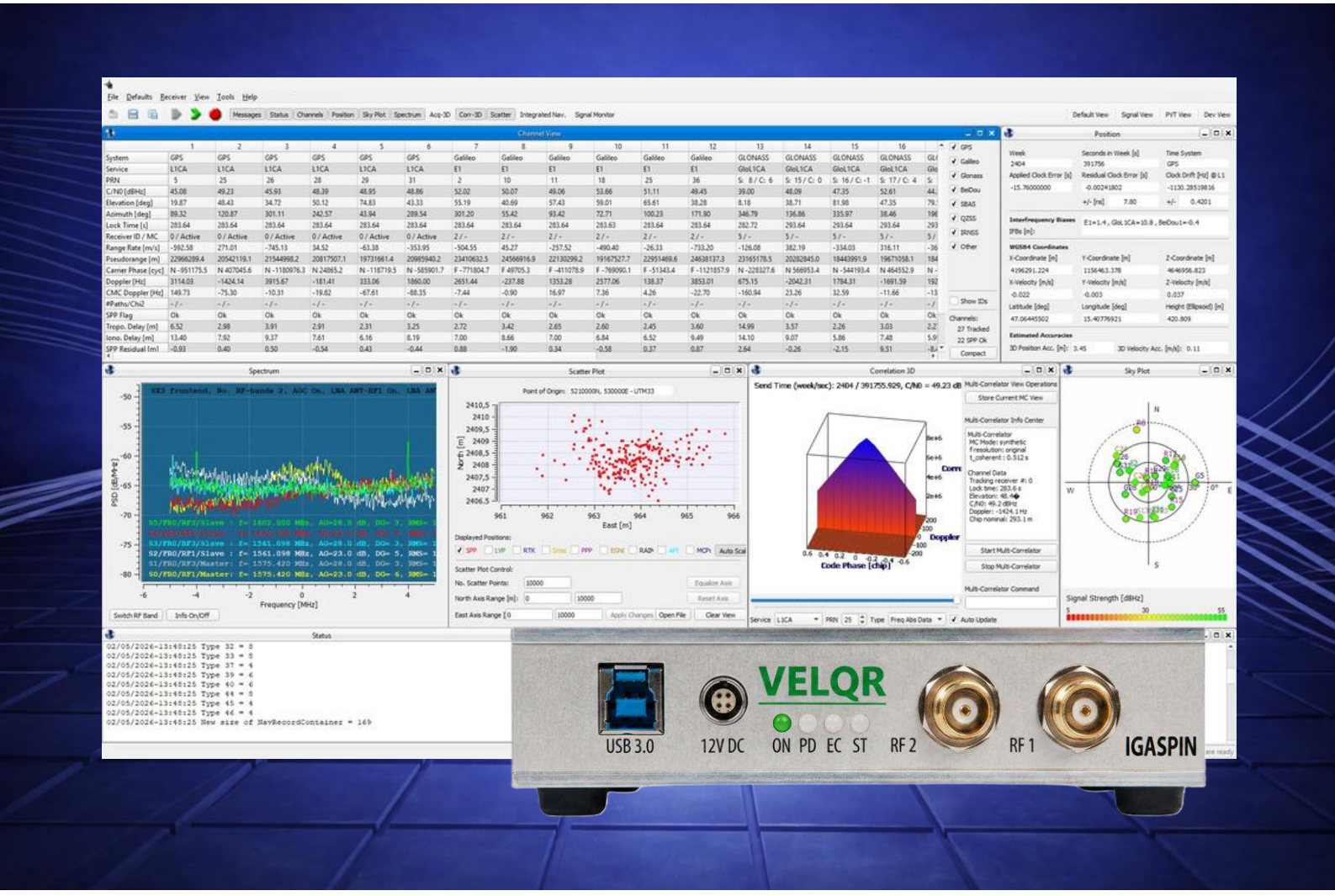
VELQR
GNSS R&D Software Receiver



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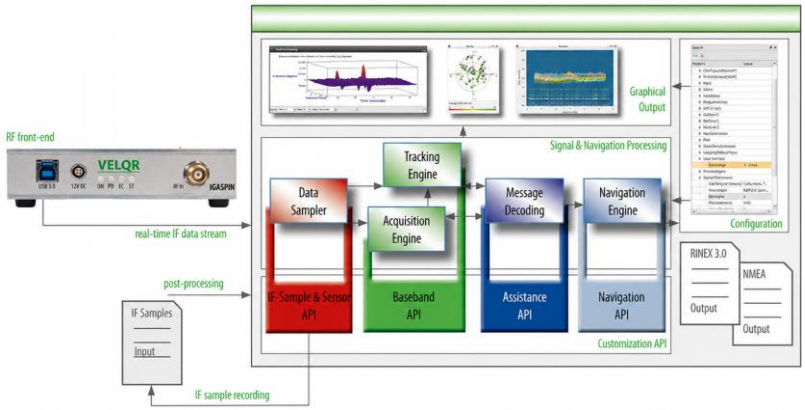
Specification

VELQR Platform Type	VELQR -1 RF	VELQR -2 RF
RF Front-End	1 RF-input 4 RF bands (L- and S-band) RF bandwidth 50 MHz	2 RF inputs, 4 RF bands (2 bands per input), L- and S-band RF bandwidth 50 MHz
Processing Unit	Intel® Core i7-4790 or higher processor, 64-bit Microsoft Windows 10/11 operating system	
IF Sample Rates	Selectable: 5, 10 (standard), 20, 25, 50, 100 MSamples	
Signal Channels	Depending on selected processing modes and options Reference station mode: up to 300 real-time channels, GPU-based signal acquisition Configurable multi-correlator setup (for signal quality monitoring, scintillation)	
GNSS Signals	Galileo E1 (I/NAV, OSNMA, SAR/RLS), E5a, E5b, E5ab (Meta Signal Processing), E6 GPS L1 CA & L1C, L2P & L2C, L5 BeiDou B1I & B1C, B2I & B2a, B3I GLONASS L1, L2 NavIC L1, L5, S QZSS L1, L2, L5 SBAS L1	
Signal Processing	Real-time Processing, Post-Processing (IF samples from file) Scalar tracking, Vector tracking	Real-time Processing, Post-Processing (IF samples from file) Scalar tracking, Vector tracking, Heading, Reflectometry
Code Accuracy	< 20 cm (typical)	
Carrier Accuracy	< 1 mm	
TTFF	< 1 s (with position and ephemeris), < 10 s (with ephemeris), < 55 s cold start	
Measurement Rate	Up to 25 Hz	
Measurement Latency	< 70 ms	
Acquisition Sensitivity	19 dBHz	
Tracking Sensitivity	10 dBHz	

Specification

Develop your own applications with the VELQR programming APIs	Baseband API, Navigation API, Sensor API, IF Sample API, Assistance API 
Output Formats	RINEX, NMEA and proprietary ASCII logs
Interfaces from RFFE to Computer	USB 3.0
External Connectors	10 MHz in/out, 1-pps out, 1 trigger-in
Active Antenna Support	5 V / 150 mA per antenna
Integrated Sensors, External Sensors	Barometer (internal), interface to Xsens IMU, interface to WLAN
Operating Limits	< 600 m/s velocity < 18.000 m height
Temperature	0° C to + 50° C
Enclosures	