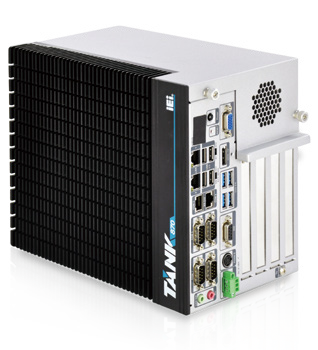
**TANK-870-Q170**



* ***High-Performance 6th/7th Generation Intel® Core™ Processor***
* ***Fanless Embedded Computer***



***Features***

* + 6th/7th Gen Intel® Core™ processor platform with Intel® Q170 chipset and DDR4 memory
  + Triple independent display with high resolution support
  + Rich high-speed I/O interfaces on one side for easy installation
  + On-board internal power connector for providing power to add-on cards
  + Great flexibility for hardware expansion

**2-slot**

**4-slot**



Fanless

Display

Triple

PCI/PCIe DDR4

Expansion

2133

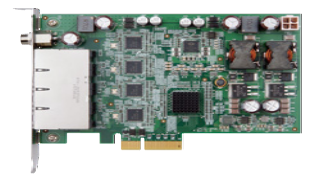
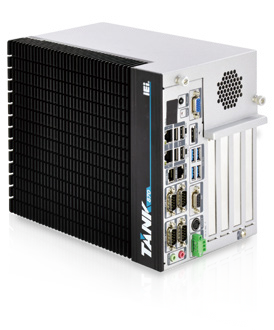
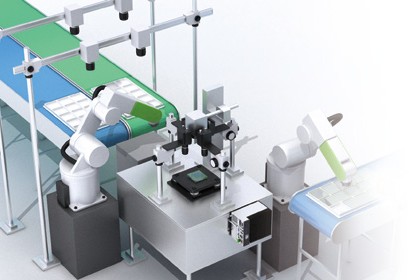
***Smart Choice for Surveillance System***

The TANK-870-Q170 integrated with IEI PoE Ethernet port expansion card can be used as a surveillance system for factory and public security. IEI PoE expansion card can support up to four PoE IEEE802.3af ports (max. 15.4 W per port ) by PCIe x4.

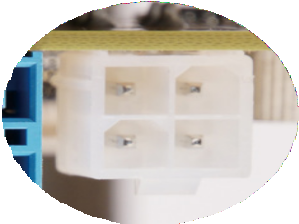
**IP Camera**

**IPCIE-4POE**

***5V@3A or 12V@3A Internal Power Connector***



The TANK-870-Q170 provides the most convenient 4-pin internal power connector for add-on card usage, adding more flexibility to the embedded system in industrial environment.



+12V

GND

+5V

GND

***Fully Integrated I/O***

**Power Switch**



1. Long-press 2 sec. to power on
2. Long-press 5 sec. to power off

LED

4 x USB 2.0

2 x GbE LAN

2 x RS-232

4 x USB 3.1

Gen 1

2 x RS-232/

422/485

DIO

2 x RS-232

Audio

Power2 (DC Jack)

Reset VGA

AT/ATX

Mode

HDMI+DP

ACC Mode

Expansion Slots 2-slot:

2 x Expansion Slots 4-slot:

4 x Expansion Slots

To Ground

Power1 (Terminal Block)

# *Flexible Expansion Interface*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Backplane** | **TANK-870-Q170i-2A** | **TANK-870-Q170i-2B** | **TANK-870-Q170i-4A** | | **TANK-870-Q170i-4B** | |
| **Slot Type** | PCIe x16 | PCIe x16 | PCIe x16 | PCIe x16 | PCIe x16 | PCI |
| **Signal** | PCIe x8 | PCIe x16 | PCIe x8 | PCIe x8 | PCIe x16 | PCI |
| **Slot Type** | PCIe x16 | PCI | PCI | PCI | PCI | PCI |
| **Signal** | PCIe x8 | PCI | PCI | PCI | PCI | PCI |
| **PCIe Mini** | N/A | N/A | 1 | | 1 | |

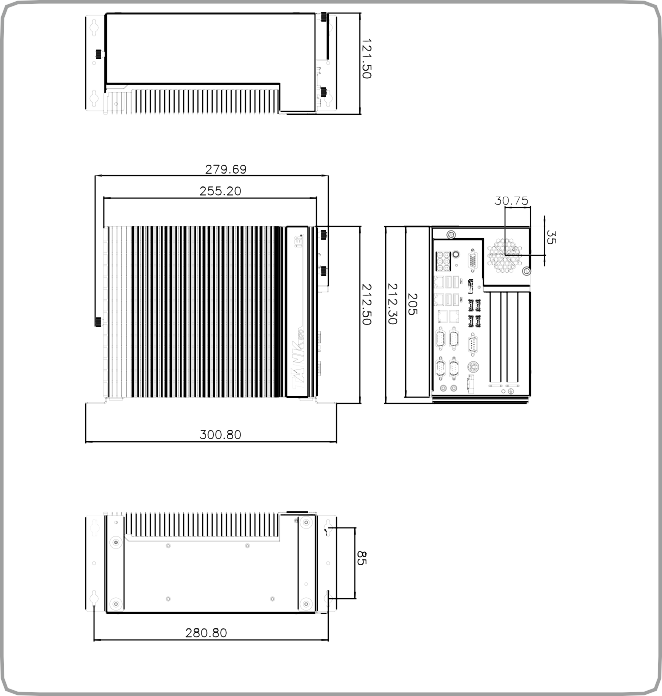
\* The expansions described above are provided by the backplanes

***Specifications***

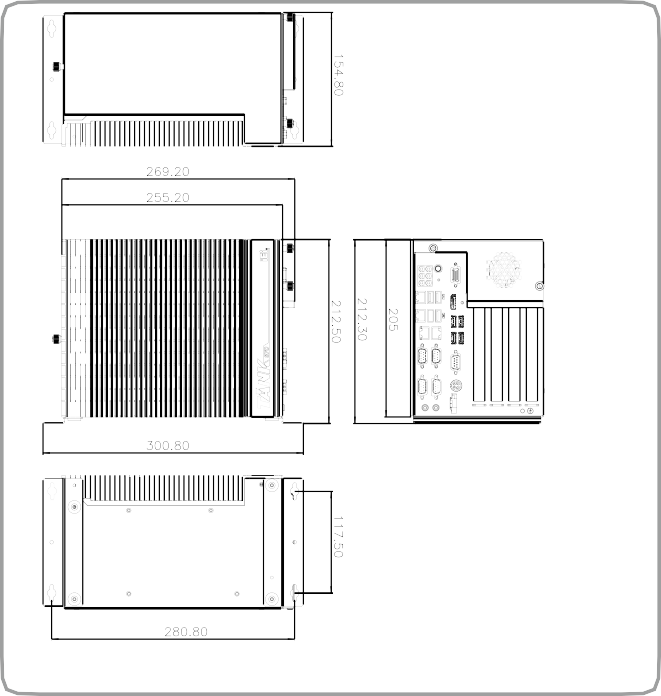
|  |  |  |
| --- | --- | --- |
| **Model Name** | | **TANK-870-Q170** |
| **Chassis** | **Color** | Black C + Silver |
| **Dimensions (WxDxH) (mm)** | 2-slot: 121.5 x 255.2 x 205  4-slot: 154.8 x 255.2 x 205 |
| **System Fan** | Fanless |
| **Chassis Construction** | Extruded aluminum alloys |
| **Motherboard** | **CPU** | Intel 7th Gen Core CPU &  Intel® Core™ i7-6700TE (2.4 GHz, quad-core, TDP=35W) Intel® Core™ i5-6500TE (2.3 GHz, quad-core, TDP=35W) |
| **Chipset** | Intel® Q170 |
| **System Memory** | 2 x 260-pin DDR4 SO-DIMM,  one 4 GB pre-installed (system max: 32GB) |
| **IPMI** | **iRIS Solution** | 1 x iRIS-2400 (optional) |
| **Storage** | **Hard Drive** | 2 x 2.5'' SATA 6Gb/s HDD/SSD bay (RAID 0/1 support) |
| **I/O Interfaces** | **USB 3.1 Gen 1 (5Gb/s)** | 4 |
| **USB 2.0** | 4 |
| **Ethernet** | 2 x RJ-45  LAN1: Intel® I219LM PCIe controller LAN2 (iRIS): Intel® I210 PCIe controller |
| **COM Port** | 4 x RS-232 (2 x RJ-45, 2 x DB-9 w/2.5KV isolation protection) 2 x RS-232/422/485 (DB-9) |
| **Digital I/O** | 8-bit digital I/O , 4-bit input / 4-bit output |
| **Display** | 1 x VGA  1 x HDMI/DP  1 x iDP (optional) |
| **Resolution** | 1 x VGA (Up to 1920 x 1200@60Hz)  1 x HDMI/DP (Up to 3840x2160@30Hz / 4096×2304@60Hz) |
| **Audio** | 1 x Line-out, 1 x Mic-in |
| **Wireless** | 1 x 802.11 a/b/g/n/ac (optional) |
| **TPM** | 1 x TPM pin header (2 x 10 pin) |
| **Expansions** | **Backplane** | 2-slot model: 1 x PCIe x16, 1 x PCI 2-slot model: 2 x PCIe x8  4-slot model: 2 x PCIe x8, 2 x PCI, 1 x Full-size PCIe Mni 4-slot model: 1 x PCIe x16, 3 x PCI, 1 x Full-size PCIe Mni |
| **PCIe Mini** | 1 x Half-size PCIe Mini slot  1 x Full-size PCIe Mini slot (supports mSATA, colay with SATA)\* |
| **Power** | **Power Input** | DC Jack: 9 V~36 V DC  Terminal Block: 9 V~36 V DC |
| **Power Consumption** | 19 [V@3.68](mailto:V@3.68) A (Intel® Core™ i7-6700TE with 8 GB memory) |
| **Internal Power output** | 5V@3A or 12V@3A |
| **Reliability** | **Mounting** | Wall mount |
| **Operating Temperature** | i7-6700TE -20°C ~ 45°C with air flow (SSD), 10% ~ 95%, non-condensing i5-6500TE -20°C ~ 60°C with air flow (SSD), 10% ~ 95%, non-condensing |
| **Storage Temperature** | -40°C ~85°C with air flow (SSD), 10% ~ 90%, non-condensing |
| **Operating Shock** | Half-sine wave shock 5G, 11ms, 100 shocks per axis |
| **Operating Vibration** | MIL-STD-810G 514.6 C-1 (with SSD) |
| **Weight (Net/Gross)** | 2-slot: 4.2 kg/6.3 kg 4-slot: 4.5 kg/6.5 kg |
| **Safety/EMC** | CE/FCC |
| **OS** | **Supported OS** | Microsoft® Windows® 8 Embedded, Microsoft® Windows® Embedded Standard 7 E, Microsoft® Windows® 10 IoT Enterprise |

\* TANK-870-Q170-QGW has no Full-size PCIe mini slot

***Dimensions (Unit: mm)***



***TANK-870-Q170i-2 slot***



***TANK-870-Q170i-4 slot***

# *Ordering Information*

## Part No. Description

**TANK-870-Q170i-i5/4G/2A-R11** Ruggedized fanless embedded system with Intel® Core™ i5-6500TE 2.3 GHz (up to 3.3 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 2 x PCIe by 8 expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i5/4G/2B-R11** Ruggedized fanless embedded system with Intel® Core™ i5-6500TE 2.3 GHz (up to 3.3 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 1 x PCIe by 16 & 1 x PCI expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i5/4G/4A-R11** Ruggedized fanless embedded system with Intel® Core™ i5-6500TE 2.3 GHz (up to 3.3 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 2 x PCIe by 8 & 2 x PCI expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i5/4G/4B-R11** Ruggedized fanless embedded system with Intel® Core™ i5-6500TE 2.3 GHz (up to 3.3 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 1 x PCIe by 16 & 3 x PCI expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i7/4G/2A-R11** Ruggedized fanless embedded system with Intel® Core™ i7-6700TE 2.4 GHz (up to 3.4 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 2 x PCIe by 8 expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i7/4G/2B-R11** Ruggedized fanless embedded system with Intel® Core™ i7-6700TE 2.4 GHz (up to 3.4 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 1 x PCIe by 16 & 1 x PCI expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i7/4G/4A-R11** Ruggedized fanless embedded system with Intel® Core™ i7-6700TE 2.4 GHz (up to 3.4 GHz, quad core, TDP 35W), 4GB DDR4 pre- installed memory, 2 x PCIe by 8 & 2 x PCI expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170i-i7/4G/4B-R11** Ruggedized fanless embedded system with Intel® Core™ i7-6700TE 2.4 GHz (up to 3.4 GHz, quad core, 4GB DDR4 pre-installed memory, 1 x PCIe by 16 & 3 x PCI expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, RoHS

**TANK-870-Q170-QGW-2A-R11** Ruggedized Fanless embedded system with Intel® Core i5-6500TE 2.3GHz, (up to 3.3 GHz, Quad Core, TDP 35W), 8GB DDR4 pre-installed memory, 2 x PCIe by 8 expansion, VGA/HDMI+DP/iDP, iRIS-2400 optional, 9~36V DC, with QTS-Gateway, RoHS

# *Options*

## Part No. Description

**32702-000400-200-RS** European power cord

**63040-010120-210-RS** Power adapter, FSP120-ABBN2, 9NA1205302, Active PFC, Vin:90~264VAC, 120W, plug=6.5mm, cable=1500mm, Erp (no load 0.15W),

Vout:19VDC, 4-pin DIN with lock, CCL, RoHS

**iRIS-2400-R10** IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface

**EMB-FAN-KIT02-R10** Fan Module;MODIFY 31100-000272-RS;+12V DC;4PIN;40\*40\*15mm ;STANDARD;;FD124015LB2W3;; L= 400mm MOLEX 5051-04P P=2.54;CCL;RoHS

**EMB-WIFI-KIT01-R20** 1T1R wifi module kit for embedded system, IEEE802.11a/b/g/n/ac WiFi with Bluetooth 4.0/3.0+HS, 1 x wifi module, 2 x 250mm RF cable, 2 x Antenna, RoHS

**DP-DP-R10** DisplayPort to DisplayPort converter board (for IEI IDP connector)

**DP-HDMI-R10** DisplayPort to HDMI converter board (for IEI IDP connector)

**DP-LVDS-R10** DisplayPort to 24-bit dual channel LVDS converter board (for IEI IDP connector)

**DP-VGA-R10** DisplayPort to VGA converter board (for IEI IDP connector)

**DP-DVI-R10** DisplayPort to DVI-D converter board (for IEI IDP connector)

**IPCIE-4POE-R10** PCI Express Power over Ethernet frame grabber card, 4-port 1000 Base(T), 802.3af compliant, RoHS

**TANK-870-Q170-WES7E64-R10** OS Image with Windows® Embedded Standard 7 E 64-bit for TANK-870-Q170 Series, with DVD-ROM, RoHS

**TANK-870-Q170-W10E64-H-R10** OS Image with Windows® Embedded Standard 10 E High End 64-bit for TANK-870-Q170-i7 Series, with DVD-ROM, RoHS **TANK-870-Q170-W10E64-V-R10** OS Image with Windows® Embedded Standard 10 E Value 64-bit for TANK-870-Q170-i5 Series, with DVD-ROM, RoHS **TPM-IN02-R20** 20-pin Infineon TPM2.0 module, software mangement tool, firmware v5.5

\* The TANK-870 can support up to 40°C operating temperature when installing with the IPCIE-4POE-R10.

# *Packing List*



1 x Chassis Screw

1 x Mounting Bracket