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

HIGH PRECISION GNSS, BACKWARD COMPATIBLE SIZE
The multi-frequency OEM729 offers future ready precise positioning. Advanced interference mitigation features maintain high performance in challenging environments. Form factor and pin compatible with NovAtel®’s previous generation OEM628™ receiver, the OEM729 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 OEM729 ensures globally available, high performance positioning without the need for expensive network infrastructure. Anywhere. Anytime.

BUILT-IN FLEXIBILITY
The OEM729 uses a 555 channel architecture and can be configured in multiple ways for maximum flexibility. NovAtel’s OEM7® firmware provides users the ability to configure the OEM729 for their unique application needs. The OEM729 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 OEM729 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
- Serial, USB, CAN and Ethernet connectivity with Web interface
- Advanced interference visualization and mitigation features
- RTK, GLIDE and STEADYLINE® firmware options
- Simple to integrate, industry common form factor with 20 g vibration performance rating
- Compatible with existing OEM628 integrations
- Supports external oscillator input
- SPAN GNSS+INS functionality

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

**Channel Count**
555 Channels

**Signal Tracking**
- GPS L1 C/A, L1C, L2C, L2P, L5
- GLONASS L1 C/A, L2 C/A, L2P, L3, L5
- Galileo 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
- SBAS: 60 cm
- DGPS: 40 cm
- TerraStar-L™: 40 cm
- TerraStar-C PRO™: 2.5 cm
- TerraStar-X™: 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 start: < 39 s (typical)
- Hot start: < 20 s (typical)

**Signal Reacquisition**
- L1: < 0.5 s (typical)
- L2: < 1.0 s (typical)

**Time Accuracy**
20 ns RMS

**Velocity Accuracy**
0.03 m/s RMS

**Velocity Limit**
515 m/s

### Physical and Electrical

- **Dimensions**: 60 × 100 × 9 mm
- **Weight**: 48 g
- **Power**
  - Input voltage: +3.3 VDC ±5%
- **Power Consumption**
  - 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: 24-pin dual row male header
- Antenna Input: MMXC female
- External oscillator input: MMXC female

### Communication Ports
- 1 RS232/RS422 up to 460,800 bps
- 2 LVCMOS Serial up to 460,800 bps
- 1 CAN Bus 1 Mbps
- 1 USB 2.0 F5
- 1 Ethernet 10/100 Mbps

### 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)
- Sinusoidal: IEC 6068-2-6
- 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
- NOVATELX, STEADYLINE, NovAtel CORRECT, OEM729, OEM628 and RTK ASSIST are trademarks of Novatel Inc.
- Specifications subject to change without notice

### 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
- Web GUI
- Outputs to drive external LEDs
- 2 Event inputs
- 1 Event output
- Pulse Per Second (PPS) output
- External Oscillator input

### Firmware Solutions

- ALIGN
- SPAN
- RTK
- RTK ASSIST™
- TerraStar PPP
- API

### Optional Accessories

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

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

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Version 5
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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. Time accuracy does not include biases due to RF or antenna delay.
3. Typical values using serial port communication without interference mitigation and external oscillator disabled. Consult the OEM7 User Documentation for power supply considerations.
4. Device or Host. Device by default.