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ADVANTECH

Enabling an Intelligent Planet

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More Information



2000020700

Advantech Fanless Embedded Box PCs

New Generation Intelligent Systems

- ✓ Ultra Slim Series
- ✓ Easy I/O Flexibility Series
- ✓ High Performance Series
- ✓ PCI/PCIe Slot Expandable Series
- ✓ Mini-ITX Series
- ✓ In-Vehicle Surveillance Series



Security



Manageability



Power-Saving



SUSIAccess
Remote Device Management

iManager
Intelligent Self-Management

ADVANTECH

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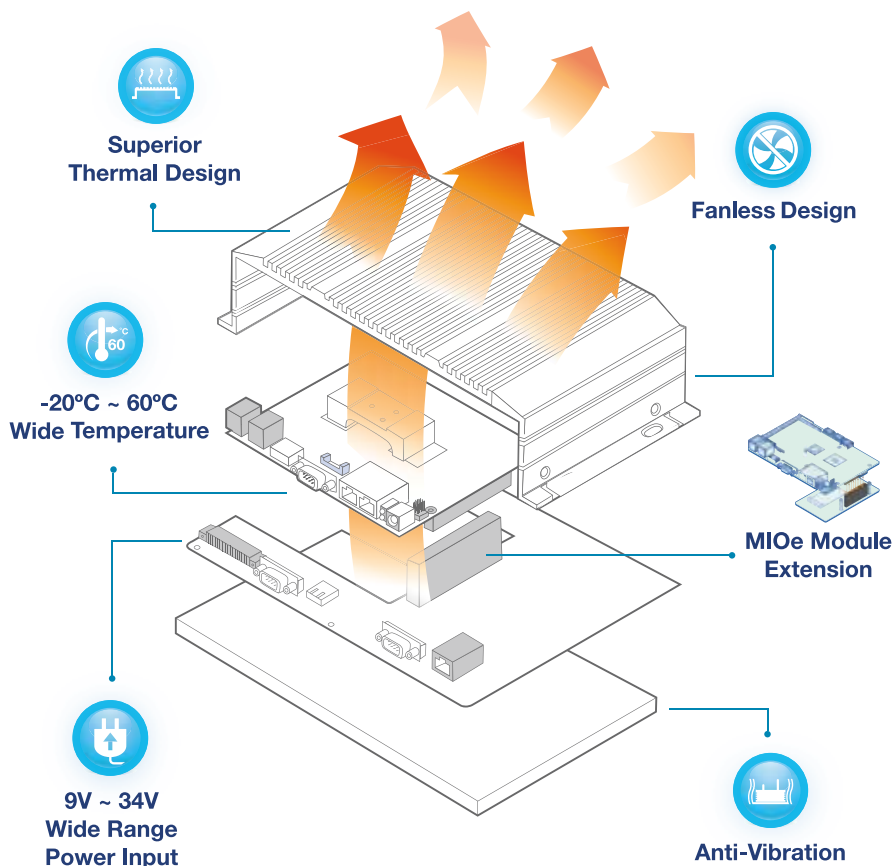
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Reliable Platforms, Advanced Design

In today's world industrial computers have a wider range of applications, including those in digital signage, POSs, kiosks, transportation, healthcare, digital surveillance, and other vertical applications. Thus embedded computers featuring compact size, durability, eco-friendliness, and low-noise designs have emerged as new market favorites. Advantech as a leader in providing trusted innovative embedded products and solutions is contributing to this development with the new design concepts into various aspects of the product line, including the appearance, cooling, structural strength, power supply, temperature range, and module expandability. Advantech has designed the new generation Fanless Embedded Box PCs, which highlight quality feature including:

- Maximized cooling efficiency and also consider the key component temperature to make sure reliability
- Wide input power supplies from 9V to 34V to fulfill different applications
- Wide temperature ranges with certified components
- Diverse expandability options, including multiple MiniPCIe, PCIe, PCI..
- Structural strengthening : vibration level up to 5 Grms and shock up to 50 G
- Slim compactness and rich I/O for application themes

Advantech aims to give developers convenient, simplified and trusted solutions for embedded applications.



Product Series

ARK-1000 Series

Ultra Slim

- Slim Size
- Ultra Low Power
- Support CF & HDD
- Mini PCIe

ARK-2000 Series

Easy I/O Flexibility

- Multiple COM, USB, LAN
- Wide Temperature
- Multiple Display Interface
- Mini PCIe, SIM Socket & mSATA

Intelligent Systems, Innovation Services

Advantech embedded platforms have long continued to provide all kinds of system and integrated services, and with cloud computing era will continue to offer an more intelligent platform. This transformation will enable new user experiences, enhanced productivity, better safety, and improved efficiency for embedded applications. Through new ideas and technologies, Advantech creates a series innovative software services to make our system becomes more manageability, power-saving and security. This will effectively relieve system developers and users of the complexity of device management and maintenance, and simply the operation of embedded devices. Entire systems can be managed easily and remotely to save costs. All from back to end, leads the industry in a new generation intelligent systems.



CloudBuilder On-Demand Cloud Services

As a top global IPC leader, Advantech has designed the first industrial cloud services for embedded applications. The new services include intelligent auto-detection of devices, and integrated on-demand services to help system integrators streamline and simplify software installation and system maintenance when they build private clouds for their own industrial applications. Advantech Industrial Cloud Builder allows SIs to install and build their own private cloud in seconds. The services also include a developer SDK; it allows SIs to develop their own embedded cloud-based apps on demand. And deployment to remote devices is both convenient and fast.



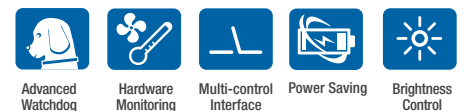
SUSIAccess Remote Device Management

All Advantech fanless embedded box PCs will pre-load with SUSIAccess, remote device management tool. Providing our customers with real-time monitoring, easy access and system protection features that help customers to multiple clients through a single console for remote device management. Software programs through the industrial cloud will immediately grasp the sudden equipment malfunction, real-time equipment maintenance, and to enhance system security protection mechanisms significantly improve maintenance efficiency and reduce personnel and time. And its active update feature also improves the system stability and efficiency.



iManager Intelligent Self-Management

To fulfill the ever-changing specialized demands of various industrial applications, Advantech designed an intelligent self-management agent with software control functions and standalone hardware design: iManager, a built-in solution chip, is a perfect solution that provides a standardized API, integrating several unique platform consolidating functions needed by embedded system integrators to help improve consistency, lighten the development effort and speed-up a product's time-to-market.



ARK-3000 Series

High Performance

- Wide Temperature
- Support Dual 2.5" HDD
- Wide DC Input Support
- PCI/PCIe & MiniPCIe

ARK-VH Series

In-Vehicle Surveillance

- Vehicle Power Design
- GPS Receiver
- E-Mark, EN50155
- 4 Ch H.264 H/W Recording

ARK-5000 Series

PCI/PCIe Slot Expandable

- Comprehensive I/O
- All I/O access from the front bezel
- 2 x PCI & 1 x PCIe x 1
- 2 x Mobile HDD tray

ARK-6300 Series

Mini-ITX

- Multiple COM, USB, LAN
- Economic Choice
- Wide Temperature
- Multiple Display Interface



USA ■

Requirements

- Small dimensions and light weight
- Low power consumption
- Well-bracketed
- Fanless design
- Wi-Fi module for wireless communication
- Supports touch panel interface

Palm-size Fanless System for Medical Nursing Cart

Smallest System Saves Power and Space

Advantech rolled out the world's smallest embedded box PC features a palm-size of 133.8 x 43.1 x 94.2 mm (W x H x D) and weighs only 0.8 kg. Small yet impressive, its CPU runs at above-average speed yet with much reduced power consumption. This mini killer product just fit a medical cart supplier's need in USA. This medical cart maker's previous solutions used a laptop bolted to the top of the cart, or a commercial PC placed in the cart cabinet, with a matched monitor on the desk. Both laptops and commercial PCs are space-consuming, however, and difficult to secure to mobile carts, and their product service cycles are of short duration, which meant they had to be replaced every two or three years. With the small yet powerful embedded box PC ARK-1120 provided by Advantech, this company is now able to offer new nursing carts which save space and power, and, with logistical support from Advantech.

System

The ARK-1120 can be provided with one of two optional I/O panels. For this medical application, we offer the one with 4 USB and 2 COM ports, and a half-size mini-PCle expansion slot to connect with a wireless communication module. The ARK-1120 is bracketed under the cart table, and a connected touch panel is placed on the desktop; nurses and physicians use it to read data and administer their work. With the provided COM ports, the ARK-1120 is connected to medical instruments which are used to measure patients' vital signs. A bar code reader is also connected to the ARK-1120 via USB port; nurses scan codes and read patient data from the server before administering medications, while the latest vital signs of the patients are immediately recorded and transmitted to the server through wireless communications. Though small in size, this ARK-1120 computer runs on an Intel Atom N455 1.66 GHz CPU, which is more than fast enough for medical cart applications but saves much power. In normal operation, the ARK-1120 consumes 10 watts of electric power, compared with the 100 watts of an average commercial computer. This is particularly important as electric devices on the carts are powered by batteries, and reduced power consumption means prolonged service between battery recharges.



Suggested Application Implementations



ARK-1120

Ultra Slim Intel® Atom™ N455 Fanless Embedded Box PC

Conclusion

This mini, power-saving ARK-1120 is particularly suited for nursing cart application as, though the use of mobile carts brings benefits of clinical documentation, nurses understandably find it a nuisance to transport computer gear while making their rounds. The application of this palm-sized computer alleviates the nurses' burden. Secondly, the fanless design of ARK-1120 is more benignant for bedside supporting; computers with fans, on the other hand, make noises and blow dust and microorganisms which could be detrimental in a healthcare environment. Last but not least, ARK-1120 is offered at a rather attractive price. With decades of accumulated knowledge and experience in industrial computers, Advantech knows how to strike an excellent balance between CPU performance, hard disk storage requirements, cooling performance, and price. In addition to medical carts, this ARK-1120 is also suitable for applications in machine tools, factory automation, and remote control for wind turbines at wind farms, thin clients for commercial purposes, and more.



China ■

Requirements

- Integrated display interface
- Slim, compact profile
- Touch panel
- Digital I/O port
- Serial ports and USB ports
- Wide operating temperature range
- Easy installation supporting VESA mount, desk mount and DIN-rail mount

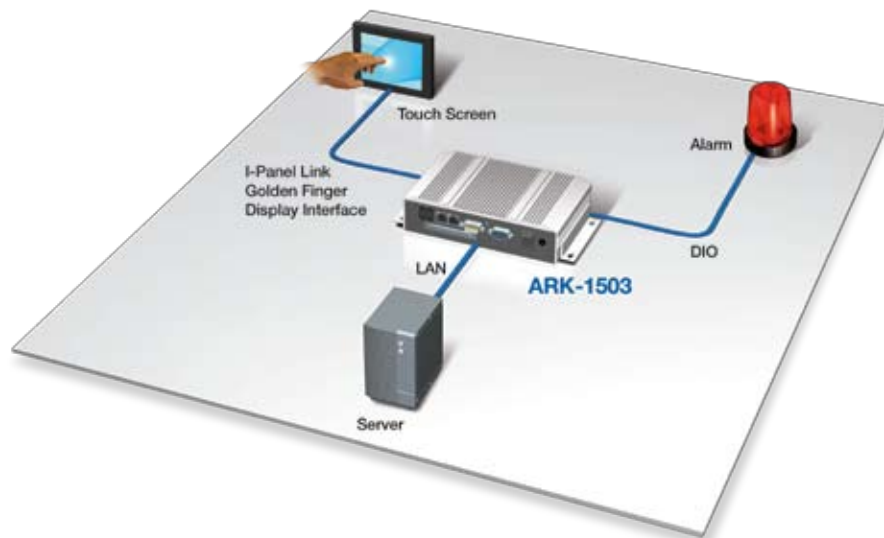
Machine Tool Control System

Integrated Display Interface Reduces Cabling Hassle

One of our Chinese clients produces metal parts processing machines, and was seeking to improve quality control by using an IPC solution with simplified cabling. Traditionally, the display panel for a machine tool needs at least three connecting cables: a power cable, a signaling cable, and a communications cable that connects to the computer. This tangle of wiring leads to quality concerns when any wire fails or if any of many connections becomes compromised. Advantech's ARK-1503 is an excellent fanless embedded box PC solution for machine tools; it simplifies system integration. With Advantech's proprietary I-Panel Link device and ITM-5115 display panel, a single cable supports the touch panel with power, signaling, and communications. The ARK-1503 is also provided with a locking power adapter, which prevents the power connector from disconnecting, further guaranteeing a reliable power supply and improving manufacturing dependability for the machine tools.

System

ARK-1503, featuring a size of 230.6 x 133 x 44.4 mm, though small, with a slim profile, boasts top CPU performance running an Intel® Atom™ D425/D525 processor at 1.8GHz; and it supports DDR3 memory up to 4GB, a 2.5" SATA HDD and rich I/O functions. It is a fanless computer with excellent cooling performance, which makes it ideally suited for embedded designs. In this particular machine tool case, an ARK-1530 is paired up with an ITM-5115 touch panel. Both the computer and the display support I-Panel Link, an integrated display interface, so a single cable is sufficient to connect the pair. Workers in the metal parts manufacturing plant operate the machine with their fingertips via the touch panel. The ARK-1530, provided with 2 Gigabit Ethernet ports, 4 USB ports, 2 COMs ports and a DIO port, connects to power supply, the machine itself, the Internet and the Intranet, the display panel and an alarm. The wide operating temperature range of the ARK-1503 and ITM-5115 (-20 to 60 degrees Celsius) was a definite advantage in this installation in northern China, where winters can be cold.



Suggested Application Implementations



ARK-1503

Intel® Atom™ D525/D425 Fanless Embedded Box PC Integrated Display Interface

Conclusion

Machine tool manufacturing is a pivotal industry and many countries are competing. Technological precision and machine quality decide the winners, so good computing control is vital in this regard. Advantech's new-generation product, ARK-1530, matched with the ITM-5115 display panel, is an ideal solution for machine tools as the application of I-Panel Link reduces wiring hassle and improves production reliability of the tools. From the viewpoint of system creators, this integrated display interface also helps to simplify system installation. Secondly, ARK-1530, though small in form, does not compromise its CPU performance and I/O capability. This allows system developers to create more compact and powerful machines that are more competitive in the market. In addition to machine tools, this solution is also ideal for applications in kiosks, automatic teller machines, parking lot entrance and exit controls, self-serve bicycle rental stations, and so on.



USA

Rich-featured System to Carry Fast-chargers for Electric Vehicles

Powering Up a Greener Future

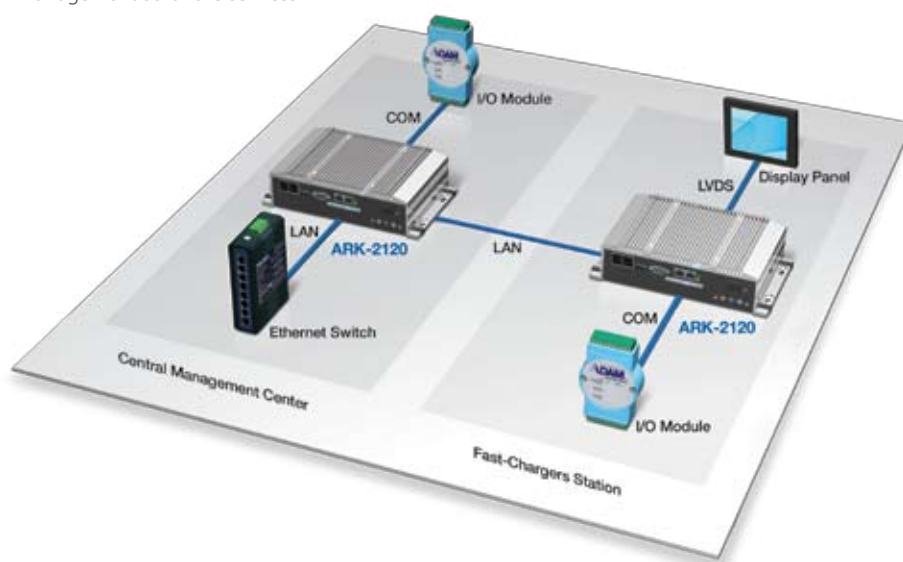
Growing environmental awareness has resulted in the increasing use of vehicles that are powered by renewable energies or energies which produce less carbon dioxide and other green house gases. Electric vehicles are among them. Our customer produces fast-chargers for electric cars, and constructs many public power charging stations. These stations are usually outdoor, self-service facilities that are connected and controlled by a networking system. Computers and other appliances for such applications have to be particularly rugged and reliable, with great connectivity and compatibility. That is why Advantech became an important partner in their projects, as it is able to provide all-in-one solutions for the computing platforms needed in such applications, including its ultra-rugged, fanless, embedded box PC, the ARK-2120.

Requirements

- Wide operating temperature range for outdoor application
- Rich I/O interface, highly integrated with other appliances and accessories
- Great connectivity with an Ethernet network
- Low power consumption

System

Our customer provides fast-charging stations with either single or multiple ports. Their chargers are so powerful that a single 15 to 30 minute charge can support over 100 hours of driving, and the transient electric current during a charge is huge. So the computing platforms that support the systems must be accurate and robust. The application scheme that the customer presented called for each charging port to be controlled by a digital I/O module, with charging data collected by a computer. This computer must provide an selection of interfaces to connect with digital I/O module, display panel, and a remote central server via the Ethernet. Advantech fanless, embedded box PC ARK-2120 supports up to 3 x GbE, 6 x USB and 6 x COMs ports. This was enough connectivity not only to connect with other parts in the system but also allows the customer to add additional functions in the future. And with regard to power consumption, the ARK-2120, running an Intel® Atom™ N2600/D2550 low-power processor delivers high performance with lower voltage, which makes it a power-saving device particularly suited for these green-hearted applications. ARK-2120 also features a wide operating temperature range of -20° ~ 60° C, well suited for outdoor applications, where ambient temperatures can vary wildly from summer to winter. This computer system also supports remote functionalities including remote reset, which allows the system administrators to manage the systems from a remote control center. When the terminal computer shut down unexpectedly, it can be recover quickly and easily by Advantech SUSIAccess remote device management software services.



Suggested Application Implementations



ARK-2120L

Intel® Atom™ N2600/D2550 with Multiple I/O

ARK-2120F

Intel® Atom™ N2600/D2550 with 3 GigaLAN and 6 COM ports

Conclusion

Advantech's fanless embedded box PCs such as ARK-2120 are highly suited for such outdoor self-service applications because of their ultra-ruggedness, wide temperature range, rich I/O options, low power consumption and remote maintenance features. The rich I/O design of ARK-2120 allows for great expandability and flexibility for system designers. Since Advantech supplied all computing and networking appliances and accessories for this fast-charger application, from display panels, digital I/O controllers, data acquisition computers and Ethernet switches to cables and mounting kits, there were absolutely no worries about connectivity or compatibility issues.



Israel

Requirements

- Intel® Core™ i7 610E + QM57, with 2.53 GHz of computing speed
- 2 PCI/PCI Express versatile expansion slots for plug-in cards
- Fanless device to avoid contaminants in fabrication cleanroom environment
- 3 series ports with support for RS-485 autoflow control
- Reliable, rugged, and enduring, for round-the-clock operation
- All-in-one solution ready for applications, without the need of compatibility testing

Suggested Application Implementations



ARK-3440 A2

Intel® Core™ i3/i5/i7 with PCIe Expansion and Dual SATA HDDs

Pushing Semiconductor Machinery Up a Notch

IPC with a Top Speed CPU

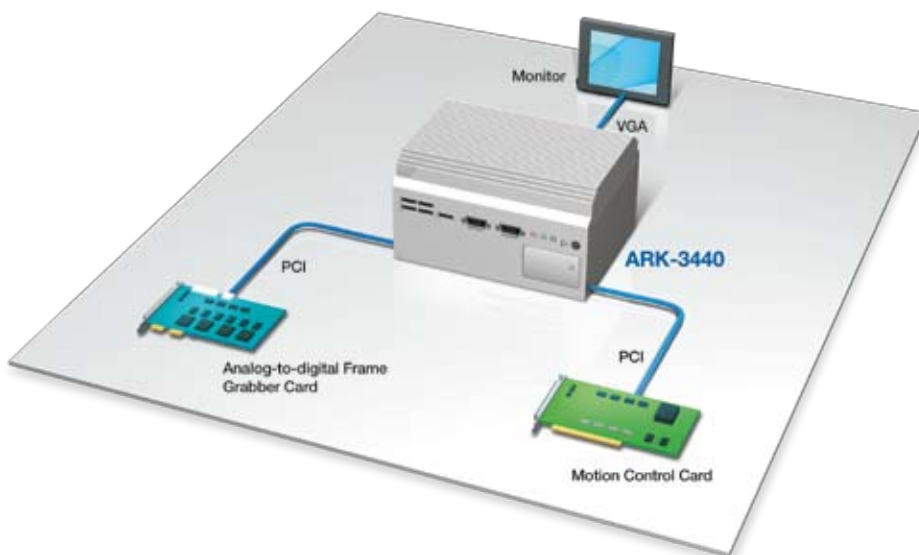
A wafer foundry represents the epitome of modern microfabrication. Be it the process of etching or photolithography, precision and speed are keys for edging out competitors, especially when IC manufacturing is becoming ever finer, moving from 90nm to 45nm and 32nm modes.

An Israeli semiconductor equipment manufacturer was seeking a fanless industrial computer of the highest computing power to incorporate in its semiconductor machinery. Advantech met their demands by providing ARK-3440, an embedded and fanless embedded box pc driven by an Intel® Core™ i7 610E processor.

System

This company had previously assembled computing systems for their machinery by themselves, using a server-class motherboard matched up with various components such as CPUs, chassis, and peripherals, purchased from different sources. This produced hassles as they had to go through a lengthy process of compatibility tests for all the components. Once any of the components was broken or out of product life cycle, they had to seek a replacement and the whole system had to be retailored, or worse, abandoned if the replacement didn't work. Advantech saved them from all these troubles by providing an all-in-one solution performed by fanless embedded box PC ARK-3440, which integrates all components as an application-ready product.

This ARK-3440 is currently in the front line as it is equipped with Intel® Core™ i7 610E processor runs at 2.53 GHz. In this application one of the two PCI/PCI Express expansion slots is fitted with a motion control card, and the other with an analog-to-digital frame grabber card, providing the connected semiconductor machine with ultra-precision auto optical inspection capabilities.



Conclusion

With ARK-3440 as its integrated and embedded computing platform, this Israeli company is exempt from troubles in remodeling and testing computers; they can now focus their attention on their core business. ARK-3440 guarantees 3 to 5 years of product life cycle, and during this period, Advantech's global logistic support and powerful RMA service eliminates any maintenance worries. ARK-3440's compact and fanless design is ideal for the cleanroom environment in wafer fabrications, where absolute freedom of contaminants is required. The ARK-3440's intrinsic ruggedness and durability make it a suitable workhorse for semiconductor manufacturing, where machines are typically required to work 24 hours a day, 7 days a week. More importantly, the ARK-3440's dual core CPU gives their machines a significant edge in high volume production, kicking IC manufacturing up another notch.



Asia ■

MRT In-Car Video Surveillance System

Guarding Passenger Safety

In many cities, the Mass Rapid Transit (MRT) system carries over 1.4 million passengers every day. Mishaps can happen at any moment, involving casualties, crimes, or biohazards. A video surveillance system that monitors every corner throughout MRT stations and trains helps maintain minute to minute passenger safety.

One MRT authority is purchasing an in-vehicle video surveillance system for its newest MRT line. This time, Advantech, in cooperation with another partner, is providing a solution based on the ARK-VH200 fanless embedded box PC, which enables real time remote monitoring and simultaneous video recording of the in-car space.

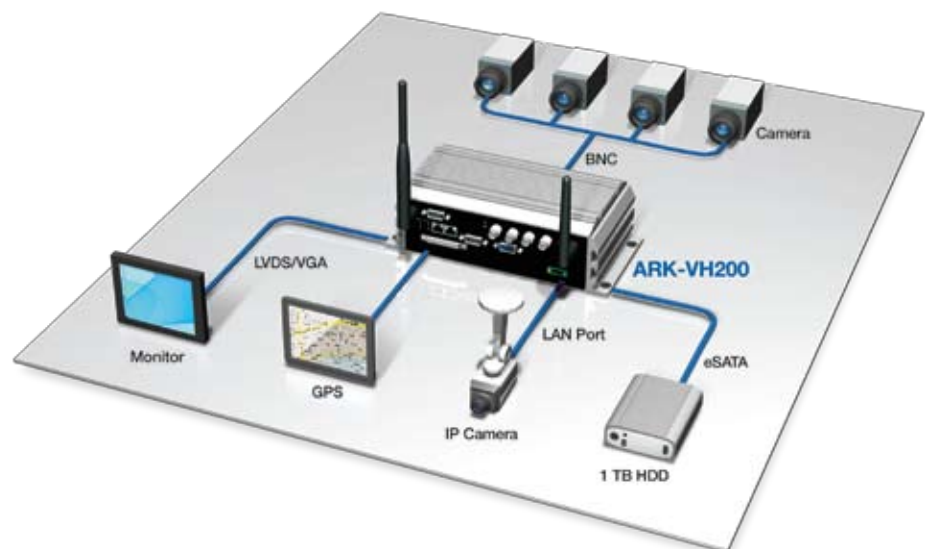
The ARK-VH200 supports a state-of-the-art hardware H.264 video encoder, which is the most popular video compression technology; it provides high video quality with much smaller files, saving bandwidth and storage costs. The ARK-VH200 is provided with dual hard disks of up to 1TB storage capacity through internal HDD bay and eSATA.

System

Each of the MRT cars is equipped with an ARK-VH200 connected to four video cameras that record in-car video from above. For the driver's cabinet, there is one video camera inside that monitors the driver, and another camera mounted outside on top of the lead car targeting the rails.

There is a 4-up, split-screen display in the driver's compartment that allows the driver to monitor live video from the passenger cars, with the screens shifting to display a different car every 5 seconds. All the video is recorded and saved in archives. The system supports high quality video; each video camera takes 30 frames per second at D1 resolution (704 x 480 pixels).

Last but not least, all devices used in this video surveillance solution are in accordance with EN50155, the most widely recognized international standard for electrical and electronic appliances used for rail vehicles, which means that this system has broad international applicability.



Suggested Application Implementations



ARK-VH200

High Performance Mobile Intel® Atom™
D510 Fanless DVR Solution

Conclusion

For a metropolitan mass transit system which sees huge human flows in and out each day, speed and comfort are among the main concerns for service quality, but security is most important of all. A comprehensive video surveillance system can help prevent crimes and keep mishaps from becoming tragedies. The remote live-view function allows MRT staff to deliver help to passengers in need as soon as possible. Video archives come into play in resolving disputes or clarifying responsibilities, and also aid in preventative planning. Video archives can also, of course, offer important help in crime investigations.

Product Selection

NEW

Coming soon



Model Name		ARK-1120	ARK-1122	ARK-1503
Features		Intel Atom N455 Palm-size and Price-competitive Solution	Intel Atom N2600 Palm-size and Low Power Consumption Solution	Intel Atom D525/D425 with Integrated Display Interface
Processor System	Processor	Intel Atom N455 1.66 GHz	Intel Atom Dual Core N2600 1.6 GHz	Intel Atom D525/D425 1.8 GHz
	System Chipset	Intel ICH8M	Intel NM10	Intel ICH8M
	BIOS	AMI 16 Mbit Flash BIOS	AMI EFI 16 Mbit	AMI 16 Mbit Flash BIOS
	System Memory	1 x DDR3 667MHz SO-DIMM Max. up to 2 GB	1 x DDR3 800MHz SO-DIMM Max. up to 4 GB	1 x DDR3 667MHz SO-DIMM (N455) 1 x DDR3 800MHz SO-DIMM (D525) Max. up to 2 GB (N455) Max. up to 4 GB (D525)
Display Interfaces	CRT	Up to 1400 x 1050	Up to 1920 x 1200	Up to 1400 x 1050 (N455) Up to 2048 x 1536 (D525)
	LVDS	-	-	24-bit LVDS up to 1366 x 768 Single channel 18/24-bit LVDS up to WXGA 1366x768
	HDMI	-	Yes	-
	DVI	-	-	-
I/O Interface	Audio	L: Lin-in, Line-out F: N/A	L: Lin-in, Line-out F: N/A	Line-out
	Ethernet	1 x RJ-45 (GigaLAN)	1 x RJ-45 (GigaLAN)	2 x RJ-45 (GigaLAN)
	USB	L: 4 x USB2.0 F: 2 x USB2.0	L: 4 x USB2.0 F: 2 x USB2.0	Up to 4 x USB 2.0
	eSATA	-	-	-
	Serial Port/ Parallel Port	L: 2 x RS-232 F: 2 x RS-232, 2 x RS-232/422/485	L: 1 x RS-232 F: 1 x RS-232, 1 x RS-232/422/485	Up to 1 x RS-232, 1 x RS-232/422/485
	Expansion	1 x half-size Mini PCIe	1 x half-size Mini PCIe	1 x Mini PCIe
	Wireless	-	-	-
Storage	Solid State Disk	1 x Type I/II Compact Flash Card	-	1 x Type I/II Compact Flash Card
	HDD	1 x 2.5" SATA HDD	1 x 2.5" SATA HDD	1 x 2.5" SATA HDD
Power Requirements	Input Voltage & Type	DC 12 V, ATX	DC 12V, ATX	DC 12 V, ATX
Certifications	EMC	CE/FCC Class A, CCC, BSMI	CE, FCC, CCC, BSMI	CE, FCC, CCC, BSMI, KC
	Safety	UL, CCC, BSMI	UL, CCC, BSMI	UL, CCC, BSMI, KC
Dimensions (W x H x D)		133.8 x 43.1 x 94.2 mm (5.27" x 1.70" x 3.71")	133.8 x 43.1 x 94.2 mm (5.27" x 1.70" x 3.71")	230.6 x 44.4 x 133.0 mm (9.08" x 1.75" x 5.24")
Operating Temperature		0 ~ 40° C air flow: 0.7 m/sec	0 ~ 40° C (w/ HDD) air flow: 0.7 m/sec	0 ~ 45° C (w/ HDD) -20 ~ 60° C (w/ CF) air flow: 0.7 m/sec
Software Support		Windows 7, XP Professional, XP Embedded, WinCE 6.0, Ubuntu	Windows 7, XP Professional, XP Embedded, WinCE 7.0, Ubuntu	Window 7, XP Professional, XP Embedded, WinCE 6.0

NEW

NEW



Model Name		ARK-2120L	ARK-2120F	ARK-3360L	ARK-3360F
Features		Intel Atom N2600/D2550 with Multiple I/O	Intel Atom N2600/D2550 with 3 GigaLAN and 6 COM ports	Intel Atom N450/D510 with Multiple I/O	Intel Atom N450/D510 with 3 GigaLAN and Isolated COM Ports
Processor System	Processor	Intel Atom Dual Core N2600 1.6 GHz/ D2550 1.86 GHz	Intel Atom Dual Core N2600 1.6 GHz/ D2550 1.86 GHz	Intel Atom N450/ D510 1.66 GHz	Intel Atom N450/ D510 1.66 GHz
	System Chipset	Intel NM10	Intel NM10	Intel ICH8M	Intel ICH8M
	BIOS	AMI EFI 16Mbit	AMI EFI 16Mbit	AMI 16Mbit Flash BIOS	AMI 16Mbit Flash BIOS
	System Memory	1 x DDR3 1066MHz SO-DIMM (D2550) 1 x DDR3 800MHz SO-DIMM (N2600) Max. up to 4 GB	1 x DDR3 1066MHz SO-DIMM (D2550) 1 x DDR3 800MHz SO-DIMM (N2600) Max. up to 4 GB	1 x DDR2 667MHz SO-DIMM Max. up to 2 GB	1 x DDR2 667MHz SO-DIMM Max. up to 2 GB
Display Interfaces	CRT	Up to 1920 x 1200	Up to 1920 x 1200	N450 up to 1400 x 1050 D510 up to 2048 x 1536	N450 up to 1400 x 1050 D510 up to 2048 x 1536
	LVDS	-	48-bit LVDS: N2600 up to 1600 x 1200 D2550 up to 2560 x 1600	18-bit LVDS (optional): N450 up to 1400 x 1050 D510 up to 2048 x 1536	18-bit LVDS (optional): N450 up to 1400 x 1050 D510 up to 2048 x 1536
	HDMI	Up to 1920 x 1200	Up to 1920 x 1200	-	-
	DVI	-	-	-	-
I/O Interface	Audio	Lin-in, Line-out, Mic-in	Lin-in, Line-out, Mic-in	Lin-in, Line-out, Mic-in	Lin-in, Line-out, Mic-in
	Ethernet	2 x RJ-45 (GigaLAN)	3 x RJ-45 (GigaLAN)	2 x RJ-45 (GigaLAN)	3 x RJ-45 (GigaLAN)
	USB	6 x USB 2.0	5 x USB 2.0	6 x USB 2.0	6 x USB 2.0
	eSATA	-	-	-	-
	Serial Port/ Parallel Port	3 x RS-232, 1 x RS-232/422/485	2 x RS-232, 4 x RS-232/422/485	3 x RS-232, 1 x RS-232/422/485	1 x RS-232, 3 x RS-232/422/485, 2 x RS-422/485
	Expansion	1 x Mini PCIe with SIM holder	1 x Mini PCIe with SIM holder	1 x Mini PCIe	1 x Mini PCI, 1 x Mini PCIe
	Wireless	-	-	-	-
Storage	Solid State Disk	One CFast Card	One CFast Card	1 x Type I/II Compact Flash Card	1 x Type I/II Compact Flash Card
	HDD	1 x 2.5" SATA HDD	1 x 2.5" SATA HDD	1 x 2.5" SATA HDD	1 x 2.5" SATA HDD
Power Requirements	Input Voltage & Type	DC 12V, ATX	DC 12V~24V, ATX	DC 12 V, ATX	DC 12 V ~ 24 V, ATX
Certifications	EMC	CE, FCC, CCC, BSMI	CE, FCC, CCC, BSMI	CE, FCC, CCC, BSMI, KC	CE, FCC, CCC, BSMI, KC
	Safety	UL, CCC, BSMI	UL, CCC, BSMI	UL, CCC, BSMI, KC	UL, CCC, BSMI, KC
Dimensions (W x H x D)		264.5 x 68.39 x 137.25 mm (10.41" x 2.69" x 5.4")	264.5 x 68.39 x 137.25 mm (10.41" x 2.69" x 5.4")	264.5 x 69.2 x 137.25 mm (10.41" x 2.72" x 5.4")	264.5 x 69.2 x 137.25 mm (10.41" x 2.72" x 5.4")
Operating Temperature		0 ~ 45° C (w/ HDD) -20 ~ 60° C (w/ SSD) air flow: 0.7 m/sec	0 ~ 45° C (w/ HDD) -20 ~ 60° C (w/ SSD) air flow: 0.7 m/sec	0 ~ 45° C (w/ HDD) -20 ~ 60° C (w/ SSD) air flow: 0.7 m/sec	0 ~ 45° C (w/ HDD) -20 ~ 60° C (w/ SSD) air flow: 0.7 m/sec
Software Support		Windows 7, XP Professional, XP Embedded, WinCE 7.0, Ubuntu	Windows 7, XP Professional, XP Embedded, WinCE 7.0, Ubuntu	Windows 7, XP Professional, XP Embedded, WinCE 6.0, Ubuntu, QNX, Vxwork	Windows 7, XP Professional, XP Embedded, WinCE 6.0, Ubuntu, QNX, Vxwork



Model Name		ARK-3403	ARK-3440 A2	ARK-5260	ARK-6320	ARK-VH200
Features		Intel Atom D510/D525 with PCI/PCIe Expansion and Dual SATA HDDs	Intel Core i3/i5/i7 with PCI/PCIe Expansion and Dual SATA HDDs	Intel Atom D510 with Dual PCI/PCIe Expansion and Dual Mobile HDDs	Intel Atom D510/D525 Price-competitive Mini-ITX Systems	Intel Atom Fanless Mobile DVR Solution
Processor System	Processor	Intel Atom D510 1.66 GHz/D525 1.8 GHz	Intel Core i7 610E 2.53 GHz/ Core i5 520E 2.4 GHz/ Core i3 330E 2.13 GHz	Intel Atom D510 1.66 GHz	Intel Atom D510 1.66 GHz/ D525 1.8 GHz	Intel Atom D510 1.66 GHz
	System Chipset	Intel ICH8M	Intel QM57	Intel ICH8M	Intel ICH8M	Intel ICH8M
	BIOS	AMI 16Mbit Flash BIOS	AMI 16Mbit Flash BIOS	AMI 16Mbit Flash BIOS	AMI 16Mbit Flash BIOS	AMI 16Mbit Flash BIOS
	System Memory	1 x DDR2 667 MHz SO-DIMM Max. up to 2 GB	2 x DDR3 1333 MHz SO-DIMM Max. up to 8 GB	1 x DDR2 667 MHz SO-DIMM Max. up to 2 GB	1 x DDR2 667 MHz SO-DIMM (D510) 2 x DDR3 1333 MHz SO-DIMM (D525) Max. up to 2 GB (D510) Max. up to 4 GB (D525)	1 x DDR2 667 MHz SO-DIMM Max. up to 2 GB
Graphics	CRT	Upto 1920 x 1200	up to 2048 x 1536	up to 2048 x 1536	up to 2048 x 1536	up to 2048 x 1536
	LVDS	18-bit LVDS (optional): up to 2048 x 1536	24-bit LVDS (optional): up to 1920 x 1200	-	18-bit LVDS (optional) upto 1366 x 768	18-bit LVDS upto 1366 x 768
	DVI	-	upto 1920 x 1200	-	upto 1600 x 1200 (D525)	-
I/O Interface	Audio	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-in, Line-out, Mic-in	Line-in, Line-out, Min-in	Line-out, Mic-in
	Ethernet	2 x RJ-45 (GigaLAN)	2 x RJ-45 (GigaLAN)	2 x RJ-45 (GigaLAN)	2 x RJ-45 (GigaLAN)	2 x RJ-45 (GigaLAN)
	Keyboard/Mouse	-	-	1 x PS/2	-	-
	USB	6 x USB 2.0	6 x USB 2.0	5 x USB 2.0	8 x USB 2.0	2 x USB 2.0, 2 x lockable USB2.0
	eSATA	1 x eSATA	1 x eSATA	-	-	1 x eSATA
	Serial Port/Parallel Port	2 x RS-232, 2 x RS-232/422/485 2 x RS-232 (option)	2 x RS-232, 1 x RS-232/422/485	4 x RS-232/422/485	5 x RS-232, 1 x RS-232/422/485	3 x RS-232
	Expansion	2 x PCI/PCIe, 2 x Mini PCIe	2 x PCI/PCIe, 2 x Mini PCIe	2 x PCI, 1 x PCIe	1 x Mini PCIe	On-board GPS Receiver
	Wireless	-	-	-	-	2 x Mini PCIe (with one SIM card socket)
Storage	Solid State Disk	1 x Type I/II Compact Flash Card	1 x Type I/II Compact Flash Card	1 x Type I/II Compact Flash Card	1 x Type I/II Compact Flash Card	1 x Type I/II Compact Flash Card
	HDD	2 x 2.5" SATA HDD	2 x 2.5" SATA HDD	2 x 2.5" SATA HDD	1 x 2.5" SATA HDD	1 x 2.5" SATA HDD
Power Requirements	Input Voltage & Type	DC 12V-24V, ATX	DC 9V-34V, ATX	DC 12V-24V, ATX	DC 12V	DC 9V~32V, AT/ATX, supports PWR ignition, compliant with ISO 7637-2
Certifications	EMC	CE, FCC, CCC, BSMI	CE, FCC, CCC, BSMI	CE, FCC, CCC, BSMI	CE, FCC, BSMI	CE, FCC, CCC, BSMI
	Safety	UL, CCC, BSMI	UL, CCC, BSMI	CCC, BSMI	BSMI	CCC, BSMI, UL
Dimensions (W x H x D)		220 x 102.5 x 200 mm (8.66" x 4.04" x 7.87")	220 x 117 x 200 mm (8.66" x 4.6" x 7.87")	137 x 189 x 221 mm (5.39" x 7.4" x 8.7")	200 x 73 x 200 mm (7.9" x 2.9" x 7.9")	260 x 77 x 134 mm (10.23" x 3.03" x 5.27")
Operating Temperature		-10 ~ 45° C (w/ HDD) -10 ~ 55° C (w/ SSD) air flow 0.7 m/sec	0 ~ 40° C (w/ HDD) 0 ~ 50° C (w/ SSD) air flow 0.7 m/sec	0 ~ 40° C (w/ HDD) 0 ~ 55° C (w/ SSD) air flow 0.7 m/sec	0 ~ 40° C (w/ HDD) 0 ~ 45° C (w/ SSD) air flow 0.7 m/sec	0 ~ 45° C (w/ HDD) -20 ~ 60° C (w/ CF) air flow 0.7m/sec
Software Support		Windows 7, XP Professional, XP Embedded, WinCE 6.0, Fedora 12, Ubuntu	Windows 7, XP Professional, XP Embedded, Fedora 14, Ubuntu	XP Professional, XP Embedded, WinCE 6.0	Windows 7, XP Professional, XP Embedded	XP Professional, XP Embedded