

# Wideband Analog Signal Optical Link System

## MWL-TX2 (Transmitter) / MWL-RX2 (Receiver)

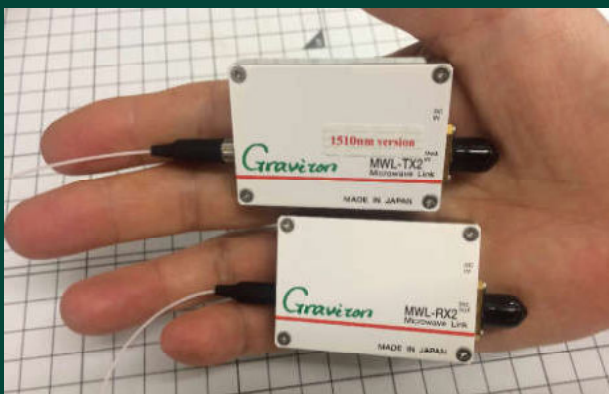
**Reasonable price** of a set of Transmitter & Receiver without peltier device is available.

Applicable for optical transmitting and receiving experiments such as wavelength multiplexing under unique environmental conditions.

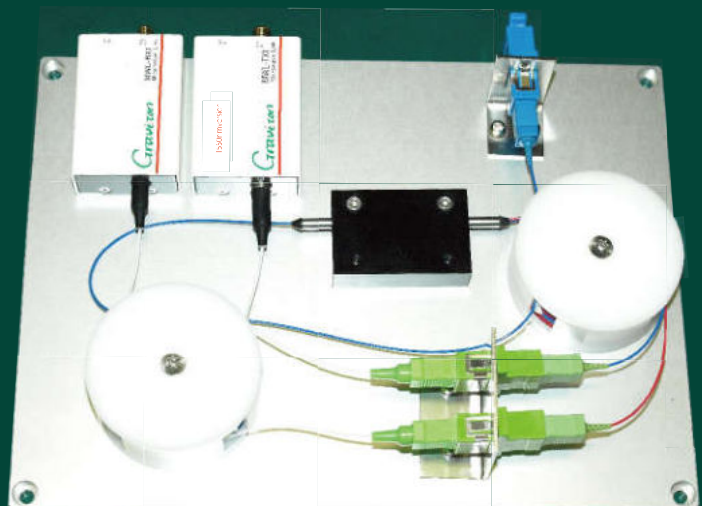
- :MWL-TX2 converts electric signal with 100KHz to 3GHz to optical intensity modulated signal. Optical output wavelength depends on the selected LD ranging from 1470nm to 1590nm.
- :MWL-RX2 converts optical intensity modulated signal to electric signal. Optical signal from 1470nm to 1610nm can be detected.

- Wavelength is selectable from 1470nm, 1510nm, 1550nm, and 1590nm for your needs.
- Contact us for different wavelength than those.

- Wide bandwidth from 100KHz to 3GHz
- Low noise:  $-135\text{dBm/Hz}$
- Low distortion: IMD3 is 50dB or less



【Compact size】



【A set up example for experiment】

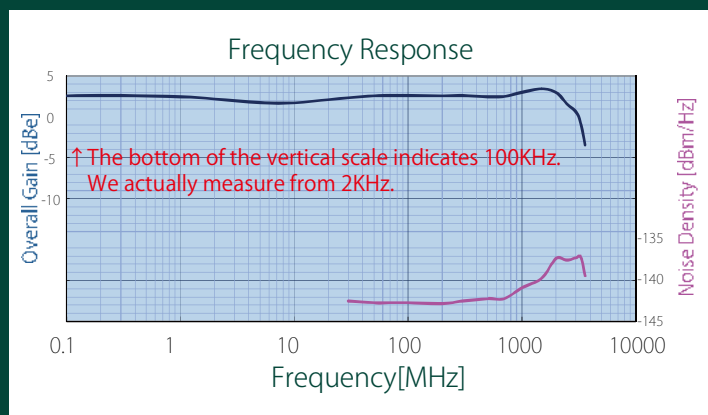
■ :MWL-TX2 converts electric signal with 100KHz to 3GHz to optical intensity modulated signal. Optical output wavelength depends on the selected LD ranging from 1470nm to 1590nm.

MWL-RX2 converts optical intensity modulated signal to electric signal. Optical signal with 1470nm to 1610nm can be detected.

### ■Optical fiber

A single mode fiber with the mode field diameter of 9 $\mu\text{m}$  is recommended to connect MWL-TX2 and MWL-RX2. SC connectors should be attached to both ends of the optical fiber. The tip of optical fiber or Ferrer end surface should be polished by 8-degree APC.

### ■ Frequency and Noise Characteristics



# Wideband Analog Signal Optical Link System

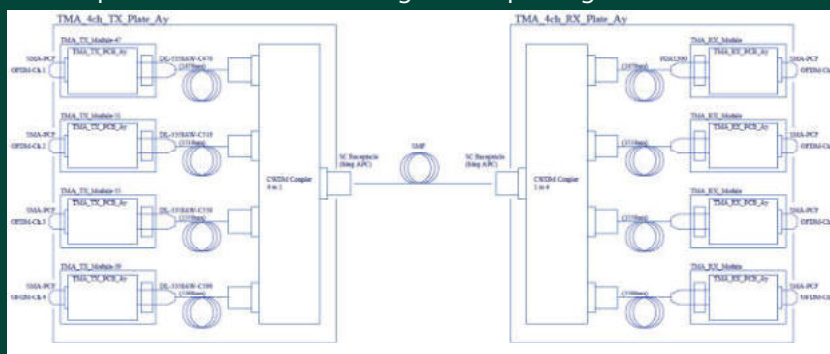
■MWL-TX2 converts electric signal with 100kHz to 3GHz to optical intensity modulated signal. Optical output wavelength depends on the selected LD ranging from 1470nm to 1590nm.

MWL-RX2 converts optical intensity modulated signal to electric signal. Optical signal with 1470nm to 1610nm can be detected.

## ■Optical fiber

A single mode fiber with the mode field diameter of 9um is recommended to connect MWL-TX2 and MWL-RX2. SC connectors should be attached to both ends of the optical fiber. The tip of optical fiber or Ferrer end surface should be polished by 8-degree APC.

## ■Example of 4-channel wavelength multiplexing



Left hand side of the figure shows 4 pcs of MWL-TX2 connected to a CWDM coupler with 4 inputs on a metal plate. Right hand side shows 4 pcs of MWL-RX2 connect to a CWDM coupler with 4 outputs on a metal plate. By connecting two sides with a fiber, 4 channel multiplexed transmission can be realized.

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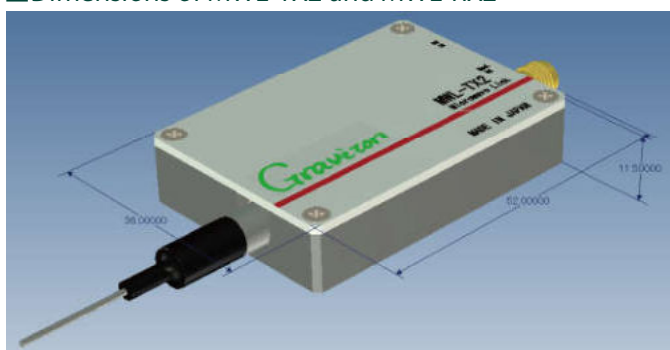
## ■MWL-TX2 Specifications

Items	Description	Remarks
Model name (& wavelength)	MWL-TX2-XX	XX: Output light wavelength 47: 1470nm ±5nm 51 : 1510nm±5nm 55: 1550nm±5nm 59 : 1590nm±5nm
Function and modulation bandwidth	Converts electric signal to optical intensity modulated signal. 100kHz to 3GHz Actual measurement can be made from 2 KHz.	
Light-emitting device	CWDM MQW-DFB Laser Diode	
Wavelength	1470nm, 1510nm, 1550nm, 1590 nm In case of 4-ch multiplexing	
Optical output power	+3dBm or greater	
Optical fiber	SMF, φ0.9 mm nylon coated core fiber x 1m	
Optical output connector	SC connector The tip of optical fiber or Ferrer end surface should be polished by 8-degree APC.	FC connector and others are available.
Electric signal input connector	Board-mounted SMA Female connector	
Input impedance	50Ω	
Input return loss	10dB or greater	
Rated input level	0dBm (50Ω)	
Power supply voltage	DC+ 9V	
Input power connector	EH connector made by J.S.T. Mfg. Co.,Ltd.	P1: DC+9V P2: GND

## ■MWL-RX2 Specifications

Items	Description	Remarks
Model name	MWL-RX2	
Function and modulation bandwidth	Converts optical intensity modulated signal to electric signal. 100Hz to 3GHz Actual measurement can be made	
Photodetector	InGaAs PIN photodiode	
Detectable wavelength	1470nm to 1610nm	
Rated light receiving power	+3dBm	
Optical fiber	SMF, φ0.9 mm nylon coated core fiber x 1m	
Optical input connector	SC connector The tip of optical fiber or Ferrer end surface should be polished by 8-degree APC.	FC connector and others are available.
Electric signal output connector	Board-mounted SMA Female connector	
Output impedance	50Ω	
Output return loss	10dB or greater	
Rated output level	0dBm (50Ω)	
Power supply voltage	DC+ 9V	
Input power connector	EH connector made by J.S.T. Mfg. Co.,Ltd.	P1: DC+9V P2: GND

## ■Dimensions of MWL-TX2 and MWL-RX2



## ■Wavelength and noise characteristics (One of the measured data which comes with the product)

