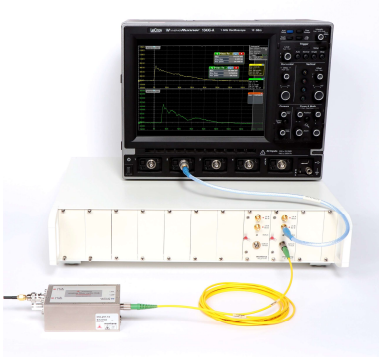


# Optical transmission link

## 2 x DC-25 MHz



Montena MOL25T optical link is designed for real-time measurement of electric signals from DC to 25 MHz in harsh electromagnetic environment.

Application is for instance the transmission/monitoring of various signals of an equipment under test during EMC immunity tests, such as supply voltages, logic states, digital signals, relay status. It also makes an ideal oscilloscope front-end for the remote measurement of floating potentials in industrial applications and ensures a total galvanic insulation of the operator, for safe operation in high voltage areas.

Each transmission link has two signal channels. The two 1 M $\Omega$  BNC inputs enable connecting standard oscilloscope probes, differential probes or any specific measurement means.

The two input electric signals are conditioned, digitalized and multiplexed into one optical signal in the transmitter module and sent to the receiver module through a single mode fibre. The receiver module converts back the optical signal in two electric signals.

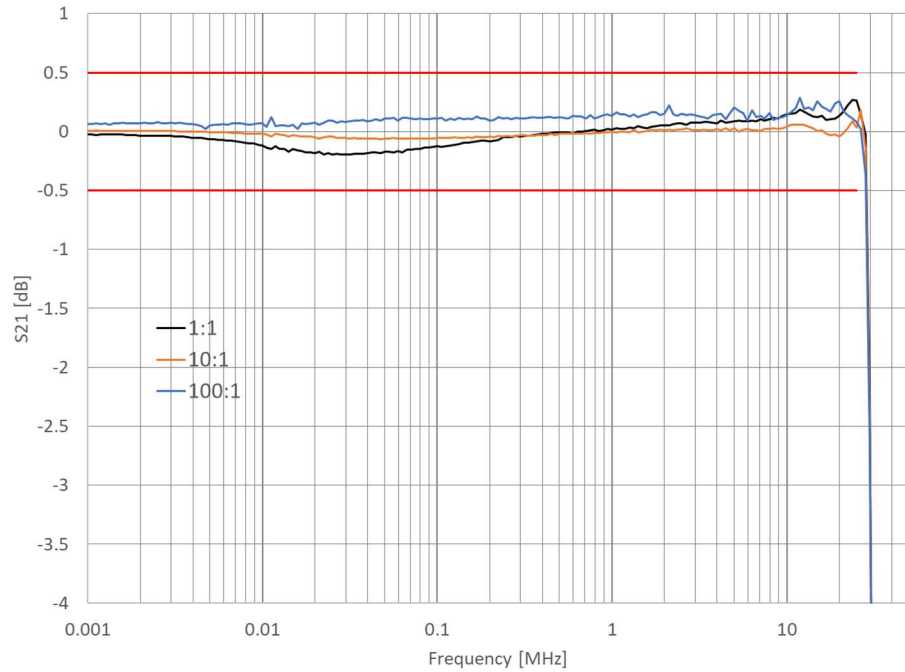
The battery powered optical transmitter comprises a remote-controlled attenuator stage (1:1 / 10:1 / 100:1) to adjust the received signal level for an optimal use of the dynamic range. The transmitter can remotely be put in a low power standby mode to save battery power when not used. A LED indicator shows the operating state.

Configurable settings can be remote controlled by a Windows-based software application.

SYSTEM	SPECIFICATIONS
Type	MOL25T
Bandwidth	DC to 25 MHz
Gain flatness	$\pm 0.5$ dB
DC gain accuracy	$\pm 1.5$ %
DC offset (@ 0 V)	$\pm 1$ mV
Measurement ranges	1 / 10 / 100 Vp
Input impedance	1 M $\Omega$
Output impedance	50 $\Omega$
Instantaneous dynamic range	65 dB
A/D converters	12-bit
Sampling rate	75 MS/s
TX input to RX output propagation delay	Typ. 4 $\mu$ s + propagation delay of the fibre cable
Laser diodes wavelength (TX / RX)	1310 nm / 1550 nm
Optical power in the fibre	1 mW (laser Class 1)
Maximum link distance	$\geq 1$ km

## Typical frequency response

Bandwidth DC to 25 MHz



The compact optical transmitter is battery powered and especially shielded for a very high immunity to electromagnetic fields.

OPTICAL TRANSMITTER	SPECIFICATIONS
Type	<b>MOL25T-TX</b>
Number of channels per module	2
Input attenuator ratios	1:1 / 10:1 / 100:1 , remotely selectable
Input impedance	1 MΩ //15 pF (max 20 pF)
Clamping voltage	± 1 Vp (1:1) ± 10 Vp (10:1) ± 100 Vp (100:1)
Maximum input voltage	250 Vp
Power supply	by internal LiPo batteries or by the power supply adapter
Battery autonomy	> 20 hours. Standby: > 1 week
RF input connectors	2 x BNC female or 2 x SMA female. See chapter 'Ordering information'
Optical connector	FC/APC
Operating temperature	-10 °C to +55 °C
Dimensions	113 x 64 x 41 mm (L x W x H)
Weight	380 gr



The optical receiver is available in two versions:

A compact stand-alone receiver for point-to-point application is battery powered and especially shielded for a very high immunity to electromagnetic fields. It has one USB interface for system configuration and supervision.

A plug-in module to be inserted in the MOL-MF-xx chassis. The modules are powered and controlled from the chassis backplane.

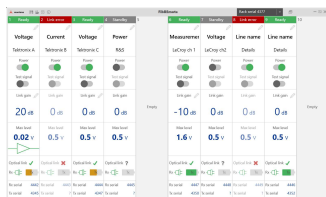
OPTICAL RECEIVER	SPECIFICATIONS	
Type	MOL25T-RX (stand-alone unit)	MOL25T-M-RX (plug-in module)
Number of channels per module	2	2
RF output connectors	SMA female / 50 $\Omega$	SMA female / 50 $\Omega$
Optical connector	FC/APC	FC/APC
Control connector	Mini-USB	USB Type A on MOL-MF-xx chassis
Output noise floor	Typ. 300 $\mu$ Vrms	Typ. 300 $\mu$ Vrms
Maximum output dynamic	$\pm 1$ Vp on 50 $\Omega$ load ( $\pm 2$ Vp on Hi-Z)	$\pm 1$ Vp on 50 $\Omega$ load ( $\pm 2$ Vp on Hi-Z)
Power supply	by internal LiPo batteries or by the power supply adapter	by the MOL-MF-xx chassis
Battery autonomy	> 20 hours. Standby: > 1 week	n/a
Operating temperature	-10 $^{\circ}$ C to +55 $^{\circ}$ C	-10 $^{\circ}$ C to +55 $^{\circ}$ C
Dimensions (excluding connectors)	99 x 64 x 41 mm (L x W x H)	40 x 172 x 84 mm (2U)
Weight	380 gr	240 gr



The MOL-MF-10 is a 19" 2U chassis for up to ten plug-in receiver modules. The receiver modules are powered and controlled from the chassis backplane



The MOL-MF-1 converter chassis enables 'stand-alone' operation of one plug-in receiver module.

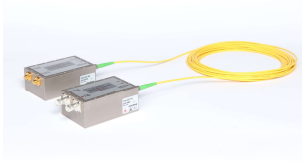


The system is delivered with montena FibREremote software application, running on Windows PC. The application allows simple configuration and monitoring of the optical links.

Configurations can be stored and recalled at any time in order to ease the configuration of large test setups.

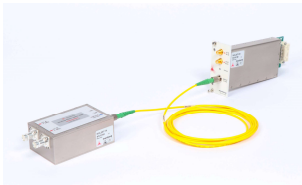
## Ordering information

### Stand-alone point-to-point link



TYPE	DESCRIPTION
<b>MOL25T-B</b>	2-channel point-to-point optical link, DC – 25 MHz, including one optical transmitter MOL25T-B-TX on battery with <b>BNC</b> input connectors, one optical receiver MOL25T-RX on battery, two battery chargers 90-264 V, one FibREmote software for PC and one carrying case
<b>MOL25T-S</b>	2-channel point-to-point optical link, DC – 25 MHz, including one optical transmitter MOL25T-S-TX on battery with <b>SMA</b> input connectors, one optical receiver MOL25T-RX on battery, two battery chargers 90-264 V, one FibREmote software for PC and one carrying case

### Optical link with plug-in receiver module



TYPE	DESCRIPTION
<b>MOL25T-MB</b>	2-channel optical link for chassis MOL-MF-xx, DC – 25 MHz, including one optical transmitter MOL25T-B-TX on battery with <b>BNC</b> input connectors, one optical plug-in receiver module MOL25T-M-RX and one battery charger 90-264 Vac
<b>MOL25T-MS</b>	2-channel optical link for chassis MOL-MF-xx, DC – 25 MHz, including one optical transmitter MOL25T-S-TX on battery with <b>SMA</b> input connectors, one optical plug-in receiver module MOL25T-M-RX and one battery charger 90-264 Vac

### Chassis for plug-in receiver modules



TYPE	DESCRIPTION
<b>MOL-MF-10</b>	Chassis 19" 2U for up to 10 plug-in receiver modules, 85 - 264 V, including one power supply cable, one USB cable and one FibREmote software for PC.
<b>MOL-MF-1</b>	Converter chassis for one plug-in receiver module, including one power supply adapter 100-230 Vac with 3 mains plugs for US/Japan, Europe and UK, one USB cable and one FibREmote software for PC. <i>Enables 'stand-alone' operation of a plug-in receiver module.</i>

### Fibre optic cables



TYPE	DESCRIPTION
<b>FCLBxxx</b>	Fibre optic cable, diameter: 3 mm xxx = the cable length Available lengths are 10, 20, 50, 100, 200, 500, 1000 m
<b>FCLBxxx-RU</b>	Rugged fibre optic cable, diameter: 7.5 mm xxx = the cable length Available lengths are 10, 20, 50, 100, 200, 500, 1000 m

### Related products / accessories



TYPE	DESCRIPTION
<b>MOL-CRG-DCDC</b>	Optional DC/DC charger for one transmitter or receiver module, Vin: 10-30 Vdc <i>Enables long term operation using an external 12V or 24V battery</i>