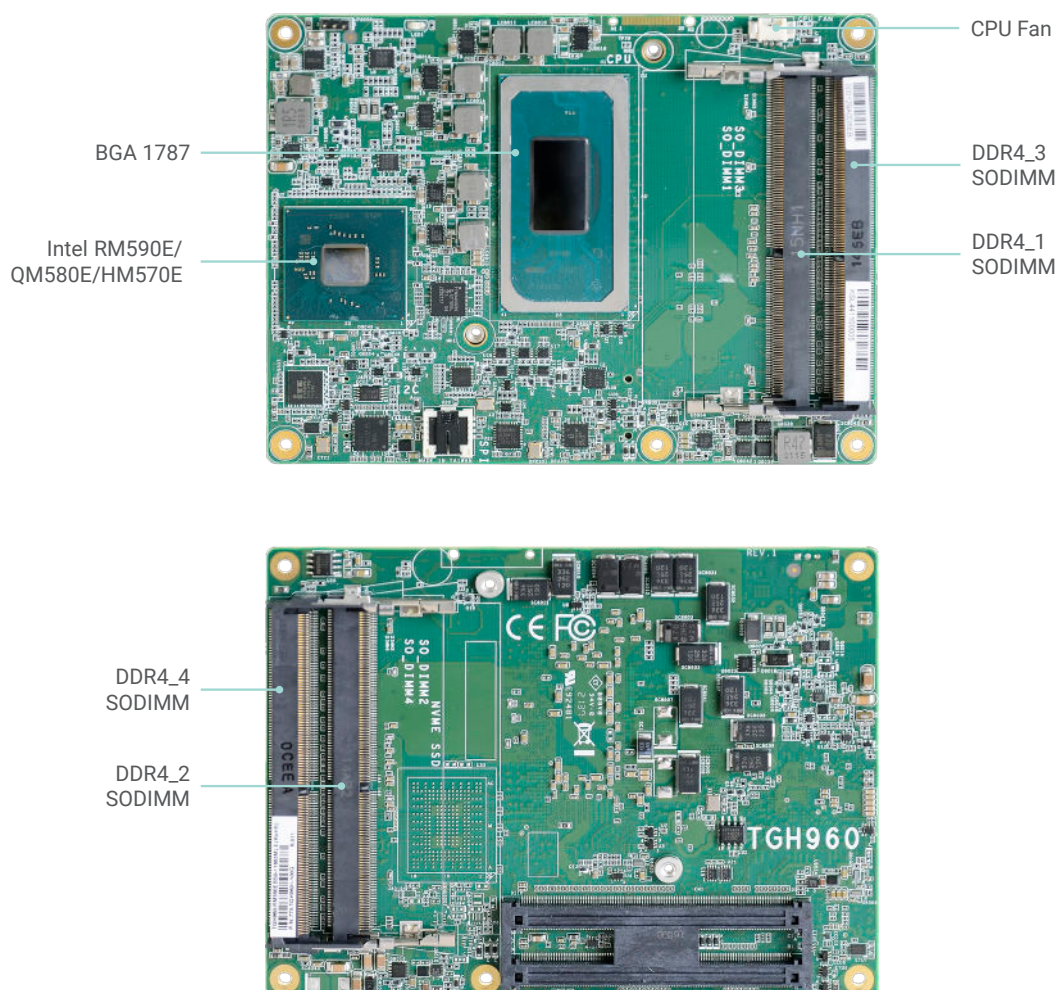


TGH960- RM590E/QM580E/HM570E

11th Gen Intel® Core™



KEY FEATURES



DDR4

4 DDR4-3200
SODIMM up to 128GB



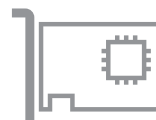
4K High Resolution

DP++ resolution
supports up to
4096x2304 @ 60Hz



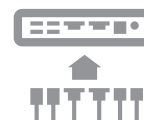
Multiple Displays

Five display ports:
VGA + LVDS*/eDP +
3 DDI



Multiple Expansion

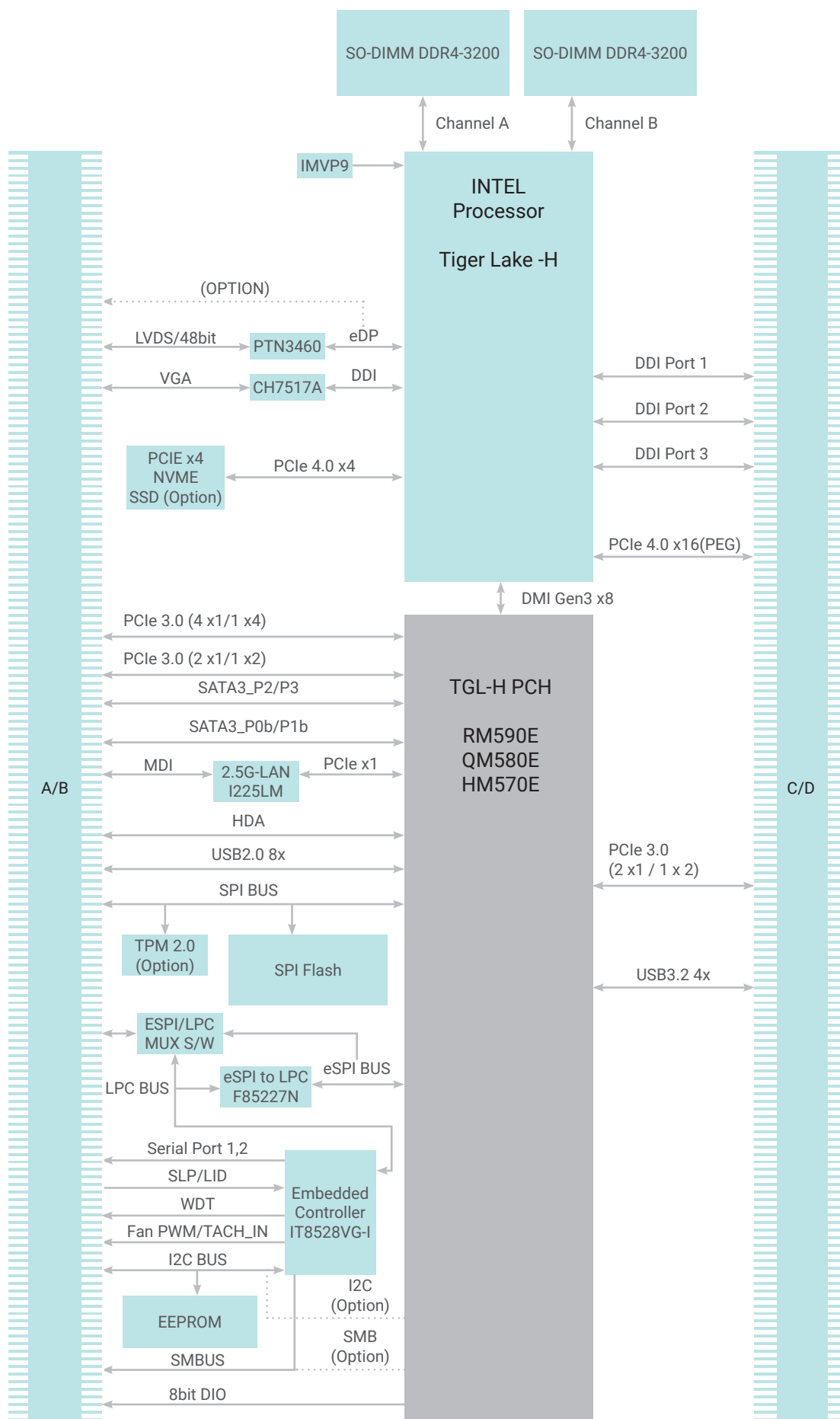
1 PCIe x16,
up to 8 PCIe x1



Rich I/O

1 Intel 2.5GbE, 4 USB
3.2 Gen2, 8 USB 2.0

BLOCK DIAGRAM



SPECIFICATION

SYSTEM	Processor	11th Gen Intel® Core™ Processors, BGA 1787 Intel® Xeon® W-11865MRE, 8 Cores, 24M Cache, 2.6GHz (4.7GHz), 45W (RM590E) Intel® Xeon® W-11865MLE, 8 Cores, 24M Cache, 1.5GHz (4.5GHz), 25W (RM590E) Intel® Core™ i7-11850HE, 8 Cores, 24M Cache, 2.6GHz (4.7GHz), 45W (RM590E/QM580E) Intel® Xeon® W-11555MRE, 6 Cores, 12M Cache, 2.6GHz (4.5GHz), 45W (RM590E) Intel® Xeon® W-11555MLE, 6 Cores, 12M Cache, 1.9GHz (4.4Hz), 25W (RM590E) Intel® Core™ i5-11500HE, 6 Cores, 12M Cache, 2.6GHz (4.5GHz), 45W (RM590E/QM580E) Intel® Xeon® W-11155MRE, 4 Cores, 8M Cache, 2.4GHz (4.4GHz), 45W (RM590E) Intel® Xeon® W-11155MLE, 4 Cores, 8M Cache, 1.8GHz (3.1GHz), 25W (RM590E) Intel® Core™ i3-1100HE, 4 Cores, 8M Cache, 2.4GHz (4.4GHz), 45W (RM590E/QM580E/HM570E) Intel® Celeron® 6600HE, 2 Cores, 8M Cache, 2.6GHz, 35W (RM590E/QM580E/HM570E)	
	Chipset	Intel® RM590E/QM580E/HM570E Chipset	
	Memory	Four 260-pin SODIMM up to 128GB	Dual Channel DDR4 3200MHz
	BIOS	AMI SPI 256Mbit	
	GRAPHICS	Controller	Intel® Iris® Xe Graphics
Feature		OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: MPEG2, WMV9, AVC/H264, JPEG/MJPEG, HEVC/H265, VP9, AV1 HW Encode: AVC/H264, JPEG, HEVC/H265, VP9	
Display		1 x VGA 1 x LVDS/eDP (eDP available upon request) 3 x DDI (HDMI/DP++)	
Multi-displays		VGA + LVDS + 2 DDI or VGA + 3 DDI or LVDS + 3 DDI	
EXPANSION	Interface	1 x PCIe x16 (Gen 4) 8 x PCIe x1 (Gen 3) 1 x LPC 1 x I2C 1 x SMBus 2 x UART (TX/RX)	
AUDIO	Audio Codec	HD Audio	
ETHERNET	Phy	1 x Intel® I225 series (10/100/1000Mbps/2.5G)	
I/O	USB	4 x USB 3.2 Gen2 8 x USB 2.0	
	SATA	4 x SATA 3.0 (up to 6Gb/s) support RAID 0/1/5/10	
	DIO	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	
STORAGE (Option)	NVMe SSD	PCIe x4 Gen4, 64GB~1TB SSD and 2nd DDR4 SO-DIMM(DIMM2) is alternative function.	
SECURITY	TPM	TPM2.0 (Available Upon Request)	
POWER	Type	8.5V~20V, 5VSB, VCC_RTC (ATX mode) 8.5V~20V, VCC_RTC (AT mode)	
	Consumption	TBD	
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit	
	Linux	Ubuntu 20.04	
ENVIRONMENT	Temperature	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	
	MTBF	TBD	
MECHANICAL	Dimensions	COM Express® Basic	95mm (3.74") x 125mm (4.9")
	Compliance	PICMG COM Express® R3.0, Type 6	

ORDERING INFORMATION

Part Number	Model Name	CPU	PCH	Onboard NVMe SSD	LVDS/eDP	USB3.2 Gen2	USB2.0	Thermal	Operating temp.
770-TGH9601-000G	TGH960-QM580E-BS0-11850HE	I7-11850HE	QM580E	-	LVDS	4	8	Cooler	0-60°C
770-TGH9601-100G	TGH960-RM590E-BS0-11865MLE	W-11865MLE	RM590E	-	eDP	4	8	Cooler	0-60°C
770-TGH9601-200G	TGH960-RM590E-TS6-11865MRE	W-11865MRE	RM590E	64GB	LVDS	4	8	Cooler	-40~85°C
770-TGH9601-300G	TGH960-HM570E-BS0-6600HE	Celeron 6600HE	HM570E	-	LVDS	4	8	Cooler	0-60°C