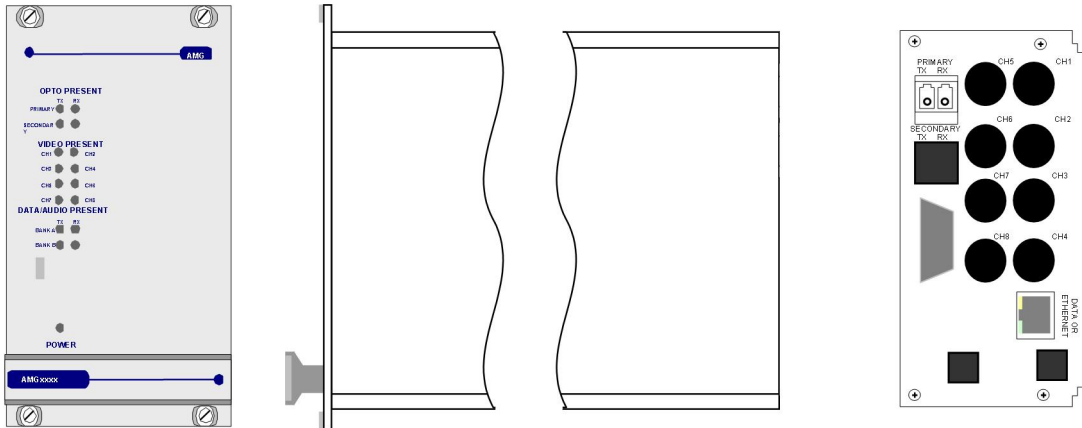


10/100 BASE-TX Ethernet Media Converter receive unit for a singlemode fibre link using CWDM



The **AMG4702ER-CWDMn** is a rackmount Ethernet Media Converter receive unit designed to provide 10BASE-T half duplex or 100BASE-Tx full duplex Ethernet connectivity over two singlemode optical fibres, or over one optical fibre when used with external optical couplers. The **AMG4702ER-CWDMn** transmits on a CWDM wavelength defined by the 'n' in the CWDMn partno. as detailed in the following table, but can receive from any 1310nm or 1550nm band wavelength.

The **AMG4702ER-CWDMn** is designed to plug into an AMG2005 subrack, which in turn fits into a 19" rack system. The rack incorporates an **AMG2003** power supply.

The **AMG4702ER-CWDMn** is designed to operate with an **AMG4701E-CWDMn** or rackmount equivalent **AMG4701ER-CWDMn** Ethernet Media Converter transmit unit in a point to point configuration.

Contents

Introduction	3
Unit Functional Schematic.....	3
Standard AMG CWDM Wavelengths	3
Optical Connection	3
Connections	4
Optical Connections	4
Power Connection	4
Ethernet Connection.....	4
Ethernet Operation	4
Front Panel Indicators	5
Power LED.....	5
Fibre Optic LED's	5
Ethernet Data LED's.....	5
Physical Information	6
Dimensions	6
Mounting Details.....	6
Removal / replacement from / to the Case.....	6
Safety	6
Maintenance and Repair	6

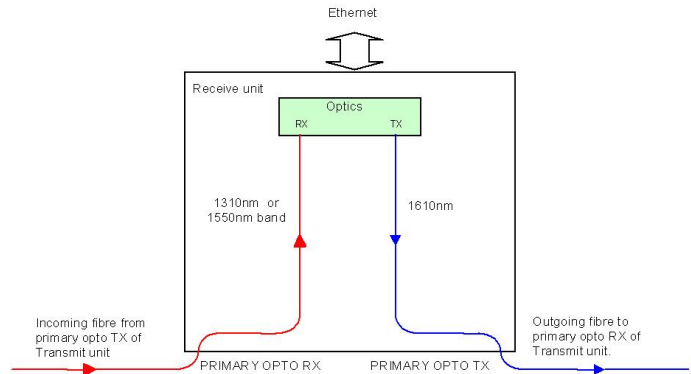
Introduction

Unit Functional Schematic

The **AMG4702ER-CWDMn** receives Ethernet data transmitted on any 1310nm or 1550nm band wavelength from the **AMG4701ER-CWDMn**.

It also transmits Ethernet data to the **AMG4701ER-CWDMn** receive unit using a wavelength defined by 'n' in the CWDMn partno.

The example shown in the schematic is where 'n' = 8, i.e. the Tx wavelength is 1610nm.



Standard AMG CWDM Wavelengths

CWDM n/m	Wavelength (nm)	CWDM n/m	Wavelength (nm)	CWDM n/m	Wavelength (nm)	CWDM n/m	Wavelength (nm)
1	1510	5	1470	9	1310	13	1390
2	1530	6	1490	10	1330	14	1410
3	1550	7	1590	11	1350	15	1430
4	1570	8	1610	12	1370	16	1450

For CWDM wavelengths 11-14, ITU-T G652C or D fibre is recommended.

Optical Connection

The **AMG4702ER-CWDMn** is connected as illustrated below when used with an **AMG4701ER-CWDMn** Ethernet Media Converter transmit unit and external optical couplers, connected as a point to point system over a single optical fibre.



Connections

Optical Connections

PRIMARY OPTO OUT

ConnectorLC/PC
Primary Optical Launch Power0dBm
WavelengthDefined by 'n' in the AMG Partno.
Optical FibreSinglemode

PRIMARY OPTO IN

ConnectorLC/PC
Primary Optical Sensitivity-22dBm
WavelengthAny 1310nm or 1550nm band
Optical FibreSinglemode
Optical Overload-5dBm

NOTE: The optical launch power may overload the input of an AMG receiver if connected directly. A minimum of 5dB loss is required to ensure correct operation.

Power Connection

Power supplyfrom plug in connection on the AMG2009 / AMG2015 subrack
Power consumption5 Watts max.

Ethernet Connection

Ethernet Data ConnectorRJ45
InterfaceAuto-negotiation up to 100BASE-TX full duplex
Ethernet Data RateMaximum 100Mb/s total Ethernet traffic on fibre

Ethernet Operation

In order for the AMG system to transmit Ethernet signals, an onboard RJ45 Ethernet interface or X16003 Ethernet interface adaptor should be fitted to both the Transmit unit and the Receive unit.

The Ethernet interface can operate at either 10Mbps/s half duplex, or 100Mbit/s full duplex, and data is transmitted from one port the other port with the minimum of delay or buffering.

The 100BaseT port does not implement MDI/MDIX; it should be connected with a straight though cable to an external switch port and with a cross over cable when connected directly to a PC or DTE.

Front Panel Indicators

Power LED

Power	Green	-	unit powered
	Off	-	no power applied to unit

Fibre Optic LED's

Primary Opto Sync TX.....	Green	-	optical channel transmitting
	Off	-	optical channel not transmitting
Primary Opto Sync RX	Green	-	optical channel receiving
	Org	-	optical channel receiving but not sync.
	Off	-	optical channel not transmitting

Ethernet Data LED's

BANK A

Data Present TX (Ethernet).....	Green	-	data present on the Ethernet input
	Off	-	no data present on the Ethernet input

This represents the Ethernet signals being transmitted onto the optical fibre

Data Present RX (Ethernet)	Green	-	data present on the Ethernet input
	Off	-	no data present on the Ethernet input

This represents the Ethernet signals being received from the optical fibre

BANK B

Data Present TX	Green	-	RJ45 Ethernet port operating at 100Mbit/s
	Red	-	RJ45 Ethernet port operating at 10Mbit/s
Data Present RX.....	Green	-	RJ45 Ethernet port operating full duplex
	Off	-	RJ45 Ethernet port operating half duplex

Note: the RJ45 Ethernet auto-negotiates up to 100Mbit/s full duplex.

Physical Information

Dimensions

Height.....3U Plug-in
Width.....14HP
Depth170mm excluding connectors
Weight.....750grams

Mounting Details

The unit is designed to be mounted within an AMG2009 or AMG2015 Subrack on standard card guides.

Removal / replacement from / to the Case

Note: - The AMG unit PCB's are static sensitive. Handle with proper care and use normal electrostatic discharge (ESD) procedures. Use properly grounded protection (for example, wrist straps) when handling the PCB.

To remove units from the case to access the data expansion boards and the daughter boards, remove the 2 or 4 fixing screws on the rear panel and slide the PCB's out of the case. Ensure that the fibres do not snag or get trapped.

To replace the PCB's into the case, slide the PCB's gently into the case aligning the boards with the appropriate slots. Ensure that the fibre do not snag or get trapped.

Safety

AMG Optical Fibre Products use Class 1 laser systems in accordance with EN 60825-2:2000.

It is always advisable to follow good practice when working with optical fibre systems. This includes:

- Do not stare with unprotected eyes or with any unapproved collimating device at fibre ends or connector faces, or point them at other people.
- Use only approved filtered or attenuating viewing aids

For other safety issues and advice on good practice associated with optical fibre systems, please see EN 60825-2:2000 or your local safety officer.

Maintenance and Repair

There are no user serviceable parts within AMG products. See unit data sheet for full specification.

In case of problem or failure, please call your local support centre or contact: **AMG Systems Ltd.** at 3 The Omega Centre, Stratton Business Park, Biggleswade, Beds., SG18 8QB, UK.

Phone	+44 (0) 1767 600 777
Technical Support	+44 (0) 1767 604 491
Email	techsupport@amgsystems.com

This page is intentionally blank.

This page is intentionally blank.