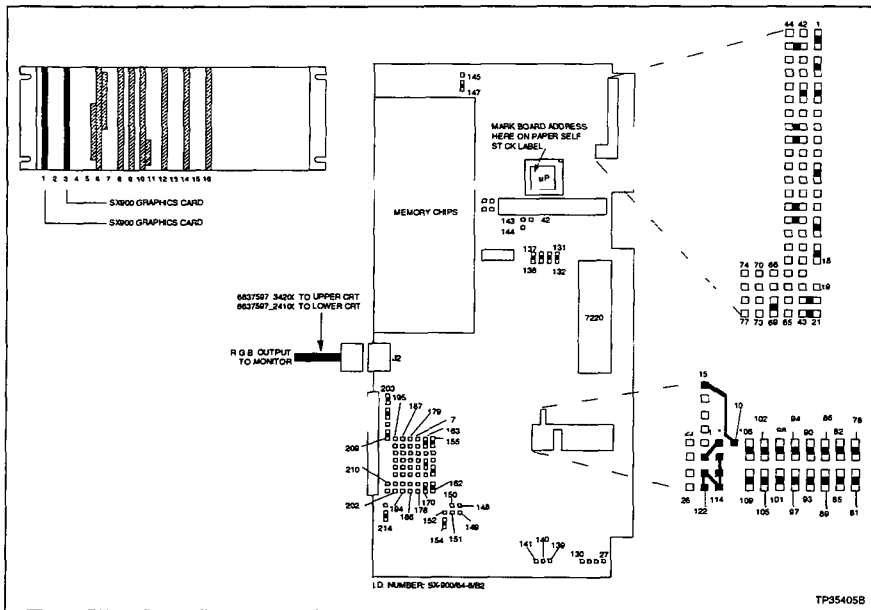


Figure 4-6 Multibus Graphics Controller Module

**Multibus Processor Module**

Ba ey Nomenclature - IIMP01

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.

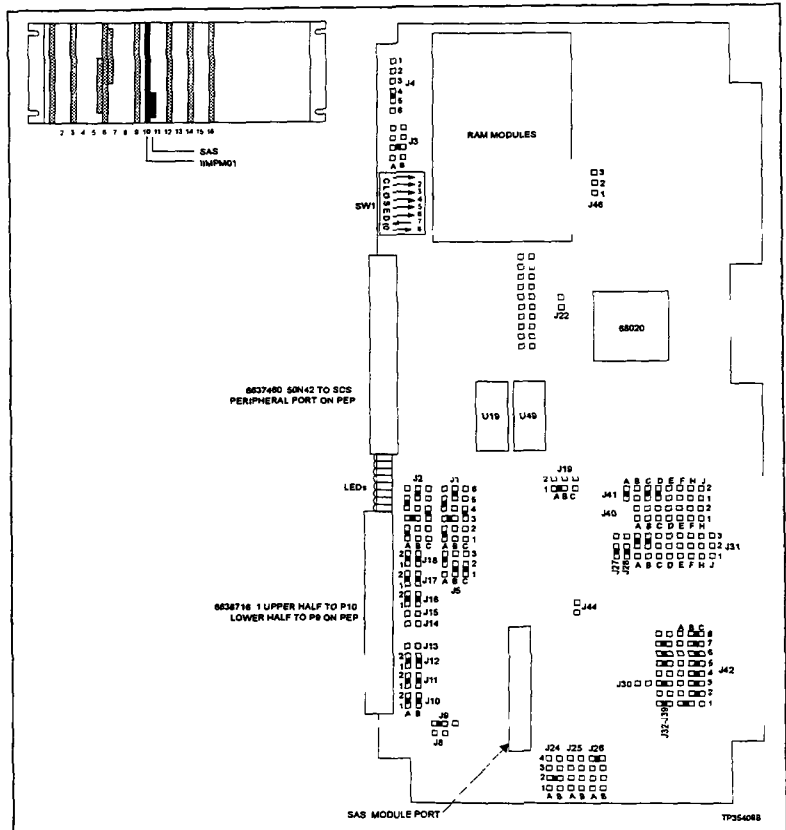


Figure 4 11. Multibus Processor Module

**STANDARD HARDWARE**



**Multibus Loop Module**

Bailey Nomenclature I1MLM01

The multibus loop module, shown in Figure 4 12, allows communication between the multibus communication processor module (I1MCP0) and the INFI NET or Plant Loop communication highway through the termination module (I1MCLO1). The switch settings shown in the figure are default 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:** Dipswitch SW1 and SW2 selects the loop address and ring number of this OIS and depends on your individual system.

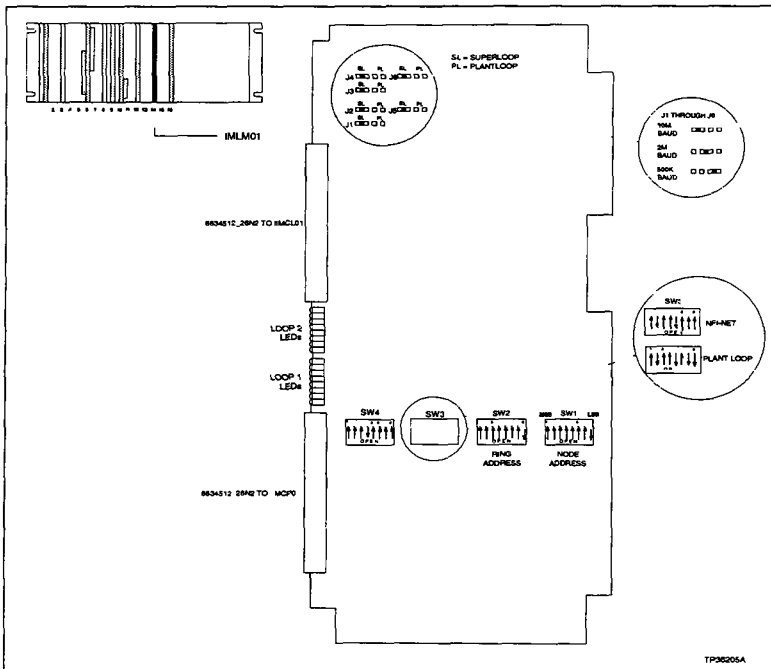


Figure 4 12. Multibus Loop Module

**Color Monitor**

Battery Part Number 1948623\_6 (19-inch 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.

**I/OIS20 and I/OIC202 NOTES:**

1. Cable number 6637597\_24100 connects the lower monitor of the I/O S20 and I/O C202 to the multibus graphics controller board. Cable number 6637597\_34200 connects the upper monitor to the multibus graphics controller board. Labels R, G and B represent red, green and blue, respectively.
2. Maximum length of RS-170 RGB cables is 250 feet. For distances over 250 feet, optical modems (NREM01) using up to 1000 feet of fiber optic cable (NKFM01-xx) are required.
3. If remote CRTs are being installed, ensure they are powered using the same polarized power and ground as the O/S and O/C to prevent ground loops. Failure to do so may cause display distortion. If ground loops are still suspected, use optically isolated modems to eliminate the problem.
4. A 9-pin D-sub connector connects an external brightness, contrast and degauss control. Use cable number 6638720\_1 for the lower monitor and cable number 6638720\_2 for the upper monitor. Brightness and contrast controls are mounted on the bezel. The degauss switch is mounted on the PEP.
5. CRT wiring connector location may be slightly different for each mode of OIS and O/C.
6. Brightness and contrast controls are located on the front panel of the power entry panel of the I/OIC203.
7. Inteco and Aydin monitors are autosensing and do not need to be switched if the power to the cabinet is 120 volts or 220 volts. However, other monitors may need to be switched to prevent damage from over voltage or undervoltage.
8. For OIC205, make connections directly to the monitor.

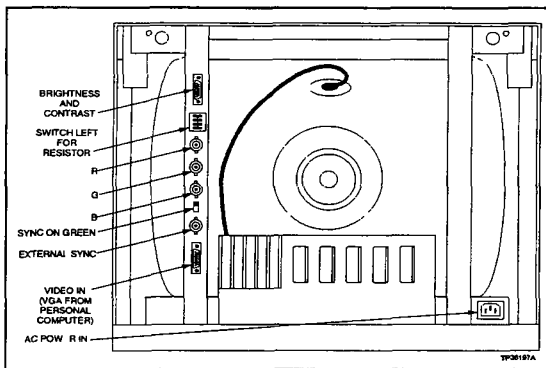


Figure 4 17. Color Monitor

*Table 5-2. Connections to Annunciator Display Board*

From P1	From P2
To P1 on optional ADP Panel use cable assembly number 1948978 1	To AUX port on keyboard interface panel use cable number 1948978 1

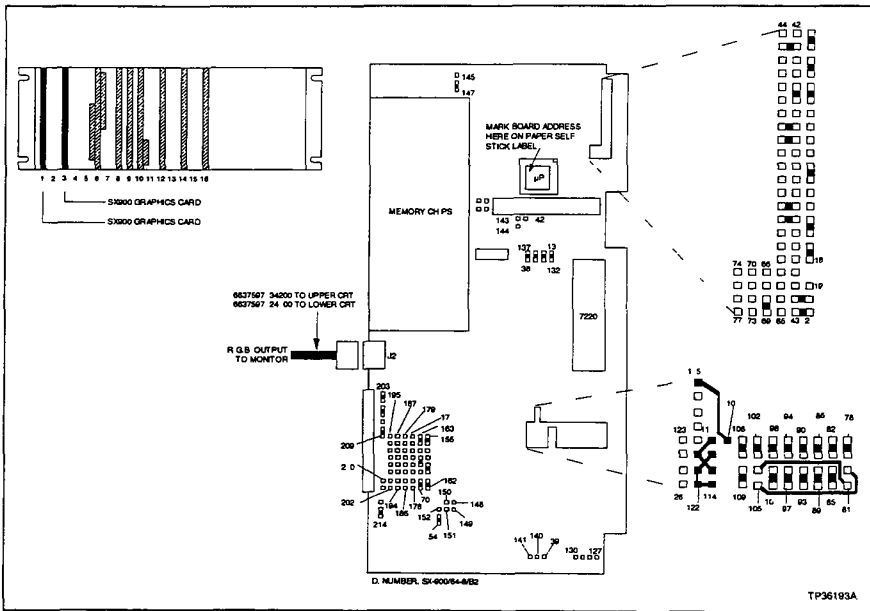
# OPTIONAL HARDWARE



## Second Color Graphics Module

Bay Nomenclature 1MGC01

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 1MGC01 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)  
 Bailey Part Number - 1948623 6 (19 inch 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.

<b>WARNING</b>	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.
<b>AVERTISSEMENT</b>	Lorsque les boulons d'ancrage sont retirés, l'écran cathodique risque de sortir à l'arrière de l'armoire IIOIS20 et IIOIC202. Si les deux boulons d'ancrage arrière sont retirés, il faut retenir l'écran afin d'éviter toute blessure.

*Table 5-3 19 Inch Color Monitor Options*

Nomenclature	Description
I O S202	One CRT mounted in cabinet and one mounted on the upper CRT mount
I OIC202	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 Cable number 6637597 24100 connects the power monitor of the IIOIS20 and IIOIC202 to the multibus graphics controller board. Cable number 6637597 34200 connects the upper monitor to the multibus graphics controller board. Labels R, G and B represent red, green and blue, respectively.

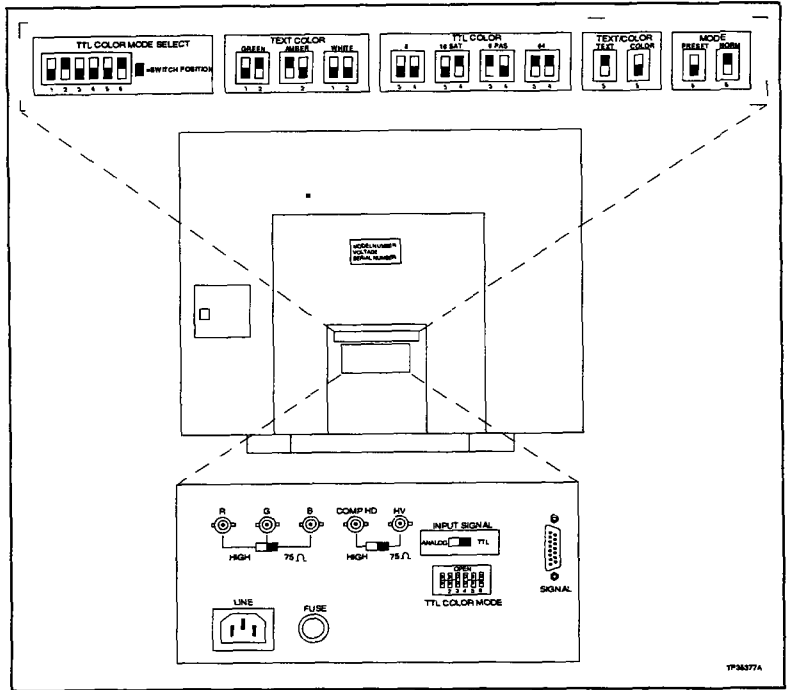
2 Maximum length of RS-170 RGB Cables is 250 feet. For distances over 250 feet, optical modems (NREM01) using up to 1000 feet of fiber optic cable (NKFM01-xx) are required.

3 If remote CRTs are being installed, insure they are powered using the same polarized power and ground as the OIS and OIC to prevent ground loops. Failure to do so may cause display distortion. If ground loops are still suspected, use of optically isolated modems will eliminate the problem.

4 A non-pend subconnector connects an external brightness, contrast and degauss control. Use cable number 6638720\_1 for the lower monitor and cable number 6638720\_2 for the upper monitor. Brightness and contrast controls are mounted on the bezel. The degauss switches are mounted on the PEP.

5 CRT wiring connector location may be slightly different for each model of OIS and OIC.

6 Brightness and contrast controls are located on the front panel of the power entry panel of the IIO C203.



1738377A

Figure 5 2a. Optional Color Monitor

**OPTIONAL HARDWARE**

---



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 to 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 to the relay terminal labeled C (common). Connect the white wire to the relay terminal labeled 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**

Base Nomenclature - I 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	OIS Cabinet
1948465_2	Spare Ink Roll
1948464_2	Spare Paper Roll
NKMC01-25	RGB Cabinet Assembly
1945080_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.

**OPTIONAL HARDWARE**

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**Streaming Tape Drive**

Bailey Nomenclature - DST01

The streaming tape drive peripheral consists of a 60 megabyte 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 receptacle 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 RESTART** 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	40, 427, 520
M crosc ence	58, 720, 256
Pr am V185	66, 863, 104
Maxtor XT-1085	67, 108, 864
Seagate ST4086	68, 198, 400
Pnam 519	150, 282, 240
Maxtor XT-2190	150, 282, 240

**OPTIONAL HARDWARE**

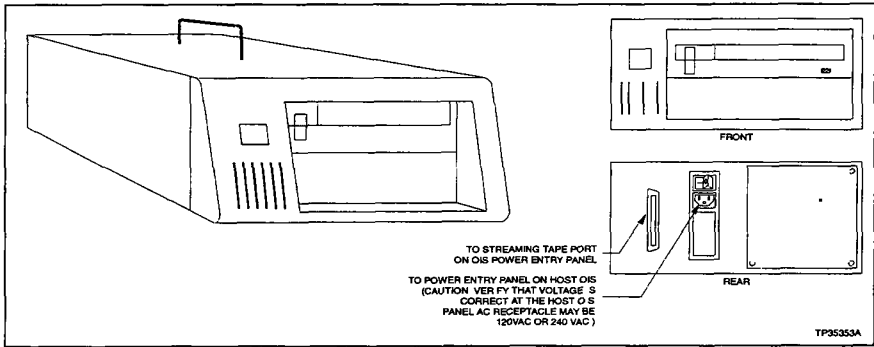


Figure 5 7 Streaming Tape IIDST01 Cable Connections

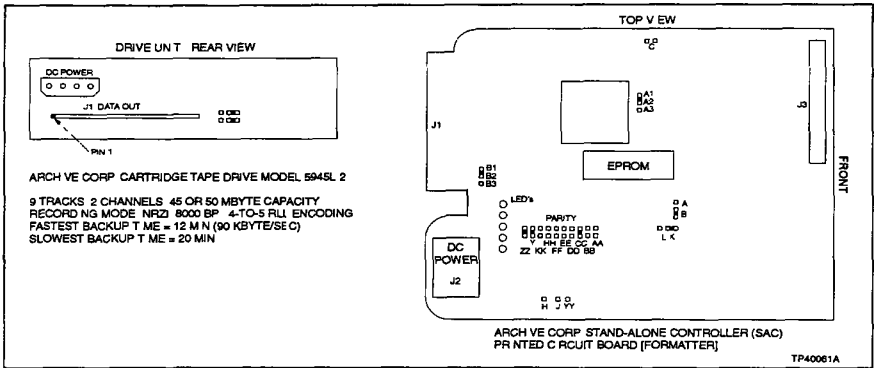


Figure 5 8 Streaming Tape Drive Jumper Settings

Table 6-2. Multibus Graphics Controller Module Self Test Status

Code	Meaning	Action
10	Il ega command	Verify syntax and enter again
11	Stack overf ow	Reset OIS and test aga n
12	Stack underf ow	Reset OIS and test aga n
13	Se f-test OK	Test comp ete, cont nue with the next test
14	Program error	Reset O S and test again
15	C rcular buffer fu	Test again
16	Reset completed	Test again
17	l egal track ng command	Ver fy syntax and enter aga n
18	llega nk ng command	Reset O S and test aga n
19	l egal rubberband command	Verify syntax and enter again
1A	Doing se f-test	Test in progress
1B	Self-test fa	Test aga n
1C	CPU t meout	Reset OIS and test again

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

DM 3F90001

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 (IIMS01)**

1. Connect the Monitor-68K terminal to the P10 connector on the power entry panel. Press **Enter** on the keyboard. A *l:>* 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 *l:>* prompt).

Type:

- DM 1FA0000 100 **Enter**
- DM 1FA2000 100 **Enter**
- DM 1FA4000 100 **Enter**
- DM 1FA6000 100 **Enter**
- DM 1FA8000 100 **Enter**
- DM 1FAA000 100 **Enter**
- DM 1FAC000 100 **Enter**
- DM 1FAE000 100 **Enter**

For

- Port 0
- Port 1
- Port 2
- Port 3
- Port 4
- Port 5
- Port 6
- Port 7

**Test Disk System Functions**

This nondestructive test returns a *l:>* 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 *l:>* 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**

**PART REPLACEMENT**

**Color Monitor for IIOIS20/IIOIC202**

Bailey 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 (8638577A1) 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, 1/16 inch bolts under the CRT shelf that hold the front of the CRT mounting tray to the cabinet.

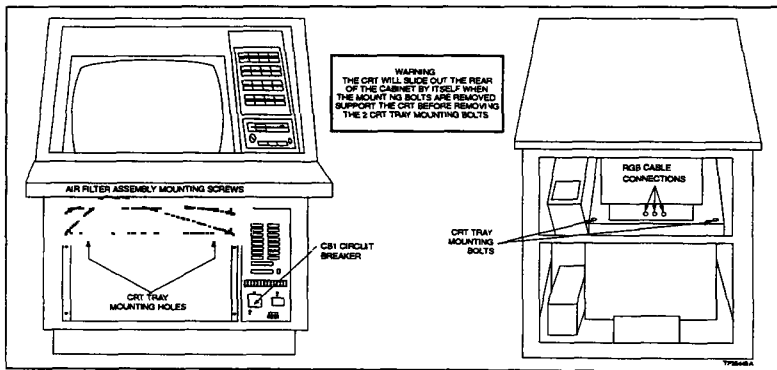


Figure 8 2. Color Monitor Removal for IIOIS20/IIOIC202

**REPLACEMENT PROCEDURES**



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 retirés, l'écran cathodique risque de sortir à l'arrière de l'armoire IIOIS20 et IIOIC20. Si les deux boulons d'ancrage arrière sont retirés, il faut retenir l'écran afin d'éviter 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.

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## SECTION 9 - SUPPORT SERVICES

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### **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 descriptions 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.

## SUPPORT SERVICES



Table 9 1. Recommended Spare Parts List

Replacement Part		Where Used						
Description	Nomenclature	OIS		OIC				
		20	20A 20D	201	202	203	204	205
Air Filter	1990006_1	X	X		X			
Annunciator/Display Pane (tabletop)	IADP01	X		X	X		X	X
Black and White Printer	I PRT02	X	X					
Color Monitor (19 inch)	1548623_6	X		X	X	X	X	
Color Monitor (33 inch)	1548014_7							X
Disk Drive Controller Module	1548013_1	X	X					
Fan	1547419_7	X	X		X			
Floppy Disk Drive	1948018_1	X	X					
Fuse, 1 A (for IIMCL01)	194776_11001	X	X					
Fuse, 2 A Fast Acting (for operator keyboard interface board)	1948182_22001	X	X	X	X	X	X	
Hard Disk Drive	1948002_1	X	X					
Keyboard Assembly	6638514_1	X		X	X	X	X	X
Keyboard, QWERTY Auxiliary Engineering Keyboard	I AKB01	X		X	X	X	X	X
Multibus Communication Loop Module	I MCL01	X	X					
Multibus Communications Processor Module	IIMCP0_	X	X					
Multibus Keyboard Module	IIMKM01	X		X	X	X	X	X
Multibus Graphics Controller Module	IIMGC01	X	X					
Multibus Loop Module	I MLM01	X	X					
Multibus Processor Module	IIMPM01	X	X					
Multibus Serial Interface Module	IIVSM01	X	X					
Power Supply	1948564_1				X			
Power Supply	1948564_2			X		X	X	
Power Supply	1948565_1	X	X					
Power Supply (slide-in supply)	6539225_1				X			
SASI Module	1948023_1	X	X					
Streaming Tape (archival storage)	IIDST01	X	X					
Touch Screen	IATS01	X		X	X		X	