Serial interface and data processing

RS-422 and TTL I/O Panels

Customizable for non standard interfaces
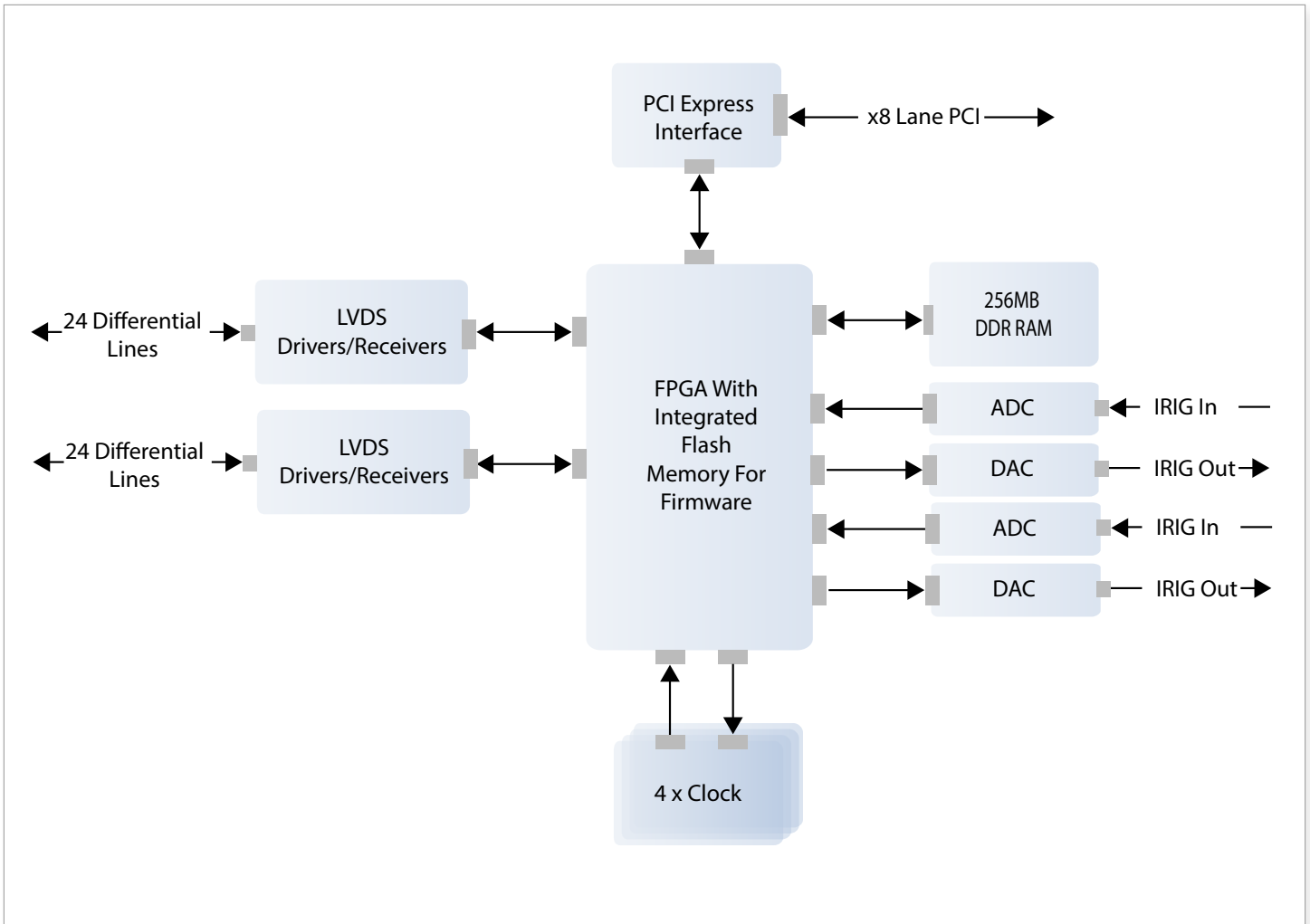
Part of the AMERGINT softFEP™ architecture

SOFT**FEP**™

Multi-Function Digital Module 2

- **Capabilities.** The MFDM 2 supports various serial interfaces using the connected I/O panel. Connect softFEP systems to serial devices such as modems, COMSEC, matrix switches, and communications equipment.

- **Physical Interfaces.** The MFDM 2 provides two VHDCI connectors with twelve differential LVDS pair inputs and outputs, 1 pps input and output, IRIG-B input, and IRIG output on each connector.

- **On Board Memory.** The MFDM 2 is equipped with 256MB of DDR RAM for enhanced data buffering and program usage.

- **Format.** The MFDM is a low-profile PCI-Express x8 Lane board.

- **Satellite Interface Processor.** Telemetry and command processing are fully supported, with the MFDM 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.

- **Firmware/Software.** softFEP applications 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.

INNOVATIVE • ADVANTAGE

PCI Express Interface → x8 Lane PCI

24 Differential Lines — **LVDS Drivers/Receivers**

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FPGA With Integrated Flash Memory For Firmware

256MB DDR RAM

ADC ← IRIG In

DAC → IRIG Out

ADC ← IRIG In

DAC → IRIG Out

4 x Clock

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 softFEP architecture

Circuits	Specifications
Four Clock Generators	0.1 - 250MHz
Two DACs	Output for optional AM-IRIG output
Memory	256 MB of DDR RAM
I/O Panels	5 RS-530 DB25 TLM Channels 1 Ternary, 2 RS-530 DB25 TLM Channels 20 RJ-45 TLM Channels (Requires 2 MFDM 2 Modules) 50x50 RJ-45 TLM Matrix Switch 5 TTL BNC TLM channels Custom Panels Upon Request

Physical/Environmental	Specifications
Dimensions	Half height PCI-Express (174mm x53.9mm)
Power	3.3v @ TBA 12V @TBA
Temperature	5-30°C Operating 0-35°C Non-Operating
Humidity	< 90% Non-Condensing