

Ultra-low noise polarization diversity coherent reception module 1G



● Product Description

The ultra-low noise polarization diversity receiver module is designed for polarization-sensitive fiber optic sensing applications. This module coherently processes the two polarization states of the local oscillator and signal light separately, using two high-speed, low-noise balanced detectors for independent reception. It effectively solves the issue of coherent polarization states. This series is an upgrade of the original PDR series,

significantly reducing the background noise, thereby providing higher signal-to-noise ratio for signal detection.

● Product features

High Bandwidth、 High Gain、 Ultra-low noise、 Built-in low-noise isolation power supply

● Part Number

MP-UPR-M-I-1000-F-A

● Application area

Fiber optic sensing、 Laser wind radar、 Optical coherence tomography、 Spectroscopy

● Core parameters

Wavelength	Bandwidth	Responsivity
1510~1590nm	1GHz	0.95A/W@1550nm

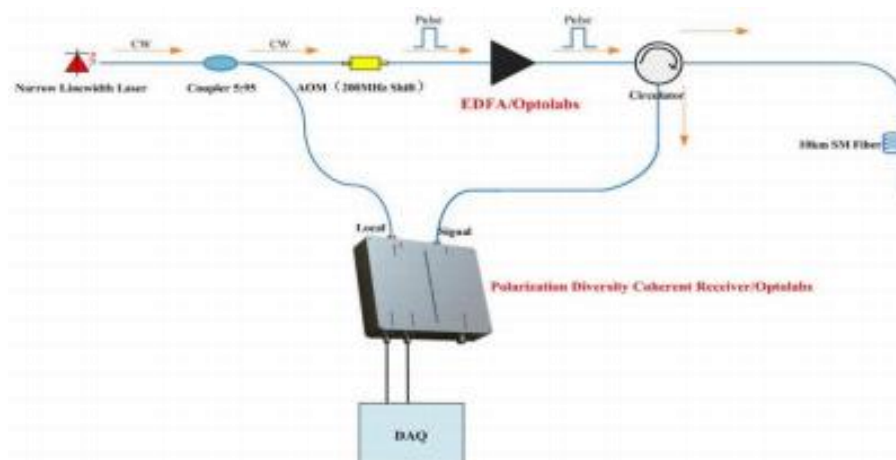
● General Parameters

Wavelength	1510~1590 (1300±50nm; 1060±50nm Optional)											nm
Bandwidth	100	200M	300M	400M	500M	800M	1G	1.2G	1.5G	2G	2.5G	Hz

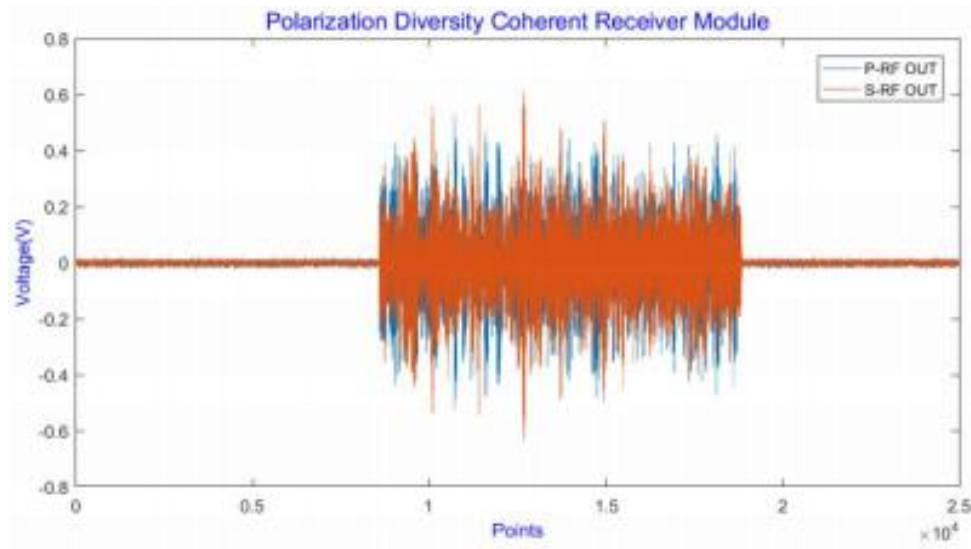
h	M											
Detector												
Responsivity	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	A/W@1 550nm
Transimpedance	30K	30K	30K	20K	10K	30K	30K	30K	30K	30K	30K	V/A
Gain												
Input	Local	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	mW
Light	Signal	300	300	300	300	300	300	300	300	300	300	μW
Polarization												
Extinction Ratio	22	22	22	22	22	22	22	22	22	22	22	dB
NEP	2.5	2.5	2.5	2.9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	pW/Sqrt(Hz)
Power Supply Voltage	5	5	5	12	12	12	12	12	12	12	12	V
Power	0.5(	0.5(	0.5(	0.5(	0.5(	0.5(	0.5(	0.5(	0.5(	0.5(	0.5(	A

Supply	max	max)	max)	max)	max)	max)	max)	max)	max)	max)	max)	
Current	)											
Coupling	DC/A	DC/A	DC/A	DC/A								
Method	C	C	C	C	DC	AC	AC	AC	AC	AC	AC	
Interface	Electrical interface: SMA; Fiber connector: FC/APC											
Type												
Fiber	Local:PM; Signal:SM											
Type												
RF	SMA											
Output												
Dimensio	120*100*25mm											
ns												

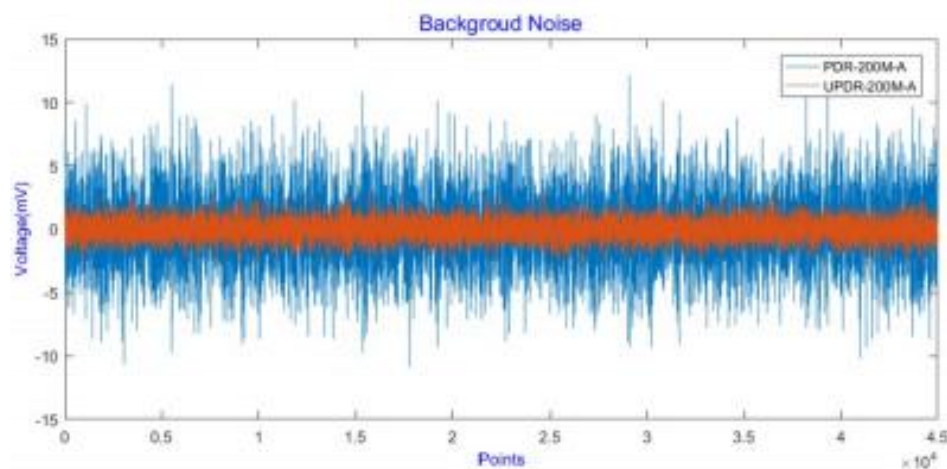
Test Result



Polarization Diversity Coherent Reception Optical Circuit Diagram



Coherent signals of P-polarized and S-polarized states.



Comparison of the base noise between ultra-low noise polarization diversity
and conventional polarization diversity