HWA4700 (With SNMP)

C-Band DWDM VGA with Mid-Stage Access

Next-Generation Variable Gain EDFA

PRODUCT DESCRIPTION

HWA4700 series is a next-generation variable gain EDFA, which with the most excellent performance and most completes functions in the market. It adopts nowadays most excellent optical performance, most advanced electronic technology and most complete software functions. Remarkable transient suppression control technology and heat management control technology let many complicated optical functions achieved. It is the most versatile multifunction optical amplifier in the market.

This next generation variable gain amplifier module is composed with two stages amplifier: variable gain pre-amplifier (PA) and variable gain booster amplifier (BA). The gain of these two stages amplifier can be independently set in a certain range. There is a connector between the two stages amplifier, which used for mid-stage access, such as optical Add-Drop module (OADM), dispersion compensation module (DCM) and others optical modules.

HWA4700 is a device with Mid-stage Access, which according with various communication technology requirements of C-Band 44 or 88 channels DWDM system, widely used in long distance and ultra-long distance transmission network. Since its complete functions, it can be used as line amplifier, pre-amplifier, booster amplifier and add-drop multiplexing amplifier.

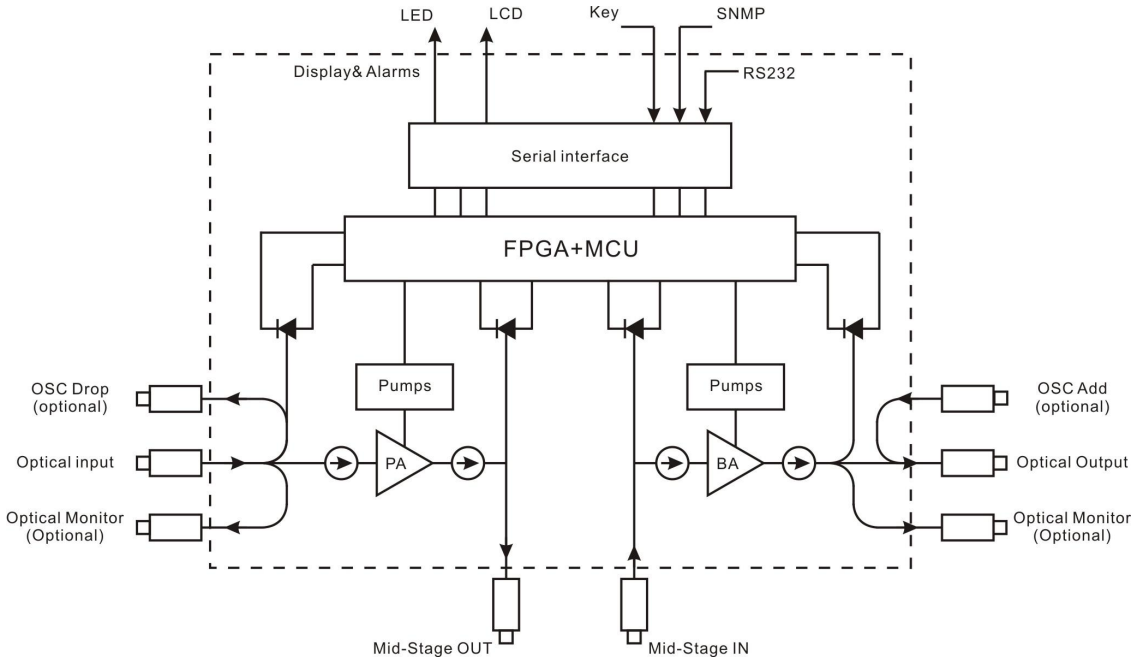
PRODUCT FEATURES

- ▶Next-generation Variable Gain Amplifies
- ▶With Mid-stage Access Version
- ▶Accord with the various communication technology requirements of C-Band 44 or 88 channels DWDM system
- ▶Adopt latest total integration electronic transient control technology
- ▶Adopt digital control technology which can adapt to heat management
- ▶Mid-stage versions can be set as independent pre-amplifier and booster amplifier
- ▶Saturation output power optional: 18dBm, 20dBm, 23dBm, 24dBm
- ▶AGC, APC, ACC working mode
- ▶Optical monitoring channels optional: OSC Add/Drop
- ▶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

- ▶OADM optical Add-Drop multiplexing
- ▶DCM ultra-long trunk dispersion compensation
- ▶ASON intelligent optical network
- ▶ROADM reconfigurable optical Add-Drop multiplexing
- ▶Long distance and Ultra-long distance network among the cities
- ▶Line amplifier, pre-amplifier, booster amplifier

OPTO-ELECTRICAL DIAGRAM



TECHNICAL INDEX

Performace			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Working wavelength range (λ)	(nm)	1529.16		1563.86	ITU 88CH
	Input power range [1]	(dBm)	-35		+3	HWA4718 Typ
			-35		+3	HWA4720 Typ
			-40		0	HWA4723 Typ
			-40		0	HWA4724 Typ
	Gain range [2]	(dB)	13		21.5	G21 Typ
			18		30	G30 Typ
			23		35	G35 Typ
			29		41	G40 Typ
			12		26	G25 Typ
	Mid-stage loss range [3]	(dB)	0		8	
			0		10	
			0		12	
	Max. output power [4]	(dBm)			18.5	HWA4718
					20	HWA4720
					23	HWA4723
					24	HWA4724
	Gain flatness	(dB)		0.7	1.0	Peak-to-peak
	Noise figure	(dB)		5.0	5.9	Max gain
	Polarization dependence loss (PDL)	(dB)			0.3	
	Polarization dependence Gain (PDG)	(dB)			0.3	
	Polarization mode dispersion (PMD)	(ps)			0.3	
	Pump leakage power	(dBm)			-30	
	Return loss[4]	(dB)	40			UPC

	Wavelength range of optic management channel	(nm)	1500	1510	1520	
Transient feature	Transient setting time	(μs)			500	16dB Add/Drop
	Transient Overshoot	(dB)	-1.5		1.0	16dB Add/Drop
	Transient gain changes	(dB)			0.5	
General feature	SNMP network management		RJ45			
	Communication interface		RS232			
	Power supply	(V)	90		265	220VAC
			30		72	-48VDC
	Power consumption	(W)			25	
	Working temp.	(°C)	0		+70	
	Storage temp.	(°C)	-40		+85	
	Working relative humidity	(%)	5		95	
	Size (W)×(D)×(H)	(")	483×205×44			(W)×(D)×(H)

Note: 1, 2, 3, 4: these optic performance are typical application, can be customized according to customers' requirements.

5: APC optional, return loss>50dB

FUNCTION MONITORING AND ALARM

Functions	In-Service Firm ware Upgrades
	Auto Shut Down
	Gain Control Mode with Automatic Power limiting (VGA)
	Independent Stage Mode (on variants with Mid-Sage Access)
	Output Power Control Mode
	Pump Current Control Mode
	Eye-Safe Power Mode
	Non-Volatile Event Log
Monitors	Total Input Power
	Total Output Power
	Optical Backreflection
	Pump Status
	Chassis Temperature
Alarms	Loss-of-Signal Alarm
	Low Output Power Alarm
	Chassis Temperature Alarm
	Pump Temperature Alarm
	Pump Bias Alarm
	Excess Backreflection Alarm (Optional)

PRODUCT SERIES

Model	Max. output Power (dBm)	Gain range Typ.(dB)	Input power range Typ.(dBm)	Mid-stage loss range(dB)	Monitor optical port mode	OSC Optical port mode
HWA4718-G21-M00-S00	18.5	13~21.5	+3~-30	0~8	1, M00 (Without output monitoring optical port) 2, MO (With output monitoring optical port) 3, MI (With input monitoring optical port) 4, MIO (With input and output monitoring optical port)	1,O00 (Without OSC / Drop) 2,OD (OSC / Drop) 3,OA (OSC / Add) 4,ODA (OSC / Drop & Add)
HWA4718-G30-M00-S00		18~30	+3~-35	0~10		
HWA4718-G35-M00-S00		23~35	0~-35	0~12		
HWA4718-G40-M00-S00		28.5~40.5	+3~-30			
HWA4720-G30-M00-S00	20	18.5~30.5	+3~-35	0~12		
HWA4720-G35-M00-S00		23~35	0~-35			
HWA4720-G40-M00-S00		29~41	+3~-35			
HWA4723-G30-M00-S00	23	19~31	0~-35	0~12		
HWA4723-G35-M00-S00		25~37	0~-37			
HWA4723-G40-M00-S00		29~41	0~-40			
HWA4724-G35-M00-S00	24	25~37	0~-37	0~12		
HWA4724-G40-M00-S00		30.5~42.5	0~-40			

MODEL EXPLANATION

HWA 4 7 □□ - G□□ - D20 - □□ - □ / □□ - M□□ - O□□

Telecom DWDM EDFA	Operation wavelength		Product type		Max.Output power(dBm)		Gain Range Typ(dB)		Chassis Length		Connector		Power Mode		Power Supply		Monitor Optical ports options		OSC optical port options mode	
	4	C-Band (1528~1564)	7	VGA with MSA	18	18.5	21	13~21.5	D20	205mm	LP	LC/UPC	S	Single PS	22	220VAC	M00	Without Monitor optical ports	O00	Without OSC
					20	20	30	18~30	D25	250mm	SP	SC/UPC	P	Dual PS Hot Plug	48	-48VDC			OD	OSC/Drop
			5	VGA without MSA	23	23	35	23~35	D30	300mm	LA	LC/APC			42	-48VDC &220VAC	MO	With output optical ports monitor	OA	OSC/Add
					24	24	40	29~41			SA	SC/APC							ODA	OSC/Drop & Add
							25	12~24									MI	With input optical port monitor		
																	MIO	With input,output optical ports monitor		