

SRX | SW-Defined GNSS Receiver Development Platforms

Client Solutions

SRX-EP



- SRX-Experimental Platform**
- adaptable analogue front-end
 - all L- & S-band signals
 - up to 4 RF inputs
 - 4 synchronized RF-bands
 - XILINX ZYNQ Ultrascale+ MPSoC
 - high performance

- Payload Test Receiver**
- adaptable RF-filter and gain
 - adapted signal processing
 - NTR 4th gen. receiver

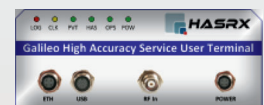


SRX-P1



- SRX-Platform Type 1**
- SWaP optimized digital front-end
 - all L-band signals
 - dual-RF input
 - 6 synchronized RF-bands
 - XILINX ZYNQ Ultrascale+ MPSoC
 - MEMS IMU integrated
 - OEM type interface for integration

- GNSS User Terminal**
- flexible integration for UT
 - additional data interfaces
 - API for external PNT integration
 - battery operated



SRX-P2



- SRX-Platform Type 2**
- same front-end as type 1
 - XILINX APAC Versal AI Core MPSoC
 - MEMS IMU integrated
 - sophisticated weak signal processing
 - ready for advanced AI extensions

- PHOENIX COTS Receiver**
- optimized SWaP
 - RTK/PPP high accuracy receiver
 - extendable for autonomous ops.





SRX Platforms Specification & Features

Platform Type	SRX-EP	SRX-P1	SRX-P2
RF Front-End	Analogue, 4 RF bands, L- & S-band, 1-4 RF-In	RF-ASIC, 6 RF-bands, L-band, Dual-RF	RF-ASIC, 6 RF-bands, L-band, Dual-RF
Processing unit (XILINX SoC)	FPGA + 4 x ARM-A53 + 2 x ARM-R5	FPGA + 4 x ARM-A53 + 2 x ARM-R5	FPGA + 2 x ARM-A72 + 2 x ARM-R5 + AI engine
Signal channels	120	120	120+
GNSS signals	Galileo E1, E5ab, E6 GPS L1, L2P& L2C, L5 BeiDou-2 B1I, B2I GLONASS L1, L2 IRNSS L5 + S SBAS L1 + L5 (tracking only)	Galileo E1, E5ab, E6 GPS L1, L2P& L2C, L5 BeiDou-2 B1I, B2I, BeiDou-3 B1C, B2ab GLONASS L1, L2 IRNSS L5 SBAS L1 + L5 (tracking only)	Galileo E1, E5ab, E6 GPS L1, L2P& L2C, L5 BeiDou-2 B1I, B2I, BeiDou-3 B1C, B2ab GLONASS L1, L2 IRNSS L5 SBAS L1 + L5 (tracking only)
Signal processing	Scalar tracking	Scalar tracking	Scalar + vector tracking, μ -trajectory
Code accuracy	< 2..20 cm (typical)	< 2..20 cm (typical)	< 2..20 cm (typical)
Carrier accuracy	< 1.5 mm	< 1.5 mm	< 1.5 mm
TTF (cold, warm, hot, re-acq.)	60 s, 30 s, 10 s, 2 s typical	60 s, 30 s, 10 s, 2 s typical	60 s, 30 s, 10 s, 2 s typical
Navigation	PVT (0,02 - 20 Hz update rate)	PVT, RTK (0,02 - 20 Hz update rate)	PVT, RTK (0,02 - 50 Hz update rate)
Heading	No	Yes (0,15° rms at 1 m)	Yes (0,15° rms at 1 m)
Data interface	IFEN proprietary ascii & binary, NMEA	IFEN proprietary ascii & binary, RTCM, NMEA	IFEN proprietary ascii & binary, RTCM, NMEA
Communication interfaces	Ethernet (1Gbps), USB 3.0	Ethernet (1Gbps), USB 3.0, UART, CAN	Ethernet (1Gbps), USB 3.0, UART, CAN
External connectors	10 MHz in/out, 1-pps out, 1 trigger-in	10 MHz in/out, 1-pps out, 1 trigger-in	10 MHz in/out, 1-pps out, 1 trigger-in
Active antenna support	5 V / 150 mA per antenna	5 V / 150 mA per antenna	5 V / 150 mA per antenna
Integrated sensors	Barometer	Barometer, 6-DOF MEMS-IMU	Barometer, 6-DOF MEMS-IMU
Operating limits	600 m/s velocity 18.000 m height	600 m/s velocity 18.000 m height	600 m/s velocity 18.000 m height
Temperature (operating)	-0° C to + 70° C	-- 40° C to + 80° C	-- 40° C to + 80° C
Board dimension	210 mm x 160 mm x 25 mm	140 mm x 100 mm x 20 mm	140 mm x 100 mm x 20 mm
Power	22 - 25 W at 12 V	10 - 16 W at 5 V	7 - 10 W at 5 V
Availability	Q4/2020	Q1/2020	Q3/2020

SRX Evolution and Flexibility

The SRX GNSS receiver platform is based on the current IFEN NTR 3rd gen. receiver, with the objective to provide a flexible GNSS receiver test and development platform available for the next decade up to 2030+. The SRX takes full advantage of the latest generation of multi-processor system-on-chip innovations, offering a processing power improvement of a factor 4 and new processing capabilities not possible before.

The SRX-EP platform is designed to achieve best RF performance with the flexibility to adapt to different RF signal needs for laboratory test.

The SRX-P with their optimized SWaP are driven to offer high precision solutions using RTK (and later also PPP), integrated with an on-board MEMS-IMU, enabling to operate even under adverse signal conditions. This enables operational scenarios beyond the current state-of-the-art. The SRX-P platforms will be further enhanced with capabilities available from the IFEN SX3 SW receiver (vector tracking, μ -trajectory, ... up to API support).

Notes

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Disclaimer:
All specifications subject to change without prior notice

For Americas
IFEN Inc.
+1 951 739 7331
M.Wilson@ifen.com



For EMEA & APAC
IFEN GmbH
+49 8121 2238 20
sales@ifen.com