

JHCTECH 集和诚

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JHCTECH IoT Computer
Connecting the Dots

AI Edge Computing System

AI

集和诚科技于2002年4月在深圳成立，是一家集研发，生产，销售和服务于一体的智能物联系统供应商。自创立以来，依托丰富的行业经验和强大的科研背景，践行“场景赋能产品创新”的战略方针，持续专注于AI边缘计算及系统应用平台的研发与生产，实现“物联机 联万物”的智慧时代。其多元化的产品和服务包括AI边缘计算、边缘控制器、无风扇车载电脑、工业平板电脑、嵌入式箱体电脑、国产化无风扇箱体电脑、工业控制计算机、单板计算机等，以及专注于行业应用和人工智能增值服务的定制解决方案，赋能各行各业的数字化转型。产品已通过3C、CE、FCC、E-Mark、EN50155等安全法规和行业认证，广泛应用于智能交通、数字化工厂、智慧物流、智慧医疗、能源和环保等多个领域。

企业文化

战略目标:场景赋能产品创新

经营理念:专注行业、精于产品、优于服务

战略口号 :物联机联万物

核心价值观:诚信、感恩、负责任

企业精神:以用户为中心，坚韧不拔，奉献，学习，创新，协同，包容，利他，向善

企业使命:致力于建设一个更智慧的地球和一个更智能化的明天;帮助改善每个人进步及长期发展,对世界的贡献

企业愿景:宁失利,勿失信。成为守诚信,重品质,敢担当,谋共赢的智能物联生态商业文明之典范

八大价值观

价值:借助技术创新为用户创造最大价值;

奋斗:坚持长期主义,努力奋斗,享受工作的快乐;

精神:任何方法论以核心价值观及企业精神衡量;

学习:学习力就是生命力，-切结果归根结底都是能力的体现;

团队:赋能个人成长,激活组织创造力,共建相互成就型组织;

行动:成功的标准是达成目标,效率和行动是关键;

情感:重情重义,不讲平均主义,反对机会主义;

双赢:链接共生,协同增效;成就他人,共利社会。

竹林效应：

一根竹子，如果它没有生在竹林里，而是孤立的，那就没有强大而发达的根系。但当竹子生长在竹林里时，它就像互相协调的生态系统。他们的根系交织在一起，一边不断向外延伸，一边为新的竹笋快速成长提供丰富的能量。我们以利他，向善的企业文化价值取向与用户共创价值。我们以用户为中心，依托经营的意志力及组织生长力形成竹林效应。将使命，愿景和价值观传递到产品及服务中，为用户创造价值。



About JHCTECH

JHCTECH, established in 2002, is an intelligent IoT system supplier with extensive capabilities in research and development, production, sales, and service. With over two decades of experience in the industry and a strong scientific research background, JHCTECH is committed to a strategic approach of "Scenario Empowering Product Innovation". Continuously focusing on developing AI edge computing and system application platforms to usher in the intelligent era of "IoT computer connecting the dots."

JHCTECH offers a diverse range of products and services, including AI edge computing, edge controllers, fanless in-vehicle computers, industrial panel PCs, embedded box computers, domestically produced fanless box computers, industrial control computers, single-board computers, and customized solutions focused on industrial applications and AI value-added services, empowering digital transformation across all industries. These products have passed safety regulations and industry certifications such as 3C, CE, FCC, E-Mark, and EN50155, and are widely used in various fields such as intelligent transportation, digital factories, smart logistics, smart healthcare, energy, and environmental protection.

Corporate Culture

Brand Strategy: Scenario Empowering Product Innovation

Business Philosophy: Focus on the industry, specialize in products, and excel in services

Strategic Slogan: IoT Computer, Connecting the Dots

Core Values: Integrity, gratitude, and responsibility

Corporate Spirit: Customer-centric, tenacious, dedicated, learning, innovative, collaborative, inclusive, altruistic, and virtuous.

Corporate Mission: Committed to building a smarter earth and a more intelligent tomorrow, helping to improve everyone's progress and long-term development, and contributing to the world.

Corporate Vision: Rather lose everything than lose integrity. Become a model of smart IoT ecological and commercial civilization that keeps integrity, emphasizes quality, is courageous and seeks win-win outcomes.

Eight Corporate Values

1.Value: Creating maximum value for users through technological innovation.

2.Strive: Upholding long-termism, striving hard, and enjoying the joy of work.

3.Spirit: All methodologies are measured by core values and corporate spirit.

4.Learning: Learning is vital as all achievements ultimately reflect one's capabilities.

5.Team: Empowering individual growth, activating organizational creativity, and co-building a mutually fulfilling organization.

6.Action: The standard of success is goal achievement; efficiency and action are the keys.

7.Affection: Valuing emotions and principles, opposing egalitarianism and opportunism.

8.Win-Win: Linking symbiosis, synergizing for increased efficiency; achieving success for others, benefiting society as a whole.

Bamboo Forest Effect:

A bamboo, if it does not grow in a bamboo forest but is isolated, does not have a strong and developed root system. But when bamboo grows in a bamboo forest, it acts like a coordinated ecosystem. Their root systems are intertwined and continue to extend outward while providing abundant energy for the rapid growth of new bamboo shoots. We create value with users based on the corporate cultural value orientation of altruism and kindness. We are user-centered and rely on our business willpower and organizational growth to form the Bamboo Forest Effect. Transmit mission, vision and values into products and services to create value for users.



BRAV

Edge Computing System
边缘计算系统——布拉沃系列

A

CNTI

Fanless Computer
国产化无风扇箱体电脑——信泰系列

KGEC

Edge Controller
边缘控制器——考工系列(KAGO)

B

KMDA

Embedded Box Computer
嵌入式箱体电脑——卡曼达系列

C

ECC

Embedded Box PC
能源控制器系列

ALAD

Industrial Panel PC
工业平板电脑——阿拉丁系列

D

WPPC

Industrial Waterproof Panel PC
防水工业平板电脑

SIGM

Fanless In-Vehicle Computer
嵌入式车载电脑——西格玛系列

E

ICS

Intelligent control system
交通监控服务器

SBC

Embedded Single Board Computer
嵌入式单板电脑系列

F

NODE

NODE Core Module
NODE 核心模块

PADR

IPC-PADR Series
工业控制计算机——潘多拉系列

JHCTECH IoT Computer
Connecting the Dots

BRAV
Edge Computing system

       								
BRAV-7131 (NVIDIA Jetson) BRAV-7121 (NVIDIA Jetson) BRAV-7201 BRAV-7220 BRAV-7302 BRAV-7501 BRAV-7520 BRAV-7521								
System								
CPU	8*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU 12*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU		6*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU 8*Cores Arm® Cortex®-A78AE v8.2 64 bit CPU		6th gen Intel Skylake-U Celeron 3855U; Core-U: I3-6100U; I5-6200U; I7-6500U; 7th gen Intel Kabylake-U Celeron 3865U; Core-U: I3-7100U; I5-7200U;I7-7500U		Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W/28W	
RAM	S001: 32GB; S002: 64GB 256 bit LPDDR5		S001: 8GB; S002: 16GB, 128 bit LPDDR5		2* DDR4 2133MHz, 32GB max.		2*DDR4 3200MHz, 64GB max.	
Graphics	S001:NVIDIA Ampere GPU, 1792 Cuda cores+ 56 Tensor Cores; S002:NVIDIA Ampere GPU, 2048 Cuda cores+ 64 Tensor Cores		S001:NVIDIA Ampere GPU, 1024 Cuda cores+ 32 Tensor Cores; 765MHz S002:NVIDIA Ampere GPU, 1024 Cuda cores+ 32 Tensor Cores; 918MHz		CPU integrated Intel 9th gen HD Graphics, HEVC/H265 HW HD codec, HDMI: 3940*2160@30Hz, DP: 4096*2160@60Hz		Intel UHD / Iris®Xe Graphics , Supports Intel DeepLearning boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI2.0:4096x2304@60Hz, DP 1.4: 7680x4320@60Hz	
I/O Interfaces								
LAN	5*Intel I210AT, 10-1000M, NTP		4*Intel I210AT, 10-1000M, NTP		4* Intel I211AT/I210AT, 10-1000M, 1*Intel I219LM, 10-1000M, iVpro		3*Intel I226V, 10M-2.5G , iAMT 13.0/iVpro	
USB	2*USB3.2 Gen2(10Gbps); 2*USB2.0		2*USB3.2 Gen2(10Gbps); 2*USB2.0		4* USB3.0 + 2* USB2.0		2* USB3.2 + 2* USB2.0	
Display	1* HDMI		1* HDMI		1* DP + 1* HDMI		1* DP + 1* HDMI	
Audio	1*Line out, Realtek ALC5640		1*Line out, Realtek ALC5640		1* Line out + 1* MIC		/	
Serial Port	2*RS232/422 ; 2*RS232		1*RS232/422/485 ; 1*RS232; 2*Iso. CAN		2*RS232/422/485 + 4*RS232		2*RS232/422/485	
DIO	8bit DIO, TTL, 2.5KV optical isolation input/output		8bit DIO, TTL, 2.5KV optical isolation input/output		8-bit TTL programmable input/output; 8-bit 2.5KV input opto-isolator(H:5-24V, L:0-1.5V), input/output 8-bit 2.5KV output opto-isolator(100mA)		8bit DIO, TTL, 2.5KV optical isolation	
Storage								
Storage	64GB eMMC, optional 1*2.5" SATA3; 1*M.2 2280 M-Key(PCIeX4),NVMe; 1*Micro SD		1*M.2 2280 M-Key(PCIeX4),NVMe; 1*Micro SD		1*2.5" SATA3+ 1*mSATA		1*2.5"SATA3+ 1*mSATA ; 2*M.2 M-Key 2280(PCIeX2), NVMe	
Expansion								
Expansion Port	1*Mini PCIe(PCIeX2+USB+SIM), 4G LTE/LAN/CAN; 1*M.2 3052 B-Key(PCIeX2+USB+SIM), 4G LTE/5G; 1*M.2 2280 M-Key(PCIeX4), NVMe/AI module 1*M.2 2230 E-Key(PCIeX1+USB), WiFi6/BT5.0		1*Mini PCIe(PCIeX2+USB+SIM), 4G LTE/LAN/CAN; 1*M.2 3052 B-Key(PCIeX2+USB+SIM), 4G LTE/5G; 1*M.2 2280 M-Key(PCIeX4), NVMe/AI module		1*Mini PCIe with SIM slot 1*M.2 B-Key 3042(PCIe X1/USB+SIM),4G LTE 1*M.2 B-Key 3052(PCIe X1/USB+SIM),4G LTE/5G 1*M.2 M-Key 2280(PCIe4.0X2), NVMe/AI module 1*M.2 M-Key 2280(PCIe3.0X2), NVMe/AI module		1*Mini PCIe with SIM slot; 1*M.2 with SIM slot, 1* full size mSATA; 1*half size Mini PCIe, 1*JHC-Express-02 EIO Express bus	
Power Supply								
Pwr Consump TDP	DC9-36V; DC out 12V 3A(Max); 50.4W (Jetson AGX Orin 32GB)		DC9-36V; DC out 12V 3A(Max); TBD		DC9-30V; 24W (I3-6100 CPU 4G DDR4)		DC9-36V; 38.4W (I5-1135G7 CPU/16G DDR4/256G SSD)	
Mechanical								
Structure	Fan cooling design, SGCC chassis		SGCC chassis		Aluminum Case, SGCC chassis		Aluminum Case,SGCC chassis	
Dimension (W*H*D)	256.4*168*86.5mm		190*145*68mm		225*144.3*87.5mm		326.4*183*96.6mm	
Net Weight	3.25KG		TBD		2.2kg		4.67KG	
Environmental								
Operating Temp	-20°C~60°C,with air flow		-20°C~60°C,with air flow		-25°C~60°C,Fanless, SSD, with air flow, -10°C~50°C,Fanless, HDD, with air flow		-20°C~70°C,with air flow(CPU,non VPU); -20°C~60°C,with air flow(CPU+2*VPU)	
Storage Temp	-40°C~85°C		-40°C~85°C		-40°C~85°C		-40°C~85°C	
Storage Humidity	10~90%@40°C, Non-condensing		10~90%@40°C, Non-condensing		10~90%@40°C, No-condensation		10~95%@40°C, No-condensation	
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/during operation(HDD)		5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/during operation(HDD)		5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/during operation(HDD)		5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	
Shock	50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)		50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)		50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)		50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)	
Certification/ EMC	CE/FCC Class A		CE/FCC Class A		CE/FCC Class A		CE/FCC Class A	
OS	Linux Ubuntu 18.04/20.04 with JetPack		Linux Ubuntu 18.04/20.04 with JetPack		Linux Fedora Ubuntu		Windows 10 64 bit, Windows 11 64 bit, SUSE, Linux, Wind River	
Windows 7, Windows 10, Linux Fedora Ubuntu								
Windows10/Windows Server 2016 (Intel® Xeon® E) Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)								
Windows10/Windows Server 2016 (Intel® Xeon® E) Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)								
Windows10/Windows Server 2016 (Intel® Xeon® E) Ubuntu/SuSe/Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)								

       								
BRAV-7601-S BRAV-7601-T BRAV-7720-S001 BRAV-7720-WP BRAV-7721-S001 BRAV-7721-WP CNTI-3A51 (Loongson 3A5000) CNTI-R351 (Rockchip RK3588)								
System								
CPU	Intel® Comet lake 10th-Gen Celeron/Pentium/ Corei9/i7/i5/i3 CPU, Intel® Q470 PCH	Intel® Comet lake 10th-Gen Celeron/Pentium/ Corei9/i7/i5/i3 CPU, Intel® Q470 PCH	Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH	Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH	Intel® Alder lake-S 12th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® Q670 PCH	Loongson3A5000, 4 Cores, 2.3GHz-2.5GHz, LS7A1000 PCH	Rockchip RK3588, 4 Cortex-A76 and 4 Cortex-A55, 2.4GHz	
RAM	2*DDR4 SO-DIMM,2933MHz, 64GB max.	2*DDR4 SO-DIMM, 2933MHz, 64GB max.	2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.	2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.	2*262-Pin SODIMM, DDR5 4800MHz, 64GB max.	2*288 Pin DIMM, DDR4 3200MHz, 64GB max.	Onboard memory, 4GB LPDDR4	
Graphics	Intel® UHD Graphics, DirectX 12, OpenGL 4.5, 2*HDMI: 4096x2304@24Hz, 1*VGA: 1920*1200@60Hz; 1*MXM3.1, GPU/AI card<190W, 2*DP, 4K display	Intel® UHD Graphics, support DirectX 12, OpenGL 4.5, 2*HDMI 1.4: 4096 x 2304@24Hz 1*VGA: 1920x1200@60Hz	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0, DP:7680*4320@60Hz, HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent displays	Nuclear display	Mali-G610 GPU, OpenGL ES3.2/OpenCL2.2/ Vulkan1.1, 2D&3D acceleration hardware; HDMI:1920*1080@60Hz NPU: 6 TOPS, INT4/INT8/INT16/FP16
I/O Interfaces								
LAN	3*Intel I226V,3*2.5G-LAN, iAMT 13.0/iVpro; 4* Intel I226V with POE+, 10-1000M(S002)	3*Intel I226V,3*2.5G-LAN,iAMT 13.0/iVpro; 4* Intel I226V with POE+, 10-1000M(T002)	2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0	2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0	2* Intel I226V, 10-1000M; 1* Intel I219LM,10-1000M, iAMT 12.0	2*88E1512, 10-1000M	2*RTL8211F, 10-1000M; 2*RTL8111H,10-1000M	
USB	4* USB3.2(10G)+2*USB2.0+2*USB3.0(optional); 2* USB3.2(5G,S002)	4* USB3.2(10G) + 2*USB2.0; 2* USB3.2(5G,T002)	4* USB3.2(10G)+2*USB3.0(5G)	4* USB3.2(10G)+2*USB3.0(5G)	4* USB3.2(10G)+2*USB3.0(5G)	4* USB3.0 + 2* USB2.0	2* USB3.0+2*USB2.0	
Display	2* HDMI + 1* VGA; GPU 2*DP	HD graphics 2* HDMI + 1* VGA	1* DP+1*HDMI+1* VGA	1* DP+1*HDMI+1* VGA	1* DP+1*HDMI+1* VGA	1* HDMI + 1*VGA	1*HDMI	
Audio	1* Line out + 1* MIC,optional audio	1* Line out + 1* MIC,Realtek ALC662VD	/	/	/	1* Line out+1* MIC, Realtek ALC269Q-VC		
Serial Port	2*RS232/422/485 + 2*RS232	2*RS232/422/485 + 2*RS232	2*RS232/422/485	2*RS232/422/485	2*RS232/422/485	12*RS232/422/485(3*DB44)	1*RS232+1*RS485; 2*CAN (CAN Open2.0,DB9)	
DIO	8 bit TTL, programmable input/output 8+16 bit TTL, programmable input/output(S002)	T001: 8 bit TTL, programmable input/output; T002: 8 bit TTL,programmable input/output, 8 bit PNP/NPN 2.5KV input/output	Optional 16bit DIO, TTL , programmable input/output	Optional 16bit DIO, TTL , programmable input/output	Optional 16bit DIO, TTL signal, programmable input/output	24bit isolated DIO(12bit DI, 12bit DO)	1*8 bit DIO(DB9)	
Storage								
Storage	2*2.5"SATA3 HDD(RAID0,1), 15mm; 1*M.2 2280 M-Key(PCIeX4), NVME; 1*mSATA(optional)	2*2.5"SATA3 HDD(support RAID0,1), max support dual 15mm HDD, 1*M.2 2280 M-Key(PCIeX4 signal), support NVME, 1*mSATA(optional)	2*2.5"SATA3 HDD(RAID0/1), 15mmthickness, 1*M.2 2280 M-Key(PCIe4.0X4), NVME, 1*mSATA(optional)	2*2.5"SATA3 HDD(RAID0/1), 15mmthickness, 1*M.2 2280 M-Key(PCIe4.0X4), NVME, 1*mSATA(optional)	2*2.5"SATA3 HDD(RAID0/1), 15mmthickness, 1*M.2 2280 M-Key(PCIe4.0X4), NVME, 1*mSATA(optional)	2*2.5"SATA3; 1*M.2 M-Key 2280(PCIe2.0X4), NVMe	Onboard 32G eMMC, 1*M.2 2242 M-key, NVMe	
Expansion								
Expansion Port	1*Mini-PCIe(USB2.0+SIM),mSATA/4G LTE; 1*M.2 2230 E-key(PCIeX1/USB+CNVio), WiFi6/BT5.0; 1*M.2 3052 B-key(PCIeX1/USB+SIM), 5G/4G LTE; 1*M.2 2280 M-Key(PCIeX4), NVME/PCIe; 1*MXM3.1(PCIeX16),up to 190W; JHCTECH-02 E/IO, 2*PCIeX4, 2*USB3.2, 2*USB2.0	1*Mini-PCIe(USB2.0+SIM), mSATA/4G LTE; 1*M.2 2230 E-key(PCIeX1/USB+CNVio),WiFi6/BT5.0; 1*M.2 3052 B-key(PCIeX1/USB+SIM), 5G/4G LTE; 1*M.2 2280 M-Key(PCIeX4), NVME/PCIe; 1*MXM3.1, MLU220-MXM AI card; JHCTECH-02 E/IO: 2*PCIeX4, 2*USB3.2, 2*USB2.0	1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVME; 1*PCIe5.0X16(X16),GPU<450W<300mm 1*PCIe4.0X16(X4),AI card<75W<300mm	1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVME; 1*PCIe5.0X16(X16),GPU<450W<300mm 1*PCIe4.0X16(X4),AI card<75W<300mm	1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVME; 2*PCIe5.0X16(X8) ,GPU<450W<300mm; 2*PCIeX16(4.0X4+3.0X4) ,AI card<75W<300mm	1*Mini PCIe(PCIeX1/USB+SIM),4G LTE/PCIe; 1*Mini PCIe(PCIeX1/SATA),mSATA; 1*M.2 3052 B-Key(PCIeX1/USB+SIM),5G NR; 1*M.2 2280 M-Key(PCIe4.0X4), NVME; 2*PCIe5.0X16(X8) ,GPU<450W<300mm; 2*PCIeX16(4.0X4+3.0X4) ,AI card<75W<300mm	1*M.2 2280 M-Key(PCIe2.0X4), NVMe 1*M.2 2230 E-Key(PCIeX1/USB2.0), WIFI	1*Full size Mini PCIe(+SIM), 4G LTE; (Opt.) onboard Wifi6/BT5.0
Power Supply								
Pwr Consump Input Voltage	DC 9-36V 3-pin, with short circuit protection, over voltage& over current protection	DC 9-36V 3-pin, with short circuit protection, over voltage& over current protection	DC 12V, 1000W max. ; TDP:TBD	DC 9-55V, 600W max. ; TDP:TBD	DC 12V 5-pin 1000W max. ; TDP:TBD	DC 9-55V , 1000W max. ; TDP:TBD	DC 12-36V; TDP: TBD	DC 9-36V ; TDP:TBD
Mechanical								
Structure	Temperature controlled fan, SGCC	Aluminum chassis, SGCC	SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan	SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan	SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan	SGCC frame, Aluminum-magnesium alloy chassis, temperature control by PWM fan	Aluminum chassis, SGCC	Aluminum-magnesium alloy, SGCC frame
Dimension (W*H*D)	284*222*82mm	284*222*80.5mm	195*374.7*254.8mm	262*374.7*178mm	245*376.8*254.8mm	230*350*210mm	312*220.2*78mm	169*100*44.2mm
Net Weight	6.70kg	6.40kg	TBD	TBD	TBD	TBD	TBD	TBD
Environmental								
Operating Temp	-20~-60°C, SSD, airflow	-20~-60°C, SSD, airflow	-20~-60°C, SSD, with air flow	-20~-60°C, SSD, with air flow	-20~-60°C, SSD, with air flow	-20~-60°C, SSD, with air flow	-20°C~-60°C,SSD ,with air flow;	-20~-60°C, SSD, air flow
Storage Temp	- 40°C~85°C	- 40°C~85°C	- 40°C~85°C	- 40°C~85°C	- 40°C~85°C	- 40°C~85°C	- 40°C~85°C	- 40°C~85°C
Storage Humidity	10~90%@40°C, No condensation	10~90%@40°C, No condensation	10~95%@40°C, No-condensation	10~95%@40°C, No-condensation	10~95%@40°C, No-condensation	10~95%@40°C, No-condensation	10~95%@40°C, No-condensation	10~95%@40°C, Non-condensing
Vibration	5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	5grms/5~500Hz/random/during operation(SSD); 1grms/5~500Hz/random/during operation(HDD)	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)
Certification/ EMC	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
OS	Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7	Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	UOS /KylinOS/LOONGNIX/openEuler	Android, Linux

 		
CNTI-2K10 CNTI-2K20		
System		
CPU	Loonson 2K1000LA, 800MHz-1.0GHz	Loonson 2K2000, 1.5GHz, L2:2MB
RAM	Onboard memory,DDR3, 1GB/2GB	Onboard memory,DDR4, 8GB
Graphics	/	VGA:1920x1200@60fps, LVDS:1920x1080@60fps
I/O Interfaces		
LAN	2*LAN, 10M-1000M	2*LAN, GNET(CPU),10M-1000M
USB	2*USB2.0	4*USB3.0 + 2*USB2.0
Display	/	2*VGA+1*LVDS
Audio		
Serial Port	2*RS232+2*RS485+2*CAN (2*7pin)	2*RS232/422/485 + 8*RS232, 1*SD Card
DIO	1*8 bit GPIO(DB9)	/
Storage		
Storage	1*SATA2.0 M.2 2242 B-KEY, standard with 32GB SSD	128GB eMMC; 1*mSATA, 1*SD
Expansion		
Expansion Port	1*SATA2.0 M.2 2242 B-KEY; 1*M.2 NGFF 2230 E-KEY (PCIe2.0X1+USB2.0) , 4G/WIFI/BT	1*Mini PCIe(PCIe3.0X1),LAN/CAN;
Power Supply		
Pwr Consump Input Voltage	DC 5V/3A ; TDP:TBD	DC 9-36V ; TDP:TBD
Mechanical		
Structure	SGCC frame	Aluminum-magnesium alloy, SGCC frame
Dimension (W*H*D)	153*154*46mm	247*151*94.8mm
Net Weight	0.82KG	2.67KG
Environmental		
Operating Temp	-20~-60°C, SSD, air flow	-20~-60°C, SSD, air flow
Storage Temp	-40°C~85°C	-40°C~85°C
Storage Humidity	10~95%@40°C, Non-condensing	10~95%@40°C, Non-condensing
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)
Shock	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)	50g peak acceleration(11ms duration)(SSD); 20g peak acceleration(11ms duration)(HDD)
Certification/ EMC	CE/FCC Class A	CE/FCC Class A
OS	Buildroot/OpenHarmony/Loongnix/SylixOS	KylinOS/UOS/Loongnix/openEuler



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KGEC

Edge controller



				
KGEC-6200	KGEC-6300	KGEC-6301	KGEC-6310	KGEC-6500
System				
CPU	Intel® Elkhart lake Soc CPU, Celeron J6412; Celeron N6210		6th/7th Gen Intel® Skylake-S/Kabylake-S Pentium/Core I3/I5/I7 CPU LGA 1151 socket,max support 65W	
RAM	1* DDR4 SODIMM 3200MHz, 32GB max.		1* DDR4 2400/2133MHz, 16GB max.	
Graphics	Intel Gen10 UHD Graphics, H.265/HEVC,HW; HDMI2.0: 4096*2304@60Hz		IntelGen.9 HD Graphics,HEVC/H265 HW DP: 4096*2304@60Hz; DVI-I(DVI-D+VGA) DVI-D: 1920*1200@60Hz, VGA: 2560*1600@60Hz	
I/O Interface				
LAN	2*Intel I226V, 10-1000M		2*Intel I210AT, 10-1000M; 4*Intel I210AT(+POE),802.3af(15.4W)	
USB	2* USB3.1, 2*USB2.0		4* USB3.0	
Display	1* HDMI		4* USB3.0	
Audio	/		1* DP + 1* DVI-I	
Serial Port	1*RS232/422/485; 1*RS232		1* DP + 1* DVI-I	
DIO	6 bit DIO(MI/O)		/	
Storage				
Storage	1*mSATA Full Size,AHCI		1*mSATA full height card	
Expansion				
Expansion	1*Mini PCIe(PCleX1/USB+SIM),4G/Wifi/BT		1*Mini PCIe(PCleX1/USB+SIM),4G/Wifi/BT; Optional 1*PCle3.0 X4(X1) + 1*32bit-PCI; Optional 1*PCle3.0 X4(X1)	
Power Supply				
Power& TDP	DC 12V;Optional DC 9~36V(OFX-075) 15.6W(Celeron J6412,32G DDR4,128G SSD)		DC 12~24V input, 2*2-pin; S001(43.7W I7-7700 4GB)// (49.4W I7-7700 4GB,+Expansion)	
Mechanical				
Structure	Aluminum chassis, SGCC frame		Aluminum chassis, SGCC frame	
Dimension (W*H*D)	130*100*40mm		S001(202*151*57.8mm/ 202*151*109.8mm,+Expansion)	
Weight	750g		S001: 2.52KG/3.52KG(+Expansion)	
Environmental				
Operating temp	-20°C~60°C , SSD		-20°C~60°C , SSD	
Storage temp	-40°C~85°C		-40°C~85°C	
Storage Humidity	10~95%@40°C, non-condensing		10~95%@40°C, non-condensing	
Vibration	5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)		5 grms/5~500Hz/random/during operation(SSD); 1 grms/5~500Hz/random/during operation(HDD)	
Shock	50g peak acceleration(duration;11ms)(SSD); 20g peak acceleration(duration;11ms)(HDD)		50g peak acceleration(duration;11ms)(with SSD); 20g peak acceleration(duration;11ms)(with HDD)	
Certification/EMC	CE/FCC Class A		CE/FCC Class A	
OS	RTOS: Intime, EC-Win, RTX-2014/2016, Ubuntu Preempt-RT,Win11/Win10,SUSE, Ubuntu, Wind River, Red Hat Enterprise		RTOS: INtime, EC-Win, RTX-2014/2016,Ubuntu Preempt-RT,Windows 7, Windows 10, Linux Fedora Ubuntu (Note: 7th gen Intel® Kabylake-S processor does not support Windows 7 32-bit)	
			RTOS: INtime, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT,Windows 7, Windows 10, Linux Fedora Ubuntu (Note: 7th gen Intel® Kabylake-S processor does not support Windows 7 32-bit)	
			RTOS: INtime, EC-Win, RTX-2014/2016 and Ubuntu Preempt-RT Windows 10, SUSE, Ubuntu, Wind River, Red Hat Enterprise	
			RTOS: INtime, EC-Win, RTX-2014/2016, Ubuntu Preempt-RT&Xenomai Windows 10, SUSE, Ubuntu, VxWork, Red Hat Enterprise	

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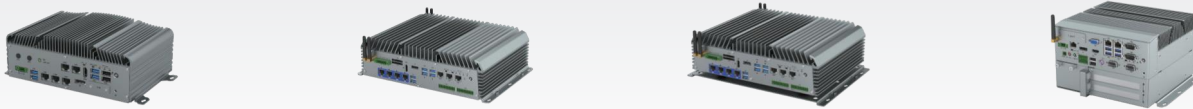
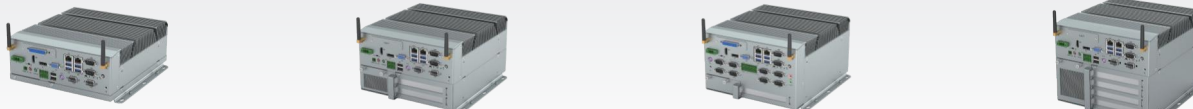
KMDA
Embedded Box Computer



Product Listing

       											
KMDA-2602		KMDA-2602/T002		KMDA-2620		KMDA-2701		KMDA-2702	KMDA-3201	KMDA-3202	KMDA-3212
Processor											
CPU	Intel Baytrail-D Celeron J1900 ,Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W	Intel Baytrail-D Celeron J1900 ,Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W	Intel® Apollolake Atom E3940 CPU	Intel Baytrail-D Celeron J1900 ,Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W	Intel Baytrail-D Celeron J1900 , Frequency 2.0~2.42GHz, 4C4T, 2M cache, 22nm, TDP 10W	Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7	Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7	Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7	Intel Skylake-U/Kabylake-U CPU Celeron/Core i3/i5/i7		
RAM	1*DDR3L,1333MHz,SODIMM, 8GB max.	1*DDR3L,1333MHz,SODIMM, 8GB max.	1*DDR3L, 1866MHz, SODIMM, 8GB max.	1*DDR3L, 1333MHz, SODIMM, 8GB max.	1*DDR3L, 1333MHz, SODIMM, 8GB max.	2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.	2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.	1*DDR4,SODIMM,2133MHz, 16GB max.			
Graphics	Intel HD Graphics, Support synchronous or asynchronous dual display, VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264	Intel HD Graphics, Support synchronous or asynchronous dual display VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz, support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264	Gen. 9th Intel HD Graphics, DP:4096*2160@60Hz, HDMI:3840*2160@30Hz,support OpenGL 4.3, DirectX 11, OpenCL 2.0, MPGE2, H.265	Intel HD Graphics, Support dual independent display, VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz,support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264	Intel HD Graphics, Support dual independent display VGA:1920*1200@60Hz, HDMI:1920*1080@60Hz,support OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264	Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz	Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 3940*2160@30Hz, DP: 4096*2160@60Hz	Intel Gen. 9th HDGraphics, HEVC/H265 HW HD codec, HDMI: 4096*2304@24Hz, DP:4096*2304@60Hz,VGA:1920*1200@60Hz			
I/O Port											
LAN	4*Intel I211AT PCIe, 10-1000M	2*Intel I211AT PCIe, 10-1000M	4/2*Intel I211AT PCIe, 10-1000M	4*Intel I211AT PCIe, 10-1000M	3*Intel I211AT PCIe, 10-1000M	2*Intel I211AT PCIe, 10-1000M 1*Intel I219 LM support Intel Vpro	2*Intel I211AT PCIe, 10-1000M, 1*Intel I219 LM support Intel Vpro, 4*Intel I211AT PCIe Full bandwidth POE	2*Intel I211AT PCIe, 10-1000M, 1*Intel I219 LM support Intel Vpro,			
USB	1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)	1* USB3.0, 3*USB2.0	2* USB3.0, 4/2*USB2.0 , 1*USB2.0 (Build-in)	1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)	1* USB3.0, 5*USB2.0 , 1*USB2.0 (Build-in)	4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)	4* USB3.0, 4*USB2.0 , 1*USB2.0 (Build-in)	4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)			
Display	1*HDMI+ 1*VGA	1*HDMI+ 1*VGA	1*DP+1*HDMI	1*VGA+1*HDMI	1*VGA+1*HDMI	1*DP+1*HDMI	1*DP+1*HDMI	1*DP+1*HDMI+1*VGA			
Audio	1*Line out,Realtek ALC662VD	1*Line out,Realtek ALC662VD	1*Line out,Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC662VD	1*Line out , Realtek ALC662VD	1*Line out+1*Mic,Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC662VD			
COM/ Others	2*RS232/422/485, 2*RS232, 2*RS232/485, 1*2 pin terminal, Remote switch, USB mouse/keyboard	2*RS232/422/485, 1*2 pin terminal, Remote switch, USB mouse/keyboard	4/2*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard	4*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard	8*RS232/422/485, 2*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard	2*RS232/422/485, 4*RS232, 1*2 pin terminal, Remote switch, USB mouse/keyboard	2*RS232/422/485, 4*RS232, 1*PS/2(mouse/keyboard)	2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)			
DIO	8-bit TTL, Programmed input–output	8-bit TTL, Programmed input–output	8-bit TTL, Programmed input–output	24-bit TTL, Programmed input–output	16-bit TTL, Programmed input–output	8-bit TTL, Programmed input–output	8- bit TTL, Programmable input and output 8-bit Iso. DI(High:5~24V,Low:0~1.5V) and 8-bit Iso. DO(100mA)	8-bit TTL, Programmed input–output			
Storage											
Storage	1*2.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI	1*2.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI	1*2.5" HDD SATA3 Bay, 6.0 Gbps, 1*mSATA Full-height card, support AHCI	1*3.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI	1*2.5" HDD SATA2 Bay, 3.0 Gbps, 1*mSATA Full-height card, support AHCI	1/2*2.5" HDD SATA3 Bay, 6.0 Gbps, 1*mSATA Full-height card, support AHCI	1*2.5" SATA3 Bay, 6.0 Gbps, SSD/HDD, 1*mSATA Full-height card, support AHCI	1*2.5" SATA3 Bay, 6.0 Gbps, SSD/HDD, 1*mSATA Full-height card, support AHCI			
Expansion											
Expansion Port	1*Mini PCIe, with SIM slot, support 4G/Wifi/BT, 1*I-port(LPT/USB2.0/Mini PCIe)	1*Mini PCIe, with SIM slot, support 4G/Wifi/BT,	1*M.2 B-key, with SIM slot, support 4G/Wifi/BT, 1*I-port (LPT/USB2.0/Mini PCIe)	1*Mini PCIe, with SIM slot, support 4G/Wifi/BT	1*Mini PCIe, with SIM slot, support 4G/Wifi/BT	1*Mini PCIe, with SIM slot, 1*M.2 B-key with PCIe+USB signal &SIM slot,support dual 4G/Wifi/BT, 1*I-port(LPT/USB2.0/Mini PCIe)	1*Mini PCIe, with SIM slot, 1*M.2 B-key with PCIe+USB signal &SIM slot,support dual 4G/Wifi/BT, 1*I-port(LPT/USB2.0/Mini PCIe)	1*Mini PCIe, with SIM slot, support 4G/Wifi/BT,			
Power Supply											
Input voltage	DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP	DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP	DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP	DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP	DC IN 9~36V, D-Jack with M8 interface, short circuit protection, OVP&OCP	DC IN 9~30V, 3pin terminal, With reverse polarity protection, short circuit protection, OVP&OCP	DC IN 9~30V, 3pin terminal, With reverse polarity protection, short circuit protection, OVP&OCP	DC IN 12~24V, 3pin terminal(front panel),			
TDP	14.4W(2.5" HDD)	14.4W(2.5" HDD)	20.04W(E3940 CPU,4G DDR3L)	19.2W(3.5" HDD)	15.6W(2.5" HDD)	27.72W(I5-7200U 8GB)	27.72W(I5-7200U 8GB)	58.56W(I5-7200U 16GB DDR4)			
Mechanical											
Structure	Top/Bottom Aluminum Chassis, SGCC frame	Top/Bottom Aluminum Chassis, SGCC frame	Top/Bottom Aluminum Chassis, SGCC frame	U-shaped Aluminum Chassis, SGCC frame	U-shaped Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame			
Color	Silver gray	Silver gray	Silver gray	Silver gray	Silver gray	Silver gray	Silver gray	Silver gray			
Installation	desktop mounting & VESA 100*100mm	desktop mounting &VESA 100*100mm	desktop mounting &VESA 100*100mm	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting			
Dimension	155*111.8*65mm	155*111.6*49mm	155*111.8*65mm	210*144*82.7mm	210*144*82.7mm	210*144.3*75.5mm	210*144.3*75.5mm	200*200*85.3mm			
Net Weight	1.30KG	1.05KG	1.30KG	2.60KG	2.60KG	2.20KG	2.20KG	3.3KG			
Environmental											
Operating Temp	-20℃~-65℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-65℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-70℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-70℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-70℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-70℃,SSD,with air flow -10℃~-50℃,HDD,with air flow	-20℃~-70℃,SSD,with air flow -10℃~-50℃,HDD,with air flow	-20℃~-70℃,SSD,with air flow -10℃~-50℃,HDD,with air flow			
Storage Temp	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃			
Storage Humidity	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation			
Vibration	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			
Shock	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			
Certificate/ EMC	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A			
OS	Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 8.1, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 10, Linux Fedora,Ubuntu	Windows 7, Windows 10, Linux Fedora,Ubuntu			
Watchdog timer	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second			

Product Listing

																								
KMDA-3230		KMDA-3601		KMDA-3602		KMDA-3820		KMDA-3610		KMDA-3920		KMDA-3920ETC		KMDA-3921										
Processor																								
CPU	Intel® Whiskey lake U Celeron/Core i3/i5/i7			Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7, Q170 Chipset			Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7, Q170 Chipset			Intel Skylake-U 3855/Kabylake-U Celeron/Core i3/i5/i7			Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7, H110 Chipset			Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7 H110 Chipset,optional Q170 Chipset			Intel Skylake-S/Kabylake-S Celeron/ Pentium/Core i3/i5/i7 H110 Chipset,optional Q170 Chipset					
RAM	2*DDR4 SODIMM,2400MHz, 32GB max.			2*260-Pin SODIMM, DDR4,2133MHz, 32GB max.			2*260-Pin ,DDR4,2133/2400MHz, 32GB max.			1*260-Pin ,DDR4,2133MHz, Max. 16GB			2*260-Pin ,DDR4,2133/2400MHz, 32GB max.			2*260-Pin ,DDR4,2133/2400MHz, 32GB max.			2*260-Pin ,DDR4,2133/2400MHz, 32GB max.			2*260-Pin ,DDR4,2133/2400MHz, 32GB max.		
Graphics	Intel® Gen. 9 UHD Graphics,Support dual independent display HDMI: 4096*2304@24Hz DP: 4096*2304@60Hz			Intel Gen. 9 HD Graphics, HEVC/H265 HW HD codec,support 3 independent display DP: 4096*2304@60Hz,VGA: 2650*1600@60Hz, HDMI: 3840*2160@30Hz,			Intel® Gen. 9 HD Graphics, HEVC/H265 HW HD codec, DP/HDMI support dual 4K HD display 1*MXM3.1 GPU module, support max. 120W GPU, 3*DP & 1*HDMI four 4K display			Intel Gen. 9th HD Graphics, HEVC/H265 HW HD codec, HDMI: 4096*2304@24Hz, DP: 4096*2304@60Hz,VGA: 1920*1200@60Hz			Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz,VGA: 1920*1200@60Hz, support 2 independent display+1 copy display			Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz,VGA: 1920*1200@60Hz, support 3 independent display(Intel Q170)			Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz,VGA: 1920*1200@60Hz, support 3 independent display(Intel Q170)			Intel Gen. 9 HD Graphics,HEVC/H265 HW HD codec, HDMI: 3840*2160@30Hz, DP: 4096*2304@60Hz,VGA: 1920*1200@60Hz, support 3 independent display (Intel Q170)		
I/O Port																								
LAN	4*Intel I210AT PCIe, 10-1000M, 1*Intel®I219LM			2*Intel I210AT PCIe,10-1000M, 1*Intel I219 LM support Intel Vpro, 4*Intel I210AT Full bandwidth POE, optional 8/11*Gig LAN			2*Intel I210AT PCIe,10-1000M, 1*Intel I219 LM support Intel Vpro, 4*Intel I210AT PCIe Full bandwidth POE, optional 4*LAN			2*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro,			1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM,support Intel Vpro,			1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro(Intel Q170),			1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro(Intel Q170),			1*Intel I211AT PCIe ,10-1000M, 1*Intel I219 LM. support Intel Vpro(Intel Q170),		
USB	4* USB3.1, 2*USB2.0			6* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)			6* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)			4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)			4* USB3.0, 2*USB2.0 , 1*USB2.0 (Build-in)			4* USB3.0, 2*USB2.0 (Build-in)			4* USB3.0, 1*USB2.0 (Build-in)			4* USB3.0, 2*USB 2.0, 1*USB2.0 (Build-in)		
Display	1*DP+1*HDMI			1*DP+1*HDMI+1*VGA			1*DP+1*HDMI+1*VGA			1*DP+1*HDMI+1*VGA			1*DP+1*HDMI+1*VGA			1*DP+1*HDMI+1*VGA			1*DP+1*HDMI+1*VGA			1*DP+1*HDMI+1*VGA		
Audio	1*Line out+1*Mic, Realtek ALC662VD			1*Line out+1*Mic,Realtek ALC662VD			1*Line out+1*Mic,Realtek ALC662VD			1*Line out+1*Mic,Realtek ALC662VD			1*Line out+1*Mic,Realtek ALC662VD			1*Line out+1*Mic, Realtek ALC662VD			1*Line out+1*Mic, Realtek ALC662VD			1*Line out+1*Mic, Realtek ALC662VD		
COM/ Others	2*RS485, 3*RS232,			2*RS232/422/485, 2*RS232,			2*RS232/422/485			2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)			2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)			2*RS232/422/485, 2*RS232, 1*PS/2(mouse/keyboard)			2*RS232/422/485, 8*RS232, 1*PS/2(mouse/keyboard)			2*RS232/422/485 , 2*RS232, 1*PS/2(mouse/keyboard)		
DIO	8-bit iso DIO(4-bit 2.5KV optical Iso. DO,4-bit 2.5KV optical Iso. DI)			16/24-bit optical Iso. DIO optional 16-bit TTL Programmable input and output			16/24-bit optical Iso. DIO optional 16-bit TTL Programmable input and output			8-bit TTL, Programmable DIO optional 16-bit TTL Programmable input and output			8-bit TTL, Programmable DIO 16-bit TTL, Programmable DIO			8-bit TTL, Programmable DIO			16-bit Programmable DIO (2*10Pin) 16-bit Programmable DIO(DB25),TTL			8-bit DIO(2*5Pin) 16-bit DIO(build-in),TTL, programmable input & output		
Storage																								
Storage	1*2.5" SATA port, 1*mSATA Full-height card, support AHCI			2*2.5" SATA,HDD/SSD, 1*mSATA Full-height card, 1*M.2 B-key with SIM slot			1*2.5" SATA3,HDD/SSD, 1*mSATA Full-height card, 1*M.2 B-key with SIM slot			1*2.5" SATA3,HDD/SSD, 1*mSATA Full-height card, support AHCI			2*2.5" SATA3,HDD, 1*mSATA Full-height card, 1*M.2 2242 B-key			2*2.5" SATA3 HDD,support RAID0,1(Intel Q170), 1*mSATA,1*M.2 2242 B-key			2*2.5" SATA3 HDD,support RAID0,1(Intel Q170), 1*mSATA,1*M.2 2242 B-key			2*2.5" SATA3,HDD,support RAID0,1(Intel Q170), 1*mSATA,1*M.2 2242 B-key		
Expansion																								
Expansion Port	1*Mini PCIe, with SIM slot, support 3G/4G/Wifi/ BT/ GPRS,1*M.2 E-key 2230 Wifi/BT module expansion, 1*I-Port(LPT/USB2.0/Mini PCIe)			1*Mini PCIe, with SIM slot, 1*half length Mini PCIe,support dual 4G LTE/Wifi/BT, 1*I-Port(LPT/USB2.0/Mini PCIe)			1*Mini PCIe, with SIM slot, 1*half length Mini PCIe,support dual 4G LTE/Wifi/BT & GPS/BDS 1*I-port(LPT/USB2.0/Mini PCIe)			1*Mini PCIe, with SIM slot, support 4G/Wifi/BT,1* PCIe X4(X4 signal), 1*PCI X4(X1signal),or 2*PCI 1*I-port(LPT/USB2.0/Mini PCIe...etc)			1*Mini PCIe, with SIM slot, support 4G/Wifi/BT			1*Mini PCIe, with SIM slot, support 4G LTE/Wifi/BT, 1*PCIe X16, 1*PCIe X4, or 2*PCI, 1*I-port(LPT/USB2.0/Mini PCIe)			1*Mini PCIe, with SIM slot, support 4G LTE/Wifi/BT, 1*PCIe X16,or 1*PCI			1*Mini PCIe, with SIM slot, support 4G LTE/Wifi/BT, 1*PCIe X16,1*PCIe X4(X1 signal)+2*PCI, or 2*PCIeX16(X8)+1*PCIeX8(X4)		
Power Supply																								
Input voltage	DC IN 9~36V, 3pin terminal,			DC 6~48V input,			DC 6~48V input,			DC 12~24V input,			DC 12~24V input,			DC 12~24V input,			DC 12~24V input,			DC 12~24V input,		
TDP	30W (I5-8265U , 8GB DDR4, 128GB SSD)			38W(I5-7500T , 4GB RAM, 128G SSD)			115.92W (I5-7500T +GTX 1060M GPU)			58.56W (I5-7200U 16GB DDR4)			68.4W (I7-6700T CPU 16GB DDR4)			68.78W (I7-6700T , 4GB DDR4, 1TB HDD)			68.78W (I7-6700T , 4GB DDR4, 1TB HDD)			68.78W (I7-6700T , 4GB DDR4, 1TB HDD)		
Mechanical																								
Structure	Aluminum Chassis, SGCC frame			Aluminum Chassis, SGCC cover			Aluminum Chassis, SGCC frame and cover			Aluminum rectangular cooling plates, SGCC paint main cabinet			Aluminum rectangular cooling plates, SGCC paint main cabinet			Aluminum rectangular cooling plates, SGCC paint main cabinet			Aluminum rectangular cooling plates, SGCC paint main cabinet			Aluminum Chassis, SGCC frame		
Color	Silver gray			Silver gray			Silver gray			Silver gray			Silver gray			Silver gray			Silver gray			Silver gray		
Installation	desktop mounting			desktop mounting			desktop mounting,Anti-vibration plane			desktop mounting			desktop mounting			desktop mounting,wall-mount			desktop mounting,wall-mount			desktop mounting,wall-mount		
Dimension	210*147*78mm			284*222*84.7mm			284*222*81mm			200*200*128.3mm			221*251*88mm			220*250*131mm			220*250**131.5mm			220*250**172mm		
Net Weight	2.29KG			4.65KG			5.60KG(non GPU)			3.65KG			4.84KG			5.27KG			5.27KG			5.58KG		
Environmental																								
Operating Temp	-20℃~70℃,SSD,with air flow -10℃~50℃,HDD,with air flow			-20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow			-20℃~65℃,SSD,with air flow -10℃~50℃,HDD,with air flow			-20℃~70℃,SSD,with air flow -10℃~50℃,HDD,with air flow			-20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow			-20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow			-20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow			-20℃~65℃,SSD,with air flow -10℃~55℃,HDD,with air flow		
Storage Temp	-40℃~85℃			-40℃~85℃			-40℃~85℃			-40℃~85℃			-40℃~85℃			-40℃~85℃			-40℃~85℃			-40℃~85℃		
Storage Humidity	10~90%@40℃, No- condensation			10~90%@40℃, No- condensation			10~90%@40℃, No- condensation			10~90%@40℃, No- condensation			10~90%@40℃, No- condensation			10~90%@40℃, No- condensation			10~90%@40℃, No- condensation			10~90%@40℃, No- condensation		
Vibration	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			5.5 grms/5~500Hz/random/operation (SSD) 1.5 grms/5~500Hz/random/operation (HDD)			5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)			5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)		
Shock	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)			50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)		
Certificate /EMC	CE/FCC Class A			CE/FCC Class A			CE/FCC Class A,E-Mark			CE/FCC Class A			CE/FCC Class A			CE/FCC Class A			CE/FCC Class A			CE/FCC Class A		
OS	Windows 10, SUSE, Ubuntu, Wind River, Red Hat Enterprise			Windows 7, Windows 10, Linux Fedora,Ubuntu			Windows 7, Windows 10, Linux Fedora,Ubuntu			Windows 7, Windows 10, Linux Fedora,Ubuntu			Windows 7, Windows 10, Linux Fedora,Ubuntu			Windows 7, Windows 10, Linux Fedora,Ubuntu			Windows 7, Windows 10, Linux Fedora,Ubuntu			Windows 7, Windows 10, Linux Fedora,Ubuntu		
Watchdog timer	Programmable via software 1 to 255 second			Programmable via software 1 to 255 second			Programmable via software 1 to 255 second			Programmable via software 1 to 255 second			Programmable via software 1 to 255 second			Programmable via software 1 to 255 second			Programmable via software 1 to 255 second			Programmable via software 1 to 255 second		

Product Listing

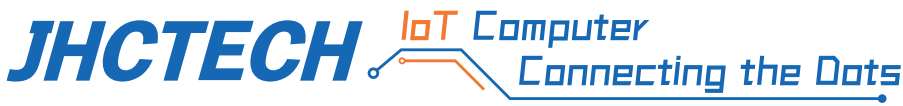
KMDA-5610/S001		KMDA-5610/S002		KMDA-5920/S001		KMDA-5920/S002		
Processor								
CPU	Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor H310 chipset	Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU Q370 chipset	Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor H310 chipset	Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor Q370 chipset	Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor H310 chipset	Intel® Coffee lake 9th/8th-Gen Core™ i7/i5/i3/Pentium/Celeron LGA1151 processor Q370 chipset	Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU H420E Chipset	Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU H420E Chipset
RAM	2*260-Pin ,DDR4,2400/2666MHz, 64GB max.	4*260-Pin ,DDR4,2400/2666MHz, 128GB max.	2*260-Pin ,DDR4,2400/2666MHz, 64GB max.	4*260-Pin ,DDR4,2400/2666MHz, 128GB max.	2*260-Pin ,DDR4,2400/2666MHz, 64GB max.	4*260-Pin ,DDR4,2400/2666MHz, 128GB max.	2*260-Pin ,DDR4,2933MHz, 64GB Max.	2*260-Pin ,DDR4,2933MHz, 64GB Max.
Graphics	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz,VGA:1900*1200@60Hz, HDMI: 3840*2160@30Hz(2 independent displays, 1 Copy Display)	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1, DP:4096*2304@60Hz,VGA:1920*1200@60Hz, DP:4096*2304@60Hz (3 independent display)	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI: 4096*2160@30Hz(2 independent displays, 1 Copy Display)	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz, VGA1900*1200@60Hz, support 3 independent display	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz,VGA:1900*1200@60Hz, HDMI: 4096*2160@30Hz(2 independent displays, 1 Copy Display)	Intel UHD Graphics, Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1 or PCIe X16, DP:4096*2304@60Hz, VGA1900*1200@60Hz, support 3 independent display	Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI: 4096*2160@30Hz (2 independent display)	Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI: 4096*2160@30Hz (2 independent display)
I/O Port								
LAN	1*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM,	2*Intel I211AT/I210AT, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, iAMT13.0,vPro;	1*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM,	2*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM, support Intel Vpro	1*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM	2*Intel I210AT PCIe ,10-1000M, 1*Intel I219 LM support Intel Vpro	1*Intel I226V, PCIe X1, 10M-2.5G, WOL; 1*Intel I219 LM, 10-1000M, WOL	1*Intel I226V, PCIe X1, 10M-2.5G, WOL; 1*Intel I219 LM, 10-1000M, WOL
USB	4* USB3.1, 2*USB2.0, 1*USB2.0(Build-in)	6* USB3.1, 2*USB2.0, 2*USB2.0(Build-in)	4* USB3.1, 2*USB2.0, 1*USB2.0(Build-in)	6* USB3.1, 2* USB2.0, 2*USB2.0(Build-in)	4* USB3.1, 2*USB2.0, 1*USB2.0(Build-in)	6* USB3.1, 2*USB2.0, 2*USB2.0(Build-in)	4* USB3.2 Gen1, 2*USB2.0, 2*USB2.0(Build-in)	4* USB3.2 Gen1, 2*USB2.0, 2*USB2.0(Build-in)
Display	1*DP+1*HDMI+1*VGA	2*DP+1*VGA	1*DP+1*HDMI+1*VGA	2*DP+1*VGA	1*DP+1*HDMI+1*VGA	2*DP+1*VGA	1*DP+1*HDMI+1*VGA	1*DP+1*HDMI+1*VGA
Audio	1*Line out+1*Mic, Realtek ALC662VD	1*Line out+1*Mic,Realtek ALC662	1*Line out+1*Mic, Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC662VD	1*Line out+1*Mic, Realtek ALC 897	1*Line out+1*Mic, Realtek ALC 897
COM/ Others	2*RS232/422/485, 2*RS232,	2*RS232/422/485, 2*RS232;	2*RS232/422/485, 2*RS232,	2*RS232/422/485, 2*RS232,	2*RS232/422/485, 2*RS232,	2*RS232/422/485, 2*RS232,	2*RS232/422/485, 2*RS232; 1*LPT, 1*PS/2	2*RS232/422/485, 2*RS232; 1*LPT, 1*PS/2
DIO	16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)	16 bit iso. DIO(2*10pin); 16 bit DIO(2*10pin)	16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)	16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)	16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)	16-bit iso DIO: 8-bit Iso. DI(High:5-24V,Low:0-1.5V) and 8-bit Iso. DO(200mA)	8-bit DIO,TTL 16-bit DIO(2*10 pin)	8-bit DIO,TTL 16-bit DIO(2*10 pin)
Storage								
Storage	2*2.5" SATA3,HDD, 1*mSATA,with SIMslot,support 4G	2*2.5" SATA3,RAID0,1; 1*Mini PCIe(SATA3.0/USB2.0), mSATA	2*2.5" SATA3,HDD, 1*mSATA,with SIM slot ,support 4G	2*2.5" SATA3,support RAID0,1, 1*M.2 M-Key,PClex4 Gen3.0, support NVME storage	2*2.5" SATA3,HDD, 1*full length Msata with SIM slot,support 4G	2*2.5" SATA3, support RAID0,1, 1*M.2 M-Key,PClex4 Gen3.0, support NVME storage	2*2.5" SATA3, 6Gbps; 1*mSATA(SATA3.0/USB2.0)	2*2.5" SATA3, 6Gbps; 1*mSATA(SATA3.0/USB2.0)
Expansion								
Expansion Port	1*M.2 E-Key 2230, Support Gigabit WFI module, 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe)	1*M.2 E-Key 2230(PCleX1&USB2.0); 1*Mini PCIe(SATA3.0/USB2.0+SIM)	1*M.2 E-Key 2230, Support Gigabit WFI module, 1*PCle X16, 1*PCle X4, 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe)	1*M.2 B-Key,with SIM slot. support5G, 1*M.2 E-Key, 1*PCle X16,1*PCle X4, 1*Mini PCIe,with SIM slot. support4G/WIFI/BT 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe)	1*M.2 E-Key 2230, Support Gigabit WFI module/BT5.0 1*PCle X16, 1*PCle X4 , 2*32-bit PCI 1*I-port(LPT/USB2.0/16-bitDIO/Mini PCIe)	1*M.2 B-Key,with SIM slot. support 5G, 1*M.2 E-Key, 1*Mini PCIe,with SIM slot. support4G/WIFI/BT, 1*I-port(LPT/USB2.0/16-bit DIO/Mini PCIe), 2*PCle X8,2*PCle X4 or 1*PCle X16,1*PCle X4,2*PCI	1*Mini PCIe(PCleX1/USB2.0+SIM), 4G LTE/PCle;	1*PCle3.0 X16(X16)+1*PCle3.0 X16(X4) ; or 1*PCle3.0 X16(X16)+ 1*32-bit PCI; 1*Mini PCIe(PCleX1/USB2.0+SIM), 4G LTE/PCle;
Power Supply								
Input voltage	DC IN 9-36V ,with protection of short circuit, over voltage, over current;	DC IN 9-36V , with protection of short circuit, over voltage, over current	DC IN 9-36V ,with protection of short circuit, over voltage, over current	DC IN 9-36V ,with protection of short circuit, over voltage, over current	DC IN 9-36V ,with protection of short circuit, over voltage, over current	DC IN 9-36V ,with protection of short circuit, over voltage, over current	DC IN 9-36V ,with protection of short circuit, over voltage, over current	DC IN 9-36V ,with protection of short circuit, over voltage, over current
TDP	96W(i7-8700 ,32G DDR4,128G SSD)	功耗:60.5W (i7-8700T , 32G DDR4, 128G SSD)	60.5W(i7-8700T,16G DDR4,128G SSD)	60.5W(i7-8700T,16G DDR4,128G SSD)	48.5W(i7-9700,16G DDR4,128G SSD)	48.5W(i7-9700,16G DDR4,128G SSD)	59.5W(i5-10500 /4G DDR4/256G SSD)	57.2W(i7-10700TE /4G DDR4/256G SSD)
Mechanical								
Structure	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame
Color	Silver white + Aquamarine	Silver white + Aquamarine	Silver white + Aquamarine	Silver white + Aquamarine	Silver white + Aquamarine	Silver white + Aquamarine	Silver white + Aquamarine	Silver white + Aquamarine
Installation	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting
Dimension	230*267.3*92mm	230*267.3*92mm	230*273*143mm	230*273*143mm	230*273*204mm	230*273*204mm	230*267.3*92mm	230*273*143mm
Net Weight	5.1KG	5.1KG	5.9KG	5.9KG	7.25KG	7.25KG	5.12KG	5.9KG
Environmental								
Operating Temp	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow
Storage Temp	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃
Storage Humidity	10~90%@40℃, No- condensation	10~95%@40℃, No-condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation
Vibration	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)
Shock	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD) 20g peak acceleration(duration 11ms,HDD)
Certificate /EMC	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
OS	Windows 10 Enterprise & IOT Enterprise(64 -bit) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7	Windows 10 Enterprise & IOT Enterprise (64 bit) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7	Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7	Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7	Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7	Windows 10 Enterprise & IOT Enterprise (64-bit) Ubuntu. SuSe. Redhat Enterprise 1,2 (Kernel 4.14) Wind River VxWorks 7	Win11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7	Win11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7
Watchdog timer	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second	Programmable via software 1 to 255 second

Product Listing

								
KMDA-6921		KMDA-7610	KMDA-7920	KMDA-7921	KMDA-2630-S	KMDA-2630-T	KMDA-3301	KMDA-3302
Processor								
CPU	Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU H420E Chipset	Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH	Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH	Intel® Alder lake-S 12th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU, Intel® H610 PCH	Intel® Elkhart lake SoC CPU: Celeron J6412/Celeron N6210	Intel® Elkhart lake SoC CPU: Celeron J6412/Celeron N6210	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU	Intel® Tiger lake U Soc CPU (core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305E),
RAM	2*260-Pin ,DDR4,2933MHz, 64GB Max.	2*262-Pin, DDR5,4800MHz, 64GB max.	2*262-Pin, DDR5,4800MHz, 64GB max.	2*262-Pin, DDR5,4800MHz, 64GB max.	1*DDR4 SO-DIMM , 3200MHz, 32GB max.	1*DDR4 SO-DIMM , 3200MHz, 32GB max.	2*DDR4 SO-DIMM, 3200MHz, 64GB max.	1*DDR4 SO-DIMM, 3200MHz, 32GB max.
Graphics	Intel UHD Graphics, Supports DirectX12, OpenGL 4.5; DP:4096*2304@60Hz, VGA:1900*1200@60Hz, HDMI: 4096*2160@30Hz (2 independent display)	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0 DP:8K@60Hz,HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0 DP:8K@60Hz,HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display	Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0 DP:8K@60Hz,HDMI:4096*2160@60Hz, VGA:1920*1200@60Hz, 3 independent display	Intel Gen11 UHD Graphics, HDMI2.0: 4096*2304@60Hz VGA: 1920*1200@60Hz	Intel Gen11 UHD Graphics, HDMI2.0: 4096*2304@60Hz VGA: 1920*1200@60Hz	Intel UHD Graphics or iRIS® Xe Graphics , Supports Intel DL technology, DirectX12.1, OpenGL 4.6 and OpenCL 2.0 HDMI 2.0 : 4096x2304@60Hz, DP 1.4 : 7680x4320@60Hz	Intel UHD Graphics / Iris® Xe Graphics , DirectX12.1, OpenGL 4.6 and OpenCL 3.0 HDMI 2.0 : 4096x2304@60Hz
I/O Port								
LAN	1*Intel I226V, PCIe X1, 10M-2.5G, WOL; 1*Intel I219 LM, 10M-1000M, WOL	1*Intel I226V, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, WOL	1*Intel I226V, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, WOL	1*Intel I226V, 10-1000M, WOL; 1*Intel I219 LM, 10-1000M, WOL	2*Intel I226V, 10M-2.5G, WOL; 2*Realtek 8111H, 10-1000M	2*Intel I226V, 10M-2.5G, WOL;	3*Intel I225V, 10M-2.5G, iAMT 13.0	2*Intel I210AT, 10M-1000M, WOL
USB	4* USB3.2 Gen1, 2*USB2.0, 2*USB2.0(Build-in)	2* USB3.2(10G),2*USB3.2(5G),2*USB2.0	2* USB3.2(10G),2*USB3.2(5G),2*USB2.0	2* USB3.2(10G),2*USB3.2(5G),2*USB2.0	2*USB3.2 Gen2, 6*USB2.0, 1*USB2.0(Build-in)	2*USB3.2 Gen2, 2*USB2.0, 1*USB2.0(Build-in)	2* USB3.2 Gen2, 2*USB2.0, 2*USB2.0(internal)	2* USB3.2 Gen2, 2*USB2.0
Display	1*DP+1*HDMI+1*VGA	1*DP+1*HDMI+1*VGA	1*DP+1*HDMI+1*VGA	1*DP+1*HDMI+1*VGA	1*HDMI+1*VGA	1*HDMI+1*VGA	1*DP+1*HDMI	1*HDMI
Audio	1*Line out+1*Mic, Realtek ALC 897	1*Line out+1*Mic, Realtek ALC 897	1*Line out+1*Mic, Realtek ALC 897	1*Line out+1*Mic, Realtek ALC 897	Audio out+1*Line in+1*Mic,Realtek ALC897	1*Line out,Realtek ALC897	1*Line out+1*Mic,Realtek ALC662VD	/
COM/ Others	2*RS232/422/485, 2*RS232; 1*LPT, 1*PS/2	2*RS232/422/485, 2*RS232; 1*SM Bus	2*RS232/422/485, 2*RS232; 1*SM Bus	2*RS232/422/485, 2*RS232; 1*SM Bus	2*RS232/422/485, 2*RS232	2*RS232/422/485, 2*RS232	2*RS232/422/485; 1*MIO	1*RS232/422/485; 1*RS232
DIO	8-bit DIO,TTL 16-bit DIO(2*10 pin)	16 bit iso. DIO,8bit DI(PNP/NPN),8bit DO 16 bit iso. DIO(2*10pin)	16 bit iso. DIO, 8bit DI(PNP/NPN),8bit DO 16 bit iso. DIO(2*10pin)	16 bit iso. DIO, 8bit DI(PNP/NPN),8bit DO 16 bit iso. DIO(2*10pin)	8 bit DIO(DB9)	8 bit DIO(DB9)	8-bit DIO(2*5pin)	8bit DIO(2*5pin)
Storage								
Storage	2*2.5" SATA3, 6Gbps; 1*mSATA(SATA3.0 & USB2.0)	2*2.5" SATA3, 15mm; 1*mSATA(SATA3)	2*2.5" SATA3, 15mm; 1*mSATA(SATA3)	2*2.5" SATA3, 15mm; 1*mSATA(SATA3)	1*2.5"SATA3; 1*mSATA, AHCI	1*2.5"SATA3; 1*mSATA, AHCI	1*2.5"SATA3, 6Gbps; 1*mSATA, support AHCI; 1*M.2 22080 M-Key NVME(PCIe4.0 X2)	2*mSATA;
Expansion								
Expansion Port	1*PCIe3.0 X16(X16)+ 1*PCIe3.0 X4(X2), 2*32-bit PCI; 1*Mini PCIe(PCIeX1/USB2.0+SIM), 4G LTE/PCIe;	1*Mini PCIe(PCIeX1/USB+SIM), 4G LTE/PCIe;	1*PCIe5.0X16(X16)+1*PCIe3.0X16(X4); or 1*PCIe5.0X16(X16)+1*32bit PCI; 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE	1*PCIe5.0X16(X16)+1*PCIe3.0X4(X2)+ 2*32bit PCI; 1*Mini PCIe(PCIeX1/USB+SIM),4G LTE	1*M.2 B-key 3052(PCIe X1/USB2.0+SIM), 5G NR/4G LTE; 1*Full size Mini PCIe(PCIe X1)	1*M.2 B-key 3052(PCIe X1/USB2.0+SIM), 5G NR/4G LTE; 1*JHCTECH Express-01 80pin:2*PCIeX1, 4*USB2.0, Front-Audio; 1*PS/2, Front-Panel, 1*Sm bus, 1*eSPI	1*Mini PCIe(PCIe X1+USB2.0), support Wifi/BT; 1*M.2 3052 B-Key(PCIe X1+USB2.0), with SIM slot, support 4G LTE/5G NR; 1*M.2 22080 M-Key , (PCIe4.0 X2), support high speed signal function card	1*Mini PCIe(PCIe X1/USB2.0), CAN2.0; 1*M.2 3042/3052 B-Key (PCIeX1/USB2.0+SIM),4G LTE/5G NR; 1*M.2 2230 E-Key (PCIeX1+USB2.0), Wifi/BT
Power Supply								
Input voltage	DC IN 9-36V ,with protection of short circuit, over voltage, over current	DC IN 9-36V 3-pin, with protection of short circuit, over voltage, over current;	DC IN 9-36V 3-pin, with protection of short circuit, over voltage, over current;	DC IN 9-36V 3-pin, with protection of short circuit, over voltage, over current;	DC 12V or DC 9-36V, short circuit protection, OVP&OCP	DC 12V or DC 9-36V, short circuit protection, OVP&OCP	DC 9-36V, 1*3-pin,with short circuit, over voltage & over current protection	DC IN 9-36V,OVP&OCP;
TDP	60W(i7-10700K /4G DDR4/256G SSD)	TDP: TBD	TDP: TBD	TDP: TBD				TBP
Mechanical								
Structure	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum Chassis, SGCC frame	Aluminum chassis, SGCC	SGCC frame
Color	Silver white + Aquamarine	Silver white+Aquamarine	Silver white+Aquamarine	Silver white+Aquamarine	Silver white+Aquamarine	Silver white+Aquamarine	Blue+white	Silver gray
Installation	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting	desktop mounting/optional Din-Rail mounting	desktop mounting; (Opt.)-Din-Rail
Dimension	230*273*204mm	256.68*267.3*99mm	256.68*312.7*149.9mm	256.68*312.7*210.9mm	162*111.8*65mm	162*111.8*65mm	250*154*61.9mm	172*116*54mm
Net Weight	6.84KG	TBD	TBD	TBD	1.32KG	1.30KG	2.55KG	0.89KG
Environmental								
Operating Temp	-20℃~-60℃,SSD,with air flow -10℃~-55℃,HDD,with air flow	-20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;	-20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;	-20℃~-60℃,SSD, with air flow; -10℃~-55℃,HDD, with air flow;	-20℃~-60℃, SSD, with air flow	-20℃~-60℃, SSD, with air flow	-20℃~-65℃, SSD, with air flow	-20℃~-60℃, SSD, with air flow
Storage Temp	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃	-40℃~85℃
Storage Humidity	10~90%@40℃, No- condensation	10~95%@40℃, No-condensation	10~95%@40℃, No-condensation	10~95%@40℃, No-condensation	10~95%@40℃, No-condensation	10~95%@40℃, No-condensation	10~90%@40℃, non-condensing	10~90%@40℃, No- condensation
Vibration	5 grms/5~500Hz/random/operation (SSD); 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)	5 grms/5~500Hz/random/operation (SSD); 1 grms/5~500Hz/random/operation (HDD)	5 grms/5~500Hz/random/operation (SSD); 1 grms/5~500Hz/random/operation (HDD)
Shock	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)	50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)
Certificate /EMC	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
OS	Win11, Windows 10 IoT Enterprise (64-bit), Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	Windows 11, Windows 10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7	Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux	Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux	Windows 10 64 bit, SUSE, Ubuntu, Wind River, Linux	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, RedHat*Enterprise, Wind River VxWorks*7, Yocto
Watchdog timer	programmable via software 1 to 255 second	programmable via software 1 to 255 second	programmable via software 1 to 255 second	programmable via software 1 to 255 second	programmable via software 1 to 255 second	programmable via software 1 to 255 second	programmable via software 1 to 255 second	programmable via software 1 to 255 second

Product Listing

																																																							
KMDA-5611-S001				KMDA-5611-S002				KMDA-6611-S001				KMDA-6611-S002				KMDA-7611-S				KMDA-7611-T				SCC-3116				ECC-U5000																											
Processor																																																							
CPU		Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, up to 65W,Intel® H310 PCH						Intel® Coffee lake 9th/8th-Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1151 CPU, up to 65W,Intel® H310 PCH						Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, up to 65W,Intel® H420E PCH						Intel® Comet lake 10th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1200 CPU, up to 65W,Intel® H420E PCH						Intel® Alder lake-S/Raptor Lake-S 12/13th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU; H610 PCH						Intel® Alder lake-S/Raptor Lake-S 12/13th Gen Core™ i9/i7/i5/i3/Pentium/Celeron LGA1700 CPU; H610 PCH						Intel® Baytrail-D Celeron J1900 , frequency 2.0~2.42GHz, quad-core with 4 threads, 2M cache, 22nm, TDP 10W						Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz											
RAM		2*DDR4 SODIMM, 2666MHz, 64GB max.						2*DDR4 SODIMM, 2666MHz, 64GB max.						2*DDR4 SODIMM, 2933MHz, 64GB max.						2*DDR4 SODIMM, 2933MHz, 64GB max.						2*DDR5 SODIMM, 4800MHz, 64GB max.						2*DDR5 SODIMM, 4800MHz, 64GB max.						1*DDR3L, 1333MHz SODIMM, 8GB max.						1*DDR4, 3200MHz SODIMM, 32GB max.											
Graphics		Intel® UHD Graphics, Supports DirectX 11.1, OpenGL 5.0, OpenCL 2.1; HDMI : 4096x2160@24Hz, VGA: 1920*1200@60Hz						Intel® UHD Graphics, Supports DirectX 11.1, OpenGL 5.0, OpenCL 2.1; HDMI : 4096x2160@24Hz, VGA: 1920*1200@60Hz						Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5; HDMI : 4096x2160@30Hz, VGA: 1920*1200@60Hz						Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5; HDMI : 4096x2160@30Hz, VGA: 1920*1200@60Hz						Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; HDMI : 4096x2160@60Hz,						Intel® UHD Graphics, Supports DirectX 12, OpenGL 4.5, OpenCL 3.0; HDMI : 4096x2160@60Hz,						Intel HD Graphics,OpenGL 3.2, DirectX 11, OpenCL 1.2, MPGE2/H.264, Dual independent display, VGA : 1920*1200@60Hz, HDMI:1920*1080@60Hz						Intel UHD Graphics / Iris® Xe Graphics, Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz											
I/O Port																																																							
LAN		1*Intel I210AT+1*I219LM, 10M-1000M, WOL; 4*Intel I210AT POE+, 10M-1000M, WOL						1*Intel I210AT+1*I219LM, 10M-1000M, WOL; 4*Intel I210AT POE+, 10M-1000M, WOL						1*Intel I210AT+1*I219LM, 10M-1000M, WOL;						3*Intel I210AT, 10M-1000M, WOL; 1*Intel I219LM, 10M-1000M, WOL						1*Intel I210AT, 10M-1000M, WOL; 1*Intel I219LM, 10M-1000M, WOL						3*Intel I210AT, 10-1000M						3*RTL811H-VB, 10-1000M																	
USB		2* USB3.1+ 2*USB2.0						2* USB3.1+ 2*USB2.0+8*USB3.0						2* USB3.2+ 2*USB2.0						2* USB3.1+ 2*USB2.0+8*USB3.0						2* USB3.2 Gen2, 2* USB3.2 Gen1						2* USB3.2 Gen2, 2* USB3.2 Gen1						1* USB3.0; 6*USB2.0						2* USB3.1; 2*USB2.0											
Display		1*HDMI+1*VGA						1*HDMI+1*VGA						1*HDMI+1*VGA						1*HDMI+1*VGA						1*HDMI						1*HDMI						1*HDMI+1*VGA						1*HDMI											
Audio		/						/						/						/						1*Line out+1*Mic,Realtek ALC897						/						1*Line out+1*Mic,Realtek ALC662VD						/											
COM/ Others		1*RS232/485; 1*RS232						1*RS232/485; 1*RS232						1*RS232/485; 1*RS232						1*RS232/485; 1*RS232						2*RS232/422/485; 4*RS232						2*RS232/422/485						4*RS232/422/485, 1*RS232; 1*PS/2						2*RS232/485, 6*RS485; 2*CAN											
DIO		32 bit iso. DIO(2*18pin)						32 bit iso. DIO(2*18pin)						32 bit iso. DIO(2*18pin)						32 bit iso. DIO(2*18pin)						8 bit iso. DIO(2*5pin)						8 bit iso. DIO(2*5pin)						8bit DIO (DB9),TTL						8*DI+6*DO											
Storage																																																							
Storage		1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps						1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps						1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps						1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps						1*2.5"SATA3.0, 6Gbps; 1*mSATA, 6Gbps						1*mSATA, 6Gbps						1*mSATA, 6Gbps						1*2.5" SATA2,HDD/SSD; 1*mSATA, AHCI						1*mSATA, 6Gbps					
Expansion																																																							
Expansion Port		1*Mini PCIe(+SIM), 4G/WIFI/PCIe;						1*Mini PCIe(+SIM), 4G/WIFI/PCIe;						1*Mini PCIe(+SIM), 4G/WIFI/PCIe;						1*Mini PCIe(+SIM), 4G/WIFI/PCIe;						2*Mini PCIe(PCIe X1/USB2.0), PCIe module; 1*M.2 3052/3042 B-Key (PCIe X1/USB2.0+SIM),5G NR;						2*Mini PCIe(PCIe X1/USB2.0), PCIe module; 1*M.2 3052/3042 B-Key (PCIe X1/USB2.0+SIM),5G NR;						1*Mini PCIe(+SIM),4G LTE/Wifi/BT;						1*Mini PCIe(+SIM),4G LTE/Wifi/BT; 1*Mini PCIe(PCIeX1+USB2.0)											
Power Supply																																																							
Input voltage		DC 9-36V, with SCP,OVP,OCP;						DC 9-36V, with SCP,OVP,OCP;						DC 9-36V, with SCP,OVP,OCP;						DC 9-36V, with SCP,OVP,OCP;						DC 9-36V, with SCP,OVP,OCP;						DC 9-36V, with SCP,OVP,OCP;						DC IN 9-36V,OVP&OCP;						DC IN 12V/9-36V,OVP&OCP;											
TDP		TBD						TBD						TBD						TBD						TBD:105.84W (Intel I3-12100/128GB SSD/32GB RAM)						TBD:105.84W (Intel I3-12100/128GB SSD/32GB RAM)						14.4W(2.5" HDD)						18.35W(Celeron J6412/2.00GHz, 8G DDR4, 128G mSATA)											
Mechanical																																																							
Structure		Aluminum-magnesium alloy, SGCC frame						Aluminum-magnesium alloy, SGCC frame						Aluminum-magnesium alloy, SGCC frame						Aluminum-magnesium alloy, SGCC frame						Aluminum Chassis, SGCC frame						Aluminum Chassis, SGCC frame						Aluminum Chassis, SGCC frame						Aluminum Chassis, SGCC frame											
Color		Silver gray						Silver gray						Silver gray						Silver gray						Silver gray						Silver gray						Silver gray						Silver gray						Silver gray					
Installation		Wall/Desktop/Din-Rail mounting						Wall/Desktop/Din-Rail mounting						Wall/Desktop/Din-Rail mounting						Wall/Desktop/Din-Rail mounting						desktop/Wall/Din-Rail mounting						desktop/Wall/Din-Rail mounting						desktop mounting						desktop mounting											
Dimension		225*154*75.6mm						225*154*75.6mm						225*154*75.6mm						225*154*75.6mm						238*169*75.6mm						238*169*61.8mm						268*160*57.6mm						222*140*45mm											
Net Weight		TBD						TBD						TBD						TBD						2.55KG						2.32KG						2.15KG						1.32KG											
Environmental																																																							
Operating Temp		-20°C~-60°C,SSD, with air flow; -10°C~-55°C,HDD, with air flow;						-20°C~-60°C,SSD, with air flow; -10°C~-55°C,HDD, with air flow;						-20°C~-60°C,SSD, with air flow; -10°C~-55°C,HDD, with air flow;						-20°C~-60°C,SSD, with air flow; -10°C~-55°C,HDD, with air flow;						-20°C~-60°C,SSD, with air flow; -10°C~-55°C,HDD, with air flow;						-20°C~-60°C,SSD, with air flow; -10°C~-55°C,HDD, with air flow;						-20°C~-65°C,SSD,with air flow -10°C~-55°C,HDD,with air flow -40°C~85°C						-20°C~-60°C,SSD, with air flow -40°C~85°C											
Storage Temp		-40°C~85°C						-40°C~85°C						-40°C~85°C						-40°C~85°C						-40°C~85°C						-40°C~85°C						-40°C~85°C						-40°C~85°C											
Storage Humidity		10~95%@40°C, No-condensation						10~95%@40°C, No-condensation						10~95%@40°C, No-condensation						10~95%@40°C, No-condensation						10~95%@40°C, No-condensation						10~95%@40°C, No-condensation						10~90%@40°C, No- condensation						10~90%@40°C, No- condensation											
Vibration		5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)						5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)						5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)						5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)						5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)						5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)						5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)						5 grms/5~500Hz/random/operation (SSD) 1 grms/5~500Hz/random/operation (HDD)											
Shock		50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)						50g peak acceleration(duration 11ms,SSD); 20g peak acceleration(duration 11ms,HDD)											
Certificate /EMC		CE/FCC Class A						CE/FCC Class A						CE/FCC Class A						CE/FCC Class A						CE/FCC Class A						CE/FCC Class A						CE/FCC Class A						CE/FCC Class A						CE/FCC Class A					
OS		Windows 10 Enterprise(/IOT,64bit) (CFL-R) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)						Windows 10 Enterprise(/IOT,64bit) (CFL-R) Ubuntu, SuSe, Redhat Enterprise 1,2 (Kernel 4.14) (CFL-R) Wind River VxWorks 7 (CFL-R)						Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7						Windows Server 2019, Ubuntu, SUSE, Redhat Enterprise, Wind River Linux, Yocto Project (64-bit), Wind River VxWorks 7						Windows 11/10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7						Windows 11/10 IoT Enterprise 2021 LTSC, Ubuntu, SuSe, Red Hat Enterprise, Wind River Linux, Wind River VxWorks 7						Windows 7, Windows 8.1, Windows 10, Linux Fedora Ubuntu						Windows 10,Linux											
Watchdog timer		programmable via software 1 to 255 second						programmable via software 1 to 255 second						programmable via software 1 to 255 second						programmable via software 1 to 255 second						programmable via software 1 to 255 second						programmable via software 1 to 255 second						programmable via software 1 to 255 second						programmable via software 1 to 255 second											



New product and differences for ALAD tablets

Model	CPU	Model	CPU	Model	CPU
A1010T/T(P)	Elkhart lake	K1020T	Sky lake-U/ Kaby lake-U	K1050T/T(P)	Tiger lake-U
A1210T/T(P)		K1220T		K1250T/T(P)	
A1510T(P)		K1520T		K1550T(P)	
A1710T/T(P)		K1720T		K1750T/T(P)	
A1810T(P)		K1820T(P)		K1850T(P)	
A1910T/T(P)		K1920T		K1950T/T(P)	
A2110T(P)		K2120T(P)		K2150T(P)	
A2310T(P)		K2320T(P)		K2350T(P)	



Industrial Panel PC Product Listing

System	ALAD-K1050T(P)	ALAD-K1250T(P)	ALAD-K1550T(P)	ALAD-K1551T(P)	ALAD-K1750T(P)	ALAD-K1850T(P)	ALAD-K1950T(P)	ALAD-K2150T(P)	ALAD-K2350T(P)
CPU	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W	Intel® Tigerlake U Celeron/Core I3/I5/I7 CPU, ULT SoC, TDP 12W/15W
RAM	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.	1*DDR4, 3200Mhz SODIMM, 32GB max.
Graphics	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz	Intel®UHD/ Intel® Iris® Xe Graphics: Intel DL boost, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI:4096*2304@60Hz
I/O Interfaces									
LAN	2*Intel I210AT, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL	2*Intel I226V, 10M-1000M, WOL
USB	4*USB3.2	4*USB3.2+1*USB2.0	4*USB3.2	4*USB3.2+1*USB2.0	4*USB3.2+1*USB2.0	4*USB3.2	4*USB3.2+1*USB2.0	4*USB3.2	4*USB3.2
Display	1*HDMI	1*HDMI	1*HDMI	1*HDMI	1*HDMI	1*HDMI	1*HDMI	1*HDMI	1*HDMI
Audio	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897	1*Line out, Realtek ALC897
Serial port	2*RS232/422/485	2*RS232/422/485+2*RS232	2*RS232/422/485	2*RS232/422/485+2*RS232	2*RS232/422/485+2*RS232	2*RS232/422/485+2*RS232	2*RS232/422/485+2*RS232	2*RS232/422/485+2*RS232	2*RS232/422/485+2*RS232
LCD Display									
Dimensions	10.1" TFT LCD	12.1" TFT LCD	15.6" TFT LCD	15.0" TFT LCD	17.0" TFT LCD	18.5" TFT LCD	19.0" TFT LCD	21.5" TFT LCD	23.8" TFT LCD
Resolution	1280*800	1280*800	1920*1080	1024*768	1280*1024	1366*768	1280*1024	1920*1080	1920*1080
Max. colors	16.2M	16.2M	16.2M	16.2M	16.7M	16.7M	16.7M	16.7M	16.7M
Luminance	350	500	350	350	350	300	470	300	350
Viewing Angle	85°(L), 85°(R), 85°(U),85°(D)	80°(L), 80°(R), 70°(U),70°(D)	85°(L), 85°(R), 85°(U),85°(D)	80°(L), 80°(R), 80°(U),80°(D)	80°(L), 80°(R), 80°(U),80°(D)	85°(L), 85°(R), 85°(U),85°(D)	85°(L), 85°(R), 85°(U),85°(D)	89°(L), 89°(R), 89°(U),89°(D)	89°(L), 89°(R), 89°(U),89°(D)
Touch screen									
Touch type	5-wire resistive touch screen/ projected capacitive touch screen	5-wire resistive touch screen/ projected capacitive touch screen	5-wire resistive touch screen/ projected capacitive touch screen	5-wire resistive touch screen/ projected capacitive touch screen	projected capacitive touch screen	5-wire resistive touch screen/ projected capacitive touch screen	projected capacitive touch screen	projected capacitive touch screen	projected capacitive touch screen
Transmittance	83%/≥85%	83%/90%	83%/90%	83%/90%	90%	83/90%	90%	90%	90%
Controller	USB	USB	USB	USB	USB	USB	USB	USB	USB
Storage	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA	1*2.5" SATA3.0 HDD/SSD, 1*mSATA
Expansion	1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR	1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR	1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR Opt.1*PCleX4 (X4) /1*32bit PCI	1*Mini PCIe(PCle&USB),PCle module; 1*M.2 3042/3052(+SIM), 4G LTE/5G NR Opt.1*PCleX4 (X4) /1*32bit PCI	1*Mini PCIe(PCle&USB),PClemodule 1*M.2 3042/3052(+SIM), 4G /5G NR	1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G/5G NR	1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR Opt.1*PCleX4 (X4) /1*32bit PCI	1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR Opt.1*PCleX4 (X4) /1*32bit PCI	1*Mini PCIe(PCle&USB),PCle module 1*M.2 3042/3052(+SIM), 4G /5G NR Opt.1*PCleX4 (X4) /1*32bit PCI
Power Supply									
Input voltage & TDP	DC IN 9~36V; 34.5W (CPU i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (CPU i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (CPU i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (CPU i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (i7~1165G7, 8G DDR4, 128G SSD)	DC IN 9~36V; 11.5W (i7~1165G7, 8G DDR4, 128G SSD)
Mechanical									
Sturcture	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell	Aluminum die-casting front bezel , fin-shaped radiator shell
Dimension (W*H*D)	275*193*51mm Panel mounting opening size(W*H): 270*188mm	315*259*51mm Panel mounting opening size(W*H): 303*247mm	416*265*59mm Panel mounting opening size(W*H): 403*251mm	380*315*56mm Panel mounting opening size(W*H): 368*303mm	415.5*360.5*59mm Panel mounting opening size(W*H): 407*352mm	482*305*59mm Panel mounting opening size(W*H): 474*396mm	453.5*388.5*64mm Panel mounting opening size(W*H): 445*380mm	546.9*344.7*64mm Panel mounting opening size(W*H): 538*335mm	594*375*64mm Panel mounting opening size(W*H): 583*364mm
Mounting	Panel/VESA 100*100/75*75mm	Panel/VESA 100*100/75*75mm	Panel/VESA 100*100/75*75mm	Panel/Rack/VESA 100*100/75*75mm	Panel/Rack/VESA 100*100/75*75mm	Panel/VESA 100*100/75*75mm	Panel/Rack/VESA 100*100/75*75mm	Panel/VESA 100*100/75*75mm	Panel/VESA 100*100/75*75mm
Net Weight	1.85KG	2.8KG	3.7KG	4.3KG	6.1KG	6.63KG	6.9KG	8.15KG	7.74KG
Environmental									
Operating Temp.	0~ 50°C, HDD(-10 ~ 55°C, SSD),airflow	0~ 50°C, HDD(-10 ~ 55°C, SSD),airflow	0~ 50°C, HDD(-10 ~ 55°C, SSD),airflow	0~ 50°C, HDD(-10 ~ 55°C, SSD),airflow	0~ 50°C, HDD(-10~55°C, SSD),airflow	0~ 50°C, HDD(-10~55°C, SSD),airflow	0~ 50°C, HDD(-10~55°C, SSD), airflow	0~ 50°C, HDD(-10~55°C, SSD), airflow	0~ 50°C, HDD(-10~55°C, SSD), airflow
Storage Temp.	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C	-20°C~-60°C
Storage Humidity	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing	10~95%@40°C, non-condensing
Vibration	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD	1g 5~500Hz,with HDD
Shock	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD
EMC	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A
OS	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto	Windows 11/10*IoT enterprise, Android, SUSE, Ubuntu, Wind River, Red Hat*Enterprise, Wind River VxWorks*7, Yocto

																
WPPC-H1580T		WPPC-H1780T		ALAD-101T		ALAD-151T		ALAD-171T		ALAD-181T(P)		ALAD-191T		ALAD-211T(P)		
System																
CPU	Intel® Baytrail Celeron J1900 2.0-2.42G CPU	Intel® Baytrail Celeron J1900 2.0-2.42G CPU														
RAM	1*DDR3L,1333Mhz SODIMM,Max.8GB	1*DDR3L,1333Mhz SODIMM, Max.8GB														
Graphics	Gen.7 Intel® HD Graphics	Gen.7 Intel® HD Graphics														
	LCD+HDMI+VGA display,OpenGL 3.2,	LCD+HDMI+VGA display,OpenGL 3.2,														
	DirectX 11, OpenCL 1.2, MPGE2/H.264	DirectX 11, OpenCL 1.2, MPGE2/H.264														
	VGA:1920*1200@60Hz; HDMI:1920*1080@60Hz	VGA:1920*1200@60Hz; HDMI:1920*1080@60Hz														
I/O Interfaces																
LAN	2*Intel I211AT, Gigabit	2*Intel I211AT, Gigabit														
USB	1*USB3.0, 3*USB2.0	1*USB3.0, 3*USB2.0														
Display	1*HDMI+1*VGA	1*HDMI+1*VGA														
Audio	Optional audio	Optional audio														
Serial port	2*RS232/422/485	2*RS232/422/485														
LCD Display																
Dimensions	15" TFT LED	17" TFT LED														
Resolution	1024*768	1280*1024														
Max. colors	16.2M	16.2M														
Luminance _(cd/m²)	350	600														
Viewing Angle	80°(left), 80°(right), 80°(up), 80°(down)	80°(left), 80°(right), 70°(up), 80°(down)														
Touch screen																
Touch type	5-wire resistive touch screen/ projected capacitive touch screen	5-wire resistive touch screen/ projected capacitive touch screen														
Transmission	83/90%	83/90%														
Controller	USB	USB														
Storage																
Storage	1*2.5" SATA swappable, 1*mSATA, support AHCI	1*2.5" SATA swappable, 1*mSATA Full-height card, support AHCI														
Expansion																
Expansion Port	1*Mini PCIe, with SIM slot	1*Mini PCIe, with SIM slot														
Power Supply																
Input voltage & TDP	DC IN 9~36V, D-Jack w/M8, Power consumption: 19.5W	DC IN 9~36V, D-Jack w/M8, Power consumption: 30W														
Mechanical																
Sturcture	SUS304 stainless steel/5052 Aluminum alloy/SECC	SUS304 stainless steel/5052 Aluminum alloy/SECC														
Dimension _(W*H*D)	405.22*328.22*52.1mm	429.51*364.51*52.1mm														
Installation	Desktop mounting VESA(100mm*100mm)	Desktop mounting VESA(100mm*100mm)														
Net Weight	5.8KG	5.57KG														
Environmental																
Operating Temperature	0~ 60℃	0~ 60℃														
Storage Temperature	-40℃~85℃	-40℃~85℃														
Storage Humidity	10~90%@40℃, No- condensation	10~90%@40℃, No- condensation														
Vibration	1g 5~500Hz	1g 5~500Hz														
Shock	10g peak acceleration (duration 11ms) with HDD	10g peak acceleration (duration 11ms) with HDD														
EMC	CE,FCC Class A	CE,FCC Class A														
OS	Windows 7,Windows 8.1, Windows 10, Linux Fedora Ubuntu	Windows 7,Windows 8.1, Windows 10, Linux Fedora Ubuntu														

Optional function module

ECB-246&ECD-2460



PC interface	Mini PCIe,52Pin
Ethernet	2*Intel I210AT,10-1000M
Operating Temp	0°C~70°C
Dimension	30*50.9*6.0mm (ECB-246) 51*27*18mm (ECD-2460)

ECB-260 CANBus



PC interface	Mini PCIe,52Pin
CAN interface	2*DB9
Application	FCANBus
CAN standard	CAN2.0A/CAN2.0B,ISO/DIS 11898-1/2/3
Protocol support	VehicleDBC, CANopen, J1939
Operating Temp	-40°C~85°C
Dimension	50.95*30*1.6mm

OFX-075



Input	DC IN 9-36V
Output	DC OUT 12V
TDP	54W~78W(max.)
Operating Temp	0°C~60°C
Dimension	53*38mm

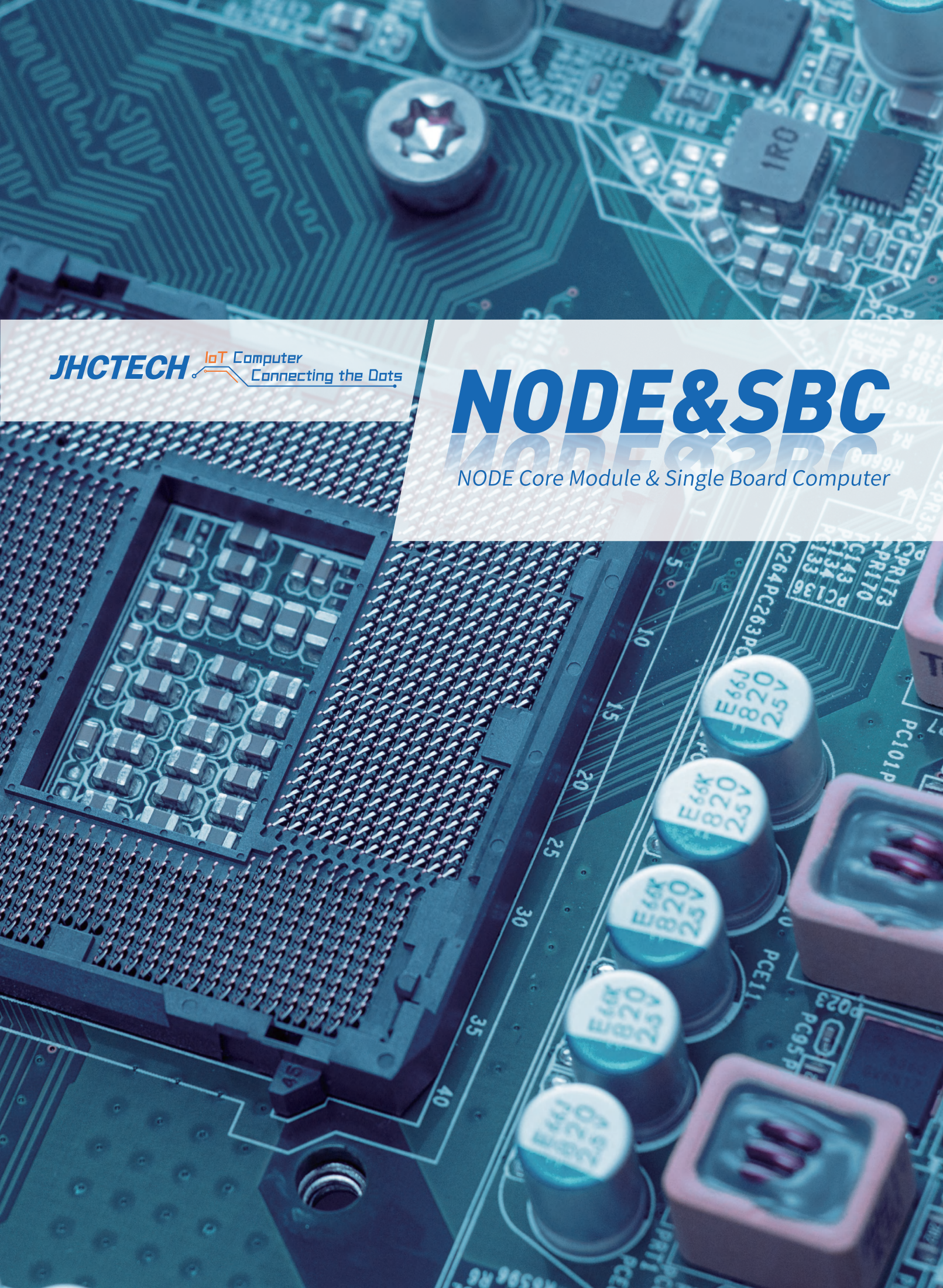


Product Listing

							
SIGM-2650				SIGM-2660			
System				System			
CPU	Intel® Apollo lake E3940 CPU, 4C4T, up to 1.8GHz, 2 MB L2, TDP 9.5W			CPU	Intel® Skylake/Kabylake-U CPU i3/i7 2C4T, MLU220 8TOPS(INT8),TDP8.5W		
RAM	1*DDR3L, 1866MHz, onboard 4GB+1*SODIMM, 8GB max.			RAM	DDR4, 2133MHz, onboard 4/8GB+1*LPDDR4 4GB, 16GB max.		
Graphics	Intel® UHD Graphics, DP: 4096*2160@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz			Graphics	Intel® UHD Graphics, DP: 4096*2304@60Hz, VGA: 1920*1200@60Hz		
I/O				I/O			
LAN	2*I210AT, 10-1000M, M12(with POE), 802.3af(15.4W)			LAN	4*I210AT,10-1000M, 4*M12, 1*I210IS, 1*SFP		
USB	2* USB3.0+ 1*USB2.0 + 2*USB2.0 (M12)			USB	3*USB3.0+ 1*USB2.0+ 2*USB2.0 (M12)		
Display	1*DP+1*VGA+1*Smart Display			Display	1*DP+1*VGA		
Audio	Opt.Realtek ALC662VD, Audio out and MIC			Audio	Opt.Realtek ALC662VD, Audio out and MIC		
Serial port	1*RS232(DB9), 1*RS485(DB9), Opt.2*CAN 2.0(DB9)			Serial port	1*RS232/RS422/RS485,DB9, 2*RS232,DB9, 1* RS232/485,DB9		
DIO	4-ch input/4-ch output (DB9)			DIO	8-bit DIO, programmable TTL signal		
Storage				Storage			
Storage	1*2.5" HDD SATA; 1*mSATA(SATA+USB)			Storage	1*2.5" HDD SATA; 1*mSATA(SATA+USB)		
Expansion				Expansion			
Expansion	2*Mini PCIe(+SIM),4G LTE/Wifi/BT/GPS 1*Mini PCIe(USB), Opt. mSATA 1*Mini PCIe(USB)			Expansion	2*Mini PCIe(+SIM),4G LTE/Wifi/BT/GPS 1*Mini PCIe(USB), Opt. mSATA 1*Mini PCIe(USB)		
Power Supply				Power Supply			
Input voltage & TDP	DC 9~36V, 5-pin M12 (S001) Opt.DC 48/72/110V(Railway), 4-pin M12 (S002) TDP: 20.4W (E3940 CPU, 4G DDR3L, 128G SSD)			Input voltage & TDP	DC 9~36V(Railway), 4-pin (M12), TDP: 38W (I5-6500U CPU/8G DDR4)		
Mechanical				Mechanical			
Structure	Aluminum chassis, SGCC frame			Structure	Aluminum chassis, stainless steel frame		
Dimension (W*H*D)	250*154*72mm			Dimension (W*H*D)	270*154*82.4mm		
Net weight	3.10KG			Net weight	3.93KG		
Environmental				Environmental			
Operating temperature	EN50155 TX: -40~70°C (Operating10min in 85°C)			Operating temperature	EN50155 TX: -40~70°C		
Storage temperature	-40°C~85°C			Storage temperature	-40°C~85°C		
Storage humidity	10~90%@40°C, non-condensing			Storage humidity	10~90%@40°C, non-condensing		
Vibration	MIL-STD-801G, EN50155			Vibration	MIL-STD-810G, EN50155		
Shock	MIL-STD-801G, EN50155			Shock	MIL-STD-810G, EN50155		
Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A			Certification /EMC	EN50155, CE/FCC Class A		
OS	Windows 10, Linux, Wind River VxWorks			OS	Linux Fedora Ubuntu		
SIGM-2650				SIGM-2660			
CPU	Intel® Apollo lake E3940 CPU, 4C4T, up to 1.8GHz, 2 MB L2, TDP 9.5W			CPU	Intel® Skylake/Kabylake-U Corei3/i5/i7 CPU;Opt. MLU220T MXM 16TOPS(INT8)		
RAM	1*DDR3L, 1866MHz, onboard 4GB+1*SODIMM, 8GB max.			RAM	Onboard 4GB +1*SODIMM, 4+16GB max.		
Graphics	Intel® UHD Graphics, DP: 4096*2160@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz			Graphics	Intel® UHD Graphics, DP: 4096*2160@60Hz, Smart Display:1920*1200@60Hz, VGA:1920*1200@60Hz		
I/O				I/O			
LAN	2*I210AT, 10-1000M, M12(with POE), 802.3af(15.4W)			LAN	2*Intel® I210AT 10M-1000M (M12)		
USB	4* USB3.1+ 2*USB2.0			USB	2* USB3.0+ 1*USB2.0 + 2*USB2.0 (M12)		
Display	1*LVDS+3*VGA			Display	1*DP+1*VGA+1*Smart Display		
Audio	Opt.Realtek ALC897, Audio out and MIC			Audio	/		
Serial port	2*RS232/422/485(DB9), 10*RS232(DB9)			Serial port	1*Console RS232 (RJ45)		
DIO	/			DIO	/		
Storage				Storage			
Storage	1*2.5" HDD SATA; 1*CFast			Storage	4*2.5" HDD SATA bay(RAID0/1/5/10); 1*mSATA		
Expansion				Expansion			
Expansion	1*Mini PCIe,WIFI/PCle module			Expansion	2*Mini PCIe(+SIM), 4G/GSM/Wifi/BT/GPS 1*Mini PCIe(SATA+USB), mSATA 1*Mini PCIe(PCle X1/USB)		
Power Supply				Power Supply			
Input voltage & TDP	DC 9~36V, 3-pin TDP: 10W			Input voltage & TDP	Railway:DC 110V(43-160V), 4-pin M12; 28W(Non. MLU220T); 44.5W(with MLU220T)		
Mechanical				Mechanical			
Structure	Aluminum chassis, SGCC frame			Structure	Aluminum alloy mold, conductive oxidation process		
Dimension (W*H*D)	247*151*94.8mm			Dimension (W*H*D)	430*44.5*283mm		
Net weight	3.0KG			Net weight	4.69KG		
Environmental				Environmental			
Operating temperature	-25~60°C with airflow			Operating temperature	EN50155 TX: -40~70°C		
Storage temperature	-40°C~85°C			Storage temperature	EN50155 QT3: -25~70°C(25W CPU); QT1: -25~55°C(45W)		
Storage humidity	10~95%@40°C, non-condensing			Storage humidity	-40°C~85°C		
Vibration	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)			Vibration	10~95%@40°C, Non-condensation		
Shock	50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)			Shock	10~95%@40°C, Non-condensation		
Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A			Certification /EMC	MIL-STD-810G, EN50155:2021		
OS	WIN10/Win11 64 bit,SUSE,Ubuntu, Wind River,Linux			OS	MIL-STD-810G, EN50155:2021		
SIGM-2661				SIGM-3250			
CPU	Intel® Elkhart lake Celeron J6412 CPU, 4C4T, 2.0-2.6GHz			CPU	Intel® Skylake/Kabylake-U CPU i3/i7 2C4T		
RAM	1*DDR4, 3200MHz, 32GB max.			RAM	DDR4, 2133MHz, onboard 4/8GB+1*SODIMM, 16GB max.		
Graphics	Intel® UHD Graphics, LVDS: 1900*1200@60Hz, VGA: 1920*1200@60Hz			Graphics	Intel® UHD Graphics, DP: 4096*2304@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz		
I/O				I/O			
LAN	2*RLT8111H, 10-1000M			LAN	6*I210AT,10-1000M, M12(4/6 POE), 802.3af(15.4W)		
USB	4* USB3.1+ 2*USB2.0			USB	2* USB3.0+ 1*USB2.0 + 2*USB2.0 (M12)		
Display	1*LVDS+3*VGA			Display	1*DP+1*VGA+1*Smart Display		
Audio	Opt.Realtek ALC897, Audio out and MIC			Audio	Opt.Realtek ALC662VD, Audio outand MIC		
Serial port	2*RS232/422/485(DB9), 10*RS232(DB9)			Serial port	1*RS232(DB9), 1*RS485(DB9), Opt. 2*CAN 2.0(DB9)		
DIO	/			DIO	4-ch input/4-ch output (DB9)		
Storage				Storage			
Storage	1*2.5" HDD SATA; 1*mSATA			Storage	1*2.5" HDD SATA; 1*mSATA(SATA+USB)		
Expansion				Expansion			
Expansion	1*Mini PCIe,PCle module			Expansion	2*Mini PCIe(+SIM),4G LTE/Wifi/BT/GPS 1*Mini PCIe(USB), Opt. mSATA 1*Mini PCIe(USB)		
Power Supply				Power Supply			
Input voltage & TDP	DC 9~36V, 3-pin TDP: TBD			Input voltage & TDP	DC 48/72/110V(Railway), 4-pin M12(S00X) DC 9~36V, 5-pin M12 (T00X) TDP: 28W (I5-6200U, 8GB)		
Mechanical				Mechanical			
Structure	Aluminum chassis, SGCC frame			Structure	Aluminum chassis, stainless steel frame		
Dimension (W*H*D)	287*151*114.8mm			Dimension (W*H*D)	270*154*64.5mm		
Net weight	TBD			Net weight	3.2KG		
Environmental				Environmental			
Operating temperature	-25~60°C with airflow			Operating temperature	EN50155 TX: -40~70°C (Operating10min in 85°C)		
Storage temperature	-40°C~85°C			Storage temperature	-40°C~85°C		
Storage humidity	10~95%@40°C, non-condensing			Storage humidity	10~90%@40°C, non-condensing		
Vibration	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)			Vibration	MIL-STD-801G, EN50155		
Shock	50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)			Shock	MIL-STD-801G, EN50155		
Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A			Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A		
OS	WIN10/Win11 64 bit,SUSE,Ubuntu, Wind River,Linux			OS	Windows 7, Windows 10, Linux Fedora Ubuntu		
SIGM-3251				SIGM-U1350			
CPU	Intel® Elkhart lake Celeron J6412 CPU, 4C4T, 2.0-2.6GHz			CPU	Intel® Skylake/Kabylake-U Corei3/i5/i7 CPU;Opt. MLU220T MXM 16TOPS(INT8)		
RAM	1*DDR4, 3200MHz, 32GB max.			RAM	Onboard 8GB+ 1*SODIMM, 8+32GB max.		
Graphics	Intel® UHD Graphics, LVDS: 1900*1200@60Hz, VGA: 1920*1200@60Hz			Graphics	Intel UHD Graphics, DirectX11.1, OpenGL 5.0 and OpenCL 2.1 ; DP:4096*2304@60Hz, HDMI:4096*2160@24Hz,		
I/O				I/O			
LAN	2*RLT8111H, 10-1000M			LAN	1*Intel I210AT(IT)+1*Intel I219LM(2*RJ45) 2*Intel I210AT(IT)[2*M12]; 3*Intel I210AT(IT)		
USB	4* USB3.1+ 2*USB2.0			USB	2* USB3.1+ 8*USB2.0		
Display	1*LVDS+3*VGA			Display	1*DP+1*HDMI		
Audio	Opt.Realtek ALC897, Audio out and MIC			Audio	(Opt.)Realtek ALC, 1*Line out+1*Mic		
Serial port	2*RS232/422/485(DB9), 10*RS232(DB9)			Serial port	2*RS232/422/485+2*RS485		
DIO	/			DIO	8-bit DIO, TTL		
Storage				Storage			
Storage	1*2.5" HDD SATA; 1*CFast			Storage	1*2.5" HDD SATA3.0(RAID0/1); 1*M.2 2280 M-Key(PCle4x), NVMe		
Expansion				Expansion			
Expansion	1*Mini PCIe,WIFI/PCle module			Expansion	Slot7&8: 1*PCle3.0X8(CPU)+1*USB3.1+ 1*USB2.0+1*G-LAN S6:1*PCleX4+1*USB3.1+1*USB2.0+1*G-LAN S5:1*PCleX4+1*USB3.1+1*USB2.0 S3&4: 1*PCleX1+SATA3.0+1*USB2.0 S1&2: 1*SATA3.0+1*USB2.0 S9: 2*PCleX8+2*PCleX4+2*PCleX1+ 4*USB3.1+4*SATA3.0+8*USB2.0+3*G-LAN		
Power Supply				Power Supply			
Input voltage & TDP	DC 9~36V, 3-pin TDP: 10W			Input voltage & TDP	DC 9~36V(Railway), 4-pin (M12), TDP: 38W (I5-6500U CPU/8G DDR4)		
Mechanical				Mechanical			
Structure	Aluminum chassis, SGCC frame			Structure	Aluminum alloy mold, conductive oxidation process		
Dimension (W*H*D)	247*151*94.8mm			Dimension (W*H*D)	482.6*248.2*133mm(w kit), 435.8*208.5*133mm(n kit)		
Net weight	3.0KG			Net weight	374*246*85mm(w kit), 342*222*85mm(n kit)		
Environmental				Environmental			
Operating temperature	-25~60°C with airflow			Operating temperature	EN50155 QT3: -25~70°C(25W CPU); QT1: -25~55°C(45W)		
Storage temperature	-40°C~85°C			Storage temperature	-40°C~85°C		
Storage humidity	10~95%@40°C, non-condensing			Storage humidity	10~95%@40°C, Non-condensation		
Vibration	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)			Vibration	10~95%@40°C, Non-condensation		
Shock	50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)			Shock	MIL-STD-810G, EN50155:2021		
Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A			Certification /EMC	MIL-STD-810G, EN50155:2021		
OS	WIN10/Win11 64 bit,SUSE,Ubuntu, Wind River,Linux			OS	MIL-STD-810G, EN50155:2021		
SIGM-U3550				SIGM-U3555			
CPU	Intel® Elkhart lake Celeron J6412 CPU, 4C4T, 2.0-2.6GHz			CPU	Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU, Intel® Q470 PCH		
RAM	1*DDR4, 3200MHz, 32GB max.			RAM	2*DDR4 SO-DIMM, 2933MHz, 64GB max.		
Graphics	Intel® UHD Graphics, LVDS: 1900*1200@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz			Graphics	Intel® UHD Graphics, DirectX 12, openGL 4.5, 2*HDMI 1.4: 4096 x 2304@24Hz		
I/O				I/O			
LAN	2*RLT8111H, 10-1000M			LAN	3*Intel I226V, 10M-2.5G, iAMT 13.0,vPro 8*Intel I210AT(8*M12)		
USB	4* USB3.1+ 2*USB2.0			USB	4* USB3.2(10G)+2*USB3.0+2*USB2.0		
Display	1*LVDS+3*VGA			Display	2*HDMI		
Audio	Opt.Realtek ALC897, Audio out and MIC			Audio	(Opt.)Realtek ALC, 1*Line out+1*Mic		
Serial port	2*RS232/422/485(DB9), 10*RS232(DB9)			Serial port	2*RS232/422/485+2*RS485		
DIO	/			DIO	8-bit DIO, TTL		
Storage				Storage			
Storage	1*2.5" HDD SATA; 1*CFast			Storage	1*2.5" HDD SATA3.0(RAID0/1); 1*M.2 2280 M-Key(PCle4x), NVMe		
Expansion				Expansion			
Expansion	1*Mini PCIe,WIFI/PCle module			Expansion	Slot7&8: 1*PCle3.0X8(CPU)+1*USB3.1+ 1*USB2.0+1*G-LAN S6:1*PCleX4+1*USB3.1+1*USB2.0+1*G-LAN S5:1*PCleX4+1*USB3.1+1*USB2.0 S3&4: 1*PCleX1+SATA3.0+1*USB2.0 S1&2: 1*SATA3.0+1*USB2.0 S9: 2*PCleX8+2*PCleX4+2*PCleX1+ 4*USB3.1+4*SATA3.0+8*USB2.0+3*G-LAN		
Power Supply				Power Supply			
Input voltage & TDP	DC 9~36V, 3-pin TDP: 10W			Input voltage & TDP	DC 9~36V(Railway), 4-pin (M12), TDP: 38W (I5-6500U CPU/8G DDR4)		
Mechanical				Mechanical			
Structure	Aluminum chassis, SGCC frame			Structure	Aluminum alloy mold, conductive oxidation process		
Dimension (W*H*D)	247*151*94.8mm			Dimension (W*H*D)	482.6*248.2*133mm(w kit), 435.8*208.5*133mm(n kit)		
Net weight	3.0KG			Net weight	374*246*85mm(w kit), 342*222*85mm(n kit)		
Environmental				Environmental			
Operating temperature	-25~60°C with airflow			Operating temperature	EN50155 QT3: -25~70°C(25W CPU); QT1: -25~55°C(45W)		
Storage temperature	-40°C~85°C			Storage temperature	-40°C~85°C		
Storage humidity	10~95%@40°C, non-condensing			Storage humidity	10~95%@40°C, Non-condensation		
Vibration	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)			Vibration	10~95%@40°C, Non-condensation		
Shock	50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)			Shock	MIL-STD-810G, EN50155:2021		
Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A			Certification /EMC	MIL-STD-810G, EN50155:2021		
OS	WIN10/Win11 64 bit,SUSE,Ubuntu, Wind River,Linux			OS	MIL-STD-810G, EN50155:2021		
SIGM-U3555				SIGM-U3555			
CPU	Intel® Elkhart lake Celeron J6412 CPU, 4C4T, 2.0-2.6GHz			CPU	Intel® Comet lake 10th-Gen Celeron/Pentium/Core™ i9/i7/i5/i3 CPU, Intel® Q470 PCH		
RAM	1*DDR4, 3200MHz, 32GB max.			RAM	2*DDR4 SO-DIMM, 2933MHz, 64GB max.		
Graphics	Intel® UHD Graphics, LVDS: 1900*1200@60Hz, Smart Display: 1920*1200@60Hz, VGA: 1920*1200@60Hz			Graphics	Intel® UHD Graphics, DirectX 12, openGL 4.5, 2*HDMI 1.4: 4096 x 2304@24Hz		
I/O				I/O			
LAN	2*RLT8111H, 10-1000M			LAN	3*Intel I226V, 10M-2.5G, iAMT 13.0,vPro 8*Intel I210AT(8*M12)		
USB	4* USB3.1+ 2*USB2.0			USB	4* USB3.2(10G)+2*USB3.0+2*USB2.0		
Display	1*LVDS+3*VGA			Display	2*HDMI		
Audio	Opt.Realtek ALC897, Audio out and MIC			Audio	(Opt.)Realtek ALC, 1*Line out+1*Mic		
Serial port	2*RS232/422/485(DB9), 10*RS232(DB9)			Serial port	2*RS232/422/485+2*RS485		
DIO	/			DIO	8-bit DIO, TTL		
Storage				Storage			
Storage	1*2.5" HDD SATA; 1*CFast			Storage	1*2.5" HDD SATA3.0(RAID0/1); 1*M.2 2280 M-Key(PCle4x), NVMe		
Expansion				Expansion			
Expansion	1*Mini PCIe,WIFI/PCle module			Expansion	Slot7&8: 1*PCle3.0X8(CPU)+1*USB3.1+ 1*USB2.0+1*G-LAN S6:1*PCleX4+1*USB3.1+1*USB2.0+1*G-LAN S5:1*PCleX4+1*USB3.1+1*USB2.0 S3&4: 1*PCleX1+SATA3.0+1*USB2.0 S1&2: 1*SATA3.0+1*USB2.0 S9: 2*PCleX8+2*PCleX4+2*PCleX1+ 4*USB3.1+4*SATA3.0+8*USB2.0+3*G-LAN		
Power Supply				Power Supply			
Input voltage & TDP	DC 9~36V, 3-pin TDP: 10W			Input voltage & TDP	DC 9~36V(Railway), 4-pin (M12), TDP: 38W (I5-6500U CPU/8G DDR4)		
Mechanical				Mechanical			
Structure	Aluminum chassis, SGCC frame			Structure	Aluminum alloy mold, conductive oxidation process		
Dimension (W*H*D)	247*151*94.8mm			Dimension (W*H*D)	482.6*248.2*133mm(w kit), 435.8*208.5*133mm(n kit)		
Net weight	3.0KG			Net weight	374*246*85mm(w kit), 342*222*85mm(n kit)		
Environmental				Environmental			
Operating temperature	-25~60°C with airflow			Operating temperature	EN50155 QT3: -25~70°C(25W CPU); QT1: -25~55°C(45W)		
Storage temperature	-40°C~85°C			Storage temperature	-40°C~85°C		
Storage humidity	10~95%@40°C, non-condensing			Storage humidity	10~95%@40°C, Non-condensation		
Vibration	5 grms/5~500Hz/random/operation(SSD); 1 grms/5~500Hz/random/operation(HDD)			Vibration	10~95%@40°C, Non-condensation		
Shock	50g peak acceleration(duration 11ms,SSD); 20gpeak acceleration(duration 11ms,HDD)			Shock	MIL-STD-810G, EN50155:2021		
Certification /EMC	EN50155/ E-Mark/ CE/FCC Class A			Certification /EMC	MIL-STD-810G, EN50155:2021		
OS	WIN10/Win11 64 bit,SUSE,Ubuntu, Wind River,Linux			OS	MIL-STD-810G, EN50155:2021		
SIGM-U3555				SIGM-U3555			
CPU	Intel® Elkhart lake Celeron J6412 CPU, 4C4T, 2.0-2.6GHz			CPU	Intel® Comet lake		

Product Listing

ICS-2010 ICS-2020 ICS-4010 ICS-4040				
System				
CPU	1/2 Intel Xeon Gen2 scalable processors, Intel® C621 PCH	1/2 Intel Xeon Gen4 scalable processors, Intel® C741 PCH	1/2 Intel Xeon Gen2 scalable processors, Intel® C621 PCH	1/2 Intel Xeon Gen4 scalable processors, Intel® C741 PCH
RAM	16*DDR4,2933MHz ECC LRDIMM/RDIMM LRDIMM:4T (16*256GB); RDIMM:2T (16*128GB)	16*DDR5,2933MHz ECC LRDIMM/RDIMM LRDIMM/RDIMM:4T (16*256GB)	16*DDR4,2933MHz ECC LRDIMM/RDIMM LRDIMM:4T (16*256GB); RDIMM:2T (16*128GB)	16*DDR5,5600MHz,3DS RDIMM/RDIMM 4T max. (16*256GB)
Graphics	VGA:1920*1200@60Hz,	VGA:1920*1200@60Hz,	VGA:1920*1200@60Hz,	VGA:1920*1200@60Hz,
I/O				
LAN	2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC	2*Broadcom BCM5720 1GBase-T; 1*IPMI2.0, Aspeed AST2600 BMC	2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC	2*Intel I210AT 10M-1000M; 1*IPMI2.0, Aspeed AST2500 BMC
USB	4* USB3.0+2*USB2.0	6* USB3.0	4* USB3.0+ 2*USB2.0	6* USB3.0
Display	1*VGA	1*VGA	1*VGA	1*VGA
Audio	/	/	/	/
Serial port	1*RS232(DB9)	1*RS232 (DB9)	1*RS232 (DB9)	1*RS232 (DB9)
DIO	/	/	/	/
Storage				
Storage	2*2.5" SAS/SATA3.0,RAID0,1	2*2.5" SAS/SATA3.0,RAID0,1	8*2.5"/3.5" SAS/SATA, RAID0/1/5/10; 2*2.5" SAS/SATA	8*2.5"/3.5" SAS/SATA, RAID0/1/5/10; 2*2.5" SAS/SATA
Expansion				
Expansion Port	2*PCIe3.0X16+1*PCIe3.0X8; 1*M.2 22110/2280 M-Key (PCIe3.0X4) , 1*M.2 2280 M-Key (PCIe3.0X4)	2*PCIe5.0X16+1*PCIe5.0X8; 2*M.2 22110/2280 M-Key(PCIe4.0X2); 3*MCIOX8(6*PCIe5.0X4 NVMe)	6*PCIe3.0X16+1*PCIe3.0X8(X4); 1*M.2 22110/2280 M-Key(PCIe3.0X4)	6*PCIe5.0X16+1*PCIe5.0X8; 2*M.2 22110/2280 M-Key(PCIe4.0X4); 3*MCIO(PCIe5.0X8,6*NVMe)
Power Supply				
Input voltage & TDP	550W/800W/1200W/1600W; 1+1 hot swap redundant power supply	550W/800W/1200W/1600W; 1+1 hot swap redundant power supply	550W/800W/1200W/1600W/2000W/2200W; 1+1 hot swap redundant power supply	550W/800W/1200W/1600W/2000W/2200W; 1+1 hot swap redundant power supply
Mechanical				
Structure	Imported SGCC hot dip galvanized steel sheet,19-inch rack 2U standard	Imported SGCC hot dip galvanized steel sheet,19-inch rack 2U standard	Imported SGCC fingerprint resistant galvanized steel, 19-inch rack 4U standard	Imported SGCC fingerprint resistant galvanized steel, 19-inch rack 4U standard
Dimension (W*H*D)	442*447*87mm	442*447*87mm	645*445*176.5mm	645*445*176.5mm
Net weight	TBD	TBD	18KG	18KG
Environmental				
Operating temp.	0~50℃	10~35℃	0~60℃	5~35℃
Storage temp.	-20℃~75℃	-40℃~70℃	- 20℃~75℃	- 40℃~65℃
Storage humidity	5~95%@40℃, Non-condensation	5~95%@40℃, Non-condensation	5~95%@40℃, Non-condensation	5~95%@40℃, Non-condensation
Vibration	TBD	TBD	TBD	TBD
Shock	TBD	TBD	TBD	TBD
Certification /EMC	CCC/CE/FCC Class A	CCC/CE/FCC Class A	CCC/CE/FCC Class A	CCC/CE/FCC Class A
OS	Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit)	Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit)	Windows Server 2012/2008 R2(64-bit) , Windows SBS 2011(64-bit), Red Hat Enterprise Linux Server(32/64-bit), Suse Enterprise Linux Server(32/64-bit), Ubuntu Server(32/64-bit)	Windows Server. Hyper-V Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Ubuntu, Oracle Linux, VMware ESXi, Citrix XenServer



JHCTECH IoT Computer Connecting the Dots

NODE&SBC
NODE Core Module & Single Board Computer

																																			
NODE-I912				NODE-I719				NODE-I914				NODE-I973				EPI-I908				ECM-I718				ECM-I910				ECM-I913							
Formfactor				INE Type F				NODE Type				NODE Type				NODE Type				System															
CPU				Intel® Tiger lake U SoC CPU: i7-1165G7, 4C8T, 2.8~4.7GHz/28W; i5-1135G7, 4C8T, 2.4~4.2GHz/28W; i3-1115G4, 2C4T, 3.0~4.1GHz/28W; Celeron 6305E, 2C2T, 1.8GHz/15W;				Intel Elkhart lake Soc CPU: Celeron J6412, 4C4T, 2.0-2.6GHz/10W Celeron N6210, 2C2T, 1.2-2.6GHz/6.5W				Intel® Tiger lake U SoC CPU: i7-1165G7, 4C8T, 2.8~4.7GHz/28W; i5-1135G7, 4C8T, 2.4~4.2GHz/28W; i3-1115G4, 2C4T, 3.0~4.1GHz/28W; Celeron 6305E, 2C2T, 1.8GHz/15W;				Intel® Comet lake-S CPU: Core i9/i7/i5/i3/Celeron				Intel® Skylake/Kabylake-U processor Celeron/Core i3/i5/i7				Intel® Elkhart lake SoC CPU: Celeron J6412 2.0-2.6GHz/ Celeron N6210 1.2-2.6GHz				Intel® Tiger lake U Soc CPU (Core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305)							
DRAM				Dual-channel DDR4 2*260-pin SO-DIMM, up to 3200MHz, 64GB max.				Single channel DDR4 1*260-pin SO-DIMM, up to 3200MHz, 32GB max.				Single channel DDR4 1*260-pin SO-DIMM, up to 3200MHz, 32GB max.				Dual-channel DDR4 2*260-pin SO-DIMM, up to 2933MHz, 64GB max.				1*DDR4,2133MHz,SODIMM, 16GB max.				1*DDR4 SODIMM,3200MHz, 32GB max.				2*DDR4 SODIMM,2400MHz, 32GB max.				2*DDR4 SODIMM,3200MHz, 64GB max.			
Graphics				Intel UHD Graphics or Iris® Xe Graphics, Supports Intel® Deep Learning Boost, DirectX12.1,OpenGL 4.6 and OpenCL 2.0; HDMI 2.0: 4096x2304@60Hz, DP 1.4: 7680x4320@60Hz, eDP: 4096x2304@60Hz				Intel® UHD Graphics, DirectX12.1, OpenGL and OpenCL; DP1.4 : 4096*2160@60Hz, eDP: 4096*2160@60Hz				Intel Iris® Xe Graphics, DirectX12.1, OpenGL 4.6 and OpenCL 3.0; HDMI 2.0: 4096x2304@60Hz, DP 1.4: 7680x4320@60Hz, eDP: 4096x2304@60Hz				Intel ® UHD Graphics 630, DirectX 12, OpenGL 4.5 and OpenCL 2.1; HDMI:4096*2160@30Hz, DP:4096*2304@60Hz, eDP:4096*2304@60Hz																			
Connector 1				eSPI and Fusa PCIe Gen3 X1*4/X4*1 PCIe Gen3 or USB3.2 X2*1 COM 1 USB2.0 3 SATA 1 DDI 1 GPIO Up to 15 channels F-Panel: Power SW/Reset/PW-LED/HDD-LED				MXM 3.1 Goldfinger(281-Pin) DDI 2 eDP 1 USB3.1 4 USB2.0 10 PCIe3.0 X1*4 PCIe3.0 X2*1 PCIe3.0 X2*1				MXM 3.1 Goldfinger(281-Pin) DDI 2 eDP 1 USB3.2 4 USB2.0 10 PCIe3.0 X1*4 PCIe3.0 X2*1 PCIe3.0 X4*1				MXM 3.1 Goldfinger(281-Pin) DDI 2 eDP 1 USB3.2 6 USB2.0 10 PCIe3.0 X1*5 PCIe3.0 X2*1																			
Connector 2				PCIe3.0 X1*1 PCIe3.0 or USB3.1 X2*1 CPU PCIe Gen4 X1*2 HDA 1 USB2.0 5 SATA 1 DDI 1 COM 2 GPIO Up to 30 channels				SATA(PCIeX1) 2 eSPI 1 HDA 1 SM BUS 1 Legacy IO 1 RTC 1 UART 4 GPIO 3 F-Panel: Power SW/Reset/PW-LED/HDD-LED				SATA(PCIeX1) 2 LPC(eSPI) 1 HDA 1 SM BUS 1 Legacy IO 1 RTC 1 UART 4 GPIO 3 F-Panel: Power SW/Reset/PW-LED/HDD-LED				SATA(PCIeX1) 4 LPC(eSPI) 1 HDA 1 SM BUS 1 Legacy IO 1 RTC 1 UART 3 GPIO 3 F-Panel: Power SW/Reset/PW-LED/HDD-LED																			
Power& TDP				DC IN 12V; TDP-up:28W(Celeron 6305E--15W)				DC IN 12V;				DC IN 12V;				DC IN 12V;																			
Dimension				133*95*16.6mm				95*82*6.4mm				95*82*6.4mm				150*100*13mm																			
Operating temp.				0~60°C(Standard); -40~85°C(Extend)				0~60°C				0~60°C				0~60°C																			
Storage temp.				-40°C~85°C				-40°C~85°C				-40°C~85°C				-40°C~85°C																			
Storage Humidity				10~95%@40°C, Non-condensing				10~95%@40°C, Non-condensing				10~95%@40°C, Non-condensing				10~95%@40°C, Non-condensing																			
EMC/ Certification				CE/FCC Class A				CE/FCC Class A				CE/FCC Class A				CE/FCC Class A																			
Watchdog Timer				Watchdog timeout programmable via software 1 to 255 second				Watchdog timeout programmable via software 1 to 255 second				Watchdog timeout programmable via software 1 to 255 second				Watchdog timeout programmable via software 1 to 255 second																			
OS Support				Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux				Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux				Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux				Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux				Windows 7, Windows 10, Linux Fedora Ubuntu (Note: The seventh generation Intel® Kabylake-U processor does not support Windows 7)				Windows 10/Windows 11 64 bit, SUSE, Ubuntu, Wind River, Linux				Windows 10 IoT enterprise, Andriod, Ubuntu, Suse, Red Hat enterprise, Wind River Vxworks 7, Yocto				Windows 11*IoT enterprise, Windows 10*IoT enterprise,Android,SUSE,Ubuntu, Wind River,Red Hat*Enterprise,Wind River VxWorks*7,Yocto			

PADR-M102-718		PADR-M102-910		PADR-M102-913		PADR-S501-953		
System								
CPU	Intel® Elkhart lake SoC CPU: Celeron J6412 Celeron N6210		Intel® Whiskey lake-U CPU, Core I7-8565U,Core I5-8265U,Core I3-8145U,Celeron 4305U		Intel® Tiger lake U Soc CPU , core i3-1115G4/i5-1135G7/i7-1165G7, Celeron 6305,TDP 12W/15W/28W		Intel 6/7th Gen. SKL/KBL-S Core i7/i5/i3/ Pentium/Celeron LGA1151 CPU, up to 91W, H110 Chipset	
RAM	1*DDR4, 3200MHz, 32GB max.		2*DDR4, 2400MHz, 32GB max.</					