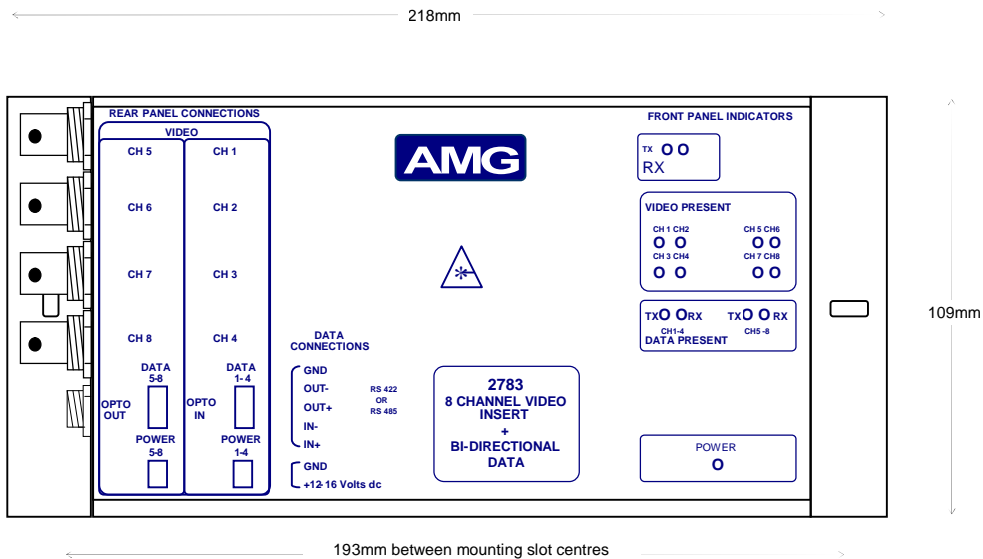




# AMG2783 Instruction Manual

## Eight Channel Video Insert Unit with Bi-directional Data



The **AMG2783** is a standalone eight channel video insert unit designed to transmit eight video signals. It also provides a RS485/RS422 bi-directional data channel. It is designed to be powered from an **AMG2002** power supply.

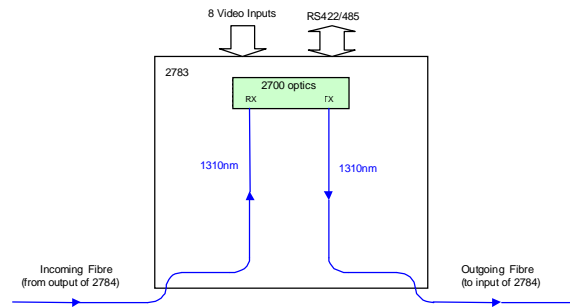
The **AMG2783** is designed to operate with the **AMG2784R** eight channel video receiver and data transceiver requiring two fibres for operation of the video and bi-directional data.

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## Introduction

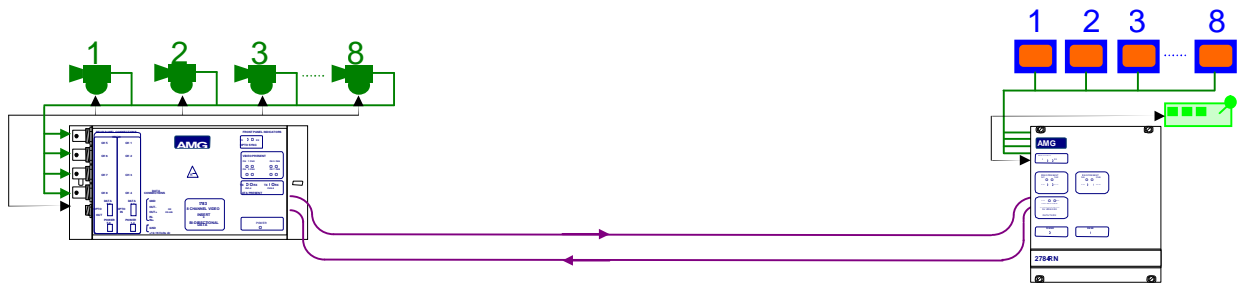
### Unit Functional Schematic

The **AMG2783** receives a 1310nm optical signal and drops of data transmitted from an **AMG2784** receiver. It then inserts eight video and one data signal onto the outgoing 1310nm optical signal. The video signals are inserted on the 8 channels available on the optical fibre. The insert channel number of the first video signal is set by SW1 inside the unit (see below). The subsequent video channels are inserted on the subsequent channels



### Optical System Connection

The **AMG2783** is connected as illustrated below when used with an **AMG2784R** 8 channel receiver.



Note that where necessary repeaters can be added at nodes to increase the average distance between nodes.

## Connections

### Video Input Connection

Connector .....	75 ohm BNC Socket.
Input Impedance .....	75 ohm terminated.
Input Level .....	1 volt p-p nominal
Frequency Response .....	10Hz to 5.75MHz min.
No of insert channels .....	8

### Optical Connections

#### OPTO OUT

Connector .....	FC/PC
Optical Launch Power .....	-5dBm
Wavelength .....	1310nm

#### OPTO IN

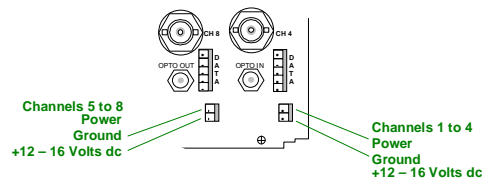
Connector .....	FC/PC
Optical Sensitivity .....	-22dBm
Wavelength .....	1310nm

## Power Connection

Connector .....removable screw terminal connector (3.5mm spacing)  
 Manufacturers Part No. Phoenix/Combicom MC1-5/2-ST-3.5  
 AMG Part No.G00047-00

Power requirement .....12 volts to 16 volt DC @  
 700mA (1 amp turn on  
 current)

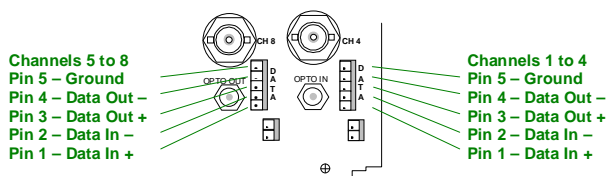
Connections..... See schematic  
 +12 – 16 Volts on lower pin  
 0 Volts on upper pin



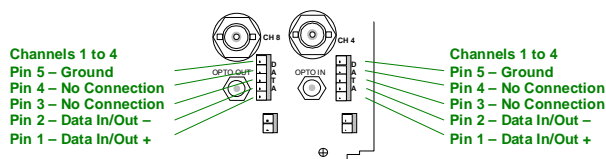
## Data Connections

Data Connector ..... 5 way removable spring terminal connector (2.5mm spacing)  
 Manufacturers Part No. Phoenix/Combicom FK-MC-0.5/5-ST-2.5  
 AMG Part No G15098-00

Connections RS422 4 wire ..... See schematic



Connections RS485 4 wire ..... See schematic



Protocol..... RS485 2wire  
 (switch selectable SW2)  
 RS422 4 wire Bus'ed or point to point (switch selectable SW2)

See below for **Configuration of the RS485 / RS422 data channel** and description of tristate operation

## Indicators

Power .....	Green	- unit powered
	Off	- no power applied to unit
Opto Sync TX .....	Green	- optical channel transmitting
	Off	- optical channel not transmitting
Opto Sync RX .....	Green	- optical channel receiving
	Off	- optical channel not receiving
Video Present CH1 .....	Green	- video signal present on video CH1 input BNC
	Off	- no video present on video CH1 input BNC
Video Present CH2 .....	Green	- video signal present on video CH2 input BNC
	Off	- no video present on video CH2 input BNC
Video Present CH3 .....	Green	- video signal present on video CH3 input BNC
	Off	- no video present on video CH3 input BNC
Video Present CH4 .....	Green	- video signal present on video CH4 input BNC
	Off	- no video present on video CH4 input BNC



## SW1 Switch Settings

All SW1 switch settings are set at the factory as follows:  
Channels 1-4 Card

Switch Position	Description	Setting
1	Video channel configuration	OFF
2	Video channel configuration	OFF
3	Video channel configuration	OFF
4	Primary / Secondary Board Setting	ON
5	Dual Redundant / Not dual redundant	OFF
6	Not Used	OFF
7	Not Used	OFF
8	On board data / Separate data card	ON

Channels 5-8 Card

Switch Position	Description	Setting
1	Video channel configuration	OFF
2	Video channel configuration	OFF
3	Video channel configuration	ON
4	Primary / Secondary Board Setting	OFF
5	Dual Redundant / Not dual redundant	OFF
6	Not Used	OFF
7	Not Used	OFF
8	On board data / Separate data card	ON

## Removal From the Case

**Note:** - The 2700 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.

In order to remove the case (to access SW1 and SW2)

- 1.1. Loosen and remove the four screws on the top and bottom of the unit's rear panel.
- 1.2. Slide the PCB assembly connected to the rear panel out of the case.
- 1.3. Ensure that the optical fibre is not trapped.

SW1 and SW2 can be found on the bottom right hand corner of each board and are labelled, close to the rear panel. The switch position are labelled on the switch, switch position 1 is always the furthest from the edge of the PCB.

When re-inserting the main PCB into the housing take care not to trap the optical fibre or the board interconnection cables.

Fasten the rear panel with the screws.

## **Safety**

The 2700 series of products uses a Class 1 laser system in accordance with EN 60825-2:2000.

However 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 the optical fibres systems see EN 60825-2:2000 or your local safety officer.

## **Maintenance**

There are no user serviceable parts within the AMG2700 products.

In case of problem or failure contact your local support centre or AMG Systems Ltd, Technical Support Department on tel. +44 (0) 1767 600777.

See unit data sheet for full specification.