

1. SCOPE

This document describes basic electrical characteristics and mechanical characteristics of optical receiver FTTH-F01, which is produced in Shenzhen, PRC.

2. ELECTRICAL SEPCIFICATION

2.1 INPUTRANGE

2.1.1 OPTICAL INPUTRANGE

Optical receiver FTTH-F01 should operate within specification of optical input range from -15dBm to -5dBm.

2.1.2 DC INPUTRANGE

Optical receiver FTTH-F01 should operate within specification of DC input range from 4.8V to 5.2V.

2.2 OUTPUT LEVEL

The optical receiver should operate within specification of output level from 70dB μ V to 73dB μ V with optical input range is from -15dBm to -5dBm.

2.3 ESD SENSITIVITY

The optical receiver should operate within specification of ESD sensitivity according to the table below:

ESD	ESD sensitivity	Human body model; R=1.5K Ω ;C=100pF	MAX=500	-	V
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2.4 RF PERFORMANCE REQUIRMENT

2.4.1 BANDWIDTH

The optical receiver should operate within specification of band width from 47MHz to 1000MHz

2.4.2 OUTPUT RETURNLOSS

The exact output return loss should apply the specification that $S_{22} \cong -14\text{dB}$

2.4.3 DISTORTION REQUIREMENT

The optical receiver should operate within specification of distortion requirement according to the table below:

Composite Triple Beat	dB	-	-	-58	60 channels; Measured at 543.25MHz Optical power@-10dBm
Composite Second Order distortion	dB	-	-	-58	
Noise carrier rating	dB	43	-	-	

2.5 OPTICAL PERFORMANCE SPECIFICATION

See the table below:

Parameter	Symbol	Min	Type	Max	Unit	Test condition
Optical Wavelength Range	λ_1	1530	1550	1570	nm	
Responsivity	R	0.90	0.95	-	A/W	Op=0dBm , $\lambda=1550\text{nm}$
Dark Current	I_d	-	0.3	0.5	nA	
Insert Loss	I_L	-	-	0.7	dB	
Return loss	ORL	-	45	-	dB	$\lambda=1550\text{nm}$
Optical Connector		-	SC	-		Green

3. ENVIRONMENTAL SPECIFICATION

3.1 TEMPERATURE

The temperature include storage temperature and operating temperature, and the optical receiver should apply to the temperature specification as the table below

3.1.1 ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Unit	Min	Typ	Max	Note
Optical Input Power	Pin	dBm	-	-	+2.0	Levels above max range may result in (latent) damages to the machine
Storage Temperature	T _{storage}	°C	-40	-	+85	10 ... 95 % relative humidity; non-condensing

3.1.2 OPERATING ENVIRONMENTAL LIMITS

Parameter	Symbol	Unit	Min	Typ	Max	Note
Case Temperature	T _{case}	°C	0	-	+80	10 ... 80 % relative humidity; non-condensing
Power Supply Voltage	V _{PSU}	V	4.8	5.0	5.2	
Power Consumption	P _{PSU}	W	-	0.6	1	V _B =5V

3.2 HUMIDITY

Operation humidity: 10% to 90% relative humidity, non-condensation.
Storage humidity : 5% to 95% relative humidity, non-condensation.

4. MECHANICAL

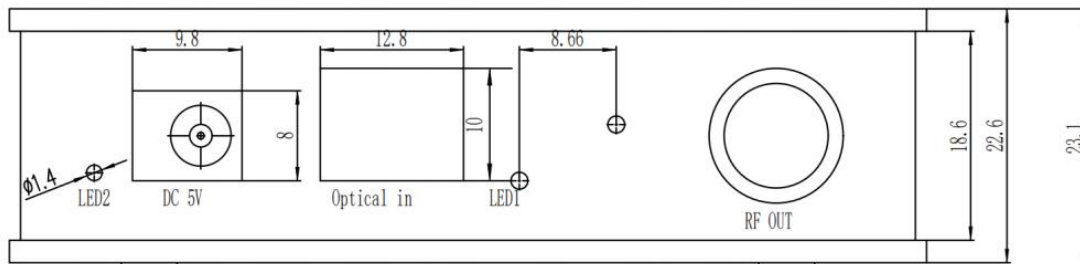
4.1 APPEARANCE

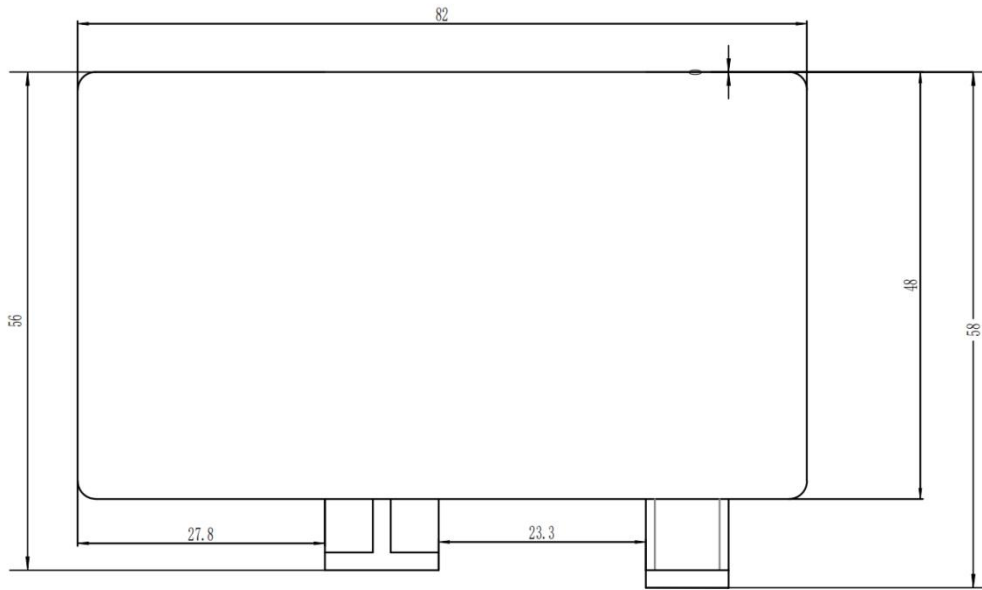
See the picture below



4.2 DIMENTION

See the mechanical drawing below (Unit:mm)





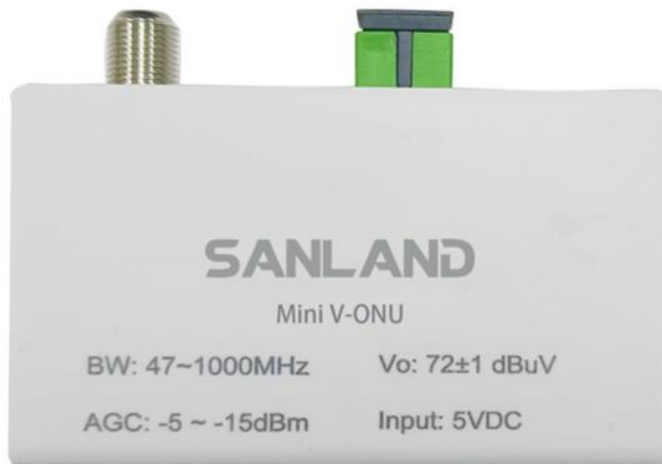
5. RF BUILDING BLOCKSPECS

5.1 FTTH-F01 RF SPECIFICATIONS

Parameter	Symbol	Unit	Min	Typ	Max	Note
RF passband	F _{PB}	MHz	47 - 1000			Minimum BW;
RF output impedance	R _{imp_out}	Ω	-	75	-	
AGC working range for optical input power	P _{opt_in}	dBm	-15	-	-5	Optical AGC will be implemented, the average optical input power controls the gain
RF output level	RF _{out}	dBμV	70	72	73	Optical power input range in -5dBm~ -15dBm
Flatness	Flatness	dB	-	±1		47-1000MHz
Output Return Loss	ORL	dB	-	-	-14	
Modulation Error Ratio	MER	dB	33	-	-	Total 96channels input ,OMI=3.5%,Optical power@-15dBm
Bit Error Ratio	BER	dB			1e-8	
CNR	CNR	dB	43			60 channels; Measured at 543.25MHz Optical power@-10dBm
CSO	CSO	dBc	-	-	-58	
CTB	CTB	dBc	-	-	-58	
Total current consumption(DC)	I _{tot}	mA	130	-	170	V _B =5V

6. IDENTIFICATION AND PACKAGING

6.1 MONOMER IDENTIFICATION



6.2 MINIMUM PACKAGE



图一

图二

图三

6.2.1 Small carton with 1 pcs of v-ONU and 1 pcs of power adapter, as shown in the figure above.

6.2.2 Carton size: 145mm * 110mm * 33mm.

6.3 OUTER PACKING

6.3.1 Special large carton, containing 60pcs, 2 * 30.

6.3.2 Size: 525mm * 305mm * 240mm.