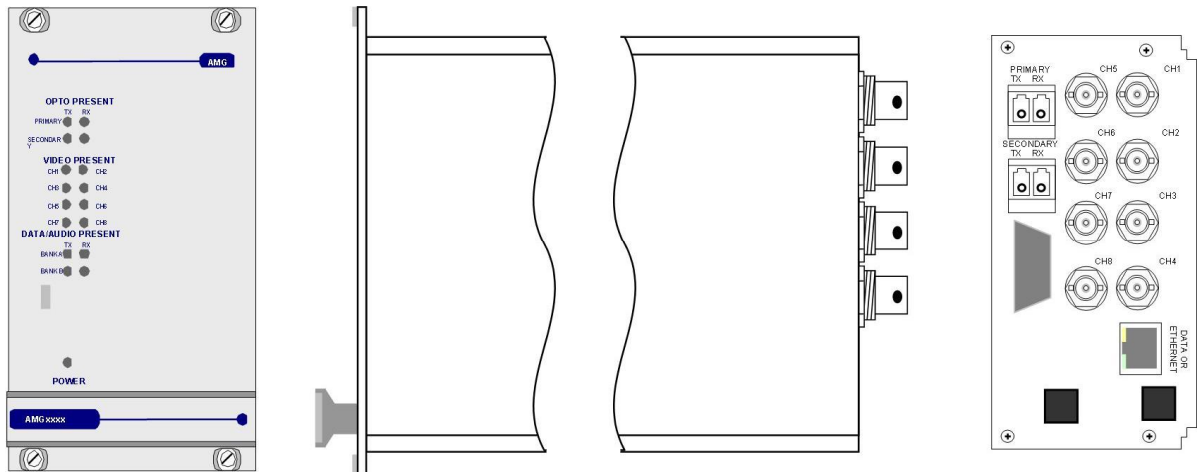


8 Channel Video Receive Unit with Ethernet for a Singlemode Fibre Link plus an integral WDM coupler



The **AMG4682ER-CWDMn-C** is a rackmount eight channel video transmit unit designed to receive 8 video signals and provide full duplex 100BaseT Ethernet connectivity over one Singlemode optical fibre.

The **AMG4682ER-CWDMn-C** 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. It also incorporates a WDM "drop and insert" optical multiplexer. This allows the user to combine a signal from a unit transmitting at an alternative CWDM wavelength onto the same optical fibre.

The **AMG4682ER-CWDMn-C** is designed to plug into an AMG2009 or AMG2015 subrack, which in turn fits into a 19" rack system.

The **AMG4682ER-CWDMn-C** is designed to operate with **AMG4681E-CWDMn-C** or rackmount equivalent **AMG4681ER-CWDMn-C** eight channel video transmit unit in a point to point configuration.

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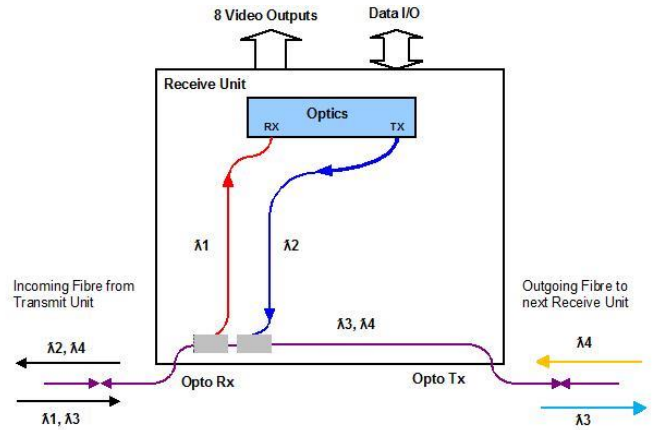
Introduction

Unit Functional Schematic

The **AMG4682ER-CWDMn-C** receives up to 8 video signals plus Ethernet data transmitted from the **AMG4681ER-CWDMn-C** transmit unit using wavelength Lambda 1.

It also transmits Ethernet data to the **AMG4681ER-CWDMn-C** using a wavelength Lambda 2 defined by 'n' in the CWDMn partno.

The **AMG4682ER-CWDMn-C** incorporates an integral WDM coupler which allows other CWDM wavelengths to be combined onto the same (single or dual) Optical Fibre(s).



Standard AMG CWDM Wavelengths

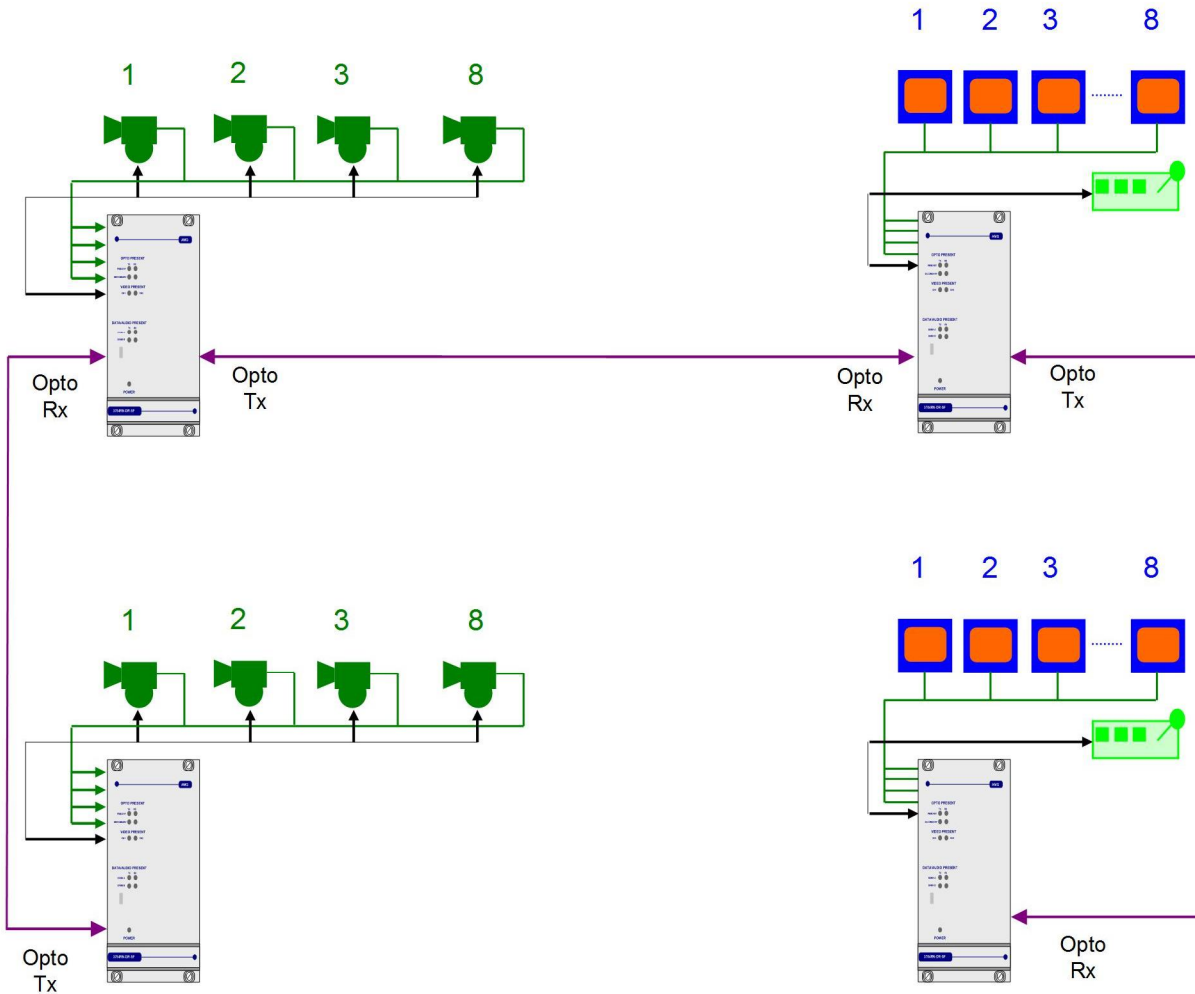
CWDM n/m	Wavelength (nm)	CWDM n/m	Wavelength (nm)	CWDM n/m	Wavelength (nm)	CWDM n/m	Wavelength (nm)
1	1510	6	1490	11	1350	16	1450
2	1530	7	1590	12	1370	17	1270
3	1550	8	1610	13	1390	18	1290
4	1570	9	1310	14	1410		
5	1470	10	1330	15	1430		

For CWDM wavelengths 11-16, ITU-T G652C or D fibre is recommended.

Optical Connection

The **AMG4682ER-CWDMn-C** is connected as illustrated below when used with an **AMG4681ER-CWDMn-C** 8-channel receive unit plus an additional 8-channel transmit / receive pair which together provide a 16-channel point to point system over a single optical fibre.

The example shown uses all single fibre optical links, alternatively dual fibres or a combination of both may be used depending on the model. Data provided can be Ethernet or low speed RS-485/RS-232 Data or both.



Connections

Video Output Connections

No. of channels..... 8
Connectors 75 ohm BNC Socket.
Output Impedance 75 ohm terminated.
Output Level 1 Volt p-p nominal
Frequency Response 10Hz to 7MHz.

Optical Connections

PRIMARY OPTO OUT

Connector LC/PC
Primary Optical Launch Power 0dBm
Wavelength..... Defined by 'n' in the AMG Partno.
Optical Fibre Singlemode

PRIMARY OPTO IN

Connector LC/PC
Primary Optical Sensitivity..... -22dBm
Wavelength..... Any 1310nm or 1550nm band
Optical Fibre Singlemode
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 supply from plug in connection on the AMG2009 / AMG2015 subrack
Power consumption 10 Watts max.

Ethernet Connection

Ethernet Data Connector RJ45
Interface Auto-negotiation up to 100BASE-TX full duplex
Ethernet Data Rate Maximum 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

Video Output LED's

Video Present CH1-8	Green	-	video signal present on output BNC
	Org	-	channel present but no video on O/P BNC
	Off	-	no video channel present

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
Depth..... 170mm excluding connectors
Weight..... 1000grams

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.

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