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.

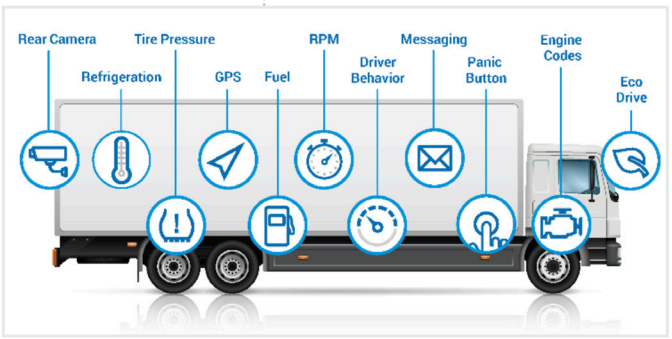
Enhanced Security – Secure boot and TLS 1.3 to protect critical vehicle and telemetry data.

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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