

**ADVANTECH**

*Enabling an Intelligent Planet*

# Transforming the Future of Video Streaming:

Innovations and Insights  
from Advantech





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# Value Proposition



## Maintaining Equipment Longevity

- Eliminates yearly system upgrades
- Low total cost of ownership, including system certification costs and RMA service preparation



## Worldwide Support & Local Services

- Global operations infrastructure
- Logistics network with local delivery
- 24/7 hotline AE & global RMA system



## Strict Revision Control for Consistency

- Reduces product validation during a product life cycle
- Avoids compatibility issues resulting from engineering changes



## Customization to Meet Changing Demands

- Customization and branding services to integrate our platforms with existing product lines
- Professional AE support shortens development times

# Next Generation IP Video Platform

Healthcare

ProV

IP Streaming

## Protocols

RTSP  
Real-Time Streaming Protocol



SDVoE<sup>®</sup>  
ALLIANCE



SRT ALLIANCE  
SECURE RELIABLE TRANSPORT



Ultra-High  
Definition



Ultra-Low  
Latency



High-Quality  
Video Encoding



Latest IP Video  
Technology



Flexible Video Format  
Transformation



8K UHD Live Player/Recorder

**UHD Professional Video Appliance**



4K SDVoE Hybrid Encoder/Recorder



HDMI 2.0 over IP  
Multicast Transceiver System



4K Portable Video  
Streamer

**Video Streaming Transmitter**



Accelerator Cards

Live Streaming  
Appliance

**Edge Video Appliance**



# Media Servers

## Media Contribution



Low-Latency  
Video Transmission

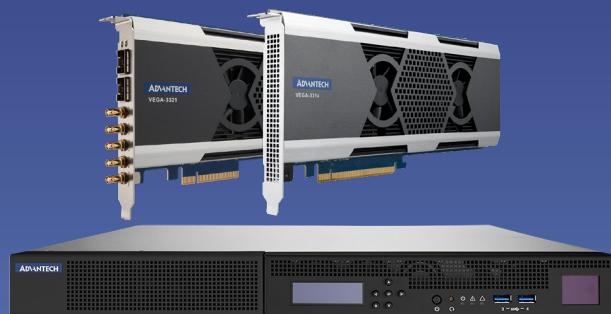


High-Quality  
Video Streaming



High-Bandwidth  
Communication

### VEGA Encoding/ Transcoding Cards



VEGA-7030



- Designed for Remote Production
- ASIC Based Video Encoding & Transcoding
- More than 10 FHD 4:2:2 Channels
- High-Reliability PCIe Production

### Video Capture Cards



HPC-6120

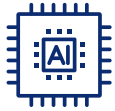


- Extreme Computing Performance
- Multiple Network Interfaces• Video
- Video Interface with 8 FHD Video Inputs
- Rivermax Ready System



# Media Servers

## Media Post-Production



AI Analytics



Low-Latency  
Video Transmission



High-Bandwidth  
Communication

### NVIDIA GPU Cards

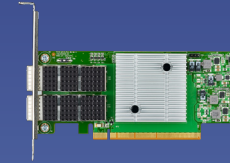


SKY-602E3



- Multiple GPU Support
- High Expandability
- Intelligent Workflow
- High-Speed Connectivity

### Networking Communication Card



SKY-820V3



- Extreme Computing Performance
- Multiple Network Interface
- High Expandability
- High-Speed Interfaces



# 4K Real-Time Video Appliance

The VEGA 6000 family of compact video processing appliances support ultra-low latency 4K AVC/HEVC interlaced/progressive encoding, decoding, and IP media streaming.



**VEGA-6321**



**VEGA-6302**

- *Open system and plug-in encoding/capture ability with added PCIe card*
- *Up to 8K display processing with different pixel types*
- *Extremely low latency based on bellwether software base*





# 4K Portable Video Streamer

The VEGA 2000 Series of small video modules supports video capture, encoding and live streaming over mobile networks for portable applications.



**VEGA-2002R**

- *4Kp60 audio/video capture over built-in 12G(3G)-SDI or HDMI 2.0 inputs*
- *Built-in remote control UI and CGI command support for easy management and development*
- *Real-time 4Kp60 H.264/H.265 8-/10-bit encoding*
- *Small form factor & low power consumption*

# UHD Video Converter

The VEGA 1000 family of AV over IP transceivers supports lossless UHD video with near zero latency transmission with SDVoE technology.



**VEGA-1000L**



**VEGA-1101**

- *Near-zero latency 4K UHD video over IP*
- *Compact, all-in-one fan-less design*
- *Supports multiple video input interfaces and streaming protocols*
- *Simultaneous SDVoE and HEVC dual-encoding and streaming capability*

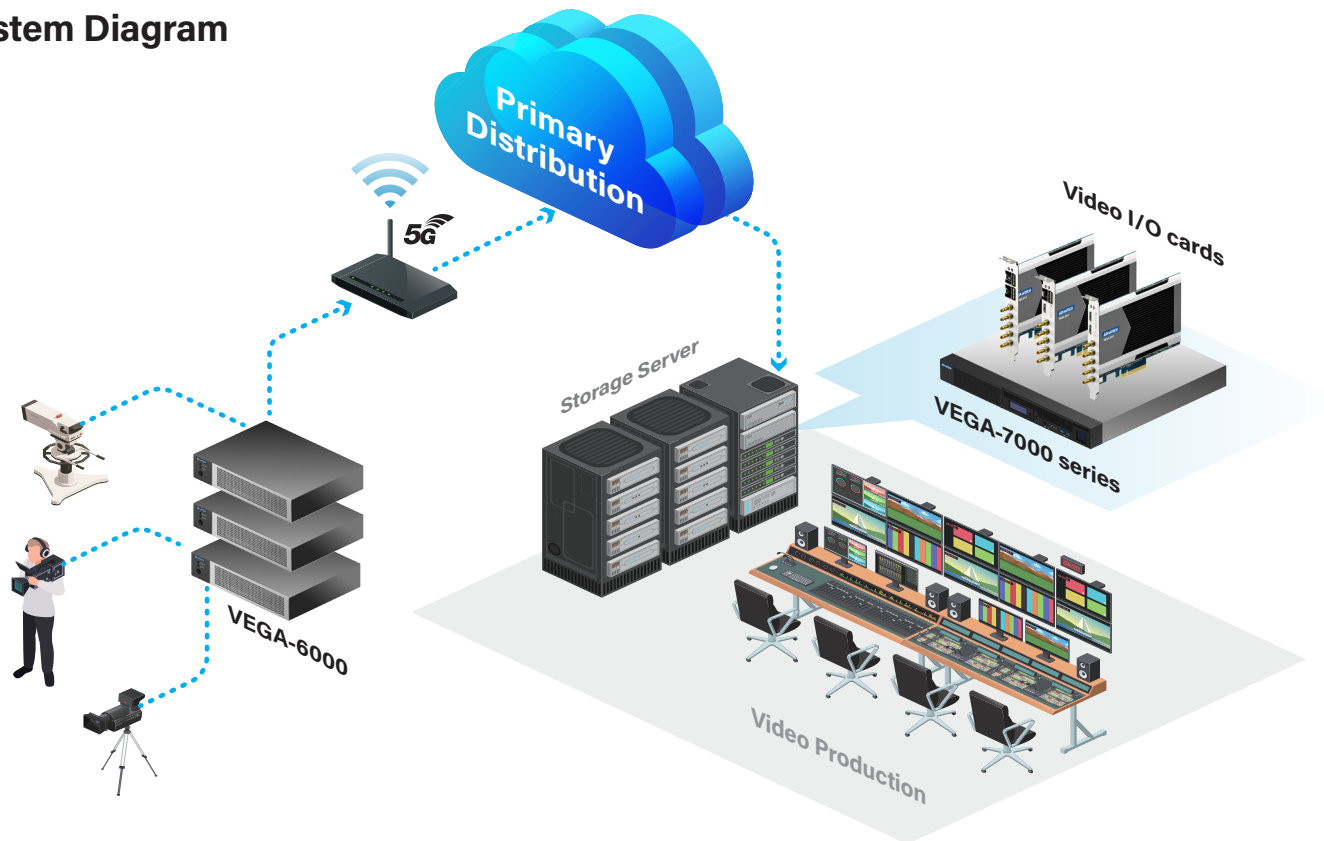


# Success Case: Live Video Stream Over 5G

## System Overview

- VEGA-6000 encodes and transmits the live video feed through the 5G network, offering a reliable, high-bandwidth connection.
- Advantech's FWA-1112VC sends the live video feed over the 5G network, ensuring low latency and high-speed data transfer.
- The VEGA 7000 series 1U media server with VEGA accelerator cards captures the incoming video stream from the 5G network. It handles multiple streams concurrently, ensuring efficient processing and delivery. These solutions also handle further processing and potential enhancements, such as mixing, editing, and overlaying graphics.
- The processed video stream is sent to a TV broadcast station for live airing, reaching a wide audience through traditional television networks.
- Simultaneously, the video is streamed to social media platforms, allowing for immediate global reach and audience engagement.

## System Diagram



## Key Features

- Portability and Flexibility
- High-Quality Streaming
- Real-Time Engagement

# Success Case: Enhancing Private Media Networks with the Advantech VEGA Series

## System Overview

- For use at remote studios and post-production facilities, the VEGA-7030 with VEGA-3311 video encoding and transcoding, converts H.264/265 streams to SDI and vice versa, ensuring smooth integration into live and on-demand workflows. VEGA 6000 provides the processing ability to handle live feeds, enabling real-time editing and contribution.
- In remote production setups, VEGA 6000 series ensures low-latency, high-quality video contribution over IP, supporting both traditional broadcast standards and newer IP-based workflows.
- The VEGA 7000 series is used to optimize video quality, ensure compliance with distribution standards, and manage bandwidth effectively.
- With support for up to six GPUs, the SKY-602E3 enables high-performance rendering and editing of high-resolution videos, facilitating efficient workflows for tasks such as color grading, effects application, and compositing.

## System Diagram



## Key Features

- Hardware Acceleration
- Integration with Flexibility
- High Performance and Reliability



# Success Case: Delivering Broadcast-Quality Live Video Streams with Advantech's Scalable Edge Accelerator Servers

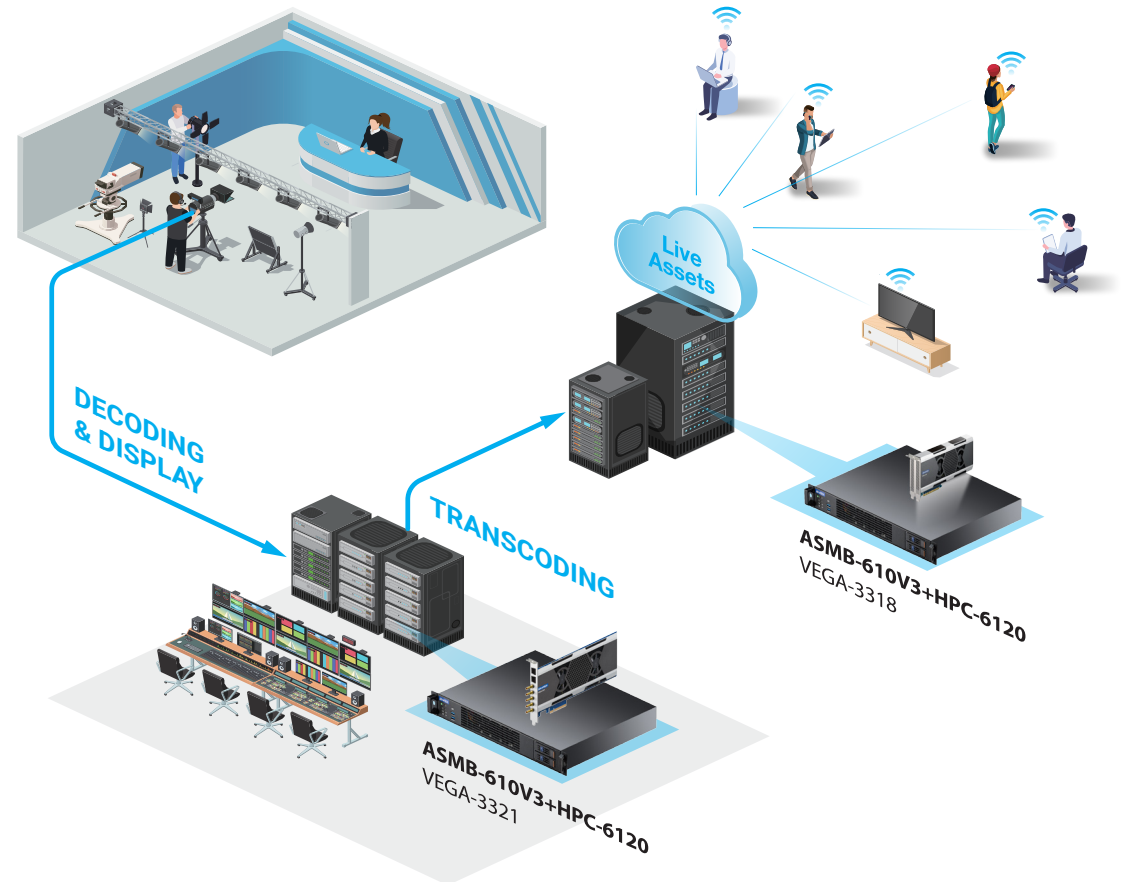
## System Overview

- The HPC-6120+ASMB-610V3 Video Creation and Broadcast platform is a 1U edge accelerator server that can be deployed by broadcasters throughout production, news, and playout environments.
- The motherboard is powered by a 13th Gen Intel® Core® processor that delivers the increased performance, cores, and memory necessary to support demanding workloads at the edge.
- The server features 4 x DIMM sockets, collaborating with Micron Technology to support up to 128 GB DDR5 memory rated up to 5600 MT/s throughput, as well as 4 x PCIe, 4 x SATA 3, 4 x GbE LAN, and 1 x dedicated IPMI NIC port.
- The solution is equipped with Advantech's thermal management system that accelerates cooling to facilitate high-volume data processing at the network edge.

## Key Features

- Easy Integration
- Flexible I/O Interface
- Space Efficiency

## System Diagram



# Product Selection: **Media Servers**



Model	VEGA-7030	HPC-6120 + ASMB-610V3	SKY-602E3
<b>Description</b>	1 U High Density Media Server for Accelerated Video Processing	1 U 18" Short-Depth Edge Accelerator Server	Mini Tower GPU Server
<b>Processors</b>	14th Gen Intel® Core™ i3/i5/i7/i9	14th/13th/12th Gen Intel® Core™	AMD® EPYC™ Embedded 8004 Series Server
<b>Expansion Slots</b>	2 x PCIe Gen 4 x8 FH/FL (x8 + x8 physical) or 1 x PCIe Gen 3 x16 FH/FL (optional) 2 x PCIe Gen 3 x4 FH/HL (x8 + x8 physical)	1 x PCIe x 16 slot or 2 x PCIe x8 slots supporting FH/10.5"	4 x PCIe 5.0 x16 FH/10.5" dual slot or 2 x PCIe 5.0 x16 dual slot FH/10.5" + 4 x PCIe x8 single slot FH/10.5"
<b>Storage</b>	2 x NVME M.2 SSD 2 x 2.5" SSD	1 x M.2 2280/22110 (SATA3/PCIe)	2 x 2.5" SATA3 drive bays+ 2 x M.2 2280 (SATA3/PCIe)
<b>Networking</b>	4 x 1GbE RJ-45	4 x 1GbE RJ-45	2 x 10GbE RJ-45 + 1 x management port



# Product Selection: **Media Servers**



Model	SKY-820V3	SKY-7632D	SKY-8132S
<b>Description</b>	2U Edge Server with 4th/5th Gen Intel® Xeon® Scalable Processors	2U Edge Server with 3rd Gen Intel® Xeon® Scalable Processors	Compact 1U Edge Server based on 3rd Gen Intel® Xeon® Scalable Processors
<b>Processors</b>	4th/5th Gen Intel® Xeon® Scalable Processors	3rd Gen Intel® Xeon® Scalable Processors	Intel® PCH C62xA Series
<b>Expansion Slots</b>	4 x PCIe Gen5 x16 (FHFL, 10.5")	3 x low profile PCIe 4.0 x16 2 x low profile PCIe 4.0 x8	2 x rear PCIe x16 (FH/FL), plus 2 x rear PCIe x16 (FH/HL) or 2 x rear PCIe x8 expansion slots(LP)
<b>Storage</b>	2 x NVME M.2 SSD 6 x 2.5" SSD	2 x NVME M.2 SSD 6 x 2.5" SSD	2 x M.2 2280
<b>Networking</b>	1 x 10GbE RJ-45 + 1 x Console Port	2 x 1GbE RJ-45	1 x GbE LAN RJ-45 + 1 x VGA+ 1 x USB 3.0

# Product Selection: **Video Appliances**



Model	VEGA-1000L	VEGA-1101	VEGA-1200	VEGA-6321	VEGA-6321
<b>Processor System</b>	BlueRiver AVP2000	BlueRiver AVP2000T	BlueRiver AVP2000	13th Gen Intel® RPL-P	13th Gen Intel® RPL-P
<b>Channels (Max.)</b>	1 (up to 4Kp60)	1 (up to 4Kp60)	1 (up to 4Kp60)	1 (up to 4Kp60)/ 4 (up to 1080p60)	1 (up to 4Kp60)/ 4 (up to 1080p60)
<b>VoIP Connectivity</b>	1 x 10 GbE (SFP+ cages)	1 x 10 GbE (SFP+ cages), 1 x 10 GbE copper (POE), 1 GbE copper	1 x 10 GbE (SFP+ cages), 1 GbE copper	3 X 10/100/1000/2500 Mbps RJ-45	3 X 10/100/1000/2500 Mbps RJ-45
<b>Standards Supported</b>	SDVoE	SDVoE	SDVoE, NDI, SRT	-	-
<b>Development kits</b>	SDVoE RESTful API	SDVoE RESTful API	Advantech RESTful API	-	-
<b>Streaming Protocols</b>	SDVoE	SDVoE	SDVoE, RTSP, RTP, RTMP, HLS, TS over IP, SRT, NDI	TS over UDP, TS over RTP, RTSP, RTMP, SRT,NDI, File based	TS over UDP, TS over RTP, RTSP, RTMP, SRT,NDI, File based

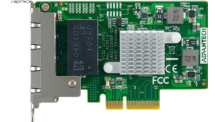
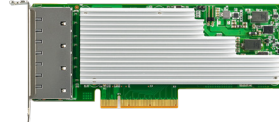
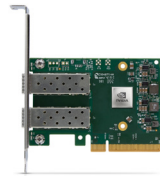
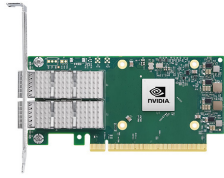


# Product Selection: **Video I/O Cards**



Model	VEGA-3003	VEGA-3312	VEGA-3311	VEGA-3321	VEGA-3310
<b>Platform</b>	Xilinx UltraScale+	Socionext M30	Xilinx UltraScale Socionext M30	Xilinx UltraScale Socionext M30	Socionext M30
<b>Channels (Max.)</b>	2 (up to 4Kp60)	2 (up to 4Kp60) / 8 (up to 1080p60)	1 (up to 4Kp60)/ 4 (up to 1080p60)	1 (up to 4Kp60)/ 4 (up to 1080p60)	2 (up to 4Kp60) / 8 (up to 1080p60)
<b>Input Interface</b>	1 x HDMI 2.0, 1 x SDVoE	PCIe 3.0 x8	4 x SDI-3G/1 x SDI-12G, 2 x 10 GigE	4 x SDI-3G/1 x SDI-12G, 2 x 10 GigE	PCIe 3.0 x8
<b>Output Interface</b>	HDMI loop-out PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
<b>Video Encoding</b>	-	H.265 (HEVG)/H.264 (AVG)	H.265 (HEVG)/H.264 (AVG)	H.265 (HEVG)/H.264 (AVG)	H.265 (HEVG)/H.264 (AVG)/ MPEG2
<b>Video Decoding</b>	-	H.265 (HEVG)/H.264 (AVG)	H.265 (HEVG)/H.264 (AVG)	H.265 (HEVG)/H.264 (AVG)	H.265 (HEVG)/H.264 (AVG)

# Product Selection: **Network Communications**



Model	PCIE-2421 NP	PCIE-2521NP	PCIE-2711 NP	PCIE-2231 NP	PCIE-1221PS	PCIE-1130PS
<b>Description</b>	Dual Port Fiber 100GbE Ethernet PCI Express Server Adapter with NVIDIA® ConnectX®-6	Dual Port Fiber 25GbE Ethernet PCI Express Server Adapter with NVIDIA® ConnectX®-6	Single Port Fiber 200GbE Ethernet PCI Express Server Adapter with NVIDIA® ConnectX®-6	Quad Port Copper 10GBase-T Ethernet PC Express Server Adapter with Intel® XL710-BM1	Dual Port Copper 10GbE Ethernet PCI Express Server Adapter with Intel® X550	Quad Port Copper Gigabit Ethernet PCI Express Server Adapter with Intel® 1350
<b>Ports</b>	2 x QSFP56	2 x SFP28	1 x QSFP56	4 X RJ-45	2 x RJ45	4 X RJ-45
<b>Media</b>	100GbE Fiber	25GbE Fiber	100GbE Fiber	10GbE Base-T Copper	10GbE Base-T Copper	GbE Copper
<b>PCIe</b>	PCIe 4.0 x16	PCIe 4.0 x8	PCIe 4.0 x16	PCIe 4.0 x16	PCIe 3.0 x4	PCIe 3.0 x4

## Regional Service & Customization Centers

**China** | Kunshan  
86-512-5777-5666

**Taiwan** | Taipei  
886-2-7732-3399

**Netherlands** | Eindhoven  
31-40-267-7000

**Poland** | Warsaw  
00800-2426-8080

**USA** | Milpitas, CA  
1-408-519-3800

## Worldwide Offices

### Asia Pacific

#### Taiwan

Toll Free	0800-777-111
Taipei	886-2-7732-3399
Taichung	886-4-2372-5058
Kaohsiung	886-7-392-3600

#### China

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Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Kunshan	86-512-5777-5666
Hong Kong	852-2720-5118

### Asia Pacific

#### Japan

Toll Free	0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-6-6267-1887
Nagoya	81-052-291-4860
Nogata	81-949-22-2890

#### Korea

Toll Free	080-363-9494/5
Korea HQ (Seoul)	080-363-9494/5

#### Singapore

Singapore	65-6442-1000
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#### Malaysia

Kuala Lumpur	60-3-7725-4188
Penang	60-4-537-9188

#### Thailand

Bangkok	66-02-2488306-9
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#### Vietnam

Hanoi	84-24-3399-1155
Hochiminh	84-28-3836-5856

#### Indonesia

Jakarta	62-21-751-1939
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#### Australia

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#### India

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Pune	91-94-2260-2349

### Europe

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Düsseldorf	49-2103-97-855-0
Amberg	49-9621-9732-100

#### France

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#### Italy

Milan	39-02-9544-961
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London	44-0-208-317-1380

#### Spain

Madrid	34-91-668-86-76
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#### Sweden

Stockholm	46-0-864-60-500
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#### Poland

Warsaw	48-22-31-51-100
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St. Petersburg	7-812-332-57-27

#### Czech Republic

Ústí nad Orlicí	420-465-524-421
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#### Ireland

Galway	353-91-792444
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Ottawa	1-800-346-3119
Chicago	1-513-742-8895
Boston	1-800-866-6008

#### Canada

Toronto	1-800-866-6008
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Toll Free	0800-770-5355
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Itajuba	55-35-3623-5949

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Mexico City	1-800-467-2415
Guadalajara	52-33-3169-7670

### Middle East and Africa

#### Israel

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#### Türkiye

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Bursa	90-850-840-3995

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