

Receivers OEM719™



MULTI-FREQUENCY, BACKWARD COMPATIBLE GNSS RECEIVER INCLUDES ALL MODERN SIGNALS

HIGH PRECISION GNSS, BACKWARD COMPATIBLE SIZE

The multi-frequency OEM719 offers future ready precise positioning for space constrained applications. Advanced interference mitigation features maintain high performance in challenging environments. Form factor and pin compatible with NovAtel®'s popular OEM615™ and OEM617™ receivers, the OEM719 provides the most efficient way to bring powerful Global Navigation Satellite System (GNSS) capable products to market quickly. With centimeter level positioning utilizing TerraStar® satellite-delivered correction services, the OEM719 ensures globally available, high performance positioning without the need for expensive network infrastructure. Anywhere. Anytime.

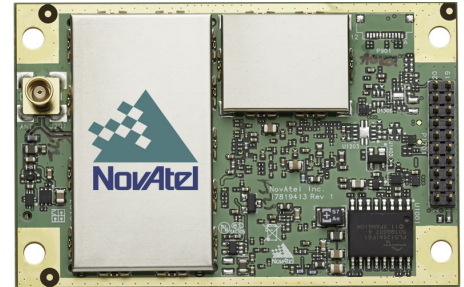
BUILT-IN FLEXIBILITY

The OEM719 uses a 555 channel architecture and can be configured in multiple ways for maximum flexibility. NovAtel's OEM7® firmware provides users with the ability to configure the OEM719 for their unique application needs. The OEM719 is scalable to offer sub-meter to centimeter level positioning, and is field upgradeable to all OEM7 family software options. These options include ALIGN® for precise heading and relative positioning, GLIDE® for decimeter level pass-to-pass accuracy and SPAN® GNSS+INS for continuous 3D position, velocity and attitude. NovAtel CORRECT® with RTK delivers centimeter level real-time positioning, or go base-free for centimeter and decimeter PPP solutions using TerraStar corrections.

To learn more about how our firmware solutions can enhance your positioning, please visit novatel.com/products/firmware-options.

DESIGNED WITH THE FUTURE IN MIND

The OEM719 is capable of tracking all current and upcoming GNSS constellations including GPS, GLONASS, Galileo, BeiDou, QZSS and NavIC. It is software upgradeable to track upcoming signals as they become available.



FEATURES

- + 555 channel, all-constellation, multi-frequency positioning solution
- + TerraStar correction services supported over multi-channel L-Band and IP connections
- + Advanced interference visualization and mitigation features
- + RTK, GLIDE and STEADYLINE® firmware options
- + Simple to integrate, small form factor with 20 g vibration performance rating
- + Compatible with existing OEM615 and OEM617 integrations
- + SPAN GNSS+INS functionality

If you require more information about our receivers, visit novatel.com/oem7

OEM719



PERFORMANCE¹

Channel Count

555 Channels

Signal Tracking

GPS L1 C/A, L1C, L2C, L2P, L5
GLONASS² L1 C/A, L2 C/A, L2P,
L3, L5

Galileo³ E1, E5 AltBOC, E5a,
E5b, E6

BeiDou B1I, B1C, B2I, B2a, B3I
QZSS L1 C/A, L1C, L2C, L5, L6

NavIC (IRNSS) L5

SBAS L1, L5

L-Band up to 5 channels

Horizontal Position Accuracy (RMS)

Single Point L1 1.5 m

Single Point L1/L2 1.2 m

SBAS⁴ 60 cm

DGPS 40 cm

TerraStar-LTM 5 40 cm

TerraStar-C PROTM 5 2.5 cm

TerraStar-XTM 5 2 cm

RTK 1 cm + 1 ppm

Initialization time < 10 s

Initialization reliability > 99.9%

Maximum Data Rate

Measurements up to 100 Hz

Position up to 100 Hz

Time to First Fix

Cold start⁶ < 39 s (typical)

Hot start⁷ < 20 s (typical)

Signal Reacquisition

L1 < 0.5 s (typical)

L2 < 1.0 s (typical)

Time Accuracy⁸ 20 ns RMS

Velocity Accuracy

< 0.03 m/s RMS

Velocity Limit⁹ 515 m/s

PHYSICAL AND ELECTRICAL

Dimensions¹⁰ 46 × 71 × 11 mm

Weight 31 g

Power

Input voltage 3.3 VDC ±5%

Power Consumption¹¹

GPS L1 0.9 W (typical)

GPS/GLONASS L1/L2 1.3 W (typical)

All frequencies/All constellations with L-Band 1.8 W (typical)

Antenna Port Power Output

Output voltage 5.0 VDC ±5%

Maximum current 200 mA

Connectors

Main

20-pin dual row male header

Antenna input

see *RF Connector Variants*

RF CONNECTOR VARIANTS

OEM719 MCX female

OEM719A MCX 90° female

OEM719B MMBX female

COMMUNICATION PORTS

3 LVCMOS Serial

up to 460,800 bps

2 CAN Bus 1 Mbps

1 USB 2.0 (device) FS

ENVIRONMENTAL

Temperature

Operating -40°C to +85°C

Storage -55°C to +95°C

Humidity 95% non-condensing

Vibration

Random MIL-STD 810G (CH1),

Method 514.7

(Cat 24, 20 g RMS)¹²

Sinusoidal IEC 60068-2-6

Bump ISO 9022-31-06 (25 g)

Shock

Operating

MIL-STD-810G (CH1),

Method 516.7 (40 g)

Non-operating

MIL-STD-810G (CH1),

Method 516.7 (75 g)-Survival

Acceleration

Operating

MIL-STD-810G (CH1),

Method 513.7 (16 g)

COMPLIANCE

FCC, ISED, CE and

Global Type Approvals

FEATURES

- Field upgradeable software
- Differential GPS positioning
- Differential correction support for RTCM 2.1, 2.3, 3.0, 3.1, 3.2, 3.3, 3.4, CMR, CMR+, RTCA and NOVATELX
- Navigation output support for NMEA 0183 and detailed NovAtel ASCII and binary logs
- Receiver Autonomous Integrity Monitoring (RAIM)
- GLIDE and STEADYLINE smoothing algorithms
- Interference Toolkit
- Outputs to drive external LEDs
- 2 Event inputs
- 1 Event output
- Pulse Per Second (PPS) output

FIRMWARE SOLUTIONS

- ALIGN
- SPAN
- RTK
- RTK ASSISTTM
- TerraStar PPP
- API

OPTIONAL ACCESSORIES

- VEXXIS® GNSS-500 and GNSS-800 series antennas
- Compact GNSS antennas
- Mechanical mounting rails
- OEM7 Development Kit

For the most recent details of this product: novatel.com/oem7

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SE Asia and Australia

61-400-883-601

Version 5

Specifications subject to change without notice
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¹ Typical values. Performance specifications subject to GNSS system characteristics, Signal-In-Space (SIS) operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources.

² Hardware ready for L3 and L5.

³ E1bc and E6bc support only.

⁴ GPS only.

⁵ Requires a subscription to a TerraStar data service. Subscriptions available from NovAtel.

⁶ Typical value. No almanac or ephemerides and no approximate position or time.

⁷ Typical value. Almanac and recent ephemerides saved and approximate position and time entered.

⁸ Time accuracy does not include biases due to RF or antenna delay.

⁹ Export licensing restricts operation to a maximum of 515 meters per second, message output impacted above 500 m/s.

¹⁰ On the OEM719A, the MCX connector extends an additional 2.06 mm (0.081") from the board (71 mm dimension).

¹¹ Typical values using serial port communication without interference mitigation. Consult the OEM7 User Documentation for power supply considerations.

¹² Requires mechanical mounting rails to meet 20 g; meets 7.7 g without rails.