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

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.

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.

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
- 2 x RS-232/422/485
- 2 x RS-232
- DIO
- 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

<table>
<thead>
<tr>
<th>Backplane</th>
<th>TANK-870-Q170i-2A</th>
<th>TANK-870-Q170i-2B</th>
<th>TANK-870-Q170i-4A</th>
<th>TANK-870-Q170i-4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slot Type</td>
<td>PCIe x16</td>
<td>PCIe x16</td>
<td>PCIe x16</td>
<td>PCIe x16</td>
</tr>
<tr>
<td>Signal</td>
<td>PCIe x8</td>
<td>PCIe x16</td>
<td>PCIe x8</td>
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<td>PCI</td>
<td>PCI</td>
<td>PCI</td>
</tr>
<tr>
<td>PCIe Mini</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

* 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)
- **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 3.0**: 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 (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: 1 x PCIe x8, 2 x PCI
  - 4-slot model: 2 x PCIe x8, 2 x PCI, 1 x Full-size PCIe Mini
  - 4-slot model: 1 x PCIe x16, 3 x PCI, 1 x Full-size PCIe Mini
- **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
- **Power Consumption**: 19 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**: 77-7900TE: -20°C ~ 45°C with air flow (SSD), 10% ~ 95%, non-condensing
  - Intel® Core™ 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
TANK-870-Q170-i2 slot

TANK-870-Q170-i4 slot

Dimensions (Unit: mm)

Ordering Information

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TANK-870-Q170i-i5/4G/2A-R11</td>
<td>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</td>
</tr>
<tr>
<td>TANK-870-Q170i-i5/4G/2B-R11</td>
<td>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 &amp; 1 x PCI expansion, VGA/HDMI+DP+IDP, IRIS-2400 optional, 9~36V DC, RoHS</td>
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</tr>
<tr>
<td>TANK-870-Q170i-i7/4G/2A-R11</td>
<td>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</td>
</tr>
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<td>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 &amp; 1 x PCI expansion, VGA/HDMI+DP+IDP, IRIS-2400 optional, 9~36V DC, RoHS</td>
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</tr>
<tr>
<td>TANK-870-Q170i-i7/4G/4B-R11</td>
<td>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 &amp; 3 x PCI expansion, VGA/HDMI+DP+IDP, IRIS-2400 optional, 9~36V DC, RoHS</td>
</tr>
<tr>
<td>TANK-870-Q170-QGW-2A-R11</td>
<td>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</td>
</tr>
</tbody>
</table>

Options

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>32702-000400-200-RS</td>
<td>European power cord</td>
</tr>
<tr>
<td>63040-010120-210-RS</td>
<td>Power adapter, FSP120-ABBN2, 9NA1205302, Active PFC, Vin:90~264VAC, 120W, plug=6.5mm, cable=1500mm, Erp (no load 0.15W), Vout:19V/DC, 4-pin DIN with lock, CCL, RoHS</td>
</tr>
<tr>
<td>iRIS-2400-R10</td>
<td>IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface</td>
</tr>
<tr>
<td>EMB-FAN-KIT02-R10</td>
<td>Fan Module/ MODIFY 31100-000272-R5;+12V DC;4PIN;40<em>40</em>15mm ;STANDARD;;FD124015LB2W3;; L= 400mm  MOLEX 5051-04P P=2.54,CCL,RoHS</td>
</tr>
<tr>
<td>EMB-WIFI-KIT01-R20</td>
<td>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</td>
</tr>
<tr>
<td>DP-DP-R10</td>
<td>DisplayPort to DisplayPort converter board (for IEI IDP connector)</td>
</tr>
<tr>
<td>DP-HDMI-R10</td>
<td>DisplayPort to HDMI converter board (for IEI IDP connector)</td>
</tr>
<tr>
<td>DP-LVDS-R10</td>
<td>DisplayPort to 24-bit dual channel LVDS converter board (for IEI IDP connector)</td>
</tr>
<tr>
<td>DP-VA-R10</td>
<td>DisplayPort to VGA converter board (for IEI IDP connector)</td>
</tr>
<tr>
<td>DP-DVI-R10</td>
<td>DisplayPort to DVI-D converter board (for IEI IDP connector)</td>
</tr>
<tr>
<td>IPCIE-4POE-R10</td>
<td>PCI Express Power over Ethernet frame grabber card, 4-port 1000 BaseT], 802.3af compliant, RoHS</td>
</tr>
<tr>
<td>TANK-870-Q170-WES7E64-R10</td>
<td>OS Image with Windows® Embedded Standard 7 E 64-bit for TANK-870-Q170 Series, with DVD-ROM, RoHS</td>
</tr>
<tr>
<td>TANK-870-Q170-W10E64-H-R10</td>
<td>OS Image with Windows® Embedded Standard 10 E High End 64-bit for TANK-870-Q170-i7 Series, with DVD-ROM, RoHS</td>
</tr>
<tr>
<td>TANK-870-Q170-W10E64-V-R10</td>
<td>OS Image with Windows® Embedded Standard 10 E Value 64-bit for TANK-870-Q170-i5 Series, with DVD-ROM, RoHS</td>
</tr>
<tr>
<td>TPM-INO2-R20</td>
<td>20-pin Infineon TPM2.0 module, software management tool, firmware v5.5</td>
</tr>
</tbody>
</table>

* 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

Dimensions (Unit: mm)