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www.aaeon.com

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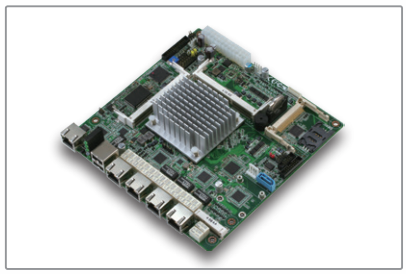
Network Computing Platforms

Get Next-Gen Network Security



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Focus • Agility • Competitiveness

About AAEON

As one of the leading manufacturers of advanced hardware platforms for network computing and security solutions, AAEON offers an extensive range of network appliances that support SD-WAN, SDN, NFV, Wireless Gateway, NGFW, Intrusion Detection/Prevention, WAN Optimization, Network Access Control, Load Balancing, Web Content Filtering, Unified Threat Management, and Wireless Network Security. Together, they make up the most versatile and cost-effective networking solutions on the market.

Offering x86-based platforms from Intel® Atom™ all the way to Intel® Xeon processors, and in desktop, 1U and 2U form factors, AAEON's team of experienced network engineers have helped companies around the world deploy reliable network appliances with faster times to market and lower development costs based on state-of-the-art hardware platforms, unmatched service quality, and long-term support.

Established in 1992, AAEON successfully established itself as a leading designer and manufacturer of advanced industrial and embedded computing platforms. AAEON maintains a strong market position providing integrated solutions, hardware, and bespoke services for premier OEM, ODM, and system integrators worldwide. After Joining the ASUS group in 2011, AAEON has further strengthened its leadership and will continuously pursue innovation and excellence in this industry.

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Note: All specifications are subject to change without notice.

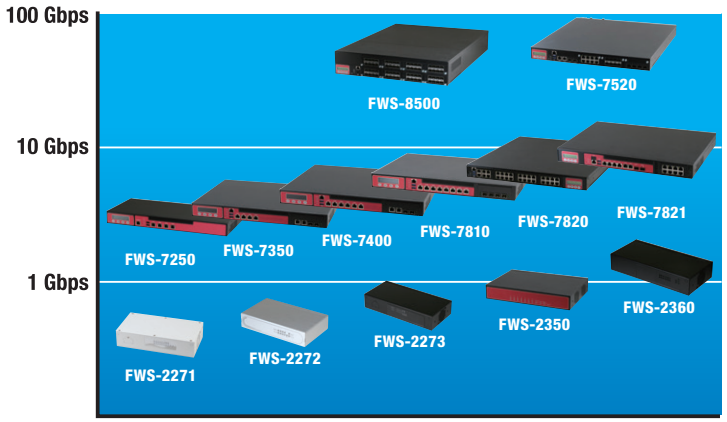
Why AAEON

Enterprises face an increased need for new and innovative solutions to maintain peak productivity while dealing with unprecedented data growth, ever-present cyber-security risks, and increasing regulatory requirements. The move toward on-premises, managed, and hybrid cloud solutions creates a great opportunity for all enterprises by offering the security and control of on-premises IT infrastructure – mixed with the scalability and advantageous economics of cloud deployments.

Introduction to AAEON Network Security Appliance

AAEON has built on the pedigree of the FWS series to develop the next generation of easy-to-manage, rapidly deployable, intelligent security appliances, further demonstrating its ability to offer a complete product portfolio that encompasses SMB, and enterprise-scale solutions.

The FWS Series offers enterprise-grade 2U rackmount, 1U rackmount, and desktop network appliances with a broad array of processors from the powerful Intel® Xeon® and Core™ i7/ i5/ i3 to the cost-efficient Atom™ processors. Designed for scalability and flexible configurations, FWS Series appliances are reliable systems for demanding network applications. They come with various combinations of Ethernet modules, including GbE and SFP Fiber LAN, PCI-E Bus expansion slots, and LCM with keypad control.



AAEON Joined “Intel® Network Builder” Program

AAEON®, a leading manufacturer of advanced hardware platforms for network computing and security solutions, announces its participation in the Intel® Network Builders Program. The program connects service providers and end users with the infrastructure, software, and technology vendors that are driving SDN/NFV solutions to the market.

With the aim of promoting closer collaboration between manufacturers experienced in providing networking solutions, the program enables the pooling of expertise and technical know-how in driving the development and deployment of software defined networking (SDN) and network functions virtualization (NFV) solutions. AAEON’s participation in the program has therefore demonstrated its high standards and in-depth knowledge of the networking sector.

http://networkbuilders.intel.com

Intel® Network Builder

Core Competence

Leading Network Technology

- 10/100/1000/10000/40000 Mbps Ethernet
- Copper and fiber Ethernet at 10GbE, 40GbE
- Support for up to 64 network ports
- Advanced bypass solutions
- Higher throughput

Reliable Networking Solution

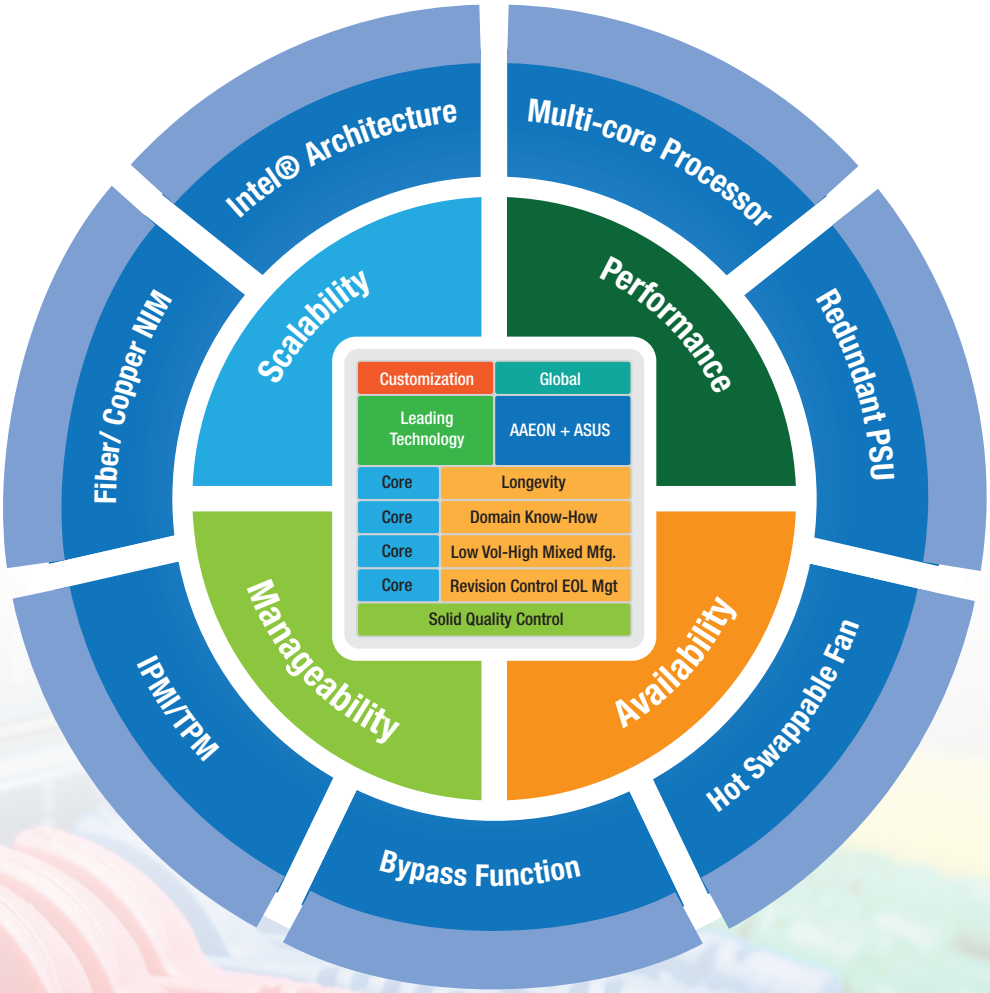
AAEON will help you ensure business continuity and access to your critical applications to mitigate risk and meet regulatory compliance requirements. We have built a world-class pre-sales team and strive to quickly deliver IT services and respond to fast-changing market conditions. To help our customers display new technology quickly and achieve execellent ROI, we also publish related materials such as installation guides and technical white papers.

Module NIC & High Port Density

Featuring up to 64 ports, FWS series appliances are purpose-built, easy-to-manage, rapidly deployable, intelligent security appliances featuring IPMI, TPM, Unified Threat Management, Intrusion Detection & Prevention, and pay-as-you-go scalability ideal for integrating with web-scale technologies, hosting the modern virtualized datacenter, high performance computing, and hybrid-cloud environments while reducing risk and enhancing agility.

Cutting Edge Processor

All AAEON network solutions have been re-engineered to support the latest 7th Generation Intel® Xeon® processors and can be relied on to deliver unrivalled processing, massive throughput, ultra-low latency, and composability ideal for top-of-rack deployments. AAEON offers a complete product portfolio that encompasses SMB, SME, and enterprise-scale solutions, in addition to low-power models for deployment in power-sensitive environments.



Note: All specifications are subject to change without notice.

Network Applications

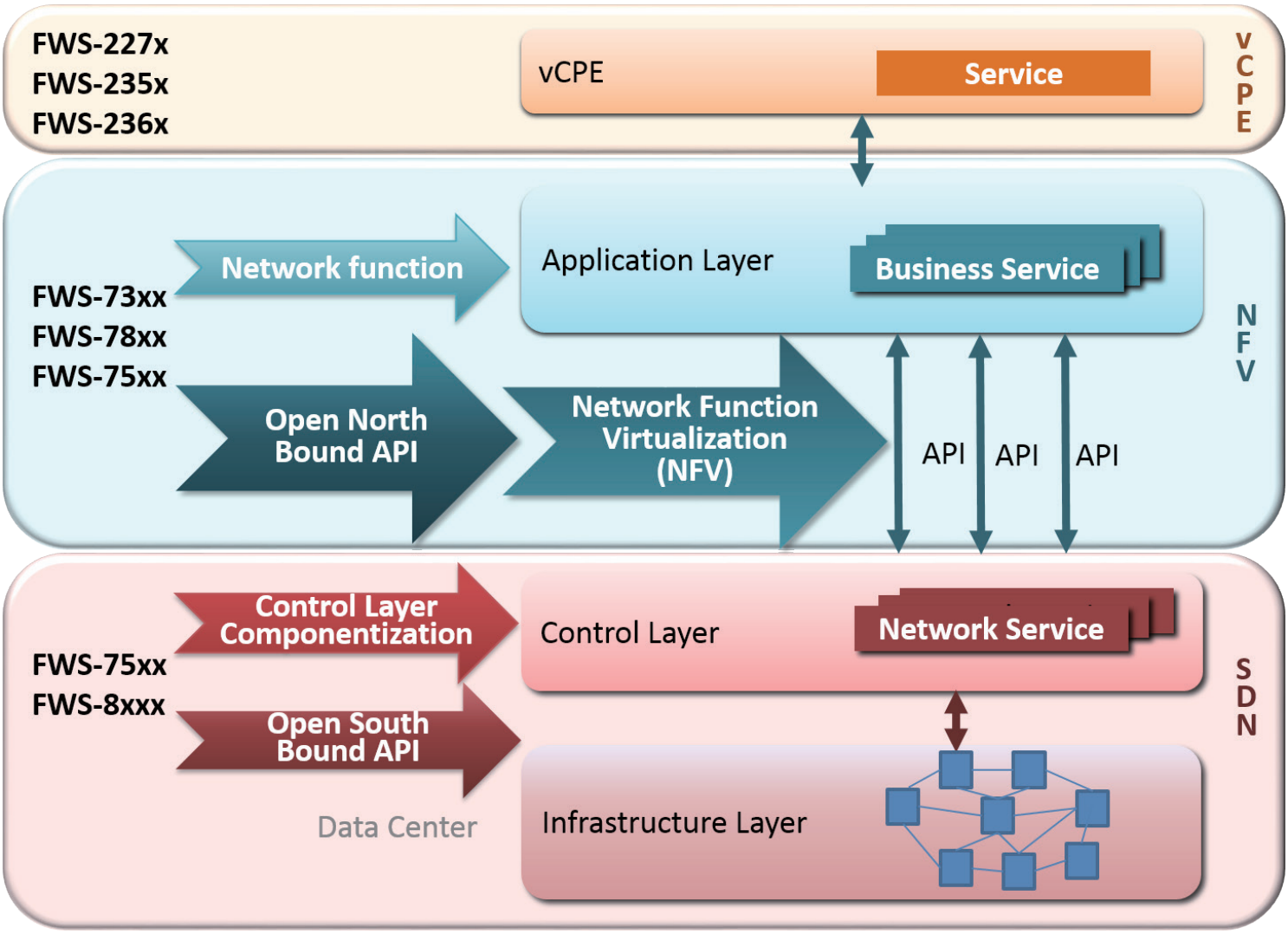
Public and private cloud clustered databases, parallel processing, transactional services, and high-performance embedded I/O applications will achieve significant performance improvements resulting in reduced completion time and lower cost per operation.

- NGFW (Next Generation Firewall)
- SD-WAN (Software Defined WAN)
- SDN (Software Defined Networking)
- NFV (Network Function Virtualization)
- vCPE (Virtual Customer Premises Equipment)
- IDS (Intrusion Detection System)
- IPS (Intrusion Prevention System)
- VPN (Virtual Private Networks)
- NAC (Network Access Control)
- Load Balancing
- Web Content Filtering
- UTM (Unified Threat Management)
- VoIP Gateway
- Wireless Network Security
- Wired/Wireless Gateway

Network Applications

Virtualize your Network

AAEON's NFV/SDN family of products are 1U~2U in size and encompass the 1U FWS-73XX Series, the FWS-75XX Series, the FWS-78XX Series, and the 2U FWS-8XXX Series. All systems have modularized LAN options for the user to choose from. vCPE solutions for new-gen network appliances are also available with our FWS-227X, FWS-225X, and FWS-226X, as well as our 1U rackmount FWS-75XX series (Broadwell-DE).



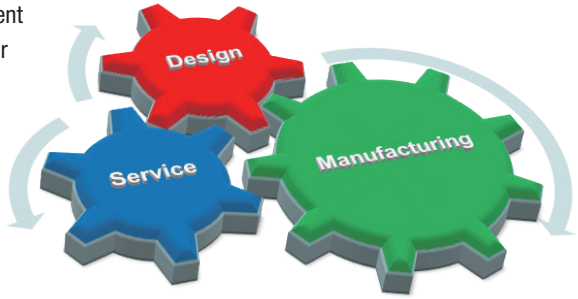
Note: All specifications are subject to change without notice.

DMS & Collaboration Models

All AAEON solutions are backed by world-class services, education, and proactive support to reduce time to production and enable you to operate at peak efficiency. Our 25 years of world-class technical expertise with practical experience in designing and automating IT processes to deliver end-to-end solutions enables your organization to maximize your investment in AAEON's network security infrastructure. At every step, AAEON ensures that services are bound tightly together to provide a thoroughly comprehensive and professionally monitored process that will exceed client expectations in quality, reliability, and durability.

- Product Conceptualization
- Electronic Circuit Development
- PCB Layout
- Component Qualification
- Mechanical Design
- Prototype building
- Compatibility, Reliability and Qualification testing
- Certification and processing (Agency Approvals)
- Manufacturing Design
- Packaging and Enclosure Design

- Customer Service Management
- Customer and Channel Repair
- Logistics extension
- Refurbishment
- Return Processing
- Troubleshooting Support
- Upgrades
- Warranty Management
- Spare Parts Management



- PCBA Assembly
- System Manufacturing
- Component and Subsystem Assembly
- Functional Testing
- Engineering Change Management
- BTO (Build to Order)
- Supplier Qualification
- Warehousing
- Failure Analysis

AAEON is able to manufacture existing products, customize existing COTS products, or jointly collaborate in the development of new products from inception to delivery. AAEON DMS capably handles large-volume, or small-volume, high-mix projects.

Whether your organization intends to deploy bespoke devices with a high-thermal tolerance and low-power draw, or many enterprise-class Network Security Appliances with exascale/hyperscale persistent availability, collaborating with AAEON enables you to deploy the best equipment with complete confidence.

Contract Manufacturing (CM)
- Customer-owned design
- AAEON provides manufacturing and engineering services

Commercial off-the-shelf (COTS)
- Based on AAEON's standard product & technology roadmap
- With optional minor changes

Customized COTS
- Based on AAEON's standard product & technology roadmap
- Modify according to customer's request

Joint Development (JDM)
- Strategic Partnership
- Co-architected design based on a common IP from the technology roadmap

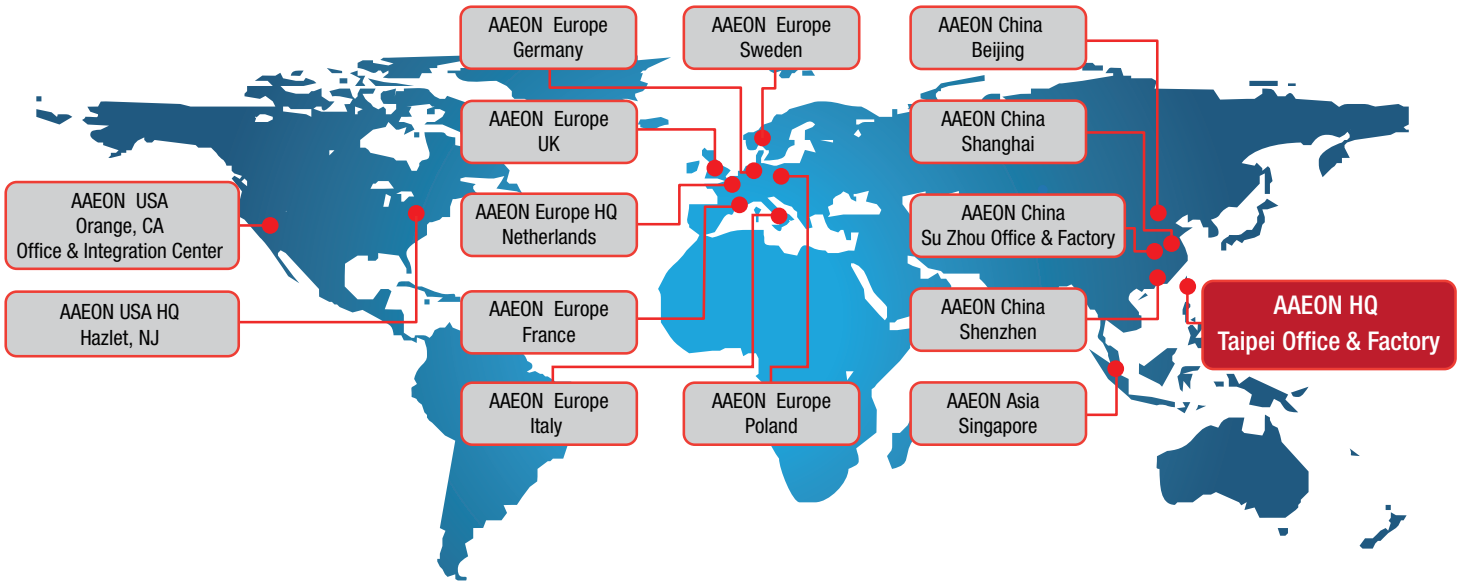
Original Design Manufacturing (ODM)
- Customer-driven design
- Based on a customer-driven product and technology roadmap

Quality Manufacturing → **Collaborative Development**

Global Office and RMA Service

Worldwide Offices

Headquartered in Taipei, Taiwan, AAEON is now serving its global partners in over 16 locations worldwide.



A Complete Service

After we have designed and manufactured the hardware, we install the required software and ship directly to your customer in your branded box. Drop shipments can be arranged from our logistics centers worldwide.

Our service allows you to focus on your core competency of software development for the information security industry. We take care of the hardware design, manufacturing, logistics, and service. This is our core competency.

Note: All specifications are subject to change without notice.

Product Lines

(1) Desktop Network Appliances

AAEON's Desktop Network Appliances support functions such as SD-WAN, vCPE, wired/wireless gateway, network access control, and load balancing in a single, convenient device for simple network security deployment. Its compact size and capability make it an ideal network appliance for small offices and branch offices.

(2) Rackmount Network Appliances

AAEON's Rackmount Network Appliances are designed in both 2U rackmount and 1U rackmount enterprise-grade configurations with a broad selection of processors. Designed for scalability and flexible configurations, the appliances are reliable systems for demanding network applications and come with various combinations of Ethernet modules including GbE and SFP Fiber LAN, PCI-E Bus expansion slots and LCM with keypad control.

(3) Network Interface Module (NIM)

The dense, feature-rich 1U design network interface modules (NIM) include impressive I/O interfaces. NIMs including GbE, SFP+, and QSFP fiber options allow you to adopt an exceptional array of easily composable configurations and customizations for seamless integration into new and existing infrastructure deployments. This composability ensures the highest degree of flexibility and performance for your environment, dramatically improving server utilization, resource allocation, and ease of management.

Swappable Design for Varied Configurations

Note: All specifications are subject to change without notice.

Feature Highlights

- Redundant Power Supplies

- Software Programmable Button

- Hot Swappable Fans

- LCM & Keypad

Intel® Technologies

AAEON FWS models feature Intel® built-in technologies such as Intel® QuickAssist Technology, Intel® Advanced Encryption Standard Instructions (AES-NI), and Intel® Virtualization Technology (Intel® VT) which can enhance entire network performance, efficiency, and security.

Data Plane Development Kit (DPDK)

The AAEON FWS series supports Intel® DPDK which can greatly boost packet processing performance and throughput, allowing more time for data plane applications.

LAN Bypass Function

Advanced LAN bypass ports protect networks against unexpected in-line system hang. With the aims of AAEON SDK, developers can easily implement the LAN bypass function.

Wireless Connectivity

AAEON FWS models feature mini-card slots for wireless connectivity expansion. In desktop models, this expansion supports functions such as WiFi, 3G, and 4G/LTE via modules.

IPMI Remote Management

IPMI is essential in meeting mission-critical business requirements and ensuring that enterprises are able to enjoy uninterrupted, highly available, and highly stable services. IPMI enables administrators to remotely monitor, manage, and maintain systems to provide uninterrupted services and near-zero downtimes.

Trusted Platform Module (TPM)

The AAEON FWS series supports TPM, which is designed to secure hardware by integrating cryptographic keys into appliances. Pushing security down to the hardware level provides more protection than a software-only solution. Part of latest platform support ANSSI certified TPM.

Bluetooth Control Solution

AAEON's network appliances are built for maximum scalability and integration, and they incorporate 3E (3- Easy) core tenets: Connectivity, Maintenance and Control. Our systems feature a Bluetooth interface, eliminating the need for external console cables and/or USB drives, and they are easily operated from tablets, mobile phones, or other Bluetooth devices.

*Note: Only supports Android OS

Note: All specifications are subject to change without notice.

Desktop Network Appliance

Model	FWS-2360	FWS-2273	FWS-2272	FWS-2271
System				
Form Factor	Desktop Intel® Atom™ Processor C3000 Series	Desktop Network Appliance	Desktop Network Appliance	Desktop 6-port Network Appliance
Processor	Intel® Atom™ Processor Supports Dual and Quad core	Intel® Celeron® N3350 Processor SoC	Intel® Celeron® N3350 Processor SoC	Onboard Intel® N3350 processor SoC
Chipset	Intel® C3000 SoC Processor	Intel® Celeron® N3350 Processor SoC	Intel® Celeron® N3350 Processor SoC	Integrated
System Memory	DDR4 SODIMM ECC DIMM (Dual core 1 slot Quad core 2 Slot) Up to 32GB	204-pin DDR3L SODIMM x 1, up to 8GB	Onboard LPDDR4 1GB memory. Optional BOM SKU supports 204-pin DDR3L SODIMM x 1, up to 8GB	204-pin DDR3L 1867MHz SODIMM Up to 1, 8 GB
Network				
Ethernet	Intel® X553 (Marvell 88E1543) RJ45 x 4 Intel® i211 RJ45 x 2 Or Intel® i210 SFP x 2 (Default Intel® i211 RJ45 x 2)	Intel® i211, Gigabit Ethernet x 4 Intel® i210, SFP x 2	Intel® i211, Gigabit Ethernet x 4	Intel® i211 (Co-lay with Intel® i210), Gigabit Ethernet x 6 (BOM Optional 4 Ports)
Bypass	Supports up to 2 pairs bypass function	Supports up to 2 pairs bypass function	—	Supports up to 2 pairs bypass function
Display				
Graphic Controller	—	Intel® HD Graphics 505 Intergrated	Intel® HD Graphics 505 Intergrated	Intel® HD Graphics 505 Intergrated
Connector	—	HDMI x 1	—	HDMI x 1
Storage				
HDD	2.5" HDD Bay x 1	2.5" HDD Bay x 1	—	2.5" HDD Bay x 1
CF/CFast/MSATA	Onboard eMMC up to 16GB, SATA 6.0 Gb/s port x 1	CompactFlash™ socket x 1 (Co-lay for BOM Optional CFast™ socket x 1), SATA 6.0 Gb/s port x 1	Onboard 8GB eMMC SATA 6.0 Gb/s port x 1, for SATA DOM	CFast™ socket x 1 (Co-lay for BOM Optional CompactFlash™ socket x 1)
Internal/ Expansion Interface				
PCIe Slot	—	—	—	—
Mini-PCIe Slot	Mini-Card socket (full-size) x 2 (1 with SIM socket)	Mini-Card socket (full-size) with SIM socket x 2	Mini-Card socket (full-size) with SIM socket x 1	Mini-Card socket (full-size) with SIM socket x 2
KB Mouse	Reserve pin-header	Reserve pin-header	—	Reserve pin-header
USB	USB 3.0 x 2	USB 3.0 x 2	USB 3.0 x 2	USB 3.0 x 2
Miscellaneous				
RTC	Internal RTC	Internal RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	Optional TPM v1.2 9660/TPM2.0 9665	Optional TPM v1.2 9660/TPM2.0 9665	Optional TPM v1.2 9660/TPM2.0 9665	Optional TPM v1.2 9660/TPM2.0 9665
GPIO	Reserve internal pin header 8-bit Digital I/O interface (4-in /4-out)	Reserve internal pin header 8-bit Digital I/O interface (4-in /4-out)	Reserve internal pin header 8-bit Digital I/O interface (4-in /4-out)	Reserve internal pin header 8-bit Digital I/O interface (4-in /4-out)
Fan	System fan x 1	Fanless, reserved pin header for system fan	Fanless	System Fan x 1
MTBF (Hours)	—	109,725	—	118,725
Color	Black	Black	Silver	White
Environmental Parameters and Dimension				
Power Requirement	12V DC Power in connector	12V DC Power in connector	12V DC Power in connector	12V DC In/ 40W power adapter x 1
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C; non-condensing	10%~80% @40°C; non-condensing	10%~80% @40°C; non-condensing	10%~80% @40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz / operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz / non operation	0.5 Grms/ 5 ~ 500Hz / operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz / non operation	0.5 Grms/ 5 ~ 500Hz / operation (SATA DOM) 1.5 Grms/ 5 ~ 500Hz / non operation	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz/ non-operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation
Dimension (W X D X H)	8.66" x 4.13" x 1.73" (220mm x 105mm x 44mm)	8.66" x 4.13" x 1.73" (220mm x 105mm x 44mm)	6.1" x 3.54" x 12.9" (155mm x 90mm x 33mm)	7.87" x 4.13" x 1.73"(200mm x 105mm x 44 mm)
I/O				
Front Panel	Power LED x 1 Status LED x 1 Storage Active LED x 1 Bypass LED x 2 LAN LED x 12	Power LED x 1 Status LED x 1 Storage Active LED x 1 Bypass LED x 2 LAN LED x 12	Power LED x 1 Status LED x 1 Storage Active LED x 1 LAN LED x 8	Bypass LED x 2 Power LED x 1 Status LED x 1 HDD Active LED x 1 LAN LED x 12
Rear Panel	USB 3.0 Port x 2 RJ-45 Port x 4 SFP x 2 RJ-45 Console x 1 12V DC Power Input x 1 Software Reset Button x 1 Power Button x 1 Antenna Hole x 4	USB 3.0 Port x 2 RJ-45 Port x 4 SFP x 2 RJ-45 Console x 1 12V DC Power Input x 1 Software Reset Button x 1 Power Button x 1 HDMI x 1 Antenna Hole x 2	USB 3.0 Port x 2 RJ-45 Port x 4 RJ-45 Console x 1 12V DC Power Input x 1 Software Reset Button x 1 Power Button x 1 Antenna Hole x 2	USB 3.0 Port x 2 RJ-45 Port x 6 (BOM Optional RJ-45 Port x 4) RJ-45 Console x 1 12V DC Power Input x 1 Software Programmable button x1 HDMI x 1 Power Button x 1

Note: All specifications are subject to change without notice.

Desktop Network Appliance

Model	FWS-2350	FWS-2260	FWS-2253
System			
Form Factor	Desktop 6-Port Network Appliance	Desktop 6-Port Network Appliance	Desktop 4-Port Network Appliance
Processor	Intel® Atom™ C2358 1.7 GHz (Dual Core) Intel® Atom™ C2558 2.4 GHz (Quad Core)	Intel® Celeron® N3060/N3160 Processor SoC	Intel® Celeron® N2807 1.58 GHz (Dual Core) Intel® Celeron® J1900 2.0 GHz (Quad Core)
Chipset	—	—	—
System Memory	240-pin DDR3 1333MHz ECC or non-ECC SDDIMM up to 16GB, C2358 single channel, C2558 dual-channel	204-pin DDR3L 1600MHz SODIMM x 2, up to 8GB	204-pin SODIMM: Intel® N2807 Single-channel DDR3L 1333MHz x 1/ Intel® J1900 Dual-channel DDR3L 1333MHz x 2
Network			
Ethernet	Intel® i211, Gigabit Ethernet x 2 (Optional additional Intel® i211, Gigabit Ethernet x 2), Intel® SoC Integrated i354 with Marvell 88E1543 PHY x 1	Intel® i211, Gigabit Ethernet x 6 (Optional Intel® i211, Gigabit Ethernet x 4)	Intel® i211, Gigabit Ethernet x 4
Bypass	Supports up to 2 pairs bypass function	Supports up to 2 pairs bypass function	Supports 1 pair bypass function for J1900 only
Display			
Graphic Controller	—	Intel® HD Graphics 400	Intel® HD Graphics
Connector	—	HDMI x 1	Reserve internal VGA pin header x 1
Storage			
HDD	Internal 2.5" SATA HDD Bay x 1	Internal 2.5" SATA HDD Bay x 1, SATA II Port x 1	—
CF/CFast/MSATA	CF socket x 1 (Optional CFast™ socket x 1)	CF socket x 1 (Optional CFast™ socket or mSATA socket x 1)	CF socket x 1
Internal/ Expansion Interface			
PCIe Slot	—	—	—
Mini-PCIe Slot	Mini-Card slot with SIM socket x 1 (Full size) (Optional Mini-Card slot up to 2)	Mini-Card slot with SIM socket x 1 (USB Signal only, full size) (Optional Mini-Card slot with SIM socket x 2)	Mini-Card Slot x 1 (Half size)
KB Mouse	Pin-header	Pin-header	Pin-header
USB	USB 2.0 x 2	USB 3.0 x 2, USB 3.0 internal pin-header x 1 (optional)	USB 2.0 x 2, USB 3.0 x 1
Miscellaneous			
RTC	Internal RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	Optional TPM v1.2/v2.0	Optional TPM v1.2 /v2.0	—
GPIO	Reserve internal GPIO Pin header x 1	Reserve internal GPIO Pin header x 1	—
Fan	System Fan x 1	Fanless	Fanless
MTBF (Hours)	86,286	85,321	—
Color	Black	Black	Black
Environmental Parameters and Dimension			
Power Requirement	12V DC power in connector/ 60W Power adapter x 1 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 60W Power adapter x 1 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 40W Power adapter x 1, 4-pin DC power out connector for HDD x 1
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	-4°F ~ 158°F (-20°C ~ 70°C), N2807/ 32°F ~ 122°F (0°C ~ 50°C), J1900
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz/ non-operation	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz/ non-operation	1 Grms/ 5 ~ 500Hz/ operation 2 Grms/ 5 ~ 500Hz/ non-operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	15 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation
Dimension (W X D X H)	10.24" x 7.01" x 1.73" (260mm x 178mm x 44mm)	10.23" x 7.01" x 1.73" (260mm x 178mm x 44mm)	6.89" x 4.09" x 1.5" (175mm x 104mm x 38mm)
I/O			
Front Panel	Power LED x 1 Status LED x 1 HDD Active LED x 1 Bypass LED x 2 (Optional) LAN LED x 12 (Supports up to LAN LED x 16)	Power LED x 1 Status LED x 1 HDD Active LED x 1 Bypass LED x 2 LAN LED x 12	Power LED x 1 Status LED x 1 HDD Active LED x 1 LAN LED x 8
Rear Panel	12V DC Power Input x 1 Power Button x 1 USB 2.0 x 2 RJ-45 LAN x 6 (Supports up to RJ-45 LAN x 8) RJ-45 Console x 1 Software Programmable Button x 1	12V DC Power Input x 1 Power Button x 1 USB 3.0 x 2 RJ-45 LAN x 6 RJ-45 Console x 1 Software Programmable Button x 1 HDMI x 1	12V DC Power Input x 1 Power Button x 1 USB 3.0 x 1 USB 2.0 x 2 RJ-45 LAN x 4 RJ-45 Console x 1 Software Programmable Button x 1

Note: All specifications are subject to change without notice.

Desktop Network Appliance

Model	FWS-2252	FWS-2251	FWS-2250
System			
Form Factor	Desktop 4-Port Network Appliance	Desktop 4-Port Network Appliance	Desktop 4-Port Network Appliance
Processor	Intel® Celeron® J1900 2.0 GHz (Quad Core)	Intel® Celeron® J1900 2.0 GHz (Quad Core)	Intel® Atom™ E3815 1.46 GHz (Single Core) Intel® Atom™ E3827 1.75 GHz (Dual Core) Intel® Celeron® J1900 2.0 GHz (Quad Core)
Chipset	—	—	—
System Memory	204-pin Dual channel DDR3L 1333MHz SODIMM x 2, up to 8GB	204-pin Dual channel DDR3L 1333/1600MHz SODIMM x 2, up to 8GB	204-pin Dual channel DDR3L 1333/1600MHz SODIMM x 2, up to 8GB (E3815 Single Channel)
Network			
Ethernet	Intel® i211, Gigabit Ethernet x 4	Intel® i211, Gigabit Ethernet x 4	Intel® i211, Gigabit Ethernet x 4
Bypass	Supports 1 pair bypass function	—	Supports 1 pair bypass function
Display			
Graphic Controller	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics
Connector	Reserve internal VGA pin header x 1	Reserve internal VGA pin header x 1	Reserve internal VGA pin header x 1
Storage			
HDD	2.5" HDD Bay x 1	Optional SATA II connector x 1 (SATA DOM Horizontal and no housing type only)	Optional SATA II connector x 1
CF/CFast/MSATA	CF socket x 1	CF socket x 1	CF socket x 1
Internal/ Expansion Interface			
PCIe Slot	—	—	—
Mini-PCIe Slot	Mini-Card Slot x 1 (Half size)	Mini-Card Slot x 3 (Half Size x 1, Full Size with SIM Socket x 1, USB 2.0 Signal only Full size with dual SIM socket x 1)	Mini-Card slot x 1 (Half size)
KB Mouse	Pin-header	Pin-header	Pin-header
USB	USB 2.0 x 2, USB 3.0 x 1	USB 3.0 x 1	USB 2.0 x 2 USB 3.0 x 1
Miscellaneous			
RTC	Internal RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	—	Default N/A, optional TPM V1.2 or 2.0	—
GPIO	—	—	—
Fan	System fan x 1	Fanless	Fan/Fanless refers to order information
MTBF (Hours)	116,331	85,551	90,630
Color	Black	White	White
Environmental Parameters and Dimension			
Power Requirement	12V DC power in connector/ 40W Power adapter x 1, 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 40W Power adapter x 1, 4-pin DC power out connector for HDD x 1	12V DC power in connector/ 40W Power adapter x 1 4-pin DC power out connector for HDD x 1
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (2.5" HDD) 1.5 Grms/ 5 ~ 500Hz/ non-operation	0.5 Grms/ 5 ~ 500Hz/ operation (SATA DOM) 1.5 Grms/ 5 ~ 500Hz/ non-operation	0.5 Grms/ 5 ~ 500Hz/ operation 1.5 Grms/ 5 ~ 500Hz/ non-operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation
Dimension (W X D X H)	7.87" x 4.09" x 1.73" (200mm x 104mm x 44mm)	8.27" x 4.09" x 1.38" (210mm x 104mm x 35mm)	6.3" x 4.09" x 1.38" (160mm x 104mm x 35mm)
I/O			
Front Panel	Bypass LED x 1 Power LED x 1 Status LED x 1 HDD Active LED x 1 LAN LED x 8	Power LED x 1 HDD Active LED x 1 LAN LED x 8 RSSI LED x 2 (optional) Accessible SIM cover x 1	Power LED x 1 Status LED x 1 HDD Active LED x 1 Bypass LED x 1 (Optional) LAN LED x 8
Rear Panel	12V DC Power Input x 1 Power Button x 1 USB 3.0 x 1 USB 2.0 x 2 RJ-45 LAN x 4 RJ-45 Console x 1 Software Programmable Button x 1 VGA Port x 1 (Optional)	12V DC Power Input x 1 Power Button x 1 USB 3.0 x 1 RJ-45 LAN x 4 RJ-45 Console x 1 Software Programmable Button x 1	12V DC Power Input x 1 Power Button x 1 USB 3.0 x 1 USB 2.0 x 2 RJ-45 LAN x 4 RJ-45 Console x 1 Software Programmable Button x 1

Note: All specifications are subject to change without notice.

Rackmount Network Appliance

Model	FWS-8600	FWS-7360	FWS-7821
System			
Form Factor	2U Rackmount Network Platform	1U Rackmount Network Platform	1U Rackmount Network Platform
Processor	Intel® Xeon® Skylake-SP Processors	Intel® Denverton C3000 Series	Intel® 6th/7th Generation Core™/ Xeon Processors
Chipset	Intel® C621	SoC	Intel® C236
System Memory	DDR4 2133/2400/2666 R-DIMM, Up to 512 GB	DDR4 U-DIMM ECC DIMM Up to 64GB	DDR4 1600/1866/2133 UDIMM/ECC, up to 64GB, 288-pin DIMM x 4
Network			
Ethernet	Intel® i211 Gigabit Ethernet x 2	Intel® i211 Gigabit Ethernet x 2, Marvell 88E1543 x 1 (4 Port)	Intel® i211 GbE x 6 + Intel® i210 GbE x 2 (SFP) + NIM x 1
Bypass	Depend on NIM module	2 Paris	Onboard 2 pairs bypass, others depend on NIM module
NIM Slot	NIM x 8 (Option 10G x 2 Project Base)	1	1
Display			
Graphic Controller	—	—	Intel® Integrated
Connector	VGA Optional	VGA optional	VGA cable (Optional)
Storage			
HDD	Internal 2.5" HDD x 2 or 3.5" HDD x 1 Option, M.2 x 1	Internal 2.5" HDD x 2 or 3.5" HDD x 1	Internal 2.5" SATA HDD x 2 or 3.5" SATA HDD x 1 (Optional)
CF/CFast/MSATA	CFast x 1, mSATA x 1, M.2 x 1	mSATA maxima x 2 (Optional)	Optional BOM CFast™ socket or mSATA slot or CFast™ socket
Internal/ Expansion Interface			
PCIe Slot	NIM Slot x 8, PCIe [x16] slots x 2	NIM x 1 or PCIe [x8] x 1	Up to PCIe x 2 [x8] slots
Mini-PCIe Slot	Mini PCIe x 1	Mini PCIe maxima x 2 (Optional)	Mini Card x 1
IPMI	IPMI Support	—	—
KB Mouse	—	—	Pin-header
USB	USB 3.0 x 2	USB 3.0 x 2	USB 3.0 x 2, Box Header (2.0mm)
Miscellaneous			
RTC	Internal RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable, 1 sec per step
Software Button	—	—	GPIO Programmable push button x 1
TPM	Option	Optional	Yes
GPIO	—	—	8 bits, BIOS default 4 bits input, 4 bits output.
Fan	5	1	2
MTBF (Hours)	—	—	94,241
Color	Black	Black	Black
Environmental Parameters and Dimension			
Power Requirement	—	—	250W ATX PSU
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10%~80% relative humidity, non-condensing	10%~80% relative humidity, non-condensing	10 ~ 80%
Storage Humidity	10%~80% @40°C; non-condensing	10%~80% @40°C; non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation
Dimension (W X D X H)	—	—	16.93" x 12.01" x 1.73" (430mm x 305mm x 44mm)
I/O			
Front Panel	Power LED x 1 Status LED x 1 HDD Active LED x 1	Power LED x 1 Status LED x 1 HDD Active LED x 1	Power LED x 1 Status LED x 1 HDD Active LED x 1 USB 3.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 (Optional w/ NIM slot) Software Programmable Switch x 1
Rear Panel	AC Power Input x 1 Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 2 (Optional)	AC Power Input x 1 Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 1 (Optional)	AC Power Input x 1 Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 2 (2 x PCIe [x8] slots, NIM slot will be disabled if PCIe Riser supported)

Note: All specifications are subject to change without notice.

Rackmount Network Appliance

Model	FWS-7820	FWS-7811	FWS-7810	FWS-7520
System				
Form Factor	1U Rackmount Network Platform	1U Rackmount Network Platform	1U Rackmount Network Platform	1U Rackmount Network Platform
Processor	Intel® 6th Generation Core™/ Xeon Processors	Intel® LGA1150 4th Gen Core™/ Xeon Processor	Intel® LGA1150 4th Gen Core™/ Xeon Processor	Intel® FCBGA Xeon D-1548/D-1518 (Optional) SoC
Chipset	Intel® C236	Intel® C226	Intel® C226	Integrated
System Memory	DDR4 1600/1866/2133 UDIMM/ECC, up to 64GB, 288-pin DIMM x 4	DDR3 1333/1600 UDIMM/ECC, up to 32GB, 240-pin DIMM x 4	DDR3 1333/1600 UDIMM/ECC, up to 32GB, 240-pin DIMM x 4	DDR4 1600/1866/2133 RDIMM/UDIMM/ECC, up to 128GB, 288 Pin DIMM x 4
Network				
Ethernet	2 ports (i210), 4 ports(82580)	Intel® i211, Gigabit Ethernet x 8 + NIM	Intel® i211, Gigabit Ethernet x 8 + NIM	Intel® i211, Gigabit Ethernet x 1 Inphi CS4227 phy 10 Gigabit Ethernet x 2 + NIM
Bypass	Onboard 2 pairs bypass, others depend on NIM module	2 ~ 4 (Depends on NIM)	2 ~ 4 (Depends on NIM)	Depends on NIM
NIM Slot	4 (Max. 5 slots by project base)	1	1	3
Display				
Graphic Controller	Intel® Integrated	Intel® Integrated	Intel® Integrated	IPMI integrated (Optional)
Connector	VGA cable (Optional)	VGA cable (Optional)	VGA cable (Optional)	—
Storage				
HDD	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)* *(mSATA/ CF/ CFast will be disabled if 2nd SATA HDD is used)	Internal 2.5" SATA HDD x 2 or 3.5" SATA HDD x 1 (Optional)	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)	2.5" SATA HDD x 2 or 3.5" SATA HDD x 1 (optional)
CF/CFast/MSATA	CF socket x 1 (Optional BOM CFast™ socket or mSATA slot)	CF socket x 1	CF socket x 1	CF socket x 1 (Optional CFast™ socket)
Internal/ Expansion Interface				
PCIe Slot	PCIe [x4] signal use [x8] slot (3rd NIM slot will be disabled if PCIe Riser supported)	PCIe [x8] slot x 1 (Optional)	PCIe [x8] slot x 1 (Optional) or PCIe [x8] slot x 2, cannot use w/ NIM (Optional)	PCIe [x4] signal use [x8] slot (optional)
Mini-PCIe Slot	—	—	—	Mini Card x 1
IPMI	—	—	—	Optional Module
KB Mouse	Pin-header	Pin-header	Pin-header	Pin-header
USB	USB 3.0 x 2, Box Header (2.0mm)	USB 2.0 x 2, Box Header (2.0mm) (optional)	USB 2.0 x 2 Box Header (2.0mm) (optional)	USB 3.0 x 2 Box Header (2.0mm) (optional)
Miscellaneous				
RTC	Internal RTC	Internal RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable, 1 sec per step	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	Yes	—	—	Yes
GPIO	8 bits, BIOS default 4 bits input, 4 bits output.	—	—	8 bits, BIOS default 4 bits input, 4 bits output.
Fan	3	2	2	3
MTBF (Hours)	71,852	97,000	115,000	96,168
Color	Black	Black	Black	Black
Environmental Parameters and Dimension				
Power Requirement	250W ATX PSU	275W Redundant PSU	250W ATX PSU	250W ATX PSU or 220W Redundant PSU (Optional)
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10 ~ 80%	10 ~ 80%	10 ~ 80%	10 ~ 80%
Storage Humidity	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non operation
Dimension (W X D X H)	16.93" x 18.7" x 1.73" (430mm x 475mm x 44mm)	16.93" x 18.7" x 1.73" (430mm x 475mm x 44mm)	16.93" x 12.01" x 1.73" (430mm x 305mm x 44mm)	16.93" x 18.7" x 1.73" (430mm x 475mm x 44mm)
I/O				
Front Panel	Power LED x 1, Status LED x 1, HDD Active LED x 1 USB 3.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 (Optional w/ NIM slot) Software Programmable Switch x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1 LAN ports Link/Active LED x 8 Bypass LED (Default 2 LEDs) USB 3.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Switch x 1	Power LED x 1, Status LED x 1, HDD Active LED x 1 LAN ports Link/Active LED x 8 Bypass LED (Default 2 LEDs) USB 3.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Switch x 1	Power LED x 1, Status LED x 1 HDD Active LED x 1 USB 3.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Switch x 1
Rear Panel	AC Power Input x 1, Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 1 (Optional PCIe [x4] signal use [x8] slot, 3rd NIM slot will be disabled if PCIe Riser supported)	AC Power Input x 2, Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 2 (Optional)	AC Power Input x 1 ,Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 2 (Optional)	AC Power Input x 1 ,Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 1 (Optional PCIe [x4] signal use x8 slot)

Note: All specifications are subject to change without notice.

Rackmount Network Appliance

Model	FWS-7400	FWS-7350	FWS-7250	FWS-8500
System				
Form Factor	1U Rackmount Network Platform	1U Rackmount Network Platform	1U Rackmount Network Platform	2U Rackmount Network Platform
Processor	Intel® LGA1150 4th Gen Core™ Processor	Onboard Intel® C2758/C2558 4-Core/ 8-Core 2.4 GHz Processor SoC	Intel® Atom™ E3845, up to 1.91 GHz/ Celeron® J1900 up to 2.42 GHz	Intel® Xeon® Processor E5-2600 v3 Series, LGA 2011
Chipset	Intel® H81	Integrated	Integrated	Intel® Communications Chipset 8925 PCH
System Memory	DDR3L 1333/1600 UDIMM, up to 16GB, 240-pin DIMM x 2	DDR3L 1600 UDIMM/ECC, up to 64GB, 240-pin DIMM x 4	DDR3(L) 1333 SODIMM, up to 8GB, 204 Pin DIMM x 2	DDR4 1600/1866/2133 RDIMM up to 512 GB 288-Pin DIMM x 16 (8 DIMM Per CPU)
Network				
Ethernet	Intel® i211, Gigabit Ethernet x 6 + NIM	Marvell 88E1543 phy Gigabit Ethernet x 4 + NIM	Intel® i210AT, Gigabit Ethernet x 4	Depends on NIM, onboard (GbE LAN x 2)
Bypass	2 ~ 4 (Depends on NIM)	2 ~ 4 (Depends on NIM)	2	Depends on NIM
NIM Slot	1	1	—	8
Display				
Graphic Controller	Intel® Integrated	Mini-Card VGA (Optional)	Intel® Integrated	Mini-Card VGA (Optional)
Connector	VGA cable (Optional)	VGA cable (Optional)	VGA cable (Optional)	VGA cable (Optional)
Storage				
HDD	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)	2.5" SATA HDD x 1 (Optional)	Internal 3.5" SATA HDD x 1 or 2.5" SATA HDD x 2 (Optional)
CF/CFast/MSATA	CF socket x 1	CF socket x 1	CF socket x 1	CF socket x 1
Internal/ Expansion Interface				
PCIe Slot	PCIe [x8] slot x 1 (Optional), cannot use w/ NIM	PCIe [x4] signal use [x8] slot	—	PCIe [x8] slot x 2 (Optional)
Mini-PCIe Slot	—	Mini Card x 1	1	1
IPMI	—	—	—	—
KB Mouse	Pin-header	Pin-header	Pin-header	Pin-header
USB	USB 2.0 x 2 Box Header (2.0mm) (optional)	USB 2.0 x 1 Box Header (2.0mm) (optional)	USB 2.0 x1 Box Header (2.0mm) (optional)	USB x 2 for internal pin-header (optional)
Miscellaneous				
RTC	Internal RTC	Internal RTC	Internal RTC	Internal RTC
Watchdog Timer	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable	1~255 steps by software programmable
Software Button	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1	GPIO Programmable push button x 1
TPM	—	—	—	TPM v1.2
GPIO	—	—	—	8-bit, BIOS default 4-bit input, 4-bit output
Fan	2	1	2	5
MTBF (Hours)	106,000	109,000	110,000	72,211
Color	Black	Black	Black	Black
Environmental Parameters and Dimension				
Power Requirement	250W ATX PSU	100W ATX PSU	100W ATX PSU	650W Redundant PSU
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)	-4°F ~ 140°F (-20°C ~ 60°C)
Operating Humidity	10 ~ 80%	10 ~ 80%	10 ~ 80%	10 ~ 80%
Storage Humidity	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing	10 ~ 80% @ 40°C, non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation	0.5 Grms/ 5 ~ 500Hz/ operation (3.5" H.D.D) 1.5 Grms/ 5 ~ 500Hz/ no operation
Shock	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation	10G peak acceleration (11 m sec. duration), operation 20G peak acceleration (11 m sec. duration), non-operation
Dimension (W X D X H)	16.93" x 12.01" x1.73" (430mm x 305mm x 44mm)	16.93" x 12.01" x1.73" (430mm x 305mm x 44mm)	16.93" x 11.02" x 1.73" (430mm x 280mm x 44mm)	18.9" x 23.62" x 3.46" (480mm x 600mm x 88mm)
I/O				
Front Panel	Power LED x 1 Status LED x 1 HDD Active LED x 1 LAN ports Link/Active LED x 6 Bypass LED (Default 2 LEDs) USB 3.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Switch x 1	Power LED x 1 Status LED x 1 HDD Active LED x 1 LAN ports Link/Active LED x 4 Bypass LED (Default 2 LEDs) USB 2.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Switch x 1	Power LED x 1 Status LED x 1 HDD Active LED x 1 LAN ports Link/Active LED x 4 Bypass LED (Default 2 LEDs) USB 2.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Switch x 1	Power LED x 1 Status LED x 1 HDD Active LED x 1 USB 2.0 Ports x 2 RJ-45 Console x 1 Parallel LCM display and 4 keypad x 1 Software Programmable Button x 1 RJ-45 LAN x 1 (optional up to RJ-45 LAN x 2)
Rear Panel	AC Power Input x 1 Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 2 (Optional)	AC Power Input x 1 Power Switch x 1 VGA port (Optional) Rear Expansion Slot x 2 (Optional PCIe [x4] signal use x8 slot)	AC Power Input x 1 Power Switch x 1 VGA port (Optional)	AC Power Input x 2 Power Switch x 1 Rear Expansion Slot x 2 (Optional PCIe [x8])

Note: All specifications are subject to change without notice.

Network Interface Module (NIM)

Model	NIM-S13A	NIM-S13B	NIM-S13C	NIM-S13D	NIM-S13E
Form Factor	1G Fiber Module	1G Fiber Module	1G Fiber Module	1G Fiber Module	1G Fiber Module
Main Chipset	Intel® 825080EB Ethernet Controller x 2	Intel® 82580EB Ethernet Controller x 2	Intel® 82580DB Ethernet Controller x 2	Intel® 82580EB Ethernet Controller x 1	Intel® 82580EB Ethernet Controller x 1
Bypass	—	—	—	—	2
Host Interface	PCI-Express [x8] (x4 + x4)	PCI-Express [x4]	PCI-Express [x8] (x4 + x4)	PCI-Express [x4]	PCI-Express [x4]
LAN Port	SFP 1 GbE Connector x 8	SFP 1GbE Connector x 8	SFP 1GbE Connector x 4	SFP 1GbE Connector x 4	SFP 1GbE Connector x 4
Indicator	—	LED x 8 for Active/Link	LED x 4 for Active/Link	LED x 4 for Active/Link	LED x 4 for Active/Link
Qualification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
Operation Temp.	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Dimension	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)

Model	NIM-C13A	NIM-C13B	NIM-C13D	NIM-S26A	NIM-S26B	NIM-S26C
Form Factor	1G Copper Module	1G Copper Module	1G Copper Module	10G Fiber Module	40G Fiber Module	10G Fiber Module
Main Chipset	Intel® 82580EB Ethernet Controller x 2	Intel® 82580EB Ethernet Controller x 2	Intel® 82580EB Ethernet Controller x 1	Intel® XL710 Ethernet Controller x 1	Intel® Fortville XL710 Ethernet Controller x 1	Intel® XL710 Ethernet Controller x 1
Bypass	2	2	2	—	—	—
Host Interface	PCI-Express [x8] (x4 + x4)	PCI-Express [x8] (x4 + x4)	PCI-Express [x4]	PCI-Express [x8]	PCI-Express [x8]	PCI-Express [x8]
LAN Port	1GbE Connector x 8	1GbE Connector x 8	1GbE Connector x 4	SFP+ 10 GbE Connector x 4	QSFP 40GbE Connector x 2	SFP+ 10 GbE Connector x 4
Indicator	LED x 8 for Active/Link	LED x 8 for Active/Link	LED x 4 for Active/Link	LED x 4 for Active/Link	LED x 2 for Active/Link	LED x 4 for Active/Link
Qualification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
Operation Temp.	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Dimension	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)	5.71" x 3.03" (145mm x 77mm)

Model	PER-C35L	PER-C36L	PER-C38L	PER-C39L	PER-C40L	PER-C41L
Form Factor	10G Fiber Module	1G Fiber Module	1G Copper Module	1G Fiber Module	1G Fiber Module	1G Copper Module
Main Chipset	Intel® 82599 Ethernet Controller x 1	Intel® i210 Ethernet Controller x 4	Intel® 82580EB colay w/ intel® i350 Ethernet Controller x 2	Intel® 82580EB Ethernet Controller x 2	Intel® 82580EB Ethernet Controller x 1	Intel® 82580EB Ethernet Controller x 1
Bypass	—	—	4	—	—	2
Host Interface	PCI-Express [x8]	PCI-Express [x4]	PCI-Express [x8] (x4 + x4)	PCI-Express [x8] (x4 + x4)	PCI-Express [x4]	PCI-Express [x4]
LAN Port	SFP 10GbE Connector x 2	SFP 1GbE Connector x 4	1GbE Connector x 8	SFP 1GbE Connector x 8	SFP 1GbE Connector x 4	1GbE Connector x 4
Indicator	LED x 2 for Active/Link	LED x 4 for Active/Link	LED x 8 for Active/Link	LED x 8 for Active/Link	LED x 4 for Active/Link	LED x 4 for Active/Link
Qualification	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A	CE/FCC Class A
Operation Temp.	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)	32°F ~ 104°F (0°C ~ 40°C)
Dimension	5.43" x 3.46" (137.8mm x 88mm)	5.43" x 3.46" (137.8mm x 88mm)	5.43" x 3.46" (137.8mm x 88mm)	5.43" x 3.46" (137.8mm x 88mm)	5.43" x 3.46" (137.8mm x 88mm)	5.43" x 3.46" (137.8mm x 88mm)

Note: All specifications are subject to change without notice.

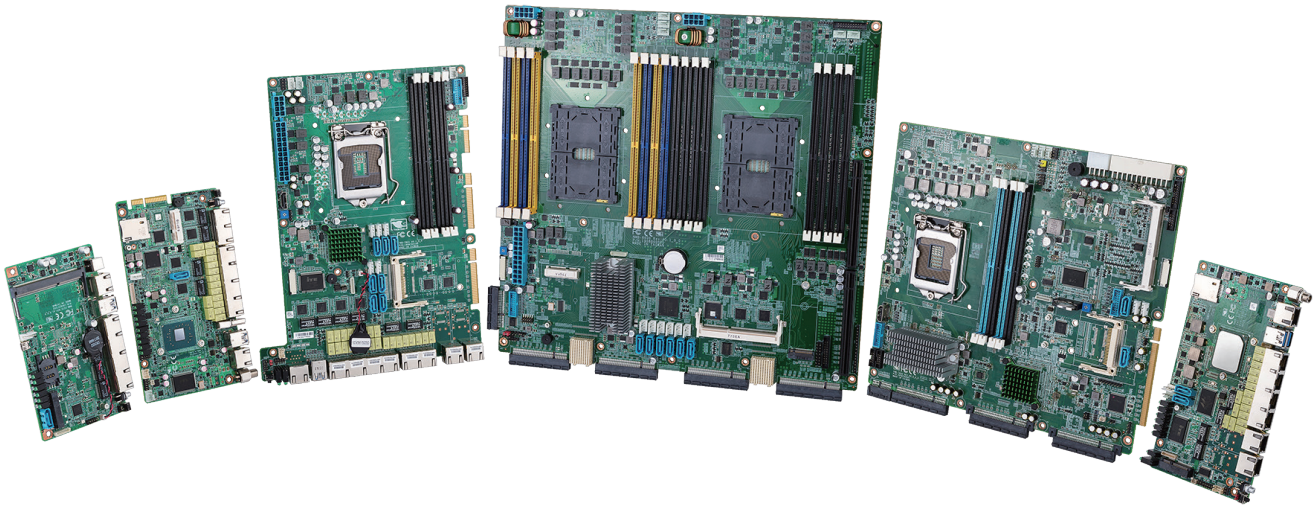
Industrial Network Appliance

new

Model	ICS-6270
System	
Form Factor	DIN Rail/ Desktop
Processor	Intel® Celeron® Processor N3350 SoC
System Memory	204-pin DDR3L 1866MHz x 1, SODIMM Up to 8GB
Chipset	—
Ethernet	Intel® i211, Gigabit Ethernet x 6
Bypass	Supports up to 2 pairs
BIOS	AMI SPI Flash BIOS
Serial ATA	SATA 6.0 Gb/s port x 1, for 2.5" HDD/SSD
CFast/mSATA	CFast™ socket x 1 (co-lay mSATA)
Expansion Interface	Supports Mini-Card slot x 1 with SIM socket
USB	USB 3.0 x 2
Serial Port	Supports up to RS-232/422/485 COM Port x 2 (1 port with isolation)
Watchdog Timer	1~255 steps by software programmable
RTC	Internal RTC
System Fan	Fanless
Color	Dark Grey
Power Supply	2 Pin Terminal Block +9~36V DC Power Input
Dimension	126 x 74.5 x 146mm
Power Requirement	+9 ~ 36V, 2-pin terminal block
MTBF (Hours)	101,292
Display	
Chipset	Intel® HD Graphics 500
Interface	VGA port x 1 (Optional DP port)
I/O	
Front I/O Panel	RJ-45 GbE x 6 RS-232/422/485 COM Port x 2 VGA port x 1 USB 3.0 x 2 Software programmable button x 1 Power LED x 1 HDD LED x 1 Status LED x 1 Bypass LED x 2
Rear I/O Panel	DIN Rail/ Wallmount Lock
Top Panel	2-Pin Terminal Block +9~36VDC x 1
Environmental	
Operating Temperature	-40°F ~ 156°F (-40°C ~ 75°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	10%~80% relative humidity, non-condensing
Storage Humidity	10%~80% @40°C; non-condensing
Vibration	0.5 Grms/ 5 ~ 500Hz / operation (SSD) 1.5 Grms/ 5 ~ 500Hz / non operation
Shock	10 G peak acceleration (11 m sec. duration), operation 20 G peak acceleration (11 m sec. duration), non operation

Note: All specifications are subject to change without notice.

Network Motherboards



AAEON provides a wide range of network motherboards based on the Intel® X86 platform and built with the latest generation Intel® CPU and high performance LAN chip from Intel® Atom™ all the way to Intel® Xeon processors. All AAEON network motherboards feature GbE, advanced LAN bypass functions, wireless connectivity via Mini-PCIe slot or M.2 interface, RJ-45 consoles, and high speed USB functions.

As a reputable manufacturer and designer of networking motherboards, AAEON is committed to the design and production of security hardware and networking modules for applications such as NGFW, UTM, SDN, NFV, vCPE, and security gateways.

Formerly Code Named	Apollo Lake	Apollo Lake	Denverton	Sky Lake and Kaby Lake	Sky Lake and Kaby Lake	Purley
Features	Funtionality	Cost-Effective	Intel® QAT	Mainstream	High Expansion	High Performance
Chipset	SoC	SoC	SoC	Intel® C236	Intel® C236	C621
Memory	204-pin DDR3L 1867MHz SODIMM Up to 1, 8 GB	Onboard LPDDR4 1GB memory, support 204-pin DDR3L SODIMM, up to 8GB	DDR4 UDIMM ECC DIMM (Dual core 1 slot Quad core 2 Slot) Up to 32 GB	DDR4 1600/1866/2133 UDIMM/ ECC, Up to 64GB, 288-pin DIMM x 4	DDR4 1600/1866/2133 UDIMM/ ECC, Up to 64GB, 288-pin DIMM x 4	DDR4 2133/2400/2666 R-DIMM Up to 512 GB
Ethernet	Intel® i211 (Co-lay with Intel® i210), Gigabit Ethernet x 6 (BOM Optional 4 Ports)	Intel® i211, Gigabit Ethernet x 4	Marvell 88E1543 RJ45 x 4 Intel® i211 RJ45 x 2 or Intel® i210 SFP x 2 (Default Intel® i211 RJ45 x 2)	Intel® i211 GbE x 6 + Intel® i210 GbE x 2 + SFP	2 ports (i210), 4 ports (82580)	Intel® i211 Gigabit Ethernet x 2
Bypass	Supports up to 2 pairs bypass function	—	Onboard 2 pairs bypass	Onboard 2 pairs bypass	Onboard 2 pairs bypass	—
NIM Slot	—	—	—	1	3	8
Display	HDMI x 1	Optional Micro HDMI	Optional Mini PCIe VGA card	VGA Pin Header	VGA Pin Header	Optional Mini PCIe VGA card
Storage	SATA x 1 CFast™ socket x 1 (Co-lay for BOM Optional CompactFlash™ socket x 1)	SATA III port x 1, for SATA DOM + Onboard 8GB eMMC	Onboard eMMC + M.2 + SATA x 1	CF socket x 1 (Optional BOM CFast™ socket or mSATA slot) SATA x 5	CF socket x 1 (Optional BOM CFast™ socket or mSATA slot) SATA x 5	SATA x 6
Expansion/ Internal Interface	—	Mini PCIe x1	—	Up to PCIe x 2 [x8] slots or PCIe x 1 [x8] + NIM x 1	PCIe [x4] signal use [x8] slot	PCIe x 2 [x8] slots

Note: All specifications are subject to change without notice.

In-Vehicle NVR Product Lines

VPC-3300S

An economically viable platform featuring expansion options such as 4 PoE+ and 2 GbE. Ideal for image processing and data acquisition. it connects an end device to an NVR, gateway, and/or IoT eco system.

Data Stream Gateway

VPC-5500S

A high-performing PC with Intel® Core Processors that supports heavy computing and consolidates applications in motion management and vision control.

High Performance

VPC-5600S

The VPC-5600S is the first VPC platform to offer an all-round integration solution with the latest Core processors. It offers up to 8 PoE + ports as well as USB slots. Other flexibility options include dual COMs, 8 bits DI/DO, and 4 USB 3.0 ports, as well as rich modularized extension kits as a control system.

Extendable Vision-based

Note: All specifications are subject to change without notice.

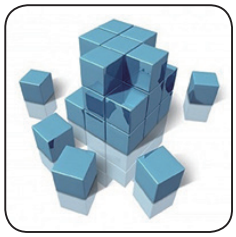
Feature Highlights

Wide Temperature

Optimized fanless design & sustainable resilience against harsh environments -20℃ ~ 70℃ (Up to -40℃ ~ 85℃ by project base)

E-Mark

All of our vehicular products, accessories and components comply to E-Mark regulations for the European Common Market.



Modularized Extension Kits

Flexible expansion options and bandwidth with GbE, COM, USB 3.0, dual VGA & SATA ports.

Smart On-Board PoEs

Up to 8 PoE ports with IEEE 802.3at foundation. Unique SDK to facilitate remote power & monitoring.

Power Ignition Control

Intelligent Power Control prevents damage to the vehicle's battery and operating matrix system by circumventing excessive vehicle battery discharge.

CANBUS

Stabilizes the transmission rate under harsh or unstable electrical conditions. Also reduces the amount of cables required.

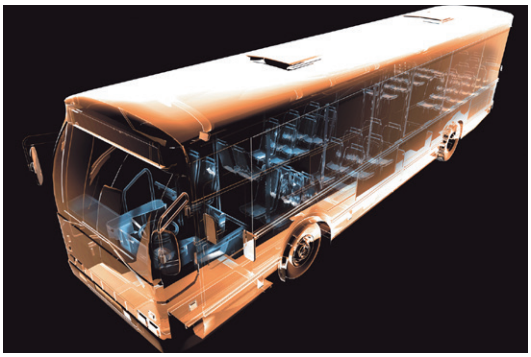
In-Vehicle NVR Product Lines

Gate System

The Automatic Gate System integrates RFID readers, IR sensors, indicators, coin receivers, displays, and motors, and it is commonly installed at check-in gates at airports, entertainment outlets, public transportation stations, corporate buildings, and border control stations. It validates passenger/patron tickets and cards.

The VPC-5600S is a high-performance computing system powered by the Intel® Core™ i7/i5/i3 processor. It configures various I/O interfaces including dual COMs, 8 bits DI/DO, and four USB 3.0 ports as a control system. Smart PoEs provide up to 8 ports of PoE+ which offer remote power control as well as the monitoring and maintenance of electric data, which helps to reduce costs.

Fleet Management



From managing an entire vehicle fleet to monitoring the internal environment of individual vehicles, in-vehicle computing systems are one of the many applications benefitting from the application of IoT technology. With a specifically designed I/O interface, the VPC series offers several benefits:

1. Up to 3 mini cards, enabling implementation of wireless communication to efficiently track on-road vehicles and manage traffic online.
2. Up to 8 PoE ports, supporting in-vehicle surveillance for the recording of traffic safety or in-bus security.
3. Power ignition control, preventing damage to the vehicle's battery or computing system.

Railway

AAEON has provided many durable and efficient solutions for Rail routers, Railway computers, and NVR. With our rugged & compact designs, we provide sustainable solutions for rolling stock in trains, high speed rail, and metro. Environmentally resilient, AAEON's railway system solutions combine essential factors such as water/dust resistance with M12 connectors, and are compliant with essential certifications such as EN 50155.

Intelligent Parking

Intelligent parking management systems include the configuration and application of car park equipment including parking guidance systems and the integration of access control and security features such as automatic number plate recognition, Radio Frequency Identification (RFID), CCTV Surveillance, traffic barriers, signage of parking areas, and internal/external guidance systems, which enable ease and speed of access for drivers, as well as the lowering of energy consumption.

The VPC-5600S supports 4 x USB 3.0 ports, a maximum of 4 COMs, 8-bit isolated DI/DO and expandable wireless modules via 3 mini cards. Additionally, they are able to connect to RFID for vehicle recognition, and barrier and sensory control. Smart PoEs provide up to 8 ports of PoE+ which offer remote power control as well as the monitoring and maintenance of electric data, which helps to reduce costs.

Note: All specifications are subject to change without notice.

VPC Series

Model	VPC-5600S	VPC-5500S	VPC-3300S
System			
Form Factor	In-Vehicle NVR	In-Vehicle NVR	In-Vehicle NVR
Processor	Intel® 7th Gen. Core™ i3/i5/i7 Processor (Default: i3-7100U)	Intel® 4th Gen. Core™ i3/i5/i7 Processor (Default: i7-4700EQ)	Intel® Celeron® J1900 Processor
Chipset	—	Intel® QM87	Quad Core SoC
Main Memory	Up to 32GB, DDR4 260-pin SODIMM	Up to 16GB, DDR3L 204-pin SODIMM	Up to 8GB, DDR3L 204-pin SODIMM
Display	HDMI x 1, DP x 1	VGA x 1, HDMI x 1, DP x 1	VGA x 1, HDMI x 1
Ethernet	10/100/1000Base-TX x 6 (Max. 10), RTL8111E	10/100/1000Base-TX x 5	10/100/1000Base-TX x 6
PoE Ethernet Port	4 ports (Max. 8 ports), sharing 60W of power budget for every four PoE ports.	PoE LAN x 4, RJ45 Ports support IEEE 802.3 at/af with total PoE power budget of 60W	4 ports, RJ-45 ports support IEEE 802.3 at/af with total PoE Power budget of 60W
RAID support	0/1	0/1	0/1
Expansion Slot	Mini-Card slot x 3 (USB2.0 x 2 + PCIe & USB 2.0 x 1) Built-in CAN 2.0B x 1	Mini-Card slot x 3 (for 3G/4G/Wifi Module) Built-in CAN 2.0B x 1	Mini-Card x 3 Built-in CAN 2.0B x 1
GPS, G-Sensor	Onboard (GPS/GLONASS), G Sensor	Onboard (GPS/GLONASS)	Onboard (GPS/GLONASS)
Front I/O Panel	Power Button x 1 3G/4G/WIFI LED x 3 USB3.0 x 4 SIM slot x 2 GbE port (RJ-45) x 2 PoE LAN x 4 (IEEE 802.3 at/af), Max. 8 ports	Power Button x 1 3G/4G/WIFI LED x 3 USB3.0 x 4 SIM slot x 2 GbE port (RJ-45) x 1 PoE LAN x 4	Power Button x 1 Power Input x 1 Remote Power x 1 3G/4G/WIFI LED x 3 SIM slot x 2 HDD LED x 1 CanBus connector x 1 8-bit DIO x 1, 4-ch digital input (Wet/dry contact with Isolation Protection 3,000 VDC) , 4-ch digital output (Compatible 5 V/TTL, 31 mA max. per channel)
Rear I/O Panel	DC-In power x 1 Remote Power x 1 8-bit DIO x 1, 4-ch digital input (Wet/dry contact with Isolation Protection 3,000 VDC) , 4-ch digital output (Compatible 5 V/TTL, 31 mA max. per channel) DC 12V Output x 1 RS-232/422/485 x 2 HDMI x 1 DP x 1 CanBus connector x 1 USB3.0 x 4 Audio Line-out x 1 Mic-In x 1	DC-In power x 1 Remote Power x 1 8-bit DIO x 1, 4-ch digital input (Wet/dry contact with Isolation Protection 3,000 VDC) , 4-ch digital output (Compatible 5 V/TTL, 31 mA max. per channel) DC 12V Output x 1 RS-232 x 2 RS-232/422/485 x 2 VGA out x 1 HDMI x 1 DP x 1 CanBus connector x 1 USB2.0 x 2 Audio Line-out x 1 Mic-In x 1	VGA out x 1 HDMI x 1 GbE port (RJ-45) x 2 PoE LAN x 4 USB2.0 x 2 USB3.0 x 1 Audio Line-out x 1 Mic-In x 1
Storage			
HDD Tray	2.5” HDD Bay x 2	2.5” HDD Bay x 2	2.5” HDD/SSD Bay x 1
CF/CFast/mSATA Slot	mSATA Slot x 1(Co-lay via SATA)	mSATA Slot x 1	mSATA Slot x 1 (deafult; colay w/ 2.5” HDD x 1)
Environmental			
Operating Temperature	-4°F ~ 158°F (-20°C ~ 70°C); Project base, -40°C ~ 85°C	-4°F ~ 158°F (-20°C ~ 70°C)	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)	-40°F ~ 185°F (-40°C ~ 85°C)
Storage Humidity	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing	10%~80% @40°C, non-condensing
Vibration/Shock	MIL-STD-810G	MIL-STD-810G	MIL-STD-810G
Certification	CE & FCC Class A, EMARK	CE & FCC Class A, EMARK	CE & FCC Class A, EMARK
Power Requirement			
Power Supply	DC 10-36V, with ignition pin	DC 10-35V, with ignition pin	DC 9-36V, with Ignition Pin
Mechanical			
Removable HDD Tray	Hot swappable 2.5'' HDD/SSD x 2 (Project base) via extension module	3.5” or 2.5” HDD x 2 (Optional, MOQ apply)	2.5” HDD x 2 (Optional, MOQ apply)
Internal System HDD Bay	2.5" HDD x 2	2.5" HDD x 2	2.5" HDD x 1 (Optional SKU if support HDD x 2)
Dimension	6.85'' x 7.87” x 2.52” (174mm x 200mm x 64mm)	11.34” x 8.27” x 3.3” (288mm x 210mm x 84mm)	6.85” x 7.87” x 2.36” (174mm x 200mm x 60mm)
Gross Weight	5.7 lb (2.6 kg)	8.3 lb (3.8 kg)	5.7 lb (2.6 kg)
Note	—	—	—

Note: All specifications are subject to change without notice.