

OPBOX ver 1.2 USB 2.0 Ultrasonic Box with Integrated Pulsar and Receiver

<http://www.optel.eu>

OPBOX ver 1.2 is a complete ultrasonic testing device, suitable for all ultrasonic measurements and due to many additional digital inputs/outputs and internal processor it can be used as a controller for more complicated devices.

The box can work together with following devices:

- multi channel multiplexer
- Phased array systems
- Scanner - it has input for incremental encoders;

The box has an implemented one channel pulser & receiver and can be used with one transducer or with two (one is sending, and the second one receiving).



Features

- Low noise preamplifier
 - Switchable analog filters
 - Support fast TGC (time gain compensation)
 - 2 signal inputs PE and TT
 - Input attenuator (-24dB)
 - Input Impedance 50 Ohm, 10pF
 - 100MHz sampling frequency
 - Delay settings up to 255us
 - Various triggering mode
 - Interfaces USB 2.0 HiSpeed
 - Dimensions: 164mm x 138mm x 34 mm
 - BNC or Lemo analog connectors
 - DB15 connector for I/O lines
- Power supply: 9V DC/2A

Technical Data

Analog parameters:

Input Amplifier	-28dB to 68dB
Gain:	
Input preamplifier:	0dB or +24dB
Input Voltage	$\pm 275\text{mV}$ or 2V
Range:	
Full Bandwidth:	0.5 MHz - 25 MHz (-3dB)
Switchable Filters(-3dB):	0.5 - 6MHz, 0.5 - 10MHz, 0.5 - 15MHz, 0.5 - 25MHz, 1 - 6MHz, 1 - 10MHz, 1 - 15MHz, 1 - 25MHz, 2 - 6MHz, 2 - 10MHz, 2 - 15MHz, 2 - 25MHz, 4 - 6MHz, 4 - 10MHz, 4 - 15MHz, 4 - 25MHz

Technical Data - cont

Pulser:

Pulse Voltage	off(0V) to 360V (positive pulse)
Charging Time	regulated from 0 to 3.1us in 0.1us steps
Fall Time	≤ 20 ns
Pulse Duration	Short circuit, bandwidth up to about 50MHz
Output impedance	< 1 Ohm

A/D data acquisition:

Resolution	8 bit
Sampling Frequency(MHz)	100; 50;25;12,5,
Data Buffer	512, 1k, 2k,4k,8k,16k, 32k, 64k, 128kB
Delay Time	Post trigger from 0 to 255us

DAC (TGC) with arbitrary waveform generator:

Frequency:	100MHz
Resolution:	8 bit
Max. gain changing:	48dB pro step

Trigger:

Application trigger rate Software controlled;
External trigger 2x inputs, 8 bit divider, TTL Signal.

Inputs / Outputs

Analog:

2 x BNC or Lemo connectors

DB15 connector:

Inputs:

2 inputs for external trigger;
2 general purpose digital lines;

Outputs:

Trigger output signal (Sync Out);
4 general purpose output/address for multiplexer;