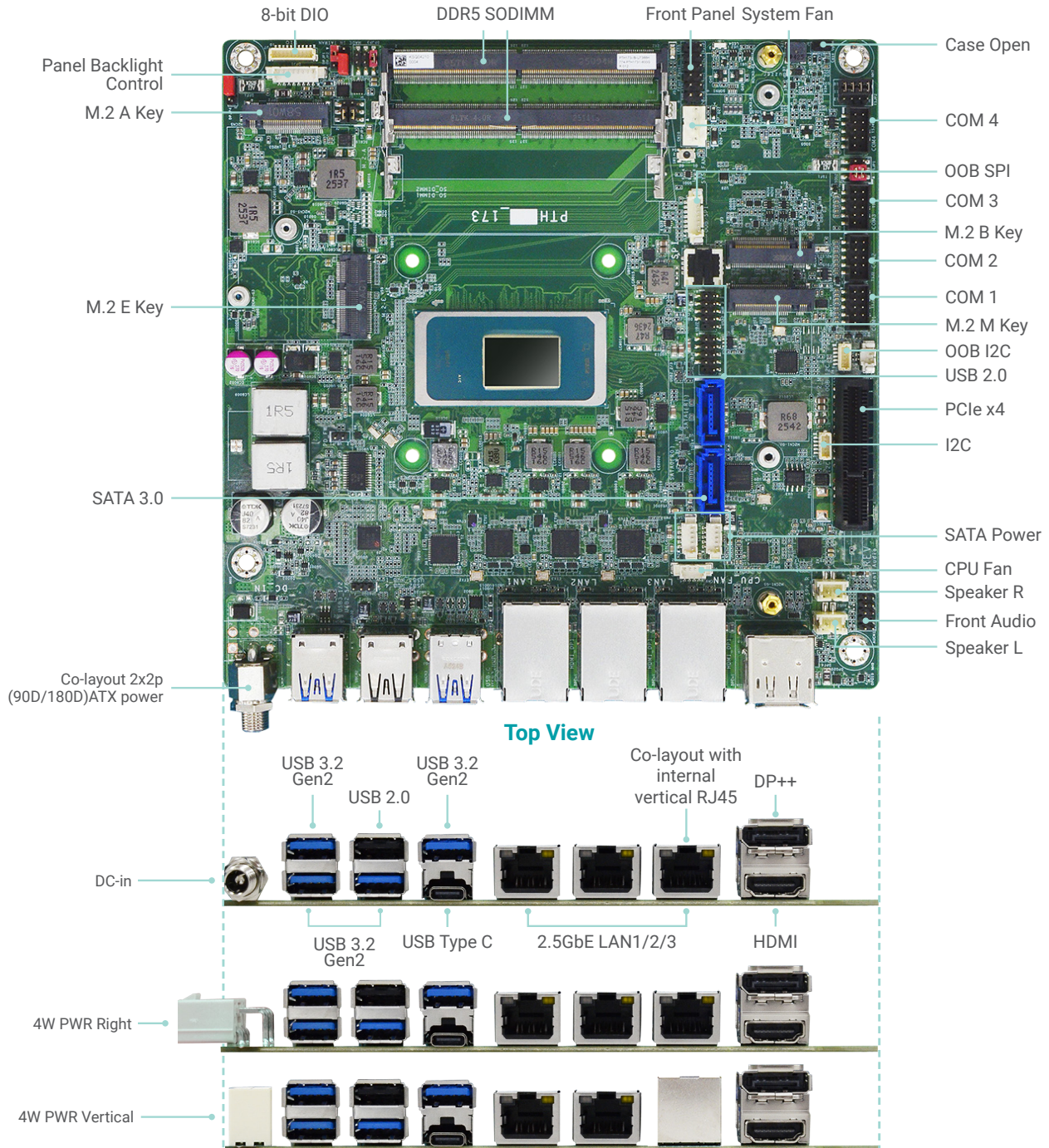


PTH171/PTH173

Inter Panther Lake H
Mini-ITX



KEY FEATURES



DDR5

2 DDR5 6400/7200MHz SODIMM up to 128GB



4K High Resolution

Supports 4K/ 2K resolution



Quad Displays

HDMI, DP, USB Type C (DP alt-mode/USB3.2 Gen2 /PD 15W), M2A-Display (optional)



Multiple Expansion

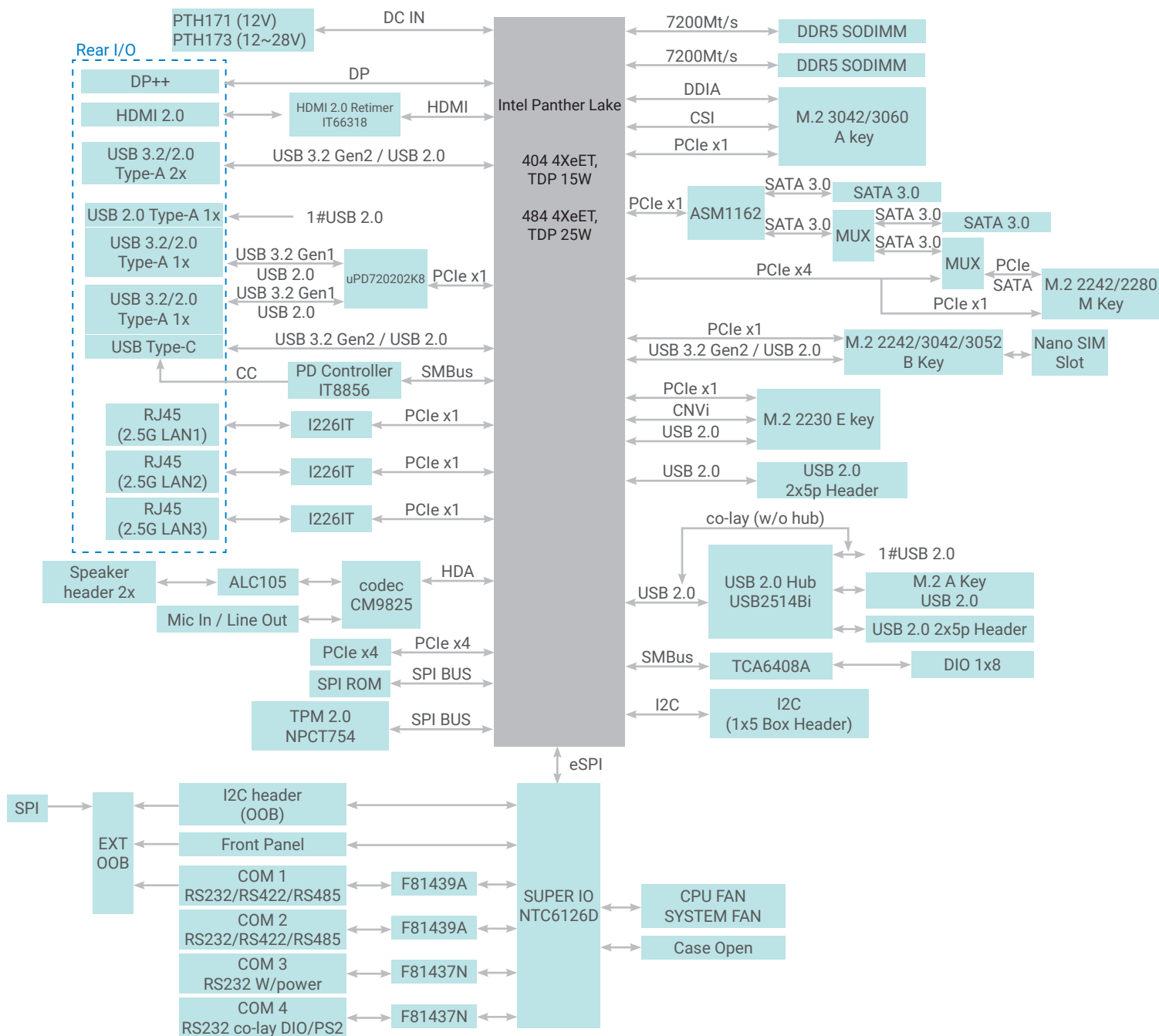
1 PCIe Gen5 x4, 1 M.2 M Key Gen5 x4, 1 M.2 B Key Gen4 x1, 1 M.2 E Key Gen4 x1, 1 M.2 A Key Gen4 x1



Rich I/O

Up to 3 2.5GbE LAN, 4 USB 3.2, 1 USB Type C, 5 USB 2.0, 2 SATA 3.0, 4 COM

BLOCK DIAGRAM



SPECIFICATION

Model Name		PTH171	PTH173
SYSTEM	Processor	Inter Panther Lake H processor, TDP up to 25W Intel® Core™ Ultra 9 388H (H484-12XeCT, vPro) Intel® Core™ Ultra X7 358HR (H484-12XeCT, vPro) Intel® Core™ Ultra 7 366HRE (484-4XeET, vPro) Intel® Core™ Ultra 7 365RE (404-4XeET, vPro) Intel® Core™ Ultra 5 336HRE (444-4XeET, vPro) Intel® Core™ Ultra 5 335RE (404-4XeET, vPro)	
	Memory	2x 262-pin SODIMM up to 128GB Dual-channel SODIMM DDR5 up to 6400 MHz (H404)/7200 MHz (H484)	2x 262-pin SODIMM up to 128GB Dual-channel SODIMM DDR5 up to 6400 MHz (H404)/7200 MHz (H484)
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit
GRAPHICS	Controller	Intel® Arc Xe3	Intel® Arc Xe3
	Display	1 x HDMI 1 x DP++ HDMI: resolution up to 4096x2160 @60Hz DP: resolution up to 4096x2304 @60Hz USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W): resolution up to 4096x2304 @60Hz (HBR2)	1 x HDMI 1 x DP++ HDMI: resolution up to 4096x2160 @60Hz DP: resolution up to 4096x2304 @60Hz USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W): resolution up to 4096x2304 @60Hz (HBR2)
	Quad Dis-plays	HDMI + DP + USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W) + M2A-Display (optional)	HDMI + DP + USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W) + M2A-Display (optional)
EXPANSION	Interface	1 x PCIe Gen 5 x4 slot	1 x PCIe Gen 5 x4 slot
		1 x M.2 2242/2280 M Key (PCIe Gen5x4, SATA3 opt. selected by BIOS, support NVMe)	1 x M.2 2242/2280 M Key (PCIe Gen5x4, SATA3 opt. selected by BIOS, support NVMe)
		1 x M.2 2242/3042/3052 B Key (PCIe Gen4x1 shared with M.2 A key by request, USB3.2 Gen2, USB2.0, SIM)	1 x M.2 2242/3042/3052 B Key (PCIe Gen4x1 shared with M.2 A key by request, USB3.2 Gen2, USB2.0, SIM)
		1 x M.2 2230 E Key (PCIe Gen4x1 and USB2.0, support Intel® CNVi,WIFI7)	1 x M.2 2230 E Key (PCIe Gen4x1 and USB2.0, support Intel® CNVi,WIFI7)
		1 x M.2 3042/3060 A Key (Standoff 3030) Support M2A Display solution (eDP/LVDS/VGA/DP/HDMI or DVI via optional cable) Support M2A-M21 expansion solution (PCIEx1,USB3/USB2,SIM)	1 x M.2 3042/3060 A Key (Standoff 3030) Support M2A Display solution (eDP/LVDS/VGA/DP/HDMI or DVI via optional cable) Support M2A-M21 expansion solution (PCIEx1,USB3/USB2,SIM)
AUDIO	Audio Codec	Realtek ALC888S	Realtek ALC888S
ETHERNET	Controller	LAN1/2: i226V/IT (10/100/1000/2.5G speeds) LAN3(vPro): i226LM/IT (10/100/1000/2.5G speeds)	LAN1/2: i226V/IT (10/100/1000/2.5G speeds) LAN3(vPro): i226LM/IT (10/100/1000/2.5G speeds)
REAR I/O	Ethernet	Up to 3 x 2.5GHz RJ45 (LAN 3 colayout with internal vertical RJ45 by option)	Up to 3 x 2.5GHz RJ45 (LAN 3 colayout with internal vertical RJ45 by option)
	USB	2 x USB 3.2 Gen2 Type A 2 x USB 3.2 Gen1 Type A 1 x USB 2.0 Type A 1 x USB 3.2 Gen2 Type C (DP alt-mode/USB3.2 Gen 2/PD 15W)	2 x USB 3.2 Gen2 Type A 2 x USB 3.2 Gen1 Type A 1 x USB 2.0 Type A 1 x USB 3.2 Gen2 Type C (DP alt-mode/USB3.2 Gen 2/PD 15W)
	Display	1 x HDMI 2.0 1 x DP++	1 x HDMI 2.0 1 x DP++
	Serial	2 x RS-232/422/485 (2.0mm pitch) 1 x RS-232 with power (2.0mm pitch) 1 x RS-232 (2.0mm pitch) colay with DIO-4bit or PS/2 (Option)	2 x RS-232/422/485 (2.0mm pitch) 1 x RS-232 with power (2.0mm pitch) 1 x RS-232 (2.0mm pitch) colay with DIO-4bit or PS/2 (Option)
INTERNAL I/O	USB	4 x USB 2.0 (2.0mm pitch) 1 x M.2 A key with M2A-M21 supports up to 2 USB3 Gen1 and 4 USB2.0 (Option)	4 x USB 2.0 (2.0mm pitch) 1 x M.2 A key with M2A-M21 supports up to 2 USB3 Gen1 and 4 USB2.0 (Option)
	Display	1 x M.2 A key, support M2A-Display (eDP / LVDS / VGA / DP / HDMI or DVI via optional cable)	1 x M.2 A key, support M2A-Display (eDP / LVDS / VGA / DP / HDMI or DVI via optional cable)
	Audio	1 x Line-out/Mic-in 2 x 3W speaker header (L/R)	1 x Line-out/Mic-in 2 x 3W speaker header (L/R)
	SATA	2 x SATA 3.0 H484 RAID 0,1,5 supported by Intel VMD H404 RAID 0,1 (shared with M.2 M key)	2 x SATA 3.0 H484 RAID 0,1,5 supported by Intel VMD H404 RAID 0,1 (shared with M.2 M key)
	DIO	1 x 8-bit DIO	1 x 8-bit DIO
	Case open	1 x case open header	1 x case open header
	SMBus	1 x SMBus	1 x SMBus
	WATCHDOG TIMER	System Reset, Programmable via Software from 1 to 255 Seconds	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	dTPM (default) fTPM (option)	dTPM (default) fTPM (option)
POWER	Type	Single 12VDC	Wide Range 12~28VDC
	Connector	DC-in Jack Right Angle Connector (4-pin) (Option) Straightl Type Connector (4-pin) (Option)	DC-in Jack Right Angle Connector (4-pin) (Option) Straightl Type Connector (4-pin) (Option)
	Consumption	Idle: TBD Max: TBD	Idle: TBD Max: TBD
	RTC Battery	CR2032 Coin Cell	CR2032 Coin Cell

SPECIFICATION

Model Name		PTH171	PTH173
OS SUPPORT	Microsoft	Windows 11 24H2 LTSC 64-bit	Windows 11 24H2 LTSC 64-bit
	Linux	Ubuntu 24.04	Ubuntu 24.04
ENVIRONMENT	Temperature	Operating: -5 to 65°C, -20 to 70°C Storage: -40 to 85°C	Operating: -5 to 65°C, -20 to 70°C Storage: -40 to 85°C
	Humidity	Operating: 5 to 95% RH Storage: 5 to 95% RH	Operating: 5 to 95% RH Storage: 5 to 95% RH
ENVIRONMENT	MTBF	TBD	TBD
MECHANISM	Dimensions	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")	Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7")
	Height	PCB: TBDmm Top Side: TBDmm Bottom Side: TBDmm	PCB: TBDmm Top Side: TBDmm Bottom Side: TBDmm
STANDARDS AND CERTIFICATION	Certifications	CE, FCC, RoHS, UKCA	CE, FCC, RoHS, UKCA

ORDERING INFORMATION

Model Name	P/N	CPU	Memory	Rear I/O			Internal I/O			Power	Operating Temp.
				Display	LAN	USB	Expansion	USB	TPM		
PTH171-IB-UX7358HR	770-PTH171X-000G	Ultra X7 358HR	2 DDR5	1 DP++, 1 HDMI20	3	2 USB 3.2 Gen2 Type A 2 USB 3.2 Gen1 Type A 1 USB 2.0 Type A 1 USB 3.2 Gen2 Type C	w/o PCIe slot, M.2 M/B/E/A Key	5 USB 2.0	Yes	12VDC	-5 to 65°C
PTH171-IE-U7366HRE	770-PTH171X-100G	Ultra 7 366HRE					M.2 M/B/E/A Key			12VDC	-20 to 70°C
PTH171-IE-U7365RE	770-PTH171X-200G	Ultra 7 365RE					M.2 M/B/E/A Key			12VDC	-20 to 70°C
PTH171-IE-U5336HRE	770-PTH171X-300G	Ultra 5 336HRE					M.2 M/B/E/A Key			12VDC	-20 to 70°C
PTH171-IE-U5335RE	770-PTH171X-400G	Ultra 5 335RE					M.2 M/B/E/A Key			12VDC	-20 to 70°C
PTH171-IB-U9388H	770-PTH171X-500G	Ultra 9 388H					w/o PCIe slot, M.2 M/B/E/A Key			12VDC	-5 to 65°C
PTH173-IB- UX7358HR	770-PTH173X-000G	Ultra X7 358HR					w/o PCIe slot, M.2 M/B/E/A Key			12~28VDC	-5 to 65°C
PTH173-IE-U7366HRE	770-PTH173X-100G	Ultra 7 366HRE					M.2 M/B/E/A Key			12~28VDC	-20 to 70°C
PTH173-IE-U7365RE	770-PTH173X-200G	Ultra 7 365RE					M.2 M/B/E/A Key			12~28VDC	-20 to 70°C
PTH173-IE-U5336HRE	770-PTH173X-300G	Ultra 5 336HRE					M.2 M/B/E/A Key			12~28VDC	-20 to 70°C
PTH173-IE-U5335RE	770-PTH173X-400G	Ultra 5 335RE					M.2 M/B/E/A Key			12~28VDC	-20 to 70°C
PTH173-IB-U9388H	770-PTH173X-500G	Ultra 9 388H					w/o PCIe slot, M.2 M/B/E/A Key			12~28VDC	-5 to 65°C

OPTIONAL ITEMS

Model Name	P/N	CPU
WM130 Chassis		CASE, mini-ITX, 200x210.6x153.8mm, for 6.7"x6.7"
Power adapter-230W/24V	671-123001-000G	POWER ADAPTER,230W,HA-1231-24LC,Input:100~240V,Output:24V/9.6A,155x75x25.4mm,L=1500mm,DC Cord 5.5*2.5mm,LV6,62368-1,HA-1231-24LC-D1(LITEON)RoHS
Power adapter-150W/24V	671-115004-000G	POWER ADAPTER,150W,PA-1151-08EA,Input:100~240V,Output:24V/6.25A,138x66x22mm,L=1500mm,DC PLUG 5.5*2.5*10mm(10A),LV6,62368-1,PA-1151-08EA(LITEON)RoHS
Power adapter-120W/24V	671-112005-100G	POWERADAPTER,120W,GST120A24,Input:100~240V,Output:24V/5A,167x67x35mm,L=1200mm,DC Cord 5.5*2.5*17mm(Lockable),LV6,62368-1,W/DFI JP PSE,GST120A24-DFI(MEAN WELL)RoHS
Power adapter-150W/12V	671-115003-000G	POWER ADAPTER,150W,EA11701E-1200,Input:100~240V,Output:12V/12.5A,179x65x40mm,L=1500mm,DC PLUG 5.5*2.5*10mm(10A),LV6,62368-1,EA11701E(T02)(EDAC)RoHS
Power adapter-60W/12V	671-106012-000G	POWER ADAPTER,60W,EA10681N-120,Input:100~240V,Output:12V/5A,113x49x35mm,L=1500mm,DC PLUG 5.5*2.5*10mm(Lockable),LV6,62368-1,EA10681N(183)(EDAC)RoHS
M2A-LVDS	770-M2ALVD-000G	M.2 A/E key DP-to-LVDS Display Module
M2A-EDP	770-M2AEDP-000G	M.2 A/E key DP-to-EDP Display Module
M2A-HDMI (HDMI/DVI)	770-M2AHDM-000G	M.2 A/E key DP-to-HDMI 2.0 Internal Module
	A81-026014-004G	HDMI Extend CABLE (90D M, L=300mm)
	A81-013010-017G	DVI CABLE, DVI-I 24+5P W/SCREW to HDMI, L=300mm
M2A-DP	770-M2ADP1-000G	M.2 A/E key DP-to-Internal DP Module w/re-driver
	A81-020081-023G	DISPLAYPORT Extend CABLE (90D M, L=300mm)
M2A-VGA	770-M2AVGA-000G	M.2 A/E key DP-to-VGA Internal Module
	A81-012004-001G	VGA CABLE,PITCH:2.54mm;L=350mm
M2A-M21 (to B key w/I SIM slot)	770-M2AM21-000G	M.2 A/E key-to-M.2 M/B key(PCIE) (3060) adapter wi SIM slot, 4 USB2.0
M2A-M21 (to B key w/I SIM slot)	770-M2AM21-100G	M.2 A/E key-to-M.2 M/B key(USB3/2) (3060) adapter wi SIM slot, 4 USB2.0
M2A-M21 (2xUSB3/4xUSB2)	770-M2AM21-200G	M.2 A/E key to USB module (3060) with 2 USB3.2 Gen1, 4 USB2.0
M2A-M21 (4xUSB2)	770-M2AM21-300G	M.2 A/E key-to-USB adapter with 4 USB2.0
M2A-MIPI (MIPI-CST)	770-M2AMIP-000G	M.2 A key-to-MIPI CSI Adapter
SMBUS cable	A81-009716-018G	WIRE CABLE, SMBus, WL1010 1*5P/1mm to KB931 2*3P/2mm, L=200mm, UL1571, 28AWG, CYT23050202BAA(GREAT IDEAL)RoHS
COM Port Cable	A81-015115-018G	COM PORT CABLE, D-SUB 9P M to KB931 2*5P/2mm, L=250mm, UL2651, 28AWG
PS/2 cable	A81-023005-009G	PS2 CABLE, MD 6P F x2 (GREEN & PURPLE) W/BACKET to 2032H 2*5P/2mm, L=400mm, UL2725, 28AWG
SATA cable w/lock	A81-002013-000G	Serial ATA data & power cable w/lock (Length: 300mm)
SATA PWR adapter cable	A81-009794-018G	SATA Power 5P/1.25mm to 4P/2.5mm,Length: 100mm
USB 2.0 cable	A81-000060-054G	USB 2.0 1-port cable (Length: 200mm) NO Bracket
USB 2.0 cable	A81-001032-016G	USB 2.0 2-port cable (Length: 200mm) NO Bracket
DIO cable	A81-009715-018G	WIRE CABLE, DIO, WL1010 1*10P/1mm to PH-8Y 1*8P/2mm and PH-4Y 1*4P/2mm, L=200mm, UL1571, 28AWG
Fan cable	A81-009771-018G	CPU/System 3P/4P Fan 1.25p-to2.54p adatper cable, Length: 150mm
Front Panel cable	A81-009615-016G	WIRE CABLE, Front panel, HSG 2*6P/2.54mm to 3φ LED*2 (orange/green) & SW Button, L=270mm,
Front Audio, w/bracket, 300mm	A81-022034-016G	AUDIO CABLE, HSG 2*5P/2.0mm to 3.5 audio jack green*1 and pink *1, w/ STD bracket, L=300mm, UL2651, 28AWG
Front Audio, 110mm	A81-022036-016G	AUDIO CABLE, HSG 2*5/2mm TO RED Earphone Jack and Green Earphone Jack, L=110mm, UL1517, 28AWG
WIFI7 BE211	TBD	TBD
KS-AUD2	770-KSAUD2-000G	Audio Amplifiers Mono/Stereo High-Power Class D Amplifier
SPEAKER 3W,150mm	293-130020-010G	SPEAKER 3W,150mm
SPEAKER 5W, 350mm	293-050001-100G	SPEAKER 5W,8Ω,w/CABLE 350mm

PACKING LIST

• 1 PTH171/PTH173 motherboard	
• 1 COM port cable with bracket (Length: 250mm, 1 x COM ports)	A81-015115-018G
• 1 Serial ATA data with power cable (Length: 300mm)	A81-002144-018G
• 4 M.2 screw/standoff	
• 1 I/O Shield	
- (2 LAN, Regular type)(For Sample)	TBD
- (3 LAN, Regular type)(For Sample)	TBD
- (2 LAN, Thin type)(For Sample)	TBD
- (3 LAN, Thin type)(For Sample)	TBD
• 1 Cooler	
- (Wide/Normal Temp. -Cooler for 25W)	A71-108160-030G