

# TREK-550

## Intel® Atom™ Industrial In-Vehicle Computing Box

**NEW**



### Features

- Supports Win CE 6.0, XPE, XP and Linux
- Automotive grade working temperature range (-30° C to 70° C)
- Rich I/O including CAN, LAN, RS-232, RS-485, J1708, isolation 4DI/4DO, Line out, Mic in, USB, and Video-in
- Built-in communication modules, including GSM/GPRS/HSDPA/CDMA, WLAN & Bluetooth
- GPS with AGPS and dead reckoning technology (Gyro & speed line)
- Certifications: CE/FCC/e-mark, MIL-SD810F, ISO 7637-2, SAE J1455, SAE J1113 regulations
- Dual display/audio output for both driver and passenger
- Ignition on/off delay; SW detectable/controllable for car power management



### Introduction

The TREK-550 is a dedicated box computer for industrial vehicle fleets, transport trucks, buses and taxis. TREK-550 combined with variety of I/O connectors can be connected to devices like OBD-II or TPMS (Tire Pressure Monitoring System). Dual display/dual audio interfaces supporting different resolutions can deliver different applications to different displays; eg: one application to a fleet driver and another to a digital signage application.

Built-in wireless communications (WWAN, WLAN, BT) enable TREK-550 to send important driver/vehicle/location/cargo information back to the control center. TREK-550 can also operate in extreme environments with features like a wide working temperature range (-30 to 70 degrees). TREK-550 also uses a special design to handle the critical issue of in-vehicle power. Special power protection (ISO7637-2/SAE J1455 Class A/ SAE J1113) and car power management software (Ignition on/off, delay on/off, low battery monitor) prevent electrical noise and surges from impacting the system, guarding against damage from transient car power. TREK-550 also support rear view monitor through connecting video in port. With this feature, driver can real time monitor the environment on two sides of the truck for driving safety. TREK-550 can also support dead-reckoning feature, which means the truck can still be traced even the driver is driving in a tunnel.

### Specifications

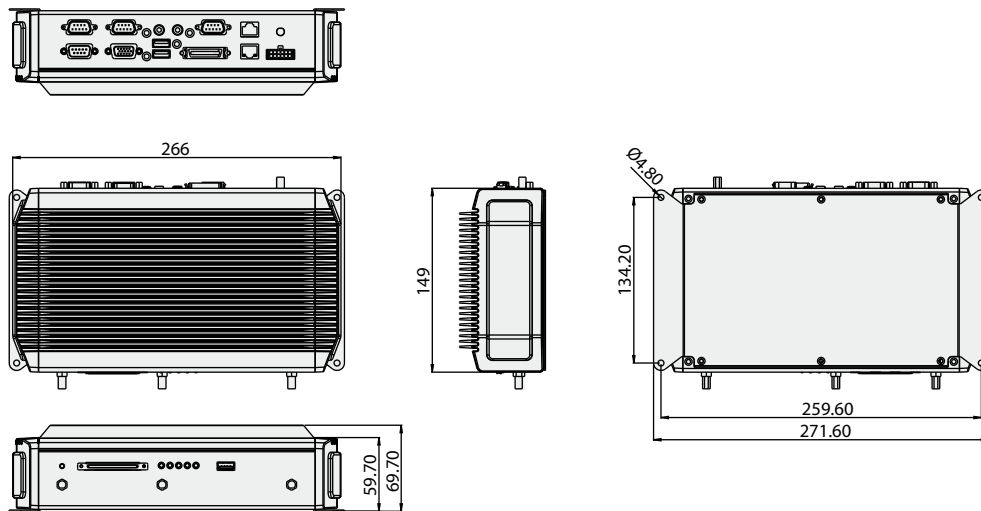
|                      |   |  |
|----------------------|---|--|
| System               | CPU   | Intel Atom XL Z510PT 1.1 GHz (Z520PT 1.3 GHz as option)  |
|                      | Chipset                                       | Intel LE82US15EE   |
|                      | System Memory                                 | 1 x 200-pin SODIMM socket, Supports up to 2 GB DDR2 400/533 memory module  |
|                      | Mini PCI-Express                              | 1 x standard Mini PCI express sockets, user accessible, for WLAN   |
| Physical             | Dimensions (W x H x D)                        | 266 x 149 x 68.2 mm  |
|                      | Weight  | 2 kg   |
| Storage              | Compact Flash                                 | Default 2 GB Industrial Grade CF card, supports Advantech SQFlash utility  |
|                      | HDD   | 40 GB/80 GB (SATA)   |
| Display interface    | High Density Port                             | Design compatible with TREK-303, support 7" LCD 800 x 480 resolution, the signal includes:   |
|                      |   | - 18 bits LVDS out<br>- 2 x RS-232<br>- Mono audio out<br>- 1 x USB Host<br>- 12V DC output  |
| I/O                  | CAN   | 1 x CAN 2.0 A/B by RJ45 (Note1: J1939 protocol is ready, Note2: 2500Vrms isolation protection)   |
|                      | USB Host                                      | 3 x USB host ports with A type receptacle  |
|                      | Mic in  | 1 x Mic-in jack  |
|                      | Line out                                      | 1 x line out jack  |
|                      | COM port                                      | - 2 x Full function RS-232, 5V@ 500mA, 12V@ 250mA, ping9, by jumper selected<br>- 1 x 4-wire RS-232, 1 x RS485, 1 x J1708                            |
|                      | Isolation DI/DO                               | - 4 x Isolated Dry Contact Digital Inputs by DB9 (2500 Vrms protection)<br>- 4 x Relay driver by DB9   |
|                      | Video in                                      | - 2 x composite video input selection supported format (for rear view monitor) by RJ-45 connector (NTSC, PAL, SECAM with automatic format detection) |
|                      | VGA output                                    | 1 x VGA output by DB-15 (independent display)  |
| LAN                  | 1 x 10/100/1000 Ethernet (with LEDs) by RJ-45 |  |
| Communication        | WWAN  | GSM/GPRS - Wavcom Q55 (default), CDMA - Sierra 5728V and HSDPA- MC8790V (option), with SMA connector for external antenna                            |
|                      | WLAN  | Optional, support 802.11 a/b/g, with SMA connector for external antenna.   |
|                      | Bluetooth                                     | Optional, support Bluetooth Class II, Version 2.0 + EDR, antenna built in  |
| GPS (dead reckoning) | Model   | LEA-4R (built in Gyro) LEA-5S (default)  |
|                      | RF Receiver Type                              | 16 Channels (ublox LEA-4R) 50 channels   |
|                      | Cold Start                                    | 34 s 29 s  |
|                      | Warm Start                                    | 33 s 29 s  |
|                      | Hot Start                                     | < 3.5 s <1 s   |
|                      | AGPS  | Supports AGPS on line only, <5 s <1 s  |
|                      | Tracking and Navigation                       | -150dBm -160 dBm   |
|                      | Acquisition                                   | -140dBm -160 dBm   |
|                      | Protocol                                      | NMEA (GGA, GLL, GSA, GSV, RMC, VTG, TXT)<br>UBX (u-blox proprietary protocol)  |
|                      | G sensor                                      | Yes, built in (by project)   |

## Specifications Cont.

|                  |                          |  |
|------------------|--------------------------|--|
| LED              | LED indicator            | - Power on (Red)<br>- Storage Access (Green)<br>- WLAN data transfer (Green)<br>- WWAN link (Green)<br>- GPS operation (Blue)  |
| Car Power Design | DC-input                 | Supports 12/24V car power system (6V - 36V wide DC input)  |
|                  | Power Management         | Power on/off delay,<br>- Power on delay, 2 sec default<br>- Power off delay, 5 sec as default<br>- Delay time controllable by SW configuration<br>- Low voltage protection<br>- Supports S4 suspend mode |
|                  | Reset                    | Yes, 1 reset button  |
| Environment      | Operating Temp.          | -30° C ~ +70° C  |
|                  | Storage Temp.            | -40 °C ~ +85° C  |
|                  | Vibration/Shock          | MIL-STD-810F, Method 516.5   |
|                  | EMC                      | CE, FCC, IC  |
| Certifications   | Safety                   | CE, CB   |
|                  | Vehicle Power Regulation | e-mark, SAE J1455, SAE J1113, ISO7637-2  |
| Mechanical       | Material                 | Top cover (Aluminum extrusion)   |
|                  |                          | Side cover (PC)  |
|                  |                          | Bottom & I/O cover (metal)   |

## Dimensions

Unit: mm



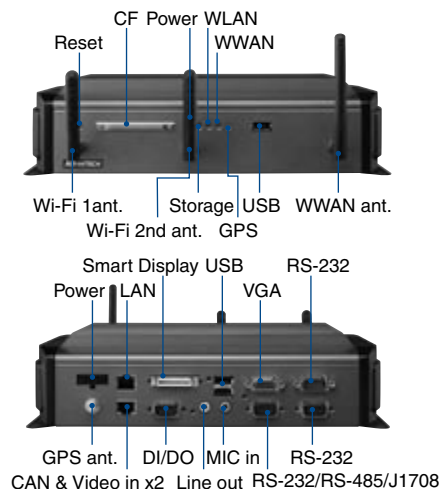
## Ordering Information

| Part Number    | Description   |
|----------------|---|
| TREK-550-A00E  | Intel Atom 1.1 GHz (Option: GPRS)   |
| TREK-550-A20E  | Intel Atom 1.1 GHz (Option: HSDPA/CDMA)   |
| TREK-550-A40E  | Intel Atom 1.3 GHz (Option: GPRS)   |
| TREK-550-A60E  | Intel Atom 1.3 GHz (Option: HSDPA/CDMA)   |
| TREK-303R-HA0E | 7" vehicle display system, 800 x 480 resolution, with 4wire resistive touchscreen, 2-watt speaker |
| 1700018342     | Cable to connect TREK-550 with TREK-303   |

## Packing List

| Description         | Quantity |
|---------------------|----------|
| CAN /Video in cable | x1       |
| Power cable         | x1       |
| GPS Antenna         | x1       |
| WWAN Antenna        | x1       |
| Screw               | x4       |
| Startup manual CD   | x1       |

## Rear-Side Connectors



|    |                         |
|----|-------------------------|
| 1  | Operator Panels         |
| 2  | Fanless Panel PCs       |
| 3  | Panel Computers         |
| 4  | Display Solutions       |
| 5  | Ethernet Switches       |
| 6  | Device Servers          |
| 7  | Serial Comm. Cards      |
| 8  | Video Surveillance      |
| 9  | Pre-Configured Systems  |
| 10 | IPC Chassis             |
| 11 | SBCs and Backplanes     |
| 12 | Industrial Motherboards |
| 13 | Embedded IPCs           |
| 14 | Mobile Computers        |
| 15 | IPC Peripherals         |
| 16 | DAQ                     |
| 17 | Signal Conditioning     |
| 18 | USB DAQ                 |