

sidekiq™ M.2 and Mini PCIe

Wideband RF transceiver
+ FPGA in a tiny,
production-ready module



Tiny SDRs for When Small Matters

Ready to integrate in low SWaP applications

The Sidekiq M.2 and Mini PCIe cards lighten the load when it comes to adding RF to mission critical applications. These embeddable SDR transceiver solutions are ready for integration into systems that support either M.2 or Mini PCIe card form factors and feature RF tuning ranges of 70 MHz to 6 GHz, programmable logic, and typical power consumption of 2.1 watts. Millions of host devices (laptops, tablet computers, embedded computers, etc.) can immediately be transformed into RF processing powerhouses with the addition of a Sidekiq M.2 or Mini PCIe.

Sidekiq Platform Development Kit (PDK)

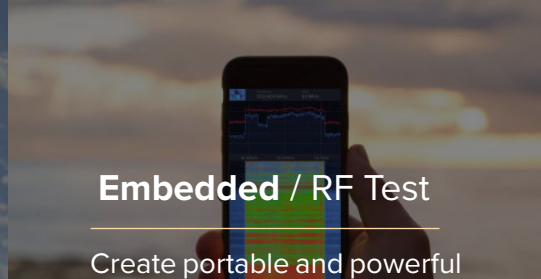
Advanced users needing to customize their solutions can leverage Sidekiq's PDK. It provides users with access to both a software API for interfacing to the card, as well as the source code for the FPGA reference design for customization. The software API provides an easy-to-use interface for configuring the RF transceivers and streaming data between the host and Sidekiq over the PCIe interface. Advanced users can add their own processing blocks to the FPGA to radically increase the signal processing capabilities of the system.

Target Applications / any flexible, interoperable radio terminal



Cube-Sat / Data Link

Use field proven hardware to meet mission critical requirements



Embedded / RF Test

Create portable and powerful RF analysis tools without reinventing the wheel



UAV / Remote RF Sensor

Meet your challenging SWaP requirements for UAVs, remote sensors, or portable systems

RF SPECIFICATION

FLEXIBLE RF FRONT END SUPPORTS TWO OPERATING MODES

Sidekiq Mini PCIe

Two phase coherent RF receivers (common LO)

One RF receiver + one RF transmitter (separate LOs)

Sidekiq M.2

Two RF receiver + two RF transmitter (2x2 MIMO)

One RF receiver + one RF transmitter (separate LOs)

RF TUNING RANGE

70 MHz to 6 GHz

RF CHANNEL BANDWIDTH

Up to 50 MHz

TYPICAL RX NOISE FIGURE

< 8 dB

TYPICAL RX IIP3

-10 dBm

RX SAMPLE RATE RANGE

233 Ksamples/sec to 61.44 Msamples/sec

TX SAMPLE RATE RANGE

233 Ksamples/sec to 61.44 Msamples/sec

A/D AND D/A CONVERTER SAMPLE WIDTH

12-bits

RX GAIN RANGE

0-76 dB, 1 dB steps

TX GAIN RANGE

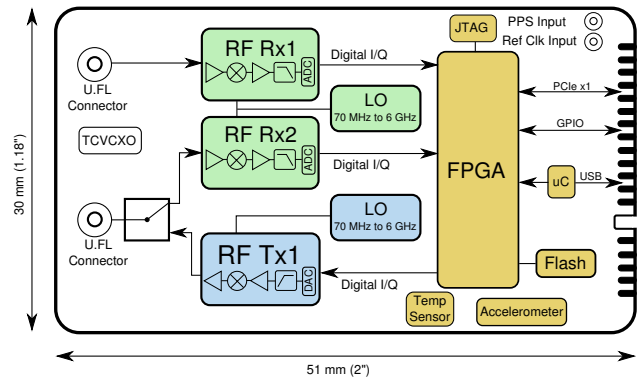
0-89 dB, 1 dB steps

TYPICAL TX OUTPUT POWER

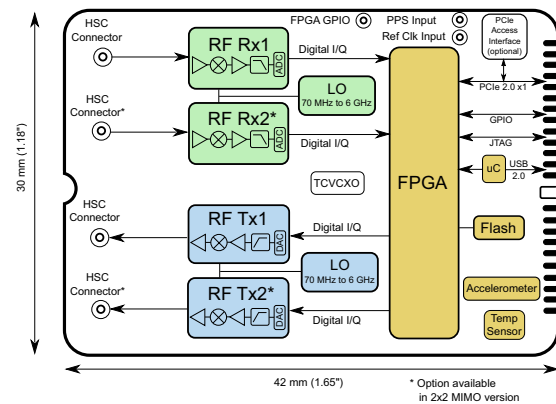
+10 dBm (+13 dBm < 2 GHz)

BLOCK DIAGRAMS

Sidekiq Mini PCIe



Sidekiq M.2



DIGITAL SPECIFICATION

FPGA

Sidekiq Mini PCIe

Xilinx Spartan 6 LX45T
FPGA with x1 PCIe interface to host

Sidekiq M.2

Xilinx Artix 7 XC7A50T FPGA
with x1 Gen2 PCIe interface to host

USB

Cypress FX2 micro controller with USB 2.0 interface to host

FPGA REPROGRAMMING

Over USB or PCIe

GPIO

Available for custom I/O

TEMPERATURE SENSOR

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

ACCELEROMETER

3-axis

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

PHYSICAL SPECIFICATION

FORM FACTOR

Sidekiq Mini PCIe

Mini PCIe card with x1 PCIe and USB 2.0 interfaces

Sidekiq M.2

M.2 (3042-D3-B-M) card with x1 PCIe Gen2 and USB 2.0 interfaces

DIMENSIONS

Sidekiq Mini PCIe

30mm x 51mm x 5mm

Sidekiq M.2

30mm x 42mm x 4mm

WEIGHT

Sidekiq Mini PCIe

8 grams

Sidekiq M.2

6 grams

TYPICAL POWER CONSUMPTION

2.1W

Specifications subject to change without notice.

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



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