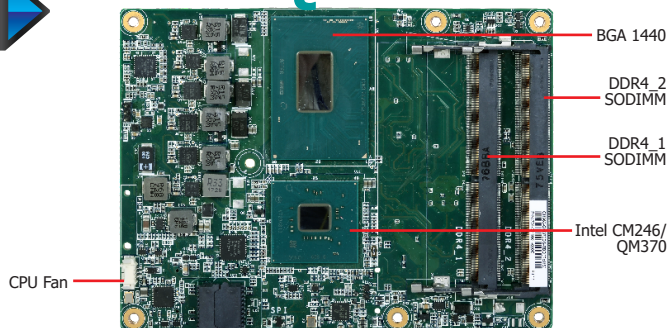




CH960-CM246 CH960-QM370

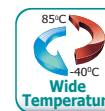
CM246
QM370



Features

- Dual channel DDR4 2666MHz SODIMM up to 64GB
- Four display ports: VGA*/DDI + LVDS*/eDP + 2 DDI Supports triple independent displays
- eDP resolution supports up to 4096x2304 @ 60Hz
- Multiple expansion: 1 PCIe x16, 8 PCIe x1
- Rich I/O: 1 Intel GbE, 4 USB 3.1, 8 USB 2.0

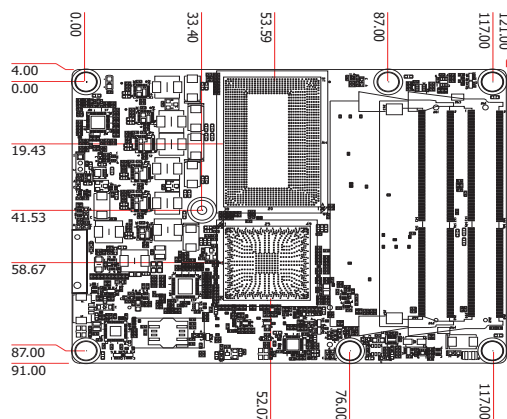
* Populated by default



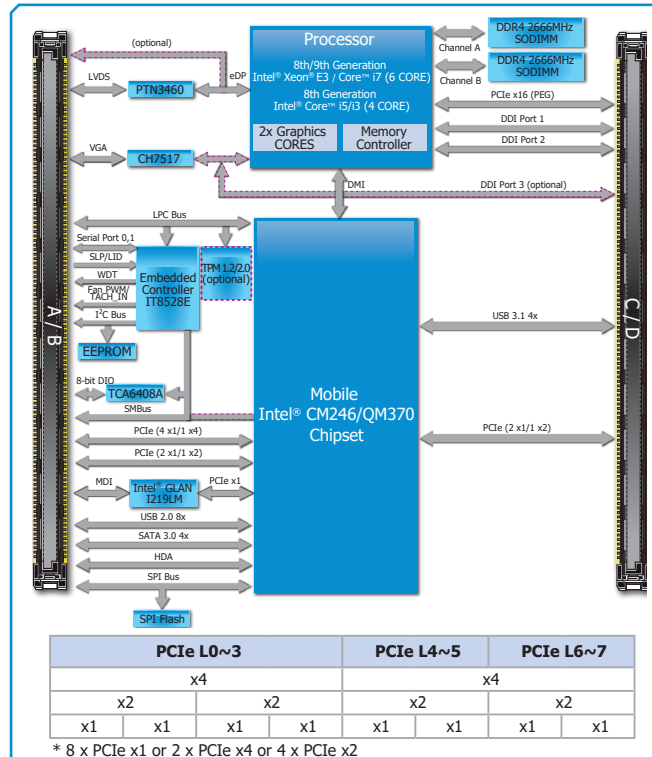
Ordering Information

Model Name	P/N	Processor	Memory	VGA/DDI	LVDS/eDP	GbE	USB 3.0	USB 2.0	Power	Thermal	Temp.
CH960-QM370TS-8850H	770-CH9601-000G	i7-8850H	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	-40 to 85°C
CH960-CM246BS-2176M	770-CH9601-100G	E-2176M	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-QM370BS-8850H	770-CH9601-200G	i7-8850H	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-QM370BS-8400H	770-CH9601-500G	i5-8400H	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-QM370BS-8100H	770-CH9601-700G	i3-8100H	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-CM246BS-2276ML	770-CH9601-800G	E-2276ML	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-CM246TS-2276ME	770-CH9601-900G	E-2276ME	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	-40 to 85°C
CH960-CM246BS-2254ML	770-CH9601-A00G	E-2254ML	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-CM246TS-2254ME	770-CH9601-B00G	E-2254ME	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	-40 to 85°C
CH960-QM370BS-9850HL	770-CH9601-C00G	i7-9850HL	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C
CH960-QM370TS-9850HE	770-CH9601-D00G	i7-9850HE	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	-40 to 85°C
CH960-CM246BS-G4930E	770-CH9601-G00G	G4930E	2 SODIMM	VGA	LVDS	1	4	8	ATX/AT	Cooler	0 to 60°C

Mechanical Drawing



Block Diagram



Specifications

Model Name		CH960-CM246	CH960-QM370
SYSTEM	Processor	8th/9th Generation Intel® Core™ Processors, BGA 1440 Intel® Core™ i7-8850H, 6 Cores, 12M Cache, 2.6GHz (4.3GHz), 45W (CM246/QM370) Intel® Core™ i5-8400H, 4 Cores, 8M Cache, 2.5GHz (4.2GHz), 45W (CM246/QM370) Intel® Core™ i3-8100H, 4 Cores, 6M Cache, 3.0GHz, 45W (QM370) Intel® Core™ i7-9850HL, 6 Cores, 9M Cache, 1.9GHz (4.1GHz), 25W (QM370) Intel® Core™ i7-9850HE, 6 Cores, 9M Cache, 2.7GHz (4.4GHz), 45W (QM370) Intel® Xeon® E-2176M, 6 Cores, 12M Cache, 2.7GHz (4.4GHz), 45W (CM246/QM370) Intel® Xeon® E-2276ML, 6 Cores, 12M Cache, 2.0GHz (4.2GHz), 25W (CM246) Intel® Xeon® E-2276ME, 6 Cores, 12M Cache, 2.8GHz (4.5GHz), 45W (CM246) Intel® Xeon® E-2254ML, 4 Cores, 8M Cache, 1.7GHz (3.5GHz), 25W (CM246) Intel® Xeon® E-2254ME, 4 Cores, 8M Cache, 2.6GHz (3.8GHz), 45W (CM246) Intel® Celeron® G4930E, 2 Cores, 2M Cache, 2.4GHz (2.4GHz), 35W (CM246)	
	Chipset	Intel® CM246 Chipset (Support ECC)	Intel® QM370 Chipset
	Memory	Two 260-pin SODIMM up to 64GB Dual Channel DDR4 2666MHz	Two 260-pin SODIMM up to 64GB Dual Channel DDR4 2666MHz
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit
	Controller	Intel® HD Graphics	Intel® HD Graphics
GRAPHICS	Feature	OpenGL up to 4.5, 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	OpenGL up to 4.5, 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
	Display	1 x VGA/DDI (DDI available upon request) 1 x LVDS/eDP (eDP available upon request) 2 x DDI (HDMI/DVI/DP++) VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 4096x2160 @ 30Hz 24bpp DVI: resolution up to 1920x1200 @ 60Hz DP++/eDP: resolution up to 4096x2304 @ 60Hz	1 x VGA/DDI (DDI available upon request) 1 x LVDS/eDP (eDP available upon request) 2 x DDI (HDMI/DVI/DP++) VGA: resolution up to 1920x1200 @ 60Hz LVDS: dual channel 24-bit, resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 4096x2160 @ 30Hz 24bpp DVI: resolution up to 1920x1200 @ 60Hz DP++/eDP: resolution up to 4096x2304 @ 60Hz
	Triple Displays	VGA + LVDS + DDI or VGA + DDI 1 + DDI 2 eDP + 2 DDI (available upon request)	VGA + LVDS + DDI or VGA + DDI 1 + DDI 2 eDP + 2 DDI (available upon request)
	Interface	1 x PCIe x16 8 x PCIe x1 1 x LPC 1 x I ² C 1 x SMBus 2 x UART (TX/RX)	1 x PCIe x16 8 x PCIe x1 1 x LPC 1 x I ² C 1 x SMBus 2 x UART (TX/RX)
AUDIO	Interface	HD Audio	HD Audio
ETHERNET	Controller	1 x Intel® I219LM with iAMT12.0 PCIe (10/100/1000Mbps)	1 x Intel® I219LM with iAMT12.0 PCIe (10/100/1000Mbps)
I/O	USB	4 x USB 3.1 8 x USB 2.0	4 x USB 3.1 8 x USB 2.0
	SATA	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10
	DIO	1 x 8-bit DIO (Default 4 inputs and 4 outputs)	1 x 8-bit DIO (Default 4 inputs and 4 outputs)
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	Available Upon Request	Available Upon Request
POWER	Type	12V, 5VSB, VCC_RTC (ATX mode) 12V, VCC_RTC (AT mode)	12V, 5VSB, VCC_RTC (ATX mode) 12V, VCC_RTC (AT mode)
	Consumption	Typical: 12V @ 0.85A (13.07Watt) Max.: 12V @ 5.75A (74.084Watt)	Typical: 12V @ 0.85A (13.07Watt) Max.: 12V @ 5.75A (74.084Watt)
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit	Windows 10 IoT Enterprise 64-bit
	Linux	Linux	Linux
ENVIRONMENT	Temperature	Operating: 0 to 60°C, -40 to 85°C Storage: -40 to 85°C	Operating: 0 to 60°C, -40 to 85°C Storage: -40 to 85°C
	Humidity	Operating: 5 to 90% RH Storage: 5 to 90% RH	Operating: 5 to 90% RH Storage: 5 to 90% RH
	MTBF	1,360,171 hrs @ 25°C; 892,642 hrs @ 45°C; 624,277 hrs @ 60°C excluding accessories Calculation Model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	1,360,171 hrs @ 25°C; 892,642 hrs @ 45°C; 624,277 hrs @ 60°C excluding accessories Calculation Model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled
MECHANICAL	Dimensions	COM Express® Basic 95mm (3.74") x 125mm (4.9")	COM Express® Basic 95mm (3.74") x 125mm (4.9")
	Compliance	PICMG COM Express® R2.1, Type 6	PICMG COM Express® R2.1, Type 6
CERTIFICATIONS	Certifications	CE, FCC, RoHS	CE, FCC, RoHS

Packing List

• 1 CH960-HM370 board	
• 1 Cooler (Height: 36.58mm)	Wide Temp: A71-111100-010G Standard: A71-111100-000G

Optional Items

• COM332-B carrier board kit	770-CM3321-000G
• Heat spreader (Height: 11mm)	A71-808316-000G