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/ThunderboltTM 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.

Rev 1.0

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

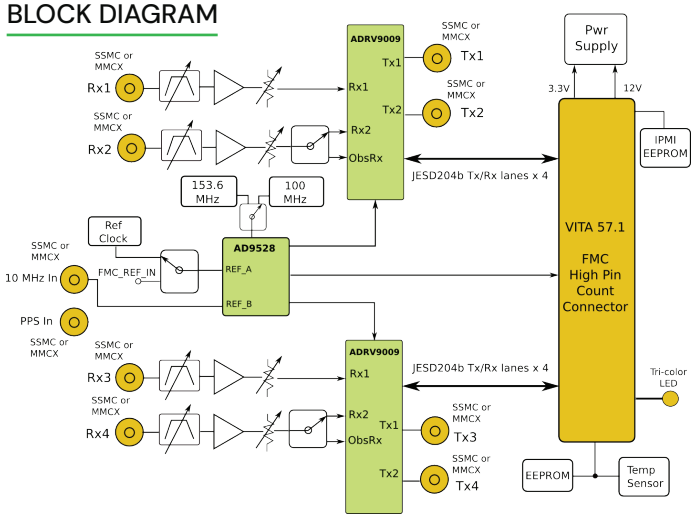
TYPICAL RF OUTPUT POWER
- Up to +5 dBm

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.

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