TERRAFIX VEHICLE COMPUTER 4000+

TVC 4000+

Introducing the TVC 4000+, the latest version of our in-vehicle server, maintaining our flexible, communications and system architecture, enhanced to meet future demands within the Emergency & Security Services. TVC 4000+ is aimed at providing customers with 'future proofed' ESN compatible devices.

The TVC 4000+ is a key component of the TME (Terrafix Mobile Environment) which is our user intuitive architecture supporting a range of different devices and applications providing a common range of functionality across multiple platforms and operating systems.

The TVC 4000+ is installed as the in-vehicle server generating the Terrafix Wi-Fi Cloud, connecting multiple devices to Terrafix hosted or customer embedded Control Systems.

Dual independent LTE cellular modems are able to provide uninterrupted coverage across all current network technologies 4G/3G/2G, whilst providing resilience against network coverage issues. Support is also provided for hands free cellular and VoLTE (Voice over LTE) audio voice calls. Software options allow individual cellular modems to be configured for automatic fall back from 4G to 3G/2G and 3G to 2G.

Key features include:

- Multi Bearer communications e.g ESN, cellular, Wi-Fi
- Dual 4G/3G/2G cellular modems
- Bluetooth 4.2
- 1x Gigabit Ethernet
- Vehicle Telematics - CANBus
- Blue-Light system reporting
- RFID systems
- Encrypted communications
- Legacy equipment support
- High performance
- Flexible interfaces

Possessing Wi-Fi capability at 2.4GHz or 5 GHz the unit provides secure client-access (device) or secure access-point hosting and is able to utilise the latest 5GHz-AC protocol to deliver maximum bandwidth availability.

Connections are provided for peripheral devices, for example, RFID readers, Airwave radio interface, telematic devices and vehicle reversing cameras.

Connections include:

- RS232 Serial Ports
- USB 2.0 x2
- Line in / Line out
- I/O connection
- Mic in
- Speaker Out
- 2x Mini Sim - 1 per modem
- Display port

TVC4000+ also provides dual screen capability with options for a direct GMSL (wired serial link) or Wi-Fi connectivity.

TERRAFIX
Total Solution Providers

Specification

CPU: Intel® CELERONTM 2980U 2x 1.6 GHz
Chipset: Intel® 8-Series LynxPoint-LP[in CPU]
Memory: 2GB DDR3[max. 8GB]
Storage: 128GB 2.5" SSD[6Gb/s] [options available]
eSATAp[optional external expansion]
Operating System: Microsoft Windows-10TM
Dimension: 240 x 185 x 65 mm
Weight: 2.5 Kg
Cooling: Fanless passive cooling
Temperature:
Operating: 0 to +60°C[extended temperature available]
Storage: -20 to +85°C
Integrated PSU: 40W
Power Input: +11 to +18 VDC [see Note 1]
Power Consumption:[@13.8V]
Active[see Note 2]: 8 W[non-charging], 22 W [charging]
Off: 80 mW, 14W [max. charging]
Power Management: Automotive protection
Engine cranking protection
Programmable ignition control
Internal Battery: 2.6Ah[Re-chargeable 3-cell Li-ION]
Communications:
Cellular: 2x Modem[see Note 3]
Wi-Fi[see Note 4]: 802.11 ac, 2x2, 5 GHz
802.11 a/g/n, 2x2, 2.4 GHz, 5GHz
Bluetooth: 4.2
Navigation Engine:
GNSS compatibility: GPS[L1 C/A][USA]
SBAS[L1 C/A]
QZSS[L1 C/A][Japan]
GLONASS[L10F][Russia]
BeiDou[B1][China]
Galileo[E1 B/C][Europe]
Channels: 72
SBAS: EGNOS, WAAS, MSAS
Accuracy:
Position < 2•5m [CEP,50%, -130dBm]
Velocity 0•05 m/s [50%@30 m/s]
Heading 0•3 degree [50%@30 m/s]
Dynamic Capability:
Max. velocity 500 m/s
Max. acceleration 4 g
Max. altitude 50,000 m
Time to First Fix:
Hot Start 1 s
Warm Start 26 s
Cold Start 26 s
Aided Start 2 s
Antenna Supply: +3•3Vdc, 50mA
Sensitivity: -148 [cold], -167[tracking] dBm

External Interfaces:
Display: [see Note 5] 1x GMSL[Gigabit Multimedia Serial Link]
1x DisplayPort TM
Ethernet: 1x Gigabit
USB: 2x USB2.0[max. current 500mA per port]
COM: 2x RS232[with FULL handshaking]
Audio: 1x Line-Out[Stereo]
1x Line-In[Stereo]
1x Mic-In[Stereo]
1x Speaker-Out[2W Stereo]
1x Cellular Handsfree[see Cellular modem]
CAN: 1x Host or Slave bus[s/w dependent]
Outputs: 5x Relay Driver[Opto-Isolated]
Inputs: 1x Ignition Sense[Opto-Isolated]
4x General[Opto-Isolated]
4G/3G/2G cellular:[see Note 3]
Technology: LTE/HSPA+/3G/GPRS/GSM
Frequency Band:
LTE 800/850/900/1800/2100/2600 MHz
HSPA/3G 850/900/1900/2100 MHz
GPRS/GSM 850/900/1800/1900 MHz
Max. Transmit Power:
LTE Class 3 (0•2W)
HSPA/3G Class 3 (0•25W)
GPRS/GSM Class 4 (2W) at 850/900 MHz
Class1 (1W) at 1800/1900 MHz
Max. Data Rates:
LTE 150 Mb/s DL, 5•6 Mb/s UL
HSPA 42 Mb/s DL, 5•6 Mb/s UL
3G 384 Kb/s DL/UL
2G EDGE 236•8 Kb/s DL/UL
2G GPRS 85•6 Kb/s DL/UL
SIM Card slot: 2x mini-SIM[one per modem]
Audio: [see Note 6] 1x Line-Out[Mono], 1x Mic-In[Mono]
Antenna Ports:
4G/3G/2G: 4x FME[two per modem, Rx diversity]
GPS: 1x SMA
Wi-Fi / Bluetooth 2x Reverse-SMA[2x2 MIMO]
LED Indicators:[see Note 7] 1x Power, 2x Cellular, 1x HDD
1x Wi-Fi, 1x GPS

Notes:
(1) Minimum operating voltage threshold of 11 VDC is designed to protect the vehicle battery from over-discharge. Lower minimum operating voltages are available on request.
(2) Typical power consumption running Win10 with both cellular modems powered and network registered (idle), Wi-Fi and Bluetooth powered. This figure does not include power drawn by a Terrafix LCD Touchscreen Display connected to the GMSL interface.
(3 Software options allow individual cellular modems to be configured for automatic fall-back from 4G to 3G/2G and 3G to 2G, or locked to a given wireless technology.
(4) Wi-Fi[TM] Soft-AP capabilities are application software and operating system dependent. It is not possible to act as a Soft-AP whilst operating in the 5 GHz band.
(5) GMSL interface is designed to operate with Terrafix LCD Touchscreen Displays.
(6) Cellular audio is only available on Modem 1.
(7) LED indicators may vary with installed Wi-Fi card and be application software dependent.

The design and specification may be subject to change without notice.

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