

Retrofitting MVMEI72 Boards

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Amendment Record

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2	09/10/2000	Document reference amended. Amendments following trial installation.
2.1	12/10/2000	ECS 'D' type connector compatibility added.
3	24/05/2001	Amended to cover CD-ROM facility.
4	30/10/2003	Amended to be applicable to all IECC-approved variants of the MVME172 board. Section 3.4 split into section 3.4 'Supported Subsystems' and Section 3.5 'Non-Supported Subsystems. TTP removed from list of supported subsystems. IFP, IGS, PCS and RDF/RMT removed from list of non-supported subsystems. Reference to IECC 6005 added for identification of approved MVME172 variants. Descriptions of EPROM update for first fitment of MVME172 boards and EPROM update / CD-ROM download for subsequent fitments of MVME172 boards clarified. Descriptions of TTP 3520 retrofit removed. References to Sections E and T(iii) of Rule Book amended to T1A and T3 respectively for new Rule Book which comes into force on 6 December 2003. Railtrack amended to Network Rail.

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I Introduction

I.1 PURPOSE

This document is a user guide for installing (or retrofitting) subsystems based on Motorola MVME172 processor boards in place of subsystems with obsolescent MVME boards in commissioned Integrated Electronic Control Centres (IECC).

It is aimed at contractors and installation engineers responsible for planning and implementing the retrofit.

This document makes reference to installing (or retrofitting) MVME172 boards with CD-ROM facility, but not at a detailed level. For a full description of installing (or retrofitting) MVME172 boards with CD-ROM facility, the document 'IECC CD-ROM Facility Retrofitting Guide' ^[1] should be consulted.

I.2 STRUCTURE

This document contains the following sections:

Section 1	provides the document introduction
Section 2	lists the terms and abbreviations used in the document
Section 3	provides background information
Section 4	lists fundamental constraints
Section 5	considers retrofit equipment and activities on an individual basis
Section 6	considers possession times
Section 7	considers the Method Statement
Section 8	outlines a retrofit procedure
Section 9	lists references.

I.3 BASIS FOR THIS GUIDE

This document is in accordance with the principles determined by Network Rail and AEA Technology Rail for retrofitting MVME172 boards into existing IECC installations. It is also based on previous experience with installing and maintaining IECC equipment and subsystems.

2 Terms and Abbreviations

2.1 TERMS

Cabinet	A 19-inch rack compatible housing used to accommodate the hardware used to construct an IECC subsystem. In a duplicated subsystem the cabinet contains both A and B computer units and associated control equipment.
CD-ROM facility	A facility for updating IECC subsystem programs and data by downloading programs and data into Flash Memory from a CD-ROM via a CD-ROM reader.
Computer Unit	A 19-inch rack that contains a power supply, J1 and J2 VME backplanes, the NDS card and a number of MVME172 embedded controller boards. In some subsystems the computer unit may also contain other cards that provide I/O facilities <i>e.g.</i> the RII contains a card that provides signals for the field indications panel (FIP).
Backplane	The connectors and interconnecting bus into which MVME cards are slotted.
BRX	An operating system used in IECC subsystem computers.
Bus	A standard for communication between processor, memory and other boards.
Flash Memory	A term used to represent E ² PROM.
IndustryPack	An add-on board for MVME172 boards to increase memory or I/O capacity.
19-inch rack	A general term for a housing or case conforming to IEC 297. The height of such units may vary and are defined by a 'U' number. Several 19-inch racks will fit into one cabinet

2.2 ABBREVIATIONS

ARS	Automatic Routesetting Subsystem
BRX	BR Executive (an IECC specific operating system)
CD-ROM	Compact Disk Read Only Memory
DIS	Flexible Display Subsystem
DRAM	Dynamic Random Access Memory
ECS	External Communications Subsystem
EM	Electro-Magnetic

EMC	Electro-Magnetic Compatibility
EPROM	Erasable Programmable Read Only Memory
E ² PROM	Electrically Erasable Programmable Read Only Memory
FAST	Factory Acceptance System Testing
FBS	Fringe Box Subsystem
FCP	Field Communications Processor
FCS	Full Configuration System (refers to documentation)
GPVDU	General Purpose Visual Display Unit
GWS	Gateway Subsystem
IECC	Integrated Electronic Control Centre
IP	IndustryPack
ISM	IECC System Monitor
MVME	Motorola Versa Module Eurocard
NDS	Network Communication and Duplication Services
NVRAM	Non-Volatile Random Access Memory
PI/T	Parallel Interface Timer
RDW	Regulator's Display Workstation
RII	Relay Interlocking Interface
RRI	Route Relay Interlocking
SCC	Signalling Control Centre
SCP	Status Control Panel
SDS	Signalling Display Subsystem
SIM	IECC Simulator – part of TRW
SRAM	Static Random Access Memory
SSI	Solid State Interlocking
TDS	Testing Display Subsystem
TNP	Translation and Network Processor
TRW	Training Workstation
TTP	Timetable Processor
VME	Versa Module Eurocard