

# TREK-60

## Rugged In-Vehicle Edge AI Platform with 8 Channel PoE for In-Vehicle & Harsh Environments



### Features

- 8ch PoE & Best Fit I/Os
- In-vehicle specialized: 12V/24V certified car power (E-Mark, ISO-7637-2), dual CANbus
- IP65, 5M3 shock and vibration tolerance, -30 ~ 70 °C wide temperature w/o airflow
- Modular design supports the latest RF communication technologies
- ONE cable connection with TREK displays
- Multiple AI accelerator options: Intel® OpenVINO™, Google Coral, Hailo for edge AI computing

### DeviceOn/iService

## Introduction

Aimed at Fleet Management and Heavy Duty Machinery applications, TREK-60 features a Intel® Core™ i7/i5/Atom™ for high-performance computing, as well as up to eight camera input channels and an integrated AI accelerator for scalable video stream edge inferencing. The RF extension module with automotive-grade FAKRA connector provides GNSS, WLAN, Bluetooth, and WWAN capabilities for real-time communication, vehicle tracking, and data collection. The embedded dual CAN bus supports diverse vehicle protocols, including raw CAN, J1939, and OBD-II, for vehicle monitoring and diagnostics, while the intelligent vehicle power management system supports ignition on/off/delay and wake-up event control. Moreover, the rugged design supports a wide operating temperature range (-30 ~ 70 °C/-22 ~ 158 °F), and is compliant with MIL-STD-810G and 5M3 specifications for vibration/shock resistance, ensuring stable operation in harsh industrial environments.

Moreover, TREK-60 is equipped with Advantech's DeviceOn/iService software, which is a next-generation unified device management solution based on the WISE-DeviceOn platform. With support for batch operations and multi-device control, DeviceOn/iService enables easy device configuration and deployment for convenient remote device management.

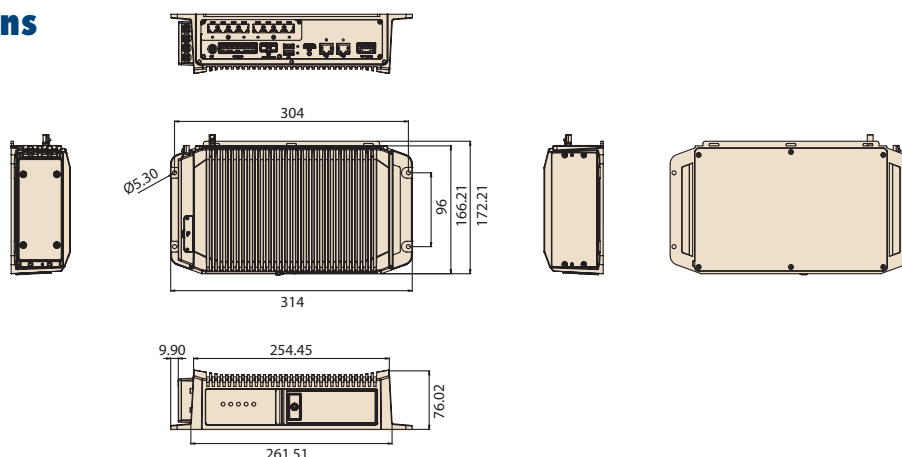
## Specifications

Core	Processor	Intel® Atom™ X5-E3940 quad-core, 1.8 GHz	Intel® Core™ i7-7600U dual-core, 3.9 GHz Intel® Core™ i5-7300U dual-core, 3.5 GHz	Intel® Core™ i7-1365URE multi-core, 4.9 GHz Intel® Core™ i5-1345URE multi-core, 4.6 GHz
	Memory	1 x SODIMM, up to 8 GB DDR3L 1866 non-ECC memory	2 x SODIMM, up to 32 GB DDR4 2133 non-ECC memory (with dual channel support)	2 x SODIMM, up to 64GB DDR5
	Graphics	Integrated 2D/3D graphics engine		
	Operating System	Windows 11 IoT Enterprise LTSC (64 bit), Linux 24.04 LTS		
Storage	mSATA/NVMe/SATA	1 x internal mSATA, up to 128 GB		Default: 1x M.2 M-key 2242 NVMe, up to 512 GB
	SSD	1 x externally accessible 2.5" SSD tray with key-lock protection		
Display	Smart Display Port 2.0*	12V/2A power output for TREK displays 1 x high-resolution video, 1 x audio signal, 1 x USB 2.0 1 x power button and 1 x reset button (via the smart display) (the SDP settings are configurable via SDK)		
	HDMI	1 x HDMI 1.3		1 x HDMI 2.0
Sensors	1 x G-sensor and gyroscope			
Expansion	Edge AI	1 x full-size mini PCIe (PCIe/USB 2.0) for edge AI		1 x M.2 E-key 2230 (PCIe Gen3 x1 lane+ USB2.0)
I/O	VIO2.0 (via VIO cable)	1 x ignition and power input 1 x J1708 (supports J1587) 2 x CAN bus (CANFD compliant by Core i 13th version); compliant with J1939, OBD-II/ISO-15765 specifications; supports both 11-bit (CAN 2.0A) and 29-bit (CAN 2.0B) identifiers; high-speed CAN connection (compliant with ISO 11898-2), up to 1 Mbit/s; configurable via SDK		
	Generic I/O 2.0 (via generic I/O cable)	2 x 4-wire RS-232 (default)/RS-485 2 x 2-wire RS-232 6 x isolated DI (dry/wet), 4 x isolated DO 2 x line-out, 2 x mic-in		
	Standard I/O	1 x USB 3.0 Type A (front accessible with key-lock protection) 2 x USB 2.0 Type A 2 x Giga LAN (with optional locking mechanism, or M12 connector)		1x USB 2.0 Type A (Front) 2x USB 3.2 Type A (Rear) 2x Giga LAN (with optional locking mechanism, or M12 connector)
	LED Indicators	5 x LED, Power (red), Storage (yellow), WLAN (green), WWAN (green), and GPS (yellow)		
	Power Button	Via second-generation TREK display; system configured to wake-on-ignition as default		
	CCMOS Button	1 x Clear CMOS button (front accessible with key-lock protection)		
	Reset Button	1 x Reset button (front accessible with key-lock protection)		

\*Supports pairing with a second-generation TREK-306 display via a single-cable connection.

## Dimensions

Unit: mm



## Specifications Cont.

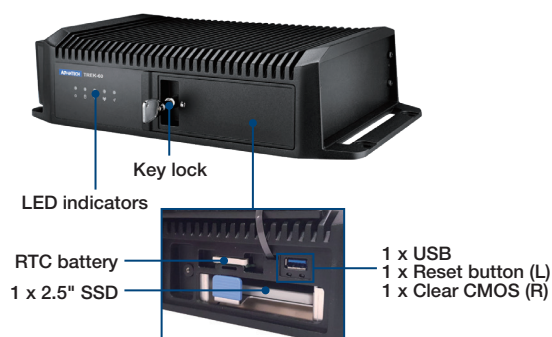
Video Surveillance	IP Camera	8 x RJ-45 for 10/100 Base-T(X) PoE, 802.3af/at compliant Power output shared by all cameras is limited to 60W <sup>1</sup> Supports PoE power control and Ethernet management <sup>1</sup> (via SDK)
Expansion <sup>2</sup> (via I/O extension)	V2X	1 x full-size mini PCIe (USB2.0) for V2X module
	Capture Card	2 x full-size mini PCIe (PCIe 2.0) for 8ch TVI video capture card
RF (WLAN/WWAN via RF extension)	WLAN/Bluetooth	1 x full-size mini PCIe (PCIe/USB 2.0) for 802.11a/b/g/n/ac Wi-Fi 5 + Bluetooth V5.0 combo module; optional high-power Wi-Fi module 1 x M.2 2230 (A+E Key) for 802.11a/b/g/n/ac/ax Wi-Fi 6 + Bluetooth V5.0 combo module
	WWAN	1 x full-size mini PCIe (USB 2.0) for 4G module (LTE Cat-4, HSPA+, GSM/GPRS/EDGE) 1 x externally accessible mini SIM card socket with cover, 1 x embedded SIM (available upon request) 1 x M.2 3042/3052 (B key, USB 3.0) for 4G/5G module
	GNSS	Built-in u-blox Neo-M8N supports concurrent reception of up to 3 GNSS (GPS, Galileo, GLONASS, BeiDou) 2.5-meter accuracy, GPS management (via SDK) Optional NEO-M8U (dead reckoning) available upon request
	Antenna	5 x FAKRA connectors for 1 x GPS (C-code), 2 x Wi-Fi + Bluetooth (I/Z-code), 2 x WWAN/LTE(D/L-code) with Wi-Fi/WWAN MIMO support
Power Supply	Voltage Input	12/24 V vehicle power (9 ~ 32 V <sub>DC</sub> input) (ISO 7637-2 and SAE J1113 compliant)
	Intelligent Vehicle Power Management (iVPM 2.0)	System power on/off/hibernate management (programmable ignition on/off/delay) PoE power total/on/off management (via SDK) Supports wake-up events: wake-on-alarm (RTC), wake-on-call/SMS, and wake-on-G-sensor System power protection (vehicle battery low-voltage protection) System monitoring and diagnostics
Mechanical	Dimensions (W x D x H)	314 x 165.5 x 75.1 mm/12.36 x 6.51 x 2.95 in
	Weight	4.2 kg/9.25 lb (excludes SSD)
Environmental	IP Rating	IP65 rating (excluding rear I/O); an optional IP65-rated M12 system I/O cover is available upon request
	Vibration/Shock	MIL-STD-810G, EN60721-3 (5M3)
	EMC	CE, FCC, RCM, CCC
	Safety	UL/cUL, CB, CCC
	Vehicle Regulation	ECE R10, ECE R118, ITxPT, ISO 7637-2, SAE J1113 compliant
	RF Regulation	CE (RED), FCC ID, IC ID
	Operating Temperature	-30 ~ 70 °C/-22 ~ 158 °F (Atom™ X5-E3940), -20 ~ 50 °C/-4 ~ 122 °F (Core™ i7/i5) <sup>3</sup> (-20 ~ 60 °C/-4 ~ 140 °F available upon request)
	Storage Temperature	-40 ~ 80 °C/-40 ~ 176 °F
DeviceOn iService		Compatible with DeviceOn iService remote device management, supporting but not limited to the following features: OTA software installation, remote SSH, device anomaly monitoring, and device control

<sup>1</sup> TREK-60 in-vehicle platform with Intel® Core™ i7-1365URE + POE 60W already reaches its maximum power consumption at 50°C. PoE power consumption depends on the system configuration and usage scenarios.

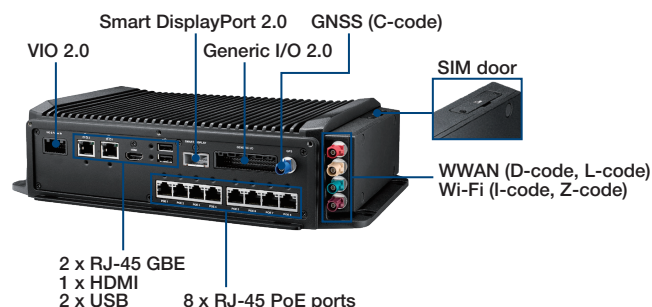
<sup>2</sup> Expansion available upon request.

<sup>3</sup> The TREK-60 in-vehicle platform with Intel® Core™ i7-1365URE with 12V input power, the maximum power consumption is 100 W for 50c. Maximum power consumption is 45W for 60c. The above-mentioned environmental temperature simulation of the vehicle is conducted by placing it on a metal frame in the actual field. The TREK-60 in-vehicle platform with Intel® Atom™ X5-E3940 processor supports a maximum operating temperature of 70 °C/158 °F. Moreover, with 24V input power, the maximum power consumption is 70W; and with 12V input power, the maximum power consumption is 60W.

## Easy-Access Front Door



## Flexible Rear I/O



## Ordering Information

Part Number	Description
*TREK-60-MCPXN0E	X5-E3940/8/64GB/GPS/PoE/W10/VIO/GPS&LTE Ant
*TREK-60-MBPAXN0E	X5-E3940/4/32GB/GPS/PoE/W10/WIFI/LTE(EU)/Full packing
*TREK-60-5EPXN0E	Ci5-7300U/8/64GB/GPS/PoE/W10/VIO/GPS&LTE Ant
*TREK-60-5EPAXN0E	Ci5-7300U/8/64GB/GPS/PoE/W10/WIFI/LTE(EU)/Full packing
*TREK-60-7KPXN0E	Ci7-7600U/16/64GB/GPS/PoE/W10/VIO/GPS&LTE Ant
TREK-60-U5GP2A0E	Ci5-1345URE/16/128GB/GPS/PoE/Win11/VIO/GPS&LTE Ant
TREK-60-U5GPUA0E	Ci5-1345URE/16/128GB/GPS/PoE/ubuntu/VIO/GPS&LTE Ant
TREK-60-U7GP2A0E	Ci7-1365URE/16/128GB/GPS/PoE/Win11/VIO/GPS&LTE Ant
TREK-60-U7GPUA0E	Ci7-1365URE/16/128GB/GPS/PoE/ubuntu/VIO/GPS&LTE Ant

\*These products are expected to be phased out in 2026/H2.

## Packing List

Part Number	Description	QTY
1700030201-11	VIO cable, supports power cable (100cm) and 2 x CAN/J1708 cable (30 cm)	1
1750008765-01	Outdoor FAKRA LTE/GPS (GLONASS) combo antenna, 5 m	1
1700030180-01*	Generic I/O cable, supports RS-232/Line-Out/Line-In/DI/DO (60 cm)	1
1750008764-01*	Outdoor FAKRA LTE antenna, 5 m	1
1751000818-01	External Ant. WIFI FAKRA-I/F LLC195 BLK L5M IP67	2

\*The actual accessories are subject to the order model

## Optional Accessories

Part Number	Description
TREK-303R-H2A0E	7" WVGA resistive touch smart display (SDP 2.0)
TREK-306P-H2A0E	10.4" XGA P-CAP touch smart display (SDP2.0)
1700030181-01	Smart display 2.0 cable, 10 m
1700030183-01	Smart display 2.0 cable, 5 m
RAM-MOUNT-06E	VESA RAM mount w/VESA base (3.625") & 5.625" double socket arm for 1.5" ball base
1700030387-01	Power cable (20 cm) with 30 cm vehicle I/O (use with adapter)
96PSA-A150W12W7-4	ADP A/D 100-240V 150W 12V LOCKABLE DC JACK (indoor use with AC power adapter)

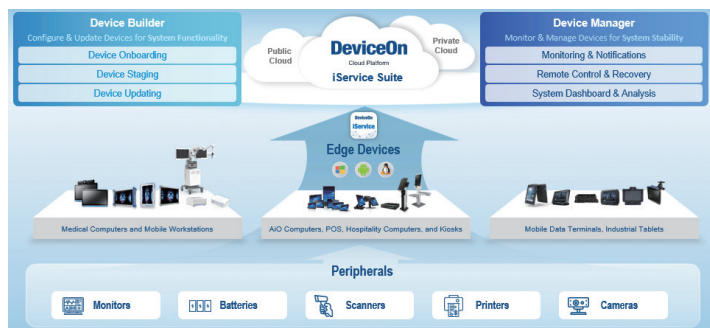
### RF Extension

Part Number	Description
TREK-60-EXTRF1A0	RF extension for Wi-Fi/LTE, 4 x FAKRA connectors (EU)
TREK-60-EXTRF1C0	RF extension for Wi-Fi/LTE, 4 x FAKRA connectors (AU)

### IO Extension

Part Number	Description
TREK-60-IP651A0	TREK-60 IP65 rated M12 system I/O cover
TREK-60-EXTIOA00	TREK-60 I/O extension with 4CH analog capture
TREK-60-EXTIOA10	TREK-60 I/O extension with 8CH analog capture

# DeviceOn - iService Suite



## Introduction

Advantech's DeviceOn - iService Suite is an advanced remote device management solution that enables you to centrally manage your devices, minimizing the need for expensive on-site visits and saving your valuable time and resources. Device Builder ensures that your devices are always up-to-date with the latest configuration and software updates, reducing the risk of data breaches and other security threats. Meanwhile, Device Manager helps to ensure that your devices are functioning correctly, reducing downtime and enhancing productivity.

## Key Functions

### Device Builder



#### Device Onboarding

- Support Windows, Linux, Android devices
- Quick enrollment process



#### Device Staging

- OS configuration
- Software/peripheral watchlist
- Device label, alarm rules



#### Device Updating

- Cloud software storage
- Installation package for multiple software updating

### Device Manager



#### Monitoring & Notifications

- Connection/hardware status
- Software/peripheral status
- Failure notifications



#### Remote Control & Recovery

- Reboot & power controls
- Audio & backlight settings
- Screenshots & remote desktop



#### System Dashboard

- Devices working status
- Software version sync status
- Results of scheduled tasks

## Services & Specifications

Functions List	OS Platform			Service Type	
	Windows	Android	Linux (Ubuntu)	Builder	Manager
	10, 11	8, 10, 12	TBD		
Device Onboarding - Enrollment, Locations and Labels	✓	✓		✓	✓
Profile - OS Settings (Kiosk Mode, ON/Off Schedule, others are OS dependent)	✓ (LTSC)	✓		✓	✓
Profile - Alarm Rules, Software Monitoring, Peripheral Monitoring	✓	✓			✓
OTA Update - Installation Packs, Software Cloud Storage	✓	✓		✓	✓
Monitoring - Device Hardware (CPU/RAM/Storage/Battery)	✓	✓			✓
Monitoring - Advanced Battery Management	✓ (Dependant on device model)				✓
Monitoring - Device Software (Running Status/CPU & Memory Usage)	✓	✓			✓
Monitoring - Peripherals & Display (Connect Status)	✓				✓
Control - Audio volume & Backlight	✓	✓			✓
Control - Screenshot, Reboot, Shutdown	✓	✓			✓
Control - Schedule Tasks	✓	✓			✓
Control - Remote Desktop	VNC				✓

## Ordering Information

Ordering P/N	Cloud Type	Description
36CSDOISSASP01	SaaS subscription	DeviceOn - iService Suite device annual fee (365 days)
36CSDOISPSRP01	On-premise server	DeviceOn - iService Suite device license (perpetual)
36CSDOISPSRP02	On-premise server	Software and installation fee for new server deployment
36CSDOISPSRP03	On-premise server	Annual maintenance fee after warranty