

MTS HSRL and SmartCan™ GDH -- October 2024

The Marvin Group: Supporting the Hellfire and rotary program since 1984



**Vertically- Integrated
Aerospace Test &
Measurement Company**

We Make Test Easy™ for military, aerospace, and manufacturing organizations



**Customer Centric,
Innovative Solutions
Leader**

Engineered solutions that best meet our customers' mission-critical requirements and reduce maintenance and sustainment lifecycle costs

**Deployed
Globally**

Flexible, superior military-ready, aerospace-quality test solutions that are backed by unrivaled long-term support. Our solutions' life cycles are measured in decades – not years

Launchers



Integration Tools



The
Marvin Group
Total
Hellfire
Solutions

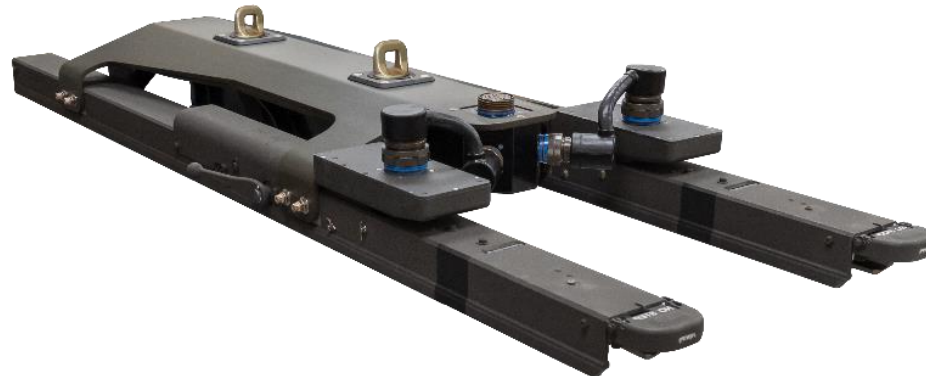
Integration



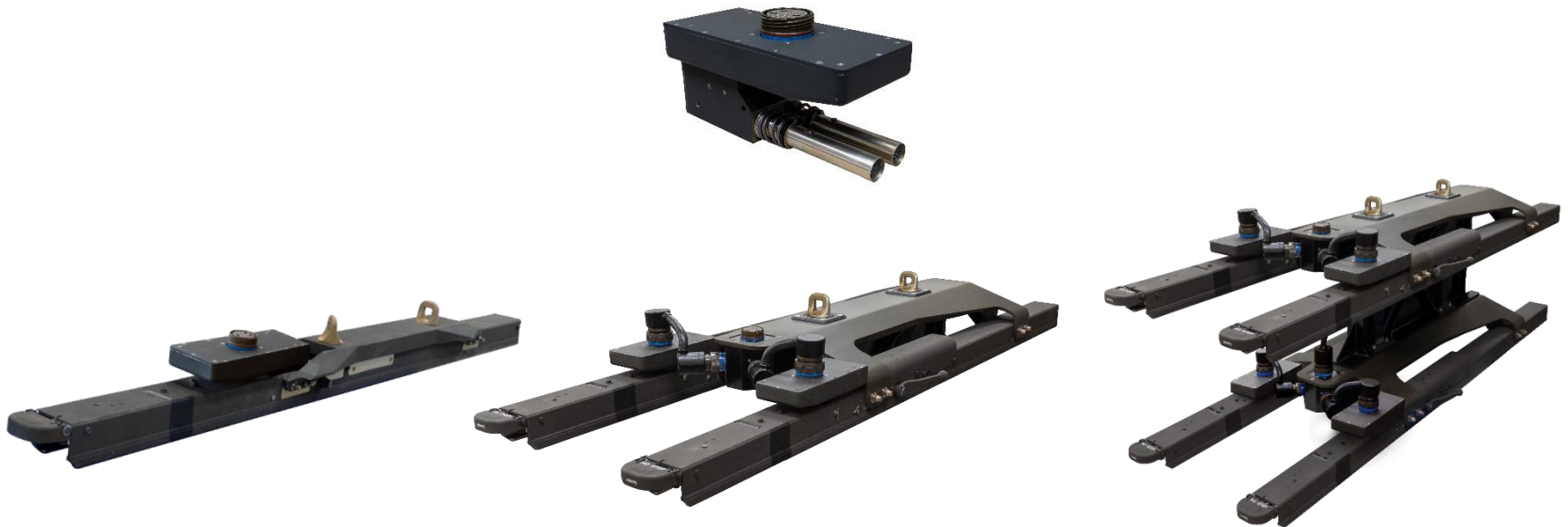
Test Equipment



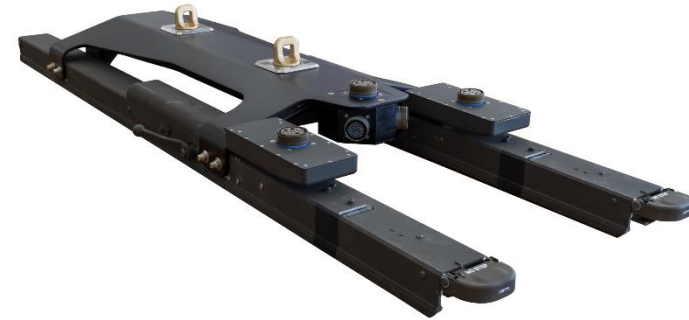
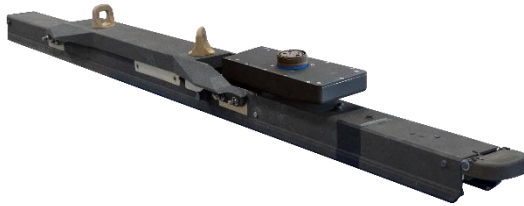
Hellfire Scalable Rail Launcher (HSRL): Overview



- The Hellfire Scalable-Rail Launcher (HSRL) provides single- and multi-rail launch capability for AGM-114 missiles without the need for external electronics or AC power
- The launcher electronics is a small MIL-STD-1760 based electronics assembly called the **Rail Electronics Unit (REU)**



- HSRL is a Hellfire System enabler. As a lightweight scalable Hellfire launcher with small, distributed electronics, the HSRL enables integration of the Hellfire missile onto many platforms including:
 - Canister-launched Hellfire (shipboard application)
 - Light UAS and other DC-only platforms



- HSRL provides the following features/capabilities:
 - MIL-STD-1760 interface (same API as M299 launcher)
 - Fully compatible/compliant with the '599 & '273 ICDs
 - Operates from 28VDC sources only (DC1/DC2)
 - Multiple adapters available to create single and multi-rail configuration that attach to standard carriage equipment

- Platform Interface: MIL-STD-1760
 - Fully compliant with MIL-STD-1760 for Mission Stores (same as M299 launcher – simplified integration)
 - Uses only 28V DC #1 and 28V DC #2 (115VAC and 270VDC are not used)

- Missile Interface:
 - Full support to all Hellfire missiles (including Longbow and Romeo) except for Hellfire I (AGM-114A/B/C)
 - Software upgradeable to JAGM
 - Works with either M299 or MM299 rails

- Significant weight reduction compared with any other solution:
 - Single-Rail HSRL: ~16.5lb
 - Twin-Rail HSRL: ~44lb
 - Increased range or Time Over Station or ability to carry additional missiles for light UAS platforms

MTS-3060A SmartCan™ Universal O-Level Armament Test Set For All Armed Systems

























- **The only handheld O-level test set that provides MIL-STD-1760 bus functionality active testing** (communication, arming, and release) beyond continuity and stray voltage **ensuring mission readiness before Smart munitions are uploaded**
- Provides flightline **test and troubleshooting** capabilities for today's legacy and Smart weapons
- The MTS-3060A is hand-held, repairable, and powered by **6 standard AA batteries**
- Capable of loading **multiple aircraft into a single SmartCan**, e.g., AH-64, F-16, F-15, B-2, MQ-9, 5th Gen, etc.
- ***Certified by Lockheed Martin Aeronautics and USAF on the F-16; SERD: 75A77***
- **NSN: 4920-01-603-7105**



Global SmartCan Deployment:

- 19 Countries
- 14 platforms



	ME & A	Americas	Europe	Asia
F-16				
F-15				
T-50/FA-50				
F/A-18				
Hawk				
F-5				
P-1/P-3				
LCA				
UAS				
AH-64				
Air Defense				

Deployed MDS

- F-16
- F-15
- F/A-18
- T-50/FA-50
- F-5
- Hawk
- Tejas LCA
- P-1 / P-3
- AH-64
- A-10
- UAS
- Air Defense

Available

- F-35
- F-22 / NGAD
- B-1
- B-2
- B-21
- B-52
- ANY Armed Platform



Deployed Munitions

- AIM-120
- AGM-65
- AIM-7
- AIM-9L/M/X
- Hellfire
- 1760 Weapons (i.e. JDAM)
- Harpoon
- HARM
- Python / Derby
- IRIS-T
- A-Darter
- Taurus

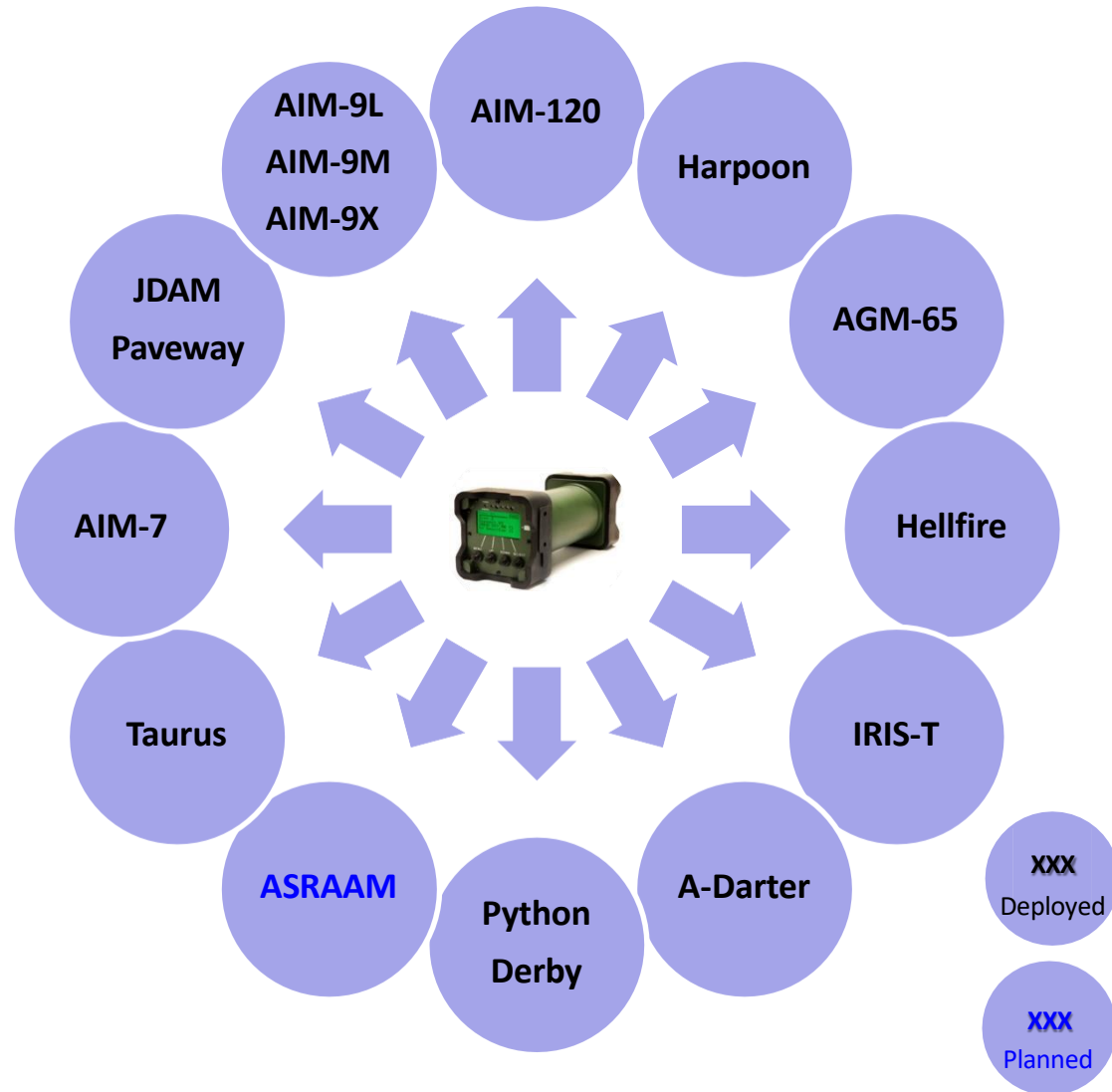
Planned

- ASRAAM
- Many More!

**The ACE and Mission-Ready Airmen Enabler
All Armament, All Platforms**

■ Universal Test Solution:

- Unlike the other Hellfire testers, the SmartCan is universal and supports many other U.S. and non-US weapons systems
- The SmartCan is deployed in 19 countries on 15 platforms including fixed-wing, rotary-wing, UAS, and air defense systems



	Test Time (min)		Setup (min)	Weight (lbs)
	Pylon with MIL-STD-1760	LAU-129		
MTS-3060A SmartCan	3	4	4	4.2
Current F-16 Test Set	20	35	45	83.8
Improvement w/MTS-3060A SmartCan	85%	89%	91%	95%

Table 1. MTS-3060A SmartCan Test Time and Test Set Weight Reduction

- Total maintenance and training cost yearly ***savings per MDS approximately \$12M***

Legacy
O-Level
F-16 & F-15
test sets



SmartCan
kit for
F-16 & F-15

■ Built-In Test (BIT)

- Provides health check of major internal assemblies

■ Self-Test

- Basic and comprehensive self-test of the SmartCan™ and cables

■ Calibration

- Built-in precision references allow a **4 year calibration cycle**
- Calibration verification on the flightline with DMM or at PMEL



■ Test Data

- **Automatically saved** by the SmartCan after each test is complete

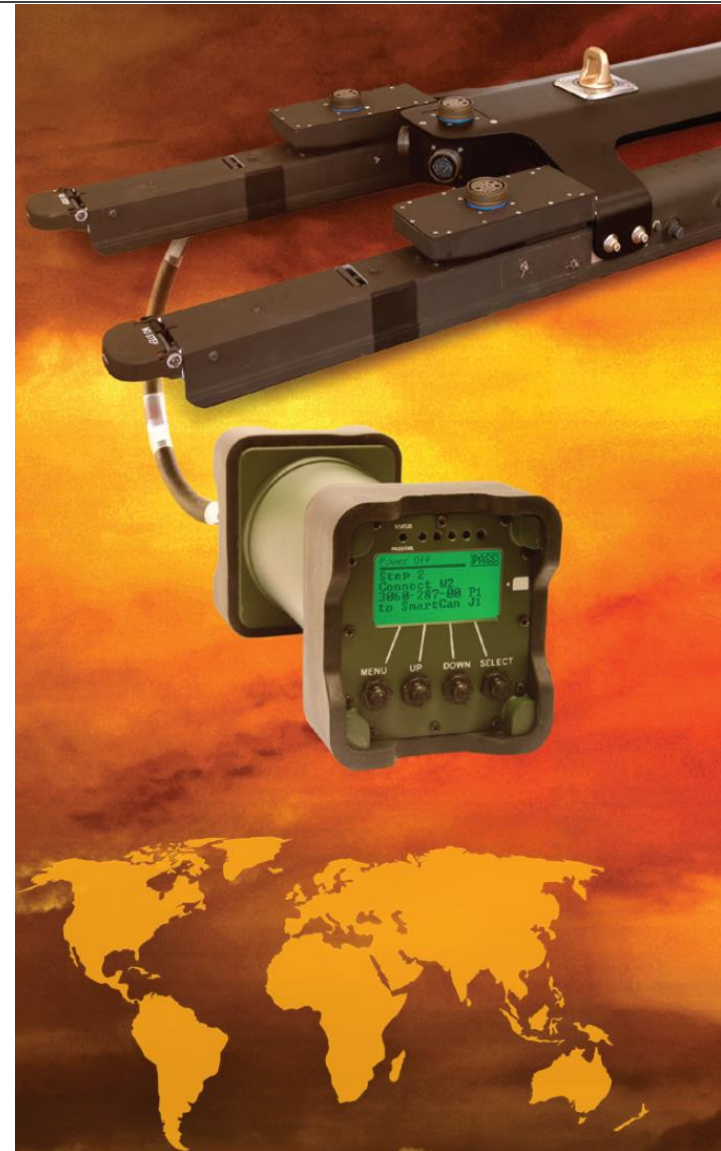
■ Test Logs

- Can be viewed during and after each test run
- Can be downloaded for additional **diagnostics, trend analysis, training, and predictive maintenance**

.....			
Task 4 : Video Tests			
.....			
Test 1 : Video On			
Mask	00000001h	Result	00000001h Ref 00000001h PASS
Test 2 : Missile Activate			
Min	22	Res	35.100 V Max 37 PASS
Test 3 : Dome Rel Volt			
Min	5	Res	18.052 V Max 32 PASS
Test 4 : Dome Rel PW			
Min	50	Res	64 mS Max 105 PASS
.....			
Task 5 : Tracking Mode			
.....			
Test 1 : Polarity COH			
Min	-0.500	Res	0.082 V Max 0.800 PASS
Test 2 : Polarity HOC			
Min	2.700	Res	4.743 V Max 5.500 PASS
Test 3 : Track Command			
Min	2.700	Res	5.160 V Max 5.500 PASS
Test 4 : Align Command			
Min	2.700	Res	5.164 V Max 5.500 PASS

MTS-3060A SmartCan and HSRL

- Integrated by design and deployed globally
- The SmartCan and HSRL are mission ready today to support your toughest deployments and enable armament maintainers to deliver resilient logistics, in contested environments
- The SmartCan pricing is already listed in NSAP and GSA catalogs and supporting the ANG and many more warfighters
- HSRL available via FMS or DCS and being delivered today globally



Thank you for joining!

