



# Sidekiq™ X4

High Bandwidth, Multi-Channel RF Transceiver in a VITA 57.1 (FMC) form factor for Advanced Solutions







## MAXIMIZE YOUR RF

### 900 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 HIGHLIGHTS

- 
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 450 MHz IBW per channel
- 
Four RF transmitters (phase coherent or two phase coherent pairs)
- 
Continuous RF coverage 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



Sidekiq VPX400 configuration option

Sidekiq X4 housed in a Thunderbolt 3 chassis



For more information about Sidekiq X4 and the available Development Kit options, please contact [sales@epiqsolutions.com](mailto:sales@epiqsolutions.com).

## RF RECEIVER SPECIFICATIONS

### NUMBER OF RECEIVERS

- Four channels as: phase coherent, two phase coherent pairs or dual high bandwidth

### RF TUNING RANGE

- 70 MHz to 6 GHz

### RF TUNING STEP SIZE

- < 5 Hz

### RF CHANNEL BANDWIDTH

- Up to 200 MHz (configurable to 450 MHz in dual high bandwidth mode)

### TYPICAL RX NOISE FIGURE

- 8 dB

### TYPICAL INPUT IP3 (AT 8 dB NOISE FIGURE)

- +8 dBm

### MAX A/D CONVERTER SAMPLE RATE

- 500 Msamples/sec

### A/D CONVERTER SAMPLE WIDTH

- 16 bits

### RX GAIN MODES

- Manual or automatic (AGC)

### PRE-SELECT FILTER

- Seven bandpass RF filters on each RF receiver

## RF TRANSMITTER SPECIFICATIONS

### NUMBER OF PHASE COHERENT TRANSMITTERS

- Four channels as: phase coherent or two phase coherent pairs

### RF TUNING RANGE

- 70 MHz to 6 GHz

### RF CHANNEL BANDWIDTH

- Up to 450 MHz

### TYPICAL RF OUTPUT POWER

- Up to +5 dBm

### MAX D/A SAMPLE RATE

- 500M samples/sec

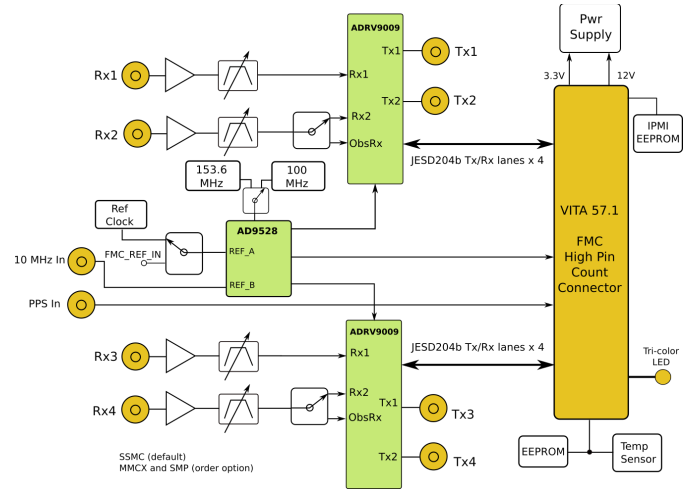
### D/A CONVERTER SAMPLE WIDTH

- 14 bits

### RF TUNING STEP SIZE

- < 5 Hz

## BLOCK DIAGRAM



## 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

## 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

Specifications subject to change without notice.

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

Epiq Solutions exports its products strictly in accordance with all US Export Control laws and regulations which shall apply to any purchase or order.



12.16.24