Wonderful Hi-Tech Empowering AI Infrastructure

The Cat.6A Cable Collection

Cat.6A cable solutions
professional manufacturing capability
and more

About
Wonderful Hi-Tech

Founded in 1978, Wonderful Hi-Tech is one of Taiwan's leading manufacturers of electronic wires and networking cables. With over four decades of wire & cable manufacturing experience, we deliver competitive, high-quality, and internationally compliant cable solutions that support the evolving demands of global infrastructure.

Our manufacturing footprint spreads from Taiwan, China, Thailand, and Vietnam, providing stable capacity, flexible lead times, and high quality. Supported by a U.S. office and agent networks across Europe and the Middle East, we combine localized customer support with a reliable global supply chain—ensuring responsiveness from project to project.

All of our networking cables, from Cat.5e to Cat.8, are produced with 100% solid bare copper conductors and verified by internationally recognized third-party certifications, including UL, 3P, and ETL. Cat.6A is where our expertise truly stands out. As Taiwan's largest Cat.6A cable manufacturer, we are trusted for the high consistency, stability, and reliability required for large-scale projects and enterprise-grade network environments.

Innovation is driven by collaboration. Our experienced R&D team works closely with customers from concept design and prototype through mass production, ensuring every solution is optimized for performance, compliance, and manufacturability. We continuously invest in advanced equipment, process optimization, and material development. Looking at digitalization and sustainability as the core of our long-term growth.

Welcome to view our catalog. Here, we showcase the breadth of our networking solutions and manufacturing capabilities, and invite you to explore future collaboration in building fast, stable, and intelligent connectivity together.
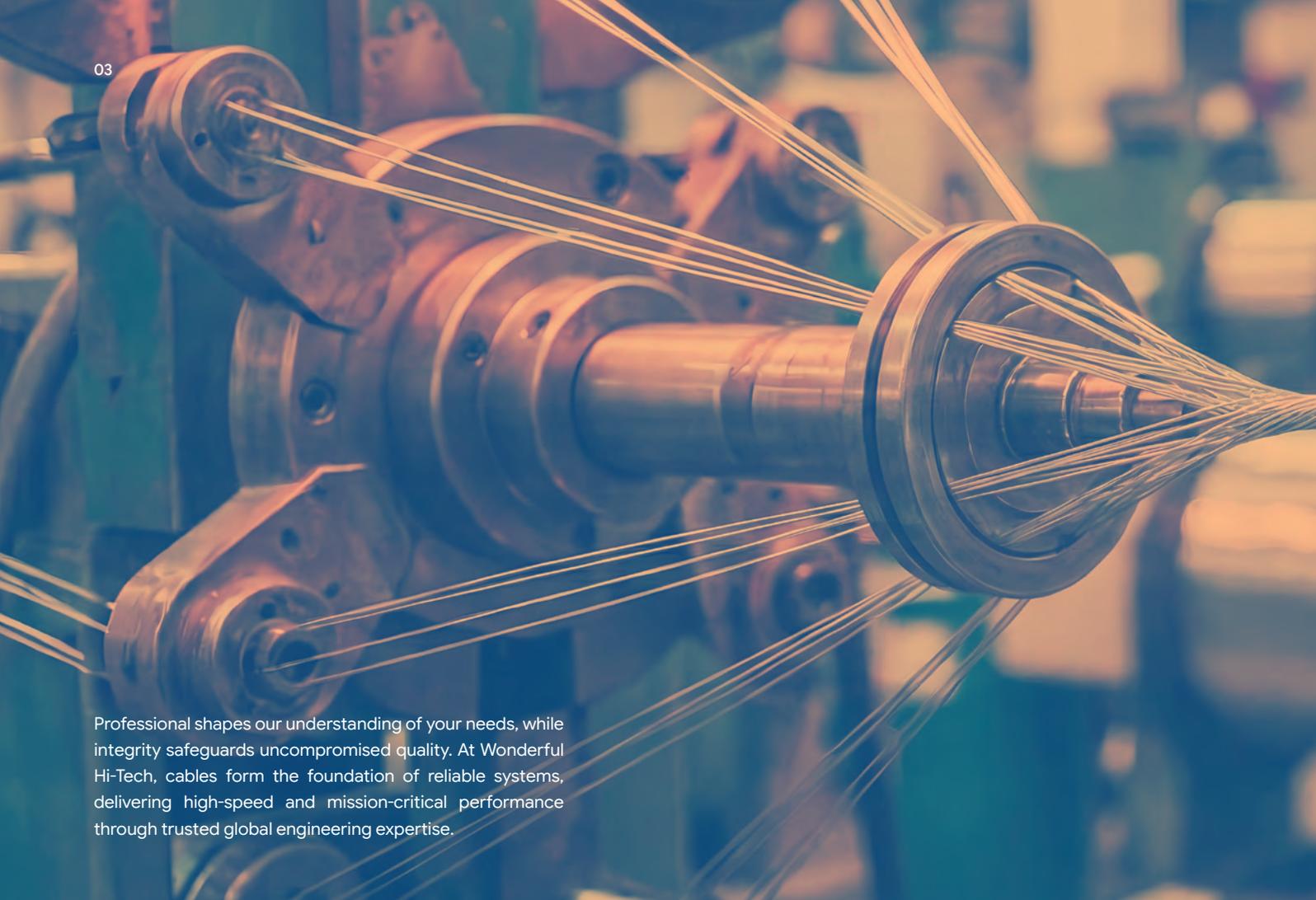
Professional shapes our understanding of your needs, while integrity safeguards uncompromised quality. At Wonderful Hi-Tech, cables form the foundation of reliable systems, delivering high-speed and mission-critical performance through trusted global engineering expertise.

Why Cat.6A?

Future-Proofing Infrastructure

As networks and smart buildings evolve, Cat.5e and Cat.6 are no longer enough. Cat.6A is the new standard, delivering 10GbE over 100 meters, supporting Wi-Fi 7 uplinks, and reliably carrying PoE++ (90W). It is the most cost-effective and secure investment for AI and cloud-ready infrastructure.

Full-Distance 10Gb Performance

Cat.6A provides stable 10Gbps transmission over distances up to 100 meters, offering a significantly lower total cost than fiber while remain easier to install and maintain. It is a secure, long-term investment for enterprise networks and data centers planning for the next decade.

Essential for Wi-Fi 6 / 6E / 7

Next-gen Wi-Fi access points require uplinks of up to 10G. Cat.6A cabling is essential to unlock the full potential of Wi-Fi 6/7 hardware, ensuring your infrastructure never becomes a performance bottleneck.

PoE Power Delivery

PoE is now the standard for smart lighting, security, and IoT. With larger conductors and lower loss, Cat.6A reliably supports PoE++ (90W), significantly reducing the need for separate electrical infrastructure and overall project costs.


Optimized for AI, Video, and Cloud

With bandwidth of up to 500MHz, Cat.6A is engineered for data-intensive applications, including AI computing, 4K/8K video transmission, and cloud synchronization. It minimizes crosstalk and latency, delivering uncompromising stability for the most demanding digital environments.

Cat. 6A Market Insights

Market indices confirm that Cat.6A cabling has officially entered a period of "High-Velocity Growth." Between 2019 and 2025, Wonderful Hi-Tech's Cat.6A shipment share surged from 11% to 23%. As AI propels the data center boom and catalyzes the diversification of edge applications, we project Cat.6A shipments to reach 50% of our total volume within the next five years.

	2019	2020	2021	2022	2023	2024	2025
C6A (%)	11%	11%	10%	11%	17%	18%	23%
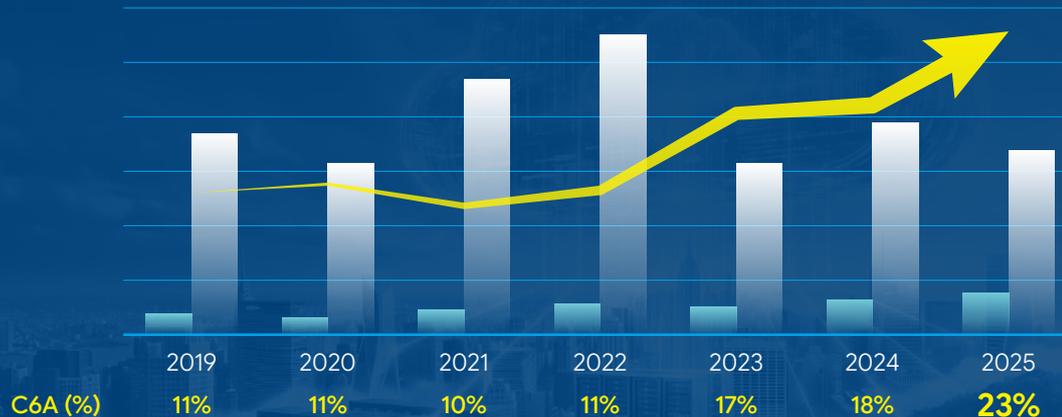
The Synergy of AI, Data Centers, and Smart Architecture

According to IDC (2025), the shift of AI applications from cloud training to edge inference is driving enterprises to accelerate 10GbE switch upgrades. Cat.6A remains the singular copper cabling standard capable of supporting 10Gbps over 100-meter distances.

Furthermore, research from JLL (2026) and Goldman Sachs indicates that AI will drive data center capacity to 200 GW by 2030, with power density increasing tenfold. These extreme conditions position Cat.6A—with its superior heat dissipation and PSANEXT anti-interference technology—as the premier choice for high-density rack cabling. With the rise of AI surveillance and smart lighting, Cat.6A flawlessly supports PoE++ (90W) high-power delivery. Utilizing 23 AWG Bare Copper conductors, it effectively minimizes temperature rise, ensuring architectural safety under extreme loads.

The Explosive Demand for Cat.6A

The surge in Cat.6A demand is a direct result of the mandatory requirements for bandwidth upgrades and advanced power management. In the age of AI computing, 10G bandwidth has transitioned from a premium to an enterprise standard. As global metal cable demand is projected to triple over the next five years, Cat.6A stands as an irreplaceable pillar of connectivity. With its 500MHz high-frequency performance and full support for the IEEE 802.3bt standard, it provides unparalleled signal stability within the most confined spaces.

Wonderful Hi-Tech's leadership in the Cat.6A sector is rooted in over twenty years of technical expertise and a precise foresight into market trends. In anticipation of demand doubling over the next five years, Wonderful Hi-Tech has established a highly resilient global supply system. Through a diversified production footprint across Asia, we ensure stable, high-quality capacity support during this period of explosive growth in high-bandwidth and high-power-delivery (PoE) requirements.

Leveraging our profound manufacturing heritage as a foundation, we will continue to drive innovation in high-speed transmission technology. Our mission is to ensure that every cable serves as the most robust neural network supporting the AI era and smart architecture, joining hands with our global partners to embrace the golden future of 10GbE ubiquity.

About Cat.6A Cable

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Cat.6A cables are constructed with four twisted pairs—eight copper conductors in total—engineered to deliver reliable, high-speed data transmission.

To minimize crosstalk between pairs, certain designs incorporate a cross-shaped plastic spline at the core of the cable, physically separating each twisted pair and preserving signal integrity.

As transmission frequency increases, additional isolation structures or fillers are often introduced to maintain precise pair spacing. In advanced configurations, each twisted pair may even be individually shielded, further enhancing resistance to interference and ensuring consistent performance in demanding network environments.

Shielding Structure

"Shielding" refers to the integration of metallic layers within the cable structure to protect data signals from electromagnetic interference (EMI).

Standard Ethernet cables, such as UTP (Unshielded Twisted Pair), rely solely on twisted pair geometry without any conductive shielding. In contrast, STP or FTP constructions incorporate aluminum foil or braided shielding—either around individual pairs or enveloping the entire cable core.

These shielding layers effectively block external noise from nearby power lines, motors, or electronic equipment, significantly reducing signal disruption and enabling stable, dependable network performance in high-density or electrically noisy installations.
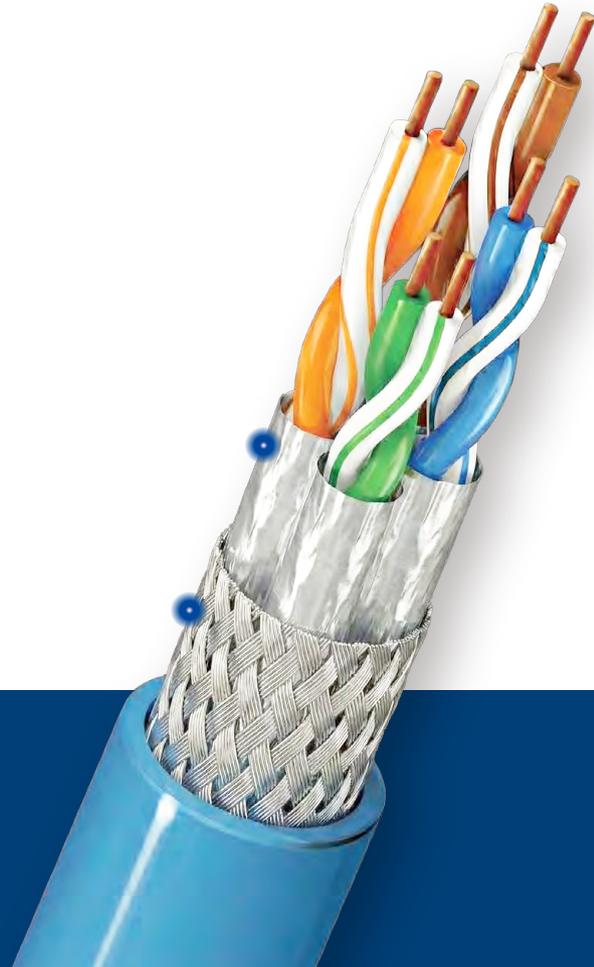
Cat. 6A Cable Construction

| Type	Cross Section	Pair Twisting / Shielding Structure	Fire Rating	Bandwidth	Performance Rating (vs. same category)
S/FTP		Braided overall shield + individually foil-shielded pairs (Maximum EMI protection)	CMP/CMR/CPR Eca	500MHz	★★★★★ Ultimate stability
F/FTP		Overall foil shield + individually foil-shielded pairs	CMP	500MHz	★★★★☆ High performance
U/FTP		No overall shield, individually foil-shielded pairs (Excellent crosstalk control)	CMP	500MHz	★★★★☆ Balanced efficiency
VTP (Noise Control Barrier)		Integrated noise barrier layer with reduced outer diameter (No individual pair shielding)	CMP/CMR	500MHz	★★★★☆ Space-optimized
F/UTP		Overall foil shield, unshielded twisted pairs	CMP/CMR/CM/CPR Eca B2ca	500MHz	★★★☆☆ Reliable standard
U/UTP		Fully unshielded twisted pairs	CMP/CMR/CM/CPR Eca B2ca	500MHz	★★☆☆☆ Essential connectivity

Cat.6A Cable Series

Whether you prioritize flexibility, durability, or space-efficiency, our Cat.6A series provides the exact specifications needed for seamless integration. Discover the cable that fits your vision.
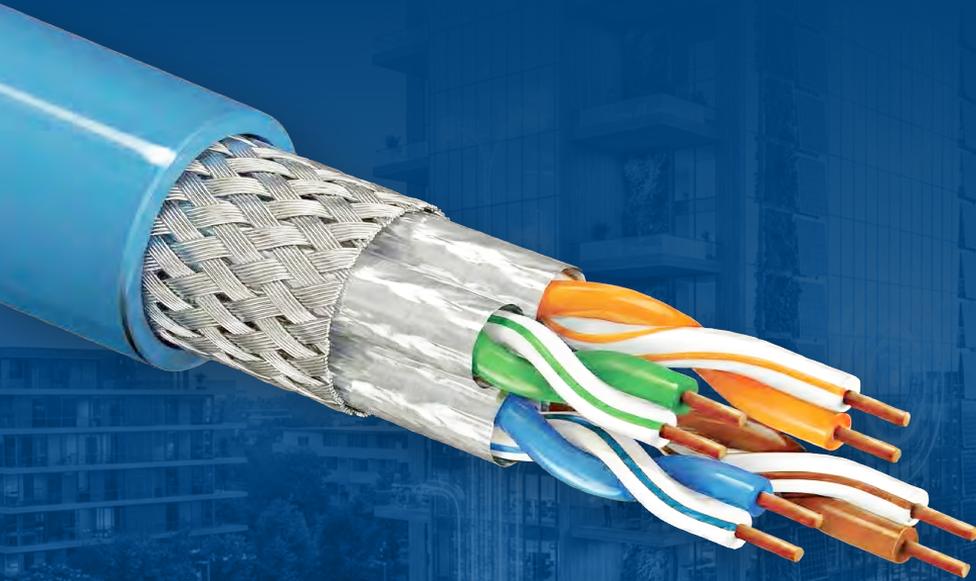
Cat 6A 28 AWG Cable

Ultra-Slim Cat.6A for High-Density Racks

Designed for space-constrained, high-density installations, the Cat.6A 28 AWG cable features an exceptionally small outer diameter that maximizes routing flexibility. Ideal for server rooms, network switches, and PoE-powered devices, the slimmer gauge reduces cable congestion, improves airflow, and simplifies installation, patching, and ongoing maintenance.
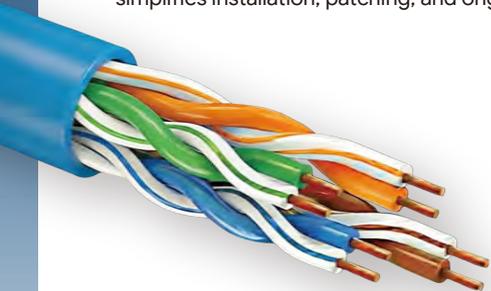
UTP Cat.6A Direct Burial Cable

## Direct-Burial Cat.6A for Outdoor & Inter-Building Connectivity

Engineered for harsh outdoor environments, this Cat.6A direct burial cable is designed for underground installation without additional conduit. A reinforced construction with water-blocking gel protects against moisture, pressure, and environmental stress, ensuring stable signal transmission. Well-suited for smart agriculture, outdoor access points, campuses, and factory-to-building links over long distances.

Small OD (VTP) Cat.6A

## Compact-Diameter Cat.6A for Space-Limited Pathways

This small-OD Cat.6A cable delivers full Cat.6A performance in a significantly reduced diameter, allowing more cables to be routed through the same conduit or tray. An integrated noise-reduction layer effectively minimizes alien crosstalk, making it ideal for commercial buildings, telecom risers, and other high-density cabling environments.
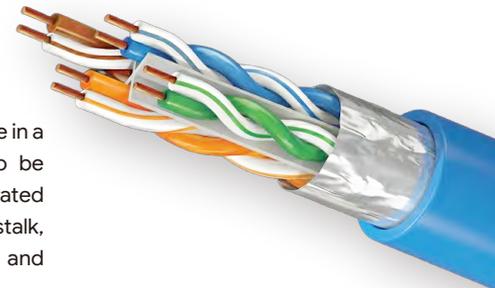
Cat.8 S/FTP #26 CMR Patch Cord

## Fire-Rated Cat.8 Patch Cord for High-Bandwidth Interconnects

The Cat.8 S/FTP 26 AWG patch cord is designed for ultra-high-speed data transmission between network devices in data centers and server environments. With a CMR fire rating, it is approved for vertical riser installations, providing both performance and safety for modern high-bandwidth infrastructure.
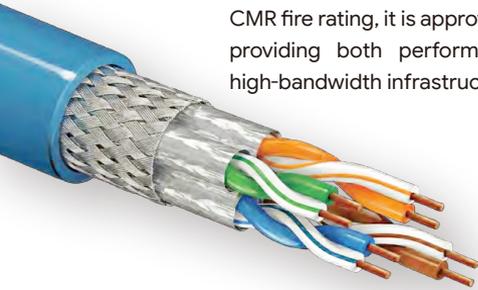
HDBaseT 3.0 Cable

## High-Bandwidth Cabling for Professional AV Systems

Featuring individually shielded pair designs (U/FTP or S/FTP), the HDBaseT 3.0 cable ensures exceptional signal integrity at high frequencies. It supports uncompressed HDMI 4K/60Hz video, HDR10+, Dolby Vision, and is compatible with 10GBASE-T. An ideal choice for conference room integration, digital signage, and professional AV deployments.
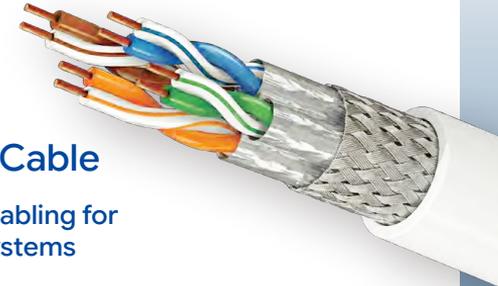
Bundle Cable

Hybrid Copper + Fiber Solution for Multi-Signal Integration

The Bundle Cable combines copper network cabling with OM3 fiber into a single jacket, enabling multiple signal transmissions through one streamlined installation. Designed to reduce installation time and cable clutter, it is ideal for data centers, smart buildings, and equipment-side connections requiring both electrical and optical signals.
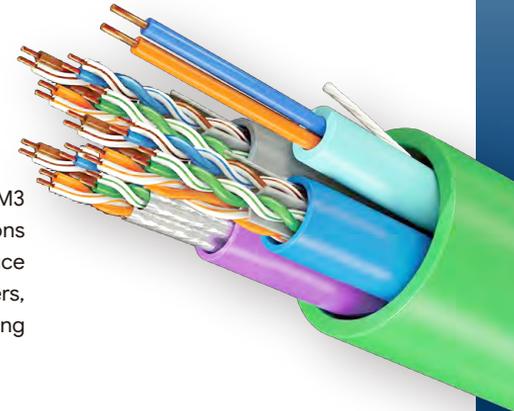
Strategic Deployment

Choosing the Right Standard for Your Environment

Elevate Your Network Performance with Dynamic Cat.6A through Cat.8 Solutions, Seamlessly Matching Every Environment for Superior Hardware Delivery.

Residential & Entry-Level Commercial Environments

In most 1GbE to 2.5GbE networks, Cat.6 may still function—but it is no longer sufficient. As bandwidth demands from NAS systems, IP surveillance, VoIP, conferencing equipment, and Wi-Fi access points continue to rise, failing to upgrade to Cat.6A means falling behind modern network requirements. With full 10GbE support up to 100 meters, Cat.6A removes performance limitations and prevents costly re-cabling in the future.

Office & Enterprise Cabling

Compared to Cat.6, Cat.6A offers superior thermal performance and long-term reliability in high-density office environments, equipment rooms, and PoE applications. As the mainstream standard for enterprise cabling, Cat.6A delivers stable 10GbE transmission over 100 meters while significantly reducing susceptibility to external electromagnetic interference. Its 500 MHz bandwidth also supports future-ready applications such as 4K conferencing, cloud collaboration, and IoT expansion.

Data Centers & High-Interference Environments

In high-EMI environments such as factories, server rooms, and areas near power equipment, Cat.7 or Cat.7A is recommended. With full S/FTP shielding, these cables are ideal for data center patching, industrial networks, and medical systems where signal stability is critical.

Cat.8 represents the highest-performance copper cabling available today, supporting 25GBASE-T and 40GBASE-T over distances up to 30 meters. It is purpose-built for server-to-server connections and Top-of-Rack architectures, enabling ultra-high-speed data transfer, PoE++, AI workloads, and data-intensive applications.

Residential & Entry-Level Commercial Environments

Cat.6A is the standard companion for Wi-Fi 6 / 6E / 7 deployments, where AP uplinks require 2.5G, 5G, or 10G bandwidth. Using Cat.6 may create performance bottlenecks in future upgrades.

Office & Enterprise Cabling

Cat.6A supports PoE+ and PoE++, delivering power over all four pairs to reduce AC outlets, power supplies, and distribution costs—ideal for smart lighting, access control, and intelligent building systems.

Data Centers & High-Interference Environments

In data centers, ToR / MoR / EoR architectures can leverage Cat.6A as a cost-effective alternative to fiber for 10GBASE-T deployments. For higher performance and noise immunity, Cat.7 and Cat.8 offer even greater advantages.

Cat. 6A Evolution

At Wonderful Hi-Tech, innovation is our constant. Driven by deep-rooted R&D expertise and an uncompromising pursuit of international standards, we have evolved from defining foundational specifications to pioneering high-power delivery, spatial optimization, and cross-domain optoelectronic integration.

The Foundation of Excellence (2005 – 2012)

The era of establishing standards and global leadership.

2005 | Proprietary Innovation
Awarded a utility patent for our exclusive UTP Cat.6A jacket design.

2007 | International Debut
Achieved ETL certification for the full Cat.6A UTP/FTP series (CMR grade).

2010 | Advanced Specifications
Secured the high-tier ETL CMP certification for Cat.6A UTP/FTP solutions.

2012 | Global Authority
Attained dual UL certification (CMP/CMR) for Cat.6A, ensuring worldwide compliance.

Diversification & Crafted Evolution (2013 – 2016)

Expanding structural possibilities and environmental consciousness.

2013 | Structural Breakthrough
Secured UL certification for S/FTP and U/FTP; achieved 3P LSZH (Low Smoke Zero Halogen) eco-certification.

2015 | Professional Audiovisual
Granted HDBaseT certification for professional AV transmission; completed UL certification for S/FTP.

2016 | European Alignment
Achieved full compliance with the EU Construction Products Regulation (CPR) Eca fire safety standard.

[1]Attained the EU CPR B2ca rating

[2]UL certification for
F/FTP and U/FTP CMP

[3]PoE-Type 4

The Peak of Performance (2017 – 2020)

Pioneering the AI era with high-power and high-density solutions.

2017 | High-Power Delivery
Led the market by securing PoH (Power over HDBaseT) and CMR-LSHF UL certifications.

2018 | Fire Safety Excellence
Attained the EU CPR B2ca rating [1] — one of the most stringent fire safety certifications in Europe.

2018-2019 | Spatial Engineering
- Launched UTP Cat.6A CMP with a reduced OuterDiameter (8.0mm to 6.4mm).
- Launched UTP Cat.6A CMR with a reduced Outer Diameter (8.3mm to 7.0mm).

2020 | Absolute Domination
Secured UL certification for F/FTP and U/FTP CMP [2]; successfully cleared the PoE Type 4 (90W) [3] extreme power test.

All-Round Deployment in Optoelectronics & Outdoor Environments (2022 - 2025)

Future-proofing smart cities and 5G infrastructure through extreme versatility.

2022 | Ultimate Flexibility
Obtained UL certification for UTP #28 AWG Cat.6A CMP cables.

2023 | Advanced Outdoor
Obtained UL CMX Outdoor-CMP certification.

2024 | Harsh Environments
Obtained UL CMX Outdoor Armored structure certification.

2025 | Optoelectronic Integration
Obtained UL CM-OF and CMG-OF certifications for Hybrid cables (Fiber-Coaxial/Power) (including U/F6AR).

This provides a single-cable solution for long-distance high-speed data transmission and power supply, meeting the demands of modern Smart Cities and 5G infrastructure.

From Idea to Quality-Assured Production

For every project, Wonderful works alongside with you through a clear, standardized, and transparent workflow—so you always know how your cable solutions are designed, manufactured, and delivered.

We go beyond passively receiving specifications. Our teams proactively propose optimized manufacturing methods and alternative solutions to help enhance product development, operational efficiency, and overall market competitiveness.

Think of Wonderful Hi-Tech as an extension of your team.

We customize collaboration models to match your project requirements and scale our support as needed—ensuring every idea moves from concept to reality faster, more reliably, and more efficiently.

Early Material & Component Alignment

We achieve peak conductivity by exclusively integrating 23 AWG Bare Copper. Our versatile jackets—PVC, LSZH, and PE—meet rigorous CM/CMR/CMP fire safety standards. Every material is curated to exceed TIA-568.2-E and IEC 11801-1 benchmarks, ensuring absolute consistency from the very source.

Rigorous Validation & Global Certifications

Prototypes undergo exhaustive testing to guarantee sustained performance beyond 500MHz. To ensure absolute confidence, our products receive regular audits from UL, ETL, and 3P (FORCE). These authoritative technical reports affirm our unwavering compliance with the most stringent international standards.

Optimize Design for Mass Production

Our R&D meticulously refines architectures to master PSANEXT and maintain a Low Delay Skew (≤45 ns). This precision engineering neutralizes alien crosstalk, ensuring flawless signal clarity at 500MHz. Every design is fully aligned with global safety regulations for enduring durability.

Mastery in Mass Production Quality Control

We implement a dual-testing mechanism for every batch: a 100M Full Electrical Test followed by Head-and-Tail 305M tests for every master reel. This rigorous oversight monitors quality with surgical precision, ensuring every meter leaving our facility possesses unparalleled stability and reproducibility.

Seamless Supply Chain & Logistics Orchestration

We deploy flexible supply models and precise inventory management to guarantee stable, on-time delivery. By combining UL/ETL/3P(FORCE) certifications with strict process controls, Wonderful Hi-Tech mitigates supply chain variables. We empower clients to bring end-products to market with superior efficiency and peace of mind.
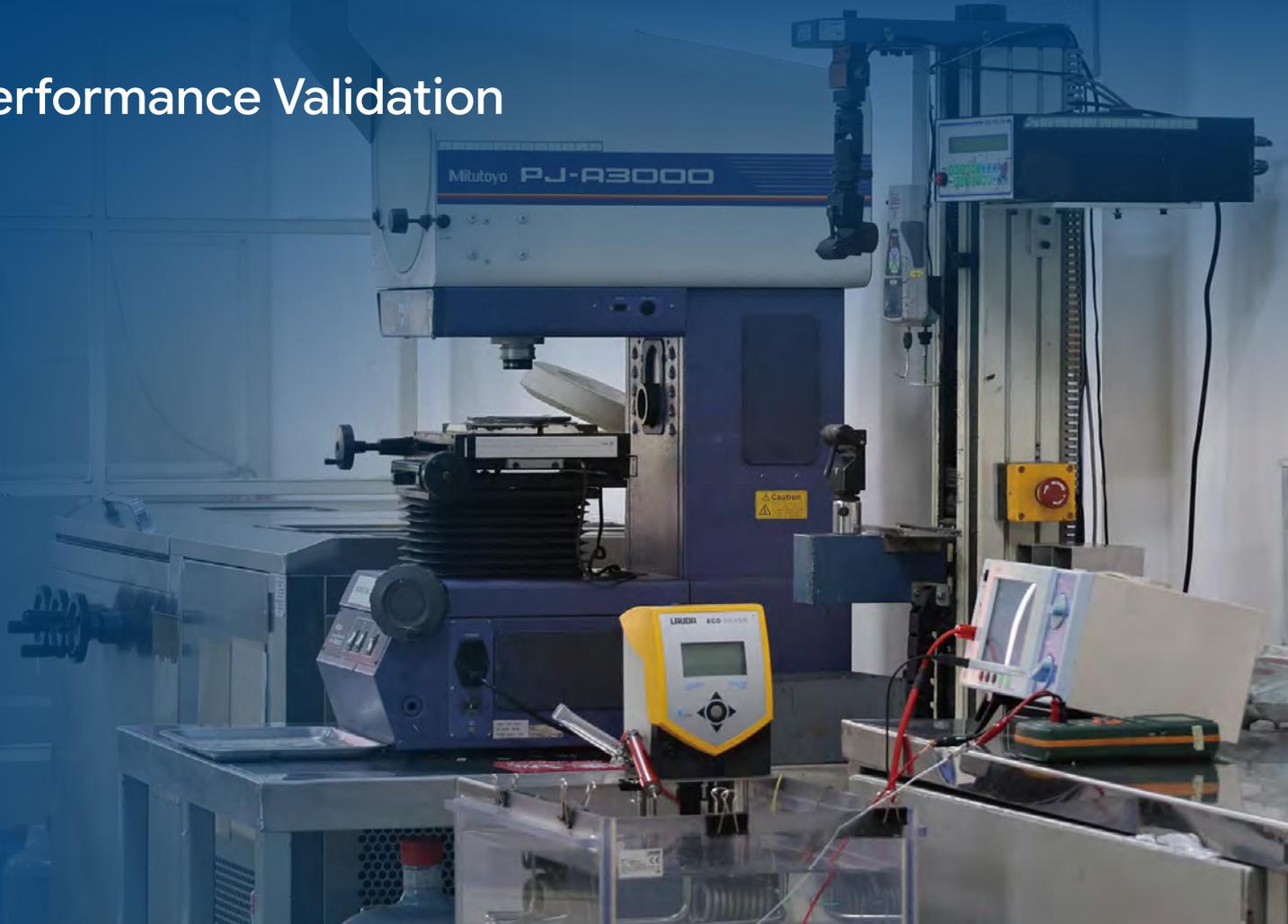
Material & Component

Product Manufacturing
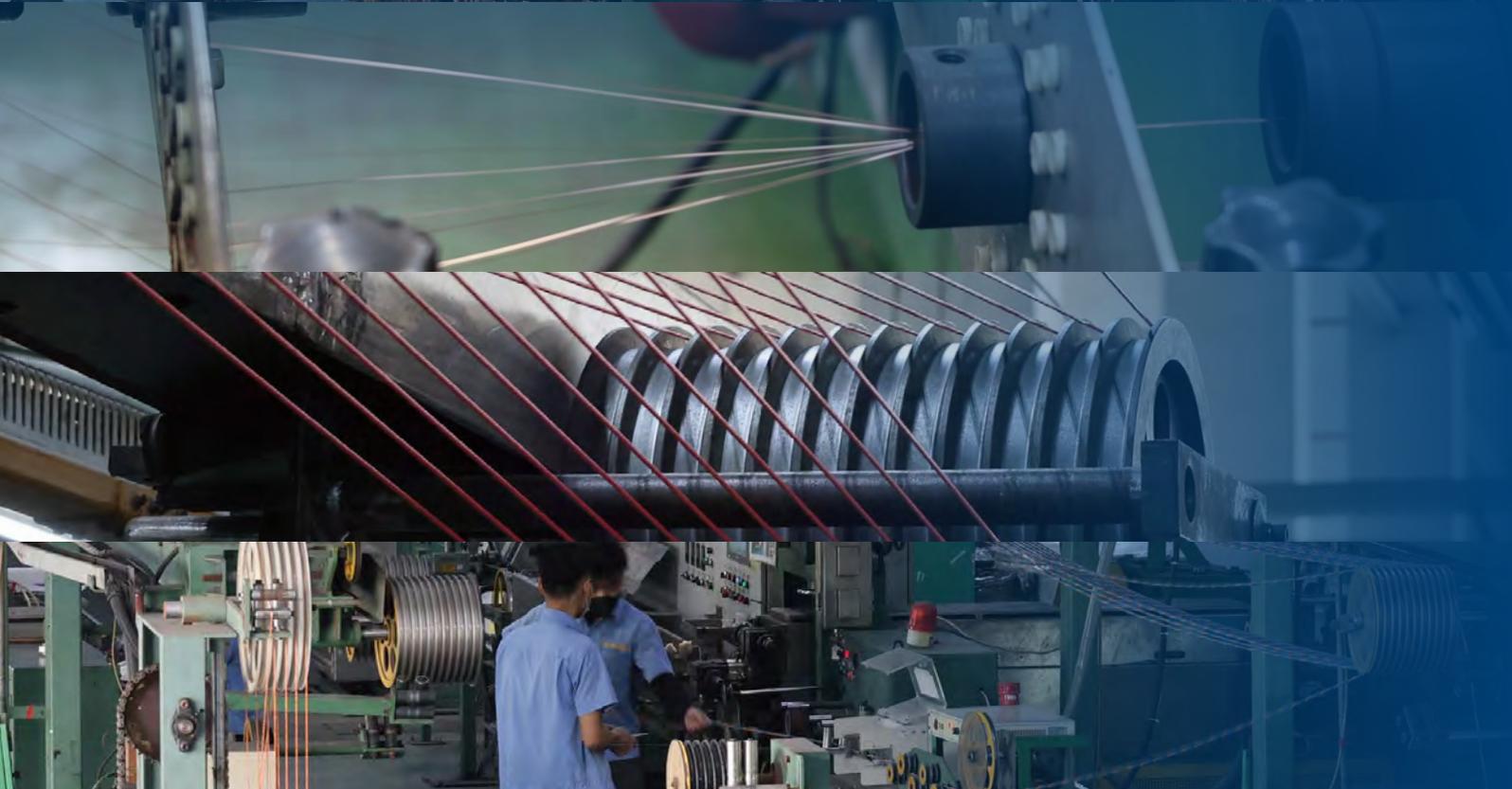
Performance Validation

Logistics & Supply Chain

Partnering to Create Value

From material selection and cable architecture design to termination, assembly, and final inspection, Wonderful Hi-Tech, together with our affiliated company Wanshih Electric, delivers a truly integrated, one-stop cable manufacturing solution.

With years of experience supporting customers in outsourced OEM production, we understand that every cable—and every process—directly impacts product quality and delivery performance. Supported by an experienced R&D team and proven manufacturing processes, we help you streamline operations, reduce costs, and ensure consistent, reliable, and on-time delivery.

By entrusting the complexities of cable manufacturing to us, you are free to focus on what matters most—product development, system integration, and innovation.

Partnering with Wonderful Hi-Tech means more than working with a supplier; it means gaining a dependable partner committed to long-term growth.

Wonderful Hi-Tech Group

At Wonderful Hi-Tech, we work side by side with global partners to deliver cable solutions across industries.

With more than 47 years of manufacturing expertise, Wonderful Hi-Tech has grown into Taiwan's largest cable manufacturer, trusted for its strong R&D capability and its ability to support the most demanding applications. Our portfolio spans datacom, automotive, industrial and home appliances, as well as green energy, smart buildings, medical, and the latest high-speed cables and leak detection solutions for AI data centers. Across every field, we move forward with our customers—combining technical depth with long-term vision.

Our strength lies in a fully integrated, one-stop manufacturing platform. From wire drawing, insulation and jacketing extrusion, shielding and braiding, to connector assembly and complete cable harness integration, every process is built on high-quality standards and world-class equipment. With four major production sites across Taiwan, Vietnam, Thailand, and China, supported by a U.S. office and a global distribution network, we respond quickly to market needs while delivering reliable cross-border supply for international customers.

We believe that the best solutions are born from deep collaboration. Our dedicated R&D teams and project-based organization work in sync with your development roadmap—actively introducing new perspectives, advanced materials, and innovative processes. We listen to your needs. By fully understanding your challenges, we help to define the most effective design and manufacturing strategies, creating sustainable competitive advantage together.

As an industry leader, sustainability is the center to our philosophy. We continue to invest in smart manufacturing, green production, and process optimization, improving operational efficiency while aligning with the global transition toward a more sustainable future.
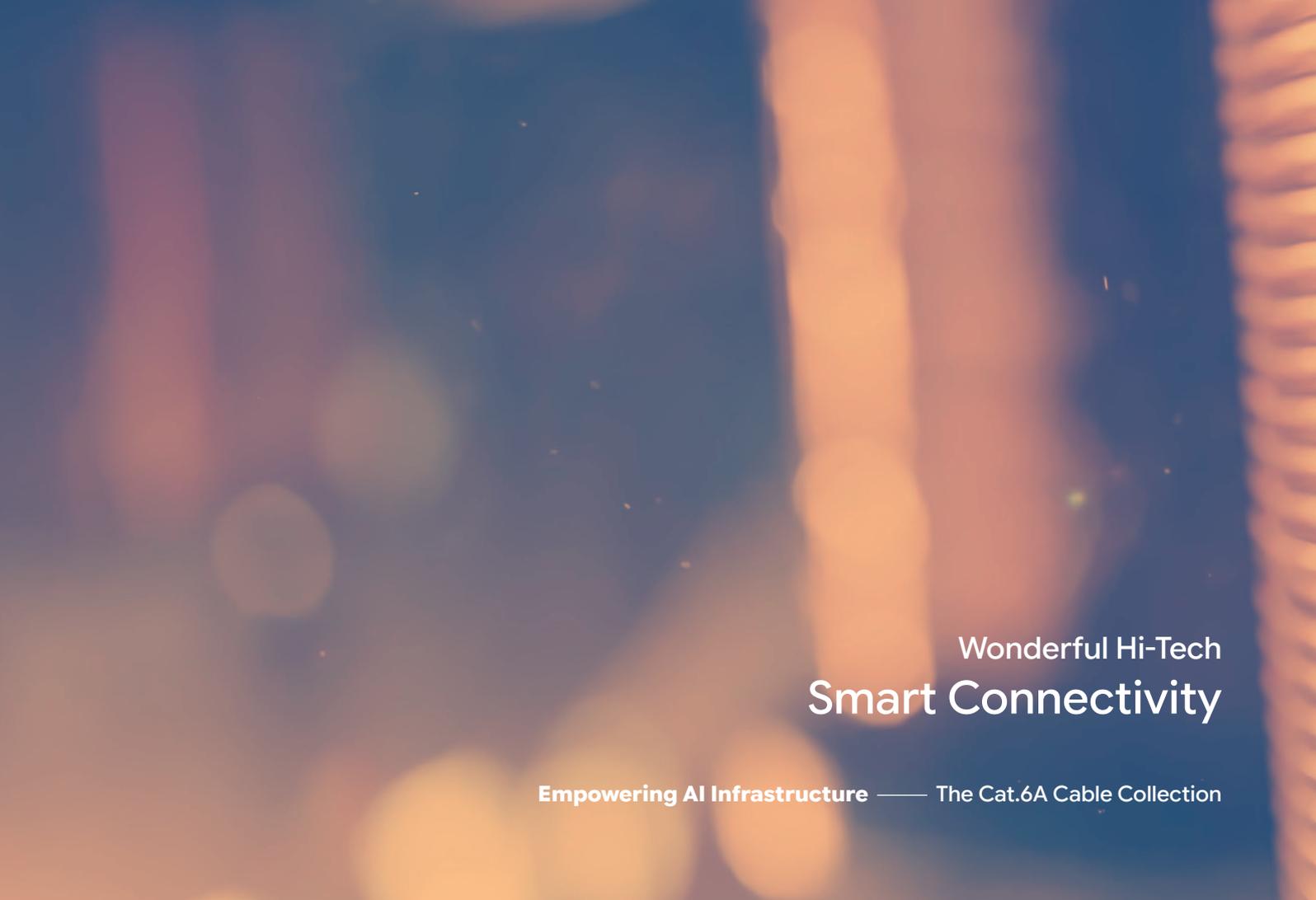
Headquarters
Taipei, Taiwan

Manufacturing Sites
Taiwan, Vietnam, Thailand, China

Overseas Office
United States

Total Production Area
Over 100,090 m^2

Employees
1,600+

Wonderful Hi-Tech

Smart Connectivity

Empowering AI Infrastructure ——— The Cat.6A Cable Collection

Wonderful Hi-Tech
Smart Connectivity

Empowering AI Infrastructure —— The Cat.6A Cable Collection

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