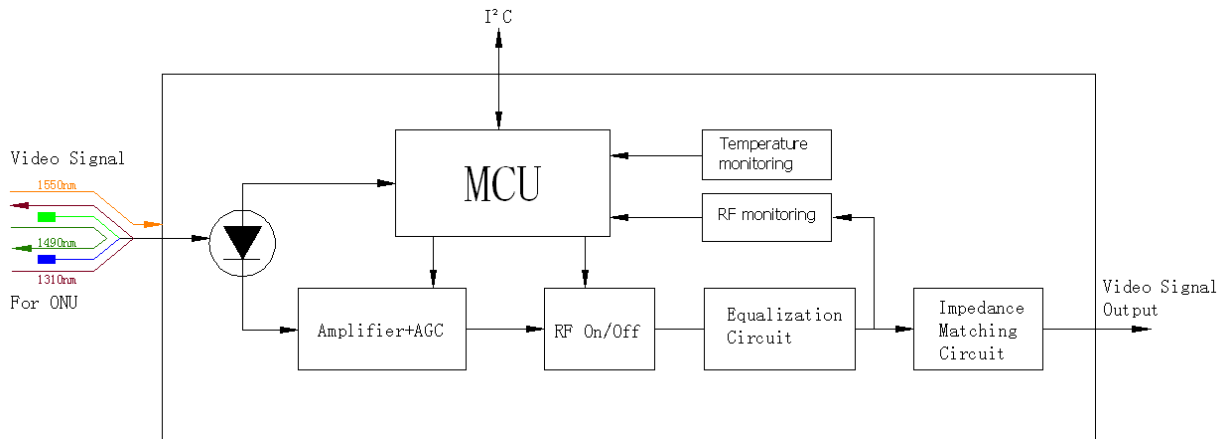




## Functional Block Diagram



## Performance Specifications

(Unless specified else the specifications are defined at 25°C)

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Operating Temperature Range	T <sub>O</sub>	-40	85	°C
Storage Temperature Range	T <sub>S</sub>	-40	85	°C
Relative Humidity – Storage	RH <sub>S</sub>	5	95	%
Fiber Yield Strength		1		Kg
Fiber Bend Radius	R	Determined by fiber type		mm

※Exceed maximum ratings may cause device damage.

### Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
DC Voltage	V <sub>CC</sub>		+5		V
Power Consumption	P <sub>COM</sub>			1.5	W

※Exceed maximum ratings may cause device damage.

## Optical and Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
<b>Electrical Characteristics</b>					
Frequency Range	F <sub>OP</sub>	47		1000	MHz
Automatic Gain Control	AGC	-10		+2	dBm
RF Output Level1 <sup>1</sup>	L <sub>O1</sub>	78	80	82	dBuv
RF Output Level2 <sup>2</sup>	L <sub>O2</sub>	68	70	72	dBuv
RF Output Level3 <sup>3</sup>	L <sub>O3</sub>	62	64	66	dBuv
Flatness In Band			±1		dB
Tilt In Band			0		dB
Output Return Loss	RL	14			dB
Output Impedance	Z <sub>o</sub>		75		Ω
MER@-8dBm <sup>8</sup>		36			dB
MER@-15dBm <sup>8</sup>		28			dB
CNR <sup>4</sup>	CNR	43			dB
CSO <sup>5</sup>	CSO	55			dB
CTB <sup>5</sup>	CTB	55			dB
SCLK		100			K
<b>Optical Characteristics</b>					
Operating Wavelength Range	λ <sub>OP</sub>	1260		1675	nm
Transmission Port Wavelength Range	λ <sub>1</sub>	1550	1555	1560	nm
Reflection Port Wavelength Range	λ <sub>2</sub>	1290	1310	1330	nm
	λ <sub>3</sub>	1480	1490	1500	nm
Block Filter Wavelength Range	λ <sub>4</sub>	1575		1580	nm
	λ <sub>5</sub>	1610		1675	nm
AGC Dynamic Range <sup>6</sup>	P <sub>AGC</sub>	-10		+2	dBm
Input Optical Power	P <sub>in</sub>	-15		+2	dBm
Insertion Loss (with connector)	IL			0.7	dB

Passband Ripple		Rp			0.3	dB
Polarization Dependent Loss		PDL			0.1	dB
ISO	Com-Pass@λ3	T-ISO <sub>1</sub>	35			dB
	Ref-Pass@λ2	T-ISO <sub>2</sub>	35			dB
	Com-Ref@λ1	R-ISO	15			dB
	Block Filter@λ4&λ5	B-ISO	35			dB
Optical Return Loss		RL			-45	dB

**Note1:** Optical Input Power: -8dBm, 543.25MHz, OMI=3.5%

**Note2:** Optical Input Power: -15dBm, 543.25MHz, OMI=3.5%

**Note3:** Optical Input Power: -18dBm, 543.25MHz, OMI=3.5%

**Note4:** Optical Input Power: -10dBm, 40 analog channels, OMI=3.5%; 63 digital channels, OMI=2.15%

**Note5:** Optical Input Power: -10dBm, 40 analog channels, OMI=3.5%; 63 digital channels, OMI=2.15%

**Note6:** Optical Input Power: -10dBm~0dBm, 543.25MHz, OMI=3.5%, Output level is 80dBuV±2dB

**Note7:** The above values are at + 25°C ambient temperature testing, in -40°C~+ 85°C under the temperature of the tube shell, all kinds of optical characteristics are constant, the RF value changes are less than ±2 dB relative + 25°C.

**Note8:** 84 digital channels, OMI=2.15%

## I2C Description

Parameter	Description	Accuracy	Note
RF Offset	RF Output Level Control	0.1dB	-5dB~+5dB
TEMP	Module internal temperature monitor	0.1°C	-45°C~+90°C
VPDMON	1550 photo-diode monitor voltage	0.1dB	-15dBm~+3dBm
RFMON	RF Output Level monitor	0.1dB	65dBuV~85dBuV
RF Output Switch	RF Output Level Enable/Disable		

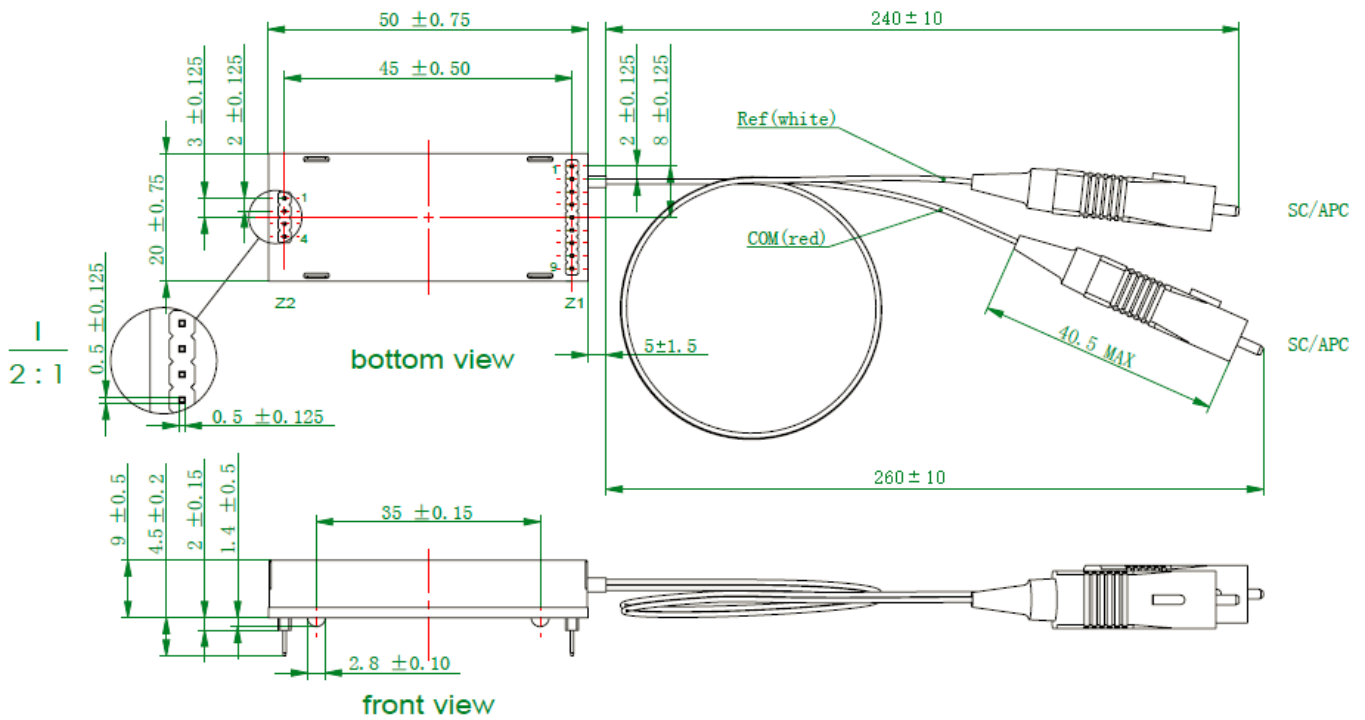
**Note1:** The module I2C interface follows the +3.3V level.

**Note2:** Serial Clock frequency must be higher than 21.5KHz ( $F_{scl} \geq 21.5\text{KHz}$ ).

**Note3:** Add timeout reset mechanism in I2C slave. The timer will be turned on when accessing I2C process interrupts. The timing is 2.5s. When jumping out of I2C interruption, it will be cleared and the timer will be off. If I2C is crashed, timer runs out and software will be reset when timer is up.

# Package Dimensions

UNIT : mm



## Pin Description

PIN	Name	Description	PIN	Name	Description
Z1 PIN1	GND	Ground	Z1 PIN6	GND	Ground
Z1 PIN2	Vcc	+5V	Z1 PIN7	GND	Ground
Z1 PIN3	GND	Ground	Z1 PIN8	RF OUT	RF Analog Output
Z1 PIN4	SDA	Serial Data addressIn/out	Z1 PIN9	GND	Ground
Z1 PIN5	SCL	Serial Clock	Z2 PIN1-4	GND	Ground