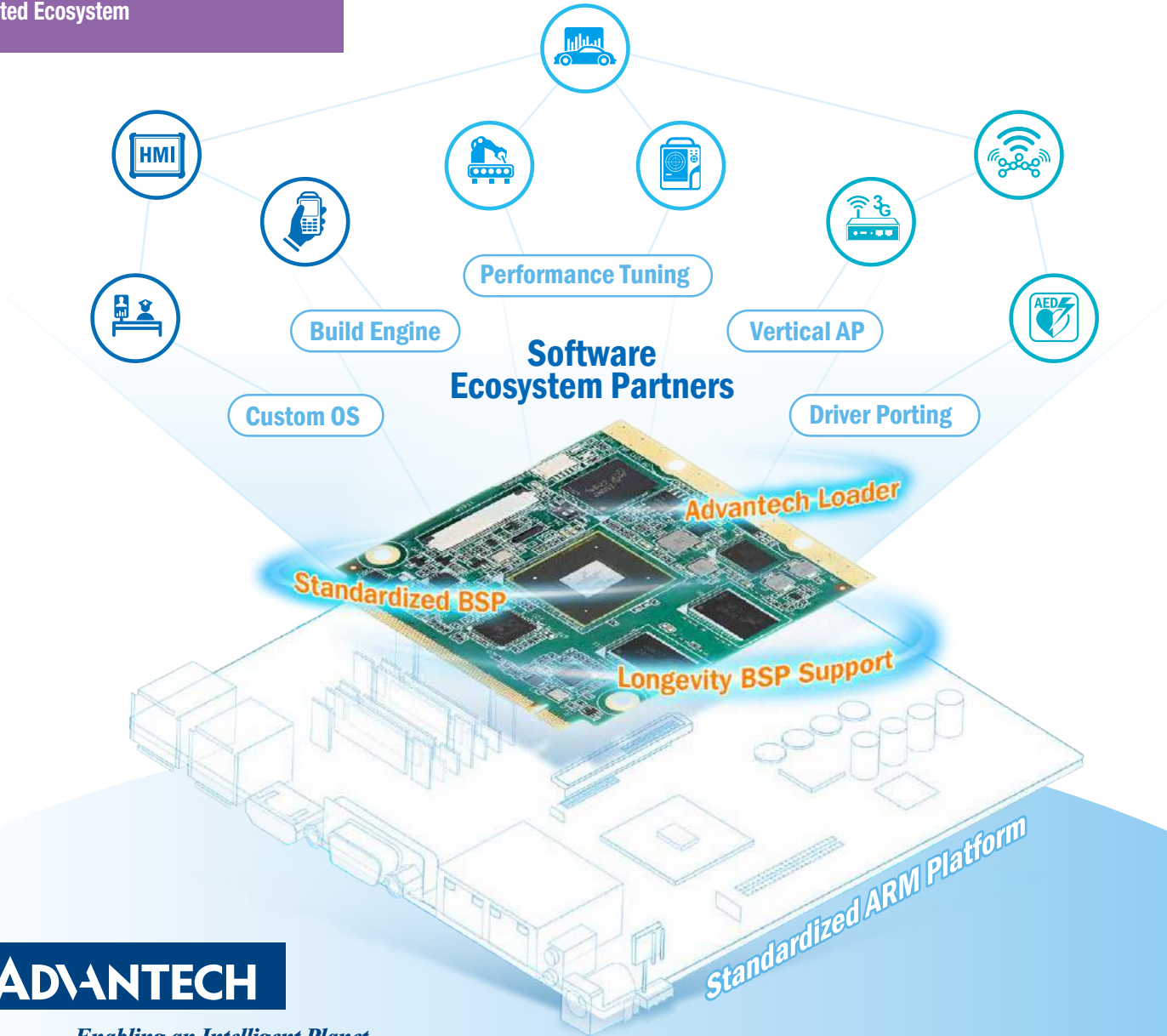


Embedded Linux & Android Ready ARM Solutions

Accelerating Your ARM Project Development

- / Unified BSP
- / Standardized Hardware
- / Integrated Peripherals
- / Trusted Ecosystem



ADVANTECH

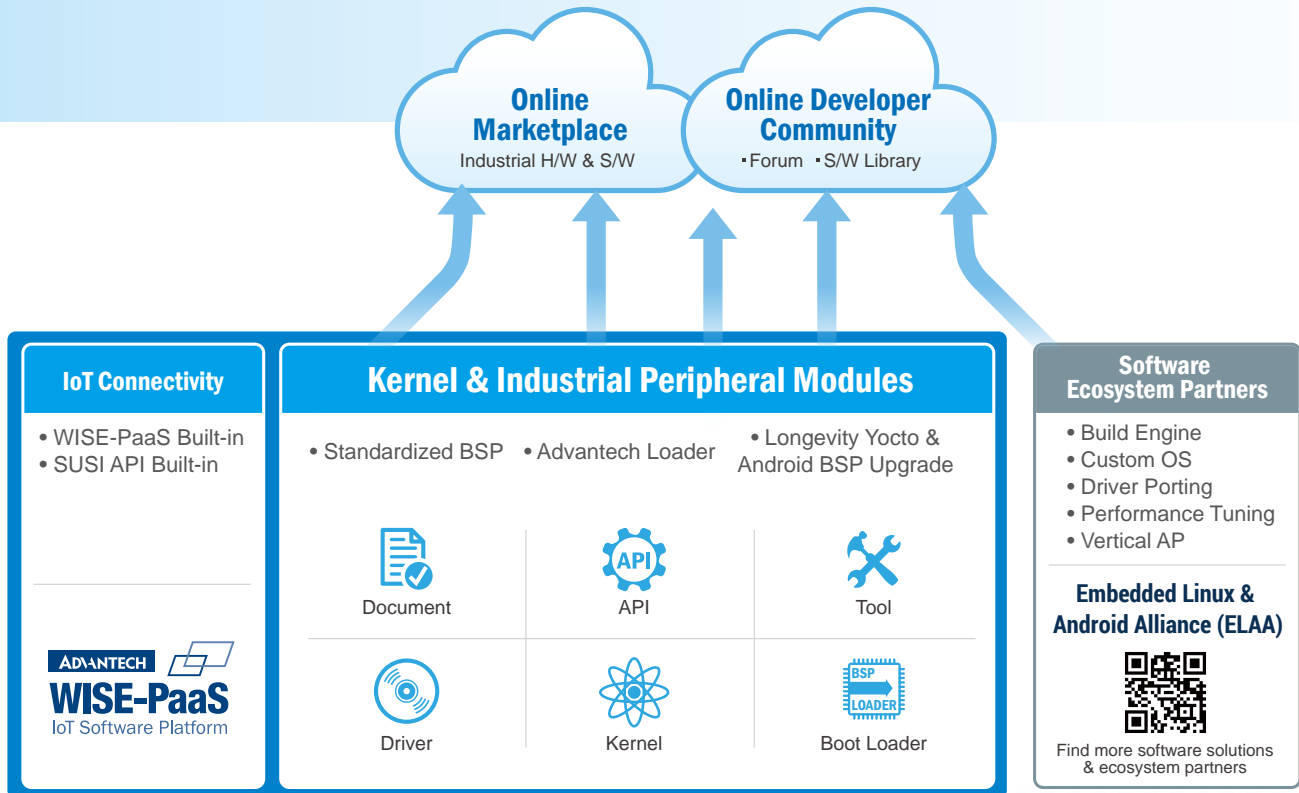
Enabling an Intelligent Planet

The Key Factors for ARM Business Success

ARM technology is leading the revolution in the IoT era due to its cost effectiveness and compact size. Back in 2010, there were a diverse variety of hardware platforms and software services available to the embedded market which made platform unification and version control difficult. To introduce ARM solutions to the world in an easy, quick way, Advantech offered a standardized hardware platform with open design guidelines and relevant schematics that helped customers integrate general hardware platforms into unique applications. To achieve that, we dedicated ourselves to providing unified, organized and advanced software packages with longevity support.

We believe software and hardware standardization will be the key to speed up time-to-market. Most ARM developers suffer from difficult peripheral integration as it takes time to find compatible peripherals and port corresponding drivers. Since then, we've consolidated and verified peripheral modules and devices in advance and offer driver ready software to our customers. This saves time and speeds up your ARM solution development.

However, all this is still not enough to overturn the confusion in ARM technology development. To reorganize the ecosystem, we are not only driving the unification in hardware and software, but we are introducing partners into this ecosystem in order to bring more add-on features in application development and complete the last mile to market. We believe ARM technology deserves to be shared, and our unified hardware, software and services will enable a brand new collaboration model in the ARM market.



Unified ARM Development Platform

- Optimal
- Configurable
- Compatible



Development Kit



RTX



Qseven



3.5" SBC



Intelligent Systems



Wireless



Display



Storage

Peripheral Integration

Advantech Unified Board Support Package

To facilitate embedded application development and ARM-based solution adoption, Advantech offers standardized and modularized board support packages to deliver an improved software development experience. Through Advantech Loader, we provide optimized configuration setting, flexible boot selection, and secure software protection features to enhance customers' application design. Our built-in SUSI API and WISE-PaaS SDK enable reliable hardware monitor/control and secured IoT connectivity. Our integrated device sample codes help our customers evaluate trusted quality peripherals in a timely manner and we release complete product specifications, design guides, and programming instructions to assist customers with system integration.

Advantech's longevity Board Support Package (BSP) upgrade service brings compatibility and flexibility for rapid embedded Linux innovation and allows customers to adopt a wide-range of the most up-to-date Linux/Android releases. We are committed to collaborating with our ecosystem partners to deliver trustworthy software services and efficient technical support that helps accelerate our customers' ARM project development.

Advantech BSP Key Features



Unified Architecture



Longevity Upgrade



Complete Documentation

Advantech Optimized Board Support Package

SUSI Demo APP

Production Test APP

Function Test APP

EMI SI/ PwP Test APP

SUSI API

WISE-PaaS Agent

Reference Codes for Integrated Peripherals

Kernel & Peripheral Drivers

Advantech Loader

Advantech Design-in Services

In the past, ARM-based application development was time-consuming and resource-intensive in development time due to the lack of technical know-how, experience, and an incomplete ecosystem. Advantech was aware of that, so we created a brand new service model to enhance product design-in through a dedicated experienced service team with plenty of technical know-how. We offer a full-range of assistance in software, hardware and integration and we're capable of software development, board design, test execution, system integration and trouble-shooting, all of which expedites your development cycles and boosts your own time-to-market.



Software

- OS Support
- Middleware/SUSI APIs
- Board Support Package
- Customization



Hardware

- Development Kit
- Reference Design
- Design Review
- Trouble Shooting



Integration

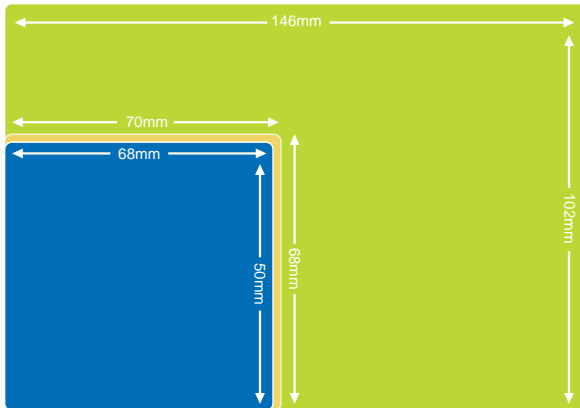
- Test Plan/Program
- Function/Reliability Test
- Certification
- Peripherals/Accessories






Production

- Worldwide Delivery
- Global After Services
- Longevity
- Excellent Quality

Standardized Hardware Solutions



Advantech has been working with RISC technology for over 10 years beginning with MIPS. We think standardizing the form factor is a key factor in making RISC more popular. With this in mind, Advantech launched its COM (Computer on module), SBC (Single Board Computer) and RISC Development Kits into the market.

		
RTX (Advantech) 68mm x 68mm	Qseven 70mm x 70mm	3.5" SBC 146mm x 102mm

Computer On Modules

Computer On Module (COM) is a type of platform which tightly integrates all main components and is well proven and compatible. The modularized design helps developers quickly build their own carrier boards for their own unique application.

RTX

Advantech originally introduced the RTX 2.0 (Ruggedized Technology eXtended) specification, which is a RISC standard platform designed for rugged applications such as military, logistics and transportation.



 Anti-vibration	 Anti-oxidation	 Wide Temperature
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Qseven

Qseven is also a standard COM form factor, which was defined by SGET and which has specified pinouts based on the high speed MXM system connector. Qseven focuses on handheld, HMI, and signage applications.

 Compact	 Fanless	 Flexible
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RTX	RTX	Qseven	Qseven	Qseven
ROM-3310	ROM-3420	ROM-7420	ROM-7421	ROM-7510
<ul style="list-style-type: none"> TI Sitara AM3352 Cortex-A8 1GHz Single core Wide range temperature and power input support Designed for automation 	<ul style="list-style-type: none"> NXP i.MX6 Cortex-A9 1GHz Dual/Quad core Outstanding graphic performance Designed for rugged applications 	<ul style="list-style-type: none"> NXP i.MX6 Cortex-A9 1GHz Dual/Quad core Cost effective module solution Designed for networking and signage 	<ul style="list-style-type: none"> NXP i.MX6 Cortex-A9 1GHz Dual Plus/Quad Plus Strong multimedia performance Designed for Kiosk and HMI 	<ul style="list-style-type: none"> TI Sitara AM5728 Cortex-A15 Dual core Outstanding computing ability Designed for video surveillance applications

Single Board Computers

Advantech has long developed its Single Board Computer (SBC) series of products, which come in standard form factors in compact sizes with rich I/O, extremely low power consumption, and easy expansion capabilities. This helps you to reduce your H/W design effort and speeds your time to market.



RSB-6410	RSB-4221	RSB-4410	RSB-4411	RSB-4760
<ul style="list-style-type: none"> NXP i.MX6 Cortex-A9 1GHz Dual/Quad Core Powerful multi-display capability, multiple I/O, and wireless connectivity Designed for kiosks and IoT gateways 	<ul style="list-style-type: none"> TI Sitara AM3358 Cortex-A8 1GHz Single Core Dual Ethernet and M.2 key E for wireless connection Designed for HMI 	<ul style="list-style-type: none"> NXP i.MX6 Cortex-A9 1GHz Dual/Quad Core Supports LVDS, VGA and HDMI display Designed for signage applications 	<ul style="list-style-type: none"> NXP i.MX6 Cortex-A9 1GHz Dual/Quad Core Rich I/O and wide range temperature and power input support Designed for HMI and industrial control 	<ul style="list-style-type: none"> Qualcomm ARM Cortex-A53 APQ8016 Quad core up to 1.2 GHz Highly integrated on-board wireless connectivity - Wi-Fi, BT, and GNSS Designed for IoT applications

Development Kits

Developers continually need to prepare cables, power adapters and peripherals to start their platform evaluation when prototyping a product. All this takes time and effort, so Advantech released a series of development kits which have everything you need including, a main board, cables, power adapter, LED panel and an SD card. We've also built-in a Linux OS image for your quick evaluation.

Qseven 2.0 ROM-DK7421	RTX2.0 ROM-DK3420	Qseven 2.1 ROM-DK7510	3.5" SBC RSB-DK4760
<ul style="list-style-type: none"> NXP ARM Cortex-A9 i.MX6 Dual/Quad Plus 1 GHz Dramatic graphics and memory performance enhancements Designed for portable applications 	<ul style="list-style-type: none"> NXP ARM Cortex-A9 i.MX6 Dual/Quad 1 GHz Reliable mechanical design combine with advanced power saving technology Designed for rugged applications 	<ul style="list-style-type: none"> TI Sitara AM5728 Cortex-A15 Dual core Outstanding computing ability Designed for video surveillance applications 	<ul style="list-style-type: none"> Qualcomm ARM Cortex-A53 APQ8016 Quad core up to 1.2 GHz Highly integrated on-board wireless connectivity - Wi-Fi, BT, and GNSS Designed for IoT applications

Trusted Peripheral Integration

ARM application development can be difficult due to peripheral integration, as well as driver support which is not so mature or well developed. Most engineers rely on open source drivers which are not thoroughly verified and may need to be modified in order to be integrated on different platforms. So to make things much easier, we streamlined the ARM platform integration process by consolidating compatible peripherals in the kernel source code and included detailed documentation for peripheral integration.



Reliable peripheral in industrial grade

Advantech offers high quality branded peripherals with longevity support, global warranty and rapid distribution, and customization flexibility. Industrial grade peripherals include display kits, RF modules, storage devices and expansion cards.



Integrated driver in various OS


To help users implement peripherals quickly, we pre-build drivers into a Linux kernel to save time in cross-compiling and driver porting. Drivers are verified in various OS environments including Linux Android and Windows.









Documentation for driver porting and device testing

To help users integrate additional peripherals, we share our know-how of driver integration to help users porting drivers onto their own platforms. Additionally, we offer our test tools, commands and sample codes freely on the Advantech online forum, along with consultant services for those who would need help.



WiFi Module	WiFi/BT Combo Module	3G Module	GPS Module	Adapter
				
EWM-W150H02E	EWM-W162M201E	968EMW0093	EWM-G108H01E	96PSA-A36W12R1
1750005885 RF Cable	1750007965-01 RF Cable	1750007156-01 RF Cable	1750006264 RF Cable	ADAPTER 100-240V 36W
1750000318 Antenna	1750002842 Antenna	1750005865 Antenna	1750007991-01 Antenna	12V 3A DC PLUG 90°

Panels					
	IDK-1115R-40XGC1E 15" 1024 x 768 LED panel, 400 nits with 5W resistive touch		IDK-1107WR-40WVA1E 7" 800 x 480 LED panel, 400 nits with 4WR touch		IDK-1107WP-50WVA1E 7" 800 x 480 LED panel, 500 nits with P-CAP touch
	IDK-1115P-40XGC1E 15" 1024 x 768 LED panel, 400 nits with P-CAP touch		96LEDK-A070WV40NB1 7" 800 x 480 LED panel, 400 nits w/o touch		96LEDK-A190SX35NF1 19" 1280 x 1024 LED panel, 350 nits w/o touch



Complete ARM-based Development Kit and Design-in Services for Compact Banknote Recycler

In the past, banknote recycling machines were only used in large businesses like banks so their size didn't really matter. However, as more and more stores and companies received fake notes, they started searching for small-sized functional banknote recycling machines to protect their own interests.

Solution

Advantech ROM-7420 is a cost-effective Computer-on-Module based on advanced ARM technology. It provides plenty of I/O and outstanding system performance to easily run the banknote identifier device which categorizes the notes by country or by value. The advanced graphic engine also helped distinguish fake notes by using a graphical analysis program developed by the banknote machine designer.

Development Kit for Prototype

Advantech offered a ROM-7420 development kit for a simple and quick way to evaluate performance. The development kit includes everything they need including a COM module and its corresponding carrier board, a 12V AC/DC power adapter, cables to connect peripherals, and an LED panel for display and touch panel development.

Advantech Design-in Service

During development, a fatal issue popped up and risked the launch schedule. Advantech jumped in without hesitation with a professional support team focused on software and hardware debugging. By providing timely support and onsite service, the customer was able to quickly resolve all issues and get the project back on track.



ROM-7420

- Qseven 1.2 Computer-on-Module
- NXP i.MX6 plus Dual/Quad 1GHz
- DDR3 1 GB/2 GB; 4 GB e.MMC flash memory
- Rich I/O for device control
- 7-year longevity support



IDK-1107

- 7 inch high brightness LED
- 4-wire resistive touch
- Reliable touch assembly
- Standard 2-year warranty



Rugged RTX Form-factor Solution for Railway Monitoring System

The railway systems in China have grown rapidly due to their convenience and widespread economic benefits. It is now the major public transportation system and serves millions of people every day. However, a total solution for data collection, processing and storage for the trains was still needed and data/network security and reliability issues presented a crucial challenge to overcome.

Solution

Advantech ROM-3420 is an ultra low power computer-on-module followed by RTX 2.0 form factor, which is specifically designed for ruggedized application with vibration-proof, anti-oxidation and anti-corrosion capabilities. It provided reliable core computing ability and steady network connectivity in the railway monitoring system and efficiently secured the data flow through Advantech built-in software API. Pairing with Advantech peripherals including SSD and WiFi 2.4GHz module, the industrial grade total solution facilitated data collection, processing and management in railway monitoring system and enhanced the smoothness and performance in its daily operation.

Rugged Form-factor with Wide Range Working Temperature

Advantech offered the ROM-3420 RTX module with four robust B2B connectors, SATA interface for data collection, and wide operating temperature features, which fulfilled the reliability requirement of a railway system that continuously operated in extreme environments in the southern and northern regions of China.



ROM-3420

- Freescale ARM Cortex™-A9 i.MX6 Dual 1 GHz high performance processor
- Onboard DDR3 1 GB memory / 4GB flash
- Supports wide range power input 5V-24V

Carrier Board Solution service

In order to extend the usability of the module, Advantech tried to speed up the development of the carrier board by providing carrier board reference schematics, design guidelines, and checklists. As well as documentation, we shared our reference design including recommended transceiver and transmitter IC selection. After they finished the carrier board schematic, Advantech also helped to review/debug the system and provided additional production ideas to improve their time-to-market.

Order in 3 Easy Steps



Please key in model name such as **ROM-3420, ROM-7421**, etc to find products.



Regional Service & Customization Centers

China Kunshan
86-512-5777-5666

Taiwan Taipei
886-2-2792-7818

Netherlands Eindhoven
31-40-267-7000

Poland Warsaw
00800-2426-8080

USA Milpitas, CA
1-408-519-3898

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Xindian 886-2-2218-4567
Taichung 886-4-2329-0371
Kaohsiung 886-7-229-3600

Middle East and Africa

Israel 072-2410527

Asia

Japan
Toll Free 0800-500-1055
Tokyo 81-3-6802-1021
Osaka 81-6-6267-1887
Nagoya 81-52-856-9657

Korea
Toll Free 080-363-9494
Seoul 82-2-3663-9494

Singapore
Singapore 65-6442-1000

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

Thailand
Bangkok 66-2-248-3140

India
Bangalore 91-80-2545-0206
Pune 91-20-3948-2075

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Jakarta 62-21-751-1939

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Toll Free 1300-308-531
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Düsseldorf 49-2103-97-855-0

France
Paris 33-1-4119-4666

Italy
Milano 39-02-9544-961

Benelux & Nordics
Breda 31-76-523-3100

UK
Newcastle 44-0-191-262-4844
London 44-0-870-493-1433

Poland
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Russia
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St. Petersburg 8-800-555-81-20

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Ústí nad Orlicí 420-465-521-020

Ireland
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Irvine 1-949-420-2500
Ottawa 1-815-434-8731

Brazil
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São Paulo 55-11-5592-5355

Mexico
Toll Free 1-800-467-2415
Mexico City 52-55-6275-2727

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www.advantech.com

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