DATA SHEET

ACTIVE OPTICS

1RU Model without WDM with Single video input and 8 Outputs

1RU Model for G/GE or 10G PON with Single video input and 16 Outputs

2RU Model for G/GE or 10G PON with Single video input and 32 Outputs

2RU Model for both G/GE and 10G PON with Dual video inputs plus optical switch and 32 Outputs

Features

- Designed for G/GE and 10GPON networks with video RF-overlay applications;
- Up to 64 input ports from OLT with LC/UPC connectors
- Up to 64 output ports to ONT with LC/APC connectors;
- Optical Output Power Per Port (Video): 20 / 22 / 23 dBm;
- Total Output Power up to 41dBm;
- Output Power (per port) adjustable in the range: 0 ~ -4dB (0.1dB/steps);
- Automatic protection of pump lasers by detecting low input or no input;
- Optional Dual video input with in-built optical switch;
- Optional Video RF test port
- Hot-swappable, automatically switched Dual power supply (AC/DC)
- Standard RJ45 interface, supporting SNMP and Web remote network management

Revision 2.3 | June 2021

1550nm Optical Transmission

High Power Multiport 1550nm EYDFA

Introduction

The C-COR range of 19” rack mountable 1550nm Optical Transmission products enables the deployment of cost-effective CATV network transmission solutions. Sourced from C-COR’s Taiwan manufacturing facilities, the products provide a reliable source of optical transmission for RF Video and data applications.

Erbium-Yttrium Doped Fibre Amplifiers (EYDFA) are recommended when the required total amplified optical power is beyond the capability of an Erbium Doped Fibre Amplifier (EDFA). The C-COR range of High Power Multiport 1550nm EYDFAs contain high-quality pump lasers and passive components. These EYDFAs can be used for multi-content, wide distribution FTTH systems and are suitable for RF analogue / QAM digital video signal distribution over fibre with superior link performance.

These EYDFAs achieve very high optical output power by using two stage Amplification. The first stage uses EDF pumping and the second stage uses EYDF pumping. For economic consideration, models with higher optical input level and only EYDF amplification are available.

Models are available with WDM and without WDM. Models without WDM are suitable for high branching networks to replace a lot of 1310nm directly modulated optical transmitters in wide coverage short distance networks. They can also provide the flexibility of adding PON services per actual demands. Models with WDM can support G/GE and/or 10G XG/XGS PON networks.

EYDFA are available in either 1RU or 2RU form factor determined by optical port count, output power per port and the connector type. Standard and Short Depth form factors are also available for Headend installation flexibility. Optional extras include Dual video inputs with built-in optical switch and Video RF test port.

Hot-swappable dual AC/DC power supply and field replaceable fan design provides for higher reliability operation. Management of the product is available via front panel LCD display, web-based SNMP and RJ45/RS232 Interfaces.

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2RU Model for G/GE or 10G PON with Dual video inputs plus optical switch and Video RF test port

2RU Model for both G/GE and 10G PON with Dual video inputs plus optical switch and Video RF test port

2RU Model for G/GE or 10G PON with Single video input, Short Depth format (Tilted Adapters)

Optical Specifications

Parameter	Min.	Typ.	Max.
Return Loss (APC) (dB)[1]	55		
Return Loss (UPC) (dB)[2]	45		
Bandwidth (nm)	1545		1565
Input Power Range (dBm) (Standard)	-10		10
Input Power Range (dBm) (Economic)	-3		10
Total Output Power (dBm) (Standard)	27		41
Total Output Power (dBm) (Economic)	27		30
Output Power Uniformity (dBm)	-0.7		0.7
Output Power Stability (dBm)	-0.3		0.3
Output Power Tuning Range (dBm)[3]	-4.0		0
Noise Figure (dB)[4]			6
Video RF Test Point (dBµV)[5]	78		82
Isolation between CATV and OLT (dB)			-40
OLT Pass Optical Loss (dB)			0.8
Channel Isolation (dB)[6]			-55
Switch: Optical Insertion Loss (dB)[5]			1.0
Switch: Channel Cross Talk (dB)[5]			-55
Switching Time (ms)[5]			8

Notes:

1. *Video Input, COM Output;*
2. *Input from OLT;*
3. *0.1 dB/step downward;*
4. *Optical Input Power: 0dBm, λ=1550nm;*
5. *Optional Order;*
6. *Between CWDM channels.*

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2RU Model for G/GE or 10G PON with Single video input and 64 (LC) Outputs

Port Options

Parameter	Connector	Max Ports
Video Inputs	SC	2
	FC	2
OLT PON Ports	SC	32
	LC	64
COM Ports	SC	32
	LC	64

General Specifications

Parameter	Min.	Typ.	Max.
Power Supply (VAC)	90		265
Power Supply (VDC)	-72	-48	-36
Total Power Consumption (W)[7]	50	80	100
Operation Ambient Temperature (°C)	-5		55
Operation Relative Humidity (%)[8]			95
Storage Temperature (°C)	-30		70
Max. Storage Relative Humidity (%)			95

Notes:
7. Depending on the total optical output power;
8. Without condensing.

Analogue Performance

Parameter[9]	Min.	Typ.	Max.
CNR (dB)		51	
CTB (dB)		65	
CSO (dB)		65	

Notes:
9. Test Conditions: Following GT/T 184-2002.

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WDM Types

Application	OLT (DS)	OLT (US)	Video (DS)
G/GE PON	1490nm	1310nm	1550nm
G/GE or 10G PON	1490nm or 1577nm	1310nm or 1270nm	1550nm
G/GE and 10G PON	1490nm & 1577nm	1310nm & 1270nm	1550nm

Total Output Power (dBm) of Standard EYDFA Models

Standard EYDFA Models		COM / Output Port Count				
Attribute	Model	4	8	16	32	64
Output Power / Port (dBm)	17	25[10]	28	31	35	38
	18	26[10]	29	32	36	39
	19	27	30	33	37	40
	20	28	31	34	38	41
	21	29	32	35	39	N/A
	22	30	33	36	40	N/A
	23	31	34	37	41	N/A
Without WDM	SC	1RU			2RU	
With WDM for G/GE or 10G PON	SC	1RU		2RU		N/A
	LC	1RU			2RU	
With WDM for G/GE and 10G PON	SC	1RU	2RU			N/A
	LC	1RU	2RU			

Note:
10. Use EDFA when the Total Optical Power <27dBm. The Standard EYDFA Models are designed for Total Optical Power in the range 27~41dB.

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Total Output Power (dBm) of Economic EYDFA Models

Economic EYDFA Models		COM / Output Port Count	
Attribute	**Model**	**4**	**8**
Output Power / Port (dBm)	**17**	25[11]	28
	18	26[11]	29
	19	27	30
	20	28	NA
	21	29	NA
	22	30	NA
Without WDM	**SC**	1RU	
With WDM for G/GEG or 10G PON	**SC**	1RU	
With WDM for G/GE and 10G PON	**SC**	1RU	NA
	LC	NA	1RU

Note:

11. Use EDFA when the Total Optical Power <27dBm. The Economic EYDFA Models are designed for Total Optical Power in the range 27~30dB.

Dimensions and Weight

Parameter	Value
Dimensions (Height x Width x Depth) (mm)	88x486×370[a] 88x486×230[b] 44x486×370[c] 44x486×230[d]
Weight (each) (kg)	8[e]

Notes:

a. 2RU standard form factor type (32 PON Output Ports)
b. 2RU short form factor type (32 PON Output Ports);
c. 1RU standard form factor type (up to 16 PON Output Ports);
d. 1RU short form factor type (up to 16 PON Output Ports);
e. Depending on Model.

Contact your local sales representative for product availability in your area and for other interface and option requirements.

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