

TREK-570



Compact In-vehicle Computing Box for Fleet Management

Features

- Intel® Atom™ E3826
- Single-cable connection to pair with TREK In-Vehicle Smart Display (TREK-303/306)
- Real time Rear View monitoring
- Dual independent display/audio output for both driver and passenger for IVI and digital signage application
- Vehicle diagnostic interface with configurable protocols support: CAN (J1939, OBD-II/ISO 15765) and J1708 (J1587)
- Built-in GNSS, WLAN, Bluetooth and WWAN (with dual SIM cards) modules
- Intelligent Vehicle Power Management: Ignition on/off delay, wake up event controls and system health monitoring and diagnostic
- Wide working temperature (-30° C ~ 70° C), 12/24V Car power system compliant (ISO 7637-2) and Anti-shock/vibration (MIL-STD-810G & 5M3)

Introduction

TREK-570 is a compact and economical vehicle-grade, Intel® Atom™ E3826 SOC powered computing box mainly designed for the fleet management market. It can work in extreme environments with wide working temperature range (-30° C ~ 70° C) and anti-shock/vibration that passes the MIL-STD-810G and 5M3 standard. Its special power protection (ISO 7637-2/SAE J1455 Class A/SAE J1113) and intelligent vehicle power management (e.g. Ignition delay on/off, low battery monitor), prevents abnormal electrical noise and surges from impacting the system, guarding against damage from transient car power.

TREK-570 combined with variety of I/O connectors can be connected to devices like TPMS (Tire Pressure Monitoring Systems), Rear view camera (for parking monitoring) and CAN Bus devices. It has dual CAN Bus ports and supports several kinds of vehicle protocols (e.g. J1939, OBD-II/ISO 15765) for vehicle diagnostics and driver behavior management. Built-in wireless communications (WWAN, WLAN, BT) enable TREK-570 to send important driver/vehicle/location/cargo information back to the control center. Furthermore, TREK-570 also reserves dual display/dual audio interfaces supporting different resolutions that can deliver different applications to different displays; for example: one application to a fleet driver and another to passenger for IVI and digital signage applications.

Specifications

Core	Processor	Intel Atom E3826 (Dual Core, 1.46 GHz)
	Memory	1 x SO-DIMM socket Up to 4GB DDR3L-1066 Non-ECC memory module; (Default configuration: 2GB)
	Graphic	Integrated 2D/3D Graphic Engine
	O.S	WEST7, WE8S (32-bit) Linux Fedora 18 Remix (kernel 3.8.0) (32-bit)
Storage	mSATA	1 x mSATA slot, support system boot up Default configuration: 16GB, UMLC, SQFLASH mSATA
Display	Smart Display Port ^(*)	12V/2A power output for TREK-30x 1 x 18-bits LVDS (Resolution: 800 x 480 or 1024 x 768, auto-detection) 1 x Line-Out ^(**) (For Speakers on TREK-30x) 2 x UART (TX/RX, TX/RX/RTS) (For T/S, Hot keys, brightness, light sensor control) 1 x USB 2.0 Type A 1 x PWR Button 1 x Reset Button
	VGA	1 x DB15 (Resolution up to 2560 x 1600)
	HDMI ^(**)	1 x HDMI Port (Resolution up to 2560 x 1600)
	Vehicle I/O Port	2 x CAN Bus (Support Raw CAN, J1939, OBD-II/ISO 15765; FW configurable) 1 x J1708 (Support J1587) 1 x RS-485 with auto flow control
I/O	Generic I/O Port	2 x 4-wire RS-232 4 x Isolated DI (Dry Contact) 4 x Isolated DO (Open collector output, driving by relay) 1 x CVBS in (For Real time Rear View) 1 x Line-Out ^(**) 1 x Mic-In
	Standard I/O Port	1 x USB 3.0 Type A (Rear side, with cable clip) 1 x USB 2.0 Type A (Rear side, with cable clip) 1 x High Speed Full RS-232, DB-9 (Pin 9 = Ring, 12V / 5V @0.5A is BOM optional by jumper setting) 1 x Giga LAN, with locked type RJ45 connector
	LED	5 x LEDs. (Power (Red), Storage (Yellow), WLAN(Green), WWAN(Green), GPS (Yellow))
	Power Button	Via TREK-30x (In-Vehicle Smart Display); System is powered on by Ignition in default
	Reset Button	1 x Reset button (Rear side)
RF	WLAN + Bluetooth	IEEE 802.11a/b/g/n + Bluetooth V4.0 combo module via Full Mini-PCIe Slot (Option: High power WLAN / WLAN for Roaming, by project-based)
	WWAN	4G (LTE,HSPA+,GSM/GPRS/EDGE, EV-DO Rev a1, 1xRTT): Sierra Wireless MC73xx via Full Mini-PCIe Slot (Default: MC7354 for US/ MC7304 for EU)
	GNSS	Build-in u-blox MAX-M8Q GPS/GLONASS module, support AGPS (Optional: GPS/Glonass/Beidou 3-in-1 module, by project-based)
	Antenna	5 x SMA type antenna hole for GPS, WiFi+ BT MIMO, WWAN/LTE MIMO. ^(**)

TREK-570

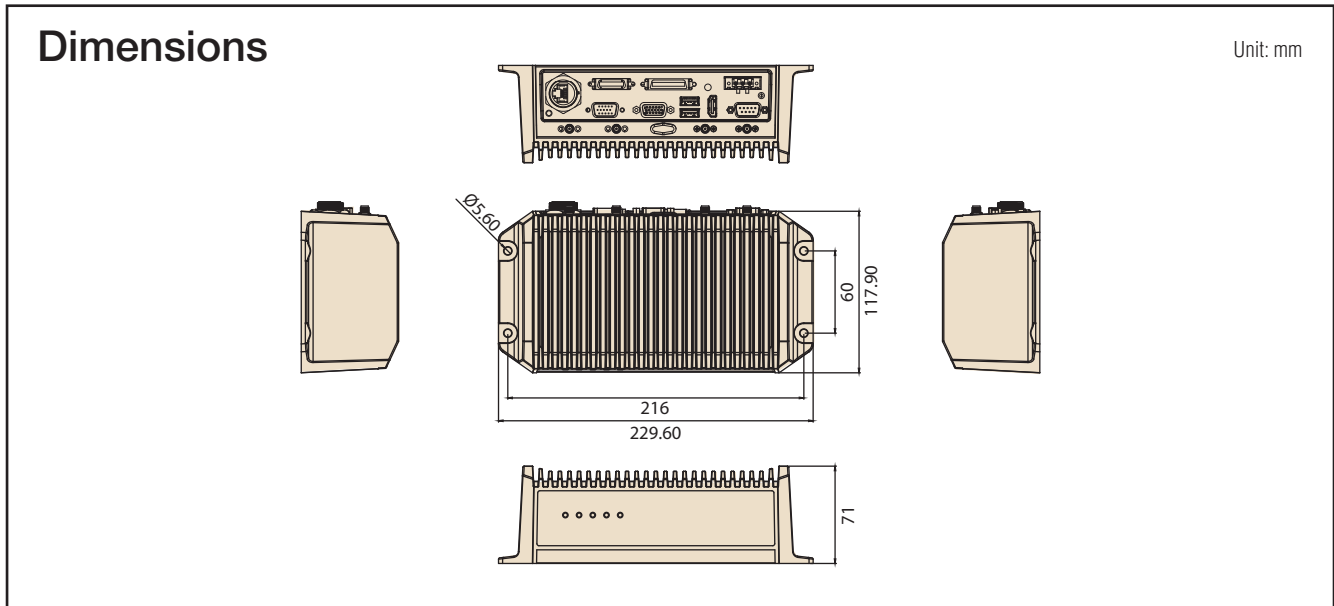
Power	Voltage input	Supports 12/24 V car power system. (6V – 32V wide DC input, ISO 7637-2 & SAE J1113 compliant.) System power on/off/hibernate management (e.g. Programmable Ignition On/Off Time delay)
	Intelligent Vehicle Power Management (iVPM 2.0)	Support Wake up Events: - Alarm (RTC) Wake up - Wake up by Call/SMS. - Wake up by G-sensor - Wake up by DI (DI0 & DI1) System power protection (e.g. Car Battery Low Voltage Protection) System monitoring and diagnostic
Mechanical	Dimensions (W x H x D)	230 x 72 x 118 mm (Default); 230 x 72 x 198 mm (with IP54 I/O Cover)
	Weight	1.45 kg (Default); 1.95 kg (with IP54 I/O Cover)
Environment	IP Rating	IP30 (Optional: IP54 with I/O Cover, by project-based)
	Vibration/Shock	MIL-STD-810G, EN60721-3(5M3)
	EMC	CE, FCC, CCC
	Safety	UL/cUL, CB
	Vehicle Regulation	E-Mark (E13), SAE J1455 class C, ISO 7637-2, SAE J1113
	RF Regulation	CE(R&TTE), FCC ID, PTCRB
	Operating Temperature	-30° C – 70° C
Storage Temperature	-40° C – 80° C	

*1: To be paired with TREK-303/306 directly. (Single-cable connection)

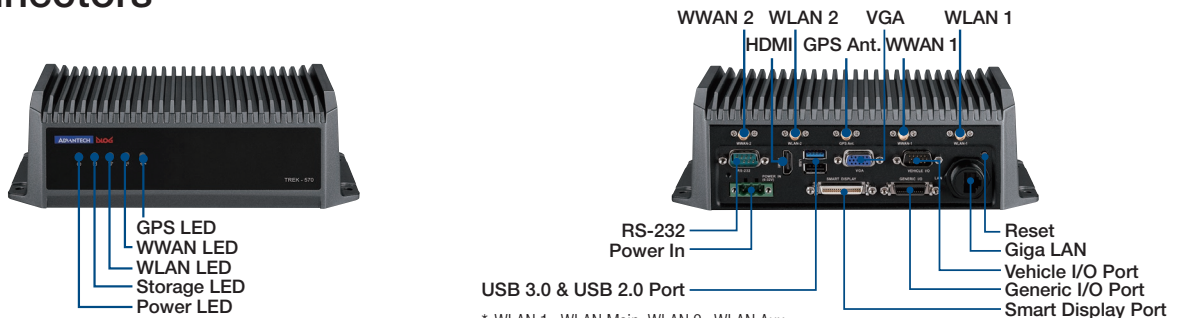
*2: Support dual independent audio streams. (i.e. The Line-Out interface in "Smart Display Port" and "Generic I/O Port" are driven by different Audio codecs.)

*3: BYT-I can support "dual" independent display only. That is, "Smart Display+VGA", "Smart Display+HDMI" or "VGA+HDMI".

*4: The connector type on box side is Female RP-SMA connector. (i.e. Female connector body (outside threads) with a male inner pin contact.)



I/O Connectors



* WLAN 1= WLAN Main, WLAN 2= WLAN Aux;
WWAN 1=WWAN Main, WWAN 2= WWAN Aux

Ordering Information

Part Number	Description
TREK-570-00A0E	TREK-570 Intel BYT E3826 (2C,1.46GHz) Barebone
TREK-570-LWB7A0E	TREK-570 w/LTE (EU)/GPS/WLAN/BT/WES7
TREK-570-LWB7B0E	TREK-570 w/LTE (US)/GPS/WLAN/BT/WES7

Remark: WE8S and Linux O.S. image are by project-based.