

FOX-EN

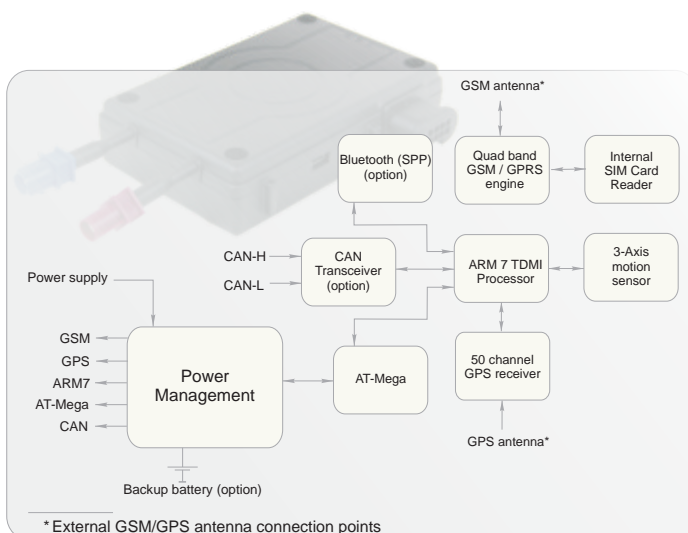
The Advanced Vehicle Tracking System

PRODUCT OVERVIEW

FOX-EN 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/no-go-zones). 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.



FOX-EN-AU/US BLOCK DIAGRAM



PRODUCT HIGHLIGHTS

- GSM/GPRS technology for 2-way communication
- Latest GPS technology for positioning
- Compact, low-cost, low power 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 IOBOX-MINI *
- Connection points for using different GSM/GPS antennas
- E1/CE approved

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
- 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 flexible 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 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 online / Autonomous
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 1000 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* discharging temp.: -20 °C to +60 °C
Battery* charging temp.: 0 °C to +45 °C

* 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.

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 for 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 bps ... 115200 bps

Antenna Connection

GSM: FAKRA Female connector, 50 ohms
GPS: FAKRA Female connector, 3V active antenna

Motion sensor

3-axis motion sensor (software-controlled features)

Processor core

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

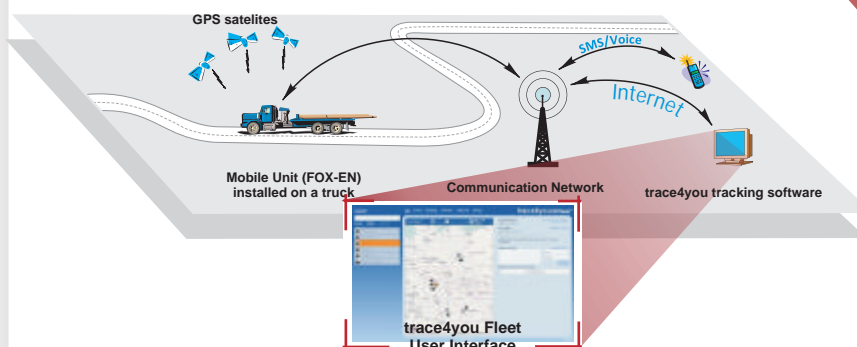
FOX-EN EVALKIT CONTENTS

EVALKIT offered by FALCOM provides all the necessary hardware, software, and documentation to effectively operate and evaluate the performance and suitability of the FOX-EN 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-EN-CH-B1-AU(US) unit
- 2 - FOX-EVALBOARD
- 3 - FAL-ANT-7
- 4 - KA-FOX-LT-FOX-EAVL cable
- 5 - FOX-LT-KFZ-1.5M install cable
- 6 - AC/DC Power adaptor 12V-1A

- 7 - UK/US Plug travel adaptor
- 8 - RS232 serial cable
- 9 - Headset
- 10 - Vehicle installation cable
- 11 - Info-sheet
- 12 - Pre-paid SIM card
- 13 - Documentation

trace4you - online tracking server



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