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 **GeoMeasure**



GNSS Receiver

LUX
Laser RTK

GeoMeasure Lux RTK

The Lux is a versatile GNSS receiver equipped with dual-laser cameras. It integrates a high-precision positioning module, IMU, AR, laser technology, and laser visualization to enable high-precision positioning, tilt measurement, AR real-world staking, and visualized laser point measurement. It boasts a maximum testing radius of up to 30 meters. The receiver features a robust magnesium-aluminum alloy design, offering durability and reliability. It supports hot-swappable batteries, allowing quick recharging without power interruption, thereby extending operational time.

CHARACTERISTICS

Full-System, Multi-Frequency GNSS Receiver

The receiver integrates a high-precision positioning module with 1,408 high-speed channels. It supports full-system and multi-frequency signal reception and processing, including: BDS: B1I, B2I, B3I, B1C, B2a, B2b, GPS: L1C/A, L1C, L2C, L5, GLONASS: L1, L2, L3, Galileo: E1, E5a, E5b, E6, QZSS: L1, L2, L5, SBAS and NavIC systems.

Tilt Measurement

Equipped with an intelligent high-precision inertial navigation (IMU) module, the device offers real-time tilt compensation, eliminating the issue of "floating points" in RTK surveys.

AR Stake Out

A professional ultra-wide-angle camera provides HD real-world stake out capabilities. Its user-friendly AR stake out application ensures precise, one-shot staking performance.

Visualized Laser Measurement

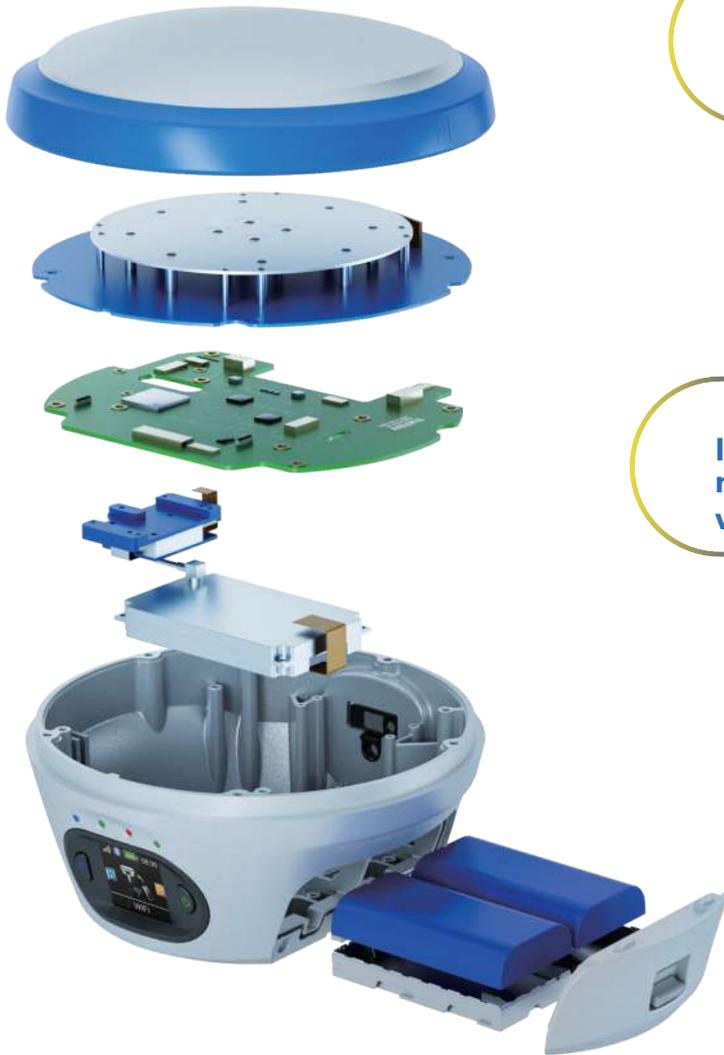
Featuring a high-precision, millimeter-grade laser ranging module and a high-definition camera, the receiver enables precise point-and-measure functionality. The combination of high-accuracy inertial navigation and the camera's HD visuals ensures seamless operation even in complex environments.

Extended Battery Life

The receiver supports two detachable batteries that allow hot-swapping without power interruption. This enables quick battery replacement, significantly extending operational endurance.

GeoMeasure Lux

Dual-Camera Laser RTK



Main body magnesium alloy
ABS/PC top cover

1408 Channel
GPS GLONASS BDS GALILEO
QZSS SBAS IRNSS

Integrates precise laser
ranging
with HD visualization

7.2V, 3400mAh*2
Over 20 Hours

Supports dual removable
powerful batteries for
extended operation

LASER MEASUREMENT



2.5cm 3D error within 5m range
Enhanced with Green Laser.
Expands the range of measurable objects.

HEIGHT	DIAMETER	WEIGHT
103 mm	160 mm	850 g

SPECIFICATION

SYSTEM

HARDWARE SYSTEM	ARM Cortex-A7 1.8GHz
OS	Linux
GNSS	
GPS	L1C/A, L1C, L2P(Y), L2C, L5
GLONASS	L1, L2, L3
BDS	B1I, B2I, B3I, B1C, B2a, B2b(PPP)
GALILEO	E1, E5a, E5b, E6(PPP)
OZSS	L1, L2, L5
SBAS	L1(PPP)
NavIC (IRNSS)	L5*(Requires firmware support)
Channel	1408
Standard Output	NMEA-0183
Correction I/O Protocol	RTCM 3.X
Frequency	20Hz max
Reacquisition Time	<1s
Cold Start Time	<40s

ACCURACY

SINGLE (RMS)	Horizontal: 1.5m/ Vertical: 2.5m
DGPS (RMS)	Horizontal: 0.4m / Vertical: 0.8m
RTK (RMS)	Horizontal: $\pm(8\text{mm}+1\text{ppm})$ Vertical: $\pm(15\text{mm}+1\text{ppm})$
Time Accuracy(RMS)	20ns
Static(RMS)	Horizontal: $\pm(2.5\text{mm}+1\text{ppm})$ Vertical: $\pm(5\text{mm}+1\text{ppm})$
Speed Accuracy(RMS)	0.03m/s
Tilt Compensation (60°)	<2cm
ARStake Out Accuracy	Horizontal: $\pm(8\text{mm}+1\text{ppm})$ Vertical: $\pm(15\text{mm}+1\text{ppm})$
Laser Measurement	<2.5cm 3D error within 5m range

SYSTEM PLATFORM

Bluetooth	BR+EDR+BLE
WIFI	802.11b/g/n
Network	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
Storage	32GB storage
Radio	Integrated high-power transceiver Frequency Range: 410~470MHz Power: 1W/2W/5W

Radio	Protocols: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT Air Baud Rate: 9600, 19200bps
Laser Module	Type: Class 3R Range: 30m Precision: $\pm 5\text{mm} \pm 100 \times 10^{-6} \times D$ (D: Measurement Distance) Wavelength: $520 \pm 20\text{nm}$ Power: 3.8mW
Laser Assist Camera	Sensor $\frac{1}{3}$ inch Resolution: 4224x3200 FOV: D44°H35°V26.5° Distortion: $\leq 1\%$
ARCamera	ARStakeout Supported Sensor: 1/2.8 inch Aperture: f/2.5 Resolution: 1920*1080 FOV: 70.3°H62.7°V38.6° Distortion: $\leq 0.38\%$

DISPLAY

LCD Panel	Sensor: 1.3inch Resolution: 240*RGB*240
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BATTERY / CHARGE

Capacity	7.2V, 3400mAh*2 (Removable, dedicated charger)
Endurance	Over 20 hours (when applying controller network mode)
Charging	9~24VDC

ENVIRONMENT

Operating Temperature	-20°C~+60°C
Storage Temperature	-20°C~+70°C
Shock Resistance	Can withstand a 1.5m drop at normal temperatures
Protection Rating	IP68

PHYSICAL

Materials	Magnesium alloy casing with ABS/PC plastic top cover
Dimensions	$\Phi 160 * 103\text{mm}$
Weight	850g (without battery)

ACCESSORIES

GeoMeasure Lux	1 Unit
External Battery	2 PCS
Battery Charging Cradle	1PCS
Radio Antenna	1PCS

Manufacturers may update parameters at any time, please refer to the latest product information.