Weapon Data Link Improved Data Modem

TACFIRE, AFAPD, MIL-STD-188/220/VMF

IDM Technical Summary

The IDM interfaces to existing voice radios in military aircraft/manpacks/etc. to transmit and receive digital data. Designed to "communicate with anything", IDMs support a wide range of protocols and are offered in a variety of form factors for easy integration into systems with limitations in space, power and cooling.

The IDM supports multiple channels (radio interfaces) so only one IDM is required to provide the data link capability to multiple radios. The IDM maintains a "radio database" that provides the flexibility to handle all different types of radio interfaces (analog/digital) as well as cryptographic equipment such as KY-58 and KY-100s. The use of the IDM is being expanded to cover Weapons data links, where the ordinance contains radio/IDM hardware, and receives target update messages, while providing status/instrumentation.

IDM Overview

In 2001, Aeronix partnered with Symetrics Industries to develop the Improved Data Modem (IDM) 501/IDM Junior™, VPIDM, and Mini IDM suite of tactical data link products. Our IDMs are being integrated and deployed in a variety of military applications worldwide. Through this partnership, Aeronix has taken an active leadership role in the Combat Net Radio Working Group (CNRWG) to ensure interoperability of your MIL-STD-188-220/MIL-STD-2045-47001-based Tactical Data Link (TDL).

AERONIX SYMETRICS INDUSTRIES

WDL IDM™

Designed to modernize legacy unguided weapons as well as provide a Tactical Data Link (TDL) for emerging Network Enabled Weapons, the WDL IDM™ combines the data link capability of the Mini IDM with a UHF/VHF radio in one Line Replaceable Unit (LRU). The WDL IDM™ provides customers with a low cost solution ideal for integration into Network Enabled Weapons. By combining a UHF/VHF radio and TDL modem into a single LRU, programs save on both non-recurring design and integration costs, recurring maintenance and logistics costs, and significant space and weight in the weapon. The WDL IDM™ is fully interoperable with existing UHF/VHF radios and the entire line of Symetrics/Aeronix IDM Family products.

Mini IDM Module

The Mini IDM is designed as a "low-cost" data link for air-launched munitions and for UAV applications where a lightweight, low-power, extremely small LRV can be integrated. The modem electronics are designed to PC/104 mechanical form factor for rapid integration into existing customer PC/104-based LRUs.

IDM Tactical Data Link Applications

MIL-STD-188-220/VMF, TACFIRE, AFAPD

On the Tactical Data Link (TDL) side, the IDM supports multiple over-the-air waveform protocols.

Aeronix/Symetrics IDMs implement TACFIRE, AFAPD, and 188-220/VMF protocols. The design provides protocol configurability on a per-channel basis (including 188-220 variants) thus providing the ideal participant in gateway solutions.

Our 188-220/VMF software solution is easily ported to other platforms, including JTRS and SCA-compliant systems.

VMF Intelligent Parser Technology™

Aeronix created the *VMF Intelligent Parser (VIP) Technology*™ that provides its IDM customers rapid-development VMF message encoding/decoding toolkit solutions in either C++ or Ada.

IDM Workbench™

Aeronix also authored this powerful Windows application that provides a wide range of IDM I&T capabilities, including full-scale, VMTL™ script-based, regression testing of your VMF host application.

WDL IDM™ Solution SPECIFICATIONS

Operating Range	-40°C to 71°C
Dimensions	5.25 x 5.75 x 3.25 in
Weight	3lb 3oz (1.45 kg)
Power	<40 Watts @ 28 VDC
Reliability	5000 Hours MTBF
Memory & Storage	64 MB SDRAM, 4 MB SRAM, 256 KB EEPROM, 32 MB FLASH
Radio Interfaces	SMA
Frequency	310-400 MHz, 25 KHz Channels
Host Interface	RS-232/RS-422 or Ethernet
Transmit Power	5 Watts
Noise Figure	5 dB

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