Field Feature Bill of Material (FFBM)

PN 03F5064

INSTALLATION of a Channel Adapter
CA UK/not UK (FC 1563/1573),
or TPS UK/not UK (FC 8320)
in IBM 3745 Models 130/170/17A

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In these instructions, the generic term CA (Channel Adapter) is used for both CADS and BCCA. CADS (Channel Adapter Data Streaming) and BCCA (Buffer Chaining Channel Adapter) terms will be used when the identification of a specific adapter type is required.

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Before Installation (steps 1-8)

1.0 Machines Affected

3745 Models 130/170/17A.

This feature should only be applied on the machine serial for which it is specified.

2.0 Related BMs and ECs

2.1 Prerequisites

(Must be installed prior to this installation)

- For BCCA (FC 1573): Microcode Level A38006.
  Checkpoint: Check level on normal and backup diskettes or via MLT function display the level of microcode loaded in MOSS.
- For BCCA (FC 1573): Documentation Level A98097.
  Checkpoint: Verify level in PRD sheet volume 5.

2.2 Concurrent

(Must be installed together)
None.

2.3 Companion

(May be installed separately)

3.0 BM(s) to be Installed

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

- 03F5064 - Installation instructions
- If feature 1563 (CADS)

  – 03F5062 - Channel Adapter not U.K.

  – or 03F5066 - Channel Adapter U.K.

  – or 03F5067 - TPS Adapter not U.K.

  – or 03F5069 - TPS Adapter U.K.

- If feature 1573 (BCCA)

  – 34F1320 - Channel Adapter not U.K.

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     – or 34F1382 - Channel Adapter U.K.

     – or 03F5067 - TPS Adapter not U.K.

     – or 03F5069 - TPS Adapter U.K.

3.1.1 If Required FFB/M

- 03F5055 - External cables (EMEA only) (one BM per CA or TPS)
- 26F1456 - Channel terminator (all countries except US)
- 80G5114 - CADR Card Exchange.
- 80G5121 - Install Microcode Level A38006.
- 80G5128 - Install Documentation Level A98097.

4.0 Preparation

1. Familiarize yourself with the purpose and details of these installation instructions before negotiating machine time with the customer.

2. Check all the items and count parts listed on the BM(s) to be installed to determine whether all parts were received.

3. Prepare CDS information for the Channel Adapter.
   Verify that the appropriate OLTS sections are present for diagnostic.

4. Ensure that all host (UCW) updating is done (refer to *HMR*, Chapter 7 (**HOST UNIT CONTROL WORD**)).

5. A TPS adapter is always installed with an IOC Bypass card (BPC1) is plugged in place of the following CA.

6. Using the *HONE Configurator sheet*, determine where the feature is to be installed, then with the following tables determine the cards positions.

1) board populated with CA(s) only

	IOC BUS			
INSTALLATION SEQUENCE	1st CA5	2nd CA6	3rd CA7	4th CA8
TAILGATE CONN. ON CCU BOARD	H	F	D	B
CARD CAL POSITIONS CADR	G2 H2	E2 F2	C2 D2	A2 B2

2) board populated with CA(s) and TPS(s)

	IOC BUS			
THE TWO TPS INSTALLATION	CA5 + TPS		CA7 + TPS	
TAILGATE CONN. ON CCU BOARD	H	F	D	B
CARD CAL POSITIONS CADR-A CADR-B	G2 H2	F2	C2 D2	B2
BPC1		E4		A4

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5.0 Programming

5.1 Diagnostics Program

To reflect this change, the CDF will be performed in Step 11.0. This is essential to allow internal diagnostics to be run properly.

5.2 Systems Programs

- ACF/NCP V5R3.1 is minimum level to support BCCA in buffer chaining mode.
  With lower level, BCCA will work in CADS mode.
- **BCCA does not support EP lines or Emulator Sub-channels (ESC)**
- The customer has to update the control program to implement this change.

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

6.0 Purpose and Description

6.1 Purpose

Install CA U.K. or not U.K., or TPS U.K. or not U.K..

6.2 Description

Install CA cards and associated Channel.

7.0 Installation Time

To be reported as MES.

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FFB/M	Machine Hrs	System Hrs	Nbr of CE
03F5066 (CA UK) or 03F5062 (CA not UK) or 34F1382 (BCCA UK) or 34F1320 (BCCA not UK)	1.2	0.0	1
and/or 03F5069 (TPS UK) or 03F5067 (TPS not UK)	1.0	0.0	
or 03F5065 (ext. cable)	0.8	0.0	
Test Time	0.6	0.0	
Total Time (CA)	2.6	0.0	
Total Time (TPS)	2.4	0.0	

8.0 Tools/Material Required

ESD kit (PN 6428316).

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Installation (steps 9-11)

9.0 Safety

- The adapter installation must be performed offline.
- Review the **Safety Notices** and the **Safety Inspection Procedures** located at the beginning of the *3745 Maintenance Information Procedures (MIP)* manual (SY33-2070).

10.0 Details of Installation

Before the installation, ask the customer:

__ - To set all the lines and channel addresses offline for this controller.
__ - To deactivate all resources of the 3746 Model 900, if attached.
__ - For the maintenance password.
__ - To logoff the console (3745-130/170) or the Service Processor (SP) (3745-17A), if not already done.

10.1 Checking, Diagnostics, Power OFF

10.1.1 Checking

10.1.1.1 From the 3745 Control Panel

__ 1. Check that **Power Control** displays **3**.
__ 2. If it does not, record the value __.
   Set the **Power Control** value to **3**.
   Press the **Validate** key.

- **If you are installing an adapter in a Model 17A, go to Step 10.1.1.3, "From the Service Processor" on page 8.**

- **Otherwise, continue.**

10.1.1.2 From the 3745-1X0 Console

__ 1. From the **CA INTERFACE DISPLAY** screen, record **Enabled channel adapters**. Then, **disable** all channel adapters.
__ 2. Wait for **Interface Status Disabled** for all CAs. Press **F4**.
__ 3. Enter the maintenance password, press **Send**.
__ 4. If the CCU is running, enter **RST** to reset the CCU.
   The MOSS goes in **MOSS ALONE** state.

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> • **Go to Step 10.1.1.4, "Display the CDF" on page 8.**

10.1.1.3 From the Service Processor

__ 1. On the **MOSS-E View** window, click on **Program**.

__ 2. Click on **LOG ON MOSS-E**.

__ 3. Enter the maintenance password, press **Enter**.

__ 4. On the **MOSS-E View** window, double click on the icon of the identified 3745.

__ 5. On the **3745 Menu** window, double click on **MOSS Console**.

__ 6. When **MOSS Console** screen is displayed, enter **CID**, press **Enter.**

__ 7. From the **CA INTERF DISPLAY** screen, record **Enabled channel adapters**. Then, **disable** all channel adapters.

__ 8. When all CAs are **DISABLED**, press **F1**.

__ 9. If CCU running, enter **RST** to reset the CCU.
The MOSS goes in **MOSS ALONE** state.

10.1.1.4 Display the CDF

Note: From this point, the **Send** key is used only for a local console. For a Service Processor, press the **Enter** key.

__ 1. Enter **CDF**, press **Send/Enter**.

__ 2. Enter **1** (DISPLAY/UPDATE), press **Send/Enter**.

__ 3. Enter **9** (CA),
press **Send/Enter**.

__ 4. Enter **0** for all CAs.
press **Send/Enter** (not required if microcode EC A97910 or higher is installed).

__ 5. Check for the presence of an **N** for the CA position to be installed according to the *HONE configurator sheet* and tables in step 4.0, "Preparation" on page 4.
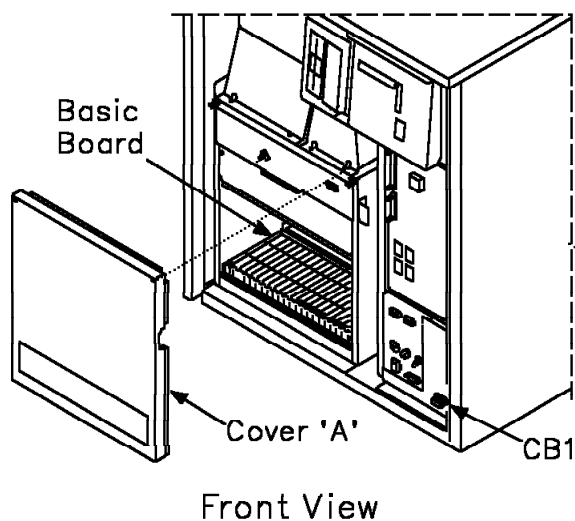Press **F1**.

10.1.2 Diagnostics

__ 1. Enter **ODG**, press **Send/Enter**.

__ 2. Enter **3** (IOCB), press **Send/Enter**.

• If **NO ERROR FOUND** is displayed, press **F1**.
• Otherwise, see the *MIP*, Chapter 1.

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10.1.3 Power OFF

__ 1. From the 3745 control panel, press the **Power OFF** key.
__ 2. Open the front cover and switch **CB1** OFF.

Basic
Board

Cover 'A'

CB1

Front View

10.2 Hardware Installation

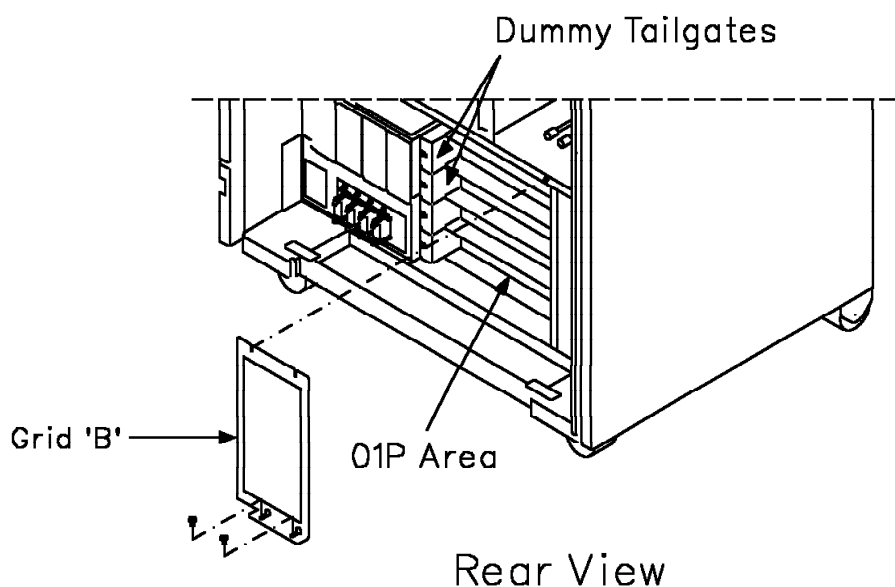**Warning:** Follow the existing ESD procedures when handling logic parts.

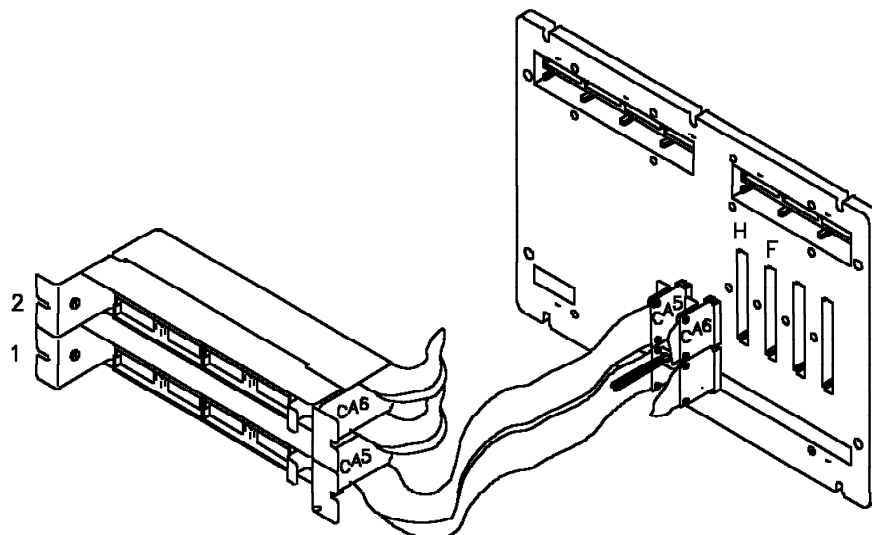| 3745	PN 03F5064	See EC	EC A73527	EC A98112	EC C38773	EC e27926
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10.2.1 Tailgate Installation

Warning: Follow existing ESD procedures when handling logic parts.

From the rear side of the machine:

__ 1. Locate the channel tailgate in position **01P**.

__ 2. From the right side of **01P**, remove the grid 'B' (four screws), and save for the reinstallation.

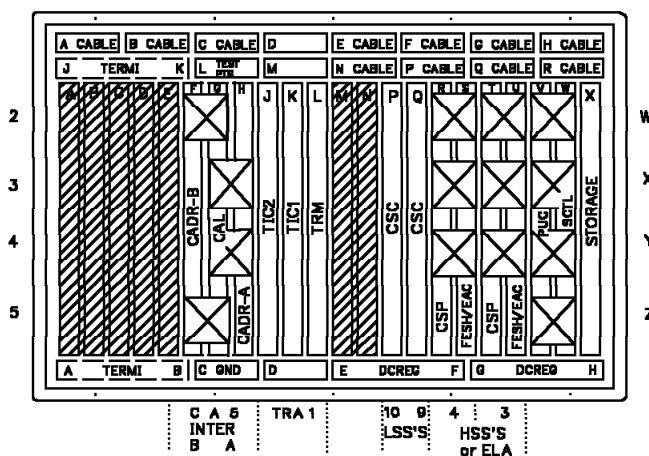__ 3. Remove the dummy tailgate(s) (two screws), and save for the reinstallation.

__ 4. On the tailgate (PN 11F6750), verify that the **Select Out** bypass switch is in the normal position.

__ 5. Install the tailgate(s) using screws removed in previous step.

__ 6. Plug the CA tailgate flex cable(s) and secure the connector(s) by pushing them onto the board pins to seat connectors. Tighten the retaining screw.

__ 7. Reinstall the grid 'B' (four screws).

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10.2.2 Cards Installation

From the front side of the machine:

__ 1. Locate the basic board in position 01G, remove and retain cover 'A' (two screws).

__ 2. Identify the channel adapter card positions, and remove the dummy cards from positions where feature will be installed.

__ 3. Verify that the holder(s) (PN 1953244) is installed on cards provided by FFB/M(s).

__ 4. Plug the cards in the right locations of the basic board.

__ 5. Plug the crossovers according to the following drawing.

- If you install a CA (Card in positions G2 and H2), plug crossovers in positions X and Y.

- If you install a TPS (Card in position F2), plug two crossovers in positions W and Z.

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10.2.2.1 BPC1 Card Installation

__ 1. This card is used to ensure continuity when a TPS is installed. If not applicable, got step 10.3, "Power ON." Mount extender (PN 1953093) on BPC1 card.

__ 2. Identify the card position (E4 or A4) using tables in step 4.0, "Preparation" on page 4.

__ 3. Remove the dummy card and plug the BPC1 card.

__ 4. Secure the BPC1 card with the intermix bracket (PN 1953110).

__ 5. Reinstall the cover 'A' over the basic board.

10.3 Power ON

Switch **CB1** ON, and close system covers.

10.3.1 From the 3745 Control Panel

__ 1. set the **Function** indicator to **1**.
Press the **Validate** key.

__ 2. Press the **Power ON Reset** key.

The MOSS IML is completed when **F0E** is displayed on the 3745 control panel.

- **If you have installed an adapter in a Model 17A, go to Step 10.3.3, "From the Service Processor."**

- **Otherwise, continue.**

10.3.2 From the 3745-1X0 Console

__ 1. When the **CA INTERFACE DISPLAY** screen is displayed, press **F4**.

__ 2. Enter the maintenance password, press **Send**.

- **Go to Step 11.1, "Update the CDF" on page 13.**

10.3.3 From the Service Processor

__ 1. Double click on the 3745 icon when it becomes PURPLE.
__ 2. On the **3745 Menu** window, double click on **MOSS console**.

Wait for **Function Selection Rules** screen.

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11.0 Test Procedures

11.1 Update the CDF

__ 1. Enter **CDF**, press **Send/Enter**.

__ 2. Enter **4** (VERIFY), press **Send/Enter**.
The values from **DISK DATA** and the **MACHINE DATA** should be identical except for the adapter you have just installed.

__ 3. To update the CDF with machine values, enter **2**, press **Send/Enter**.

- If **CDF VERIFY COMPLETED** is displayed, press **F6**.

- Otherwise, see the *MIP*, Chapter 1.

11.2 Display the CDF

__ 1. Enter **1** (DISPLAY/UPDATE), press **Send/Enter**.

__ 2. Enter **9** (CA), press **Send/Enter**.
A **Y** should appear under the CA you have just installed.
Check the **CA TYPE** value: 6 for CADS or 7 for a BCCA.

__ 3. Enter the LA number, press **Send/Enter**.

11.3 Update the Channel Addresses and CA Parameters

__ 1. Enter the CA position you have just installed, press **Send/Enter**.

__ 2. Press **F5** to update the **I/O error alert** and TPS/TCS mode, if required.

__ 3. Press **Send/Enter**, then **F8**.

__ 4. Update the applicable fields, press **Send/Enter**.

__ 5. Press **F1**.

High Speed Data Transfer				Data Streaming
Host type	Byte CA	Block CA	Selector CA	
3033	No	Yes	Yes	No
308X	Yes	Yes	No	No
309X	Yes	Yes	No	Yes
ES9000	Yes	Yes	No	Yes
4341	Yes	Yes	Yes	No
4361	Yes	Yes	No	No
4381	Yes	Yes	No	No
937X	No	Yes	No	Yes
3044	–	–	–	No

Channel Burst Length	
Block Multiplex or Selector Channel	254
Byte Multiplex With Buffered Devices	NCP : 254, PEP: 64
With Unbuffered devices	16: 4341, 4381 32: 3033, 308X, 309X ES9000

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11.4 Diagnostics

  __   1. Enter **ODG**, press **Send/Enter**.

  __   2. Enter **4** (CA), enter the channel adapter number in **ADP** field.

  __   3. Press **Send/Enter**.

- If **NO ERROR FOUND** displayed, press **F1**.

- Otherwise, see the *MIP*, Chapter 1.

11.5 External Wrap Test

On the diag request menu:

  __   1. Enter **LO01** in the diag field. Enter the adapter number in the Adpt field, press **Send/Enter**.

  __   2. Follow the prompts. When they prompt you to plug the wrap blocks into the "A-in", plug the terminators into the "A-out".

- If no error is reported, press **F1**.

- Otherwise, see the *MIP*, Chapter 1.

11.6 External Cables

  __   1. Locate the remote power control tailgate in position **01S** and connect the EPO cable.

  __   2. Connect the external channel cables according to the customer configuration.

  __   3. Close the rear system cover.

11.7 OLT Diagnostics (Optional)

  __   1. Enter **CID**, press **Send/Enter**.

  __   2. Enable the CA to be tested.

  __   3. When the function is completed, press **F1**.

  __   4. Enter **ODG**, press **Send/Enter**.

  __   5. Enter **8** (OLT) and the adapter number, press **Send/Enter**.

  __   6. Follow the prompts. Refer to the *3745 Channel Adapter on line Test Guide* D99-3745, for appropriate replies.

  __   7. Run the OLT on all new installed interfaces.

If an error is reported, see the *MIP*, Chapter 1.

11.8 Save Hard Disk Contents Onto the Backup set of Diskettes

  __   1. Enter **DIF**, press **Send/Enter**.

  __   2. Enter **2**. Enter the date and save-ID, press **Send/Enter**. Follow the prompts on the console.

  __   3. When function is completed, press **F1**.

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- **If you have installed an adapter in a Model 17A, go to Step 11.10, "From the Service Processor" on page 15.**

- **Otherwise, continue.**

11.9 From the 3745-1X0 Console

Re-enable the channel adapters disabled in Step 10.1.1.2, "From the 3745-1X0 Console" on page 7.

- **Go to Step 11.11, "General IPL."**

11.10 From the Service Processor

__ 1. On the **3745 Menu** window, double click on **MOSS Console**,

__ 2. Enter **CID**, press **Enter**.

__ 3. Enable the channel adapter recorded in Step 10.1.1.3, "From the Service Processor" on page 8.
Wait until all channels are **E** in the E/D REQUEST column.
Press **F1**.

__ 4. Enter **OFF**, press **Enter**.

__ 5. On the **3745 Menu** window, click on **Function**. Then, click on **Exit**.

__ 6. On the **MOSS-E View** window, click on **Program**.

__ 7. Click on **LOG OFF MOSS-E**.

11.11 General IPL

From the 3745 Control Panel:

__ 1. Set the **Power Control** indicator to its original value recorded in Step 10.1.1.1, "From the 3745 Control Panel" on page 7.

__ 2. Set the **Function** indicator value to **0** (general IPL).

__ 3. Press the **Validate** key.

The general IPL starts.

- If **FF4** 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 load can fail if a mismatch exists between the control program and the hardware configuration.

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After Installation (steps 12-15)

12.0 Field Updating

None.

13.0 Publications Update

None.

14.0 Parts Disposition

14.1 Purchased Machines

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

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

15.0 Machine Records

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

End of instructions.

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