

# FOX3

*most developed and advanced vehicle tracking system with all options in one product*

## PRODUCT OVERVIEW

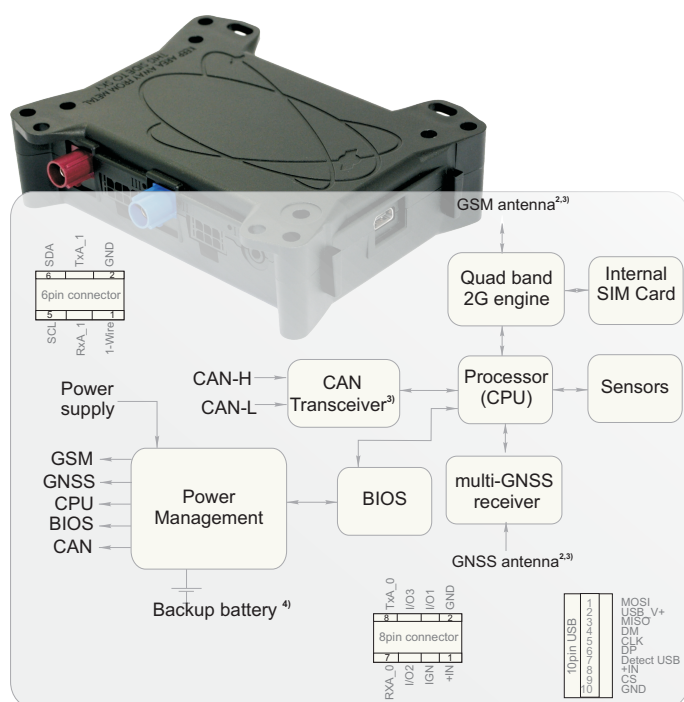
FOX3 is a compact, all-in-one device combining all features of the successful FOX-IN/EN family into one single unit. FOX3 is designed to operate with internal or external antennas. The built-in internal antennas are automatically turned off while external antennas are in use. This device will dramatically simplify your logistics as well as the installation process and the post-installation support. Newly developed FALCOM „PREMIUM-Features“ show the way to the future of mobile data logging, storing, processing and sending.

FOX3 is a configurable smart tracking / data logging device which can be fully adapted to user requirements.

FOX3 offers new features like: DATA ENCRYPTION, several HISTORY MODES or ECO-DRIVE/BEHAVIOUR LOGGING beside standard items like status reports, alerts messaging, audio call, spy calls or geofencing.



## FOX3 BLOCK DIAGRAM



<sup>1)</sup> Optional  
<sup>2)</sup> Internal/External GSM/GNSS antennas  
<sup>3)</sup> Activation with PFAL-Command  
<sup>4)</sup> Accessory

## PRODUCT HIGHLIGHTS

- State-of-the-art 2G and GNSS technology
- 3-axis acceleration, internal temperature sensors
- Gyro / Magnetic sensors (external only)
- Drop-in replacement of previous FOX-generation
- Sensor interfaces via RS-232 / RS-485 / 1-Wire / I<sup>2</sup>C / CAN
- FALCOM PFAL programming language
- Delivers high performance and very flexible applications
- Customizable firmware configuration
- Multi-function I/Os
- Optional battery back-up<sup>4</sup>
- Display connectivity (JAZZ2)
- Audio interface (SPK+MIC)
- Data-Logger functionality
- CAN/FMS interface<sup>3)</sup>, CAN-OBDD (On-Board Diagnostics)<sup>3)</sup>
- Hardware expandable via IOBOX-MINI<sup>4)</sup>
- Internal GSM/GNSS antennas with connectors for optional external antennas<sup>3)</sup>
- Communication via USB 2.0 interface
- Support connection with Garmin devices
- E1/CE approved; FCC/PTCRB in preparation

## FIRMWARE FEATURES

- Embedded TCP/IP stack for client-server application
- FALCOM protocols: IOP, GSM, AREA, 3DP, BIN
- Supports SMS/USSD/Voice call/TCP/IP/UDP/SMTP/HTTP
- Local and remote firmware update and configuration
- Multi power-saving modes and wake up conditions
- 20 programmable Timers, Triggers, Counters, nvCounters
- 3000 programmable Geofences, 32 Areas, 2000 Waypoints
- Report by distance, time, bearing and on demand
- Drivers Logbook / History / Trip management
- Intelligent and flexible configuration alarms
- RFID and sensor-based application
- FALCOM PREMIUM feature supported
- Over-the air-access (OTA)

## APPLICATIONS

- Real time online tracking
- Fleet management / monitoring
- Security / Emergency / Insurance services (UBI)
- Real time satellite navigation
- Territory management
- Personalized drivers logbook
- Route verification
- Trip management / distance calculations
- Theft protection
- Driving behaviour / Eco-Drive monitoring
- 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 2G	
2G bands: 850/900/1800/1900 MHz	
Internet (TCP/UDP/HTTP/SMTP)	
Multi channel GNSS (GPS+Galileo/GLONASS <sup>2)</sup> receiver	
A-GPS (online / offline / autonomous)	
Protocols: NMEA, FALCOM (binary)	
Accuracy:	<b>GPS / GLONASS</b>
Position:	2.5 m / 4.0 m
Acquisition / Sensitivity:	
Cold Start:	29 s / 30 s
Tracking:	-161 dBm / -158 dBm
Sensitivity:	-148 dBm / -145 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 +32,0 V DC
Internal Li-Polymer 1000 mAh rechargeable battery <sup>1)</sup>

### Average Power Consumption

Normal operation:	50mA @ 12 VDC
Sleep mode:	< 1mA @ 12 VDC

### Environmental data

Operating temp.:	-40 °C to +85 °C
Storage temp.:	-40 °C to +85 °C
GSM <sup>3)</sup> :	-40 °C to +85 °C
Battery <sup>4)</sup> discharging temp.:	-20 °C to +60 °C
Battery <sup>4)</sup> charging temp.:	0 °C to +45 °C

<sup>1)</sup> Optional / Accessory

<sup>2)</sup> Activation with PFAL-Command.

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

<sup>4)</sup> Applicable with backup battery

<sup>5)</sup> Hardware Premium Features: CAN-interface, RS-485 port

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

### Physical characteristics

Dimensions (LxWxH): 105 mm x 83 mm x 28 mm
Weight: approx. 130 g

### Air humidity

5% up to 95% non-condensing
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### Interfaces

3 x Digital/analog IO ports programmable
1 x Predefined digital input (Ignition)
3 x LED indicators programmable
2 x RS-232 Ports (1 x V.24 level; 1 x RS-232/RS-485 <sup>5)</sup> )
1 x 10pin Mini-USB connector (for IOBOX-MINI <sup>1)</sup> )
1 x 1-Wire interface (incl. 5V Phantom Power)
1 x I <sup>2</sup> C interface
1 x 4pin audio jack interface (2.5mm)
1 x CAN-Bus Interface <sup>2)</sup> (uses 2 of 3 I/Os)
1 x Inside SIM card holder for 1,8/3 V SIM cards
1 x USB 2.0 interface

### Serial Data Rates

Serial Ports: 4800...115200 bps (default = 115200 bps)
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### GSM / GNSS Antennas

Internal and external <sup>2)</sup> with automatic/manual switch
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### Sensor / Measurement range

3-axis Acceleration/Temperature
- 3DG: ± 8g (programmable)
- Temperature: - 50 to + 120 °C (programmable)

### Processor core

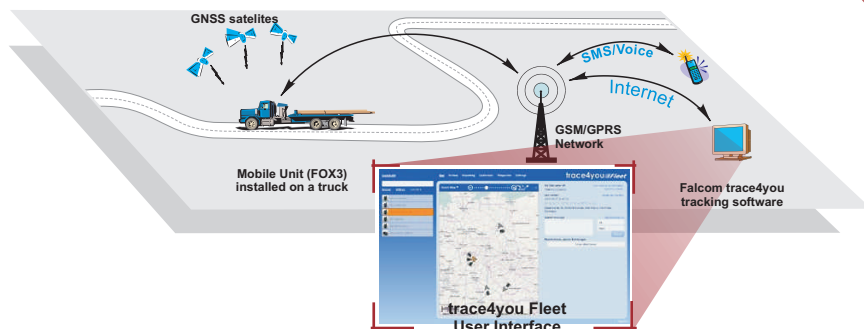
RTC + Calendar
8 MB Flash (History / Firmware / Configuration)

## FOX3 EVALKIT CONTENT

EVALKIT provides all the necessary hardware, software and documentation (online) to effectively evaluate the FOX3 device. This plug & play starter kit consists of:

- |  |                                  |
|--|----------------------------------|
| 1 - FOX3 unit (pre-configured)                         | 8 - All PREMIUM features enabled |
| 2 - EVALBOARD + cable                                  | 9 - RS-232/RS-485 serial cable   |
| 3 - Backup battery                                     | 10 - Headset-uw                  |
| 4 - KA68 installation cable                            | 11 - Info-sheet                  |
| 5 - AC/DC Power adapter 12V-1A                         | 12 - trace4you server account    |
| 6 - UK/US Plug travel adapter                          | 13 - Pre-paid SIM card           |
| 7 - IOBOX-CAN (2 <sup>nd</sup> CAN interface + 8 I/Os) | 14 - Technical support hotline   |

## trace4you evaluation platform (accessible via FALCOM Evaluation Kit)



## CONTACT

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