GNSS®
by Orient Systems Group

HIGH PRECISION SATELLITE NAVIGATION

CATALOG 2021

Made in Russia

ABOUT

4GNSS is a brand of high-precision and technological navigation equipment of the Orient Systems Group

Orient Systems is a developer, manufacturer and supplier of high-precision GNSS equipment in Russia and abroad. The company was founded in 2014 in Moscow, where GNSS receivers, modems and software for equipment control are still produced. All Orient Systems employees have specialized education. The main principles of creating products is reliability, easy integration, convenient operation and cost effective.

Advantages

1 **SKOLKOVO RESIDENT**
Developments based on the Skolkovo innovation center

2 **UNIQUE TECHNOLOGIES**
Proprietary technologies for high productivity

3 **EQUIPMENT CUSTOMIZATION**
Replacement of components for customer's tasks

4 **CONVENIENCE AND COMFORT OF WORK**
Easy configuration and integration of GNSS equipment

5 **COST EFFECTIVE**
With high technical characteristics

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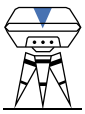
SOLUTIONS

4GNSS navigation equipment is a professional reliable tool for high precision applications

4GNSS equipment is used as an integrator for their specific projects, as well as end users. Due to centimeter positioning accuracy, workability and reliability, our equipment is actively used in various applications with high precision requirements for navigation systems.



SURVEYING

Geodetic, cadastral and GIS surveying with centimeter accuracy

HYDROGRAPHY

Positioning and navigation of various instruments on large and medium vessels

MINING

Automation of drilling rigs, excavators and other devices in the mining industry

PRECISE FARMING

Implementation precision farming principles to optimize the agricultural industry

UAV

High precision navigation allows you to speed up and clarify the process of obtaining orthophoto

UNMANNED VEHICLES

GNSS receivers - one of the components of the high-precision navigation system of an unmanned vehicle

Our customers

МТС

КАМАЗ

ГАЗ группа

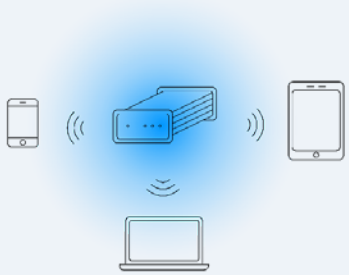
zyfra VIST

АО ГЛОНАСС

ФОРТ XXI

TECHNOLOGIES

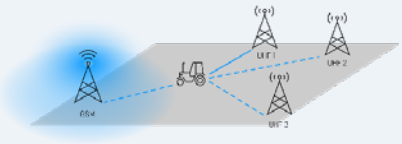
Our modern developments allow us to make the process of working with equipment as comfortable and simple as possible



WEB SURVEY

All the features of field software and even more directly in the browser of any of your devices!

The operating system no longer matters if your device has Wi-Fi. Android, IOS, Windows, etc. - use a browser for full control and management of the GNSS receiver via the Web interface.



STEADY STREAM

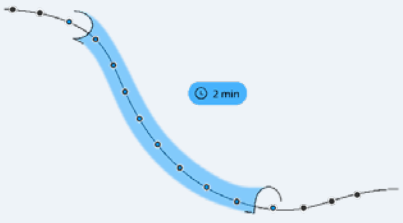
Use the most stable stream of corrections.

The Steady Stream technology allows your device to use both UHF and GSM connection at the same time. It will ensure reliable reception of corrections even in case of a change in connection type.

RTK&GO

Be confident in your field data by combining RTK and Stop&Go modes.

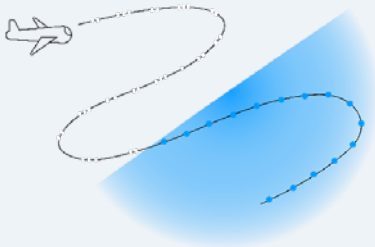
Your receiver during the RTK mode will produce the same shooting in Stop&Go mode. Thanks to this, you can always post-process measurements in case of any problems with the RTK.



STRONG EVENT

Forget about false events when working with external recording devices (for example, a camera during aerial photography).

The built-in comparator cuts off excess events. So each photo corresponds to only one event, which facilitates the subsequent analysis of data for processing.



INERTIAL GNSS

Get a high-precision trajectory even with the loss of satellite signals.

An integrated solution using an external inertial block and a car's motion model allows you to maintain high accuracy in determining the trajectory up to 2 minutes after the loss of signals from global navigation satellite systems.

PRODUCTS

We develop and manufacture various navigation systems: GNSS receivers, modems and other equipment and software in Russia

DEKART

GEODETIC
GNSS RECEIVER

DEKART is a universal GNSS geodetic accuracy receiver. This is a professional device at an affordable price that meets all modern requirements in geodetic works.

The receiver can be operated via the web interface or any field software via NMEA messages.

The innovative panoramic light indicator displays the status of the receiver regardless of the side you are looking at.

Built-in 2SIM GSM / UHF modem will allow you to receive differential corrections even in conditions with weak or no cellular signal.

Various GNSS boards

DECART is based on various GNSS boards so you can choose the right one

Free field software

Use Web interface or field software via NMEA messages to control the receiver

Hot-swap batteries

Separate use of batteries will extend the operating time by replacing the batteries

WEB-SURVEY

Work with any OS (iOS, Android, etc.)

STEADY STREAM

2SIM GSM/UHF modem

RTK&GO

RTK and Stop&Go at the same time

360° VIEW

Panoramic indication

SIGNAL TRACKING

	DEKART	DEKART-S	DEKART-SE
Channels	574	956	448
GPS	L1 C/A, L2C, L2P, L5	L1 C/A, L2C, L2P, L5	L1C/A, L1C, L2C, L2P, L5
BeiDou	B1, B2, B3	B1, B2, B3	B1I, B1C, B2a, B2I, B3
GLONASS	L1 C/A, L1P, L2 C/A, L2P, L3	L1 C/A, L1P, L2 C/A, L2P, L3	L1CA, L2CA, L3 CDMA
Galileo	E1, E5a, E5b	E1, E5a, E5b	E1, E5a, E5b, E5 AltBoc, E6
SBAS	WASS, EGNOS, MSAS, GAGAN	WASS, EGNOS, MSAS, GAGAN	WASS, EGNOS, MSAS, GAGAN, SDCM (L1, L5)**

POSITIONING

	DEKART/DEKART-S	DEKART-SE
RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm	H: 5 mm + 0.5ppm V: 10 mm + 1 ppm
DGPS	H: 0.4 m V: 0.4 m	H: 0.4 m V: 0.7 m
Standalone	H: 1.5 m V: 1.5 m	H: 1.2 m V: 1.9 m
SBAS	H: 1 m V: 1 m	H: 0.6 m V: 0.8 m
Post-processing	H: 2.5 mm + 0.5 ppm V: 5 mm + 0.5 ppm	H: 2.5 mm + 0.5 ppm V: 5 mm + 0.5 ppm
SECORX (PPP)**	-	H: 4 cm V: 7 cm

DATA FORMAT

DEKART/DEKART-S	DEKART-SE
• RTCM 2.X, 3.X • CMR (GPS only) • CMR+ (GPS only)	• RINEX v2.x, v3.x • CMR v2.0 (receive/transmit) • CMR+ (receive only)
• NMEA-0183	• NMEA 0183, v2.3, v3.03, V4.0
• ComNav Binary (CNB)	• Septentrio Binary (SBF)
• Data output frequency up to 20 Hz *	• Data output frequency up to 100 Hz *

COMMUNICATIONS

• 1 Lemo7 (f):
- 1 RS232 baud rates up to 460800 bps
- 1 USB
- 1 external power
- 1 Pulse Per Second (PPS) output
• Built-in UHF modem*
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Panoramic indication show the working status

PHYSICAL

• Size (D × H): 174 mm × 112 mm
• Weight: 1250 g
• Antenna connector: TNC

ENVIRONMENTAL

• Working temperature: -40°C to +70°C
• Storage temperature: -40°C to +85°C
• Humidity: up to 100% (condensation)
• Waterproof and dustproof: IP67, protected from temporary immersion to depth of 1 m
• Shock: designed to survive a 2 m drop onto concrete

ELECTRICAL

• Input voltage: +12.0 V ~ +17.0 VDC
• Power consumption: up to 33 W
• Memory 8 GB (32 GB*)
• Batteries: 3400mAh x 2pcs

- optional

GNSS RECEIVER

OS-112

Multi-frequency GNSS receiver with built-in battery *

WEB-SURVEY	STEADY STREAM	RTK&GO	STRONG EVENT
Work with any OS (iOS, Android, etc.)	2SIM GSM/UHF modem	RTK and Stop&Go at the same time	No false events

OS-112 is a universal multifunctional L1/L2 GNSS receiver with an external antenna connection. It can be used as a Base or Rover in the RTK, Stop&Go, Static modes and for high-precision trajectory and events obtaining.

OS-112 is suitable for most high-precision applications.

SIGNAL TRACKING

• 574 channels:
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1 C/A, L1P, L2 C/A, L2P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

PERFORMANCE

• Cold start: <50 s
• Warm start: <45 s
• Hot star: <15 s
• RTK Initialization time: <10 s
• Signal reacquisition: <2 s
• Initialization reliability: >99.9%
• Velocity accuracy: 0.03 m/s
• Acceleration: 4 g
• Overload: 15 g
• Time accuracy: 20 ns

DATA FORMAT

• Correction data I/O: RTCM 2.X, 3.X, CMR(GPS only), CMR + (GPS only)
• Position data output:
- NMEA-0183
- ComNav protocols
- Data output rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz*

POSITIONING

RTK:
Horizontal: 8 mm + 1 ppm
Vertical: 15 mm + 1 ppm

***DGPS*:** < 0.4 m 3D RMS

***Standalone*:** < 1.5 m 3D RMS

***SBAS*:** < 1 m 3D RMS

Post Processing:
Horizontal: 2.5 mm + 1 ppm
Vertical: 5 mm + 1 ppm

COMMUNICATIONS

• 2 RS232 Lemo4 (f) baud rates up to 460800bps
• 1 Pulse Per Second (PPS) output
• 1 Event Marker input
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Built-in UHF modem*
- 410-470 MHz
- Up to 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna Lemo1 (f)
• Build-in GSM modem
- 2G/3G: 900/2100 MHz
• TCP-IP/UDP-IP (client, server)
• NTRIP (client, server)
• OS-Stream
• GNSS antenna Lemo1 (f)
• 6 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
164 mm × 87,4 mm × 53,6 mm
• Weight: 660 g

ENVIRONMENTAL

• Working temperature: -40°C to +70°C
• Storage temperature: -40°C to +85°C
• Humidity: up to 100% (condensation)
• Waterproof and dustproof: IP67, protected from temporary immersion to depth of 1 m
• Shock: designed to survive a 2 m drop onto concrete

ELECTRICAL

• Input voltage: +9.0 V ~ +28.0 VDC
• Power consumption: up to 3 W
• Built-in battery: 3000 mAh (12-17 V, 20 W)
• Memory 8 GB (32 GB*)

** - optional*

GNSS RECEIVER

OS-113

Universal multifrequency GNSS receiver with an external antenna

WEB-SURVEY
Work with any OS (iOS, Android, etc.)

STEADY STREAM
2SIM GSM/UHF modem

RTK&GO
RTK and Stop&Go at the same time

STRONG EVENT
No false events

OS-113 is a multi-frequency GNSS receiver with an external antenna. It is ideal for recording RAW data. And it can also receive/transmit corrections as Base or Rover.

OS-113 is perfect for any high-precision applications where Raw data collecting or RTK positioning are required.

SIGNAL TRACKING

• 574 channels:
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1 C/A, L1P, L2 C/A, L2P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

PERFORMANCE

• Cold start: <50 s
• Warm start: <45 s
• Hot star: <15 s
• RTK Initialization time: <10 s
• Signal reacquisition: <2 s
• Initialization reliability: >99.9%
• Velocity accuracy: 0.03 m/s
• Acceleration: 4 g
• Overload: 15 g
• Time accuracy: 20 ns

DATA FORMAT

• Correction data I/O: RTCM 2.X, 3.X, CMR(GPS only), CMR + (GPS only)
• Position data output:
- NMEA-0183
- ComNav protocols
- Data output rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz*

POSITIONING

RTK:
Horizontal: 8 mm + 1 ppm
Vertical: 15 mm + 1 ppm

***DGPS*:** < 0.4 m 3D RMS

***Standalone*:** < 1.5 m 3D RMS

***SBAS*:** < 1 m 3D RMS

Post Processing:
Horizontal: 2.5 mm + 1 ppm
Vertical: 5 mm + 1 ppm

COMMUNICATIONS

• 2 RS232 Lemo4 (f) baud rates up to 460800 bps
• 1 Pulse Per Second (PPS) output BNC (f)
- GNSS antenna TNC (f)
• 1 Event Marker input
• Built-in UHF modem *
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
- GSM1 antenna TNC (f)
- GSM2 antenna TNC (f)
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Ethernet RJ-45
• 1 RS232 Lemo4 (f) doubling of GSM/UHF output
• 10 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
165 mm × 163,9 mm × 90,1 mm
• Weight: 1590 g

ENVIRONMENTAL

• Working temperature: -40°C to +70°C
• Storage temperature: -40°C to +85°C
• Humidity: up to 100% (condensation)
• Waterproof and dustproof: IP67, protected from temporary immersion to depth of 1 m
• Shock: designed to survive a 2 m drop onto concrete

ELECTRICAL

• Input voltage: +9.0 V ~ +28.0 VDC
• Power consumption: up to 3 W
• Built-in battery: 18000 mAh (9-28 V, 45 W)
• Memory 8 GB (32 GB*)

** - optional*

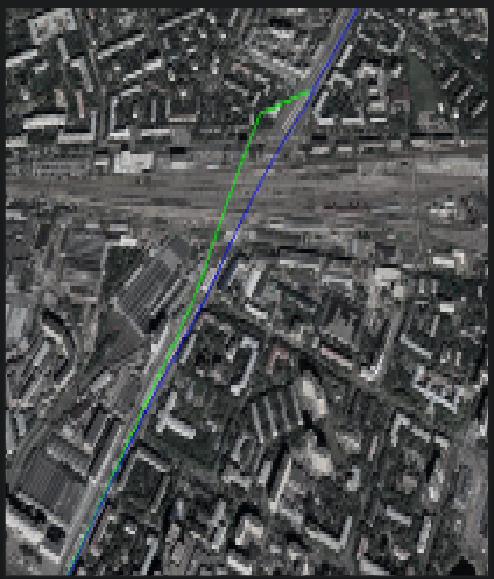
Multi-antenna GNSS receiver with IMU*

OS-213

OS-213 is a dual-antenna (three-antenna *) GNSS receiver with an optional external inertial unit*. Designed for high-precision determination of the position of an object in space (coordinates and course).

Thanks to the integrated GNSS + INS solution * and the object movement model, OS-213 can provide a high-precision trajectory within 2 minutes after losing tracking of navigation satellites.

Green: GNSS + INS
Blue: GNSS + INS + Vehicle motion model



WEB-SURVEY

Work with any OS (iOS, Android, etc.)

INERTIAL GNSS*

GNSS+INS - up to 2min without tracking

STEADY STREAM

2SIM GSM/UHF modem

STRONG EVENT

No false events

OS-213 can be either a **two-antenna or a three-antenna*** GNSS receiver. The modification with three antennas is designed for high-precision determination of 3 angles of object orientation in space using satellite signals. Ideal for hydrography, unmanned vehicles, and other applications that require highly accurate **3D vectoring** of an object's motion.

SIGNAL TRACKING

• 574 channels:
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1 C/A, L1P, L2 C/A, L2P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

PERFORMANCE

• Cold start: <50 s
• Warm start: <45 s
• Hot star: <15 s
• RTK Initialization time: <10 s
• Signal reacquisition: <2 s
• Initialization reliability: >99.9%
• Velocity accuracy: 0.03 m/s
• Acceleration: 4 g
• Overload: 15 g
• Time accuracy: 20 ns

DATA FORMAT

• Correction data I/O: RTCM 2.X, 3.X, CMR(GPS only), CMR + (GPS only)
• Position data output:
- NMEA-0183
- ComNav protocols
- Data output rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz*

POSITIONING

RTK:
Horizontal: 8 mm + 1 ppm
Vertical: 15 mm + 1 ppm

***DGPS*:** < 0.4 m 3D RMS

***Standalone*:** < 1.5 m 3D RMS

***SBAS*:** < 1 m 3D RMS

Post Processing:
Horizontal: 2.5 mm + 1 ppm
Vertical: 5 mm + 1 ppm

HEADING

• Azimuth: (0.2/R)°
• Roll or Pitch: (0.4/R)°
R-range between antennas

COMMUNICATIONS

• 2 RS232 Lemo4 (f) baud rates up to 460800 bps
• 1 RS232 IMU to PC port* Lemo4 (f) baud rates up to 4000000 bps
• 1 Pulse Per Second (PPS) output BNC (f)
- GNSS-master TNC (f)
- GNSS-rover TNC (f)
• 1 Event Marker input
• Built-in UHF modem *
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
- GSM1 antenna TNC (f)
- GSM2 antenna TNC (f)
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Ethernet RJ-45
• 1 RS232 Lemo4 (f) doubling of GSM/UHF output
• 1 DB9 IMU communication*
• 12 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
165 mm × 163,9 mm × 90,1 mm
• Weight: 1840 g

ENVIRONMENTAL

• Working temperature: -40°C to +70°C
• Storage temperature: -40°C to +85°C
• Humidity: up to 100% (condensation)
• Waterproof and dustproof: IP67, protected from temporary immersion to depth of 1 m
• Shock: designed to survive a 2 m drop onto concrete

ELECTRICAL

• Input voltage: +9.0 V ~ +28.0 VDC
• Power consumption: up to 3 W
• Memory 8 GB (32 GB*)

** - optional*

GNSS RECEIVER

FLYBOX

Compact GNSS receiver for UAV integration

STRONG EVENT

No false events

FLYBOX is a simple compact GNSS receiver with an external antenna. This device has the enclosure which provide EMC protection.

You can setup build-in comparator for define value of silence period. All “false” events out of this period will cut off. So, for example, each photo will corresponds to a single event while aerial photography.

SIGNAL TRACKING

• 574 channels:
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1 C/A, L1P, L2 C/A, L2P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

PERFORMANCE

• Cold start: <50 s
• Warm start: <45 s
• Hot star: <15 s
• RTK Initialization time: <10 s
• Signal reacquisition: <2 s
• Initialization reliability: >99.9%
• Velocity accuracy: 0.03 m/s
• Acceleration: 4 g
• Overload: 15 g
• Time accuracy: 20 ns

DATA FORMAT

• Correction data I/O: RTCM 2.X, 3.X, CMR(GPS only), CMR + (GPS only)
• Position data output:
- NMEA-0183
- ComNav protocols
- Data output rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz*

POSITIONING

RTK:
Horizontal: 8 mm + 1 ppm
Vertical: 15 mm + 1 ppm

DGPS: < 0.4 m 3D RMS

Standalone: < 1.5 m 3D RMS

SBAS: < 1 m 3D RMS

Post Processing:
Horizontal: 2.5 mm + 1 ppm
Vertical: 5 mm + 1 ppm

COMMUNICATIONS

• 1 USB
• 1 Event Marker input
• GNSS antenna Lemo1 mini (f)
• 2 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
135 mm × 76 mm × 27 mm
• Weight: 1590 g

ENVIRONMENTAL

• Working temperature: -40°C to +85°C
• Storage temperature: -40°C to +85°C
• Humidity: up to 100% (condensation)
• Waterproof and dustproof: IP65

ELECTRICAL

• Input voltage: +9.0 V ~ +28.0 VDC
• Power consumption: up to 3 W

** - optional*

2SIM GSM/UHF MODEM

ModemOS

2SIM GSM/UHF modem

STEADY STREAM

2SIM GSM/UHF modem

ModemOS is a 2SIM GSM/UHF * modem with Steady Stream technology. Unlike most modems, automatically switching between SIM cards depends on the stability of receiving the correction stream. Parameters like signal/noise ratio and status of Internet connection don't influence on switching.

The built-in 2 W UHF modem* allows you to use ModemOS as a common radio modem.

Intelligent selection of the most reliable correction stream between GSM1, GSM2 and UHF - ModemOS automatically switches the type of communication depending on the availability or absence of the UHF or GSM signals.

You can create the list of GNSS base stations with UHF transceivers with appropriate coordinates and UHF parameters. Thanks to the built-in GPS/GLONASS receiver, ModemOS automatically detects the nearest UHF translator and connects to it.

КОММУНИКАЦИЯ

• 1 port DB15:
- 1 RS232 baud rate up to 230400 bps
- Power
- Compatible with Satel interface/power cable
• UHF modem*:
- 410-470 MHz frequency range
- 2 W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Wi-Fi (APN)
• 2SIM GSM modem:
- 2G/3G: 900/2100 MHz
- GSM1 antenna TNC (f)
- GSM2 antenna TNC (f)
• Support TCP-IP and NTRIP-client
• 6 LED indicators show the working status

ФИЗИЧЕСКИЕ ПАРАМЕТРЫ

• Size (L × W × H): 145 mm × 85 mm × 35 mm
• Weight: 400 g (500 g with UHF)
• Antenna Connector: 4 x TNC (f)

ЭЛЕКТРОПИТАНИЕ

• Input voltage: +7.0 V ~ +20.0 VDC
• Power consumption: up to 3 W

ВНЕШНИЕ УСЛОВИЯ

• Operating temperature: from -40 ° C to + 75 ° C
• Storage temperature: from -40 ° C to + 80 C
• Dust and moisture protection:
- IP67 protection against short-term immersion to a depth of 1 m
• Shock resistance:
- withstands falling onto concrete from a height of 1.5 m

** - optional*

Comparison of GNSS receivers

DEKART

Multi-frequency geodetic rover

SIGNAL TRACKING

• 574 channels
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1/L2 C/A, L1/L2 P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

COMMUNICATIONS

• 1 Lemo7 (f):
- 1 RS232 baud rates up to 460800 bps
- 1 USB
- 1 external power
- 1 Pulse Per Second (PPS) output
• Built-in UHF modem*
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Panoramic indication show the working status

DATA FORMAT

• RTCM 2.X, 3.X
• CMR (GPS only)
• CMR+ (GPS only)
• NMEA-0183
• ComNav Binary (CNB)
• Data output frequency up to 20 Hz *

PHYSICAL

• Size (D × H): 174 mm × 112 mm
• Weight: 1250 g

DEKART-S

Multi-frequency geodetic rover

SIGNAL TRACKING

• 956 channels
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1/L2 C/A, L1/L2 P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

COMMUNICATIONS

• 1 Lemo7 (f):
- 1 RS232 baud rates up to 460800 bps
- 1 USB
- 1 external power
- 1 Pulse Per Second (PPS) output
• Built-in UHF modem*
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Panoramic indication show the working status

DATA FORMAT

• RTCM 2.X, 3.X
• CMR (GPS only)
• CMR+ (GPS only)
• NMEA-0183
• ComNav Binary (CNB)
• Data output frequency up to 20 Hz *

PHYSICAL

• Size (D × H): 174 mm × 112 mm
• Weight: 1250 g

DEKART-SE

Multi-frequency geodetic rover based on European GNSS board

SIGNAL TRACKING

• 448 channels
- GPS: L1C/A, L1C, L2C, L2P, L5
- GLONASS: L1CA, L2CA, L3 CDMA
- Beidou: B1I, B1C, B2a, B2I, B3
- Galileo: E1, E5a, E5b, E5 AltBoc, E6
- SBAS: Egnos, WAAS, GAGAN, MSAS, SDCM (L1, L5)

COMMUNICATIONS

• 1 Lemo7 (f):
- 1 RS232 baud rates up to 460800 bps
- 1 USB
- 1 external power
- 1 Pulse Per Second (PPS) output
• Built-in UHF modem*
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Panoramic indication show the working status

DATA FORMAT

• RINEX v2.x, v3.x
• CMR v2.0 (receive/transmit)
• CMR+ (receive only)
• NMEA 0183, v2.3, v3.03, V4.0
• Septentrio Binary (SBF)
• Data output frequency up to 100 Hz *

PHYSICAL

• Size (D × H): 174 mm × 112 mm
• Weight: 1250 g

** - optional*

OS-112

Multi-frequency GNSS receiver

SIGNAL TRACKING

• 574 channels
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1/L2 C/A, L1/L2 P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

COMMUNICATIONS

• 2 RS232 Lemo4 (f) baud rates up to 460800bps
• 1 Pulse Per Second (PPS) output
• 1 Event Marker input
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Built-in UHF modem*
- 410-470 MHz
- Up to 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna Lemo1 (f)
• Build-in GSM modem
- 2G/3G: 900/2100 MHz
• TCP-IP/UDP-IP (client, server)
• NTRIP (client, server)
• OS-Stream
• GNSS antenna Lemo1 (f)
• 6 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
164 mm × 87,4 mm × 53,6 mm
• Weight: 800 g

OS-113

Multi-frequency GNSS receiver

SIGNAL TRACKING

• 574 channels
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1/L2 C/A, L1/L2 P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

COMMUNICATIONS

• 2 RS232 Lemo4 (f) baud rates up to 460800 bps
• 1 Pulse Per Second (PPS) output BNC (f)
- GNSS antenna TNC (f)
• 1 Event Marker input
• Built-in UHF modem *
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
- GSM1 antenna TNC (f)
- GSM2 antenna TNC (f)
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Ethernet RJ-45
• 1 RS232 Lemo4 (f) doubling of GSM/UHF output
• 10 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
165 mm × 163,9 mm × 90,1 mm
• Weight: 1590 g

OS-213

Multi-antenna multifrequency GNSS receiver

SIGNAL TRACKING

• 574 channels
- GPS: L1 C/A, L2C, L2P, L5
- BeiDou: B1, B2, B3
- GLONASS: L1/L2 C/A, L1/L2 P
- Galileo: E1, E5a, E5b
- SBAS: WASS, EGNOS, MSAS, GAGAN

COMMUNICATIONS

• 2 RS232 Lemo4 (f) baud rates up to 460800 bps
• 1 RS232 IMU to PC port* Lemo4 (f) baud rates up to 4000000 bps
• 1 Pulse Per Second (PPS) output BNC (f)
- GNSS-master TNC (f)
- GNSS-rover TNC (f)
• 1 Event Marker input
• Built-in UHF modem *
- 410-470 MHz
- 2W
- TRIMTALK, TRANSEOT, TRIMMK3
- UHF antenna TNC (f)
• Build-in 2SIM GSM modem
- 2G/3G: 900/2100 MHz
- GSM1 antenna TNC (f)
- GSM2 antenna TNC (f)
• Bluetooth
• Wi-Fi 802.11 (APN, client)
• Ethernet RJ-45
• 1 RS232 Lemo4 (f) doubling of GSM/UHF output
• 1 DB9 IMU communication*
• 12 LED indicators show the working status

PHYSICAL

• Size (L × W × H):
165 mm × 163,9 mm × 90,1 mm
• Weight: 1840 g

** - optional*

For dealership, test drive and any other questions about the equipment, please contact the provided phone numbers, contact us by email or WhatsApp, come to our office

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