

# FM780 Virtex-7™ XMC

## With user definable memory & I/O

The very versatile FM780 is a high-performance Xilinx Virtex-7™-based XMC industry standard VITA 42.3 compliant module. The FM780 has been designed to be a multi-function high-performance digital signal processor. The Virtex-7™ FPGA device available on-board is user-programmable and can be used for the implementation of high-end signal processing algorithms. Based on customer requirements, front-panel I/O modules may be added to enable the FM780 to perform data acquisition and waveform

generation, high-speed communication, image processing and implement various types of complex DSP applications. In addition to a maximum of 12 GB of on-board DDR3 SDRAM the FM780 offers a variety of memory options such as NAND Flash, QDRII+ SRAM and extra DDR3 SDRAM. Optionally, the user-configurable BLAST™ mounting sites may also be populated with JPEG2000 CODECs or even a customer's specific logic devices or circuit designs. The FM780 is available as a conduction cooled XMC.

### FEATURES:

- Virtex-7 XC7VX485T, XC7VX980T, XC7VX690T, XC7VX1140T
- Gen 1, 2 and 3 PCIe controller, 4 and 8-lane
- 2GB DDR3 SDRAM
- High density Memory Options using BLAST sites: additional DDR3 SDRAM, QDR2+ SRAM, NAND FLASH.
- 1Gbit FPGA configuration on board Flash
- 128Mbit user defined Flash ROM
- VITA 42 and VITA 20 compliant
- Front Panel I/O Daughter Cards for A/D, D/A, Video, digital and optical communication
- Abaco Systems FMC products optionally supported on side 2
- Consult Ordering Information for all options
- Conduction Cooled

ANSI/VITA 47	Air-cooled		Conduction-cooled	
	EAC4	EAC6	ECC1	ECC4
Operating temperature	0C to +55C	-40C to +70C	0C to +55C	-40C to +85C
Storage temperature	-40C to +85C	-50C to +100C	-40C to +85C	-55C to +105C
Humidity	95%	95%	95%	95%
Operating vibration	5Hz to 100Hz PSD = 0.04g <sup>2</sup> /Hz 100 Hz to 1000 Hz PSD = 0.04 gs <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5Hz to 100H PSD = 0.04g <sup>2</sup> /Hz 100 Hz to 1000 Hz PSD = 0.04 gs <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5 Hz to 100 Hz PSD increasing at 3 dB/octave 100 Hz to 1000 Hz PSD = 0.1 g <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5 Hz to 100 Hz PSD increasing at 3 dB/octave 100 Hz to 1000 Hz PSD = 0.1 g <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave
Operating shock	20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	40g, 11 millisecond shock half-sine or 40g, 11 millisecond, terminal sawtooth shock pulses in all three axes	40g, 11 millisecond shock half-sine or 40g, 11 millisecond, terminal sawtooth shock pulses in all three axes
Operating altitude	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft	-1500 ft to 60,000 ft
Conformal coating	Optional	Optional	Optional	Optional

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## Specifications

### Application

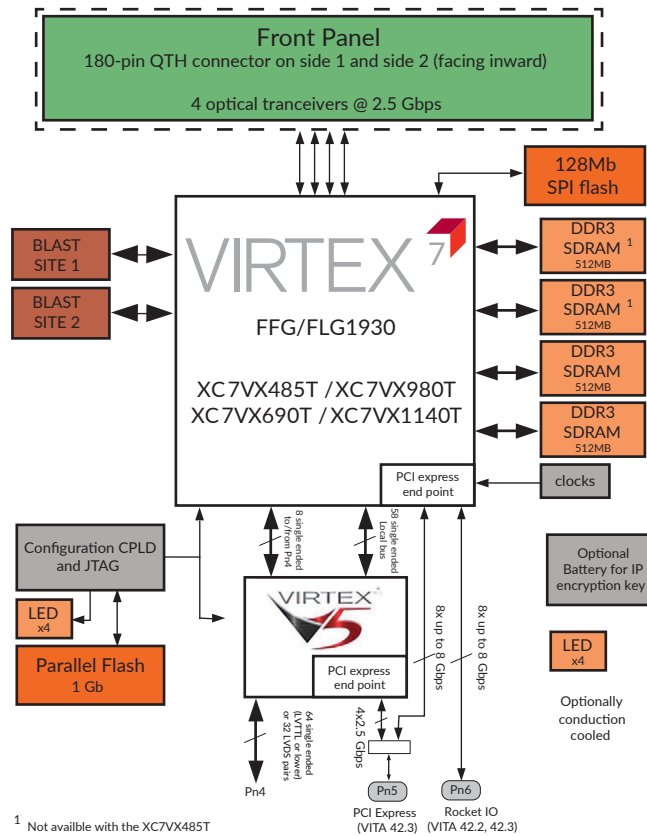
- Software Defined Radio (SDR)
- RADAR/SONAR Image Processor
- Satellite communication systems
- RADAR & Radio Jamming
- JPEG2000 Video Image Processors
- Baseband Communication Transceivers
- Multi-Channel digital receivers
- 32M-point floating-point FFT processing
- Event Processor & Recorder

### Software Support

- Stellar IP available for this product. A simple way to design FPGA firmware with automated code and bitstream generation
- Board control and monitoring tools
- Flash programming utility
- Confidence tests
- Host side API
- Software program example
- Xilinx ISE projects for both FPGA
- Test firmware and VHDL source code
- Drivers for Windows, Linux, VxWorks

AS9100 Certified

## Block diagram



## Ordering information

Talk to us about your algorithmic requirements, Abaco Systems is a full-service firmware and software development house. We are a specialist at high performance FFT and Video Processing. Check with us, we may have IP Cores that meet requirements for your application, right off the shelf.



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