Maximize Your RF

800 MHz Instantaneous BW and 3U VPX Compatible

The Sidekiq™ X4 multi-channel RF transceiver card introduces a new level of RF integration and capability, reducing product development times and improving wideband range, versatility, and performance. Integrating two Analog Devices’ ADRV9009 wideband transceivers, Sidekiq X4 creates a very flexible, high capacity RF transceiver solution that resides in VITA 57.1 FPGA Mezzanine Card (FMC) compliant form factor. These features, along with multi-band pre-select filtering on each of the four receive paths, facilitate the development of complex RF solutions and applications such as:

- Satellite Communications
- Digital Radio Frequency Memory (DRFM)
- EW/EA Systems
- Wideband RF Record and Playback
- Spectrum Monitoring
- 5G Cellular Systems
- 802.11 AC/AX Systems
- Direction Finding

KEY FEATURES

- Configurable RF channel bandwidth up to 200 MHz per channel, for support of up to **800 MHz instantaneous bandwidth** (IBW)
- **3U VPX** and PCIe3/Thunderbolt™ 3 deployment options available with COTS carriers
- Operates in four-channel phase coherent mode for 200 MHz IBW per channel or in a dual-independently tunable mode supporting 400 MHz IBW per channel
- **Four RF transmitters** (phase coherent or two phase coherent pairs)
- Continuous RF range between **1 MHz and 6 GHz**
- Exceptional dynamic range with **16-bit A/D** and **14-bit D/A** converters
- VITA 57.1 FPGA Mezzanine Card (FMC) with high pin count (HPC) interface
### RF RECEIVER SPECIFICATIONS

**Number of Receivers**
Four channels as: phase coherent, two phase coherent pairs or dual high bandwidth

**RF Tuning Range**
1 MHz to 6 GHz

**RF Tuning Step Size**
< 5 Hz

**RF Channel Bandwidth**
Up to 200 MHz (configurable to 400 MHz in dual high bandwidth mode)

**Typical Rx Noise Figure**
8 dB

### RF TRANSMITTER SPECIFICATIONS

**Number of Phase Coherent Transmitters**
Four channels as: phase coherent or two phase coherent pairs

**RF Tuning Range**
1 MHz to 6 GHz

**RF Channel Bandwidth**
Up to 200 MHz

**Typical RF Output Power**
Up to +5 dBm

**Max D/A Sample Rate**
245.76 Msamples/sec

**D/A Converter Sample Width**
14 bits

**RF Tuning Step Size**
< 5 Hz

### BLOCK DIAGRAM

![Block Diagram Image]

### DIGITAL SPECIFICATIONS

**A/D and D/A interface to Host System**
JESD204b

**Additional I/O from Host**
I2C + singled-ended GPIO

**PPS Input**
Direct to host system FPGA (for timestamping)

**10 MHz Reference Input**
For phase locking card to external system

### MECHANICAL SPECIFICATIONS

**Form Factor**
VITA 57.1 High Pin Count FPGA Mezzanine Card (FMC)

**Thermal Management**
Convection cooled (conduction option on request)

**Typical Power Consumption**
7 - 14 Watts (depending on # of channels in use)

**Component Temperature Rating**
-40 to +85 degrees C

**RF Connector Options**
MMCX, SSMC and SMP

For more information about Sidekiq X4 and the available Development Kit options, please contact Epiq Solutions.

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Epiq Solutions is a small business dedicated to advancing RF technology through products designed and manufactured in the U.S.A.