Smart Factory Solution

Developing and Perfecting Your Smart Factory

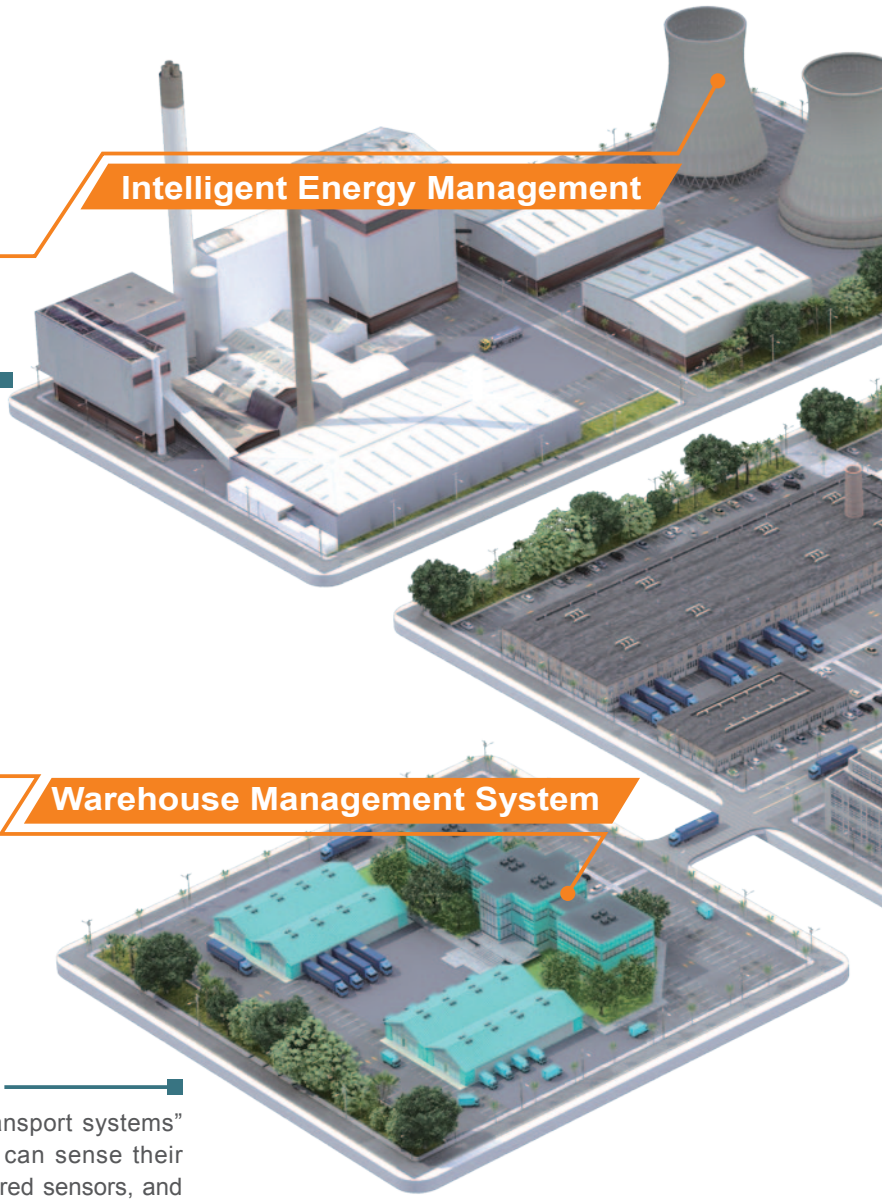
IRIS™
IPMI 2.0 Compliant

www.ieiworld.com

IEI Smart Factory Solution

Developing and Perfecting Your Smart Factory

IEI's smart factory solution improves the production efficiency and warehouse management accuracy. To catch the wave of automatic assembly, robot system will be a major role along with the machine vision and motion control solutions. For factory automation control terminals, IEI offers industrial computing solutions with robust IP65 design, wide temperature, and flexible add-on card expansion. To elevate the efficiency of warehouse management, IEI provides UHF RFID and 1D/2D barcode reader solutions with various form factors.



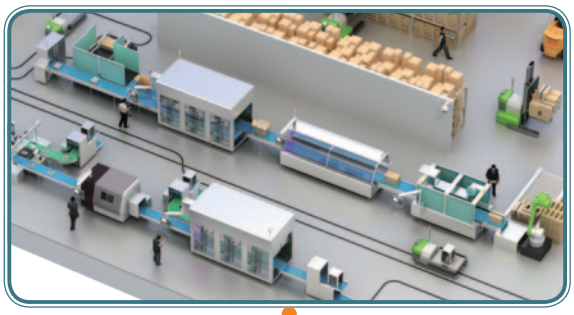
Intelligent Energy Management

IEI industrial machines can immediately transmit essential operating data — including energy consumption and status. This adds a continuous stream of useful data for plant managers and industrial engineers that can be mined across a facility's machines to detect key trends and worrisome failures. In other words, vital micro machine data gets aggregated into a valuable macro view of a facility.

Warehouse Management System

One big trend in the future is the introduction of “transport systems” in the warehouse. The autonomous vehicles which can sense their surroundings independently using laser scanners, infrared sensors, and RFID chips, and navigate to their respective destinations autonomously.

The autonomous vehicles (autonomous transport robots) can travel on a track, form the basic elements of the solution. The panel PC, mobile computer and embedded computers form the entire control system.



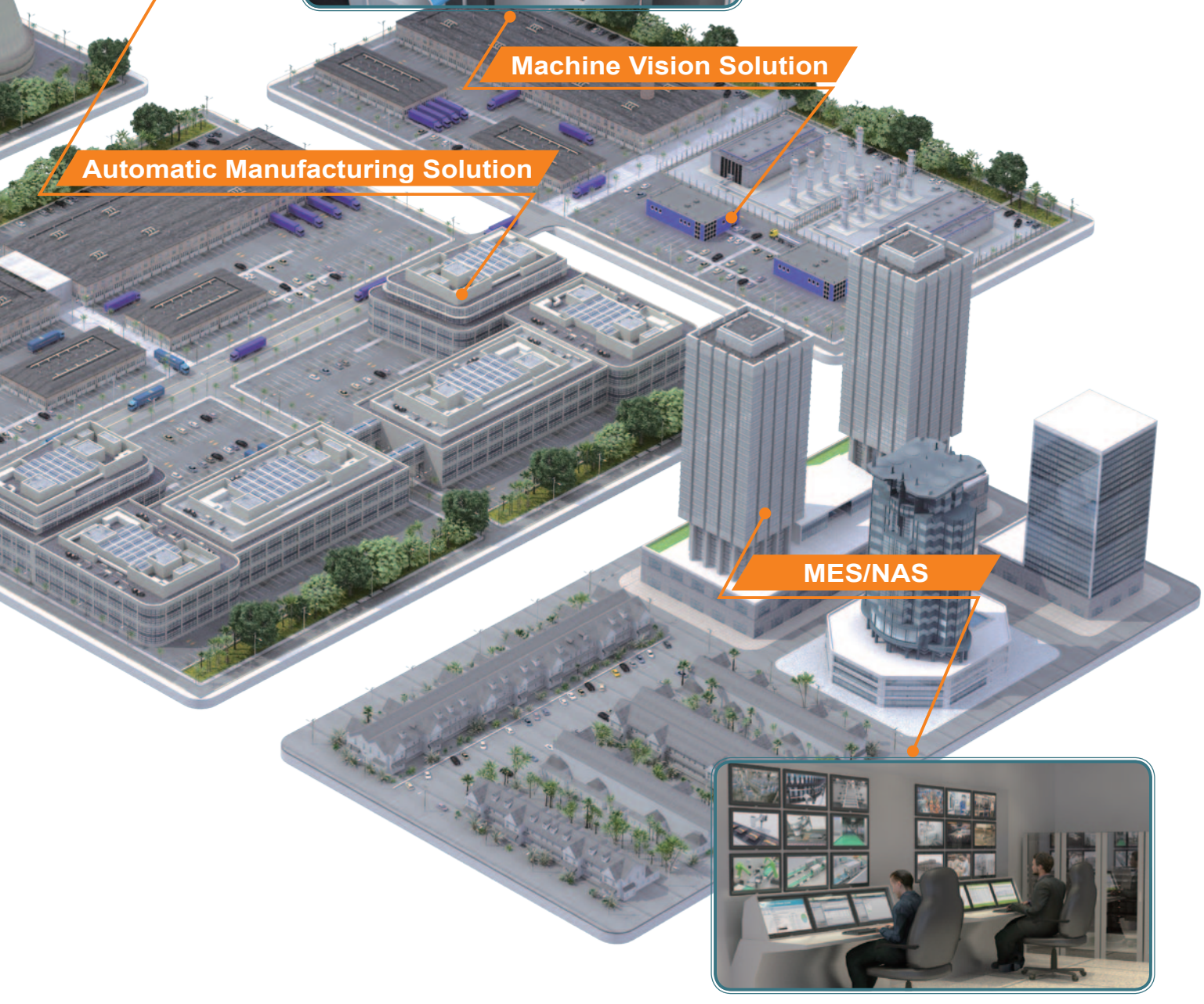
Automatic Manufacturing Solution

Manufacturing processes will increase in flexibility and allow for the economic production of small lot sizes. Robots, smart machines, and smart products that communicate with one another and make certain autonomous decisions will provide this flexibility.

Products, production processes, and production automation will be designed and commissioned virtually in one integrated process and through the collaboration of producers and suppliers.

Machine Vision Solution

Machine vision is the process of applying a range of technologies and methods to provide imaging-based automatic inspection, process control, robot guidance and more.

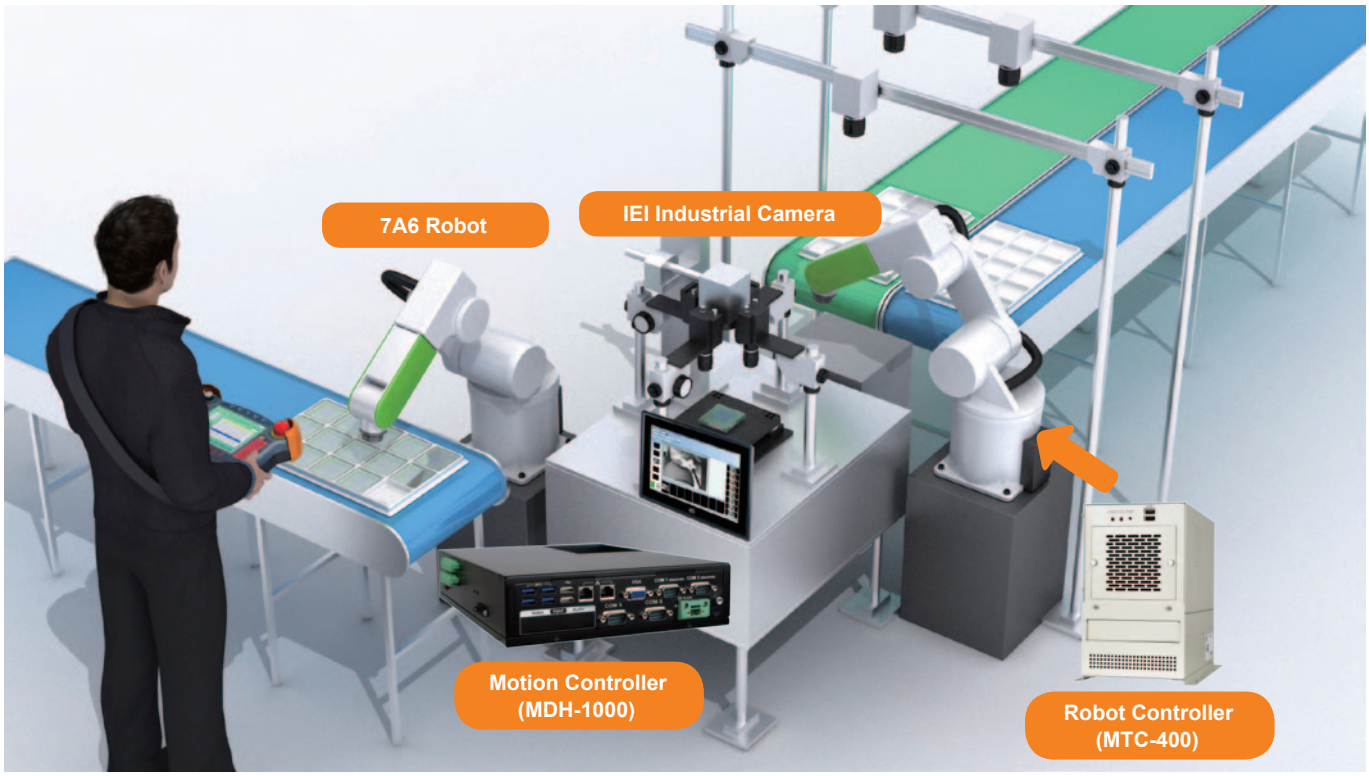


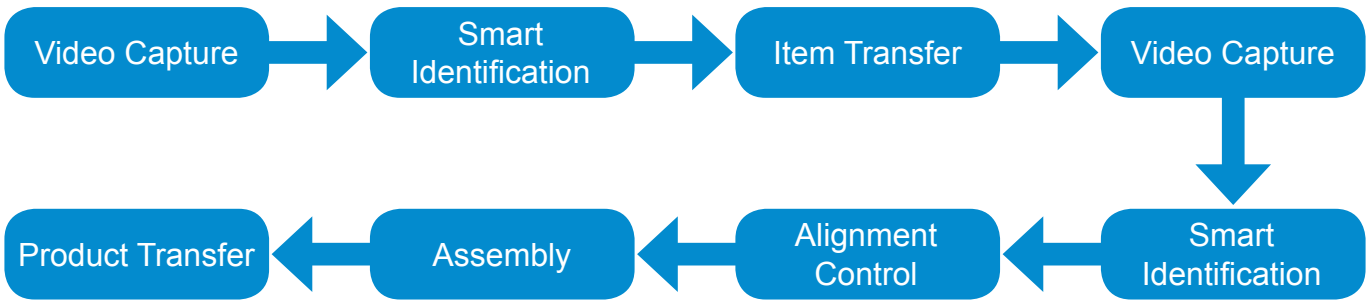
Automatic Manufacturing Solution

The next wave of manufacturing, Industry 4.0, will affect producers' entire value chain. From design to after-sales service, the production automation will be optimized through the integrated IT systems, robots, smart machines, motion controllers and embedded systems that communicate with one another. IEI provides not only elements of Industry 4.0 but also having a total solution of automatic manufacturing system, including industrial robot system and motion control system integration service.

Automatic Product Line

On a production line, products are conveyed from one process to another by the conveyor belt. Using the video captured by the smart camera, the production location information is sent to the iRX6-MTC400 robot controller. After calculation, the robot controller will send a control command to control the 7A6 robot to grasp the item from the source position and place it on the optical alignment machine. The optical alignment machine is composed of the MDH-1000 integrated motion control system, IEI industrial cameras, and XXY alignment platform. After placing the item on the optical alignment machine, the smart control software of the MDH-1000 will activate the industrial camera to capture images of the item to locate the positioning symbol on the item. After confirming relevant position and angle, the MDH-1000 will control the motion platform to complete alignment and assembly. Then the 7A6 industrial robot will transfer the item to the conveyor belt of the next process to finish the processing work of this station.





Advanced Robot/Motion Controller Architecture

MTC-400

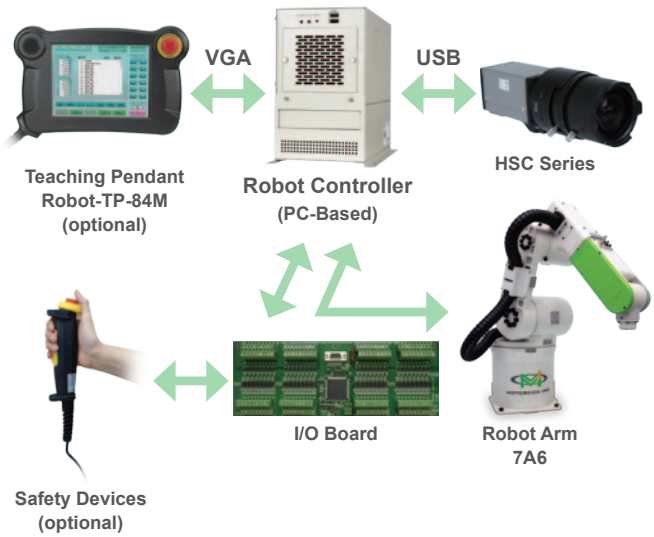
Robot Control Software

Robot Arm 7A6

High-performance robotic arms from Motorocon are equipped with genuine HD decelerator from Japan and exclusive robot harnesses imported from Switzerland to ensure product reliability. These robotic arms have high precision, high payload, intuitive operation, high safety, and expandability

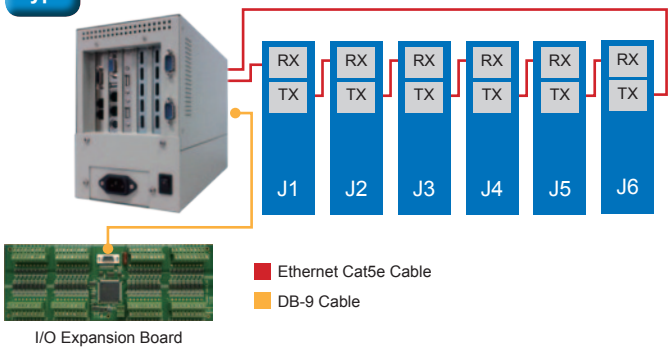
- **Functionality and reliability**
  The MTC-400 is verified by robotic arm 7A6
- **Further programming development**
  Friendly secondary development function for users to equip robots with more functions, such as Visual C++, Visual Basic, BCB, Visual C#, Labvie
- **Link type**
  The Robot Controller can control and link to digital and pulse output motor systems and IT equipped with real-time control and unique singular point estimation functions to ensure the operational reliability of robots.

System Architecture



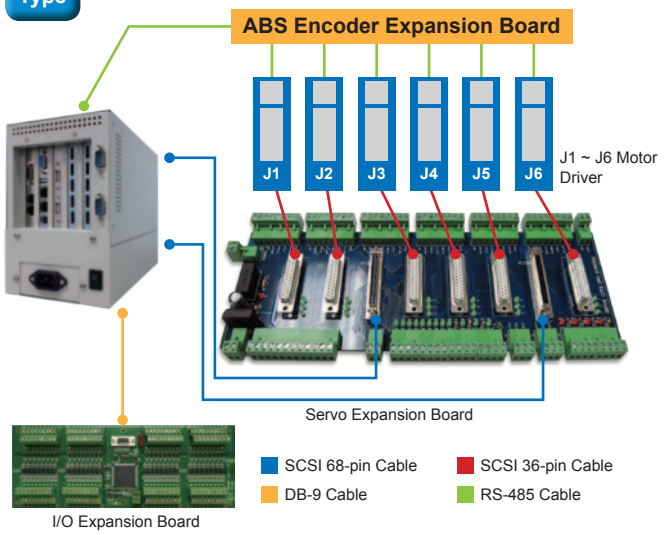
Link Type

Serial digital communication control interface



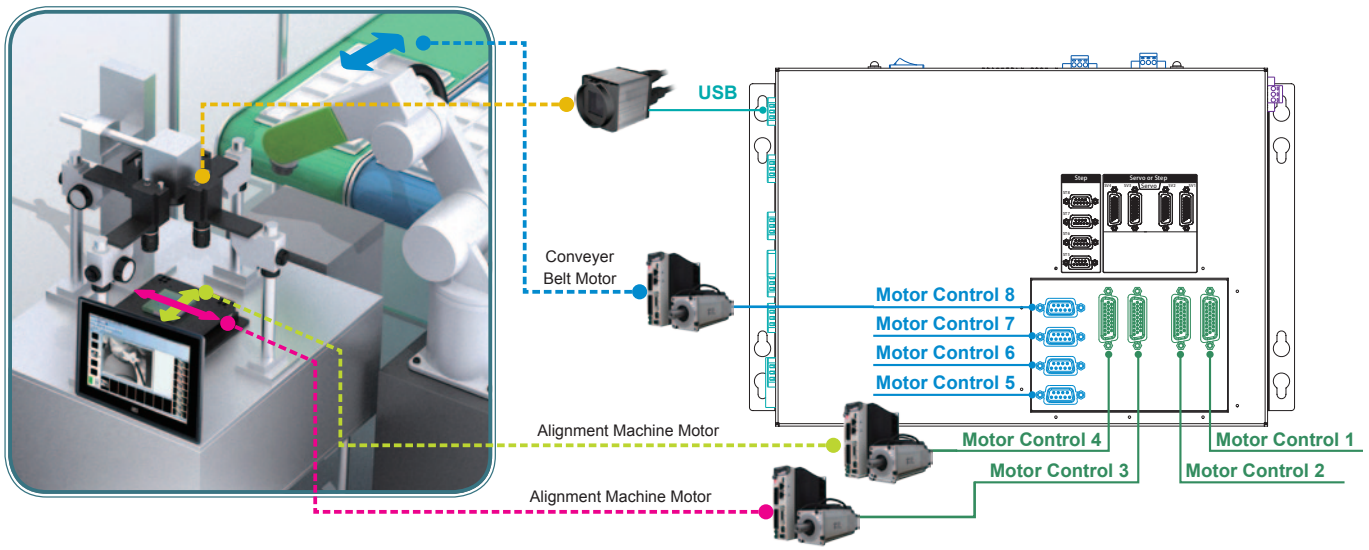
Link Type

Standard pulse output control interface



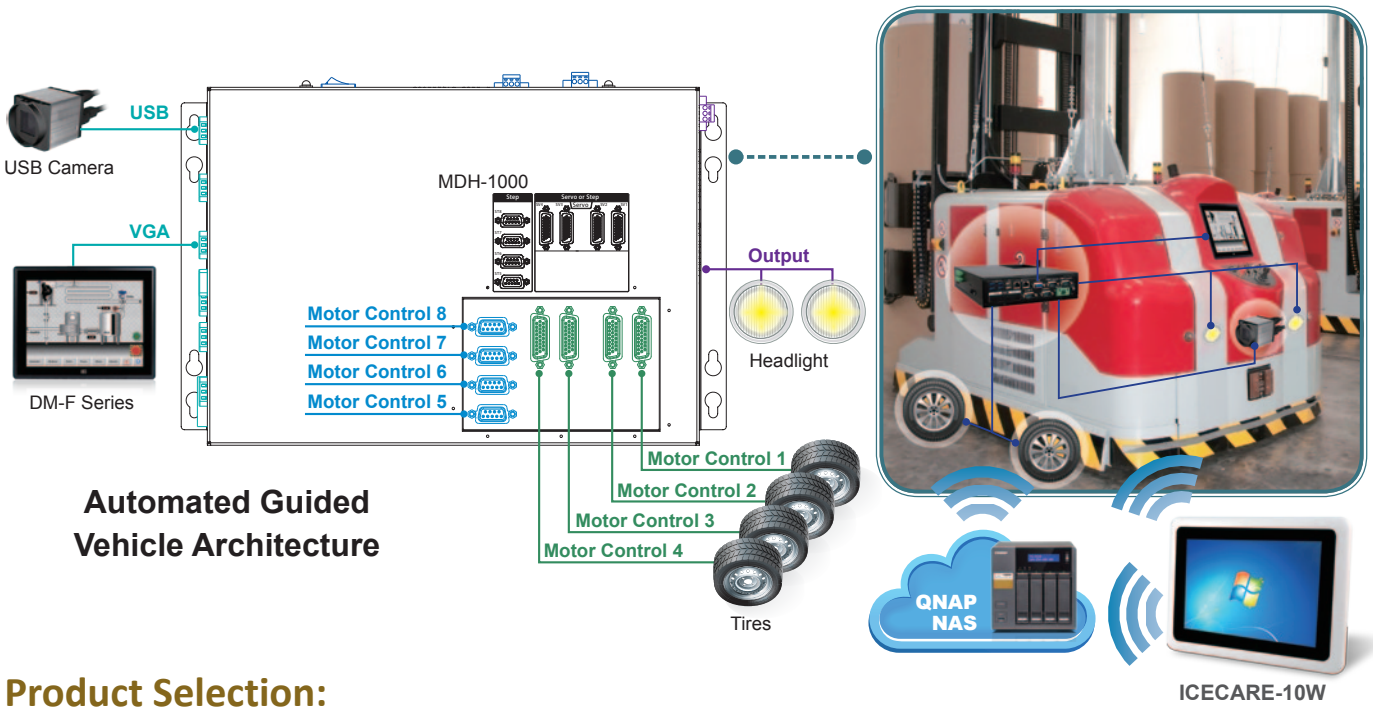
Economy Robot/Motion Controller Architecture

The motion controller (MDH-1000) is a fanless embedded system integrating industrial computer, motion control card, servo wiring board and I/O wiring board which has multi motion control and multi I/O control functions. The advantages include small size, easy wiring and installation.



Automated Guided Vehicle

The motion controller (MDH-1000) is a fanless embedded system integrating industrial computer, motion control card, servo wiring board and I/O wiring board which has multi motion control and multi I/O control functions. The advantages include small size, easy wiring and installation.The 4-axis servo motor for motion control which is compatible with the absolute servo systems from different manufacturers, including Panasonic, Delta, Gotrend, Sankyo, etc. It has great compatibility to use in the motion control applications.



Automated Guided Vehicle Architecture

Product Selection:

- **Advanced Controller: Robot Arm 7A6, MTC-400 & IEI industrial camera**
- **Economy Controller: MDH-1000 & IEI industrial camera**

7A6

Robot Arm

- Payload: 7kg
- Rotation: 6-axis
- Speed: 6165 mm/s

Robot-TP-84M

8.4" Easy-to-use Control Terminal

- Completely dust and splash proof (IP 64) design
- Safety functions: emergency stop, 3-position deadman switch, mode selection switch.

MDH-1000

Motion Controller

- Fanless design
- 8 axes of pulse type motor control
- 4-axis servo/step motor and 4-axis step motor
- Pulse output support A/B Phase, Pulse/Dir, CW/CCW mode

DM-F Series

IP 65 Flat Bezel Industrial Monitor

- 6.5" to 24" resistive/PCAP monitor
- Extended operating temperature: -20°C ~ 60°C

HSC-03M2-O

USB 3.0 Lightweight Camera

- Supporting SuperSpeed USB 3.0 & opto-isolated external GPIO, up to 60fps
- Supporting OpenCV, Open eVision & MIL

MTC-400

Robot Controller

- Supports 3~6 axes vertical articulated robot, SCARA robot, delta robot
- Multi-axis contouring accuracy and command resolution of +/-0.001mm and +/-0.001°

Advanced Controller Applications:

- Loading/Unloading
- Screw Locking
- Cutting
- Gluing Robot
- Palletizer
- Welding Robot
- Picking/Packing
- Transport
- Grinding
- Assembly

Economy Controller Applications:

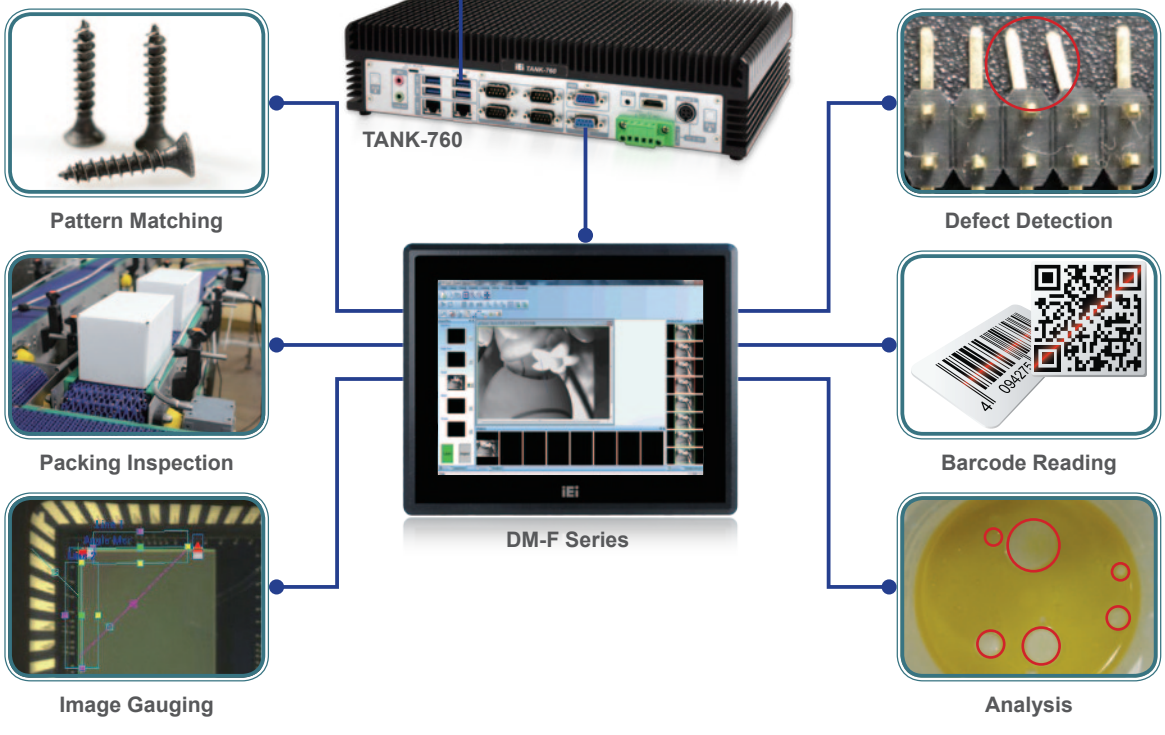
- Alignment System
- Automatic Guide
- Automatic Production Line
- Automatic Test Machine
- Machine Vision
- Position Control
- Production Line Control System

Machine Vision Solution

Machine vision is a replacement for human vision and judgment by using video cameras, software and computers to perform an inspection task, such as gauging, counting as well as barcode and optical character reading (OCR). IEI designs and develops advanced industrial cameras, barcode readers and embedded computers, which can be used to perform reliably at higher speed and with greater precision.

Inspection & Verification

IEI industrial cameras are equipped with USB 3.0 SuperSpeed interface and can stably transfer data to PC while in continuous shooting, enabling it to become a reliable and high compatibility platform. The algorithm independently developed by IEI enables users to implement additional image processing from the camera to reduce time of the image inspection processing.



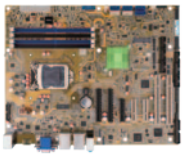
Product Selection: HSC-03M2-O & TANK-760

TANK-760-HM86
- Support three independent video outputs
- Support IEI iRIS-2400 (IPMI 2.0 compliant)

TANK-6000
- Support IPMI 2.0 via IEI iRIS solution
- Workstation with Intel® C226 chipset

DM-F Series
- Robust IP 65 aluminum front bezel
- HDMI/DisplayPort/VGA flexible video input solution

HSC-03M2-O
USB 3.0 Lightweight Camera
- Support SuperSpeed USB 3.0 & opto-isolated external GPIO, up to 60fps
- Support OpenCV, Open eVision & MIL



IMBA-Q170-i2
- Support triple display with HDMI/DVI/VGA
- Support USB 3.0, SATA 6Gb/s and PCI Express Gen3
- Support IPMI 2.0 via iRIS-2400 module

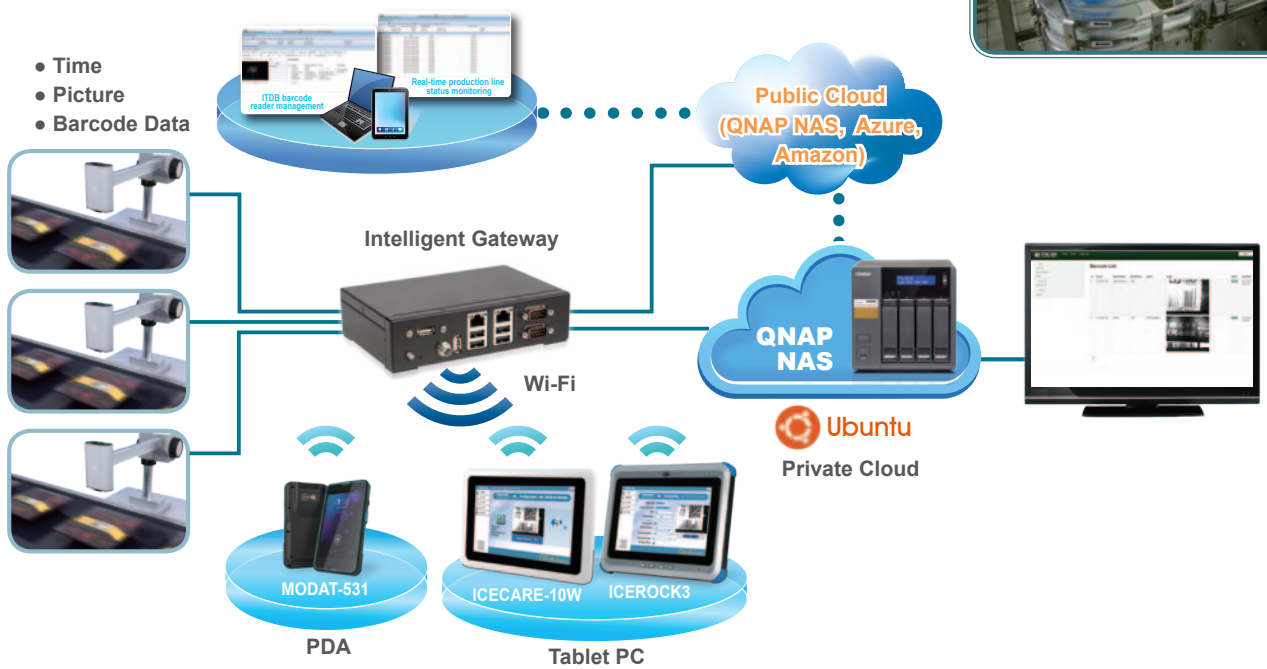
IMBA-BDE
- Intel® Xeon processor D-1500 product family
- Intel® 10 GbE supported
- Support IPMI 2.0 via iRIS-2400 module

Applications:
- Quality Checking
- Subassembly Verification
- Packing Inspection

IoT High Speed Barcode Reader

Installing ITDB Series barcode reader with QNAP NAS system allows you to manage your production lines in a more efficient way. The NAS can act as a private cloud or a public cloud. An ITDB system that runs over an IP network infrastructure enables the decoded images and results to be distributed to any number of sites, within the constraints of available bandwidth.

IoT 1D/2D Barcode Reader Solution



Product Selection:
ITDB 100 Series and QNAP NAS TVS-x71

ITDB-100L / ITDB-100HD
High Speed 2D Barcode Reader

Supporting remote monitoring and control via PC/NAS/Android phones & tablets

TVS-x71
- Manage, share, and back up business data with Real-time Remote Replication (RTRR)
- 10GbE-ready, highly-efficient storage solution for 4K video playback, transcoding and on-the-fly editing

Applications:
- Logistics
- Airport
- High-speed Manufacturing Line

Intelligent Energy Management

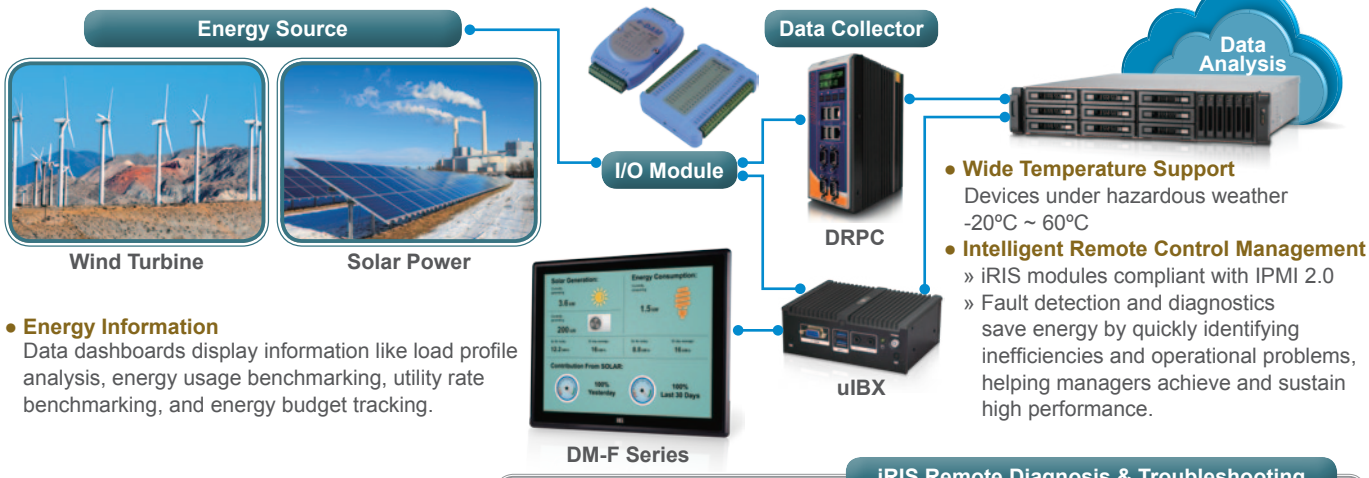
With a growing interest in renewable energy resources globally, the sun and the wind have become one of the most rapidly growing eco-friendly alternative energy sources in the recent years.

By using solar thermal panels and wind turbines, both sunlight and wind are transformed into electricity ready to be consumed at factory and any other establishments that require electricity. These two will be the most important power production units of any hybrid system up to date.

Information about power production and consumption will be collected and used by the control unit to create profiles of power consumption/ production for each source/load of the system. Once these profiles are created a better and tighter management can be deployed.

Energy Data Collection & Analysis

Information technology adds intelligence to factories from design to the end of the process. Today's technologies automate the collection, storage and retrieval of data from across multiple factories and factory sub-systems to make that data available for decision makers, from facility managers to supervisors.



- **Energy Information**
  Data dashboards display information like load profile analysis, energy usage benchmarking, utility rate benchmarking, and energy budget tracking.

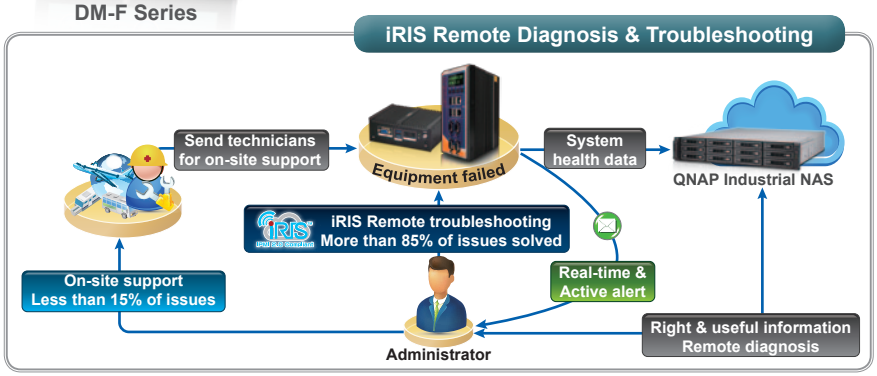
- **Wide Temperature Support**
  Devices under hazardous weather -20ºC ~ 60ºC
- **Intelligent Remote Control Management**
  » iRIS modules compliant with IPMI 2.0
  » Fault detection and diagnostics save energy by quickly identifying inefficiencies and operational problems, helping managers achieve and sustain high performance.

Product Selection:

DRPC series & uIBX series

DRPC Series

uIBX Series



Warehouse Management System (WMS)

Material input/output management and examination are the duty of a warehouse. As quantity inconsistency is the most common problem in handwritten vouchers, personnel will be unable to capture the exact quantity of material input, shipping, and stock and implement first in first out (FIFO) control. Even worse, personnel will need to spend more time on finding raw materials, and can not trace incoming materials effectively. IEI thus introduces Warehouse Management System (WMS) to provide convenient and traceable management through cloud computing. The benefits of the WMS include:

- Ensure traceability for raw material input and product shipping.
- Shorten material selection and shipping time.
- Enhance warehouse management efficiency and accuracy.
- Ensure real-time warehouse information.
- Minimize customer complaints from man-induced mistakes.
- Enable real-time capture of fleet status and enhance vehicle dispatch flexibility.

Smart Warehouse Management Solutions

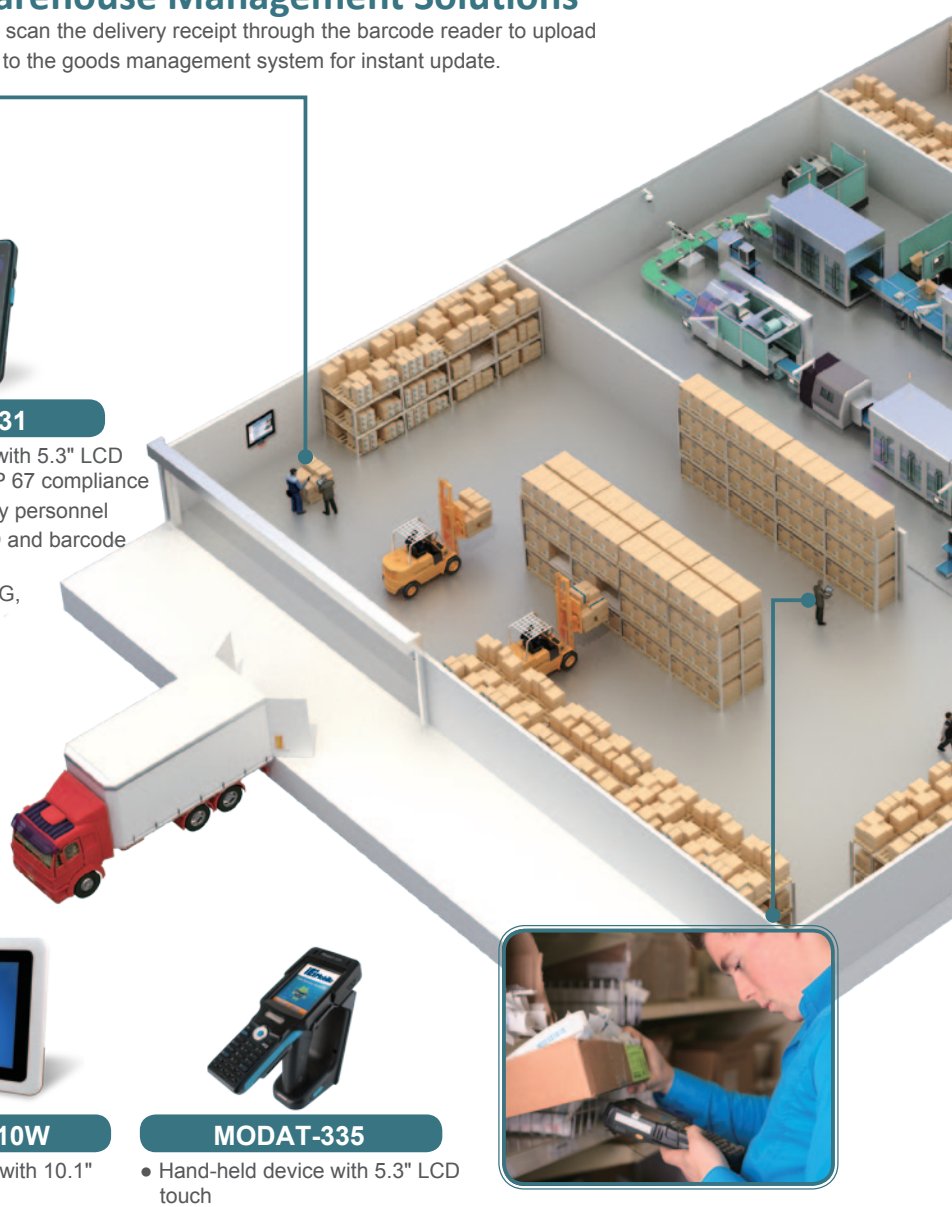
Deliveryman can scan the delivery receipt through the barcode reader to upload goods data back to the goods management system for instant update.

ICEROCK3-T10

- Mobile device with 10.1" LCD PCAP touch and IP 64 compliance
- Support NFC/RFID and barcode reader
- GPS, 3G, Wi-Fi
- Dual battery power
- Suitable for delivery personnel

MODAT-531

- Hand-held device with 5.3" LCD PCAP touch and IP 67 compliance
- Suitable for delivery personnel
- Support NFC/RFID and barcode reader
- GPS positioning, 3G, Wi-Fi connection



AFL3-12A Panel PC

- IP 64 compliant front panel with multi-touch
- Equipped dual LAN (GbE), Wi-Fi
- Optional 2D barcode reader
- Suitable for warehouse management

ICECARE-10W

- Hand-held device with 10.1" LCD PCAP touch
- Support NFC/RFID and barcode reader
- GPS positioning, 3G/Wi-Fi
- Suitable for warehouse personnel

MODAT-335

- Hand-held device with 5.3" LCD touch
- Support NFC/RFID and barcode reader
- GPS positioning, 3G/Wi-Fi connection
- Optional UHF RFID handle grip
- Suitable for warehouse personnel

The warehouse personnel can use the barcode reader to scan barcodes of stock-ins and stock-outs information then upload the stock data to the inventory management system for instant update.

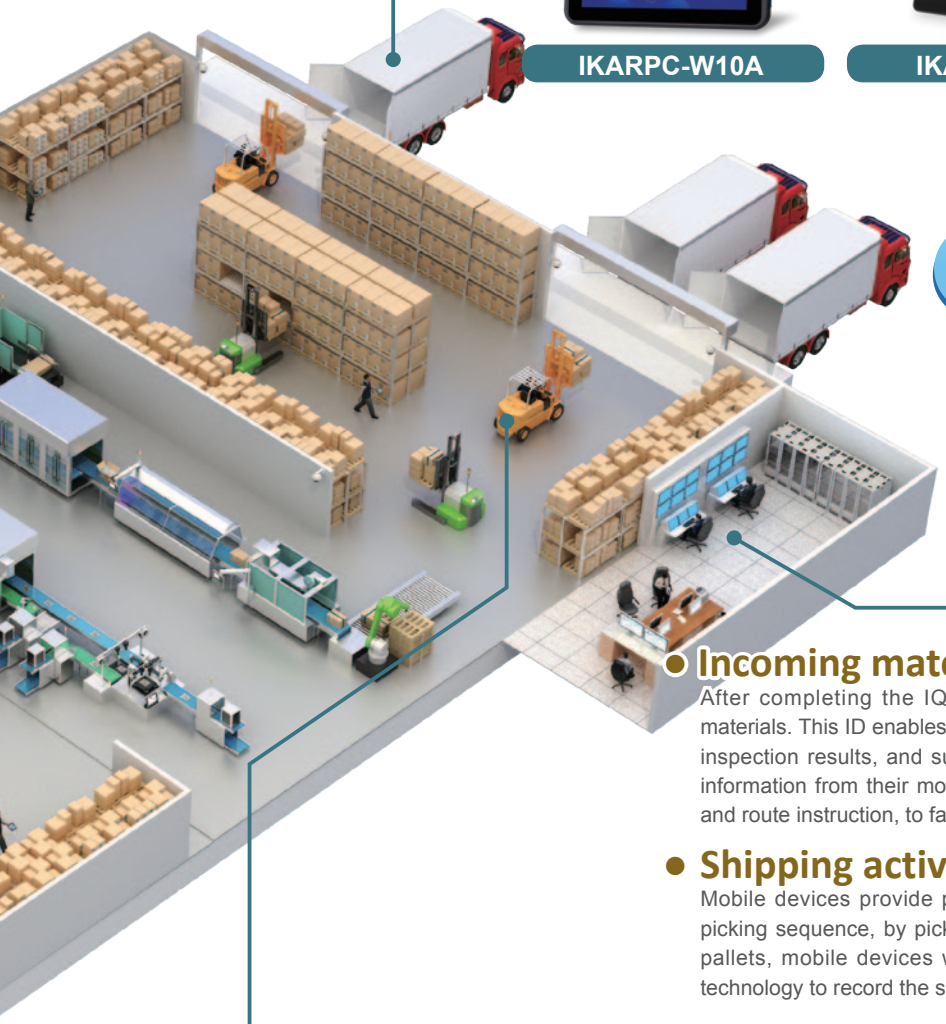
Fleet Logistics Applications

Fleet management and dispatching efficiency can be improved by taking the advantages of the 3G connection of the IKARPC panel PC to send real-time information to the dispatching center for confirming vehicle locations (GPS) and driving conditions (OBD-II). The IVS-100 in-vehicle system not only has the features mentioned above, but it also supports driving condition recording by installing video capture system, and features UHF-RFID for real-time goods monitoring, allowing users to easily and instantly manage and control the fleet and goods.

IKARPC-W10A

IKARPC-07A

IVS-100



Incoming materials

After completing the IQC inspection, the system generates an ID for raw materials. This ID enables users to trace the supplier, material incoming date, IQC inspection results, and supplier lot number. Warehouse personnel can retrieve information from their mobile devices, including the storage lot of raw materials and route instruction, to facilitate slotting raw materials.

Shipping activities

Mobile devices provide picking personnel shipping list to manage picking by picking sequence, by picking route, and by FIFO. When shipping products with pallets, mobile devices will collect the product ID on the shelve using RFID technology to record the shipping order and transportation information.

The AFL3/PPC-F/UPC panel PCs support wide-range operating temperature so that they can be deployed in any high- or low-temperature warehouses.

UPC

- Full IP 65 touch panel PC
- CAN bus, Wi-Fi supported
- Optional RFID reader
- Suitable for forklift application

AFL3 Panel PC

- Support multi-touch, IP 64 compliant front panel
- Equipped dual LAN (GbE) and Wi-Fi

PPC-F Series

- PPC-F heavy industrial panel PC
- Support multi-touch, IP 65 compliant front panel
- Equipped dual LAN (GbE) and Wi-Fi

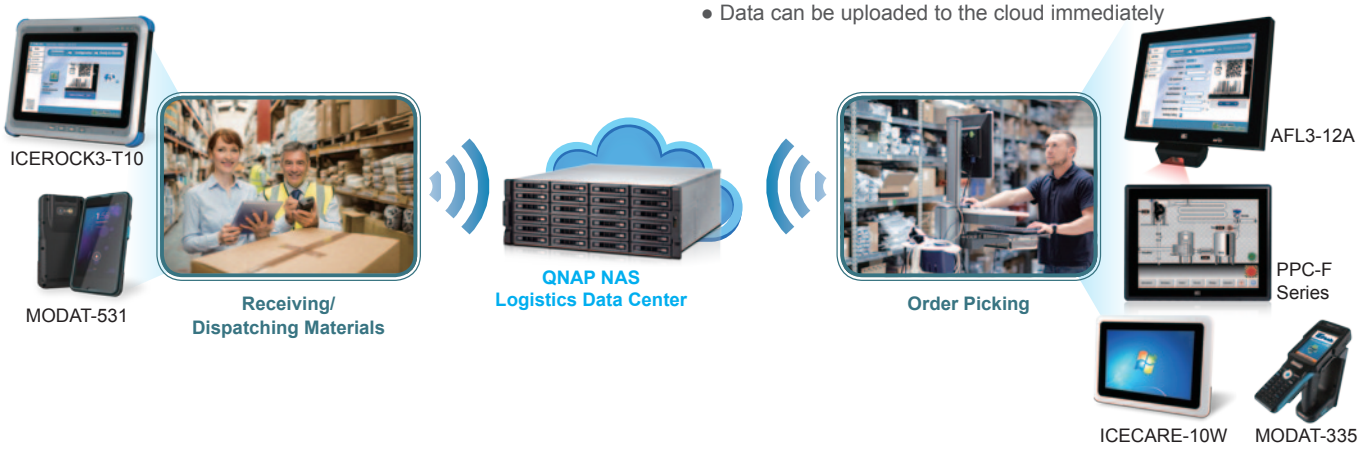
Warehouse Management: Receiving/Dispatching Materials

Receiving

- Handheld device application: After receiving goods and signing on the delivery man's handheld device, the cloud-based inventory management system will be updated in real time.

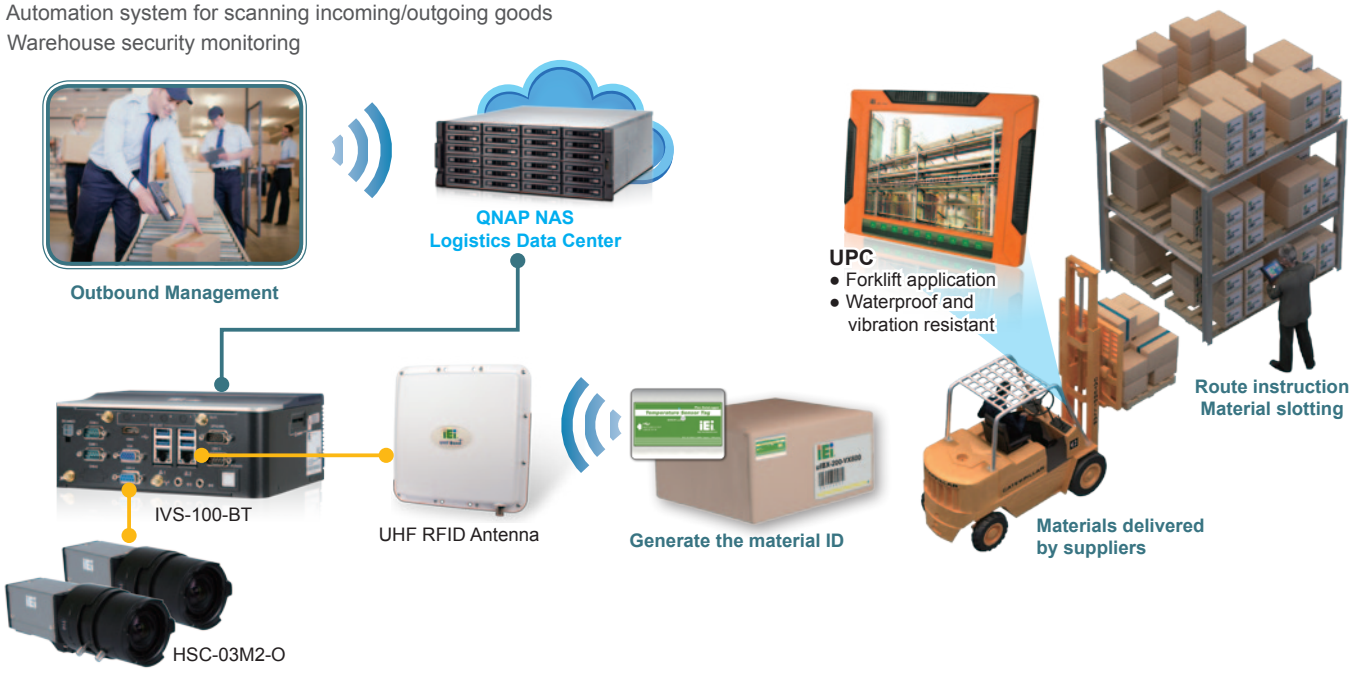
Receiving/Dispatching

- AFL3/PPC-F series with barcode reader can be used to scan the barcode of the incoming/outgoing package.
- ICECARE-10W and MODAT-335 mobile device are both equipped with barcode reader to scan package barcodes easily
- Data can be uploaded to the cloud immediately



Warehouse Management: Inbound/Outbound

- Automation system for scanning incoming/outgoing goods
- Warehouse security monitoring



Fleet Management

- GPS for vehicle tracking
- 3G/4G capability for data transmission
- OBD-II interface for vehicle diagnosis

Remote Management

MES

MES Software System Solution

Most manufacturing industries require a lot of labor work in production, production line and equipment management, and production data collection. While modern manufacture-based enterprises need to face land acquisition difficulty, labor cost rise, and labor recruitment difficulty, new employees who are not familiar with production operation will increase defect rate. How to implement effective control has become a real problem to many manufacture-based enterprises.

Advantages of smart solutions

- Enable process management and optimization. Increase product tractability.
- Provide production scheduling and effective management for production quantity.
- Provide electronic SOPs to enhance product yield rate.
- Ensure equipment management and integration for effective labor hourmanagement and equipment availability.
- Implement automation to reduce labor costs and stabilize production rhythm.

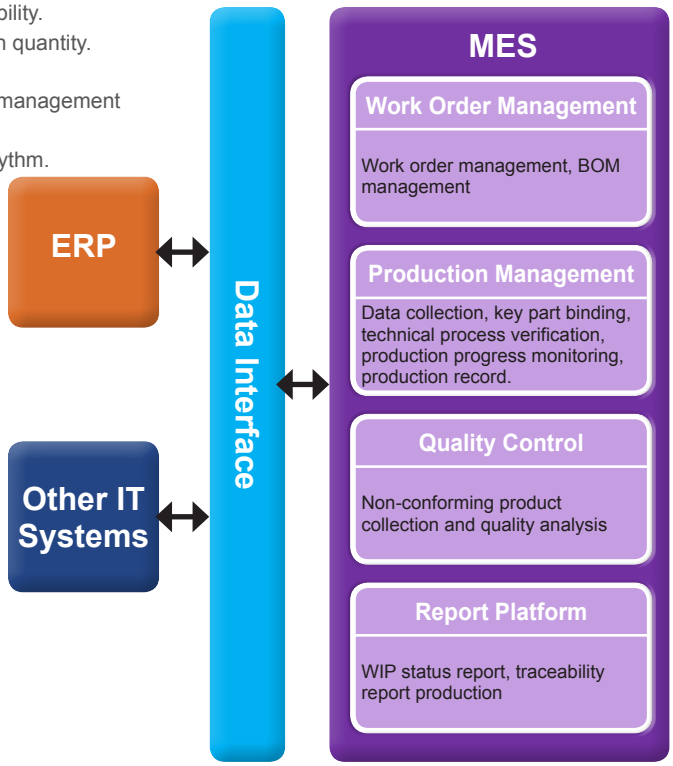
Smart operation

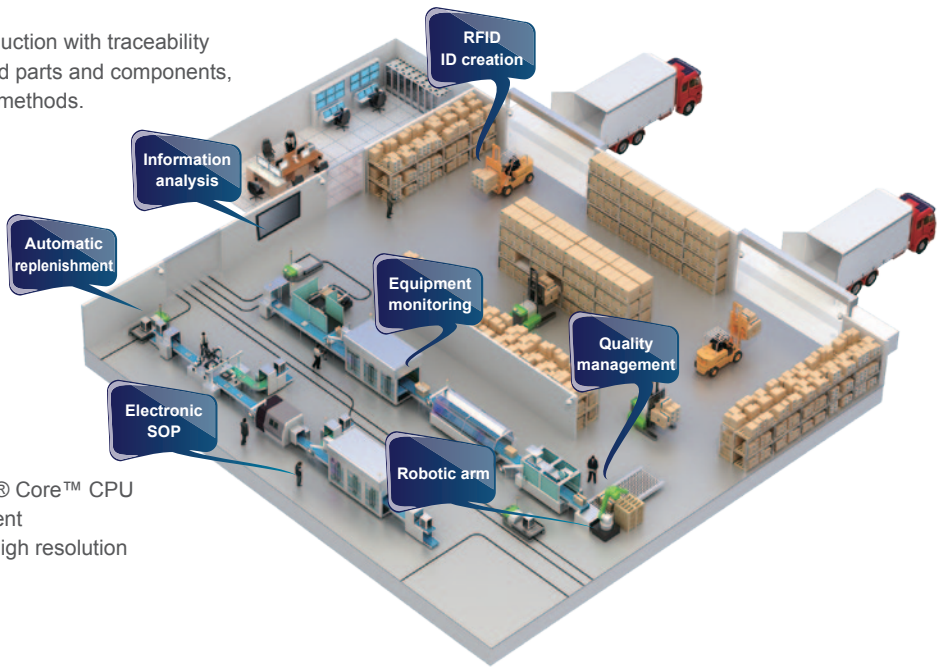
- ID creation: After IQC inspections, an ID (barcode or RFID) is assigned to the material to accelerate information collection and accuracy in the production process.
- Information analysis: Production data is digitized for production scheduling and management to generate real-time data regarding schedule accomplishment rate, quality report, and production.
- Automatic material replenishment: Materials are fed to each station by means of the AGV system to reduce storage space on the production line.
- Electronic SOP: Provide clear and correct SOPs to each station to ensure the correct version is in place.
- Equipment monitoring: Integrate data of production equipment, monitor equipment status, and provide equipment parameters.
- Robotic arm: Assists in routine handling operation and stabilize production pace.
- Quality management: Measure product quality after production and manage product quality analysis.

Production record

Products are effectively recorded during production with traceability to to their in-process quality analysis, installed parts and components, suppliers and customers, and transportation methods.

System Framework





Product Selection:

TANK Series and QNAP NAS

TANK-860

- Intel® HM86 chipset + 4th generation Intel® Core™ CPU
- IPMI function for remote control management
- Three independent video outputs support high resolution
- Temperature: -20°C ~ 60°C

TVS-ECx80U-SAS Series

- 10GbE-ready, up to 3,800+ MB/s throughput and 268,000+ IOPS for breakthrough performance
- Qtier Technology: Auto tiering crucial to storage efficiency
- Built-in 256GB mSATA modules for caching

Applications:

- Industry Workstation

• AFL3 Series Panel PC




Model Name	AFL3-W07A-BT	AFL3-08A-BT	AFL3-W10A-BT	AFL3-12A-BT
LCD Size	7"	8.4"	10.1"	12.1"
Resolution	1024 x 600 (16:9)	800 x 600 (4:3)	1280 x 800 (16:10)	1024 x 768 (4:3)
Touch Screen	Projected capacitive type	Projected capacitive type	Projected capacitive type	5-wire resistive touch window/ projected capacitive type
CPU	Intel® Celeron® N2807 (dual core, 1.58 GHz)	Intel® Celeron® J1900 (quad core, 2.0 GHz)	Intel® Celeron® J1900 (quad core, 2.0 GHz)	Intel® Celeron® J1900 (quad core, 2.0 GHz)
I/O Ports & Switch	1 x 9-30V Lockable power jack 1 x AT/ATX switch 1 x Power switch 1 x Reset button 2 x GbE LAN 2 x RS-232 COM port (DB-9 connector) 2 x USB 3.0	1 x 9-30V DC Lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x RJ-45 for GbE LAN 2 x USB 2.0 2 x USB 3.0	1 x 9-30V DC lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x RJ-45 for GbE LAN 2 x USB 2.0 2 x USB 3.0	1 x 9-30V lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector)(RI/5V/12V) 2 x RJ-45 for GbE LAN 2 x USB 2.0 2 x USB 3.0
Construction	PC + ABS Plastic			
Mounting	Panel, Wall, Stand, Arm VESA 75mm x 75mm			Panel, Wall, Rack, Stand and Arm VESA 75mm x 75mm / 100mm x 100mm
Operating Temperature (°C)	-20°C ~ 50°C (Ambient with air flow)	-10°C ~ 50°C (Ambient with air flow)		-20°C ~ 50°C (Ambient with air flow)
Storage Temperature (°C)	-20°C ~ 60°C			
IP Level	IP 65 compliant front panel	IP 64 compliant front panel		
Thermal Solution	Fanless			
Power Requirement	9 V ~ 30 V			




Model Name	AFL3-W15A-BT	AFL3-W15B-H81	AFL3-W15C-ULT3	AFL3-W19C-ULT3
LCD Size	15.6"			18.5"
Resolution	1366 x 768 (16:9)			
Touch Screen	5-wire resistive type with RS-232 interface / projected capacitive type with USB interface			projected capacitive type with USB interface
CPU	Intel® Celeron® J1900 (quad core, 2 GHz)	Intel® Core™ i7/i5/i3, Pentium®, Celeron® processor (TDP 35W)	Intel Core™ i7/i5/i3 and Celeron® on-board Processor	Intel® Core™ i7/i5/i3 and Celeron® on-board Processor
I/O Ports & Switch	1 x 9-30V lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x GbE LAN 2 x USB 2.0 2 x USB 3.0	1 x 9-30V lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x HDMI output 1 x Power switch 1 x Reset button 1 x RS-232 COM port (DB-9 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x GbE LAN 2 x USB 3.0 4 x USB 2.0	1 x 9-30V Lockable Power Jack 1 x AT/ATX switch 1 x HDMI output 1 x Power Switch 1 x Reset Button 1 x RS-232 by DB-9 (RI/5V/12V) 1 x RS-232/422/485 by DB-9 (RI/5V/12V) 2 x GbE LAN 4 x USB 3.0	1 x 9-30V Lockable Power Jack 1 x AT/ATX switch 1 x HDMI output 1 x Power Switch 1 x Reset Button 1 x RS-232 by DB-9 (RI/5V/12V) 1 x RS-232/422/485 by DB-9 (RI/5V/12V) 2 x GbE LAN 4 x USB 3.0
Construction	PC + ABS Plastic			
Mounting	Panel, Wall, Rack, Stand and Arm VESA 75mm x 75mm / 100mm x 100mm			Panel, Wall, Rack, Stand and Arm VESA 100mm x 100mm
Operating Temperature (°C)	-20°C ~ 50°C (Ambient with air flow)			
Storage Temperature (°C)	-20°C ~ 60°C			
IP Level	IP 64 compliant front panel			
Thermal Solution	Fanless	Smart Fan	Fanless	
Power Requirement	9 V ~ 30 V			9 V ~ 30 VDC

PPC-F Series Heavy Industrial Panel PC

Model Name	PPC-F06B-BT	PPC-F08B-BT	PPC-F10B-BT	PPC-F12B-BT	PPC-F15A-H81	PPC-F15B-BT
LCD Size	5.7" (4:3)	8" (4:3)	10.4"	12" (4:3)	15" (4:3)	15" (4:3)
Resolution	640 (W) x 480 (H)	800 (W) x 600 (H)	800 (W) x 600 (H)	1024 (W) x 768 (H)	1024 (W) x 768 (H)	1024 (W) x 768 (H)
TouchScreen	4-wire resistive type flat touch window, 3H	5-wire resistive type flat touchscreen, 3H		5-wire resistive single-touch type flat touchscreen, 3H / 2-point projected capacitive type touchscreen, 6H		
Touch Controller	PenMount DMC9000			Penmount DMC 9000 EETI EXC7200	Penmount 6000 EETI EXC7200	Penmount DMC 9000 EETI EXC7200
CPU	Intel® Celeron® processor N2807, dual-core, 1.58GHz	Intel® Celeron® J1900 on-board SoC, quad-core, 2GHz	Intel® Celeron® J1900 on-board SoC, quad-core, 2GHz	Intel® Celeron® quad-core J1900 SoC, 2GHz	4th generation Intel® Core™ i7/ i5/i3, Pentium® and Celeron® processor, up to TDP 65W CPU	Intel® Celeron® quad-core J1900 SoC, 2GHz
I/O Ports and Switches	1 x 9 V~36 V DC lockable jack (2-pin) 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RJ-45 LAN port 1 x RS-232 COM port (DB-9 connector) (RI/5V/12V) 1 x RS-422/485 2 x USB 2.0 2 x USB 3.0	1 x 9 V~30 V lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x GbE LAN 2 x USB 2.0 2 x USB 3.0	1 x 9 V~30 V lockable power jack 1 x AT/ATX switch 1 x Audio port (line-out) 1 x Power switch 1 x Reset button 1 x RS-232 COM port (RJ-45 connector) 1 x RS-232/422/485 COM port (DB-9 connector) (RI/5V/12V) 2 x GbE LAN 2 x USB 2.0 2 x USB 3.0	1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x HDMI 1 x Power switch 1 x RS-232/422/485 1 x VGA 2 x RJ-45 LAN port 2 x RS-232 2 x USB 2.0 2 x USB 3.0	1 x AC/DC power plug 1 x AT/ATX switch 1 x Clear CMOS 1 x HDMI 1 x Power switch 1 x Reset button 1 x RS-422/485 1 x VGA 2 x RJ-45 LAN port 2 x USB 3.0 4 x RS-232 4 x USB 2.0	1 x 9 V~36 V DC jack (4-pin) 1 x 9 V~36 V DC terminal block 1 x HDMI 1 x Line-out 1 x Power switch 1 x RS-232/422/485 1 x VGA 2 x RJ-45 LAN port 2 x RS-232 2 x USB 2.0 2 x USB 3.0
System Cooling	Fanless				Active fan	Fanless
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)					
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)					

Model Name	PPC-F17A-H81	PPC-F17B-BT	PPC-F22A-H81	PPC-F24A-H81
LCD Size	17"	17"	22"	24"
Resolution	1280 (W) x 1024 (H)	1280 (W) x 1024 (H)	1920 (W) x 1080 (H)	1920 (W) x 1080 (H)
Touchscreen	5-wire resistive type single touch window, 3H 2-point projected capacitive touch window, 6H		2-point projected capacitive touch window, 6H	
Touch Controller	Penmount 6000 EETI EXC7200	Penmount DMC 9000 EETI EXC7200	EETI EXC7200	EETI EXC7200
CPU	4th generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU	Intel® Celeron® quad-core J1900 SoC, 2GHz	4th generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU	4th generation Intel® Core™ i7/ i5/ i3, Pentium® and Celeron® processor, up to TDP 65W CPU
I/O Ports and Switches	1 x AC/DC power plug 1 x AT/ATX switch 1 x Clear CMOS 1 x HDMI 1 x Power switch 1 x Reset button 1 x RS-422/485 1 x VGA 2 x RJ-45 LAN port 2 x USB 3.0 4 x RS-232 4 x USB 2.0	1 x DC jack (4-pin) 1 x HDMI 1 x Microphone & speaker 1 x power switch 1 x RS-232/422/485 1 x Terminal block 1 x VGA 2 x RJ-45 LAN port 2 x RS-232 2 x USB 2.0 2 x USB 3.0	1 x AC/DC power plug 1 x AT/ATX switch 1 x Clear CMOS 1 x HDMI 1 x Power switch 1 x Reset button 1 x RS-422/485 1 x VGA 2 x RJ-45 LAN port 2 x USB 3.0 4 x RS-232 4 x USB 2.0	1 x AC/DC power plug 1 x AT/ATX switch 1 x Clear CMOS 1 x HDMI 1 x Power switch 1 x Reset button 1 x RS-422/485 1 x VGA 2 x RJ-45 LAN port 2 x USB 3.0 4 x RS-232 4 x USB 2.0
System Cooling	Active fan	Fanless	Active fan	Active fan
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)			
Storage Temperature	-20°C ~ 60°C (-4°F ~ 140°F)			

• Heavy Industrial Monitor




Model Name	DM-F65A	DM-F08A	DM-F12A	DM-F15A
LCD Display	6.5" (4:3)	8" (4:3)	12" (4:3)	15" (4:3)
Max. Resolution	640 (W) x 480 (H)	800 x 600	1024 (W) x 768 (H)	1024 (W) x 768 (H)
Touchscreen & Controller	5-wire resistive single touch window/ Penmount 6000		5-wire resistive single touch window/ Penmount 6000 2-point projected capacitive touch window/ EETI EXC7200	
I/O Ports	1 x VGA (DB-15) 1 x DVI 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 12V DC jack		1 x VGA (DB-15) 1 x HDMI 1 x DisplayPort 1.1 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 9V-36V DC jack 1 x 9V-36V terminal block	
Construction Material	Aluminum front frame and sheet metal rear cover			
Mounting	Panel Mount/ Rack Mount 75 x 75 VESA Mount		Panel Mount/ Rack Mount/ 100 x 100 VESA Mount	
Operating Temperature	-20°C ~ 60°C (with air flow)		-20°C ~ 60°C	
Storage Temperature	-20°C ~ 70°C			
IP Level	IP 65 compliant front panel			
Power Adapter	63040-010036-121-RS		60W 12V output with lockable jack (63040-010060-120-RS, optional)	
Power Input	12V DC		9V~36V DC	




Model Name	DM-F17A	DM-F19A	DM-F22A	DM-F24A
LCD Display	17" (5:4)	19" (4:3)	21.5" (16:9)	24" (16:9)
Max. Resolution	1280 (W) x 1024 (H)	1280 (W) x 1024 (H)	1920 (W) x 1080 (H)	1920 (W) x 1080 (H)
Touchscreen & Controller	5-wire resistive single touch window/ Penmount 6000 2-point projected capacitive touch window/ EETI EXC7200		2-point projected capacitive touch window/ EETI EXC7200	2-point projected capacitive 2-point touch window/ EETI EXC7200
I/O Ports	1 x VGA (DB-15) 1 x DVI (F19A only) 1 x HDMI (F17A only) 1 x DisplayPort 1.1 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 9V-36V DC jack 1 x 9V-36V terminal block		1 x VGA (DB-15) 1 x HDMI 1 x DisplayPort 1.1 1 x USB 2.0 (touch) 1 x RS-232 (reserved for resistive touch ATO) 1 x Lockable 9V-36V DC jack 1 x 9V-36V terminal block	
Construction Material	Aluminum front frame and sheet metal rear cover			
Mounting	Panel Mount/ Rack Mount/ 100 x 100 VESA Mount	Panel Mount 100 x 100 VESA Mount	Panel Mount/ 100 x 100 VESA Mount	Panel Mount/ 100 x 100 VESA Mount
Operating Temperature	-20°C ~ 60°C (with air flow)		-10°C ~ 50°C (with air flow)	
Storage Temperature	-20°C ~ 70°C		-20°C ~ 60°C	-20°C ~ 60°C
IP Level	IP 65 compliant front panel			
Power Adapter	60W 12V output with lockable jack (63040-010060-120-RS, optional)			
Power Input	9V~36V DC			

• UPC Series Verticak Market Panel PC

Model Name	UPC-V312-D525	UPC-V315-QM77
LCD Size	12.1"	15"
Resolution	1024(W) x 768(H)	1024(W) x 768(H)
Touchscreen	5-wire resistive type with RS-232 interface	5-wire resistive type with RS-232 interface
CPU	Intel® Atom™ D525 1.8GHz dual-core processor	Intel® Celeron® 1047UE processor Intel® Core™ i7-3517UE processor Intel® Core™ i3-3217UE processor
I/O Ports and Switches	4 x USB connector AT/ATX switch Audio jack (Line-out, Mic) CAN-bus (3-pin terminal block) DC-IN 1 (terminal block) / DC-IN 2 (DC jack) GbE LAN (RJ-45 connector) Reset button RS-232 (DB-9 connector) RS-422/485 (4-pin box header) VGA port (DB-15 connector)	1 x AT/ATX mode switch 1 x Audio jack (Line out, MIC) 1 x CAN-bus 1 x DC jack (9~36V DC) 1 x HDMI port 1 x Reset button 1 x RS-422/485 (RJ-45) 1 x Terminal block (9~36V DC) 1 x VGA 2 x GbE LAN 2 x USB 2.0 2 x USB 3.0 3 x RS-232 (RJ-45)
System Cooling	Fanless	Fanless
Construction Material	Aluminum die-casting	Aluminium alloy
Mounting	VESA 100mm x 100mm and 75mm x 75mm with M8 screws	VESA 100mm x100mm or 75mm x 75mm with M8 screws
Operating Temperature	-20°C ~ 60°C	-20°C ~ 60°C
Storage Temperature	-40°C ~ 85°C	-30°C ~ 70°C
IP Rating	Full IP 65	Full IP 65
Power Consumption	52W	52W

• Tablet PC and Industral PDA

Model Name		ICEROCK3	ICECARE-10W	MODAT-531	MODAT-335
Display	LCD size	10.1" TFT LCD	10.1" TFT LCD	5.3 LCD	3.5 TFT LCD (sunlight readable)
	Max Resolution	1280 x 800	1280 x 800	480(H) x 854(V)	240(H) x 320(V) QVGA
	Touchscreen	Projected capacitive type	Projected capacitive type	5-point capacitive	4-wire resistive
System	CPU	Intel® Celeron® 1007U or Intel® Core™ i7-3517UE	Intel® Celeron® 1007U or Intel® Core™ i7-3517UE platform	Quad Cortex™-A7 1.2GHz	Marvell PXA 310 624MHz
	Operating System	Windows Embedded Standard 7 P	Windows Embedded Standard 7	Android 4.2x	Microsoft Windows Embedded Handheld 6.5
I/O Interface	USB	3 x USB 3.0 1 x SIM card slot	2 x USB 2.0	6-pin connector (battery charging/ USB host/USB client)	16-pin connector (RS-232/battery charging/USB host/USB client)
	Micro HDMI	1 x Micro HDMI	1 x Micro HDMI	N/A	N/A
	Audio	1 x Headphone 1 x Mic-in 2 x Speakers (1 W)	1 x Speaker (1.5 W) 1 x Audio mic-in	1x Speaker 1x Headset/Built-in mic-in	1x Speaker 1x Headset/Built-in mic-in
	Expansion	1 x SD card (internal)	Smart card reader Magnetic stripe reader	1 x Mini USB client 2.0	1 x Mini USB client 2.0
Power	Power Adapter	Input AC: 100~240V Output DC: 19V / 3A	Input AC: 100~240V Output DC: 19V / 2.1A	Input: 100V AC to 240V AC ~ 50-60Hz 0.2A Output: 5V/2.6A	Input: 100V AC to 240V AC ~ 50-60Hz 0.2A Output: 5V / 2.1A
	Battery	40 W standard battery pack 40 W optional battery pack	14.8V 3500mAh, 51.8WH	3900 mAh	3.7V 3000 mAh
Environment	Operating Temperature	0°C~40°C	0°C~40°C	-10°C ~ 50°C	-10°C ~ 50°C
	Storage Temperature	-20°C~60°C	-20°C~60°C	-20°C ~ 60°C	-20°C ~ 60°C
	Environmental Protection	Front panel: IP65, Back side: IP64	IP 54 compliant front panel	IP 67	IP 54

• Transportation System



Model Name	IKARPC-07A-A9	IKARPC-07A-BT	IKARPC-W10A-BT
LCD Size	7"	7"	10.1
Resolution	1024 × 3 (RGB) × 600	1024 × 3 (RGB) × 600	1280 x 800
Touchscreen	Projected capacitive touch with USB interface	Projected capacitive touch with USB interface	Projected capacitive touch with USB interface
CPU	Freescale™ i.MX 6 Cortex™-A9 (quad-core, 1.0 GHz)	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)	Intel® Atom™ processor E3826 (dual-core, 1.46 GHz, 7W)
Expansions PCIe Mini	1 x Full-size PCIe Mini for mSATA module	1 x Full-size PCIe Mini (reserved for mSA TA module) 1 x Full-size PCIe Mini (reserved for 3G module) 1 x Half-size PCIe Mini (reserved for Wi-Fi module)	1 x Full-size PCIe Mini (reserved for 3G module), 1 x Full-size PCIe Mini (reserved for Wi-Fi module)
System Fan	Fanless	Fanless	Fanless
Chassis Construction	PC + ABS plastic	PC + ABS plastic	PC + ABS plastic
Power Input	Cigarette lighter power cable, DC 9 V~30 V	Cigarette lighter power cable, DC 9 V~30 V	Cigarette lighter power cable, DC 9 V~30 V
Power Consumption	12 V @ 0.8 A	12V @ 1.25 A	12 V @ 1.73 A
Mounting	VESA 75	VESA 75	VESA 100
Operating Temperature	-20°C ~ 60°C with air flow	-20°C ~ 60°C with air flow	-20°C ~ 60°C with air flow

• Embedded System



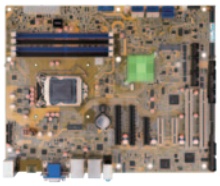


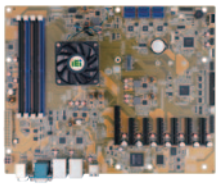
Model Name	IVS-100-BT	TANK-860-HM86	TANK-760-HM86	TANK-6000-C226	uIBX-250-BW
CPU	Intel® Atom™ processor	Intel® Core™ i5, Celeron®	Intel® Core™ i7/i5, Celeron®	Intel® Xeon® E3, Core™ i3	Intel® Celeron® N3160
iRIS Solution	N/A	1 x iRIS-2400	1 x iRIS-2400	1 x iRIS-2400 on board	N/A
I/O Interfaces	1 x DB15 RS-422/485 1 x DB-9 CAN-bus/OBD-II 1 x HDMI 1 x Line in 1 x Line out 1 x VGA 2 x 10/100/1000 Mbps RJ-45 by RTL8111E PCIe GbE 2 x SIM 4 x USB 3.0	1 x DisplayPort 1 x DVI-I 1 x PCIe GbE by Intel® I210 1 x PCIe GbE by Intel® I217LM 1 x VGA 2 x RJ-45 2 x RS-422/485 (RJ-45) 2 x USB 2.0 4 x RS-232 (DB-9, two with isolation) 4 x USB 3.0	1 x DisplayPort 1 x HDMI 1 x PCIe GbE by Intel® I210 1 x PCIe GbE by Intel® I217LM 1 x VGA 2 x Phoenix terminal block with isolation 2 x RJ-45 2 x RS-232/422/485 (DB-9, with isolation) 2 x USB 2.0 4 x RS-232 (DB-9, with isolation) 4 x USB 3.0	1 x HDMI 1 x PCIe GbE by Intel® i217 PHY 1 x VGA 2 x Combo (SFP Fiber/RJ-45), combo with LAN 1/LAN 2 2 x RS-232 (DB-9) 2 x USB 2.0 3 x PCIe by GbE Intel® i210 4 x RJ-45 4 x USB 3.0	1 x AT/ATX switch 1 x HDMI 1 x Power button 1 x VGA 2 x RJ-45 PCIe GbE by Intel® I211 controller 2 x RJ-45 RS-232/422/485 4 x USB 3.0
System Fan	Fanless	Fanless	Fanless	92 mm x 92 mm x 25 mm	Fanless
Chassis Construction	Extruded aluminum alloy	Extruded aluminum alloys	Extruded aluminum alloys	Extruded aluminum alloys	Extruded aluminum alloy
Power Input	Cigarette lighter power cable DC 9 V~30 V	DC Jack: 9 V~36 V DC	DC Jack: 9 V~36 V DC Terminal Block: 9 V~36 V DC	DC Jack: 19 V/24 V DC	DC Jack: 12 V DC
Power Consumption	12 V @ 3.2 A (Intel® Atom™ E3826 with 2 GB DDR3 memory)	19 V@3.34 A (Intel® Core™ i5-4400E with 4 GB memory)	19 V@3.2 A (Intel® Core™ i5 i5-4400E with 4 GB memory)	19 V@4.8 A (Intel®Xeon® E3-1225 v3 with 8 GB memory)	12V @ 2A (Intel® Celeron® N3160 with 2 GB memory)
Mounting	VESA 100	Wall mount	Wall mount	Wall mount	Wall mount, VESA 75
Operating Temperature	-20°C ~ 60°C with air flow	-20°C ~ 60°C with air flow (SSD)	-20°C ~ 70°C with air flow (SSD) for i5-4400E & 2000E -20°C ~ 50°C with air flow (SSD) for i7-4700EQ	-20°C ~ 55°C with air flow (SSD)	-20°C ~60°C with air flow (SSD)
Weight (Net/Gross)	2.1 kg/3.6 kg	2-slot: 4.2 kg/6.3 kg 4-slot: 4.5 kg/6.5 kg 6-slot: 4.8 kg/6.9 kg	4.2 kg/6.9 kg	2.5 kg/4.6 kg	470 g/1.4 kg

Embedded System

Model Name	DRPC-120-BT	DRPC-100-CV
CPU	Intel® Atom™ E3845 1.91 GHz	Intel® Atom™ N2800 1.86 GHz
iRIS Solution	iRIS-2400 optional	N/A
I/O Interfaces	2 x USB 3.0 2 USB 2.0 2 x RJ-45 1 x PCIe GbE by Intel® I210 controller 1 x PCIe GbE by Intel® I211 controller 2 x DB-9 w/3KV isolation protection 2 x DB-9 w/3KV isolation protection 1 x VGA 1 x HDMI	2 x RJ-45 Realtek 8111E PCIe GbE 2 x DB-9 w/3KV isolation protection 2 x DB-9 w/3KV isolation protection 1 x Phoenix terminal block w/ 3KV isolation protection 1 x Phoenix terminal block w/ 3KV isolation protection, supporting 2-port CAN-bus 1 x VGA 1 x SATA DOM support
Expansions	1 x Full Size (co-lay mSATA), 1 x Half size	1 x Full size (support mSATA)
System Fan	Fanless	Fanless
Chassis Construction	Extruded aluminum alloys	Extruded aluminum alloys
Power Input	DC jack: 9 V ~ 32 V DC	3-pin terminal block: 9 V ~ 28 V DC
Power Consumption	12 V@ 2.1 A (Intel® Atom™ E3845 with 2 GB memory)	12 V@1.85 A (Intel® Atom™ N2800 with 2 GB DDR3 memory)
Mounting	DIN-rail	DIN-rail
Operating Temperature	-20°C ~ 60°C with air flow (mSATA)	-25°C ~65°C with air flow (mSATA)
Weight (Net/Gross)	1.4 kg/2.5 kg	1 kg/2 kg

Industrial Motherboard





Model Name	IMBA-Q170-i2	IMBA-BDE
CPU Socket	LGA1151	On board
CPU Type	6th generation Intel® Core™ i7/i5/i3 Pentium® and Celeron® processor	Intel® Xeon processor D-1500 product family
Display Interface	Triple independent display support 1 x HDMI 2.0 1 x DVI-D 1 x VGA 1 x iDP interface	VGA via AST2500
iRIS	1 x iRIS-2400 slot	On board
I/O Interface	1 x KB/MS 1 x LPT 2 x RS-232/422/485 4 x RS-232 5 x USB 3.0 7 x USB 2.0	1 x PS/2 for KM/MS 1 x RS-232/422/485 1 x USB 2.0 Type A 4 x USB 3.0 5 x RS-232 6 x USB 2.0
Dimensions	244 mm x 305 mm	244 mm x 305 mm
Weight	1200 g	1200 g

Industrial Camera

Model Name	HSC-032M2-O	ITDB-100 Series
Resolution (max.)	752 x 480	752 x 480
Sensor	1/3 inch CMOS with global shutter	1/3 inch CMOS with global shutter
Dimensions (mm)	58.9 mm x 29 mm x 29 mm	89.8 mm x 62 mm x 32 mm
Operating Temperature	0°C ~ 45°C	0°C ~ 50°C
Storage Temperature	-30°C ~ 60°C	-10°C ~ 60°C
Power Consumption (max.)	<3.5W	Power on: 7.7 W, Max. PD: 9.9 W

6-axis Vertical Articulated Robotic Arm

Model Name	7A6	
P-point Reach (max.)*	700 mm	
P-point Reach (min.)*	350 mm	
Payload	7 kg	
Net Weight	49 kg	
Robot Footprint	250 mm x 250 mm	
Second Arm	350 mm	
Maximum Composite Speed	6165 mm/s	
Point-to-point Cycle Time**	0.7 sec	
Position Repeatability	±0.03 mm	
Allowable Torque	J4, J5	14.0 Nm
	J6	5.8 Nm
Allowable Inertia	J4, J5	0.42 kg-m2
	J6	0.1 kg-m2
Motion Angle	J1	340° (+170° ~ -170°)
	J2	195° (+135° ~ -60°)
	J3	210° (+170° ~ -40°)
	J4	360° (+180° ~ -180°)
	J5	200° (+100° ~ -100°)
	J6	720° (+360° ~ -360°)

6-axis Robotic Arm Controller

Model Name	MTC-400
Color	White
Dimensions (WxDxH) (mm)	140 x 269 x 230.5
System Fan	Front fan: 1 x 8 cm
Case Material	Heavy metal
CPU	Intel® Atom™ dual core D525 CPU (1.80GHz with 1MB L2 cache)
Chipset	Intel® ICH8M
System Memory	Built-in 1 GB DDR3 800 MHz Memory 1 x 204-pin 800MHz DDR3 SDRAM SO-DIMM (system max. support 4 GB)
I/O port	5 x USB 2.0 2 x RJ-45, PCIe GbE by Realtek 8111E 2 x DB-9 (RS-232) 1 x VGA (Resolution: 2048 x1536@75Hz) 1 x CF Type II
Expansion Slot	2 x PCI
Power Input	85 ~ 264VAC complete series
Operating Temperature	-20°C ~ 60°C (Air flow during measurement)
Motion Control	6-axis Robotic Arm Motion Control Card
I/O Module	64 I/O Points
Teaching Pendant	6.5" Exclusive Teaching Pendant

8.4" Teaching Pendant

Model Name		TP-84M
Display	LCD Size	8.4"
	Resolution	800(W) x 600 (H)
	Brightness (cd/m²)	350
Touch Screen		Resistive Touch Screen
I/O Interface	Video Input	VGA
	Touch Interface	RS-232
	Power Source	12VDC Input
Operating Temperature		0°C~50°C
Storage Temperature		-20°C ~ 65°C
Humidity		< 90% RH (no condensation allowed)
Physical	Housing	ABS+PC
	Dimensions (LxWxH mm)	321.67 x 204 x 81.41
	Weight (G/W, N/W)	3.25kg / 4.2 kg
	IP Rating	6-side IP 64 Waterproof
Cable Length		6 meter (12V DC/VGA/USB)
Drop Survival		1m (38 inch) 4 corner ,2 sides
Power Consumption		6W

Motion Control Platform

Model Name		MDH-1000
Motion Control Module	Control Mode	Module 1: Dual mode: servo or step motor Module 2: Step motor
	Number of Axes	4 axes
	Pulse Output	5Mpps max. differential output Support A/B Phase, CW/CCW, Pulse/Dir mode
	Encoder Input	A/B/Z photocoupler-isolated signal, 32-bit, 4 times multiple frequency
	Input	Module 1: Servo_Alm (servo alarm), Servo_INP (in position) Module 1&2: MRLimit (right limit), MLLimit (left limit), MORG (home)
	Output	Module 1: Servo_AlmClear (sevro alarm clear), Servo_CL (driver's command & servo error clear) Module 1&2: Servo_On (servo on)
	Connector	4 x DB-26 + 4 x DB-9
I/O Module	Input	16 x photocoupler-isolated (3000 VBMS isolated) Voltage: 0V ~ 24V, Operating voltage: 5V up
	Output	16 x photocoupler-isolated open collector (3000 VBMS isolated) Max. voltage allowed: 24V, Max. current: 90mA
Others	Software Support	DLL library, support software development tool including VC++/VB/Labview, etc.

Headquarters
威強電工業電腦 IEI Integration Corp.
No. 29, Zhongxing Rd., Xizhi Dist., New Taipei City 221, Taiwan
TEL : +886-2-86916798 / +886-2-26902098 FAX : +886-2-66160028
sales@ieiworld.com www.ieiworld.com

America
IEI Technology USA Corp.
138 University Parkway, Pomona, CA 91768
TEL : +1-909-595-2819 FAX : +1-909-595-2816
sales@usa.ieiworld.com usa.ieiworld.com

China
威强电工业电脑 IEI Integration (Shanghai) Corp.
上海市闵行莘庄工业区申富路515号
515, Shen Fu Rd., Xin Zhuang Industrial Develop Zone, Shanghai, 201108, China
TEL:+86-21-3116-7799 FAX:+86-21-3462-7797
sales@ieiworld.com.cn www.ieiworld.com.cn

2016.01