

Mk3 USERS MANUAL

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TECHNICAL MEMORANDUM

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TO: MARK 3 USERS
FROM: Publications Department
DATE: January 29, 1982
SUBJ: MARK 3 Extension Documentation
64K-byte Expansion Board
Port Expansion Board

Documentation for the 64K-byte Expansion Board and the Port Expansion Board is covered in the attached new Section 10 of the MARK 3 User Manual. These options are designed to significantly enhance the performance of the MARK 3. This section will supplement the current MARK 3 User Manual (version 01). The manual is presently being revised and will be available in approximately two to three months.

Section 10
OPTIONAL FEATURES

10.1 INTRODUCTION

The 64K-byte Memory Expansion Board and the Port Expansion Board are options designed to significantly enhance the performance of the MARK 3. The memory expansion option increases memory capacity from 64K bytes to 128K bytes; the port expansion option provides three additional asynchronous ports for increased system capability. When these options are combined, dramatic increases in performance can be realized. Both options are piggy-back boards designed for easy installation.

10.2 64K-BYTE MEMORY EXPANSION BOARD

The Memory Expansion Board provides 64K bytes of additional memory, significantly expanding the MARK 3's capabilities. The option provides additional upper-core partitions, doubling the MARK 3 memory capacity and substantially increasing system performance. The Memory Expansion Board is a piggy-back, plug-in board positioned on top of the main CPU board via the 50-pin header connector on the CPU board. The expansion board has two connectors: its black connector sits flat on the board for normal operations; its green connector sits at right angles to the board for debugging purposes. The board is cut out to facilitate test connections.

See Figure 10-1 for an illustration of the 64K-byte Memory Expansion Board.

10.2.1 MEMORY EXPANSION BOARD INSTALLATION

In order to utilize the Memory Expansion Board on existing CPU boards in the field, a factory upgrade is necessary. This upgrade involves minor wiring changes to the CPU board and a new set of system and MANIP self-test prompts. Contact a POINT 4 representative for detailed upgrade information.

Future CPU boards will accommodate the expansion board, which will simply be plugged in.

IRIS 7.4 or 7.5 software revisions are also required to utilize this option.

The Memory Expansion Board must be affixed to the CPU board. Pull out the CPU board and locate the vertical 50-pin header connector. If there is no 50-pin connector, one must be installed. Align the board with the connector, plug it in, and affix the board to the stiffener with two screws in the screw holes on the front edge of the expansion board.

When positioned correctly, board holes should line up with holes on the stiffener. The correct position for the Memory Expansion Board on the CPU board is shown in Figure 10-2.

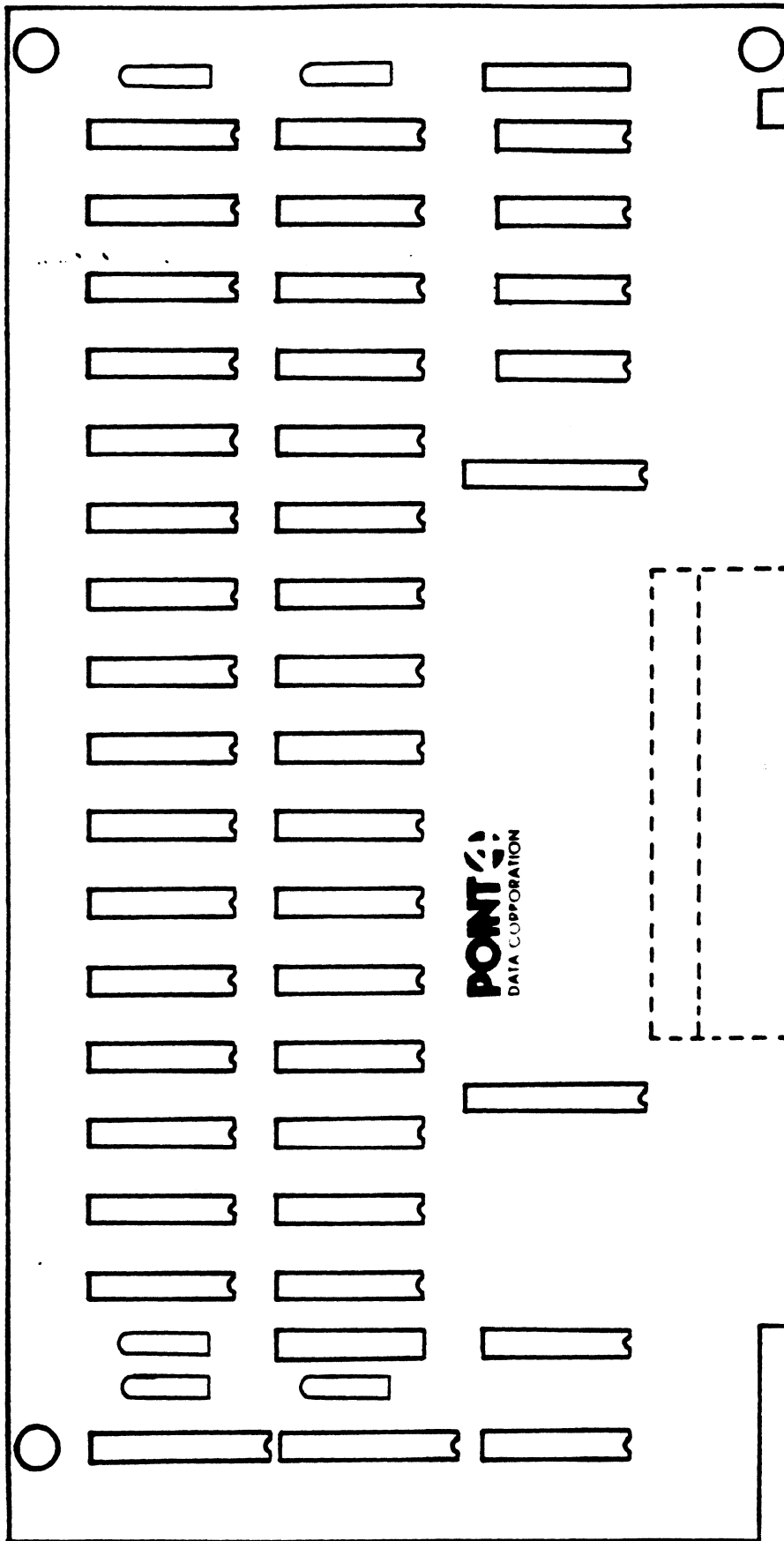


Figure 10-1. MARK 3 64K-byte Memory Expansion Board

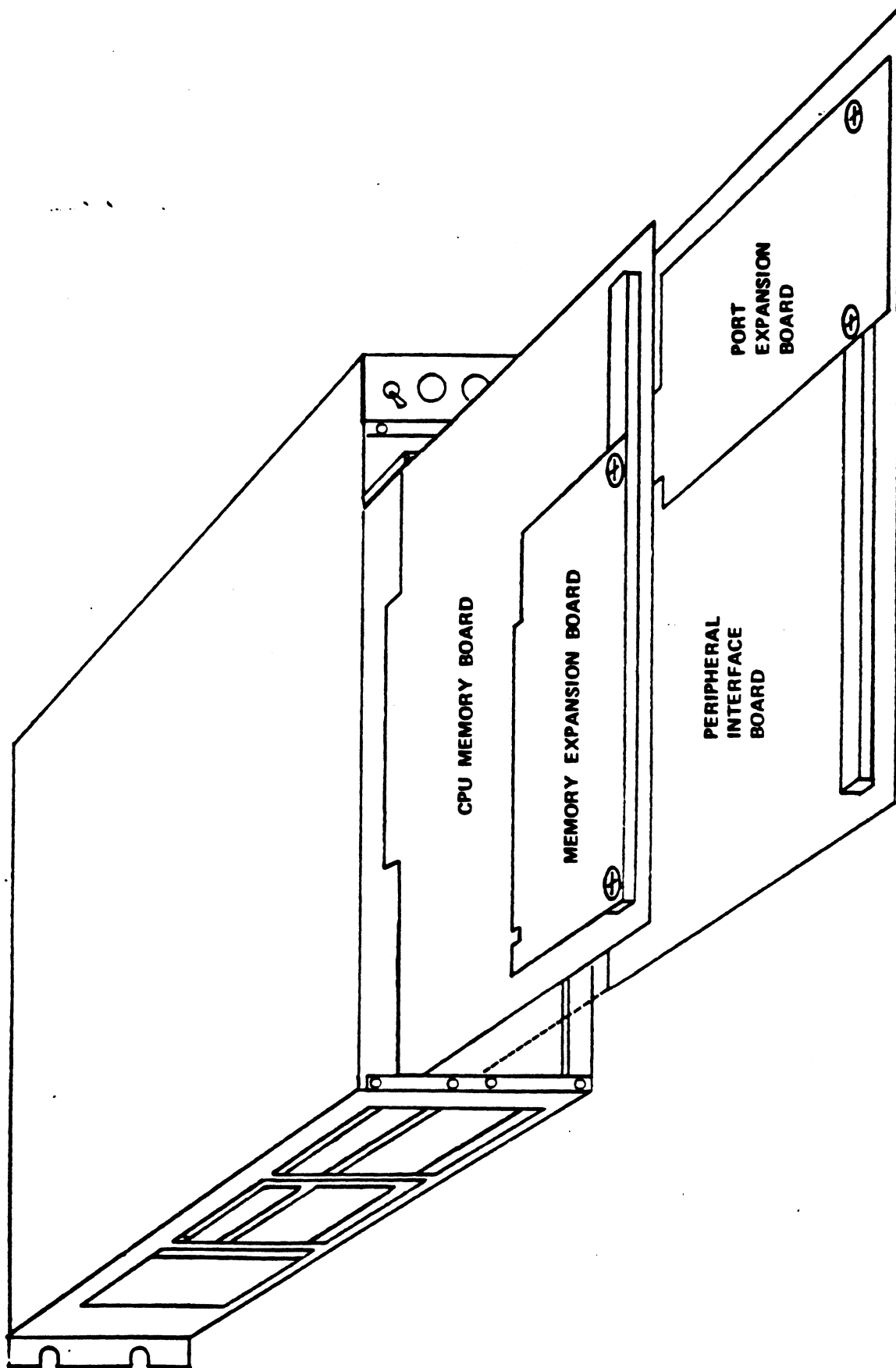


Figure 10-2. Installation of MARK 3 Memory Expansion and Port Expansion Boards

10.3 PORT EXPANSION BOARD

This option adds three asynchronous ports to the system, significantly increasing MARK 3 capabilities, especially when added in conjunction with the memory expansion board. These three additional ports are functionally identical to the existing MARK 3 ports, allowing access from additional terminals. With the Port Expansion Board option, MARK 3 easily expands its capabilities to seven ports.

The Port Expansion Board is a piggy-back, plug-in board positioned on top of the Peripheral Interface Board (PIB) via the 50-pin header connector on the PIB. The expansion board has two connectors: its black connector sits flat on the board for normal operations; its green connector sits at right angles to the board for debugging purposes. The board is cut out to facilitate test connections.

See Figure 10-3 for an illustration of the Port Expansion Board.

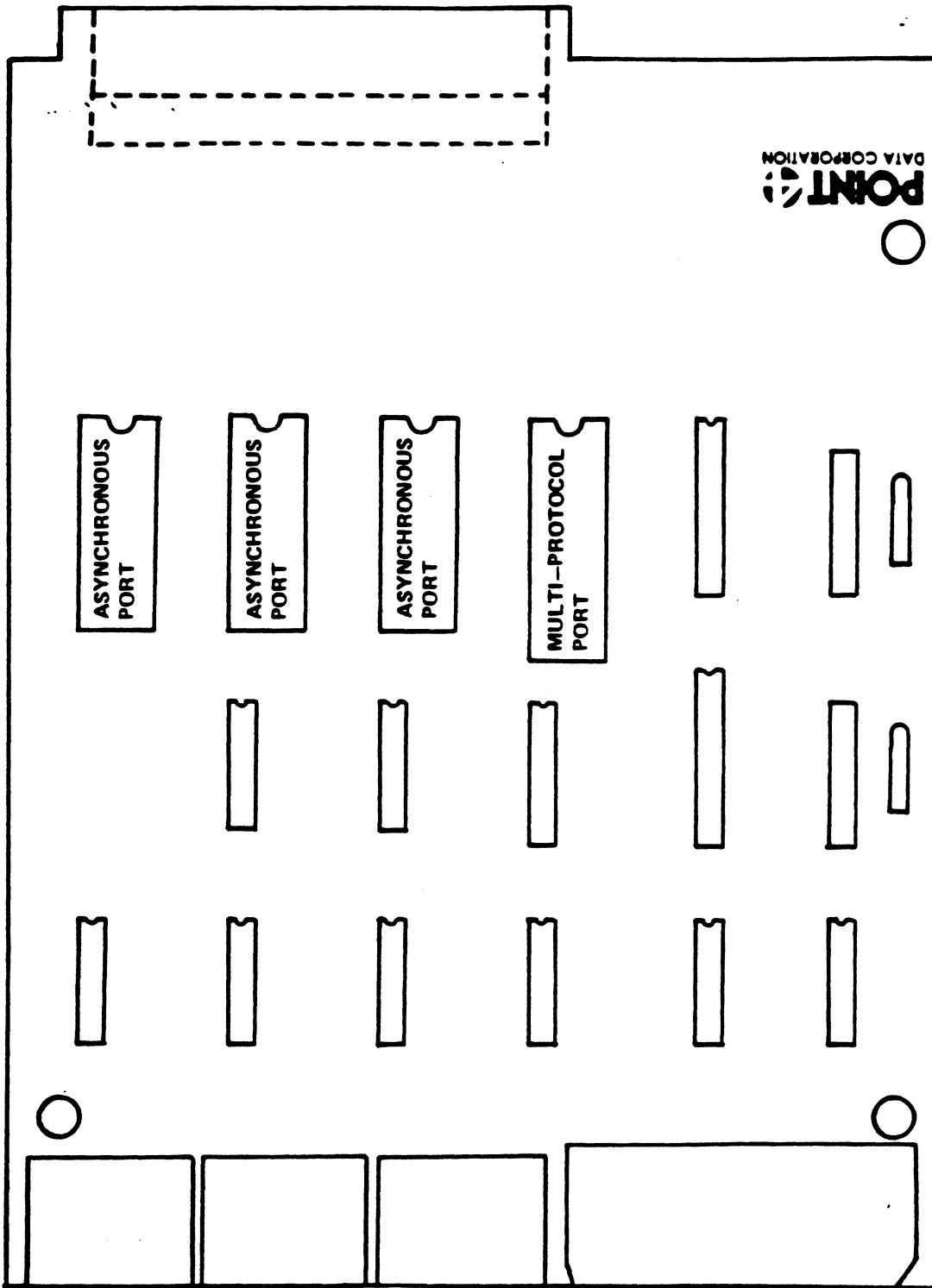


Figure 10-3. MARK 3 Port Expansion Board

10.3.1 MODIFICATIONS FOR MODEM CONTROL

The Port Expansion Board is designed to allow the additional capability of modem control. In the current expansion board cable connector, Clear-to-Send and Carrier Detect are in two separate pins, jumpered externally by the cable. Modems typically require DTR (Data Terminal Ready), which must be added to allow the new capability. In future boards, Clear-to-Send and Carrier Detect will be combined on the board. They will be the same pin physically (pin 5), with different functional characteristics. DTR will be added at pin 2.

Because of this new capability, the existing connector accommodates old cables for use with a terminal. However, if a line printer is to be utilized, connector modifications must be implemented as follows:

1. Remove jumper between pins 2 and 5.
2. Reroute Clear-to-Send control line to pin 5.

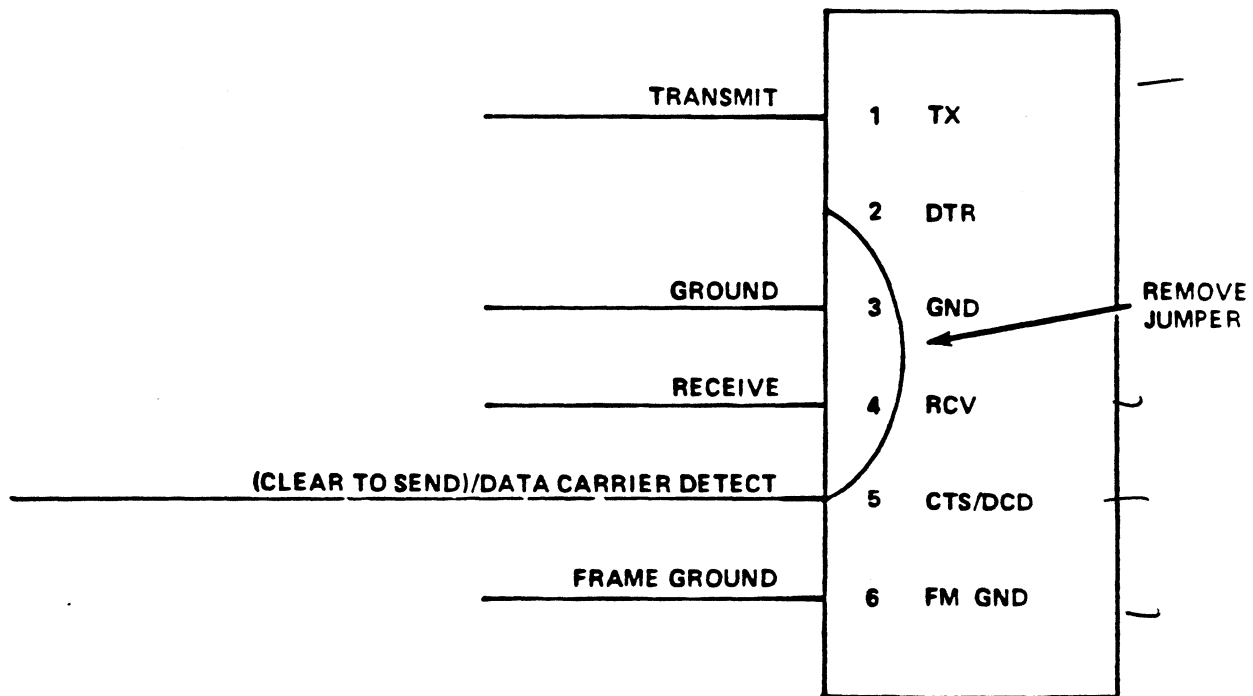


Figure 10-4. Connector Modification to Utilize Existing Line Printer Cable

10.3.2 PORT EXPANSION BOARD INSTALLATION

In order to utilize the Port Expansion Board on PIB boards in the field, a factory upgrade is necessary. This upgrade involves changing the PROM set. Contact a POINT 4 representative for detailed upgrade information.

Future PIBs will accommodate the expansion board, which will simply be plugged in.

IRIS 7.4 or 7.5 software revisions are also required to utilize this option.

The Port Expansion Board must be affixed to the PIB. Pull out the PIB and locate the vertical 50-pin header connector. If there is no 50-pin connector, one must be installed. Align the board with the connector, plug it in, and affix the board to the stiffener with two screws in the screw holes on the front edge of the expansion board. When positioned correctly, board holes should line up with holes on the stiffener. The correct position for the Expansion Port Board on the PIB is shown in Figure 10-2.

Currently on the PIB, space is allocated to accommodate seven plug-in carriers. Four ports are installed with jumpers to specified hard-wired baud rates. Baud rates for the additional three asynchronous ports on the Port Expansion Board are also specified by the remaining three slots on the PIB. Jumpers must be supplied for these three additional ports. Normally, these carriers are supplied with jumpers installed in the 9600 Baud position as the default.