



Matchstiq™ X40

High-Performance Low SWaP SDR Optimized for AI & ML at the RF Edge

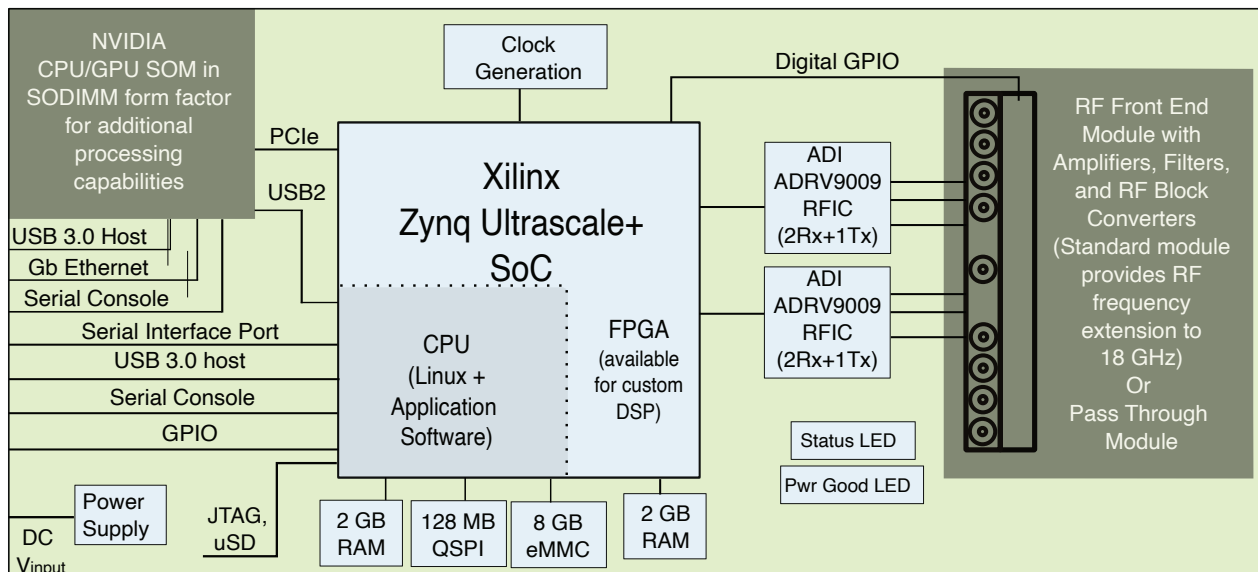
GROUND BREAKING MULTI-CHANNEL 18GHz SDR ENABLING AI & ML IN SMALL FORM FACTOR APPLICATIONS

COMPLETE RF + SDR + FPGA + CPU + GPU TRANSCEIVER PLATFORM

The Matchstiq™ X40 is a high-performance SDR and digital signal processing platform optimized for small form factor applications with challenging SWaP-C requirements. It has an unprecedented level of integration, which makes it ideal for applications like UsX payloads. The Matchstiq™ X40 combines an RF frontend capable of accessing up to 18GHz with multiple digital transceiver channels, a high-performance Nvidia Orin NX 16G GPU/CPU, and an AMD Zynq Ultrascale+ FPGA. Loaded with high-performance components, this SDR delivers cutting-edge data processing and AI & ML capabilities at the RF edge.

Matchstiq™ X40 supports phase coherent and independent modes, as well as fast frequency hopping, and comes in two configurations. The high-frequency configuration has four receivers and one transmitter—each capable of accessing RF frequencies from 1MHz to 18GHz with instantaneous bandwidth up to 450MHz per channel. The low-frequency configuration benefits from reduced SWaP-C and offers four receivers and two transmitters – all capable of accessing RF frequencies from 1MHz to 6GHz with an instantaneous bandwidth of 200MHz per channel.

BLOCK DIAGRAM



KEY HIGHLIGHTS

- Low SWaP Platform with High Level of Integration
- Optimized for Small UxS Payloads and Dismounted Applications
- Up to 450MHz Instantaneous Bandwidth and 18GHz RF Frequency Coverage
- Supports Frequency-Phase Coherent and Independent Operation on All RF Channels
- Fast Frequency Hopping Supported on All RF Channels
- Integrated AMD Ultrascale+ FPGA and Nvidia Orin NX for Signal Processing
- Libsidekiq API for SDR Control and Application Development

GENERAL SPECIFICATIONS

ENVIRONMENTAL OPTIONS

- Storage -40° to 85° C
- Operation, -40° to 70° C

FORM FACTOR SPECIFICATIONS

DIMENSIONS

- 8.5" x 4.25" x 1.5"

WEIGHT

- 2.2 lbs

DIGITAL SPECIFICATIONS

FPGA

- AMD Ultrascale+ XCZU7EG FPGA

CPU/GPU

- Nvidia Orin NX 16G

RF SPECIFICATIONS (High Frequency Variant)

NUMBER OF RECEIVERS

- Four

NUMBER OF TRANSMITTERS

- One

RF COVERAGE

- 1 MHz to 18 GHz

RF CHANNEL BANDWIDTH

- Up to 450 MHz

TYPICAL RX NOISE FIGURE

- <12 dB

TYPICAL RX IIP3

- +5 dBm

A/D NUMBER OF BITS

- 16

TYPICAL TX OUTPUT POWER

- +0 dBm

D/A NUMBER OF BITS

- 14

RF SPECIFICATIONS (Low Frequency Variant)

NUMBER OF RECEIVERS

- Four

NUMBER OF TRANSMITTERS

- Two

RF COVERAGE

- 1 MHz to 6 GHz

RF CHANNEL BANDWIDTH

- Up to 200 MHz

TYPICAL RX NOISE FIGURE

- <12 dB

TYPICAL RX IIP3

- ~+12dBm

A/D NUMBER OF BITS

- 16

TYPICAL RF OUTPUT POWER

- Up to +0 dBm

D/A NUMBER OF BITS

- 14

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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