

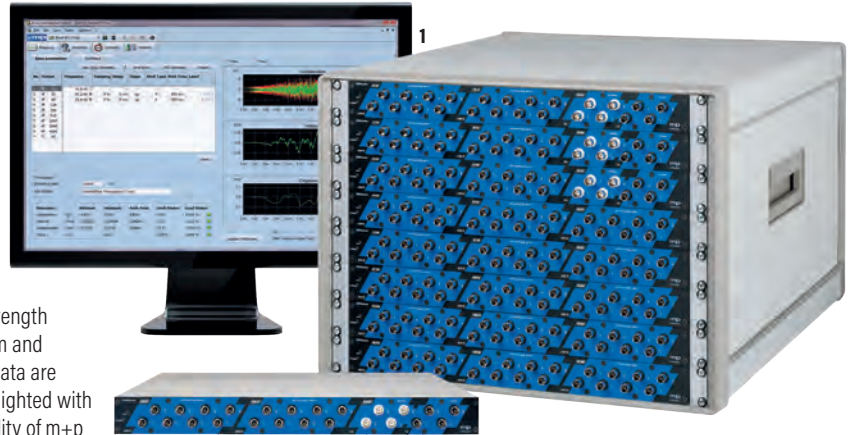
STABLE HIGH-END TESTING SYSTEM

For aircraft strength and vibration testing, China's Aircraft Strength Research Institute chose systems from m+p international, which offer the required flexibility for setup and control

The Aviation Industry Corporation of China's (AVIC) Aircraft Strength Research Institute (ASRI) is the national test center for verifying structural strength in newly developed aircraft in the country. It provides ground testing facilities for full-size aircraft, which help to predict vital performance data before an aircraft embarks on its maiden flight. Estimates of component lifetime and reliability can also be provided. ASRI plays a key role in the country's aircraft development program and has contributed substantially to the success of the Chinese aircraft industry.

For high-end vibration and strength testing, the stability of the system and absolute confidence in the test data are crucial. Engineers at ASRI are delighted with the excellent stability and reliability of m+p international's advanced test equipment.

The new 102.4 kSa/s per channel bridge module is designed for dynamic strain measurements, experimental stress analysis and fatigue testing of mechanical structures. It enables connection of eight strain gauges in full-, half-, or quarter-bridge configurations. Two versions are available – one with RJ45



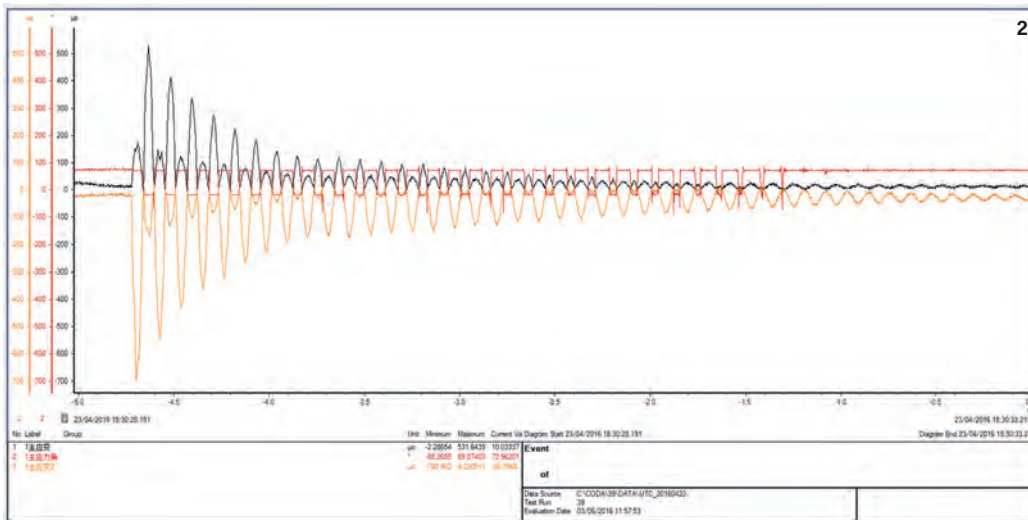
1 // Multichannel m+p system for desktop use or rack mount

strain rosettes can also be used for temperature compensation.

The built-in bridge excitation and completion is individually programmable for each channel, making time-consuming hardware reconfiguration of different gauge types unnecessary. All channels support TEDS to ensure fast, convenient and secure transfer of transducer details to the m+p VibRunner bridge module. An Ethernet interface allows remote operation so the VibRunner system can be positioned close to the measurement point. This reduces the sensor wire lengths and helps optimize low-noise performance.

ASRI also uses the m+p VibControl software and m+p VibRunner instrumentation for acoustic fatigue testing using progressive wave tubes (PWT) and vibration testing (with a shaker) for evaluating the environmental and reliability characteristics of aircraft parts.

The advanced functionality, stability and user-friendliness of the m+p system are greatly appreciated at the institute. An ASRI engineer comments: "Over a period of extensive testing, the high stability and reliability of the m+p system were proved conclusively. The software is easy to use and convenient for us. With the great support from m+p international, we can tackle any test situation."



2 // Strain test data using m+p Coda software showing the principle strain 1, principle strain 2 and the angle of principle direction

ASRI chose m+p VibControl and m+p Coda software from m+p international for its vibration control and strain tests. The hardware platform employed is an m+p VibRunner providing 16 analog input channels, 64 bridge input channels, and four analog output channels.

Tests for aircraft strength testing include swept sine vibration, random vibration, noise, classic shock, and shock response spectrum analysis. Analog and strain signals can be measured simultaneously.

connectors and the other one with nine pin LEMO connectors. These robust and reliable connectors have proved ideal for flexible strain measurement configurations. 120Ω, 350Ω and 1,000Ω resistors can be connected. When the principle direction of strain is unknown, m+p Coda software allows strain rosettes to be used, so that separately oriented gauges can measure normal strains along different directions in the surface of the part. The principle strain and angle are calculated and displayed in real time. The

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