



QUTHC Limited

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PC BOX(PB02) Specification



Version: 20230208		
Product Model		PB02-ADL-N
PD ID Model		PB02 passive cooled
PCB		PCB:114*116*1.2mm (8-layers)
Brief Introduction		PB BOX with powered by DC / Triple display
Features		1. 3 displays up to 4K 60fps : 1) HDMI2.0 4K@60 2) MINI DP 4K@60 3) VGA 2. 4x USB ports: 3.1 GEN1 X2 + USB2.0 x2 3. USB TYPEC: usb3.1 gen1 4. WIFI 802.11 AC dual band, 2T2R 5. Gigabit Lan
Mechanical size	Unit dimension (L×W×H)	127*127*38mm
HARDWARE SPEC		
Processor	Model	Alder Lake N Series
	CPU and Speed	1) N100(Quad core, 0.8GHz~3.4GHz, 4 threads, 6MB cache) 2) N200 (Quad core, 1.0GHz~3.6GHz,4 threads, 6MB cache) 3) i3-N300 : (Octa core, 0.8GHz~3.8GHz,8 threads, 6MB cache)
Graphics		N100 &N200: Intel® UHD Graphics 750 MHz N300: Intel® UHD Graphics 1.25 GHz
DDR	Volume	DDR5 4800 MT/s up to 16GB
Storage	eMMC	32GB/64GB/128GB/256GB on board
	M.2 SSD(M-KEY 2280)	x1(support NVME or SATA SSD)
	2.5"HDD	x1, if use FAN, no space for HDD, subject to actual development.
WiFi Module	Standard/Frequency Range	WiFi 5: AC3165/AC7265/AC9260/AC9560 or WiFi 6: AX201

DISPLAY Output	Resolution	HDMI2.0 4K@60 MINI DP 4K@60 VGA up to 1080P
Connector	DC CNN	12V/2A
	TYPE C	x1(usb2.0)
	Micro SD / TF Card slot	× 1
	USB3.0 Type A (Host)	x2
	USB2.0 Type A	x2
	HDMI output Type A	x1 (HDMI 2.0)
	DP output (MINI DP)	x1(dp1.2)
	VGA	x1
	RJ45	x1 (10/100/1000Mbps(Gigabit lan), support WOL/PXE
	Phone Jack (φ3.5mm)	x1 (Mic&L/R)
Button / Keys	Power ON/OFF	× 1
	BIOS recovery (inside)	x1
Environment	Working temp	0 to 30 °C
	Storage temp	-10 to 40 °C
BIOS	Auto powered on	Yes
	RTC WAKE	Yes
VESA mount		support 75x100

	Intel N100	Intel N200
Price	Search Online 	Search Online 
Socket Type	NA ²	FCBGA1264
CPU Class	Mobile/Embedded	Mobile/Embedded
Clockspeed	NA ²	NA ²
Turbo Speed	Up to 3.4 GHz	Up to 3.7 GHz
# of Physical Cores	4 (Threads: 4)	4 (Threads: 4)
Cache	NA ²	L1: 2KB, L2: 0.0MB, L3: 0MB
Max TDP	6W	6W
Yearly Running Cost	\$1.10	\$1.10
Other	Intel UHD Graphics	Intel UHD Graphics
First Seen on Chart	Q1 2023	Q1 2023
# of Samples	3	2
CPU Value	32.7	19.4
Single Thread Rating (% diff. to max in group)	1775 (0.0%)	1383 (-22.1%)
CPU Mark (% diff. to max in group)	4192 (0.0%)	3742 (-10.7%)

CPU Mark Rating

As of 8th of February 2023 - Higher results represent better performance

Intel N100		4,192
Intel N200		3,742

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CPU Value (CPU Mark / \$Price)

As of 8th of February 2023 - Higher results represent better value

Intel N100		32.7
Intel N200		19.4

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CPU Single Thread Rating

As of 8th of February 2023 - Higher results represent better performance

Intel N100		1,775
Intel N200		1,383

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Estimated Energy Usage Cost

Estimated Energy Adjustable Values

Average hours of use per day	Average CPU Utilization (0-100%) ¹	Power cost, \$ per kWh ²
8	25	0.25

¹ Average user usage is typically low and can vary from task to task. An estimate load 25% is nominal.

² Typical power costs vary around the world. Check your last power bill for details. Values of \$0.15 to \$0.45 per kWh are typical.

Intel N100

Intel N200

Max TDP	6W	6W
Power consumption per day (kWh)	NA	NA
Running cost per day	NA	NA

Running cost per day	NA	NA
Power consumption per year (kWh)	NA	NA
Running cost per year	NA	NA

	Intel N100	Intel Celeron N5105 @ 2.00GHz	Intel Celeron J4125 @ 2.00GHz	Intel N200	+ ADD
Price	Search Online	Search Online	Search Online	Search Online	
Socket Type	NA 2	FCBGA1338	FCBGA1090	FCBGA1264	
CPU Class	Mobile/Embedded	Mobile/Embedded	Desktop	Mobile/Embedded	
Clockspeed	NA 2	2.0 GHz	2.0 GHz	NA 2	
Turbo Speed	Up to 3.4 GHz	Up to 2.9 GHz	Up to 2.7 GHz	Up to 3.7 GHz	
# of Physical Cores	4 (Threads: 4)	4 (Threads: 4)	4 (Threads: 4)	4 (Threads: 4)	
Cache	NA 2	L1: 256KB, L2: 1.5MB, L3: 4MB	L1: 1,792KB, L2: 16.0MB, L3: 0MB	L1: 2KB, L2: 0.0MB, L3: 0MB	
Max TDP	6W	10W	10W	6W	
Yearly Running Cost	\$1.10	\$1.83	\$1.83	\$1.10	
Other	Intel UHD Graphics	Intel UHD Graphics	Intel UHD Graphics 600	Intel UHD Graphics	
First Seen on Chart	Q1 2023	Q2 2021	Q1 2020	Q1 2023	
# of Samples	3	219	368	2	
CPU Value	32.7	13.7	0.0	19.4	
Single Thread Rating (% diff. to max in group)	1775 (0.0%)	1520 (-14.4%)	1167 (-34.3%)	1383 (-22.1%)	
CPU Mark (% diff. to max in group)	4192 (0.0%)	4094 (-2.3%)	2982 (-28.9%)	3742 (-10.7%)	