



# Matchstiq™ S-series

Versatile Software-Defined Radio (SDR) Platforms

## RECONFIGURABLE RF TRANSCEIVER PLATFORMS

### WELCOME TO THE MATCHSTIQ FAMILY OF SMALL FORM FACTOR TRANSCEIVERS

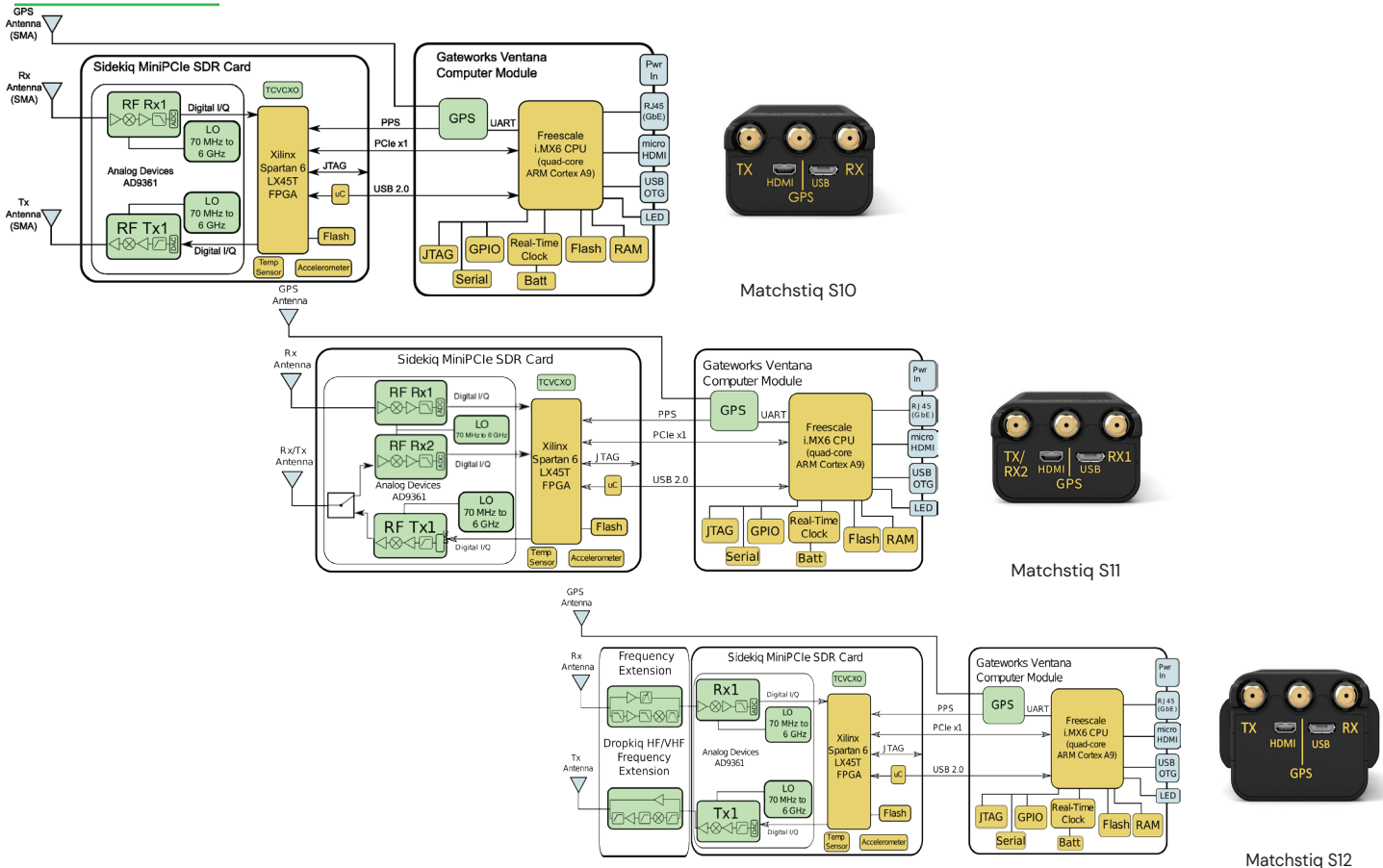
Epiq Solutions' Matchstiq S10/S11/S12 defines the state-of-the-art in small form factor software-defined radio (SDR) platforms. Building on the success of the award-winning Matchstiq S1 and Z1 platforms, Matchstiq S10/S11/S12 provides increased RF flexibility, RF performance, and signal processing capacity, in a smaller and lighter package.

Development kits for Matchstiq S10/S11/S12 are also available to enable end-users to rapidly leverage the benefits of the platform for their own customized applications.

### KEY HIGHLIGHTS

- RF transceiver tuning range of 70 MHz to 6 GHz (S10/S11) and < 1 MHz to 6 GHz (S12)
- Supports RF channel bandwidths up to 50 MHz
- Integrated GPS receiver with 1PPS
- On board Xilinx Spartan®6 LX45T FPGA for signal processing tasks
- Quad-core ARM Cortex A9 CPU @ 800 MHz (Freescale i.MX6) running Linux
- Gigabit ethernet, USB 2.0 OTG, and HDMI ports for external interfacing

### BLOCK DIAGRAM



Matchstiq S10



Matchstiq S11



Matchstiq S12

## RF SPECIFICATION

### FLEXIBLE RF FRONT END OPERATING MODES

#### S10/S11/S12

- One RF receiver + one RF transmitter
- #### S11
- Two phase coherent RF receivers

### RF RX PRE-SELECT FILTERING

#### S12

- Seven banded filters  
(sub-octave from 400 MHz to 6 GHz)

### RF TUNING RANGE

#### S10/S11

- 70 MHz to 6 GHz

#### S12

- < 1 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

#### S10/S11

- +13 dBm < 2 GHz,
- +10 dBm > 2 GHz

#### S12

- TBD

### SYSTEM REFERENCE CLOCK ACCURACY

- +/- 1PPM

## DIGITAL SPECIFICATION

### CPU

- Freescale i.MX6 (quad-core ARM Cortex A9 @ 800 MHz)

### FPGA

- Xilinx Spartan 6 LX45T (-3 speed grade)

### RAM

- 1 GB

### FLASH

- 2 GB

### ETHERNET INTERFACE

- 10/100/1000 Base-T (RJ45), supports passive Power-Over-Ethernet

### USB INTERFACE

- USB 2.0 OTG (microUSB)

### VIDEO INTERFACE

- HDMI (microHDMI)

### GPIO

- Available internally, contact Epiq Solutions

### TEMPERATURE SENSOR

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

### ACCELEROMETER

- 3 axis

### REAL-TIME CLOCK

- Included with internal battery backup

## PHYSICAL SPECIFICATION

### DIMENSIONS

#### S10/S11

- 4.41" x 1.65" x 1.13"

#### S12

- 4.41" x 2.00" x 1.43"

### WEIGHT

#### S10/S11

- 5.6 oz

#### S12

- 7.5 oz

### EPIQ SOLUTIONS TURN-KEY APPLICATIONS FOR MATCHSTIQ PLATFORMS

#### INCLUDE:

##### Skylight

- Cell Tower Survey & Location (2G/3G/4G Cellular)

##### Floodlight

- Paging Channel Monitoring/Decoding (2G/3G/4G Cellular)

##### Spotlight

- Uplink Activity Detection/Decoding (2G/3G/4G Cellular)

##### ERA

- RF Spectrum Analysis

*Specifications subject to change without notice.*

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