

# TREK-674

## Compact In-Vehicle Computing Box for Fleet Management and Surveillance



### Features

- Vehicle diagnostics interface with configurable CAN (J1939, OBD-II/ISO 15765) and J1708 (J1587) protocols
- Embedded Stretch S7 video encoder supports up to 8 analog video inputs and 4 audio inputs
- 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
- Accessible external SSD tray with key-lock protection
- Wide operating temperature range (-30 ~ 70 °C/-22 ~ 158 °F)
- Supports 12/24 V vehicle power (ISO 7637-2)
- MIL-STD-810G and 5M3 certified for shock and vibration tolerance
- Easily paired with TREK in-vehicle smart displays (TREK-303/306) via a single-cable connection

### Introduction

TREK-674 is a compact vehicle-grade, dual-core computing box designed to provide high-quality video surveillance and fleet management for police, ambulance, fire engine, and bus fleets. The inclusion of GNSS, WLAN, Bluetooth, and WWAN (with dual SIM cards) modules allows remote monitoring and vehicle tracking even in tunnels. TREK-674 also features several vehicle protocols (J1939, OBD-II/ISO 15765) for vehicle diagnostics and driver behavior management, and supports up to 8 channel camera inputs for high-quality H.264 D1/30fps/ch recording. The USB 3.0 port, dual SIM card sockets, and CFast slots are front-facing to ensure ease of maintenance. Meanwhile an external swappable SSD tray is provided for video data backups.

### Specifications

|            |   |   |
|------------|---|---|
| Core       | Processor                                       | Intel® Atom™ E3827 (dual core, 1.75 GHz)  |
|            | Memory  | 1 x SODIMM socket<br>Up to 8 GB DDR3L-1066/1333 non-ECC memory (2 GB default)   |
|            | Graphics  | Integrated 2D/3D graphics engine  |
|            | Video HW Encoder                                | Stretch S7 with H.264 MJPEG support; up to D1 resolution (30fps) per channel  |
|            | Operating System                                | WES7, Win10 IoT LTSC (32 bit), WES8, and Linux Ubuntu 14.04 Kernel 3.19.0 (32 bit) upon request   |
| Storage    | CFast   | 1 x externally accessible CFast slot with cover and supports system boot up<br>16 GB, UMLC S0Flash CFast (default)  |
|            | SSD   | 1 x externally accessible 2.5" SSD tray with key-lock protection, supports system boot up<br>64 GB, UMLC S0Flash SSD (default)  |
| Display    | Smart Display Port <sup>1</sup>                 | 12V/2A power output for TREK-30x<br>1 x 18-bit LVDS (800 x 480/1024 x 768 resolution with auto-detection)<br>1 x Line-Out2 (for TREK-30x speakers)<br>2 x UART (TX/RX, TX/RX/RTS) (for touchscreen, hot keys, brightness, and light sensor control)<br>1 x USB 2.0 Type A<br>1 x PWR button<br>1 x Reset button |
|            | VGA   | 1 x DB15 (up to 2560 x 1600 resolution)   |
| I/O        | Vehicle I/O                                     | 2 x CAN bus (supports raw CAN, J1939, OBD-II/ISO 15765; configurable via firmware)<br>1 x J1708 (supports J1587)  |
|            | Generic I/O                                     | 1 x RS-485 with auto flow control<br>1 x 4-wire RS-232<br>4 x Isolated DI (dry contact)<br>2 x Isolated DO (open collector output, driven by relay)<br>1 x Line-Out <sup>2</sup><br>1 x Mic-In  |
|            | Standard I/O                                    | 1 x USB 3.0 Type A (front)<br>2 x USB 2.0 Type A (rear, with cable clip)<br>1 x High-speed full RS-232, DB-9 (Pin 9 = ring, 12/5 V @0.5A is BOM optional via jumper setting)<br>2 x Giga LAN, with locked-type RJ45 connector   |
| RF         | Video/Audio Input (Via DVI-I Connector)         | 8 x Video inputs with video compression, H.264, MJPEG support, and up to D1 resolution (30fps) per channel<br>4 x Audio inputs with G.711 audio compression   |
|            | LED Indicators                                  | 5 x LEDs: Power (red), Storage (yellow), WLAN (green), WWAN (green), and GPS (yellow)   |
|            | Power Button                                    | Via TREK-30x in-vehicle smart display; system power on by ignition as default   |
|            | Reset Button                                    | 1 x Reset button (front)  |
|            | WLAN + Bluetooth                                | IEEE 802.11a/b/g/n + Bluetooth V4.0 combo module via full-size mini PCIe slot (Optional high-power WLAN/WLAN for roaming available upon request)  |
| Power      | WWAN  | 4G (LTE, HSPA+, GSM/GPRS/EDGE, EV-DO Rev a1, 1xRTT); Sierra Wireless MC73xx via full-size mini-PCIe slot (MC7354 for US/MC7304 for EU as default)<br>2 x external accessible mini-SIM card sockets (selectable) with cover  |
|            | GNSS  | Built-in u-blox MAX-M8W GPS/GLONASS/BeiDou module with A-GPS support (Optional LEA-6R or Neo-M8L (dead reckoning) available upon request)   |
|            | Antenna   | 4 x SMA-type antenna holes for GPS, Wi-Fi+BT, WWAN/LTE MIMO <sup>3</sup>  |
|            | Voltage input                                   | Supports 12/24 V vehicle power, 9 ~ 32 V <sub>DC</sub> input (ISO 7637-2 and SAE J1113 compliant)   |
| Mechanical | Intelligent Vehicle Power Management (IVPM 2.0) | System power on/off/hibernate management (programmable ignition on/off/delay)<br>Supports wake-up events: wake-on-alarm (RTC), wake-on-call/SMS, and wake-on-G-sensor<br>System power protection (vehicle battery low voltage protection)<br>System monitoring and diagnostics                                  |
|            | Dimensions (W x H x D)                          | 294 x 73 x 184 mm (11.57 x 2.87 x 7.24 in)  |
|            | Weight  | 3.5 kg (7.71 lb)  |

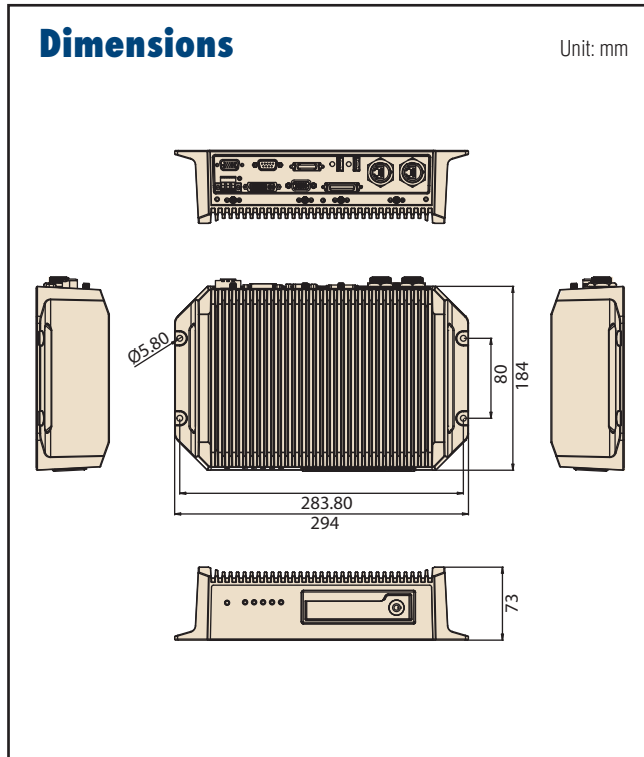
<sup>1</sup> For direct pairing with TREK-303/306 via a single-cable connection

<sup>2</sup> Supports dual independent audio streams (the Line-Out interfaces of the smart display and generic I/O are driven by different audio codecs)

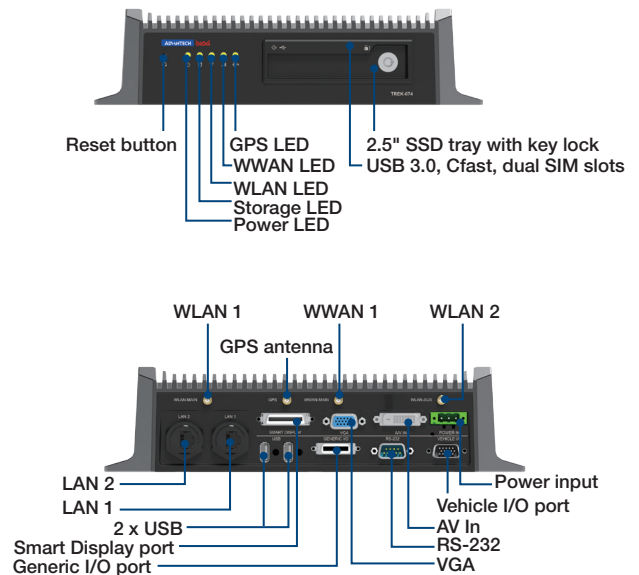
<sup>3</sup> The TREK-674 connector type is female RP-SMA (e.g., a female connector body (outside threads) with a male inner pin contact)

## Specifications Cont.

|             |                       |  |
|-------------|-----------------------|--|
| 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, ISO 7637-2, SAE J1113 |
|             | RF Regulation         | CE (R&TTE), FCC ID                             |
|             | Operating Temperature | -30 ~ 70 °C (-22 ~ 158 °F)                     |
|             | Storage Temperature   | -40 ~ 80 °C (-40 ~ 176 °F)                     |



## I/O Connectors



Note: WLAN 1 = WLAN main, WLAN 2 = WLAN auxiliary, WWAN 1 = WWAN main

## Ordering Information

| Part Number      | Description                             |
|------------------|---|
| TREK-674-LWB7A0E | TREK-674 w/LTE(EU)/GPS/WLAN/BT/SSD/WES7 |
| TREK-674-LWB7B0E | TREK-674 w/LTE(US)/GPS/WLAN/BT/SSD/WES7 |

Note: WES8, Win10 IoT LTSB and Linux OS images are available upon request.

## Packing List

| Part Number    | Description                            |
|----------------|--|
| 1700019031     | 1 x 2M power cable                     |
| 1700023050-11  | 1 x generic I/O cable, 2M              |
| 1700023051-01  | 1 x vehicle I/O cable, 30 cm           |
| 1700022702-01  | 1 x Audio/Video cable, 20 cm           |
| 1654011716-01  | 2 x waterproof RJ45 locking kit        |
| 1750007724-01  | 1 x 3-in-1 antenna (LTE/GPS/Wi-Fi), 3M |
| 1750007723-01  | 1 x Wi-Fi only antenna, 3M             |
| 1990018848T000 | 2 x USB cable clips                    |

## Optional Accessories

| Part Number      | Description  |
|------------------|--|
| TREK-303R-HA0E   | 7" WVGA in-vehicle smart display                                     |
| TREK-306D-HA0E   | 10" WVGA in-vehicle smart display                                    |
| 1700020007-11    | 2M smart display cable   |
| 1700020008       | 5M smart display cable   |
| 1700020128       | 5M power cable   |
| 1700019464       | Power cable, 155 mm (for in-house testing)                           |
| 96PSA-A60W12V1-1 | Adapter AC 100 ~ 240 V, 60 W, 12 V 5A w/o PFC (for in-house testing) |



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