TREK-674

Compact In-vehicle Computing Box for Surveillance & Fleet Management

TAIWAN EXCELLENCE 2015

Features

- Intel® Atom™ E3827 SOC
- Easily paired with TREK in-vehicle smart displays (TREK-303/306) via a single-cable connection
- Embedded Stretch S7 video encoder supports up to 8 analog video inputs and 4 audio inputs
- Accessible external SSD tray with key-lock protection
- Vehicle diagnostics interface with configurable CAN (J1939, OBD-II/ISO 15765) and J1708 (J1587) protocols
- Built-in GNSS, WLAN, Bluetooth, and WWAN (with dual SIM cards) modules
- Intelligent vehicle power management system supports ignition on/off/ delay functions, wake-up event control, and system health monitoring and diagnostics
- Wide working temperature range (-30° C ~ 70° C), supports 12/24V vehicle power (ISO 7637-2) and shock and vibration tolerant (MIL-STD-810G and 5M3)

Introduction

TREK-674 is a compact vehicle-grade, dual-core computing box designed to provide high-quality video surveillance and fleet management for police car, ambulance, fire engine and buses. TREK-674 delivers tracking and positioning which allows a truck to be traced even if the driver is in a tunnel. It supports several vehicle protocols (e.g. J1939, OBD-II/ ISO 15765) for vehicle diagnostics and driver behavior management, and it supports up to 8 channel camera inputs for high-quality H.264 D1/30fps/ch recording to improve driver/ passenger safety and security. Front side USB 3.0 port, dual SIM cards and Cfast slots are designed for ease of maintenance. A single SSD tray is swappable and designed for video data backup. The TREK-674 provides reliable on-road recording and can transmit images or alarms for remote monitoring over wireless, GPRS, 3G, or HSDPA network connections.

Specifications

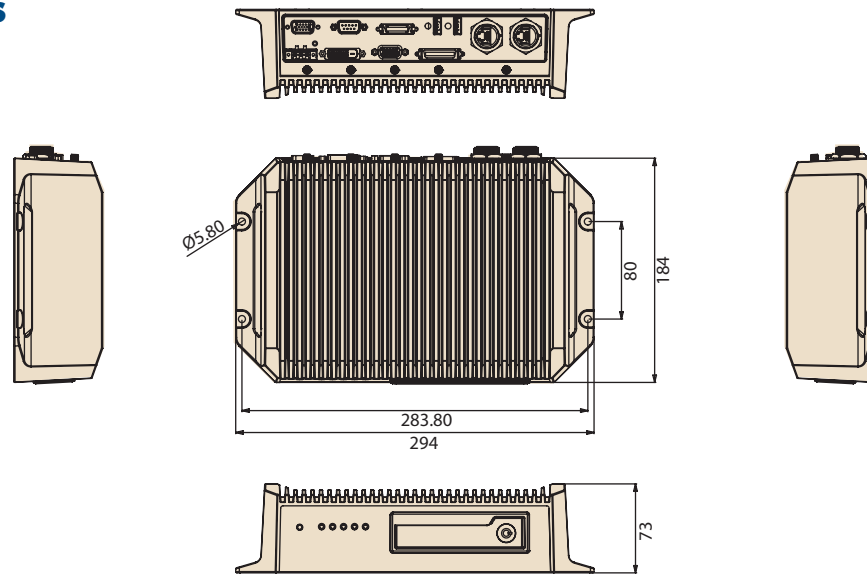|		
Core	Processor	Intel Atom E3827 (Dual Core, 1.75 GHz)
	Memory	1 x SO-DIMM socket Up to 4GB DDR3L-1066/1333 Non-ECC memory module; (Default configuration: 2GB)
	Graphic	Integrated 2D/3D Graphic Engine
	Video HW Encoder	Stretch S7, support H.264, MJPEG format; Resolution up to D1, 30fps per channel
	O.S	WES7, WE8S (32-bit) Linux Fedora 18 Remix (kernel 3.8.0) (32-bit)
Storage	CFast	1 x external accessible CFast slot with cover, support system boot up Default configuration: 16GB, SLC SQFlash Cfast card
	SSD	1 x external accessible 2.5" SSD tray with key-lock protection, support system boot up Default configuration: 64GB, UMLC SQFlash SSD
Display	Smart Display Port (*1)	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 (*2) (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 Signal 1 x Reset Button Signal
	VGA	1 x DB15 (Resolution up to 2560 x 1600)
I/O	Vehicle I/O Port	2 x CAN Bus (Support Raw CAN, J1939, OBD-II/ISO 15765; FW configurable) 1 x J1708 (Support J1587)
	Generic I/O Port	1 x RS-485 with auto flow control 1 x 4-wire RS-232 4 x Isolated DI (Dry Contact) 2 x Isolated DO (Open collector output, driving by relay) 1 x Line-Out (*2) 1 x Mic-In
	Standard I/O Port	1 x USB 3.0 Type A (Front side) 2 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) 2 x Giga LAN, with locked type RJ45 connector
	Video / Audio input (AV In, via DVI-I Connector)	8-ch Video inputs, Video Compression: support H.264, MJPEG format; Resolution up to D1, 30fps per channel 4-ch mono Audio inputs, Audio Compression: G.711
	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 (Front side)
RF	WLAN + Bluetooth	IEEE 802.11a/b/g/n + Bluetooth V4.0 combo module via Full Mini-PCIe Slot (Optionl: High power WLAN / WLAN for Roaming, by project-based)
	WWAN	HSPA+, GSM/GPRS/EDGE: Sierra Wireless AirPrime MC809x via Full Mini-PCIe Slot (Default: MC8090 for US / MC8092 for EU) (Optional: 4G (LTE,HSPA+,GSM/GPRS/EDGE, EV-DO Rev a1, 1xRTT): Sierra Wireless MC73xx, by project-based) 2 x external accessible Mini-SIM card socket (User selectable) with cover
	GNSS	Build-in u-blox LEA-6S GPS module, support AGPS (Optional: LEA-6R (Dead-Reckoning) or Max-M8W (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. (*3)

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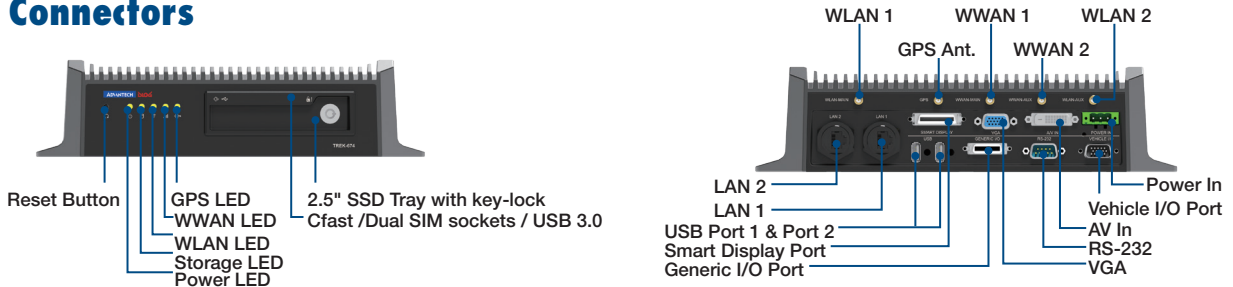
Dimensions

Unit: mm

Ø5.80
184
80
283.80
294
73

Specifications Cont.

Power	Voltage input	Supports 12/24 V car power system. (9V ~ 32V wide DC input, ISO 7637-2 & SAE J1113 compliant.)
	Intelligent Vehicle Power Management (iVPM 2.0)	System power on/off/hibernate management (e.g. Programmable Ignition On/Off Time delay) Support Wake up Events: - Alarm (RTC) Wake up. - Wake up by Call/SMS. - Wake up by G-sensor. System power protection (e.g.Car Battery Low Voltage Protection) System monitoring and diagnostic
Mechanical	Dimensions (W x H x D)	294 x 73 x 184 mm
	Weight	3.5 kg
Environment	IP Rating	IP30
	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
	Operating Temperature	-30° C ~ 70° C
	Storage Temperature	-40° C ~ 80° C

I/O Connectors

Reset Button
GPS LED
WWAN LED
WLAN LED
Storage LED
Power LED
2.5" SSD Tray with key-lock
Cfast /Dual SIM sockets / USB 3.0

WLAN 1
GPS Ant.
WWAN 1
WWAN 2
WLAN 2
LAN 2
LAN 1
USB Port 1 & Port 2
Smart Display Port
Generic I/O Port
Power In
Vehicle I/O Port
AV In
RS-232
VGA

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

Ordering Information

Part Number	Description
TREK-674-HWB7A0E	TREK-674 w/HSPA+(EU)/GPS/WLAN/BT/SSD/WES7
TREK-674-HWB7B0E	TREK-674 w/HSPA+(US)/GPS/WLAN/BT/SSD/WES7
TREK-674-HWB8A0E	TREK-674 w/HSPA+(EU)/GPS/WLAN/BT/SSD/WE8S
TREK-674-HWB8B0E	TREK-674 w/HSPA+(US)/GPS/WLAN/BT/SSD/WE8S

Remark: Linux O.S. image is by project-based.

Optional Accessories

Function	P/N	Description
Smart Display	TREK-303R-HA0E TREK-306D-HA0E	TREK-303, 7" WVGA Smart display TREK-306DH, 10.4" XVGA in-vehicle Smart Display
Smart Display cable 2M	1700018342	M Cable SCSI-36P(M)/SCSI-36P(M) 2M for TREK-303
Smart Display cable 5M	1700019283	M Cable SCSI-36P(M)/SCSI-36P(M) 5M TREK-303
Power cable (for in-house Test)	1700019464	A Cable 1*3P-5.08/DC Jack+S/W 155mm TREK-753
Adaptor (for in-house Test)	1757003995	ADAPTER AC100-240V 60W 12V 5A W/O PFC FSP060-DBA