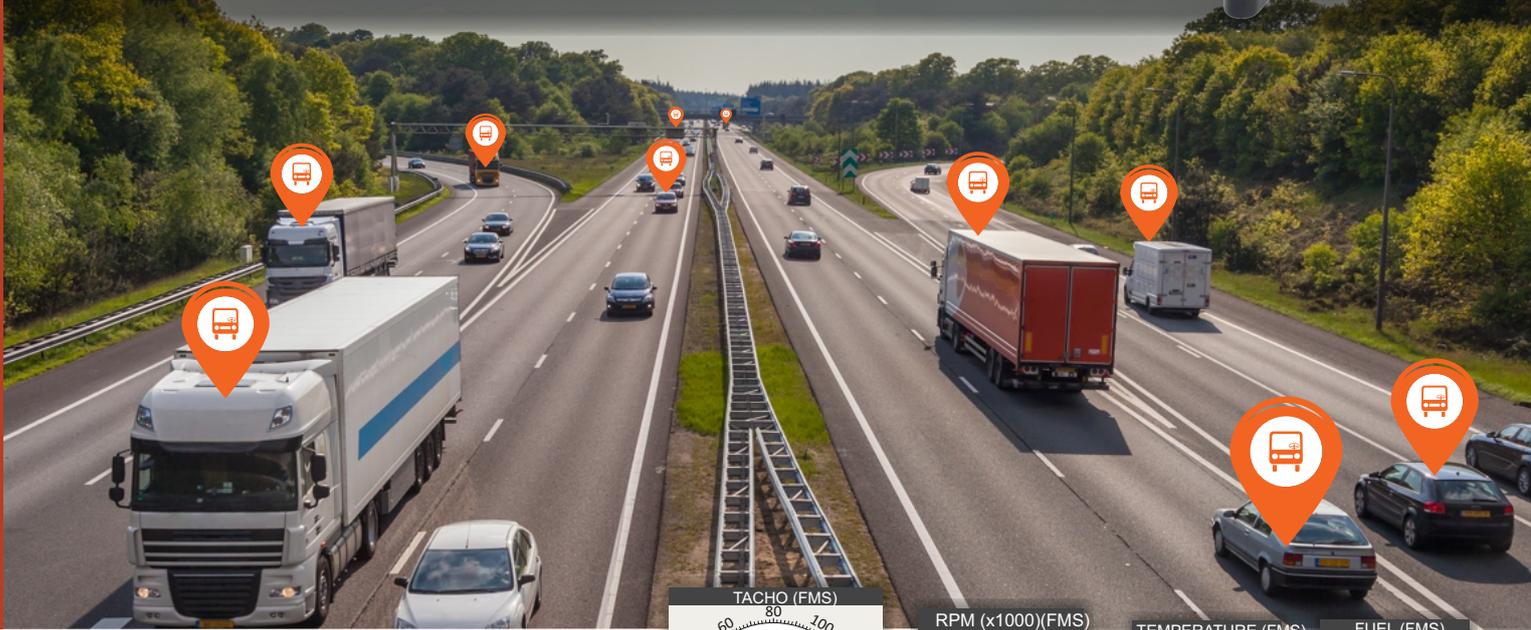# LANTRONIX®

CONNECT SMART. DO MORE.™

Lantronix (formerly 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, asset and workforce tracking and security, precision farming.

TACHO (FMS)	RPM (x1000)(FMS)	TEMPERATURE (FMS)	FUEL (FMS)
98,00 km/h	2.123	79 °C	89 Litre

FOX3-2G/3G/4G

ADVANCED VEHICLE TELEMATICS AND DATA LOGGING SYSTEM WITH HIGH SPEED DATA CONNECTION

FOX3-2G/3G/4G Series is a compact all-in-one device combining **2G/3G/4G data connection** with the latest **GNSS technology** to completely satisfy customer's need. It is a highly **customizable vehicle telematics device** and it offers a variety of inputs and outputs to satisfy the most demanding requirements. A box (**IOBOX-MINI, IOBOX-CAN or IOBOX-WLAN**) can be used to extend the functionality of the FOX3-2G/3G/4G Series for the most flexible expansion options in the industry. FOX3-2G/3G/4G Series is designed to operate with

internal or external antennas. 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 LANTRONIX "**Premium-Features**" show the way to the future of mobile data logging, storing, processing and sending. FOX3-2G/3G/4G Series is an advanced and fully customizable vehicle tracking device. FOX3-2G/3G/4G Series offers new features like: Data Encryption, several History Modes, Eco-

GSM/2G/3G/4G	GNSS	TCP/UDP/HTTP
SMS/E-MAIL	LOGGING	MONITORING
SECURITY	ECO-DRIVE	INPUT/OUTPUT
2 x CAN BUS	AES-TCP	JAMMING DETECTION
SPEED	D. TACHOGRAPH	REAL-TIME
ANTI-THEFT	DISTANCE	START-STOP
GEOFENCE	DIRECTION	CRASH DETECTION
ALERTS	BLE	1-WIRE
DRIVER-ID	WLAN	RS-232

LANTRONIX

TECHNICAL SPECIFICATION

General

4G /3G / 2G bands: (refer to the table below)

Internet (TCP/UDP/HTTP/SMTP)

Multi channel GNSS
(GPS/Galileo/GLONASS/BeiDou)

A-GPS (online / offline /autonomous)

Protocols: NMEA, FALCOM (binary)

Accuracy:	GPS	GLONASS
Position:	2.5 m	4.0 m
Acquisition / Sensitivity:		
Cold Start:	29 s	30 s
Tracking:	-161 dBm	-158 dBm
Sensitvity:	-148 dBm	-145 dBm

GPS Operational limits:

Velocity:	500 m/s (972 knots)
Altitude:	50.000 m
Update rate:	1 Hz

GSM / GNSS Antennas

Internal and external [2] with automatic/manual

Electrical characteristics

Power supply: +10,8 V to +32,0 V DC

Internal 1000 mAh rechargeable battery[1]

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[3]:	-40 °C to +85 °C
Battery[4] Discharging temp.:	-20 °C to +60 °C
Charging temp.:	0 °C to +45 °C

Physical characteristics

Dimensions (LxWxH): 105 mm x 83 mm x 28

Interfaces

3 x Digital/analog IO ports (user-configurable)

1 x Predefined digital input (Ignition)

3 x LED indicators (user-configurable)

2 x RS-232 Ports(**1**xV.24 level;**1**xRS-232/RS-485[2)5)])

1 x 10pin Mini-USB connector (for IOBOX-MINI[1], IOBOX-CAN [1] or IOBOX-WLAN [1])

1 x 1-Wire interface (incl. 5V Phantom Power)

1 x I²C interface

1 x 4pin audio jack interface (2.5mm)[6]

1 x CAN-Bus Interface[2) 5)] (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

Sensor / Measurement range

3-axis Acceleration/Temperature

- **3DG**: ± 8g (programmable)

- **Temperature**: - 50 to + 120 °C (programmable)

Processor core

RTC[7]

8 MB Flash(History / Firmware / Configuration

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1) Optional / Accessory
2) Activation with PFAL-Command.
3) The GSM/GPRS module is fully functional (-20 °C to + 55 °C meets the 3GPP specifications) Storage and using conditions of the device with battery option are limited to the battery temperature range.
4) Applicable with backup battery
5) Hardware Premium Features: CAN-interface
6) Available on FOX3-3G-AU and FOX3-2G only

OPTIONS

- 3000 programmable Geofences
- 2000 progammable Waypoints
- 250 programmable Alarms
- ECO-Drive-GPS functions
- Customizable firmware configuration

- Passive/active RFID based applications
- NFC based applications
- Internal GSM/GNSS antennas & connectors for optional external antennas[1]
- Hardware expandable via IOBOX-MINI[1], IOBOX-CAN[1] or IOBOX-WLAN[1]

- PROMOTION KIT providing all necessary hardware, software, documentation, SIM Card and 3 month access to the D2Sphere tracking platform including 8h technical training support
- D2SPHERE™ device management services to monitor, diagnose, control and update your FALCOM devices

APPLICATION AREAS

- Real time online tracking
- Fleet management / monitoring
- Car sharing
- Waste management
- Theft protection

- Public transportation
- Real time satellite navigation
- Territory management
- Route verification
- Trip management / distance calculations

- Driving behaviour / Eco-Drive monitoring
- Security / Emergency / Insurance services (UBI)
- Toll collection / Pay-As-You-Drive (PAYD)
- Compatible with D2SPHERE™ tracking platform and easily adaptable to other tracking servers.

GNSS   GSM   2G/3G/4G   2G/3G fall-back   Internet   SMS   TCP

| FOX3-2G/3G/4G APPLICATION AREA | COMMUNICATION NETWORK | WEB SERVER | USER-INTERFACE (e.g. D2SPHERE™) |

AVAILABLE MODELS

PRODUCT	4G[a] BAND	3G[b]	2G	CERTIFICATIO	FEATURES	REGIONS
FOX3-2G	-	-	Quad	CE, E1	Standard (with	World
FOX3-3G Std.	-	1/2/5/8/19	Quad	E-Mark, (CE,ISED,FCC,BT)[d]	Standard (no audio)	World
FOX3-3G-BLE	-	1/2/5/8/19	Quad		Bluetooth Low	World
FOX3-3G-AU	-	1/2/5/8/19	Quad		Audio (Spk. +	World
FOX3-3G-DR	-	1/2/5/8/19	Quad		Dead-Reckoning	World
FOX3-3G-BID	-	1/2/5/8/19	Quad		BlueID Technology	World
FOX3-4G-C4-	Cat 4: 2/4/5/7/17	1/2/4/8/5[c]	Quad	CE,E1,ISED,FCC	Standard (no audio)	4G North America, 3G/2G World
FOX3-4G-C4-	Cat 4: 1/3/5/7/8/20	1/2/4/8/5[c]	Quad	(CE,E-Mark)[d]	Standard (no audio)	4G Europa, 3G/2G World
FOX3-4G-C1-	Cat 1: 3/7/20	-	900/1800	CE,E-Mark	Standard (no audio)	4G Europa, 2G Dual-band
FOX3-4G-M1	M1/NB1: 2/3/4/5/8/12/13/20/26*/28*	-	Quad	(CE,E-Mark)[d]	Standard (no audio)	North America (M1), Multiregion (M1/NB, 2G)

a)Cat 4 : 150 Mb/s DL, 50 Mb/s UL; Cat 1:10 Mb/s DL, 5 Mb/s UL; Cat M1: 300 kbit/s DL, 375 kbit/s UL; Cat NB1: 27.2 kbit/s DL, 62.5 kbit/s UL   b) 5.76 Mb/s UL, 7.2 Mb/s DL
c) 42 Mb/s DL, 5.76 Mb/s UL   d) Planned / In progress   * =Roaming bands   ** Please consult us this model, which is subject to MOQ and other considerations