# TREK-773

## 7" All-in-One Ultra Rugged Mobile Data Terminal



TAIWAN EXCELLENCE SILVER AWARD 2016

## Features

- Intel® Atom™ E3827 SoC compatible with Windows 10 and Ubuntu OS
- 7" WVGA wide-angle LCD with resistive touch control
- Vehicle diagnostics interface with CAN (J1939, OBD-II/ISO 15765) and J1708 (J1587) protocols
- Built-in NFC, GNSS, WLAN, Bluetooth, and LTE WWAN modules
- Intelligent vehicle power management system supports ignition on/off/delay functions, wake-up event control, and system monitoring and diagnostics
- Wide operating temperature range (-30 ~ 60 °C/-22 ~ 140 °F)
- Supports 12/24 V vehicle power (ISO 7637-2)
- MIL-STD-810G and 5M3-certified for shock and vibration tolerance
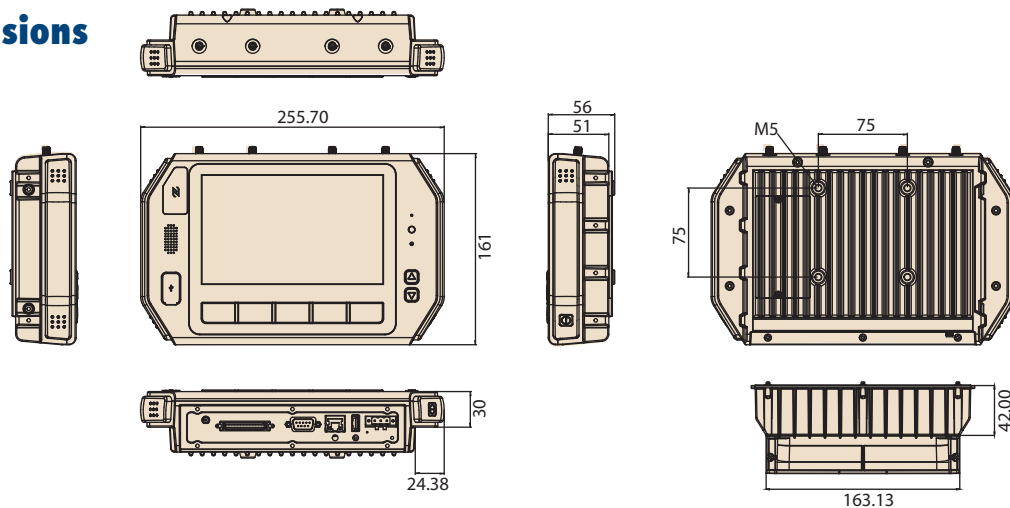
## Introduction

TREK-773 is a next-generation, all-in-one, 7" mobile data terminal. Equipped with an Intel® Atom™ E3827 SoC, TREK-773 offers high-performance computing with a wired connection via Gigabit Ethernet, CAN2.0B (J1939, OBD-II/ISO 15765), and J1708 (J1587). The integrated LTE (backwards compatible with CDMA/HSDPA), GPS, WLAN, and Bluetooth communication interfaces ensure connectivity and real-time data transmissions. Aimed at the automotive market, TREK-773 is compatible with 12/24 V vehicle power and compliant with ISO 7637-2 and SAE J1113 standards to ensure stable operation during engine starts. With the added provision of a ruggedized chassis, wide operating temperature range (-30 ~ 60 °C/-22 ~ 140 °F), and shock (100G, 6ms) and vibration tolerance, TREK-773 provides the ideal terminal for industrial applications in harsh environments.

## 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 (4 GB default for full configuration) |
| | Graphics | Integrated 2D/3D graphics engine |
| | Operating System | Windows 10 IoT Enterprise 2019 LTSC (64 bit) default, with Ubuntu 18.04 LTSB (64 bit) available upon request |
| **Storage** | CFast | 1 x externally accessible CFast slot with cover and boot up support (32 GB default for full configuration) |
| | SD Card | 1 x externally accessible push-push-type SD slot with cover for convenient expansion |
| **Display** | Type | 7" automotive-grade TFT LCD |
| | Resolution | WVGA (800 x 480) |
| | Brightness (cd/m²) | 1000 nits (typical) |
| | Viewing Angle (H/V) | 170°/170° |
| | Contrast Ratio | 1000:1 (typical) |
| | Backlight Type | LED |
| | Backlight Life (Hrs) | 30K |
| **Touchscreen** | Type | 4-wire analog resistive touchscreen with 3H surface hardness and IK06 (510 g steel ball drop @300 mm) support<br>(Optional sunlight readable touchscreen available upon request) |
| | Transparency | 84% ±3% |
| **Sensor** | Sensor | Light sensor, G-sensor |
| **Expansion** | Edge AI | 1 x full-size mini-PCIe slot reserved for Advantech VEGA-330 Edge AI module |
| **I/O** | Function Keys | 5 x programmable function keys with green LED indicators |
| | Standard I/O | 1 x SIM card slot (left)<br>1 x High-speed full RS-232 (rear) (RS232 RI pin can be configured to 12 V$_{DC}$ output)<br>1 x USB 3.0 host Type A (rear)<br>1 x Giga LAN with RJ45 connector (rear) |
| | Extended I/O [2] | 1 x Mic-In/1 x stereo Line-In/1 x stereo Line-Out<br>1 x CVBS input, 1 x USB 2.0 host<br>1 x High-speed full RS-232, 1 x RS-485 with auto flow control<br>4 x Isolated DI (dry contact), 4 x isolated DO (open collector output, driven by replay)<br>1 x CAN bus (supports raw CAN, J1939, OBD-II/ISO 15765)<br>1 x J1708 (supports J1587)<br>1 x 12 V$_{DC}$/1.5A continuous current output (shared with standard I/O full RS-232 DB9) |
| **Miscellaneous** | Power Button/LED Indicators | 1 x Power button; 1 x Power LED indicator (yellow) |
| **RF** | WLAN + Bluetooth | IEEE 802.11a/b/g/n/ac + Bluetooth V5.0 combo module via full-size mini-PCIe slot |
| | WWAN | 1 x Sierra Wireless WP76xx via full-size mini PCIe slot for 4G (LTE Cat-4, HSPA+, GSM/GPRS/EDGE, EV-DO Rev a1, 1xRTT) |
| | GNSS | Built-in u-blox MAX-M8Q GPS/GLONASS/BeiDou module and A-GPS support |
| | Antenna | 1 x GPS, 2 x WWAN (LTE), 2 x WLAN/Bluetooth |
| | NFC | ISO/IEC 14443A, 14443B, 15693; MIFARE 1K/4K, Ultralight; NFC-IP2 protocol |
| **Power** | Input Voltage | 12/24 V$_{DC}$ vehicle power (ISO 7637-2 and SAE J1113 compliant) |
| | Intelligent Vehicle Power Management (iVPM 2.0) | System power on/off management (e.g., programmable ignition on/off/delay), system monitoring and diagnostics, system power protection (vehicle battery low voltage protection), and wake-on-alarm (RTC), wake-on-call/SMS, and wake-on-G-sensor events |
| **Mechanical** | Dimensions (W x H x D) | 255.7 x 161 x 56 mm/10.06 x 6.33 x 2.20 in |
| | Weight | 2.2 kg/4.8 lb |

# Dimensions

Unit: mm



255.70
161
56
51
M5
75
75
30
24.38
42.00
163.13
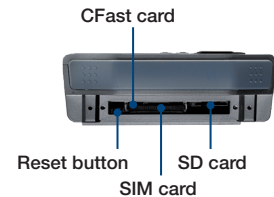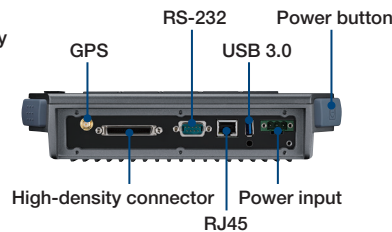
# Specifications Cont.

| Environment | IP Rating | IP54 (excluding I/O); optional IP54 protection for entire system with additional I/O cover |
|---|---|---|
| | Vibration/Shock | MIL-STD-810G, EN60721-3(5M3) |
| | EMC/Safety | CE, FCC, CCC; UL/cUL, CB |
| | Vehicle Regulation | E-mark (E13) for 12/24 V system, SAE J1455 class C, ISO 7637-2, SAE J1113 |
| | Railway | EN50155 (available upon request) |
| | RF Regulation | CE (R&TTE), FCC ID |
| | Operating Temperature | -30 ~ 60 °C/-22 ~ 140 °F |
| | Storage Temperature | -40 ~ 80 °C/-40 ~ 176 °F |

# I/O Connectors



WWAN antenna main
Wi-Fi antenna main
NFC
2W speaker
Front USB
5 programmable hot keys

WWAN antenna auxiliary
Wi-Fi antenna auxiliary
Mic-In
Light sensor
Power LED
Brightness control

GPS
RS-232
USB 3.0
Power button
High-density connector
Power input
RJ45

CFast card
Reset button
SIM card
SD card

# Ordering Information

| Part Number | Description |
|---|---|
| TREK-773R-00A1E | TREK-773R w/GPS/NFC barebones unit* |
| TREK-773R-LWBXA1E | TREK-773R w/LTE(EU)/GPS/WLAN/BT/NFC/CFast/W10 |
| TREK-773R-LWBXB1E | TREK-773R w/LTE(US)/GPS/WLAN/BT/NFC/CFast/W10 |

* The barebones does not include RAM or CFast.
Note: TREK-773 can be equipped with the Linux OS upon request.

# Packing List

| Part Number | Description | QTY |
|---|---|---|
| 1700019031* | 12/24V 2M power cable | 1 |
| 1750007909-01 | Outdoor dipole Wi-Fi antennas | 2 |
| 1750007924-01* | Outdoor LTE/GPS combo antenna, 3M | 1 |
| 1750007926-01 | Outdoor LTE antenna, 3M | 1 |
| 1990018848T000 | USB/LAN cable clips | 2 |

* Included in TREK-773 barebone unit

# Optional Items

| Part Number | Description |
|---|---|
| 1700020128 | 12/24V_DC power cable, 5M |
| 1700019307 | High-density cable (MDR 50P/BNC + 3 x audio jack + USB-A + D-sub, 9P) |
| RAM-MOUNT-01 | VESA RAM mount w/clamp base, 1.5" ball |
| RAM-MOUNT-06E | VESA RAM mount w/VESA base, 1.5" ball |
| 9668TREK35E | AC/DC power kit |
| 9668TREK37E | IP54-rated I/O cover |

# TREK-773 CTOS KIT

| Part Number | Description |
|---|---|
| 98R8T77304E | TREK-773 WLAN kit (802.11a/b/g/n/ac BT combo) with antenna |
| 98R8T77305E | TREK-773 LTE module kit for US (WP7610) with antenna |
| 98R8T77306E | TREK-773 LTE module kit for EU (WP7607) with antenna |

# Embedded OS

| Part Number | Description |
|---|---|
| 20708WX9ES0016 | Image Win 10 LTSC-9 (Atom) TREK-773 V1.00 3MUI x64 |