HA7100 C+L-Band Erbium Doped Fiber Amplifier

PRODUCT DESCRIPTION

HA7100 series is a C-Band booster EDFA with gain spectrum bandwidth coverage within 1528~1565nm and 1570~1610nm. According to the gain flatness feature, this series product can be divided into 2 types:

HA7100/SCH: single-channel booster amplifier, do not fix on gain flatness, suitable for the application of single channel or 1~8 continuous ribbon channels (ITU wavelength).

HA7100/FXX: gain-flattened booster amplifier, realizing gain flatness (F10, ≤±0.5dB) at gain spectrum <1.0dB (Typ.<0.8dB) within whole C+L-band, as adopting the high-quality GFF and optimization of optical route. Meet requirement of DWDM system C+L-band booster amplifier on gain flatness and high output power totally.

HA7100/FXX gain flatness divided in two levels for option. Standard type F10: FL≤±0.5Db, ordinary type F20: FL≤±1.0dB.

HA7100 adopts the world's top class pump laser and America OFS erbium-doped optical fiber. Perfect APC, ACC and ATC control, excellent design in the ventilation and heat-dissipation ensure the long life and high reliable work of pump laser. RS232 and RJ45 offer serial commutation and SNMP network management port. The LCD at the front panel offers the work index of all equipment and warning alarm. The laser will switch off automatically if optical power is missing, which offers security protection for the laser. All the optical port can be installed in the front panel (also can be in the back panel if customers specify).

PRODUCT FEATURE

- C+L-Band operating wavelength (1528~1565nm and 1570~1610nm)
- Low noise, high-output, high reliability
- HA7100/SCH single channel optical amplifier
- HA7100/FXX gain flatness optical amplifier
- Two gain flatness performance option:≤±0.5dB, ≤±1.0dB
- APC, AGC, ACC controlled selection
- Powerful RS232 supervisory instruction
- Optional multi-exterior structure
- Three exterior option: 1U (19” stander), 3D (12.4”, 3U, Desk-type) and modulator
- 1U and 3D exterior, offering status appearance and diagnosing fault with LCD, standard RS232 communication interface, SNMP network management function
- Application of 3D models to adapt to laboratory
- Excellent P/P ratio in area.

MAIN APPLICATION

- C+L-Band single channel booster amplification
- C+L-Band DWDM booster amplification
- Laboratory application

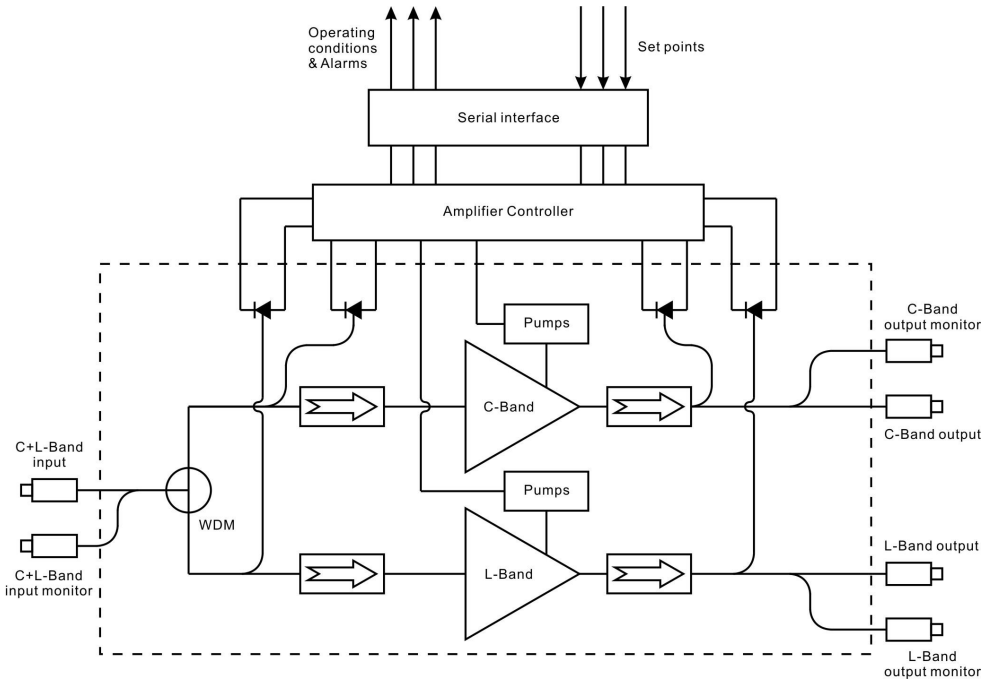
TECHNIQUE INDEX

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Operating Wavelength Range	(nm)	1528		1563	C-Band
			1570		1610	L-Band
	Input Power	(dBm)	-6		+3	
	Maximum Output Power[1)]	(dBm)			15	HA7115
					17	HA7117
					19	HA7119
					20	HA7120
					22	HA7122
					23	HA7123
					24	HA7124
					26	HA7126
	Output Power Adjustable Range	(dBm)	0		-6	P type
	Gain Flatness (Peak-To-Peak, Nominal Gain)	(dB)	Single channel			SCH
				0.8	1.0	F10, ≤±0.5
				1.5	2.0	F20, ≤±1.0
	Noise Figure (Max Output, Max Gain)	(dB)			5.5	HA7115
					5.8	HA7117
					6.3	HA7119
					6.5	HA7120
					6.8	HA7122
					7.0	HA7123
					7.3	HA7124
					7.5	HA7126
	Polarization Dependence Loss	(dB)			0.3	
	Polarization Dependence Gain	(dB)			0.4	
	Polarization Mode Dispersion	(ps)			0.5	
	Input/Output Isolation	(dB)	30			
	Pump Power Leakage	(dBm)			-30	
	Echo Loss	(dB)	40			UPC
			55			APC
General feature	Snmp Network Management Interface		RJ45			
	Serial Interface		RS232			
	Power Supply	(V)	90		265	220VAC
			30		72	-48VDC
			23		25	+24VDC
	Power Consume	(W)			50	
	Operating Temp.	(°C)	0		65	
	Storage Temp.	(°C)	-40		80	
	Operating Relative Humidity	(%)	5		95	
	Size (W)×(D)×(H)	(")	19×14.5×1.75			1RU (19")
		(")	12.4×15.4×5.25			3D (12.4", desk-type)

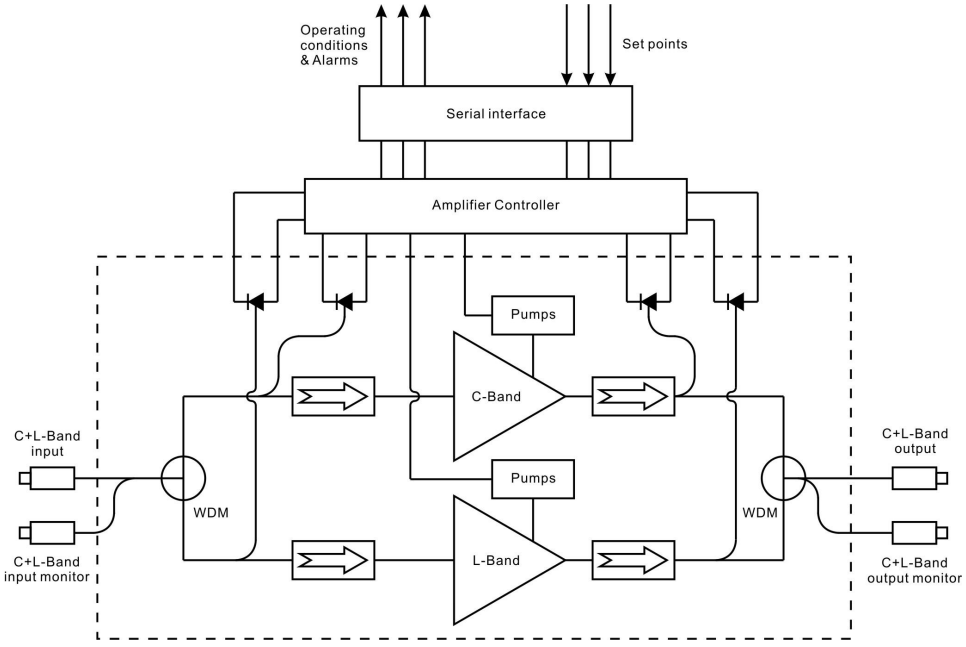
Remark: Output power can be customized by user.

OPTICAL/ELECTRICAL SCHEMA

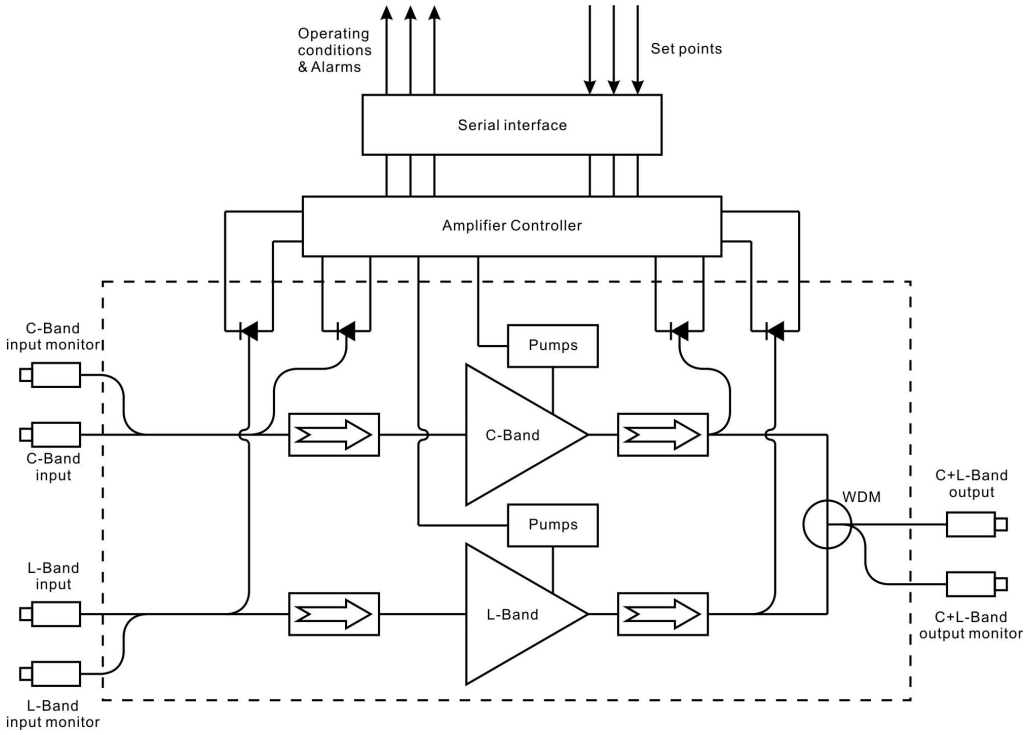
1.Optical port mode M12 (1×C+L-Band input, 1×C-Band output, 1×L-Band output. With input & output monitor port)



2.Optical port mode 11 (1×C+L-Band input, 1×C+L-Band output. With input & output monitor port)



3.Optical port mode M21 (1×C-Band input, 1×L-Band input , 1×C+L-Band output. With input & output monitor port)



PRODUCT SERIES

Model	Output Power Max (Dbm)	Gain Flatness (Db)	Wavelength (Nm)	Function	Optical Port Mode
HA7115/SCH-0N-012	15	Single channel	1528~1565 & 1570~1610	With SNMP network management	1×C+L-Band input, 1×C-Band output, 1×L-Band output. Without input & output monitor port
HA7117/SCH-0N-012	17				
HA7119/SCH-0N-012	19				
HA7120/SCH-0N-012	20				
HA7122/SCH-0N-012	22				
HA7123/SCH-0N-012	23				
HA7124/SCH-0N-012	24				
HA7115/F10-PN-M12	15	≤±0.5	1528~1565 & 1570~1610	With SNMP network management, output power 0 ~ -6dB adj.	1×C+L-Band input, 1×C-Band output, 1×L-Band output. With input & output monitor port
HA7117/F10-PN-M12	17				
HA7119/F10-PN-M12	19				
HA7120/F10-PN-M12	20				
HA7122/F10-PN-M12	22				
HA7123/F10-PN-M12	23				
HA7124/F10-PN-M12	24				
HA7126/F10-PN-M12	26				

MODEL EXPLANATION

HA 7 [1] [2][0] / [S][C][H] – [0] [N]– [0][1][2] – [1][U] – [F] / [S][A] – [2][2]

Product series	Operating bandwidth		Product type		Saturation output power		Gain flatness (dB)		Function		Network management		Optical port mode		Exterior		Optical port position		Connector		Power supply	
Amplifier of communication class	5	1540~1563nm CATV	1	BA	13	13dBm	SCH	Single-channel	0	Without	0	Without	011	1×C+L input, 1×C+L output, without monitor interface	1U	19" 1RU	F	Front panel	FA	FC/APC	22	220VAC
			2	LA	14	14dBm	F05	FL≤±0.25 GP-P≤0.5	P	Optical power adj.	N	With			2U	19" 2RU	B	Back panel	FP	FC/UPC	11	110VAC
	4	C-Band 1528~1565nm	3	PA	17	17dBm							M11	1×C+L input, 1×C+L output, with monitor interface	3D	Desk-type 12.4×15.4×5.8			SA	SC/APC	48	-48VDC
			4	High Power	18	18dBm	F10	FL≤±0.5 GP-P≤1.0	G	Gain adj.									SP	SC/UPC		
	6	L-Band 1570~1610nm	5	VGA	19	19dBm							012	1×C+L input, 1×C&1×L output, without monitor interface	ML	Modulator			LA	LC/APC		
			7	MSA	20	20dBm	F20	FL≤±1.0 GP-P≤2.0							OEM	Appearance user customized			LP	LC/UPC		
	7	C+L-Band	8	FTTP with CWDM, for FTTx PON	21	21dBm							M12	1×C+L input, 1×C&1×L output, with monitor interface								
	8	Bi-direction EDFA			22	22dBm																
					23	23dBm							021	1×C&1×L input, 1×C+L output, without monitor interface								
					24	24dBm																
					25	25dBm							M21	1×C&1×L input, 1×C+L output, with monitor interface								
					26	26dBm																