

CATV Optical Receiver Module

RXMM918-404

Features

- *Integrated WDM and analog PD*
- *High performance InGaAs PIN*
- *High responsivity, High linearity, High Isolation*
- *Low power consumption*
- *Low receiving optical power*
- *-6dBm~ +2dBm AGC dynamic range*
- *+3dB~ +5dB tilt from 45Mhz~ 1000Mhz*
- *-20°C~ +70°C operating ambient temperature*
- *Input optical power monitoring and alarming*
- *RF output signal Enable/Disable*
- *Built in AGC function of receiver enables RF output tolerance in 2 dB even when optical input power various from -6dBm to +2dBm*
- *RoHS Compliant*

Application

- *CATV networks*
- *FTTH networks video*

receiver-ONU side

Description

The CATV Optical Receiver is designed for FTTH networks ONU side to receive the 1550nm video signal.

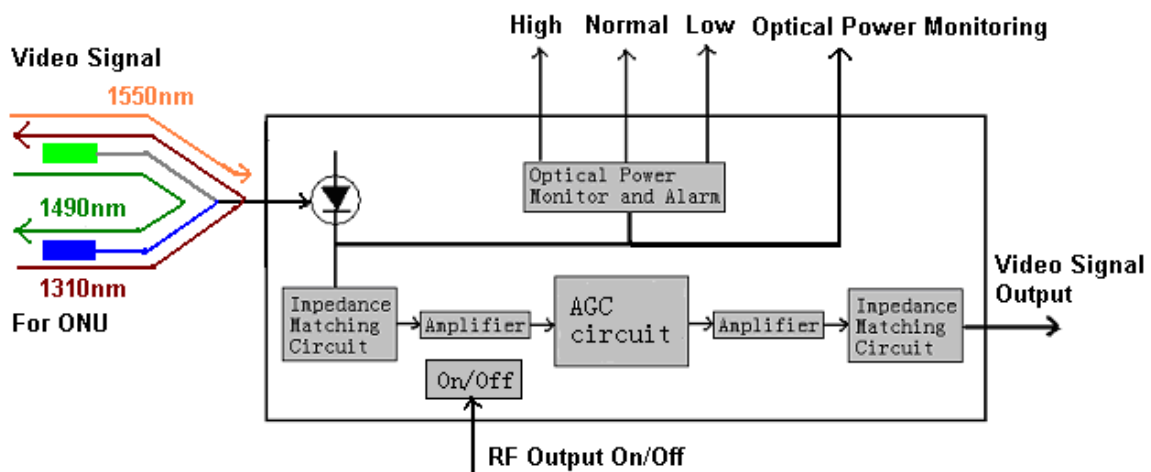
The receiver integrates a WDM and PD, it can fit together with xPON (Passive Optical Net) SFF transceiver or PtoP optical transceiver to fulfill triplay function for FTTH networks.

The receiver contains an Automatic Gain Control(AGC) circuit to maintain the output level over an input optical power of $-6\text{dBm} \sim +2\text{dBm}$.

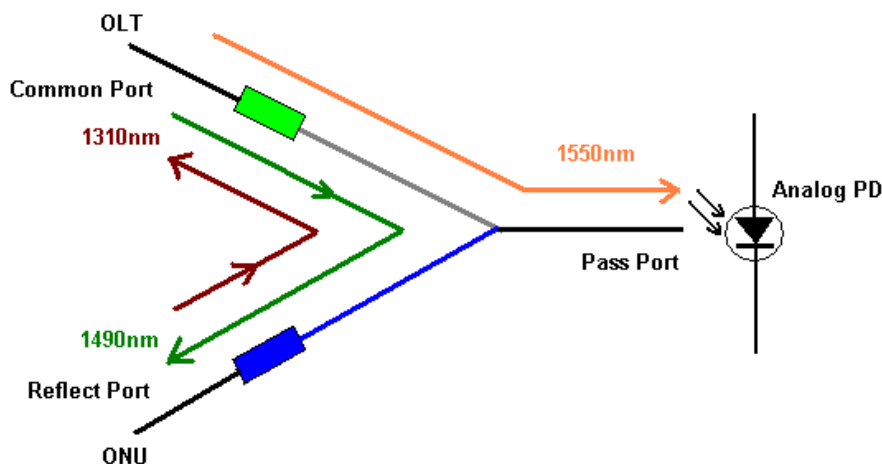
The receiver contains an Amplitude Equilibrium circuit to offer 5dB tilt over the frequency band of 45Mhz~1000Mhz to offset the high frequency' attenuation of cable.

The receiver contains an RF output signal Enable/Disable function for customers to control the video signal's On/Off.

Block Diagram



Optical Diagram



Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Typ	Max	Note
Storage Temperature Range	Ts	°C	-40		+85	
Operating Temperature Range	To	°C	-20		+70	
Relative Humidity	RH	%	5		95	
Lead solder temperature	-	°C			260	
Lead solder duration	-	S		10		
Fiber yield strength	-	kgf		1		
Fiber bend radius	-	mm		30		

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max	Note
DC Voltage to PD	VPD	V	+10	+12	+15	
PD Current	IPD	mA			3	
DC Voltage to Amplifier	Vamp	V	+4.8	+5	+5.2	
Amplifier Current	Iamp	mA		150		
Power Consumption	Pcon	W		0.75		

Specifications

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
Frequency Range	Fop	MHz	45		1000	
RF Output Level	Lo	dBuv		80		Note 1
Flatness In Band		dB		±1	±1.5	
Tilt In Band		dB		3	5	
Output Return Loss	RI	dB	15	17		
Output Impedance	Zo	Ω		75		
CNR	CNR	dB	46			Note 2
CSO	CSO	dB	62	65		Note 3
CTB	CTB	dB	65	68		Note 3
Optical receive Characteristics						
AGC Dynamic Range	PAGC	dBm	-6		+2	Note 4
Input Optical Power	Popt	dBm	-8		+2	
Optical Return Loss		dB	50			
wavelength	Reflect	λ 1	nm	1260	1310	1360
	Reflect	λ 2	nm	1480	1490	1500

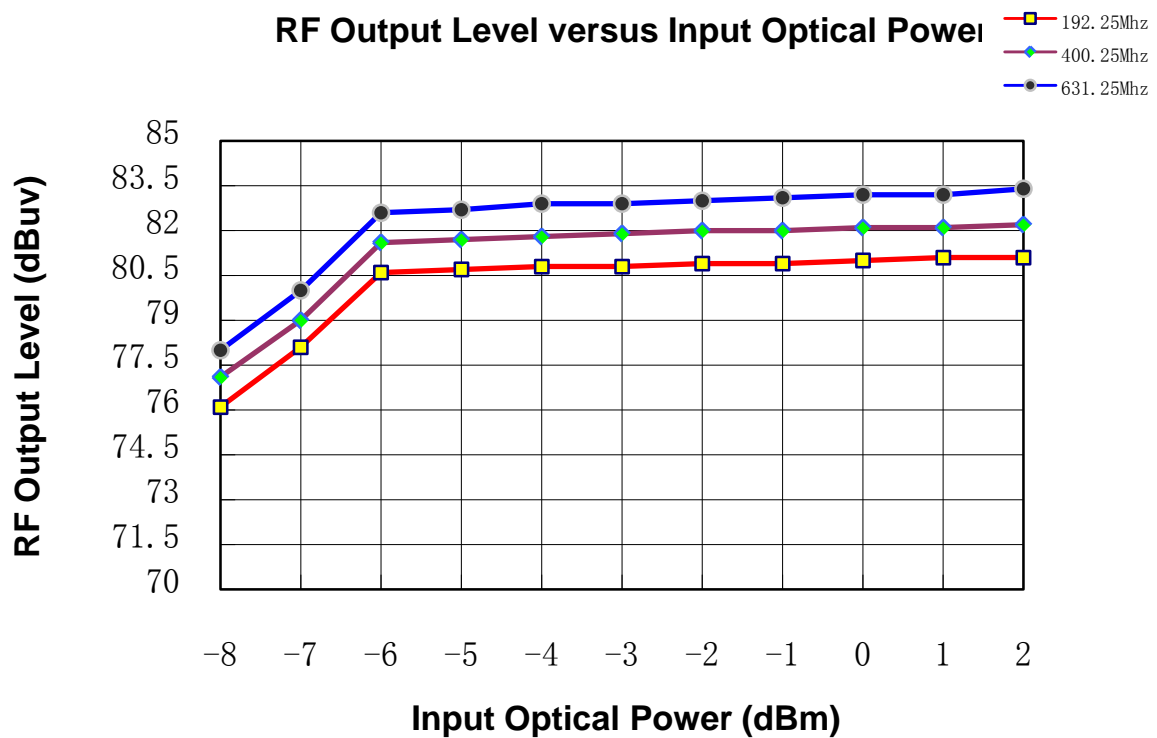
	Pass	λ 3	nm	1540	1550	1560
Isolation	Com-Pass	λ 1	dB	34		
	Ref-Pass	λ 1	dB	50		
	Com-Pass	λ 2	dB	34		
	Com-Ref	λ 3	dB	15		
	Reflect	λ 1	dB			1
Insertion Loss	Reflect	λ 2	dB			1
	Pass	λ 3	dB			1

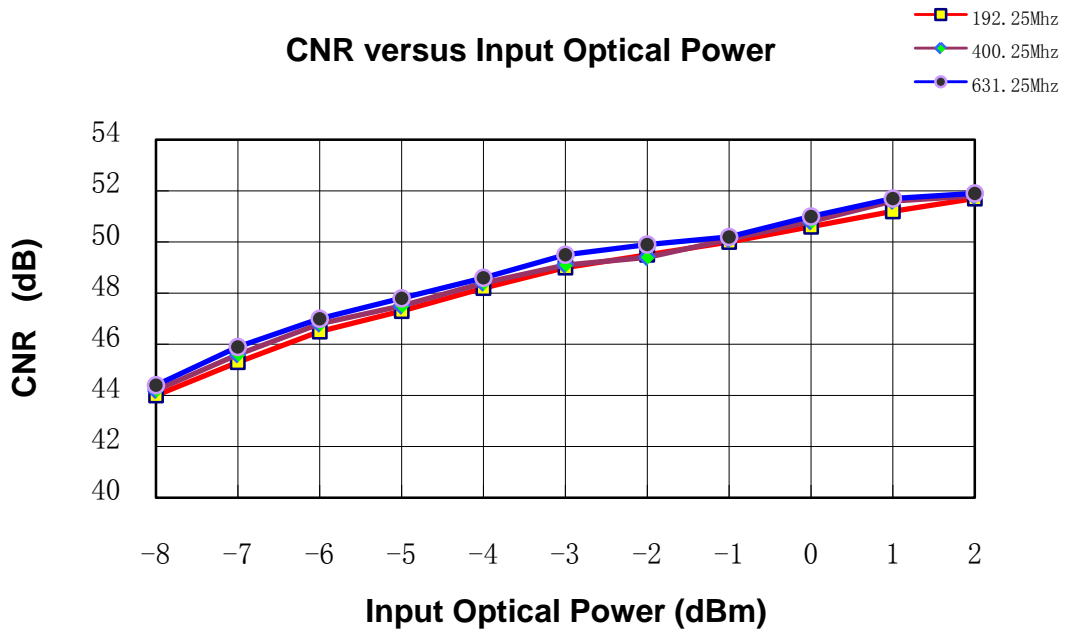
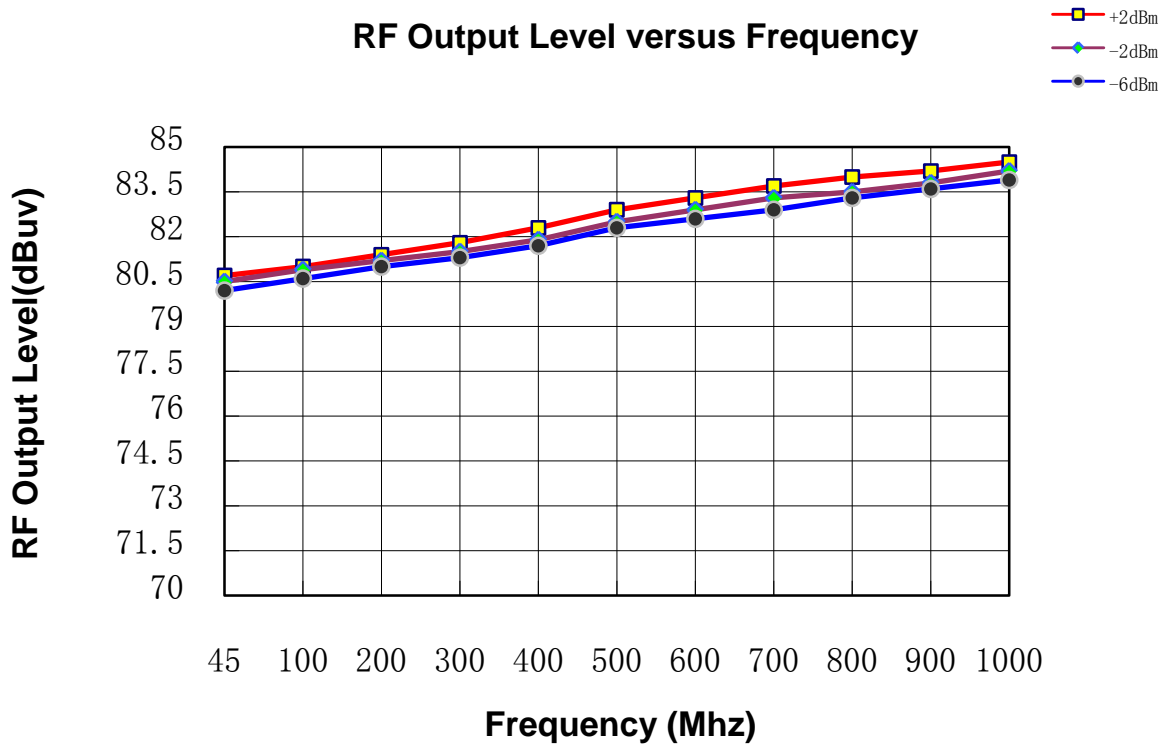
Note1: Optical Input Power: -6dBm, 551.25 MHz, OMI=3.3%

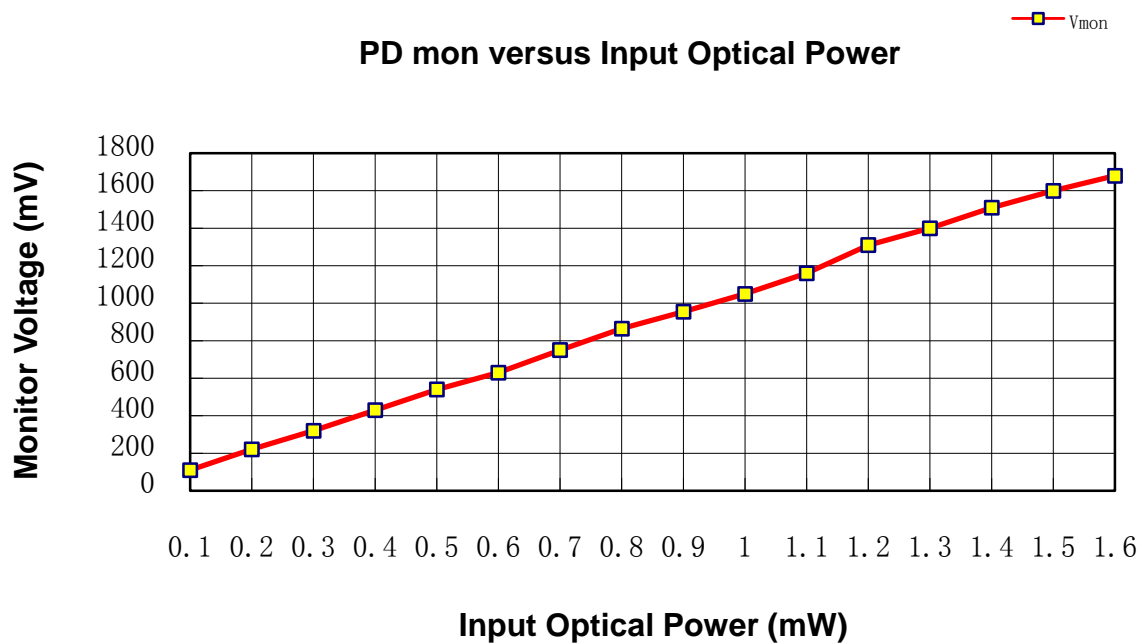
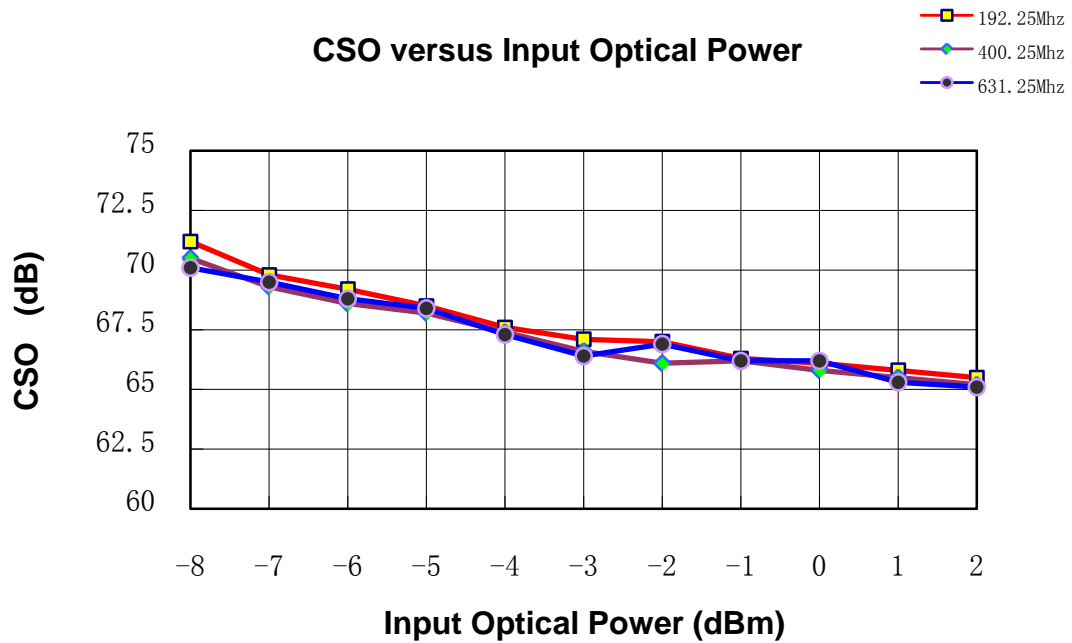
Note2: Optical Input Power: -6dBm, 84 PAL-D channels, OMI=3.3%

Note3: Optical Input Power: +2dBm, 84 PAL-D channels, OMI=3.3%

Note4: Optical Input Power: -6dBm~ +2dBm, 551.25Mhz, OMI=3.3%, Output level is 80dBuV \pm 2dB







Connector Type

Connector	Style	Note
RF Output	Imperial F Type Female or Metric F Type Female	Optional
Optical Input	FC/APC or SC/APC	Optional

Pin Description

Pin	Name	Description	Note	Pin	Name	Description	Note
1	VPD	+12v		6	High	Optical Power Overload	2
2	GND	Ground		7	Nor	Optical Power Normal	3
3	Vamp	+5v		8	Low	Optical Power Loss	4
4	GND	Ground		9	PD mon	Optical Power Monitor	5
5	Disable	Module Disable	1	10	GND	Ground	

Note1: Internal pullup resistance. No connect or TTL High for enable; TTL Low for Disable.

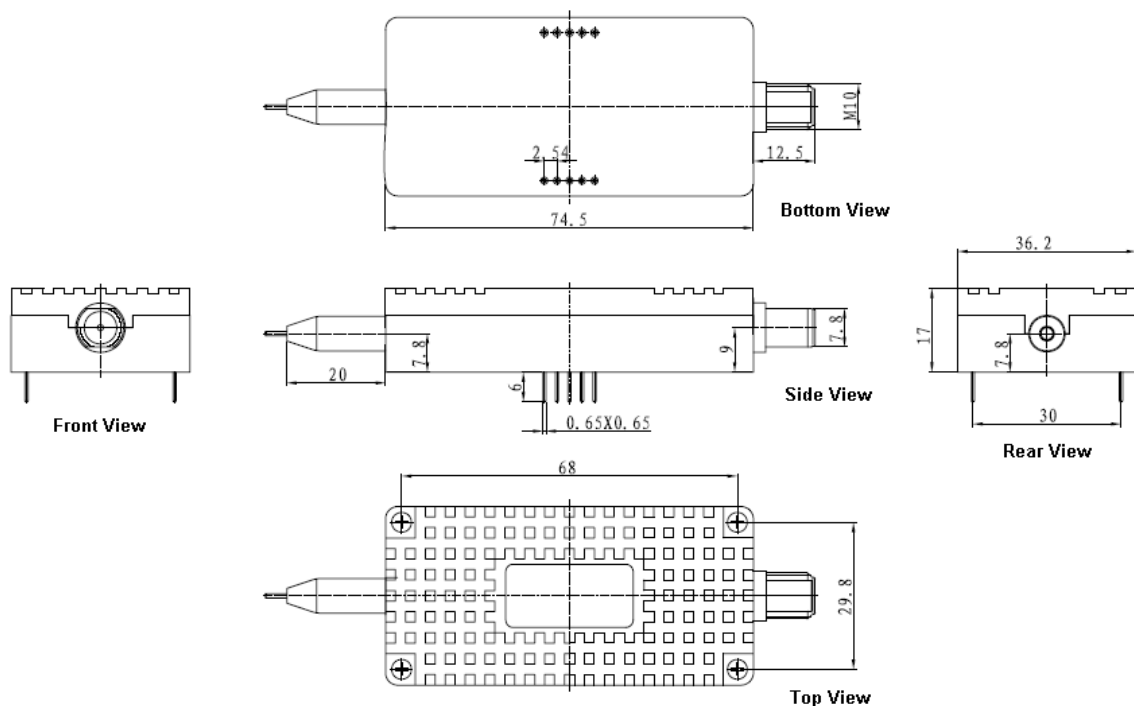
Note2: PIN6=3.5V @ Popt ≥+2dBm

Note3: PIN7=3.5V @ -8dBm ≤Popt ≤+2dBm

Note4: PIN8=3.5V @ Popt ≤-8dBm

Note5: PIN9's output voltage is linear variety according to Input Optical Power.

Package Outline



Unit: mm

Ordering Information

Part No.	Specifications					Application
	Package	Band	Rx	Top	others	
RXMM918-404	2x5pin	45~1000MHz	WDM-PIN	-20 °C +70°C	F Female ;RoHS	FTTH
RXMM918-405	2x5pin	45~1000MHz	PIN	-20 °C +70°C	F Female; RoHS	FTTH

Note1: F Type Female connector is Metric thread in tolerance without notice and the Imperial thread (3/8-32UNEF-2B) is optional.

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