WISE-4773-S51U

Intelligent Cellular LTE OBD Data Interface – GPS, Category M1

Features

- Retrieve, translate, analyze data from vehicle onboard diagnostics bus
- J1939, J1708/J1587, OBDII (North America)
- GPS location and accuracy information
- Industry leading, proprietary OBD database/algorithms with broadest make-model-year vehicle coverage (North America) - managed by onboard intelligence
- Cellular LTE Category M1 – reduced power consumption
- Plug-and-play – just plug into the OBD port
- Simple command-line interface (CLI) for easy application development
- Digital, self-orientating accelerometer and audible alert – hard acceleration, braking, cornering
- Tamper alert with current location if the device is removed
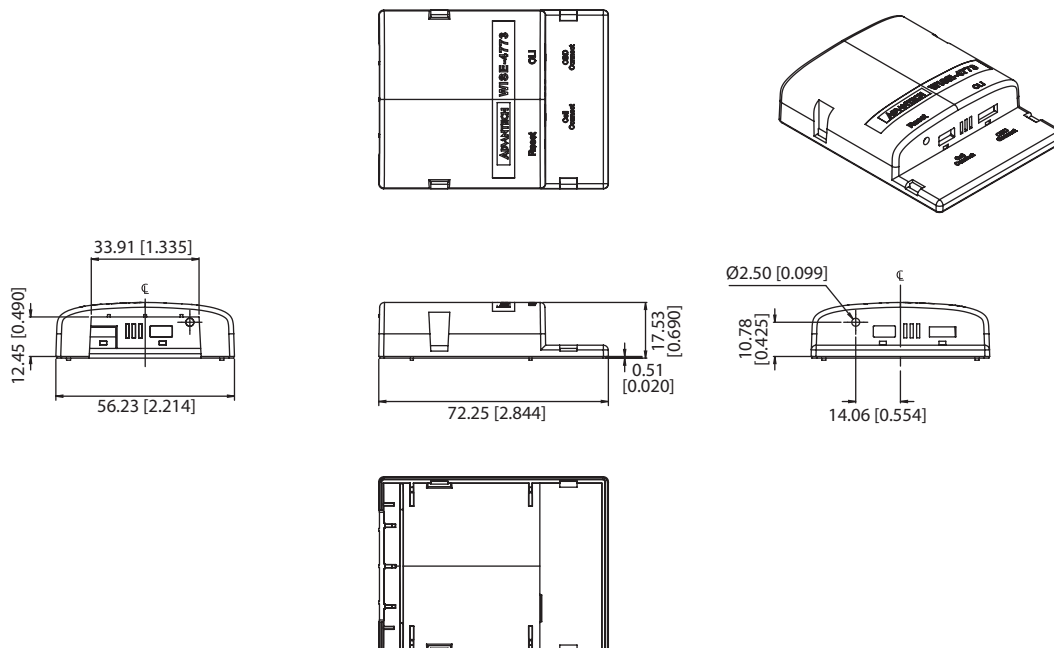
Overview

Model WISE-4773-S51U, Intelligent OBD ("On Board Diagnostics") Cellular Data Interface, collects data from GPS and your vehicle's OBD port. The self-installing device wirelessly transmits data over the G5 CAT M1 cellular network to your fleet management or analytics systems. Transport Layer Security (TLS) allows secure, cellular data connections to a configurable IP address via JSON over HTTPS and/or Cloud Management Platform for device management. All data into and out of the device is secure and encrypted.

WISE-4773-S51U plugs directly into the vehicle diagnostic port and automatically detects the vehicle bus and supported parameters using Advantech B+B SmartWorx industry leading proprietary built-in database and algorithms. It enables easy retrieval of the most commonly used parameters in telematics and fleet management applications, across the broadest range of North American vehicles, and makes that data available anywhere via the cellular network. Requires no knowledge of data bus protocols or automotive manufacture proprietary data as the onboard intelligence manages this for you.

Advanced, assisted GPS technology provides location, speed, altitude and heading at each Ignition On/Off event and at a configurable interval when the ignition is on.

A self-leveling, 3-axis accelerometer provides both audible feedback to the driver and a report to the fleet manager if the driver has accelerated or braked too quickly, or if they are cornering at an unsafe speed. Limits can be set individually for each of the three events.

Model WISE-4773-S51U also contains a cloud management platform for firmware updates, device configuration, and security management. The cloud management platform can also be hosted locally for extra security.

Specifications

Wireless Interface

▪ **Cellular**	LTE, Category M1 LTE CATM1/NBIOT bands supported (USA) 4GLTE FDD: B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B26, B28 4GLTE TDD: B39 AT&T
▪ **Transmit Power**	1 MB: 12.5 dBm; 54 MB: 12.25 dBm; 65 MB: 9.25 dBm
▪ **Receiver Sensitivity**	1 MB: -91 dBm; 54 MB: -75 dBm; 65 MB: -71 dBm
▪ **Accelerometer**	Digital, 3-axis, self-orientating (acceleration, braking, cornering)
▪ **Buzzer**	Indicates hard braking, acceleration, cornering
▪ **GPS/GLONASS/AGPS**	Location accuracy of at least 2.5 M CEP
▪ **Configuration**	Automatic, configurable intervals over cellular or CLI
▪ **Internal Antennas**	GPS, Cellular
▪ **Data Rate**	Up to 15 Mbps
▪ **Connector**	(1) J1962 (OBD) / ISO 15031 Type A
▪ **LEDs**	(1) Green – indicates connection to the cellular network (1) Red – Indicates connection to the vehicle network

Power

▪ **Source**	Direct power via OBD J1962 port Battery backup (and alert) Low power states
▪ **Operating Voltage**	9 to 36 V DC
▪ **Power Consumption**	<5 mA @ 12V DC deep sleep <15 mA @ 12V DC network sleep <150 mA @ 12V DC active

Environment

▪ **Operating Temperature**	-30 to +75 °C (-22 to +167 °F)
▪ **Storage Temperature**	-40 to +85 °C (-40 to +185 °F)

Physical

▪ **Enclosure Dimensions**	56.2 x 72.3 x 17.5 mm (2.21 x 2.85 x 0.69 in.)

Approvals, Directives, Standards

▪ **SAE J1113, FCC-Part 15B, Industry Canada - EMC/EMI**	
▪ **Shock & Vibration**	SAE J1455, US MIL Standards 810F, 202G
▪ **Drop Testing**	Drop: 1.22 m (4 ft.) Dropped unit shall return to normal operation
▪ **Cellular Carriers**	(approvals pending)

Supported Vehicles (NATAM)

- OBDII data support for 2008 and newer light-duty and medium-duty vehicles
- OBD data support for 1996 and newer heavy-duty vehicles.

Supported Vehicle Parameters

▪ **Vehicle Identification Number (VIN)**	
▪ **Vehicle Speed**	Monitor aggressive driving
▪ **Engine Speed**	Monitor idle time and engine abuse
▪ **Throttle Position**	
▪ **Odometer/Distance Traveled**	Monitor trip distance and hours of service
▪ **Instantaneous Fuel Rate in Usage per Hour**	
▪ **Accelerometer**	Monitor hard acceleration, braking, cornering
▪ **Tamper notification**	Super-capacitor provides 2 to 4 minutes for shut down and last transmission of data; then one more report indicating power off and current location
▪ **Total Fuel**	Monitor fuel usage and guard against theft
▪ **Ignition Status**	Automatic detection and idle time tracking
▪ **Battery Voltage**	Watch for charging system failures
▪ **PTO Status**	Automatically calculate fuel tax savings
▪ **Diagnostic Trouble Codes (DTCs)**	
▪ **MIL Status**	
▪ **Emissions Readiness Monitors**	Check remotely if vehicles are ready for emissions certification
▪ **Brake Switch Status**	Available on most Ford & GM trucks/vans
▪ **Seatbelt Fastened**	
▪ **Barometric Pressure**	
▪ **Engine Oil Temperature**	
▪ **Engine Run Time**	
▪ **Oil Life Remaining**	
▪ **TPMS/Tire Pressure**	
▪ **Driver Seatbelt**	
▪ **Transmission Fluid Temperature**	
▪ **Fuel Level**	

Other parameters available on a custom basis.

Additional Features

- Automatic low power mode senses when vehicle or engine speed is zero
- Proprietary vehicle detection algorithm and embedded database lets the same hardware work on all compliant vehicles
- Configurable parameter reporting by polling at fixed rate or when threshold is exceeded
- Data store-&-forward if cellular connection is not available (8 days)

Supported Protocols

- SAE J2284/ISO 15765
- Ford MSCAN
- Low Speed GMLAN
- J1708 / J1587
- J1939 (250 kbps & 500 kbps)

Ordering Information

▪ **WISE-4773-S51U**	Intelligent Cellular OBD Data Interface

Accessories – Sold Separately

BB-1962FFMCBL	OBDII male to (2) OBDII female Y splitter cable	Optional for ODBII vehicles
BB-D99YT21962	Type II CAN 500 9-pin male and female to OBDII Y splitter cable	Required for J1939 vehicles with Deutsch Type 2 connector
BB-D99Y1962	Type 1 black 9-pin male and female to OBDII Y splitter cable	Required for J1939 & J1708 vehicles with Deutsch 9-pin connector