

# SRX | SW-Defined GNSS Receiver Development Platforms

## Client Solutions

### SRX-EP



#### SRX-Evolution 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

#### Test Receiver (User, IOT, P/L)

- adaptable RF-filter and gain
- flexible signal processing
- extendable navigation processing
- NTR 4<sup>th</sup> 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
- Extension for specific interfaces

#### CubeSat Space Receiver

- specific space interfaces
- safe FPGA re-configurability
- lockstep OBC operation
- multi-antenna operation
- integrated orbit-propagator



### SRX-P2

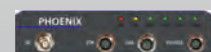


#### SRX-Platform Type 2

- same front-end as type 1
- XILINX APAC Versal AI Core MPSoC
- sophisticated weak signal processing
- ready for advanced AI extensions
- OEM type interface for integration

#### PHOENIX COTS Receiver

- optimized SWaP
- RTK/PPP high accuracy receiver
- extendable for autonomous ops.
- ruggedized for agriculture





# 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<br>GPS L1, L2P& L2C, L5<br>BeiDou-2 B1I, B2I<br>GLONASS L1, L2<br>IRNSS L5 + S<br>SBAS L1 + L5 (tracking only) | Galileo E1, E5ab, E6<br>GPS L1, L2P& L2C, L5<br>BeiDou-2 B1I, B2I, BeiDou-3 B1C, B2ab<br>GLONASS L1, L2<br>IRNSS L5<br>SBAS L1 + L5 (tracking only) | Galileo E1, E5ab, E6<br>GPS L1, L2P& L2C, L5<br>BeiDou-2 B1I, B2I, BeiDou-3 B1C, B2ab<br>GLONASS L1, L2<br>IRNSS L5<br>SBAS L1 + L5 (tracking only) |
| Signal processing              | Scalar tracking   | Scalar tracking   | Scalar + vector tracking, $\mu$ -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<br>18.000 m height   | 600 m/s velocity (space: 8 km/s)<br>18.000 m height (space: LEO up to 3.000 km)   | 600 m/s velocity<br>18.000 m height   |
| Temperature (operating)        | -0° C to + 70° C  | -- 40° C to + 80° C   | -- 40° C to + 80° C   |
| Board dimension                | 180 mm x 160 mm x 25 mm   | 160 mm x 100 mm x 20 mm   | 120 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                   | Q2/2021   | Q3/2021   | Q4/2021   |

## SRX Evolution and Flexibility

The SRX GNSS receiver platform is based on the current IFEN NTR 3<sup>rd</sup> 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,  $\mu$ -trajectory, ... up to API support).

Notes

[www.ifen.com](http://www.ifen.com)

**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