# FOX5 – Edge-Powered Telematics

SECURE INTELLIGENT TELEMATIC GATEWAY

LANTRONIX PERCEPXION

FOX5 gateways combined with Percepxion™ software elevate vehicle telematics to the next level with high-performance connectivity, edge intelligence, and fleet management built for scale. By processing data locally, enforcing end-to-end security, and automating provisioning, this unified solution cuts deployment time and powers major gains in operational efficiency.

**Accelerated Deployment** – supporting CAN, RS-232, RS-485, 1-Wire, plus Bluetooth sensor integration.

**Accurate Tracking** – advanced GNSS and dead reckoning for dependable precision where conditions are toughest.

**Edge Intelligence** – executing local filtering, data normalization, and processing to cut data usage costs and maintain integrity.

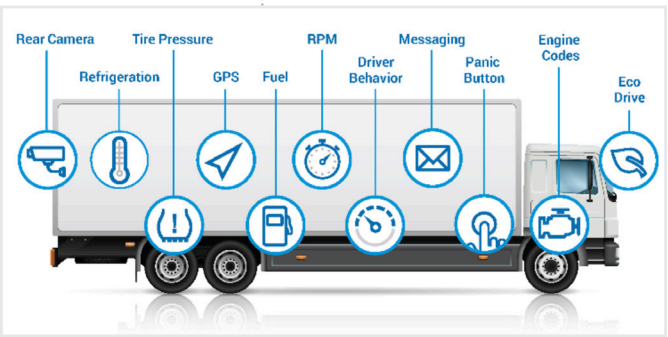
**Enhanced Security** – Secure boot and TLS 1.3 to protect critical vehicle and telemetry data.

**Simplified Management** – powered by Percepxion's zero-touch provisioning and real-time monitoring.

**Markets:**

## Feature highlights

- Highly optimized internal antenna for superior RF performance
- 4G LTE Cat 1 bis global connectivity
- Highly accurate positioning with advanced GNSS and dead reckoning
- 32/64 MB RAM/Flash for edge intelligence programming
- Cryptographic co-processor
- Programmable I/Os & LEDs
- Internal and external antenna options
- BLE 5.4 for peripheral & sensor connectivity

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*Telematics Gateway*

## Specifications

| Model | F54R000S | | F54R00FS | |
|---|---|---|---|---|
| **Cellular** | | | | |
| Cellular technology | 4G LTE Cat 1 bis | | 4G LTE Cat 1 bis | |
| Cellular band support | B2,4,5,12,13,14,66 | | B1,2,3,4,5,7,8,12,13,18,19,20, 25,26,28,66,34,38,39,40,41 | |
| Certifications | FCC, IC, PTCRB, AT&T, UL AT&T FirstNet | | CE, UKCA, PSTI, CB, E-Mark, Telec | |
| **Multi-Channel GNSS** | | | | |
| Dead Reckoning | Yes | | Yes | |
| A-GPS (online/offline/ autonomous) | Yes | | Yes | |
| Accuracy | GPS | GLONASS | GPS | GLONASS |
| GPS | 1.5m | 1.5m | 1.5m | 1.5m |
| Acquisition / Sensitivity | GPS | GLONASS | GPS | GLONASS |
| Cold Start | <32s | <32s | <32s | <32s |
| Tracking | -162 dBm | -162 dBm | -162 dBm | -162 dBm |
| Sensitivity | -145 dBm | -145 dBm | -145 dBm | -145 dBm |
| GPS Operational Limits | GPS | GLONASS | GPS | GLONASS |
| Velocity | 515 m/s | 515 m/s | 515 m/s | 515 m/s |
| Altitude | 18,000 m | 18,000 m | 18,000 m | 18,000 m |
| Update Rate | 10 Hz | 10 Hz | 10 Hz | 10 Hz |
| **Antennas** | Internal & External w/ automatic/manual switch | | Internal & External w/ automatic/manual switch | |
| **Input Power** | +10.8 V – 60 V DC | | +10.8 V – 60 V DC | |
| **Battery** | Internal 1000 mAh rechargeable battery | | Internal 1000 mAh rechargeable battery | |
| **Power Consumption** | | | | |
| Normal Operation | 60 mA @ 12 VDC | | 60 mA @ 12 VDC | |
| Sleep Mode | <2.2 mA @ 12 VDC | | <2.2 mA @ 12 VDC | |
| **Environmental Data** | | | | |
| Operating Temperature | -30°C to +85°C | | -30°C to +85°C | |
| Storage Temperature | -30°C to +85°C | | -30°C to +85°C | |
| Cellular Temperature | -30°C to +85°C | | -30°C to +85°C | |
| Battery Discharging Temperature | -20°C to +60°C | | -20°C to +60°C | |
| Charging Temperature | 0°C to +45°C | | 0°C to +45°C | |
| **Interfaces** | | | | |
| Configurable Digital/ Analog I/O | 3 | | 3 | |
| Pre-defined Digital Input | 1 (Ignition) | | 1 (Ignition) | |
| Programmable LEDs | 3 | | 3 | |
| Serial Ports | 1x RS-485 & 1x RS-232 or 2x RS-232 | | 1x RS-485 & 1x RS-232 or 2x RS-232 | |
| 1-Wire | 1 | | 1 | |
| CAN-bus | 1 | | 1 | |
| USB 2.0 | 1 | | 1 | |
| 10-pin Mini-USB | Yes, for IOBOX accessories | | Yes, for IOBOX accessories | |
| I2C bus | 1 | | 1 | |
| **Sensor** | | | | |
| Accelerometer | Yes | | Yes | |
| 3DG | ± 8g (programmable) | | ± 8g (programmable) | |
| **SIM Card** | 2x Nano-SIM Holder | | 2x Nano-SIM Holder | |
| **Security** | | | | |
| Cryptographic co-processor | Yes | | Yes | |
| Secure Boot | Yes | | Yes | |
| **Bluetooth** | BLE 5.4 | | BLE 5.4 | |
| **Dimensions** | 105 mm x 83 mm x 28 mm | | | |

| Model | F54R000S | F54R00FS |
|---|---|---|
| **System Feature** | | |
| RAM / Flash | 32 MB / 64 MB | 32 MB / 64 MB |
| Real-time Clock | Yes | Yes |
| **Edge Programming** | LUA Scripts & PFAL Programming Language | LUA Scripts & PFAL Programming Language |
| **Protocols** | | |
| Modbus | Yes | Yes |
| CAN | Yes | Yes |
| 1-Wire | Yes | Yes |
| J1939 | Yes | Yes |
| MQTT | Yes | Yes |
| TCP/UDP | Yes | Yes |
| HTTP | Yes | Yes |
| SMTP | Yes | Yes |
| **Software Features** | | |
| Programmable Geofences | 3000 | 3000 |
| Programmable Waypoints | 2000 | 2000 |
| Programmable Alarms | 200 | 200 |
| **Device Management** | Lantronix Percepxion™ | Lantronix Percepxion™ |
| Warranty | 2-Year Limited | 2-Year Limited |

## Ordering Information

| Region | Part Number |
|---|---|
| North America | F54R000S |
| Rest of World | F54R00FS |

## Accessories

| Model | Description |
|---|---|
| 60100 | IOBOX-MINI: I/O Port Extender, 13 Additional I/Os |
| 60149 | IOBOX-CAN: CAN-Bus and I/O Extender. Additional CAN Interface, D8 Interface & 8 I/Os |
| 60338 | 1.5m 8-pin Open-Ended Installation Cable with 2A Blade Fuse |
| 60036 | 1.5m 8-pin Open-Ended Installation Cable |
| 60039 | 1.5m 6-pin Open-Ended Installation Cable |
| 60347 | 1.5m 16-pin Open-Ended Installation Cable for IOBOX-MINI and IOBOX-CAN |
| 60286 | 1.5m OBDII Installation Cable with Ignition Wire |

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