

## **Field Feature Bill of Material (FFBM)**

**PN 76F9097**

### **INSTALLATION of an Ethernet Line Adapter (FC 4781) in IBM 3745 Models 130, 150 and 170**

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## Before Installation (Steps 1-8)

### 1.0 Machines Affected

3745 Models 130/150/170.

### 2.0 Prerequisites/Concurrent/Companion

#### 2.1 Prerequisites

(Must be installed prior to this installation)

- MICROCODE - Level C38002 or later.

Checkpoint: Check label on normal and back-up diskettes or use the MLT function from the MOSS console.

- NCP V6R1 is the minimum level to support ETHERNET feature.
- Documentation - Level A98314 or later.

Checkpoint: Pages YZ.

#### 2.2 Concurrent

(Must be Installed Together)

None.

#### 2.3 Companion

(May be installed separately)

None.

### 3.0 B/M(S) to be Installed

**Note:** Review each numbered item in this section to determine your needs.

#### 3.1 Install the Following B/Ms

B/M 72f0033 - ELA installation (FC 4781)  
76F9097 - Installation instructions

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## 3.2 Install one of the following B/M's

B/M 76F9069 - Labels for Model 130.  
 B/M 76F9067 - Labels for Model 150.  
 B/M 76F9059 - Labels for Model 170.

### As required FFB/M(s):

FFB/M 80G5121 - Install Microcode Level C38006.  
 FFB/M 80G5129 - Install Documentation Level A98314.

## 4.0 Preparation

- Familiarize yourself with the purpose and details of the installation instruction before to obtain the customer machine time commitment.
- Check all the items and count the parts listed on the B/M to be installed to determine that all the parts were received.
- See the *Hone installation sheet* to determine the adapter card positions to be installed.

### Notes:

1. Up to 2 **ELA** can be installed in 3745 Models 170 or 130.

In a Model 170, there are limitation rules to install ELA feature. See the *Hone installation sheet*.

Only one **ELA** can be installed in a 3745 Model 150.

2. In Models 170 and 130 the first **ELA** (if no HPTSS already installed) must be installed in adapter position **3 (Card positions A1T2 and A1U2)** and the second **ELA** must be installed in adapter position **4 (Card positions A1R2 and A1S2)**.

If one HPTSS is installed, the ELA will be installed in position 4.

Determine the position with the *Hone Installation sheet*.

Adapter Pos.	POS. 4	POS. 3
Card Pos.	R2 / S2	T2 / U2
Specify Code	SC 9782	SC 9781

- In a Model 150 the **ELA** is installed in the adapter position **3** (Card in the positions A1T2 and A1U2).

## 5.0 Programming

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## 5.1 Diagnostic Programs

To reflect this change, CDF will be performed in Step 11.2, "Update the Configuration Data File (CDF)" on page 12. This is essential to allow the internal diagnostics to be run properly.

## 5.2 System Programs

To implement this change, the customer must update the control program (NCP generation), if not already done.

NCP Tier		Usage Limits	(Up to...)
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1		1 TSS/HPTSS/ELA	+ 1 TRA + 2 CA
2		2 TSS/HPTSS/ELA	+ 1 TRA + 2 CA
2.5		6 TSS/HPTSS/ELA	+ 0 TRA + 4 CA
	or	2 TSS/HPTSS/ELA	+ 2 TRA + 4 CA
3		8 TSS/HPTSS/ELA	+ 0 TRA + 8 CA
	or	4 TSS/HPTSS/ELA	+ 4 TRA + 8 CA
4		24 TSS/HPTSS/ELA	+ 0 TRA + 16 CA
	or	20 TSS/HPTSS/ELA	+ 4 TRA + 16 CA

## 6.0 Purpose and Description

### 6.1 Purpose

Install an ELA feature.

### 6.2 Description

Install Adapters cards, internal cable and labels.

## 7.0 Installation Time

To be reported as MES.

FFB/M	Machine Hrs	System Hrs.	Nbr of CE
72F0033	1.5	0.0	1

## 8.0 Special Tools and/or Materials Required

ESD kit (PN 6428316).

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## Installation (Steps 9-11)

### 9.0 Safety

- Remove all electrical power from the machine and associated machines before the installation.
- Review the **Safety Inspection Procedures** located at the beginning of the *3745 Maintenance Information Procedure (MIP)* manual, SY33-2070.
- Review **Safety Notices** located at the beginning of the *3745 Maintenance Information Procedures* manual, SY33-2070.

### 10.0 Details of installation

Before installation the following steps must be performed:

- \_\_\_ • Ask the customer to set all lines and channel addresses off-line for this controller.
- \_\_\_ • Ask the customer to logoff the console, if not already done.
- \_\_\_ • Ask the customer for the **maintenance password**.

#### 10.1 Checking, Diagnostics, Power OFF

From the Control Panel:

- \_\_\_ 1. Check that **Power Control** indicator displays **3** .. If it does not, record the value \_\_\_, then Press the **power control** key until **3** is displayed.
- \_\_\_ 2. Press the **Validate** key.

From the Local Console:

- \_\_\_ 3. From **CA INTERFACE DISPLAY** screen, record **enabled channel adapters**, then **Disable** all channel adapters.
- \_\_\_ 4. Wait for **Interface status disabled** for all CA's.  
Press **F4**.
- \_\_\_ 5. Enter the **maintenance password**, Press **Send**.
- \_\_\_ 6. If the CCU is running, Enter **RST** to reset the CCU.

The MOSS goes in **MOSS ALONE** state.

## 10.1.1 Display the Configuration Data File (CDF) on Local Console

- \_\_\_ 1. Enter **CDF**, Press **Send**.
- \_\_\_ 2. Select **DISPLAY/UPDATE**, Enter **1**, Press **Send**.
- \_\_\_ 3. Select **LA**, Enter **10**, Press **Send**.  
Check for an **N** under the LA position that will be installed according to the *Hone installation sheet*.
- \_\_\_ 4. Press **F1**.

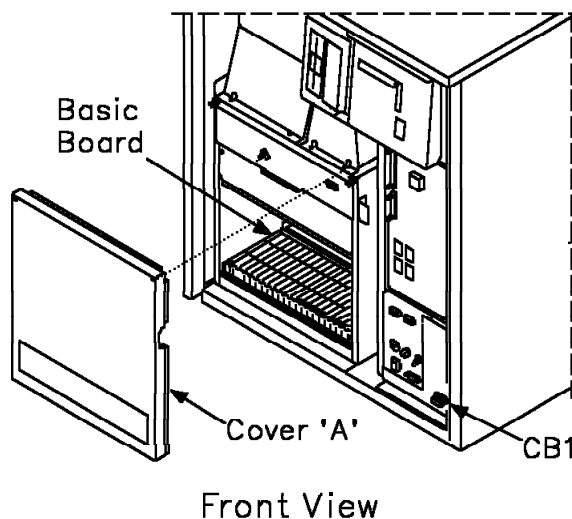
## 10.1.2 Run the Diagnostics

- \_\_\_ 1. Enter **ODG**, Press **Send**.
- \_\_\_ 2. Select **IOCB**, Enter **3**, Press **Send**.
  - If any error is reported, see the *MIP*, Chapter 1, and follow the appropriate procedure.
  - If no error is reported, Press **F1**.

**Note:** If one ELA and/or one HPTSS is already installed , ELA/HPTSS diagnostics should be run to check the DMA bus.

## 10.1.3 Power OFF

- \_\_\_ 1. Power OFF the 3745 from the control panel.
- \_\_\_ 2. Open the front system cover and switch OFF **CB1**.



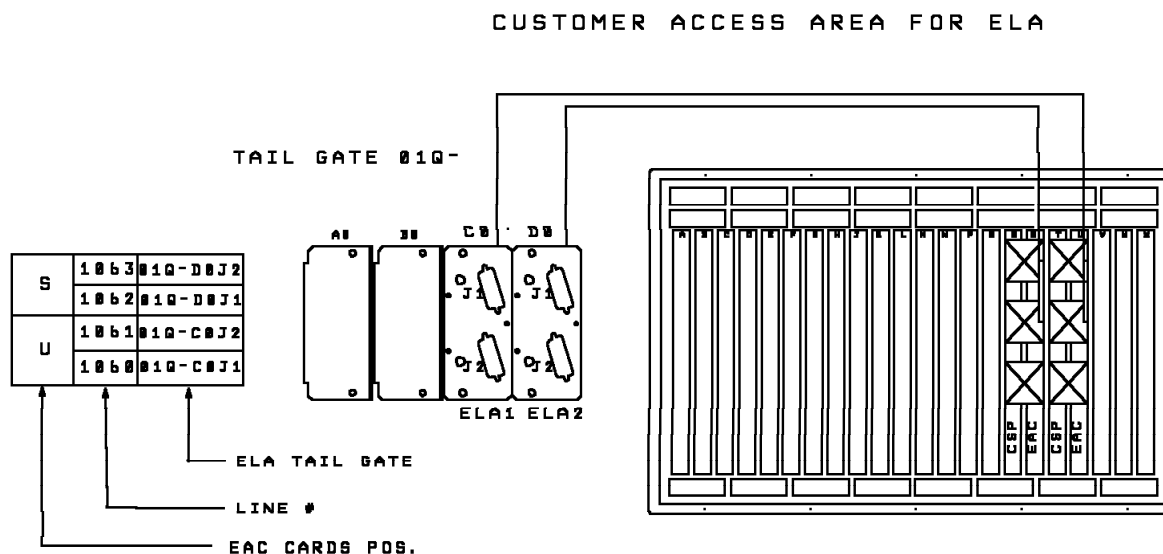
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## 10.2 Hardware Installation

**Warning:** Follow the existing ESD procedures when handling logic parts.

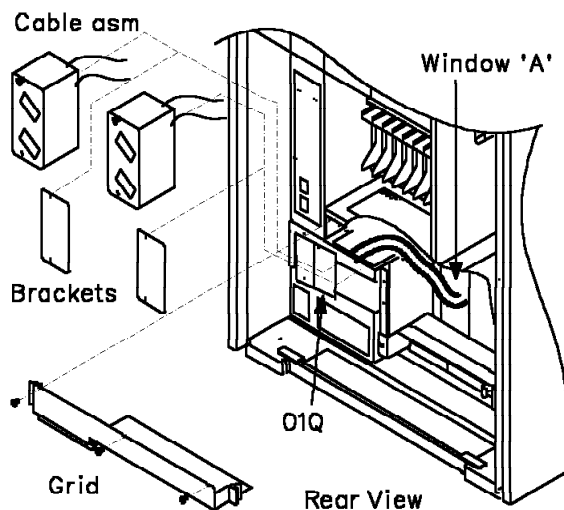
### 10.2.1 ELA Internal Cable asm (PN 72F0025) Installation

- \_\_\_ 1. Open the rear system cover.
- \_\_\_ 2. Locate the **ELA** tailgate in position Q at the 3745 bottom left, and locate the connector position to be installed.
  - If no HPTSS installed, the first ELA adapter tailgate connector in 3745 Model 170 and 130 is installed in position 01Q-C0, the second is installed in position 01Q-D0.
  - The ELA adapter tailgate connector installed in 3745 Model 150 is installed in position 01Q-C0.

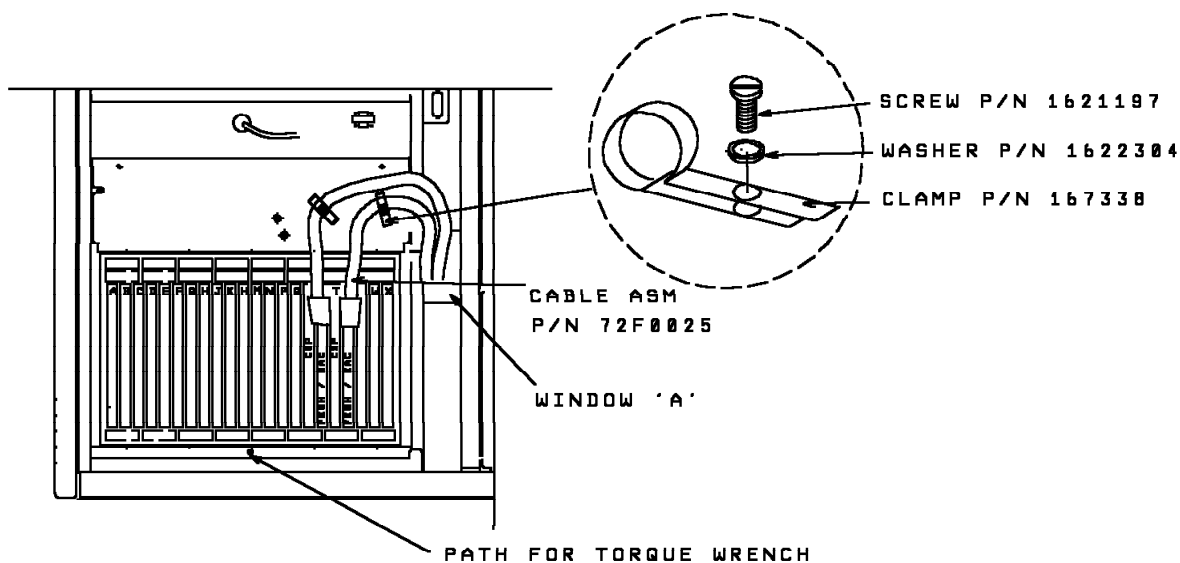


- \_\_\_ 3. Remove the dummy bracket from the identified tailgate position. (will not be re-used).
- \_\_\_ 4. Unfasten 3 screws and remove the grid over the CA tailgate.





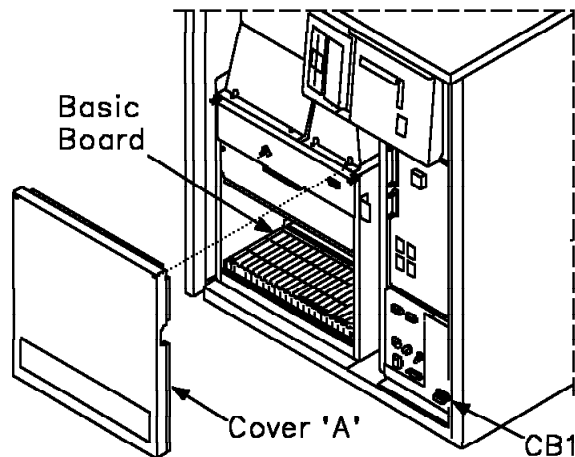
- 5. Pass the cable connector of ELA asm cable (PN 72F0025) thru the bottom window **A** of the frame and route the cable to the front of the machine.
- 6. Secure the cable tailgate using the captive screws on the tailgate.
- 7. Re-install the grid over the CA tailgate.



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## 10.2.2 DC-REG Card Installation

- \_\_\_ 1. From the front side of the machine, remove the cover 'A'.



Front View

**Note:** If installing an ELA in the adapter position 3 (cards in T2, U2) a DCREG card must be plugged in the position A1-ZG of the base board. If so, unplug the cards from the positions A1R2 to A1X2.

If installing an ELA in the adapter position 4 (cards in R2, S2) a DCREG card must be plugged in the position A1-ZE of the base board.

If so, unplug the cards from the positions A1-K2 to A1-U2 .

**Unplug the MUX/TRSS/HPTSS/ELA cables (If any) from the cards before removing the cards and ensure that cards are correctly labelled according to their positions, if it does not, label them.**

- \_\_\_ 2. With a torque wrench, unfasten the bottom 'spring retainer' screw (see figure on previous sheet).
- \_\_\_ 3. Disengage the retainer and install the DC-REG card in the identified position.
- \_\_\_ 4. Replace the retainer and tighten the screw.

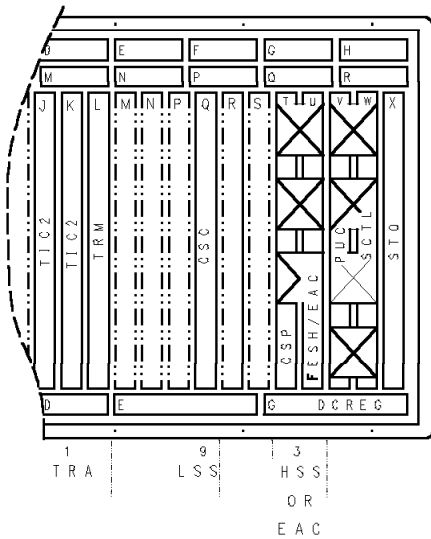
## 10.2.3 Adapter Card Installation

- \_\_\_ 1. Check that the holders are installed on the cards received with the FFB/M.
- \_\_\_ 2. Identify the position of the cards to be installed and remove the dummy cards, and/or the BPC1 card (Can be plugged in the socket 4 of the CSP slot).
- \_\_\_ 3. Install the cards (CSP card in 01A-R2 or T2, EAC card in 01A-S2 or U2).

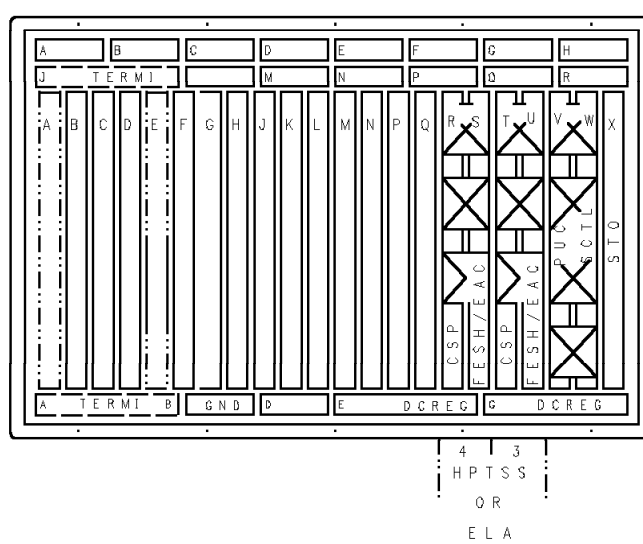
**Note:** Before seating the **EAC** card, plug the cable assembly installed in previous Step in the socket J1 of the card.

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3 7 4 5 1 5 0 C A R D S L O C A T I O N



3 7 4 5 1 7 0 O R 1 3 0 C A R D S L O C A T I O N



- \_\_\_ 4. Install 3 crossovers (PN 8645777) in positions W, X, Y of the CSP/EAC cards.

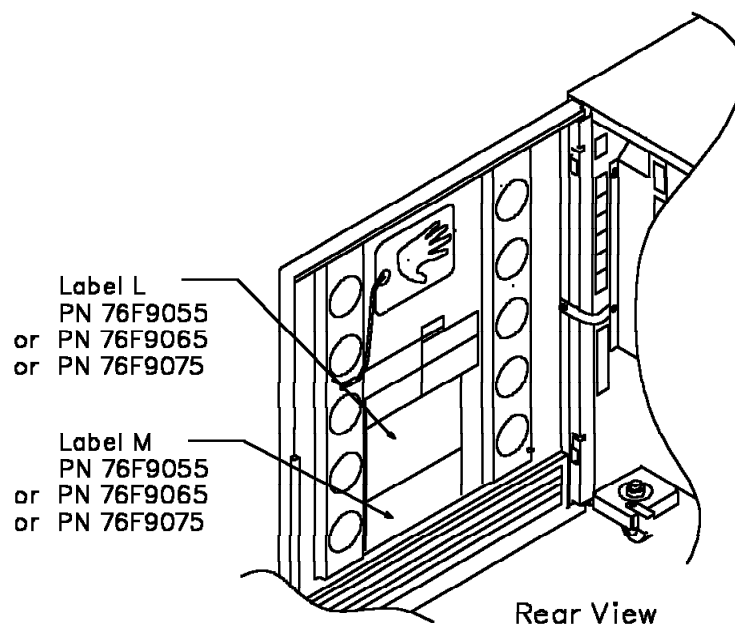
## 10.2.4 Securing cable

- \_\_\_ 1. Secure the cable asm with the clamp (PN 167338), screw (PN 1621197) and washer (PN 1622304) (see figure on page 8).
- \_\_\_ 2. Reinstall the cover 'A'.

## 10.2.5 Labelling

- \_\_\_ Attach the labels **L** and **M** from PN 76F9055 (if Model 170) or PN 76F9065 (if Model 130) or PN 76F9075 (if Model 150) inside the door, as shown on the following figure.

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## 11.0 Test Procedures

### 11.1 Power on and MOSS IML

- \_\_\_ 1. Switch **CB1** ON and close the system cover.

From the control panel:

- \_\_\_ 2. Press the **Function** key until a flashing **1** is displayed.
- \_\_\_ 3. Press the **Validate** key.
- \_\_\_ 4. Press the **power ON** key.
- \_\_\_ 5. A **MOSS IML** is performed.

Verify that the green LED on the ELA tailgate is **ON**.

If it does not, see the *MIP*, Chapter 1, and follow the appropriate procedure.

### 11.2 Update the Configuration Data File (CDF)

From the Local Console:

- \_\_\_ 1. When **CA INTERFACE DISPLAY** screen is displayed, press **F4**
- \_\_\_ 2. Enter the **maintenance password**. Then, press **Send**.
- \_\_\_ 3. Enter **CDF**. Then, press **Send**.
- \_\_\_ 4. Select **Verify**, Enter 4. Then, press **Send**.

The values from the disk and the machine should be identical except for the adapter you have just installed.

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To update the CDF with machine values, Enter **2**. Then, Press **Send**.

- When the function is completed, the message "CDF verify completed" is displayed.  
Press **F6**.
- If adapters are not recognized, see the *MIP*, Chapter 1, and follow the appropriate procedure.

## 11.3 Display the Configuration Data File (CDF)

1. Select **DISPLAY/UPDATE**, Enter **1**, Press **Send**.
2. Select **LA**, Enter **10**, Press **Send**.  
Check for a **Presence=Y** and **LA type=6 (ESS)** for the LA (3 or 4) you have just installed.
3. Press **F1**.

## 11.4 Run the Diagnostics

1. Enter **ODG**, Press **Send**.
2. Select **ESS**, Enter **9**.
3. Enter the **Adapter Number**, Press **Send**.
  - If any error is reported, see the *MIP*, Chapter 1, and follow the appropriate procedure.
  - If no error is reported, Press **F6**

## 11.5 Wrap tests.

### 11.5.1 Run the routine UF02.

(On port 1 of the ELA you have just installed.)

1. Enter **UF02** in the Diag field.  
Enter the LA number in ADP field, Press **Send**.
2. When prompt **Enter ETGX-J2 config....** is displayed, (X is the LA number),  
Install the ELA wrap plug (PN 70X8670) on the connector J2 of the ELA tailgate,
3. Enter **RF1**, Press **Send**.  
  
If an error is reported, see the *MIP*, Chapter 1, and follow the appropriate procedure.  
  
If **No error is found**, and if a properly terminated transceiver/cable assembly is available from the customer, remove the wrap plug and rerun the routine **UF02**, as follows.  
Otherwise, proceed to the next bullet and run routine **UF03**.
4. When prompt **Enter ETGX-J2 config....** is displayed,

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Connect the external cable with a properly terminated transceiver to the connector J2, Enter **RF2**, Press **Send**.

If an error is reported, see the *MIP*, Chapter 1, and follow the appropriate procedure.

If no error, proceed.

## 11.5.2 Run the routine **UF03**.

(On port 2 of the ELA you have just installed.)

- 1. Enter **UF03** in the Diag field.  
Enter the LA number in the ADP field, Press **Send**.

- 2. When prompt **Enter ETGX-J1 config....** is displayed, (X is the LA number),

Install the ELA wrap plug (PN 70X8670) on the connector J1 of the ELA tailgate,

- 3. Enter **RF1**, Press **Send**.

If an error is reported, see the *MIP*, Chapter 1, and follow the appropriate procedure.

If **No error is found**, and if a properly terminated transceiver/cable assembly is available from the customer, remove the wrap plug and rerun the routine **UF03**, as follows.  
Otherwise, Press **F1**.

- 4. When prompt **Enter ETGX-J1 config....** is displayed,

Connect the external cable with a properly terminated transceiver to the connector J1, Enter **RF2**, Press **Send**.

If an error is reported, see the *MIP*, Chapter 1, and follow the appropriate procedure.

If no error, Press **F1**.

## 11.6 External cables

The external cables are provided by the customer.

### Warning

Install only the cables which conform to ISO 8802-3. See the *Safety Handbook* (GA33-0126). The Line Interface Connector is not designed to prevent operator contact with the shield. Precautions should be taken to ensure that the shield does not come in contact with hazardous voltage during the installation.

- Connect the ELA external cable to the tailgate connector.

## 11.7 Logoff the Local Console

- \_\_\_ 1. Enter **OFF**, Press **Send**
- \_\_\_ 2. Re-enable all channel adapters disabled in Step 3 on page 6.

## 11.8 General IPL

From the control panel:

- \_\_\_ 1. Set the Power control indicator to the value previously recorded in Step 1 on page 6.
- \_\_\_ 2. Set the **Function** indicator value to **0** (General IPL). Press the **Validate** key.
- \_\_\_ 3. The general IPL starts.

If steady **FF4** code is displayed on the control panel, ask the customer to load the control program.

If the control program is loaded from the hard disk, **000** will be displayed when **IPL** is successful.

**Note:** The control program can fail if a mismatch exists between the control program and the hardware configuration.

### 11.8.1 Set the MOSS OFF-IINE

- \_\_\_ 1. Press **F4**.
- \_\_\_ 2. Enter the **maintenance password**, Press **Send**.
- \_\_\_ 3. Enter **MOF**, Press **Send**.
- \_\_\_ 4. Press **F1**.

### 11.8.2 Save the Hard Disk Contents onto the back up set of diskettes

- \_\_\_ 1. Enter **DIF**, Press **Send**.
- \_\_\_ 2. Select **2**,
- \_\_\_ 3. Enter the date and save ID, Press **Send**.
- \_\_\_ 4. Follow the prompts on the console.  
When the function is completed, Press **F1**.
- \_\_\_ 5. Set the MOSS online,  
Enter **MON**, Press **Send**.
- \_\_\_ 6. Logoff the console,  
Enter **OFF**, Press **Send**.

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## After Installation. (Steps 12-15)

### 12.0 Field Updating

None.

### 13.0 Field Support Publications

None.

### 14.0 Parts Disposition

#### 14.1 Purchased Machines

Refer to the ownership of the parts matrix to determine the correct owner of removed/unused parts.

- For Domestic Areas, return the parts to the customer.
- For EMEA/APG/AG Areas, see the *Hardware and General Service Code Description*.

All parts determined to be the property of IBM should be processed as stated in the rental machine directions as follows.

#### 14.2 Rental Machines

Provide all parts to the IBM branch office for potential return in accordance with existing return, recovery, and reclamation programs.

### 15.0 Machine Records

- Install the new **MACHINE HISTORY** supplied .
- Report the installation (As MES activity) and quality according to the existing procedure.

**End of instructions**

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