FALCOM
WIRELESS COMMUNICATIONS GMBH

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

FOX-IN

The Advanced Vehicle Tracking System

PRODUCT OVERVIEW

FOX-IN 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. The device can operate fully autonomous and it is able to interact using sensors and actors.
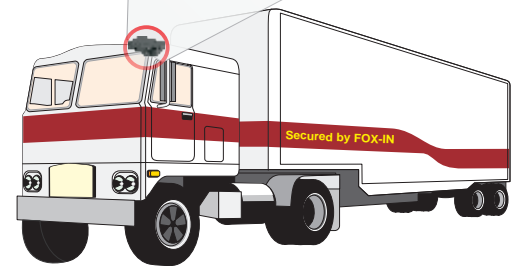
It can be adapted to existing tracking solutions and can be easily configured to gather or exchange relevant information with servers or users directly. An often used example is to send status reports or verbose alert messages directly via SMS to users and/or via TCP to tracking servers. Users benefit most from combining comfort and security aspects - for example having regular voice calls as well as spy calls in emergency cases. 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/Geo-fence*).
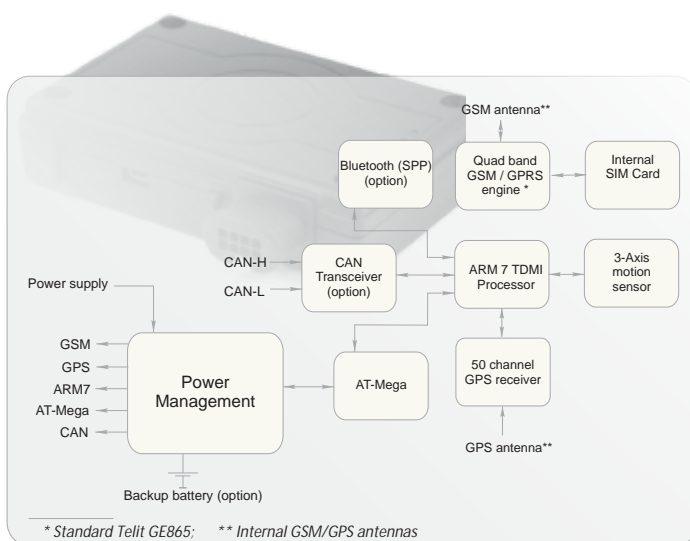
All of these features are perfectly integrated in a device concept which significantly reduces time-to-market and provides low cost tracking and security solutions.

MINI IO BOX*

FOX-IN

Secured by FOX-IN

FOX-IN-AU/US BLOCK DIAGRAM

* Standard Telit GE865;   ** Internal GSM/GPS antennas

PRODUCT HIGHLIGHTS

- State-of-the-art 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
- Multi-function I/Os
- 3D accelerometer 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
- RFID and sensor-based application
- Wireless communication via Bluetooth® (SPP)*
- CAN/FMS interface*, OBD II (On-Board Diagnostics)*
- Expandable via MINI IO BOX*
- Internal GSM/GPS antennas
- E1/CE approved
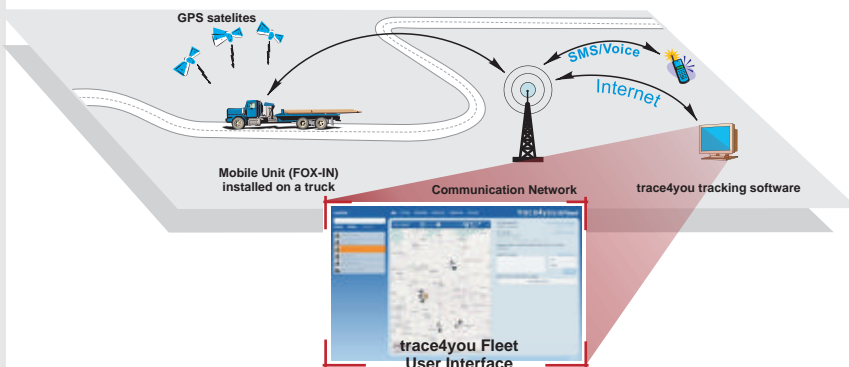
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FIRMWARE FEATURES

- Embedded TCP/IP stack for client-server application
- FALCOM protocols: IOP, GSM, AREA, 3DP, BIN
- Supports SMS, CSD, Voice call
- Locally and remotely firmware update
- Multi power-saving modes and wake up conditions
- 20 programmable Timers, Triggers, Counters
- 100 programmable Geofences and 32 Areas
- Progammable 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
- RFID and sensor-based application
- 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 - Telit GE865

GSM frequency bands : 850/900/1800/1900 MHz

GPRS class 10, Class B

Internet (TCP/IP/UDP/HTTP/SMTP)

50 channel u-blox 6 engine (UBX-G6010)

A-GPS online/offine support

Protocols:	NMEA, FALCOM (binary)	
Accuracy:	Position:	2.5 m
	SBAS:	2 m
Acquisition:	TTFF:	29 sec. average
Sensitivity:	Tracking:	-162 dBm
	Cold start:	-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

Internal Li-Polymer 500 mAh rechargeable battery [1]*

Average Power Consumption

Normal operation: 86 mA @ 12 VDC

Power saving (IGN) : 860 µA @ 12 VDC

Environmental data

Operating temp.:	-40 °C to +85 °C
Storage temp.:	-40 °C to +90 °C
GSM**:	-40 °C to +85 °C
Battery option:	-20 °C to +60 °C
Charging temp.:	0 °C to +45 °C

Physical characteristics

Dimensions (LxWxH): 100 mm x 65 mm x 24 mm

Weight: approx. 105 g

Air humidity

5% up to 95% non-condensing

Interfaces

3x digital/analog IO ports free-programmable

1 x predefined digital input (Ignition)

3 x LED indicators free-programmable

1 x RS232 port V.24 level (RX, TX and GND)

Mini-USB 10pin with 2 hardware options
  (Audio or SPI with I/O Extension)

Audio interface (available in basic version)

1 x RS232 port 3.3V (available in basic version)

CAN-Bus Interface* (uses 2 of 3 I/Os)

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

Internal Bluetooth ® interface* (SPP)

Serial Data Rates

4800...115200 bps (default=57600 bps)

GSM / GPS Antennas

Internal

Motion sensor

3-axis motion sensor (software-controlled features)

Processor core

ARM7/TDMI

8 MB Flash (History / Firmware / Configuration)

* 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.

FOX-IN 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 FOX-IN 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 - FOX-IN-CH-B1-AU(US) unit
2 - FOX-EVALBOARD
3 - KA-FOX-LT-FOX-EAVL cable
4 - FOX-LT-KFZ-1.5M install cable
5 - AC/DC Power adapter 12V-1A
6 - UK/US Plug travel adaptor

7 - RS232 serial cable
8 - Headset
9 - Vehicle installation cable
10 - Info-sheet
11 - Pre-paid SIM card
12 - Documentation

trace4you - online tracking server

GPS satelites

SMS/Voice

Internet

Mobile Unit (FOX-IN) installed on a truck

Communication Network

trace4you tracking software

trace4you Fleet User Interface

CONTACT

http://www.falcom.de