

**FTTx series product • M9130 Series**

## **Technical Specification**

**Hangzhou Huatai Optic Tech. Co., Ltd**

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## **1.0 PRODUCT DESCRIPTION**

Huatai M9130 optical receiving module is designed for ONU optical fiber network unit. This series of product with perfect detect and remote shutting off function adopts high sensitivity receiving tube and Huatai special low noise matching circuit. It is a kind of high index, low power consumption and high cost performance RFTV optical receiving unit.

It mainly supply for ONU professional manufacture, as ONU optical receive unit.

M9130 optical port mode with following two types optional:

M9130 : operating wavelength 1260~1600nm

M9130/WD : Built-in CWDM, suitable for single-fiber triple wavelength system, RFTVoperating wavelength 1550nm, passwavelength 1310/1490nm,can conveniently connect the ONU of EPON, GPON.

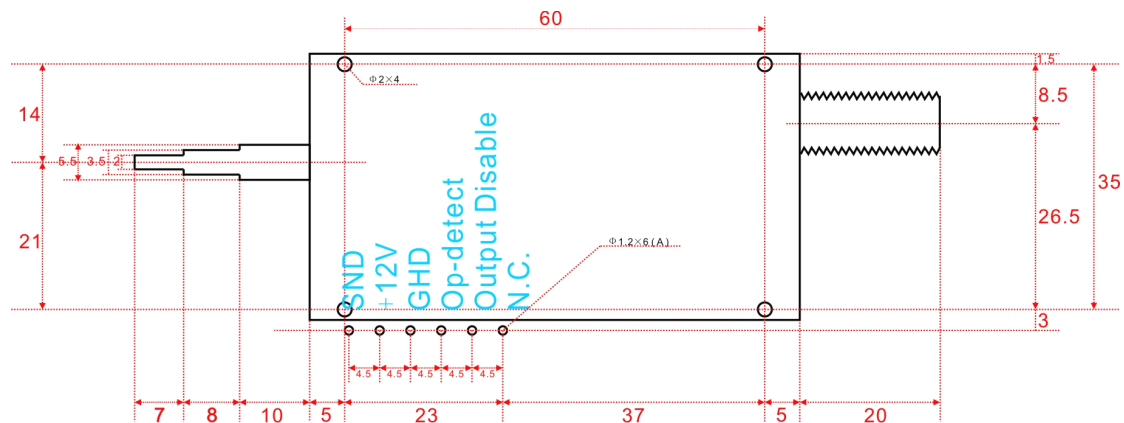
## **2.0 PRODUCT FEATURE**

- Extra-low noise (3.8% modulate, -10dBm receive,  $CNR \geq 45dB$ )
- Good linearity
- In the range of 47~862MHz,all have good flatness (FL=1.0dB)
- Mini metal shell, supply safeguards to opto-electrical sensing device
- High output level can supply for many users
- Low power consumption, high cost performance
- State detection and remote turning off function

## **3.0 MAIN APPLICATION**

- FTTx
- HFC

## 4.0 PCB mounting dimensions



Note : 1. "A" is the PCB hole (6) location  
2. All dimension in mm

## 5.0 Technical index

Performance		Index	Supplement	
Optic feature	Operation wavelength	(nm)	1250~1600	
	Receiving power	(dB)	-2 ~ -12	
	Responsibility	(A/W)	1310nm $\geq$ 0.85	Typical application 1550nm $\pm$ 10nm
			1550nm $\geq$ 0.9	
	Optical return loss	(dB)	$\geq$ 55	
Optical fiber connector		SC/APC		
RF feature	Work bandwidth	(MHz)	47 ~ 862	
	Flatness	(dB)	$\leq \pm 1.0$	
	Output level	(dB $\mu$ V)	90	Pin: -2dBm
	Output level adjust	(dB)	0 ~ 18	MGC
	Return loss	(dB)	$\geq$ 12	47 ~ 862MHz
	Output impedance	( $\Omega$ )	75	
	Output port number		1	
RF tie-in		F-Female		
Link feature	Test channel	CH	PAL-D/59CH	NTSC/80CH
	OMI	(%)	3.8	

	CNR1	(dB)	56.6	Pin: -2dBm
	CNR2	(dB)	48.2	Pin: -8dBm
	CTB	(dB)	≤-65	Vo≤88dBμV
	CSO	(dB)	≤-63	Vo≤88dBμV
	HUM	(dB)	≤-60	
General feature	Power supply	(V)	+12VDC	±1.0V
	Power Consume	(W)	≤3	+12VC, 160mA
	Work temp	(°C)	-20 ~ +50	
	Storage temp	(°C)	-40 ~ 85	
	Work relative temp	(%)	5 ~ 59	
	Size	(mm)	90×36×12	(W)×(D)×(H)

## 6.0 TEST DATA

Diagram 1: input power in -1dBm ~ -11dBm

Pin (dBm)	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11
Vo (dBμV)	92	90	88	86	84	82	80	78	76	74	72
CNR (dB)	56.1	55.6	54.0	53.0	51.7	50.3	49.1	48.2	46.8	45.5	43.7
CTB (dB)	63	65	65	65	65	67	68	67	65	65	65
CSO (dB)	63	63	64	65	65	65	65	65	63	63	63

Remark:

1. Test condition: PAL-D59CH, OMI=3.8%
2. Test sample: M9130

## 7.0 PRODUCT SERIES

Model	Input wavelength	CATV operating wavelength	Data pass wavelength	Fiber conn
M9130	1310 or 1550nm	1260~1600nm	-	SC/APC
M9130/WD	1310, 1490/1550nm	1540~1560nm	1310/1490nm	LC/APC

## 8.0 CONNECTOR PIN DEFINITION AND DESCRIPTION

Pin#	Definition	Description
1	GND	Ground
2	+12V	Power +12VDC
3	GND	Ground
4	Op-detect	Optical powers detect: the voltage equal to optical receive diodes electricity multiple 1KΩ resistance. the pin can detect RF output level, (optical input power reduce 1 dB, then RF level reduce 2dB).
5	Output Disable	CATV signal connect, the pin can through a 3-5V CMOS logical signal level, or connect 10KΩ pull up resistance to 4.5V, active RF output. CATV signal turn off, the pin connect to GND.
6	N.C.	Empty

## 9.0 Model explanation

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S
A

FTTH CATV optical receiver module	Number of RF output port		RF output level(Pin=-2dBm)		CWDM		Connector	
	1	1 port	26	26dBmV(86dB μ V)	NC	Without	FA	FA/APC
2	2ports	30	30dBmV(90dB μ V)	WD	With DWDM	FU	FA/UPC	
						SA	SA/APC	
						SU	SA/UPC	
						LA	LA/APC	
						LU	LA/UPC	

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