

Maverick LAU-117 Dual-Mode Launcher

Providing Full Capability for Analog or Digital Interface



Maverick LAU-117 Dual-Mode Launcher adds digital performance, while maintaining legacy analog system capability.

Benefits

- Enables Maverick capability with all MIL-STD-1760 aircraft
- Maintains capability with legacy interface platforms
- Significantly reduces aircraft integration risk
- Backward compatibility with all current Maverick aircraft and configurations

Dual-Mode Launcher

Raytheon Missile Systems, working together with EDO Corp.'s MTech business unit, has developed a digital upgrade to the existing Maverick LAU-117 family of launchers. This initiative, jointly funded by Raytheon and EDO Corp., was driven by the emerging market of MIL-STD-1760 aircraft including the Japanese Maritime Patrol Aircraft, the U.S. Air Force A-10 precision engagement upgrade, and the Joint Strike Fighter. The Raytheon Missile Systems and EDO Corp. team has completed qualification of the Dual-Mode Launcher (DML).

Dual-Mode Launcher

The Maverick (AGM-65) LAU-117 DML is an upgrade of the current LAU-117 family of launchers that adds the capability of interfacing with MIL-STD-1760 aircraft platforms while maintaining compatibility with the legacy analog interface platforms.

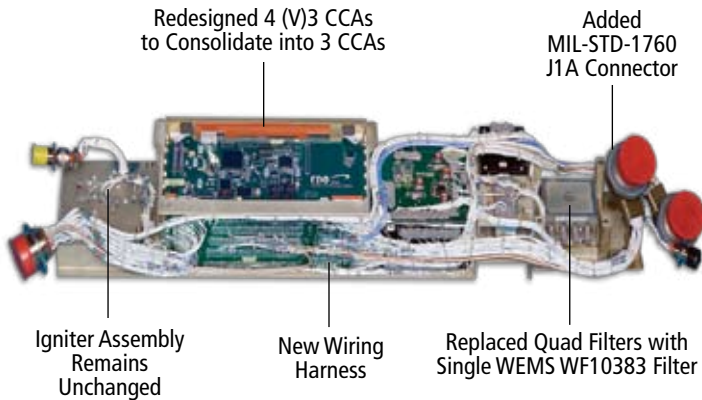
This is accomplished within the circuitry of the launcher electronics assembly, which maintains the same physical characteristics of its predecessor, offering both legacy and MIL STD 1760 connectors to flight line personnel for seamless aircraft installation.

The DML accomplishes integration of MIL-STD-1760 operation with existing functions at a system level rather than using an add-on approach. Commands using the 1760 interface are treated exactly like inputs from the Maverick legacy interface and directly translate into corresponding missile inputs. Operation of the DML in the analog mode is transparent to users and controlled internally by software rather than relays, discrete logic and application-specific integrated circuits.

Several advanced features are available when operating the DML in the 1760 mode.



Maverick LAU-117 Dual-Mode Launcher



- **Real-Time BIT Feedback** — results of the launcher Periodic Built-In Test (PBIT) operations are available over the 1553 data bus. BIT results are also recorded in the DML, even for legacy mode operation and are available for post-mission download using the MIL-STD-1760 mass data transfer protocol.
- **Enhanced Data from the Missile** — information about the internal state of the missile appearing as bar coded data on the video display is available for some Maverick variants. The DML decodes this data, makes it available over the 1553 data bus, and provides real-time feedback to the operator regarding the quality of specific missile operations.
- **Mission Data/video Recording** — the missile video is recorded into DML memory using a 5-second circular buffer. The entire Maverick power-on time till launch or power-off data is recorded internally in the launcher. Post-mission download of

this video and data is available using the MIL-STD-1760 mass data transfer protocol.

- **Launcher Software Update** — launcher software can be updated in the field using MIL-STD-1760 test equipment.
- **RS-170 Compliant Video** — the DML converts the Maverick video, frame by frame, into a video signal that is compliant with the RS-170 standard. Up to 16 frames of video will be stored for upload via MIL-STD-1553 or video display.

Portable Stores Management System

The Raytheon Missile Systems and EDO Corp. team has developed a concept for streamlining the integration of AGM-65 Maverick missiles on fixed wing and rotary aircraft using a ruggedized laptop computer and the DML in MIL-STD-1760 mode only.

The primary goal for pursuing this concept is to reduce the cost of integrating Maverick on new

platforms and offer customers significant flexibility. Potential near-term aircraft for such a system include the P-3 Orion, SH-60 and SH-70 Seahawk, and AS 332 Super Puma.

The concept entails developing a stand-alone system that can be easily installed and removed from aircraft. The laptop would be isolated from all other aircraft systems except for

two analog lines representing horizontal and vertical slave inputs from onboard sensors. The laptop is electrically isolated from the aircraft stores management system. This eliminates the requirement for extensive EMI/EMC testing to qualify the system on each platform. In addition, laptop integration does not require any operational flight program changes.



Raytheon Company
Missile Systems
 Strike Weapons
 P.O. Box 11337
 Tucson, Arizona
 85734-1337 USA
 520.663.7827 phone
 520.663.7755 fax

www.raytheon.com

Raytheon

Customer Success Is Our Mission