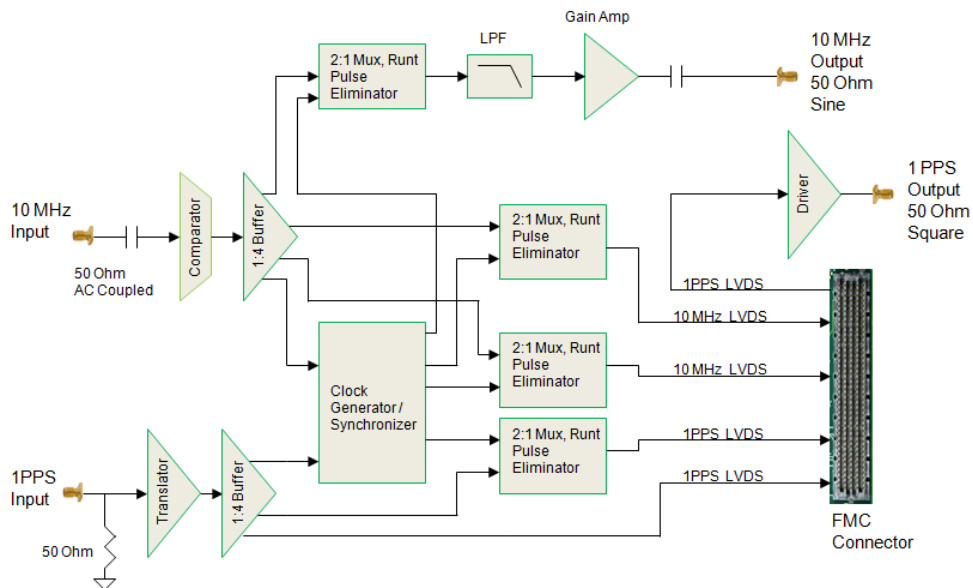


• Applications

- Software Defined Radio
- SATCOM
- Modulation / Demodulation
- Low Power Wireless Mesh
- FMC Carriers
- Wireless
- Fixed Site

10 MHz and 1 PPS Timing Module

The Apogee FMC Timing module receives external 10 MHz and 1PPS references and distributes them to the FMC connector for use by the Carrier. The timing module also re-drives a copy of the 10 MHz and 1PPS back out on SMA connectors for use by follow-on equipment. The module features Runt Pulse Eliminators that prevent any short cycle or “runt” pulses during source switchover. The module also features an Analog Devices AD9548. The AD9548 generates an output clock synchronized to one of up to four differential inputs. The digital PLL allows for reduction of input time jitter or phase noise associated with the external references. The AD9548 continuously generates a clean (low jitter), valid output clock even when all references have failed by means of a digitally controlled loop and holdover circuitry.



Key Specifications— FMC Timing Module

RF Connectors.....	SMA, 50 Ohm
10 MHz Input.....	4 to 13 dBm, 50 Ohm, AC coupled, 50 Ohm Pad
1PPS Input.....	7 to 13 dBm, Direct Couple, 50 Ohm
10 MHz and 1PPS Status.....	Front panel multi-color LEDs, Green for locked, Red is unlocked or not present
Clock Generator/Synchronizer.....	Analog Devices AD9548BCPZ, switchable in or out, readable status
Outputs to FMC Connector.....	x2 Filtered 10 MHz LVDS, x1 Filtered 1PPS LVDS, x1 Direct 1PPS LVDS
10 MHz Output.....	Filtered with output amplifier, 50 Ohm Sine
1PPS Output.....	Driven from a user signal generated on the Carrier, amplified, 50 Ohm Square
Command and Control.....	Via Carrier card control signals (Interface Control Document provided)
FMC Card Form Factor.....	ANSI/ VITA 57.1 FPGA Mezzanine Card (FMC), High Pin Count (HPC)
Environmental.....	0-50C Operation Range (TBD), Humidity 5%–90% Non-condensing



Apogee Applied Research, Inc. provides engineering services and hardware systems to commercial and government end users. Our main area of expertise is ultra high bandwidth Software Defined Radios. Apogee systems feature advanced Digital Signal Processing techniques and the ability to process a wide variety of signal types.

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Our leadership team has over 45 years combined experience in the field of Digital Signal Processing, and a reputation for outstanding customer service long after the sale. We have a proven track record of delivering systems on time and exceeding customer expectations from concept to delivery.

We're on the Web

www.apogee-ar.com

Apogee's Dayton Facility

- **Engineering**
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- **Test**

