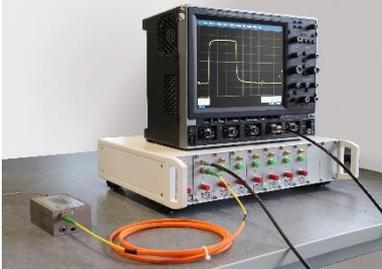


Optical Transmission link DC-500 MHz



Montena MOL500T optical link is designed for real-time measurement of analogue electric signals from DC up to 500 MHz in harsh electromagnetic environment.

The shielded optical transmitter has a $1\text{ M}\Omega / 50\ \Omega$ BNC input which enables connecting any sensing device (current probe, HV probe or specific means for HF measurements). 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.

The input electric signal is conditioned and converted into an 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 into an electric signal. The optical signal transmission is regulated with an automatic level control that maintains precise and constant performance independently of the optical losses.

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 reduce energy consumption when not used. A LED indicator shows the operating state.

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

| SYSTEM | SPECIFICATIONS |
|-----------------------------|-----------------------------|
| Type | MOL500T |
| Bandwidth | DC to 500 MHz |
| Flatness | $\pm 1.5\text{ dB (max)}$ |
| Measurement ranges | 0.7 / 7 / 70 Vp |
| Input impedance | 1 M Ω or 50 Ω |
| Output impedance | 50 Ω |
| Instantaneous dynamic range | > 50 dB |
| Maximum link distance | about 1 km |



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

| OPTICAL TRANSMITTER | SPECIFICATIONS |
|--------------------------------------|--|
| Type | MOL500T-TX |
| Number of channels per module | 1 |
| Input attenuator ratios | 1:1 / 10:1 / 100:1, software selectable |
| Input impedance | 1 M Ω //15pF or 50 Ω , software selectable |
| Max. input power (CW) | 250 mW |
| Clamping voltage | 0.7 V _p (1:1) 7 V _p (10:1) 70 V _p (100:1) |
| Max input voltage | 125 V _{rms} |
| Immunity to external electric fields | > 500 kV/m (pulse according to MIL-Std 461 RS105) |
| Power supply | by internal LiPo batteries or by the power supply adapter |
| Battery autonomy | > 30 hours. Standby: > 1 week |
| Built-in test generator | 500 Hz bipolar square signal |
| RF input connector | BNC (F) |
| Optical connector | FC/APC |
| Operating temperature | -10 °C to +55 °C |
| Dimensions | 99 x 64 x 41 mm (L x W x H), excluding connectors |
| Weight | 380 gr |



The compact optical 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.

| OPTICAL RECEIVER | SPECIFICATIONS |
|---------------------------------|---|
| Type | MOL500T-RX (stand-alone module) |
| Number of channels per module | 1 |
| RF output connector | SMA (F) |
| Optical connector | FC/APC |
| Control connector | Mini-USB |
| Optical losses compensation | Automatic |
| Output power at 1dB compression | 100 MHz : +8 dBm, 500 MHz : +5 dBm |
| Output noise floor | TBC - meas. in progress |
| Maximum output dynamic | \pm 0.7 V _p |
| Power supply | by internal LiPo batteries or by the power supply adapter |
| Battery autonomy | > 30 hours. Standby: about 1 month |
| Operating temperature | +5 °C to +55 °C |
| Dimensions | 99 x 64 x 41 mm (L x W x H), excluding the connectors |
| Weight | 380 gr |



The compact optical receiver for multilink application is a plugin module. To be inserted in the MOL-MF-10 chassis.

| OPTICAL RECEIVER | SPECIFICATIONS |
|-------------------------------|-------------------------------|
| Type | MOL500T-M-RX (plug-in module) |
| Number of channels per module | 1 |
| RF output connector | SMA (F) / 50 ohm |
| Optical connector | FC/APC |
| Control connector | USB on main frame chassis |
| Operating temperature | +5 °C to +55 °C |



The multilink main frame is a 19", 2 HU chassis for up to ten RX modules. The receiver modules are powered and controlled from the chassis back plane.

| MAIN FRAME | SPECIFICATIONS |
|-----------------------|---------------------------------|
| Type | MOL-MF-10 |
| Number of slots | 10 slots for RX modules |
| Control connector | USB on main frame chassis |
| Operating temperature | +5 °C to +55 °C |
| Dimensions | 448 x 356 x 110 mm (W x D x H), |
| Power rating | 85 - 264 V, 47 - 65 Hz |
| Weight | About 5 kg |



The system is delivered with the FibREmote software application, running on Windows PC.

The application allows simple configuration and monitoring of the MOL500T optical links.

The configuration can be stored and recalled at any time in order to ease the configuration of large test setup's.



The transmission link utilises single mode optical fibre with FC/APC connectors.



Ordering information

Multilink system

| TYPE | DESCRIPTION |
|------------------|--|
| MOL-MF-10 | Multilink mainframe for up to 10 optical links, 85 - 264 V, including a 10 slots chassis, one power supply cable, one USB cable, one Windows control software FibREmote, one carrying case for up to 10 transmitters with their battery chargers |
| MOL500T-M | Single channel optical link for multilink system MOL-MF-10, DC - 500 MHz, including one optical transmitter MOL500T-TX on battery, one optical plug-in receiver module MOL500T-M-RX and one battery charger |

Standalone point-to-point link

| TYPE | DESCRIPTION |
|----------------|---|
| MOL500T | Single channel point-to-point optical link, DC – 500 MHz, including one optical transmitter MOL500T-TX on battery, one optical receiver MOL500T-RX on battery, two battery chargers, one Windows control software FibREmote and one carrying case |

Fibre optic cables

| TYPE | DESCRIPTION |
|-------------------|---|
| FCLBxxx | Fibre optic cable, diameter: 3 mm xxx = the cable length Available lengths are 10, 20, 50, 100, 200, 500, 1000 m |
| FCLBxxx-RU | 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 |
|-----------------|--|
| PULSELab | Pulse measurement and processing software application, Life time license for installation on one PC |