

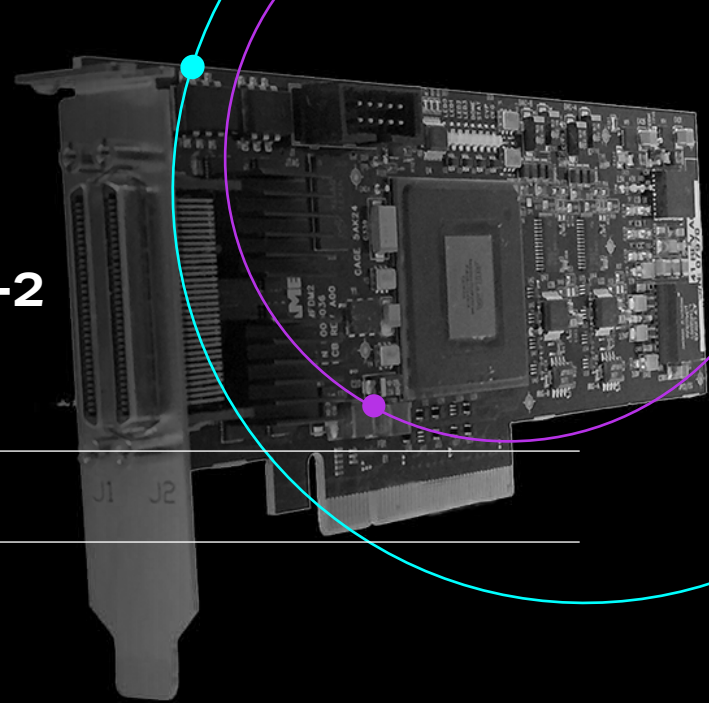
# MFDM-2

## 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 our Hardware I/O Panels (full suite available), the MFDM-2 allows users to connect an ARKA 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:

SOFTLINK® applications (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.

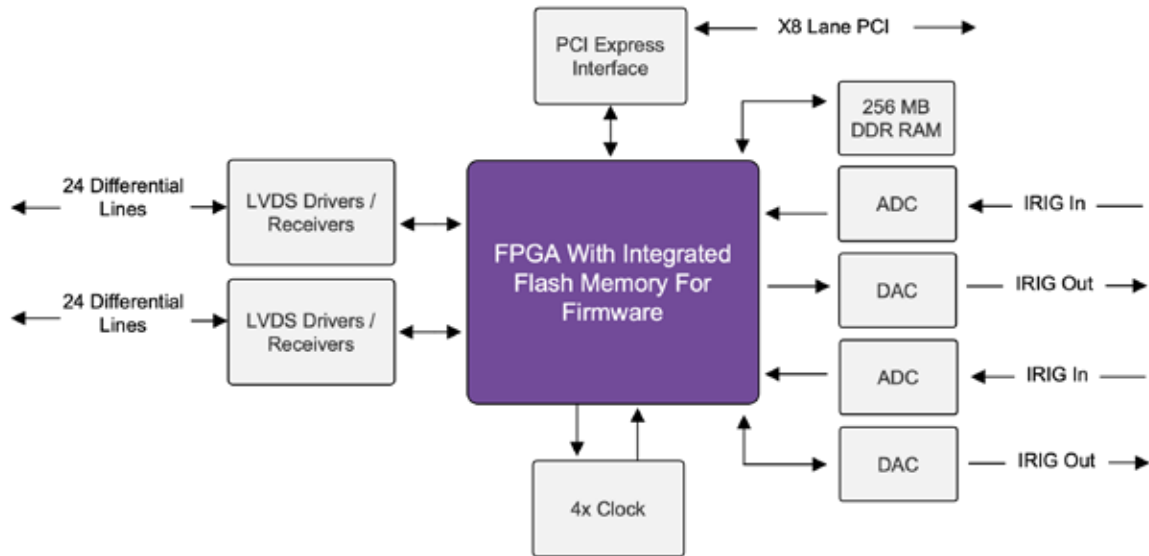
#### HARDWARE I/O PANELS:

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

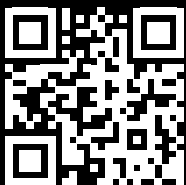


## SPECIFICATIONS

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 4 Vpp max
FPGA	Altera Arria V
Other	Integration with 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



### FOR ADDITIONAL INFORMATION:

2315 Briargate Pkwy., Suite 100  
Colorado Springs, CO 80920 USA  
Tel: 719-522-2800 | Fax: 719-522-2810

arka-group-technologies [www.arka.org](http://www.arka.org)

