



UN-154 Differential eLoran RSIM

Key Features

- 1U 19" rack mount enclosure
- Multimode differential Loran Reference Station and Integrity Monitor
- Configurable as:
 - Reference Station
 - Integrity Monitor
 - Hot Standby
- Automatic switchover with no loss of data
- Software configurable
- Loran-C, eLoran, Chayka
- Internal solid state drive

The UN-154 is a multimode receiver that uses the latest version of UrsaNav's Mitigator™ series Low Frequency (LF) receivers. The UN-154 is designed for use in differential Loran applications. The receiver, configured as a Reference Station (RS), measures and monitors Loran signals and calculates the differential corrections based on pseudo range measurements, nominal ASF values, and the surveyed location of the DLoran Station antennas. It can also act as an Integrity Monitor (IM) that pre- and post- checks the validity of the calculated differential corrections.

The UN-154 meets the stringent European Telecommunications Standards Institute requirements for Primary Reference Clocks, the Stratum-I frequency requirements, and provides traceability of time to within 50 nanoseconds of UTC. Built-in future-proofing ensures capability to track next generation LF signals with advanced waveforms and enhanced data channel capability.

As solutions experts for LF Position, Navigation, Timing, Frequency, and Data technology; UrsaNav has you covered from transmission to reception. Our turnkey solutions include system design, timing and control equipment, advanced data channel techniques, and differential Loran reference equipment.

UN-154 Technical Specifications

PERFORMANCE

Timing

- **Timing Specifications:** ETSI EN300 462-6-1 / ITU G.811
- **Maximum Time Interval Error:** < 50ns from UTC; < 25ns for 100s intervals; < 100ns for intervals <1000s
- **Hold-over:** < 5 μ s / 24 hrs
- **Timing source:** 1 to 3 radio transmitters with automatic handover

Positioning

- **Time to First Fix:** 30 seconds
- **Position Update Rate:** 1 Hz
- **Accuracy (95%):** 10-20m Stand-alone eLoran absolute positioning accuracy in differential eLoran mode
- **Stations tracked:** All in view

eLoran Engine

- **Sensitivity:** 30-120 dB μ V/m
- **Dynamic range:** 96 dB
- **Signal Processing:** Band pass/notch filtering, cross-rate cancellation, moving average TOA integration
- **Loran Data Channel:** Eurofix, 9th / 10th pulse
- **Heading:** <1 degree with H-field antenna

ACCESSORIES

- Power cord, User Manual, ELEGANT user interface
- Optional UN-006 E-field antenna
- Optional UN-008 H-field antenna
- Optional Antenna Cable 5, 15, or 30m

PHYSICAL & ELECTRICAL

- **Dimensions:** 1U 19" rackmount x 16" deep
- **Weight:** 3.6 kg
- **Input Voltage:** 100-240VAC 50/60Hz
- **Power Consumption:** 16 W

INTERFACE

Interface

- RSIM message interface (draft Dloran RSIM standard)
- TCP/IP and UDP interface (Ethernet)
- Interfaces with other UN-154 RSIM equipment
- Interfaces with Monitor & Control Servers
- Interfaces with LDC capable eLoran transmitter for Dloran broadcast

Physical

- Ethernet port
- USB port
- 10 MHz frequency output
- 1 PPS eLoran UTC output
- 10 MHz frequency input
- 1PPS input
- Multicolor Status LEDs

ENVIRONMENTAL

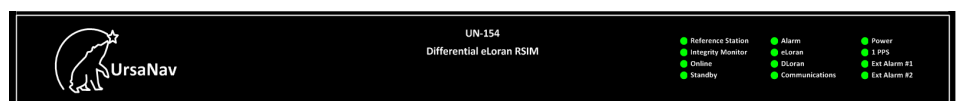
- **Operating Temperature:** -40°C to +65°C
- **Storage Temperature:** -50°C to +75°C
- **Humidity:** 95% non-condensing

FEATURES

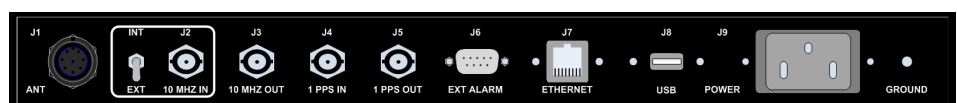
- Dual Core ARM/DSP Software Defined Radio
- Firmware upgradable
- On Board FPGA and flash memory
- Monitors eLoran reception
- Calculates Differential Loran corrections
- Protects System Performance Integrity
- Automatic fail-over to stand-by equipment
- eLoran Engine (UN-151):
 - Meets RTCM SC127 draft MPS spec
 - Meets ETSI PRC requirements
 - Meets Stratum-I frequency spec
 - eLoran UTC recovery

ELEGANT™

UrsaNav ELEGANT software for the UN-154 receiver provides a complete monitor and control capability of a dLoran reference station and integrity monitor suite composed of three UN-154s and a server. The software is scalable to accommodate implementations where multiple RSIMs communicate with multiple transmitting sites. This software is provided with customizations to meet end-user requirements.



Front View



Rear View



www.ursanav.com

LFsolutions@ursanav.com

Northeast Regional Office

85 Rangeway Road
Suite 110, Building Three
North Billerica, MA 01862 USA

+1 781.538.5299

EMEA Operations

Het Moeleke 7
3060 Bertem
Belgium

+32.16.845095

*Specifications subject to change without notice.

© UrsaNav Inc. All rights reserved.