

Technical Specification for Low Noise Amplifier Development

一. RF indicators

Test items		Index	unit	remark
frequency range		170-185	MHz	
Maximum output power		≥ 0	dBm	
Power regulation range		≥ 20	dB	
gain		50 ± 1.0	dB	
Gain adjustment step size		1.0	dB	
CNC adjustm	1 ~ 20dB	≤ 1.0	dB	Measure every 1dB
	20 ~ 30dB	≤ 1.5	dB	
In band fluctuation		≤ 1	dB	Peak to peak value
Intermodulation attenuation		≤ -53	dBc	Frequency interval of 600kHz, 2-carrier full
Noise coefficient		≤ 1.5	dB	
ALC control range		≥ 10	dB	After ALC is activated, the input power increases by 15dB and
Maximum allowable input power		≥ -10	dBm	Lasts for 1 minute without damage
Input voltage standing wave ratio		≤ 1.35		Add+28V, standard grid output -10dBm
High and low temperatur	Working	$-40 \sim +55$	$^{\circ}\text{C}$	Low temperature can
	Gain stability	$\pm 1.5 @ -25^{\circ}\text{C} \sim +55^{\circ}\text{C}$	dB	
	Power	$\pm 1 @ -25^{\circ}\text{C} \sim +55^{\circ}\text{C}$	dB	
Power	dynamic	$\leq 0.5\text{A} @ +12\text{Vdc}$;		Single tone full power
Monitoring interface		Molex5557-2*5		
RF input/output connector		SMA-50KFD (input、		

Monitoring function		Describe	Remark
Set parameters	ALC start control threshold	The maximum output power that can be set, with an adjustment range of $\geq 5\text{dB}$;	
	RF signal switch	Enable foot height to turn on low noise or low noise	
	Downward attenuation value ATT	CNC attenuation, with a gain attenuation range of 0-31dB and a step of 1dB;	Attenuation accuracy : 1 ~ 20dB ≤ 1.0 ; 20 ~ 30dB ≤ 1.5
	Fault alarm	When setting the enable switch to on, the query module will display a fault alarm	
Query parameters	Switch status	If "off" is set, the query should be in the off state The other is in the on power amplifier state	
	Input power level value	Detect the input power value of the power amplifier range (-95~-50dBm)	Detection accuracy: $\pm 1\text{dB}$
	Output power level value	Detect the output power value of the power amplifier, detection range (Pomax+2, Pomax -20), display the last value when the switch is turned off	Detection accuracy: Pout $\pm 1\text{dB}$
	ALC value query	The displayed value is equal to the actual set ALC value	

二. Monitoring function (implemented through interface)

三. Appearance dimensions

1. Appearance dimension diagram: as shown in Figure

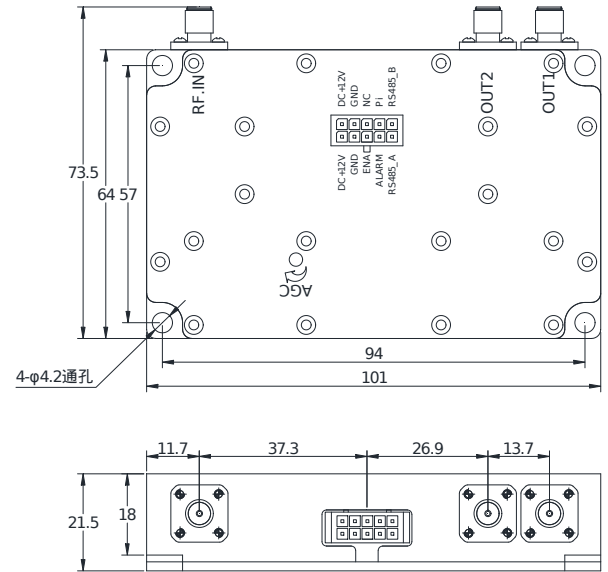
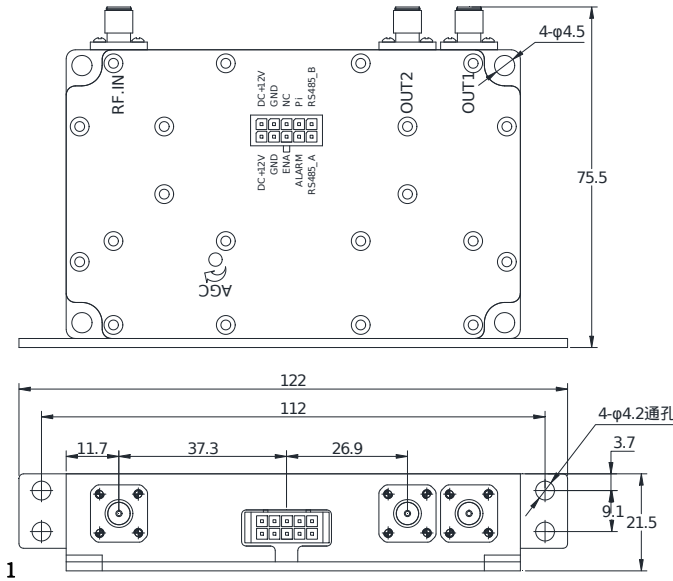


Figure 1. Appearance and dimensions of vertical installation method

Figure 2. External dimensions of the horizontal

installation method

1、Product specifications and dimensions :

NO	Name	specifications
1.	Product Name	Blue board low noise amplifier
2.	Product model	
3.	Vertical appearance dimensions (length * width * height)	122*74.7*21.5mm (Including RF connectors)
4.	Horizontal appearance dimensions (length * width * height)	102*72.7*21.5mmmm(Including RF connectors)/102*63*21.5mm(Excluding RF connectors)
5.	Net weight (Kg)	

2、Definition of power supply and I/O interface :

Pin	definition	explain	Diagram	Socket Name	Socket specifications/mode ls
1.	RS485_A	RS485 pin A		Molex3.0mm 5557Double row curved needle holder	2*5 (10P)
2.	RS485_B	RS4855B pin			
3.	ALARM	Fault alarm pin			
4.	Pi	Input power detection pin			
5.	LNA_EN	Low noise switch enable foot			
6.	NC	Empty feet			
7.	DC GND	GnD			

8.	DC GND	GnD			
9.	DC +12V	DC+12V power supply pin			
10.	DC +12V	DC+12V power supply pin			

3、 3. RF interface identification: as shown in Figures 1 and 2

NO	definition	Corresponding identification	Joint Name	Joint specifications/mod els
1.	RF input interface	RF. IN	SMA RF connector	SMA-KFD
2.	RF output interface 1	RF. OUT1		
3.	RF output interface 2	RF. OUT2		