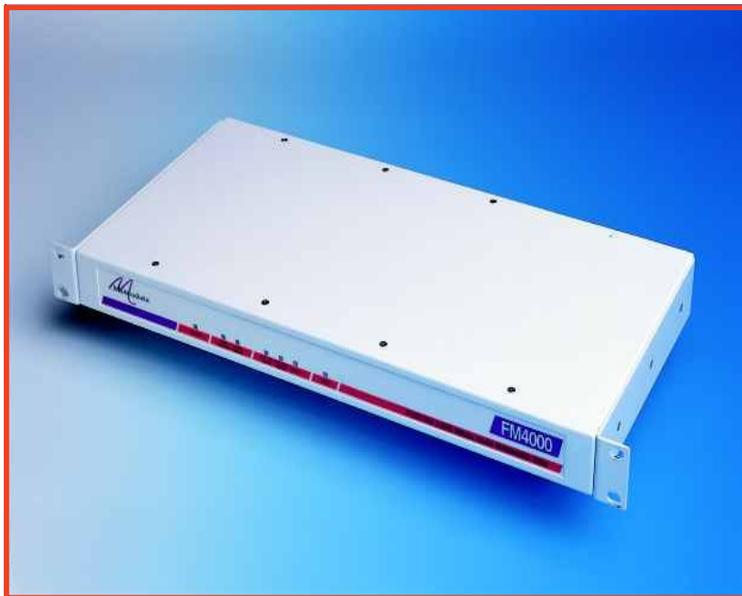# FM4000

**E1 (n*64k) G.703/G.704
X.21/ V.35 Converter**

- High Spec E1 G.703 2.048 Mbps interfacing
- Fractional E1 by allowing n*64Kbps channels
- X.21 or V.35 ports
- External Alarm relay port
- Remote configuration and testing of units across the network
- Comprehensive performance monitoring of both device and line
- Optional SNMP management
- Optional -48 volt DC supply

datasheet **FM4000**

The Metrodata FM4000 DSU is used to interface high performance DTE equipment such as bridges or routers to 2.048 Mbps E1 services. The fractional E1 service is allocated on an n*64Kbps basis. The DTE equipment may present an X.21 or a V.35 interface. FM4000s are used in pairs with one unit at either end of the Wide Area link. Error conditions and usage statistics are gathered and stored by the FM4000. Unit set-up is done via a comprehensive menu system which is accessed via a local or remote terminal. The optional Metrodata LM1100 SNMP Enabler permits management via a LAN using an SNMP system.
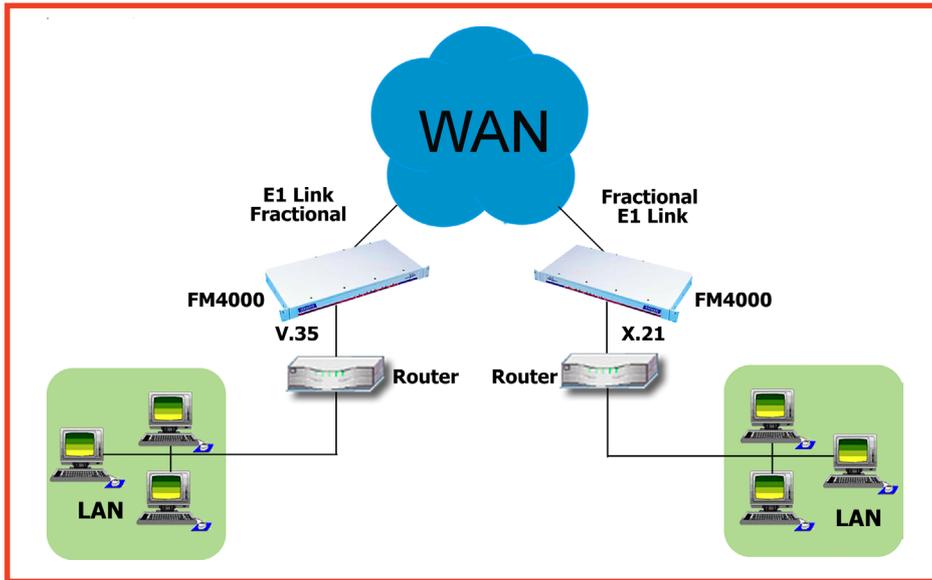
About Metrodata

Metrodata are experts in network connectivity solutions. Based near London Heathrow Airport, we are leading designers and manufacturers of high performance communication hardware for the Fixed line, Satellite, Wireless, Systems integration, Service provision and Corporate networking communities.

Metrodata connectivity products provide solutions for interface conversion, interface extension and ATM networking from n*64Kbps through to Sonet/SDH.

Metrodata's sound technical and commercial understanding of international data networking issues ensures that we have the solutions for current and future networking needs. Our continuous development program means that Metrodata solutions are state of the art and provide an economic cost of ownership to our customers.

Metrodata

FM4000

Application Diagram

Specifications

Line E1 Interface

Port	G.703, 75 ohm unbalanced, 120 ohm balanced
Framing	G.704 (CRC4 or No CRC4) or Unframed
Interface	BNC (75 ohm), RJ45 (120 ohm)
Line coding	HDB3
Bit rate	2.048 Mbps +/- 50ppm
Cable length	E1 BNC RG59 = 600m
	E1 BNC UR202 = 750m
	E1 RJ45 Belden 8132 = 175m
	E1 RJ45 Belden 9841 = 300m

DTE Interface

Port	X.21 or V.35
Interface	X.21: ISO4903, 15-way D type
	V.35: ISO2593, 34-way M-rack
Bit Rate	n*64Kbit/s, n = 1 to 31, or 2.048Mbps

Configuration & Management

Type	Menu driven
Access	System console, telnet, SNMP
Interface	V.24, Ethernet 10baseT via RJ45
Security	Access by 2-level password
System	Non-volatile set-up
Clock modes	Internal, E1 loop or DTE (CCITT cct 113)

Power supply

AC Mains	100-250 VAC, 50-400 Hz, 50mA
-48 VDC Supply	-36 to -72 VDC, 200-100mA

Status LED & Diagnostics

Loopbacks	Local loop, Remote loop
BERT	$2^{15}-1$ PRBS
Statistics	Per G.821, 15min, 24 hour totals
Major Alarms	LOS, LOF, SQ
Minor Alarms	AIS, RAI
Data	DTE Tx Data, DTE Rx Data, DTE fault
Test	Test via menu, Test LED on front panel

Compliance & Approvals

Performance	G.703, G.704., G.706, G.823
BNC version	OTR.001 2DS, BABT# NS/4043I/i/P/603813
RJ45 version	CTR12, CTR 13, BABT# AA606631
Safety	EN41003, EN 60950
EMC	EN55022, EN50082
Statistics	G.821, AT&T 54016:15 min, 24hr totals
Management	RFC1213 (MIB II), RFC1495 (telnet), RFC1157 (SNMP), RFC1406 (DS1/E1), MetroDte MIB (DSU), RFC1215 (Traps)

Environment

Temp	0 - 50 deg C
Humidity	0 - 95% RH, non-condensing
Pressure	86 - 106 KPA

Packaging

Type	1U, 19 inch rackmount
Dimensions	435 x 213 x 44 mm (W x D x H)

FM4000 Part Numbers	DTE X.21 E1 Line: BNC	DTE: V.35 E1 Line: BNC	DTE: X.21 E1 Line: RJ45	DTE: V.35 E1 Line:RJ45
AC Mains:100-250 VAC	80-05-005	80-05-006	80-05-007	80-05-008
DC Power: -48 VDC	80-21-005	80-21-006	80-21-007	80-21-008

For more about Metrodata products, visit our website at www.metrodata.co.uk
Metrodata reserves the right to change specifications without notice.
Please check when ordering.

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