

# Nilamtec NL1

## Multi-Band High Precision GNSS Laser IMU Survey System

### WHAT IS NILAMTEC NL1 GNSS LASER IMU SURVEY SYSTEM?

**Nilamtec NL1 GNSS Laser IMU Survey System is an innovative solution for cm level GNSS measurement especially for the near field which cannot be reached easily.**

**The system comprises of Nilamtec NL1 GNSS Laser IMU Unit, T5 8" Rugged Control Unit, and NField Software.**

**It is an easy-to-use solution for topography, tree, utility, power line, as-built, site setting out survey works.**

### Nilamtec NL1

With well integrated GNSS, Laser and IMU technologies, Nilamtec NL1 provides cm level GNSS measurement by high precision laser pointing and tilt compensation to centering pole.

Powered by 1408 channel full constellation GNSS receiver, NL1 supports advanced RTK technologies and provides up to 8mm accuracy in GNSS positioning. The laser pointing and IMU tilt compensation solution provide cm level measurement accuracy. It greatly improves the work efficiency in

hard-to-reach location and change the work mode from level-the-pole to quick-move-on.

### Nilamtec T5

Powered by Qualcomm QCM6490 CPU, Nilamtec T5 provides high speed computing power and 5G communication. T5 runs the CPU demanding BIM/Field application software and exchange high volume data with cloud server much faster.

With 8" extra bright screen, it makes reading drawings and maps in the field much easier.

### Nilamtec NField Software

NField is an easy-to-use software for field survey. Pre-loaded into Nilamtec T5, NField supports point survey, point stakeout, line stakeout, CAD mapping.

NField is well structured for project management, survey devices management, survey work management, and provide useful tools for engineering calculations.

### **Reliability and Efficiency in The Field and Office**

Both NL1 and T5 are rugged

designed for field application. You can take them to work in the field without worry about dust, water, damage caused by dropping the tablet, high or low temperature, and long operation hour.

Nilamtec NL1 system simplifies the survey work and make the job done easier in the hard-to-reach area.



Nilamtec NL1



Nilamtec T5



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### TECHNICAL SPECIFICATION

#### Nilamtec NL1

##### GNSS

- 1408 Channels
- GPS (L1C/A, L1C, L2P(Y), L2C, L5)
- GLO (L1, L2, L3)
- BDS (B1I, B1C, B2I, B2a, B2b, B3I)
- GAL (E1, E5a, E5b, E6)
- QZSS (L1, L2, L5, L6)
- SBAS (L1, L2, L5)
- Data Format
  - CMR, CMR+,
  - RTCM2.X, RTCM3.X

##### Accuracy

##### GNSS

- Standalone (RMS):
  - Horizontal: 1.5m
  - Vertical: 2.5m
- DGNSS (RMS)
  - Horizontal: 0.4m
  - Vertical: 0.8m
- RTK (RMS)
  - Horizontal:  $\pm 0.8\text{cm} + 1\text{ppm}$
  - Vertical:  $\pm 1.5\text{cm} + 1\text{ppm}$

##### Laser

- Laser Accuracy (RMS)
  - $\leq \pm 1\text{cm} + 0.4\text{cm/m}$

##### IMU

- Tilt Compensation Accuracy
  - $\leq 1.5\text{cm}$  at tilt angle  $30^\circ$ ,
  - Max Tilt angle:  $120^\circ$
- IMU Update Rate:
  - 200 Hz

##### Communication

- LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28
- LTE TDD: B38/39/40/41
- WCDMA: B1/2/4/5/6/8/19
- GSM: B2/3/5/8
- Bluetooth 4.1

##### Power

- Built-in 7000mAh battery
- Up to 12 hours typical operation

##### Environment

##### Temperature:

- Operating:  $-20^\circ\text{C}$  to  $+75^\circ\text{C}$
- Storage:  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$

##### Humidity:

- 95% non-condensing

##### Dust and Water Proof:

- IP67

##### Drop Resistance:

- 1.6 m drop onto concrete

##### Physical

- Size: 133.5x63x56mm
- Weight: approx. 260g
- Interface: USB-C

#### Nilamtec T5

##### Operating System

- Android 13 AOSP OS

##### CPU

- Qualcomm QCM6490

##### RAM/Flash

- 8Gb/128Gb

##### Communication Network

- GSM: B2/B3/B5/B8,
- WCDMA: B1/B3/B5/B8,
- TDD-LTE: B38/B39/B40/B41,
- FDD-LTE: B1/B2/B3/B5/B7/B8/B20/B26/B28
- 5G-NR: N1/N3/N7/N8/N28/N38/N41/N77/N78/N79L
- WIFI: IEEE 802.11 a/b/g/n/ac/ax, 2.4GHz and 5GHz, 2x2 MIMO
- Bluetooth: Bluetooth 5.2
- USB: UBS 3.0 Type C x 1 (support display port), USB2.0 Type A x2
- NFC
- Extended Pogo Pin Interface: Back (12-pin): UART/USB/GPIO/DCIN  
Bottom (10-pin): USB2.0/DCIN/GPIO

##### SIM Card

Nano SIM x 2

##### Power Management

- Battery: user replaceable 7000 mAh board temperature range, Li-ion battery



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## Multi-Band High Precision GNSS Laser IMU Survey System

- Fast Charging: Support Qualcomm QC 4.0 (need to work with QC 4.0 charger)

### Sensors

G Sensor, Temperature Sensors, Gyroscope, Light Sensor, E-Compass, Fingerprint

### Physical

- Size: 209x130x13.9mm
- Weight: approx. 530g (including battery)
- User Interface: Hard Keys Power, Volume up/down, F1, F2, F3, F4

### Environmental

Temperature:

- Operating: -20 °C to +60 °C
- Storage: -30 °C to +70°C

Humidity:

- 95% non-condensing

Dust and Water Proof:

- IP68

Drop Resistance:

- 1.22 m as per MIL-STD-810G

### Input/Output

Extended Memory:

Micro SD card (T card)

Display:

Damage-Resistant Gorilla Glass  
8" LCD Capacitive Multi-touch screen  
1280 x 800 Pixel resolution  
700 cd/m<sup>2</sup> brightness

Audio:

Built-in speaker and microphone  
Support USB-C type corded microphone

Camera:

Rear Camera: 20 MP with flash light  
Front Camera: 8 MP

### Nilamtec NField Software

#### General Features

- Project Management
- Coordinate System
- Calibration Point
- Import/Export Data
- Points Database
- Others

#### Compatible Devices

- Nilamtec GNSS products

#### Survey

- Point Survey/Stakeout
- CAD Mapping/Stakeout
- Line/DMS Stakeout

#### Tools

- Coordinate Converter
- Angle Converter
- Perimeter and Area
- Volume
- File Sharing
- Calculator
- Others



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