

# RESOLUTE REFERENCE

*The ultra low power geodetic grade reference receiver.  
Optional embedded telemetry makes the Resolute Reference the ultimate receiver for remote applications.*

The low power and optional embedded telemetry of the Resolute family, with the highest quality RAW GNSS measurements. Available with Iridium or Cell modems for ease of deployment, data retrieval and remote command and control.

## FEATURES

- L1, L2, L5, All constellations
- RAW GNSS data standard
- Less than 1.2 Watts Typical
- 1 x 8 GB and 1 x 4 GB SLC microSD Cards
- Optional 3G GSM Cellular Modem, Iridium RUDICS and/or SBD
- Ethernet Interface
- Compressed Data Formats
- Small 6"x 6"x 3" Form Factor
- -40° C to +60° C
- Compatible with XeosOnline™ Tunnel



## TELEMETRY OPTIONS



**REF**  **TEK**  
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GNSS Technology		Connectors	
<b>GNSS Signals</b>	GPS: L1C, L1P(Y), L2C, L2P(Y) L5 • GLONASS: L1, L2, L3 • Galileo: E1, E5a, E5b, AltBoc • BeiDou: B1, B2 1 • SBAS: EGNOS, WAAS, GAGAN, MSAS, SDCM (L1, L5) • IRNSS: L51 • QZSS: L1, L2, L5 (Some signals optional)	<b>Power, Ethernet</b>	Souriau Circular MIL Spec 12E 10P Female
<b>Number of Channels</b>	448 hardware channels	<b>GNSS Antenna</b>	Type N female
<b>Sample Rate</b>	Up to 20 Hz (100Hz Option)	<b>Serial 232, 485, SDI 12</b>	Souriau Circular MIL Spec 12E 14P Female
<b>Time to first fix</b>	< 20 s warm; < 45 s cold; < 1 s Re-acquisition	<b>USB</b>	USB Mini B
<b>C/No Threshold</b>	Tracking: 20 dB-Hz; Acquisition: 33 db-Hz	<b>900 MHz Radio</b>	TNC female (optional)
<b>RTK Accuracy</b>	Horizontal: 0.6cm + 0.5 ppm Vertical: 1 cm + 1 ppm (optional)	<b>Iridium</b>	TNC female (optional)
<b>Smoothed &amp; Filtered Positions</b>	Horizontal: < 1mm, Vertical: 1 mm	<b>Cellular</b>	TNC female (optional)
<b>Velocity Accuracy</b>	3 cm/s	<b>Grounding</b>	Grounding Stud (2 BA Thread)
<b>Latency</b>	<10ms		
<b>Feature Rich GNSS</b>	Lock + for robust tracking during high vibrations, APME+ multipath mitigation, Iono+ advanced ionospheric disturbance protection		
Electrical and Mechanical		General	
<b>Power Supply</b>	11-28V DC	<b>Interface</b>	Button, Status LEDs, Programmatic Commands, Web Interface, XeosOnline™
<b>Power Consumption</b>	1.2 W Typical (12V)	<b>Data Logging</b>	Dual 4 GB Removable SD Card. 4 Parallel Logging Sessions (GNSS) SBF (Convertible to NMEA 0183, v2.3, v3.01, v4.0; RINEX v2.x, 3.x), External Digital Sensors (independent sessions)
<b>Operating Temperature</b>	-40 °C to +60 °C (-55 °C optional)	<b>Data Streaming</b>	RS 232, 485, 900Mhz Radio, Iridium RUDICS, Iridium SBD, Cellular LTE, Cellular SMS (some optional)
<b>Dimensions and Weight</b>	6"x6"x3", 2.8lbs		
<b>Drop</b>	1 m onto a hard surface		

Feature	Resolute Reference	Resolute Pin	Resolute Polar
<b>Standard Update Rate</b>	Up to 20Hz	Up to 20Hz	Up to 20Hz
<b>On-Board Storage</b>	1 x 8 GB or 1 x 4 GB Micro SD	1 x 8 GB or 1 x 4 GB Micro SD	1 x 8 GB or 1 x 4 GB Micro SD
<b>Operating Temperature</b>	-40 °C to +60 °C	-40 °C to +60 °C	-55 °C to +60 °C
<b>GPS L1, L2, L5; Glonass G1, G2, G3</b>	✓	✓	✓
<b>All Signals</b>	0	0	0
<b>RINEX v2.x, 3.x</b>	✓	✗	✓
<b>SBF</b>	✓	✓	✓
<b>RTK (RTCM v2.x, 3.x CMRv2.0 and CMR +)</b>	0	✓	0
<b>Position Monitoring</b>	✓	✓	✓
<b>900 MHz Radio</b>	✗	✓	✗
<b>Cellular LTE Modem</b>	0	0	0
<b>Iridium SBD (9523)</b>	0	0	✓
<b>Iridium RUDICS (9523)</b>	0	0	✓
<b>External Sensor Logging</b>	0	0	0
<b>192 KB RAM</b>	✓	✓	✓
<b>2 MB External RAM</b>	0	0	0
<b>2MB Flash Memory</b>	0	0	✓

✓ = Included    0 = Optional    ✗ = Not Included