



TELECOMS INTERFACING & CONNECTIVITY

SOLUTIONS GUIDE

ABOUT Us

WHO ARE WE?

Founded in 1989 as a Telecoms equipment designer and manufacturer, the initial goal of Metrodata Ltd. was to overcome incompatibilities in the connection of Data equipment to Network Services. Our early product line-up included Speed, Interface and Protocol Conversion devices. Today, the company's focus is best summarised as 'Network Interface and Transport Specialists'.

Based near London's Heathrow Airport, Metrodata supplies customers worldwide, with some 40% of production destined for markets outside the U.K.

WHAT DO WE DO?

Metrodata offers a wide range of connectivity solutions for the LAN and WAN arena. Network Interfaces and Transports supported include those for Serial, SDH/PDH, ATM, Ethernet and Fibre applications. Our portfolio today extends from simple connectivity products through to Multiplexing and Managed Service Delivery Solutions for the Telecoms Carrier market.

The company offers Network Design and Integration services and in this area has a particular expertise in Fibre technologies, enabling clients to maximise the effectiveness of their Fibre infrastructure investments

OUR CUSTOMERS AND MARKETS

Metrodata Ltd's customers worldwide include Telecoms Service Providers, Corporate Enterprises of all sizes and Governmental organisations. Our multiservice convergence and satellite communications 'back haul' capabilities, allied with extensive expertise in interfacing military serial Cryptos has given us a strong position with Defence organisations.

Metrodata supplies both directly and via integration Partners, primarily in Europe, the USA, LATAM and the Middle East. The company continually strives to develop new markets.

THIS GUIDE

Ethernet Service Delivery & LAN Extension	3
Fibre Multiplexing & Media Conversion	6
SDH/PDH Interfacing & Multiplexing	9
Satcom & Serial Encryptor Interfacing	11

PLUG-&-PLAY LAN EXTENSION

Metrodata's Plug & Play LAN Extension products extend the plug and play functionality of Ethernet switches to join Ethernet LANs together across Point-to-Point links. This results in less equipment, minimal configuration and lower maintenance costs.

These Ethernet Extension products enable you to interconnect your LAN over a WAN without the need for expensive and complex routers. An example application would be to connect a remote office network to the headquarters over an external network. Metrodata also offers advanced and managed Ethernet Extension and convergence products, see the MetroCONNECT Ethernet Service Delivery product range.

LAN OVER LEASED LINES



WC1000:
LAN TO E1 2.048MBPS



WC3445:
LAN TO E3 OR DS-3
DIP SWITCH SELECTED



WC155:
LAN TO STM-1/OC-3

LAN OVER SERIAL



WC X.21:
LAN TO X.21 OR EIA-530
UP TO 20MBPS



WC V.35:
LAN TO V.35
UP TO 20MBPS

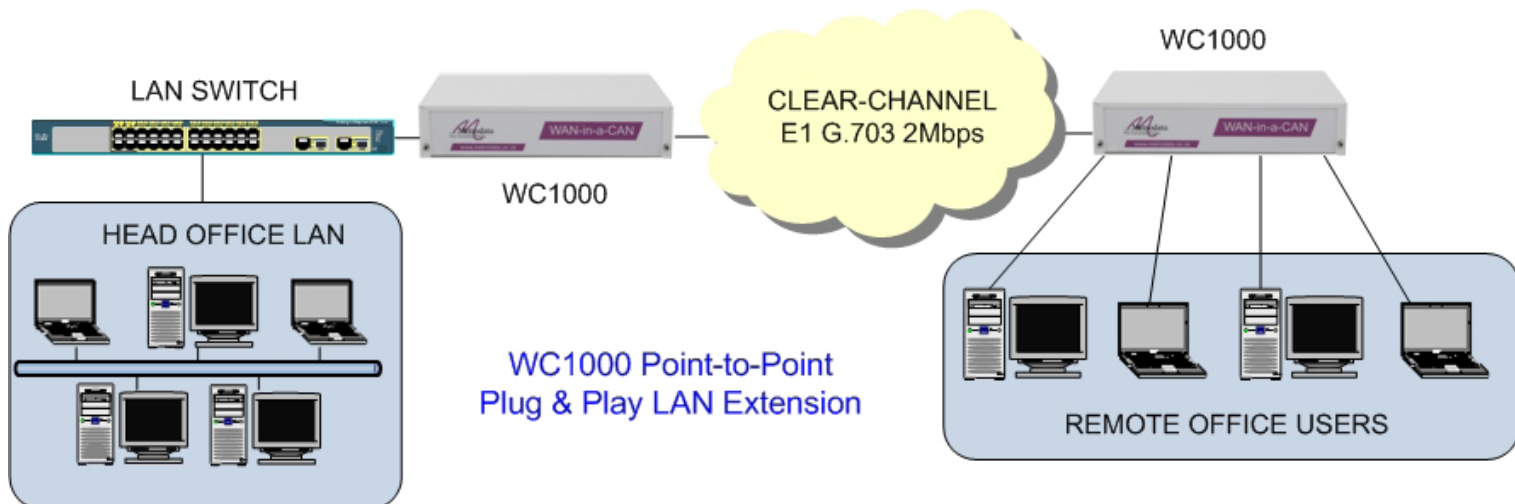


LV2000:
LAN TO LVDS/EIA644
UP TO 52MBPS
AUTO CRYPTO RESYNC



LH1000:
ENABLES THE TRANSMISSION OF LAN FRAMES ACROSS
SATELLITE LINKS VIA SERIAL MODEMS.
LAN OVER HSSI UP TO 110MBPS
LAN OVER X.21, EIA530, RS449, V.35 UP TO 20MBPS
LAN OVER RS232 UP TO 256KBPS

APPLICATION EXAMPLE



ETHERNET SERVICE DELIVERY

METROCONNECT PRODUCT LINE

The MetroCONNECT family comprises a range of products for Managed Ethernet Extension and Service Delivery, encompassing a variety of Transport Media including Fibre, PDH (E1/T1 & E3/DS3), SDH (STM-1/OC-3) and Serial.

The family includes the MC12000 Ethernet Service Delivery Chassis and a wide range of stand-alone / CPE devices, all supporting Ethernet OAM and full management via Telnet & SNMP.

MC12000 ETHERNET SERVICE DELIVERY PLATFORM

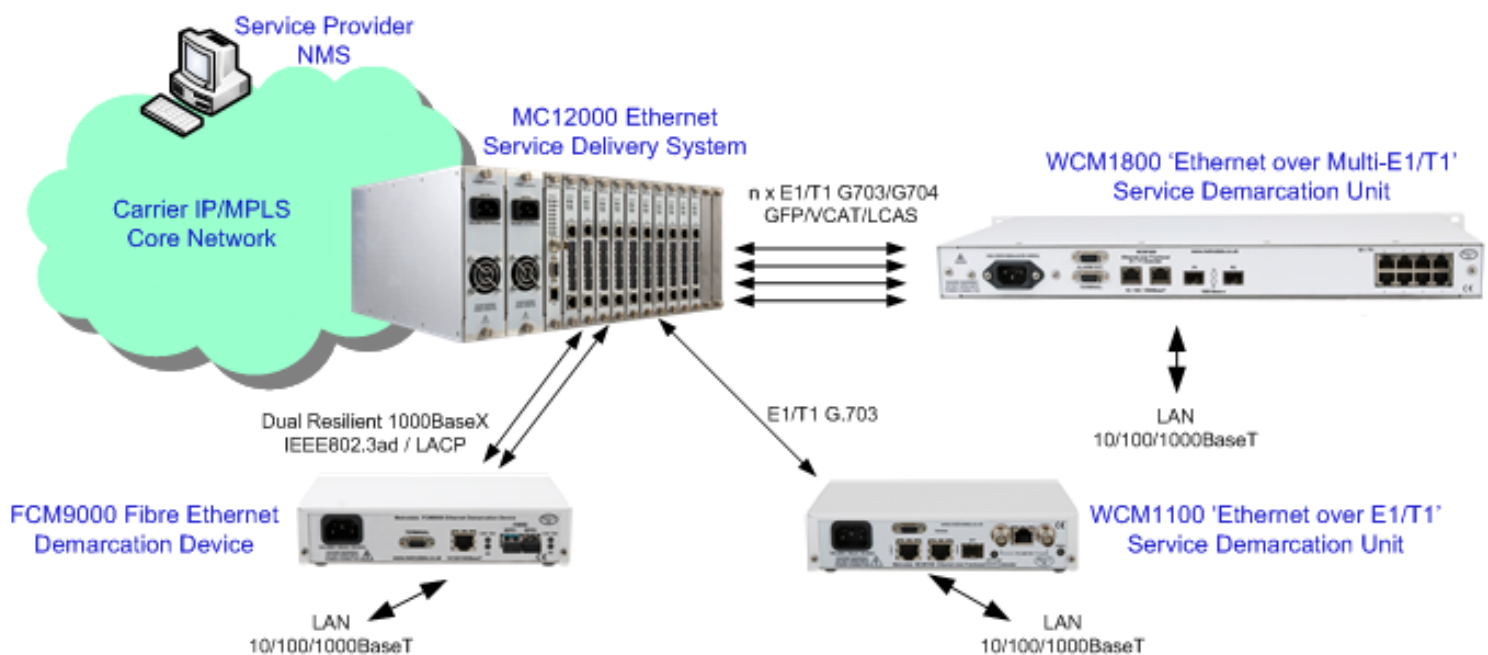
MODULES

ETHERNET SERVICE DELIVERY/EXTENSION

- FCC9000:TWIN ETHERNET OVER FIBRE WITH DUAL SFP LINKS
- WCC1100: ETHERNET OVER E1/T1
- WCC1400: ETHERNET OVER 4 PORT BONDED E1/T1
- WCC1800: ETHERNET OVER 8 PORT BONDED E1/T1
- WCC3100: ETHERNET OVER E3/DS3
- WCC3200: ETHERNET OVER 2 PORT BONDED E3/DS3
- WCC5100: ETHERNET OVER STM-1/OC-3
- WCC_SERIAL: ETHERNET OVER SERIAL
- LHC1000: ETHERNET OVER HSSI



APPLICATION EXAMPLE



ETHERNET SERVICE DELIVERY

METROCONNECT MANAGED LAN EXTENSION & CPE FAMILY

The MetroCONNECT WCM, FCM and LHM demarcation / CPE ranges offer Ethernet Service Delivery and simple point-to-point Managed Ethernet Extension over:

Fibre: Flexible media via dual/redundant SFP interface

Leased Lines: Clear Channel and Fractional E1/T1, Framed E3/DS3 and STM-1/OC-3

Serial: EIA530, V.35, X.21, RS449 and HSSI

ETHERNET OVER FIBRE



FCM9000:
CONVERSION FROM TWISTED PAIR 10/100/1000BASE-TO
RESILIENT DUAL 100/1000BASE-X SFP FIBRE PORTS
LINK STATE FORWARDING SUPPORTED

FRACTIONAL E1/T1 SERVICES



WCM1100

LAN EXTENSION OF ETHERNET OVER FRACTIONAL E1/T1 SERVICES



WCM1400 (4 x E1/T1 Ports)



WCM1800 (8 x E1/T1 Ports)



WCM1820 (16 x E1/T1 Ports)

FRAMED E3/DS3 SERVICES



WCM3100

LAN EXTENSION OF ETHERNET OVER FRAMED E3/DS3 SERVICES



WCM3200 (2 x E3/DS3 Ports)



WCM3400 (4 x E3/DS3 Ports)

SDH STM1/SONET OC3 SERVICES



WCM5100:
LAN EXTENSION OF 10/100/1000BASE ETHERNET OVER RESILIENT STM-1 OR OC-3 SERVICES

SERIAL AND HSSI SERVICES



WCM SERIAL:
LAN EXTENSION OVER FRACTIONAL SERIAL WAN SERVICES
LAN OVER X.21, V.35, EIA-530 UP TO 15MBPS



LHM1000:
ENABLES THE TRANSMISSION OF LAN FRAMES ACROSS SATELLITE LINKS VIA SERIAL MODEMS.
LAN OVER HSSI UP TO 52MBPS

FIBRE MODEMS

Metrodata has an extensive range of Fibre Optic Service Extension Solutions, offering conversion to singlemode short haul fibre, singlemode long haul fibre or multimode fibre:

E1 OVER FIBRE PRODUCTS



FC1000:
BNC/ RJ45 E1 TO MULTIMODE
FIBRE
PAYLOAD AND PROTOCOL
TRANSPARENT



FC1100:
BNC/ RJ45 E1 TO SINGLEMODE
SHORT HAUL
PAYLOAD AND PROTOCOL
TRANSPARENT



FC1200:
BNC/RJ45 E1 TO SINGLEMODE
LONG HAUL
PAYLOAD AND PROTOCOL
TRANSPARENT



EMUX:
COST EFFECTIVE 4,8 OR 16 PORT E1 FANOUT OVER FIBRE
RESILIENT 1+1 FIBRE INTERFACE
REMOTE CONFIGURATION AND TESTING OF UNITS
MANAGEMENT & PERFORMANCE MONITORING
SFP FIBRE MODULES ENABLE MANY TYPES OF FIBRE

E3/DS-3 OVER FIBRE PRODUCTS



FC3000:
BNC E3/DS-3 TO MULTIMODE
FIBRE
PAYLOAD AND PROTOCOL
TRANSPARENT



FC3100:
BNC E3/DS-3 TO SINGLEMODE
SHORT HAUL
PAYLOAD AND PROTOCOL
TRANSPARENT



FC3200:
BNC E3/DS-3 TO SINGLEMODE
LONG HAUL
PAYLOAD AND PROTOCOL
TRANSPARENT

SERIAL OVER FIBRE PRODUCTS



FIMO-232:
ASYNCHRONOUS RS-232
STANDARD 9 WAY D-TYPE
DTE OR DCE INTERFACE
DATE RATE AGILE
EXTEND UP TO 70KM



FIMO-2100:
RESILIENT FIBRE UPLINK
MULTI-STANDARD SERIAL INTERFACE UP TO 8.192MBPS
RS-232, EIA530, X.21 AND V.35
DTE OR DCE INTERFACE
CONFIGURABLE IN 64KBPS STEPS
EXTEND UP TO 70KM

APPLICATION EXAMPLE



**FC1X00 E1/ISDN-30 Trunk
Extension over Fibre**

MEDIA CONVERTERS

Metrodata offers a range of products for conversion from Electrical Signalling to Fibre, for Ethernet, STM-1/OC-3 and STM-4/OC-12.

ETHERNET COPPER TO FIBRE



FC5000:
CONVERSION FROM 10/100/1000BASE-T TO 1000BASE-X
SFP MODULE FOR 1000BASE-SX OR 1000BASE-LX
1000BASE-SX = 550M OVER MULTIMODE
1000BASE-LX = 10KM OVER SINGLEMODE



FC7X00:
CONVERSION FROM 10/100BASE-T TO 100BASE-FX
AVAILABLE IN MULTIMODE OR SINGLEMODE VARIANTS
UP TO 70K ON SINGLEMODE LONG HAUL

STM-1 ELECTRICAL TO FIBRE



FC4000:
STM-1/OC-3 BNC
ELECTRICAL TO MULTIMODE



FC4100:
STM-1/OC-3 BNC
ELECTRICAL TO SINGLEMODE SHORT HAUL



FC4200:
STM-1/OC-3 BNC
ELECTRICAL TO SINGLEMODE LONG HAUL

MULTIMODE TO SINGLEMODE FIBRE CONVERTER



FC2000:
STM-1/OC-3 MULTIMODE TO SINGLEMODE SHORT HAUL
100BASEFX MULTIMODE TO SINGLEMODE SHORT HAUL

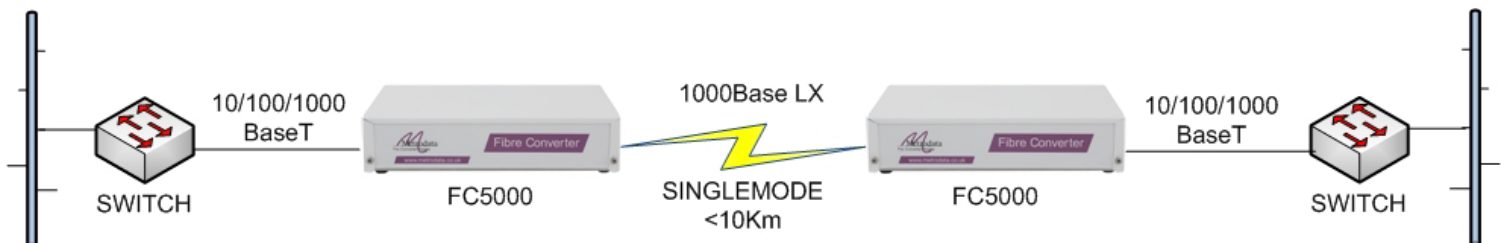


FC2500:
STM-1/OC-3 MULTIMODE TO SINGLEMODE LONG HAUL
100BASEFX MULTIMODE TO SINGLEMODE LONG HAUL



FC-GigE:
MEDIA CONVERSION BETWEEN 1000BASE-SX & 1000BASE-LX
850NM TO 1300NM WAVELENGTH CONVERSION
1000BASE-LX = 10K OVER SINGLEMODE

APPLICATION EXAMPLE



FC5000 Switched Ethernet
Flexible Media Conversion

PASSIVE CWDM MULTIPLEXERS

The MetroWAVE family is a range of passive CWDM optical multiplexers allowing independent services to be converged over a singlemode fibre pair. Each input is assigned a different wavelength, all of which are combined for transmission over a single Fibre Transmit/Receive pair. Many different applications, including Ethernet, Serial, TDM, Fibre-Channel (SAN) and CCTV signalling can be supported.

These small cost-effective multiplexers are passive and contain no moving parts, offering excellent reliability, whilst transmission distances of typically up to 80km are supported.



METROWAVE-5:
5-CHANNEL (1471nm - 1531nm CWDM + 1300nm BAND) CWDM MULTIPLEXER WITH CWDM EXPANSION PORT AND MONITOR PORT



METROWAVE-4A:
4-CHANNEL (1551nm - 1611nm) CWDM MULTIPLEXER

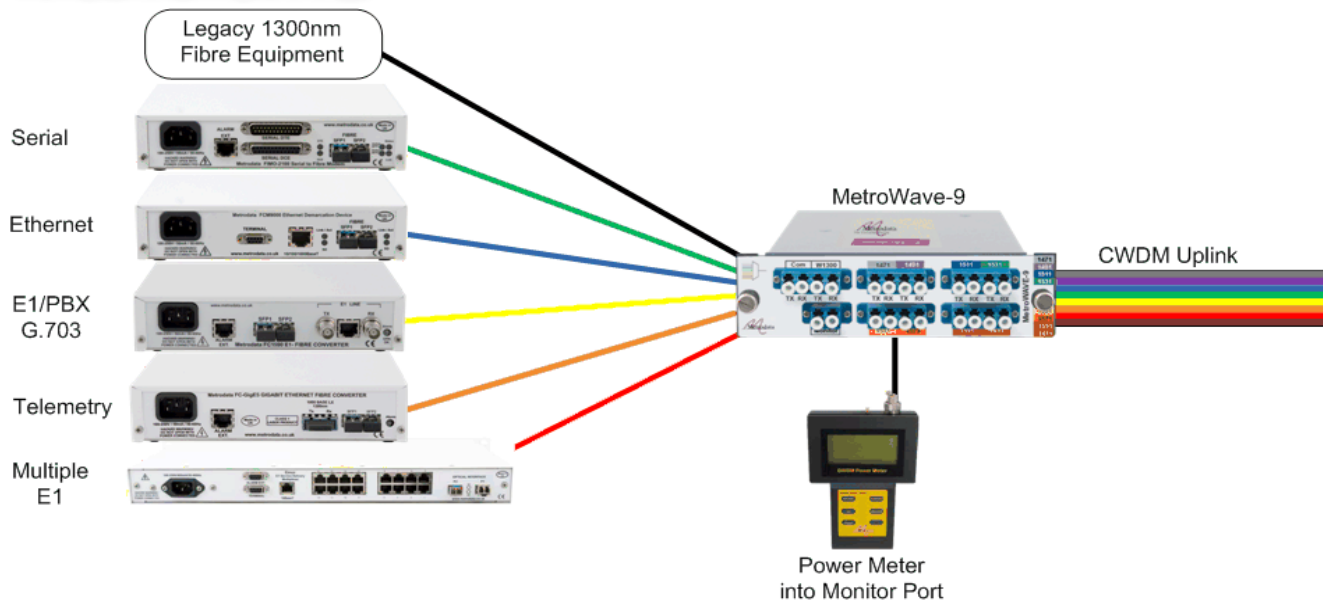


METROWAVE-9:
9-CHANNEL (1471nm - 1611nm CWDM + 1300nm BAND) CWDM MULTIPLEXER WITH MONITOR PORT



METROWAVE-POWERMETER:
MONITORS ALL 18 CWDM CHANNELS SIMULTANEOUSLY
PLUGS INTO THE METROWAVE MONITOR PORT FOR EASY BUT SOPHISTICATED SYSTEM LEVEL DEBUG

APPLICATION EXAMPLE



DATA INTERFACE CONVERTERS

Metrodata supports a range of standard Telco, Router, Satcom and Encryptor data interface converters, typically used for converting Nx64Kbps and E1, E2, E3 and DS-3 leased lines to serial data interfaces.

E1 INTERFACE PRODUCTS



DC1000:
E1 G.703 TO X.21
E1 BNC OR RJ45
CLEAR CHANNEL



DC1200:
E1 G.703 TO V.35
E1 BNC OR RJ45
CLEAR CHANNEL



DC3000:
E1 G.703 TO X.21
E1 BNC OR RJ45
G.704 Nx64Kbps



DC3200:
E1 G.703 TO V.35
E1 BNC OR RJ45
G.704 Nx64Kbps



FM4000:
E1 CSU/DSU
BNC TO X.21 BNC TO V.35
RJ45 TO X.21 RJ45 TO V.35
REMOTE MANAGEMENT OPTION

E3 AND DS-3 INTERFACE PRODUCTS



DC3445:
E3 OR DS-3 TO HSSI CONVERTER
DIP SWITCH SELECTABLE

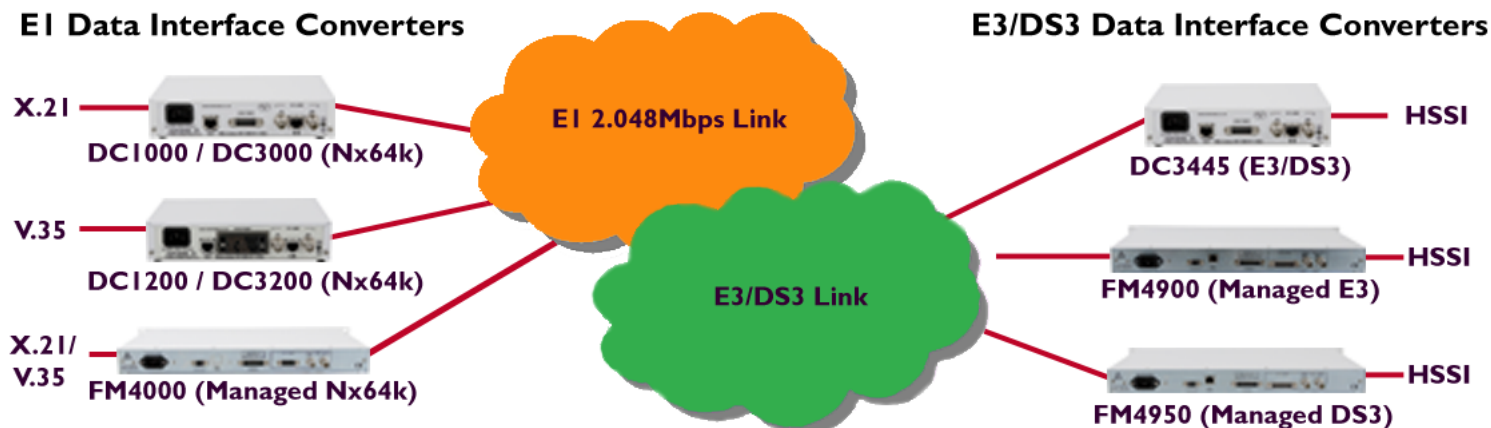


FM4900:
E3 CSU/DS-3 BNC TO HSSI
REMOTE MANAGEMENT OPTION



FM4950:
DS-3 CSU/DSU BNC TO HSSI
REMOTE MANAGEMENT OPTION

APPLICATION EXAMPLE



MULTIPLEXERS

Metrodata offers a range of multiplexers, for (i) converging multiple Nx64Kbps services over E1, (ii) multiple E1 services over fibre, and (iii) multiple E1, T1, E3, DS-3 and Ethernet services over STM-1 / OC-3.

E1 SUB-RATE MULTIPLEXERS



FM4200:
E1 DROP/INSERT MULTIPLEXER
1 X E1 LINE PORT
1 X E1 DROP PORT, 1 X SERIAL PORT



FM4500:
E1 DROP/INSERT MULTIPLEXER
1 X E1 LINE PORT
1 X E1 DROP PORT, 4 X SERIAL PORT

E1 - FIBRE MUX



EMUX:
COST EFFECTIVE 4, 8 OR 16 PORT E1 FANOUT OVER FIBRE
RESILIENT 1+1 FIBRE INTERFACE OFFERS AUTOMATIC SWITCH OVER
REMOTE CONFIGURATION AND TESTING OF UNITS ACROSS THE NETWORK
SFP FIBRE MODULES ENABLE MANY TYPES OF FIBRE: MULTIMODE, SINGLEMODE, CWDM AND DWDM

SDH/FIBRE MUX

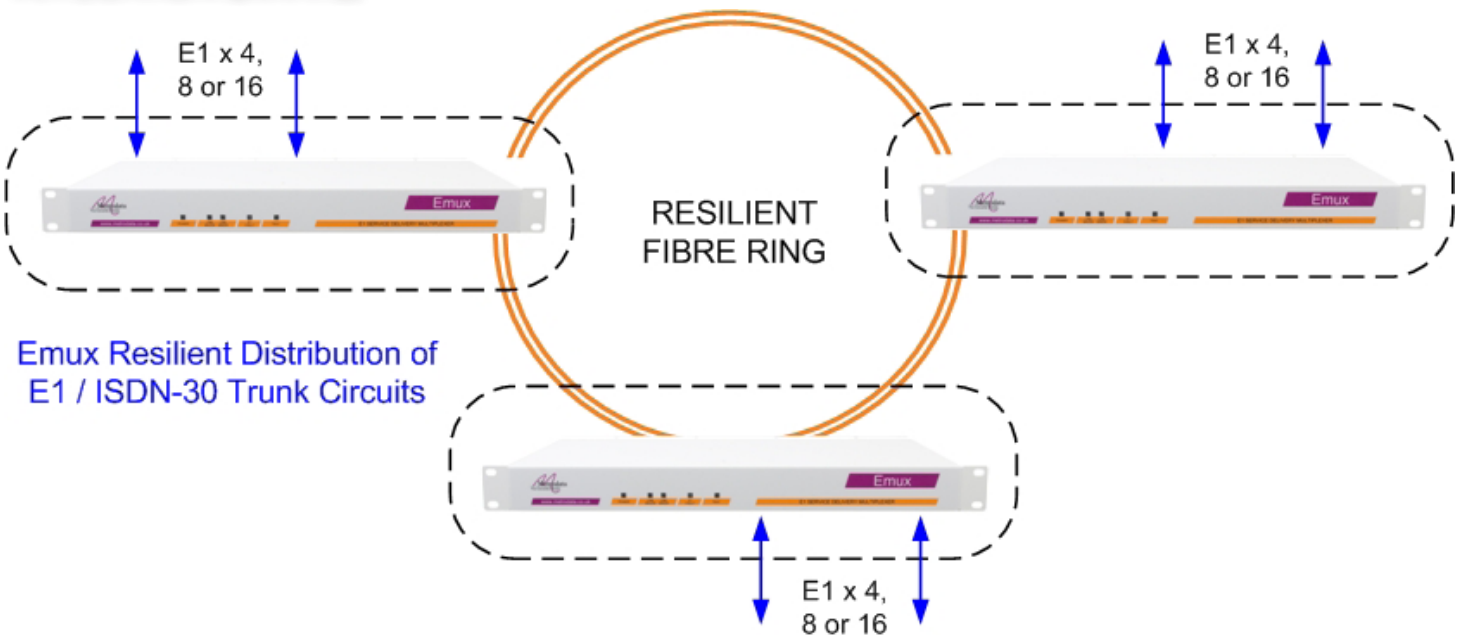


METROLAN 1000:
8 X ETHERNET PLUS 8 X E1 / T1
OVER SDH STM-1 / SONET OC-3



METROLAN 2000:
8 X ETHERNET PLUS 8 X E1 / T1
PLUS 3 X E3/DS-3 OVER SDH STM-1 / SONET OC-3

APPLICATION EXAMPLE



SATCOM & ENCRYPTOR INTERFACING

Metrodata offers a range of products for interface conversion between Ethernet, HSSI, LVDS and EIA530.

From our experience with Satcom, Encryptor and Radio Relay systems, Metrodata has incorporated high functionality into this cost effective range of products.

LVDS TO HSSI CONVERTERS



BC1X00:

THE BC1X00 BASEBAND CONVERTER ALLOWS THE LATEST GENERATION OF SERIAL LINK AND BULK ENCRYPTION DEVICES WITH LVDS/EIA-644 INTERFACES TO BE CONNECTED TO SATCOMS EQUIPMENT, ROUTERS AND RADIO SYSTEMS. ENCRYPTOR RESYNC IS SUPPORTED



LV2000:

ENABLES THE TRANSMISSION OF LAN FRAMES OVER AN EIA-644/LVDS CONNECTION, SATELLITE MODEMS OFFERING LVDS INTERFACES OFFER A LOWER COST ALTERNATIVE TO HSSI FOR OPERATION AT UP TO 52MBPS. THE LV2000 PROVIDES A CRYPTO AUTO RESYNC FUNCTION THAT WILL GENERATE A RESYNC REQUEST TO THE ENCRYPTOR IF THE LV2000 SENSES THE DATA STREAM HAS LOST SYNCHRONISATION

EIA530 TO HSSI CONVERTERS



BC2X00:

THE BC2X00 BASEBAND CONVERTER PRODUCTS ALLOW EIA530 AND HSSI EQUIPMENT TO INTERWORK, FOR EXAMPLE: SATCOMS, ROUTERS AND RADIO RELAY SYSTEMS.

ETHERNET OVER HSSI CONVERTERS

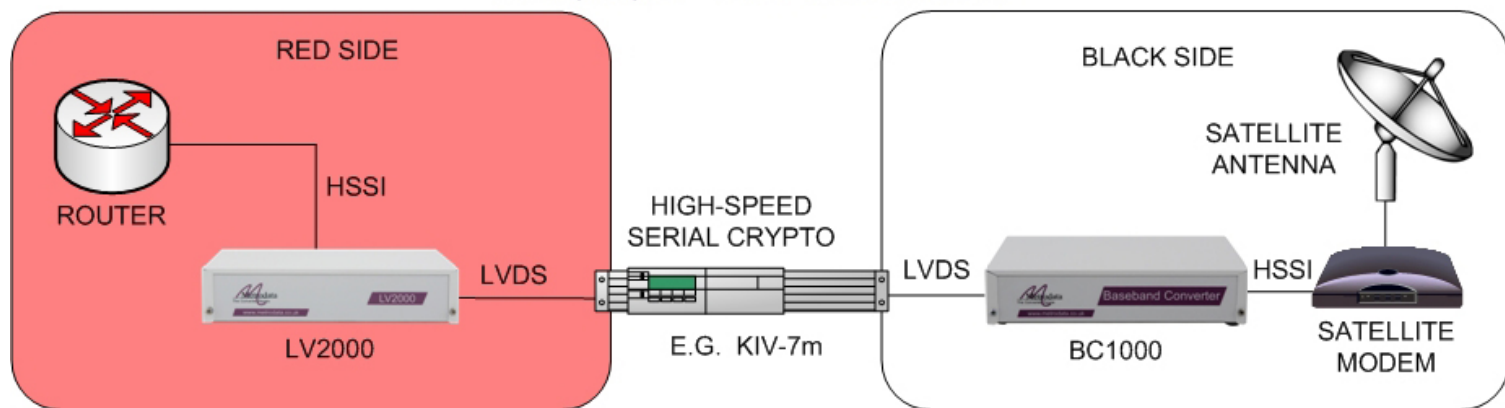


LH1000:

ENABLES THE TRANSMISSION OF LAN FRAMES ACROSS SATELLITE LINKS VIA SERIAL MODEMS.
 LAN OVER HSSI UP TO 110MBPS
 LAN OVER X.21, EIA530, RS449, V.35 UP TO 20MBPS
 LAN OVER RS232 UP TO 256KBPS

APPLICATION EXAMPLE

BC1X00 / LV2000
 E'net - Serial Conversion for
 Military Crypto - Radio & SatCom links



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