

Rugged data acquisition for missile and captive carry platforms

**CURTISS-
WRIGHT**


Challenge

- Limited space available for test equipment
- Large and varied signal acquisition requirements
- Harsh environmental requirements

Solution

- ACRA KAM-500 data acquisition chassis
- Mature and stable backplane can be adapted to any footprint
- Large catalogue of high performance acquisition modules

Results

- Successful testing of numerous missile platforms
- Modularity allowed systems to be easily expanded
- Flexibility means any solution can be catered for

Challenge

Missile testing presents many challenges to flight test engineers. The key challenge is the limited space available for the test equipment. Data from a large number of sensors must be acquired, processed, transmitted and/or recorded in a footprint that is particular to the missile being tested. It is difficult to find off the shelf data acquisition solutions that provide the appropriate flexibility, functionality and performance in a rugged package that fits in the available space.

Solution

The ACRA KAM-500 is suitable for all 7" and larger diameters. Where even smaller diameters are required, the MicroKAM will fit into 2.58" and above. The KAM-500 backplane is mature, stable and can be laid out in different shapes to allow standard modules to be used in awkward spaces. There is a wide selection of plug-in modules available including sensor measurement and conditioning, avionics bus monitors, high speed digital data and video and audio compression. This enables custom systems to be realized with minimum development costs while a commercial off the shelf approach leads to fast availability

of standard product. Onboard recording using CompactFlash is also supported yielding a total measurement and storage solution in a compact, rugged form.

Results

The ACRA KAM-500 has been used on numerous missile and captive carry platforms. Some of the reasons the KAM-500 was selected for missile programs include its ability to cost effectively process and accurately condition signals from accelerometers, strain gages and temperature sensors. Another key advantage of the KAM-500 was the digital filtering accuracy provided as well as the KAM-500's ability to modularly expand to include captive data recording and multiple PCM outputs. The KAM-500 has a track record as being a key component in successful testing of the missile platforms. Critical to this track record is the flexible design criteria built into every KAM-500 and the controlled application of Program Management that enables the company to rapidly respond to changing design/schedule scenarios as the programs evolved.