FALCOM

A leading developer and manufacturer of automatic vehicle location systems, personal and asset tracking products for commercial and industrial applications.

DISCO-B5-MAGNET

The advanced asset tracking unit with magnetic base plates or mast holder for boats
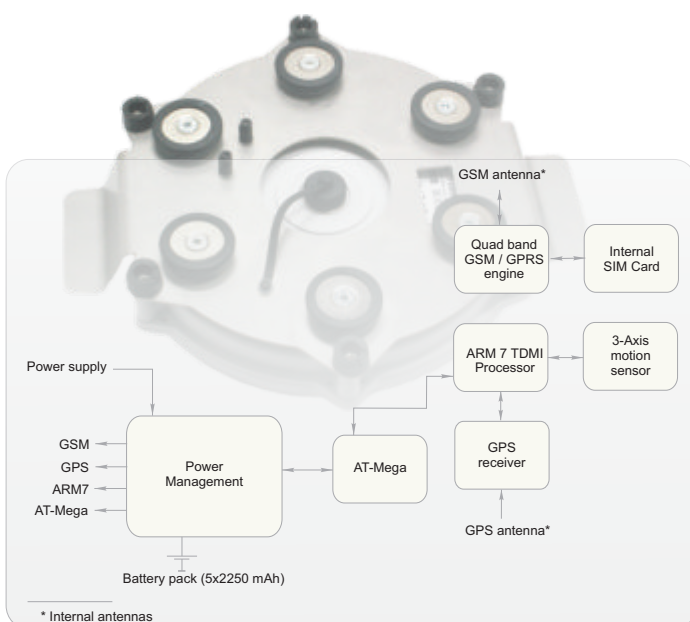
PRODUCT OVERVIEW

DISCO-B5-MAGNET 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 latest GPS technology for positioning, a high-capacity Lithium-Ion rechargeable battery, and housed in a weatherproof plastic case, the device is suitable for a wide range of outdoor applications in the asset tracking, security and recovery and transit sectors. The device has a protection class IP67, which allows mounting of the device permanently on the roof of the assets including buses, trucks, trains, vessels and other assets. The unit mounts to your assets with its magnetic base plates, and its rubberized feet keep it from scratching your paint. The device can operate fully autonomous and it is able to interact using sensors and actors.

DISCO-B5-MAGNET 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 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-B5-MAGNET BLOCK DIAGRAM

GSM antenna*

Quad band GSM / GPRS engine

Internal SIM Card

ARM 7 TDMI Processor

3-Axis motion sensor

Power supply

GSM
GPS
ARM7
AT-Mega

Power Management

AT-Mega

GPS receiver

GPS antenna*

Battery pack (5x2250 mAh)

* Internal antennas

PRODUCT HIGHLIGHTS

- Quad-Band GSM/GPRS technology for 2-way communication
- Latest GPS technology for precise positioning
- High durable IP67 weatherproof casing
- Easy installation and minimal maintenance
- Roof-mount unit, magnetic base plates and rubberized feet
- Designed for use on cars, trucks, trains, vessels and other assets
- Long battery life, internal battery pack (5x2250 mAh)
- Battery operating for several days without recharging
- Assembled by special security screws
- Very-efficient power saving modes
- Customized firmware configuration and protocols
- Different communication channels
- Remote activation, configuration and administration
- Wide variety of events and states for sending reports
- Truck detection and Anti tamper detection system
- Custom housing and packaging design possible
- Local and over-the-air firmware update
- Data-Logger functionality
- CE/e1

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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
- 2000 waypoints for accurate route management
- Wide variety of events/states for sending reports
- Progammable Geo-fencing and Parking alerts
- Detects changes of digital inputs
- 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 Serial port, TCP and SMS
- Intelligent and fexible configuration alarms

APPLICATIONS

- Truck and anti-tempering detection (Removing and Opening detection)
- 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
- Compatible with FALCOM trace4you server (also configurable for most of TCP/IP server-based tracking applications)

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)

50 channel GPS engine

A-GPS offline / Autonomous

GPS frequency:	L1 1575.42 MHz	
Protocols:	NMEA, FALCOM (binary)	
Accuracy:	Position:	2.5 m
	SBAS:	2 m
Acquisition:	Cold starts:	26 sec.
Sensitivity:	Tracking:	-162 dBm
	Cold starts:	-148 dBm
GPS Operational limits:		
	Velocity:	500 m/s (972 knots)
	Altitude:	50.000 m
	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 Lithium-Ion battery pack (5 x 2250 mAh)[1]

Average Power Consumption

Normal operation: ca.100 mA @ 12 VDC

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

Physical characteristics

Dimensions max. (LxWxH): 235mm x 58mm x 210mm

Weight: ca. 1325 g

Magnetic Holding Force

ca. 15 kg (ca. 150 Newton).

Air humidity

5% up to 95% non-condensing

Interfaces

Inside SIM card holder for 1,8/3 V SIM cards

Housing

PA6 Plastic

Protection class: IP67

Serial Data Rates

4800 bps ... 115200 bps

GSM and GPS Antennas

Internal

Motion sensor

3-axis motion sensor (software-controlled)

Processor core

ARM7/TDMI

8 MB Flash (History / Firmware / Configuration)

Accessories

Phylon Clamp

Programming and Charging cable
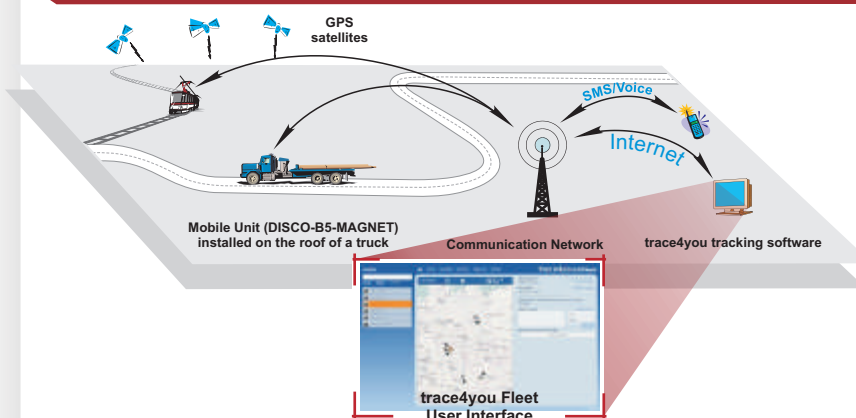
Replacement battery pack

* 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.

DISCO-B5-MAGNET EVALKIT CONTENTS

Complete plug and play evaluation system for the DISCO-B5-MAGNET device incl. Documentation, T4Y server access, programming/service cable and pre-paid SIM card.

trace4you - online tracking server

GPS satellites

SMS/Voice

Internet

Mobile Unit (DISCO-B5-MAGNET) installed on the roof of a truck

Communication Network

trace4you tracking software

trace4you Fleet User Interface

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