

Serial interface and data processing

RS-422 and TTL I/O

Customizable for non standard interfaces

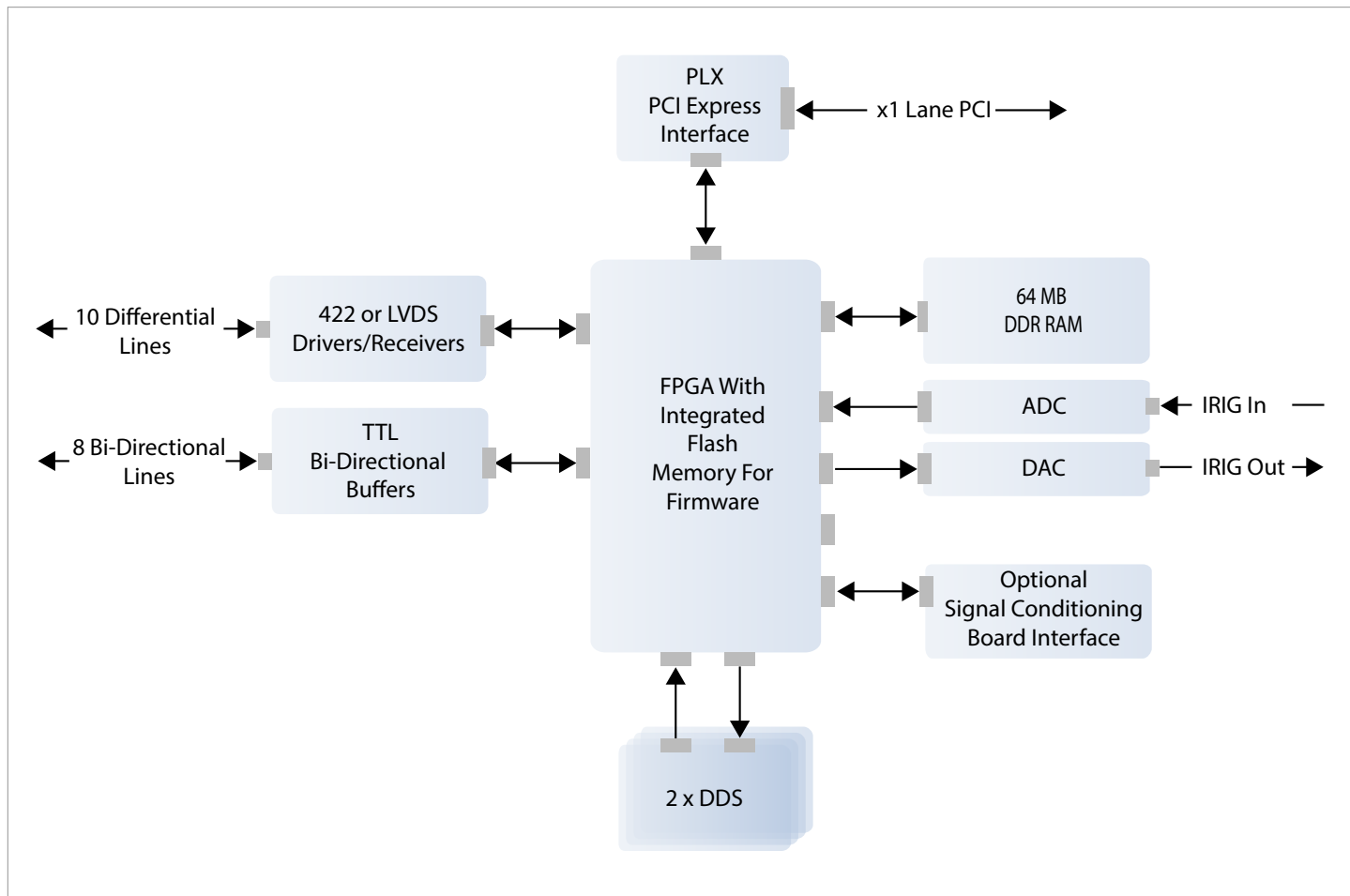
Part of the AMERGINT softFEP™ architecture

SOFTFEP™

Multi-Function Digital Module

- **Capabilities.** The MFDM supports RS-422 and TTL serial interfaces. Connect softFEP systems to serial devices such as modems, COMSEC, matrix switches, and communications equipment.
- **Physical Interfaces.** The MFDM provides two HD-26 D-sub connectors with ten differential RS-422 pair input and outputs, eight TTL lines, one SMB connector for IRIG-B input, and one SMB for IRIG output.
- **On Board Memory.** The MFDM is equipped with 64MB of DDR RAM for enhanced data buffering and program usage.
- **Connectors.** Two board-to-board header connectors are provided for synchronization between MFDMs.
- **Format.** The MFDM is a PCI-Express x1 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.

Multi-Function Digital Module MFDM



Key Functions	Specifications
Input	Up to 10 differential signals
Output	Up to 10 differential signals
RS-232	2 headers (Internal use only)
TTL	8 lines (input or output)
IRIG Input	AM IRIG IRIG-B DC Level Shift IRIG via TTL Line
External Reference	5 - 100 MHz sine wave 1 Vpp min 5 Vpp max
Internal Interface	2 2x10 board-to-board headers (Signal Conditioning board Interface)
FPGA	Xilinx Spartan-3
Other	Integration with softFEP architecture

Circuits	Specifications
DDS	Up to 50 MHz for RS-422 Up to 150 MHz for LVDS
DAC	Output for optional AM-IRIG output
Memory	64 MB of DDR RAM
Options	DAC for optional AM-IRIG output
Signal Conditioning Board Options	Single Channel ECL with differential clock and data I/O Four channel A-to-D capture with 5 MHz bandwidth per channel (Center frequency 0-400 MHz) 5 channel TTL converter panel

Physical/Environmental	Specifications
Dimensions	Full height PCI-Express (174mm x 89.53mm)
Power	3.3v @ 0.1 A 12V @ 1.08 A
Temperature	5-35°C Operating 0-40°C Non-Operating
Humidity	< 90% Non-Condensing