FOX Series

Telematics Gateway

PERCEPXION

SECURE INTELLIGENT TELEMETRY GATEWAY

The Lantronix FOX series is an ideal solution for securely transforming telemetry data from assets such as field equipment and fleet vehicles into actionable insights. When paired with Lantronix Percepxion™ software, it streamlines complex device management tasks, including true zero-touch provisioning, enhancing efficiency and minimizing errors.

The Complete Package to Successfully Deploy Your IoT and Telematics Projects

Having an integration between hardware, connectivity, accessories, and ability to adapt to different field equipment is a critical success factor for all projects depending on telemetry data. Lantronix FOX, a secure intelligent telemetry gateway, combines flexible edge data acquisition and processing, and optimizes the data transmission with the back-office systems. Percepxion™ device management system automates and simplifies device life cycle management, provides real-time monitoring and APIs for easy integration.

Multiple Hardware Interfaces to Connect Your Field Equipment

The FOX series gateways are equipped with diverse set of inputs and outputs and support a wide range of fieldbus protocols. The gateways support cellular connectivity and integrated GNSS technology enables location-based feature sets. Designed for deployment in intricate industrial settings or challenging urban landscapes, the FOX series operates seamlessly with internal or external antennas, significantly streamlining logistics, installation, and ongoing support.

Protect and Process Data at the Edge

Push intelligence to the edge by leveraging the Lantronix PFAL scripting language or widely adopted LUA language. Edge intelligence allows faster reaction to changing conditions compared to cloud-only solutions. It can also reduce the total cost of ownership, when cellular data usage can be optimized by pre-processing and normalizing the data at the edge. FOX series gateways expedite the integration to IoT Platforms by supporting MQTT, Azure, and REST APIs.

Percepxion™ Centralized Device Management Platform

With the ready-to-use software platform, monitor, manage, and control your devices from anywhere, anytime. The Percepxion platform provides software-defined automation across all your devices and the capture of device telemetry data for event management and analytics.

FOX Applied to Critical Infrastructure

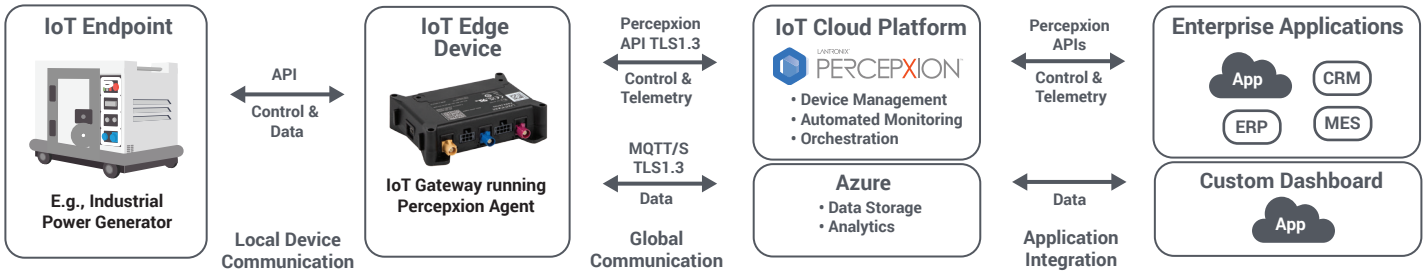
- User configurable Multi-platform communication
- Data decoding and buffering
- Remote zero-touch provisioning through Percepxion™
  - Firmware
  - Configuration
  - Certificate

FOX Highlights

- Send only the data you need to the cloud with the FOX edge processing and local data storage to reduce your recurring cost and ensure the fastest response time from your device.
- Secure critical data from cyber-attacks using advanced encryption such as AES, SSL/TLS 1.3.
- Collect vehicle information such as tachograph (FMS), RPM (x1000), temperature, and fuel levels with high accuracy.
- Support for common fieldbuses like Modbus and others using RS-232/485 interfaces.
- Collect ID, buzz, magnetic detection, movement, and temperature using Lantronix BLE sensors, or bring your own.

Percepxion for IoT Application

Integrate Edge Devices & Device Management into Enterprise IoT Systems



LANTRONIX

FOX Series

Telematics Gateway

TECHNICAL SPECIFICATIONS

General

4G LTE, with 2G fallback: (refer to the table below)
Internet (TCP/UDP/HTTP/SMTP)
Multi channel GNSS (GPS/Galileo/GLONASS)
Dead Reckoning variants
A-GPS (online/offline/autonomous)

Protocols:	NMEA, PFAL (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 with automatic/manual switch[2]
Wi-Fi 2.4, BLE 5.2 on the FOX4

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
Cellular[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

Security Features on the FOX4

Secure Boot
ATEC608 secure element

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 or 1x RS-232 1x RS-485 variants
1 x 10pin Mini-USB connector (for IOBOX-MINI[1], IOBOX-CAN[1])
1 x 1-Wire interface (incl. 5V Phantom Power)
1 x I²C interface
1 x CAN-Bus Interface[2] (uses 2 of 3 I/Os)
1 x 2FF mini-SIM Card Holder
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 cellular engine is fully functional (-20°C to + 55°C meets the 3GPP specifications).
4) Applicable with a backup battery.
Storage and using conditions of the device with battery option are limited to the battery temperature range.

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]
- PROMOTION KIT providing all necessary hardware, software, documentation, SIM Card and trial access to the Percepxion™ centralized management platform including 8 hour technical training support
- Percepxion™ device management platform to monitor, diagnose, control and update your devices

APPLICATION AREAS

- Generator monitoring
- Fuel tank monitoring
- HVAC system monitoring
- Real-time online location tracking
- Fleet management/monitoring
- Car sharing
- Waste management
- Theft prevention
- Public transportation
- Real-time satellite navigation
- Territory management
- Route verification
- Trip management/distance calculations
- Driving behavior / Eco-Drive monitoring
- Security / Emergency / Insurance services (UBI)
- Toll collection / Pay-As-You-Drive (PAYD)

AVAILABLE MODELS

SKU	REGION	DEAD RECKONING	BATTERY	RS-485	BLE	Wi-Fi	4G LTE	3G/2G FB
F33H002B01	WORLDWIDE		x				M, NB1	x
F33H002S	WORLDWIDE						M, NB1	x
F33H007S	JAPAN		x				M, NB2	
F33H502S	WORLDWIDE		x	x			M, NB1	x
F33HGZ2S	WORLDWIDE				4.1		M, NB1	x
F33HGZ2B01	WORLDWIDE		x		4.1		M, NB1	x
F43H102S	EMEA		x		5.2	802.11n	M, NB2	x
F43H207S	JAPAN		x		5.2	802.11n	M, NB2	
F43H20FS	WORLDWIDE		x		5.2	802.11n	M, NB2	
F43H502S	EMEA		x	x	5.2	802.11n	M, NB2	x
F43H507S	JAPAN		x	x	5.2	802.11n	M, NB2	
F43H50FS	WORLDWIDE		x	x	5.2	802.11n	M, NB2	
F43R20FS	WORLDWIDE	x	x		5.2	802.11n	M, NB2	
F44H102S	EMEA		x		5.2	802.11n	Cat-1	x
F44H502S	EMEA		x	x	5.2	802.11n	Cat-1	x
F44H504S	ANZ, LATIN AMERICA		x	x	5.2	802.11n	Cat-1	x

Learn more at lantronix.com/fox-series

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