

64 ports



32 ports

ED5229GP Series **GPON EDFA with WDM for IP (OLT) wavelengths Multi Optical Outputs**

The ACI ED5229GP series is a high-power multi-ports EDFA optical booster with gain spectrum bandwidth from 1545 to 1563 nm for HFC network. It is designed for the amplification of CATV 1550 nm single channel or multi-channel wavelengths (ITU wavelength) with WDM for IP(OLT) signal overlay. the integrated WDM devices is used for combing GPON (IP) signals of wavelengths 1310 nm (upstream) & 1490 nm (downstream) with 1550 nm CATV signal in the same fiber. This series of EDFA offers a flexible solution for CATV large area coverage of metropolitan and medium-size cities.

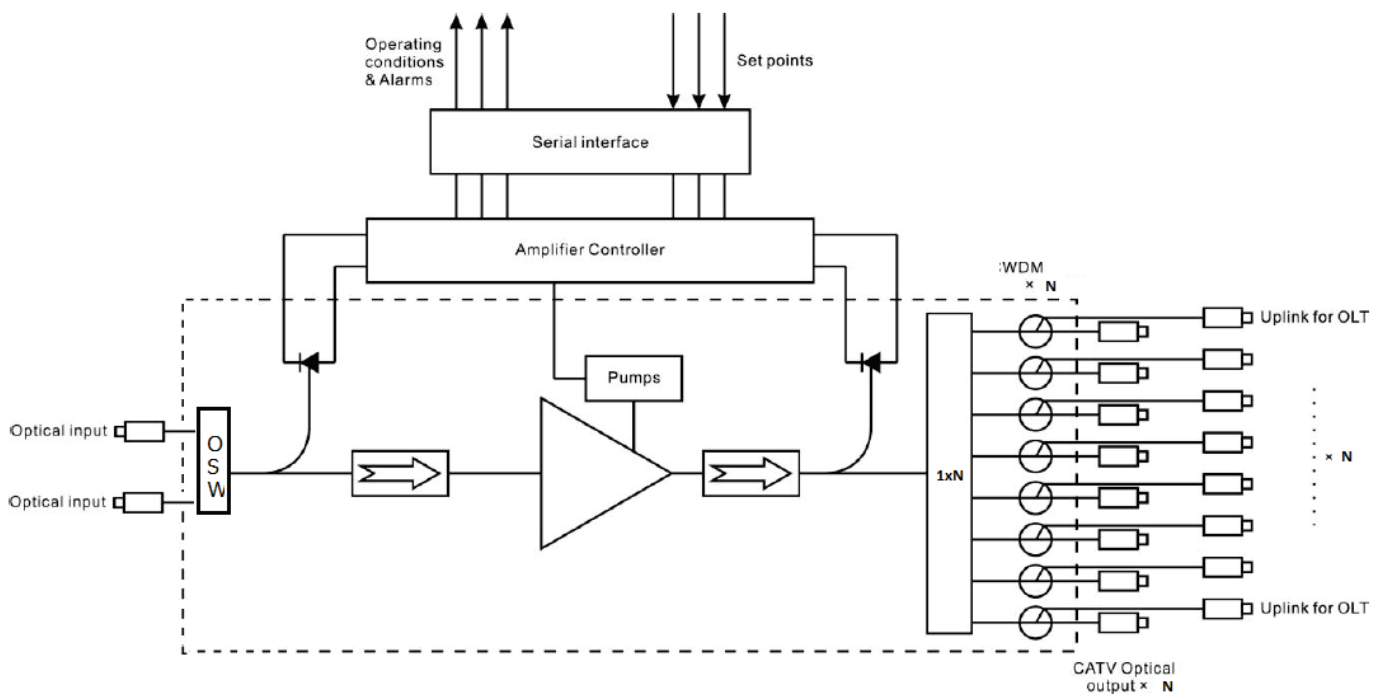
The ED5229GP EDFA adopts the world’s top class pump lasers and the American brand OFS’ erbium-doped optical fiber. Perfect APC control, excellent design in the ventilation and heat-dissipation ensures the long life and high reliability of the product. The pump laser will switch off automatically if the input optical signal power is missing, which offers safety protection for the laser.

The LCD display and LED indicators on the front panel provide system information, real-time monitoring and alarm functions for operating this equipment. A RS232 interface is available for controlling the unit from a remote PC by a GUI software. Network management via SNMP protocol is possible using the RJ-45 port on the front panel.

Features

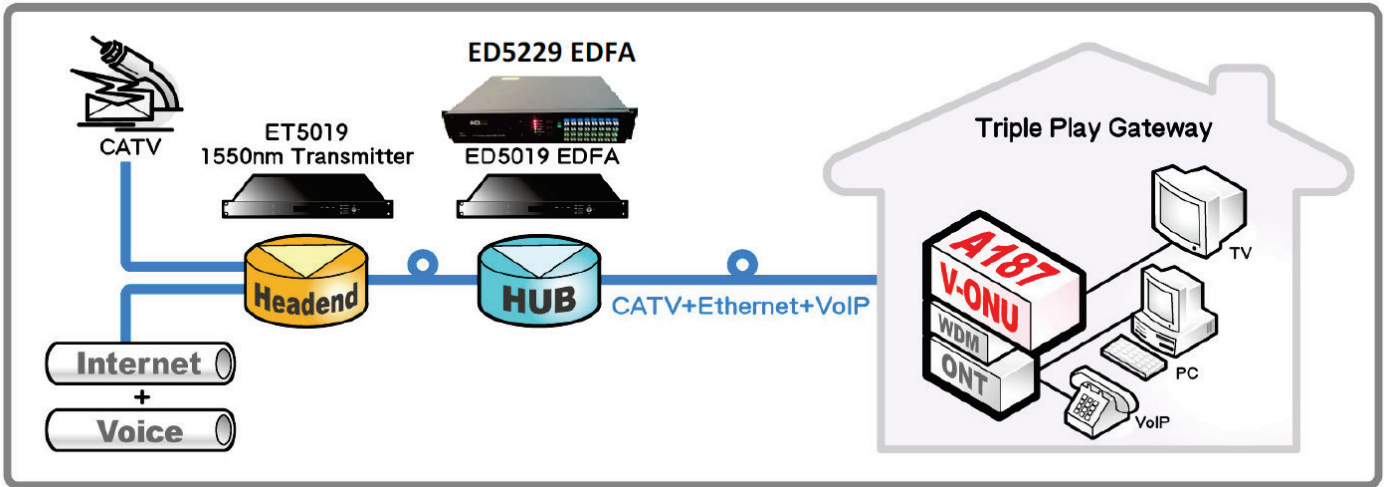
- 1545~1563 nm operating wavelengths range
- 8, 16 , 32 or 64 port outputs (option)
- Low noise, high reliability
- APC control
- Powerful RS232 supervisory instruction
- Efficient space, flexible installation and easy operation
- A high performance optical output driver circuit and laser TEC to provide a highly reliable EDFA.
- A Built-in microprocessor allows the unit to monitor the system parameters.
- The pump laser auto shutdown function is available.
- LED indicator on the front panel shows the alarm status.
- LCD display on the front panel shows the system parameters.
- Support firmware upgrade download.
- Support SNMP for network management (option).

Block Diagrams



Application

FTTX Solution



Specifications

ACI Communications, Inc.				ED5229GP Series EDFA with WDM (Multi optical outputs)			
No	PARAMETERS	CONDITIONS	UNITS	SPECIFICATION			NOTES
0.	Environmental condition			Min.	typical	Max.	
0.1	Power Consumption		Watt			80	
0.2	Operation Case Temperature		°C	0		50	
0.3	Operation Humidity		%RH	0		85	Without Condensation
0.4	Storage Case Temperature		°C	-20		70	
0.5	Storage Humidity		%RH	0		85	Without Condensation

Specifications

ACI Communications, Inc.				ED5229GP Series EDFA with WDM(Multi optical outputs)			
No.	PARAMETERS	CONDITIONS	UNITS	SPECIFICATION			NOTES
1.	Optical Specifications			Min.	Typ.	Max.	
1.1	Optical Wavelength (GPON/ IP)	In vacuum	nm	1270	1310	1350	Pass through
				1480	1490	1505	Pass through
1.2	Optical Wavelength (CATV)	In vacuum	nm	1545	1550	1563	
1.3	Total Input Power Range	@ $\lambda_{OP}=1550$ nm	dBm	-10		+8	
1.4	Saturated Output Power (per port)	@ $P_{in} \geq -6$ dBm @ $\lambda_{OP}=1550$ nm	dBm	Pout	Pout +0.3	Pout +1	Pout is selected by customer, eg. Pout = 19 dBm
1.5	Output power after WDM	\geq		18	19	20	For Pout= 19 dBm model
1.6	Output Power Stability	Over λ_{OP}	dB			0.5	
1.7	Output power uniformity	Among output ports	dB		± 0.5 dB		
1.8	Noise Figure @ $P_{in}=0$ dBm (1550nm)	≤ 23 dBm	dB	-		≤ 6.0	Including optical switch & WDM insertion loss
1.9	PDG (Polarization Dependent Gain)	Over λ_{OP}	dB	-	-	0.5	
1.10	PMD (Polarization Mode Dispersion)	Over λ_{OP}	Ps/nm	-	-	0.5	
1.11	Optical Return Loss	All ports, min.	dB	50			
1.12	Input Isolation		dB	25			
1.13	Output Isolation	≤ 17 dBm ≤ 23 dBm	dB	25 45			
1.14	Insertion loss (IP wavelength)	@ 1310 & 1490 nm	dB			1.0	
1.15	Pump Laser Used	@ ≤ 22 dBm @ ≥ 23 dBm			1 3 or 4		32 or 64 ports
1.16	Residual Pump LD Power	970 ~ 980 nm	dBm			-30	
1.17	Control Mode	APC/ACC/ATC			APC		
1.18	Number of output ports	CATV+IP		32 / 64			32/64 ports
1.19	Number of input ports	CATV input		2			
		IP(OLT) inputs		32 / 64			32/64 ports
2.	Mechanical /Power/Interface Specifications						
2.1	Dimension(W x L x H)	19", 2RU Rack mount		19" x 14.7" x 3.5" (483 x 373 x 88 mm)			
2.2	Power Supply	Dual power module/ hot standby	Volt	-48 VDC (-30 ~ -72 VDC)			
2.3	Pump Laser Switch			Button Switch			
2.4	LED Indicators			Power, Input, Output, System			
2.5	User Interface			RS232, RJ45 (Ethernet)			
2.6	Fiber type	Single Mode	μ m	9/125			
2.7	Optical Connector	Output ports IP input ports CATV input ports		LC/APC LC/UPC SC/APC			with built-in WDM & switch

No.	PARAMETERS	CONDITIONS	UNITS	SPECIFICATION			NOTES
3. Built-in WDM Specifications				Min.	Typ.	Max.	
3.1	Transmission band	For GPON signal	nm		1550, 1490		downstream
	Reflection band				1310		upstream
3.2	Insertion loss: Transmission band Reflection band	≤	dB			0.8 0.6	
3.3	PDL	≤	dB			0.1	
3.4	PMD		ps			0.1	
3.5	Isolation	≥	dB	40			
3.6	PON signal pass-through when EDFA is turned off		nm		1490, 1310		
3.7	Maximum power	Max.	dBm			26	
4. Built-in Optical Switch							
4.1	Number of inputs	Main(A), secondary(B)			2		
4.2	Insertion loss	≤	dB			1.2	
4.3	Switching time	≤	second			0.5	
4.4	Switching mode:						
	Switching to secondary input when main input is below predefined level						
	Automatic back to main input when main input is turned on again						
	When both main and secondary inputs are below the threshold, the EDFA selects the higher input						
Signal pass through when equipment is down							
5. Configuration and Management							
5.1	Constant Output	@ variable input: -6 ~ +8 dBm					
5.2	Configuration method	Through button panel and web interface					
5.3	Management method	By Web interface with 10/100Mbps Ethernet port and SNMP					
		Settable threshold of switching, MIB file document available for third party integration					
5.4	Managed Information	Input power, output power, power supply status, bias current of pump laser, laser temperature					
		Alarm threshold setting for : input power, output power, bias current of laser, laser temperature					
6. Key Parts Information							
6.1	Pump laser brand & origin	JDSU , Oclaro(Bookham), IPG or similar / USA					
6.2	EDFA manufacturer origin	Taiwan					
6.3	Laser cooling method	Thermoelectric cooler (TEC)					
6.4	EDFA lifetime	≥ 10 years					

Ordering Matrix

ACI ED5229 Series Multi-port EDFA with WDM Configuration Sheet

Customer: _____

Created By: _____

Order Date: _____

ORDERING MATRIX

January 30, 2017

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PART NUMBER	E	D	5	2	2	9	G	P				—						

9 **CONTROL INTERFACE**

- 0: None (Default)
- 1: SNMP (RJ45)
- 2: RS232

16 **MAIN POWER**

- 1: 110/220 VAC (Default)
- 2: Dual 110/220 VAC
- 3: Dual -48 VDC

10~11 **NUMBER OF OUTPUT PORT**

- 08: 8 output ports
- 16: 16 output ports
- 32: 32 output ports
- 64: 64 output ports

17 **POWER CORD SETS**

- 0 = None
- 1 = North America
- 2 = International / Europe
- 3 = Japan
- 4 = Australia
- 5 = Argentina
- 8 = DC power connector with wire terminal,
Red negative (-), Black positive (+)
- 9 = DC wire set with lug type terminal (AWG14),
Red Negative (-), Black Positive(+)
- X = Custom - (Determined by product management)

13~14 **OUTPUT POWER (per port)**

- 13: 13 dBm Selectable range:
- 14: 14 dBm 16port: 15 ~ 21 dBm
- 15: 15 dBm 32port: 13 ~ 22 dBm
- 16: 16 dBm 64port: 15 ~ 21 dBm
- 17: 17 dBm
- 18: 18 dBm
- 19: 19 dBm
- 20: 20 dBm
- 21: 21 dBm
- 22: 22 dBm

18 **POP IP INPUT CONNECTOR**

- 0= No IP input
- 1= LC/UPC

15 **OPTICAL CONNECTOR(input - output)**

- 1: SC/APC - LC/APC
- 2: SC/APC - SC/APC

NOTES:



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