FOX3 Series

ConsoleFlow™   **LANTRONIX Connectivity Services**

ADVANCED TELEMATICS GATEWAY

Lantronix, Inc., a 30 year storied M2M and IoT specialist, designs, manufactures and sells worldwide 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, and more.

The Complete Package to Successfully Deploy Your Telematics Projects

Many projects fail due to the lack of integration between hardware, connectivity from service providers, critical accessories such as antennas and the lack of adaptation to the field. Lantronix provides a versatile telematics gateway that connects the featured scenarios, connectivity, advanced support and a device management platform, ConsoleFlow™; for device performance, location and real-time notifications of critical events.

A Large Choice Of Hardware Interface To Connect Your Vehicle Globally

FOX3 Series gateways are customizable, compact all-in-one devices combining cellular data connection with the latest GNSS technology, along with a variety of inputs and outputs.

Want to deploy in a complex industrial environment or urban canyon? The FOX3 is designed to operate with internal or external antennas as well as dead reckoning mode, which dramatically simplifies logistics, the installation process and the post-installation support.

Protect and Process in the Edge; Do Your Own Customization

Simply connect the FOX3 gateway to any telematics platform with powerful PFAL scripting language or the highly popular LUA. The FOX3 also supports MQTT and REST API to ease your hardware integration and shorten your time to market.

ConsoleFlow™ Centralized Device Management Platform

Monitor, manage, and control your devices from anywhere, at any time with the ready-to-use software platform web application. The easy-to-use platform provides software-defined automation with zero-touch provisioning across all of your devices and the capture of device telemetry data for event management and analytics.

Connectivity Services - IoT Cellular Platform

Lantronix's cloud-based Connectivity Services platform provides users the ability to activate, monitor and manage connectivity for all devices. The easy-to-use dashboard and analytics tools provide key insights into connectivity solution operations. Extensive diagnostics help troubleshoot any connectivity issues that may arise.

Perfect For

Fleet Management   Car-sharing   Commercial Vehicle

Asset & Workforce Tracking   Precision Farming   Logistics
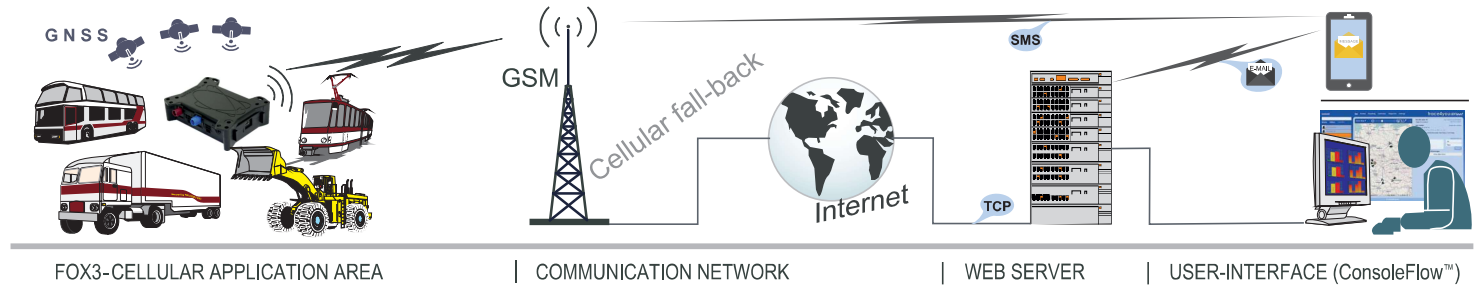
FOX3 Highlights

- Send to the cloud only what you need with the FOX3 edge processing and local data storage to reduce your recurring cost and ensure the fastest response time from your device.

- Keep critical data safe from cyber attack by using advanced encryption such as AES, SSL/TLS.

- Collect vehicle information such as tachograph (FMS), RPM (x1000), temperature, fuel level, with high accuracy using Lantronix "Premium Features."

- Collect ID, buzz, magnetic detection, movement, temperature, using BLE sensors "approved by Lantronix" or bring your own.

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TECHNICAL SPECIFICATIONS

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
Sensitivity:	-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~ 60 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 mm

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 (1xV.24 level;1xRS-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
8 MB Flash (History / Firmware / Configuration)

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).
4) Applicable with backup battery.
   Storage and using conditions of the device with battery option are limited to the battery temperature range.
5) Hardware Premium Features: CAN-interface.
6) Available on FOX3-3G-AU and FOX3-2G only.

OPTIONS

- 3000 programmable Geofences
- 2000 programmable 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 trial access to the ConsoleFlow™ centralized management platform including 8h technical training support
- ConsoleFlow device management platform to monitor, diagnose, control and update your 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 ConsoleFlow centralized management and easily adaptable to other tracking servers

FOX3-CELLULAR APPLICATION AREA | COMMUNICATION NETWORK | WEB SERVER | USER-INTERFACE (ConsoleFlow™)

AVAILABLE MODELS

MODEL NAME	GEOGRAPHICAL AREA	CELLULAR TYPE [1]	BANDS [2]	FALLBACK MODE(S) [1]	BANDS [2]	SPECIAL FEATURE	CERTIFICATIONS [3] COMPLETED | IN PROGRESS | UNDER CONSIDERATION	FCS [4]	ORDER CODE
FOX3-3G	World [5]	3G [A7]	5[a]/8/2/1	2G [A2]		×	**E-Mark** | CE; ISED; FCC	Jun. '15	F35H00FS
FOX3-3G-AU						Audio			F35H01FS
FOX3-3G-DR					5/8/3/2	Dead Reckoning		Feb. '17	F35R00FS
FOX3-3G-BLE						Bluetooth® 4.0 [6]	**Bluetooth®** [7]	Nov. '17	F35HGZFS
FOX3-M1	World	LTE-M1	12[b]/28/13/20/26[c]/8/3/4/2	2G [A3]		×	E-Mark | CE; ISED; FCC	Oct. '19	F33H002S
FOX3-M1-BLE						Bluetooth® 4.0 [6]	**Bluetooth®** [7]		F33HGZ2S
FOX3-C1	EMEA	LTE cat. 1	20/3/7		8/3	×	E-Mark | CE		F34H002S
FOX3-C4		LTE cat. 4	20/5/8/3/1/7	3G [A2]	5[a]/8/4[d]/2/1			Nov. '17	F38H002S
	The Americas	LTE cat. 4	17/5/4/2/7	2G [A2]	5/8/3/2		**E-Mark** | **CE**; **ISED**; **FCC**	Mar. '17	F38H000S

Certifications column also contains (spanning vertically): ISO 7637-2:2011 [8]; ISO 21848:2005 [9]

Please consult us regarding the models or features shown in grey, which are subject to MOQ and other considerations.

[1] Uplink / Downlink maximum data rates
- 2G: (λ1) 42[8] / 85[6]; or (λ2) 236[8] / 236[8]; or (λ3) 236[8] / 296 kbps
- 3G: (λ1) 5[76] / 7[2]; or (λ2) 5[76] / 42[2] Mbps
- LTE-M1 [NB1]: 375 / 300 [31[25] / 27[2]] kbps
- LTE cat. 1: 5[2] / 10[3] Mbps
- LTE cat. 4: 50 / 150 Mbps

[2] Ranked by increasing frequencies
[a] incl. NTT docomo's B19, itself incl. Japan's B6
[b] incl. North America's B17
[c] incl. KDDI's B18 as well as North America's B5 – cf. note [a]
[d] Not available on the European model, American model only

[3] Please consult us, should any other certification be required
[4] First customer shipment [date of]
[5] A special software build is available for NTT docomo
[6] Please consult us for a BlueID variant
[7] By the Bluetooth® Special Interest Group ("SIG")
[8] And even more stringent ISO 7637-2:2004, @12 V and @24 V, by TÜV
[9] @48 V, by QuieTek

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