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Version 1.0

MiX 2450-B

Product Overview

Overview

The MiX 2450-B is a Consumer Vehicle tracking device featuring an LTE modem with 2G fallback. It contains a GNSS, accelerometer, a 434 MHz Short Range Device (MagiX), and a 1000mAh Li-Ion Polymer backup battery.

General Features

Feature	Description
Trip Data Recording	The following data is recorded: date and time, distance travelled, journey duration, vehicle speed, journey departure and arrival time, driver name, driver ID and vehicle ID.
Driving Violations	The following standard violations are recorded: over speeding, harsh braking, harsh acceleration, harsh cornering moderate and severe impact detected.
GPS Data Recording	Essential information is recorded with every GNSS tracking point, e.g. vehicle and driver ID, date and time, latitude and longitude, altitude, heading, velocity, number of satellites, etc.
Active Tracking	Track your vehicle movements in real-time using automated vehicle location (AVL) updates from the vehicle replay routes taken on street level or satellite maps.
Active Events	Be notified via email and/or text/SMS message, when selected standard or user-defined events occur.

Part Numbers

P/N	Description
U0195MT	MiX 2450 with Backup Battery Electronic Unit: Quectel EG915N-EA; Consumer variant
A0136MT	Power Harness MP24 for MiX 2450-B

Technical Specifications

General

Feature	Description
Supply	Automatic 12/24V operation Backup Battery 3.7 V; 1000 mAh Li-Ion Polymer Battery
Communication	LTE CAT1/2G Over-the-air firmware downloads
SIM Card	Nano SIM (4FF)
Short Range Device (MagiX)	Use in conjunction with a Two Button Remote for panic and roadside alerts
Serial Communication	TTL serial interface (115kbps) (not accessible from outside the enclosure)

LED	Modem status/power indication
Battery	10 h operation without primary supply
3-Axis Accelerometer	The 3-axis motion sensor capable of measuring accelerations with an output data rate of 1 Hz to 5 kHz. Dynamically selectable full-scale: ±2g/±4g/±8g/±16g
Location	GNSS with GPS, GLONASS, BDS, Galileo and QZSS Number of concurrent GNSS: 4 + QZSS
Events	Over-speeding Harsh Acceleration Harsh Braking Harsh Cornering Moderate/ Severe Impact Low Vehicle Battery Vehicle Battery Disconnect / Vehicle Battery Reconnect Ignition On / Ignition Off
GNSS Antenna	Internal
Enclosure IP rating	IP50
Clock	Internal RTC
Dimensions	25 x 58 x 100 mm
Weight	125 g

Environment

Feature	Description
Temperature	DIN EN 60068-2-1 DIN EN 60068-2-2 (Recommended Storage) 0°C to +50°C (Operating) -20°C to +60°C (limited by Li-Ion battery)
IP Rating	IP50
Vibration	In accordance with ISO 16750-3:2007(E) for 8h (at least 1 unit in each perpendicular axis). The vibration profile is as per table 14 of ISO16750-3:2007(E)
Shock	In accordance with Mil-Std-810F method 516.5 at a level 30g and with pulse duration of 11ms. The test consists of three shocks to be executed in each major axis and for both positive and negative directions in all 3 perpendicular axes.
Mechanics: Free fall	DIN EN60068-2-32: According to automotive guidelines 3 drops from 1m height (outside packaging)
Humidity	Compliance with MIL-STD-810F figure 507.4-1 (Duration: 5 x 48 h cycles)

Power Supply

Feature	Description
Supply	10.5 – 33 VDC
Current Consumption at 12V (primary side)	Out of trip: < 20 mA Sleep Mode: < 20 mA Drive / Recovery Mode: < 100mA, consumption depends on instantaneous conditions Battery charge current: < 200 mA (internally managed by firmware)
Current Consumption at 24V (primary side)	Out of trip: < 15 mA Sleep Mode: < 15 mA Drive / Recovery Mode: < 50mA, consumption depends on instantaneous conditions Battery charge current: < 100 mA (internally managed by firmware)
Power Consumption	< 1800 mW
Circuit protection	ISO7637-2 Over voltage rating: 56 V DC for 60 s
Reverse Polarity Protection	ISO7637-2

Battery

Feature	Description
Type	3.7 V, 1000 mAh rechargeable Li-Ion Polymer Battery (GPE603530)
Capacity	6 h reporting once an hour, and a further 4 h reporting every 10 min
Temperature	Can discharge between -20.0 ˚C and 60.0 ˚C Can be charged between 0 ˚C or above 55.0 ˚C

GNSS

Feature	Description
Technology	Quectel LC76G-PA
Sensitivity (tracking)	-166 dBm
Satellite Constellations	47-channels GPS L1C/A and GLONASS L1 BDS, Galileo and QZSS Number of concurrent GNSS: 4 + QZSS
Antenna	Internal
Acquisition (normal)	Cold (<3 2s); Warm (< 25 s); Hot (<2 s)

Modem

Feature	Description
Module	Quectel EG915N-EA (LTE CAT1/2G)
Bands	LTE B1, B3, B7, B8, B20, B28 2G B3 and B8
Class / Power Output	EGSM900: Class 4 (33 dBm ±2 dB) DCS1800: Class 1 (30 dBm ±2 dB) EGSM900 8-PSK: Class E2 (27 dBm ±3 dB) DCS1800 8-PSK: Class E2 (26 dBm ±3 dB) LTE-FDD bands: Class 3 (23 dBm ±2 dB)
Data rates	LTE: FDD: Max 10 Mbps (DL) / Max 5 Mbps (UL) GSM: (2G) GPRS: Max 85.6 Kbps (DL) /Max 85.6Kbps (UL) EDGE: Max 236.8 Kbps (DL) / Max 236.8 Kbps (UL)
Packet Data	TCP/ UDP/ PPP/ NTP/ NITZ/ FTP/ HTTP/ PING/ CMUX/ HTTPS/ FTPS/ SSL/ FILE/ MQTT/ MMS/ SMTP/ SMTPS
LTE 3GPP Release	Support 3GPP release 9

MagiX (Short Range Device)

Feature	Description
Receiver Frequency	434.3 MHz
Radiated Output Power	10 dBm
Frequency Deviation	10 kHz
Data Rate	19200 bps
Modulation	2 Level FSK
RF Bandwidth	39.2 kHz

Microprocessor

Feature	Description
Processor	STM32H562VGT6
Memory	FLASH: 1 MB SRAM: System: 640Kbytes Backup: 4Kbytes

Type Approvals

Feature	Description
South Africa	ICASA