

# Improved Data Modem & Tactical Data Links

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

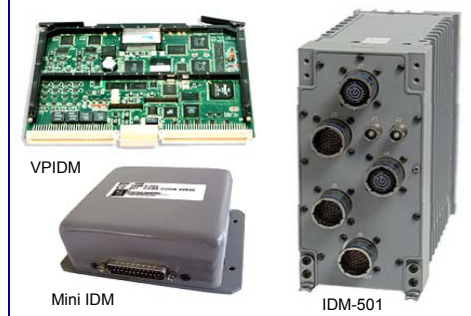
## IDM Technical Summary

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 ordnance 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).



**IDM Form Factors Available**

## IDM-501 (IDM Junior™)

Designed for fighter/attack aircraft and helicopters, the IDM-501's primary host interface is MIL-STD-1553, It also provides a serial interface. The IDM-501 contains four independent radio channels, and has spare card slots to provide room for additional capability such as PRISM imagery. It can be hosted as a single card in another aviation box.

## VPIDM Module

Designed for applications with space limitations, the VPIDM module fits into any 6U VME-bus-based LRU. Its standard configuration supports two radio channels and PRISM imagery capability. A daughter card can be placed on the VPIDM to add two additional IDM radio channels.

## 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.

## IDM Solution SPECIFICATIONS

	IDM 501	VP IDM	MINI IDM
<b>Operating Range</b>	-40°C to 71°C	-40°C to 71°C	-40°C to 71°C
<b>Dimensions</b>	7.42 x 3.59 x 8.82 in	9.18 x 6.29 x 0.6 in	4.25 x 4.25 x 1.85 in
<b>Weight</b>	8.5 lb (3.8 kg)	1 lb (0.45 kg)	1lb (0.45 kg)
<b>Power</b>	13 Watts at 28 VDC	7 Watts (5VDC, -5 VDC, 12 VDC, -12 VDC)	4.2 Watts @ 28 VDC
<b>Reliability</b>	5000 Hours MTBF	5000 Hours MTBF	5000 Hours MTBF
<b>Memory &amp; Storage</b>	256 Mb SDRAM, 4 Mb SRAM, 256 Kb EEPROM, 32 Mb FLASH	256 Mb SDRAM, 4 Mb SRAM, 256 Kb EEPROM, 32 Mb FLASH, 128 Mb Compact FLASH	256 Mb SDRAM, 4 Mb SRAM, 256 Kb EEPROM, 32 Mb FLASH
<b>Radio Interfaces</b>	4 Primary Channels <sup>1</sup>	2 Primary Channels <sup>1</sup> 2 Expansion Channels,	1-2 Channels <sup>1</sup>
<b>Video Interface Std/Opt</b>	(Opt) RGB, DEF STAN 00-18, RS-170, RS343, NTSC 525/60, PAL 625/50	(Std) RGB, DEF STAN 00-18, RS-170 RS343, NTSC 525/60, PAL 625/50	(Opt) RS-170, RS343, NTSC 525/60, PAL 625/50
<b>Host Interface</b>	RS-232, RS-422, Mil-Std-1553	Configurable for RS-422 or RS-232	RS-232 or RS-422, Ethernet, USB
<b>Expandability</b>	Spare Slot PRISM Imagery Card Can Be Added	Can Expand Number of Radio Interfaces to 4 Using Mezzanine Card	Optional RS-170, PRISM Imagery Card Can Be Added

<sup>1</sup>Can be configured for Analog (ASK FSK) or Digital (NRZ, ASK, Synchronous or Asynchronous) Interface



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