

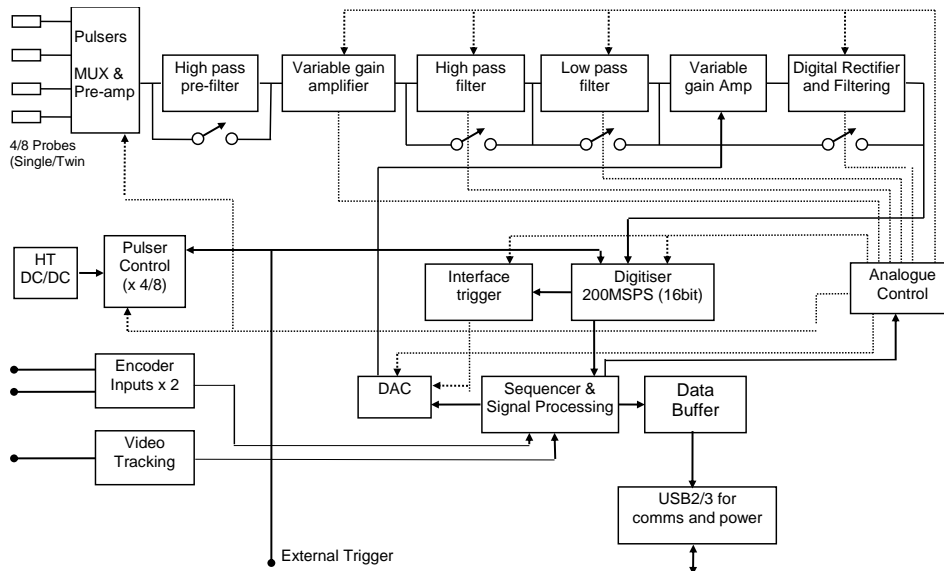
db-MiniPOD USB is a ruggedized, portable ultrasonic inspection module that capable of simultaneous multi-channel Time-of-Flight-Diffraction (TOFD) and Pulse Echo (PE) Corrosion/Erosion Mapping capable of interfacing to a wide range of single/multi-axis manipulators including video tracking. The system comes complete with a suite of comprehensive data collection and off-line analysis software that runs under Windows XP/Win7/Win10.



Key Features

- Rugged, miniature module contains full ultrasonic inspection system
- Interfaces and self-powered by USB to any Windows PC/laptop/tablet
- 4, 8 or 16 channel variants available
- Real time RF, A, B, C, D-scan displays and storage
- Multi-channel, simultaneous TOFD and Pulse Echo Corrosion/Erosion Mapping
- Position stamping from up to 2 encoders
- Corrosion Mapping using Video Tracking technique
- Comprehensive configuration, data acquisition, off-line analysis and reporting software
- Windows XP/Win7/Win10 Operating System
- Expandable by daisy-chaining additional modules
- External/internal motor drive option

Block Schematic



Technical Specification

Digitiser

Sampling Rate	200MHz to 6.25MHz in 6 steps
Resolution	8/12/16-bit
Points per channel	65535
Sampling Delay	65535 samples (at digitisation frequency)
Averaging	2 to 256 frames or disabled
Averaging Performance	Real-time hardware averaging of all channels at maximum digitisation rate
Averaging Memory	128k – dynamically allocated
Max. Gates per Channel	Hardware: 1, Software: 16
Peak Detection	Real-time, bi-polar, first 'n' peaks

Input Noise Level	1.5nV/(Hz) ^{1/2}
Impedance (Damping)	75Ω, 125Ω, 180Ω & 300Ω

Distance Amplitude Correction (DAC)

Gain Range	-2 dB to +110 dB in 0.5 dB steps
DAC Curves	8
DAC Memory	16kByte
DAC Points per Curve	Up to 4096
DAC Frequency	¼ to 1/32 of digitisation rate
DAC Reference	TX pulse or Interface Echo

Pulsar / Receiver

Probe Connectors	4, 8 or 16
Software Channels	Up to 256
Transducer Type	Single or Twin
HT Pulse Voltage	-100V Unipolar or +/- 100V Bipolar
HT Pulse Width	15 ns to 1000 ns in 5 ns increments (with <10 ns rise time)
PRF	50 Hz to 10 kHz in 10 Hz steps (dependent upon voltage, pulse width and gate settings)

Manipulator Interface

Type	Encoder, Video or motorised (by external unit)
Number of Axes	2
Encoder Type	Single/Differential
Encoder Voltage	5V (TTL)
Encoder Counts	±2 ³¹ quadrature counts. 1MHz maximum

Signal Filtering & Rectification

Low Pass Filters	1MHz, 2MHz, 6MHz, 7.5MHz, 9MHz, 10MHz, 15MHz, 20MHz, 25MHz, 40MHz & 60MHz (at 200MHz digitiser)
High Pass Filters	0.1MHz, 0.5MHz, 1MHz, 2.5MHz, 4MHz, 5MHz, 8MHz, 10MHz, 15MHz, 20MHz & 16.5MHz. (at 200MHz digitiser)
Rectifier	Digital - Full-wave, Positive half-wave and RF (unrectified)
Post-Rectification Filters	Digital – as per Low Pass Filters

Video Tracking Interface

Maximum Image Size	768 x 576 (PAL)
Detection speed	50 Hz (PAL)
Standard	PAL or NTSC

Amplifier

Gain Range	-2 dB to +110 dB in 0.5 dB steps
Bandwidth	0.1 - 20 MHz

Physical, Power & Interface

PC Interface Type	USB 3
Interface Thru-put	500-750Mbps
Dimensions	95mm x 54mm x 23mm (4 channel)
Weight	0.25 kg
Rating	IP65
Power	USB powered 5V @ 5W
Temperature	0°C to 50°C operating (-20°C to 80°C storage)



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