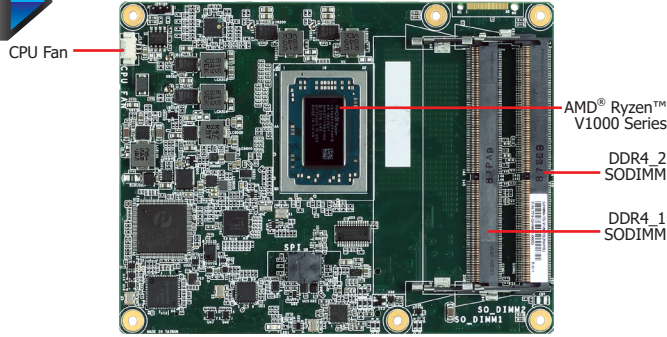


# GH960

**V1000  
/R1000**



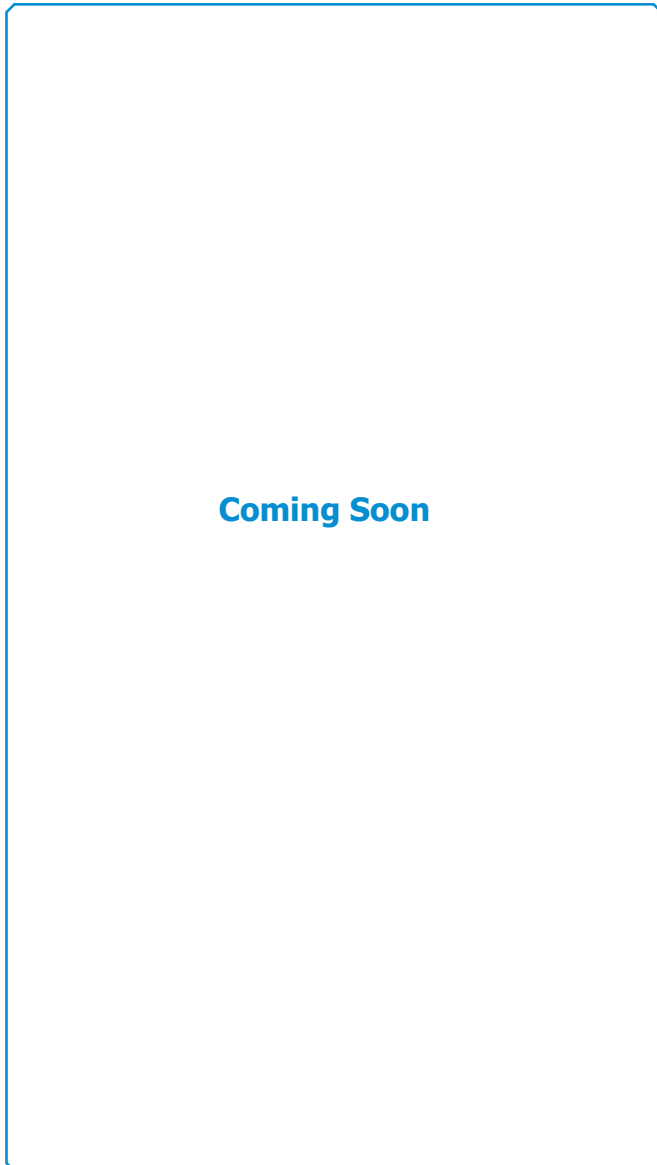
## Features

- **Dual channel DDR4 2400/3200MHz SODIMM up to 32GB**
- **Four display ports: VGA\*/DDI + LVDS\*/eDP + 2 DDI Supports three independent displays**
- **DP++ resolution supports up to 4096x2304 @ 60Hz**
- **Multiple expansion: 1 PCIe x8, 7 PCIe x1**
- **Rich I/O: 1 Intel GbE, 4 USB 3.1, 8 USB 2.0**

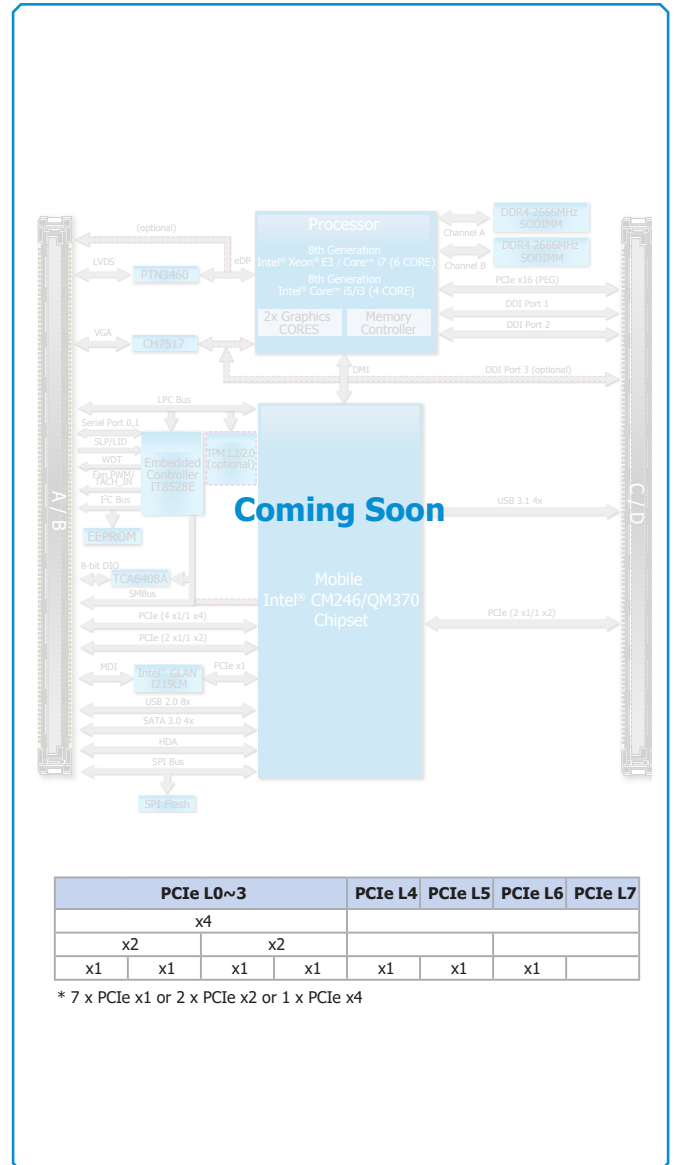
\* Populated by default



## Mechanical Drawing



## Block Diagram



## Specifications

<b>SYSTEM</b>	<b>Processor</b>	AMD® Ryzen™ Embedded V1807, Quad Core, 2MB Cache, 11 CU, 3.35GHz (3.8GHz), 35-54W AMD® Ryzen™ Embedded V1756, Quad Core, 2MB Cache, 8 CU, 3.25GHz (3.6GHz), 35-54W AMD® Ryzen™ Embedded V1605, Quad Core, 2MB Cache, 8 CU, 2.0GHz (3.6GHz), 12-25W AMD® Ryzen™ Embedded V1202, Dual Core, 1MB Cache, 3 CU, 2.3GHz (3.2GHz), 12-25W AMD® Ryzen™ Embedded R1606G, Dual Core, 1MB Cache, 3 CU, 2.6GHz (3.5GHz), 12-25W AMD® Ryzen™ Embedded R1505G, Dual Core, 1MB Cache, 3 CU, 2.4GHz (3.3GHz), 12-25W	
	<b>Memory</b>	Two 260-pin SODIMM up to 32GB	Dual Channel DDR4 up to 2400/3200MHz
	<b>BIOS</b>	Insyde SPI 64Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	AMD® Radeon™ Vega Graphics	
	<b>Feature</b>	OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9	
	<b>Display</b>	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 eDP: resolution up to 3840x2160 @ 60 Hz HDMI: resolution up to 2560x1600 @ 60Hz or 4096x2160 @ 24Hz DVI: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2304 @ 60Hz
	<b>Triple Displays</b>	VGA + LVDS + DDI or VGA + DDI 1 + DDI 2	eDP + 2 DDI (available upon request)
<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x8 (Gen 3) 7 x PCIe x1 or 2 x PCIe x2 or 1 x PCIe x4 1 x LPC 1 x I <sup>2</sup> C 1 x SPI 1 x SMBus 2 x UART (TX/RX)	
	<b>Interface</b>	HD Audio	
<b>ETHERNET</b>	<b>Controller</b>	1 x Intel® I210AT with iAMT12.0 PCIe (10/100/1000Mbps) (normal temp.) or 1 x Intel® I210IT with iAMT12.0 PCIe (10/100/1000Mbps) (wide temp.)	
<b>I/O</b>	<b>USB</b>	4 x USB 3.1 8 x USB 2.0	
	<b>SATA</b>	1 or 2 x SATA 3.0 (up to 6Gb/s)	RAID 0/1
	<b>DIO</b>	1 x 8-bit DIO (Default 4 inputs and 4 outputs)	
<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>	TPM1.2/2.0 (Available Upon Request)	
<b>POWER</b>	<b>Type</b>	12V, 5VSB, VCC_RTC (ATX mode)	12V, VCC_RTC (AT mode)
	<b>Consumption</b>	TBD	
<b>OS SUPPORT</b>		Windows: Windows 10 IoT Enterprise 64-bit	Linux
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: 0 to 60°C -40 to 85°C (with cooler)	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	TBD	
<b>MECHANICAL</b>	<b>Dimensions</b>	COM Express® Basic	95mm (3.74") x 125mm (4.9")
	<b>Compliance</b>	PICMG COM Express® R3.0, Type 6	

## Packing List

• 1 GH960 board	
• 1 DVD	
• 1 Cooler (Height: 36.58mm)	TBD

## Optional Items

• carrier board kit	TBD
• Heat spreader (Height: 11mm)	TBD