Acoustic Resonance Inspection reinvented…
introducing the Smart Test ™ family of AR Inspection systems from Advanced Material Solutions

Smart Test ™ ARI systems represent a significant technology advancement in Resonance Inspection. A few key advantages of the Smart Test ™ family are:

- **Extended bandwidth** to 98 kHz – this higher bandwidth enables testing of a much broader range of components, particularly small parts and parts with small features or fine detail.

- **Higher resolution** – higher resolution provides a much more accurate frequency waveform, meaning a significantly more accurate pass / fail call. This enhances safety and reduces the number of false rejects.

- **Ruggedized hardware** – engineered with high volume inspection in mind our new spectrum analyzer and industrial electric impactor have been developed to deliver worry free operation under even the most demanding production schedules.

- **Smart Test ™ ARS software** – our software application has been designed for the shop floor with features that greatly improve productivity and ease of use. Go from part / lot setup to mass production inspection in minutes. Data reporting is simple and intuitive.

- **Integral process compensation** - provides a quantum leap forward in system reliability for clients who need to accommodate manufacturing process variation. Our integrated solution avoids the need for an external interface and complicated data communication between multiple programs. Downtime is eliminated, productivity, reliability and quality are enhanced.

The Smart Test ™ Family of ARI Systems:

Smart Test ™ *Pro / Pro+* - a high speed, high volume turnkey inspection system intended for 100% inspection on the production floor. Ideal for in-line, automated, objective inspection with no need for operator intervention. The system includes an instrumented spectrum analyzer, turn-key conveyor system, industrial automated electric impactor, microphone, automation accessories (light curtains, PLC, pneumatic ejector), Smart Test ™ ARS software, cables and industrial-grade computer with Microsoft® Excel®.

Smart Test *Core / Core*+ - comprised of the core elements of the Smart Test Pro system, ready for clients to integrate into their own custom process design. The ST Core system includes an industrial automated electric impactor with thumb-switch trigger (easily externally triggered by PLC), instrumented spectrum analyzer, microphone, Smart Test ™ ARS software, cables and industrial-grade computer with Microsoft® Excel®.

Smart Test *EX* – a portable system for desktop or benchtop inspections - fits easily inside a laptop case. Ideal for spot checking in the field, for new part set-up prior to mass production inspection, or for investigation and troubleshooting material or process variation. The ST EX system includes instrumented spectrum analyzer, industrial automated electric impactor, microphone, Smart Test ™ ARS software, cables and laptop computer with Microsoft® Excel®.

Smart Test *MINI* - Ideal for in-line, automated, objective inspection of small components with no need for operator intervention. A high speed, high volume turnkey inspection system intended for 100% inspection on the production floor. Fast throughput - as fast as a part every 2-3 seconds. Can be integrated with a bowl feeder or vibratory table to automate the process. The system includes an instrumented spectrum analyzer, servo motor/PLC controller, force sensor, microphone, adjustable part feed slide, Mainframe and testing chamber built with sound absorbing Material, part cradle, Smart Test ™ ARS software, cables and industrial-grade computer with Microsoft® Excel®.

Smart Test ™ System Specifications:

Part Throughput Rate	3 seconds per part, typical*
Part Types	Component parts with high stiffness
Maximum Analysis Range	96 kHz
Minimum Analysis Range	500 Hz
Total Harmonic Distortion (THD)	98 dB
Dynamic Range	106 dB
Frequency Resolution	512 to 89,100
Analysis Modes	Spectrum or FRF
Available Criteria Ranges	20
Digital Input /Output	Solid state relay, Qty 4 (3.3volts)
Delay Processing Capability	-50 to +200%
Data Logging	Peak frequency and amplitude
Spectral Logging	Toggle on/off
Input Trigger Settings	Channel #1 and #2
Data Overlay	Up to 1500 traces
PC Comm Configuration	USB
PC OS	Windows 10 (64-Bit)