

## MFDM-2 Multi-Function Digital Module-2

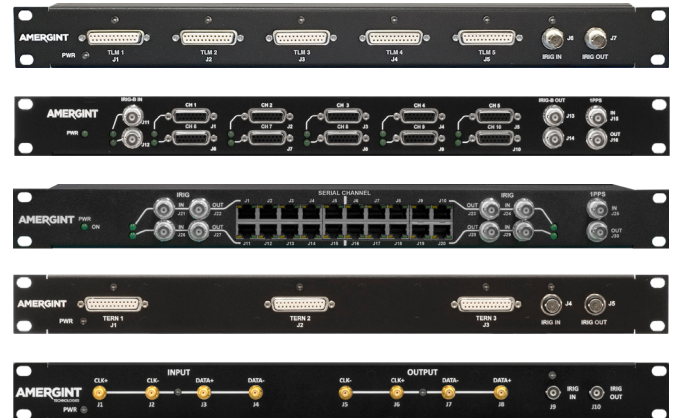
Serial interface and data processing

RS-422 and TTL I/O

Customizable for non-standard interfaces

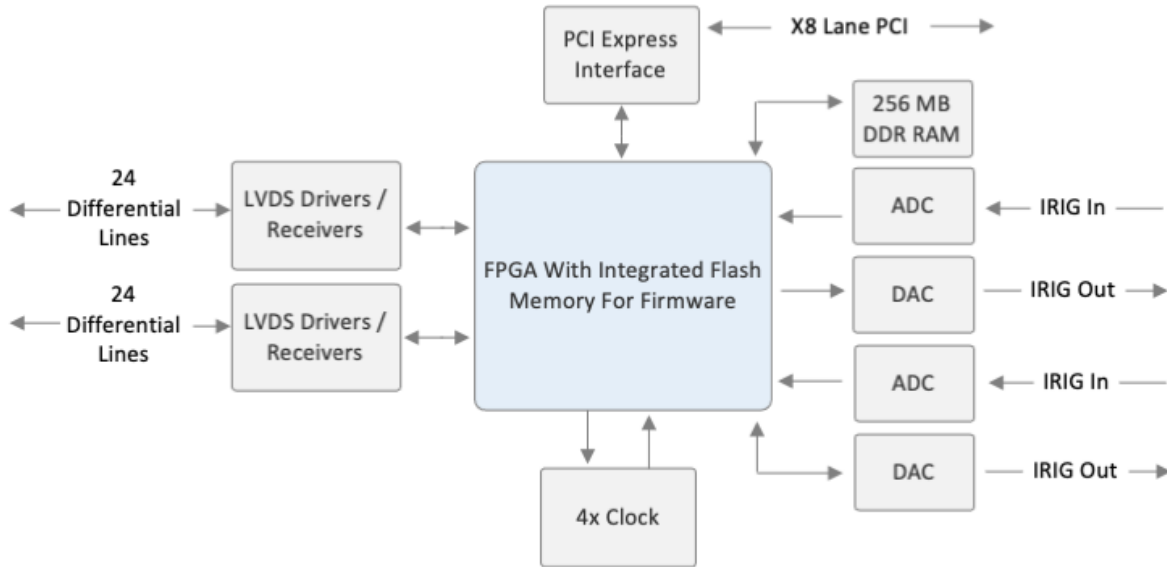
## FEATURES

- » **Capabilities:** The MFDM-2 provides high-density input/output (I/O) and onboard RAM for enhanced data buffering. Coupled with one of AMERGINT's Hardware I/O Panels (full suite available), the MFDM-2 allows users to connect an AMERGINT system to a variety of different serial interfaces (e.g., serial switches, modems, network gateways, and COMSEC devices) and electrical signals (e.g., TTL, RS-422, ECL, and LVDS).
- » **Standalone PCIe Card:** The MFDM-2 is a low-profile PCIe x8 Lane card.
- » **Physical Interfaces:** The MFDM-2 hosts two VHDCI connectors, with 12 differential LVDS pair inputs and outputs, 1 pps input and output, IRIG-B input, and IRIG output on each connector.
- » **Onboard Memory:** The MFDM-2 is equipped with 256 MB of DDR RAM for enhanced data buffering and program usage.
- » **Satellite Interface Processor:** Telemetry and command processing are fully supported, with the MFDM-2 providing synchronous and ternary input/output, IRIG input with time processing, and integrated Tx/Rx BERTs.
- » **Serial Protocol:** Process multiple serial interfaces with support for a wide range of protocols.
- » **Software Extensions:** AMERGINT applications (aka Apps) for record, playback, AFSCN C/C/S, EXU, USB commanding, telemetry frame synchronization, mux/demux, and CCSDS processing are available for use with the MFDM-2 to extend capabilities.
- » **Hardware I/O Panels:** The MFDM-2 connects to our suite of rack-mount I/O Panels, creating an interface to equipment that uses a variety of serial data interfaces and electrical signals. Panels include 5-TLM, 10-TLM, 20-TLM, 3-TERN, ECL, and many more.



\*Custom I/O options and panels are available.

## BLOCK DIAGRAM



## SPECIFICATIONS

Key Functions	Specifications
Input	Up to 24 differential signals
Output	Up to 24 differential signals
Two IRIG Inputs	AM IRIG IRIG-B DC Level Shift IRIG via TTL Line
External Reference	5 - 100 MHz sine wave 1 Vpp min 5 Vpp max
FPGA	Altera Arria V
Other	Integration with AMERGINT SOFTLINK® architecture

Circuits	Specifications
Four Clock Generators	0.1 - 250 MHz
Two DACs	Output for optional AM-IRIG output
Memory	256 MB of DDR RAM
I/O Panels	5 RS-530 DB25 TLM Channels 3 Ternary, 2 CMD Channels 20 RJ-45 TLM Channels 5 TTL BNC TLM channels 2 ECL TLM Channels 10 DB15 TLM Channels  Custom Panels Upon Request

Physical/Environmental	Specifications
Dimensions	Half height PCI-Express (174 mm x 53.9 mm)
Power	3.3 V @ TBA 12 V @TBA
Temperature	5-30°C operating 0-35°C non-operating
Humidity	< 90% non-condensing

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