

TREK-570

Compact In-Vehicle Computing Box for Fleet Management



Features

- Intel® Atom™ E3826 system-on-chip (SOC) processor
- Can be paired with TREK-303/306 in-vehicle smart display via a single-cable connection
- Supports real-time rear view monitoring
- Dual independent displays/audio outputs for in-vehicle infotainment and digital signage applications
- Vehicle diagnostics interface with support for configurable CAN (J1939, OBD-II/ISO 15765) and J1708 (J1587) protocols
- Built-in GNSS, WLAN, Bluetooth, and WWAN (with a dual SIM card slot) modules
- Intelligent vehicle power management system for ignition on/off delay, wake-up event control, system health monitoring, and diagnostics functions
- Wide operating temperature range (-30 ~ 70 °C/-22 ~ 158 °F)
- Compliant with 12/24 V vehicle power (ISO 7637-2)
- MIL-STD-810G and 5M3 certified for shock and vibration tolerance

Introduction

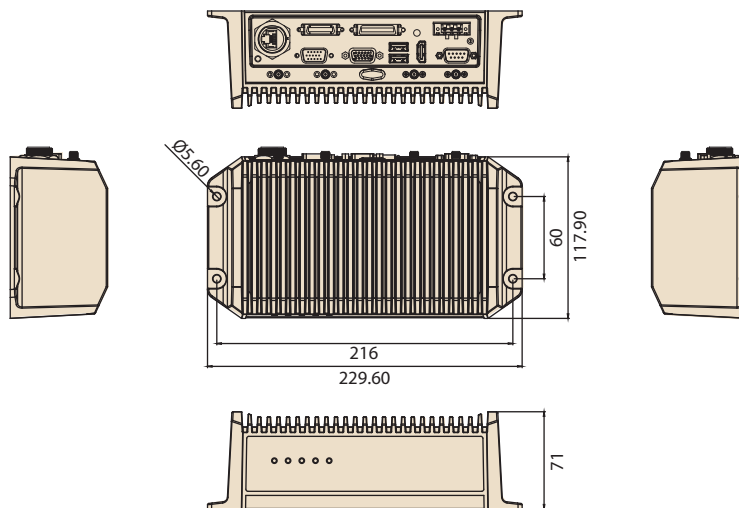
TREK-570 is a compact and economical in-vehicle computing box powered by an Intel® Atom™ E3826 SOC and can be paired with TREK-303/306 in-vehicle smart displays via a single-cable connection. Aimed at fleet management applications, TREK-570's wide operating temperature and MIL-STD-810G and 5M3 certification for shock vibration resistance enable it to withstand harsh environments. The inclusion of an intelligent vehicle power management (VPM 2.0) chip protects against transient voltage (ISO 7637-2/SAE J1455/SAE J1113) and enables programmable functions (ignition on/off, delay on/off, and low battery monitoring). TREK-570 also features various I/O for integrating CAN bus devices and peripherals, such as a tire pressure monitoring system. The dual CAN bus ports support diverse protocols (J1939, OBD-II/ISO 15765) to facilitate vehicle diagnostics and driver behavior management. Built-in wireless communication technologies (WLAN, WWAN, Bluetooth) enable vehicle tracking and real-time data transmissions to a centralized control center. Furthermore, TREK-570 also supports dual independent displays/audio outputs for in-vehicle infotainment and digital signage applications.

Specifications

Core	Processor	Intel® Atom™ E3826, dual-core, 1.46 GHz	
	Memory	1 x 2 GB DDR3L SODIMM 1066 MHz, non-ECC (up to 4 GB)	
	Graphics	Integrated 2D/3D graphics engine	
	Operating System	WES7, WES8, Win10 IoT LTSB (32 bit), Linux Ubuntu 14.04 Kernel 3.19.0 (32 bit)	
Storage	mSATA	1 x 16 GB UMLC, SQFlash mSATA, with support system bootup	
Display	Smart Display Ports ¹	1 x 12V/2A power output for TREK-30x	
		1 x 18-bit LVDS with 800 x 480/1024 x 768 resolution and automatic detection	
		1 x Line-Out2 (for TREK-30x speakers)	
		2 x UART (TX/RX, TX/RX/RTS) (for touchscreen, hot keys, and brightness/light sensor control)	
VGA	HDMI ²	1 x USB 2.0 Type A	
		1 x Power button	
		1 x Reset button	
Vehicle I/O	Generic I/O	1 x DB15 (up to 2560 x 1600 resolution)	
		1 x HDMI (up to 2560 x 1600 resolution)	
		2 x CAN bus with raw CAN, J1939, and OBD-II/ISO 15765 support (configurable via firmware)	
I/O	Standard I/O	1 x J1708 with J1587 support	
		1 x 4-wire RS-485 with auto flow control	
		2 x 4-wire RS-232	
	LED Indicators	Power Button	4 x Isolated DI (dry contact)
			4 x Isolated DO (open collector output, driven by relay)
			1 x CVBS-In (for real-time rear view monitoring)
			1 x Line-Out ²
RF	Antenna	1 x Mic-In	
		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, 12/5 V @0.5 A in BOM; optional via jumper setting)	
Power	Intelligent Vehicle Power Management (VPM 2.0)	1 x Giga LAN, with locking RJ45 connector	
		5 x LEDs: 1 x Power (red), 1 x Storage (yellow), 1 x WLAN (green), 1 x WWAN (green), 1 x GPS (yellow)	
		1 x Reset button (rear side)	
Mechanical	Dimensions (W x H x D)	Via TREK-30x in-vehicle smart display; system is powered on by vehicle ignition as a default	
		WLAN + Bluetooth	IEEE 802.11a/b/g/n + Bluetooth V4.0 combo module via full mini PCIe slot (optional high-power WLAN/WLAN roaming available upon request)
		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)
Mechanical	Weight	GNSS	MAC-M8Q/W GPS/GLONASS/BeiDou 3 in 1 module
		Input Voltage	5 x SMA-type antenna holes for GPS, Wi-Fi+Bluetooth MIMO, WWAN/LTE MIMO ⁴
		Intelligent Vehicle Power Management (VPM 2.0)	Compatible with 12/24 V vehicle power (6 ~ 32 VDC input; ISO 7637-2 and SAE J1113 compliant)
Mechanical	Weight	System power on/off/hibernate management (programmable ignition on/off delay)	
		Supports wake-up events: Wake on Alarm (RTC), Wake by Call/SMS, Wake by G-sensor, and Wake by DI (DI0 & DI1)	
		System power protection (low voltage protection for vehicle battery)	
Mechanical	Weight	System monitoring and diagnostics	
		Standalone unit: 230 x 72 x 118 mm (9.05 x 2.83 x 4.64 in)	
		With IP54-rated I/O cover: 230 x 72 x 198 mm (9.05 x 2.83 x 7.79 in)	
Mechanical	Weight	Standalone unit: 1.45 kg (3.19 lb)	
		With IP54-rated I/O cover: 1.95 kg (4.29 lb)	

Dimensions

Unit: mm



Specifications Cont.

Environment	IP Rating	IP30 (optional IP54-rated I/O cover available upon request)
	Vibration/Shock	MIL-STD-810G, EN60721-3(5M3)
	EMC	CE, FCC, CCC
	Safety	UL/cUL, CB
	Vehicle Regulations	E-Mark (E13), SAE J1455 class C, ISO 7637-2, SAE J1113
	RF Regulations	CE(R&TTE), FCC ID, PTCRB
	Operating Temperature	-30 ~ 70 °C (-22 ~ 158 °F)
	Storage Temperature	-40° C ~ 80° C (-40 ~ 176 °F)

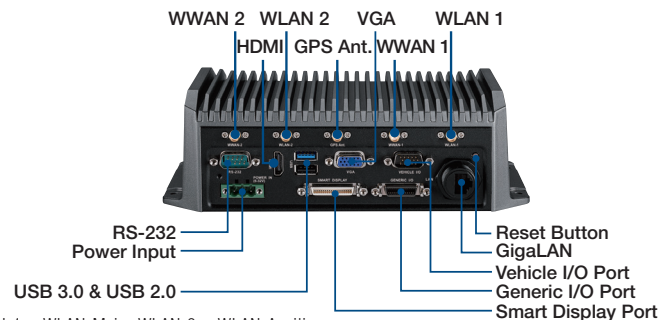
¹ When paired with TREK-303/306 via a single-cable connection

² Supports dual independent audio streams. The Line-Out interfaces of the smart display ports and generic I/O are driven by different audio codecs.

³ BYT-1 can support dual independent displays (smart display + VGA, smart display + HDMI, or VGA + HDMI).

⁴ The box-side connector is RP-SMA, female (external female thread with male internal pin)

System I/O



Note: WLAN 1 = WLAN Main, WLAN 2 = WLAN Auxiliary,
WWAN 1 = WWAN Main, WWAN 2 = WWAN Auxiliary

Ordering Information

Part Number	Description
TREK-570-00A0E	TREK-570 Intel BYT E3826, dual-core, 1.46 GHz, barebone unit
TREK-570-HWB7A0E	TREK-570 w/LTE (EU)/GPS/WLAN/BT/WES7
TREK-570-LWB7B0E	TREK-570 w/LTE (US)/GPS/WLAN/BT/WES7
TREK-570-LWBXA0E	TREK570 w/LTE(EU)/GPS/WLAN/BT/W10 IoT LTSB
TREK-570-LWBXB0E	TREK570 w/LTE(US)/GPS/WLAN/BT/W10 IoT LTSB

Note: WES8, and Linux OS images are available upon request.

Packing List

Part Number	Description
1700019031	Power cable, 2 m
1700023050-11	Generic I/O cable
1700023051-01	Vehicle I/O cable
1654011716-01	Waterproof RJ45 locking kit
1750007724-01	3-in-1 (LTE/GPS/Wi-Fi) antenna, 3 m
1750007723-01	Wi-Fi antenna, 3 m

Optional Accessories

Part Number	Description
TREK-303R-HA0E	TREK-303 7" WVGA in-vehicle smart display
TREK-306D-HA0E	TREK-306DH 10.4" XVGA in-vehicle smart display
1700020007	M cable SCSI-36P(M)/SCSI-36P(M), 2 m, for TREK-303
1700020008	M cable SCSI-36P(M)/SCSI-36P(M), 5 m, for TREK-303
1700019464	A cable 1*3P-5.08/DC jack+SW, 155 mm, for in-house testing
96PSA-A65W19V1-1	Adaptor 100-240 VAC, 60W, 12 V, 5A, w/o PFC FSP060-DBA, for in-house testing