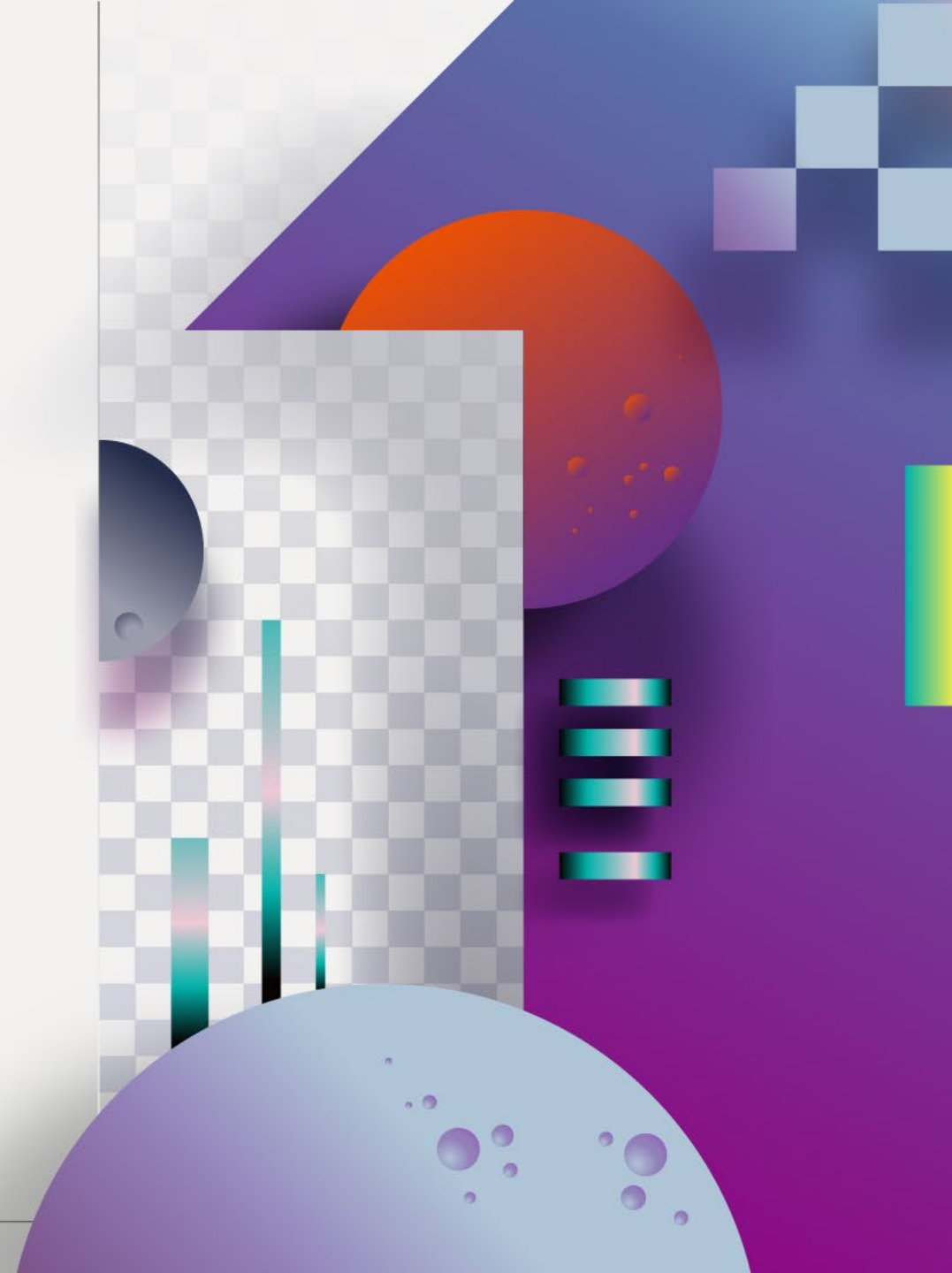# QNAP

Company Profile
2023

Stay
one
step
ahead

- About QNAP

- Product Applications

- Full QNAP Product Lineup

- Operational Sustainability

- Global Businesses Deployment

- Manufacturing and Quality Control

Stay
one
step
ahead

About QNAP

The name of QNAP originates from "Quality Network Appliance Provider".
We are committed to developing software applications, dedicated to
optimizing hardware design, and have established our own production lines to
offer comprehensive and cutting-edge technological solutions.

- QNAP was established in 2004
- We have 11 subsidiaries / 7 offices in 25 countries around the world to serve
  our customers
- More than 1300 fantastic employees work at worldwide locations of QNAP
- Over 600 engineers dedicated to R&D and innovation

Values

Smart innovation that integrates storage, networking, and video communication to redefine modern IT solutions

Vision

Software-defined architectures to establish future-proof digital information flow

Mission

Drive enterprise digital transformation with innovative information technology
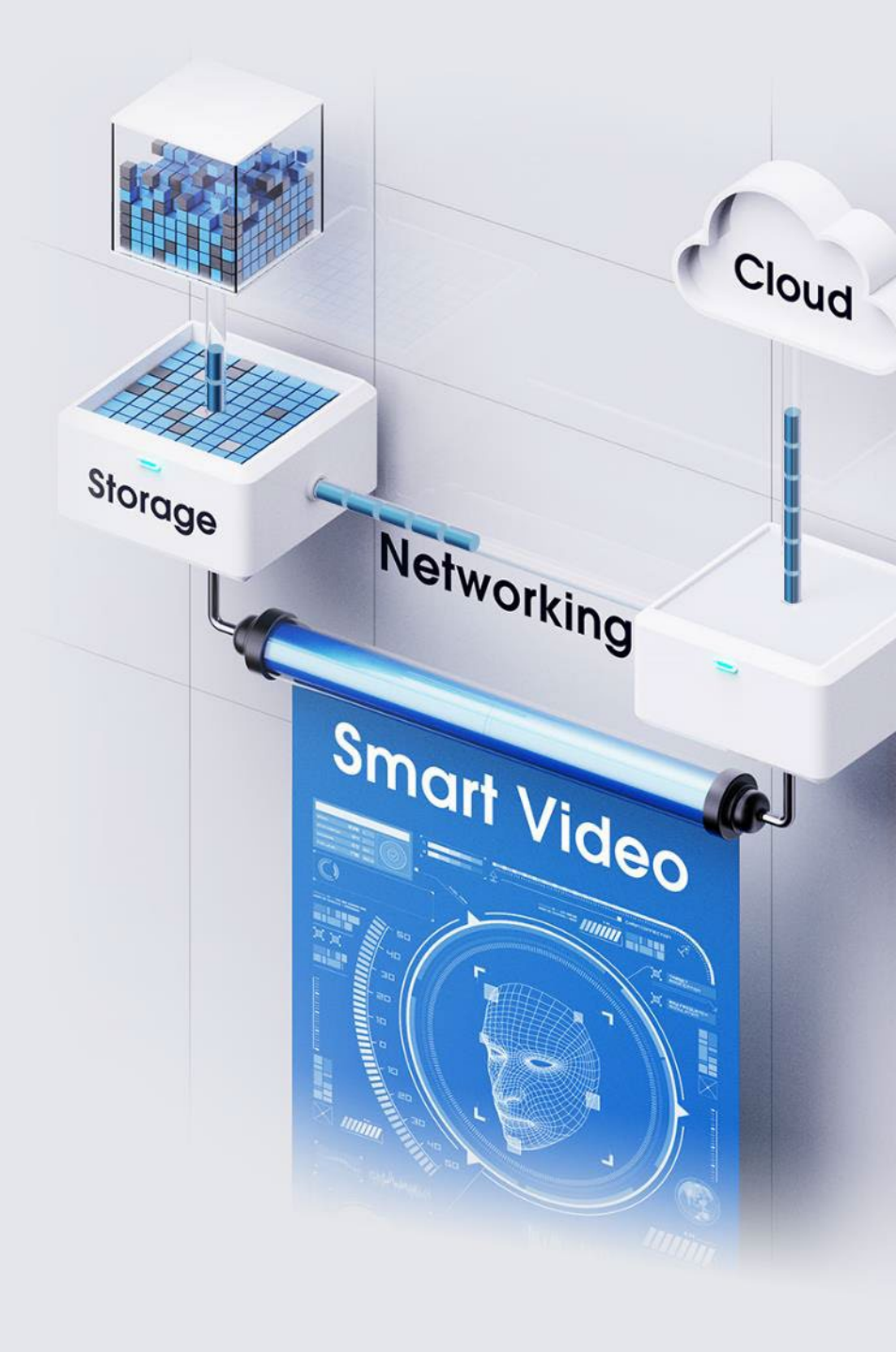
Core Competency

- Virtualized Storage and Network Communication

- Integrated Hybrid Cloud and AI Value-added Information Technology

- In-house Production foundation and Full-process Production Lines

- Vertical Market Deployment for High-Penetration Businesses

- Local Before-and-After Sales Services from Worldwide Subsidiaries

Yearbook

QNAP Headquarters
Established in Taipei

NL Warehouse
Established in Bleiswijk, responsible for deliveries to European countries

JP office
Established in Tokyo, offering before-and-after sales services

TH office: Established in Bangkok, Thailand, offering before-and-after sales services

UK office: Established in Swindon, UK office and warehouse offer services to customers in UK & Ireland

HK office: Established in Kowloon Bay, offering before-and-after sales services to the customers in Hong Kong and Macau

2004　　　**2012**　　　**2016**　　　**2018**

2009　　　**2015**　　　**2017**　　　**2022**

US office/Warehouse
Established in Pomona, California, mainly offering services to customers in the Americas

CA office: Established in Markham, Canada, offering before and after sales services

DE office: Established in Willich, Germany, the office and warehouse offers high-end models to European customers

IT office: Established in Rome, Italy, offering before-and-after sales services

QIN: Established in Bengaluru, India, with an R&D and after-sales service center

European Headquarters: Based in Willich, Germany, the warehouse and service center covers European customers

Awards

**2017 Red Dot Award:
Product Design**

TVS-873 10GbE
Business NAS

**2018 Best
Choice Award**

TS-328 3-bay RAID
5 NAS

**2021 Red Dot Award:
Innovative
Product Design**

QGD-3014-16PT
Desktop Smart Edge
PoE Switch

**2018 Red Dot Award:
Product Design**

TVS-951X 9-bay 10GbE
Multimedia NAS

**CES 2019
Innovation Awards**

HS-453DX
Fanless NAS

**2022 Red Dot Award:
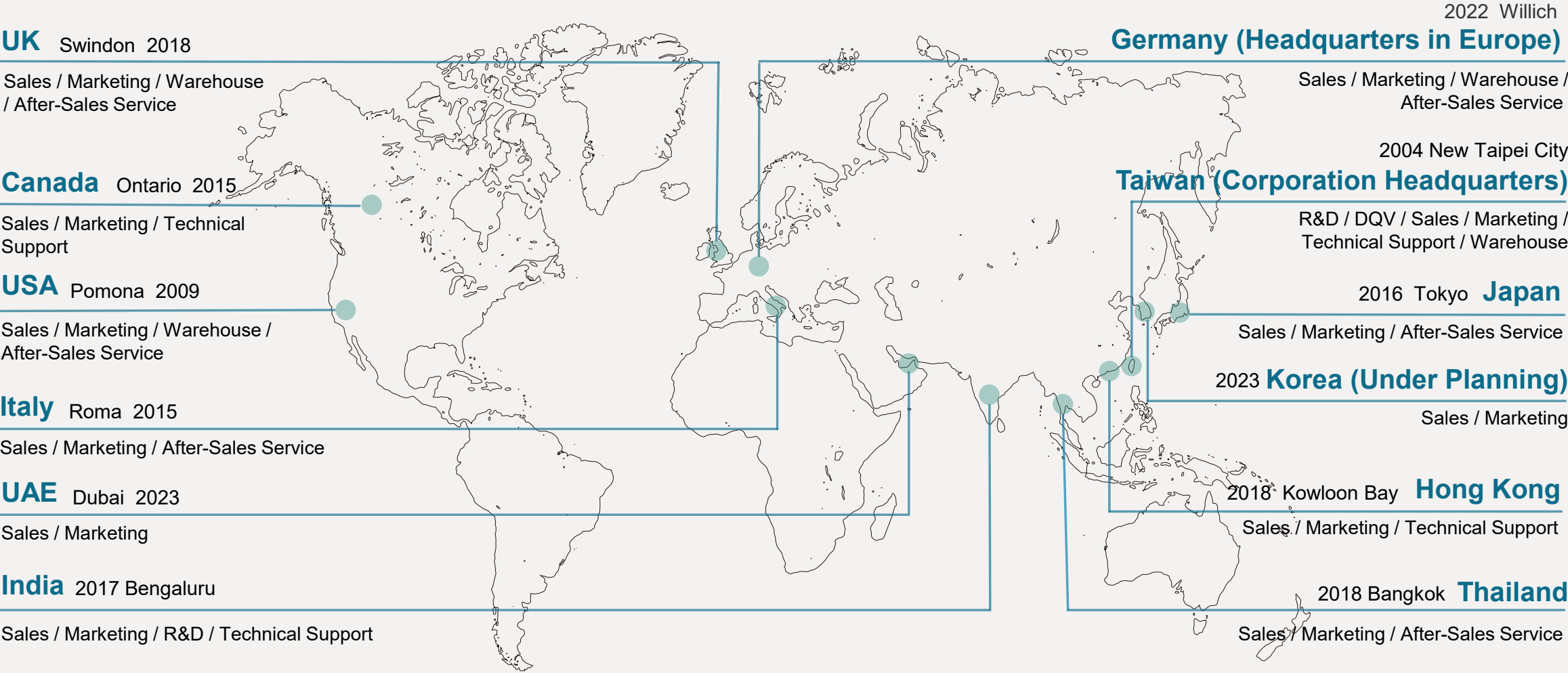Product Design**

TS-h1290FX
Desktop 12-bay All-Flash NAS

**2023 TechRadar Pro Picks
Award Winner for CES 2023**

TS-464 Quad-core dual-port 2.5GbE NAS

Worldwide Deployment of Subsidiaries

The deployment of QNAP subsidiaries around the world is shown as follows

2022 Willich

Germany (Headquarters in Europe)

Sales / Marketing / Warehouse / After-Sales Service

UK Swindon 2018

Sales / Marketing / Warehouse / After-Sales Service

2004 New Taipei City

Taiwan (Corporation Headquarters)

R&D / DQV / Sales / Marketing / Technical Support / Warehouse

Canada Ontario 2015

Sales / Marketing / Technical Support

USA Pomona 2009

Sales / Marketing / Warehouse / After-Sales Service

2016 Tokyo **Japan**

Sales / Marketing / After-Sales Service

Italy Roma 2015

Sales / Marketing / After-Sales Service

2023 **Korea (Under Planning)**

Sales / Marketing

UAE Dubai 2023

Sales / Marketing

2018 Kowloon Bay **Hong Kong**

Sales / Marketing / Technical Support

India 2017 Bengaluru

Sales / Marketing / R&D / Technical Support

2018 Bangkok **Thailand**

Sales / Marketing / After-Sales Service

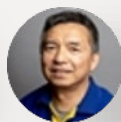# Corporate Leadership

Chairman of QNAP

Teddy Kuo

General Manager of QNAP

Meiji Chang

QUS

James Wu
Regional VP of US

QCA

Siimon Tsai
Regional VP of Canada

QDE

Dale Chen
Regional VP in Europe

QHK

Banson Chang
Regional VP of Asia Pacific

QIT

Tony Chou
Regional Manager of Southern Europe

QJP

Jack Yang
Regional VP of Japan & Korea

QTH

Banson Chang
Regional VP of Asia Pacific

QUK

Posen Wang
Regional Manager of UK

QIN

Prasanna Mumbai
Office Manager of India R&D Center

Major Customers

Major Customers

eShop

Major Customers

Major Customers

Reseller

BT · shi · Insight · SimplyFLASH · Softcat

ebuyer · Computacenter · BECHTLE · CDW · Connection GOVCONNECTION PUBLIC SECTOR SOLUTIONS we solve IT

ACP · CLS Ihr Team für innovative Technologie · medialine.ag systems & services

Xizhi Headquarters

Number of Employees

456

Scope of Business

- Administration
- General Affairs
- Finance
- Legal
- Information
- Sales and Marketing
- Product Development
- R&D
- Testing
- Technical Support
- Logistics

Xinsheng Office

Number of Employees

118

Scope of Business

Product Development / R&D

Hsinchu Office

Number of Employees

98

Scope of Business

Product Development / R&D

Taichung Office

Number of Employees

18

Scope of Business

Product Development / R&D

Kaohsiung Office

Number of Employees

57

Scope of Business

Product Development / R&D

Product Applications

Information Engineering

- IT Storage Architecture
- Data Backup and Recovery
- Infrastructure as a Service (IaaS)
- Workspace Collaboration
- Network Infrastructure

Video Surveillance & Teleconferencing

- Live Stream and Surveillance

- AI-powered Surveillance Event Search

- High-availability Recording Takeover

- HD Wireless Projection

- Multipoint Video Conference System

Content Creator & Video Editing

- 4K High Resolution Online Editing

- Thunderbolt High-speed Transmission

- Petabyte-scale File Storage

- Integrates Non-linear Editing Applications

- Direct-attached Storage

Retail & Department Stores

- AI Smart Retail Data Analysis
- Facial Recognition Tracking with Non-overlapping Camera Views
- Heat maps of People Flow
- Computes Visit Duration and Conversion
- Centralized Cloud Management
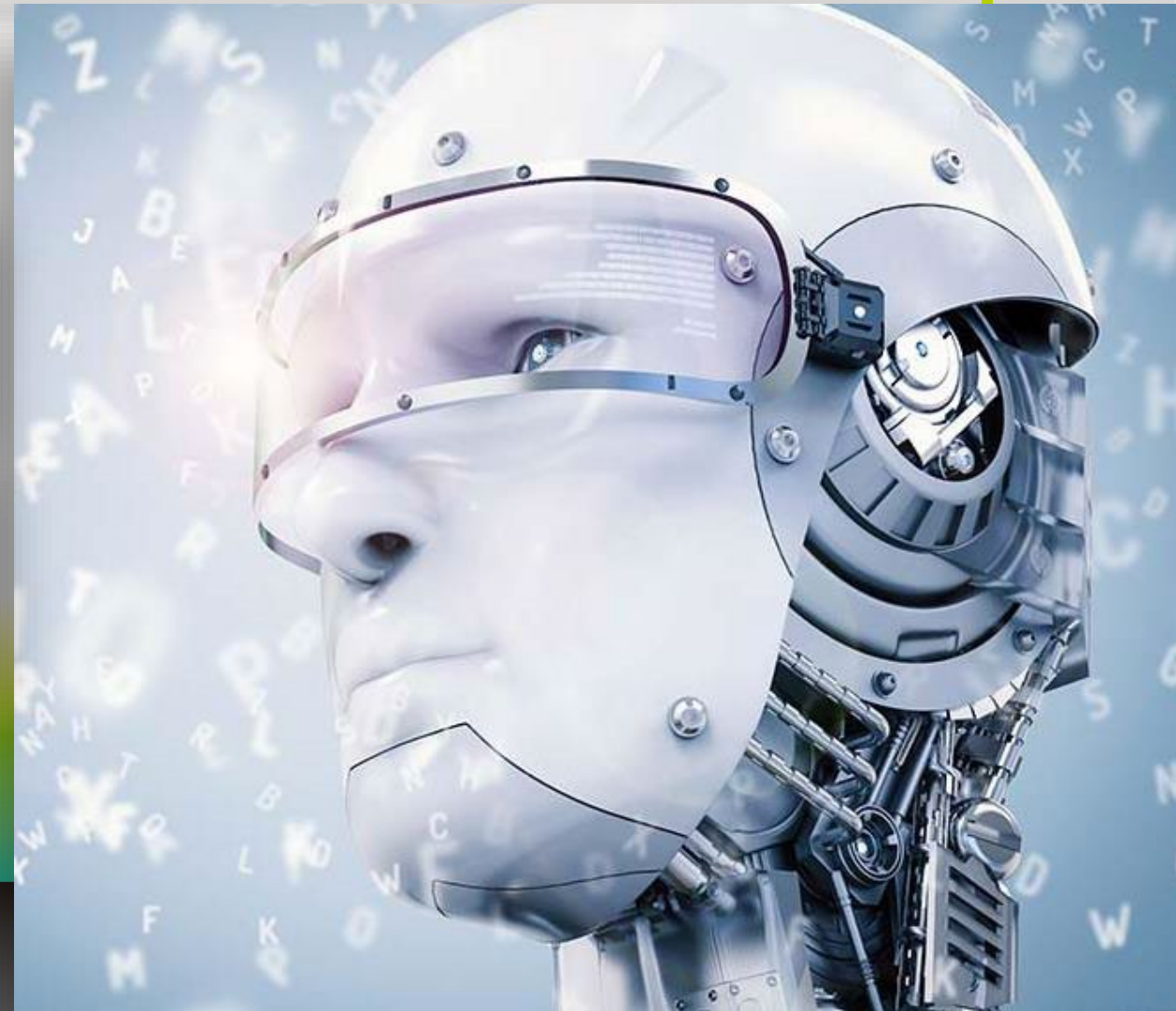
Healthcare

- Storage and Backup of Confidential Data
- Machine Learning Model for Medical Imaging
- Extraction of Medical Journals and Documents
- Telemedicine and Interaction
- DICOM Integration

Education

- Multipoint Data Sharing and Synchronization
- FTP File Management System
- Small form factor Classroom Storage Device
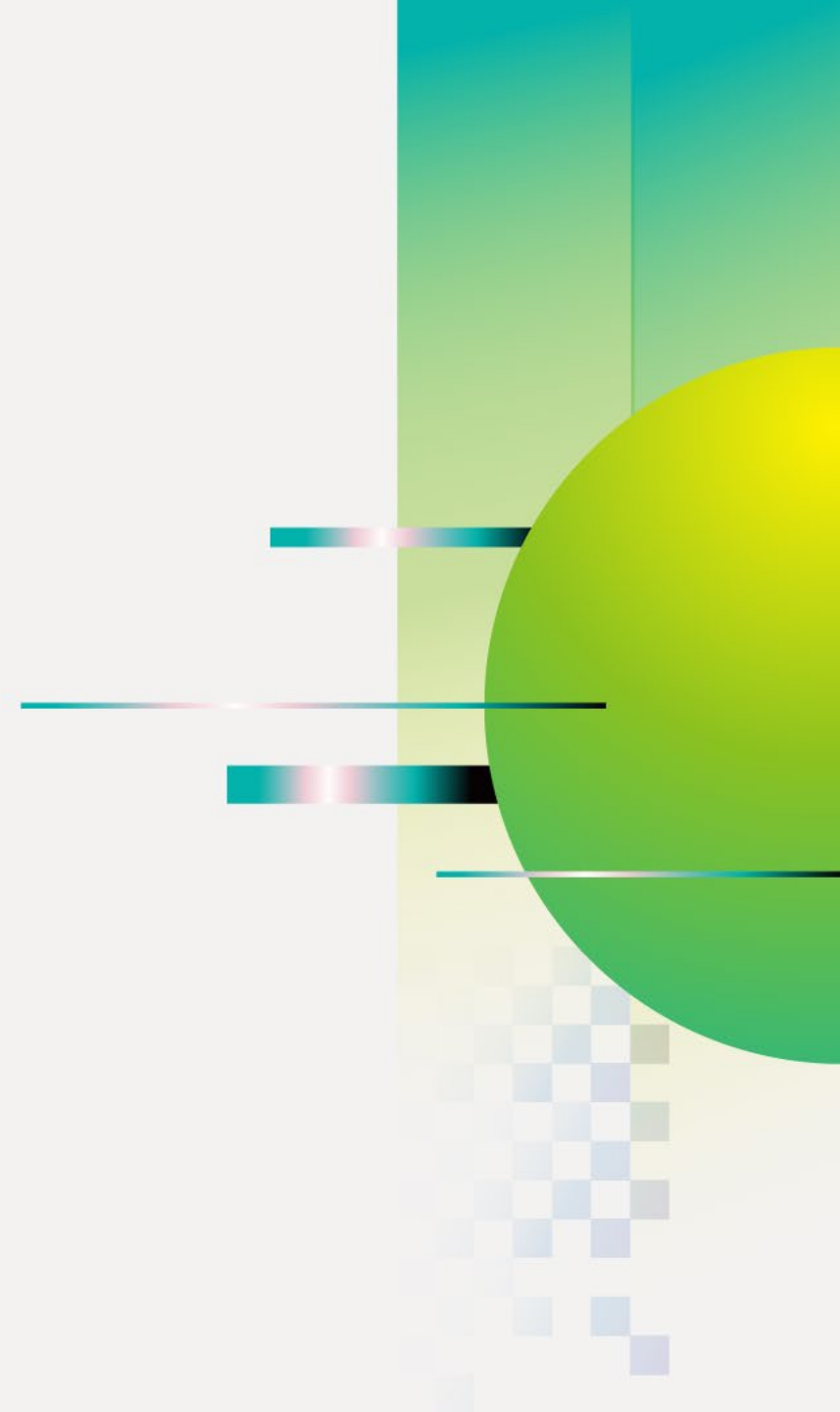- Remote Learning and Interaction
- Campus Safety Surveillance

Industrial Manufacturing

- NAS with Wide-temperature and Wide-voltage Power Supply

- Network Switch with Industrial Network Management

- Objective Ransomware Information Defensive System

- PoE++ / PoE+ Power over Ethernet Switch

- IoT Private Cloud Platform

Full QNAP Product Lineup

All-flash storage. Ultimate performance.

QNAP's All-Flash Storage Solutions feature ZFS data reduction and SSD optimization technologies to maximize SSD performance and lifespan. Perfect for keeping your business agile and efficient!

Flash-optimized storage

Write amplification is an undesirable effect of SSDs, bringing challenges to flash memory performance and endurance. QNAP's exclusive Write Coalescing algorithm is engineered for flash optimization by transforming all random writes to sequential writes along with reduced I/O. It not only effectively increases random write performance for all-flash environments but can also improve SSD lifespans.

Quality of service

Quality of Service helps optimize resource allocation based on I/O and bandwidth for LUNs/shared folders at different service levels. QoS prioritizes the performance of business-critical applications that run concurrently with non-critical applications as well as reducing "noisy neighbor" problems.

Inline data compression and compaction

Inline data compression shrinks file sizes to lower storage I/O workloads for improved performance. It also helps optimize storage utilization of SSD over-provisioning.

SSD TRIM

While almost all SSDs have shown consistent write performance degradation, TRIM helps overcome write performance drops. SSD TRIM allows the system to inform SSDs to delete unneeded data blocks. Deletion tasks are processed during system idle times, meaning it does not have to wait for when new data is written to the block.

High-performance ZFS-based OS with greater reliability

QNAP's QuTS hero operating system combines the app-based QTS with a 128-bit ZFS file system to provide flexible storage management, comprehensive data protection and optimized performance to meet the needs of business-critical applications.

QuTS hero

ZFS | Efficient data reduction technology

Inline data deduplication is block-based and runs before data is written to storage. This greatly optimizes storage usage while significantly decreasing storage capacity requirements. Coupled with inline compression and inline compaction technologies, ZFS significantly reduces the overall storage footprint - especially helpful for increasing SSD storage efficiency when highly-repetitive data or massive small files are generated.

Near-limitless, instant snapshots

ZFS supports up to 65,535 snapshots for iSCSI LUN and shared folders to accomplish well-rounded snapshot versioning. If 1 snapshot is created every hour, 24 snapshots per day, then up to 7 years of snapshots can be created without needing to delete any!

PB | Up to petabyte capacity per shared folder

The 128-bit ZFS filesystem has huge capacity potential and natively supports standard RAID levels and additional ZFS RAID layouts (RAID Z). ZFS-based QNAP storage solutions provide up to 5PB capacity for individual shared folders, enabling enterprises to tackle storage-demanding applications.

Real-time SnapSync

The advanced block-based real-time SnapSync ensures that a primary and secondary NAS always keep the same data, providing the strongest support for nonstop business operations and helping users remove the risk of data loss!

High-speed 25GbE networking

Enable lightning-fast throughput for bandwidth-demanding tasks such as virtualization, massive data transmission, and fast backup/restoration.

25GbE-ready All-flash NAS

The TS-h3088XU-RP provides a built-in dual-port 25GbE SFP28 SmartNIC with the NVIDIA® Mellanox ConnectX-4 Lx SmartNIC controller that supports iSCSI Extensions for RDMA (iSER) to increase performance of data transfer between NAS and ESXi server and offload CPU workloads.

Affordable 25GbE managed switch

The QSW-M5216-1T is a 25GbE Layer 2 web managed switch that provides flexible network interfaces for high compatibility at an affordable price, enabling small businesses to quickly upgrade to an ultra-high-speed backbone network by integrating to existing network infrastructure.

10GbE connectivity: The future is now!

10GbE connectivity improves overall network performance and everyday tasks with ten times the bandwidth of 1GbE. By offering 10GbE-ready NAS, network adapters and switches, QNAP is a one-stop provider for everything you need to create your own 10GbE environment.

10GbE NAS solutions

QNAP provides a range of NAS with integrated hardware and software solutions that can make the most of the incredible bandwidth provided by 10GbE networks.

10GbE network adapters

QNAP provides 10GbE PCIe expansion card and Thunderbolt to 10GbE adapters to empower devices with 10GbE connectivity. The QM2 Expansion Card not only includes 10GbE connectivity, but also provides the ability to add M.2 SSDs to your workstation or NAS.

10GbE switches

QNAP's QSW Series 10GbE switches supports 10GBASE-T and NBASE-T standards, allowing you to take advantage of higher network speeds with existing Cat 5e and 6a cables. Both SFP+ (fiber) and RJ45 (copper) ports are available for servicing a range of network needs.

Breakthrough performance and outstanding connectivity with Thunderbolt NAS

QNAP offers the very best in connectivity with Thunderbolt™ NAS. Providing speed and versatility that standard NAS cannot match, video production professionals using QNAP Thunderbolt™ NAS enjoy enhanced workflows, unprecedented speed, and incredible versatility.

Ultra-high speed transfer

With transfer speeds of up to 40GbE, file sharing and high-resolution multimedia editing is greatly boosted.

High availability with USB Type-C

Compatible with USB Type-C, Thunderbolt NAS can easily centralize file storage and sharing from any USB Type-C device without needing a different cable.

Facilitate 10GbE workflows with Thunderbolt-to-Ethernet

The innovative T2E Converter bridges Thunderbolt and Ethernet networks, allowing Thunderbolt-enabled computers to connect to these networks via their Thunderbolt connection to the Thunderbolt NAS. This saves a 10GbE port and eliminates the need for extra adapters or network cards.

Collaboration station for Mac and Windows

The increased bandwidth of Thunderbolt 3 enables smooth video editing and faster file sharing for photographers, video editors and graphic designers. Several Thunderbolt™ devices can be connected to the Thunderbolt NAS to process real-time photo and audio editing simultaneously without impacting system performance.

Flexible and economical storage expansion

Direct-attached Storage (DAS) adds additional storage capacity to your PC by being directly connected via USB or another port. DAS is usually plug-and-use to a single device and is suitable for users who seek extra storage space and not the advanced features and network connectivity of NAS.

RAID Support

QNAP DAS supports various RAID levels to improve performance and data protection.

Simple Interface

The QNAP External RAID Manager helps monitor the DAS system, drives, and health status. It automatically sends system alerts to your PC if an error occurs.

For NAS Expansion

QNAP DAS can be used with either USB Type-C, SATA, or SAS for faster data transfer and can be easily managed using QTS / QuTS hero Storage & Snapshots. The TL series is suited for NAS expansion.

Effortless Setup

The DAS is completely plug-and-use and does not require any network configuration. An eject button is included to quickly remove the DAS from the connected computer.

For PC Expansion

QNAP DAS are ideal choices for PC users looking to expand their storage space. They use USB Type-C, SATA, or SAS for faster data transfer and support software and hardware-controlled RAID configurations for flexible storage configuration.

Next-generation intelligent IP surveillance and remote backup solution

With the subscription-based QVR Elite smart surveillance solution you only pay for the channel licenses you need, allowing you to affordably safeguard your property. You can arrange a dedicated, independent storage space for surveillance data on the QNAP NAS and enjoy simplified camera management, storage space allocation, camera live viewing and playback. Recordings are saved as MP4 files for playback on nearly every device.

Direct monitoring on an HDMI display

Easily play recordings with a connected HDMI display using the QVR Smart Client. Search for event recordings within a time period and detection area specified in the user interface.

Leverage AI-based applications for value-added services

QVR Elite's surveillance footage can be processed by multiple QNAP AI-based video analytics applications (such as QVR Face, QVR Human, QVR DoorAccess) to empower surveillance systems with smart door access, facial recognition, human counting capabilities and more.

QVR Pro Client: Centralized monitoring and management

QVR Pro Client enables monitoring multiple channels simultaneously. Flexibly switch between live view and playback mode to easily fulfill centralized monitoring and management.

Records using the MP4 video format

QVR Elite records video files in the universal MP4 format, allowing for smooth playback on any device. In addition, you can conveniently back up recordings to other QTS / QuTS hero NAS or cloud storage space using Hybrid Backup Sync or HybridMount.

Easy capacity expansion

Create multiple recording spaces for QVR Elite recordings. If you run out of storage space, you can easily expand your NAS storage by connecting to QNAP expansion enclosures.

### Low cost: flexible subscription plan

QVR Elite is subscription-based, with monthly, yearly, and 3-year subscription plans. You can build a robust surveillance system with a low-cost monthly price of US $1.99 per channel. You can alter the subscription based on your needs to reach higher cost efficiency.

Easily build a personal cloud and access anywhere

In contrast to the limited storage space and potential security issues with public cloud services, the QNAP NAS is advantageous for establishing a secure and large-capacity personal cloud.
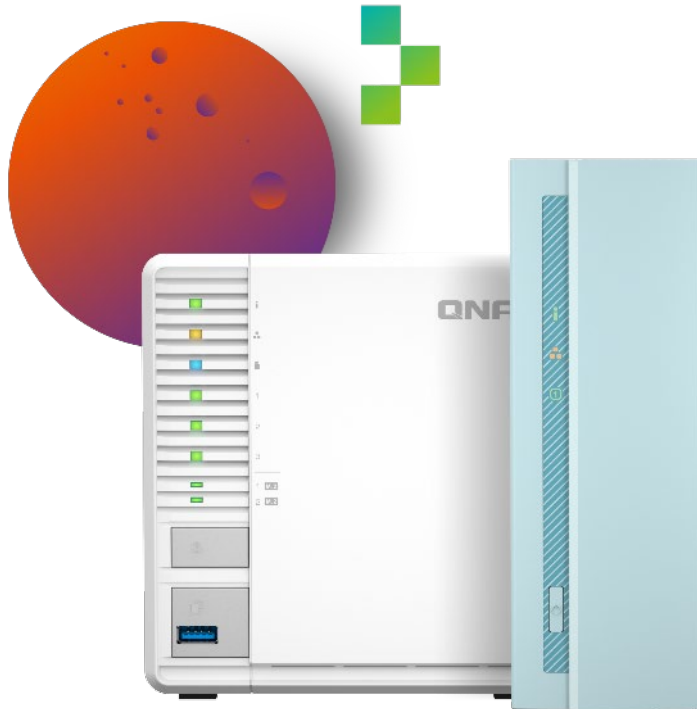
An easy-to-use, all-in-one backup solution

The QNAP NAS can do many things, but at its heart is a complete backup solution to protect your files and data. By regularly backing up your files and device content, you can make data loss a thing of the past.

Greater multimedia enjoyment

The QNAP NAS comes with a wide range of media applications, including Photo Station, Video Station and Music Station, allowing you to easily manage and view your media files.

Easy and secure remote connection with myQNAPcloud

myQNAPcloud allows you to remain connected to your QNAP NAS using a unique domain name. No complex routing or configuration is required, and myQNAPcloud strengthens SSL Certificate keys to 2048-bits to enable secure remote access, management, and sharing files and check your system status from anywhere.

A secure backup center with snapshot protection

Snapshots are essential for NAS data protection, and their block-level feature makes it a dependable data protection method in the face of growing ransomware threats.

Connect to a TV or monitor with HDMI

With HDMI output, the QNAP NAS allows you to directly enjoy multimedia content, use web browsers, manage your NAS, or watch recorded surveillance footage or live feeds on your NAS.

ADRA Network Detection and Response (NDR) appliances

The QNAP ADRA series Network Detection and Response (NDR) appliances selectively screen network traffic and detect malware lateral movement, stopping hostile activities before data leakage and encryption can occur.

The rapid-screening ADRA NDR cybersecurity appliances

The ADRA NDR precisely pinpoint malware activities on your local network without impacting performance. The proprietary rapid-screening mechanism employed in the ADRA NDR detects potentially malicious activities based on a set of criteria and responds to these anomalies according to defined policies. This greatly improves the security of your network without impacting performance.

Threat detection

The ADRA NDR is equipped with deep analysis features that allow in-depth inspections for malware and vulnerability exploits. The ADRA NDR is also capable of simulating a threat trap for malware to initiate attacks. Once the malware becomes active, hostile behaviors will be detected by the cybersecurity appliance and actions will be taken.

Threat analysis

Once suspicious activities are captured by Threat Detection, network traffic packets are analyzed against a collection of rules to determine the attack type. Different detection events over time will be evaluated against each other to determine their relations as an additional criterion for evaluating associated risk levels.

Threat response

Automatically isolate affected devices only to contain the malware attack to a smaller range, without shutting down the entire network. IT administrators can take a series of actions (such as isolating or temporarily allowing) to flexibly tackle operational needs.
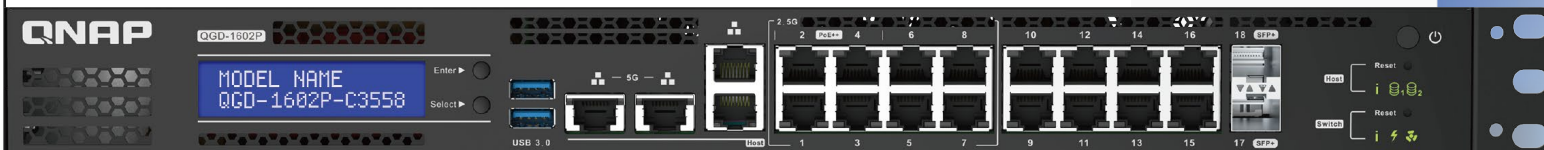
QuWAN SD-WAN solution for resilient IT infrastructure

QNAP's QuWAN SD-WAN solution features Auto Mesh VPN, IPsec encryption and cloud-centric management. Compatible with a wide range of QNAP solutions, QuWAN enables SMBs to efficiently build a dependable network at a cost-effective price, and to facilitate digital transformation, multi-site expansion and remote working.

Auto mesh VPN
Automatically establishes a mesh VPN and removes the need for manual static VPN settings.

Cloud management
The QuWAN Orchestrator provides powerful and convenient central network management.

Network security
Adopts Deep Packet Inspection to analyze L7-Payloads for content information from websites and devices.

WAN optimization
QuWAN adopts load balancing technologies to combine the bandwidth of different ISPs and to prioritize bandwidth utilization.

Cost optimization
Optimizes fiber/network transmission to lower the cost of VPN equipment and bandwidth expenses.

Web GUI
Provides user-friendly functionality, including a dashboard, eMap, traffic analysis, and more.

Enjoy a high-coverage Mesh Wi-Fi experience

The QMiro-201W and QMiroPlus-201W support tri-band Wi-Fi 5 wireless transmission and Mesh Wi-Fi handover, ensuring stable Wi-Fi connections and greater signal quality via a Mesh Wi-Fi network.

Connect your Home with High-Coverage Tri-Band Mesh Wi-Fi

QMiro-201W / QMiroPlus-201W adopts Wi-Fi Handover technology, allowing multiple users to be automatically connected to the router with the strongest Wi-Fi signal with a single SSID. With dual-band 2.4GHz/5GHz, QMiro-201W / QMiroPlus-201W also provides a dedicated Mesh 5GHz frequency for high-bandwidth connections between Mesh Wi-Fi routers, guaranteeing smooth and stable Wi-Fi connections.

Dedicated Tri-band Mesh Wi-Fi for smooth connections

Supports tri-band Wi-Fi of 2.4GHz, 5GHz and a dedicated Mesh Wi-Fi 5GHz band for high-bandwidth connections between Mesh Wi-Fi routers. Unlike conventional dual-band routers whose 5GHz band must be shared between Wi-Fi clients and Mesh Wi-Fi routers, the QMiro-201W /QMiroPlus-201W guarantees smooth and stable Wi-Fi connections.

Smart Video Conferencing Solution

All-in-one: video calling, wireless presentation and meeting recordings.

QNAP Smart Video Conferencing Solution is a high-quality video conferencing system, providing an ideal solution for small meeting rooms with support for wireless presentations, cross-platform communication and local storage.

Running KoiMeeter video conferencing operating system

KoiMeeter provides an dedicated solution for small meeting rooms with support for wireless presentations, cross-platform communication and local storage.

Free yourself from cables with 4K wireless projection

4K wireless projection provides a seamless wireless projection experience free from complex cabling and without needing additional projection devices.

Up to four-way video conferencing and collaboration

Multi-point video conferencing with the QNAP KoiBox-100W, KoiMeeter, the KoiMeeter mobile app, and compatible SIP systems.

Local storage for record and store meetings

Install a 2.5-inch SATA drive and locally store all your meeting videos, audio and shared files while also enabling further usage as training materials.
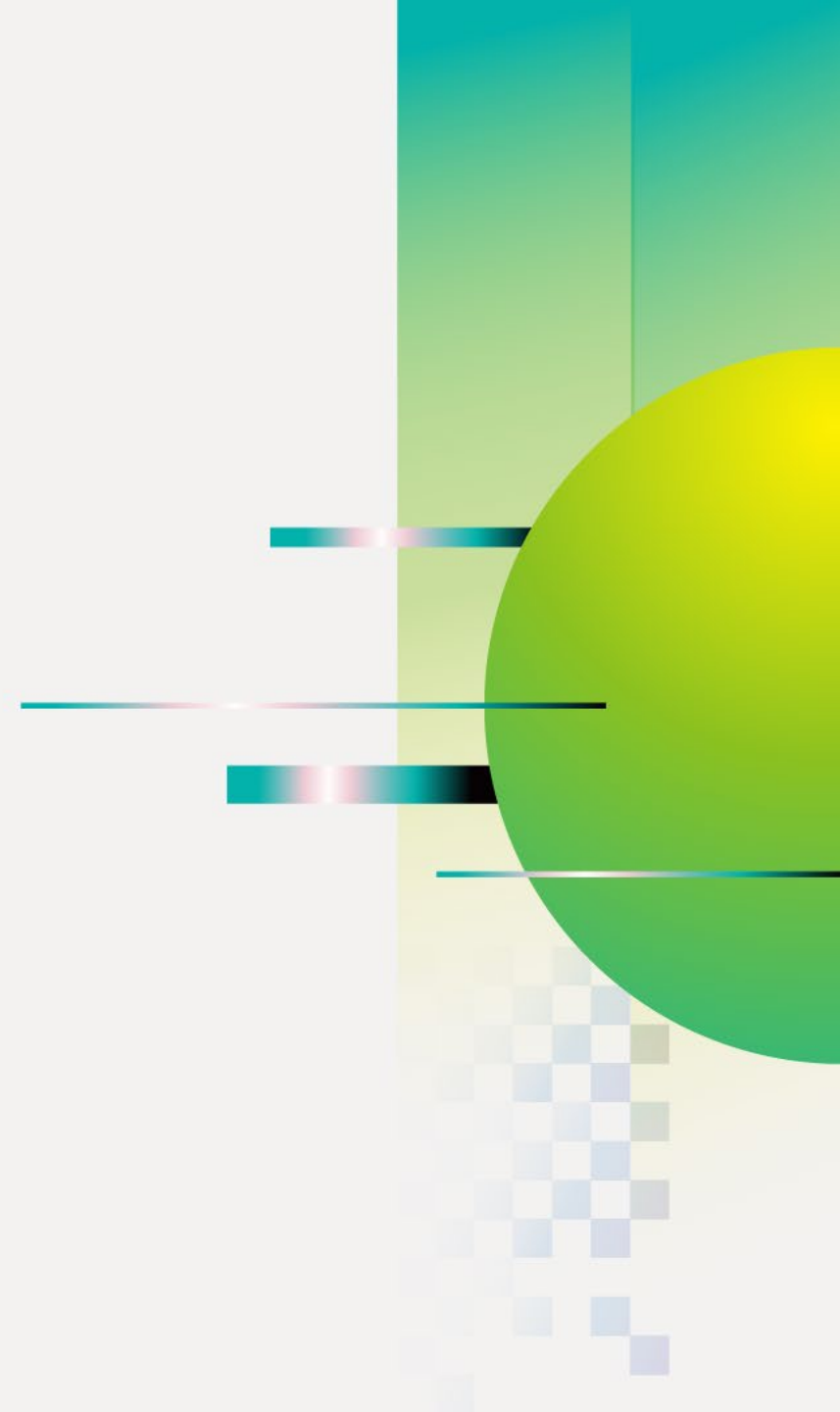
Optimized cloud meeting experience

The QNAP Smart Video Conferencing Solution supports popular cloud meeting services, such as Zoom®, Skype™, Microsoft Teams®, Cisco Webex®, and Google Meet™ for streamlining communication between different platforms.

Operational Sustainability

Worldwide Quality Control Processes Certified by ISO

The quality of QNAP products and services is accredited by international certifications, demonstrating the conformity to high-quality standards

ISO 9001
Quality Management System

ISO 27001
Information Security Management System

ISO 14001
Environmental Management System

ISO 45001
Occupational Health and Safety Management System
CSR Certification

ISO 27017
Cloud Information Security

ISO 27018
Cloud PII Protection Management

QNAP ESG Guideline

Environmental protection, employee health and safety, and social participation fulfill corporate social responsibility and the pursuit of business continuity

Environmental Sustainability

- Environmental Policy
- Carbon reduction management
- Green procurement
- Environmental sustainability education
- Supply chain management
- Energy and waste management

Employee Care

- Employee compensation and benefits
- Labor rights
- Employment environment
- Competency management
- Labor relation
- Education & training

Corporate Governance

- Integrity management
- Organization strategy
- Regulations compliance
- Information transparency
- Internal control
- Stakeholder compunctions

Customer Engagement

- Product and service liability
- Ensuring confidentiality of customer information
- Customer relationship maintenance
- Green products

Social Involvement

- Social care
- Community involvement
- Charitable activities
- Corporate image

Green Product Design Management

QNAP takes Sustainable Development Goals (SDG 12) as its corporate philosophy, and also regards the sustainability of the Earth as its corporate vision. Starting from product design, elimination of hazardous elements and packaging design, with innovative thinking, we are dedicated to developing Green products with low consumption and low correlation elements.

Green Materials

- RoHS II
- RoHS China
- REACH
- United States "TSCA" regulation
- Taiwan EPA
- Conflict Free Minerals Policy
- EU Deca-BDE, PFOS and DMF

Green Packaging

- EU Packaging and Packaging Waste Directive 94/62/EC

- The total amount of Pb, Cd. Hg and Hexavalent Cr doesn't exceed 100mg/kg (ppm)
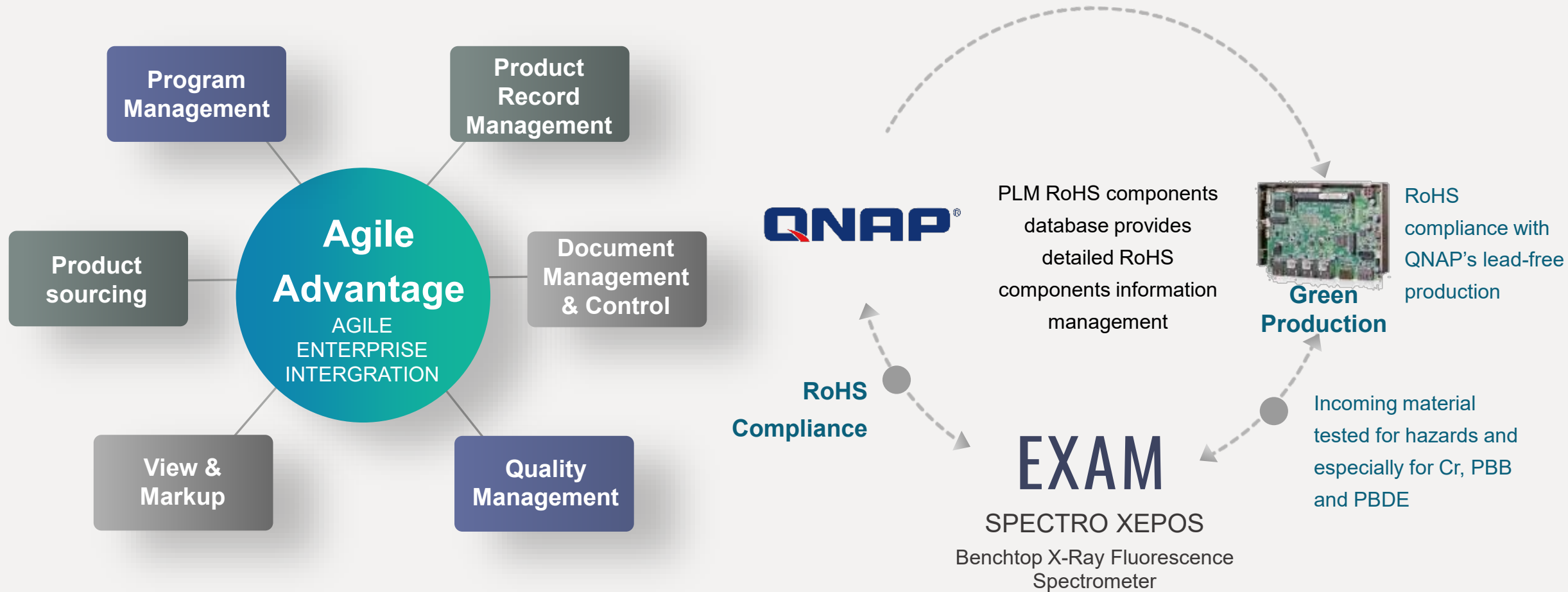
Product Recycling

- Waste Electrical and Electronic Equipment (WEEE) Directive

RoHS Compliance

Program Management

Product Record Management

Product sourcing

Agile Advantage
AGILE ENTERPRISE INTERGRATION

Document Management & Control

View & Markup

Quality Management

RoHS Compliance

QNAP®

PLM RoHS components database provides detailed RoHS components information management

Green Production

RoHS compliance with QNAP's lead-free production

EXAM
SPECTRO XEPOS
Benchtop X-Ray Fluorescence Spectrometer

Incoming material tested for hazards and especially for Cr, PBB and PBDE

Environmental Responsibility

QNAP plans to reduce CO_2 emissions by 4% in 5 years

- Operation guidelines related to environmental protection management, environmental management systems (ISO 14001)
- Energy saving appliance replacement, and tracking CO2 emissions
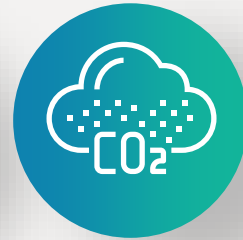- Reduce electric consumption by using LED lights and inverter air conditioners throughout the company

Waste gas

Waste water

Waste

Carbon emissions

Supply Chain Management

QNAP has a skilled supply chain management team that proactively uses advanced ERP tools to hep customers gain a competitive edge

QNAP ensure that our customers can reduce their TCO (Total cost of ownership) with the following criteria

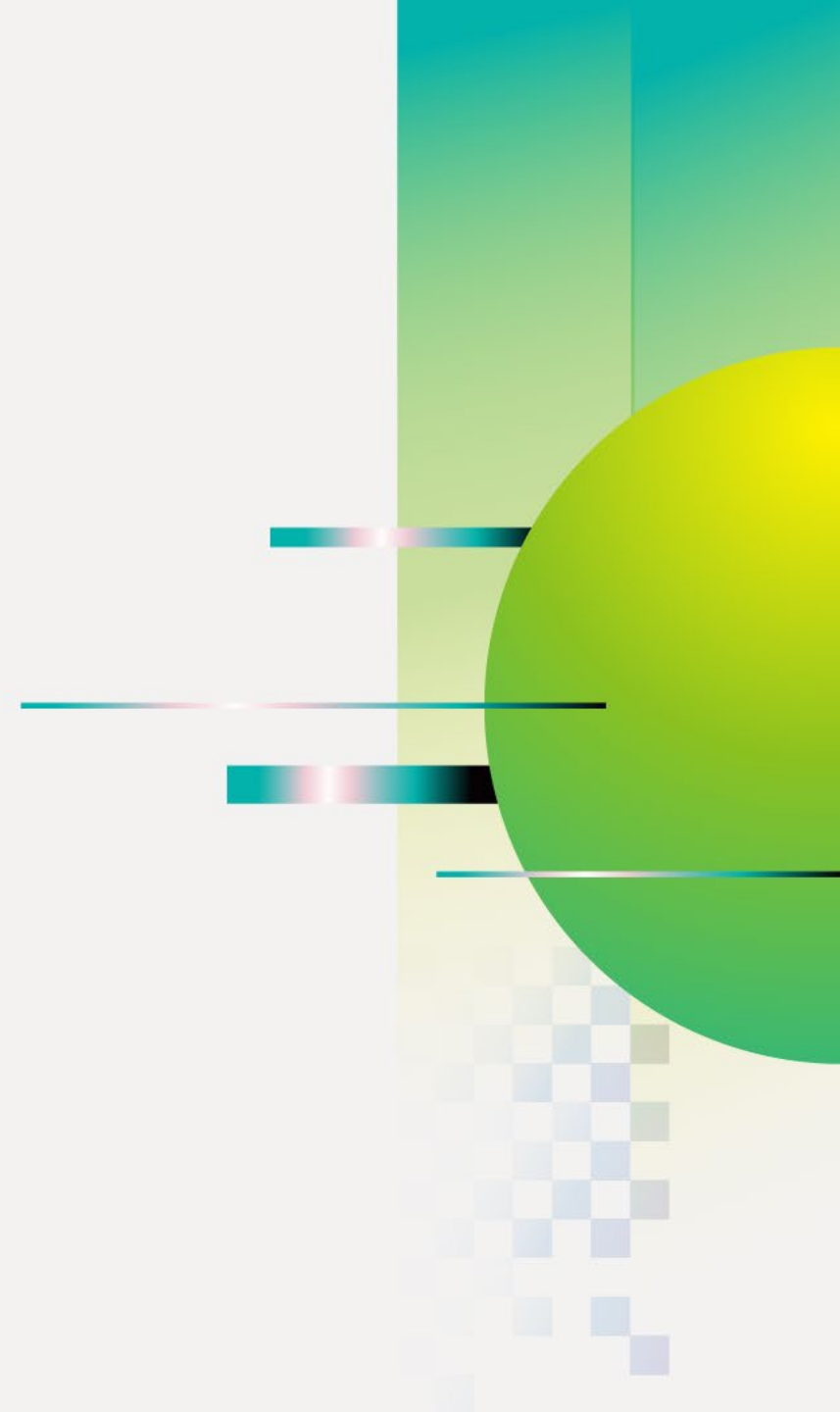**Reduced Inventory**   **Stable Quality**   **Time to Market**   **Reliable Source**   **Competitive Costs**   **Conflict Mineral Procurement Strategy**

Global Deployment of QNAP

Qidu Factory

Gross Building Area
19,180
square meters

PCBA Capacity in 2021
30K per month
SMD x5 & DIP x2

System Capacity in 2021
28K per month
Assembly Line x 13

USA

Office / Warehouse Center

Time of Establishment

2009

Location

Pomona CA

USA

Office / Warehouse Center

Number of Employees

47

Scope of Business

Before & After Sales Services

Warehouse Center

Germany

European Headquarters

Time of Establishment

2022

Location

Willich

Germany

European Headquarters

Number of Employees

50

Scope of Business

Before & After Sales Services
Warehouse Center

Canada

Office

Time of Establishment

2015

Location

Markham, Ontario

Canada

Office

Number of Employees

11

Scope of Business

Before & After Sales Services

Italy

Office

Time of Establishment

2015

Location

Roma

Italy

Office

Number of Employees

8

Scope of Business

Before & After Sales Services

Japan

Office

Time of Establishment

2016

Location

Tokyo

Japan

Office

Number of Employees

15

Scope of Business

Before & After Sales Services

India

Office

Time of Establishment

2017

Location

Bengaluru (Bangalore)

India

Office

Number of Employees

48

Scope of Business

R&D and After Sales Service

Thailand

Office

Time of Establishment

2018

Location

Bangkok

Thailand

Office

Number of Employees

7

Scope of Business

Before & After Sales Services

UK

Office / Warehouse Center

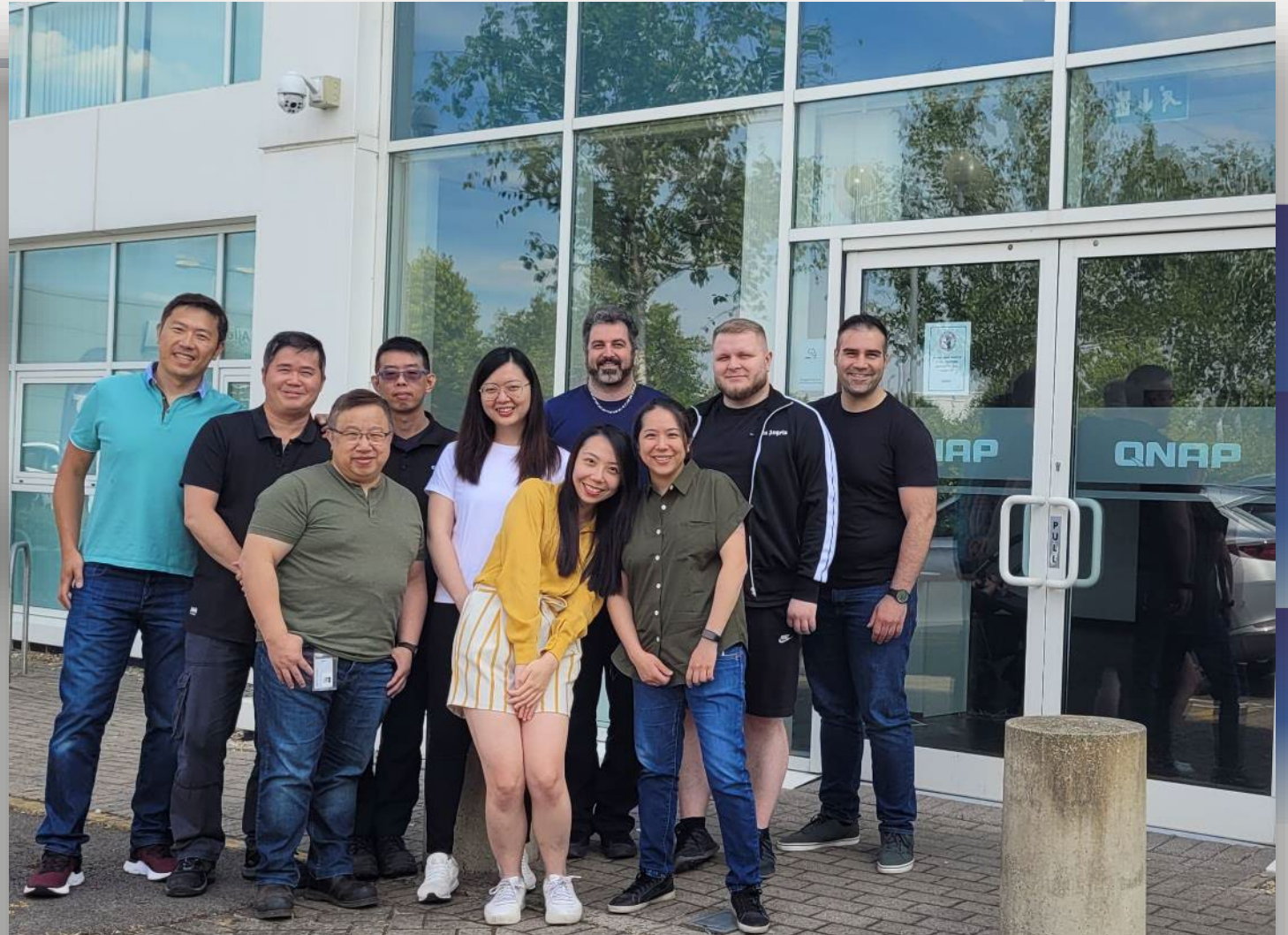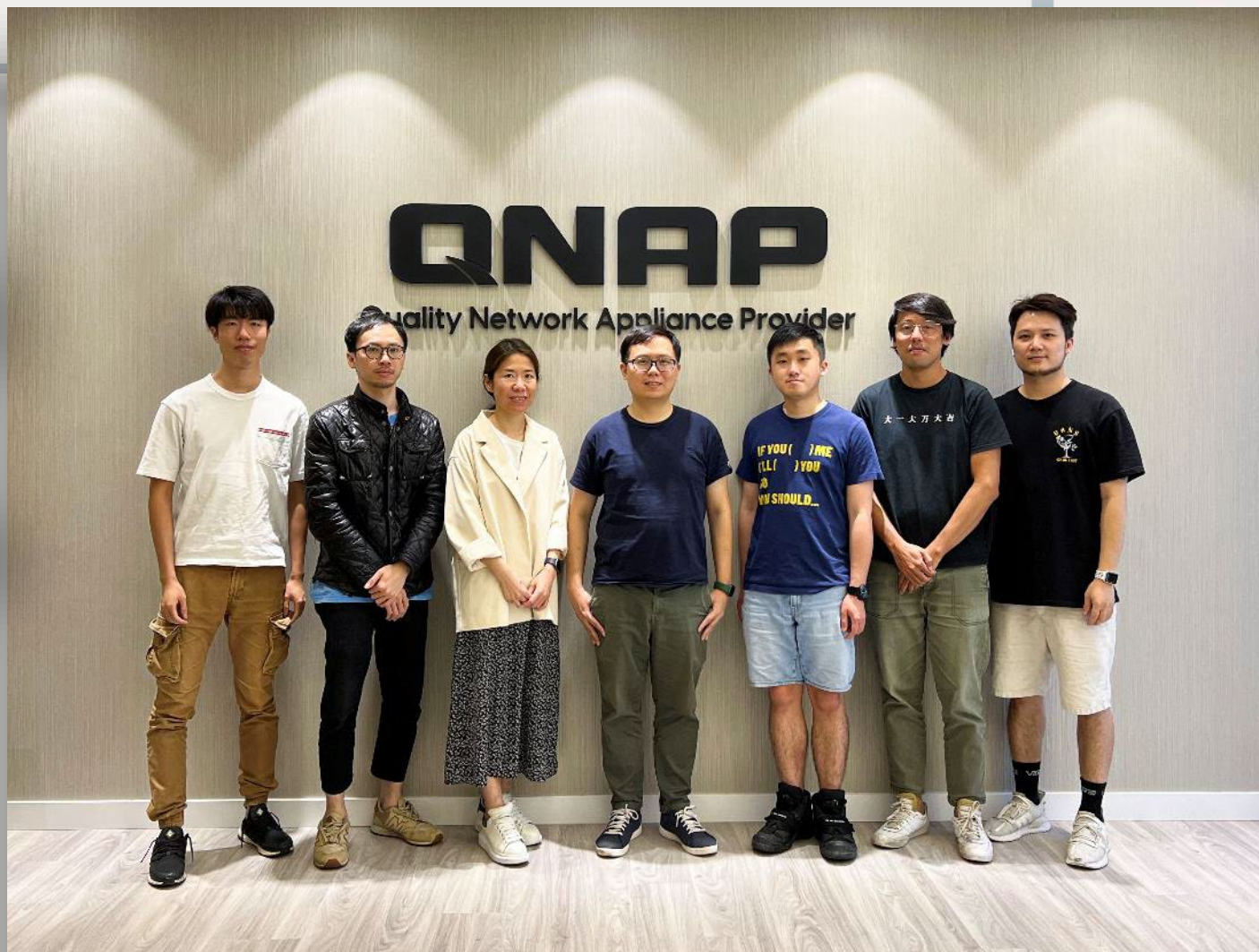**Time of Establishment**

2018

Location

Swindon

UK

Office / Warehouse Center

Number of Employees

13

Scope of Business

Before & After Sales Services

Warehouse Center

HK

Office

Time of Establishment

2018

Location

Kowloon Bay

HK

Office

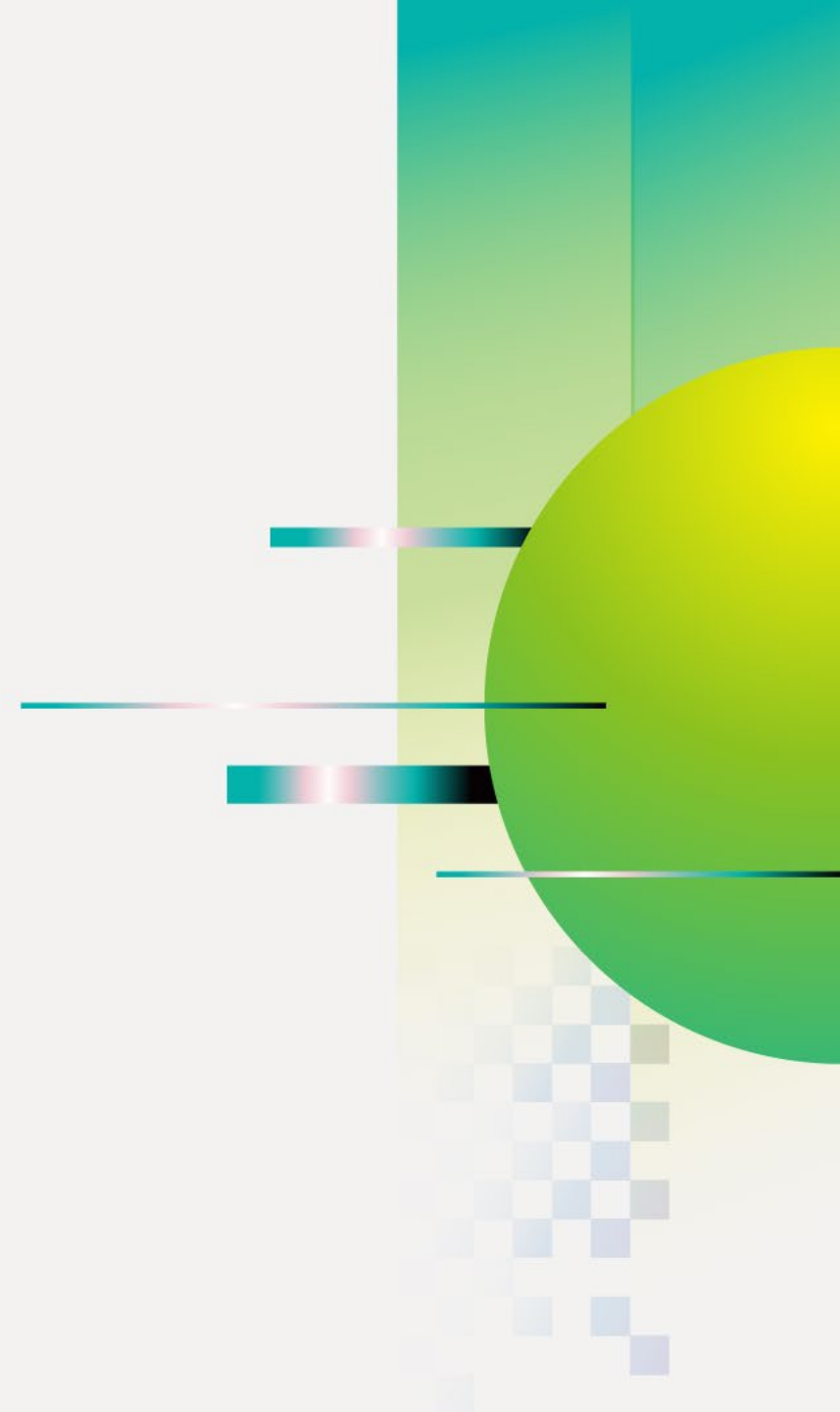**Number of Employees**

7

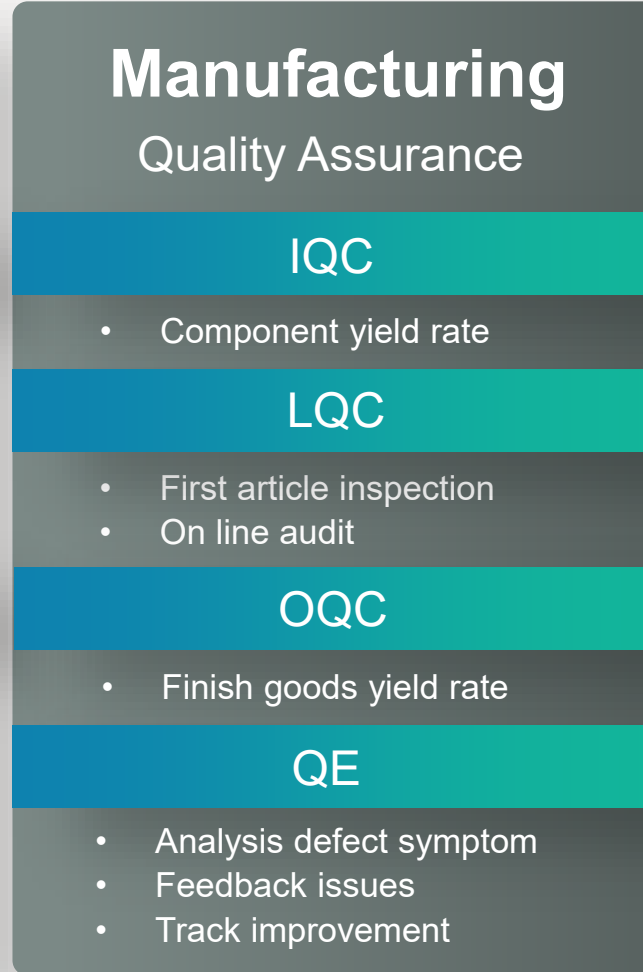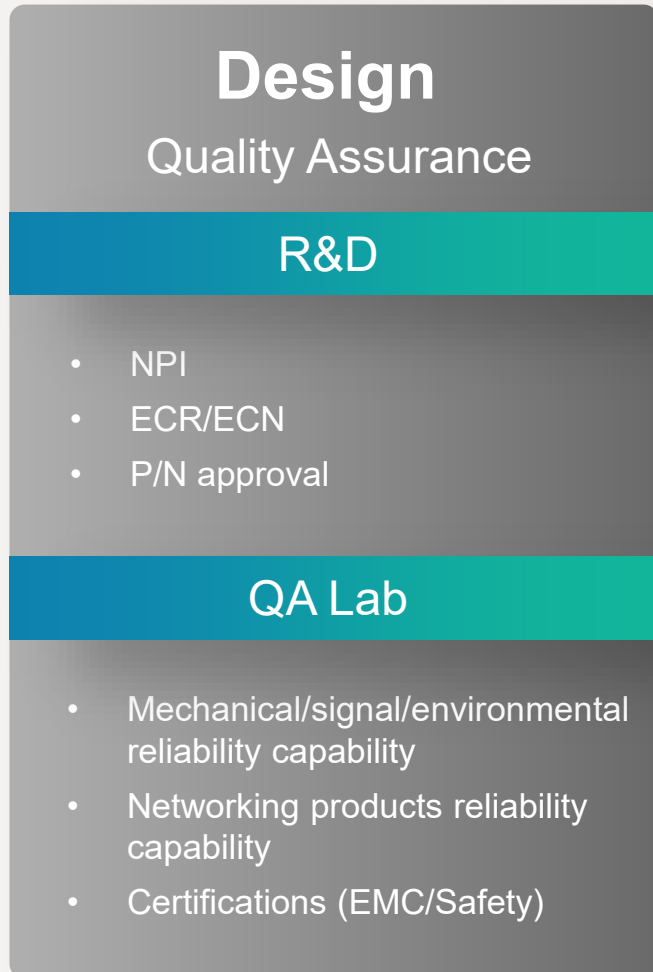**Scope of Business**

Before & After Sales Services

Quality Management and Production Process of QNAP

QNAP Quality Control Management

Design
Quality Assurance

R&D

- NPI
- ECR/ECN
- P/N approval

QA Lab

- Mechanical/signal/environmental reliability capability
- Networking products reliability capability
- Certifications (EMC/Safety)

Manufacturing
Quality Assurance

IQC

- Component yield rate

LQC

- First article inspection
- On line audit

OQC

- Finish goods yield rate

QE

- Analysis defect symptom
- Feedback issues
- Track improvement

Customer
Quality Assurance

Customer

- Annual customer satisfaction survey & feedback

FAE & RMA

- Customer application service
- Return product analysis
- Technical support
- DOA & RMA
- Product lifecycle management
- Production traceability
- Quality traceability

Mechanical Reliability Capability
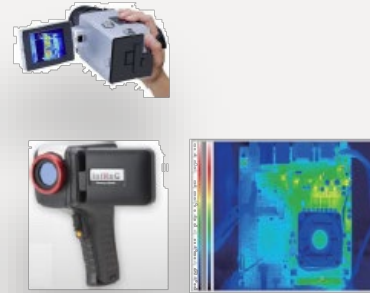

Vibration Test

Drop Test

Shock Test

3D Printing RP sample

Thermal Analysis Lab

Natural Convection Chamber

IR Camera

Temperature Data Acquisition

Experienced Heat Flow Engineering

Data Collection	Model Building	Running and debug	Post Processing	Thermal Simulation Report

- **Data Collection**
  - Power consumption
  - Mechanical drawing
  - Material property
  - Component spec.
  - Customer request

- **Model Building**
  - Geometry simplifying
  - Material property setting
  - Condition setting

- **Running and debug**
  - Grid generation
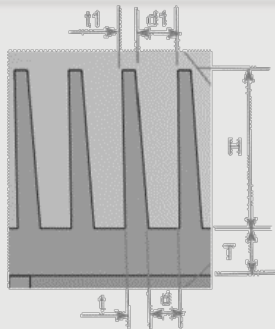 - Grid quality improvement
  - Model check

- **Post Processing**
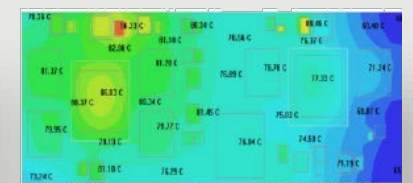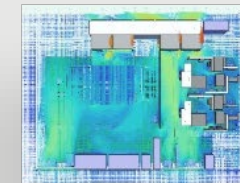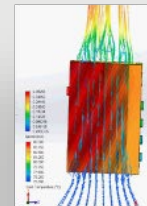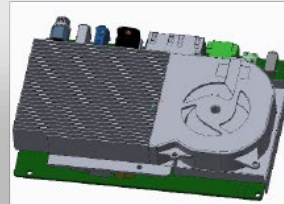 - Temperature profile
  - Air flow profile

- **Thermal Simulation Report**
  - Temperature results
  - Temperature profile
  - Flow profile

Optimal Heat Sink Simulation

System Thermal Simulation

Environmental Reliability Capability

Thermal Shock
With Humidity

Hosedown IPX6

Air Leak Tester
IPX7 / IP69K

Dust Test

LCD Display and
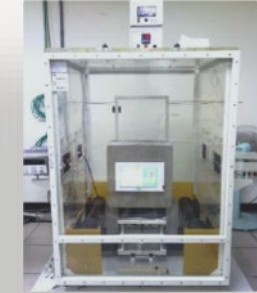Compatibility Test

Acoustic Noise
Testing

Salt Spray Tester

Natural Convection
Chamber

Represents real interior environment
for in-wall mounting system

Signal Validation Test

Radio Frequency Testing

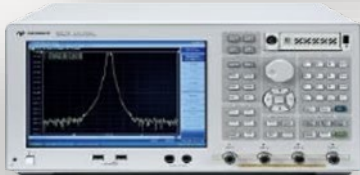| Impedance Test	Bluetooth	WLAN	Throughput Test
Agilent Network Analyzer	Anritsu MT8852	Anritsu MT8860C	IxChariot / LitePoint IQxel

Signal / Power / Spectrum

Agilent Signal Gen.

Agilent Power Meter

Agilent Spectrum Analyzer

Tektronix Signal Measurement Labe
(4 channel 200GS/s)

Sifos POE Tester PSE & PD
(802.3/at/af/bt compliance)

Networking Specific Design and Validation Facilities

Testing Center

Spirent Testing Center

▼

- 100/1G/10G/25G/40G/100G Ethernet (12-Port Dual Media QSFP+)
- Test 16 port RJ45 or fiber (SFP+)*3
- Test 16 Port RJ45 10G/5G/1G/100M/10M
- Test Standard RFC2544 or RFC 2889
- WiFi-modules

LAN Performance Test

Spirent CHS-9000A

▼

- 10/100/1G Ethernet (12-Port Dual Media QSFP+)
- Test 36 port RJ45 or fiber (SFP+)
- Test Standard RFC2544 or RFC 2889

LAN Performance Test

Spirent N11U

▼

- 100/1G/10G/25G/40G/100G Ethernet (12-Port Dual Media QSFP+)
- Test 16 port RJ45 or fiber (SFP+)
- Test Standard RFC2544 or RFC 2889

Spirent 400G Test

Spirent dX3 G400G Seven-Speed Appliance

▼

- PAM4:
  8 x 400GbE, 16 x 200GbE, 32 x 100GAUI-2, 64 x 50GAUI-1
- NRZ(25G)
  16 x 100GAUI-4, 32 x 50GAUI-2, 32 x 25GAUI
- NRX(Others): 16 x 40GbE, 32 x 10GbE

Networking Specific Design and Validation Facilities

100G Load Tester	100G Load Tester	100G Load Tester	400G Real Time Signal

NOVUS 100GE

- Enable high-density multi-rate native 100/50/40/25/10 GE testing
- Leverage affordable lower-density 4-port full feature configuration with field-upgradable option to 8-ports

XENA 10/40/100-GigE

- 12 slots in a 4U form factor
- High port density e.g. 144x10GE ports
- Support copper and optical Gigabit Ethernet and 0/40/100/200/400-Gigabit Ethernet modules

Spirent CF20 L4-L7

- 1G/10G/40G and 100G interfaces
- Web-based test controller

Tektronix DPS77004SX

- 70 GHz ATI Performance Oscilloscope Systems: 2 x 70 GHz, 200 GS/s or 4 x 33 GHz, 100GS/s
- 2 x DPS77004SX required for 400GbE PAM4 real-time signals

High Reliability PCBA Production & Quality Management

Omron VT-X750
High-speed automated X-ray
CT inspection system
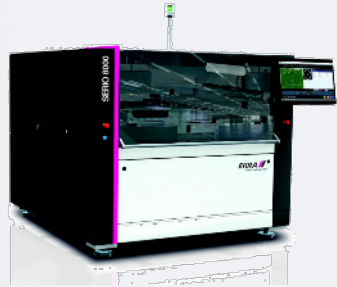
ERKA SERIO 8000

3D Solder Paste
Inspection (SPI)

Panasonic NPM-W2 /
NPM-W2S

Pyramax 150A z12

TR7700 SIII Plus

TR7006L

YG100

TR7500

YG88

Production History Management

Manufacturing
- Visual inspection (cosmetic)
- Functional test (simulation test)

Quality Engineering
- Analyze defects and take action
- Feedback to related department for future improvements
- Track improvement efficiency

Project Quality Management
- Lead team members push quality improvement for quality yield rate
- 4M management
- Follow up customer requirements
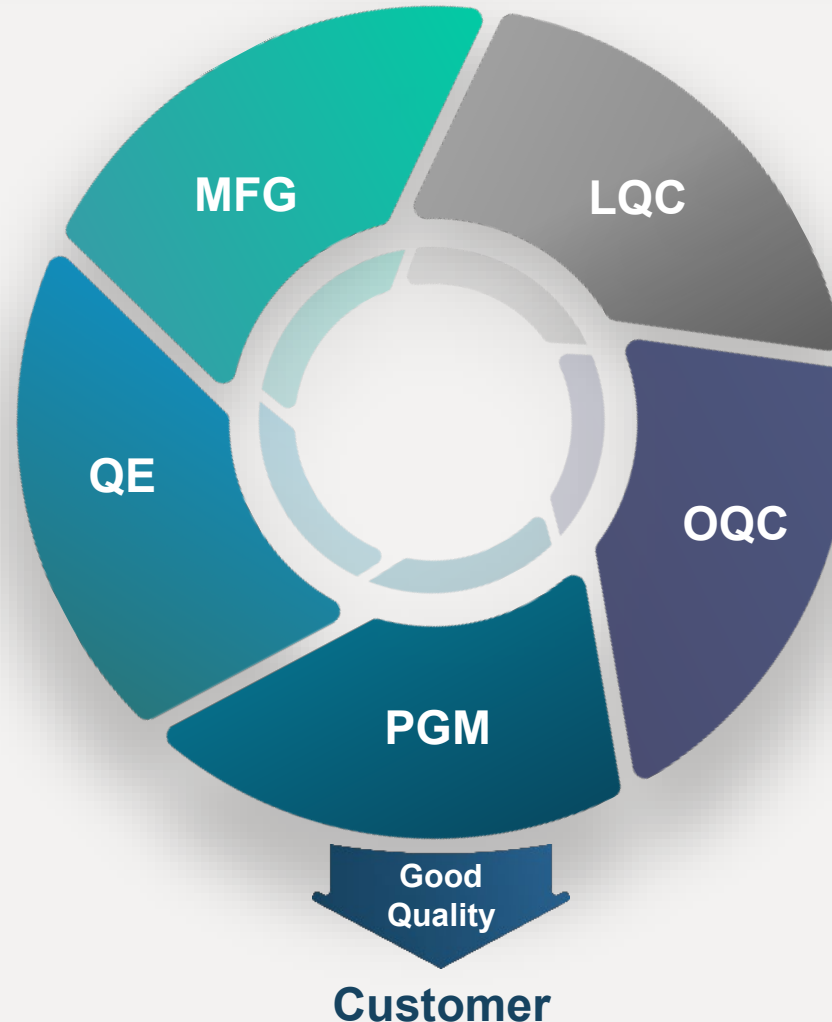
Line Quality Control
- First article inspection
- On line audit according to checklist
- LQC-SMT 100% inspection
- LQC-DIP 100% inspection
- LQC-ASSY 100% inspection

Outgoing Quality Control
- Visual inspection (AOI)
- ECN change review
- ORT test
- FCT test

MFG

LQC

QE

OQC

PGM

Good Quality

Customer

Product Traceability

Data Collection

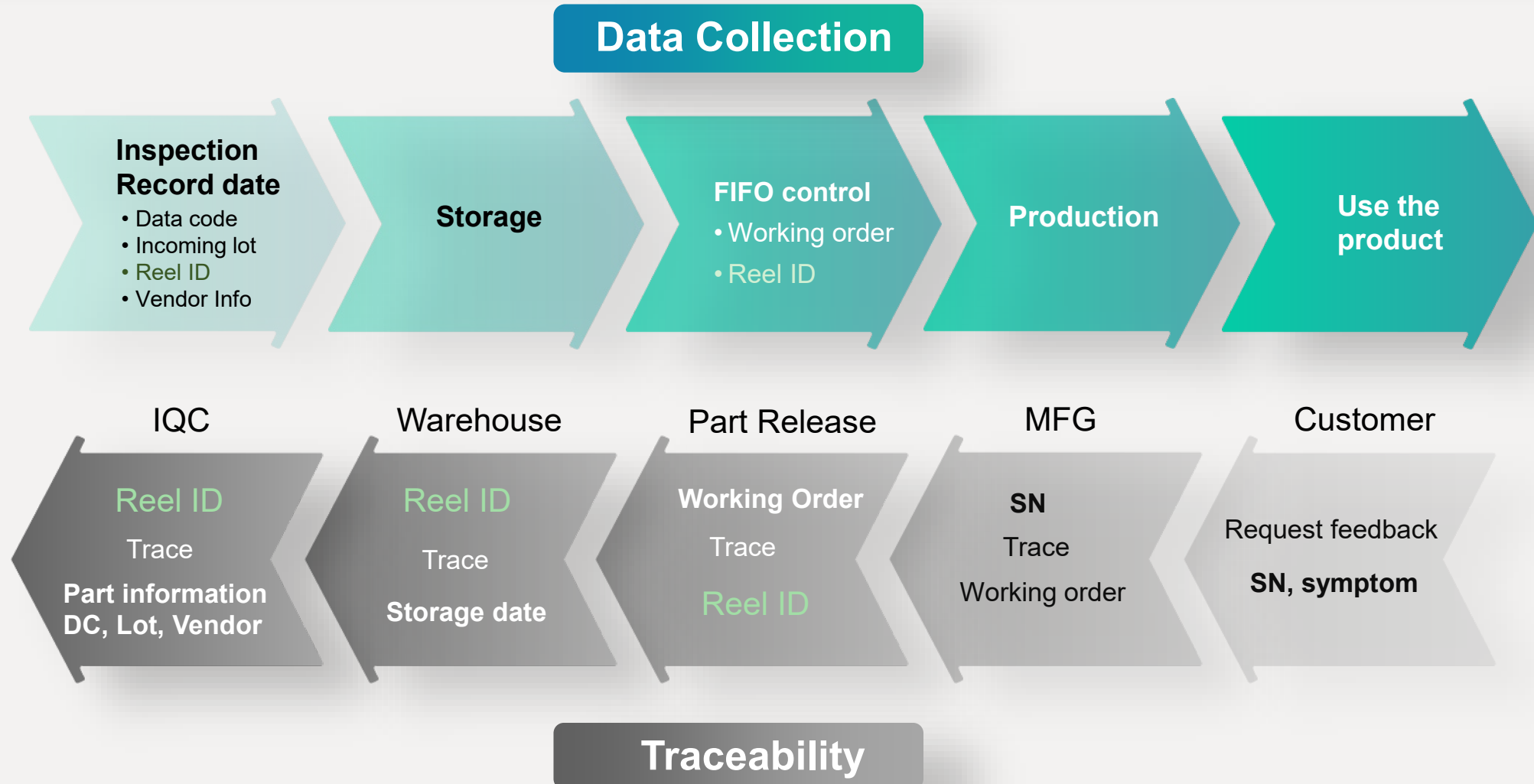**Inspection Record date**
- Data code
- Incoming lot
- Reel ID
- Vendor Info

Storage

FIFO control
- Working order
- Reel ID

Production

Use the product

IQC	Warehouse	Part Release	MFG	Customer
Reel ID	Reel ID	**Working Order**	**SN**	
Trace	Trace	Trace	Trace	Request feedback
Part information DC, Lot, Vendor	**Storage date**	Reel ID	Working order	**SN, symptom**

Traceability

Production History Management

Product S/N

Production History
- Production Line
- Process
- Work Order/Revision
- Time
- Employee

Components
- Part No. / Desc. / Revision
- S/N or Date code
- RoHS Validation
- MAC Address
- Vendor / AML
- Half-Finished Product History

Quality Data
- IQC / LQC / OQC Data
- Defects Statistics
- Reason Analysis
- Duty Analysis
- Repair History

Shipping
- Shipment No.
- Shipment Data and Warranty
- Original Order No.

Uses barcode scanners to track product serial numbers in key assembly station, and input error messages for product control and quality issue tracking.

RMA Service Process

IT Infrastructure at QNAP

Vendors

QNAP

Customers

CRM/SRM

Jira / PLM / PDM / CIS

ERP / ASCP

MES / WMS / HMS / gRMA

BI / EIP

Notes (Workflow & KM)

Global System

Enterprise Portal / B2B / B2C / RMA

Design Engineering	Collaborate
Materials Planning	e-P
Logistics	ASN QC reports

Collaborate

eCommerce /EDI

Delivery / Quality RMA

VIP Portal

Data Retrieved from IEI / MES / ERP / EIP System

WMS: Warehouse Management System, ASCP: Advanced Supply Chain Planning

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one
step
ahead