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Specification BR 1811
Issue 1

SPECIFICATION FOR A SERIAL MATRIX PRINTER

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SPECIFICATION BR 1811

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FOREWARD

This specification has been prepared by the Director of Signal and Telecommunications Engineering, to whom all technical queries should be directed.

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1. REFERENCES

The latest edition of the following references shall apply

British Standard Specifications

- 1363 13A plugs, switched and unswitched socket outlets and boxes.
- 4884 Technical manuals
- 5750 Quality Assurance Systems
- 5783 Code of practice for handling electro-static devices
- 6301 Safety requirements for apparatus for connection to certain telecommunications networks.
- 6500 Insulated flexible cords and cables
- 6527 Limits and measurements of spurious signals generated by data processing and electronic office equipment.
- 6746 PVC Insulation and sheath of electric cables
- 6746C Colour chart for PVC insulation and sheath of electric cables

British Rail Director of S. & T. Engineering Specification 967
Railway Signalling Apparatus: Environmental Conditions.

CCITT V24/V28 Interface Recommendations.

Health and Safety at Work Act 1984.

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2. ABBREVIATIONS

The following abbreviations are used in this specification:-

bps	Bits per second
ASCII	American Standard Code for Information Interchange
CPI	Characters per inch
CPS	Characters per second
CR	Carrier received
DSR	Data set ready
DTE	Data terminal equipment
DTR	Data terminal ready
RCD	Residual current device
RD	Received data
RFS	Ready for sending
RTS	Request to send
TD	Transmitted data
XOFF	The transmitted code that states that a terminal can not accept more data
XON	The transmitted code that states that a terminal is ready to accept more data

3. SCOPE

This specification details the design and performance requirements for a serial matrix printer for use with British Rail computer terminals in Area Freight Offices, Control Centres, Travel Centres, Train Maintenance Depots and general offices.

4. EQUIPMENT OPERATION AND PERFORMANCE

The printer shall operate as a pin matrix printer with moving printhead for use with sprocket hole punched paper or paper rolls.

4.1 PRINTING METHOD

4.1.1. PRINthead

The printhead shall form a character image matrix of better than 9 dots vertically by 5 printed dots horizontally in 9 possible positions. Lower case characters shall have descenders as required. The expected printhead life shall be greater than 4x10⁶ to 8 printed characters. The printhead shall be protected from thermal overload.

4.1.2 INK METHOD

The ink shall be carried on a ribbon which is either carried in a cartridge on the printhead or stretched across the face of the platen. The ink colour shall be black. The ribbon shall have a life of greater than 3x10⁶ to 6 characters printed at an acceptable print quality.

4.1.3. HORIZONTAL MOVEMENT

The printhead shall print in draft mode at a controlled speed greater than 150 CPS at 10 CPI in both directions. The printhead shall move in the optimum direction for each printed line.

The normal printing pitch shall be 10 CPI.

4.1.4 VERTICAL MOVEMENT

The normal line pitch shall be 1/6 inch. The time for a paper line feed shall be less than 200ms for a line feed of 1/6 inch.

The normal form feed distance shall be selectable from 11, 11.5, 12 inches