

DISCO-B4-GLONASS

The First Dual Mode (GPS+GLONASS) Telematic Solution

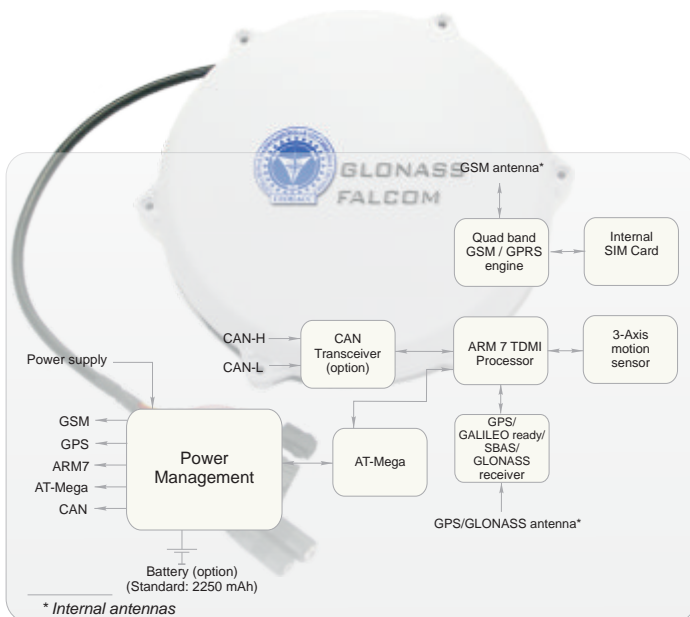
PRODUCT OVERVIEW

FALCOM launches a new vehicle tracking system combining GPS and GLONASS positioning systems with a higher level of reliability for complete telematics functionality. DISCO-B4-GLONASS is a free configurable smart tracking device which can be fully adapted to different user needs. Using a Quad-Band GSM/GPRS technology for two way worldwide communication, the ability to work with global navigation satellite systems (GNSS) - GPS and GLONASS, a high-capacity Li-Polymer rechargeable backup-battery, and housed in a weatherproof plastic case, the device is suitable for a wide range of mixed indoor/outdoor applications in the AVL, fleet management, asset tracking, vehicle security and recovery and transit sectors. The device has a protection class IP69K, which allows mounting of the device permanently on the roof of the vehicles, including buses, trucks, trains, vessels and other assets.

The device can operate fully autonomous and it is able to interact using sensors and actors. DISCO-B4-GLONASS can be adapted to existing tracking solutions and can be easily configured to gather or exchange relevant information with servers or users directly. An often used example is sending of the status reports or alarm messages directly to the users via SMS and/or to the tracking servers via TCP/UDP/HTTP/SMTP. Drivers logbook and data logging functionalities are combined in the history feature. Geofencing can be used to report violations of predefined routes or areas (for example, if a car enters or leaves a specific area or deviate a specific route). All of these features are perfectly integrated in a device concept which significantly reduces time-to-market and provides low cost tracking and security solutions.



DISCO-B4-GLONASS BLOCK DIAGRAM



PRODUCT HIGHLIGHTS

- Quad-Band GSM/GPRS technology for 2-way communication
- GPS/GLONASS/GALILEO ready/SBAS receiver for positioning
- Compact, low-cost and low power unit
- High durable IP69K weatherproof casing
- Roof-mounted design
- Custom housing and packaging design possible
- Very-efficient power saving modes
- Delivers high performance and very flexible applications
- Customized firmware configuration
- Different communication channels
- Remote activation, configuration and administration
- Wide variety of events and states for sending reports
- Allows to create customized protocols
- Local and over-the-air firmware update
- Data-Logger functionality
- Powered from vehicle main battery
- Multi-function I/Os
- High-capacity Li-Polymer rechargeable backup-battery*
- CAN/FMS interface*
- CE/e1 approvals

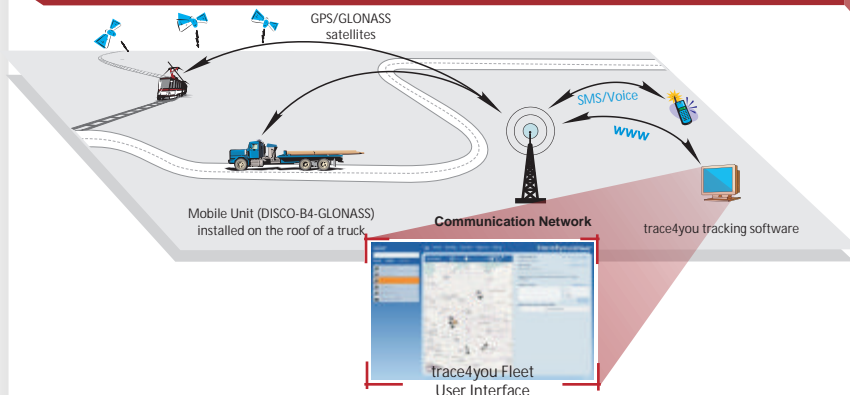
FIRMWARE FEATURES

- Embedded TCP/IP stack for client-server application
- FALCOM protocols: IOP, GSM, AREA, 3DP, BIN
- Supports SMS, CSD, Voice call
- Firmware update locally and remotely
- Multi power-saving modes and wake up conditions
- 20 programmable Timers, Triggers, Counters
- 100 programmable Geofences and 32 Areas
- Programmable Geo-fencing and Parking alerts
- Detects changes of digital inputs
- Preferred and forbidden GSM providers for communication cost reduction
- Forwards messages from one channel to another
- Customized reports, sending intervals
- Report by distance, time, bearing and on demand
- Drivers Logbook / History / Trip management
- Local/Remote access via PFAL commands
- Device configuration via Serial port, TCP and SMS
- Intelligent and flexible configuration alarms
- Connection with external alarm systems

APPLICATIONS

- Real time online tracking
- Fleet management / monitoring
- AssetTracking
- Security / emergency services
- Territory management
- Personalized drivers logbook
- Route verification
- Trip management / distance calculations
- Theft protection
- Toll collection / pay as you drive
- Indoor and outdoor solutions
- Compatible with FALCOM trace4you server
(also configurable for most of TCP/IP server-based tracking applications)

trace4you - online tracking server



TECHNICAL SPECIFICATION

General

Quad-Band GSM/GPRS engine
GSM frequency bands : 850/900/1800/1900 MHz
GPRS class 10, Class B
Internet (TCP/IP/UDP/HTTP/SMTP)
32 channels GPS/GLONASS engine
GPS/GALILEO ready/SBAS: L1 1575.42 MHz
GLONASS: L1 1597.5-1609.5 MHz
Protocols: NMEA, FALCOM (binary)
Accuracyhorizontal:
autonomous mode: 2.5 m
differential mode: 1 m
height: 3 m
velocities: 0.05 m/s
Acquisition: TTFF: 30 sec. typical
Sensitivity: Tracking: -160 dBm
acquisition: -143 dBm
Supported vehicle dynamics:
Velocity: 500 m/s (972 knots)
Altitude: 18000 m
Acceleration: 5 g
Update rate: 1 Hz

Environmental data

Operating temp.:	-40 °C to +85 °C
Storage temp.:	-40 °C to +85 °C
GSM** operating temp.:	-40 °C to +85 °C
Battery ¹⁾ discharging temp.:	-20 °C to +60 °C
Battery ¹⁾ charging temp.:	0 °C to +45 °C

Electrical characteristics

Power supply:	+10,8 V to +32,0 V DC
Internal Li-Polymer 2250 mAh backup-battery* ¹⁾	

* Optional.

** The GSM/GPRS module is fully functional (-20 °C to +55 °C meets the 3GPP specifications).

¹⁾ Storage and using conditions of the device with battery option are limited to the battery temperature range.

Average Power Consumption

Normal operation: ca.100 mA @ 12 VDC
Power saving (IGN): ca. 1mA @ 12 VDC

Physical characteristics

Dimensions Ø187.2 ± 0.1 mm; 74.7 ± 0.1 mm
Weight: ca. 470 g

Air humidity

5% up to 95% non-condensing

Interfaces

3 x digital/analog IO ports free-programmable
1 x predefined digital input (Ignition)
1 x RS232 port V24 level
1 x RS232 port 3.3V
CAN-Bus Interface* (uses 2 of 3 I/Os)
Inside SIM card holder for 1,8/3 V SIM cards

Audio jacks:

1 x Microphone (2.5mm jack)
1 x Speaker (3.5mm jack)

Housing

PA6 Plastic
Protection class: IP69K

Serial Data Rates

4800 bps ... 115200 bps

GSM and GPS/GLONASS Antennas

Internal

Motion sensor

3-axis motion sensor (software-controlled)
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Processor core

ARM7/TDMI
8 MB Flash (History / Firmware / Configuration)

DISCO-B4-GLONASS EVALKIT CONTENTS

Complete plug and play evaluation system for the DISCO-B4-GLONASS device incl.:

- | | |
|-----------------------------------|--|
| 1 - DISCO-B4-AU | 6 - RS232 serial cable |
| 2 - FOX-EVALBOARD | 7 - Info-sheet (incl. t4yserver login, SIM-Card information) |
| 3 - FOX-LT-KFZ-1.5M install cable | 8 - Pre-paid SIM card |
| 4 - AC/DC Power adapter 12V-1A | 9 - Documentation |
| 5 - UK/US adaptor | |

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