



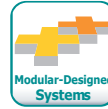
# EC510-KH/EC511-KH

CM238  
QM175

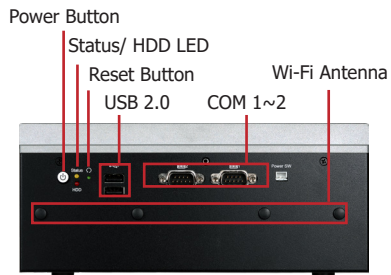


## ► Features

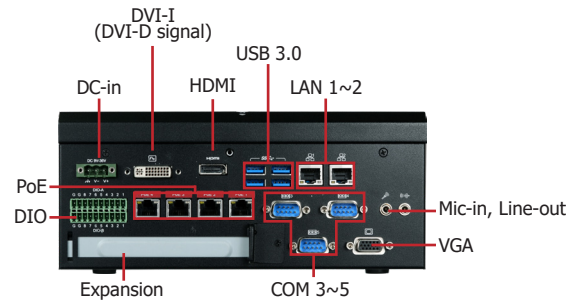
- Rugged and Fanless Embedded System, Wide Temperature: -40 to +70°C
- Intel® 7th Gen Kaby Lake Mobile Processors Xeon/Core i7/ i5/i3
- Supports Dual Channel DDR4 SODIMM up to 64GB
- Triple independent displays: 1 VGA + 1 DVI or HDMI + 1 HDMI or DP
- 4 PoE + 2 LAN, 5 COM, 4 USB 3.0, 2 USB 2.0, 1 M.2 NVMe slots, 16 bit DIO
- Supports 1 PCIe x16 or 1 PCI



## ► Panel

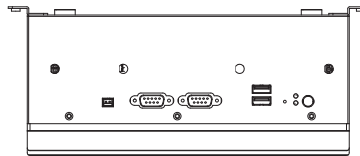


Front View

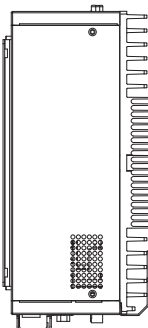


Rear View

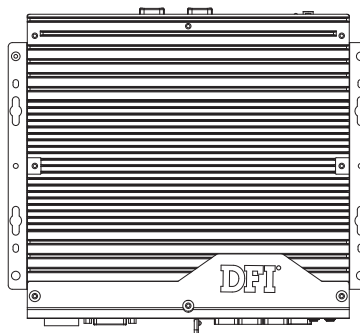
## ► Dimensions



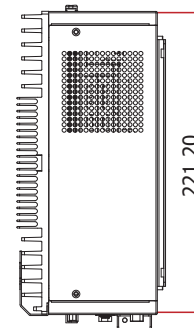
Front View



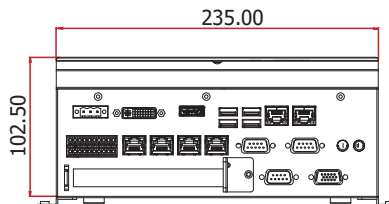
Left View



Rear View



Right View

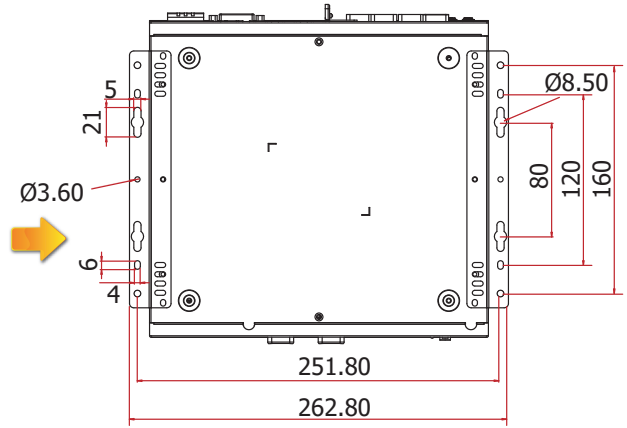
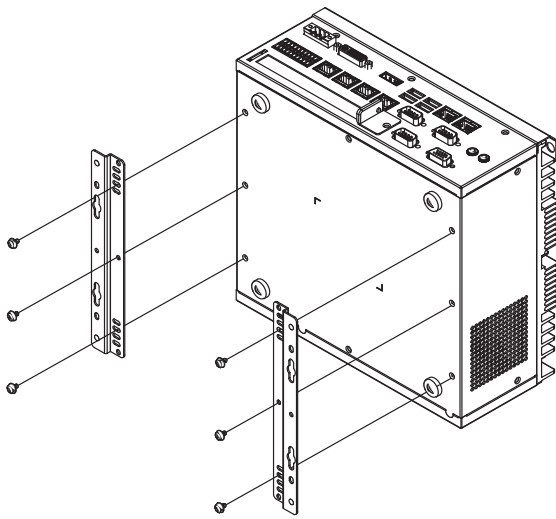


## ► Specifications

<b>SYSTEM</b>	<b>Processor</b>	7th Generation Intel® Core™ Processors, BGA 1440 Intel® Xeon® Processor E3-1535M v6, Quad Core, 8M Cache, 3.1GHz (4.2GHz), 45W (CM238 only) Intel® Core™ i7-7820EQ Processor, Quad Core, 8M Cache, 3.0GHz (3.7GHz), 45W Intel® Core™ i5-7440EQ Processor, Quad Core, 6M Cache, 2.9GHz (3.6GHz), 45W Intel® Core™ i5-7442EQ Processor, Quad Core, 6M Cache, 2.1GHz (2.9GHz), 25W Intel® Core™ i3-7100E Processor, Dual Core, 3M Cache, 2.9GHz, 35W Intel® Core™ i3-7102E Processor, Dual Core, 3M Cache, 2.1GHz, 25W	
	<b>Chipset</b>	Intel® CM238 Chipset	Intel® QM175 Chipset
	<b>Memory</b>	Two 260-pin SODIMM up to 64GB (CM238 supports ECC) Dual Channel DDR4 2400MHz	
	<b>BIOS</b>	Insyde SPI 128Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® HD Graphics	
	<b>Feature</b>	OpenGL up to 5.0, DirectX 11, OpenCL 2.1 HW Decode: HEVC/H.265, H.264, M/JPEG, MPEG2, VC1/WMV9, VP8 (8-bit), VP9 (10-bit) HW Encode: HEVC/H.265, M/JPEG, MPEG2, VP8	
	<b>Display</b>	1 x VGA 1 x HDMI or DVI (DVI-D signal) 1 x HDMI or DP	VGA: resolution up to 1920x1200 @ 60Hz DVI: resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz DP: resolution up to 4096x2304 @ 60Hz
	<b>Triple Displays</b>	VGA + HDMI or DVI (DVI-D signal) + HDMI or DP	
<b>STORAGE</b>	<b>Internal</b>	2 x 2.5" SATA 3.0 Drive Bay support RAID 0/1	
<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x16 (EC511-KH only) or 1 x PCI (EC510-KH only) 1 x M.2 2280 M key (PCIe x4 NVMe, Intel optane memory support) 1 x Full-size Mini PCIe with micro SIM socket (PCIe/USB) 1 x Full/Half-size Mini PCIe with micro SIM socket (USB)	
<b>ETHERNET</b>	<b>Controller</b>	4 x Intel® I210IT PCIe (10/100/1000Mbps) 1 x Intel® I211IT PCIe (10/100/1000Mbps) 1 x Intel® I219LM with iAMT11.0 PCIe (10/100/1000Mbps) (only Core i7/i5 supports iAMT)	
<b>LED</b>	<b>Indicators</b>	1 x Power LED 1 x HDD LED	
<b>FRONT I/O</b>	<b>Serial</b>	2 x RS-232/422/485 (DB-9) (RS-232 with power)	
	<b>USB</b>	2 x USB 2.0 (type A)	
	<b>Buttons</b>	1 x Power Button 1 x Reset Button	
	<b>Wi-Fi Antenna</b>	4 x Antenna Hole	
<b>REAR I/O</b>	<b>Ethernet</b>	6 x GbE (RJ-45) or 2 x GbE (RJ-45) + 4 x PoE	
	<b>Serial</b>	3 x RS-232/422/485 (DB-9)	
	<b>USB</b>	4 x USB 3.0 (type A)	
	<b>Display</b>	1 x VGA 1 x HDMI or DVI (DVI-D signal) 1 x HDMI or DP	
	<b>Audio</b>	1 x Line-out 1 x Mic-in (available upon request)	
	<b>DIO</b>	16 bit DIO	
<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds	
<b>SECURITY</b>	<b>TPM</b>	TPM 2.0 (optional)	
<b>POWER</b>	<b>Type</b>	Wide Range 9~36V	
	<b>Connector</b>	3-pole Terminal Block	2-pin Power Extension Switch Connector
<b>OS SUPPORT</b>		Windows 10 IoT Enterprise 64 Bit	Linux (available upon request)
<b>MECHANISM</b>	<b>Construction</b>	Metal + Aluminum	
	<b>Mounting</b>	Wall Mount	
	<b>Dimensions (W x H x D)</b>	235 x 102.5 x 221.2mm	
	<b>Weight</b>	4.1 kg	
<b>ENVIRONMENT</b>	<b>Operating Temperature</b>	0 to 50°C (HDD) -20 to 60°C (SSD) -40 to 70°C (optional)	
	<b>Storage Temperature</b>	-20 to 85°C	
	<b>Relative Humidity</b>	5 to 95% RH (non-condensing)	
<b>STANDARDS AND CERTIFICATIONS</b>	<b>Shock</b>	Half sine wave 3G, 11ms, 3 shock per axis	
	<b>Vibration</b>	IEC68-2-64	
	<b>Certification</b>	CE, FCC Class A, Microsoft Azure	

All product specifications are subject to change without notice.

Wall Mounting



### ▶ Ordering Information

Model Name	Part Number	Description
EC511-KH	750-EC5112-000G	EC511-KH Fanless, KH263-QM175, I7-7820EQ, 6 COM, 6 USB, 2 LAN + 4 POE, 16bit DIO, 1PCIe x16 DC 9~36V input, F/G SYSTEM, Op. temp. -20 to +60°C
EC511-KH	750-EC5112-100G	EC511-KH Fanless, KH263-QM175, I7-7820EQ, 6 COM, 6 USB, 6 LAN, 16bit DIO, PCIe x16 DC 9~36V input, F/G SYSTEM RoHS, Op. temp. -20 to +60°C
EC510-KH	(RFQ)	EC510-KH Fanless, KH263-QM175, I7-7820EQ, 6 COM, 6 USB, 2 LAN + 4 POE, 16bit DIO, PCI DC 9~36V input, F/G SYSTEM, Op. temp. -20 to +60°C
EC510-KH	(RFQ)	EC510-KH Fanless, KH263-QM175, I7-7820EQ, 6 COM, 6 USB, 6 LAN, 16bit DIO, PCI, DC 9~36V input, F/G SYSTEM, Op. temp. -20 to +60°C

### ▶ Optional Items

Optional Items	Part Number	Description
Wall Mount	761-EC5410-000G	Wall Mount Kit, RoHS

### ▶ Packing List

• 1 EC510-KH/EC511-KH system unit
• 1 Extend power switch cable
• 1 terminal block 3pole for DC input
• 1 cable with 2 wire stripped and tinned to DC jack