# TREK-510

**NEW**

## ARM-based, In-Vehicle Computing Box

### Features

- ST ARM based STA2062 333 MHz CPU with Win CE
- Automotive grade working temperature range (-30 to 70° C)
- Rich I/O such as CAN, multi-COMs, isolation 4DI/4DO, line out, Mic in, USB, SD
- Built-in RF communication modules, such as GPRS/HSDPA/CDMA
- Certifications: CE, FCC, E-mark and MIL-STD-810G, ISO7637-2, SAE J1113, SAE J1455 regulations
- Ignition on/off delay; SW detectable/controllable for car power management
- Built in G sensor for active security system

E 13   FC   CE   RoHS COMPLIANT 2002/95/EC   Microsoft Windows Embedded Partner

## Introduction

The TREK-510 is a dedicated box computer for industrial vehicle fleets, transport trucks, buses and taxis. TREK-510 combined with a variety of I/O connectors can be connected to devices like OBD-II or TPMS (Tire Pressure Monitoring System).

Built-in wireless communications-WWAN enable TREK-510 to send important driver/vehicle/location/car information back to the control center. TREK-510 can also operate in extreme environments with features like a wide working temperature range (-30 to 70 degrees) and anti-shock/vibration design. TREK-510 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.

## Specifications

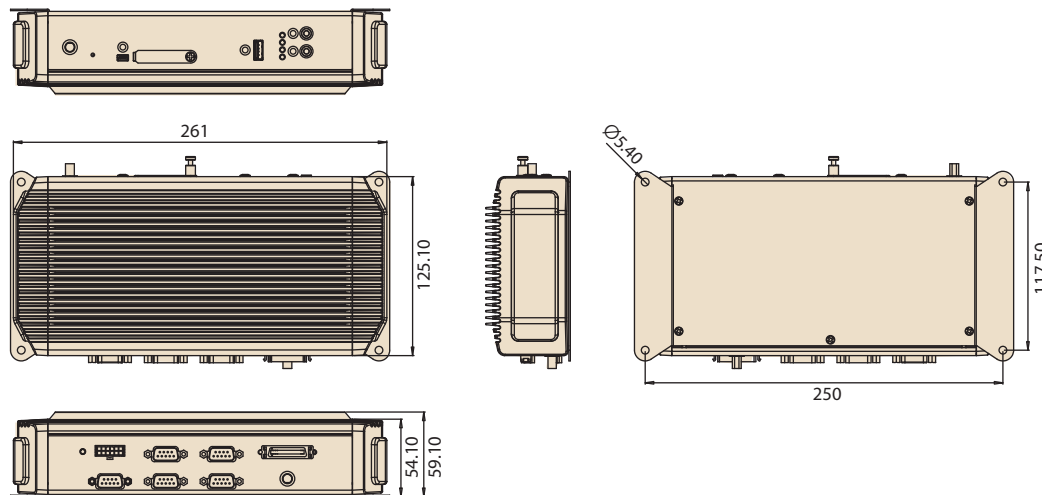| | | | |
|---|---|---|---|
| System | Soc | STM industrial degree STA2062 ARM9-based 333 Mhz RISC SOC | |
| | System Memory | Mobile DDR 128 MB | |
| | Watchdog | Yes | |
| | RTC | Yes, with one time 200 mAh coin battery | |
| | Operating System | Win CE 5.0 English core version as default | |
| Physical | Dimensions | 261 x 125 x 59.1 mm | |
| | Weight | 1.5 kg | |
| Storage | On Board Flash | 2 GB on board flash for bootloader, image & Customer's AP | |
| | SD slot | 1 x (external accessible) | |
| Display Interface | Smart Display Port | Design compatible with TREK-303L, 7" smart display, the signal includes:<br>- 18-bit LVDS out<br>- 1 x RS-232<br>- 1 x audio line out<br>- 1 x USB Host<br>- 12 V @ 1 A output | |
| I/O | CAN | 1 x CAN 2.0 A/B by DB9 with J1939 protocal | |
| | USB Host | 1 x USB 2.0 host port by type A | |
| | USB Client | 1 x USB Client by Mini Type AB | |
| | Mic In | 1 x RCA jack | |
| | Line-out | 1 x RCA jack | |
| | COM Port | COM 1&2: 2 x Full Function RS-232, 5 V/12 V @ 0.5 A, ping9, by jumper selection<br>COM3: 1 x 4-wire RS-232/485 (controlled by software), 5 V/12 V @ 0.5 A, ping9, by jumper selection | |
| | Isolation DI/DO | 4 x Isolated dry contact digital inputs from DB9 connector (2500 Vrms protection)<br>4 x relay driver from DB9 connector | |
| Communication | WWAN | GPRS        - Cinterion MC55i: Support GPRS class 10 (Quad-band)<br>CDMA      - Sierra Wireless MC 5728V: Support EV-DO REV A, EV-DO,CDMA (1900 MHz, 800 MHz)<br>HSDPA     - Sierra Wireless MC 8790V: Support EDGE, GPRS, GSM, HSDPA, HSUPA (GPRS/EDGE class B, multislot class 12) (Quad-band) | |
| GPS | RF Receiver Type | 32 Channels (built-in), GPS L1 frequency, C/A code | 50 channels, GPS L1 frequency (option) |
| | Cold Start | 39 s | 29 s |
| | Warm Start | 33 s | 29 s |
| | Hot Start | < 1 s | < 1 s |
| | AGPS | 3 s | < 5 s |
| | Acquisition | -145dBm | -160dBm |
| | Protocol | NMEA Input/output, ASCII, 0183, 2.3 (compatible to 3.0) | |
| | Antenna | SMA connector for external antenna | |
| G-sensor | | Yes, built-in | |
| LED | LED indicator | Power (Red), GPS operation (Blue), WWAN link (Green), Status (Green) | |

http://www.advantech-dlog.com
Regional contact:

All product specifications are subject to change without notice

Last updated : 17-Jun-2011

## Specifications Cont.

| | | |
|---|---|---|
| Car Power Design | DC-Input | Supports 12/24V car power systems (6V ~ 36V wide DC input, ISO 7637, SAE J1113) |
| | Power Management | Power on/off delay, Power on delay, 2 sec by default Power off delay, 5 sec by default Delay time allow control by SW configuration Low voltage protection |
| | HW Reset | Yes, 1 reset button |
| Environment | IP rating | IP31 |
| | Operating Temp. | -30° C ~ +70° C |
| | Storage Temp. | -40° C ~ +85° C |
| | Vibration/shock | MIL-STD-810G, Method 516.5 |
| | EMC | CE, FCC |
| Certifications | Safety | CE, CB |
| | Vehicle Power Regulations | E-mark, SAE J1455, SAE J1113, ISO7637-2, compliance |
| Mechanical | Material | Top cover (Aluminum extrusion) Side cover (PC) Bottom & I/O cover (metal) |

## Dimensions

Unit: mm



261
125.10
Ø5.40
117.50
250
54.10
59.10

## Ordering Information

| Part Number | Description |
|---|---|
| TREK-510-GCEA0E | Vehicle computing system with ST 2062 processor, 128 MB RAM and 2 GB NAND flash, GPS, GPRS, Win CE 5.0 |
| TREK-303R-LA0E | 7" vehicle display system, 480 x 234 resolution, with 4 wire resistive touchscreen, 2-watt speaker |
| 1700018342 | 2-meter cable (paired with TREK-510) |

## Packing List

| Part Number | Description | Quantity |
|---|---|---|
| TREK-510-GCEA0E | ARM-based, in-vehicle computing box | x1 |
| 1700018306 | Power cable | x1 |
| 1750001380 | GPS Antenna | x1 |
| 1750006080 | WWAN Antenna | x1 |
| 2068051000 | Startup manual CD | x1 |
| 19900018848T000 | Cable clip for MIC in, line out, USB host, USB client | x4 |

## Fully Integrated I/O



Mic in  Power
Status  USB Host  Reset
Line out  WWAN  USB client
GPS  WWAN ant.



Power  Smart Display
Ground  DI/DO  RS-232
RS-485/ RS-232  CAN  RS-232  GPS ant.