Lassen clone are compatible mechanically and electrically with famous TRIMBLE Lassen products. We use TRIMBLE advanced technology GPS/GNSS receivers for a powerful replacement. You are looking for Lassen SKII, Lassen LP, Lassen iQ/SQ replacement boards with improved capabilities, test our clones.

**KEY FEATURES AND BENEFITS**

- Mechanically and electrically compatible with original TRIMBLE Lassen series.
- Product/Protocol continuity after TRIMBLE LTB/EOL
- Avoid huge cost due for a complete redesign
- Improve GPS performances on current design
- Offer GNSS capabilities (Buffalo) to your product
- For new design when SMD GPS are not appropriate
- Designed and Manufactured in FRANCE

**DESIGN FOR QUICK IMPLEMENTATION**

Naelcom modules NLC-SKII, NLC-LP, NLC-iQ are user configurable, dual I/O serial ports mean flexibility and fast integration, reliable performances over –40°C to +85°C extended temperature range.

By using our clones you will make the good choice for businesses continuity, updating current installation with latest powerful TRIMBLE GPS/GNSS receivers.

**MULTI PURPOSE**

The Naelcom NLC-SKII, NLC-LP, NLC-iQ boards line support multi TRIMBLE receivers in order to give an answer for each customer need: Copernicus II for TSIP/TAIP/NMEA compatibility, Condor C1919C for 5Hz capability, Resolution SMTx for accurate 1PPS (15ns) and Timing features (TRAIM, Self-Survey).

**DEMONSTRATED PERFORMANCE**

Industry is looking for easy to use interface to achieve their goal. With the NLC-xxx we just offer the missing brick to develop new opportunities and continue businesses.

By using TRIMBLE top quality modules, our boards achieve tracking sensitivity –160dBm, fast TTFF (cold start):38 second, aGPS, SBAS (WAAS, EGNOS, MSAS) capable, update rate up to 5Hz (CONDOR).

**SAVE MONEY**

Hardware redesign is a huge cost, NAELCOM offers possibility to reduce it by offering compatible boards. Only small software modifications may be required due to baud rate, parity, packets lengths and configuration, due to GPS models differences between TRIMBLE original Lassen and clones.
NAELCOM NLC CLONE SERIES : SKII, iQ, LP FORM FACTOR

PHYSICAL AND ELECTRICAL CHARACTERISTICS

NLC-SKII-CP2-V2.0 (GPS receiver COPERNICUS® II):
- Size: 82.6 mm x 31.2 mm x 10.2 mm
- Weight: 50 grams
- Connectors: RF: SMB; I/O: 8-pin (2x4), 2.54 mm header
- Prime Power: +3.3 VDC, ±0.3V
- Power consumption (board only): 49mA
- Back-up power: +2.7 to +5V DC
- Back-up consumption: 7µA @ +3.0V

Supported protocols: TSIP@38400, 8, None, 1 (parity not configurable)
NMEA@38400, 8, None, 1 (parity not configurable)
TAIP@48000, 8, None, 1 (parity not configurable)
NLC-SKII/xx PCB supports also TRIMBLE BUFFALO (GNSS, NMEA 1Hz) and CONDOR C1919C (NMEA, 5Hz)

NLC-LP-CP2 (GPS receiver COPERNICUS® II):
- Size: 66.167 mm x 31.750 mm x 12 mm
- Weight: 40 grams
- Connectors: RF: MCX; I/O: 8-pin (2x4), 2 mm header
- Prime Power: +3.3 VDC, ±0.3V
- Power consumption (board only): 58mA
- Back-up power: +2.7 to +3.6V DC
- Back-up consumption: 7µA @ +3.0V

Data connector Pinout:
- Serial ports/1PPS: 3.0V CMOS, TTL compatible
- NMEA@384000, 8, None, 1 (parity not configurable)
- TAIP@48000, 8, None, 1 (parity not configurable)

NLC-LP-xx PCB supports also TRIMBLE BUFFALO (GNSS, NMEA 1Hz) and CONDOR C1919C (NMEA, 5Hz)

NLC-iQ-CP2 (GPS receiver COPERNICUS® II):
- Size: 26 mm x 26 mm x 9 mm
- Weight: 12 grams
- Connectors: RF: HFL; I/O: 8-pin (2x4), 1.27 mm header
- Prime Power: +3.0 VDC, ±0.3V
- Power consumption (board only): 49mA
- Back-up power: +2.7 to +3.6V DC
- Back-up consumption: 7µA @ +3.0V

Interface characteristics
- Serial ports/1PPS: 3.0V CMOS, TTL compatible
- NMEA@384000, 8, None, 1 (parity not configurable)
- TAIP@48000, 8, None, 1 (parity not configurable)

Data connector Pinout:
- Serial ports/1PPS: 3.0V CMOS, TTL compatible
- NMEA@384000, 8, None, 1 (parity not configurable)
- TAIP@48000, 8, None, 1 (parity not configurable)

NLC-iQ-xx PCB supports also TRIMBLE BUFFALO (GNSS, NMEA 1Hz) and CONDOR C1919C (NMEA, 5Hz)

NLC-SUP-iQ PCB supports also TRIMBLE BUFFALO, CONDOR C1919C (NMEA, 5Hz), Resolution SMTx (GPS Timing TSP) and Resolution SMT GG (GNSS, timing TSP)

ENVIRONMENTAL CHARACTERISTICS (ALL SERIES)

Temperature
- Operating: -40°C to +85°C
- Storage: -55°C to +100°C
- Operating Humidity: 5% to 95% R.H. non-condensing, at +60°C

PERFORMANCES

TRIMBLE GPS COPERNICUS® II:
- Accuracy (24 hr static):
  - Horizontal: <2.5 m 50%, <5 m 90%
  - SBAS: <2.0 m 50%, <4 m 90%
- Altitude:
  - <5 m 50%, <8 m 90%
  - <2.0 m 50%, <4 m 90%
- Velocity: 0.06 m/sec
- Static PPS: ±60ns RMS
- PPS (Stationary Mode "Indoor")@ -145dBm: ±350ns RMS

Acquisition (Autonomous, ~130dBm, 50%)
- Recacquisition: 2 s
- Hot Start: 3 s
- Hot Start without battery backup: 8 s
- Warm Start: 35 s
- Cold Start: 38 s
- Sensitivity (unaided): ~160 dBm
- Acquisition: ~148 dBm

Receiver Dynamics
- Position/Timing: ~160 dBm
- Tracking: ~148 dBm
- LP

Specifications subject to change without notice.

ORDERING INFORMATION

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-CP2 versions are available on stock, other versions on request.

CUSTOM VERSION:

On request NAELCOM offer possibility to customize your product, we are offering special connector or coating.

Depending model, please contact us.

Specifications subject to change without notice.

NAELCOM NLC CLONE SERIES : SKII, iQ, LP FORM FACTOR

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<td>TXDB</td>
<td>RXDB</td>
<td>VCC</td>
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</table>

(1) Pin 1 of NLC-LP-CP2 is not connected by default. Copernicus II does not support « Signal Control Power mode control interface » from Lassen LP. TXDB can be connected on PIN 1, on demand.

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