

# REACT



**HIGH PRECISION**



**MULTI-FREQUENCY  
& CONSTELLATION**



**INTERFERENCE  
DETECTION  
& REJECTION**



**RUGGED  
ENCLOSURE**



REACT (Receiver Antenna Compact Technology) is a compact, rugged enclosure containing a high quality GNSS receiver and antenna to provide a cost effective and flexible solution to your requirements.

## **SCALABLE PRECISION PERFORMANCE**

REACT can operate as a single position to 1.5m or upgraded to use correction sources and achieve positions as precise as 1cm (RTK). The REACT is well suited to operate as an RTK base station or rover and can be configured to output GNSS heading. REACT can be connected to an IMU to create an Inertial Navigation System.

## **REACT VARIANTS**

The REACT is a modular product which can be constructed to meet a variety of applications. Available in three signal plans L1, L1/L2 or L1/L5.

## **BUILT FOR RUGGED ENVIRONMENTS**

The compact, rugged enclosure is MIL-STD qualified with respect to EMC, shock, vibration and environmental standards.

## **INTERFERENCE PROTECTION**

High performance NovAtel OEM7 receiver provides options for signal protection against interference and jamming.

## PERFORMANCE

### Horizontal Position Accuracy (RMS)

Single Point L1	1.5m
Single Point L1/L2	1.2m
SBAS <sup>2</sup>	0.6m
DGPS	0.4m
RTK	1cm + 1ppm
RTK Initialisation Time	<10 sec
Azimuth Accuracy <sup>3</sup> (ALIGN)	0.1° (2m), 0.05° (4m) <sup>4</sup>
Roll, Pitch Accuracy <sup>3</sup> (ALIGN)	0.2° (2m), 0.01° (4m) <sup>4</sup>
Time Accuracy <sup>4</sup>	20 ns RMS
Velocity Accuracy	0.03 m/s RMS - 0.05 m/s RMS
Velocity <sup>5</sup>	600 m/s
Vibration	Up to 20G (sustained tracking)

### Channel Configuration

Up to 555 Channels <sup>12</sup>	
ReACT-RNS	GPS L1, GLONASS L1
ReACT-QNS L1/L2	GPS L1/L2, GLONASS G1/G2/G3, Galileo E1/E5b, BeiDou B1/B2
ReACT-SNS L1/L5	GPS L1/L5, GLONASS G1, Galileo E1/E5a, BeiDou B1/B2a, NavIC L5

### Measurement Precision (RMS)

L1 C/A Code	4cm	L1 Carrier Phase	0.50mm (differential channel)
L2 P(Y) Code <sup>7</sup>	8cm	L2 Carrier Phase	1.00mm (differential channel)
L5 Code	3cm	L5 Carrier Phase	0.50mm (differential channel)

### Data Rates (Measurements and Positions)

Up to 100Hz

### Time to First Fix

Cold Start <sup>9</sup>	<50 sec
Hot Start <sup>9</sup>	<35 sec

### Signal Reacquisition

L1	0.5 sec (typical)
L2 & L5	1.0 sec (typical)
RTK position reacquisition <sup>10</sup>	5-8 sec

1-Typical values. Performance specifications subject to GPS system characteristics, US DOD operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources. Independent tests performed at FSL office using L1L2 GPS+GLO showed improved performance figures than the stated typical values.  
 2-SBAS includes WAAS, EGNOS and MSAS type systems, GPS only.  
 3-Accuracy obtained using a baseline length of 2 to 4 metres.  
 4-Time accuracy does not include biases due to RF or antenna delay.  
 5-Export licensing restrictions apply.  
 6-Dependant on receiver model installed  
 7-L2 P for GLONASS  
 8-Typical value. No almanac or ephemeris and no approximate position or time.  
 9-Typical value. Almanac and recent ephemeris saved and approximate position and time entered.  
 10-After a complete loss of satellite signals this is the typical period the receiver takes to compute an acceptable position in a high dynamics scenario.  
 11-GPS L1/L2, GLONASS L1/L2  
 12-Depends on hardware model

## PHYSICAL AND ELECTRICAL

Dimensions	NS: 116mm x 116mm x 84mm NSc: 116mm x 116mm x 79mm
Data Cable Length	5m 1m (c' Models with centre mount cable)
Weight	~600g
Input voltage	+9 to +36 VDC
Power consumption (at typical values)	<3W <sup>2</sup> typical

### Communication Ports

1x RS232 / RS422  
 1x RS232  
 1x RS232/USB 2.0, 12 Mbps  
 Auxiliary strobe signals, including a configurable PPS output for time synchronization and mark.

## FEATURES AND MOUNTING

3x M6 for plate mounting (standard)  
 3x 10-32 UNF for plate mounting (optional)  
 5/8" thread for centre mounting (NS only)  
 Field-upgradeable software  
 PAC multipath mitigating technology  
 Differential GPS positioning  
 Differential correction support for RTCM, CMR, CMR+ and RTCA  
 EDGE-WARE Modules

## ENVIRONMENTAL

Temperature	
Operating	-32°C to +75°C
Storage	-40°C to +85°C
Regulatory:	
EMC	European CE, 89/EEC EN 55022 Class B, EN50082-1
EMC	MIL-STD-461F (Ground, Army), FCC Class A
Immersion	MIL-STD 810F, method 512.4, IEC 60529 IPX7
Humidity	MIL-STD 810F, method 507.4, procedure 1
Salt Spray	MIL-STD 810F, method 509.4
Sand and Dust	MIL-STD 810F, method 510.4
Fluids Susceptibility	MIL-STD-810F, method 504
Vibration	MIL-STD 810F, method 514.5, Category 20 MIL-STD 810E, method 514.4 tbl. 514.4-AXVII MIL-STD 810F, method 516.5, Procedure I, IV IEC 61000-4-2 level 2 (±4 KV) MIL-STD-810F, method 505.4
Shock	
Electrostatic Discharge (ESD)	
Ultraviolet Light Protection	
Compliance	RoHS, WEEE



Includes Hexagon NovAtel's GNSS Engine