# MPLT

## Built on the latest MicroPulse technology, the MPLT takes the LT concept to a new level.




The MPLT is a compact (120mm x 280mm x 310mm), rugged, lightweight (<5 Kg), and enclosed unit (no fans). It includes parallel firing capability, the user adjustable 300V pulsers of the MicroPulse 6, and provides high resolution with up to 100MHz true sampling.

Like our other next generation products, it not only connects to the PC running the test application via Ethernet but it also takes its power either from the Ethernet or from a separate 48V power source. MPLT has very low noise and with Gigabit Ethernet, data transfer rates of up to 120 Megabytes per second are achievable. Available as a 12-, a 24-, a 36- or a 48-channel version. MPLT is ideally suited for use in multi-probe pulse-echo and TOFD inspections. Its Compact size and PoE means the MPLT may be positioned close to the inspection head, keeping probe lengths to a minimum.

### Features

- No external fans – unique air-cradle maintains internal temperature
- Inputs for 2 axes of encoders (single-ended or differential) for true pulse on position
- Outputs digitised waveform and/or peak detected data with up to 4 hardware gates
- Parallel Firing capability
- High data output – up to 120 Mbytes per second
- Easily scaleable – up to 4 units connected using Peak NDT's unique MPLink technology
- Power over Ethernet (PoE)
- Compact (120mm x 280mm x 310mm), rugged, lightweight (<5 Kg) and enclosed unit (no fans)
- Extended dynamic range modes
- The user adjustable 300V pulsers of the MP5-PA
- Available as a 12-, a 24-, a 36- or a 48-channel version

### Applications

- Mixed Pulse-echo and TOFD inspections in hard to access areas
- Inline testing systems
- Research and development
- Gantry systems
- In-situ monitoring

# MPLT

| | Parameter | Range | Step Size |
|---|---|---|---|
| **Configurations** | | 12, 24, 36, 48 channels | |
| **Pulser** | Pulser Type | Negative square wave | - |
| | Pulser Voltage | 50 to 300Volts | 25Volt |
| | Pulser Rise Time | <5ns | - |
| | Pulser Width | 16nsec to 1010nsec | 2nsec |
| | Pulser Output Impedance | <10Ω | - |
| | Pulser Damping | 50Ω to 660Ω in 8 steps | - |
| | Pulse Repetition Frequency | 1Hz to 20kHz | 1Hz |
| | Parallel Firing | Yes | |
| | Phased Array Pulser Delay | N/A | |
| | Number of Tx Focal Laws | N/A | |
| | Tx Voltage Apodistion | N/A | |
| **Receiver** | Gain | 70dB<br>NB Max DAC plus main gain is 110dB | 0.25dB |
| | Input Impedance | 660Ω | - |
| | Bandwidth | 0.75MHz to 25MHz (-3dB) | |
| | Analogue Filters | 0.75MHz to 12MHz (-3dB) Bandpass<br>2.5MHz to 18MHz (-3dB) Bandpass<br>3MHz to 22MHz (-3dB) Bandpass<br>3MHz to 25MHz (-3dB) Bandpass<br>0.5MHz Bandpass Filter<br>1MHz Bandpass Filter<br>2MHz Bandpass Filter<br>4MHz Bandpass Filter<br>5MHz Bandpass Filter<br>10MHz Bandpass Filter<br>5MHz 2nd order TOFD Bandpass Filter<br>10MHz 2nd order TOFD Bandpass Filter | discrete selection |
| | Digital Filters | Programmable high and low pass | User definable |
| | Phased Array Receiver Delay | N/A | |
| | Number of Rx Focal Laws | N/A | |
| | Dynamic Depth Focusing | N/A | |
| **Distance Amplitude Correction** | DAC Dynamic Range | 0 to 60dB<br>Max DAC plus main gain limit is 110dB | 0.25dB |
| | DAC Trigger | Transmit pulse or material interface echo | Selectable |
| | No of DAC curves | 256 utilising up to 64kbytes | - |
| | DAC update | 40dB/µsec | - |
| | DAC Clock | 0.78125MHz, 1.5625MHz, 3.125MHz, 6.25MHz, 12.5MHz and 25MHz selectable | 6 settings (selectable) |
| | Water path DAC | | |
| **Digitiser and Digital Processing** | ADC Resolution | 12 bits | N/A |
| | Amplitude Resolution | 16 bits | |
| | Sample Rate | 10, 25, 50 and 100MHz | Selectable |
| | Number of ADC's | 1 per 6 channel block | |
| | Element Summing | N/A | N/A |
| | Acquisition Gate Delay | 64k sample points from trigger or I/F echo | 1 sample point |
| | Acquisition Gate | Up 32K sample points | 1 sample point |

| | Parameter | Range | Step Size |
|---|---|---|---|
| | Rectification | No Rectification<br>Fullwave<br>+ve halfwave<br>-ve halfwave | Selectable |
| | Smoothing | None and 10 selectable settings | - |
| | Hardware Gates | 4 gates utilising up to 32K samples each | - |
| | Interface Echo | Hardware interface trigger for gate and DAC | - |
| | Hardware Peak Processing | For each gate up to 80 peaks (N + largest), first peak, largest peak, threshold crossing | Selectable |
| | Output Options | Peak processed data and/or full digitised waveform | |
| | Threshold | 10 to 4095 | 1 |
| | Averaging | 2 to 256 realtime | |
| | Gain Reduced Firing | Selectable to be triggered on saturation with programmable adjustment level | |

## General Specifications

| | | |
|---|---|---|
| **Interfaces** | Communication Interface | Gigabit Ethernet capable of up to 120MB/s |
| | Inter-system Master Slave | High speed LVDS (6 pipes @ 800MBits/sec + TTL sync) allowing for expansion of element count by connection of two MicroPulse systems |
| | Output Data Buffer | 2Gbytes |
| | FMC Acquisition Buffer | N/A |
| | Digital Encoders | 2 axes of differential 32-bit encoder inputs accepting 5Volt encoders at rate of up to 700kHz |
| | Digital I/O | 4 inputs and 4 outputs (5Volt TTL compatible) |
| | Analogue Outputs | Trigger |
| **Connectors** | UT Connectors | Coaxial Lemo 00 |
| | Ethernet Connector | Industrial RJ45 |
| | LVDS Master/Slave | 1 x high speed shielded connector |
| | Encoder Connector | Lemo 1B.310 |
| | I/O Connector | Lemo 0B.306 |
| | Power Connector | Lemo 0B.302 |
| | Analogue O/P Connectors | Lemo 1B.310 |
| **Physical** | Case Size (H x W X D) | 120mm x 280mm x 310mm |
| | Power Supply | 48V DC from Ethernet or separate supply (48V @ 1500mA) |
| | Power Consumption | 40W max |
| | Weight | Up to 5 Kgs depending on configuration |
| **Environmental** | Operating / Storage Conditions | Operating Temperature: 0 to 45°C<br>Storage Temperature: -10 to 55°C<br>Relative Humidity: less than 85% non-condensing |
| | EMC | EN61326 |
| | Safety | EN61010 |