BondCheck

- Supports Pitch-Catch, Resonance and MIA Bond-Testing Modes
- Pitch and Catch Dry Coupled Bond testing mode for rapid detection of defects in laminate, bonded and sandwich structures.
- Automatic Test Frequency Optimisation.
- Sweep, RF, Y/T, Encoded and Phase/Frequency Plots.

BondCheck - Applications & Probe Selection

Material	Inspection Requirement	Good	Possible
Bond Stiffeners	Disbonds	Both	Both
Carbon Laminate (multilayer)	Delaminations, Voids, Porosity	Resonance	Pitch-Catch
Carbon or Glass reinforced pipes or pressure vessels.	Disbonds, delaminations.	Pitch-Catch	No
Carbon Overwrapped Pressure Vessels (COPV)	Disbonds, delaminations	Pitch-Catch	No
Carbon Skin to Foam Core	Disbonds, delaminations	Pitch-Catch	Resonance
Carbon skin to metal Nomex honeycomb	Disbonds, delaminations and crushed core	Pitch-Catch	Resonance
Carbon-Carbon in Heat Shields	Delaminations, cracking, density changes	Pitch-Catch	Resonance
Composite Repair Validation	Disbonds, delaminations	Pitch-Catch	No
Glass fibre skin to foam or wood core	Disbonds, delaminations	Pitch-Catch	Resonance
Metal Skin to metal honeycomb	Disbonds and crushed core	Both	Both
Metal to metal bonded skins	Disbonds	Resonance	Pitch-Catch
Perforated metal skin to honeycomb core, used for acoustic liners	Disbonds	Pitch-Catch	No
Sandwich Structure	Far-side flaws or core damage on sandwich construction	Pitch-Catch	Resonance
Sandwich Structure (multicore)	Inter-core disbonds, core damage	Pitch-Catch	Resonance
0.5”/12.7mm defect		Resonance	Pitch-Catch
Curved surface up to 1”/25mm		Pitch-Catch	Resonance
Depth of indication location in multi-layered structures.		Resonance	No

Pitch-Catch	Resonance	Both	No

Transmit	Operating Mode	Pitch-Catch only
	Output Frequency Range	1kHz to 100kHz
	Main Gain	0 to +76dB, 0.1dB steps
	Output Voltage: 3 ranges: ±12V, other TBC	0 to +76dB, 0.1dB steps
	Minimum Output drive load impedance	300 Ohms
	Waveform Type	Arbitrary waveform, supporting tone burst with rectangular/hanning window and frequency chirp.
	Transmit waveform points maximum	8192
	Waveform Duration	Maximum 3.2ms
	Waveform Output DAC clock rate	2.5MHz fixed
Receive	Sample Rate	440kHz (subject to change).
	Bit Depth	16 bit.
	Gain Range	0 to 60dB (TBC subject to testing)
	Receive Bandwidth	3kHz to 1MHz - 3dB points.
	Time Base Range	100µs to 2ms
	Time Base Delay	0µs to 1ms
	Amplitude/Phase Extraction Cursor	Position Resolution 2µs
Software Specification	Display Modes	RF Waveform, Y-T Mode*.
	Acquisition Gate in RF Mode	With adjustable amplitude, start and parameter control.
	Acquisition Gate in Y-T Mode	Multiple box regions.*
	Calibration Mode	Performing frequency sweep or bond and dis-bonded areas. Automatic inspection frequency determination with manual adjustment.
	Bond/Dis-bond Alarm	State on screen on probe.
	Live Waveform	Display during parameter adjustment*
	Save	Inspection data to SD card. *
	Export	Of inspection report.*
	Encoder	With 1D line plot of chosen parameter (phase/amplitude).
Pitch-Catch Probe Specification	Operating Frequencies	Depends on piezo resonant frequency. Current model 30kHz (suitable for 10kHz to 50kHz operation).
	Transmit - receive probe separation	17mm
	Transmit - receive probe linear travel	>5mm
	Probe auto-recognition	Yes*
	Probe alarm LED	Yes*
	Probe tips	Rounded end and flat end, replaceable by user.
	Probe housing material	Anodised aluminium case, with stainless steel probe housings, rubber finger grip.
	Probe connector	8 pin LEMO.

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