



## **NAELCOM**

2 Rue Jean Mermoz B.P.120  
93297 Tremblay en France Cedex  
FRANCE

Tel : +33 1 48 61 95 28

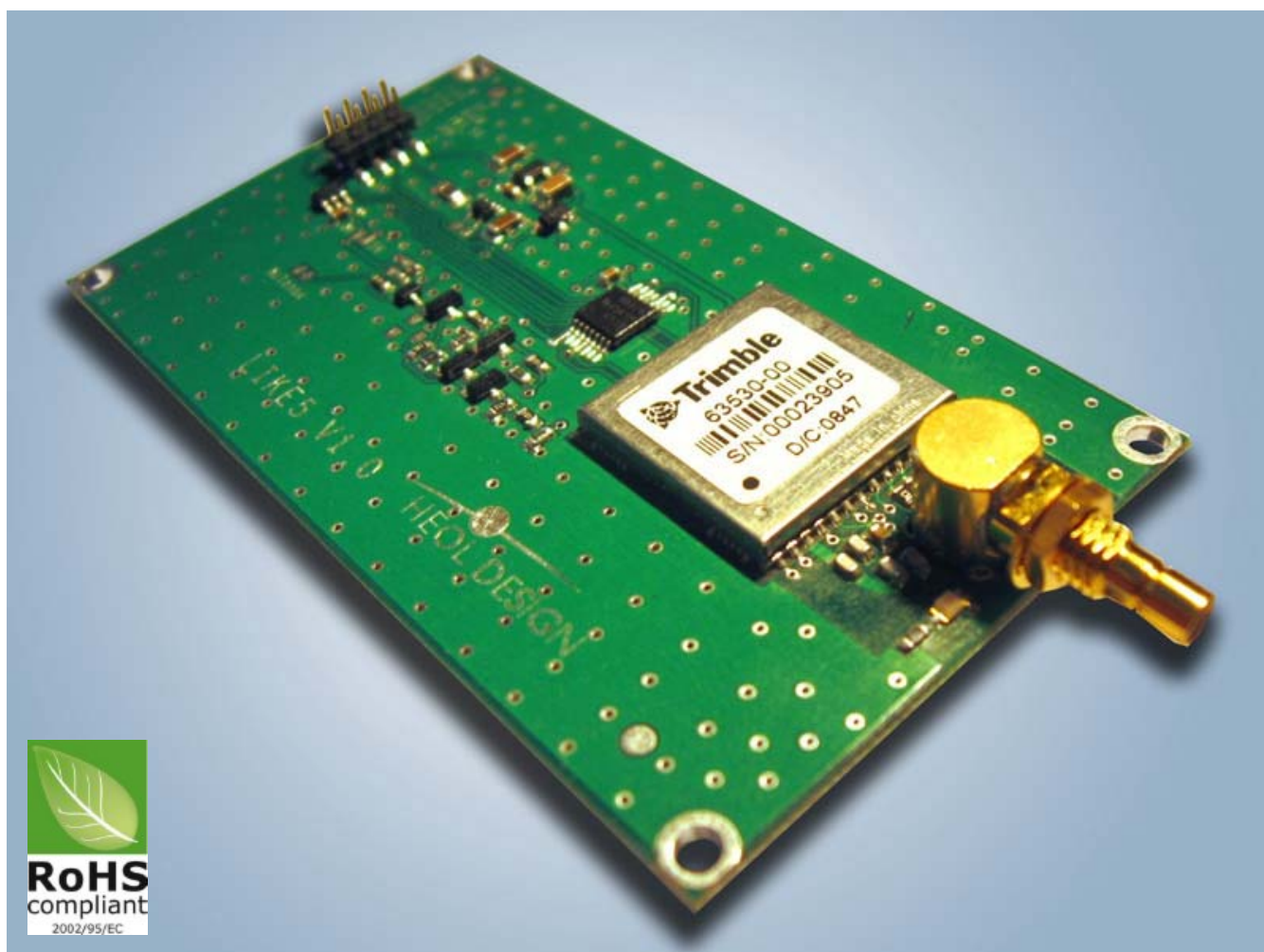
Fax : +33 1 48 61 94 03

e-mail : [contact@naelcom.com](mailto:contact@naelcom.com)

Web : [www.naelcom.com](http://www.naelcom.com)

# **GPS RECEIVER NLC-ACE III**





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NAELCOM is not responsible for the operation or failure of operation of GPS satellites or the availability of GPS satellite signals.

## ***BEST PERFORMANCE***

NAELCOM has produced a new GPS receiver board, the "NLC-ACEIII", which is based on the Trimble Copernicus high performance GPS chip set. This OEM board is designed for use in embedded and industrial applications requiring high accuracy positioning and timing information. It can also be used as a replacement and upgrade for users of the Trimble ACE II and ACE III receiver board.

The NLC-ACEIII board are RoHS (lead free) compliant.

## ***ADVANTAGES:***

- Ultra-high sensitivity of **-160dBm** (-190dBw), 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: **45mA @ 5V**, with Power-Good LED.
- The 2 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 ACE II and ACE III GPS receivers; same form factor, for ease of integration.
- **Protection** against open and/or short circuit on the antenna (60mA), and alarms reported through serial port.
- **50V** Overvoltage protection on Antenna input.
- Accurate pps (pulse per second signal), better than **±60 ns**.
- New stationary mode for timing application.

## SUMMARY OF THE CHARACTERISTICS:

### Performances:

Receiver		12 channels
	Tracking sensitivity	-160dBm
	Acquisition Sensitivity (High "Indoor" Sensitivity Mode)	-148dBm*
	Acquisition Sensitivity (Standard Sensitivity Mode)**	-142 dBm
Initial acquisition time		
	Hot Start	3s
	Warm Start	35s
	Cold Start	38s
	Re-acquisition	2s
Accuracy		
	Horizontal @50% (@90%)	<2.5m (<5m)
	Horizontal with SBAS @50% (@90%)	<2.0m (<4m)
	Altitude @50% (@90%)	<5m (<8m)
	Altitude with SBAS @50% (@90%)	<3m (<5m)
	PPS (Static)	± 60ns rms
	PPS (Stationary Mode "indoor" @ -145dBm)	± 350ns rms
Altitude		<18 000m
Speed		<515m/s max
Acceleration		4G (39.2m/s <sup>2</sup> )
Operating Temperature		-40/+85°C
Storage Temperature		-55/+105°C

\* For Hot Start with ephemeris, otherwise -146dBm.

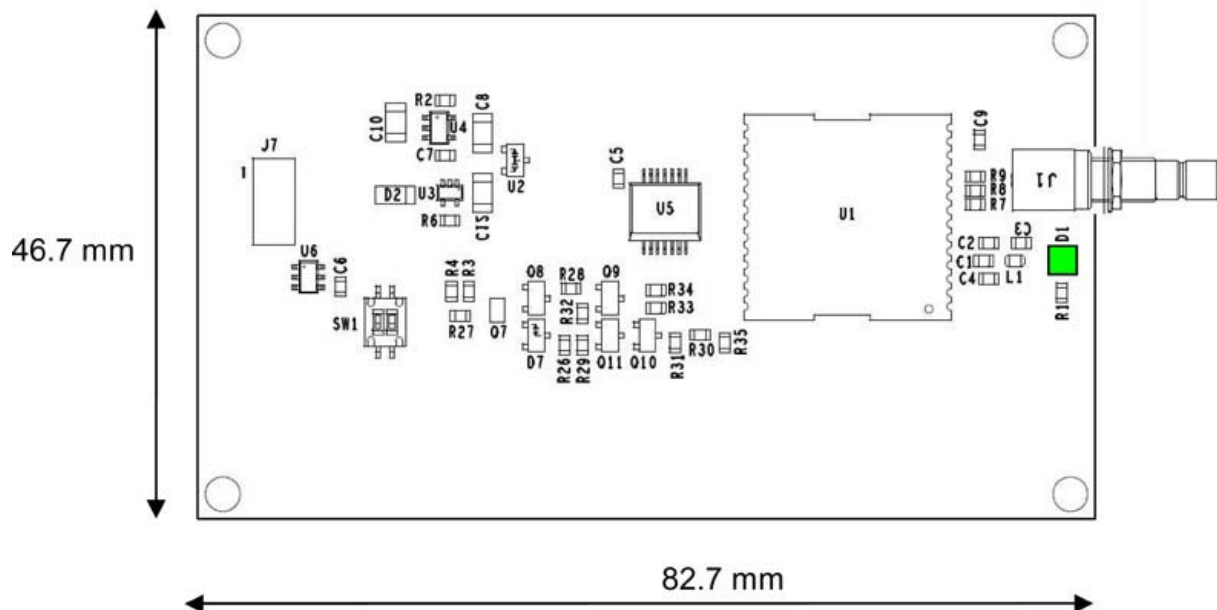
\*\* Standard Acquisition Sensitivity is the default setting. High mode should be enabled for indoor applications.

### Electrical characteristics


Prime power	Voltage	4.5 to 5.5 VDC
	Power consumption	45mA
Backup power	Voltage	3.2 to 5.5 VDC
	Power consumption	10µA / 30mA (1)
Antenna voltage		5VDC, 3.3VDC or passive

(1) At beginning of standby, and after 18 hours, the current drawn on Backup pin will be 30mA during 40ms.

### Physical characteristics:



### EMC compatibility

The NLC-ACEIII board has successfully completed compliance testing against the following standards listed below: (In accordance with the  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.

### For Information:

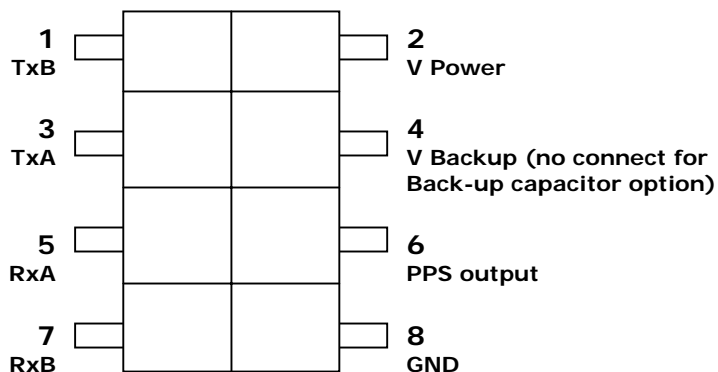
The EN61000-4-3 standard is identical to the CEI 1000-4-3 standard and replaces ENV50140.

The EN61000-4-3 standard (see note A) is mentioned in the EN50082-generic standard for electrical and electronic equipment designed for use in industrial environments.

The NF EN61000-4-6 standard is identical to the CEI 1000-4-6 standard and replaces ENV50141. The EN61000-4-6 standard (see note B) is mentioned in the EN50082-2 generic standard for electrical and electronic equipment designed for use in industrial environments.

## ***Connectors description***

8 pin 2 mm male header:



NAELCOM can provide mother board in metal housing (with protected RS232/RS422 interface and power supply) for your applications on request.

Antenna: Right angle SMB connector.

## ***Factory settings of the serial ports***

The two communication ports (5V TTL level) are set as standard as follows:

### **Port 1:**

- Input: TSIP protocol, 38400 Baud, 8 bits, no parity, 1 stop bit.
- Output: TSIP protocol, 38400 Baud, 8 bits, no parity, 1 stop bit.

### **Port 2:**

- Input: NMEA protocol, 4800 Baud, 8 bits, no parity, 1 stop bit.
- Output: NMEA protocol, 4800 Baud, 8 bits, no parity, 1 stop bit.

## ***Ordering part number***

The ordering part number is **NLC-ACEIII**.