

# **XMM Optical Monitor**

MULLARD SPACE SCIENCE LABORATORY  
UNIVERSITY COLLEGE LONDON

Author: Mary Carter

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## **BLUE DETECTOR HV UNIT MECHANICAL DESIGN**

DOCUMENT: XMM-OM/MSSL/SP/0036.02 13-Mar-95

**BLUE DETECTOR H.V. UNIT MECHANICAL DESIGN (XMM-OM)**  
**(Assy. drg. no. A1/5229/400)**

**Introduction**

There are two high voltage units fitted on the telescope side of the blue bulkhead. Each unit provides a high voltage supply to one of the redundant blue detectors.

**Design Constraints**

The design constraints are to maximise the printed circuit board area available for the high voltage electronics and yet fit in the space left by the dichroic mechanism, two filter wheel mechanisms and two blue detectors.

**General Description**

A mechanical layout of one of the high voltage units is shown in figs. 1 and 2.

To maximise the board area available, each PCB is mounted in its own tray and hardwired to connectors located in the side walls of the tray. These trays are then stacked on top of each other to form a box. Trays 2, 3 and 4 have shoulders on their undersides to locate them onto the tray below. Once stacked, four studs are inserted to clamp the trays together and attach the resulting unit to the blue bulkhead.

The PCBs in trays 1, 2 and 3 are connected to the smaller PCB in tray 4 via an external harness. (A design using a back plane instead of an external harness was rejected, as the motherboard took up too much room.) A 15 way connector from tray 4 and high voltage connectors from each of the individual trays connect the high voltage unit to the rest of the blue detector system.

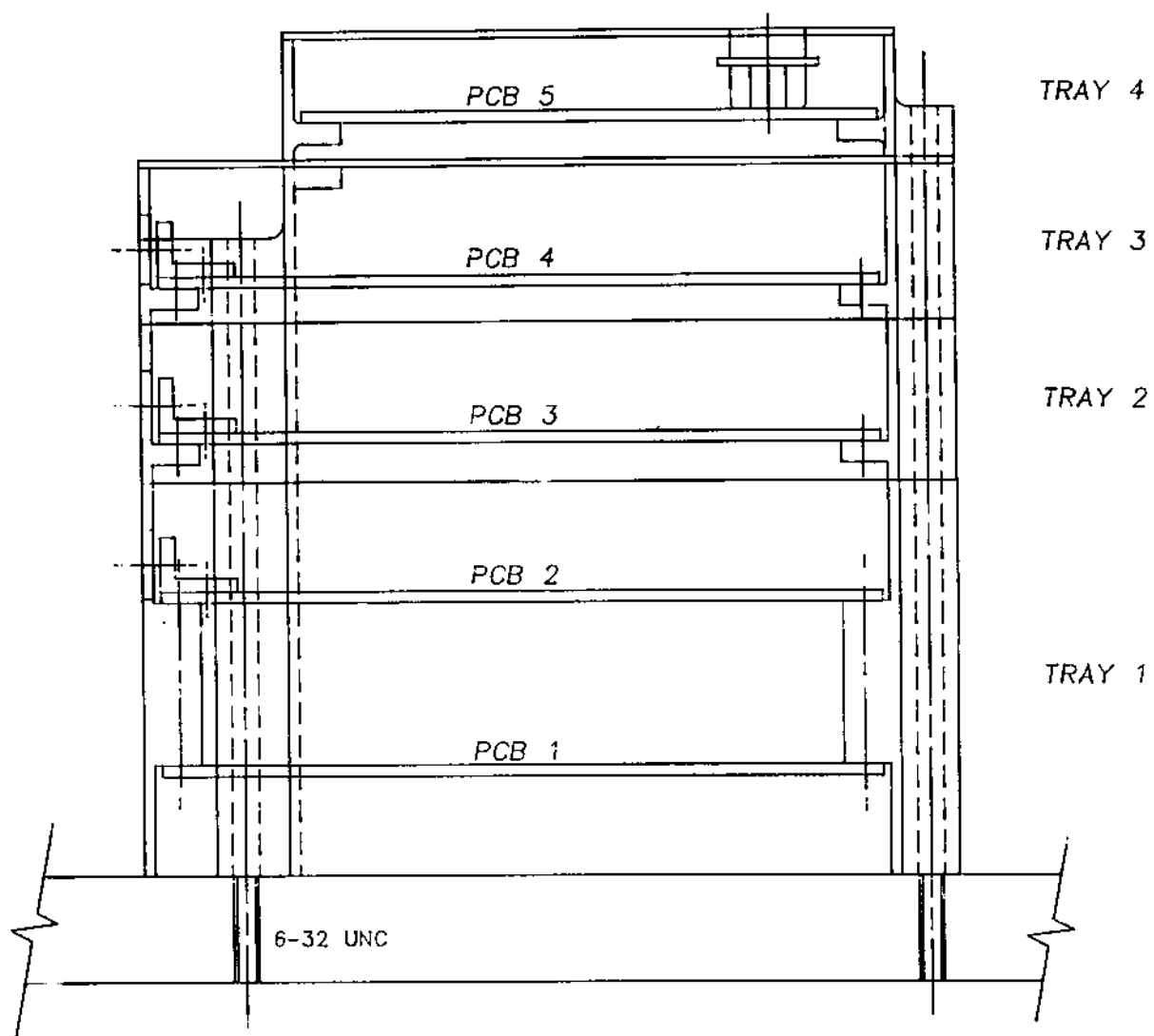


FIG. 1.

HIGH VOLTAGE UNIT  
(SIDE VIEW)

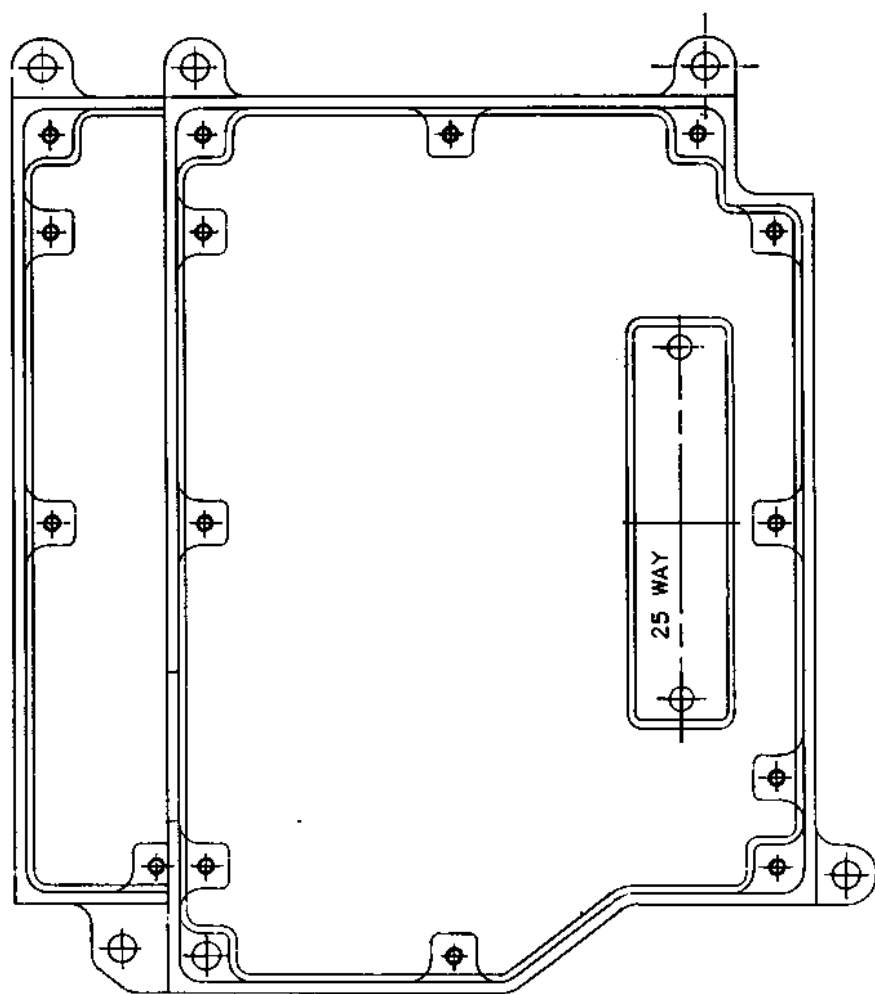


FIG. 2.

HIGH VOLTAGE UNIT

(PLAN VIEW)