Ver. 2.2en

HHOA-F5000

CATV Multi-ports Output High Power Full Function Optical Amplifier Module

Technical Specification

Hangzhou Huatai Optic Tech. Co., Ltd

CONTENT

1.0 PRODUCT DESCRIPTION

Huatai HHOA-F5000 series is a kind of multi-port output, high power, full-function optical amplifier module and is suitable for CATV with low noise. Its total output power is 27~40dBm (0.5W~10W) optional and its optical output port can reach to 64 pieces at most. The module has standard RS232 interface, adopts high reliable and low power consumption design as well as adopts APC, AGC control mode. The product has two series:

HHOA-F5100 Booster amplifier, input power range: +3~+15dBm

HHOA-F5200 Pre-booster amplifier, built-in low noise pre-amplifier, input power range: -10~+10dBm

The output power of Huatai HHOA-F5000 high power optical amplifier module can be chosen in the range of 27dBm~40dBm. According to different output power, Huatai HHOA-F5000 adopts two latest technical solutions. One is to use single mode high power 980nm pump laser with cooling and EDF, multi-pump synthesis technique. The other is to use multi-mode high power 980nm pump laser without cooling and double-clad Er-Yb doped fiber-optic technology. It provide a whole set of high reliability, low cost, low noise and low power consumption solutions for the application of high power, multi-port output amplifier. It can be widely used in CATV head-end or FTTx distribution network.

Huatai is the well-known manufacturer of optical amplifier. Its products, for the high quality, high reliability and high cost performance, are the ideal choice for the OEM system integrator.

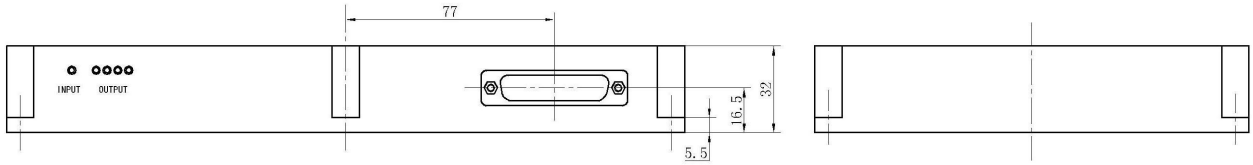
2.0 PRODUCT FEATURES

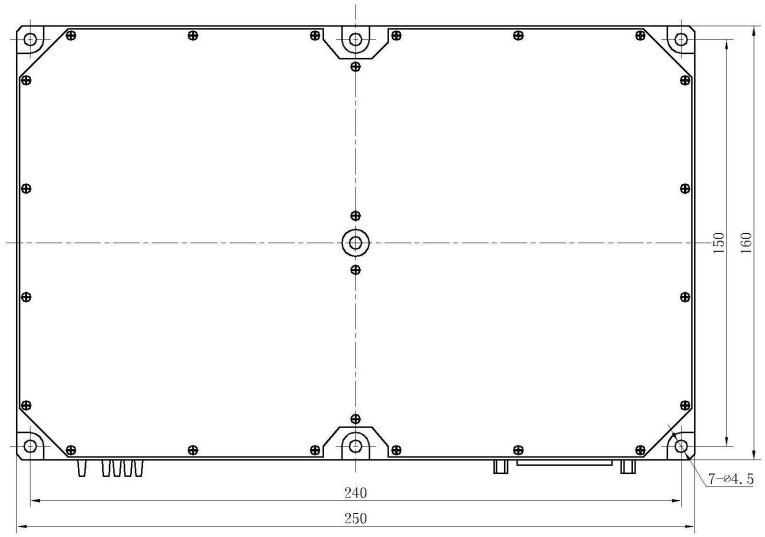
- Compact Full Function High Power multi-port output EYDFA module
- Easy to operate. Can work immediately when power up
- APC, ACC control mode
- The total output power is 27dBm~40dBm optional
- Optical output port: 4~64 optional
- Low noise figure <5.0dB (Typ<4.5dB, Pin=0dBm))
- Extended operation temperature 0~50℃ (with heat sink and air-cooled)
- Input/output optical power detection
- Input/output optical isolation
- Industry standard RS232 communication interface and excellent software function
- Output optical power adjustable (through RS232)
- High reliable, low power consumption
- The excellent P/P ratio in the field

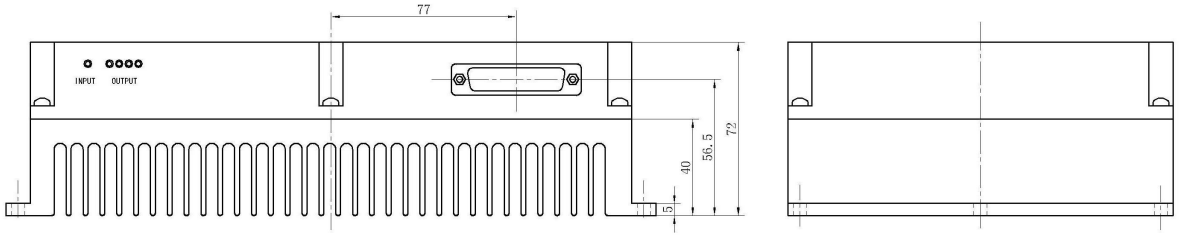
3.0 MAIN APPLICATION

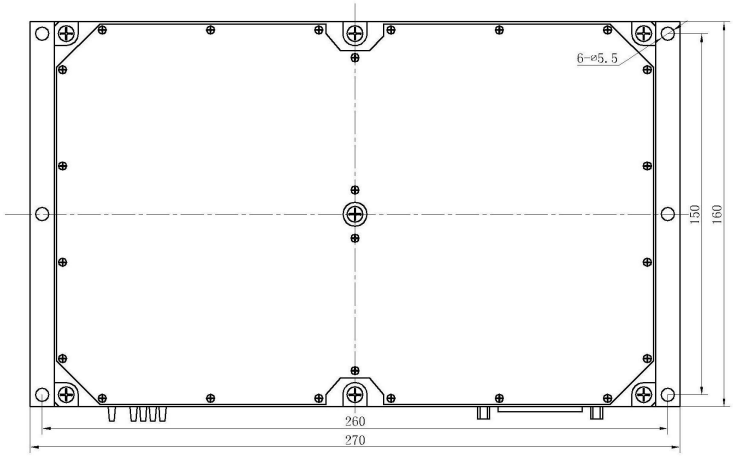
- FTTx (FTTP, FTTH)
- Triple-play
- CATV

4.0 DIMENSION









5.0 TECHNIQUE INDEX

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Wavelength	(nm)	1540		1563	
	Operating mode		Continuous CW			
	Input power	(dBm)	+3	+6.0	+15	
			-10	0.0	+10	
	Total output power	(dBm)	27		39	
	Each port output power	(dBm)	11		22.5	
	Number of output port		4		32	Option 64 ports
	Difference of each output power	(dB)	-0.5		+0.5	
	Noise figure	(dB)		4.5	5	HHOA-F5100 (Pin=6dBm)
				4.5	5	HHOA-F5200 (Pin=0dBm)
	System CNR deterioration	(dB)			0.1	Pin=6dBm
	Polarization dependence gain	(dB)		0.3		
	Polarization mode dispersion	(ps/nm)			0.4	
	Input/output isolation	(dB)	30			
	Input/output pump power leakage	(dBm)			-35	
	Input/output each loss	(dB)	45			
	Control mode		APC, ACC			
	Optical power adjustable range	(%)	55		100	
	Power stability		<1% rms			8 hours, 25°C
	Optical fiber length	(m)	0.5	0.8	1.5	
	Input/output fiber		SMF28 900μm			
	Optical connector		SC/APC, LC/APC			
General feature	Serial interface		RS232			
	Power supply	(VDC)	5	5	12	Optional -48VDC
	Power consume	(W)		30		
	Work temp.	(°C)	0		50	
	Storage temp.	(°C)	-40		80	
	Relative humidity	(%)	5		95	
	Exterior	(mm)	250 × 160 × 32			Without heatsink
			270 × 160 × 72			With heatsink

6.0 PIN DEFINITION

Pin	Definition	Pin	Definition
1	VCC +5V	14	GND
2	VCC +5V	15	GND
3	VCC +5V	16	GND
4	VCC +5V	17	GND
5	NC	18	RS232 out (TTL) TXD
6	NC	19	Input power alarm*
7	EDFA temp. alarm*(TTL)	20	NC
8	Output power alarm*(TTL)	21	Amplifier expiration input
9	Pump bias current alarm*(TTL)	22	RS232 in (TTL) RXD
10	Pump temp. alarm*(TTL)	23	NC
11	NC	24	VCC +5V
12	VCC +5V	25	GND
13	GND		

* All warning set at the TTL high level.

7.0 PORDUCT SERIES

7.1 HHOA-F5100 PRODUCT SERIES

Model	Total output power (dBm)	Input power range (dBm)	Number of output ports (pcs)	Each port output power (dBm)
HHOA-F5127×02	⩾27dBm(500mw)	+3 ~ +15dBm	2	23.5
HHOA-F5127×04			4	20
HHOA-F5127×08			8	16.5
HHOA-F5128×02	⩾28dBm(630mw)	+3 ~ +15dBm	2	24.5
HHOA-F5128×04			4	21
HHOA-F5128×08			8	17.5
HHOA-F5129×02	⩾29dBm(800mw)	+3 ~ +15dBm	2	25.5
HHOA-F5129×04			4	22
HHOA-F5129×08			8	18.5
HHOA-F5130×04	⩾30dBm(1000mw)	+3 ~ +15dBm	4	23
HHOA-F5130×08			8	19.5
HHOA-F5130×16			16	16
HHOA-F5131×04	⩾31dBm(1260mW)	+3 ~ +15dBm	4	24
HHOA-F5131×08			8	20.5
HHOA-F5131×16			16	17
HHOA-F5131×32			32	13.5
HHOA-F5132×04	⩾32dBm(1580mW)	+3 ~ +15dBm	4	25
HHOA-F5132×08			8	21.5
HHOA-F5132×16			16	18
HHOA-F5132×32			32	14.5
HHOA-F5133×04	⩾33dBm(2000mW)	+3 ~ +15dBm	4	26
HHOA-F5133×08			8	22.5
HHOA-F5133×16			16	19
HHOA-F5133×32			32	15.5
HHOA-F5134×08	⩾34dBm(2510mW)	+3 ~ +15dBm	8	23.5
HHOA-F5134×16			16	20
HHOA-F5134×32			32	16.5
HHOA-F5135×08	⩾35dBm(3160mW)	+3 ~ +15dBm	8	24.5
HHOA-F5135×16			16	21
HHOA-F5135×32			32	17.5
HHOA-F5136×08	⩾36dBm(4000mW)	+3 ~ +15dBm	8	25.5

HHOA-F5136×16			16	22
HHOA-F5136×32			32	18.5
HHOA-F5137×16	⩾37dBm(5000mW)	+3 ~ +15dBm	16	23
HHOA-F5137×32			32	19.5
HHOA-F5137×64			64	16
HHOA-F5138×16	⩾38dBm(6300mW)	+3 ~ +15dBm	16	24
HHOA-F5138×32			32	20.5
HHOA-F5138×64			64	17
HHOA-F5139×16	⩾39dBm(8000mW)	+3 ~ +15dBm	16	25
HHOA-F5139×32			32	21.5
HHOA-F5139×64			64	18
HHOA-F5140×16	⩾40dBm(10000mW)	+3 ~ +15dBm	16	26
HHOA-F5140×32			32	22.5
HHOA-F5140×64			64	19

7.2 HHOA-F5200 PRODUCT SERIES

Model	Total output power (dBm)	Input power range (dBm)	Number of output ports (pcs)	Each port output power (dBm)
HHOA-F5227×02	⩾27dBm(500mw)	-10 ~ +10dBm	2	23.5
HHOA-F5227×04			4	20
HHOA-F5227×08			8	16.5
HHOA-F5228×02	⩾28dBm(630mw)	-10 ~ +10dBm	2	24.5
HHOA-F5228×04			4	21
HHOA-F5228×08			8	17.5
HHOA-F5229×02	⩾29dBm(800mw)	-10 ~ +10dBm	2	25.5
HHOA-F5229×04			4	22
HHOA-F5229×08			8	18.5
HHOA-F5230×04	⩾30dBm(1000mw)	-10 ~ +10dBm	4	23
HHOA-F5230×08			8	19.5
HHOA-F5230×16			16	16
HHOA-F5231×04	⩾31dBm(1260mW)	-10 ~ +10dBm	4	24
HHOA-F5231×08			8	20.5
HHOA-F5231×16			16	17
HHOA-F5231×32			32	13.5
HHOA-F5232×04	⩾32dBm(1580mW)	-10 ~ +10dBm	4	25
HHOA-F5232×08			8	21.5

HHOA-F5232×16			16	18
HHOA-F5232×32			32	14.5
HHOA-F5233×04	⩾33dBm(2000mW)	-10 ~ +10dBm	4	26
HHOA-F5233×08			8	22.5
HHOA-F5233×16			16	19
HHOA-F5233×32			32	15.5
HHOA-F5234×08	⩾34dBm(2510mW)	-10 ~ +10dBm	8	23.5
HHOA-F5234×16			16	20
HHOA-F5234×32			32	16.5
HHOA-F5235×08	⩾35dBm(3160mW)	-10 ~ +10dBm	8	24.5
HHOA-F5235×16			16	21
HHOA-F5235×32			32	17.5
HHOA-F5236×08	⩾36dBm(4000mW)	-10 ~ +10dBm	8	25.5
HHOA-F5236×16			16	22
HHOA-F5236×32			32	18.5
HHOA-F5237×16	⩾37dBm(5000mW)	-10 ~ +10dBm	16	23
HHOA-F5237×32			32	19.5
HHOA-F5237×64			64	16
HHOA-F5238×16	⩾38dBm(6300mW)	-10 ~ +10dBm	16	24
HHOA-F5238×32			32	20.5
HHOA-F5238×64			64	17
HHOA-F5239×16	⩾39dBm(8000mW)	-10 ~ +10dBm	16	25
HHOA-F5239×32			32	21.5
HHOA-F5239×64			64	18
HHOA-F5240×16	⩾ 40dBm(10000mW)	-10 ~ +10dBm	16	26
HHOA-F5240×32			32	22.5
HHOA-F5240×64			64	19

8.0 ORDER INFORMATION

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Product series		Module type		Wavelength		Product type		Output power		Number of output ports		Heatsink option		Connector		Fiber length	
HHOA	High Power Optical Amplifier module 250×160×32mm	F	Full function	5	CATV	2	With Pre-EDFA	27	27dBm	02	2 ports	0	Without	FA	FC/APC	05	0.5m
HNOA	Mini narrowband EDFA module 70×40×12mm					1	BA	28	28dBm	04	4 ports	1	With	SA	SC/APC	08	0.8m
HMOA	Compact narrowband EDFA module 90×70×12mm							29	29dBm	08	8 ports			LA	LC/APC	10	1.0m
HLOA	Standard narrowband EDFA module 150×125×22mm							30	30dBm	16	16 ports					15	1.5m
HMDA	Compact gain flattened EDFA module 90×70×12mm							31	31dBm	32	32 ports						
HLDA	Standard gain flattened EDFA module 150×125×22mm							32	32dBm	64	64 ports						
								33	33dBm								
								34	34dBm								
								35	35dBm								
								36	36dBm								
								37	37dBm								
								38	38dBm								
								39	39dBm								
								40	40dBm								