

# REACT



**HIGH PRECISION**



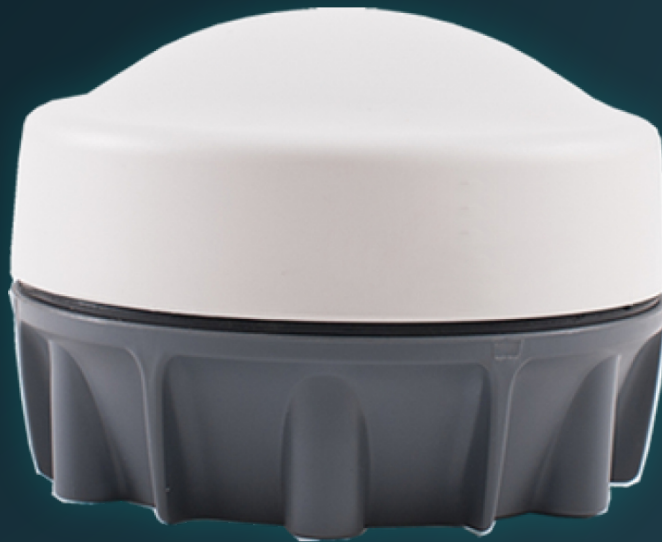
**MULTI-FREQUENCY  
& CONSTELLATION**



**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<br>NSc: 116mm x 116mm x 79mm |
| Data Cable Length                     | 5m<br>1m ('c' Models with centre mount cable)         |
| Weight                                | ~600g                                                 |
| Input voltage                         | +9 to +36 VDC                                         |
| Power consumption (at typical values) | <3W <sup>12</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                     |
| Shock                         | MIL-STD 810E, method 514.4 tbl. 514.4-AXVII                 |
| Electrostatic Discharge (ESD) | MIL-STD 810F, method 516.5, Procedure I, IV                 |
| Ultraviolet Light Protection  | IEC 61000-4-2 level 2 (±4 KV)<br>MIL-STD-810F, method 505.4 |
| Compliance                    | RoHS, WEEE                                                  |



Includes Hexagon NovAtel's GNSS Engine

