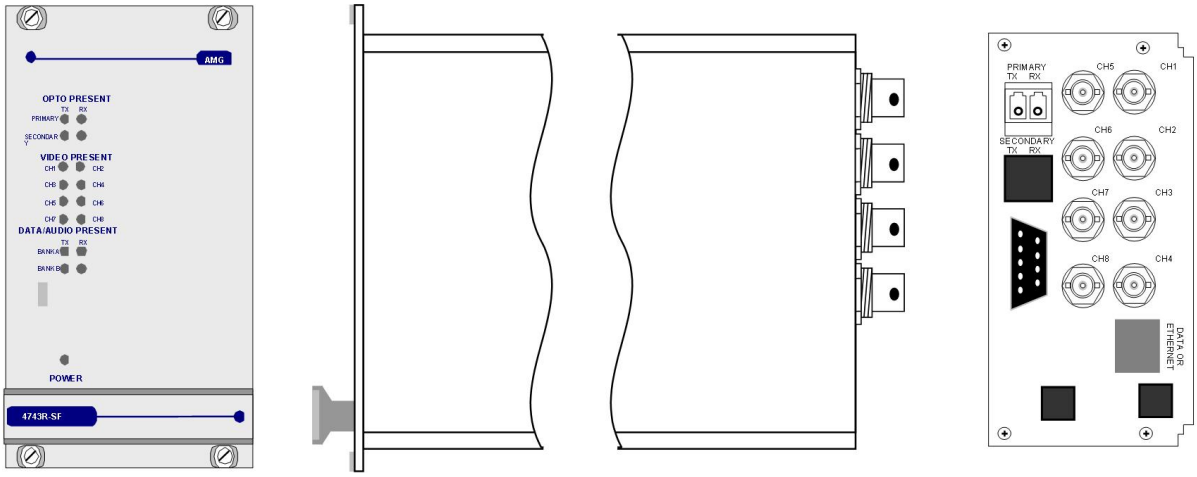
# 8 Channel Video Receive Unit for a Singlemode Optical Fibre Link - includes AMG NMS Network Management Interface




The **AMG4782RN-SF** is a rackmount eight channel video receive unit designed to receive 8 video signals over one Singlemode fibre.

The **AMG4782RN-SF** is designed to plug into an **AMG2005** or **AMG2009** subrack, which in turn fits into a 19" rack system. It also includes an AMG Management Interface to allow management of the system using the AMG SNMP enabled Management software.

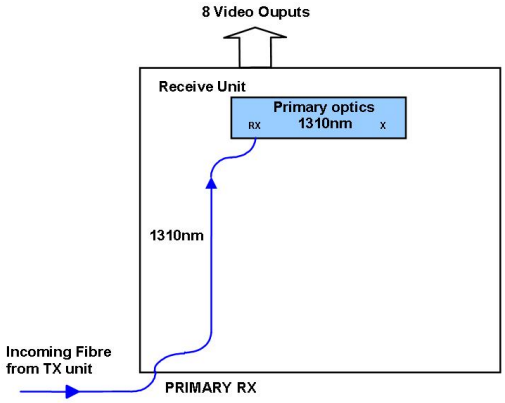
The **AMG4782RN-SF** is designed to operate with **AMG4781-SF** or rackmount equivalent **AMG4781R-SF** eight channel video transmit unit in a point to point configuration.

# Contents

# Introduction

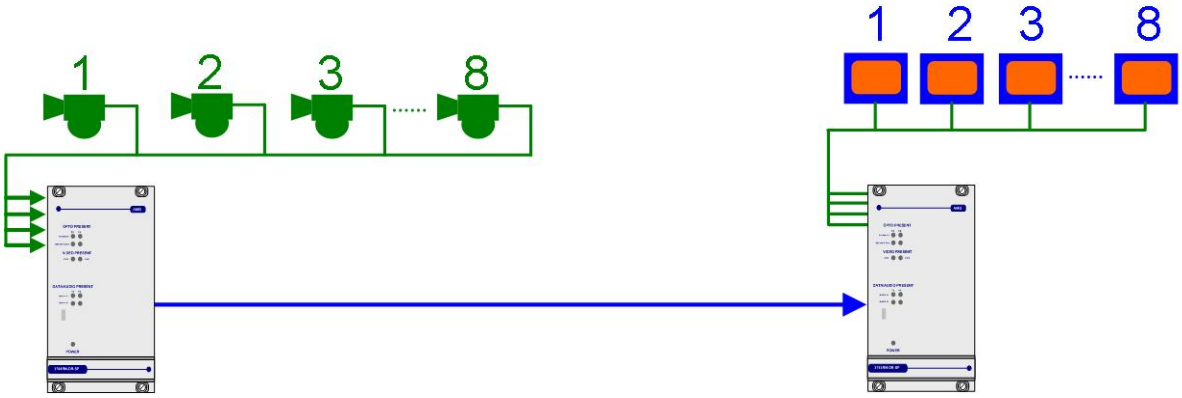
## Unit Functional Schematic

The **AMG4782RN-SF** drops off up to 8 video signals transmitted from the **AMG4781-SF**.




## Optical Connection

The **AMG4782RN-SF** is connected as illustrated below when used with an **AMG4781R-SF** 8-channel transmit unit acting as a point to point system.



# 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 IN**
Connector .....LC/PC
Optical Fibre .....One fibre - Singlemode
Primary Optical Sensitivity.....-22dBm
Wavelength.....1310nm

## Power Connection

Power supply .....from plug in connection on the AMG2009 / AMG2015 subrack
Power consumption .....10 Watts max.

# 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.....Not Used

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

## *Network Management*

Network Management of the system is provided by the AMG Management Interface which allows Management using the AMG SNMP enabled Management software.

### *NMS Operation*

Requires Network Management "N" option in each Rx (Receive) or Tx (Transmit) unit.
Recommended for Dual Redundant Options to give knowledge of failure
Rx collects information regarding all attached Tx units

**Interface**

- 9 Way D-type management port on each Rx or Tx
- RS-232 or RS-485 on Management Port
- Multiple Rx/Tx units use RS-485 and effectively parallel all the RS-485 ports together
- Connect to PC RS-232 Port via RS-485/RS-232 convertor

**Proprietary GUI**

- Loss of unit
- Loss of Optical Input
- Loss of Video Input

### *SNMP*

SMNP Compatibility: SMNP Version 1
AMG3700 Device do NOT act as SNMP Agents

PC running AMG NMS software is the only 'true' SNMP Agent

- Provides Proxy access to all AMG devices
- SNMP Community String used to differentiate between AMG devices

### *Network Alarm Port*

Alarm Output: Normally Closed

Opens when loss of :

- Video at any insert node
- Primary optical input at any node
- Secondary optical input at any node
- Any node through a power down
- Power at the receiver

Closed by: Reset

### *The Management Interface*

The Management Interface is fitted to AMG receivers / transmitters and is signified by a 'N' in the part number

Each management interface, thus each receiver or transmitter, has an ID number with is identified below the management port. This ID number is used by the AMG Network Management System (NMS) to identify the unit.

The physical interface is a 9 way female D-type connector. It supports either RS-232 or RS-485.

**Management Port Pin-out:**

| Pin Number | RS-232 Connection | RS-485 Connection |
|---|---|---|
| 1 | - | Data B (+) |
| 2 | RD (data out of port) | Data A (-) |
| 3 | TD (data into port) | - |
| 4 | Connect to DTR held –ve or shorted to ground | - |
| 5 | SG (signal ground) | SG (signal Ground) |
| 6 | Alarm Output | Alarm Output |
| 7 | Alarm Output | Alarm Output |
| 8 | Alarm reset (Gnd) | Alarm reset (Gnd) |
| 9 | Alarm reset | Alarm reset |

For multiple Management Ports it is recommended that the RS-485 interface is used with each RS-485 pair connected in parallel. In this case an RS-485 to RS-232 / USB converter is required in order to connect to a standard PC Comms. Port.

The time delay between receiving a data request and sending out a response from the port is 625µs. Therefore any RS-485 converter should have a 'turn around' time or 'transmit dwell' time equal to or less than 625µs.

**Recommended RS-485 Converter's are:**

RS-485 to RS-232
Dataforth DCP485-S: Available in the UK from http://uk.farnell.com/ Order No. 300-9348

**Settings on the DCP485-S:**

- RS-485 Switch Settings: 1-UP, 2-DOWN, 3-DOWN, 4-UP, 5-DOWN, 6-DOWN, 7-DOWN, 8-UP
- RS-232 Switch Settings: 1-DOWN, 2-UP, 3-DOWN, 4-UP
- DCE/DTE set to DCE.

RS-485 to USB
B&B 485USBTB-2W: Available in Europe from http://www.bb-europe.com/ Order No. 485USBTB-2W

**Connections to management port:**

| Management Port | DCP485-S | 485USBTB-2W |
|---|---|---|
| 1 | 2 or 4 | B+ |
| 2 | 3 or 5 | A- |
| 5 | GND | GND |

NOTES:
On the DCP485-S, pins 3 and 5 are connected together and pins 2 and 4 are connected together.
On the 485USBTB-2W, there are 2 pairs of terminals both labeled A-, B+, either pair may be used.

### *Alarm Output and Reset Operation*

The alarm output and reset is designed to indicate a change of state of the fibre loop or spur attached to the receiver. The Alarm output is a volts free contact relay output (rating: 0.5A at 125VAC or 1A at 24VDC). It normally open, which means that when not powered the contacts will be open circuit.

On power up the contacts will close and will remain closed for up to 5 seconds. During this time the receiver will monitor and record the state of the AMG transmit units connected to the receiver.

The contacts will then remain closed until there is a change from this recorded state. A change of state would be:

- Addition or loss of video at any insert node
- Addition or loss of primary optical input at any node
- Addition or loss of secondary optical input at any node
- Power up or down of any node
- Loss of power at the receiver

Following a change of state the contacts will remain open, regardless of whether the alarm condition reverts back to its previous state, until the a reset signal is presented to the alarm input connections. The alarm reset input is biased at 5V via a 1kΩ resistor. To reset the alarm, the alarm reset is required to be pulled to ground, either by a volt-free contact or an open collector output. The alarm output will be held in a closed state whilst the alarm reset is connected to ground.

On release of the alarm reset, the alarm output will remain in a closed state until the next change of state to the AMG transmit unit connected to the receiver. The alarm output may not register a change of state which happens within 5 seconds of release of the alarm reset.

## 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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