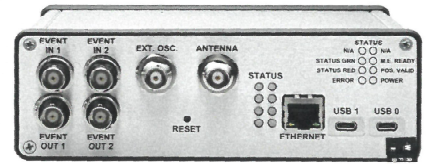# GT7800

Custom designed enclosure using OEM7 technology for precise timing applications

Future-proofed scalability

Capable of tracking all present and upcoming Global Navigation Satellite System (GNSS) constellations and satellite signals, the GT7800 is easy to use and customise for your application.

Easy system installation and precise timing

The GT7800 uses the OEM729 receiver from Hexagon | NovAtel to provide highly precise timing when used on its own or connected with an external oscillator. Standard interfaces are provided through conventional connectors, eliminating the need for hard to find and expensive custom cables. The GT7800 also features advanced Ethernet support for remote configuration and access of receiver data.

Fully functional OEM729 receiver

The GT7800 is scalable to offer sub-metre to centimetre-level positioning and is upgradable to all OEM7 family software options. These options include ALIGN for precise heading and relative positioning, GLIDE for decimetre-level pass-to-pass accuracy and SPAN GNSS+INS for continuous 3D position, velocity and altitude. NovAtel RTK delivers centimetre-level real-time positioning or for centimetre and decimetre PPP solutions use TerraStar corrections.

Precise thinking makes it possible

Our GNSS products were developed for efficient and rapid integration and have set the standard in quality and performance for over 20 years. State-of-the-art lean manufacturing facilities in our North American headquarters produce the industry's most extensive line of OEM receivers, antennas and subsystems. Our products are backed by a team of highly-skilled design and customer support engineers ready to answer your integration questions.

Features and Benefits

- Easy access to all ports available on OEM729 receiver card

- Support for external oscillator for precise timing applications

- All-constellation, multi-frequency positioning solution

- Serial, USB, CAN and Ethernet connectivity

- Supports Precision Time Protocol (PTP)

Performance[1]

Signal tracking

GPS	L1 C/A, L1C, L2C, L2P, L5
GLONASS[2]	L1 C/A, L2 C/A, L2P, L3, L5
Galileo[3]	E1, E5 AltBOC, E5a, E5b, E6
BeiDou	B1I, B1C, B2I, B2a, B2b, B3I
QZSS	L1 C/A, L1C, L1S, 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[4]	60 cm
DGPS	40 cm
TerraStar-L[5]	40 cm
TerraStar-C PRO[5]	2 cm
TerraStar-X[5]	2 cm
RTK	1 cm + 1 ppm

Maximum data rate

Measurements	up to 100 Hz
Position	up to 100 Hz

Time to first fix[6]

Cold start	< 34 s (typ)
Hot start	< 20 s (typ)

Signal reacquisition

L1	< 0.5 s (typ)
L2	< 1.0 s (typ)

Time accuracy[7]

< 5 ns RMS

Velocity accuracy

< 0.03 m/s RMS

Velocity limit[8]

600 m/s

Physical and electrical

Dimensions

160 W x 62.5 H x 190 L mm

Weight

500 g

Power

Input voltage	+9 to +36 VDC
Power consumption[9]	2.0 W

Antenna LNA power output

Output voltage	5 VDC ±5%
Maximum current	200 mA

Connectors

Antenna	TNC
Serial	DB9 male
CAN	DB9 female
USB 2.0 (device only)	Micro A/B
Ethernet	RJ45
Event In/Out	BNC
External oscillator	BNC
Power	DC coax jack

Status LEDs

Power
Position Valid
Error

Environmental

Temperature

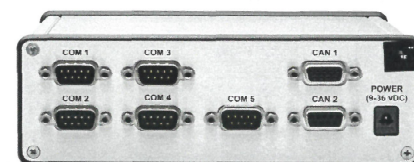|	
Operating	0°C to +55°C
Storage	-40°C to +75°C

ESD

IEC 61000-4-2

Compliance

FCC, ISED, CE

Included accessories

- DC power cable assembly
- USB micro cable

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1. *Typical values under ideal, open sky conditions.*
2. *Hardware ready for L5.*
3. *E1bc and E6bc support only.*
4. *GPS-only*
5. *Requires a subscription to a TerraStar correction service.*
6. *Cold start: no almanac or ephemerides and no approximate position or time.*
   Hot start: almanac and recent ephemerides saved and approximate position and time entered.
7. *Time accuracy does not include biases due to RF or antenna delay.*
8. *Export licensing restricts operation to a maximum of 600 m/s, message output impacted above 585 m/s.*
9. *Typical values using serial port communication without interference mitigation and external oscillator disabled. Consult the OEM7 User Documentation for power supply considerations.*

Contact Hexagon | NovAtel