

# ITA-5231

## Intel® 6th Generation Core™ i Processor Fanless System; EN 50155 Compliant for Railway Applications



### Features

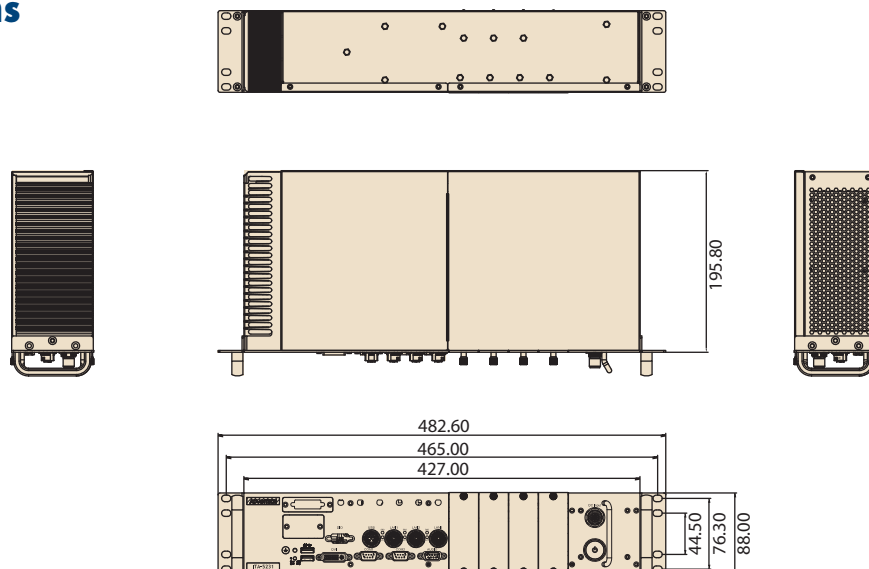
- H-series, 6th generation Intel® Core™ i3/i5/i7 platform with QM170
- Fanless computer for railway vehicle applications, fully compliant with EN 50155
- Satisfies temp. standard: EN 50155 TX (-40 ~ 70 °C) and IEC 61373 body mount class B
- Compliant with EN 50121-3-2/ EN 50121-4 EMC test standard
- Ruggedized connectors (M12) used for communication and power ports
- Supports easy-swap storage module and I/O module

### Specifications

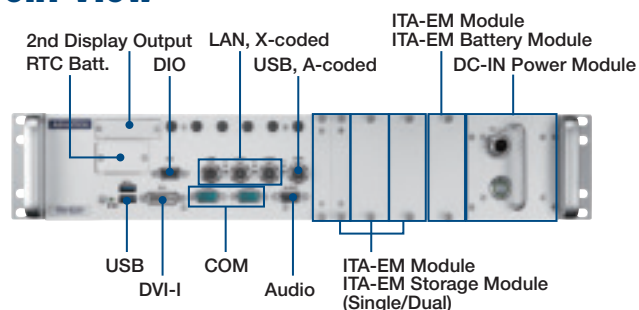
|                     |                                 |   |            |                              |
|---------------------|---------------------------------|---|------------|------------------------------|
| System Chipset      | CPU                             | Intel® Core™ i7-6822EQ  | i5-6442EQ  | Celeron® G3902E              |
|                     | Base Frequency/Turbo Boost      | 2.0/2.8 GHz   | 1.9/2.7GHz | 1.6GHz/NA                    |
|                     | L3 Cache                        | 8M  | 6M         | 2M                           |
|                     | Cores/Threads                   | 4C/8T   | 4C/4T      | 2C/2T                        |
|                     | Chipset                         | QM170   |            |                              |
|                     | BIOS                            | AMI SPI 128Mb   |            |                              |
| Memory              | Technology                      | 8GB on board memory, DDR4 2133MHz   |            |                              |
|                     | SODIMM slot                     | 1   |            |                              |
|                     | Max. Capacity                   | Up to 16GB  |            |                              |
| Graphics            | Chipset                         | Intel® HD Graphics 530, Celeron with Intel® HD Graphics 510   |            |                              |
|                     | VRAM                            | Shared with system memory up to 512MB   |            |                              |
|                     | Display                         | DVI-I: 1920x1200 @ 60Hz   |            |                              |
| I/O                 | USB                             | 2 x USB3.0 with Type A<br>1 x USB2.0 with M12 A-coded(F) 4-pin  |            |                              |
|                     | Serial Port                     | 2 x DB9, RS-232/422/485 with 2KV Isolation, supports auto-flow control                                      |            |                              |
|                     | DIO                             | 1 x DB9, 4-bit DI/ 4-bit DO with 2KV Isolation  |            |                              |
|                     | Main Display                    | 1 x DVI-I (Optional to DVI-D+VGA via Y cable)   |            |                              |
|                     | Audio                           | 1 x DB9, 1 x Speaker-out with 2 x 4W amplifier, 1 x Mic-in  |            |                              |
| Ethernet            | Controller                      | Intel i210-IT /i219LM (Industrial)  |            |                              |
|                     | Interface                       | 10/100/1000 Mbps  |            |                              |
|                     | Connector                       | 3 x M12 X-coded(F), LAN1 with i219LM and LAN2/LAN3 with i210-IT   |            |                              |
| Storage             | HDD/SSD easy-swap module        | 1 x ITA-EM-ST51-00A1E, supports 2 x 2.5" SSD (Default setting)<br>Max to 4 x 2.5" SSD (7mm/9.5mm)           |            |                              |
|                     | mSATA                           | 1 x mSATA slot on board   |            |                              |
| Others              | Mini PCIe                       | 3 x Mini PCIe Socket (Full size)  |            |                              |
|                     | SIM card                        | 2 x SIM slot  |            |                              |
| LED & Button        | LED                             | 1 x power, 1 x storage, 1 x alert, 1 x BATT   |            |                              |
|                     | Button                          | 1 x power on/off switch<br>1 x reset button   |            |                              |
| Power               | Input Voltage                   | DC 24V input compliant with EN50155 class S2/C2 (optional DC 48/72/110V input)                              |            |                              |
|                     | Connector                       | 1 x M12 S-coded(M) 4-pin  |            |                              |
| Watchdog Timer      | Output                          | System reset  |            |                              |
|                     | Interval                        | Programmable 1~255 sec/min  |            |                              |
| Environment         | Temperature                     | Operating (with Industrial/Wide-temperature SSD/mSATA)<br>-40 ~ 70 °C                                       |            | Non-operating<br>-40 ~ 85 °C |
|                     | Humidity                        | 5% ~ 95% @ 40 °C (Non-condensing)   |            |                              |
| Mechanical          | Dimension (W x H x D)           | 427 x 88 x 195.8 mm (16.81" x 3.46" x 7.71")/482.6 x 88 x 221.3 mm (19" x 3.46" x 8.71") with mounting kits |            |                              |
|                     | Install                         | Rack-mounting   |            |                              |
| Certification       | EMC                             | CE/FCC Class A, CCC   |            |                              |
|                     | Safety                          | UL, CB, CCC   |            |                              |
| EN 50155 Compliance | Ambient Temperature             | EN 50155 TX (-40 ~ 70 °C)   |            |                              |
|                     | Shock and Vibration             | IEC 61373 body mount class B  |            |                              |
|                     | Interruptions of Voltage Supply | Class S2  |            |                              |
|                     | Supply Change Over              | Class C2  |            |                              |
|                     | EMC                             | EN 50121-4  |            |                              |

## Dimensions

Unit: mm



## Front View



## Ordering Information

| Voltage (M12-S-Male)  | Part Number    | Processor | Ethernet (M12-X-Female) | USB2.0 (M12-A-Female) | USB3.0 (Type A) | mini-PCle | 2.5" SSD | mSATA slot | COM        | DIO     | Display |
|-----------------------|----------------|-----------|-------------------------|-----------------------|-----------------|-----------|----------|------------|------------|---------|---------|
| 24V <sub>DC</sub>     | ITA-5231-L7A1E | i7-6822EQ | 3                       | 1                     | 2               | 3         | Up to 4  | 1          | 2(Default) | 4DI/4DO | DVI-I   |
|                       | ITA-5231-L5A1E | i5-6442EQ | 3                       | 1                     | 2               | 3         | Up to 4  | 1          | 2(Default) | 4DI/4DO | DVI-I   |
|                       | ITA-5231-L0A1E | G3902E    | 3                       | 1                     | 2               | 3         | Up to 4  | 1          | 2(Default) | 4DI/4DO | DVI-I   |
| 48V <sub>DC</sub>     | ITA-5231-M7A1E | i7-6822EQ | 3                       | 1                     | 2               | 3         | Up to 4  | 1          | 2(Default) | 4DI/4DO | DVI-I   |
|                       | ITA-5231-S7A1E | i7-6822EQ | 3                       | 1                     | 2               | 3         | Up to 4  | 1          | 2(Default) | 4DI/4DO | DVI-I   |
| 72/110V <sub>DC</sub> | ITA-5231-S5A1E | i5-6442EQ | 3                       | 1                     | 2               | 3         | Up to 4  | 1          | 2(Default) | 4DI/4DO | DVI-I   |

ITA-5231 Series supports various I/O expansion. For more specifications, please contact your distributor or sales representative.

## Optional List

| Part Number                        | Description  |
|------------------------------------|--|
| ITA-EM-SR51-00A1E                  | Easy-swap module, 4 x RS232/422/485 with 2KV Isolation                                     |
| ITA-EM-CN51-00A1E                  | Easy-swap module, 2 x CAN ports with 2KV Isolation   |
| ITA-EM-PE51-00A1E <sup>Note1</sup> | 2 PoE: Each port max to 7.5W @ 52V <sub>DC</sub><br>1 PoE: Up to 15.4W @ 52V <sub>DC</sub> |
| ITA-EM-ST51-00A1E                  | Easy-swap storage tray, support 2 x 2.5" SSD (7mm/9.5mm)                                   |
| ITA-EM-ST51-10A1E                  | Easy-swap storage tray, support 1 x 2.5" SSD (7mm/9.5mm/15mm)                              |

| P/N           | Description  |
|---------------|--|
| 1700025295-31 | USB cable: M12 A-code-> USB Type A,10cm              |
| 1700026432-21 | LAN cable: M12 x-code-> RJ45,10cm                    |
| 1700025857-21 | Power cable: M12 S-code-> 2pin Terminal Block,10cm   |
| 1700004713    | Y cable: DVI 29P(M) -> DVI 29P(F)+D-SUB 15P(F), 18cm |

Note1: Only supports EN 50155 T2 class: -40 ~ 55 °C

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