

Sidekiq™ NV100

Wideband RF transceiver in M.2 2280 Key M form factor with FPGA and GPSDO

EXCEPTIONAL RF TUNING, FIDELITY AND INSTANTANEOUS DYNAMIC RANGE IN A TINY SDR

FOR SIMULTANEOUS, MULTI-CHANNEL PROCESSING NEEDS

Sidekiq NV100 is a highly flexible RF powerhouse optimized to tackle your most challenging signal environments. This embeddable SDR-based RF transceiver comes in a tiny M.2 2280 Key B + M form factor that allows it to be used in millions of host devices where PCIe-based NVMe® solid state drives (SSDs) are supported. Sidekiq NV100 leverages Analog Devices' ADRV9004, a wideband transceiver RFIC that delivers extended RF tuning capabilities, as well as exceptional RF fidelity and instantaneous dynamic range. Multiple RF operating modes are supported, including single channel 1 Rx + 1 Tx FDD/TDD, dual-channel phase coherent Rx or Tx, and dual-channel independently tunable Rx or Tx.

Rx pre-select filtering is automatically, intelligently configured by Epiq Solutions' libsidekiq API. Sidekiq NV100 integrates on-board Rx pre-select filters for interference protection and a GPS disciplined oscillator (GPSDO) for enhanced long-term timing accuracy. These and other integrated features create a complete, high performance, low latency, wideband transceiver that reduces the number of bulky, external hardware elements required in a final system while increasing processing capabilities and allowing you to either save space and reduce your product size, or free up space to accommodate other technology needs.

KEY HIGHLIGHTS



AMD® Artix®-7 XC7A50T FPGA with a Gen2 x2 PCIe Interface



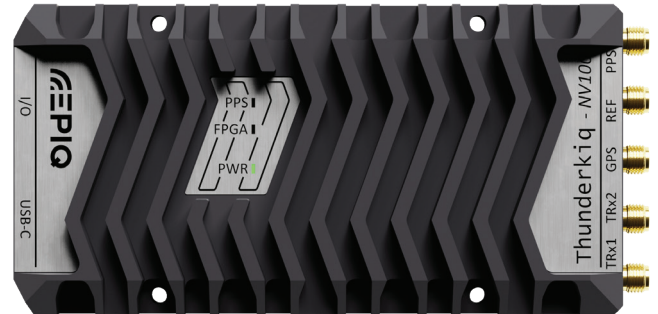
Ideal for Low-SWaP EW, SIGINT, C5ISR, and Tactical Communications



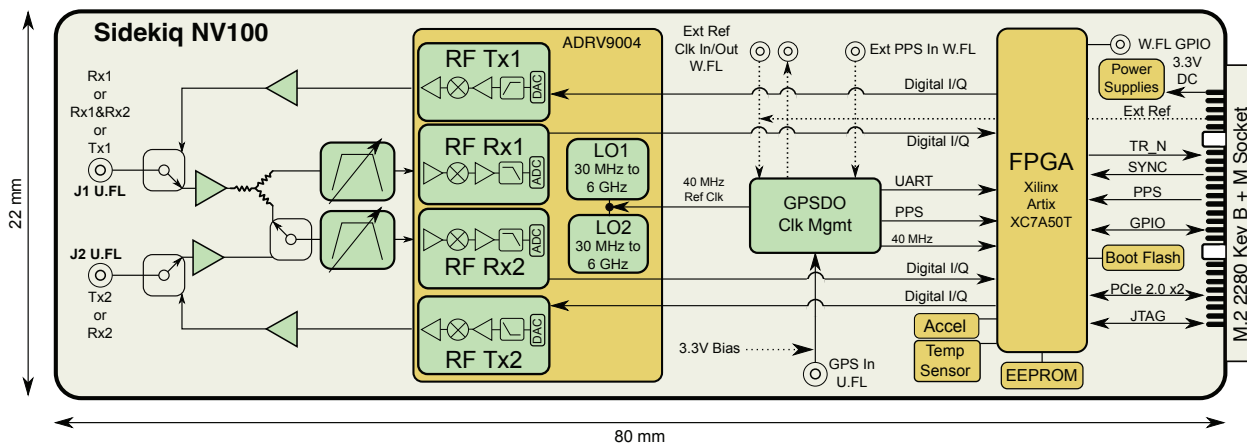
Up to 50MHz Instantaneous Bandwidth and 6GHz RF Frequency Coverage



Libsidekiq API for SDR Control and Application Development



BLOCK DIAGRAM



PHYSICAL SPECIFICATION

FORM FACTOR

- M.2 2280 key B + M form factor, commonly used for NVMe SSD drives

DIMENSIONS

- 22mm x 80mm x 4.4mm

WEIGHT

- 9g

TYPICAL POWER CONSUMPTION

- 4 - 6 W

DIGITAL SPECIFICATION

FPGA

- AMD® Artix®-7 XC7A50T FPGA with a Gen2 x2 PCIe interface to host

FPGA REPROGRAMMING

- Over PCIe

GPIO

- Available at M.2 edge connector; one GPIO available on a W.FL connector

COMPONENT TEMPERATURE RANGE

- -40 deg C to +85 deg C

TEMPERATURE SENSOR

- -55 deg C to +125 deg C (+/- 2 deg C)

MOTION TRACKING

- 6-axis, combining a 3-axis gyroscope and 3-axis accelerometer

THUNDERBOLT™ 3 COMPATIBLE PLATFORM

DIMENSIONS

- 66mm x 136mm x 22.9mm (2.60in x 5.34in x 0.90in)

WEIGHT

- 250g (8.8oz)

POWER CONSUMPTION

- 5 - 7 W

RF INTERFACE

- Tx1/Rx1, Tx2/Rx2, CLK Reference, PPS, GPS

INTERFACE TO HOST

- Thunderbolt™ 3 compatible, over USB-C connector (provides both power and data transport)

RF SPECIFICATION

RF INTERFACE

- Antenna Port 1: U.FL coaxial connector supporting Tx or Rx
- Antenna Port 2: U.FL coaxial connector supporting either Tx or Rx

RF TUNING RANGE

- 30 MHz to 6 GHz (RF access to 10 MHz)

RF CHANNEL BANDWIDTH

- Up to 50 MHz

TYPICAL RX NOISE FIGURE

- < 5 dB

TYPICAL RX IIP3

- +2 dBm

RX AND TX SAMPLE RATES RANGE

- Up to 61.44 Msamples/sec

A/D AND D/A CONVERTER SAMPLE WIDTH

- 16-bits

RX GAIN RANGE

- 0-34 dB, 0.5 dB steps

TX GAIN RANGE

- 0-48 dB

TYPICAL TX OUTPUT POWER

- +5 dBm

RX PRE-SELECT FILTERING

- Sub-octave pre-selection from 30MHz to 6GHz

GPS

- NMEA sentences, PPS output, and frequency-disciplining
- Multi-channel GPS and GLONASS/BEIDOU, SBAS, QZSS overlay systems receiver
- U.FL antenna input, 3.3V bias for active GPS antenna

EXTERNAL CLOCK REFERENCE

- W.FL coaxial input or edge connector, configurable for 10 MHz or 40 MHz input clock
- W.FL coaxial output, 40 MHz signal suitable to drive another Sidekiq module

EXTERNAL PPS

- W.FL coaxial input or edge connector

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.

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