Matchstiq™ X40

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

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

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

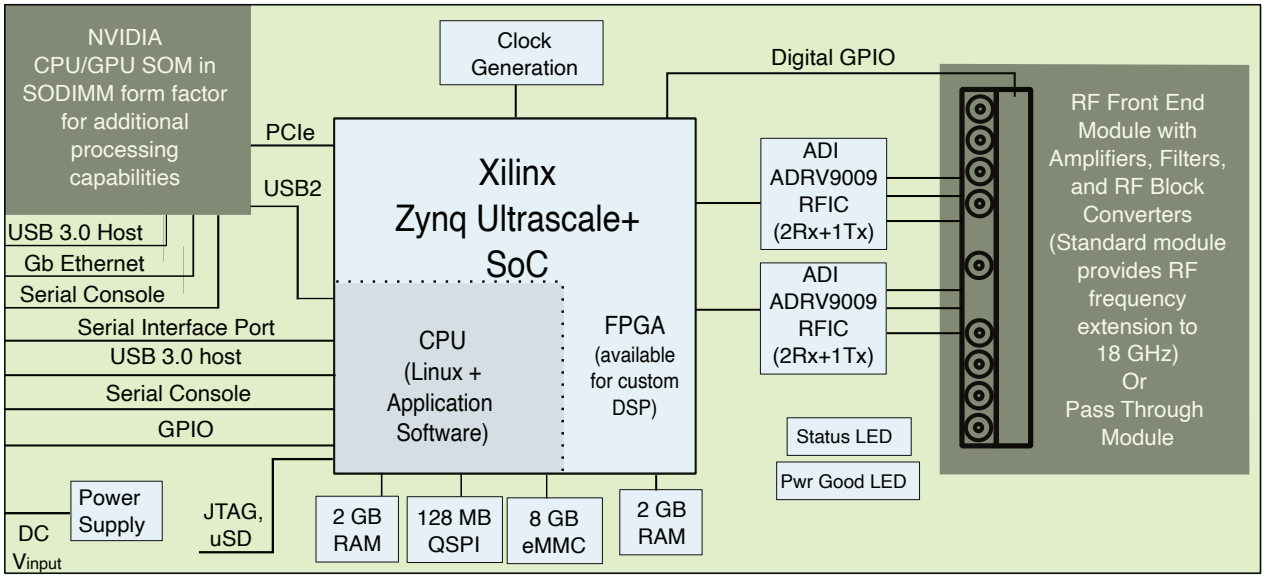
The Matchstiq™ X40 is a high-performance SDR and digital signal processing platform optimized for small form factor applications with challenging SWaP-C requirements. It has an unprecedented level of integration, which makes it ideal for applications like UsX payloads. The Matchstiq™ X40 combines an 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.

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

BLOCK DIAGRAM



Rev 0.1

GENERAL SPECIFICATIONS

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

FORM FACTOR SPECIFICATIONS

DIMENSIONS
- 9.75" x 4.25" x 1.45"

WEIGHT
- 2.6 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.
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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