



2020 PRODUCT GUIDE

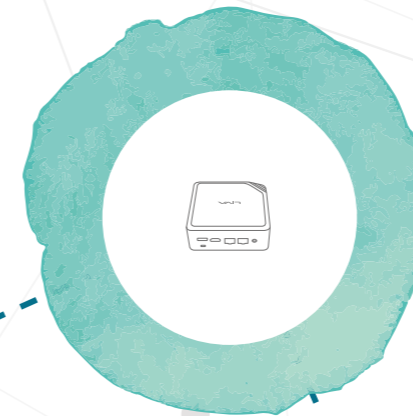
Exploring More
creative and experienced design to develop
cutting-edge Motherboards and Mini PC.



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Helping The Customers See It All.
Because Everything Matters.



Smart AI Solution

Edge Computing PC
Voice Assistant - Amazon Alexa



Complete System Solution

LIVA Mini PC
Fanless and Rugged IPC
All-in-One



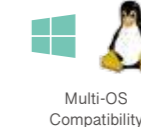
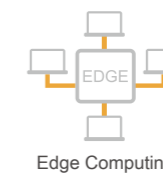
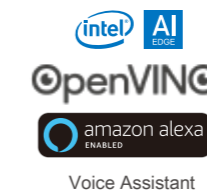
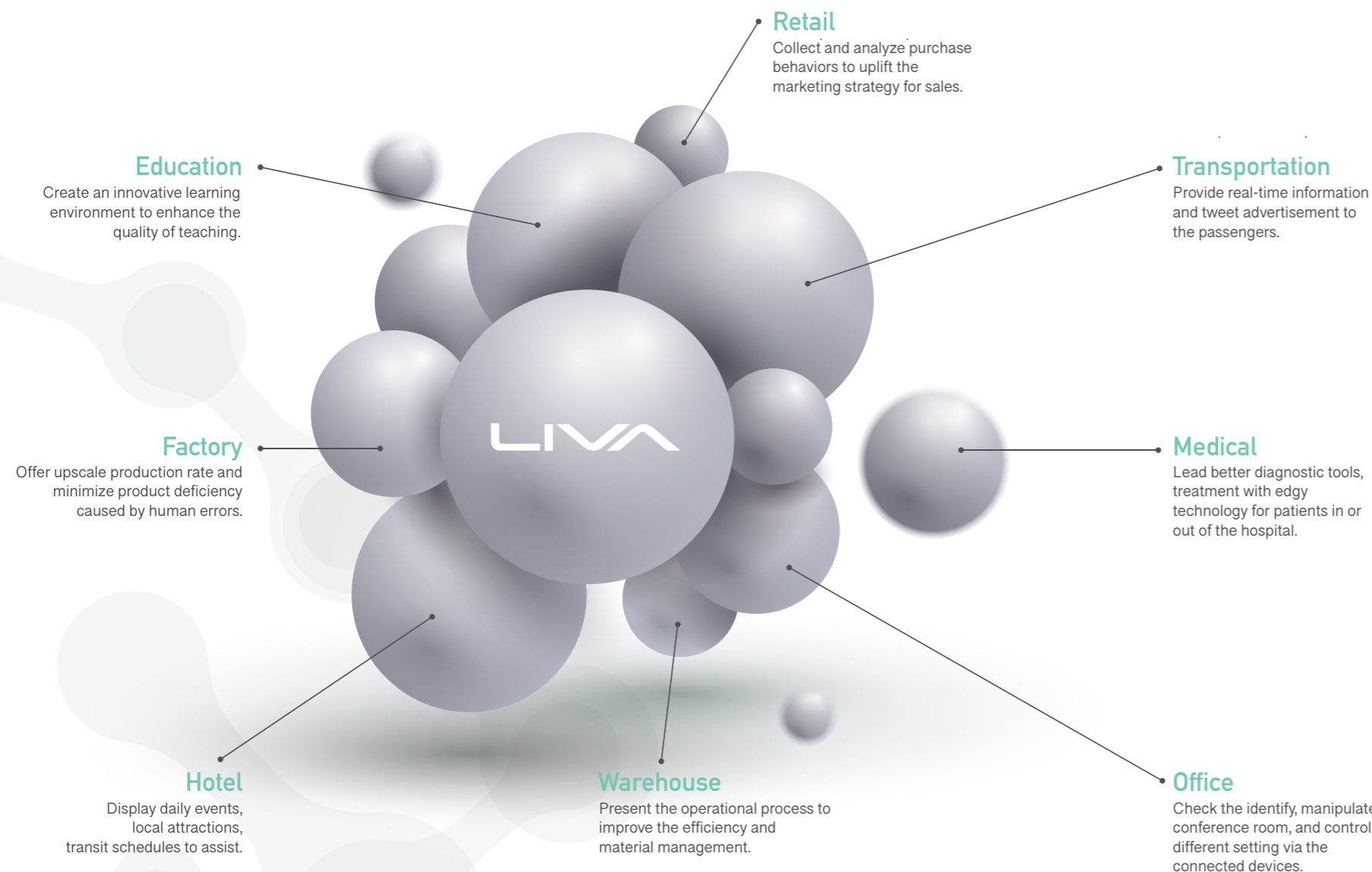
Competitive Motherboard Solution

Industrial and Consumer

Elitegroup Computer Systems, the world's leading manufacturer specialized in developing multiple shapes of motherboards and mini PCs, aims to create and inject more possibilities into different types of products to fulfill versatile using scenarios. We evolve with the trend of new technology, and also transform ourselves from the traditional manufacturer to an integrated solution advisor. With the vision and broad knowledge of IT industry, the innovation is continuously cultivated and implemented into the whole product category. Our mission is to assist all customers conquering all kinds of difficulties successfully and creating a bunch of added value in life.

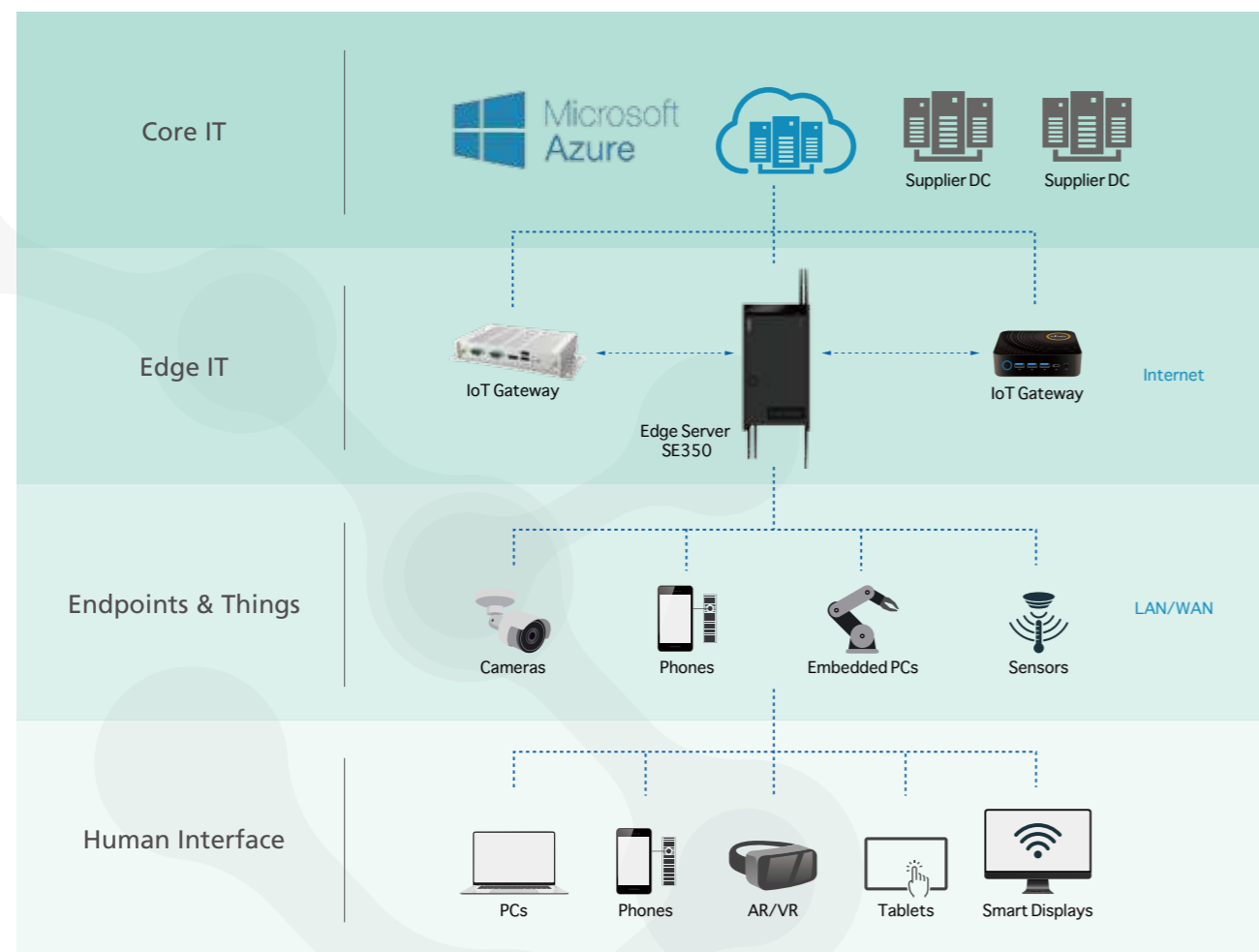
Think Small For Big Results

LIVA Mini PCs feature the flexibility, expandability and optimized performance in a compact body to tackle your daily computing tasks effortlessly. Furthermore, PC is at the heart of operation of entire application to start a better living style. It plays a very significant role to be a crucial part in the middle to complete the whole picture, and it has blossomed prosperously between us and our customers without doubt. The smallest things can make the biggest difference. We help you see it all so you can address it all, advancing productivity, efficiency, and profits.



Operational Architecture

Connected things are orchestrated through the respective stage inseparably. They distribute greater efficiency in the process achieving all kinds of applications. From the cloud to edge computing and local devices, these different devices of each stage have a unique role to well cooperate with each other depending on the exclusive technology. With IoT and AI, this framework can be widely used in many real cases of life. ECS has been working on the specific products fitting in the entire ecosystem, and keeps working together with numerous companies that can provide high-end edge computing products. After the integration, our mission is to unitedly build a more thorough network to facilitate the multiple using scenarios, and successfully offer an appropriate answer to the issue.



Public Security System

Nowadays, there are plenty of activities happening in the city, and transportation is the first thing taken into consideration when we leave the house. To ensure traffic safety, and to monitor emergencies, many street lights, utility poles or traffic facilities are equipped with surveillance cameras. However, most devices cannot record sounds or transfer the video files instantly for the real-time response. Through LIVA Mini PC as an intermediary device, it can record and transmit audio and video to the surveillance and control center, so that relevant parties are able to quickly grasp the conditions in a wide and spacious place. Not only can the manpower be streamlined, but also it can be deployed more efficiently.



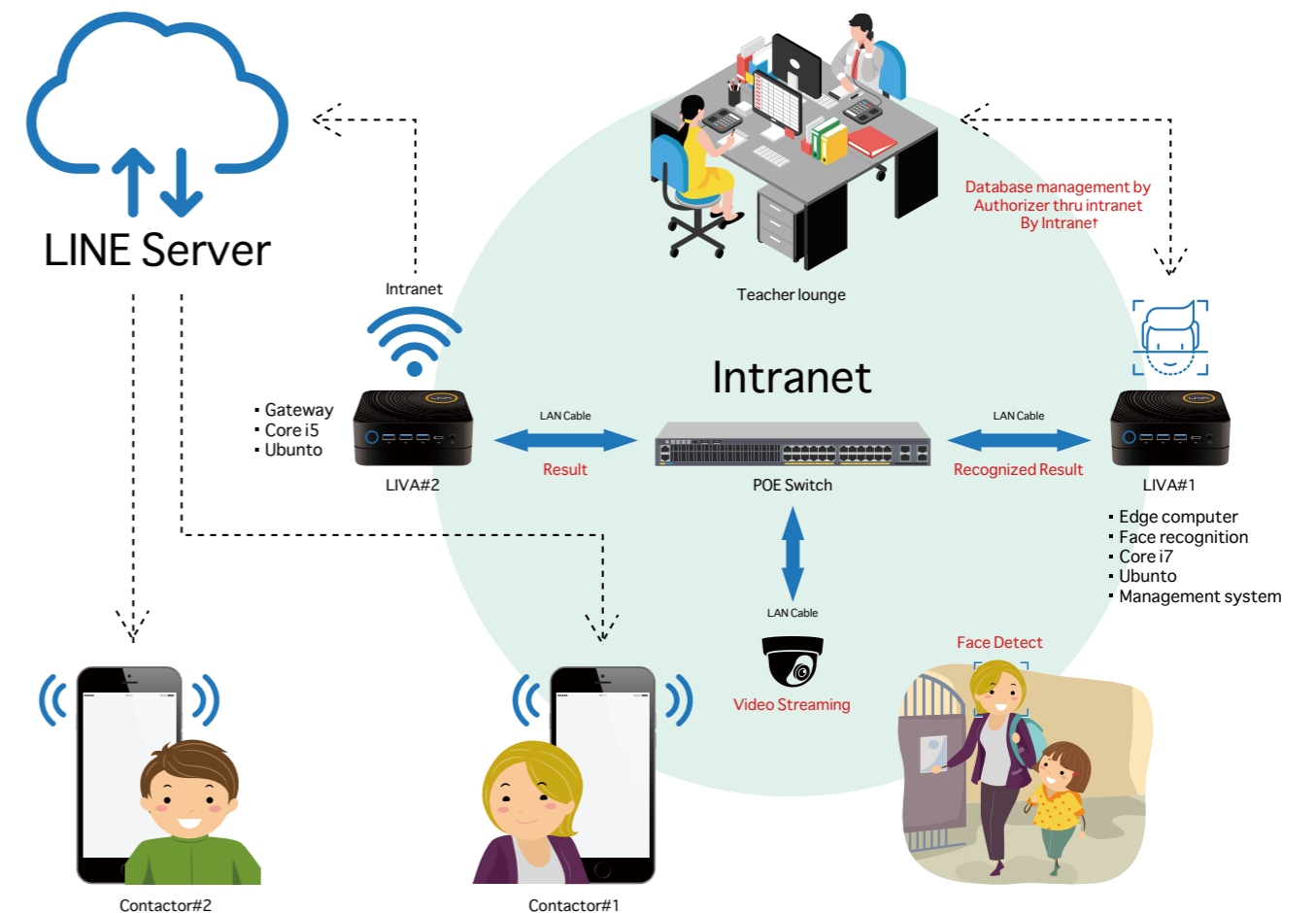
Product Information KIOSK

In response to the booming trend of tourism, more and more foreign tourists travel around the world and buy goods at local shopping malls. Due to language differences, it takes some efforts to understand the details regarding the products, and often causes misunderstanding when making a purchase. Most of time, the in-store staff is limited or occupied, and foreign customers can't be assisted instantly and correctly, especially when they don't speak English. LIVA Mini PC, barcode scanner and display fabricate a multi-language product inquiry machine to support the buying process. The related information, such as ingredients, usage and tutorials, will be displayed on the screen, after the customers chooses the selected language and scan the product barcode. Buying things will be easier, and more friendly to the foreigners.



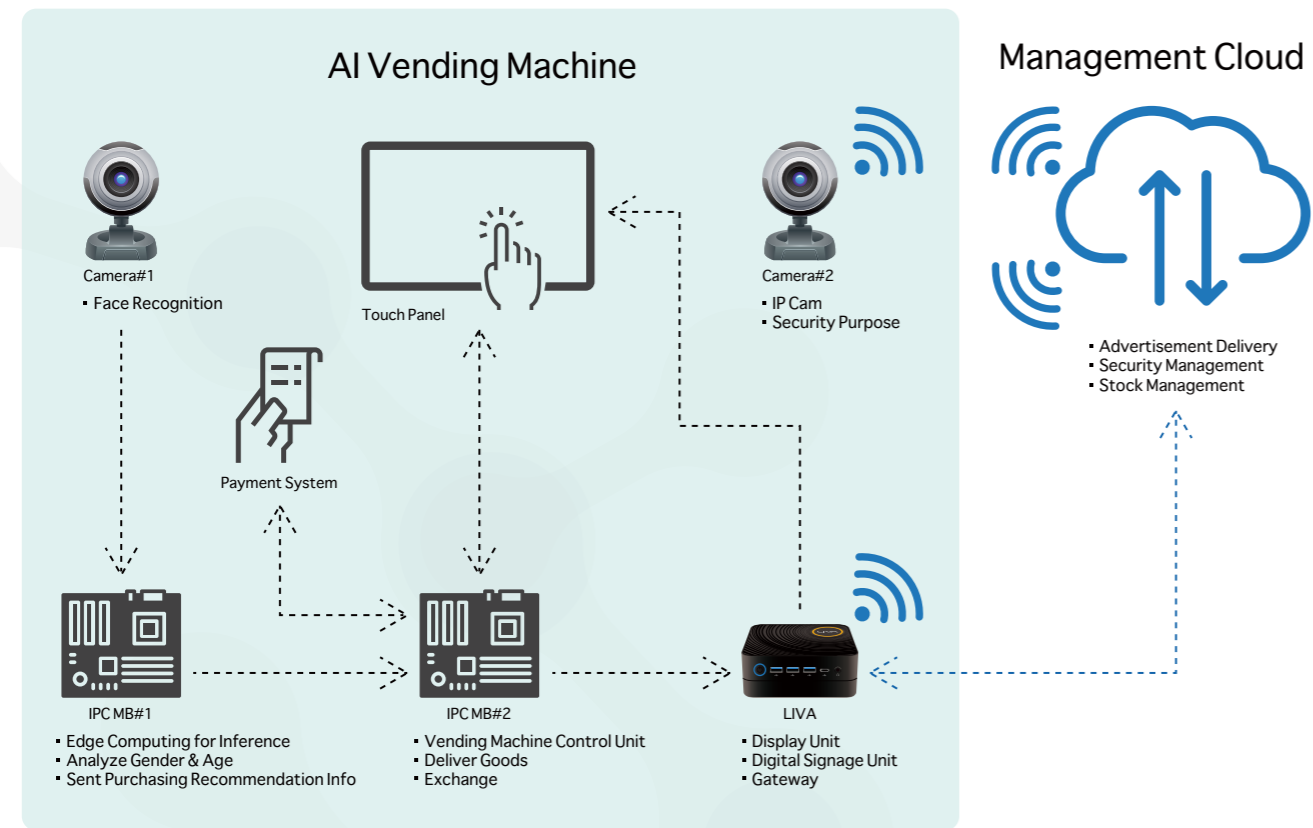
Children's Safety

Due to variety of social and economic factors, the number of children in a family is decreasing day by day, so that parents are paying more attention to the safety of children. In particular, the age of kindergarten to primary school students is most needed for parent's pick-up after school. LIVA Mini PC combines face recognition technology, cloud computing and collaboration with third-party social communications software. When someone attempts to pick up a child from school, the system will immediately analyze the identity and automatically send an alert message to the parents and teachers via the communication software when kids leave the school. Multiple ways of precaution and protection allow parents to feel more reassured about the safety of younger children.



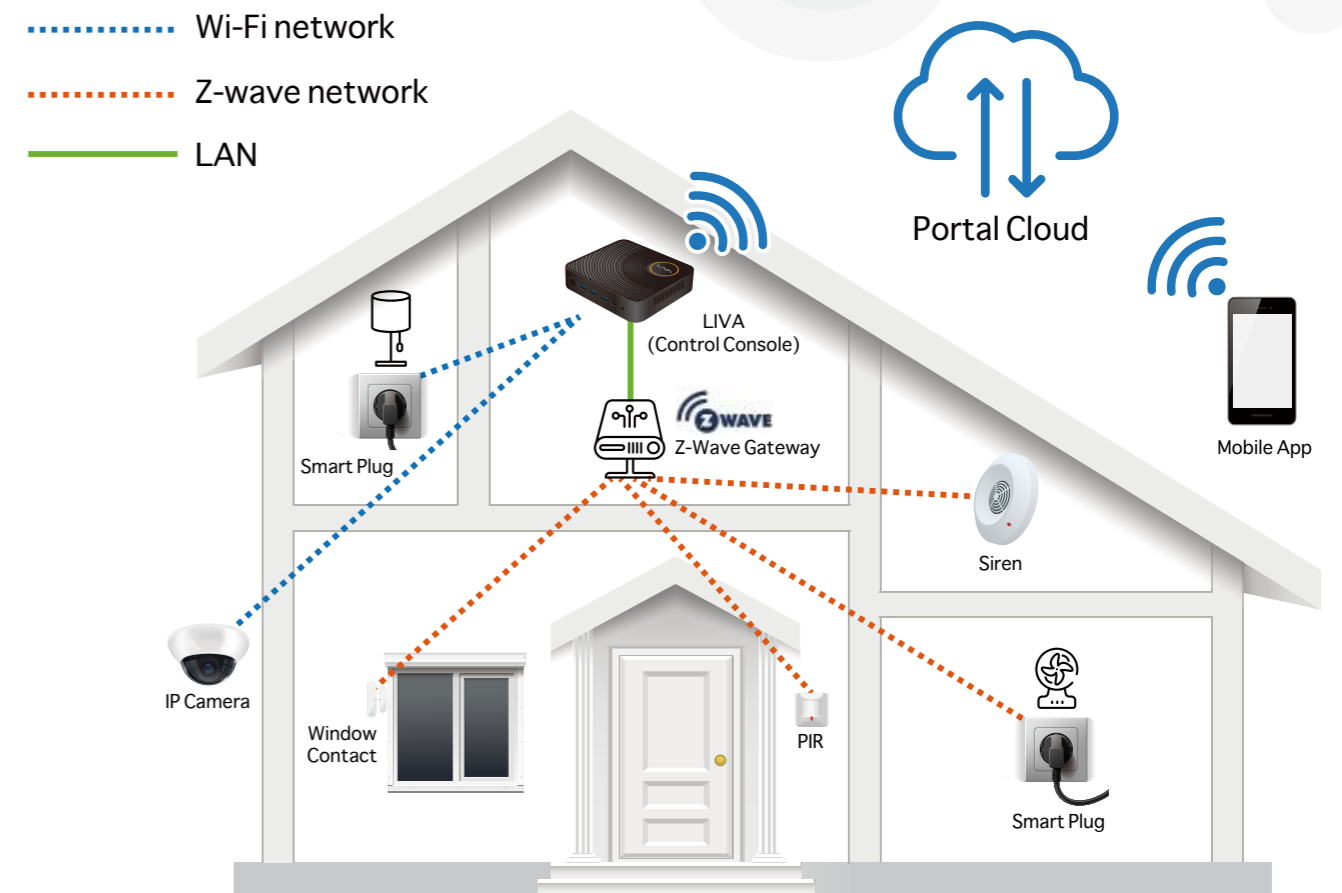
Smart Vending Machine

Japan is the country with the highest density of vending machines in the world. Therefore, creating bigger business opportunities to uplift sales number via the machines becomes more and more important. However, among the devices, there are rare ones functioned the wireless connection to the internet. To improve the situation, LIVA Mini PC is deployed as the hub of the vending machine. Through cloud computing and link with different devices, it help collect and analyze purchasing preference from the consumers for precision marketing effectively. In addition, thanks to face recognition and CMS (content management system), advertisement and information of the most recommended, or best selling products will be tweeted on the screen according to the gender and age of the consumers. We are selling not only goods but tailor-made one for your choice In the future.



Intelligent Living

Smart appliances are prevailingly used in our daily life. They are more than just the household appliances to construct a small and intelligent ecosystem but offer a more convenient way of living. Connection between each other is the key in this environment, and we upgrade the function with LIVA Mini PC, as a computing server. It not only can manage information well and stably but contain the versatile usages in different role. PC collects, and stores data, then talk to Z-wave gateway and cloud to effectively execute the operation. It offers you to customize the configuration more easily. The compact design also makes it blend and take up less space.



Compactness Meets Infinity



 CPU Multiple Platforms	 Desktop PC Full Desktop Computing	 Fanless Quiet Operation	 HDMI + D-Sub + DisplayPort 3 Types of Display Outputs
 Wi-Fi ac Faster Wi-Fi 802.11ac wireless connection	 M.2 SSD Lightning Speed of M.2	 TYPE-C For All Your Devices	 ULTRA HD 4K 4K Ready Stunning 4K Visuals

*Specifications & features vary depending on model and/or region.



LIVA One Plus CL H310C

CPU	Support Intel® 9th & 8th Gen Processors with LGA 1151 socket (TDP 65W max.)
Memory	2 x SO-DIMMs DDR4 2666 MHz up to 32GB
Storage	1 x 2.5" SATA3 HDD or SSD 1 x M.2 2260/2280 SATA/PCIe SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI / 1 x VGA
Audio	2 x Audio Jacks
I/O	Front I/O: 2 x USB 3.1 Gen 1 1 x USB 2.0 1 x MIC-In 1 x Line-Out 1 x Power Button Rear I/O: 2 x USB 3.1 Gen 1 / 2 x USB 2.0 / 1 x RJ45 (Gigabit Lan) / 2 x Audio Jacks / 1 x DC-In / 1 x Kensington Lock
Dimension	196 x 183 x 45 mm
OS Support	Windows 10
Power Supply	19V/6.32A, 120W
Others	



LIVA One Plus SoC

CPU	Support Intel® Pentium® and Celeron® Processors J4005/4105/5005; J4025/J4125/J5040/J5025
Memory	1 x SO-DIMM DDR4 2133 MHz up to 8GB
Storage	1 x 2.5" SATA3 HDD or SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI / 1 x VGA
Audio	2 x Audio Jacks
I/O	Front I/O: 3 x USB 2.0 1 x MIC-In 1 x Line-Out 1 x Power Button Rear I/O: 2 x USB 3.1 Gen 1 / 2 x USB 2.0 / 1 x RJ45 (Gigabit Lan) / 2 x Audio Jacks / 1 x DC-In / 1 x Kensington Lock
Dimension	196 x 183 x 45 mm
OS Support	Windows 10
Power Supply	19V/3.42A, 65W
Others	



LIVA One 400 Series

CPU	Support Intel® 10th Gen Processors with TDP 65W or 35W max.
Memory	2 x SO-DIMMs DDR4 2666MHZ
Storage	1 x SATA 2.5" HDD 1 x M.2 supports 2280 SATA/PCIe SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI / 2 x DP / 1 x DSUB / 1 x COM
Audio	2 x Audio Jacks
I/O	Front I/O: 2 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 2 x Audio Jacks (MIC and Line-Out) Rear I/O: 1 x DC-In / 4 x USB 2.0 / 1 x HDMI / 2 x DP / 1 x D-SUB / 1 x RJ45 (Gigabit Lan) / 1 x COM
Dimension	205 x 176 x 33 mm
OS Support	Windows 10
Power Supply	TDP 35W: 19V, 90W TDP 65W: 19V, 120W
Others	



LIVA One H310C

CPU	Support Intel® 9th & 8th Gen Processors with LGA 1151 socket (TDP 35W max.)
Memory	2 x SO-DIMMs DDR4 2666 MHz up to 32GB
Storage	1 x 2.5" SATA3 HDD or SSD 1 x M.2 2280 SATA/PCIe SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI 1 x VGA 2 x DP (max. 2 video outputs)
Audio	2 x Audio Jacks
I/O	Front I/O: 2 x USB 3.1 Gen 1 / 1 x USB 3.1 Gen 1 Type-C / 1 x MIC In / 1 x Line-Out / 1x Power Button Rear I/O : 4 x USB 2.0 / 1 x RJ45 (Gigabit Lan) / 1 x RS232 (option) / 1 x DC-In / 1 x Kensington Lock
Dimension	205 x 176 x 33 mm
OS Support	Windows 10
Power Supply	19V/4.74A, 90W
Others	Support TPM Onboard (option) Support Internal Speaker (option)

Coming Soon



LIVA One DH310

CPU	Support Intel® 9th & 8th Gen Processors with LGA 1151 socket (TDP 65W max.)
Memory	2 x SO-DIMMs DDR4 2666 MHz up to 32GB
Storage	1 x 2.5" SATA3 HDD or SSD 1 x M.2 2280 SATA/PCIe SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI v2.0 1 x VGA (option, share with COM2) 1 x DP (DP++)
Audio	2 x Audio Jacks
I/O	Front I/O: 2 x USB 3.1 Gen 1 / 1 x SD card Reader / 1 x MIC-In / 1 x Line-Out / 1x Power Button Rear I/O : 2 x USB 2.0 / 2 x USB 3.1 Gen 1 / 2 x RJ45 (2 x Gigabit LAN, Intel® i219V and Realtek RTL8111H) / 1 x COM1 (RS232) / 1 x COM2 (RS232/422/485, option) / 1 x DC-In / 1 x Kensington Lock / 1 x External Power header
Dimension	205 x 176 x 33 mm
OS Support	Windows 10 / Linux
Power Supply	19V/4.74A, 90W
Others	Support CEC Support 3042 LTE module and mSIM card

Coming Soon



SF110 - 400 Series

CPU	Support Intel® 10th Gen Processors with TDP 65W or 35W max.
Memory	2 x SO-DIMMs DDR4 2666MHZ
Storage	1 x SATA 2.5" HDD 1 x M.2 supports 2280 SATA/PCIe SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 5.0
Video Output	1 x HDMI 2 x DP 1 x DSUB 1 x COM
Audio	2 x Audio Jacks
I/O	Front I/O: 2 x USB 3.1 Gen 2 / 1 x USB 3.1 Gen 2 Type-C / 2 x Audio Jacks (MIC and Line-Out) Rear I/O: 1 x DC-In / 4 x USB 3.1 Gen 1 / 1 x HDMI / 2 x DP / 1 x D-SUB / 1 x RJ45 (Gigabit Lan) / 1 x COM
Dimension	205 x 176 x 33 mm
OS Support	Windows 10
Power Supply	TDP 35W: 19V, 90W TDP 65W: 19V, 120W
Others	vPRO



SF110 - Q370

CPU	Support Intel® 9th & 8th Gen Processors with LGA 1151 socket (TDP 35W max.)	Support Intel® 9th & 8th Gen Processors with LGA 1151 socket (TDP 35W max.)	Support AMD Ryzen™ and Athlon™ APUs with AM4 Socket (TDP 35W max.)
Memory	2 x SO-DIMMs DDR4 2666 MHz up to 32GB	2 x SO-DIMMs DDR4 2666 MHz up to 32GB	2 x SO-DIMMs DDR4 2400 MHz up to 32GB
Storage	1x 2.5" SATA3 HDD or SSD 1 x M.2 2280 SATA/PCIe SSD Support Intel® Optane™ Memory	1 x 2.5" SATA3 HDD or SSD 1 x M.2 supports 2280 SATA/PCIe SSD Support Intel® Optane™ Memory	1 x 2.5" SATA3 HDD or SSD 1 x M.2 supports 2280 SATA/PCIe SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2 or 5.0	2 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2 or 5.0	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI / 1 x D-Sub / 2 x DP / (max. 3 Video Outputs)	1 x HDMI / 1 x D-Sub / 2 x DP / (max. 3 Video Outputs)	1 x HDMI / 1 x VGA / 1 x DP / (max. 3 Video Outputs)
Audio	2 x Audio Jacks	2 x Audio Jacks	2 x Audio Jacks
I/O	Front I/O: 2 x USB 3.1 Gen 2 / 1 x USB 3.1 Gen 2 Type-C / 1 x MIC-In / 1 x Line-Out / 1 x Power Button Rear I/O: 4 x USB 3.1 Gen 1 / 1 x RJ45 (Gigabit Lan) / 1 x DC-In / 1 x RS232 (option)	Front I/O: 2 x USB 3.1 Gen 2 / 1 x USB 3.1 Gen 2 Type-C / 1 x MIC-In / 1 x Line-Out / 1 x Power Button Rear I/O: 2 x USB 3.1 Gen 1 / 2 x USB 2.0 / 1 x RJ45 / 1 x DC-In / 1 x RS232 (option)	Front I/O: 2 x USB 3.1 Gen 1 / 1 x USB 3.1 Gen 2 Type-C / 1 x MIC / 1 x Line-Out / 1 x Power Button Rear I/O: 4 x USB 3.1 Gen 1 / 1 x RJ45 (Gigabit Lan) / 1 x DC-in / 1 x RS233 (option) / 1 x Kensington Lock
Dimension	205 x 176 x 33 mm	205 x 176 x 33 mm	205 x 176 x 33 mm
OS Support	Windows 10 / Linux	Windows 10 / Linux	Windows 10
Power Supply	19V/4.74A , 90W	19V/4.74A , 90W	19V/4.74A , 90W
Others	1 x TPM IC Onboard 1 x Internal Speaker Support vPro Sku (option)	1 x TPM IC Onboard 1 x Internal Speaker Support DASH Function	Support TPM Onboard (option) Support Internal Speaker (option) Support DASH (option)



SF110 - B360 (DASH)



SF110-A320



LIVA Z Plus

CPU	Support Intel® 7th Gen Core™ Processors with TDP 15W	Support Intel® 7th Gen Core™ Processors with TDP 15W	Support Intel® Pentium® and Celeron® Processors N4000/N4100/N5000; N4020/N4120/N5020/N5030
Memory	2 x SO-DIMMs DDR4	2 x SO-DIMMs DDR4	2 x SO-DIMMs DDR4, up to 8GB
Storage	1 x M.2 2242 SATA/PCIe SSD	1 x 2.5" SATA3 HDD or SSD 1 x M.2 2242 SATA/PCIe SSD	eMMC 32GB/64GB 1 x 2.5" SATA3 HDD or SSD (Option)
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI 1 x mDP	1 x HDMI 1 x mDP	1 x HDMI 2.0 1 x HDMI
Audio	1 x Combo Jack 1 x Digital Mic	1 x Combo Jack 1 x Digital Mic	1 x Combo Jack 1 x Digital Mic
I/O	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 1 x DC-In 2 x Gigabit LAN (1 x Intel LAN)	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 1 x DC-In 2 x Gigabit LAN (1 x Intel LAN) 4 x COM (RS232) Ports	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 2 x USB 2.0 1 x DC-In 1 x Gigabit LAN
Dimension	117 x 128 x 32mm	117 x 128 x 51mm	132 x 118 x 56.4mm
OS Support	Windows 10 / Linux	Windows 10 / Linux	Windows 10
Power Supply	19V / 3.42A, 65W	19V / 3.42A, 65W	19V / 3.42A, 65W
Others	Support vPro Sku (option)	Support vPro Sku (option)	

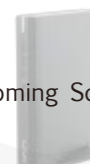


LIVA ZE Plus



LIVA Z2

Coming Soon



SF110 - 400 Series

CPU	Support Intel® 10th Gen Processor with TDP 65W or 35W max.	Support Intel® 10th Gen Core™ Processors with TDP 15W	Support Intel® 10th Gen Core™ Processors with TDP 15W
Memory	2 x SO-DIMMs DDR4 2666MHZ	2 x SO-DIMMs DDR4 2400/2666 MHz	2 x SO-DIMMs DDR4 2400/2666 MHz
Storage	1 x 2.5" SATA3 HDD or SSD 1 x M.2 supports 2280 SATA/PCIe SSD	1 x M.2 2280/2242 SATA/PCIe SSD Support Intel® Optane™ Memory	1 x 2.5" SATA3 HDD or SSD 1 x M.2 2280/2242 SATA/PCIe SSD Support Intel® Optane™ Memory
Wireless	WLAN 802.11ac & Bluetooth 5	1 x M.2 2230 WLAN 802.11ax or 802.11ac/BT 5.0	1 x M.2 2230 WLAN 802.11ax or 802.11ac/BT 5.0
Video Output	1 x HDMI / 2 x DP / 1 x DSUB / 1 x COM	1 x HDMI (HDMI 2.0) / 1 x mDP	1 x HDMI (HDMI 2.0) / 1 x mDP
Audio	2 x Audio Jacks	1 X Combo Jack 4 X Digital MIC – Support Alexa (A4PC) (Option)	1 x Combo Jack 4 x Digital MIC – Support Alexa (A4PC) (Option) 1 x Internal Speaker (Option)
I/O	Front I/O: 2 x USB 3.1 Gen 2 / 1 x USB 3.1 Gen 2 Type-C / 2 x Audio Jacks (MIC and Line-Out) Rear I/O: 1 x DC-In / 4 x USB 3.1 gen. 1 / 1 x HDMI / 2 x DP / 1 x D-SUB / 1 x RJ45 (Gigabit Lan) / 1 x COM	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 1 x DC-In 2 x Gigabit LAN (1 x Intel LAN)	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 1 x DC-In 2 x COM (RS232) 2 x Gigabit LAN (1 x Intel LAN)
Dimension	205 x 176 x 33 mm	117 x 128 x 35mm	117x 128 x 52.9mm
OS Support	Windows 10	Windows 10 / Linux	Windows 10 / Linux
Power Supply	TDP 35W: 19V, 90W TDP 65W: 19V, 120W	12V~19V / 90W-120W	12V~19V / 90W-120W
Others	Support DASH	Support vPro Sku (option)	1 x M.22280/2242 for SSD or Capture Card (KEY M) Support vPro Sku (option)



LIVA Z3 Plus



LIVA Z3E Plus



LIVA Z2V



LIVA Z2L



LIVA Z

CPU	Support Intel® Pentium® and Celeron® Processors N4000/N4100/ N5000; N4020/N4120/N5020/N5030	Support Intel® Pentium® and Celeron® Processors N4000/N4100/ N5000; N4020/N4120/N5020/N5030	Support Intel® Pentium® and Celeron® Processors N3350/N3450/N4200
Memory	2 x SO-DIMMs DDR4 up to 8GB	LPDDR4 on board up to 4GB	2 x SO-DIMMs DDR3L
Storage	eMMC 32GB/64GB 1 x 2.5" SATA3 HDD or SSD	eMMC 32GB/64GB 1 x 2.5" SATA3 HDD or SSD	eMMC 32GB/64GB 1 x M.2 2242 SATA3 HDD or SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI 1 x D-Sub	1 x HDMI 1 x D-Sub	1 x HDMI 1 x mDP
Audio	1 x Combo Jack 1 x Digital Mic	1 x Combo Jack 1 x Digital Mic	1 x Combo Jack 1 x Digital Mic
I/O	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 2 x USB 2.0 1 x DC-In 1 x Gigabit LAN	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 2 x USB 2.0 1 x DC-In 1 x Gigabit LAN	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 1 x DC-In 2 x Gigabit LAN
Dimension	132 x 118 x 56.4mm	132 x 118 x 56.4mm	117 x 128 x 32mm
OS Support	Windows 10	Windows 10	Windows 10 / Linux
Power Supply	19V / 3.42A, 65W	19V / 3.42A, 65W	19V / 3.42A, 65W
Others			



LIVA ZE

CPU	Support Intel® Pentium® and Celeron® Processors N3350/N3450/N4200;	LIVA Q2	Support Intel® Pentium® and Celeron® Processors N4000/N4100/N5000; N4020/N4120/N5020/N5030	LIVA Q	Support Intel® Pentium® and Celeron® Processors N3350/N3450/N4200
Memory	2 x SO-DIMMs DDR3L	Memory	LPDDR4 4GB	Memory	LPDDR4 2GB/4GB
Storage	eMMC 32GB/64GB 1 x M.2 2242 SATA3 HDD or SSD	Storage	eMMC 32GB/64GB 1x Micro SD slot (Max 128GB)	Storage	eMMC 32GB/64GB 1x Micro SD slot (Max 128GB)
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI 1 x mDP	Video Output	1 x HDMI v2.0	Video Output	1 x HDMI
Audio	1 x Combo Jack 1 x Digital Mic	Audio	HDMI Audio	Audio	HDMI Audio
I/O	3 x USB 3.1 Gen 1 1 x USB 3.1 Gen 1 Type-C 1 x DC-In 4 x COM (RS232) 2 x Gigabit LAN	I/O	1 x USB 3.1 Gen 1 1 x USB 2.0 1 x Gigabit LAN 1 x DC-In	I/O	1 x USB 3.1 Gen 1 1 x USB2.0 1 x Gigabit LAN 1 x DC-In
Dimension	117 x 128 x 51mm	Dimension	70 x 70 x 34.6mm	Dimension	70 x 70 x 33.4mm
OS Support	Windows 10 / Linux	OS Support	Windows 10	OS Support	Windows 10
Power Supply	19V / 3.42A, 65W	Power Supply	12V/2A, 24W	Power Supply	12V/2A, 24W
Others		Others	Support CEC Support Watch Dog	Others	Support CEC Support Watch Dog



LIVA XE

CPU	Support Intel® Pentium® and Celeron® Processors J3060/J3160/J3710	LIVA X2	Support Intel® Pentium® and Celeron® Processors J3060/J3160/J3710
Memory	2GB / 4GB DDR3L	Memory	2GB / 4GB DDR3L
Storage	eMMC 32GB/64GB 1 x M.2 2242 / 2280 SATA SSD	Storage	eMMC 32GB/64GB 1 x M.2 2242 / 2280 SATA SSD
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI 1 x D-Sub	Video Output	1 x HDMI 1 x D-Sub
Audio	1 x Combo Jack	Audio	1 x Combo Jack
I/O	3 x USB 3.1 Gen 1 1 x DC-In 1 x Gigabit LAN 1 x Kensington Lock	I/O	2 x Digital Mic 3 x USB 3.1 Gen 1 1 x DC-In 1 x Gigabit LAN 1 x Kensington Lock
Dimension	135 x 83 x 40mm	Dimension	156 x 83 x 51mm
OS Support	Windows 10 / Linux	OS Support	Windows 10 / Linux
Power Supply	12V/3A, 36W	Power Supply	12V/3A, 36W



LIVA Q1D

CPU	Support Intel® Pentium® and Celeron® Processors N3350/N3450/N4200	LIVA Q1L	Support Intel® Pentium® and Celeron® Processors N3350/N3450/N4200	LIVA Q1A Plus	Rockchip RK3399 (Dual-core Cortex-A72 + Quad-core Cortex-A53)
Memory	LPDDR4 2GB/4GB	Memory	LPDDR4 2GB/4GB	Memory	DDR3L 2GB/4GB
Storage	eMMC 32GB/64GB 1x Micro SD slot (Max 128GB)	Storage	eMMC 32GB/64GB 1x Micro SD slot (Max 128GB)	Storage	eMMC 16GB/32GB 1x Micro SD slot (Max 128GB)
Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2	Wireless	1 x M.2 2230 WLAN 802.11ac & Bluetooth 4.2
Video Output	1 x HDMI 1 x DP	Video Output	1 x HDMI	Video Output	1 x HDMI 1 x DP
Audio	HDMI Audio	Audio	HDMI Audio	Audio	HDMI Audio
I/O	2 x USB 3.1 Gen 1 1 x USB2.0 1 x Gigabit LAN 1 x DC-In	I/O	2 x USB 3.1 Gen 1 1 x USB 2.0 2 x Gigabit LAN 1 x DC-In	I/O	1 x USB 3.1 Gen 1 2 x USB 2.0 1 x Gigabit LAN 1 x DC-In
Dimension	74 x 74 x 34.6mm	Dimension	74 x 74 x 34.6mm	Dimension	74 x 74 x 34.6mm
OS Support	Windows 10	OS Support	Windows 10	OS Support	Android 8.1
Power Supply	12V/2A, 24W	Power Supply	12V/2A, 24W	Power Supply	12V/2A, 24W
Others		Others		Others	



M1000 (SKL-1000)

CPU	Intel® Skylake, Onboard SoC (Max. CPU TDP 15W, Configurable TDP-up 25W) Intel® Celeron® 3955U Processor Intel® Core™ i5-6200U Processor Intel® Core™ i5-6300U Processor	M500 (APL-500)	Intel® Apollo Lake, Onboard SoC (TDP up to 12W) Intel® Celeron® N3350 Processor
Memory	Max. Capacity 8GB Onboard Memory, define 2GB/4GB Support DDR4 2144	Memory	Onboard Memory, DDR3L, Support 2GB 1 x SO-DIMM Slot, Support 2GB/4GB/8GB
Storage	1 x SATA III (6Gb/s, Support SATADOM, Colay with M2DOM)	Storage	N/A
Expansion Slots	1 x mini-PCIe Slot (with mSATA, USB2.0) 2 x M.2 Slots (1x 2230 E Key, 1x 2242 B Key) 1 x Micro SIM Card Slot	Expansion Slots	1 x Mini PCIe Slots with PCIe + USB 2.0 interface 1 x mSATA / 1 x M.2 2230, Key E, Support WLAN/BT / 1 x SIM Slot
Video Output	1 x VGA (1920x1200 Full HD) / 1 x HDMI (Full HD)	Video Output	1 x VGA (Support by Chrontel CH7517) / 1 x DP++
Audio Controller	Realtek ALC269	Audio Controller	Realtek ALC269
Ethernet	Support 10/100/1000Mbps 2 x Intel® i211 2 x RJ-45 Connectors	Ethernet	Support 10/100/1000Mbps 2 x Intel® i211-IT 2 x RJ-45 Connectors
Super I/O	ITE IT8786	Super I/O	ITE IT8528VG
I/O	Front I/O: 1 x HDMI / 2 x USB 2.0 / 5 x COM (2x DB-9, 1x DB-44) / COM 2 Support RS232/422/485, Switch by BIOS / COM 3~6 Support RS232/485, Switch by BIOS / 1 x PS/2 Combo Connector / 1 x Power On Button with LED / 1 x Reset Button Rear I/O: 1 x DC-In (12V~28V) / 2 x RJ-45 / 4 x USB 3.0 / 1 x VGA / 1 x COM (DB-9) / COM 1 Support RS232i or DIO 8bit, Switch by Jumper 1 x Audio Line Out	I/O	Front I/O: 1 x DP++ / 1 x Reset Button / 1 x Power Button w/ Power LED / 1 x HDD LED / 2 x COM / 2 x DB9 (COM1, COM2, Support RS232/422/485) / 2 x Antenna Holes / 2 x USB 2.0 Rear I/O: 1 x VGA / 2 x RJ-45 / 4 x USB 3.0 / 1 x DC-In (9V~36V) / 2 x Antenna Holes
Dimension	209.8 x 120 x 38.2mm	Dimension	183 x 115.2 x 36 mm
Connectors & Headers	1 x Buzzer / 1 x CLR_CMOS Header (1x3 pins) / 1 x GPIO Header (3 x 8 pins, with 2 x 1 Jumper, Support by COM2) / 1 x HDD LEN (2 sets, Blue & Red) / 1 x SATA III (6Gb/s) / 1 x SATA Power (1 x 4pins) / 1 x USB 2.0 Header (for USB Type A by Cable) 1 x AT/ATX Mode (3 x 1 pins with Jumper) 2 x USB 3.0 Power (3 x 1 pins with Jumper) 1 x USB 2.0 Power (3 x 1 pins with Jumper)	Connectors & Headers	1 x Battery Header (1x2 Pins, For Battery) 1 x CLR_COMS (Button Type) 1 x Buzzer 1 x AT/ATX Mode (Switch Type)



Multiplicity Fits Versatile Occasions



CPU

Support Intel® 8th & 9th Gen Core™ Processor



10-Point Touch



Wide-viewing Angle



Adjustable Display



Pop-up Webcam



DVD-RW Drive

*Specifications & features vary depending on model and/or region.



E24

Screen Size	23.8"
CPU	Support Intel® 9th & 8th Gen Processors
Motherboard	H310CH5-TI2
Display	1920 x 1080 FHD with LED-backlight LCD 170° Wide-viewing Angle Aspect Ratio 16:9"
Graphics	Integrated Intel® HD Graphics
Memory	Support 2 x Dual Channel DDR4 SO-DIMMs
Storage	Support 1 x 2.5" Hard Disk Support 1 x M.2 2260 / 2280 slot for SSD
Camera	N/A
ODD	N/A
Audio	2 x 2 W speakers
I/O	Side: 2 x USB 2.0 Rear: 2 x Audio Jacks (1 x Headphone, 1 x microphone) / 1 x RJ-45 / 1 x HDMI out / 1 x D-sub / 2 x USB 2.0 / 2 x USB 3.1 Gen 1 / 1 x 19V DC-In
Wireless	WLAN 802.11 a/b/g/n/ac & BT 4.2
OS Support	Windows 10 64-bit
Power Supply	120W



E22

Screen Size	21.5"
CPU	Support Intel® 9th & 8th Gen Processors
Motherboard	H310CH5-TI2
Display	1920 x 1080 FHD with LED-backlight LCD Support 10-point multi-touch (Optional) 178° Wide-viewing Angle Aspect Ratio 16:9
Graphics	Integrated Intel® HD Graphics
Memory	Support 2 x Dual Channel DDR4 SO-DIMMs
Storage	Support 1 x 2.5" Hard Disk Support 1 x M.2 2260 / 2280 slot for SSD
Camera	2 MP Webcam
ODD	1 x Slim optical DVD-RW
Audio	2 x 2 W speakers
I/O	Side: 2 x USB 2.0 2 x Audio Jacks (1 x Headphone, 1 x microphone) 3-In-1 card reader Rear: 2 x Audio Jacks (1 x Headphone, 1 x microphone) 1 x RJ-45 / 1 x HDMI out / 1 x D-sub / 2 x USB 2.0 2 x USB 3.1 Gen 1 / 1 x 19V DC-In
Wireless	WLAN 802.11 a/b/g/n/ac & BT 4.2
OS Support	Windows 10 64-bit
Power Supply	120W



G24

Screen Size	23.6"
CPU	Support Intel® 9th & 8th Gen Processors
Motherboard	H310CH5-TI2
Display	1920 x 1080 FHD with LED-backlight LCD Aspect Ratio 16:9
Graphics	Integrated Intel® HD Graphics
Memory	Support 2 x Dual Channel DDR4 SO-DIMMs
Storage	Support 1 x 3.5" Hard Disk or 2 x 2.5" Hard Disk Support 1 x Slim Optical Drive (DVD+RW) or 1 x 2.5" Portable Hard Disk
Camera	1.3 MP Webcam
ODD	1 x Slim optical DVD-RW
Audio	2 x 5 W speakers
I/O	Side: 2 x USB 3.0 2 x Audio Jacks (1 x Headphone, 1 x Microphone) 1 x Multi card reader Rear: 2 x Audio Jacks (1 x Headphone, 1 x Microphone) / 1 x RJ-45 / 1 x HDMI out / 1 x D-sub / 2 x USB 2.0 / 2 x USB 3.1 Gen 1 / 1 x 19V DC-In
Wireless	WLAN 802.11 a/b/g/n/ac & BT 4.2
OS Support	Windows 10 64-bit
Power Supply	150W



M24

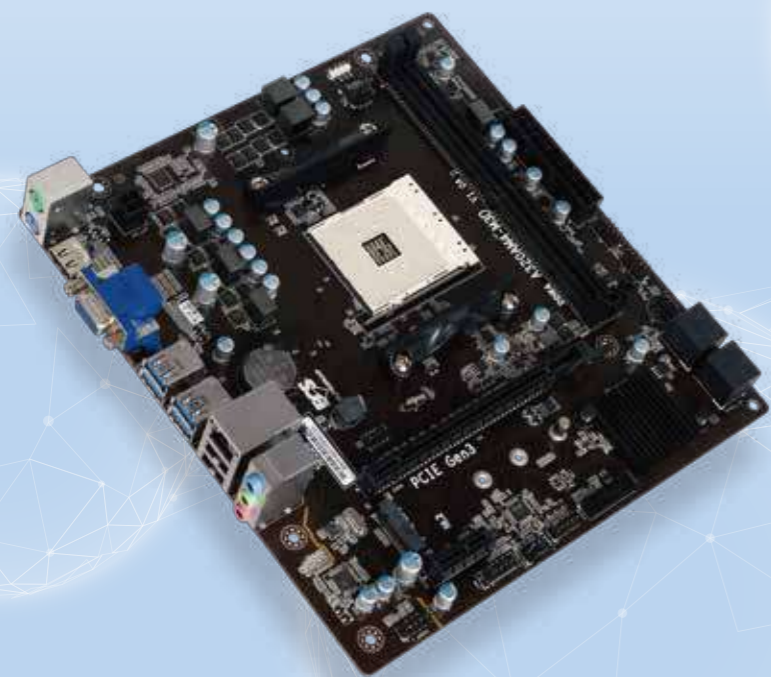
Screen Size	23.8"
CPU	Support Intel® 9th & 8th Gen Processors
Motherboard	H310CH5-TI2
Display	1920 x 1080 FHD with LED-backlight LCD Support 10-point multi-touch (Optional) 178° Wide-viewing Angle Aspect Ratio 16:9
Graphics	Integrated Intel® HD Graphics
Memory	Support 2 x Dual Channel DDR4 SO-DIMMs
Storage	Support 1 x 2.5" Hard Disk Support 1 x M.2 2260 / 2280 slot for SSD
Camera	2 MP Webcam
ODD	1 x Slim optical DVD-RW
Audio	2 x 2 W speakers
I/O	Side: 2 x USB 2.0 2 x Audio Jacks (1 x Headphone, 1 x Microphone) 1 x Multi card reader Rear: 2 x Audio Jacks (1 x Headphone, 1 x Microphone) / 1 x RJ-45 / 1 x HDMI out / 1 x D-sub / 2 x USB 2.0 / 2 x USB 3.1 Gen 1 / 1 x 19V DC-In
Wireless	WLAN 802.11 a/b/g/n/ac & BT 4.2
OS Support	Windows 10 64-bit
Power Supply	120W



DURATHON 2

MOTHERBOARD Quality, Stability and Convenience

A320AM4-M3D V5.0



AMD Chipset
Support Ryzen, A-Series, Athlon™ Processors

BIOS
User-Friendly BIOS

HDMI + D-Sub

High-Definition Audio

ESD Protection

M.2 SSD
Lightning Speed

*Specifications & features vary depending on model and/or region.



Coming Soon

400 Series-A

Form Factor	ATX
Chipset	Intel® Latest Express Chipset
CPU	Intel® 10th Gen Processors for LGA 1200 socket
Memory	4 x DIMMs, Dual Channel DDR4 3200+, up to 64GB
Storage	6 x SATA 6Gb/s support RAID 0,1,5,10 1 x M.2 supports 2242/2260/2280 SATA & PCIe Gen3 x4 SSD & Intel® Optane™ Memory 1 x M.2 supports 2242/2260/2280 PCIe Gen3 x4 SSD, Intel® Optane™ Memory
Expansion Slots	3 x PCI Express x16 Gen 3.0 slot(s) 3 x PCI Express x1 Gen 3.0 slot(s) 1 x M.2 supports 2230 WLAN/BT ,CNVi
Video Output	1 x HDMI / 1 x DP
Audio Controller	8-Channel(7.1) HD Audio subsystem by Realtek ALC1220
Ethernet	Intel® 2.5G LAN Controller
USB	4 x USB 3.1 Gen 2 4 x USB 3.1 Gen 1 5 x USB 2.0
Dimension	305 x 244mm
Others	LED Trace Path with Multi-Color Choice by LED Controller Onboard EAR Phone Amplifier Easy Buttons to OC Easy BIOS update VR Loading LED



Coming Soon

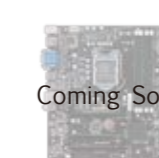
400 Series-A2

Form Factor	ATX
Chipset	Intel® Latest Express Chipset
CPU	Intel® 10th Gen Processors for LGA 1200 socket
Memory	4 x DIMMs, Dual Channel DDR4 3200+, up to 64GB 6 x SATA 6Gb/s support RAID 0,1,5,10 1 x M.2 supports 2242/2260/2280 SATA & PCIe Gen3 x4 SSD & Intel® Optane™ Memory 1 x M.2 supports 2242/2260/2280 PCIe Gen3 x4 SSD
Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) 3 x PCI Express x1 Gen 3.0 slot(s) 1 x M.2 supports 2230 WLAN/BT ,CNVi
Video Output	1 x HDMI / 1 x DP
Audio Controller	8-Channel(7.1) HD Audio subsystem by Realtek ALC892
Ethernet	Realtek RTL8111H Gigabit Controller
USB	2 x USB 3.1 Gen 2 4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	305 x 244mm
Others	LED Trace Path with Multi-Color Choice by LED Controller



Z370-LIGHTSABER

Form Factor	ATX
Chipset	Intel® Z370 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	4 x DIMMs, Dual Channel DDR4 3200+, up to 64GB
Storage	6 x SATA 6Gb/s support RAID 0,1,5,10 1 x M.2 supports 2242/2260/2280 SATA & PCIe Gen3 x4 SSD & Intel® Optane™ Memory 1 x M.2 supports 2242/2260/2280 PCIe Gen3 x4 SSD & Intel® Optane™ Memory
Expansion Slots	3 x PCI Express x16 Gen 3.0 slot(s) 3 x PCI Express x1 Gen 3.0 slot(s)
Video Output	1 x HDMI / 1 x DP
Audio Controller	8-Channel(7.1) HD Audio subsystem by Realtek ALC1150
Ethernet	Killer E2500 Gigabit Controller
USB	2 x USB 3.1 Gen 2 6 x USB 3.1 Gen 1 7 x USB 2.0
Dimension	305 x 244mm
Others	LED Trace Path with Multi-Color Choice by LED Controller Onboard EAR Phone Amplifier Easy Buttons to OC Dual BIOS for Backup VR Loading LED EZ charger by Front USB 3.0 USB2.0 accelerator for KB/MS



Coming Soon

400 Series-M6

Form Factor	Micro-ATX
Chipset	Intel® Latest Express Chipset
CPU	Intel® 10th Gen Processors for LGA 1200 socket
Memory	4 x DIMMs, Dual Channel DDR4 2666, up to 64GB 4 x SATA 6Gb/s support RAID 0,1,5,10 1 x M.2 supports 2260/2280 SATA & PCIe Gen3 x4 SSD & Intel® Optane™ Memory
Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) (x16 Gen 3.0 / x4 Gen 3.0) 2 x PCI Express x1 Gen 3.0 slot(s) 1 x M.2 sup 2230 WLAN/BT, CNVi
Video Output	1 x HDMI / 2 x DP / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC892
Ethernet	Realtek ALC105 (Amplifier)
USB	Intel® i219LM Gigabit Controller 3 x USB 3.1 Gen 2 4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	244 x 244mm
Others	SPI Flash ROM 128Mb+64Mb



Q370H5-M6

Form Factor	Micro-ATX	Form Factor	Micro-ATX
Chipset	Intel® Q370 Express Chipset	Chipset	Intel® Q370 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket	CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	4 x DIMMs, Dual Channel DDR4 2666, up to 64GB	Memory	4 x DIMMs, Dual Channel DDR4 2666, up to 64GB
Storage	4 x SATA 6Gb/s 1 x M.2 supports 2260/2280 PCIe SSD M.2 SATA & PCIe Gen3 x4 SSD & Intel® Optane™ Memory	Storage	4 x SATA 6Gb/s 1 x M.2 supports 2260/2280 PCIe SSD M.2 SATA & PCIe Gen3 x4 SSD & Intel® Optane™ Memory
Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) (x16 Gen 3.0 / x4 Gen 3.0) 1 x PCI Express x1 Gen 3.0 slot(s) 1 x PCI slot(s) 1 x M.2 (2230) WLAN / BT and Intel® CNVi JFP1 card support	Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) (x16 Gen 3.0 / x4 Gen 3.0) 2 x PCI Express x1 Gen 3.0 slot(s) 1 x M.2 (2230) WLAN / BT and Intel® CNVi JFP1 card support
Video Output	1 x HDMI / 1 x DP / 1 x DVI / 1 x D-Sub	Video Output	1 x HDMI / 2 x DP / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC105 (Amplifier)	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC887 Realtek ALC105 (Amplifier)
Ethernet	Intel® WGI 219LM Gigabit Controller	Ethernet	Intel® WGI 219LM Gigabit Controller
USB	6 x USB 2.0 port 4 x USB 3.1 Gen 1 1 x USB 3.1 Gen 2 2 x USB 3.1 Gen 2 Type-C	USB	6 x USB 2.0 4 x USB 3.1 Gen 1 1 x USB 3.1 Gen 2 2 x USB 3.1 Gen 2 Type-C
Dimension	244 x 244mm	Dimension	244 x 244mm
Others	SPI Flash ROM 128Mb+64Mb Support EZ Charger (Position on F_USB 3.1 type C)	Others	SPI Flash ROM 128Mb+64Mb



Q370H5-M16



400 Series-M7

Form Factor	Micro-ATX	Form Factor	Micro-ATX
Chipset	Intel® Latest Express Chipset	Chipset	Intel® H310 / B360 Express Chipset
CPU	Intel® 10th Gen Processors for LGA 1200 socket	CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400, up to 32GB	Memory	2 x DIMMs, Dual Channel DDR4 2666/2400, up to 32GB
Storage	4 x SATA 6Gb/s	Storage	4 x SATA 6Gb/s
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 2.0 slot(s) 1 x PCI Slot	Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 1 x PCI Express x1 Gen 2.0 slot(s)
Video Output	1 x HDMI / 1 x DVI / 1 x D-Sub	Video Output	1 x HDMI or 1 x DVI (H310H5-M2DV only) / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC887	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller	Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 6 x USB 2.0	USB	4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	244 x 220mm	Dimension	190 x 170mm
Others	Support ECS exclusive eBLU, eDLU, eSF software	Others	Support ECS exclusive eBLU, eDLU, eSF software



H310H5-M2 / B360H5-M2



B360 TIGER-T9

Form Factor	Micro-ATX	Form Factor	Micro-ATX
Chipset	Intel® B360 Express Chipset	Chipset	Intel® B360 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket	CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400, up to 32GB	Memory	2 x DIMMs, Dual Channel DDR4 2666/2400, up to 32GB
Storage	4 x SATA 6Gb/s 1 x M.2 supports 2242/2260/2280 PCIe Gen3 x4 SSD & Intel® Optane™ Memory	Storage	4 x SATA 6Gb/s 1 x M.2 supports 2242/2260/2280 SATA & PCIe Gen3 x4 SSD
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 3.0 slot(s)	Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 3.0 slot(s)
Video Output	1 x HDMI / 1 x DVI / 1 x D-Sub (3 Independent Displays support)	Video Output	1 x HDMI / 1 x DVI / 1 x D-Sub (3 Independent Displays support)
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller	Ethernet	Realtek RTL8111H Gigabit Controller
USB	2 x USB 3.1 Gen 2 4 x USB 3.1 Gen 1 6 x USB 2.0	USB	2 x USB 3.1 Gen 2 4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	225 x 185mm	Dimension	225 x 185mm
Others	1 x COM header Support Intel® Optane Technology LED Trace Path with Single Color	Others	1 x COM header LED Trace Path with Single Color



B360 TIGER-9



H310H5-M17

Form Factor	Micro-ATX	Form Factor	Micro-ATX
Chipset	Intel® H310C Express Chipset	Chipset	Intel® H310 / B360 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket	CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400 up to 32GB	Memory	2 x DIMMs, Dual Channel DDR4 2666/2400 up to 32GB
Storage	4 x SATA 6Gb/s 1 x M.2 supports 2260/2280 PCIe X2 / SATA SSD (Opt.)	Storage	4 x SATA 6Gb/s 1 x M.2 supports 2260/2280 PCIe X2 SSD
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 2.0 slot(s) 1 x PCI slot(s)	Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 2.0 slot(s) 1 x PCI slot(s)
Video Output	1 x HDMI / 1 x DVI / 1 x D-Sub	Video Output	1 x HDMI / 1 x DVI / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller	Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 6 x USB 2.0	USB	4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	244 x 190mm	Dimension	244 x 190mm
Others	Support ECS exclusive eBLU, eDLU, eSF software	Others	Support ECS exclusive eBLU, eDLU, eSF software



H310H5-M7 / B360H5-M7



H310CH5-M19

Form Factor	Micro-ATX
Chipset	Intel H310C Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400 up to 32GB
Storage	4 x SATA 6Gb/s
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 1 x M.2 (2230) WLAN / BT
Video Output	1 x HDMI / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 4 x USB 2.0
Dimension	190 x 170mm
Others	Support ECS exclusive eBLU, eDLU, eSF software, COM header



H310CH5-M2

Form Factor	Micro-ATX
Chipset	Intel® H310C Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400, up to 32GB
Storage	4 x SATA 6Gb/s
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 1 x PCI Express x1 Gen 2.0 slot(s)
Video Output	1 x HDMI or 1 x DVI (H310CH5-M2DV only) / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	190 x 170mm
Others	Support ECS exclusive eBLU, eDLU, eSF software



H310CH5-TI2

Form Factor	Thin Mini-ITX
Chipset	Intel® H310 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400 up to 32GB
Storage	2 x SATA 6Gb/s
Expansion Slots	1 x M.2 2260/2280 SATA & PCIe SSD 1 x M.2 (2230) WLAN / BT
Video Output	1 x HDMI / 1 x VGA / 1 x LVDS
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC105 (Amplifier)
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.0 2 x USB 2.0 3 x USB 2.0 (CAM_CR, TP)
Dimension	170 x 170mm
Others	N/A



H310CH5-TI

Form Factor	Thin Mini-ITX
Chipset	Intel® H310 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400 up to 32GB
Storage	2 x SATA 6Gb/s
Expansion Slots	1 x M.2 2260/2280 SATA & PCIe SSD 1 x M.2 (2230) WLAN / BT
Video Output	1 x HDMI-in / 1 x HDMI-out / 1 x LVDS
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC1304 (Amplifier)
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.0 2 x USB 2.0 3 x USB 2.0 (CAM_CR, TP)
Dimension	170 x 170mm
Others	N/A



H310CH5-M7

Form Factor	Micro-ATX
Chipset	Intel® H310C Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR4 2666/2400 up to 32GB
Storage	4 x SATA 6Gb/s 1 x M.2 supports 2260/2280 PCIe X2 SSD
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 2.0 slot(s) 1 x PCI slot(s)
Video Output	1 x HDMI / 1 x DVI / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	244 x 190mm
Others	Support ECS exclusive eBLU, eDLU, eSF software



H310CH5-TI4

Form Factor	Thin Mini-ITX
Chipset	Intel® H310 Express Chipset
CPU	Intel® 9th and 8th Gen Processors for LGA 1151 socket
Memory	2 x DIMMs, Dual Channel DDR3L 1600 up to 32GB
Storage	2 x SATA 6Gb/s 1 x M.2 2260/2280 SATA & PCIe SSD"
Expansion Slots	1 x M.2 (2230) WLAN / BT
Video Output	1 x HDMI / 1 x VGA / 1 x LVDS header
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC105 (Amplifier)
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.0 2 x USB 2.0 3 x USB 2.0 (CAM_CR, TP)
Dimension	170 x 170mm
Others	N/A



GLKD-I

Form Factor	Mini-ITX
Chipset	N/A
CPU	Intel® Gemini Lake J4005 SoC Intel® Gemini Lake J4105 SoC Intel® Gemini Lake J5005 SoC
Memory	1 x SO-DIMM, Single Channel DDR4 2400, up to 8GB
Storage	2 x SATA 6Gb/s (2nd SATA share with M.2 2242/2280 SSD)
Expansion Slots	1 x M.2 slot (2230) supports WLAN/BT and Intel® CNVi Card
Video Output	1 x HDMI / 1 x DP or 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC105 (Amplifier)
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	170 x 170mm
Others	N/A



GLKD-I2

Form Factor	Mini-ITX
Chipset	N/A
CPU	Intel® Gemini Lake J4005 SoC Intel® Gemini Lake J4105 SoC Intel® Gemini Lake J5005 SoC
Memory	1 x SO-DIMM, Single Channel DDR4 2400, up to 8GB
Storage	2 x SATA 6Gb/s
Expansion Slots	1 x M.2 slot (2230) supports WLAN/BT and Intel® CNVi Card
Video Output	1 x HDMI / 1 x DP or 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	170 x 170mm
Others	N/A



GLKD-HTI

Form Factor	Mini-ITX	Form Factor	Mini-ITX
Chipset	N/A	Chipset	N/A
CPU	Intel® Gemini Lake J4005 SoC Intel® Gemini Lake J4105 SoC Intel® Gemini Lake J5005 SoC	CPU	Intel® ApolloLake J3355 SoC Intel® Apollo Lake J3455 SoC Intel® Apollo Lake J4205 SoC
Memory	1 x SO-DIMM, Single Channel DDR4 2400, up to 8GB	Memory	1 x SO-DIMM, Dual Channel DDR3L 1866, up to 8GB
Storage	1 x SATA 6Gb/s port 1 x M.2 slot (2280) supports Single side SATA SSD	Storage	1 x SATA 6Gb/s port 1 x M.2 slot (2280) supports Single side SATA SSD
Expansion Slots	1 x M.2 slot (2230) supports WLAN/BT and Intel® CNVi card	Expansion Slots	1 x M.2 slot (2230) supports WLAN/BT
Video Output	1 x HDMI / 1 x LVDS	Video Output	1 x HDMI / 1 x LVDS
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC105 (Amplifier)	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC105 (Amplifier)
Ethernet	Realtek RTL8111H Gigabit Controller	Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 3 x USB 2.0	USB	4 x USB 3.1 Gen 1 3 x USB 2.0
Dimension	170 x 85mm	Dimension	170 x 85mm
Others	N/A	Others	N/A



APLD-HTI



APLD-MINI3

Form Factor	N/A	Form Factor	Micro-ATX
Chipset	N/A	Chipset	AMD B450
CPU	Intel® Gemini Lake N3350 SoC Intel® Gemini Lake N3450 SoC Intel® Gemini Lake N4200 SoC	CPU	AMD Ryzen™ Processors & 7th Gen A-series / Athlon™ Processors for AM4 socket
Memory	2 x SO-DIMMs, Dual Channel DDR3L , up to 8GB	Memory	2 x DIMMs, Dual Channel DDR4 2667/2400, up to 32GB
Storage	eMMC 64GB/32GB 2.5" HDD (Option)	Storage	4 x SATA 6Gb/s ports support RAID 0,1,10 1 x M.2 supports (2230) WLAN / BT
Expansion Slots	1 x M.2 slot (2230) supports WLAN/BT	Expansion Slots	1 x PCI Express x16 Gen 3.0 slot 1 x PCI Express x1 Gen 2.0 slot
Video Output	1 x HDMI / 1 x D-SUB	Video Output	1 x HDMI / 1 x D-Sub / 1 x DVI
Audio Controller	Realtek ALC233	Audio Controller	8-Channel(5.1) HD Audio subsystem by Realtek ALC887
Ethernet	1 x Gigabit LAN	Ethernet	Realtek RTL8111H Gigabit Controller
USB	3 x USB 3.0 1 x USB 3.0 Type-C 2 x USB 2.0	USB	1 x USB 3.1 Gen 2 5 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	120 x 110.1mm	Dimension	225 x 205mm
Others	N/A	Others	N/A



B450AM4-M5



GLKM-MINI2

Form Factor	N/A	Form Factor	N/A
Chipset	N/A	Chipset	N/A
CPU	Intel® Gemini Lake N4000 SoC Intel® Gemini Lake N4100 SoC Intel® Gemini Lake N5000 SoC	CPU	Intel® Apollo Lake N3350 SoC
Memory	2 x SO-DIMMs, Dual Channel DDR4 2400, up to 8GB	Memory	2 x SO-DIMMs DDR3L, up to 8GB
Storage	eMMC 64GB/32GB 2.5" HDD (Option)	Storage	eMMC 64G/32G 2.5" HDD/SSD (Option)
Expansion Slots	1 x M.2 slot (2230) supports WLAN/BT	Expansion Slots	E Key 2230 supports PCIe/USB M Key 2280/2242 supports PCIe
Video Output	1 x HDMI / 1 x D-SUB	Video Output	1 x HDMI / 1 x mDP
Audio Controller	Realtek ALC233	Audio Controller	Realtek ALC233
Ethernet	1 x Gigabit LAN	Ethernet	Realtek RTL8111H Gigabit Controller
USB	3 x USB 3.0 1 x USB 3.0 Type-C 2 x USB 2.0	USB	4 x USB 3.1 Gen 1
Dimension	120 x 110.1mm	Dimension	120 x 116 x 1.6mm
Others	N/A	Others	N/A



APLM-MINI2



B350AM4-M / B450AM4-M

Form Factor	Micro-ATX	Form Factor	Micro-ATX
Chipset	AMD B350 / B450	Chipset	AMD B350
CPU	AMD Ryzen™ Processors & 7th Gen A-series / Athlon™ Processors for AM4 socket	CPU	AMD Ryzen™ Processors & 7th Gen A-series / Athlon™ Processors for AM4 socket
Memory	4 x DIMMs, Dual Channel DDR4 2667/2400, up to 64GB	Memory	2 x DIMMs, Dual Channel DDR4 2667/2400, up to 64GB
Storage	4 x SATA 6Gb/s ports support RAID 0,1,10 1 x M.2 supports (2230) WLAN / BT 1 x M.2 supports 2280 SATA SSD	Storage	4 x SATA 6Gb/s ports support RAID 0,1,10 1 x M.2 supports (2230) WLAN / BT 1 x M.2 supports 2260/2280 SATA & PCIe X2 SSD"
Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) (x16 Gen 3.0 / x4 Gen 2.0) 1 x PCI Express x1 Gen 2.0 slot(s) 1 x PCI slot	Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) (x16 Gen 3.0 / x2 Gen 2.0) 2 x PCI Express x1 Gen 2.0 slot(s)
Video Output	1 x HDMI / 1 x DP / 1 x D-Sub / 1 x DVI (Optional)	Video Output	1 x HDMI / 1 x DP / 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111GN Gigabit Controller	Ethernet	Realtek RTL8111GN Gigabit Controller
USB	2 x USB 3.1 Gen 2 6 x USB 3.1 Gen 1 5 x USB 2.0	USB	2 x USB 3.1 Gen 2 6 x USB 3.1 Gen 1 5 x USB 2.0
Dimension	244 x 244mm	Dimension	244 x 244mm
Others	N/A	Others	Support ECS exclusive eBLU, eDLU, eSF software Support USB 3.1 Function



B350AM4-M2



B350AM4-M2A

Form Factor	Micro-ATX	Form Factor	Micro-ATX
Chipset	AMD B350	Chipset	AMD A320
CPU	AMD Ryzen™ Processors & 7th Gen A-series / Athlon™ Processors for AM4 socket	CPU	AMD Ryzen™ Processors & 7th Gen A-series / Athlon™ Processors for AM4 socket
Memory	2 x DIMMs, Dual Channel DDR4 2667/2400, up to 64GB	Memory	2 x DIMMs, Dual Channel DDR4 2667/2400, up to 32GB
Storage	4 x SATA 6Gb/s ports support RAID 0,1,10 1 x M.2 supports (2230) WLAN / BT 1 x M.2 supports 2260/2280 SATA & PCIe X2 SSD	Storage	4 x SATA 6Gb/s ports support RAID 0,1,5,10 1 x M.2 supports 2242/2260/2280 PCIe X4 SSD
Expansion Slots	2 x PCI Express x16 Gen 3.0 slot(s) (x16 Gen 3.0 / x2 Gen 2.0) 2 x PCI Express x1 Gen 2.0 slot(s)	Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 1 x PCI Express x1 Gen 2.0 slot(s)
Video Output	1 x HDMI / 1 x DP / 1 x D-Sub	Video Output	1 x HDMI, 1 x DVI, 1 x D-Sub / 1 x HDMI, 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662 Realtek ALC1304 (Amplifier)	Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC662
Ethernet	Realtek RTL8111EPV Gigabit Controller	Ethernet	Realtek RTL8111H Gigabit Controller
USB	2 x USB 3.1 Gen 2 6 x USB 3.1 Gen 1 5 x USB 2.0	USB	6 x USB 3.1 Gen 1 6 x USB 2.0
Dimension	244 x 244mm	Dimension	220 x 205mm
Others	Support USB 3.1 Function Supports DASH function	Others	Support ECS exclusive eBLU, eDLU, eSF software



A320AM4-M3 / M3D v5.0



A320AM4-M7

Form Factor	Micro-ATX
Chipset	AMD A320
CPU	AMD Ryzen™ Processors & 7th Gen A-series / Athlon™ Processors for AM4 socket
Memory	2 x DIMMs, Dual Channel DDR4 2667/2400, up to 32GB
Storage	4 x SATA 6Gb/s ports support RAID 0,1,5,10 1 x M.2 supports 2260/2280 PCIe X4 SSD
Expansion Slots	1 x PCI Express x16 Gen 3.0 slot(s) 2 x PCI Express x1 Gen 2.0 slot(s) 1 x PCI Slot
Video Output	1 x HDMI, 1 x DVI, 1 x D-Sub
Audio Controller	6-Channel(5.1) HD Audio subsystem by Realtek ALC887 AMP IC ALC105
Ethernet	Realtek RTL8111H Gigabit Controller
USB	4 x USB 3.1 Gen 1 (optional 6) 6 x USB 2.0
Dimension	244 x 210mm
Others	Support ECS exclusive eBLU, eDLU, eSF software



H81H3-IA1

Form Factor	ATX	Form Factor	Micro ATX	Form Factor	Micro ATX
Chipset	Intel® H81	Chipset	Intel® H110	Chipset	Intel® H110
CPU	Support LGA 1150 Max. CPU TDP 88W	CPU	Support LGA 1151 Max. CPU TDP 65W	CPU	Support LGA 1151 Max. CPU TDP 65W
Memory	Max. Capacity 16GB 2 x 240-pin DIMM Slots Support DDR3/DDR3L 1066/1333	Memory	Max Capacity 32GB 2 x 288-pin DIMM Slots Support DDR4 2133	Memory	Max Capacity 32GB 2 x 288-pin DIMM Slots Support DDR4 2133"
Storage	4 x SATAIII (6GB/s)	Storage	4 x SATA III (6GB/s)	Storage	4 x SATA III
Expansion Slots	1 x PCIe x 16 Slot (x 16 Signal) 1 x PCIe x 4 Slot (x 1 Signal) 1 x PCIe x 1 Slot (x 1 Signal) 4 x PCI Slots (ITE8892E)	Expansion Slots	2 x PCIe x 16 Slots (x 16 Signal , x 4 Signal) 1 x PCIe x 1 Slot (x 1 Signal) 4 x PCI Slot (ITE 8892E) 1 x VGA	Expansion Slots	2 x PCIe x 16 Slots (x 16 Signal , x 4 Signal) 1 x PCIe x 1 Slot (x 1 Signal) 1 x PCI Slot (ITE 8893E) 1 x VGA
Video Output	1 x VGA 1 x HDMI	Video Output	1 x DVI-D 1 x HDMI	Video Output	1 x DVI-D 1 x HDMI
Audio Controller	Realtek ALC269	Audio Controller	Realtek ALC662	Audio Controller	Realtek ALC662
Ethernet	Support 10/100/1000Mbps 2 x Realtek 8111G 2 x RJ-45 Connectors	Ethernet	Support 10/100/1000Mbps 1 x Intel® 211AT, 1x Intel® i219V 2 x RJ-45 Connectors	Ethernet	Support 10/100/1000Mbps 1 x Intel® i211AT, 1x Intel® i219V 2 x RJ-45 Connectors
Super I/O	ITE IT8786E-I	Super I/O	Fintek F81866AD-I	Super I/O	Fintek F81866AD-I & F81216AD
Rear I/O	1 x VGA 1 x HDMI 2 x RJ-45 2 x USB 2.0 2 x USB 3.1 Gen1 1 x Audio (Mic-In, Line-Out) 2 x COM (2x RS232) 2 x PS/2 Keyboard & PS/2 Mouse Connectors	Rear I/O	1 x VGA 1 x DVI-D 1 x HDMI 2 x RJ-45 2 x USB 2.0 4 x USB 3.0 1 x Audio (Mic-In, Line-Out) 1 x COM (RS232/422/485) 1 x PS/2 Combo Connector	Rear I/O	1 x VGA 1 x DVID 1 x HDMI 2 x RJ-45 2 x USB 2.0 4 x USB 3.0 1 x Audio (Mic-In, Line-Out) 1 x COM (RS232/422/485) 1 x PS/2 Combo Connector
Dimension	305 x 244mm	Dimension	305 x 244mm	Dimension	244 x 244mm
Connectors & Headers	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Buzzer 1 x Case Open Header 1 x CLR_CMOS Header 1 x CPU Fan Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x LAN LED Header 4 x SATA III (6Gb/s) 1 x SYS Fan Header 1 x SPDIF Out Header 4 x USB 2.0 4 x COM 1 x TPM Header 1 x Vertical USB 2.0 Type A Onboard	Connectors & Headers	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Buzzer 1 x ME Disable Header 1 x ME Test 1 x CLR_CMOS Header 1 x CPU Fan Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x GPIO Header (DIO, 8-bit) 4 x SATA III (6GB/s) 5 x COM (RS232) 1 x SYS Fan Header 4 x USB 2.0 1 x TPM Header (2x10 pins) 1 x Vertical USB 2.0 Type A onboard	Connectors & Headers	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Buzzer 1 x ME Disable Header 1 x ME Test 1 x CLR_CMOS Header 1 x CPU Fan Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x GPIO Header (DIO, 8bit) 4 x SATA III (6GB/s) 9 x COM (COM2~COM10, RS232) 1 x SYS Fan Header 4 x USB 2.0 1 x TPM Header 1 x Vertical USB 2.0 Type A onboard



H11H4-IA1

H11H4-IM1



H11H4-IM2



C23H4-II1



H11H4-I

Form Factor	Micro ATX	Mini-ITX	Mini-ITX
Chipset	Intel® H110	Intel® C236	Intel® H110
CPU	Support LGA 1151 Max. CPU TDP 65W	Support LGA 1151 Max. CPU TDP 80W	Support LGA 1151 Max. CPU TDP 65W
Memory	Max Capacity 32GB 2 x 288-pin DIMM Slots Support DDR4 2133	Max Capacity 32GB Support DDR4 2133 ECC/ Non-ECC UDIMM Memory Dual Channel Memory Technology	Max Capacity 32GB 2 x SO-DIMM Slots Support DDR4 2133
Storage	4 x SATA III	8 x SATA III (6Gb/s)	2 x SATA III (6Gb/s)
Expansion Slots	2 x PCIe x 16 Slots (x 16 Signal, x 4 Signal) 1 x PCIe x 1 Slot (x 1 Signal) 1 x PCI Slot (ITE 8893E)	1 x PCIe Gen3 x16	1 x PCIe x 16 Slot (x 16 Signal) 1 x mini-PCIe Slot (with mSATA, USB)
Video Output	1 x VGA 1 x DVI-D	1 x VGA 1 x HDMI 1 x DP	1 x VGA 1 x HDMI 1 x LVDS
Audio Controller	Realtek ALC662	Realtek ALC662	Realtek ALC269
Ethernet	Support 10/100/1000Mbps 1 x Intel® i211AT, 1 x Intel® i219V 2 x RJ-45 Connectors	2 x 10/100/1000Mbps GbE LAN Support by Intel® i210 and Intel® i219 Support Wake-On-LAN Support Energy Efficient Ethernet 802.3az Support PXE	Support 10/100/1000Mbps 2 x Realtek 8111H 2 x RJ-45 Connectors
Super I/O	Fintek F81866AD-I	ITE IT8733E	ITE IT8786E-I
Rear I/O	1 x VGA 1 x DVID 2 x RJ-45 2 x USB 2.0 4 x USB 3.0 1 x Audio (Mic-In, Line-Out) 1 x COM (RS232/422/485) 1 x PS/2 Combo Connector	1 x VGA 1 x HDMI 1 x DP 2 x RJ-45 2 x USB 2.0 4 x USB 3.0 1 x Audio (MIC-in, Line-Out) 1 x COM (RS232/422/485)	1 x VGA 1 x HDMI 2 x RJ-45 4 x USB 3.0 1 x Audio (Mic-In, Line-Out) 2 x COM 2 x COM 1 x PS/2 Combo Connector
Dimension	244 x 244mm	170 x 170mm	170 x 170mm
Connectors & Headers	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Buzzer 1 x ME Disable Header 1 x ME Test 1 x CLR_CMOS Header 1 x CPU Fan Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x GPIO Header (DIO, 8bit) 4 x SATA III (6GB/s) 5 x COM 1 x SYS Fan Header 4 x USB 2.0 1 x TPM Header 1 x Vertical USB 2.0 Type A onboard	1 x TR1 Header 1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x CPU Fan Header 1 x SYS Fan Header 1 x SATA DOM PWR 1 x CLR_CMOS Header 8 x SATA III (6GB/s) 1 x Internal Speaker Header 1 x Front Panel Switch/LED Header 1 x AUX Front Panel Header 2 x USB 3.0 1 x TPM Header 1 x COM (RS232/422/485)	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Case Open Header 1 x CLR_CMOS Header 1 x CPU Fan Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x GPIO Header (8-bit) 1 x LPT Header 1 x LVDS Header 1 x LCD PWR 2 x SATA III (6GB/s) 4 x COM 1 x SYS Fan Header 4 x USB 2.0



H11H4-II1



BTID-I



BTD-I

Form Factor	Mini-ITX	Mini-ITX	Mini-ITX
Chipset	Intel® H110	Intel® Bay Trail D J1900	Intel® Bay Trail D J1800
CPU	Support LGA 1151 Max. CPU TDP 65W	Onboard SoC Max. CPU TDP 10W	Onboard SoC Max. CPU TDP 10W
Memory	Max Capacity 32GB 2 x SO-DIMM Slots Support DDR4 2133	Max. capacity 8GB 1 x SO-DIMM Slot Support DDR3L 1066/1333	Max. capacity 8GB 1 x SO-DIMM Slot Support DDR3L 1066/1333
Storage	2 x SATA III (6Gb/s)	2 x SATA III (3GB/s, SATA1 Support SATADOM)	2 x SATA III (3GB/s)
Expansion Slots	1 x PCIe x 16 Slot (x 16 Signal) 1 x mini-PCIe Slot (mSATA, USB) 1 x M.2 B-Key (M2DOM)	1 x PCIe x 1 Slot (x 1 Signal) 1 x M.2 Slot (PCIe, USB 2.0)	1 x PCIe x1 Slot 1 x mini-PCIe Slot (mSATA, USB 2.0)
Video Output	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x HDMI	2 x VGA(1 x Rear I/O, 1 x Internal Header) 1 x LVDS
Audio Controller	Realtek ALC269	Realtek ALC269	Realtek ALC662
Ethernet	Support 10/100/1000Mbps 2 x Intel® i211AT 2 x RJ-45 Connectors	Support 10/100/1000Mbps 2 x Realtek 8111G 2 x RJ-45 Connectors	Support 10/100/1000Mbps 2 x Realtek 8111H 2 x RJ-45 Connectors
Super I/O	ITE IT8786E-I	ITE IT8786E-I	ITE IT8786E-I
Rear I/O	1 x VGA 1 x HDMI 2 x RJ-45 2 x USB 2.0 4 x USB 3.0 1 x Audio (Mic-In, Line-Out) 2 x COM 1 x PS/2 Combo Connector	1 x VGA 2 x RJ-45 2 x USB 2.0 3 x USB 3.0 1 x Audio (Mic-In, Line-Out) 2 x COM (2x RS232) 2 x PS/2 Keyboard & PS/2 Mouse Connector 1 x DC-In (12V)	1 x VGA 2 x RJ-45 4 x USB 2.0 1 x Audio (Mic-In, Line-Out) 2 x COM (1x RS232, 1xLPT) 2 x PS/2 Keyboard & PS/2 Mouse Connector
Dimension	170 x 170mm	170 x 170mm	170 x 170mm
Connectors & Headers	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Case Open Header 1 x CLR_CMOS Header 1 x SATADOM Jumper 1 x CPU Fan Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x GPIO Header (8-bit) 1 x LVDS Header 1 x VCON Jumper 1 x LVDS PWR Jumper Switch 1 x LCD PWR 2 x SATA III (6GB/s) 4 x COM 1 x SYS Fan Header 2 x USB 2.0 1 x Vertical USB 2.0 Type A onboard	1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Buzzer 1 x Case Open Header 1 x CLR_CMOS Header 1 x Front Panel Audio Header 1 x GPIO Header 1 x LVDS Header (24bits, Dual Channel) 1 x LVDS PWR Jumper Switch 1 x LVDS PWR 1 x PS/2 Header 2 x SATA II (3GB/s) 4 x COM 1 x SYS Fan Header 1 x USB 2.0 1 x TPM Header 1 x Vertical USB 2.0 Type A onboard	1 x 24-pin ATX Power Connector 1 x 4-pin 12V Power Connector 1 x Internal Speaker Header 1 x Buzzer 1 x Case Open Header 1 x CLR_CMOS Header 1 x Front Panel Audio Header 1 x Front Panel Switch/LED Header 1 x GPIO Header 1 x LVDS Header (24bits, Dual Channel) 1 x Internal VGA Header 1 x LVDS PWR Jumper Switch 1 x Inverter 2 x SATA II (3GB/s) 7 x COM 1 x SYS Fan Header 4 x USB 2.0



APL-II2



APL-II2W



APL-II1 (HDMI or DP)

Form Factor	Mini-ITX	Mini-ITX	Mini-ITX
Chipset	Intel® Apollo Lake N3350 / J3355	Intel® Apollo Lake E3940	Intel® Apollo Lake N3350
CPU	Onboard SoC Max. CPU TDP 10W	Onboard SoC Max. CPU TDP 10W	Onboard SoC Max. CPU TDP 10W
Memory	Max. Capacity 8GB 1 x SO-DIMM Slot Support DDR3L 1867	Max. Capacity 8GB 1 x SO-DIMM Slot Support DDR3L 1867	Max. Capacity 8GB 1 x SO-DIMM Slot Support DDR3L 1867
Storage	2 x SATAIII (6GB/s)	2 x SATAIII (6GB/s)	2 x SATAIII (6GB/s)
Expansion Slots	1 x PCIe 1 x M.2_2280,M-Key: SATA Only 1 x M.2_2230,E-Key: PCIe + USB2.0	1 x PCIe 1 x M.2_2280,M-Key: SATA Only (co-lay with SATA#2) 1 x M.2_2230,E-Key: PCIe + USB2.0 (for W.LAN/B.T)	1 x M.2_2280,M-Key: SATA Only 1 x M.2_2230,E-Key: PCIe + USB2.0
Video Output	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x DP 1 x LVDS	1 x VGA 1 x DP or HDMI 1 x LVDS
Audio Controller	Realtek ALC269	Realtek ALC269	Realtek ALC269
Ethernet	Support 10/100/1000mbps 1 x Realtek RTL8111H 1 x Intel® i211-AT 2 x RJ-45 Connectors	Support 10/100/1000mbps 1 x Intel® i210-IT 1 x RJ-45 Connector	Support 10/100/1000mbps 1 x Realtek RTL8111H 1 x RJ-45 Connector
Super I/O	ITE IT8786E-I	ITE IT8786E-I	ITE IT8786E-I
Rear I/O	1 x VGA 1 x HDMI 2 x RJ-45 4 x USB 3.0 1 x COM6 1 x DC-In (12V, 4-PIN type) 1 x RJ11 (12V/24V)	1 x VGA 1 x DP 1 x RJ-45 4 x USB 3.0 1 x COM 1 x DC-In (12V, 4-PIN type)	1 x VGA 1 x DP or HDMI 1 x RJ-45 4 x USB 3.0 1 x DC-In (12V, 4-PIN type) 1 x RJ11 (12V/24V)
Dimension	170 x 170mm	170 x 170mm	170 x 170mm
Connectors & Headers	1 x AT/ATX mode 2 x SYS Fan 1 x Front Panel 1 x Front Audio 1 x Speaker Header 1 x Buzzer 3 x USB 2.0 Header 1 x USB 2.0 Key 2 x SATAIII 5 x COM Header 1 x PS/2 1 x GPIO/DIO 1 x Case Open 1 x CLR_CMOS 1 x LVDS 1 x LVDS PWR Jumper Switch 1 x LVDS PWR 1 x Power Interface (ATX Power, 12V)	1 x AT/ATX mode 2 x SYS Fan 1 x Front Panel 1 x Front Audio 1 x Speaker Header 1 x Buzzer 3 x USB 2.0 Header (5 ports) 1 x USB 2.0 Key 2 x SATAIII 2 x SATA Power 5 x COM Header 1 x PS/2 1 x GPIO/DIO 1 x Case Open 1 x CLR_CMOS 1 x LVDS 1 x LVDS PWR Jumper Switch 1 x LVDS PWR 1 x Power Interface (4 pins ATX Power, 12V)	1 x AT/ATX mode 2 x SYS Fan 1 x Front Panel 1 x Front Audio 1 x Speaker Header 1 x Buzzer 3 x USB 2.0 Header 1 x USB 2.0 Key 2 x SATAIII 2 x SATA Power 5 x COM Header 1 x PS/2 1 x GPIO/DIO (4-bit) 1 x Case Open 1 x CLR_CMOS 1 x LVDS 1 x LVDS PWR Jumper Switch 1 x LVDS PWR 1 x Power Interface (ATX Power, 12V)



SKLU-IE1



SKLU-IE2



APLU-IC1

Chipset	Intel® Celeron® 3955U Processor Intel® Core™ i5-6200U Processor Intel® Core™ i5-6300U Processor	Intel® Celeron® 3955U Processor Intel® Core™ i5-6200U Processor Intel® Core™ i5-6300U Processor	Intel® Celeron® N3350 Processor
CPU	Intel® Skylake U, Onboard SoC Max. CPU TDP 15W (cTDP-up 25W)	Intel® Skylake U, Onboard SoC Max. CPU TDP 15W (cTDP-up 25W)	Intel® Aplo Lake, Onboard SoC, TDP up to 12W
Memory	Max. Capacity 8GB , Define 2G, 4G Onboard Memory Support DDR4 2133	Max. Capacity 8GB, Define 2G, 4G Onboard Memory Support DDR4 2133	Support dual channel Onboard Memory, DDR3L, Support 2GB 1 x SO-DIMM Slot, DDR3L, Support 2GB/4GB/8GB
Storage	1 x SATAIII (6GB/s)	1 x SATAIII (6GB/s)	EMMC (BOM Option)
Expansion Slots	1 x mini-PCIe Slot (mSATA, USB2.0) 2 x M.2 Slots (1x 2230 E Key, 1x 2242 B Key) 1 x Micro SIM Card Slot	1 x mini-PCIe Slot (with mSATA, USB2.0) 2 x M.2 Slots (1x 2230 E Key, 1x 2242 B Key) 1 x Micro SIM Card Slot	1 x mini-PCIe Slot with PCIe, USB 2.0 ,SIM 1 x mSATA 1 x M.2 2230 Slot, Key E 1 x SIM Slot
Video Output	1 x VGA 1 x HDMI	1 x VGA 1 x HDMI 1 x LVDS	1 x VGA 1 x DP++ 1 x LVDS
Audio Controller	Realtek ALC269	Realtek ALC269	Realtek ALC269
Ethernet	Support 10/100/1000mbps 2 x Intel® i211 2 x RJ-45 Connector	Support 10/100/1000mbps 2 x Intel® i211 2 x RJ-45 Connector	Support 10/100/1000mbps 2 x Intel® i211-AT / 2x RJ-45 Connectors 2 x RJ-45 Connector
Super I/O	ITE IT8786	ITE IT8786	ITE IT8528VG
I/O	Front I/O: 1 x HDMI 2 x USB 2.0 5 x COM (1x DB-9, 1x DB-44) 1 x PS/2 Combo Connector 1 x Power On Button with LED 1 x Reset Button Rear I/O: 1 x VGA 2 x RJ-45 4 x USB 3.0 1 x COM (1x DB-9) 1 x DC-In (12V~28V) 1 x Audio Line Out	Front I/O: 1 x HDMI 2 x USB 2.0 3 x COM (3x DB9) 1 x PS/2 Combo Connector 1 x Power On Button with LED 1 x Reset Button Rear I/O: 1 x VGA 2 x RJ-45 4 x USB 3.0 1 x COM (1x DB-9) 1 x Audio Line Out	Front I/O: 2 x COM (RS232/422/485) 1 x DP++ 1 x Reset Button 1 x Power Button w/ Power LED 1 x HDD LED 2 x USB 2.0 Connector Rear I/O: 1 x VGA 2 x RJ-45 4 x USB 3.0 1 x DC-In (9V~36V)
Dimension	185 x 115mm	185 x 115mm	146 x 102mm
Connectors & Headers	1 x Buzzer 1 x CLR_CMOS Header 1 x GPIO Header 1 x HDD LEN 1 x SATA III (6Gb/s) 1 x SATA Power 1 x USB 2.0 Header 1 x AT/ATX Mode 2 x USB 3.0 Power 1 x USB 2.0 Power	1 x 4-pin 12V Power Connector 1 x Buzzer 1 x CLR_CMOS Header 1 x GPIO Header 2 x COM Header 1 x HDD LEN 1 x SATA III (6Gb/s) 1 x SATA Power 1 x USB 2.0 Header 1 x AT/ATX Mode 2 x USB 3.0 Power 1 x USB 2.0 Power 1 x LVDS Header	1 x Battery Header 1 x Front Audio Panel Pin Header 1 x Front Panel Pin Header 1 x CPU FAN 1 x CLR_COMS 1 x Buzzer 1 x AT/ATX Mode 2 x COM Header 1 x LVDS Header 1 x Panel power (3.3V ,5V and 12V) 1 x Backlight power (5V and 12V)



APLU-IC1W

Chipset	Intel® Atom® x5 E3940 Processor	Chipset	Intel® Celeron® N3350 Processor
CPU	Intel® Apollo Lake , Onboard SoC, TDP up to 12W	CPU	Onboard SoC, TDP up to 12W
Memory	Support dual channel Onboard Memory, DDR3L, Support 2GB 1 x SO-DIMM Slot, DDR3L, Support 2GB/4GB/8GB	Memory	Support dual channel Onboard Memory, DDR3L, Support 2GB 1 x SO-DIMM Slot, DDR3L, Support 2GB/4GB/8GB
Storage	EMMC (BOM Option)	Storage	NA (BOM Option)
Expansion Slots	1 x Mini PCIe Slot with PCIe, USB 2.0, SIM 1 x mSATA 1 x M.2 2230 Slot, Key E 1 x SIM Slot	Expansion Slots	1 x Mini PCIe Slot with PCIe, USB 2.0, SIM 1 x mSATA 1 x M.2 2230 Slot, Key E 1 x SIM Slot
Video Output	1 x VGA 1 x DP++ 1 x LVDS	Video Output	1 x VGA 1 x DP++ 1 x LVDS
Audio Controller	Realtek ALC269	Audio Controller	Realtek ALC269
Ethernet	Support 10/100/1000mbps 2 x Intel® i210-IT 2 x RJ-45 Connector	Ethernet	Support 10/100/1000mbps 2 x Intel® i211-AT 2 x RJ-45 Connector
Super I/O	ITE IT8528VG	Super I/O	ITE IT8528VG
I/O	Front I/O: 2 x COM (RS232/422/485) 1 x DP++ 1 x Reset Button 1 x Power Button w/ Power LED 1 x HDD LED 2 x USB 2.0 Connector Rear I/O: 1 x VGA 2 x RJ-45 4 x USB 3.0 1 x DC-In (9V~36V)	I/O	Front I/O: 1 x DP++ 1 x Reset Button 1 x Power Button w/ Power LED 1 x HDD LED 2 x COM (RS232/422/485) Rear I/O: 1 x VGA 2 x RJ-45 4 x USB 3.0 1 x DC-In (9V~23V)
Dimension	146 x 102mm	Dimension	146 x 102mm
Connectors & Headers	1 x Battery Header 1 x Front Audio Panel Pin Header 1 x Front Panel Pin Header 1 x CPU FAN 1 x CLR_COMS 1 x Buzzer 1 x AT/ATX Mode 2 x COM Header 1 x LVDS Header 1 x Panel power (3.3V, 5V and 12V) 1 x Backlight power (5V and 12V)	Connectors & Headers	1 x Battery Header 1 x Front Audio Panel Pin Header 1 x Front Panel Pin Header 1 x CPU FAN 1 x CLR_COMS 1 x Buzzer 1 x SATA Connector 1 x AT/ATX Mode 2 x COM Header 1 x LVDS Header 1 x USB 2.0 Header 1 x Panel power (3.3V, 5V and 12V) 1 x Backlight power (5V and 12V)



APLU-IC2

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