LD900 Receiver

Quad-Band GNSS receiver delivers precise positioning for demanding marine operations.

LD900 Receiver

Maximum performance

The LD900 is a quad-band GNSS receiver capable of tracking GPS, GLONASS, BeiDou and Galileo constellations to provide reliable and accurate positioning. Access to multiple GNSS signals allows for better satellite availability and reduces the impact of satellite masking or blockage.

Robust L-band reception

LD900 receives L-band signals on multiple channels providing access to the worldwide independent correction links and services supplied by Hexagon | Veripos. Correction data available simultaneously from multiple correction satellites minimizes the impact of satellite masking to ensure reliable reception of signals.

Maximum accuracy

Veripos provides accurate and reliable positioning for all marine applications via their redundant positioning and multi-frequency precise point positioning (PPP) Apex Pro and Ultra correction services. Apex PRO corrections utilise all GNSS constellations delivering 2.5 cm accuracy for use in the most demanding offshore applications.

GNSS+INS integration

SPAN GNSS+INS technology combines GNSS positioning with inertial navigation system (INS) measurements like velocity, attitude and heave. In a solution optimised for hydrographic survey applications, the 3D positioning provides accurate measurements even through extended GNSS outages.

Simple to configure and operate

The intuitive colour display and navigation menu make setup, configuration and system status monitoring simple, and the LD900 can also be configured remotely through Quantum software from Veripos.

Designed for marine operations

The receiver has been designed, manufactured and delivered specifically for marine operations. Marine certification allows the LD900 to be interfaced with dynamic positioning systems, assuring accurate and reliable positioning for critical marine operations.

Benefits

- Supports centimetre-level multi-constellation positioning with Veripos Apex and Ultra PPP correction services
- Compatible with Quantum visualisation software
- EN60945 Marine Certified
- OGP 373-19 and IMCA SO15 QC compliant
- Designed for marine operations such as dynamic positioning, seismic exploration, offshore construction, survey and autonomous marine applications
- Advanced signal filtering mitigates the effects of interference from other transmitters

Features

- 555 channel, all-constellation, multi-frequency positioning solution
- Simultaneously track multiple correction service satellites
- Independent L-band RF input
- Intuitive colour display for configuration and monitoring
- Multiple communication options for interfacing
- Optional SPAN GNSS+INS functionality
- Optional ALIGN GNSS heading solution
- Optional MSK Beacon receives corrections from IALA marine radio beacon network
- Automatic 72-hour rolling data log for incident support
- Spoofing and interference detection and mitigation provided by GRIT (GNSS Resilience and Integrity Technology)
- 19” Rackmount option providing additional serial port expansion & UHF receiver availability

Primary GNSS module[1]

Channel configuration

555 Channels

Signal tracking

GPS	L1 C/A, L1C, L2C, L2P, L5
GLONASS[2]	L1 C/A, L2 C/A, L2P, L3, L5
BeiDou	B1I, B1C, B2I, B2a, B2b, B3I
Galileo[3]	E1, E5 AltBOC, E5a, E5b, E6
NavIC (IRNSS)	L5
SBAS	L1, L5
QZSS	L1 C/A, L1C, L2C, L5, L6

Horizontal position accuracy (RMS)

Single Point L1	1.5 m
Single Point L1/L2	1.2 m
SBAS[4]	1 m
Veripos DGNSS[5]	1 m
Veripos PPP[5]	2.5 cm
RTK	1 cm + 1 ppm
Initialisation time	< 10 s
Initialisation reliability	> 99.9%

Maximum data rate

Measurements	up to 20 Hz
Position	up to 20 Hz

Time to first fix

Cold start[6]	< 39 s (typical)
Hot start[7]	< 20 s (typical)

Signal reacquisition

L1	< 0.5 s (typical)
L2	< 1.0 s (typical)

Time accuracy[8]	20 ns RMS
Velocity accuracy	< 0.03 m/s RMS
Velocity limit[9]	515 m/s

Secondary GNSS module[1]

Channel configuration

555 Channels

Signal tracking[10]

GPS	L1 C/A, L1C, L2C, L2P, L5
GLONASS[2]	L1 C/A, L2C, L2P, L3, L5
BeiDou	B1I, B1C, B2I, B2a
Galileo[11]	E1, E5 AltBOC, E5a, E5b
NavIC (IRNSS)	L5
SBAS	L1, L5

Time to first fix

Cold start[6]	< 39 s (typical)
Hot start[7]	< 20 s (typical)

Signal reacquisition

L1	< 0.5 s (typical)
L2	< 1.0 s (typical)

Time accuracy[8]	20 ns RMS
Velocity accuracy	< 0.03 m/s RMS
Velocity limit[9]	515 m/s

L-band module

Channels	5 Channels
Frequency range	1525 to 1560 MHz

Beacon module (option)

Channels	2 Channels
Frequency range	283.5 to 325.0 kHz
Channel spacing	500 Hz
Demodulation	Minimum Shift Keying (MSK)

Communication ports

3 RS-232/RS-422	up to 460,800bps
3 RS-232/RS-422 (expansion)	up to 460,800bps
1 USB 2.0 (host)	HS
2 Ethernet	10/100 Mbps
1 PPS output	pulse width 1 to 500ms

Physical and electrical

Dimensions	300 x 200 x 80 mm
with mounting plate	300 x 220 x 80 mm
Weight	3.8 kg
with mounting plate	4.8 kg
Power[12]	
Power consumption	13 W (typical)
Input voltage	+12 to 24 VDC
Antenna LNA power outputs	
Output voltage	12 VDC ±5%
Maximum current	300mA
Connectors	
GNSS RF	TNC
L-band RF	TNC
IALA	TNC
Serial	DB9
Serial (expansion)	DB15
USB (host)	Type A
Ethernet	RJ45
PPS	BNC
Power	M12, 4 pin
Display	
3.5” QVGA TFT Colour Display	

ALIGN GNSS heading accuracy

Baseline	Accuracy (RMS)
2 m	0.08 degrees
4 m	0.05 degrees

SPAN technology

GNSS+INS integration with marine profile for hydrographic survey applications.

Supported IMUs:

IMU-ISA-100C

IMU-uIMU-IC

Attitude & velocity performance

Refer to IMU product sheets for values

Heave performance[13]

Instantaneous Heave	5 cm or 5%
Delayed Heave	3.5 cm or 3.5%
Post-Processed Heave	2.5 cm or 2.5%[14]

Environmental

Temperature	
Operating	-15°C to +55°C
Humidity	EN60945

Compliance

FCC, CE, UKCA, RoHS, REACH , WEEE, EN60945 (Protected Equipment), EN/IEC62368

Features

- NovAtel OEM7 marine positioning engine
- Standard 32 GB internal storage
- Automatic 72 hour rolling data log for incident support
- Simultaneously track multiple correction service satellites
- Independent L-band RF input
- SPAN GNSS+INS option
- ALIGN GNSS Heading (option)
- Built in WiFi support
- OGP 373-19 and IMCA S015 (July 2011) QC compliant

1 Typical values. Performance specifications subject to GNSS system characteristics, Signal-in-Space (SIS) operational degradation, ionospheric and tropospheric conditions, satellite geometry, baseline length, multipath effects and the presence of intentional or unintentional interference sources. 2 Hardware ready for L3 and L5. 3 E1bc and E6bc support only. 4 GPS only. 5 Requires a subscription to a data service. 6 Typical value. No almanac or ephemerides saved and no approximate position or time. 7 Typical value. Almanac or ephemerides and no approximate position and time entered. 8 Time accuracy does not include biases due to RF or antenna delay. No almanac or ephemerides and no approximate position or time. 9 Export licensing restricts operation to a maximum of 515 meters per second, message output impacted above 500 m/s. 10 Model-configurable to track L5/E5a (all / Galileo) through L2 (GPS) or L3/E5b/B2 (GLONASS / Galileo / BeiDou) through L2 (GLONASS). 11 E1bc support only. 12 Typical value. Consult the user documentation for power supply considerations. 13 Requires SPAN Marine Profile. 14 Post-processing results using Waypoint Inertial Explorer.

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For the most recent details of this product visit veripos.com

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