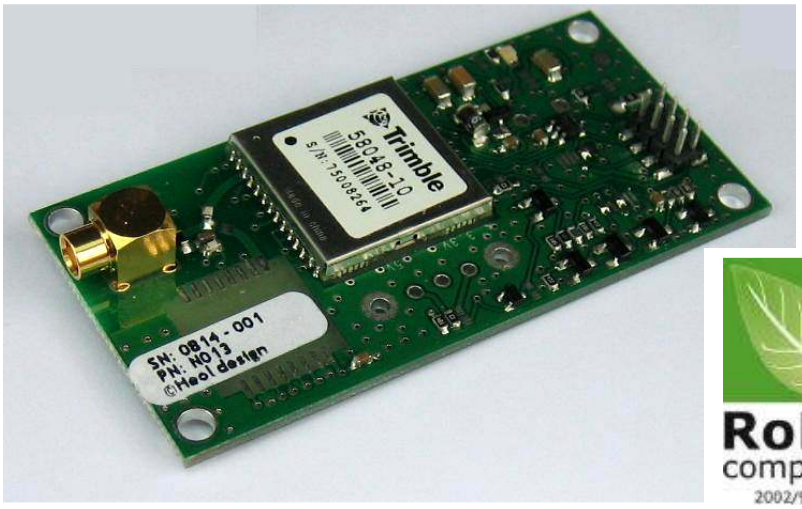
HEOL DESIGN

N0xx, improved replacement GPS receivers : clones for Trimble iQ, SQ, SK2, LP, ACE II/III



RoHS compliant 2002/95/EC

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BEST PERFORMANCE

HEOL DESIGN is the first company to produce Trimble GPS receiver clone boards, which are based on the Copernicus II high performance GPS chip set. These OEM board are designed for use in embedded and industrial applications requiring high accuracy positioning and timing information. They can also be used as a replacement and upgrade for users of the Trimble Lassen iQ, SQ, LP, SK2 and ACE (ACEII, ACEIII) receiver boards, which are now EOL (end of life).

The N0xx (except N016 - iQ and SQ replacement boards), have an additional feature: thanks to a switch, you can select the active antenna voltage; so you can migrate from an obsolete receiver technology to a performing one, without the need to change the antenna.

Also, the N021 and N024 (Lassen SKII and ACEII / ACEIII clones) integrate a processor, for matching with parity odd, and additional software features.

ADVANTAGES:

- Ultra-high sensitivity of **-160dBm**, enabling high performance acquisition and tracking in urban canyon and signal obscured environments.
- SBAS support (WAAS, EGNOS), for improved Horizontal and Altitude accuracy.
- Cold Start Time to First Fix (TTFF) is quicker than **38s**.
- Low power consumption (around **100mW**).
- The serial ports that can be configured to suit the customer's requirements such as: input and output protocols (TSIP, NMEA, TAIP) and transmission speed.
- Configuration parameters backed-up to an EEPROM.
- Pin to pin compatible with Trimble GPS receivers; same form factor, for ease of integration.
- **Protection** against open and/or short circuit on the antenna, and alarms reported through serial port.
- Overvoltage protection on Antenna input**.**
- Accurate pps (pulse per second signal), better than **±60 ns**.
- Optional: on board **Back-up** capacitor with autonomy of 30 hours for hot start-up after a power cut.

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SUMMARY OF THE CHARACTERISTICS:

Performances:

Receiver		12 channels, -160dBm
Update speed		TSIP ⇒ 1Hz ; NMEA ⇒ 1Hz
Accuracy	Horizontal (w SBAS)	<2 meters (50%), <4 meters (90%)
	Altitude (w SBAS)	<3 meters (50%), <5 meters (90%)
	Speed	0,06 m/sec (nominal)*
	Time (pps)	±60 ns
Initial acquisition time	Cold (Time to First Fix)	< 39 seconds (90%)*
	Warm start	< 35 seconds (90%)*
	Hot start	< 3 seconds (90%)*
Reacquisition signal after signal lost		< 2 seconds (typical)*
Altitude		< 18 000 m
Speed		< 515 m/sec maximum
Acceleration		4 g (39,2m/sec□)
Operating Temperature		-40/+85 °C
Storage Temperature		-55/+105°C

* Aerial field cleared

Electrical characteristics

Prime power	Voltage	3.2 to 5.5 VDC
	Power consumption	100mW without active antenna
Backup power	Voltage	3.2 to 3.6 VDC
	Power consumption	10µA
Antenna voltage		3 to 5 VDC (switch selectable)

EMC compatibility

The HEOL-N0xx boards have successfully completed compliance testing against the following standards listed below: (In accordance with the CE directive).

- EN55022 class B (conducted and radiated emissions) dated January 1999, with 10dB margin.
- EN61000-4-3 published in 2002: "Immunity tests on electromagnetic fields radiated at radio-electrical frequencies", with 10V/m electromagnetic field.
- EN61000-4-6 published in February 1997: "Immunity tests on conducted interference, induced by radio-electrical fields".
- EN61000-4-4 (Immunity to rapid transients) dated June 1995, with 2kV transients.
- EN61000-4-2 (Immunity to electrostatic discharges) dated June 1995.

Ordering part numbers

Lassen SK2 replacement board:

N011-V1-B with parity 'none'
N021-V1-B with parity 'odd'

Lassen LP replacement board:

N013-V1-X C

ACEII / ACEIII replacement board:

N014-V1-B with parity 'none'
N024-V1-B with parity 'odd'

For these 3 part numbers :

Antenna connector:
- B : SMB (default)
- A : SMA
- X : MCX
- F : Fakra SMB

C : Optional BackUp Battery Capacitor (leave blank if not required)

Lassen iQ / SQ replacement board:

N016-V1-H C R

Antenna connector:
- H : Hirose HFL (default)
- A : SMA on cable

Fixing pins:
- R : Right angle (default)
- S : Straight

C : Optional on board BackUp Battery Capacitor (leave blank if not required)