Hellfire Center of Excellence

MARVIN TEST SOLUTIONS

Hellfire Launchers

Stores Management Systems

Integration Services and Tools

Test Solutions for All Maintenance Levels

The Hellfire Authority

The Marvin Group is the predominate Hellfire Authority with the industry's most comprehensive suite of solutions including Hellfire launchers, innovative Stores Management System (SMS) computers, Hellfire integration tools and services, and advanced test sets for flightline (AVUM), shop (AVIM), and depot-level testing. Spanning more than forty years, The Marvin Group and Marvin Test Solutions (MTS) have been the premier "one stop" Hellfire solution source, building on a proud legacy that began in 1984 with the venerable M272 Hellfire launcher on the AH-64A Apache helicopter.

Our state-of-the-art Hellfire Scalable Rail Launcher (HSRL) has been developed in response to warfighter feedback, and their expressed need for reduced weight and expanded configuration flexibility. Leading-edge material engineering, and a DC-only implementation, significantly reduces weight, resulting in greater range and/or increased platform payload capacity.

Multiple launcher configurations, distributed configuration with compact MIL-STD-1760 rail electronics, and innovative Stores Management System (SMS) computer packaging facilitate quick and efficient integration, substantially decreasing

- Missile Simulators

- Laser Source Simulators

- Stores Management Systems

- Integration Services and Tools

- Lightweight, Scalable Rail Launchers

- AME Distributed Solutions System Enabler

- O-, I-, Depot-Level Armament Test Solutions

implementation and field deployment times. The HSRL has quickly become the preferred solution for current platform upgrades, and a Hellfire enabler for all light-weight platforms.

A recognized leader in Hellfire armament test, MTS has developed and fielded a comprehensive suite of solutions spanning all maintenance levels. Warfighters supporting high operational tempos on the flightline must quickly troubleshoot and resolve issues, and the MTS-3060A SmartCan Universal flightline (AVUM) Armament Test Set is the preferred solution. It is capable of performing all pre-load and
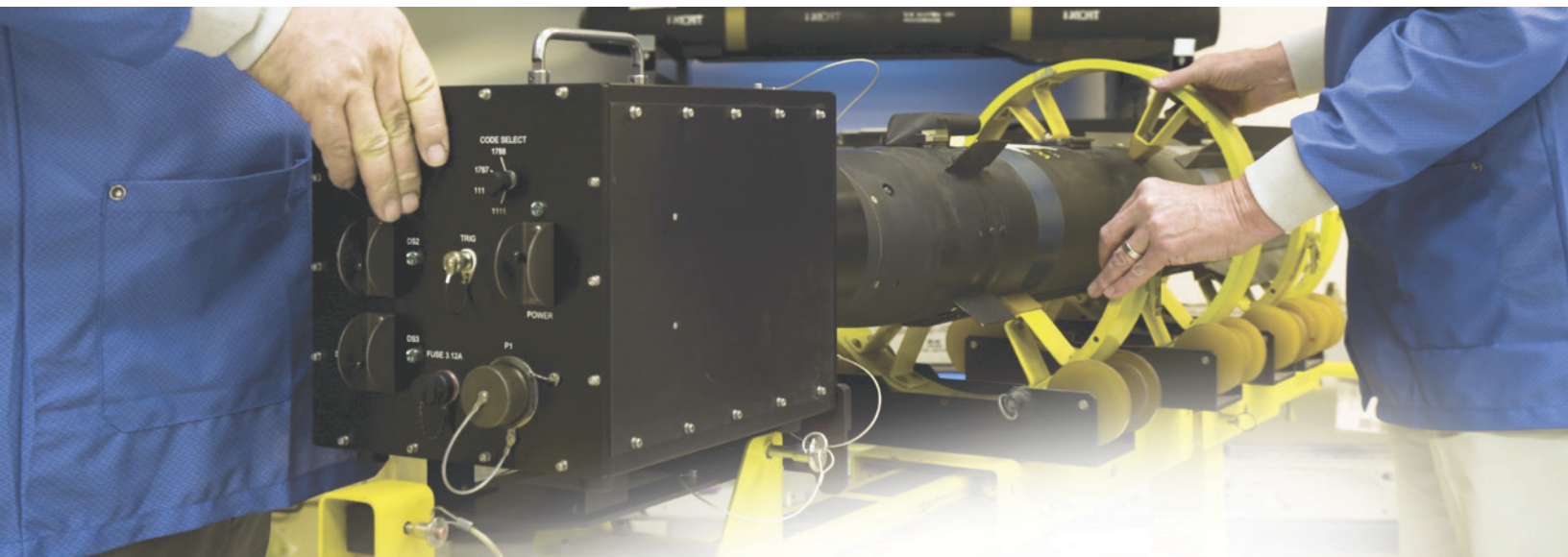
functional checkouts for Hellfire AME quickly and effectively through weapons emulation.

The AN/TSM-205B test set provides shop (AVIM) test capabilities for all fielded Hellfire launchers including M310, M299, and HSRL. This ultra-rugged tester is also flightline qualified and the launcher test can be performed at the shop or by the aircraft.

The TS-201C test set provides comprehensive Intermediate, Depot, and Production test capabilities for M310, M299, and HSRL launchers as well as the Launcher Electronic Assembly (LEA) of the M299 and the Rail Electronics Unit (RU) of HSRL. The TS-201C is used in the production lines of the M310, M299, and HSRL launchers and is approved by the U.S. Army for qualification testing of all Hellfire launchers.

Our team of seasoned Hellfire engineers have decades of combined experience testing and deploying Hellfire solutions, and fielding these on a variety of platforms – airborne, land-based, and shipborne. MTS also offers a suite of Hellfire integration services and tools that can significantly reduce implementation time and streamline field deployment.

Hellfire Scalable Rail Launcher

The Hellfire Scalable Rail Launcher (HSRL) is an advanced Hellfire System enabler of greater range and/or endurance due to its lighter weight. This lightweight, DC-only, scalable launcher features small, distributed electronics enabling integration of the Hellfire missile onto many platforms including the Canister-launched Hellfire (shipboard application), Light Unmanned Aircraft Systems (UAS), and other platforms that can benefit from reduced weight and DC-only operation.

Features

The Hellfire Scalable Rail Launcher (HSRL) provides single- and multi-rail launch capability for the AGM-114 family of missiles without the need for external electronics or AC power. With the integrated rail electronics and M299 compatible MIL-STD-1760 interface, the HSRL can be easily integrated into smaller platforms and distributed systems such as those planned for FVL.

The scalable HSRL design allows multiple rails to be combined to create adaptable configurations based on the platform's requirements, including single-rail, dual-rail, triple-rail, or quad-rail. It can support all Hellfire II (including Romeo) and Longbow Hellfire

- Light-weight, DC only Hellfire Launcher for smaller platforms

- Supports all Hellfire II (including Romeo) and Longbow Hellfire variants

- Software upgradeable to JAGM

- Fully compliant with the M299 MIL-STD-1760 interface

- Flexible configurations including: Single-rail, Dual-rail, Triple rail, or Quad-rail

- Hellfire System enabler for future vertical lift (FVL) and other distributed solutions

missile variants, and is software-upgradeable to support the AGM-179 Joint Air-to-Ground Missile (JAGM).

A significant weight reduction has been achieved when compared with any other solution, with a single rail weighing just under 17 lbs. and Dual-Rail launchers weighing under 44 lbs. This reduced weight increases range and/or duration (time on station) and also offers the ability for smaller UAS platforms to carry additional missiles.
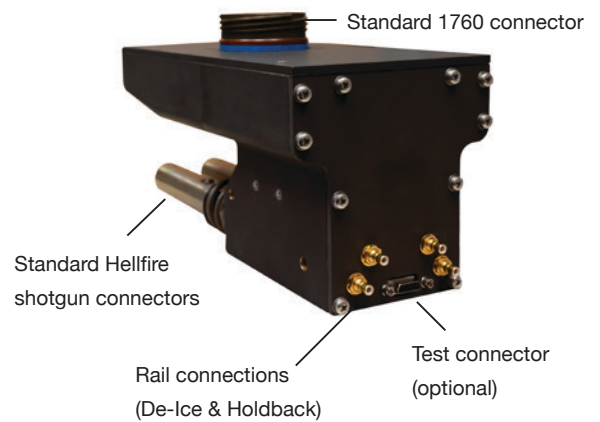
General Atomics

The HSRL is DC-only and incorporates a small MIL-STD-1760 based electronics assembly called the Rail Electronics Unit (REU) which is fully compliant with the M299 MIL-STD-1760 interface.

Stores Management Systems

The Hellfire Interface Unit (HIU) and Hellfire Interface Assembly (HIA) are Hellfire mission computers that enable the integration of the Hellfire missile system onto existing platforms. The HIU is an aircraft line replaceable unit (LRU) that can be repackaged to meet the platform's requirements. The HIA is a Circuit Card Assembly (CCA) that can be repackaged and integrated into existing mission computers.

Both the HIU and HIA interface with the platform's main mission computer and provide all pertinent information for display on the platform's multi-function displays (MFDs). Both the HIU and HIA can interface with multiple Hellfire launchers (M299/M310 or HSRL) and support up to 16 Hellfire missiles. Additionally, the HIU/HIA can support all Hellfire missile variants and is software-upgradeable to support JAGM.

Standard 1760 connector

Standard Hellfire shotgun connectors

Rail connections (De-Ice & Holdback)

Test connector (optional)

Rail Electronics Unit (REU)
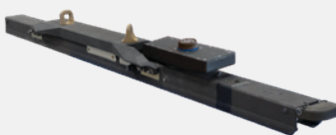
HIU
Hellfire
Interface Unit

HIA
Hellfire Interface
Assembly

Hellfire Mission Computers

Scalable Rail Launcher Configurations

Multiple rails may be combined to create adaptable configurations based on the platform's requirements.

Single

Dual

Quad

Hellfire Armament Test Solutions

O-Level / Flightline / AVUM

Experience the future of armament test today with the **MTS-3060A SmartCan Universal O-Level Armament Test Set.** Addressing the armament test gap that exists across legacy 4th and 5th generation aircraft equipped with "smart" weapon technology (MIL-STD-1760), the SmartCan enables support for any platform and any armament system including HSRL and all other Hellfire launcher variants.

Lightweight, hand-held and ergonomically designed for ease of use, the ruggedized, impact resistant construction is ideal for the flightline, enabling operation in the most demanding and adverse conditions. Significant reductions in field setup and test times are also achieved, flightline validated up to 90%, along with reduced logistics footprint, training and support requirements.

Unrivaled cybersecurity features and protections further differentiate the SmartCan, making this the most cyber-secure O-Level test set available. Data encryption, removable SD storage, and a controlled Test Program Set (TPS) development environment further enhanced the SmartCan's cybersecurity protections.

The **MT3045 Advanced Hellfire Missile Simulator** is a portable test set which slides onto the rails of

- Unrivaled cybersecurity
- Faster setup / test times
- Reduced logistics footprint
- Smart and legacy armament
- Rugged, portable alternatives
- O, I, Depot, Production solutions
- Globally deployed, combat proven

Hellfire launchers and offers full simulation of Hellfire and Hellfire II missiles (AGM-114A-K, M, N, P, R) and partial simulation of the Longbow Hellfire Missile (AGM-114L). It simulates the missiles in tracking and non-tracking modes, monitors critical rail signals and displays status to the operator.

It can simulate other equipment such as AN/AWM-101 and includes a laser code interface and support for both PRF and PIM codes, and when connected to the IRIS controller, simultaneous two-rail test and simulation of launchers is possible.

O-Level / I-Level / AVIM

Combining I-Level / Backshop test functionality in a compact, rugged, flightline-qualified enclosure, the **AN/TSM-205B Armament Systems Test**

Set Series was specifically designed to provide a precision, portable test capability for Hellfire systems. This family of test sets is capable of full parametric test of HSRL and M299/M310 launchers with diagnostics to the LRU level (LEA or REU) and can provide interactive Hellfire missile simulation with fault injection for platform integration.

The handheld **MT1888 Laser Source Simulator** is an innovative, lightweight series of eye-safe test solutions which support all U.S. laser-guided munitions (LGM's). Field programmable and able to support any PRF code, the MT1888 is used to exercise laser seekers and simulate the return from a "laser-painted" target. Remote control operation is available as well. Additional laser codes are available to U.S. customers.

Portable, self-contained, and housed in a rugged enclosure, the **MTS-8110 Hellfire Platform Simulator** is ideal for laboratory environments, system integration facilities or field use. It allows developers to complete most of a system's design, test, and verification without access to the physical aircraft.

A state-of-the-art target simulator for optically-guided weapons, the **MTS-916 Modular Target Simulator** supports Hellfire, Maverick and Paveway missiles. Laser variants of the MTS-916 employ an innovative solid-state target design with no moving parts.

I-Level / AVIM / Depot

Capable of performing full parametric functional test on Hellfire Missiles, the MTS-206A-2 Hellfire Field Test Set combines the test capabilities of an I-Level test set in a compact, rugged enclosure qualified for field use.

Designed for extended service life, built-in calibration references extend the calibration cycle and only require verification, which eliminates the need for Depot calibration service. Additionally, when paired with the state-of-the-art MTS-916 Modular Target Simulator, the MTS-206's test capabilities are expanded further via a communication link between the test set and the digital target simulator.

Rounding out MTS' portfolio of Hellfire armament and munitions test solutions is the TS-201C, an advanced I-level and Depot-Level test set, supporting next generation MIL-STD-1760-based armament systems including launchers and bomb racks. It supports all versions of the Hellfire launcher including the legacy HSRL, M310, and M299.
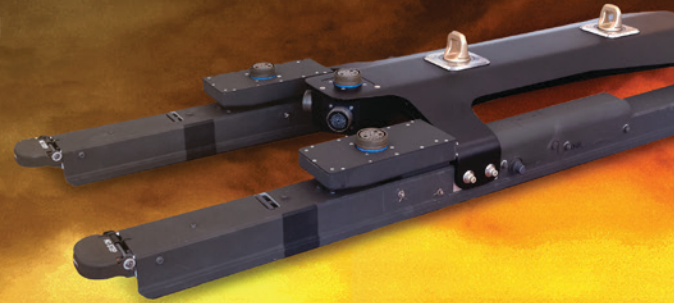

MTS-3060A SmartCan Universal O-Level Armament Test Set

Integration Services / Tools

Marvin Test Solutions eliminates the guesswork surrounding Hellfire system integration and armament test. Having designed and deployed Hellfire missile and platform emulators, launcher electronics, and various test and integration solutions since 1988, MTS is uniquely positioned as the industry's preferred Hellfire solution partner.

Innovative features found on the HSRL, such as the advanced DC-only power management design and the unique Stores Management System HIU and HIA mission computers, highlight these capabilities. While test solutions such as the MTS-3060A Universal O-Level Armament Test Set and munition simulators such as the MTS-8110 Hellfire Platform Simulator support platform integration and field deployment.

As a Marvin Group company, an award-winning group with more than 60 years of experience in the military and commercial aerospace industries, Marvin Test Solutions is a vertically integrated aerospace test and measurement organization with test solutions deployed worldwide supporting military, aerospace and high reliability manufacturing organizations.

Unrivaled long-term support and product availability are key aspects of our customer-first philosophy, prompting us to make the simple yet invaluable decision to continue producing and supporting our products decades into the future. MTS understands the support requirements of military and aerospace programs, and our goal is to deliver products and solutions that exceed these long-term, life-cycle requirements as a fundamental part of our customer commitment.

AS9100D
CERTIFIED
ISO 9001:2015

The Marvin Group

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