

- Managed Ethernet Service Delivery to standalone Ethernet Demarcation Devices (EDDs)
- Mixture of modules can be supported in the same compact 4U 19" rack
- Up to 12 LAN extension and 24 media conversion functions can be supported
- 10/100/1000baseT RJ45 copper and 100baseFX or 1000baseX SFP ports on all modules
- Copper, fibre and resilient service delivery supported over a variety of last mile services
- Link state forwarding
- Ethernet Jumbo frame support (10kbytes max frame size)
- OAM support including IEEE 802.3ah
- Alarm extension relays
- Hot-Swap for all modules & power supplies
- SNMP remote management
- Redundant load sharing AC or DC PSUs for increased resilience



MC12000 MetroConnect chassis

MetroConnect offers the Carrier a high density Ethernet Service Delivery solution with fibre, or copper distribution from the core network to customer sites. MetroConnect operates in provider mode generating and terminating OAM frames according to IEEE 802.3ah. With multiple access links deployed resilience can be supported via either G.7042 LCAS, RSTP or 802.3ad link aggregation. In this way MetroConnect enables maximum efficiency of use of the core network infrastructure, along with maximum flexibility of service delivery to the customer, whilst retaining management visibility right up to the customer demarcation point.

The MC12000 is a 4U, 19" rack based chassis unit supporting up to 2 power supply modules (PSUs) and has 12 I/O slots giving a port density of up to 24 EDDs per 4U of rack space. Spare network interface device modules can be resident in the chassis ready for immediate additional functionality or to provide 'in situ' spares. The "hot swap" capability of modules and power supplies eases the provisioning of new services and the maintenance of existing services.

A wide variety of last mile service delivery types can be supported including:

- Ethernet over Fibre via the FCC9000 I/O module and the FCM9000 standalone unit
- 1,4 or 8 fractional E1 or T1 services via the WCC1100, WCC1400 and WCC1800 I/O modules and the WCM1100, WCM1400 and WCM1800 standalone units
- 1 or 2 fractional E3 or DS3 services via the WCC3100 and WCC3200 I/O modules and the WCM3100 and WCM3200 standalone units

- SDH STM-1 or Sonet OC-3 services via the WCC5100 I/O module and the WCM5100 standalone unit
- Serial or HSSI services via the WCC_Serial and LHC1000 I/O modules and the WCM_Serial and LHM1000 standalone units

For example:

- The FCC9000 I/O module is used with the standalone FCM9000 deployed at the customer site to deliver a 10/100/1000baseT or fibre Ethernet service over a fibre WAN connection, with up to 24 individual Ethernet services being delivered via a single MCI2000 MetroConnect chassis, alternatively
- The WCC1100 I/O module is used with the standalone WCM1100 deployed at the customer site to deliver a 10/100/1000baseT or fibre Ethernet service over a fractional E1 or T1 service, with up to 12 individual Ethernet services being delivered via a single MCI2000 MetroConnect chassis.

The MCI2000 only requires a single PSU to support a full compliment of cards but for increased resiliency redundant PSUs can be used. The PSUs are load sharing when used in the optional I+I redundant configuration. For maximum MTBF (mean time between failures) the -48V DC PSU modules may be used. Typical operating power consumption is less than 75 watts.

The MCI2000 system management module manages each of the I/O modules and has the ability to extend management to remote EDD devices, and beyond, via IP or OAM services. The I/O modules optionally generate and terminate OAM frames according to IEEE 802.3ah. Each I/O module supports standalone operation with defaults configured using simple bit switches for ease of installation, which can then be overridden by the management software.

Management of the MCI2000 is either via the console port, or the management Ethernet port using SNMP, Telnet or Web interfaces. SNMP traps are generated based on configurable alarms generated for any of the I/O modules. TFTP download of software and configuration is also supported. To further future proof the MCI2000 system, remote hardware upgrade of CPLD firmware is included. Management access has password protection whether via the console, Telnet or Web interfaces. Performance statistics are available for all ports with data collection in 15 minute segments for a 24 hour period. For security, the MCI2000 supports TACACS+ for access control.

Planned features include: Fibre link aggregation IEEE 802.3ad and resilience via RSTP, 802.1ag and V.1731 OAM support, SNMP version 2 and 3, and SSH for secure access



Typical Interface module

Specifications

Configuration & Management		Dimensions (W x D x H mm) & Capacity	
Type	Menu driven user interface	19" Rackmount	484 x 251 x 178 mm
Access	Local console, Telnet, SNMP	Alarm Extension	9 way D-type on chassis rear panel
Interface	V.24 Terminal port, Network port	Interface cable entry	On module
Security	Access by two level password	Typical configuration	2 PSU modules 1 Management module Up to 12 interface modules
System	Non-volatile configuration		
Environment		Power supply options	
Temp	0 - 50 deg C	-48V DC	-36 to -72 VDC, 2 Amps
Humidity	0 - 95% RH, non-condensing	AC Mains	85 - 250 VAC, 50/60Hz, 1 Amp
Pressure	86 - 106 kPa		IEC connector
Compliance & Approvals		Power Rating	125 watts per PSU
Safety	EN60950		
EMC	EN55022, EN50082		

Ordering information

MetroConnect Item	AC Mains	-48VDC	Configuration Information
MC12000 Chassis with single PSU	80-16-021	80-16-031	19" rack mountable chassis with 1 PSU module, managed SNMP module and 12 slots for I/O modules
MC12000 Chassis with redundant PSUs	80-16-022	80-16-032	19" rack mountable chassis with 1+1 PSU redundancy with load balancing, managed SNMP module and 12 slots for I/O modules
Spare PSU Module	80-15-110	80-15-115	100-250 VAC 50/60Hz, 1 Amp or -48VDC, 3 Amp
PSU Slot Blanking plate	80-15-105		Blanking plate for empty PSU slot when only fitted with one PSU
I/O Slot Blanking plate	80-15-107		Blanking plate for empty I/O interface card slot.
Management Module	80-16-120		Spare management module
I/O Modules			12 I/O module slots

Interface Modules for the MetroConnect

The two left hand slots are occupied by the power supply modules. If only one power supply is fitted, then a blanking plate should be fitted over the second space for EMC compliance. The subsequent slots provide space for up to 12 I/O modules. Any unoccupied slots should have blanking plates fitted in order to preserve EMC compliance.

Module	Standalone	Module Function
WCC1100 (80-16-542)	WCM1100 AC (80-70-542)	10/100/1000BaseT or fibre Ethernet over a Fractional E1/T1 service
	WCM1100 DC (80-71-542)	
WCC1400 (80-16-4542)	WCM1400 AC (80-70-4542)	10/100/1000BaseT or fibre Ethernet over 4-port Fractional E1/T1 service
	WCM1400 DC (80-71-4542)	
WCC1800 (80-16-8542)	WCM1800 AC (80-70-8542)	10/100/1000BaseT or fibre Ethernet over 8-port Fractional E1/T1 Service
	WCM1800 DC (80-71-8542)	
WCC3100 (80-16-543)	WCM3100 AC (80-70-543)	10/100/1000BaseT or fibre Ethernet over Fractional E3/DS3 Service
	WCM3100 DC (80-71-543)	
WCC3200 (80-16-2543)	WCM3200 AC (80-70-2543)	10/100/1000BaseT or fibre Ethernet over 2 port Fractional E3/DS3 Service
	WCM3200 DC (80-71-2543)	
WCC5100 (80-16-547)	WCM5100 AC (80-70-547)	10/100/1000BaseT or fibre Ethernet over STM-1/OC-3 service
	WCM5100 DC (80-71-547)	
WCC_Serial (80-16-545)	WCM_Serial AC (80-70-545)	10/100/1000BaseT or fibre Ethernet over a serial service
	WCM_Serial DC (80-71-545)	
LHC1000 (80-16-544)	LHM1000 AC (80-70-544)	10/100/1000BaseT or fibre Ethernet over a HSSI Serial service
	LHM1000 DC (80-71-544)	
FCC9000 (80-16-933)	FCM9000 AC (80-70-933)	10/100/1000BaseT or fibre Ethernet Demarcation Device
	FCM9000 DC (80-71-933)	

About Metrodata

Founded in 1989 and based near London's Heathrow airport, Metrodata is a leading designer and manufacturer of datacommunications hardware for Fixed line, Satellite, Enterprise and Carrier networks. Specialising in interoperability and interconnectivity, Metrodata offers a range of Standard, Niche and Systems Integration type products. These include Media converters, Interface converters, Fibre converters, Ethernet extenders and ATM switching and Circuit emulation products. Other specialist products manage high data rates and clock sensitive applications to ensure higher network performance. Metrodata provides COTS products to the commercial, government and defence sectors, as well as developing turnkey products to specific customer requirements. For more information and data on Metrodata products, visit our web site at www.metrodata.co.uk

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