S12 - 1 RX + 1 TX (< 1 MHz − 6 GHz)

S11 - 2 x phase coherent RX or 1 RX + 1 TX

S10 - 1 RX + 1 TX

EPIQ

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)

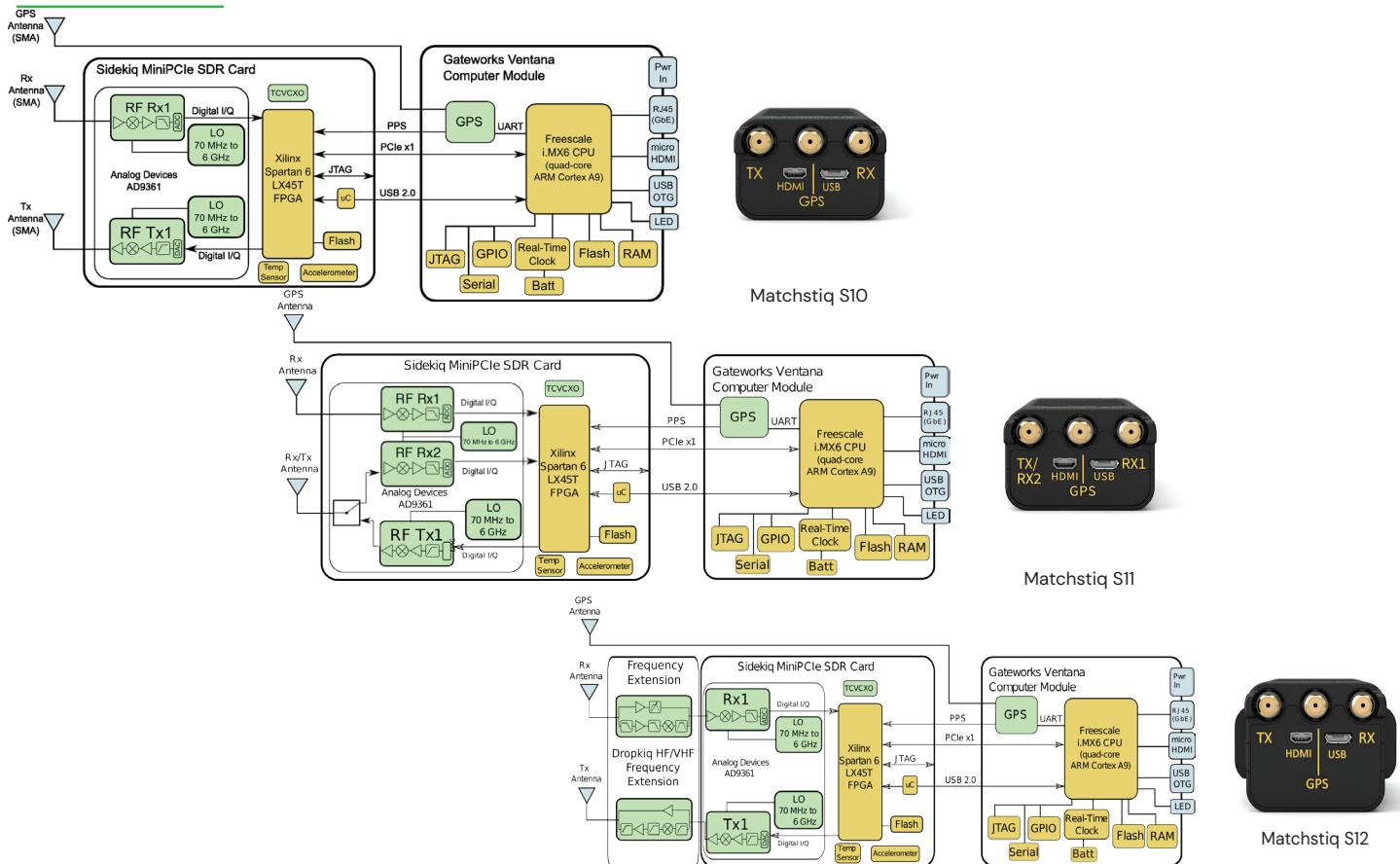Supports RF channel bandwidths up to 50 MHz

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

Rev 1.0

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

Rev 1.0

EPIQ