FALCOM

FALCOM, a storied M2M and IoT specialist from Germany, designs, manufactures and sells world-wide state-of-the-art devices, services and solutions ideally suited to numerous applications: fleet management, car sharing, usage-based insurance pricing, asset and workforce tracking and security, precision farming.

BOLERO-LT2

The Advanced Vehicle Tracking System

PRODUCT OVERVIEW

BOLERO-LT2 is a free configurable smart tracking device which can be fully adapted to user requirements. Its main purpose is to act as a mobile client for various system solutions like AVL, fleet management, vehicle security and recovery.
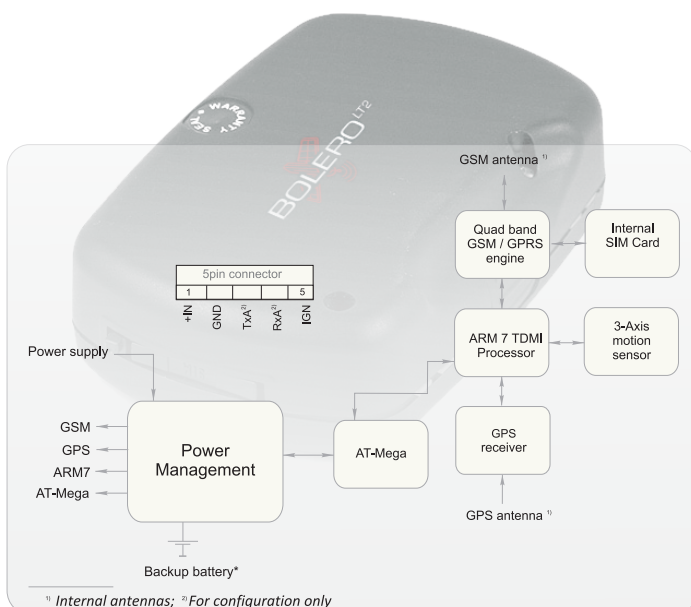
It can be adapted to existing tracking solutions and can be easily configured to gather or exchange relevant information with servers or users directly. An often used example is to send status reports or verbose alert messages directly via SMS to users and/or via TCP to tracking servers. Drivers logbook 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/Geofence*).

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.

BOLERO-LT2 BLOCK DIAGRAM

GSM antenna [1]

Quad band GSM / GPRS engine

Internal SIM Card

5pin connector

1				5
+IN	GND	TxA[2]	RxA[2]	IGN

ARM 7 TDMI Processor

3-Axis motion sensor

Power supply

GSM
GPS
ARM7
AT-Mega

Power Management

AT-Mega

GPS receiver

GPS antenna [1]

Backup battery*

[1] Internal antennas; [2] For configuration only

PRODUCT HIGHLIGHTS

- ⦿ GSM/GPRS technology for 2-way communication
- ⦿ Latest GPS technology for positioning
- ⦿ Compact, low-cost and light-weight unit
- ⦿ Delivers high performance and very flexible applications
- ⦿ Customized firmware configuration
- ⦿ Different communication channels
- ⦿ 3-axis motion sensor for detecting movements of assets
- ⦿ Wide variety of events and states for sending reports
- ⦿ Allows to create customized protocols
- ⦿ Data-Logger functionality
- ⦿ Powered from vehicle main battery
- ⦿ Backup battery to back up the main power supply
- ⦿ Custom housing and packaging design possible
- ⦿ Internal GSM/GPS antennas
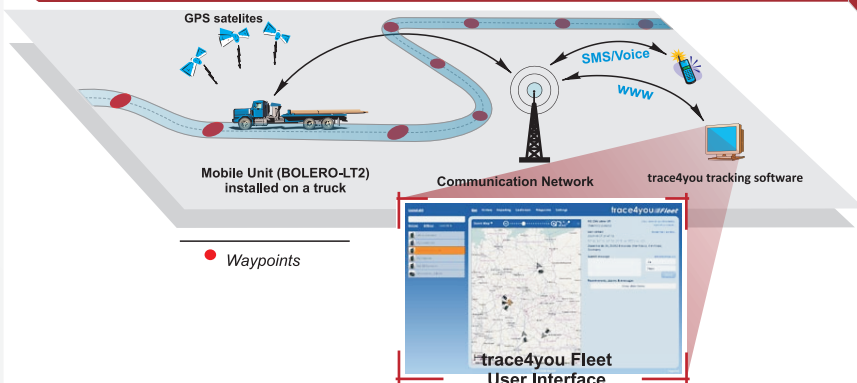- ⦿ E1/CE approved

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FIRMWARE FEATURES

- Embedded TCP/IP stack for client-server application
- FALCOM protocols: IOP, GSM, AREA, 3DP, BIN
- Supports SMS, CSD
- Locally and remotely firmware update
- 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
- Programmable Geo-fencing and Parking alerts
- Detect changes of digital inputs
- Forward messages from one channel to another
- Customized reports, sending intervals
- Report by distance, time, bearing and on demand
- Drivers Logbook / History / Trip management
- Locally/Remotely accessible via PFAL-Commands
- Device configuration via Serial port, TCP and SMS
- Intelligent and fexible configuration alarms
- Connection with external alarm systems

APPLICATIONS

- Real time online tracking
- Fleet management / monitoring
- Security / emergency services
- Real time satellite navigation
- Territory management
- Personalized drivers logbook
- Route verifcation
- Trip management / distance calculations
- Theft protection
- Toll collection / pay as you drive (PAYD)
- 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	
Protocols: NMEA, FALCOM (binary)	
Accuracy: Position:	2.5 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

Electrical characteristics

Power supply: +10,8 V to +32 V DC	
Li-Polymer 1000 mAh rechargeable battery [1)]*	

Environmental data

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

Average Power Consumption

Normal operation: 78mA @ 12 VDC	
Power saving (IGN): 0.8 mA @ 12 VDC	

Physical characteristics

Dimensions (LxWxH): 85 mm x 56 mm x 24 mm	
Weight: ca. 90 g	

Air humidity

5% up to 95% non-condensing

Interfaces

- **1** x Dgital input (Ignition)
- **4** x LED indicators free-programmable
- **1** x Button free-progammable
- **1** X RS232 port V.24 level (RX, TX and GND - only for device configuration, not for connecting external devices.)
- Inside SIM card holder for 1,8/3 V SIM cards

Serial Data Rates

4800 bps ... 115200 bps

GPS/GSM Antennas

Internal GPS and GSM antennas

Motion sensor

3-axis motion sensor**

Processor core

ARM7/TDMI

8 MB Flash (History / Firmware / Configuration)

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* 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.

BOLERO-LT2 EVALKIT CONTENTS

EVALKIT offered by FALCOM provides all the necessary hardware, software, and documentation to effectively operate and evaluate the performance and suitability of the BOLERO-LT2 device. The EVALKIT is shipped pre-configured allowing system integrators and developers to test the device and see how it works. The KIT contains:

1 - BOLERO-LT2-MS-B1
2 - FOX-EVALBOARD
3 - BLOLERO-LT2-FOX-EVAL cable
4 - Installation cable
5 - AC/DC Power adapter 12V-1A
6 - UK/US adaptor

7 - RS232 serial cable
8 - Double-sided adhesive pad
9 - Info-sheet (incl. t4yserver login, SIM-Card information)
10 - Pre-paid SIM card
11 - Documentation

trace4you - online tracking server

GPS satelites

SMS/Voice

www

Mobile Unit (BOLERO-LT2)
installed on a truck

Communication Network

trace4you tracking software

- Waypoints

trace4you Fleet
User Interface

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