



# Matchstiq™ X40

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

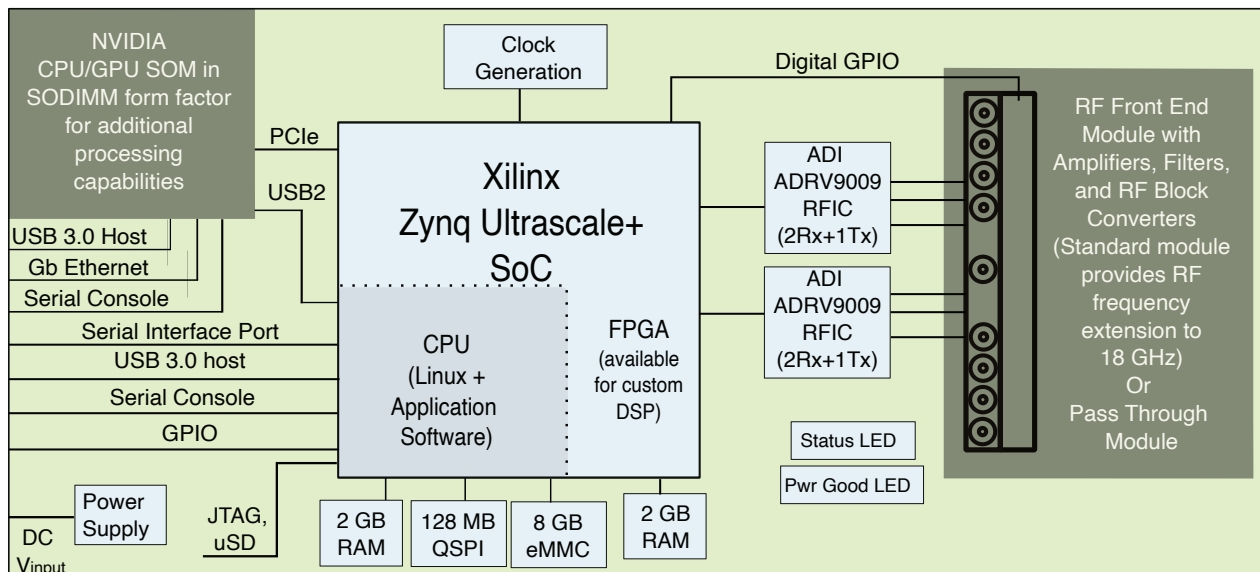
## GROUNDBREAKING MULTI-CHANNEL 18GHz SDR ENABLING AI & ML IN SMALL FORM FACTOR APPLICATIONS

### 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.

### 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

- 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.*

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