

# ITA-5831

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



### Features

- Intel® Core™ i7-6822EQ platform with QM170
- Fanless computer for railway vehicle applications, fully compliant with EN 50155:2017
- Satisfies temp. standard: EN 50155 OT4 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
- ITA58311905-T system supports maximum turbo frequency of 2.8GHz in single core; that of 2.5GHz in multi-core
- No RED Certification

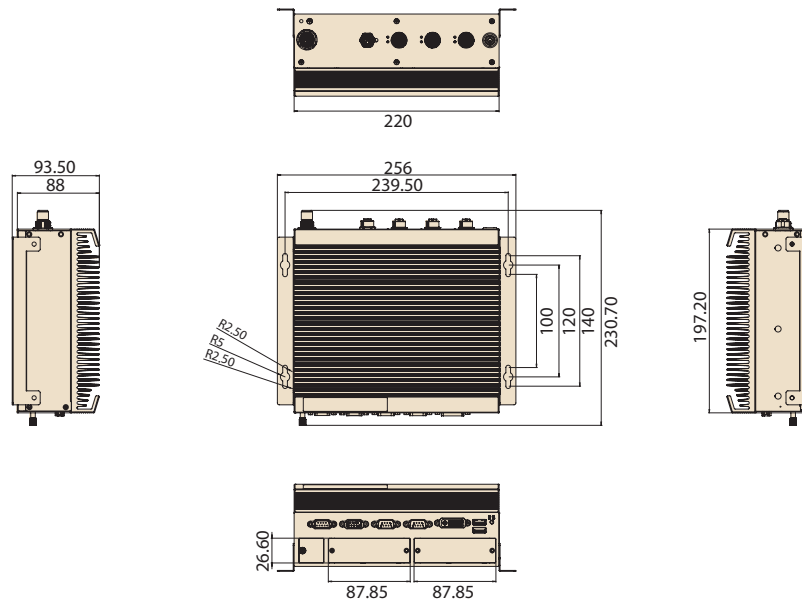


### Specifications

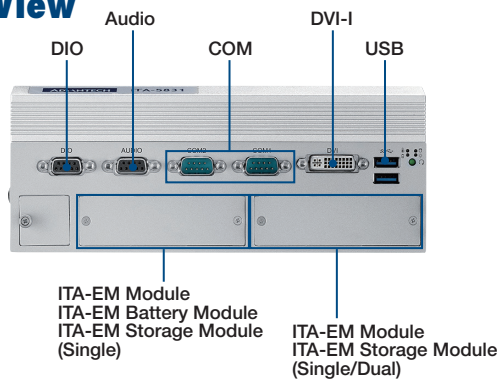
System Chipset	CPU	Intel® Core™ i7-6822EQ	i5-6442EQ	Celeron G3902E
	Base frequency/Turbo Boost	2.0/2.8 GHz	1.9/2.7GHz	1.6 GHz/ NA
	L3 Cache	8M	6M	2M
	Cores/Threads	4C/8T	4C/4T	2C/2T
	Chipset	QM170		
	BIOS	AMI SPI 128Mbyte Flash		
Memory	Technology	8GB/16GB onboard memory, DDR4 2133MHz		
	SODIMM slot	1		
	Max. Capacity	Up to 32GB		
Graphics	Chipset	Intel® HD Graphics 530, Celeron with Intel® HD Graphics 510		
	VRAM	Shared with system memory to 512MB (Default setting)		
	Display	DVI-I: 1920 x 1200 @ 60Hz		
I/O	USB	2 x USB3.0 with Type A 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		
	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 (Industrial)	
Interface		10/100/1000 Mbps		
Connector		Up to 3 x M12 X-coded(F)		
Storage	HDD/SSD easy-swap module	1 x ITA-EM-ST61-00A1E, supports 2 x 7mm/2.5" SSD (Default) Max to 3 x 2.5" SSD, 2 of 7mm SSD and 1 of 7mm/9.5mm SSD		
	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 battery		
	Button	1 x power on/off switch 1 x reset button		
Power	Input Voltage	DC 24V input compliant with EN50155 class S2/C1(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 SSD) -40 ~ 70 °C		Non-operating -40 ~ 85 °C
	Humidity	5% ~ 95% @ 40 °C (Non-Condensing)		
Mechanical	Dimension (W x H x D)	220 x 88 x 197.2 (8.66" x 3.46" x 7.76")/ 256 x 93.5 x 197.2mm (10.0" x 3.68" x 7.76") with mounting kits		
	Install	Wall-mount by mounting bracket		
	Ingress Protection	IP40 rating, IP50 with I/O caps		
Certification	EMC	CE/FCC Class A, CCC		
	Safety	UL, CB, CCC		
EN 50155 Compliance	Ambient Temperature	EN 50155 OT4 (-40 ~ 70 °C)		
	Shock and Vibration	IEC 61373 body mount class B		
	Interruptions of Voltage Supply	Class S2: 10 ms interruptions		
	Supply Change Over	Class C1: at 0,6 Un during 100 ms without interruptions		
	EMC	EN 50121-3-2/EN 50121-4		
Fire protection	EN 45545-2, HL3			

## Dimensions

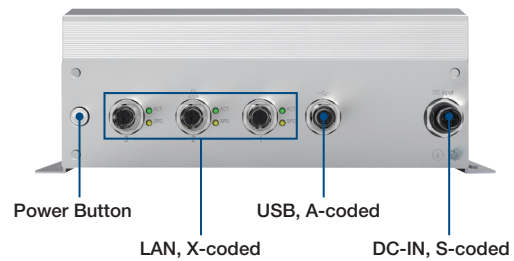
Unit: mm



## Front View



## Rear 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	Digital I/O	Display
24V <sub>DC</sub>	ITA-5831-L7A1E	i7-6822EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-L5A1E	i5-6442EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-L0A1E	G3902E	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
48V <sub>DC</sub>	ITA-5831-M7A1E	i7-6822EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-M5A1E	i5-6442EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
72V <sub>DC</sub>	ITA-5831-H7A1E	i7-6822EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-H5A1E	i5-6442EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-H0A1E	G3902E	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
110V <sub>DC</sub>	ITA-5831-S7A1E	i7-6822EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-S5A1E	i5-6442EQ	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I
	ITA-5831-S0A1E	G3902E	3	1	2	3	Up to 3	1	2 (Default)	4DI/4DO	DVI-I

ITA-5831 Series supports various I/O expansion. For more specifications, please contact your distributor or sales representative.

## Optional List

Part Number	Description
ITA-EM-SR61-00A1E	Easy-swap module, 4 x RS232/422/485 with 2KV Isolation
ITA-EM-CN61-00A1E	Easy-swap module, 2 x CAN ports with 2KV Isolation
ITA-EM-PE61-00A1E <sup>Note1</sup>	2 PoE: Each port max to 7.5W @ 52V <sub>DC</sub> 1 PoE: Up to 15.4W @ 52V <sub>DC</sub>
ITA-EM-ST61-00A1E	Dual Easy-swap storage tray, support 2 x 2.5" SSD (7mm)
ITA-EM-ST61-10A1E	Single Easy-swap storage tray, support 1 x 2.5" SSD (7mm/9.5mm)
ITA-EM-BA61-00A1E <sup>Note2</sup>	14.4V 2500mAh, discharging for 30mins @ 55 °C and charging for 3hrs @ 40 °C

Part Number	Description
FRU-ITA5831-0001	USB cable: M12 A-code-> USB Type A,10cm
FRU-ARS2600-0001	LAN cable: M12 x-code-> RJ45,10cm
FRU-ITA5831-0002	Power cable: M12 S-code-> 2pin Terminal Block,10cm
FRU-ITA5831-0003	Y cable: DVI 29P(M) -> DVI 29P(F)+D-SUB 15P(F), 18cm

Note1: Only supports EN 50155 class OT2: -40 ~ 55 °C

Note2: Charge/Discharge temperature and shipment area is limited. Please refer to ITA-EM datasheet.