TREK-510

ARM-based, In-Vehicle Computing Box

Features

- ST ARM based STA2062 333 MHz CPU with Win CE 5.0
- Automotive grade working temperature range (-30 to 75° 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 GSM/GPRS/HSDPA/CDMA, WLAN & Bluetooth
- Certifications: CE, FCC, e-mark and MIL-810F, ISO7637-2, SAE J1113, SAE J1455 regulations
- Ignition on/off delay; SW detectable/controllable for car power management
- Built in G sensor for security implementation

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, WLAN, BT) 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 75 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

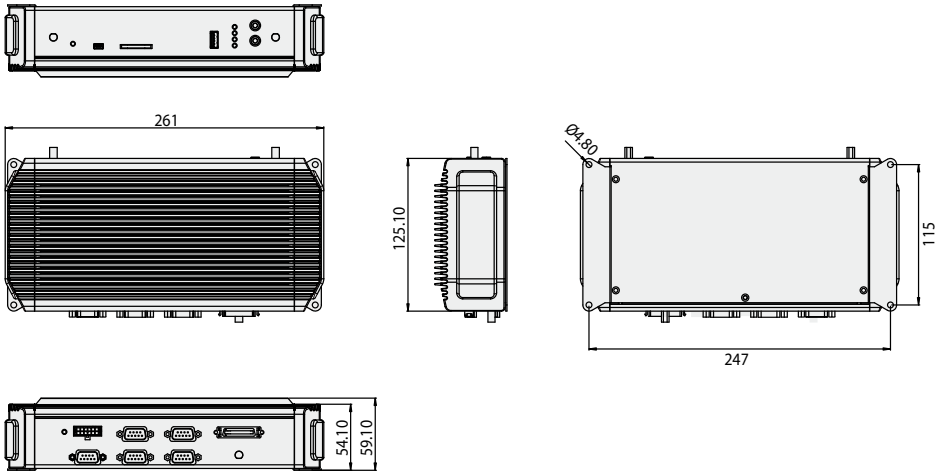
System	SOC	STM industrial degree STA2062 ARM9-based 333 MHz RISC SOC
	System Memory	Mobile DDR 128 MB
	Watchdog	Yes
	RTC	Yes, with one time 200 mAh coin battery
	Operating System	Win CE 5.0 English core version
Physical	Dimensions	261 x 125 x 57 mm
	Weight	1.5 kg
Storage	On Board Flash	2 GB on board flash for bootloader and image
	SD slot	1 x
Display Interface	High Density Port	Design compatible with TREK-303, supports 7" LCD 480 x 234 resolution, the signal includes: ▪ 18-bit LVDS out ▪ 1 x RS-232 ▪ 1 x line out ▪ USB Host ▪ 12 V @ 1 A output
I/O	CAN	1 x CAN 2.0 A/B by DB9
	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
	Speaker-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 selected ▪ COM3: 1 x 4-wire RS-232/485 (control by SW, 5 V/12 V @ 0.5 A, ping9, by jumper selected
	Isolation DI/DO	▪ 4 x Isolated dry contact digital inputs from DB9 connector (2500 Vrms protection) ▪ 4 x relay driver from DB9 connector
Communication	WWAN	GSM/GPRS -Wavecom Q55:Support GSM/GPRS class 10(Quad-band) CDMA -Sierra Wireless MC 5728V: Support EV-DO REV A, EV-DO,CDMA (1900 MHz, 800 MHz) HDDPA -Sireea Wireless MC 8790V: Support EDGE, GPRS, GSM, HSDPA, HSUPA (GPRS/EDGE calss B, multislot class 12) (Quad-band)
	WLAN	Optional, supports 802.11 b/g with SMA connector for external antenna
	Bluetooth	Optional, supports Bluetooth Class 2 antenna built in
GPS	RF Receiver Type	32 Channels GPS L1 frequency, C/A code
	Cold Start	39 s
	Warm Start	33 s
	Hot Start	< 1 s
	AGPS	3 s
	Tracking and Navigation	-159dBm
	Acquisition	-145dBm
	Protocol	NMEA Input/output, ASCII, 0183, 2.3 (compatible to 3.0)
	Antenna	SMA connector for external antenna
G-sensor		Yes, built-in

Specifications Cont.

LED	LED indicator	Power (Red), GPS operation (Blue), GPRS link (Green), User-defined (Amber)
Car Power Design	DC-Input	Supports 12/24V car power systems (6V ~ 36V wide DC input, ISO 7637, SAE J1455, 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 ▪ Supports normal, idle (turn off LCD backlight only) & suspend mode
	Reset	Yes, 1 reset button
Environment	Operating Temp.	-30° C ~ +75° 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 Regulations	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-510-CEA00E	Vehicle computing system with ST 2062 processor, 128 MB RAM and 2 GB NAND flash, Win CE 5.0
TREK-303R-LA0E	7" vehicle display system, 480 x 234 resolution, with 4 wire resistive touchscreen, 2-watt speaker
1700018342	Cable to connect TREK-510 with TREK-303

Packing List

Description	Quantity
Power cable	x1
GPS Antenna	x1
WWAN Antenna	x1
Screw	x4
Startup manual CD	x1

Fully Integrated I/O