ADVANTECH
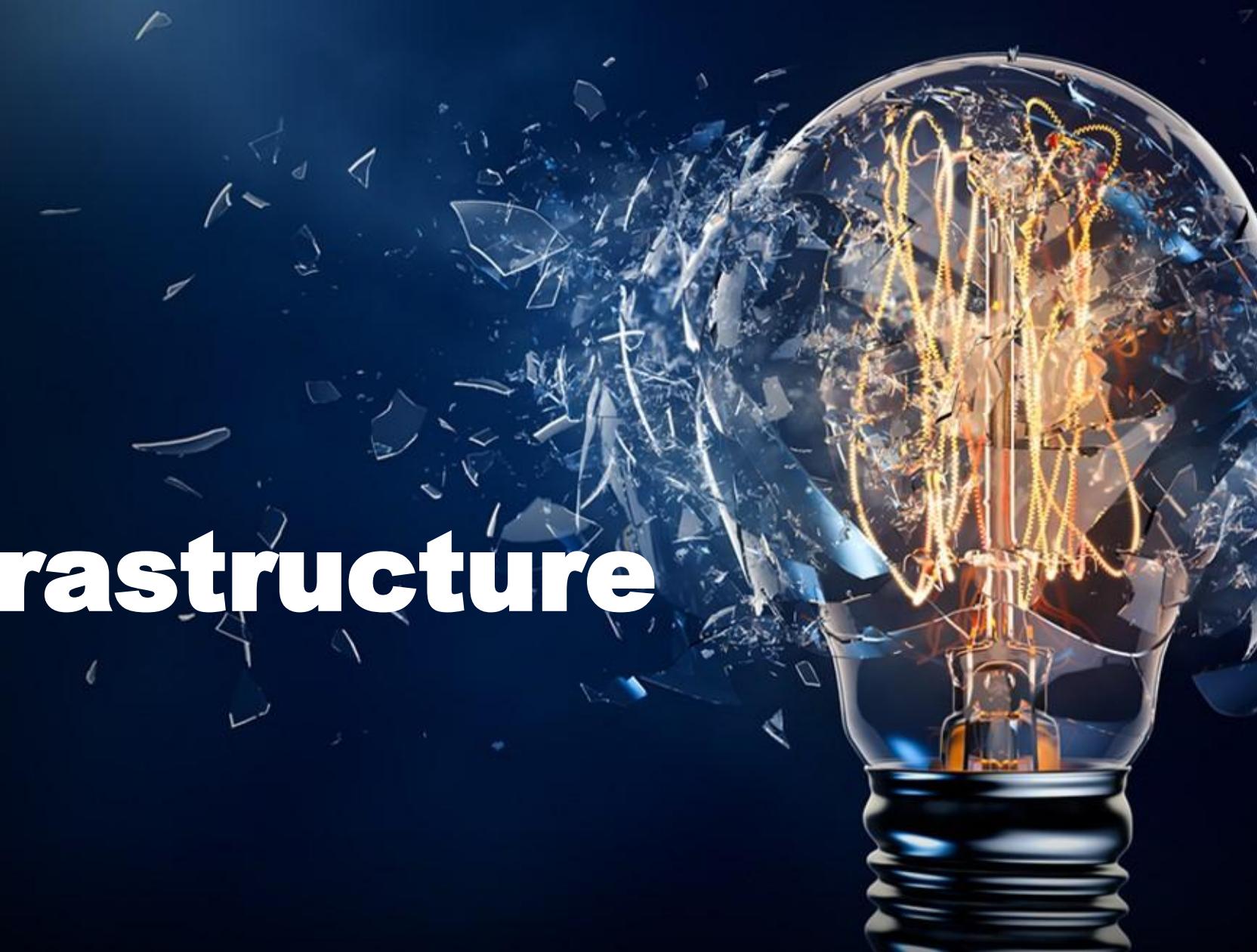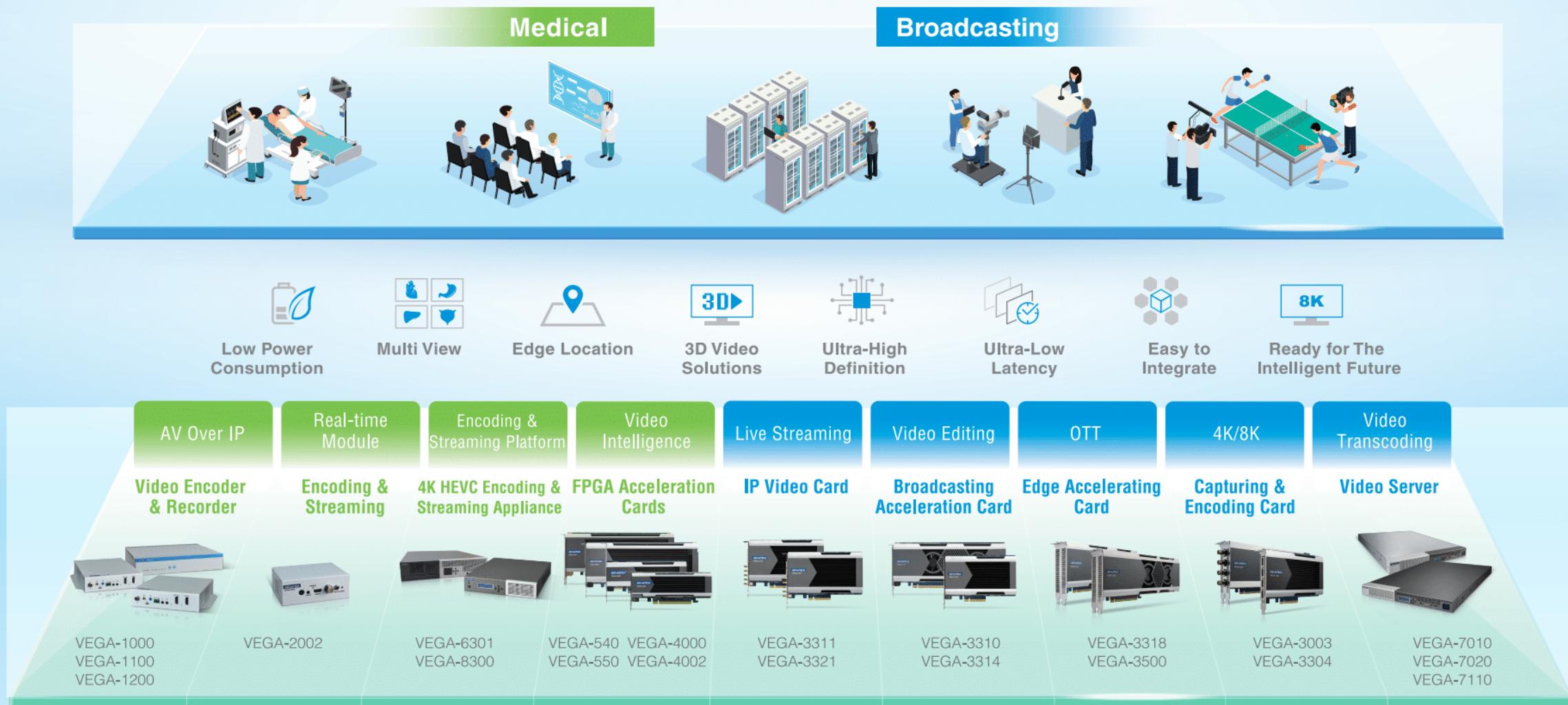
Next-Gen Media Infrastructure

Thomas Lien, Project Manager

Advantech

Advantech's Comprehensive Video Solutions

Medical

Broadcasting

Low Power Consumption	Multi View	Edge Location	3D Video Solutions	Ultra-High Definition	Ultra-Low Latency	Easy to Integrate	Ready for The Intelligent Future

AV Over IP	Real-time Module	Encoding & Streaming Platform	Video Intelligence	Live Streaming	Video Editing	OTT	4K/8K	Video Transcoding
Video Encoder & Recorder	Encoding & Streaming	4K HEVC Encoding & Streaming Appliance	FPGA Acceleration Cards	IP Video Card	Broadcasting Acceleration Card	Edge Accelerating Card	Capturing & Encoding Card	Video Server
VEGA-1000 VEGA-1100 VEGA-1200	VEGA-2002	VEGA-6301 VEGA-8300	VEGA-540 VEGA-4000 VEGA-550 VEGA-4002	VEGA-3311 VEGA-3321	VEGA-3310 VEGA-3314	VEGA-3318 VEGA-3500	VEGA-3003 VEGA-3304	VEGA-7010 VEGA-7020 VEGA-7110

NDI · SDVoE · 8K ULTRA HD · 4K ULTRAHD · 1080p FULL HD · H.265 HEVC · VP9 · AV1

intel · NVIDIA · Ambarella · XILINX

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Advantech Media & Cloud Server Product Offerings

Reliability
- Redundant BIOS & FW
- Redundant PSU & cooling
- High ESD immunity
- EMC class-B barebone design (selected models)
- Dust filter support (selected models)

Serviceability
- Fail-safe BIOS & FW updates via Advantech IPMI Core
- Platform Health Diagnostics (Advantech Server iManager: running on CPU)
- Advantech BMC WebUI (Node Explorer)
- Redfish compliant OEM options

Embedded Background
- Product change notifications on key components for FW and HW
- Customization options

Performance
- 3rd Gen Intel Xeon Scalable processors
- NUMA balanced design
- High I/O and acceleration density
- Workload-optimized Intel Select Solutions configurations
- In-house electrical, mechanical and thermal designs

Longevity
- 7-15 years product life cycle plus extended product warranty
- Fixed BOM for customized product P/N

Environmental
- Extreme wide operating temperature range
- NEBS-3 compliant designs
- IP65 outdoor cabinet configurations
- Chassis mechanical twist strength
- 11 ~ 31.5 inch depth chassis

Deployed Globally in Telecom and Industrial Business and Mission Critical Applications

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Media Infrastructure Served by Advantech Portfolio

Low-Latency Live Video Creation, Production & Distribution

Live Event

VEGA-6000

4G LTE

WiFi

5G

SDI

IP

VEGA-6321

IP Studio

VEGA-7030

FWA-5072

SKY-721

VEGA-3321

MOBILE

4G

1080p FHD

SATELLITE

1080p/4K
FHD/UHD

CABLE/OTT

4K/8K
UHD1/2

Video Cloud

amazon
YouTube
HBO NOW
NETFLIX
sling
hulu
WATCH ESPN
AND MANY MORE
at&t
DIRECTV
verizon✓
au

ADVANTECH

Taiwan News Live Video Production
(VEGA Video Appliance for Live Video Contribution)

3ʳᵈ Party Video Program
Web-based Video Streaming

VEGA-6301
Video Appliance
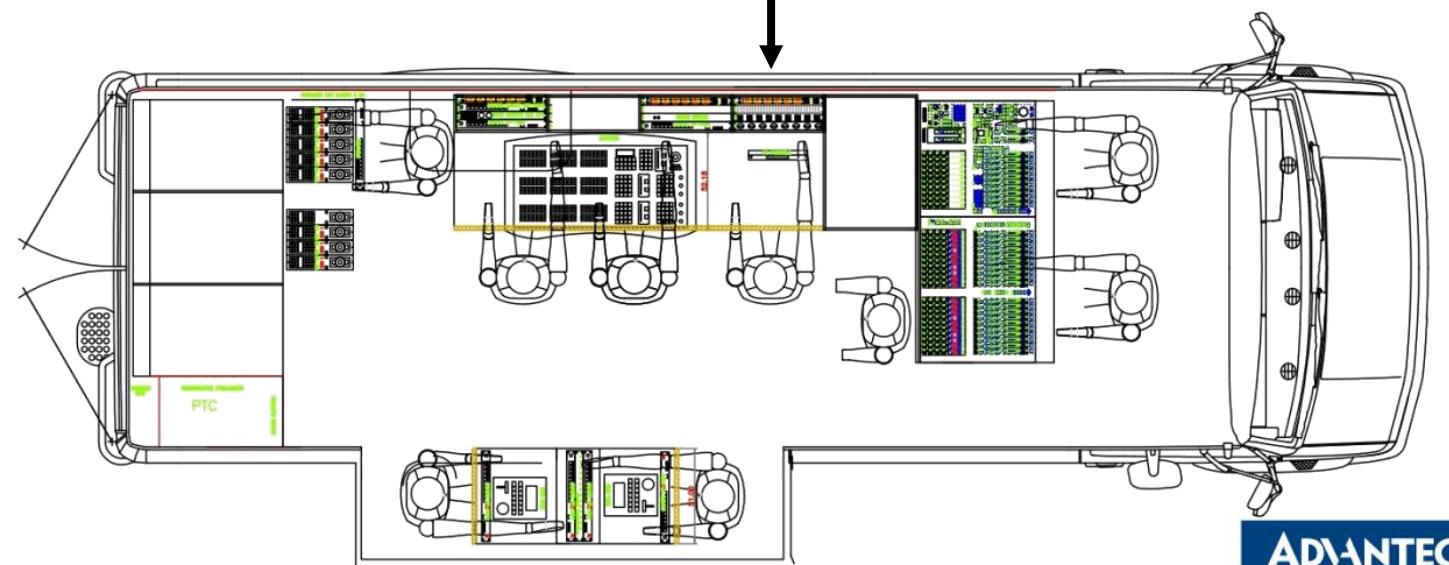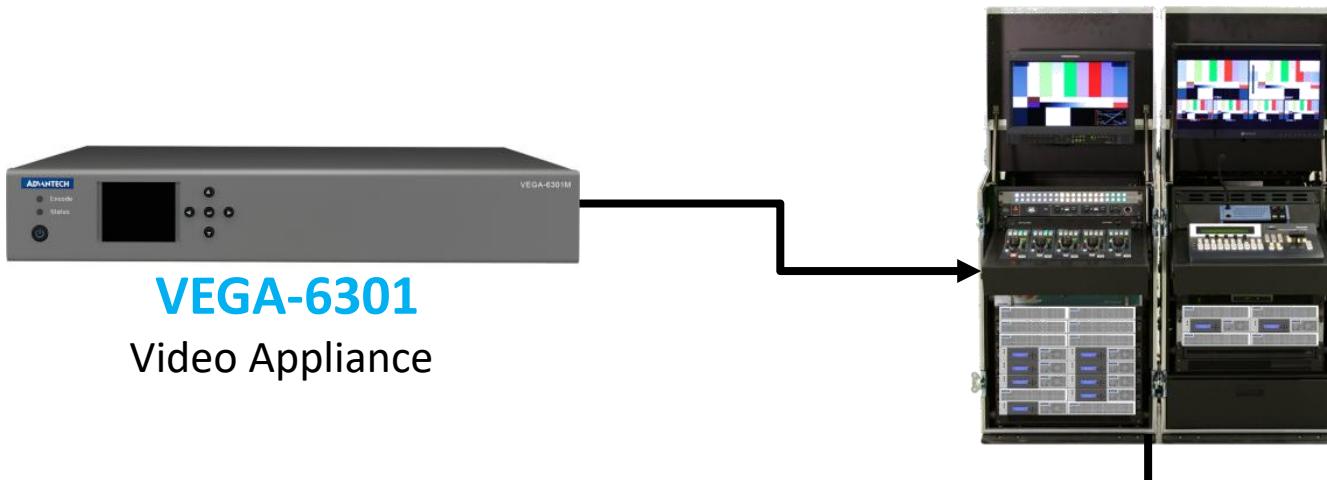
Taiwan Pro-Baseball League 4K Live TV
VEGA-7000 & VEGA-3311Deploy to WINTV 2018

VEGA-7000
Video Server

VEGA-3311
UHD Video Card

3rd Party Video Program
Web-based Video Streaming

ADVANTECH

Medical 4K Recorder Solution Ready Platform
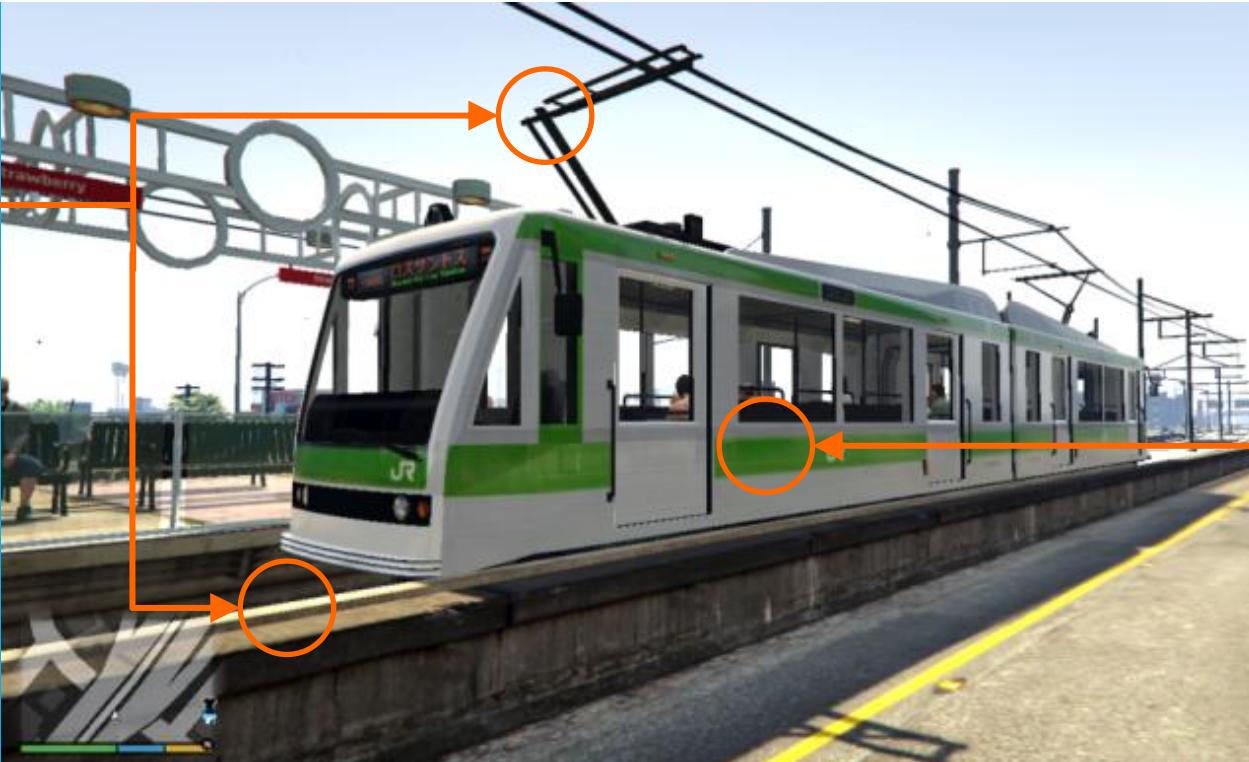## Software Application Ready-To-Go

VEGA-3311
4K Video Card

3rd Party Video Program
Medical Video Recorder &
Management System

Railway Inspection by VEGA Video & AI Products
The Proven Solution Installed on JR Train -- VEGA-7000 + VEGA-3311

- Total 8x 4K high speed camera capturing the power cable line and railway platform

- 2x VEGA-7000 & 8x VEGA-3311 installed in one train

- Record the outside environment and streaming to remote cloud for analytic

- AI platform now leverage the nVidia GPU AI platform

VEGA-7000
Video Server

VEGA-3311
4K Video Card

3rd Party Video Program
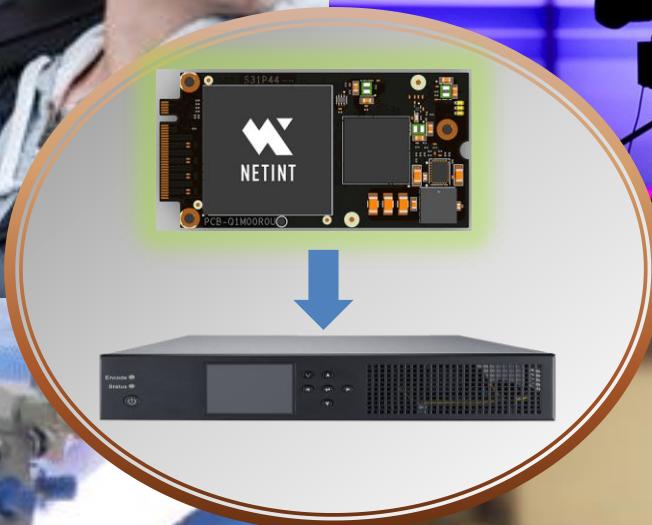Web-based Video Streaming

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New Facilitate Video Streaming Solution at Field
VEGA + Netint T1M: Compact, Low Power, Compression Efficiency

News Gathering

Live Event Streaming

Medical Video Processing
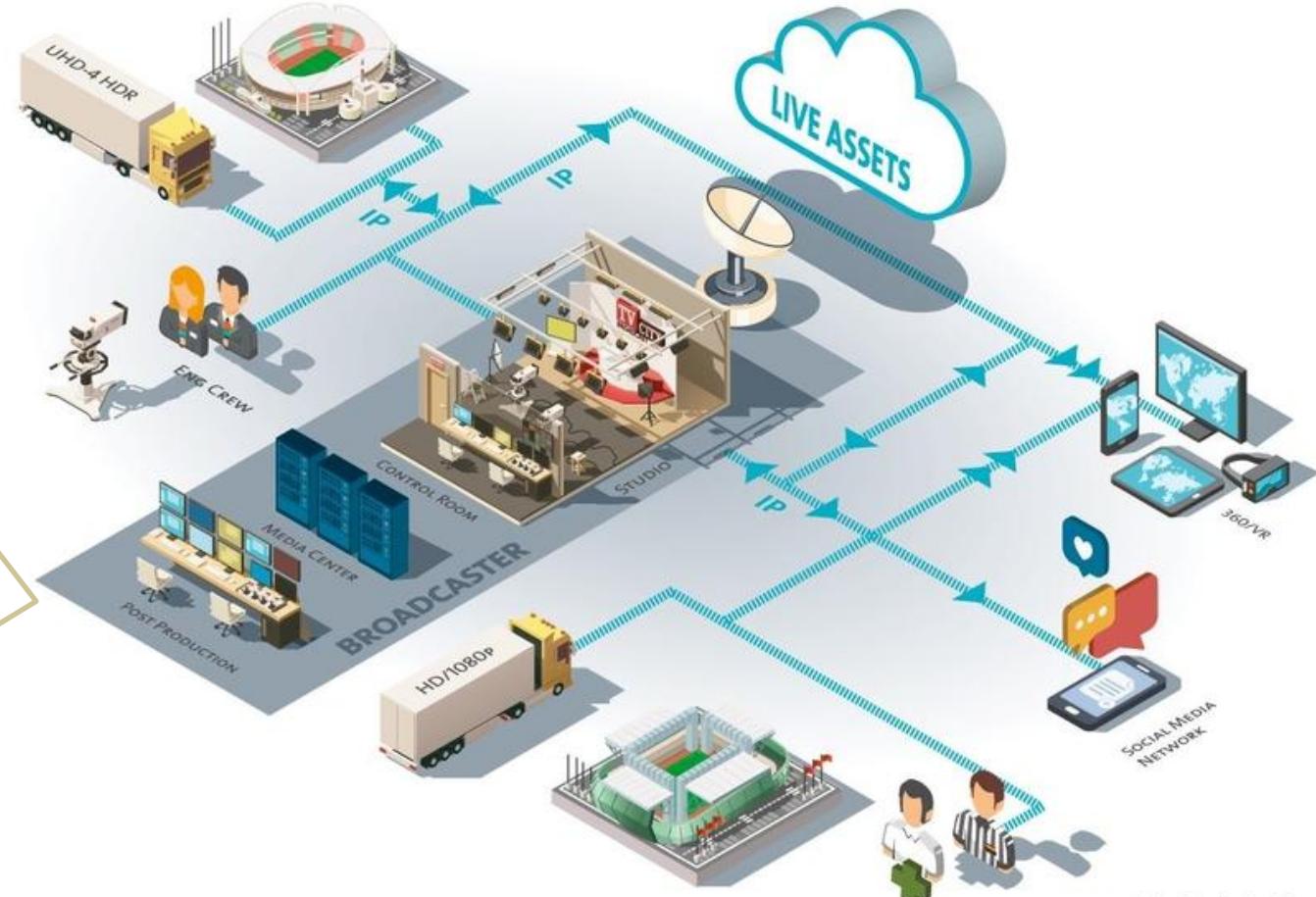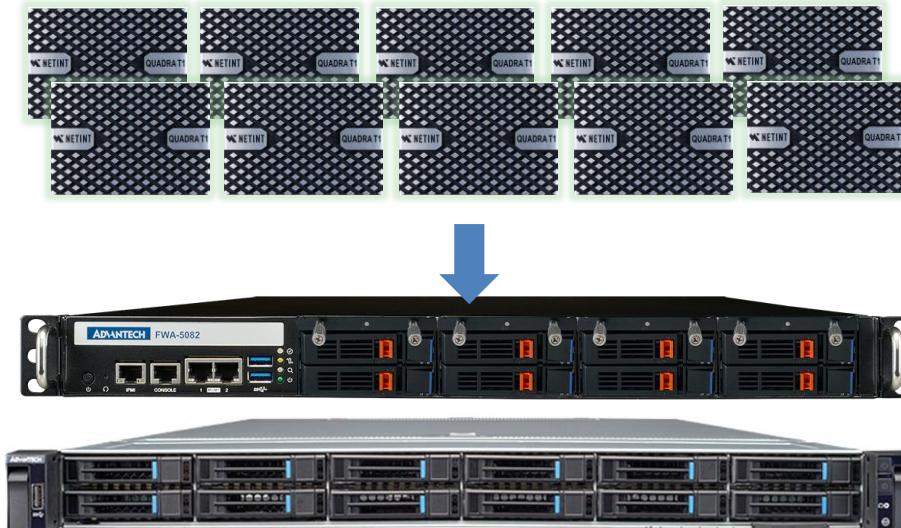
Live Conferencing

ADVANTECH

Realtime & High Channel Density IP Video Processing
FWA & SKY Media Server + Netint T1U : Professional IP Video Content Creation & Delivery

Adv Media Server & T1U

© Live-Production.TV

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FWA-6083 with 8x NMC-S01 & PCIe Slot

- **3x** internal PCIe Gen5 x16 slots for HHHL (Half-height, half-length) cards installation
- Support PCIe bifurcation to support two x4 per card to support 3x Quadra T2A HBA
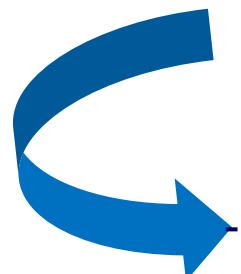
- With 8x NMC-S01 installed, we can support up to **16x U.2** drive bays in FWA-6083
- Changeable NMC to support Ethernet type NMC for additional Ethernet I/O expansion like 10G SFP+, 25G SFP28…etc.

Edge Computing & WISE-Edge in Action

Thank you

ADVANTECH

VEGA Portable Streamer usage case for emergency news gathering

Wifi hotspot
5Ghz wifi support
(802.11 a/n)

Signal booster
a built in signal booster
deliver optimal network
reception

HVEC (H.265)
encoding capabillity
ensures up to 50 %
bitrate reduction

Stream more with less
add additional video
sources for
multiple concurrent
rtmp streams.

Secure
256 aes encryption and
VPN ensures your data

Physical Dimensions
50.8 x 34.3 x 22.9 cm
Weight 5.23 kg
(with 4 hours batteri -
without antennas)

Simple User interface
connect your phone,
tablet or pc to access all
settings

LTE connection
built in modems support
of your region.
Optional support for:
NET 1/ice.net in the
Nordics or
FirstNet in USA

Patch panel
1 x WAN and 1 x LAN
interfaces (i.e. satellite,
ADSL or any available
connection) to increase
network reception

Multiple connections
BNC (3G-SDI) & HDMI
1.4 Interface

Battery powered
low power consumption
delivers from 4-16 hours
of streaming with
hot swap function

Exterior Pockets
four (4) exterior pockets
ensures easy access
to extra batteries and
chargers

One-button startup
automatic input and
format detection makes
the usage simple and
quick.

Optimal coverage
5 internal 3G/4G/LTE/
modems with easy
access

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Taiwan Pro-Baseball League 4K Live TV
(VEGA 7000/3311/MediaFlow Live Video Contribution)

VEGA-7000
Video Server

VEGA-3311
4K Video Encoder

MediaFlow
Web-based Video Streaming

ADVANTECH

Taiwan Cable TV Operator 4K Content Delivery
(VEGA 7010/3314/MediaFlow Realtime UHD Video Transcoding)

VEGA-7010
Video Server

VEGA-3314
4K Video Encoder

MediaFlow
Web-based Video Streaming

ADVANTECH

Intelligent Driverless Baggage Tractor in Trail

Remote ◄—— 2000M ——► **Local**

5G

Feedback **<100ms**

Control **<30ms**

CDN – Content Delivery Network

VDI server for Regional CDN
SKY-721E3
(2x 24~32 cores / 96~128 GB RDIMM / 120 TB / dual 10GbE NIC)

Origin Server

CDN

CDN

Regional nodes

Edge nodes

Lightweight CDN

Live Stream
Content Input

5G

5G

5G

WiFi

5G

WiFi

ADVANTECH
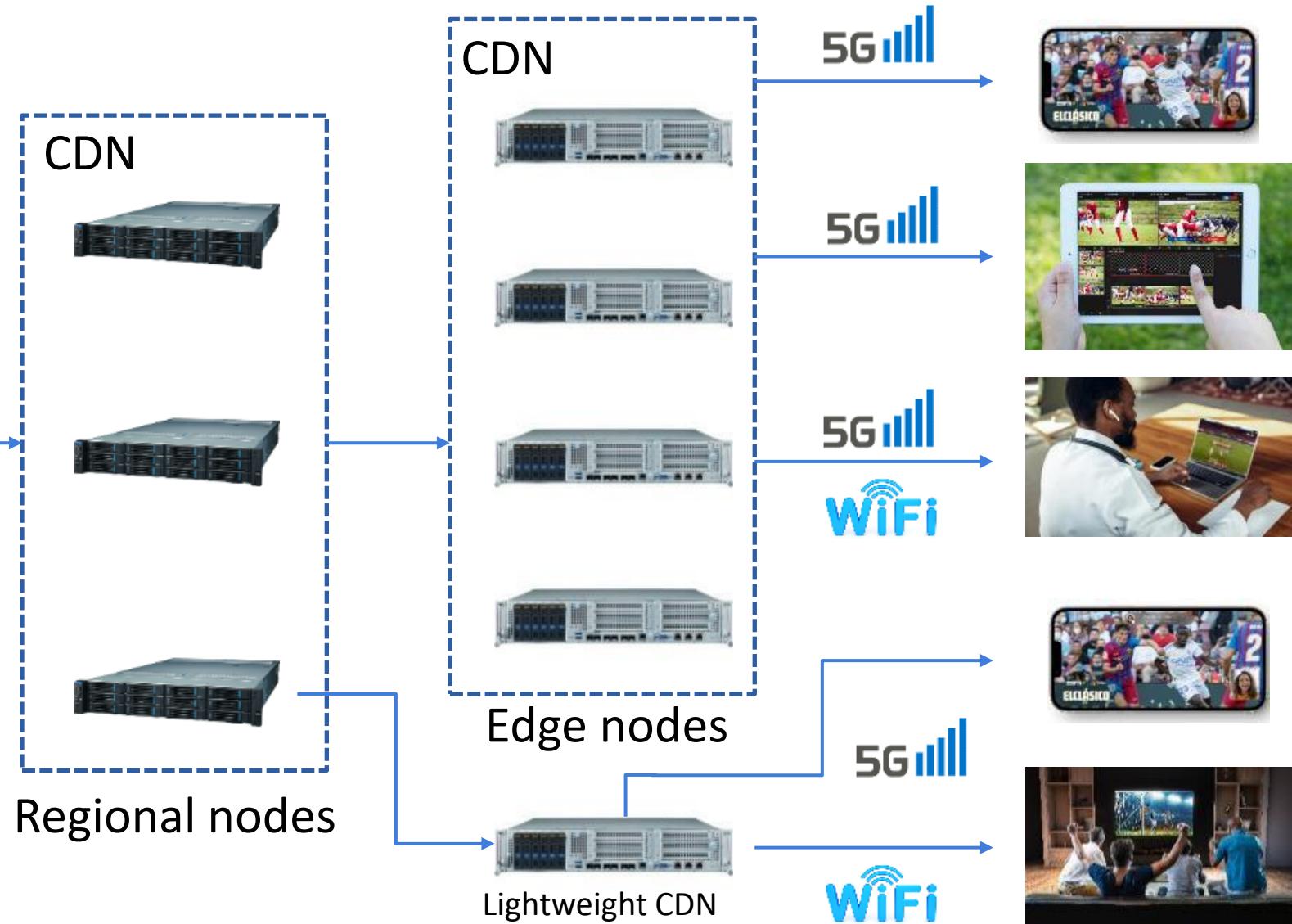
CIoT SKY Server Product Portfolio Strategy

SKY-8101

SKY-8201

Robust, Short Depth High-Performance Platform for Business Critical Application

SKY-8132S

SKY-8132S-11

Wide Temperature Carrier Grade NFV + SDN Platforms

SKY-8101D

High Speed Networking and Video Broadcasting Platforms

SKY-6000

SKY-7000

SKY-8000L

Optimized for Edge AI & HCI Virtualization with Compute / Network / Storage

Platforms to Meet the Requirements of Different Enterprise Solutions

ADVANTECH

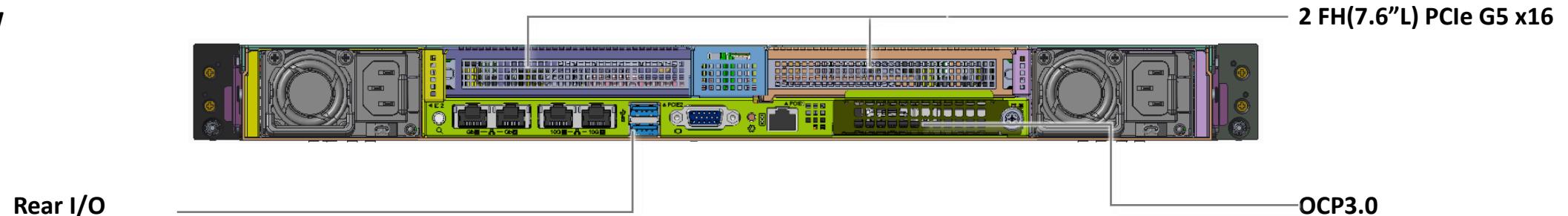# High Level HW Specifications

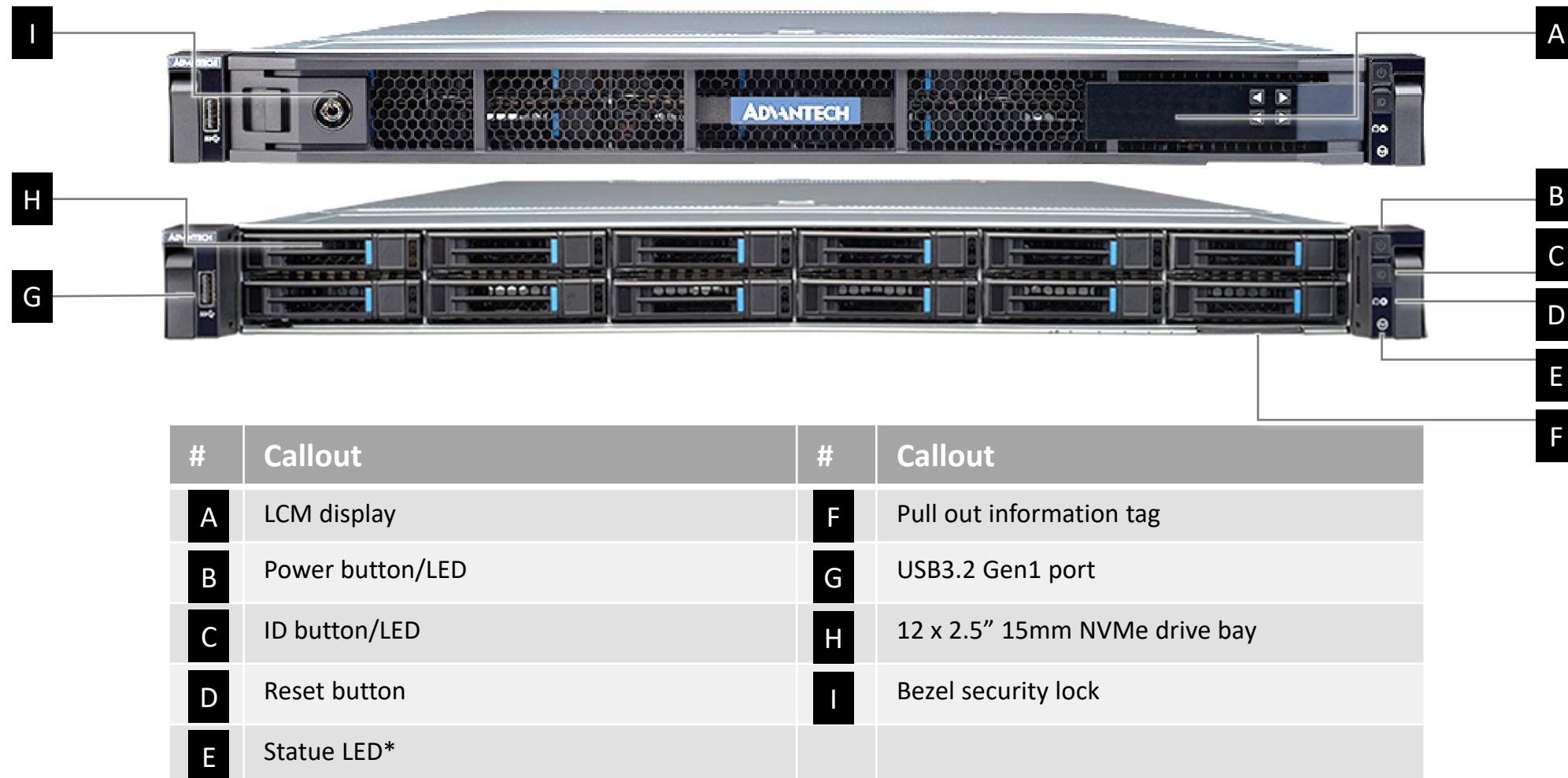| Feature	Detail
Form Factor	• 1U Rackmount (438 x 770 x 43.2 mm)
General	• Single AMD EPYC™ 9004/9005 series processor in SP5 socket, TDP up to 300W* Note *: Air cooled CPUs with TDP over 300W only supported under specific conditions
Memory	• DDR5 RDIMM up to 6400MT/s (AMD EPYC™ 9005 Series Processor) • Max 12 256GB DDR5 RDIMM, up to 3TB (1DPC)
Networking	• 2 x GbE RJ-45 ports • 2 x 10G RJ-45 ports
Expandability	• 2 x PCIe G5 x16 FH3/4L • 1 x OCP3.0 PCIe G5 x16
Storage	• 12 x 2.5" 15mm hot-swappable drive bays, support up to 12 PCIe G5 NVMe drives • 2 x M.2 2280 NVMe slots
I/O Connectivity	• Front: 1 x USB3.2 Gen1; Power button/LED; ID button/LED; Reset button; Status LED* • Rear: 2 x USB3.2 Gen 1; ID button/LED; VGA; RS-45 Console; PSU fail LED
Power Supply	• 1600W 1+1 80 PLUS Platinum Power Supply with PMBus
Operating Temperature	• 0 °C (32 °F) to 35 °C (95 °F)
No-Operating Temperature	• -40 ~ 70°C (-40 ~ 158°F), 95% relative humidity (RH) at 60°C, non condensing
Cooling	• 8 x 4056 hot-swap fan with SmartFan control
Platform Management	• IPMI 2.0 based on AST2600, KVM with shared NIC LAN
Security	• TPM2.0; Chassis Intrusions; Bezel Lock

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Front and Rear Views

FRONT VIEW

Ear Handle

12 NVMe U.2 Drive

Ear Handle

Pull-out Information Tag

REAR VIEW

2 FH(7.6"L) PCIe G5 x16

Rear I/O

OCP3.0

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Product Overview (Front Side)

- Components on the front of the server

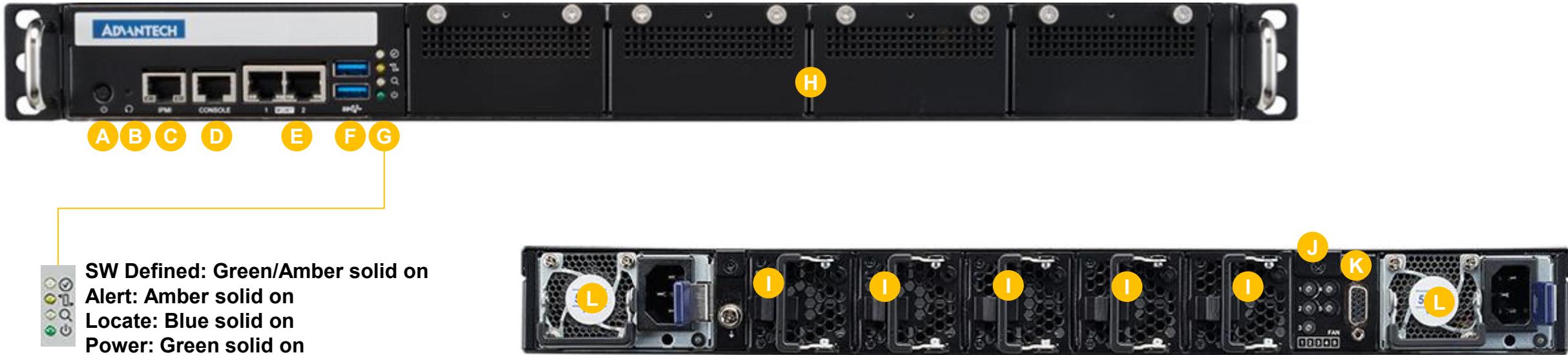| #	Callout	#	Callout
A	LCM display	F	Pull out information tag
B	Power button/LED	G	USB3.2 Gen1 port
C	ID button/LED	H	12 x 2.5" 15mm NVMe drive bay
D	Reset button	I	Bezel security lock
E	Statue LED*		

Note*: Bi-color LED, Red color indicates the system status, while the Green color is reserved and can be controlled via pcimg command

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1U SKU FWA-5072 Introduction

Processor System	Processor	Single Intel 5th generation Xeon scalable processor
	Core count	Up to 60-core
	Base Frequency	Up to 3.7 GHz
Memory	Technology	DDR5, up to 5600 MT/s
	Max Capacity	1024 GB (64GB per slot)
	Socket	16 x 288-pin DIMM
	ECC support	RDIMM
Networking	Controller	2 x Intel i210
	1GbE	2 x 1GbE RJ45
PCIE Expansion	PCIe Slot	1 x PCIe Gen4 x16 HH/HL card (internal)
Storage	2.5" Bay	2 x Internal 2.5" SATA/NVMe SSD (7mm thickness)
	M.2	2 x 2280 M.2 SATA SSD

I/O	Console	1 x RJ45 type console
	USB	2 x USB 3.0
	LED	1 x Power LED, 1 x Alert LED, 1 x Locate LED, 1 x Software-defined LED
	Display	1 x VGA port
	Button	1 x Power button, 1 x Software-defined button
	Others	1 x dedicated 1GbE LAN for IPMI
NMC Expansion	NMC	4 x PCIe Gen5 x8
Fan		5 x Hot swap 4056 mm fan
Power	Power Type	AC Redundant CRPS (Option: DC Redundant CRPS)
	Watts	550W
	Input	AC: 100-240V~, 12-7A, 50-60Hz
Dimension		438 x 43.7 x 600 mm (W x H x L)

Front & Rear System View

SW Defined: Green/Amber solid on
Alert: Amber solid on
Locate: Blue solid on
Power: Green solid on

A	Power button	H	4 x Advantech NMC slots
B	SW control button	I	5 x 4056 fan modules (hot-swap)
C	1 x GbE LAN (dedicated for IPMI/BMC)	J	FAN status LED
D	RJ45 console port	K	VGA port
E	2 x GbE RJ45 ports for MGMT	L	800W/550W Redundant PSU
F	2 x USB 3.0 ports		
G	System LEDs		

FWA-5072 with 4x NMC-S01

Advantech NMC-S01

- *2x 2.5" disk bays expansion kit for NMC slot*
- *Support disk type*
    - *U.2 NVMe SSD (x4)*
    - *6Gbps SATA SSD (via additional RAID card)*
    - *6Gbps SAS SSD (via additional RAID card)*

- **With 4x NMC-S01 installed, we can support up to 8x U.2 drive bays in FWA-5072**
- **Changeable NMC to support Ethernet type NMC for additional Ethernet I/O expansion like 10G SFP+, 25G SFP28…etc.**

ADVANTECH

2U SKU FWA-6083 Introduction

Processor System	**Processor**	Single AMD EPYC-9005 Processor
	Core count	Up to 192-core
	Base Frequency	Up to 4.2 GHz
Memory	**Technology**	DDR5, up to 6400 MT/s
	Max Capacity	768 GB (64GB per slot)
	Socket	12 x 288-pin DIMM
	ECC support	RDIMM
Networking	**Controller**	2 x Intel i210
	1GbE	2 x 1GbE RJ45
PCIE Expansion	**PCIe Slot**	3 x PCIe Gen5 x16 HH/HL slots (vertical installation)
Storage	**2.5" Bay**	2 x hot-swap 2.5" disk bays for SATA SSD/HDD, NVMe
	M.2	2 x 2280 M.2 NVMe SSD

I/O	**Console**	1 x RJ45 type console
	USB	2 x USB 3.0
	LED	1 x Power LED, 1 x Alert LED, 1 x Locate LED, 1 x Software-defined LED
	Display	1 x VGA port
	Button	1 x Power button, 1 x Software-defined button
	Others	1 x dedicated 1GbE LAN for IPMI
NMC Expansion	**NMC**	8 x PCIe Gen5 x8
Fan		4 x Hot swap 8038 mm fan modules
Power	**Power Type**	AC Redundant CRPS (Option: DC Redundant CRPS)
	Watts	1200W
	Input	AC: 100-240V~, 12-7A, 50-60Hz
Dimension		438 x 88 x 600 mm (W x H x L)

Front & Rear System View

SW Defined: Green/Amber solid on
Alert: Amber solid on
Locate: Blue solid on
Power: Green solid on

A	Power button	H	4 x Advantech NMC slots
B	SW control button	I	4 x 8038 fan modules (hot-swap)
C	1 x GbE LAN (dedicated for IPMI/BMC)	J	FAN status LED
D	RJ45 console port	K	VGA port
E	2 x GbE RJ45 ports for MGMT	L	1200W Redundant PSU
F	2 x USB 3.0 ports		
G	System LEDs		