HWA4400 (With SNMP)

C-Band DWDM Fixed Gain EDFA (FGA-C)

PRODUCT DESCRIPTION

HWA4400 series is a fixed gain EDFA which is specifically designed for C-Band DWDM optic transmission system, accord with various communication technology requirements of 44 channels DWDM system. It adopts nowadays excellent optical performance, advanced electronic control technology and complete software functionalities. Excellent total integration electronic transient control technology ensures amplifier to achieve the locking of optimal flat gain (OFG) in large dynamic input optical power range.

HWA4400 adopts the world's top class pump laser; advanced electronic circuit and low consumption design, greatly reduced the heat power consumption of complete equipment. Perfect FGC, ATC control, excellent design in the ventilation and heat-dissipation, ensures the long life and high reliability work of pump laser. The LCD at the front panel offers the work index and warning alarm of all equipment. RS232 and RJ45 offer serial communication and SNMP network management port. The laser will switch off automatically if optical power is missing, which offers security protection for the laser.

HWA4400 is suitable for DWDM booster amplifier (BA) and DWDM preamplifier (PA).

PRODUCT FEATURES

- ▶Accord with the various communication technology requirements of 44 channels DWDM system
- ▶Excellent optical performance
- ▶Excellent total integration electronic transient control technology
- ▶Optimal flat gain (OFG) locking (fixed gain mode)
- ▶Excellent gain flatness feature (GF<1.0dB)
- ▶Excellent Transient feature
- ▶Low noise figure
- ▶Various fixed gain available
- ▶Various saturation output power available
- ▶Latest low power consumption digital control technology
- ▶The transient suppression of output optical power, to protect the optical device
- ▶Carrier-class security and reliability, and network management function
- ▶The LCD, LED at the front panel offers the work index and warning alarm of all equipment.
- ▶Standard RS232 communication interface.
- ▶10/100M Ethernet interface supports SNMP and WEB remote network management.
- ▶1+1 powers supply back up optional, hot-plug function available
- ▶Low power consumption
- ▶Excellent P/P ratio in area

MAIN APPLICATION

▶C-Band44 channels DWDM booster amplifier

▶C-Band 44 channels DWDM Preamplifier

▶Long distance trunk network

▶MAN or access network

▶All kinds of SDH/PDH transmission system

▶FTTx PON

SOFTWARE FUNCTION MONITORING AND ALARM

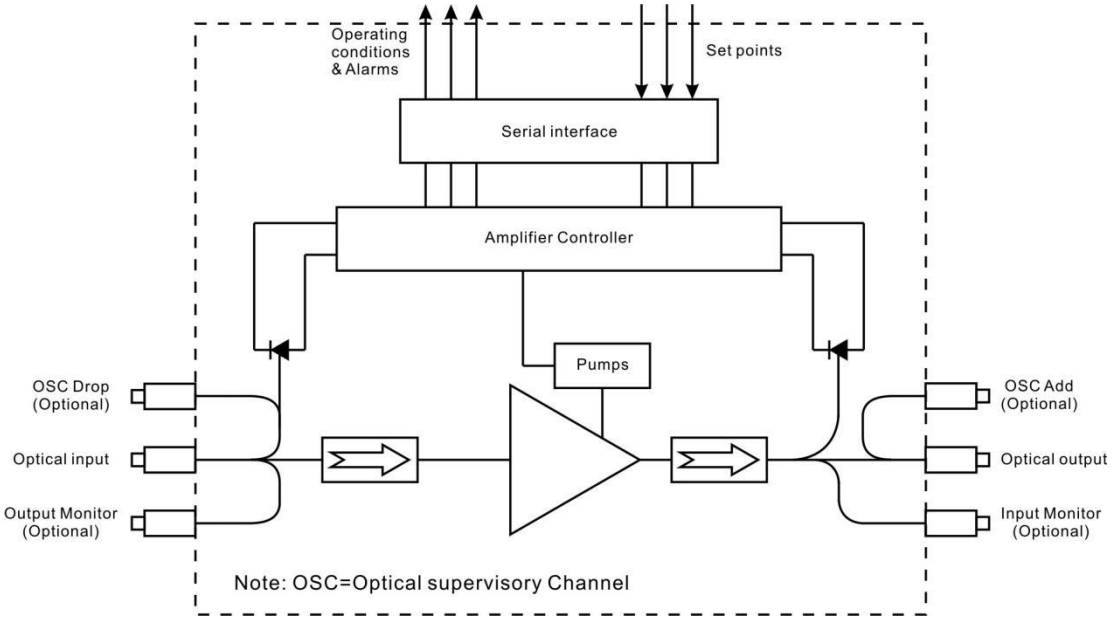
Function, Monitoring, Alarm		Standard version	Enhanced version
Functions	In-Service Firmware Upgrades	√	√
	Auto Shut Down	√	√
	Fixed Gain Mode (FGA)	√	√
	Variable Gain Control Mode (VGA, AGC)	×	√
	Variable output power control mode (VPA, APC)	×	√
	Pump Current Control Mode (ACC)	√	√
	Pump Maximum Working Current limit Protection	√	√
Monitors	Total Input Power	√	√
	Total Output Power	√	√
	Pump Status	√	√
	Chassis Temperature	√	√
Alarms	Loss-of-Signal Alarm	√	√
	Chassis Temperature Alarm	√	√
	Pump Temperature Alarm	√	√
	Pump Bias Alarm	√	√

TECHNICAL INDEX

Performace			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Working wavelength range (λ)	(nm)	1529.16		1563.86	ITU 88CH
	No. of working channel	(CH)	1	44		
	Total input power range (Pi)	(dBm)	-30		+3	
	Saturation output power(Po)	(dBm)	13		24	Enhanced version
	Optimal Flat Gain (OFG)	(dB)	13		33	Enhanced version
	Gain flatness	(dB)		0.7	1.0	Value of peak to peak
	Noise figure	(dB)		4.7	5.5	Max output, max gain
	Monitoring accuracy of input optical power	(dB)	-0.5		+0.5	
	Monitoring accuracy of output optical power	(dB)	-0.5		+0.5	
	Average gain accuracy	(dB)	-0.5		+0.5	
	Gain stability	(dB)	-0.25		+0.25	
	Polarization dependence Gain (PDG)	(dB)			0.3	
	Polarization mode dispersion (PMD)	(ps)			0.3	
	Polarization dependence loss (PDL)	(dB)			0.3	
	Input/Output optic isolatioin	(dB)	30			
	Pump leakage power	(dB)			-30	
	Echo loss	(dB)	45			UPC
			55			APC
	Optical Supervisory Channel Wavelength	(nm)	1500	1510	1520	
Transient feature	Transient setting time	(μs)			700	15dB Add/Drop
	Transient Overshoot	(dB)	-1.5		+1.5	15dB Add/Drop
	Transient gain changes	(dB)	-0.5		+0.5	

General feature	SNMP network management		RJ45			
	Communication interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
	Power consumption	(W)			30	
	Working temp.	(°C)	-5		+70	
	Storage temp.	(°C)	-40		+85	
	Working relative humidity	(%)	+5		+95	
	Size (W)×(D)×(H)	(mm)	483×205×44			

OPTO-ELECTRICAL DIAGRAM



PRODUCT SERIES

Model	Stauration power	Signal gain(dB)	Gain flatness	The Function Version	Monitor optical port mode	OSC Optical port mode
HWA4413-G □□	13dBm	13, 17, 20, 22, 24, 27, 30, 33 Optional	<1.0dB	1, FG: Standard Version (FGA) 2, VG: Enhanced Version (VGA)	1, M00: Without output monitoring 2, MO: With output monitoring 3, MI: With input monitoring 4, MIO: With input and output monitoring	1, O00: Without OSC / Drop 2, OD: OSC / Drop 3, OA: OSC / Add 4, ODA: OSC / Drop & Add
HWA4417-G □□	17dBm					
HWA4420-G □□	20dBm					
HWA4422-G □□	22dBm					
HWA4423-G □□	23dBm					
HWA4424-G □□	24dBm					

Note: The signal gain and the saturation output power can be chosen by the user

MODEL EXPLANATION

HWA 4 4 □□ – G□□ – □□ – □ / □□ – M□□ – O□□

Telecom DWDM Optical amplifier	Operation wavelength			Product type		Stauration power		Signal gain		Connncrtor		Power mode		Power supply		Monitor options		OSC optical port options	
	4	1529.16~1563.86 C-Band 44 CH & 88 CH		4	FGA Fixed Gain EDFA	13	13dBm	13	13dB	LP	LC/UPC	S	Single PS	22	220VAC	M00	Without Monitor optical ports	O00	Without OSC
						17	17dBm	17	17dB	LA	LC/APC	P	Dual PS Hot plug	48	-48VDC	MO	With output monitor	OD	OSC/Drop
						20	20dBm	20	20dB	SP	SC/UPC			42	-48VDC &220VAC	MI	With intput monitor	OA	OSC/Add
						22	22dBm	22	22dB	SA	SC/APC					MIO	With input & output monitor	ODA	OSC/Drop & Add
						23	23dBm	24	24dB	FP	FC/UPC								
						24	24dBm	27	27dB	FA	FC/APC								
								30	30dB										
								33	33dB										