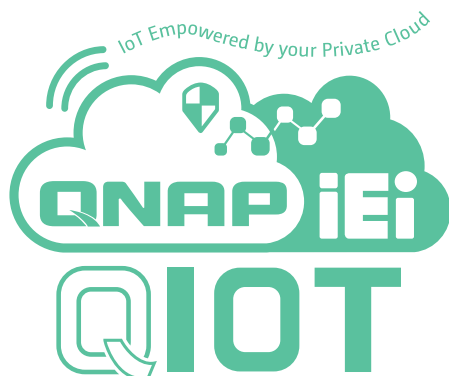# IEI QTS Gateway Solution

Cloud Based IPC built-in with QTS Gateway OS for IIoT

QTS Gateway for IoT Cloud Solution

Could Base IPC Built-in with QTS Gateway OS for IIoT

IoT Empowered by your Private Cloud

QNAP iEi QIOT

By connecting machines, work pieces and systems, we can create intelligent networks along with the entire value chain of IoT, that is, at your demand, our expandable products are connected to each other autonomously.

The IIoT (Industrial Internet of Things) concept is changing the past production modes; more and more automated equipment is used to replace manual labor. However, the meaning of automation would have been lost if these equipment still have to rely on a lot of manpower. Machine to machine (M2M) communication, data storage and analysis capability are the keys to creating a smart production line. IEI incorporates with QNAP to launch cloud-based IPC with QTS Gateway operating system, offering possibilities of connecting devices, communications and the cloud servers for IPC applications.

Health Care/ Hospital Care	Factory Automation & MES	Fleet Management	Retail/ Mass Market	Home Automation
POC-W22A	TANK-860	TANK-760	IDS-300	uIBX-250

QTS Gateway for Cloud IPC Solution

IEI's new generation smart fan-less embedded computer has an ultra-rugged design that allows stable operation even under the worst environments; it is not only quiet but also safe. The TANK-860-QGW supports the QTS Gateway operating system allowing you to easily monitor the system status. Diverse application programs can also be downloaded to satisfy different application needs.

QTS Gateway is an operating system designed specifically for IEI IPCs and fully integrated the QNAP NAS operating system (QTS), breaking through the stereotype of IPCs of not having operating systems and saving unnecessary costs for installing servers and computers. QTS Gateway not only allows easy monitoring of computer status through its visualized interface, it also allows the use of many free application programs, making it multifunctional while challenging the values of traditional IPCs.

|	Traditional IPC	Cloud-based IPC
Remote System Visualization	No	Yes
OS	No (additional devices must be purchased and installed)	Built-in VM virtual application
Remote Device Management	No (additional management software must be installed)	Free Apps: Qcenter, QRM+
Data Backup	No (additional management software must be installed)	Hybrid Backup Sync
myQNAPcloud Management	No	Yes, supports system update through a cloud
Video Surveillance	No (additional surveillance software must be installed)	Free software: Surveillance Station
RAID Data Storage	No (must use with specific platforms)	RAID 0, RAID 1
Support for Mobile Devices	No	Free App Qfile, Qmanager

Three-in-one Virtualized Application

Computation, Storage, Network

Virtualization Station Painless migration, complete OS virtualization

- Quick transfer, zero threshold
- PCIe card connection
- VM Backup & Restore
- Remote Import & Export
- USB Passthrough
- Advances in VM network structure, again — the Software Dened Network
- Virtual switch
- Device Management
- Visibility and direct access to files
- User-based permissions settings
- Operate VMs through web browsers
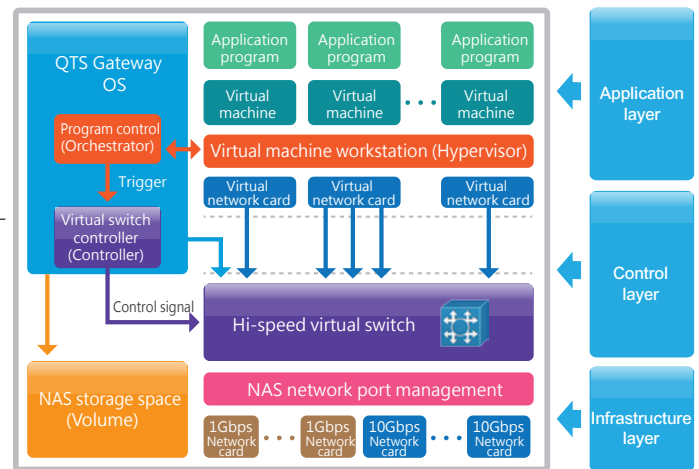
Quick Transfer, Zero Threshold

Provides physical-to-virtual (P2V) technology can be used to create a familiar operating system (e.g. Win 2000/XP/7/8.1/10/Server 2003/2012, Linux, x86-Android...etc) adding more flexible system management.
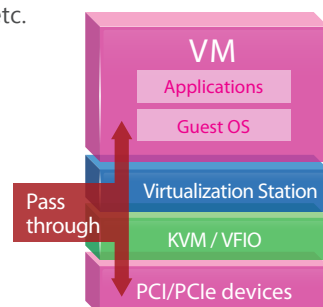

VM Backup & Restore with VM Snapshot

Supporting local and remote backup and restore your VM avoid disaster. Able to set schedule or real time snapshot to reduce the downtime while restoring.
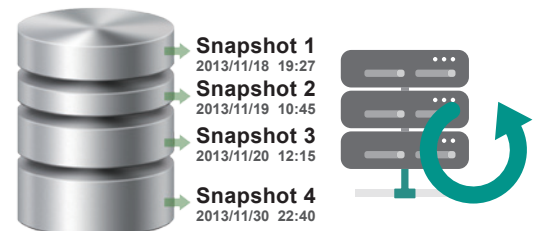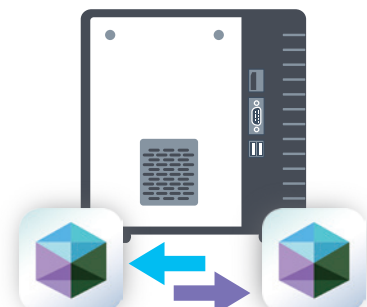

PCIe card connection and USB Passthrough

With Intel® Virtual technology allowing VMs to allocated H/W resources such as PCIe, PCI, Lan, USB, COM, DIO...etc.

Remote Import & Export

Virtual machines of various formats can be easily imported to and exported from the Virtualization Station.

Container Station
Rapidly deploy containers

Container Station is developed following the Just enough OS, or JeOS, philosophy. This lightweight virtualization technology can instantly and truly create a ready-to-use environment on PCs, TANK-860-QGW and the Cloud for RD developers and IT administrators.

Micro services, quick deployment

Container Station only requires 64MB of memory to run an application program; such lightweight virtualization technology allows you to quickly deploy large numbers of environments.

Best partner for IoT maintenance and operation

Container Station supports the required device protocols (MQTT and AMQT etc.), interface services and data computation needed in the IoT environment, allowing it to be easily connected to the IoT era.

A growing number of popular apps

Container station offers the most up-to-date and top-of-technology applications for rapid deployment with just a click. The following apps are now available: LibreOffice, MongoDB, Nginx, Node.js, Redis, MySQL, WordPress, Deluge, Minecraft, Wine, Jenkins, GitLab, Redmine, Joomla! and OpenERP.

HD Station

Using VGA, DVI, HDMI, DP display to output the entire HD Station provides you east to access your application (VM), output the Virtual Machine (VM) console via monitor.

QVM Desk

Linux

Windows

Android

Linux Station

Comprehensive service from the Ubuntu Linux. Just download Linux Station from the App Center and use displays to output the entire Ubuntu desktop.

Data Center and Backup – Perfect integration of public and private clouds

In the era of information explosion, there are thousands of data being written every day. QTS Gateway continues the essence of the cloud purpose operating system and provides several management and backup tools to allow you to easily nd data and back them up or share them to other devices or cloud services, providing more diverse and mind-easing backup management solutions.
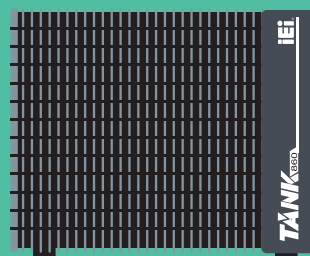
Local backup and synchronization:
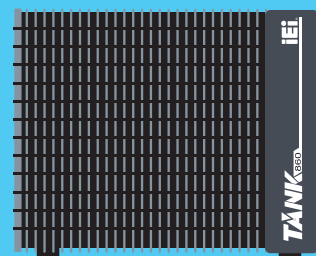
- External device
- Local folder
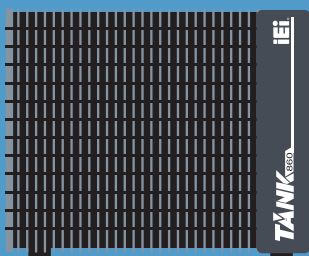
Remote backup and synchronization:

- RTRR
- FTP
- Rsync
- CIFS/SMB

Cloud backup:

- Support for a variety of enterprise-class cloud storage

QIoT Suite -
# Your private IoT cloud platform

A look at IoT technology

IoT (Internet of Things) architecture consists of 3 main layers: sensors, networks, and applications. The sensor layer includes devices that collect data about the environment and send that data to the network layer. The network layer transports the accumulated data to the application layer; the application layer combines and processes the data to transform it to actionable information, and eventually help enterprises make informed decisions.
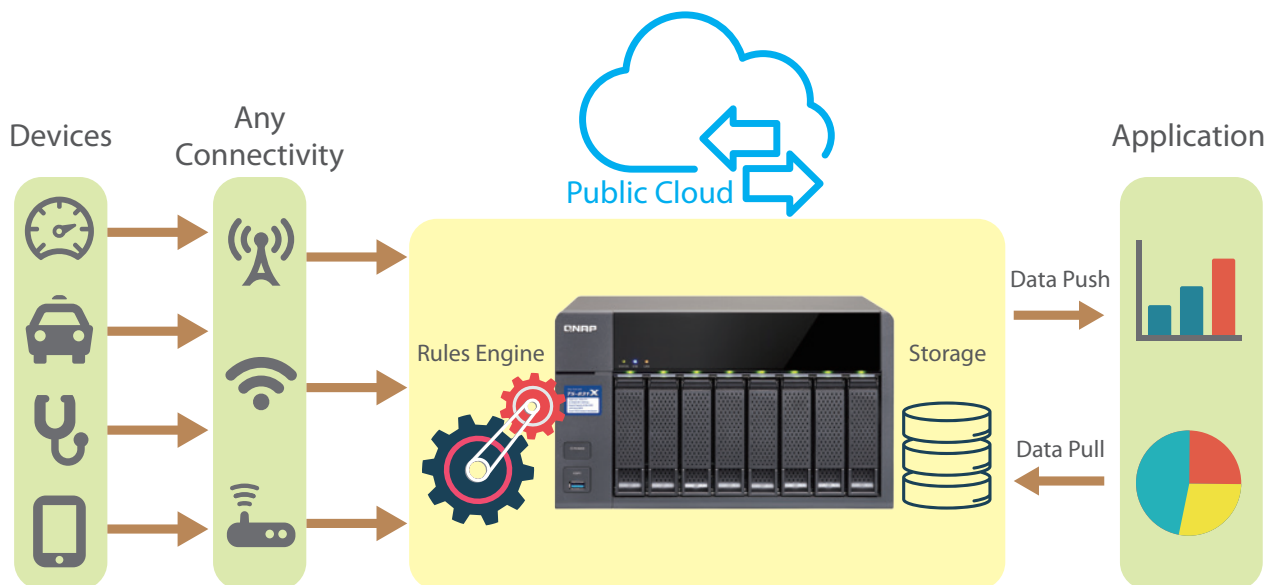
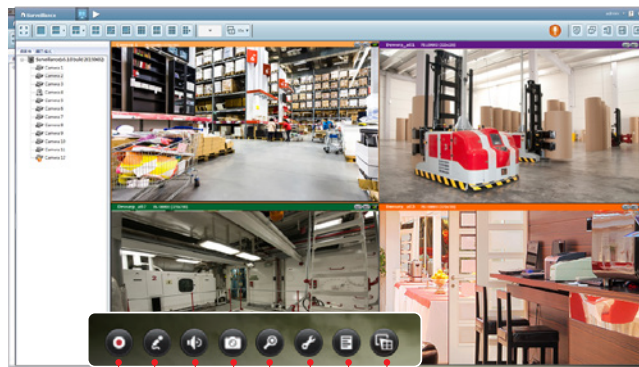## QIoT Suite with efficient development cases

QIoT Suite provides several IoT tools to help developers build an IoT environment, integrate sensors, and make use of development kits (Arduino, Raspberry Pi, etc) with the NAS's Ponte (data receiver), Node-RED (data analysis), MongoDB (data storage), Freeboard (data presentation) to construct a comprehensive IoT architecture.
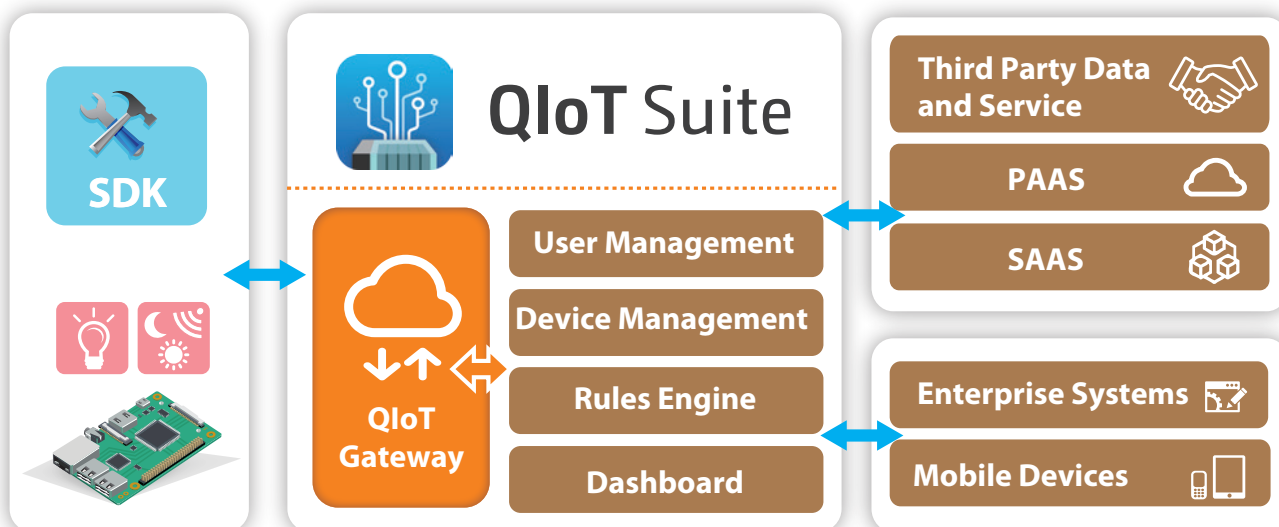
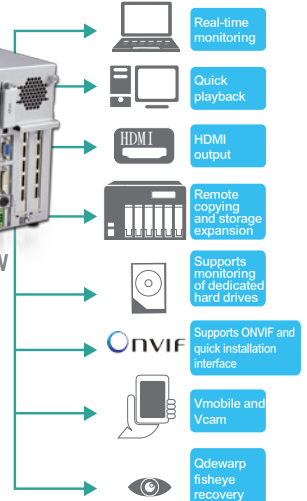# Surveillance Station – remote video surveillance

QNAP video sur veillance center provides four free camera channels, and suppor ts ONVIF and PSIA universal camera protocols, compatible with over 3,000 IP camera models of over 100 brands. It allows you to easily create an automated video surveillance system for your factory to protect property and personnel safety, and to create a working environment with no blind spots.

TANK-860-QGW

- Real-time monitoring
- Quick playback
- HDMI output
- Remote copying and storage expansion
- Supports monitoring of dedicated hard drives
- Supports ONVIF and quick installation interface
- Vmobile and Vcam
- Qdewarp fisheye recovery

Manual recording
Microphone
Audio
Snapshot
Digital zooming
Camera setting
Camera information
Key areas

free 4 video channels

Q'Center
Centralized multi-GTS Gateway management

Q'Center offers you a powerful management solution can view the status and system information of multiple QTS Gateway systems at the same time. Q'center can greatly assist IT administrators in system resource allocation and future capacity planning.
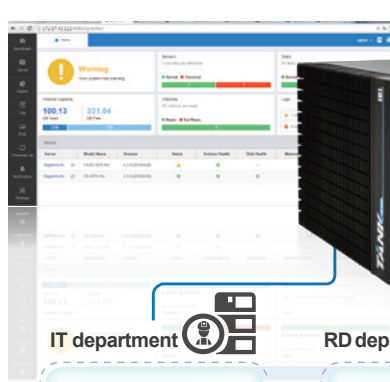
Q'center centralized management
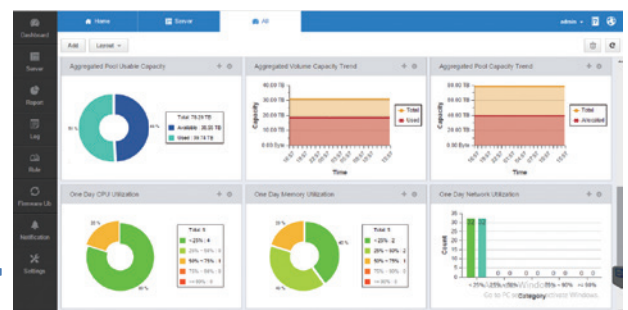
IT department
RD department
Factory terminal

Remote monitoring/Multi-server management best helper for IT personnel

QTS Gateway provides several productivity tools, allowing IT personnel to use visualized charts to manage and monitor the IPMI server or other devices with the QTS operating system installed, lowering related fees for management and maintenance and maximizing information management and productivity of the staff.

QRM+
IT infrastructure management

QRM+ is a centralized remote server and PC management solution from QNAP designed for IT teams. QRM+ monitors and controls the pulse/health of all the mission critical servers in your network. QRM+ provides a single point solution to discover, map, monitor and control all the critical devices (Servers/PCs/Thin Clients etc.) in your network. Manage your servers remotely from different client with-in or from outside of the same network.

Remote management

UNIX® | Windows™ | Linux | IPMI
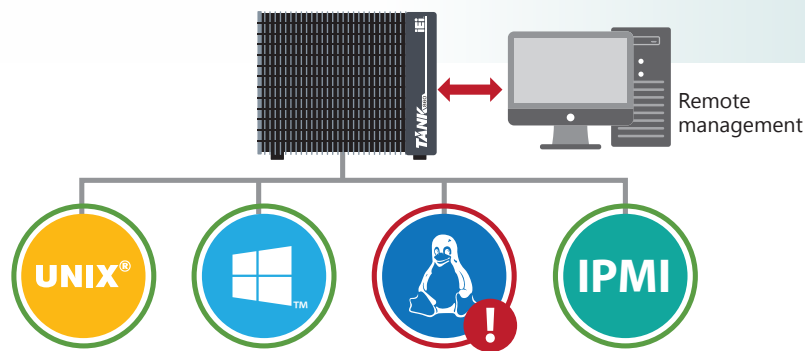
- Improve server health status control for the administrators.
- Discover, map, monitor and control resources in your network on a single platform.
- Supports Agent based (QRMAgent) and Agentless (IPMI) surveillance, supports IPMI 2.0.
- Keeps track of all mission-critical device settings and provides state of art alert/event management.
- Generate reports to help analyze the performance of network resources.
- Exclusive QRMAgent (lightweight remote management agent service) that supports multiple platforms such as Windows and Linux.
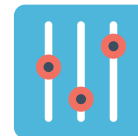- Save time on troubleshooting and quickly restore the system to operable status.

Discover   Map   Monitor   Control

QRMAgent

Developed by QNAP, QRMAgent is an agent program installed on workstations. QRM+ can monitor and manage the workstations through this program. After you add a device to the QRM+ server, the system will automatically install this agent program to that device. Or, you can choose to manually install QRMAgent on the workstation if you prefer. QRMAgent currently supports the following operating systems (more to be added later):

Platform	Operating System
x86 - Windows	Windows XP/7/Vista/8/8.1/10, Windows Server 2008/2012
AMD64 - Windows	Windows XP/7/Vista/8/8.1/10, Windows Server 2008/2012
X86 - Linux	Ubuntu 12.x/14.x/15.x

Application

Central nervous system of robots

TANK-860-QGW is like the brain of robots and its multiple I/O outputs can connect to various automated control, machine vision and data acquisition devices, just like the limbs and sense of human. The PCI-SN300 motion control card can be controlled by running application program on VM using Virtualization Station, allowing USB 3.0 cameras to capture images to use as the eyes of the robot to perform positioning. Robots can exchange data and use algorithms to optimize application programs, and then send it back to TANK-860-QGW to send unified commands to all equipment. In addition, Hybrid Backup Sync can also be used to backup data on to other storage devices, lowering the risk of data loss and preserve precious data.
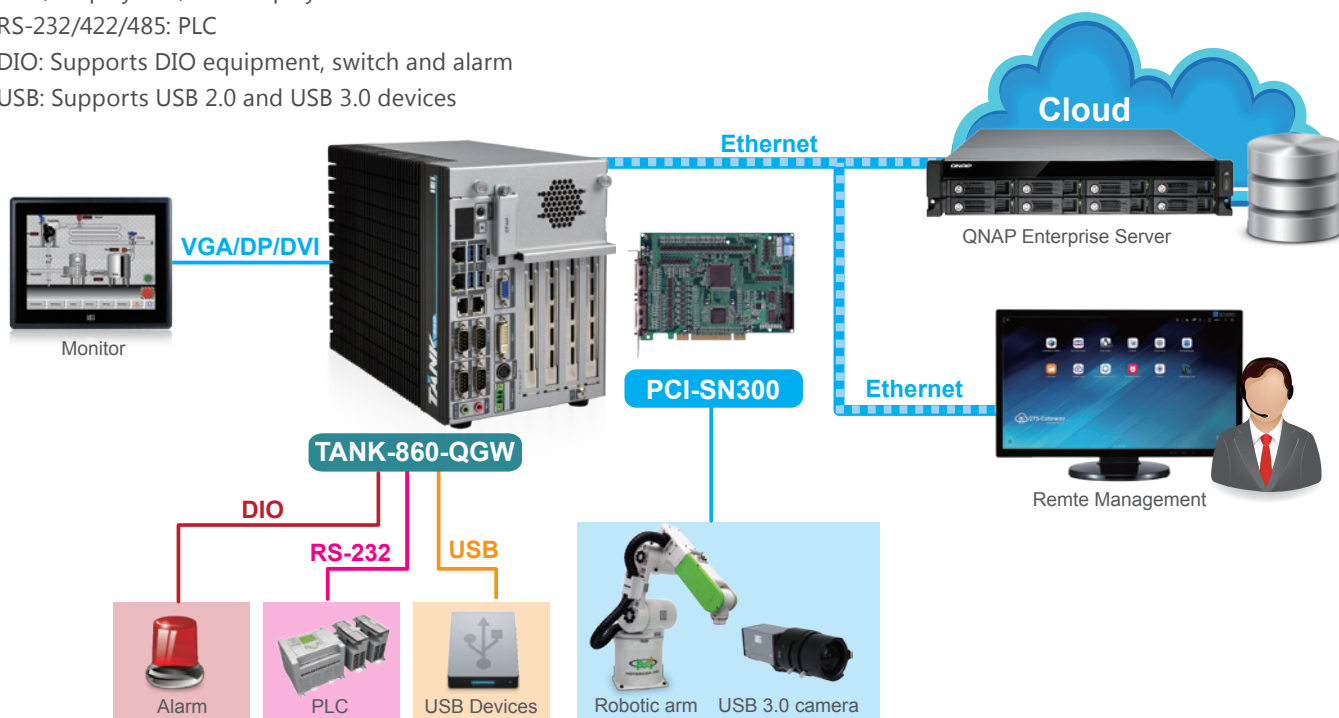
Connectable devices:
VGA, DisplayPort, DVI: display screen
RS-232/422/485: PLC
DIO: Supports DIO equipment, switch and alarm
USB: Supports USB 2.0 and USB 3.0 devices

Ethernet

Cloud

VGA/DP/DVI

QNAP Enterprise Server

Monitor

PCI-SN300

Ethernet

TANK-860-QGW

Remte Management

DIO

RS-232   **USB**

Alarm   PLC   USB Devices   Robotic arm   USB 3.0 camera

Agriculture Automation

This system can help farmer to build an irrigation schedule system and to monitor plant growth from remote.

Farmers is able to create a watering mode based on data analysis and find out the best watering time by collecting long-term data such as air humidity, soil dampness, light, etc. QTS gateway can also help farmers to expand vegetable garden through successful date mode duplication experienceand reduce human judgment.

Camera

Tem / Hum Sensors

ECW-281-QGW

DIO

Unattended Machine Room

Nowadays, systems become more and more intelligent, therefore, it starts replacing manpower in many places. In the past, each central control room has to be assigned an IT person to monitor all systems. Now, extra manpower for managing all systems and devices can be reduced through the QTS gateway system. QTS gateway is able to be applied in unmanned banking systems, IT rooms, etc. Moreover, by using this system, customer is not only able to reduce 90% manpower but also save almost 25% electricity consumption.

Cooling Fans
Smoke Sensor Detector
Air Condition RF433
Camera
Temp / Hum Sensors
Door Lock

- RS-485
- LoRa

MODAT-532

Access Control | Tem / Hum Sensors | Fan Speed Control | Camera

TANK-860-QGW

Equipment Management

IEI QTS gateway can be considered as a first level gateway. It collects equipment's data and transfers all data information to local severs through Ethernet for further data management.

The QTS gateway system has been used on CNC equipment control. System itself is not only considered as a small MES system, but also can be integrated with the original MES system and the ERP system.

This®• application is mainly integrated by two devices, Machine Data Analysis (MDA) and Machine Data Collection (MDC). These two types of systems are able to build up a business model based on the QTS gateway software.

MDA1
(Machine Data Analysis)

Ethernet

MDC
(Machine Data Collection)

MDC

MDC (n+1)

QTS-Gateway
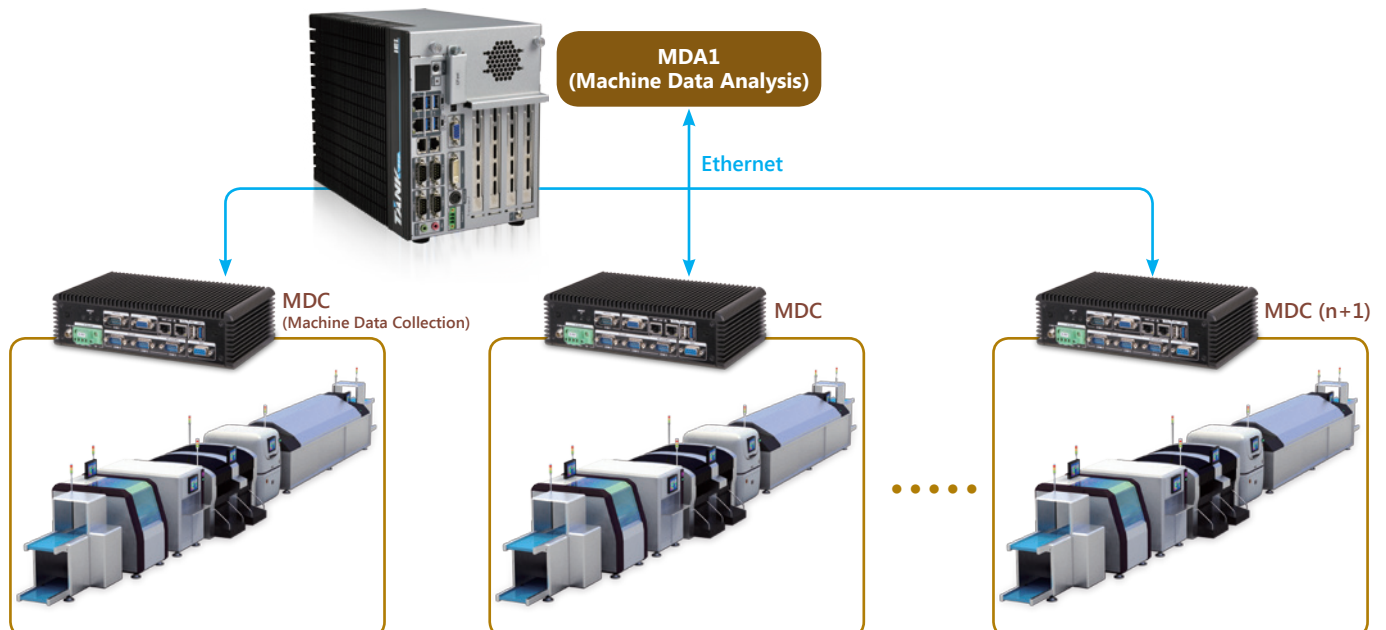
Product List

PPC-FxxB-BT
- 12"/15"/17"/19" Fanless Intel® Bay Trail Solution
- Robust IP65 aluminum front bezel

ECW-281B-BT
- Fanless embedded system with Intel® Celeron J1900 Processor
- 12V DC and 9~36V DC models available

DRPC-120-BT
- Fanless DIN-Rail embedded system with Intel® E3845 processor
- Programmable OLED display

Preliminary

ECN-380-QM87i
- Fanless embedded system with Intel® Core™ i5/ Celeron® CPU
- Triple display with two HDMI and one VGA output

Preliminary

SBOX-100-QM87-QGW
- Fanless marine computer with Intel® Core™ i5 CPU
- Isolated 18 V~36 V DC input

TANK-860-HM86
- Ruggedized fanless embedded system with Intel® HM86 mobile solution
- Up to six different expansion slot options

TANK-760-HM86
- Ruggedized fanless embedded system with Intel® HM86 mobile solution
- Three independent video outputs

Preliminary

IDS-300-BW
- Digital signage system with Intel® Celeron N3160 solution
- Three independent HDMI output

Preliminary

uIBX-250-BW-QGW
- Fanless system with Intel® Celeron® N3160 processor
- Dual display

Preliminary

IVS-200-ULT2-QGW
- Intel® i5-5350U or Celeron® 3755U CPU
- 9~36V DC input
- E-Mark certification

2017.05