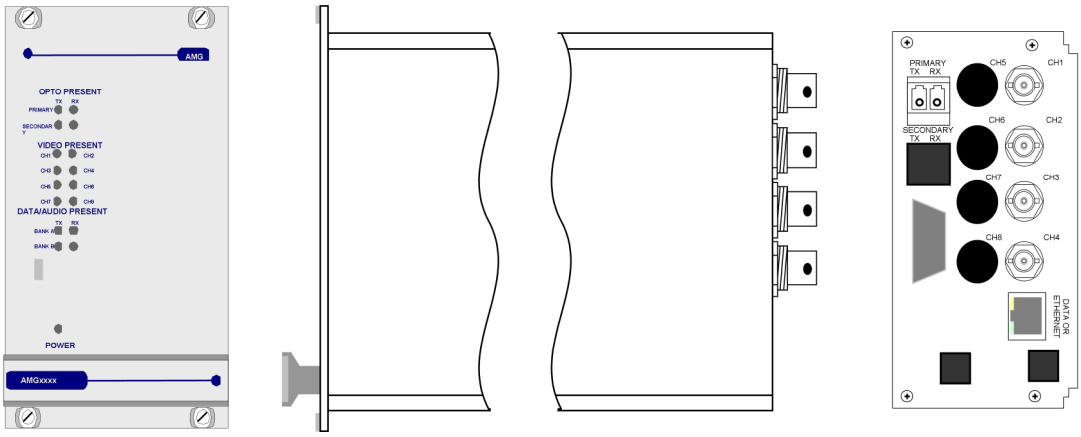
4 Channel Video Transmit Unit with Ethernet for a Multimode Fibre Link



The **AMG4641ER** is a rackmount four channel video transmit unit designed to transmit 4 video signals and provide full duplex 100BaseT Ethernet connectivity over two Multimode fibres.

The **AMG4641ER** is designed to plug into an AMG2005 subrack, which in turn fits into a 19" rack system.

The **AMG4641ER** is designed to operate with **AMG4642E** or rackmount equivalent **AMG4642ER** four channel video receive unit in a point to point configuration.

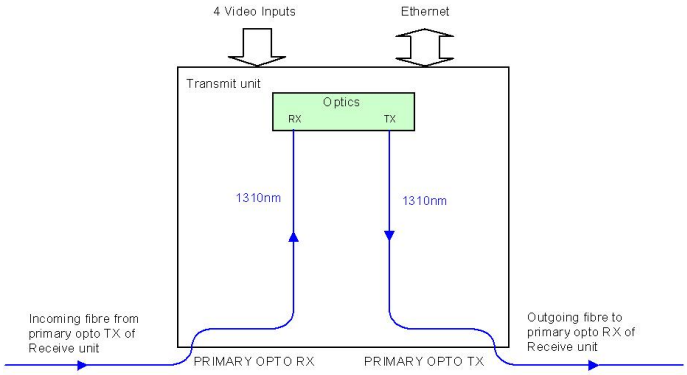
Contents

Introduction

Unit Functional Schematic

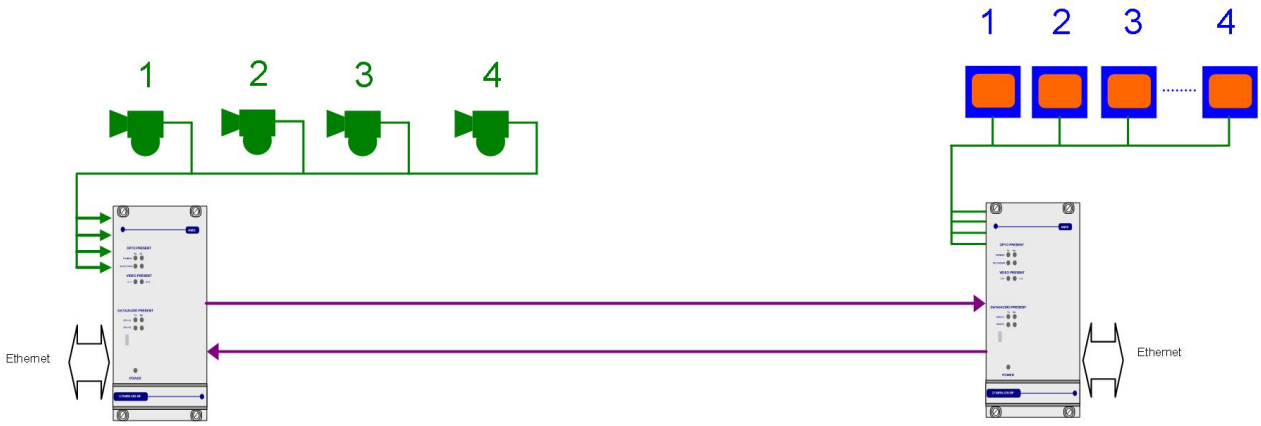
The **AMG4641ER** transmits up to 4 video signals plus Ethernet data to the **AMG4642E**.

It also receives Ethernet data transmitted from the **AMG4642E**.



Optical Connection

The **AMG4641ER** is connected as illustrated below when used with an **AMG4642ER** 4-channel receive unit acting as a point to point system.



Connections

Video Input Connections

No. of channels.....4
Connector .....75 ohm BNC Socket.
Input Impedance.....75 ohm terminated.
Input Level .....1 volt p-p nominal
Frequency Response.....10Hz to 7MHz.

Optical Connections

PRIMARY OPTO OUT

Connector .....LC/PC
Primary Optical Launch Power .....-5dBm
Wavelength.....1310nm
Optical Fibre .....Multimode 50/125 or 62.5/125**

PRIMARY OPTO IN

Connector .....LC/PC
Primary Optical Sensitivity.....-22dBm
Wavelength.....1310nm
Optical Fibre .....Multimode 50/125 or 62.5/125**

**Note: the transmission distance is limited by the bandwidth of the Multimode optical fibre. The optical data rate is 1.25Gbits/s. The maximum bandwidth specification at this data rate for Multimode fibre is 2km. although in most cases the units will operate successfully over longer fibre lengths. It is advisable however for distances greater than 2km, to have the optical fibre tested.

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

Front Panel Indicators

Power LED

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

Video Input LED's

Video Present CH1-4	Green	-	video signal present on input BNC
	R/G	-	channel present but no video on I/P BNC

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.

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 10Mbits/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.

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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