

# Matchstiq™ Z3u

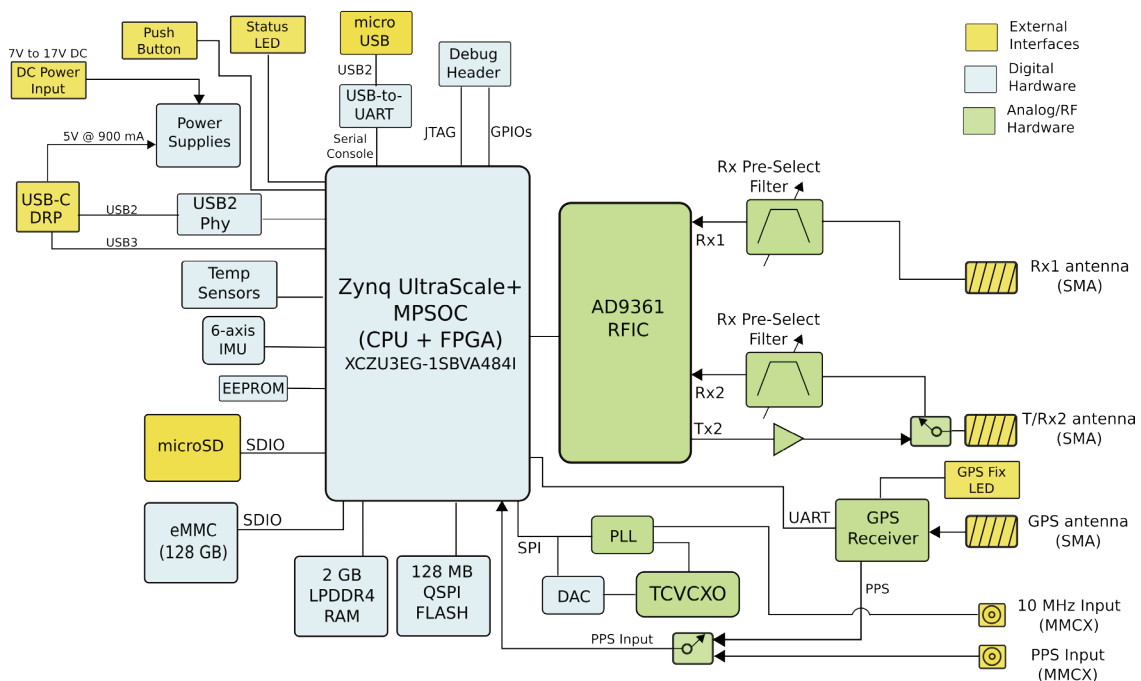
Next Generation Low SWaP Fully Integrated Software – Defined Radio (SDR) Platform

## RADICALLY SMALL, INDUSTRIAL – GRADE RF SIGNAL PROCESSING PLATFORM

### REDUCE RISK AND ACCELERATE DEVELOPMENT OF MISSION CRITICAL RF TRANSCEIVER SOLUTIONS

The Matchstiq Z3u is a field-ready, complete software-defined radio (SDR) platform designed to deliver a fully integrated RF transceiver plus signal processing solution in the smallest possible form factor. Measuring just 3.64" x 2.74" x 0.75" and weighing 5.6 ounces, the Matchstiq Z3u is ideal for on-the-go signal processing applications. An integrated magnetic mount allows the platform to attach to a cell phone or other portable device, deriving power and providing communications through a single USB-C port. As a completely stand-alone platform, Matchstiq Z3u can execute signal processing applications locally on the AMD® Zynq® Ultrascale+ System on Chip (SoC), or interface to a host platform over USB 3.0 to execute applications on the host.

### BLOCK DIAGRAM



### KEY HIGHLIGHTS

- Supports 2-Channel Phase Coherent Rx Mode, or 1Tx + 1Rx Independent Mode
- 10 MHz + PPS inputs
- GPS Disciplined Oscillator
- AMD® Zynq® Ultrascale+ SoC (XCZU3EG)
- 128 GB eMMC + microSD Card Slot
- USB 3.0 OTG Interface

## PHYSICAL SPECIFICATION

### DIMENSIONS

- 3.64" x 2.74" x 0.75"

### WEIGHT

- 5.6 oz

### POWER

- < 4.5W
- Power via USB-C connector or DC barrel jack (7-17V)

## DIGITAL SPECIFICATION

### SYSTEM-ON-CHIP (SOC)

- AMD® Zynq® Ultrascale+ XCZU3EG
- Quad-core ARM Cortex A53 CPU (64-bit)
- 154K logic cells
- 7.6 Mbits block RAM
- 360 DSP slices

### RAM

- 2GB LPDDR4 SDRAM

### NON-VOLATILE STORAGE

- 128 GB eMMC + microSD card slot

### OPERATING SYSTEM

- Linux (Ubuntu 18.04)

### USB INTERFACE

- USB 3.0 OTG via USB-C

### GPIO

- Access via I/O header

### SERIAL CONSOLE ACCESS

- Console available via microUSB

### ACCELEROMETER

- 6-axis IMU

### JTAG

- Access via I/O header

## GPS RECEIVER SPECIFICATION

### GPS MODULE

- Origin Spider ORG4033

### NUMBER OF CHANNELS

- 99 search channels, 33 simultaneous tracking channels

### COLD START

- < 31 seconds

### SENSITIVITY WHILE TRACKING

- -165 dBm

### TYPICAL PPS ACCURACY

- 30 nS

## RF SPECIFICATION

### FLEXIBLE RF FRONT END SUPPORTS VARIABLE OPERATING MODES

- 2-channel phase coherent Rx, or 1Tx + 1Rx

### RF TUNING RANGE

- 70 MHz to 6 GHz

### RF CHANNEL BANDWIDTH

- 200 KHz up to 56 MHz

### TYPICAL RX NOISE FIGURE

- < 8 dB

### TYPICAL RX IIP3

- > -10 dBm

### RX PRE-SELECT FILTERS

- Flexible bandpass filter from 50 MHz to 6 GHz on both Rx channels

### TX AND RX SAMPLE RATE RANGE

- 233 Ksamples/sec – 61.44 Msamples/sec

### A/D AND D/A CONVERTER SAMPLE WIDTH

- 12-bits

### RX GAIN RANGE

- 0-76 dB

### TX GAIN RANGE

- 0-89 dB

### TYPICAL TX OUTPUT POWER

- +13dBm below 2GHz and +10dBm above 2GHz



Specifications subject to change without notice.

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