

Advantech uCPE Solutions

Join the SD-WAN Transformation
at the Enterprise Edge

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ADVANTECH

Enabling an Intelligent Planet

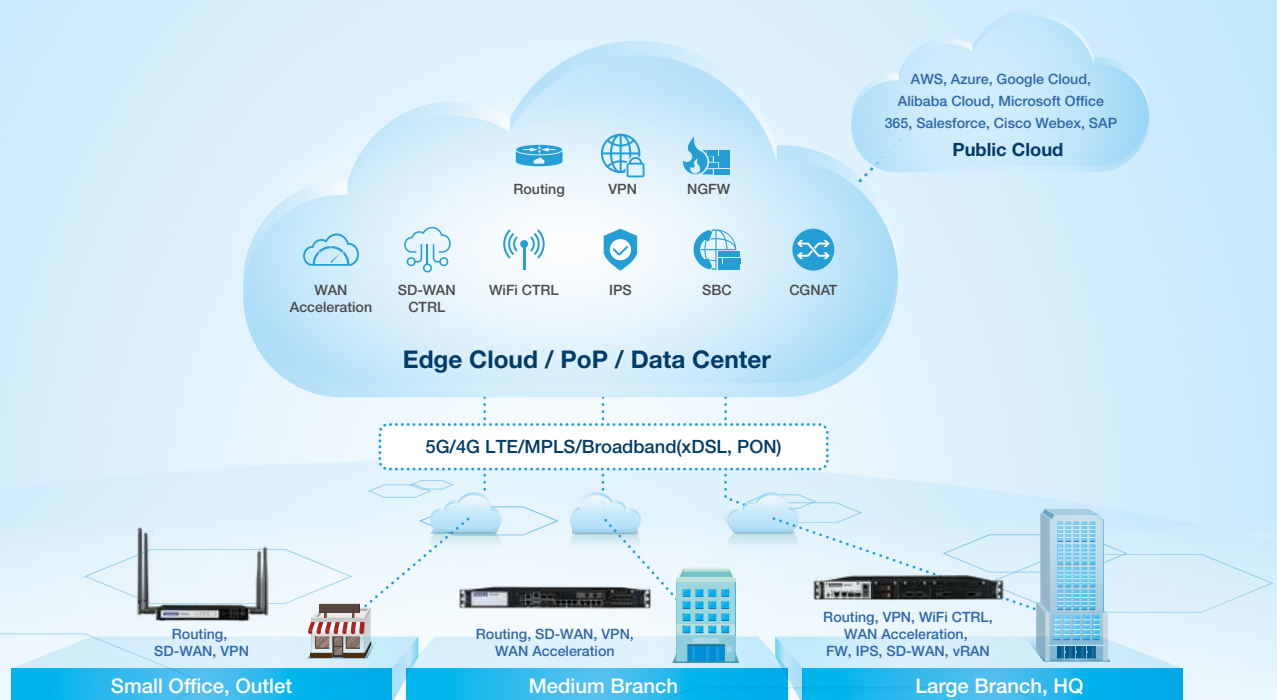


IoT Solutions
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Universal CPE for next generation SD-WAN and SD-Branch

As information and communications technologies converge, accelerated by the virtualization of applications in the cloud, the software defined, all-IP infrastructure that promises to be extremely agile and reconfigurable is in the making. One that opens the doors to a whole new class of flexible and secure on-demand services at the enterprise edge. At the center of this transformation is the Software-Defined Wide Area Network (SD-WAN) deployed on universal customer premises equipment (uCPE), a compute, storage, and networking platform that can bring virtualized or non-virtualized (bare metal) services that scale from small branch offices, small-to-medium-sized businesses to enterprise and service provider edge cloud.



From SD-WAN to SD-Branch

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 the cloud are down or degraded. In addition centralized management provides a single-pane-of-glass view of the state of all the devices on the WAN. Enter SD-Branch software which extends SD-WANs into the LAN providing even greater visibility over both application services and local device usage. By monitoring use of applications and devices, system admins can gain greater insights into traffic flows and apply the appropriate policies to maintain network integrity and keep data flowing. SD-Branch provides the ability to not only manage WAN services from a central point but also LAN connected devices such as IoT gateways, printers, VoIP systems, and WiFi Access Points.



I White-box uCPE Benefits

Advantech's feature flexible white-box uCPE product range offers a solid foundation for deploying SD-WAN and additional virtual network functions from key industry partners. This brings the benefits described below to the entire ecosystem: from enterprise, to services providers and software partners.

Enterprise

uCPE solutions replace multiple fixed-function appliances in the enterprise, reducing capital and operating costs while providing increased service provisioning flexibility. Choosing open and re-programmable commercial-of-the-shelf (COTS) platforms offers an investment protection for the long-term. uCPE securely extends the cloud to the enterprise edge where new and optimized business services can be deployed faster than ever before.

Hardware consolidation for lower TCO

Streamline the rollout of new business services and branches

Agile on-demand services boost enterprise productivity

Enhanced security and network optimization choices from open marketplace

Service Provider

When hardware and software functions are disaggregated in the uCPE model, service providers and enterprise users alike gain the benefits of multi-vendor choice and avoid lock-in by any single vendor. Moreover, by leveraging an open universal platform providing an NFV infrastructure, supply chains can be streamlined across one or two white box uCPE models. Service providers can now benefit by offering VNF and application marketplaces that allow them to differentiate from competition and introduce new ways to monetize and grow revenue.

Faster time to revenue with new services

CAPEX & OPEX savings

Full virtual solution avoids vendor lock-in

Simplified CPE portfolio, platform & architecture

Ecosystem

The arrival of open CPE solutions presents a whole new opportunity for the ecosystem driving innovation and bringing faster time to revenue. Enterprises and service providers can benefit from this thriving ecosystem that mixes open source and commercial solutions. VNF vendors can leverage standard infrastructure and address a broader marketplace with new and optimized services while management and orchestration players offer single-pane-of-glass and enhanced automation services. System Integrators can offer comprehensive deployment & support models for customers requiring a full service model.

Universal edge platform opens new markets and business opportunities

Faster time to revenue with software centric solutions

Open co-creation framework that drives innovation

Mix of open source and commercial solutions

Virtualize, Automate and Deploy on Advantech White Boxes

I The Pioneer in White-box 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 NFV, Advantech helps co-create new business ecosystems that enable an intelligent planet.

Advantech's uCPE designs provide the range of innovative platforms needed by service providers to transform the network using new disaggregated models. uCPE and NFV extend the cloud to the enterprise edge where technologies such as SD-WAN, IoT and virtual RAN enable a converged edge architecture securely connecting people and things. Over 100 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 this backed by a solid financial base and an extensive network of more than 8,000 employees globally. That is why we are the trusted uCPE and SD-WAN hardware partner to service providers across all major continents.

I Scalable White Boxes

Advantech's white box uCPE range, built on standard Intel® processors in feature-flexible appliances, covers multiple configurations and price points scaling from 2 to 28 cores providing maximum physically achievable throughputs up to 220 Gbps. Optional networking modules offer a highly flexible WAN connectivity choice of hybrid 5G, 4G LTE, WiFi6, WiFi5, 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 10x. As a result, secure branch connectivity including end-to-end encryption can be provided without compromising VNF performance or increasing cost. The 1U higher end platforms have been designed for high-availability networks with integrated fail-safe redundancy and advanced remote security and management features that minimize system down time.



www.ucpe.tech



I Enhanced Platform Management

Advantech's networking platforms have been specifically designed to run high-availability telecommunication services and minimize costly downtime. Advantech's Advanced Platform Management provides all required IPMI v2.0 Baseboard Management Controller (BMC) functionality and also additional features that allow local and remote users to early detect system degradation, avoid system interruption and shorten mean time to repair.

Enhanced Lights-out Management Features

Fail-safe firmware redundancy for zero-risk upgrades

Directory-based credentials (LDAP) for smooth enterprise integration



Metro Ethernet features like dying gasp

Redfish, SNMP, IPMI, NETCONF, VPN/HTTPS

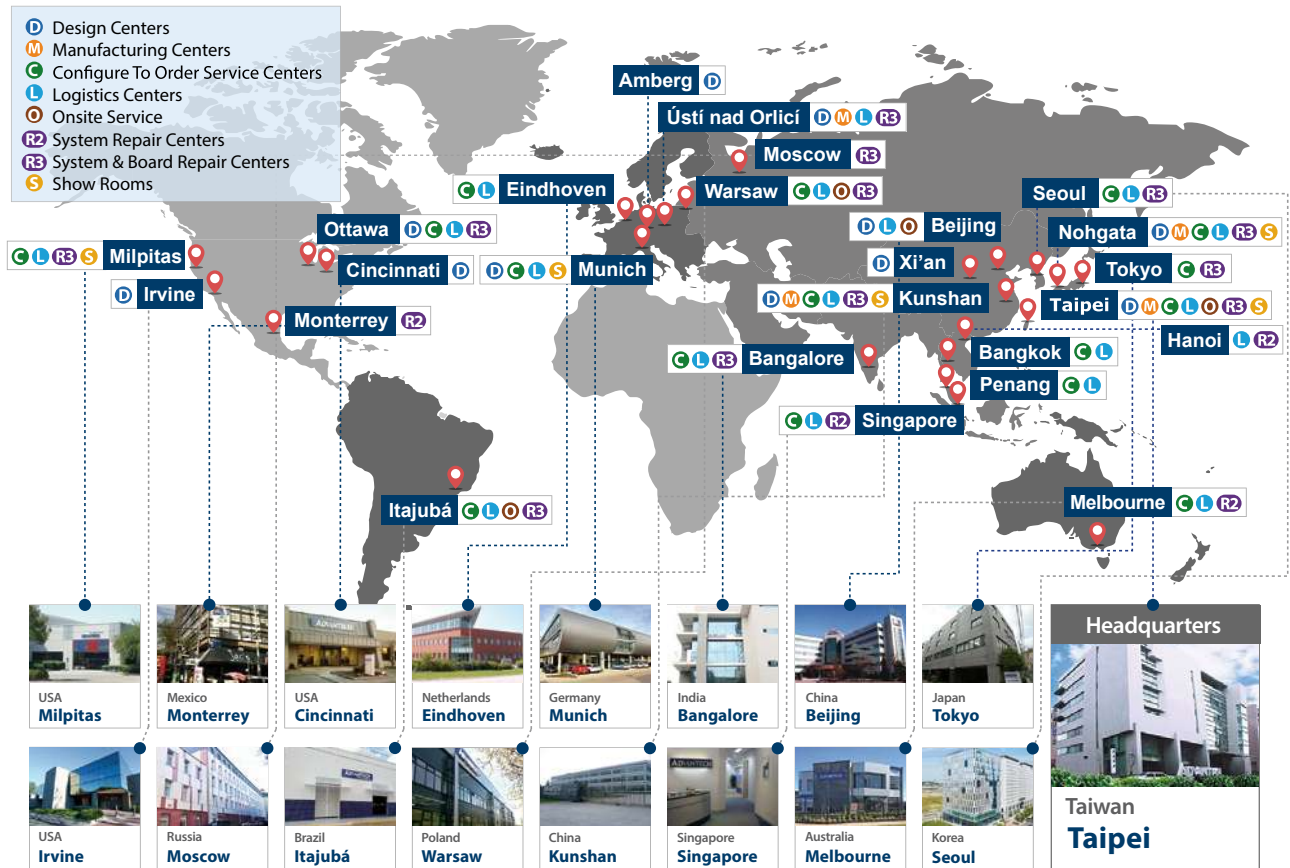
Diagnostics framework for identifying a hardware problem quickly

I QuickStart Linux Image (QSL)

- CentOS 7 based start-up image (USB base)
- Features include:
 - Platform specific drivers (Intel® NIC, IPMI driver, etc.)
 - Advantech LAN bypass
 - LCD module control
 - Platform Management tool (ipmitool, lm-sensor...etc)
 - Offline diagnostics
 - DPDK & QAT

USB Image			Pre-installed on HDD/SSD (on request)		
Platform Tools	BIOS Update	LCD Module Control	DPDK pktgen	Intel® QAT Openssl	Diagnostic Tools
	FRU Data Display	LAN Bypass Control	DPDK I2fwd	DPDK ipsecgw	
	Sensor / Health	Sierra QMI SDK	DPDK PMD	DUI	
	Platform mgmt. tools	TPM Sample	Intel® QAT Sample	System Info	
Ethernet Drivers	TPM Drivers	SR-IOV Drivers	DPDK Drivers	QAT Drivers	HWM Drivers
CentOS 7 Linux					

Advantech Global Services




Refurbish and upgrade worn out hardware to prolong the life of your product pool

After hardware and software updates, revision control and test, we ensure your product gets a new lease of life, just like new in appearance and performance.



Warranty

Contain expense for after warranty repair

Extended warranty can be purchased along with your product order. We provide 3-to-6 month, and 1-to-3 year extended warranty service to help you plan your maintenance budget in advance.



Shorten downtime with Advanced Replacement Services

Advantech prepares replacement units for you, allowing reliable parts and components to be exchanged by next day shipment to your destination of choice.

Connect to Advantech Remote Evaluation Lab

Advantech's Remote Evaluation Service (RES) is designed to help customers get ahead of the technology curve and rapidly evaluate next-generation applications and services on a wide range of networking platforms that can emulate different deployment scenarios at different network locations. We work together with leading silicon, middleware and NFV ecosystem partners so that you can:



Early evaluate and benchmark latest hardware and software technologies



Remotely perform functional and interoperability testing



Get an early start on development while saving resources, time and money

RES puts virtual control of your own test lab at your finger-tips. You no longer incur the costs of shipping heavy freight around the world, purchasing expensive test rigs or breaking your back installing equipment in a lab which you probably wouldn't sit in anyway. The systems we propose are pre-integrated application-ready platforms embedded in a qualified, dedicated, and secure network test environment. In addition, our NFV Test-Drive Portals build a full-stack NFVI environment where users can remotely evaluate VNF performance or interoperability for a particular use case.

I What's In It For You

Accelerate the Evaluation Process: quickly kick off SD-WAN hardware and software evaluation without having to deal with all the shipping, licensing and setting up hassle.

Choose From the Widest uCPE Range: take any Advantech white-box uCPE for a test-drive, from ultra-low footprint to high-end performance.

Simplify Decision-Making: get your hands on pre-validated SD-WAN stacks that have been configured to perform well together.

Find Your Sweet Spot: mix and match software and hardware components, get rid of unnecessary load and find the perfect feature-set that match your customer's compute, throughput and storage needs.

Quick Start SD-WAN: start getting familiar with uCPE managers, SD-WAN controllers and cloud orchestrators, reproducing everyday situations on real-world networking gear.

www.go-res.com

Strategic Partner Engagement to Accelerate Network Transformation

I Best-of-Breed Partners

Advantech and its uCPE ecosystem partners bring together innovators to foster technology teamwork, interoperability testing and solution development. Proven product interoperability means customers can rapidly integrate tested combinations of hardware and software components with total confidence. In a fast paced market this results in delivering innovative solutions more rapidly and responding more effectively to new customer needs.

Advantech's partner ecosystem is made up of leaders in each of their respective areas of expertise. Together, these companies provide all of the essential components for developing, verifying, integrating and building high performance uCPE products.



"6WIND and Advantech have worked together for over a decade to give the Industry white box networking solutions for a range of Service Provider requirements. Our new Border Router bundle responds to ISP requests to combine 6WIND's software Pedigree with Advantech's server expertise For a ready-to-run alternative to proprietary Hardware routers."

Eric Carmés, CEO, 6WIND

"We are pleased to be working with Advantech on their uCPE products based on the latest Atom and Xeon CPUs from Intel. The latest products from Advantech provide remarkable levels of performance, and our pre-integrated solutions enable our mutual CoSP customers to deploy uCPE applications very quickly."



Prayson Pate, CTO ADVA Edge Cloud

“Advantech’s feature-flexible range of server-grade white box appliances forms a very compelling uCPE solution when coupled with Enea’s open virtualization platform. Enea NFV Access provides a fully-fledged uCPE virtualization environment and cloud-based management with zero touch provisioning on Advantech’s slim tabletop white boxes, and scales seamlessly to its rack-mounted Intel Xeon servers. Communication service providers and enterprises looking to deploy second generation SD-WAN and VNFs can rely on the cost-effective and scalable uCPE solution provided by Enea and Advantech.”



Adrian Leufvén, SVP of Enea's OS Business Unit



“With PREMIER’s extensive technology partner ecosystem, our Pi-CON solution set leverages industry partners such as Intel and Advantech to provide best-in-Class uCPE solutions delivering virtualized network functionality. PREMIER’s large uCPE platform is verified as an Intel® Select Solution for uCPE and utilizes the Intel® Xeon® D Processor to deliver optimal performance and efficiency.”

Joe Baemel VP Partner & Business Development, KGPCo

“Our partnership empowers the rapid deployment of Telco Systems’ NFVTime open uCPE across a range of Advantech white box appliances. This winning combination of service-ready, plug-and-play uCPE solutions, pre-integrated with Advantech white box hardware, enables telecom operators and managed service providers to efficiently expand their uCPE-based NFV services targeted at SMBs, and increase revenue opportunities for managed network business services from this segment. The Telco Systems-Advantech relationship exemplifies our commitment to helping service provider customers become more agile in deploying new business services across all market segments with the optimal cost structure and resource requirements.”



Ariel Efrati, CEO, Telco Systems



“Service Providers are increasingly focused on delivering Value-added CPE-based services to their Enterprise/Commercial customers with speed and at scale. To meet the service providers’ needs, WWT is Partnering with Advantech to deliver Intel Select Solutions for uCPE. With Advantech’s innovative hardware platforms and WWT’s unique validation and Integration capabilities, we’re jointly delivering industry leading solutions to enable our service provider customers to grow their Enterprise/Commercial revenue streams.”

Joe Wojtal, VP of Open Systems & Solutions, WWT

Selection Guide



Model		FWA-T011	FWA-1010VC	FWA-AAL1010VC
SPEC				
Form Factor		Tiny box	Tabletop	Tabletop
Processor System	Processor	Intel® Celeron® J3355/J3455	Intel® Atom™ C2558/C2758	Intel® Atom™ C2558/C2758
	Core Number	2/4core	4/8-core	4/8-core
	Frequency	2.0GHz/ 1.5GHz	2.4GHz/ 2.4GHz	2.4GHz/ 2.4GHz
	L2 Cache	2MB	2MB/ 4MB	2MB/ 4MB
	L3 Cache	-	-	-
	Chipset BIOS	AMI Efi 64Mbit	AMI Efi 64Mbit	AMI Efi 64Mbit
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	2x 240-pin DIMM	2x 240-pin DIMM
	ECC Support	Non-ECC	Yes	Yes
Networking	Controller	4 x Intel i211/i210	3 x Marvell 88E1112 1 x Marvell 88E6141	4 x Marvell 88E1112 1 x Intel i350
	1GbE	4 x 10/100/1000BASE-T RJ45 port	2x 10/100/1000BASE-T RJ45 or SFP auto-negotiation link via Marvell 88E1112 1x 10/100/1000BASE-T RJ45 port via Marvell 88E1112 4x 10/100/1000BASE-T RJ45 ports via Marvell 88E6141 with 1GbE uplink to CPU	2x 10/100/1000BASE-T RJ45 or SFP auto-negotiation link via Marvell 88E1112 2x 10/100/1000BASE-T RJ45 via Marvell 88E1112 2x 10/100/1000BASE-T RJ45 via Intel i350
	10GbE	-	-	-
	Advanced LAN bypass	-	-	-
	PCIe x 16 PCIe x 8 PCIe x 4 NMC	- - - -	- - - -	- - - -
Expansion	m.2 PCIe	1 x M.2 2230 for WiFi5/BT module with 2x antenna holes 1 x M.2 3042 for 3G/4G LTE module with 2x antenna holes (USB2.0/USB3.0)	1x M.2 2232 for WiFi5 module with 2x antenna holes	1x Mini PCIe for WiFi5 module with 2x antenna holes
	Mini PCIe	-	1x full-size Mini PCIe with SIM holder for 3G/4G LTE module with 2x antenna holes	1x M.2 with SIM holder for 3G/4G LTE module with 2x antenna holes
	SIM Socket	1	1	1
	2.5" HDD/SSD	-	1x 2.5" SATA3.0 Gen3 SSD bracket (Max 9.5mm height only) (only on C2758 SKU)	1x 2.5" SATA3.0 Gen3 SSD bracket (Max 9.5mm height only) (only on C2758 SKU)
Storage	3.5" HDD	-	-	-
	M.2 SSD/NVMe	1x M.2 2280 SSD	1x M.2 2280 SSD (option 2x M.2 2242)	1x M.2 2280 SSD (option 2x M.2 2242)
	mSATA SSD	-	-	-
	eMMC	-	-	-
Display				
I/O	Console port	1	1	1
	USB3.0	-	-	-
	USB2.0	2x USB2.0	1x USB2.0	1x USB2.0
	GPIO	-	Pin Header	Pin Header
	LED Indicator	Power, HDD, 4G LTE, WiFi5, Software-defined status	Power, HDD, 4G LTE, WiFi5, SW defined status	Power, HDD, 4G LTE, WiFi5, SW defined status
	Reset button	Yes	-	-
	Others	-	1x Power Switch 1x Software definable button	1x Power Switch 1x Software definable button
TPM		None but optional by TPM1.2 or TPM2.0 module	None but optional by TPM1.2 or TPM2.0 module	None but optional by TPM1.2 or TPM2.0 module
Power	Power Type	DC	DC	DC
	Watts	36W	60W	60W
	Input	100V ~ 240V	100V ~ 240V	100V ~ 240V
	Connector	DC Jack	DC Jack	DC Jack
Power Adaptor		12V 3A, 36W external adaptor	12V 5A, 60W external adaptor	12V 5A, 60W external adaptor
Environment	Operating Temperature (air flow 0.7 m/sec)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)
	Non-operating Temperature	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 60 °C (-40 ~ 140 °F)	-40 ~ 60 °C (-40 ~ 140 °F)
	Vibration Resistance	With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration	With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration	With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration
	Shock Protection	-	-	-
Cooling		fanless	1x system fan with smart fan	1x system fan with smart fan
Mechanical	Mounting	Desktop/Wall-mounting (Option)	Desktop/Wall/Rack-mounting (Option)	Desktop/Wall/Rack-mounting (Option)
	Dimensions (W x H x D)	152 x 21 x 125 mm (5.9" x 0.8" x 4.9")	250 x 44 x 190.4 mm (9.8" x 1.7" x 7.5")	250 x 44 x 190.4 mm (9.8" x 1.7" x 7.5")
	Weight	0.7 Kg (1.55lb)	2.3 Kg (4.8lb)	2.3 Kg (4.8lb)
OS Support		Linux, Windows 10	Linux, Windows 10	Linux, Windows 10
Advantech S/W Packages		- QuickStart Linux Image (Ubuntu based reference BSP) including -- afwu -- Imsensors -- flashrom -- Sierra QMI drivers -- Intel DPK -- Intel QAT -- DUI (Offline Diagnostics) Individual packages: - DUI (Offline Diagnostics)	- QuickStart Linux Image (Ubuntu based reference BSP) including -- afwu -- Imsensors -- flashrom -- Sierra QMI drivers -- Intel DPK -- Intel QAT -- DUI (Offline Diagnostics) Individual packages: - DUI (Offline Diagnostics)	- QuickStart Linux Image (Ubuntu based reference BSP) including -- afwu -- Imsensors -- flashrom -- Sierra QMI drivers -- Intel DPK -- Intel QAT -- DUI (Offline Diagnostics) Individual packages: - DUI (Offline Diagnostics)
IPMI		-	-	-
MTBF		178,101hrs	320,415hrs	-



FWA-1012VC	FWA-1112VC	FWA-1212VC
Tabletop	Tabletop	Tabletop
Intel® Atom™ C3338/C3558/C3758	Intel® Atom™ C3338/C3558/C3758	Intel® Atom™ C3336/C3558
2/4/8-core	2/4/8-core	2/4-core
1.6G/2.2G/2.2G	1.6G/2.2G/2.2G	1.6G/2.2G/2.2G
≤8C L2 is 2MB/Core; >8C is 2MB/Core Pair	2MB/2MB	2MB/2MB
-	-	-
AMI Efi 64Mbit	AMI Efi 64Mbit	AMI Efi 64Mbit
VT-x, VT-d, SR-IOV	VT-x, VT-d, SR-IOV	VT-x, VT-d
DDR4 2400MHz	DDR4 1866/2133/2400MHz	DDR4 1866/2133/2400MHz
64GB	32GB	32GB
1x 288-pin DIMM for 2 core 2x 288-pin DIMM for 4/8 core	1x 260-pin SODIMM	1x 260-pin SODIMM
Yes	Yes	Yes
1x Intel i350	2x Intel i210	2 x Marvell 88E1543
1x Marvell phy 88E1543	1x Intel x553(CPU)	4 x Intel i211
2x 10/100/1000BASE-T RJ45 and 2x SFP via Intel i350 4x 10/100/1000BASE-T RJ45 port via Marvell 88E1543 (2 of 4 can support POE+)	2x 10/100/1000BASE-T RJ45 via Intel i210 2x 10/100/1000BASE-T RJ45 port via Intel x553	2 Combo ports support SFP via Marvell 88E1543, 4 GbE RJ45 via Intel i211
-	2x 10G/1G SFP+ via Intel x553	-
-	-	-
-	-	-
-	-	-
-	-	-
1x B-Key for M.2 2242/2280 SSD or 4G LTE 1x B-Key for M.2 2242 SSD or 4G LTE	1x M.2 3052 B-key 5G or 1x M.2 3042 B-key 4G LTE 1x M.2 2230 E-key WiFi6 or WiFi5	1x M.2 3052 B-key 5G or 1x M.2 3042 B-key 4G LTE 1x M.2 2230 E-key WiFi5 or WiFi6
1x Half size WiFi5 module 1x Full size WiFi5 module	(Option: 1x Full size WiFi5 by inquiry)	1 x Mini-PCIe for 4G LTE or WiFi5
2	2	2
1x 2.5" SATA3.0 Gen3 SSD bracket (Max 9.5mm height only) (only on C3758 SKU)	-	-
-	-	-
1x B-Key for M.2 2242/2280 SSD or 4G LTE 1x B-Key for M.2 2242 SSD or 4G LTE	1x B-Key for M.2 2280 SSD	1x B-Key for M.2 2280 SSD
-	-	-
1 (Option)	1 (Option)	1
-	-	-
1	1	1
2x USB3.0	2x USB3.0	2x USB2.0
-	-	-
-	-	-
Power, 3x SW define, HDD, WiFi5, 4G LTE, WiFi5 or 4G LTE	Power, HDD, 5G or 4G LTE, 5G or 4G LTE or WiFi5 or WiFi6, SW define by sku	-
-	Yes	-
1x Power Switch 1x Software definable button	-	-
None but optional by TPM1.2 or TPM2.0 module	None but optional by TPM1.2 or TPM2.0 module	None but optional by TPM1.2 or TPM2.0 module
DC	DC	DC
36W for 2 core 60W for 4/8 core	36W	36W
100V ~ 240V	100V ~ 240V	100V ~ 240V
DC Jack (lockable screw type) 12V 5A, 60W external adaptor	DC Jack (lockable screw type) 12V 3A, 36W external adaptor	DC Jack (lockable screw type) 12V 3A, 36W external adaptor
0 ~ 40 °C (32 ~ 104 °F)	-20 ~ 60 °C (-4 ~ 140 °F) 8core -20 ~ 70 °C (-4 ~ 158 °F) 2/4core	-20 ~ 60 °C (-4 ~ 140 °F) 8core -20 ~ 70 °C (-4 ~ 158 °F) 2/4core
-40 ~ 60 °C (-40 ~ 140 °F)	-40 ~ 85 °C (-40 ~ 185 °F)	-40 ~ 85 °C (-40 ~ 185 °F)
With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis
With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration	With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration	With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration
2x system fan with smart fan(for 8core SKU) or 2x system fan with smart fan(for 2/4core SKUs)	fanless	fanless
Rack/Wall-mounting (Option)	Rack/Wall-mounting (Option)	Rack/Wall-mounting (Option)
250 x 190 x 44 mm (9.8" x 7.5" x 1.7")	220 x 160 x 44 mm (8.7" x 6.3" x 1.7")	227x44x167.8mm (8.9" x 1.7" x 6.6")
2.3kg (4.8lb)	2.3kg (4.8lb)	-
Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)
- QuickStart Linux Image (Ubuntu based reference BSP) including -- afu -- lmsensors -- flashrom -- Sierra QMI drivers -- Intel DPDK -- Intel QAT -- DUI (Offline Diagnostics) Individual packages: - DUI (Offline Diagnostics)	ALBPCU APOECU Servier iManager(Linux base) -Health guard -Diagnostic framework -Sensor reader -FRU utility -PSU status -Network device identifier(NDI)	ALBPCU APOECU Servier iManager(Linux base) -Health guard -Diagnostic framework -Sensor reader -FRU utility -PSU status -Network device identifier(NDI)
-	-	-
114,700hrs	TBD	TBD

Selection Guide



Model		FWA-1320	FWA-2012	FWA-2320
SPEC				
Form Factor		Tabletop	1U - Rack Mount	1U - Rack Mount
Processor System	Processor	Intel® Atom™ C2358/2558	Intel® Atom™ C3558/C3758/C3958	Intel® Atom™ C2358/2558/C2758
	Core Number	2/4-core	4/8/16-core	2/4/8-core
	Frequency	1.7GHz/2.4GHz	2.2GHz/2.2GHz/2.0GHz	1.7GHz/2.4GHz/2.4GHz
	L2 Cache	1MB/2MB	≤8C L2 is 2MB/Core; >8C is 2MB/Core Pair	1MB/2MB/4MB
	L3 Cache	-	-	-
	Chipset	-	-	-
Virtualization		AMI Efi 64Mbit VT-x	AMI Efi 64Mbit VT-x, VT-d, SR-IOV	AMI Efi 64Mbit VT-x
Memory	Technology	DDR3/DDR3L 1600MHz	DDR4 2400MHz	DDR3/DDR3L 1600MHz
	Max. Capacity	16GB	64GB	16GB
	Socket	2x 240-pin DIMM	2x 288-pin DIMM	2x 240-pin DIMM
	ECC Support	Yes	Yes	Non-ECC or ECC
Networking	Controller	4 x Marvell 88E1111 2 x Intel I210	4 x Marvell 88E1543 2 x Intel I210	4 x Marvell 88E1111 2 x Intel I210
	1GbE	4x 1GbE RJ45 with 2 segment advanced bypass support via Marvell 88E1111 2 x 1GbE RJ45 for management via Intel I210-AT	4x 1GbE RJ45 via Marvell 1543 with 2 pairs LAN Bypass 2 x GbE RJ45 port via Intel I210	4 x 1GbE RJ45 with 2 segment advanced bypass support via Marvell 88E1111 2 x 1GbE RJ45 for management via Intel I210-AT
	10GE	-	-	-
	Advanced LAN bypass	2x segment (4x ports)	2x segment (4x ports)	2x segment (4x ports)
Expansion	PCIe x 16	-	-	-
	PCIe x 8	-	-	-
	PCIe x 4	-	-	-
	NMC	-	1x NMC	-
	m.2 PCIe	-	-	-
	Mini PCIe	-	-	-
	SIM Socket	-	-	-
Storage	2.5" HDD/SSD	1x 2.5" SATA3.0 Gen3 HDD/SSD bracket (Max 9.5mm height only)	1 x 3.5" HDD	1x 2.5" HDD/SSD (by request) 1x 3.5" HDD
	3.5" HDD	-	1 x 2.5" HDD(option)	-
	m.2 SSD	-	-	-
	mSATA SSD	1	-	1
	eMMC	-	-	-
Display				
I/O	Console port	1	1	-
	USB3.0	-	2x USB3.0	-
	USB2.0	2x USB2.0	-	2x USB2.0
	GPIO	Pin Header	Pin Header	Pin Header
	LED Indicator	Power, HDD status	Power, Status, Location LED	Power, HDD status
	Reset button	-	Yes	-
	Others	1x Power Switch TPM1.2	1x AC Power Switch None but optional by TPM1.2 or TPM2.0 module	1x Power Switch TPM 1.2 supported by Infineon SLB9635TT1.2
Power	Power Type	DC	AC	AC
	Watts	60W	150W	100W
	Input	100 V ~ 240 V	100 V ~ 240 V	100 V ~ 240 V
	Connector	DC Jack	AC 3pin plug	AC 3pin plug
	Power Adaptor	12V 5A, 60W external adaptor	-	-
Environment	Operating Temperature (air flow 0.7 m/sec)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)
	Non-operating Temperature	-40 ~ 60 °C (-50 ~ 140 °F)	-40 ~ 60 °C (-50 ~ 140 °F)	-40 ~ 60 °C (-50 ~ 140 °F)
	Vibration Resistance	With HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With SATA HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis
		With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis		With SSD: 0.3 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis
	Shock Protection	With HDD: 10G, IEC-60068-2-27, half sine, 11ms duration With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration	With SATA HDD: 10G, IEC-60068-2-27, half sine, 11ms duration	With HDD: 10G, IEC-60068-2-27, half sine, 11ms duration With SSD: 10G, IEC-60068-2-27, half sine, 11ms duration
Cooling		1x system fan with smart fan	2 x system fan with smart fan	1x system fan with smart fan
Mechanical	Mounting	Desktop	1U Rackmount	1U Rackmount
	Dimensions (W x H x D)	280 x 44 x 176mm (11" x 1.7" x 6.9")	430 x 44 x 320.7 mm (16.7" x 1.7" x 12.6")	426 x 44 x 318mm (16.8" x 1.7" x 12.5")
	Weight	2 Kg (3.3 lb)	6.6 Kg (14.5 lbs)	4.5 Kg (9.9 lb)
OS Support		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) including -- afru -- lmsensors -- flashrom -- Advanced LBP Utility -- DJI (Offline Diagnostics) Individual packages: - Advanced LBP Library - DJI (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP) including -- afru -- ipmitool -- lmsensors -- LCD4Linux -- Intel DPDK -- Advanced LBP utility Individual packages: - Advanced LBP utility	- QuickStart Linux Image (CentOS based reference BSP) including -- afru -- lmsensors -- flashrom -- LCD4Linux -- Advanced LBP Utility -- DJI (Offline Diagnostics) Individual packages: - Advanced LBP Library
IPMI		-	Option by Advantech LOM Module	-
MTBF		325,040hrs	268,349hrs	325,040hrs



FWA-3050	FWA-3260	FWA-5020	FWA-5070
1U - Rack Mount	1U - Rack Mount	1U - Rack Mount	1U - Rack Mount
Intel® Xeon® processor D-2100 processor family	Intel® Xeon® processor D-1500 processor family	1/2x Intel® Xeon® E5-2600 v3/v4 processor family	1x 1st/2nd gen. Intel® Xeon® Scalable Processor family
4/8/16-core Option: 12/14/16C	Default: 4/8-core Option: 2/6/12/16-core	8C/10C/12C/14C/ 16C/18C/ 20C/22C	8C/10C/12C/14C/16C/18C/ 20C/22C/24C/26C/28C
1.9G~2.3GHz	1.7GHz~2.4GHz	2.0GHz/2.1GHz/2.2GHz/2.3GHz/2.4GHz/2.6GHz	2.0GHz/2.1GHz/2.2GHz/2.3GHz/2.4GHz/2.6GHz/3.0GHz 2/3.2GHz/3.4GHz/3.6GHz
11MB/22MB	3MB/6MB/9MB/12MB/18MB/24MB	30MB ~ 55 MB	4MB - 28MB Up to 38.5MB
-	-	Intel C612	Intel C626 or C621
AMI Efi 64Mbit	AMI Efi 64Mbit	AMI Efi 64Mbit	AMI Efi 64Mbit
VT-x, VT-d, SR-IOV	VT-d, VT-d, SR-IOV	VT-d, VT-d, SR-IOV	VT-d, VT-d, SR-IOV
Max. DDR4 2133/2400/2666MHz	DDR4 2400MHz	DDR4 2400MHz	DDR4 2400/2666MHz
128GB RDIMM/256GB LRDIMM	128GB	512GB	768GB
4x 288-pin DIMM	4x 288-pin DIMM	8/16x 288-pin DIMM	12x 288-pin DIMM
Yes	Yes	Yes	Yes
2 x Intel i350 2 x Intel 210 4 x Intel x722(CPU)	4 x Intel i350 2 x Intel i210	1 * Intel i210	Intel i210
4 x 1GbE RJ45 via Intel i350 4 x 1GbE RJ45 with optional 2 segment advanced bypass support via Intel i350 2 x 1GbE RJ45 for management via Intel i210-AT	4 x 1GbE RJ45 with 2 segment advanced bypass support via Intel i350 2 x 1GbE RJ45 for management via Intel i210-AT	4 x 1GbE RJ45 with 2 segment advanced bypass support via I-350 AM4 2 x 1GbE RJ45 for management via Intel i210-AT	2 x 10/100/1000 Mbps RJ45 via Intel i210 chip
4x 10G SFP+ via Intel x722 Option: 2x segment (4x ports)	2x 10G SFP+ via Intel Xeon-D SoC 2x segment (4x ports)	2x 10G SFP+ via Intel X710 (5020 SKU2) 2x segment (4x ports) (5020 SKU2)	2x 10G SFP+ via Intel C626 (by SKU)
1 x HH/HL gen3 x8 slot	A:1 FH/HL A:2 FH/HL (option)	1 HH/HL (Internal Proprietary)	1 HH/HL (Internal Proprietary)
-	2x NMC	-	-
1 x NMC	-	2/4x NMC	4 x NMC
2	-	-	1 x M.2 PCIe Slot (2280, SATA Interface Default, PCIe Interface Option)
-	-	-	-
2x 2.5" SATA SSD/HDD (max. height 9.5mm)	2x 2.5" HDD/SSD	Max. 2 x 2.5" HDD/SSD	Max. 3 x 2.5" HDD/SSD (2 is default)
-	1x 3.5" HDD/SSD(option)	-	-
2x M.2 2280 SSD/NVMe	2x m.2(2280/2242)	-	1 x M.2 2280 1 x mSATA
-	-	2	-
-	-	-	-
1x VGA(rear)	-	VGA box header	VGA box header
1 X RJ45	1	Pin Header	1
2	2	2	2
-	-	-	-
8-bit GPIO	Pin Header	Pin Header	Pin Header
Power/Alert/Location/Software-defined LED	Power, HDD status LED	Power, HDD status LED	Power, Status, Locate LED by IPMI
Yes by programmable software-defined button	Pin Header	Pin Header	Pin Header
-	RS232, 2x USB3.0. Opt. by request	RS232, 2x USB, VGA opt.	1 x power button
None but optional by TPM1.2 or TPM2.0 module	TPM2.0 (Option: TPM1.2 by module)	TPM1.2	None but optional by TPM1.2 or TPM2.0 module
AC: fixed or redundant (Option: redundant DC)	AC: fixed or redundant (Option: redundant DC)	AC: Redundant, Default DC: Redundant, Optional	AC: Redundant, Default DC: Redundant, Optional
300W (1+1) AC/DC (Option: ATX 250W)	250W / 300W (1+1)AC/DC	650W	AC: 650W / DC: 800W
100 V ~ 240 V / DC-48V	100 V ~ 240 V / DC-48V	100 V ~ 240 V / DC-48V	100 V ~ 240 V / DC-48V
AC 3pin plug	AC 3pin plug	AC 3pin plug	AC 3pin plug
-	-	-	-
0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)	0 ~ 40 °C (32 ~ 104 °F)
-40 ~ 60 °C (-50 ~ 140 °F)	-40 ~ 60 °C (-50 ~ 140 °F)	-40 ~ 60 °C (-50 ~ 140 °F)	-40 ~ 60 °C (-50 ~ 140 °F)
With SATA HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With SATA HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With SATA HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis	With SATA HDD: 0.5 Grms, IEC 60068-2-64, 5-500Hz, 1hr/axis
With SATA HDD: 10G, 11ms, IEC-60068-2-27, X,Y,X-X,-Y-Z axis, 3times per axis	With SATA HDD: 10G, 11ms, IEC-60068-2-27, X,Y,X-X,-Y-Z axis, 3times per axis	With SATA HDD: 10G, 11ms, IEC-60068-2-27, X,Y,X-X,-Y-Z axis, 3times per axis	With SATA HDD: 10G, 11ms, IEC-60068-2-27, X,Y,X-X,-Y-Z axis, 3times per axis
Max. 4x system fan with smart fan, (Option: Hot-swappable redundant FAN)	4x system fan with smart fan	2/3x system fan with smart fan	3x system fan with smart fan
1U Rackmount	1U Rackmount	1U Rackmount	1U Rackmount
438 x 44 x 420mm (17.2" x 1.7" x 16.5")	430 x 44 x 500mm (16.6" x 1.7" x 19.7")	438 x 44x 625 mm (17.24" x1.732" x24.61")	438 x 44 x 550(mm)
15 Kg (33lb)	A SKU:15 Kg (33lb) B SKU:13 Kg (29lb)	18 KG	20 KG
Linux (CentOS, Red Hat, Fedora, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)	Linux (CentOS, Red Hat, Ubuntu)
ALBPCU APOECU ipmitool Servier iManager(Linux base) -Health guard -Diagnostic framework -Network device identifier(NDI)	- QuickStart Linux Image (CentOS based reference BSP) including -- afdu -- ipmitool -- LCD4Linux -- Imsensors -- flashrom -- LCD4Linux -- Advanced LBP Utility Individual packages: - Advanced LBP Library	- QuickStart Linux Image (CentOS based reference BSP) including -- afdu -- ipmitool -- LCD4Linux -- Advanced LBP Utility -- Intel DPDK -- Intel QAT -- DUJ (Offline Diagnostics) Individual packages: - Advanced LBP Library -- DUJ (Offline Diagnostics)	- QuickStart Linux Image (CentOS based reference BSP) including -- afdu -- ipmitool -- LCD4Linux -- Advanced LBP Utility -- Intel DPDK -- Intel QAT -- DUJ (Offline Diagnostics) Individual packages: - Advanced LBP Library -- DUJ (Offline Diagnostics)
IPMI v2.0 compliant BMC with web interface 249,927hrs(AC PSU) 82,438hrs(DC PSU)	Option by Advantech LOM Module 162,280hrs	IPMI v2.0 compliant BMC with web interface 90,668hrs	IPMI v2.0 compliant, with web interface and iKVM 166,753hrs

Selection Guide

Type	Standard	FWA-T011	FWA-1010VC	FWA-AAL1010	FWA-1320	FWA-2320
Safety	CB IEC 60950-1:2005, AMD1:2009, AMD2:2013, EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	●	●	●	●	●
	UL UL 60950-1, 2nd Edition, 2019-05-09 / CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10	●	●	●	●	●
	CB IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11:2017	●	●	●	●	●
	UL UL 62368-1, 2nd Edition, 2014-12-01 / CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	●	●	●	●	●
	LVD EN 62368-1:2014+A11:2017	●	●	●	●	●
	Russia: EAC				●	●
	Argentina: S-Mark					
	Taiwan: BSMI (CNS14336-1)		●			
	South Africa: SABS NRCS-LoA					
	China: CCC GB4943.1 2011	●	●	●	●	●
EMC	EN 300 386 for Network Equipment				●	●
	Australia/New Zealand: AS/NZS CISPR 32					
	Europe: EN 55024(CISPR 24)				●	●
	Europe: EN 55035(CISPR 35)					
	Europe: EN 55032				●	●
	EN 61000-6-2				●	●
	IEC 61000-3-2				●	●
	IEC 61000-3-3				●	●
	Europe: EN 55024				●	●
	IEC 61000-6-4				●	●
	IEC 61000-4-2				●	●
	IEC 61000-4-3				●	●
	IEC 61000-4-5				●	●
	IEC 61000-4-6				●	●
	IEC 61000-4-8				●	●
	IEC 61000-4-11				●	●
	Europe: EN 55035					
	IEC 61000-6-4					
	IEC 61000-4-2					
	IEC 61000-4-3					
	IEC 61000-4-5					
	IEC 61000-4-6					
	IEC 61000-4-8					
	IEC 61000-4-11					
	Japan: VCCI				●	●
	USA: FCC CFR 47 Part15, Subpart B, Canada: ICES-3/NMB-3				●	●
	Taiwan: BSMI CNS13438, CNS15663					
	South Africa: SABS SANS 222 (CISPR 22) and SANS 224 (CISPR 24)					
	China: CCC GB/T9254 2008, GB17625.1 2012				●	●
	Korea: KCC					
EMC	Australia/New Zealand: AS/NZS CISPR 32		●			
	Europe: EN 55024(CISPR 24)	●	●	●		
	Europe: EN 55035(CISPR 35)					
	Europe: EN 55032	●	●	●		
	EN 61000-6-2	●	●	●		
	IEC 61000-3-2	●	●	●		
	IEC 61000-3-3	●	●	●		
	Europe: EN 55024	●	●	●		
	IEC 61000-6-4	●	●	●		
	IEC 61000-4-2	●	●	●		
	IEC 61000-4-3	●	●	●		
	IEC 61000-4-5	●	●	●		
	IEC 61000-4-6	●	●	●		
	IEC 61000-4-8	●	●	●		
	IEC 61000-4-11	●	●	●		
	Europe: EN 55035					
	IEC 61000-6-4					
	IEC 61000-4-2					
	IEC 61000-4-3					
	IEC 61000-4-5					
	IEC 61000-4-6					
	IEC 61000-4-8					
	IEC 61000-4-11					
	Japan: VCCI			●		
	USA: FCC CFR 47 Part15, Subpart B, Canada: ICES-3/NMB-3	●	●	●		
	Taiwan: BSMI CNS13438, CNS15663		●			
	South Africa: SABS SANS 222 (CISPR 22) and SANS 224 (CISPR 24)					
	Korea: KCC		●			
	China: CCC GB/T9254 2008, GB17625.1 2012	●	●	●		
	RF	WLAN USA: FCC Part 15C (802.11b/g/n)	▲	●	●	
USA: FCC Part 15E (802.11a/n) (bands 1 and 4)		▲	●	●		
USA: FCC Part 15C (802.11ac)		▲	●	●		
Europe: EN 300 328 (2.4GHz)		▲	●	●		
Europe: EN 201 893(5GHz)		▲	●	●		
WLAN USA: FCC Part 22/24/27		▲	●	●		
WLAN Europe: EN 301 908-1 (WCDMA+LTE)		▲	●	●		
WLAN Europe: EN 301 908-2 (LTE)		▲	●	●		

● Available

▲ Under evaluation

Remark: Please contact your Advantech representative for all details

FWA-FLEXIWAN

Pre-configured Slim uCPE with Ubuntu & flexiWAN SD-WAN



Delivered by Canonical



FWA-T011

I Features

- Verified uCPE configuration pre-loaded and pre-tested with Ubuntu 18.04 LTS + flexiWAN flexiEdge SD-WAN
- Pre-configured to boot out-of-the box with zero touch provisioning
- Based on Advantech FWA-T011 slim uCPE for entry-level deployments
- Features include:
 - Multi-Tenant Accounts and Users, Organization based inventory
 - IPSec over VxLAN tunnels, Tunnel quality metrics
 - Internet Breakout, Static routes configuration
 - Dashboards, Credit card based billing
 - Scheduled auto software upgrade, Northbound API access keys

I Overview

The FWA-FLEXIWAN Starter Kit simplifies the development and testing of entry level white box SD-WAN solutions based on the Advantech FWA-T011. Designed for bare metal deployments, the kit is pre-configured with Ubuntu 18.04 LTS and the flexiWAN flexiEdge software installed as a debian package. The installation adds all the necessary components required for running the flexiEdge router including VPP, FRR, and flexiWAN Agent. All components are installed as Ubuntu system services. As both the Ubuntu and flexiWAN components are open source they require no additional software licenses.

flexiWAN flexiEdge Open-source SD-WAN

flexiWAN flexiEdge is a centrally managed SD-WAN package with integration points in its core that allow for 3rd party logic to be integrated in a performance efficient way. Delivered as an open source package, it is democratizing the second Wave of SD-WAN, allowing enterprises and service providers to better manage and control their networks, and improve the way data/traffic is handled.

Starter Kits

For more information about pricing and ordering please contact us at sdn.nfv@advantech.com.

Advantech model		FWA-T011
Advantech part number		FWA-T011FLX-4CA1S
FlexiWAN sku		FWA-FLEXIWAN-1
SPEC		
Form Factor		Tabletop
Processor System	Processor	Intel® Celeron® Processor J3455
	Core Number	4C/4T
	Frequency	1.5GHz
Memory		Single 4GB Non-ECC SO-DIMM
Storage		Single 64GB M.2 SSD
Ethernet		4x RJ45
WWAN (LTE or 5G)	Spec	Optional
WLAN (WiFi)		Optional
Power supply		External 36W adaptor
Rack-mount kit		Optional
Pre-installed Software		Ubuntu + Open source flexiWAN flexiEdge SD-WAN Software

FWA-ENEAFLEXIWAN

Pre-configured uCPEs with Enea NFV Access & flexiWAN SD-WAN



FWA-1012VC



FWA-3050

I Features

- Verified uCPE configurations pre-loaded and pre-tested with Enea NFV Access
- Includes flexiWAN flexiEdge SD-WAN VNF
- Pre-configured to boot out-of-the box with zero touch provisioning
- Based on Advantech's mainstream whitebox uCPEs: The FWA-1012VC for wide-scale entry to mid-range deployments and the highly configurable FWA-3050 for mid to hi-end enterprise needs.

I Overview

Advantech, Enea and flexiWAN have teamed up to make available 3 starter kits that simplify the development and testing of second-generation SD-WAN solutions. The kits are configured with Enea NFV Access, a small footprint, high performance virtualization platform pre-installed on Advantech white box uCPEs. Each kit includes flexiWAN flexiEdge SD-WAN VNF.

Enea NFV Access

Enea NFV Access is a complete NFVI platform designed for deployment at the customer premise, and optimized for common vCPE and SD-WAN use cases. Not based on OpenStack, it is able to provide full throughput and performance with minimal footprint. It depends on as little as one CPU core and scales to high-end Intel Xeon devices, leading to high deployment flexibility.

flexiWAN flexiEdge Open-source SD-WAN

flexiWAN flexiEdge is a centrally managed SD-WAN VNF with integration points in its core that allow for 3rd party logic to be integrated in a performance efficient way. Delivered as an open source package, it is democratizing the second Wave of SD-WAN, allowing enterprises and service providers to better manage and control their networks, and improve the way data/traffic is handled

Starter Kits

For more information about pricing and ordering please contact us at sdn.nfv@advantech.com.

Advantech model		FWA-1012VC		FWA-3050
Advantech part number		FWA-1012ENFX-4CA1S	FWA-1012ENFX-8CA1S	FWA-3050ENFX-12A1R
ENEAFLEXIWAN sku		FWA-ENEAFLEXI-1	FWA-ENEAFLEXI-2	FWA-ENEAFLEXI-3
SPEC				
Form Factor		Tabletop	Tabletop	1U Rackmount
Processor System	Processor	Intel® Atom™ C3558	Intel® Atom™ C3758	Intel® Xeon® D-2163IT
	Core Number	4-core	8-core	12-core
	Frequency	2.2GHz	2.2GHz	2.1GHz
Memory		Single 8GB ECC UDIMM	Two 8GB ECC UDIMM	Four 8GB ECC UDIMM
Storage		Single 64GB M.2 SSD	Single 128GB M.2 SSD	Single 256GB M.2 SSD
Ethernet		2x 1G SFP 4x RJ45	2 x 1G SFP 6x RJ45(2 for POE)	4 x 10G SFP+ 2x RJ45 (Management) 8x RJ45
WWAN (LTE or 5G)	Spec	Optional	Optional	Optional
	SIM Socket	-	-	-
WLAN (WiFi)		Optional	Optional	Optional
Expansion ^{note}	PCIe expansion slot	-	-	1
	NMC slot	-	-	1
BMC		-	-	Yes
Power supply		External 60W adaptor	External 60W adaptor	Internal 300W AC PSU
Power supply redundancy		-	-	Yes
Rack-mount kit		Optional	Optional	Yes
Slide rail		-	-	Optional
Pre-installed Software		Enea NFVAccess + Open source FlexiWAN flexiEdge SD-WAN		

Note: Usable Expansion is only 1 slot even though the hardware has 2 slots.

FWA-VERSA

Pre-configured white-boxes with Versa Networks FlexVNF



FWA-1010VC



FWA-1012VC



FWA-5070

I Overview

Advantech provides a full range of platforms which are validated by Versa Networks. To streamline global deployment at the enterprise edge, all the kits are pre-configured with the necessary components, firmware and FlexVNF to offer exact performance and feature sets at application level.

FlexVNF

Versa FlexVNF is a multi-service, multi-tenant software platform built from the ground up on cloud principles to deliver scale, segmentation, programmability and automation. It provides both networking and security functions in a single software along with service chaining capabilities. Highly flexible Versa FlexVNF WAN edge software allows customers to deploy a broad spectrum of software-defined solutions from SD-Routing, SD-Security, SD-WAN and SD-Branch. Regardless of where FlexVNF is deployed (on-premises or in the cloud), all network and security capabilities are provisioned and managed centrally through the Versa Director single-pane-of-management platform

Advantech model		FWA-1010VC					FWA-AAL1010			
Advantech part number	-	FWA1010VC1701-T	FWA1010VC1711-T	FWA1010VC1702-T	FWA1010VC1712-T	FWA-AAL1010VC-4CA	FWA-AAL1010VCR-4CA	FWA-AAL1010VC-8CA	FWA-AAL1010VCR-8CA	
Versa sku	V100-EX-NW	V110-EX-NW	V110-EX-L455-W178	V120-EX-NW	V120-EX-L455-W178	V110-NW	V110-LE455-W257	V120-NW	V120-LE455-W257	
SPEC										
Form Factor		Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	
Processor System	Processor	Intel® Atom™ C2358	Intel® Atom™ C2558	Intel® Atom™ C2558	Intel® Atom™ C2758	Intel® Atom™ C2758	Intel® Atom™ C2558	Intel® Atom™ C2558	Intel® Atom™ C2758	
	Core Number	2-core	4-core	4-core	8-core	8-core	4-core	4-core	8-core	
	Frequency	1.7GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz	2.4GHz	
	Chipset	-	-	-	-	-	-	-	-	
Memory		Single 4GB ECC UDIMM	Single 8GB ECC UDIMM	Single 8GB ECC UDIMM	Two 8GB ECC UDIMM	Two 8GB ECC UDIMM	Single 8GB ECC UDIMM	Single 8GB ECC UDIMM	Two 8GB ECC UDIMM	
Storage		Single 64GB M.2 SSD	Single 64GB M.2 SSD	Single 64GB M.2 SSD	Single 128GB M.2 SSD	Single 128GB M.2 SSD	Single 64GB M.2 SSD	Single 64GB M.2 SSD	Single 128GB M.2 SSD	
Ethernet		2x 1G SFP/RJ45 1x RJ45 4x switched RJ45	2x 1G SFP/RJ45 1x RJ45 4x switched RJ45	2x 1G SFP/RJ45 1x RJ45 4x switched RJ45	2x 1G SFP/RJ45 1x RJ45 4x switched RJ45	2x 1G SFP/RJ45 1x RJ45 4x switched RJ45	2x 1G SFP/RJ45 4x RJ45	2x 1G SFP/RJ45 4x RJ45	2x 1G SFP/RJ45 4x RJ45	
WWAN (4G LTE)	Spec	-	-	Cat.6 (for AMER & EMEA)	-	Cat.6 (for AMER & EMEA)	-	Cat.6 (for AMER & EMEA)	-	
	SIM Socket	-	-	1	-	1	-	1	-	
WLAN (WiFi5)		-	-	IEEE 802.11 a/b/g/n/ac	-	IEEE 802.11 a/b/g/n/ac	-	IEEE 802.11 a/b/g/n/ac	-	
Expansion ^{Note}	PCIe expansion slot	-	-	-	-	-	-	-	-	
	NMC slot	-	-	-	-	-	-	-	-	
BMC		-	-	-	-	-	-	-	-	
TPM		TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	
Power supply		External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	
Power supply redundancy		-	-	-	-	-	-	-	-	
Rack-mount kit		Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	
Slide rail		-	-	-	-	-	-	-	-	
Power cord		USA	USA	USA	USA	USA	USA	USA	USA	

Note: Usable Expansion is only 1 slot even though the hardware has 2 slots.

*For details on Versa software please visit <https://www.versa-networks.com>

Advantech model		FWA-1012VC					FWA-1320		
Advantech part number		FWA-1012VC-2CA1V	FWA-1012VC-2CA1VR	FWA-1012VC-4CA1V	FWA-1012VC-4CA1VR	FWA-1012VC-8CA1V	FWA-1012VC-8CA1VR	FWA13201601E-T	FWA13201602E-T
Versa sku		V200-NW	V200-LE455-W302	V210-NW	V210-LE455-W302	V220-NW	V220-LE455-W302	V100	V110
SPEC									
Form Factor		Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	Tabletop	Tabletop
Processor System	Processor	Intel® Atom™ C3338	Intel® Atom™ C3338	Intel® Atom™ C3558	Intel® Atom™ C3558	Intel® Atom™ C3758	Intel® Atom™ C3758	Intel® Atom™ C2358	Intel® Atom™ C2558
	Core Number	2-core	2-core	4-core	4-core	8-core	8-core	2-core	4-core
	Frequency	1.6GHz	1.6GHz	2.2GHz	2.2GHz	2.2GHz	2.2GHz	1.7GHz	2.4GHz
	Chipset	-	-	-	-	-	-	-	-
Memory		Single 4GB ECC UDIMM	Single 4GB ECC UDIMM	Single 8GB ECC UDIMM	Single 8GB ECC UDIMM	Two 8GB ECC UDIMM	Two 8GB ECC UDIMM	Single 4GB ECC UDIMM	Single 8GB ECC UDIMM
Storage		Single 64GB M.2 SSD	Single 64GB M.2 SSD	Single 64GB M.2 SSD	Single 64GB M.2 SSD	Single 128GB M.2 SSD	Single 128GB M.2 SSD	Single 64GB mSATA SSD	Single 64GB mSATA SSD
Ethernet		6x 1G RJ45	6x 1G RJ45	2x 1G SFP 4x RJ45	2x 1G SFP 4x RJ45	2x 1G SFP 6x RJ45(2 for POE)	2x 1G SFP 6x RJ45(2 for POE)	6x RJ45	6x RJ45
WWAN (4G LTE)	Spec	-	Cat.6(for AMER & EMEA)	-	Cat.6(for AMER & EMEA)	-	Cat.6(for AMER & EMEA)	-	-
	SIM Socket	-	2	-	2	-	2	-	-
WLAN (WiFi5)		-	IEEE 802.11 a/b/g/n/ac	-	IEEE 802.11 a/b/g/n/ac	-	IEEE 802.11 a/b/g/n/ac	-	-
Expansion ^{Note}	PCIe expansion slot	-	-	-	-	-	-	-	-
	NMC slot	-	-	-	-	-	-	-	-
BMC		-	-	-	-	-	-	-	-
TPM		TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2	TPM1.2
Power supply		External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor	External 60W adaptor
Power supply redundancy		-	-	-	-	-	-	-	-
Rack-mount kit		Optional	Optional	Optional	Optional	Optional	Optional	-	-
Slide rail		-	-	-	-	-	-	-	-
Power cord		-	-	-	-	-	-	USA	USA

Note: Usable Expansion is only 1 slot even though the hardware has 2 slots.

*For details on Versa software please visit <https://www.versa-networks.com>

Advantech model		FWA-2320			FWA-3260		FWA-5020	FWA-5070
Advantech part number		FWA23201601E-T	FWA23201602E-T	FWA23201603E-T	FWA3260A1702-T	FWA3260A1706-T	FWA5020U1701-T	-
Versa sku		Versa500	Versa510	Versa520	Versa800	Versa810	Versa1000	Versa1800
SPEC								
Form Factor		1U - Rack Mount	1U - Rack Mount	1U - Rack Mount	1U - Rack Mount	1U - Rack Mount	1U - Rack Mount	1U - Rack Mount
Processor System	Processor	Intel® Atom™ C2358	Intel® Atom™ C2558	Intel® Atom™ C2758	Intel® Xeon® D-1528	Intel® Xeon® D-1548	Intel® Xeon® E5-2697 v3	1 x Intel® Xeon® Gold 6212U
	Core Number	2-core	4-core	8-core	6-core	8-core	14-core	24-core
	Frequency	1.7GHz	2.4GHz	2.4GHz	1.9GHz	2.0GHz	2.6GHz	2.4GHz
	Chipset	-	-	-	-	-	Intel C612	Intel C621
Memory		Single 4GB ECC UDIMM	Single 8GB ECC UDIMM	Two 8GB ECC UDIMM	Two 16GB ECC UDIMM	Four 16GB ECC UDIMM	Four 16GB ECC UDIMM	Six 16GB ECC UDIMM
Storage		Single 64GB mSATA SSD	Single 64GB mSATA SSD	Single 128GB mSATA SSD	Single 128GB M.2 SSD	Single 256GB M.2 SSD	Single 512GB 2.5" SSD	Two 512GB 2.5" SSD
Ethernet		6x RJ45	6x RJ45	6x RJ45	2x 10G SFP+ 4x RJ45 2x Mgmt(RJ45)	2x 10G SFP+ 4x RJ45 2x Mgmt(RJ45)	2x 10G SFP+ 4x RJ45 2x Mgmt(RJ45)	8x 10G SFP+ 9x RJ45 1x Mgmt(RJ45)
WWAN (5G or 4G LTE)	Spec	-	-	-	-	-	-	-
	SIM Socket	-	-	-	-	-	-	-
WLAN (WiFi5 or WiFi6)		-	-	-	-	-	-	-
Expansion ^{Note}	PCIe expansion slot	-	-	-	Single full-height/ half-length PCIe x8	Single full-height/ half-length PCIe x8	-	-
	NMC slot	-	-	-	2	2	2	1
BMC		-	-	-	Yes	Yes	Yes	Yes
TPM		TPM1.2	TPM1.2	TPM1.2	TPM2.0	TPM2.0	TPM1.2	TPM1.2
Power supply		External 60W adaptor	External 60W adaptor	External 60W adaptor	Internal single 300W AC	Internal single 300W AC	Internal two 650W AC	Internal two 650W AC
Power supply redundancy		-	-	-	Yes	Yes	Yes	Yes
Rack-mount kit		-	-	-	-	-	-	-
Slide rail		-	-	-	Yes	Yes	Yes	Yes
Power cord		USA	USA	USA	USA	USA	USA	-

Note: Usable Expansion is only 1 slot even though the hardware has 2 slots.

*For details on Versa software please visit <https://www.versa-networks.com>

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