MTS-3060

UNIVERSAL O-LEVEL ARMAMENT TESTER FOR SMART & LEGACY SYSTEMS

- Supports both "smart" and legacy weapons
- Supports multiple platforms including F-16, F-15, TA-50, FA-50, F-5 and more
- Support for MIL-STD-1760 "smart" weapons systems
- Simultaneous and continuous monitoring of up to 6 Squib firing circuits
- Audio and Video signal generation
- Supports standard operating modes of SERD 75060

DESCRIPTION

The MTS-3060 SmartCan™ is an advanced flight line tester for suspension and Alternate Mission Equipment (AME) including pylons, launchers, bomb racks, and pods. The MTS-3060 SmartCan™ is a high—performance hand-held device with a shape of a "beercan" but with previously unavailable flight-line test capabilities. The State-of-The-Art The MTS-3060 SmartCan™ is unlike any other Beercan tester and provides measurement, loading and stimuli functions that are typically associated with large O-Level testers such as the SERD-75501. With multiple measurement channels, dedicated and continuous squib circuit monitoring, multiple load channels, audio and video simulation, and MIL-STD-1760 support, the MTS-3060 can support any platform and any "smart" and legacy armament system.

The MTS-3060 SmartCan™ delivers new flight—line test capabilities and is an ideal O-Level tester for AME and other aircraft systems. The advanced capabilities of the MTS-3060 enable it to bridge the Armament Test Gap that exists on legacy and 5th Gen platforms.

While providing advanced capabilities in support of new and complex weapons systems, the MTS-3060 maintains full compatibility with Legacy Beercan testers such as the SERD-75060, preserving the substantial investment in the 75060 cables and adapters. New adapters and cables that offer a substantial cost reduction and improved reliability provide a path forward once the current legacy adapters and cables require repair or replacement.

FEATURES

The unique design and features of the MTS-3060 SmartCan™ provide test capabilities that are not typically associated with Beercan testers. Instead of only one or two measurement

channels, the MTS-3060 provides more than 30 measurement channels and the capability to simulate legacy and "smart" weapons. The multiple channels alleviate the requirement to use multiple Beercan testers when testing armament systems with multiple squibs (such as MAU-12, MAU-50, LAU-117, etc.). The simultaneous testing of multiple squib signals, combined with a unique cross-fire algorithm, provides a robust test process that is superior to the single-channel or dual-channel methods offered by legacy Beercans. The measurement channels include:

- AC/DC high-voltage measurement channels for up to 400V signals
- DC measurement channels for 4-39VDC with an E-Load capable of loading up to 3.5A per channel
- Squib measurement signals with continuous monitoring (threshold detector) and parametric testing
- Specific measurement channels for grounds
- General-purpose measurement channels for -2V to +50V signals

The MTS-3060 SmartCan™ can generate audio and video signals required to simulate missile functions when testing AGM-65 and AIM-9 systems and provide a more robust test. Two channels of audio and one channel of video can be simultaneously generated.

An innovative power management system allows operation of the SmartCan for over 24 hours without the need to replace the standard AA batteries. This extended operation is achieved using sleep modes and drawing power from the AME when available. With multiple measurement channels internal to the SmartCan, the adapter cables have been simplified and most do not require any selectors or electronics (as the legacy adapters do).
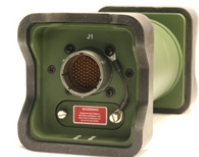
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With a sunlight-readable LCD display and multi-function keys, the MTS-3060 SmartCan™ provides more capabilities, more test instructions and more test information than any other Beercan or O-Level tester.

During tests, the display's background color indicates test status with green denoting a passing test and red denoting a test that failed. The LCD can also display the actual test results of the last test run.

WEAPONS SIMULATION

The MTS-3060 provides more than the typical Beercan measurement functions. Some weapons systems and especially the newer "smart" weapons will not activate the firing circuits unless a weapon is present. With its weapons simulation capabilities, the MTS-3060 SmartCan™ is the right tool for smart weapons systems testing, delivering a robust test with expanded fault coverage. Weapons simulation features include:

- Simulates major functions of missiles for missile launchers testing of 16S210, LAU-129 and LAU-117
- Simulates JDAM for MIL-STD-1760 testing
- Simulates major functions of bombs and rockets for TER-9 and SUU-20 testing
- Simulates major functions of launchers for preload testing
- Simulates major functions for F-16 Internal Gun pickup
- Simulates Audio signals including frequency sweep
- Simulates RS-170 Video signal

BUILT-IN TEST AND SELF-TEST

The MTS-3060 SmartCan™ contains a Built-In-Test (BIT) that provides verification of major circuits. A comprehensive Self-Test verifies the MTS-3060's performance including the cables and adapters using a self-test adapter. BIT and Self-Test can be performed at the flight line or at the back shop, no special external test equipment is required other than the self-test adapter.

CALIBRATION

The MTS-3060 SmartCan™ employs an innovative calibration technique that further simplifies maintenance and reduces scheduled maintenance down-time and associated logistics. Multiple NIST-traceable, high-precision references have been incorporated into the design of the SmartCan™, and the MTS-3060 verifies its calibration status against these references every time the self-test is performed. In the event the MTS-3060 is out of calibration, the test set initiates an automated calibration procedure that calibrates the MTS-3060 measurement and stimuli devices against the built-in references. The references have to be checked once every 2 years using standard PMEL equipment that can be brought to the field and do not require evacuation of the test set to the depot or the PMEL facility.

RUGGED CONSTRUCTION

The rugged construction of the MTS-3060 SmartCan™ facilitates field operation anywhere in the world. The MTS-3060's ability to operate in adverse weather conditions makes it the ultimate tool for testing. Additional protection has been included in the MTS-3060 to minimize equipment damage if the SmartCan is dropped by the user. The MTS-3060 is ergonomically designed for ease of use and will not roll when placed on angled surfaces.

IMPROVED ADAPTERS

While the MTS-3060 supports legacy SERD 75060 adapters, the MTS-3060 can also be provided with new adapters and cables that are more reliable and cost-effective. The design of the MTS-3060 SmartCan™ "relocates" the majority of switching and loads into the SmartCan™, resulting in a streamlined and simplified adapter design for increased reliability.

MARVIN TEST SOLUTIONS

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CONNECTIVITY AND UPGRADABILITY

The MTS-3060 SmartCan™ contains a USB interface, allowing log files of the last test run for each weapon to be easily moved to a computer for printing and analysis. This feature is especially important when failures occur and the availability of data for further analysis is critical to the timely repair of the aircraft.

The MTS-3060's USB interface also simplifies firmware updates without the need to ship the test set back to the depot or to the manufacturer. Additional test programs supporting new weapons systems can also be added this way.

APPLICATIONS

- Flight line armament testing and troubleshooting
- Flight line pre-load testing
- Flight line avionics testing
- Missile/weapon simulation

SPECIFICATIONS

GENERAL DESCRIPTION	
AME and Weapons Systems Supported	16S210, LAU-128, LAU-129, LAU-117, TER-9, SUU-20, MAU-12, MAU-50, BRU-46, BRU-47, AIM-9, AGM-65, JDAM, F-16 Gun, P4, BRU-57, STAR, BRU-61
Display and Indicators	Sunlight-readable graphic LCD display with a resolution of 128 x 64 pixels and six different background colors. Individual indicators to support legacy mode operation.
Manual Controls	4 soft function keys, easy and intuitive operation
MEASUREMENT CAPABILITIES	
High-Voltage Measurement Channels	3 x AC/DC ±400V, 1% accuracy (differential) 3 x AC/DC ±400V, 1% accuracy (single-ended)
Low-Voltage Measurement Channels	14 x AC/DC -2V to +50V, 1% accuracy (single-ended)
Squib Measurement Channels	6 channels, switchable 3 Ω load, 1% accuracy, 10KHz max sample rate per channel. Also routed to a continuous threshold detector
E-Load Measurement Channels	6 channels, 4 to 39VDC, 1% accuracy, each channel can load 0-3.5A
Ground Measurement Channels	3 channels with pull-up/pull-down to verify ground signals
Legacy Measurement Channels	4 input pins to support AT, PV, SV, ST, and EED modes of legacy SERD 75060
Resistance Measurement	Built-in current source provides for resistance measurement on all differential channels
ADDITIONAL CAPABILITIES	
1553	MIL-STD-1553 support (as R/T for weapons simulation)
Audio	Two channels with selectable voltage and frequency. One channel can provide a frequency sweep of 100Hz to 10KHz
Video	RS-170 compatible
Discrete Outputs	4 discrete output channels 28VDC/GND/Open
Cable ID	Ability to detect cables and adapters automatically

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PHYSICAL AND ENVIRONMENTAL	
Size	Length: 8.25" Diameter of body: 3" Front/Rear panel: 3.5" x 3.5"
Weight	SmartCan: 4.2lb SmartCan Kit: (1 SmartCan, adapters, cables, self-test adapter, and case): 35lb
Operating Temperature	-20°C (-4°F) to +57°C (+135°F)
Storage Temperature	-51°C (-60°F) to 71°C (+160°F)
Maximum Relative Humidity Range	95%
Salt Fog	Per MIL-PRF-28800F Class 2
EMI	MIL-STD-461F
Shock	5 ft drop onto concrete
Vibration (Sine)	Per MIL-PRF-28800F Class 1
Loose Cargo	Per MIL-PRF-28800F Class 2
Transit Drop	Per MIL-PRF-28800F Class 2
Explosive Atmosphere	Per MIL-PRF-28800F Class 1
Maximum Altitude	Operating: 15,000 ft Storage: 40,000 ft
National Stock Number	4920-01-603-7105

Note: Specifications are subject to change without notice

ORDERING INFORMATION

MTS-3060 SmartCan	Universal O-Level Aircraft Armament Tester for Smart & Legacy Weapons Systems

MILITARY TEST SOLUTIONS

MARVIN TEST SOLUTIONS