AVL-50 Series
Data Sheet

Compact Integrated Vehicle Trackers

The AVL-50 Series is a range of GPS trackers designed for a wide variety of simple vehicle tracking applications including vehicle finance asset protection, stolen vehicle recovery and simple fleet management. Vehicle trackers within the series support LTE CAT-M1 (eMTC), LTE CAT-M2 (NB-IoT) on many bands supporting North American and European Cellular Operators. The AVL-50 Series offer basic digital I/Os that can be used for monitoring or controlling external peripherals. The built-in GPS receiver has best in class sensitivity and fast time to first fix. System integration is straightforward as complete documentation is provided for the full featured @Track protocol. The @Track protocol supports a wide variety of reports including emergency alarm, geo-fence boundary crossings, as well as external power supply monitoring and position reports.

Highlights

- Small-sized, Ultra-thin Device Allowing Covert Installation
- Cost Effective Solution for Basic Tracking
- Multiple I/O Interfaces for Monitoring and Control
- Internal 3-axis Accelerometer for Motion Detection
- Driving Behavior Monitoring and Incident Notification
- AVL-50 Series Sub-models Provide Optional Internal Bluetooth Version

Model No.	Region	Technology	LTE Category	Operating Band	Certificate
AVL-50 A	North America	LTE	eMTC	LTE: B2/B4/B12/B13	FCC/Verizon
AVL-50 E	Europe	GSM/LTE	eMTC/NB-IoT	GSM: 900/1800 MHz LTE: B3/B8/B20	CE/E-Mark

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RF Specification

	AVL-50 A	AVL-50 E
GSM Frequency		900/1800 MHz
GSM Data Transmission		GPRS multi-slot class 12 EDGE multi-slot class 12
LTE Operating Band	B2/B4/B12/B13	B1/B3/B8/B20
LTE Data Transmission	eMTC (DL) 300kbps eMTC (UL) 375kbps	eMTC (DL) 300kbps eMTC (UL) 375kbps NB1 (DL) 34kbps NB1 (UL) 66kbps

GNSS Specification

GPS Type	Qualcomm Gen 8C GNSS receiver
Sensitivity	Cold start: -148 dBm Tracking: -159 dBm
Position Accuracy (CEP)	Autonomous: < 2.5m
TTFF (Open Sky)	Cold start: 30s average Hot start: 1s average

Interfaces

Digital Inputs	One positive trigger for ignition detection
Digital Outputs	One open drain, 150 mA max drive current
Digital Inputs/Outputs	Configurable I/Os, one special I/O can be configured as a negative trigger digital input or an open drain output with 150 mA max drive current
Communication Port	One TTL UART port for upgrading and debugging
Cellular Antenna	Internal antenna
GPS Antenna	Internal antenna
Indicator LED	CEL and GPS

Bluetooth Specification (Optional)

Frequency	2.4 GHz RF transceiver compatible with Bluetooth Low Energy (BLE)
Receiver Sensitivity	-88 dBm
Max out RF Power	Up to 10 dBm
BT Antenna	Internal only

General Specification

Dimensions	87mm*55mm*12.5mm
Weight	50g
Backup Battery	Li-Polymer 190 mAh
Operating Voltage	DC 8V to 32V
Operating Temperature	-30℃ ~ +80℃ -40℃ ~ +85℃ for storage

Air Interface Protocol

Transmit Protocol	TCP, UDP, SMS
Scheduled Timing Report	Report position and status at preset intervals
Geo-Fence	Geo-fence alarm, support up to 20 circular and 20 polygon geo-fence regions
Power On Report	Report when the device is powered on
Tow Alarm	Based on internal 3-axis accelerometer
Driving Behavior Monitoring	Aggressive driving behavior detection, e.g. harsh braking and acceleration
Crash Detection	Accident data collection for reconstruction and analysis
Special Alarm	Special alarm based on the digital inputs
Remote Control	OTA control of digital outputs

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GPS Tracking Solutions

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