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Network & Security Solutions

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Universal Edge Platforms for the Cloud Native Enterprise

As operational, information, and communications technologies converge, accelerated by the virtualization of applications, the software defined, an AI-driven network infrastructure that promises to be extremely agile and reconfigurable is in the making. Advantech Network Appliances provide a solid and open foundation for service providers and enterprises to deploy agile and secure network services that break away from monolithic architectures. These scalable edge-to-cloud white boxes integrate the latest computing and networking technologies into optimized platforms that are widely deployed running popular SD-WAN, SASE, security and uCPE software from industry leading ecosystem partners. This flexible approach allows for disaggregated strategies that minimize supply chain risks and protect network investment, building an open and cloud-native infrastructure ready to enable microservices that scale from small branch offices and small-to-medium-sized businesses to enterprise and service provider networks.



From SD-WAN to SASE - Anywhere Security for the AIoT Era

One of the main benefits of SD-WAN is the contextual awareness that it provides to software about the state of the WAN and connection quality. By providing this additional intelligence, software is able to re-route traffic on the fly in cases where connections between the on-premise equipment and cloud are down or degraded. In addition, centralized management provides a single-pane-of-glass view of the state of all devices on the WAN. But SD-WAN is just one piece of the broader WAN networking and security puzzle. In addition to SD-WAN, SASE provides features such as NGFW, IPS, CASB, DLP and SWG. With the entire network and security infrastructure delivered as a single cloud-native platform, enterprises benefit from increased visibility, fewer silos, and enhanced security. Cost-savings, versatility, and cloud-friendliness are key benefits of SD-WAN. SASE delivers those benefits as well as additional networking and security functionality to prepare the cloud-native enterprise for the AIoT era.

Foster Innovation with Advantech Enterprise Edge Devices

The Pioneer in White-box SD-WAN & uCPE

For over 30 years, the world's leading brands have chosen to embed Advantech computing platforms and IoT intelligent systems into their products, empowering Industry 4.0, building smart city and transforming the network infrastructure. As early-movers in new technologies such as AI, IoT, and SDN, Advantech helps co-create new business ecosystems that enable an intelligent planet.

Advantech's network appliances provide a range of innovative platforms needed by service providers to transform the network using new, disaggregated, AI-driven models. Advantech white boxes extend the cloud to the enterprise edge where technologies such as SD-WAN, AI, and FWA enable a converged edge architecture securely connecting people and things. Over 150 dedicated engineers design our networking products to address new market needs following strict quality design rules and test criteria. Certification and regional homologation services ensure products can be safely deployed globally. All of this is backed by a solid financial base and an extensive network of more than 8,500 employees globally. That is why we are the most trusted SD-WAN, SASE, and network edge hardware partner for service providers across the world.

Edge to Cloud Scalability

Advantech's white box network appliance range, built on standard x86 processors in feature-flexible appliances, cover multiple configurations and price points scaling from 2 to 100+ cores providing maximum physically achievable throughputs up to 800+ Gbps. Optional networking modules offer a highly flexible WAN connectivity choice of hybrid 5G, 4G LTE, Wi-Fi 5 & 6, xDSL, & SFP+ configurations.

Encryption acceleration is supported using Intel® QuickAssist on Intel Atom® and Intel® Xeon® based platforms with DPDK providing the technology needed to accelerate packet handling by up to 10 times. As a result, secure branch connectivity, including end-to-end encryption, can be provided without compromising VNF performance or increasing costs. The 1U high-end platforms have been designed for high-availability networks with integrated fail-safe redundancy, advanced remote security, and management features that minimize system down time.

SD-WAN & SASE Appliances			
 FWA-T011 • Budget-friendly • Versatile Mounting Approach • Fanless & Extremely Compact Slim CPE for cloud-based deployments	 FWA-1000/2000 Series • Optimized C/P Ratio • RF Certified • Fanless & Compact Small Offices and Outlets (Less Than 1gbps)	 FWA-3000 Series • Efficient Performance • Rich Connectivity • Built-in QAT Medium Enterprise Branch (Less than 20Gbps)	 FWA-5000/6000 Series • Superior Performance • High Scalability • Redundant Design Headquarters and Data Centers (Above 20Gbps)



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Serial/USB Communications

Network Appliances



Model		FWA-T011	FWA-1010VC	FWA-AAL1010VC
Form Factor		Small box	Tabletop	Tabletop
Processor System	Processor	Intel® Celeron® N3350/J3455	Intel Atom® C2558/C2758	Intel Atom® C2558/C2758
	Core Count	2/4 cores	4/8 cores	4/8 cores
	Frequency	1.1/1.5GHz	2.4GHz	2.4GHz
	L2 Cache	2MB	2/4MB	2/4MB
	Chipset	–	–	–
BIOS		AMI UEFI	AMI UEFI	AMI UEFI
Virtualization		VT-x, VT-d	VT-x	VT-x
Memory	Technology	DDR3L 1600/1866MHz	DDR3/DDR3L 1600MHz	DDR3/DDR3L 1600MHz
	Max. Capacity	8GB	32GB	32GB
	Socket	1 x 204-pin SO-DIMM	2 x 240-pin DIMM	2 x 240-pin DIMM
	ECC Support	–	✓	✓
Networking	Controller	4 x Intel i210	3 x Marvell 88E1112, 1 x Marvell 88E6141	4 x Marvell 88E1112, 1 x Marvell 88E6141
	1/2.5GbE	4 x 1GbE RJ-45	2 x 1GbE RJ-45 or SFP via Marvell 88E1112; 1 x 1GbE RJ45 via Marvell 88E1112; 4 x 1GbE RJ45 via Marvell 88E6141	2 x 1GbE RJ-45 or SFP via Marvell 88E1112; 2 x 1GbE RJ-45 via Marvell 88E1112; 2 x 1GbE RJ-45 via Intel i350
	10GbE	–	–	–
	LAN Bypass	Advanced	–	–
		Legacy	–	–
Expansion Slots	PCIe Slot	–	–	–
	NMC	–	–	–
	M.2 (Except SSD)	1 x 2230 Wi-Fi/BT module 1 x 3042 3G/4G LTE module	1 x 2230 Wi-Fi module	1 x 3042 3G/4G LTE module
	Mini PCIe	–	1 x full-size 3G/4G LTE module	1 x full-size Wi-Fi module
	SIM Socket	1	1	1
Storage	2.5" Bay	–	1 x 2.5" SSD (9.5 mm (H), C2758)	1 x 2.5" SSD (9.5 mm (H), C2758)
	3.5" Bay	–	–	–
	M.2	1 x 2280 SATA SSD	1 x 2280 SATA SSD 2 x 2242 SATA SSD (Optional)	1 x 2280 SATA SSD 2 x 2242 SATA SSD (Optional)
	Console	1	1	1
I/O	USB 3.0	–	–	–
	USB 2.0	2	1	1
	LED Indicator	Power, HDD, 4G LTE, Wi-Fi, Software-defined	Power, HDD, 4G LTE, Wi-Fi, Software-defined	Power, HDD, 4G LTE, Wi-Fi, Software-defined
	Display Interface	HDMI	–	–
	Button	1 x Power switch, 1 x Software-defined	1 x Power switch, 1 x Software-defined	1 x Power switch, 1 x Software-defined
Power Supply	TPM	TPM1.2 or TPM2.0 (Optional)	TPM1.2 (Optional)	TPM1.2 (Optional)
	Power Type	DC	DC	DC
	Watts	36 W	60 W	60 W
	Input	100 ~ 240 V	100 ~ 240 V	100 ~ 240 V
	Power Adapter	12V 3A, 36W external adapter	12V 5A, 60W external adapter	12V 5A, 60W external adapter
Environment	Operating Temperature	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
	Non-Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
	Vibration Resistance	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis
	Shock Protection	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms
Cooling		Fanless	1 x system fan with smart fan	1 x system fan with smart fan
Mechanical	Construction	Steel	Steel	Steel
	Mounting	Desktop/Rackmount optional	Desktop/Rackmount optional	Desktop/Rackmount optional
	Dimension (W x H x D)	152 x 21 x 125 mm (6.0" x 0.83" x 4.92")	250 x 44 x 190.4 mm (9.84" x 1.73" x 7.5")	250 x 44 x 190.4 mm (9.84" x 1.73" x 7.5")
	Weight	0.7 kg (1.54 lb)	2.3 kg (5.1 lb)	2.3 kg (5.1 lb)
OS Support		Linux, Windows 10	Linux, Windows 10	Linux, Windows 10
Advantech S/W Packages		- QuickStart Linux Image (CentOS based reference BSP): afwu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP): afwu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP): afwu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)
IPMI		–	–	–

✓ : supported, – : not supported, △ : optional

Network Appliances



Model		FWA-1012VC	FWA-1112VC	FWA-1212VC	FWA-1013
Form Factor		Tabletop	Tabletop	Tabletop	Tabletop
Processor System	Processor	Intel Atom® C3338/C3558/C3758	Intel Atom® C3558/C3758	Intel Atom® C3336/C3558/C3436L	Intel Atom® C5315/C5325/P5332/P5352
	Core Count	2/4/8 cores	4/8 cores	2/4 cores	4/8C (C5300); 12/20C (P5300)
	Frequency	1.5/2.2GHz	1.6/1.3/2.2GHz	2.2GHz	2.4GHz (C5300); 2.2GHz (P5300)
	L2 Cache	2MB/Core	2MB	4/8MB	2MB
	Chipset	-	-	-	-
Virtualization	BIOS	AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI
	VT-x, VT-d	VT-x, VT-d	VT-x, VT-d	VT-x, VT-d	VT-x, VT-d
Memory	Technology	DDR4 2400MHz	DDR4 1866/2133/2400MHz	DDR4 1866/2133/2400MHz	DDR4 2400/2667/2933MHz
	Max. Capacity	64GB	32GB	32GB	128GB
	Socket	1 x 288-pin DIMM for 2 core 2 x 288-pin DIMM for 4/8 core	1 x 260-pin SO-DIMM	1 x 260-pin SO-DIMM	2 x 288-pin RDIMM
	ECC Support	✓	✓	✓	✓
Networking	Controller	1 x Intel i350, 1 x Marvell phy 88E1543	2 x Intel i211; 1 x Marvell phy 88E1543	2 x Marvell 88E1543 4 x Intel i211	1 x Intel i350-AM4; 2 x Intel i226
	1GbE/2.5GbE	2 x 1GbE RJ-45 and 2 x SFP via Intel i350 4 x 1GbE RJ-45 via Marvell 88E1543 (2 POE+)	2 x 1GbE RJ-45 via Intel i211 4 x 1GbE RJ-45 via Marvell 88E1543 or 2 x 1GbE RJ-45 via Marvell 88E1543 plus 2 x SFP+ via SoC	2 x Combo ports via Marvell 88E1543, 4 x 1GbE RJ-45 via Intel i211	4 x 1GbE RJ-45 via SoC; 4 x 1GbE RJ-45 via i350; 2 x 2.5GbE RJ-45 via i226
	10GbE	-	2 x 10G/1G SFP+ via SoC	-	4 x 10G SFP+ via SoC
	LAN bypass	Advanced	-	-	2 pairs of LAN bypass (Optional)
		Legacy	-	-	-
	PCle Slot	-	-	-	-
Expansion Slots	NMC	-	-	-	1
	M.2 (Except SSD)	1 x 3042 LTE module (Optional: 1 x 2242 SATA)	1 x 2242 LTE/5G module; 1 x 2230 Wi-Fi module	1 x M.2 3052 B-Key 5G or 1 x M.2 3042 B-Key 4G LTE 1 x M.2 2230 E-Key Wi-Fi 6	1 x 2230 Wi-Fi module
	Mini PCIe	1 x half-size and 1 x full-size Wi-Fi module	1 x full-size Wi-Fi module (BOM option)	1 x Mini-PCIe for 4G LTE or Wi-Fi 5	-
	SIM Socket	2	2	-	-
Storage	2.5" Bay	1 x 2.5" SSD (9.5 mm (H), C3758)	-	-	-
	3.5" Bay	-	-	-	-
	M.2	1 x 2242/2280 SATA/PCle Gen3 x1 SSD (Optional: 1 x 3042 LTE)	1 x 2280 SATA SSD	1 x 2280 SATA SSD	2 x 2280 SATA SSD
I/O	Console	1	1	1	1
	USB 3.0	2	2	-	-
	USB 2.0	-	-	2	2
	LED Indicator	Power, HDD, 4G LTE, Wi-Fi, Software-defined	Power, HDD, 4G/LTE, LTE/Wi-Fi, Software-defined	Rear: power, system, cloud Front: HDD, power, system, cloud, Wi-Fi, 3 x RF signal	Power, Alert, Locate, Software-defined
	Display Interface	-	-	-	VGA
	Button	1 x Power switch, 1 x Software-defined	1 x Power	1 x Power, 1 x Software-defined	1 x Power, 1 x Software-defined
Power Supply	TPM	TPM1.2 or TPM2.0 (Optional)	TPM2.0 or None TPM	TPM1.2 or TPM2.0 (Optional)	TPM2.0 or None TPM
	Power Type	DC	DC	DC	DC (Single/Redundant)
	Watts	36 W for 2 core 60 W for 4/8 core	36 W	36 W	150 W
	Input	100 ~ 240 V	100 ~ 240 V	100 ~ 240 V	100 ~ 240 V
Environment	Power Adapter	12V 5A, 60W external adapter	12V 3A, 36W external adapter	12V 3A, 36W external adapter	12V 12.5A, 150W external adapter
	Operating Temperature	0 ~ 40°C (32 ~ 104°F)	0 ~ 70°C (32 ~ 158°F) 4 Core 0 ~ 60°C (32 ~ 140°F) 8 Core	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
	Non-Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
	Vibration Resistance	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis
	Shock Protection	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms
Cooling		2 x system smart fan (8core SKU) or 2 x system smart fan (2/4core SKUs)	Fanless	Fanless	2 x system smart fan
Mechanical	Construction	Steel	Steel	Steel	Steel
	Mounting	Desktop/Rackmount optional	Desktop/Rackmount optional	Desktop/Rackmount optional	Desktop/Rackmount optional
	Dimension (W x H x D)	250 x 44 x 190 mm (9.84" x 1.73" x 7.48")	220 x 44 x 160 mm (8.66" x 1.73" x 6.3")	270 x 44 x 168 mm (8.1" x 1.32" x 5.04")	339 x 44 x 241 mm (13.35" x 1.73" x 9.49")
	Weight	2.3 kg (5.1 lb)	2.3 kg (5.1 lb)	3.0 kg (6.6 lb)	3.0 kg (6.6 lb)
OS Support		Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)
Advantech S/W Packages		- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPKDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPKDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPKDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPKDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)
IPMI		-	-	-	IPMI v2.0 compliant BMC with web interface

✓ : supported, - : not supported, △ : optional

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Edge Software & Industry Solutions

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Intelligent HMI & Monitors

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Serial/USB Communications

Network Appliances



Model		FWA-2012	FWA-2013	FWA-3034	FWA-3050	FWA-3051
Form Factor		1U Rackmount	1U Rackmount	1U Rackmount	1U Rackmount	1U Rackmount
Processor System	Processor	Intel Atom® C3558/C3758/C3958	Intel Atom® P5342/P5362	12th/13th Generation Intel® Core™	Intel® Xeon D-2100	Intel® Xeon® D-2700/D-2800
	Core Count	4/8/16 cores	16/24 cores	Up to 16/24 cores	8/14/16 cores	8/16/20 cores (Optional: 14/22 cores)
	Frequency	2.2/2.2/2.0GHz	2.2GHz	Up to 3.4/3.2GHz	1.9/1.9/2.0GHz	1.8 ~ 2.5GHz
	L2 Cache	4/8: 2MB/core 16: 2MB/core pair	2MB	5 ~ 32MB	11/19/22MB	15 ~ 30MB
	Chipset	–	–	Intel R680E/H610E	–	–
	BIOS	AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI
Virtualization		VT-x, VT-d	VT-x, VT-d	Intel® VT-x, VT-d, SR-IOV	VT-x, VT-d	VT-x, VT-d
Memory	Technology	DDR4 2400MHz	DDR4 2400/2667/2933MHz	DDR5 4800/5600MHz	DDR4 2667MHz	DDR4 2667/2993/3200MHz
	Max. Capacity	64GB	128GB	64GB	256GB	256GB
	Socket	2 x 288-pin DIMM	2 x 288-pin RDIMM	2 x 288-pin UDIMM	4 x 288-pin RDIMM	4 x 288-pin DIMM
	ECC Support	✓	✓	✓	✓	✓
Networking	Controller	1 x Marvell 88E1543; 2 x Intel i210-AT	1 x Intel i350-AM4; 2 x Intel i226-LM	2 x Intel i210-IS; 8 x Intel i226-LM; 1 x Intel X710-BM2	2 x Intel i350-AM4; 2 x Intel i210-AT	1 x Intel i350-AM4; 2 x Intel i210-AT
	1/2.5GbE	4 x 1GbE RJ-45 via Marvell 1543 (2 pairs LAN bypass) 2 x GbE RJ-45 via Intel i210	4 x 1GbE RJ-45 via SoC; 4 x 1GbE RJ-45 via i350; 2 x 2.5GbE RJ-45 via i226	2 x 1GbE SFP via Intel i210; 8 x 2.5GbE RJ-45 via Intel i226	8 x 1GbE RJ-45 via Intel i350; 2 x 1GbE RJ-45 via Intel i210	4 x 1GbE RJ-45 via SoC 4 x 1GbE RJ-45 via i350 2 x 1GbE RJ-45 via i210
	10GbE	–	4 x 10GbE SFP+ via SoC	2 x 10GbE SFP+ via Intel X710	4 x 10GbE SFP+ via SoC	4 x 10GbE SFP+ via SoC
	LAN bypass	2 pairs of LAN bypass (Optional)	2 pairs of LAN bypass (Optional)	2 pairs of LAN bypass (Optional)	2 pairs of LAN bypass (Optional)	2 pairs of LAN bypass (Optional)
Expansion Slots	PCIe Slot	–	–	1 x FH/HL Gen4 x8	1 x HH/HL Gen3 x8	1 x FH/HL Gen4 x16 (Customized)
	NMC	1	1	1	1	2
	M.2 (Except SSD)	–	1 x 2230 Wi-Fi module	1 x 3052/3042 4G module (5G by project base) or 2230 Wi-Fi module	–	–
	Mini PCIe	–	–	–	–	–
	SIM Socket	–	–	–	–	–
	2.5" Bay	1 x 2.5" HDD/SSD (Optional)	1	2 x 2.5" SATA HDD/SSD	2 x 2.5" SATA HDD/SSD	2 x 2.5" SATA HDD/SSD
Storage	3.5" Bay	1	Optional	–	–	–
	M.2	1 x 2280 SATA SSD	2 x 2280 SATA SSD	1 x 2280 SATA/PCIe Gen4 x4 SSD	2 x 2280 SATA/PCIe Gen3 x1/x2 SSD	2 x 2280 SATA/PCIe Gen3 x4 SSD
	Console	1	1	1	1	1
I/O	USB 3.0	2	–	2	2	2
	USB 2.0	2 (by pin header)	2	–	–	–
	LED Indicator	Power, Alert, Locate	Power, Alert, Locate, Software-defined	Power; Alert, Locate, Software-defined	Power, Alert, Locate, Software-defined	Power, Alert, Locate, Software-defined
	Display Interface	–	VGA	VGA	VGA	VGA
	Button	1 x Power	1 x Power, 1 x Software-defined	1 x Power, 1 x Software-defined	1 x Power, 1 x Software-defined	1 x Power, 1 x Software-defined
TPM		TPM 1.2 or 2.0 (Optional)	AC Single	AC Redundant / Single	AC Redundant	AC Redundant
Power Supply	Power Type	AC Single	AC Single	AC Redundant / Single	AC Redundant	AC Redundant
	Watts	150 W	320 W Redundant / 250 W Single	300 W Redundant / 250 W Single	300 W	300 W
	Input	100 ~ 240 V	100 ~ 240 V	100 ~ 240 V	100 ~ 240 V	100 ~ 240 V
	Power Adapter	–	–	–	–	–
Environment	Operating Temperature	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
	Non-Operating Temperature	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
	Vibration Resistance	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis
	Shock Protection	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms
Cooling		2 x system smart fan	2 x system smart fan	3 x system smart fan	Max. 4 x system smart fan (Hot-swappable optional)	4 x system smart fan
Mechanical	Construction	Steel	Steel	SECC	Steel	Steel
	Mounting	1U Rackmount	1U Rackmount	1U Rackmount	1U Rackmount	1U Rackmount
	Dimension (W x H x D)	430 x 44 x 320.7 mm (16.93" x 1.73" x 12.63")	438 x 44 x 390.5 mm (17.24" x 1.73" x 15.37")	438 x 44 x 420 mm (17.24" x 1.73" x 16.54")	438 x 44 x 420 mm (17.24" x 1.73" x 16.54")	438 x 44 x 420 mm (17.24" x 1.73" x 16.54")
	Weight	6.6 kg (14.6 lb)	–	8.2 kg (18.1 lb)	15 kg (33.1 lb)	15 kg (33.1 lb)
OS Support		Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Fedora, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)
Advantech S/W Packages		- QuickStart Linux Image (CentOS based reference BSP): afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP): afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP): afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP): afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP): afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)
IPMI		Option with Advantech LOM Module	IPMI v2.0 compliant BMC with web interface	IPMI v2.0 compliant BMC with web interface	IPMI v2.0 compliant BMC with web interface	IPMI v2.0 compliant BMC with web interface

✓ : supported, – : not supported, △ : optional

Network Appliances



Model			🌀 FWA-4134	🌀 FWA-5070	🌀 FWA-5072	🌀 FWA-6072	🌀 FWA-6172
Form Factor			2U Rackmount	1U Rackmount	1U Rackmount	2U Rackmount	2U Rackmount
Processor System	Processor		12th/13th Generation Intel® Core™	2nd Gen Intel® Xeon® Scalable	4th Generation Intel® Xeon® Scalable	4th Generation Intel® Xeon® Scalable	4th Generation Intel® Xeon® Scalable (Dual)
	Core Count		Up to 16/24 cores	8 ~ 28 cores	8 ~ 32 cores	8 ~ 52 cores	8 ~ 52 cores /socket
	Frequency		Up to 3.5GHz	2.0 ~ 3.6GHz	Up to 3.7GHz	Up to 3.7GHz	Up to 3.7GHz
	L2 Cache		5 ~ 32MB	4 ~ 28MB	2MB/core	2MB/core	2MB/core
	Chipset		Intel R680E	Intel C626 or C621	Intel C741	Intel C741	Intel C741
	BIOS		AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI	AMI UEFI
Virtualization			Intel® VT-x, VT-d, SR-IOV	VT-x, VT-d	Intel® VT-Redirect Protection, Intel® S-IOV	Intel® VT-Redirect Protection, Intel® S-IOV	Intel® VT-Redirect Protection, Intel® S-IOV
Memory	Technology		DDR4 3200MHz	DDR4 2400/2666MHz	DDR5 4800/4400MHz	DDR5 4800/4400MHz	DDR5 4800MHz
	Max. Capacity		128GB	768GB	1024GB	1024GB	1024GB
	Socket		4 x 288-pin DIMM	12 x 288-pin DIMM	16 x 288-pin DIMM	16 x 288-pin DIMM	16 x 288-pin DIMM
	ECC Support		✓	✓	✓	✓	✓
Networking	Controller		2 x Intel i210-AT	2 x Intel i210-AT	2 x Intel i210-AT	2 x Intel i210-AT	2 x Intel i210-AT
	1/2.5 GbE		2 x 1GbE RJ-45 via Intel i210	2 x 1GbE RJ-45 via Intel i210	2 x 1GbE RJ-45 via Intel i210	2 x 1GbE RJ-45 via Intel i210	2 x 1GbE RJ-45 via Intel i210
	10GbE		2 x 10GbE SFP+ via Intel X710	2 x 10G SFP+ via Intel C626 (by SKU)	–	–	–
	LAN Bypass	Advanced	2 pairs of LAN bypass (Optional)	Supported by NMC	Supported by NMC	Supported by NMC	Supported by NMC
		Legacy	–	Supported by NMC	Supported by NMC	Supported by NMC	Supported by NMC
Expansion Slots	PCIe Slot		1 x FH/HL Gen3 x4 (Optional)	1 x HH/HL Gen4 x8/x16	1 x HH/HL Gen4 x16	1 x FH/HL Gen4 x16	2 x FH/HL Gen5 x16 or 1 x Double-deck 10.5" Gen5 x16
	NMC		4/8	4	4	8	8
	M.2 (Except SSD)		–	–	–	–	–
	Mini PCIe		–	–	–	–	–
Storage	SIM Socket		–	–	–	–	–
	2.5" Bay		Optional	Max. 3 x 2.5" HDD/SSD	2 x 2.5" SATA HDD/SSD	2 x 2.5" SATA HDD/SSD	2 x 2.5" SATA or NVMe HDD/SSD
	3.5" Bay		4 x 3.5" SATA HDD	–	–	–	–
	M.2		–	1 x 2280 SATA SSD (PCIe Gen3 option)	2 x 2280 SATA/ 1 x PCIe Gen3 x1 + 1 x PCIe Gen3 x4 SSD	2 x 2280 SATA/ 1 x 2280 SATA + 1 x PCIe Gen3 x4 SSD	2 x 2280 SATA/PCIe Gen3 x4 SSD
I/O	Console		1	1	1	1	1
	USB 3.0		2	2	2	2	2
	USB 2.0		–	–	–	–	–
	LED Indicator		Power, HDD	Power, Alert, Software-defined	Power; Alert, Locate, Software-defined	Power; Alert, Locate, Software-defined	Power; Alert, Locate, Software-defined
	Display Interface		VGA	VGA box header	VGA	VGA	VGA
	Button		1 x Power, 1 x Software-defined	1 x Power	1 x Power, 1 x Software-defined	1 x Power, 1 x Software-defined	1 x Power, 1 x Software-defined
TPM			–	TPM 1.2 or TPM 2.0 (Optional)	TPM 2.0	TPM 2.0	
Power Supply	Power Type		AC Redundant / DC Redundant (Optional)	(AC) Redundant / (DC) Redundant (Option)	(AC) Redundant / (DC) Redundant (Option)	(AC) Redundant / (DC) Redundant (Option)	(AC) Redundant / (DC) Redundant (Option)
	Watts		350 W / 300 W	(AC) 650 W / (DC) 800 W	(AC) 550 W / (DC) 800 W	(AC) 800 W / (DC) 800 W	(AC) 1200 W / (DC) 800 W
	Input		100 ~ 240 V	(AC) 100 ~ 240 V, (DC) -72 ~ -40 V	(AC) 100 ~ 240 V, (DC) -72 ~ -40 V	(AC) 100 ~ 240 V, (DC) -72 ~ -40 V	(AC) 100 ~ 240 V, (DC) -72 ~ -40 V
	Power Adapter		–	–	–	–	–
Environment	Operating Temperature		0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
	Non-Operating Temperature		-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
	Vibration Resistance		5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis	5-500 Hz, 0.3 Grms, 3 axes, 1 hr/per axis
	Shock Protection		10 G, 11 ms	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms	10 G, 11 ms
Cooling			3 x system smart fan	3 x system smart fan	5 x system smart fan	3 x system smart fan	4 x system smart fan
Mechanical	Construction		Steel	Steel	Steel	Steel	Steel
	Mounting		2U Rackmount	1U Rackmount	1U Rackmount	2U Rackmount	2U Rackmount
	Dimension (W x H x D)		438 x 88 x 520 mm (17.24" x 3.4" x 20.4")	438 x 44 x 550 mm (17.24" x 1.73" x 21.65")	438 x 43.7 x 600 mm (17.2" x 1.7" x 23.6")	438 x 88 x 600 mm (17.2" x 3.4" x 23.6")	438 x 88 x 600 mm (17.2" x 3.4" x 23.6")
	Weight		20 kg (44.1 lb)	20 kg (44.1 lb)	11 kg (24.25 lb)	15 kg (33.06 lb)	21.5 kg (47.4 lb)
OS Support			Linux (Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu, Fedora)	Linux (CentOS, Red Hat, Ubuntu, Fedora)	Linux (CentOS, Red Hat, Ubuntu, Fedora)
Advantech S/W Packages			- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP); afu; ipmitool; LCD4Linux; Advanced LBP Utility; Intel DPDK; Intel QAT; DUI (Offline Diagnostics) - Individual Packages: Advanced LBP Library; DUI (Offline Diagnostics)
IPMI			–	IPMI v2.0 compliant, with web interface and iKVM	IPMI v2.0 compliant, with web interface and iKVM	IPMI v2.0 compliant, with web interface and iKVM	IPMI v2.0 compliant, with web interface and iKVM

✓ : supported, – : not supported, △ : optional

1

Edge Software & Industry Solutions

2

Intelligent HMI & Monitors

3

Automation Computers

4

Intelligent Systems

5

Mission Critical CompactPCI Platforms

6

Intelligent Transportation & Substation Certified Systems

7

Industrial Server & Cloud Solutions

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AI & Advanced Computer Vision

9

Video Infrastructure Solutions

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Network & Security Solutions

11

Industrial Communication

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Industrial Gateways

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EtherCAT Solutions & Automation Controllers

14

Intelligent Motion Control Solutions

15

Data Acquisition (DAQ) Solutions

16

Remote I/O, Wireless I/O & Sensors

17

Serial/USB Communications

Network Modules



Model Name		 NMC-0108	 NMC-0120		 NMC-0121		 NMC-0804	 NMC-0806		
Ordering Part Number		NMC-0108-04FSA1	NMC-0120-04FBSSA2	NMC-0120-04FBLSA2	NMC-0121-04CSA1	NMC-0121-04CBSA1	NMC-0804-08FSA1	NMC-0806-08CSA1	NMC-0806-08CBSA1	
Chipset		Intel I350-AM4	Intel I350-AM4	Intel I350-AM4	Intel I350-AM4	Intel I350-AM4	Intel I350-AM4	Intel I350-AM4	Intel I350-AM4	
Speed		1 Gb/s	1 Gb/s	1 Gb/s	1 Gb/s	1 Gb/s	1 Gb/s	1 Gb/s	1 Gb/s	
Connector Type		4 x SFP fiber	4 x SR fiber LC	4 x LR Fiber LC	4 x RJ-45 copper	4 x RJ-45 copper	8 x SFP fiber	8 x RJ-45 copper	8 x RJ-45 copper	
Interfaces		1 x PCIe x4 Gen2	1 x PCIe x4 Gen2	1 x PCIe x4 Gen2	1 x PCIe x4 Gen2	1 x PCIe x4 Gen2	2 x PCIe x4 Gen2	2 x PCIe x4 Gen2	2 x PCIe x4 Gen2	
LAN Bypass (Legacy/Advanced)		–	Fiber bypass (OBM Module)	Fiber bypass (OBM Module)	–	Advanced LBP	–	–	Advanced LBP	
Present Pin Detection		✓	✓	✓	✓	✓	✓	✓	✓	
LED Definition		Speed LED 10 Mb/s: – 100 Mb/s: – 1000 Mb/s: – Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: – Disconnect: –	Link / Act LED (Right/Left) Link: Green on Active: Green Blinking Bypass LED (Middle) LAN Bypass: Amber on Disconnect: – Connect: –	Link / Act LED (Right/Left) Link: Green on Active: Green Blinking Bypass LED (Middle) LAN Bypass: Amber on Disconnect: – Connect: –	Speed LED (Left) 10 Mb/s: – 100 Mb/s: – 100 Mb/s: Amber on (Downgrade speed) 1000 Mb/s: Green on (Maximum speed) Link/Act/ Bypass LED (Right) Link: Green on Active: Green Blinking LAN Bypass: – Disconnect: –	Speed LED (Left) 10 Mb/s: – 100 Mb/s: – 100 Mb/s: Amber on (Downgrade speed) 1000 Mb/s: Green on (Maximum speed) Link/Act/ Bypass LED (Right) Link: Green on Active: Green Blinking LAN Bypass: Amber on Disconnect: Amber blinking	Speed LED 10 Mb/s: – 100 Mb/s: – 1000 Mb/s: – Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: – Disconnect: –	Speed LED (Left) 10 Mb/s: – 100 Mb/s: – 100 Mb/s: Amber on (Downgrade speed) 1000 Mb/s: Green on (Maximum speed) Link/Act/ Bypass LED (Right) Link: Green on Active: Green Blinking LAN Bypass: – Disconnect: –	Speed LED (Left) 10 Mb/s: – 100 Mb/s: – 100 Mb/s: Amber on (Downgrade speed) 1000 Mb/s: Green on (Maximum speed) Link/Act/ Bypass LED (Right) Link: Green on Active: Green Blinking LAN Bypass: Amber on Disconnect: Amber blinking	
Power	Voltage	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	
	Consumption	10 W	10 W	10 W	10 W	10 W	15 W	15 W	15 W	
Environment	Operating Temperature	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	
	Storage Temperature	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	
	Storage Humidity	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	
	Vibration Resistance	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis
	Shock Protection	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)
Mechanical	Dimension W x H x D	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	
	Weight	0.3 kg	0.7 kg	0.7 kg	0.4 kg	0.4 kg	0.5 kg	0.7 kg	0.7 kg	

✓ : supported, – : not supported, △ : optional

Network Modules



Model Name		NMC-1001	NMC-4007		NMC-1012
Ordering Part Number		NMC-1001-04FSA1	NMC-4007-04FBSSA2	NMC-4007-04FBLSA2	NMC-1012FN-08A1
Chipset		Intel XL710-BM1	Intel XL710-BM2	Intel XL710-BM2	Intel E810-CAM2
Speed		10 Gb/s	10 Gb/s	10 Gb/s	10 Gb/s
Connector Type		4 x SFP+ fiber	4 x SR fiber LC	4 x LR fiber LC	8 x SFP+ fiber
Interfaces		1 x PCIe x8 Gen3	1 x PCIe x8 Gen3	1 x PCIe x8 Gen3	1 x PCIe x8 Gen4
LAN Bypass (Legacy/Advanced)		-	Fiber bypass (OBM Module)	Fiber bypass (OBM Module)	-
Present Pin Detection		✓	✓	✓	✓
LED Definition		Speed LED 1 Gb/s: - 10 Gb/s: - Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: - Disconnect: -	Link / Act LED (Right/Left) Link: Green on Active: Green Blinking Bypass LED (Middle) LAN Bypass: Amber on Disconnect: Amber blinking Connect: -	Link / Act LED (Right/Left) Link: Green on Active: Green Blinking Bypass LED (Middle) LAN Bypass: Amber on Disconnect: Amber blinking Connect: -	Speed LED <10 Gb/s: Amber 10 Gb/s: Green Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: - Disconnect: -
Power	Voltage	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%
	Consumption	15 W	17 W	17 W	10 W
Environment	Operating Temperature	-5 ~ 45°C (23 ~ 113°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
	Storage Temperature	-20 ~ 65°C (-4 ~ 149°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
	Storage Humidity	5 ~ 85% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)
	Vibration Resistance	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis
	Shock Protection	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)
	Shock Protection	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)
Mechanical	Dimension W x H x D	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm
	Weight	0.5 kg	0.7 kg	0.7 kg	0.5 kg



Model Name		NMC-2501	NMC-2503	NMC-4006	NMC-6003L		NMC-6004
Ordering Part Number		NMC-2501-02FSA1	NMC-2503FN-04A1	NMC-4006-02FSA1	NMC-6003L-01FSA1	NMC-6003L-02FSA1	NMC-6004FBD
Chipset		Intel XXV710-DA2	Intel E810-CAM1	Intel X710-BM2	Intel E810-CAM1	Intel E810-CAM2	Mellanox ConnectX-6
Speed		25 Gb/s	25 Gb/s	40 Gb/s	100 Gb/s	100 Gb/s	200 Gb/s
Connector Type		2 x SFP28 fiber	4 x SFP28 fiber	2 x QSFP+ fiber	1 x QSFP28 fiber	2 x QSFP28 fiber	2 x SR4 fiber
Interfaces		1 x PCIe x8 Gen3	1 x PCIe x8 Gen4	1 x PCIe x8 Gen3	1 x PCIe x8 Gen4	1 x PCIe x8 Gen4	1 x PCIe x 16 Gen4
LAN Bypass (Legacy/Advanced)		-	-	-	-	-	-
Present Pin Detection		✓	✓	✓	✓	✓	✓
LED Definition		Speed LED <25 Gb/s: Amber on (Downgrade speed) 25 Gb/s: Green on (Maximum speed) Link/Act LED/Bypass LED Link: Green on Activity: Green Blinking LAN Bypass: - Disconnect: -	Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: - Disconnect: -	Speed LED <40 Gb/s: - 40 Gb/s: - Link/Act LED/Bypass LED Link: Green on Activity: Green Blinking LAN Bypass: - Disconnect: -	Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: - Disconnect: -	Link/Act/Bypass LED Link: Green on Active: Green Blinking LAN Bypass: - Disconnect: -	Link / Act LED (Right/ Left) Link: Green on Active: Green Blinking Bypass LED (Middle) Link: Green on Active: Green Blinking LAN Bypass: Amber on Disconnect Amber blinking Connect: -
Power	Voltage	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%	+12 V ± 10%
	Consumption	16 W	10 W	15 W	10 W	10 W	30 W
	Operating Temperature	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)	0 ~ 40°C (32 ~ 104°F)
	Storage Temperature	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
	Storage Humidity	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)	95% @ 60°C (140°F)
	Vibration Resistance	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis	1. Test PSD: 0.026 G/Hz, 2.16 Grms 2. System condition: Packaged mode 3. Test Frequency: 5-500Hz 4. Test Axis: X, Y and Z axis
Environment	Shock Protection	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)	half sine 10G with package (x y z axis)
	Dimension W x H x D	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	74.6 x 42.4 x 174.7 mm	149.6 x 42.4 x 174.7 mm
Mechanical	Weight	0.7 kg	0.5 kg	0.6 kg	0.5 kg	0.5 kg	0.5 kg

✓ : supported, - : not supported, △ : optional

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Edge Software & Industry Solutions

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Intelligent HMI & Monitors

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Automation Computers

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Intelligent Systems

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Mission Critical CompactPCI Platforms

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Intelligent Transportation & Substation Certified Systems

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Industrial Server & Cloud Solutions

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AI & Advanced Computer Vision

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Video Infrastructure Solutions

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Network & Security Solutions

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Industrial Communication

12

Industrial Gateways

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EtherCAT Solutions & Automation Controllers

14

Intelligent Motion Control Solutions

15

Data Acquisition (DAQ) Solutions

16

Remote I/O, Wireless I/O & Sensors

17

Serial/USB Communications

Certifications

Type	Standard	FWA-T011	FWA-1010VC	FWA-AAL1010VC	FWA-1012VC	FWA-1112VC	FWA-1212VC	FWA-1013
Safety	CB: IEC 60950-1	✓	✓	✓	–	✓	✓	✓
	UL: UL 60950-1	✓	✓	✓	–	–	–	–
	CB: IEC 62368-1 2nd Edition	✓	✓	✓	✓	✓	✓	✓
	UL: UL 62368-1 2nd Edition	✓	✓	✓	✓	✓	✓	✓
	LVD: EN 62368-1	✓	✓	✓	✓	–	–	–
EMC	FCC	✓	✓	✓	✓	✓	✓	✓
	CE	✓	✓	✓	✓	✓	✓	✓
	BSMI	–	✓	–	–	–	–	–
	CCC	✓	✓	✓	✓	✓	✓	✓
	VCCI	✓	✓	✓	–	✓	✓	–
	RCM	✓	✓	–	–	✓	–	–
	KCC	–	✓	–	–	–	–	–
RF	WLAN: FCC	–	–	–	–	O	–	–
	WLAN: RED	–	–	–	–	O	–	–
	WWAN: FCC (5G/4G/LTE)	–	✓	✓	✓	O	–	–
	WWAN: RED (5G/4G/LTE)	–	✓	✓	✓	O	–	–

Type	Standard	FWA-2012	FWA-2013	FWA-3050	FWA-3051	FWA-3034	FWA-5070	FWA-5072
Safety	CB: IEC 60950-1	✓	O	✓	O	–	✓	–
	UL: UL 60950-1	✓	–	✓	O	–	✓	–
	CB: IEC 62368-1 2nd Edition	✓	O	✓	O	✓	✓	✓
	UL: UL 62368-1 2nd Edition	✓	O	✓	O	✓	✓	✓
	LVD: EN 62368-1	–	–	–	–	–	–	–
EMC	FCC	✓	O	✓	O	✓	✓	✓
	CE	✓	O	✓	O	✓	✓	✓
	BSMI	–	–	✓	–	–	–	–
	CCC	✓	O	✓	O	✓	✓	✓
	VCCI	–	–	✓	–	–	✓	–
	RCM	–	–	✓	–	–	✓	–
	KCC	✓	–	–	–	–	–	–
RF	WLAN: FCC	–	–	–	–	–	–	–
	WLAN: RED	–	–	–	–	–	–	–
	WWAN: FCC (5G/4G/LTE)	–	–	–	–	–	–	–
	WWAN: RED (5G/4G/LTE)	–	–	–	–	–	–	–

✓ : Certified, O : Coming Soon, – : Uncertified

Remark: Please contact your Advantech representative for further details

