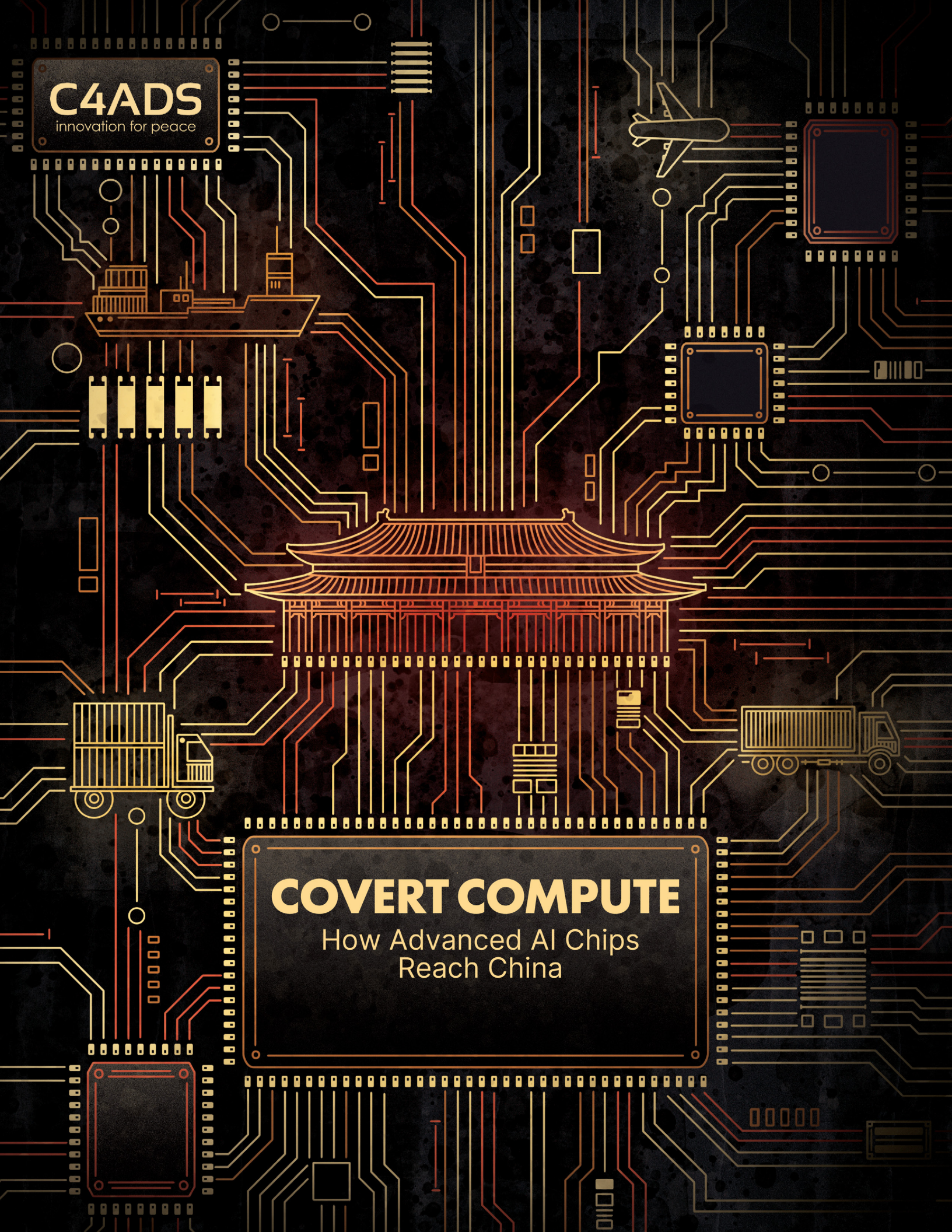




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How Advanced AI Chips
Reach China

ACKNOWLEDGMENTS

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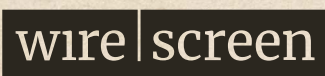
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EXECUTIVE SUMMARY

Advanced graphics processing units (GPUs) are the hardware foundation of modern artificial intelligence (AI). States have an interest in maintaining a lead in developing and accessing the most powerful classes of chips to gain a geopolitical and technological advantage over other countries. Since 2022, the U.S. Department of Commerce's Bureau of Industry and Security (BIS) has used export controls to limit access for some countries, including China, to advanced semiconductor chips that are produced with U.S. inputs and technology. However, China has demonstrated a sustained and adaptive ability to acquire restricted U.S.-designed chips, exploiting gaps in jurisdictional coordination and enforcement regimes.

Using Chinese government records, Southeast Asian trade data, and corporate data, C4ADS identified and analyzed three pathways through which restricted NVIDIA chips likely reach Chinese end users:

- **Direct Acquisition by Universities and Research Institutions:** Between July 2025 and January 2026, Chinese universities and research institutions procured at least 56 restricted NVIDIA chips worth US\$1.7 million. These chips were bundled inside multimillion-dollar contracts and routed through uncredentialed companies. Most of the buyer institutions maintain ties to the Chinese government and China's defense industrial base.
- **Diversion and/or Transshipment through Southeast Asian Trade Networks:** C4ADS identified 50 export shipments of restricted NVIDIA GPUs diverted through Vietnam, India, and Malaysia to Hong Kong and China between 2022 and 2025, totaling approximately US\$13.4 million and showing a consistent pattern of chip movement.
- **Opaque Corporate Ownership Structures:** Megaspeed International Pte. Ltd., reported by Bloomberg and The New York Times to be the largest Southeast Asian importer of NVIDIA hardware, with a total of US\$4.6 billion in imports from 2023 to 2025, has a web of ultimate beneficial owners that may have ties to the People's Republic of China (PRC).

These findings almost certainly understate the true volume of diverted chips. The analysis covers a six-month window of government records, and tallies only chips explicitly mentioned in available documents and trade data. That such cases surface in open-source records at all indicates the problem extends beyond what public documentation captures. Closing the enforcement gap will require sustained coordination between BIS and regional partners, meaningful post-sale end-user verification, and private sector compliance treated as an ongoing obligation.

INTRODUCTION

Despite U.S. export controls, the PRC has demonstrated a sustained capacity to acquire advanced semiconductor chips – particularly GPUs – revealed through a variety of Chinese government records, trade, and corporate networks that obscure the true end users and end uses of the technology. GPUs are a type of semiconductor chip with a massive parallel processing architecture that has been the primary hardware catalyst behind modern AI breakthroughs.¹ Without them, current large-scale deep learning models simply could not exist.² Both AI systems and the chips that power them are dual-use technologies, with vast implications for social, economic, and military developments. They underpin modern technology to such an extent that their development and access are expected to determine the shape of the future geopolitical environment.³ Many analysts have compared chips to oil to capture the impactful role they are set to play in the 21st century. Other policy experts compare the potential of semiconductor chips to fire, capturing the sheer potential, but also the danger associated with decision-making around this resource and the technologies it empowers.⁴

The United States currently leads GPU design, with the U.S. company NVIDIA holding 70% to 95% of the advanced AI chip market.⁵ To maintain this lead and limit access to adversarial defense industrial bases, the United States has restricted exports of cutting-edge GPUs and manufacturing equipment to the PRC since 2022.⁶ A critical dimension of U.S. export controls is the Foreign Direct Product Rule (FDPR), which extends jurisdiction beyond U.S.-produced chips to any semiconductor manufacturer abroad using U.S. equipment, software, or design tools as well as to foreign-made products containing a certain percentage of U.S. content.⁷ Because U.S. companies dominate much of the chip supply chain, this rule means that most advanced semiconductor production is likely to trigger some degree of U.S. jurisdictional exposure, regardless of where it occurs.

According to PRC government policies, China is adopting a dual-track approach to acquiring foreign-produced GPUs, meaning that Chinese authorities are heavily prioritizing technological indigenization, while acquiring U.S. and friend-shored technology for the highest output classes of chips that the PRC cannot yet produce domestically. As U.S. policymakers continue to debate the scope of export restrictions on high-end AI chips to PRC end users, China has demonstrated a sustained and growing capacity to circumvent existing controls, acquiring advanced U.S.-designed chips through diversion and procurement networks that U.S. authorities have thus far been unable to adequately identify or disrupt.

This report focuses on three pathways the PRC is leveraging to secure access to U.S. semiconductor chips despite export controls. First, Chinese universities and research institutions are publicly procuring restricted chips through direct acquisition contracts. Second, chips move through complex trade and production pathways; intermediaries seeking access to the Chinese market route restricted GPUs through third countries before they reach China. Countries in South and Southeast Asia, including India, Malaysia, Vietnam, Indonesia, Singapore, Thailand, as well as Taiwan, have emerged as major hubs for chip assembly, testing, and packaging. Even when these countries

are not themselves designing or fabricating chips, their role in the manufacturing and assembly of U.S.-origin semiconductors brings them within the scope of U.S. export restrictions and makes them high-risk countries for transshipment or diversion. The third pathway relies on corporate structures deliberately engineered to obscure who actually controls the companies making the acquisitions. This report sheds light on some of the corporate actors involved in such high-risk transactions.

Compared with existing public reporting, C4ADS' results account for a relatively small portion of potential export control evasion. The difference reflects two limits on scope: C4ADS' analysis covers a six-month window, whereas other estimates often span multiple years, and it includes only results that explicitly mention specific chips. Therefore, these results represent a conservative estimate; they do not capture relabeled items that may be exported through normal trade channels.

Epoch AI estimates with 90% confidence that, by the end of 2025, smuggling had brought into China between 290,000 and 1.6 million NVIDIA H100-equivalents (H100e), a common benchmark for AI compute capacity.⁸ Epoch AI's median estimate makes up roughly a third of China's total compute stock.⁹ That range is wide, and the uncertainty is rooted in two unknowns: how much smuggling went undetected and whether the allegedly diverted chips reached China.

METHODOLOGY

C4ADS collected and analyzed 371,442 Chinese government documents published between July 2025 and January 15, 2026, the latest data available at the time of analysis.¹⁰ The collected records were made text-searchable and uploaded to C4ADS' data repository, Horizons.¹¹ C4ADS conducted a bulk search to identify contracts that included references to controlled AI NVIDIA chips, using "NVIDIA" and its Chinese name, "英伟达," as key terms. This analysis is scoped to NVIDIA chips because the company accounts for an estimated 70% to 95% of the AI GPU market; it does not capture chips from other suppliers such as AMD or Intel that may also reach China through similar diversion channels.¹² To then narrow down the results, C4ADS filtered these documents for restricted and banned chips.

C4ADS compiled the documents that included references to AI chips restricted as of January 2026 and structured that information along the following parameters:

- Project title and ID number
- Date of announcement or contract signing
- Buyer
- Supplier
- Controlled NVIDIA items
- Quantity
- Total value in renminbi (Chinese yuan) and U.S. dollars

In a parallel effort, C4ADS analyzed 2022-2025 trade data for Southeast Asian countries to find transactions that may constitute U.S. export control violations in countries that serve as major AI chip manufacturing and assembly hubs. Trade data was filtered for key sectors including "electrical and electronics" and "machinery," using key Harmonized System (HS) codes 8471, 8473, 8479, 8523, and 8542. C4ADS used "NVIDIA" in English and Chinese ("英伟达") as key search terms here as well.¹³ C4ADS further filtered the trade data containing these key terms and HS codes for all Chinese and Hong Kong imports. Lastly, C4ADS selected for analysis the shipments with product descriptions that only included language regarding controlled chips: A100, H100/H200, A800, H20, L40, A30, RTX 4090, RTX 5090 (Blackwell), and the Quantum-2 QM9700 networking hardware. The list was compiled through a literature review focused on the latest specifications for controlled chips.

C4ADS then layered the trade data with corporate records, as well as other publicly available information, to examine end-user procurers, corporate actors facilitating this trade, and the corporate owners behind them.

The report's underlying data carries several limitations. Smugglers use sophisticated methods to conceal their activities, especially in a strategically important sector like semiconductors. Some actors may avoid detection entirely, moving chips through fishing boats or other channels that bypass legal reporting mechanisms. Others may relabel products as goods from unrelated sectors and move them through regular shipping channels. C4ADS' methodology also relies on formal documents and trade records, so it cannot capture the informal or cash-based gray and black-market activity that leaves

no paper trail. Similarly, available Chinese government records likely exclude projects classified as highly sensitive. Trade data carries further limitations, including incomplete coverage, human error, and intentional concealment or distortion by the parties involved.

The search methodology also takes a conservative approach. It does not capture shipments in which controlled chips are embedded in systems labeled under a different server brand, or in which sellers may deliberately mislabel product descriptions. It excludes diversion routes through jurisdictions outside Southeast Asia and arrangements in which Chinese customers access compute remotely. As a result, this report does not offer a holistic view of chip smuggling, diversion, and other gray-area transactions.

Because of these limitations, the actual scale of illicit transfers is almost certainly higher than this report's findings indicate. An additional caution applies: a government record or trade data does not indicate that the parties completed a transaction. The global nature of semiconductor manufacturing compounds this difficulty: companies may ship chips to Vietnam and other Southeast Asian jurisdictions for repair and reexport, a legitimate practice that can also serve as cover for diversion. This report therefore focuses on identifying risk. Drawing on publicly available information, it documents the methods actors use to obscure these transfers – particularly shell company networks – and identifies some of the entities involved.

U.S. Policy on Export of Advanced AI Chips: An Uncertain Landscape

The United States has historically led in the development and production of advanced AI chips. China, however, is rapidly expanding its capabilities, narrowing the window to implement effective safeguards against the misuse of critical technologies. U.S. policymakers are principally concerned with controlling access to high-density, high-performance GPUs or chips, because these can be used to train AI models with potential military applications and power Chinese surveillance systems that have fueled human rights abuses.¹⁴ The U.S. Congress and every U.S. administration in recent years have recognized the importance of maintaining the United States' competitive advantage in GPUs, though they have differed on the best policies to achieve it. Policy analysis suggests that wider Chinese access to advanced chips accelerates Beijing's ability to copy and independently produce the technology.¹⁵ Supply chains for AI chips are complex and dynamic, involving multiple stages of production, assembly, and distribution, all of which introduce geopolitical risks.

Since October 2022, the United States has required an export license for certain high-performance AI chips destined for China, with licensing requests reviewed on a presumption of denial. Such high-performance chips have historically included, among others, the NVIDIA A100 PCIe/SXM, H100, and H200. Additional Bureau of Industry and Security (BIS) restrictions in 2023 added a new performance density parameter that brought the A800 and H800 chips under this export

control law.¹⁶ Data center chips seen as posing a lower, but still notable, national security risk are classified as notified advanced computing (NAC) eligible. Nevertheless, data center infrastructure is integral to China's AI-enabled surveillance state and human rights violations.¹⁷ NAC-eligible chips carry no presumption of denial for export licensing but require prior BIS notification for export to countries subject to U.S. arms embargoes, a group that includes China, classified as Group D:5 destinations.¹⁸ BIS reviews the NAC notification for national security concerns and then determines if a license is required.

Biden Administration AI Diffusion Rule (January 2025)

On January 15, 2025, the outgoing Biden administration published the Framework for Artificial Intelligence Diffusion (the AI Diffusion Rule), establishing a three-tier global framework for regulating transactions involving advanced AI model weights and high-performance computing chips.¹⁹ The rule also created, for the first time, a restriction on exports of AI model weights. In effect, the model itself, not just the hardware used to train it, became a controlled national security asset.

Trump Administration: Rescission and Revised Policy (2025-2026)

On May 13, 2025, the Trump administration formally rescinded the AI Diffusion Rule.²⁰ On January 15, 2026, BIS published a final rule marking a significant shift in export control policy for certain advanced AI chips destined for China and Macau.²¹ The rule changed the license review policy from "presumption of denial" to "case-by-case review" for commercially available chips with total processing performance below 21,000 and total DRAM bandwidth below 6,500 GB/s – performance levels corresponding to NVIDIA's H200 GPU and AMD's MI325X accelerator.

Additional Guidance and Enforcement from BIS (2025-2026)

Concurrent with the rescission of the AI Diffusion Rule in May 2025, BIS issued three compliance guidance documents. Among other functions, the guidance documents address potential enforcement consequences of providing China access to advanced semiconductors that would likely be used to train AI models.²² They identify new "red flags" that may appear in transactions suggesting illicit diversion of advanced semiconductors.²³ In May 2026, BIS issued guidance closing a loophole and confirming that export licenses are required for advanced computing items, including NVIDIA's Blackwell and Rubin chips, and AMD's MI350X, destined for any company headquartered in China, regardless of the location of its subsidiaries or offshore data centers.²⁴

In 2025, the Trump administration also added 65 Chinese entities to the trade restriction Entity List, which identifies foreign individuals, businesses, research institutions, and governments that pose risks to U.S. national security or foreign policy interests.²⁵ According to BIS, China Academy of Information and Communications Technology (CAICT), which C4ADS identified as a key recipient of restricted NVIDIA GPUs, is the parent entity of one of these restricted entities.²⁶

While legal review is required to make definitive determinations about export control violations, C4ADS' analysis deliberately focused on chips that remain among the most restricted under both the pre- and post-January 15, 2026, regulatory frameworks. With the exception of the H200, which shifted from presumption of denial to case-by-case review under the January 15, 2026, BIS rule, the chips identified in this report's Chinese government documents, trade, and corporate records were subject to the most stringent licensing requirements under both periods. For H200-

class chips, the case-by-case review standard still requires exporters to meet strict certification conditions; absent documentation of such compliance, these shipments remain legally suspect. The chips identified in Chinese government records and trade data include the A100, H100, and Blackwell-series GPUs.

Despite U.S. efforts, the PRC continues to gain access to U.S.-controlled cutting-edge AI chips. C4ADS investigations of potential chip smuggling into the PRC indicate three interdependent pathways through which restricted U.S.-designed AI chips reach China: direct acquisition by Chinese universities and entities tied to the Chinese military-industrial base, Southeast Asian diversion networks, and opaque, complex corporate structures spanning Vietnam, Malaysia, India, Singapore, and secrecy jurisdictions such as the Cayman Islands.

DIRECT ACQUISITION BY UNIVERSITIES AND RESEARCH INSTITUTIONS

Chinese acquisition contracts show that the Chinese university system provides one avenue through which China systematically accesses advanced AI hardware, despite U.S. export controls. Between July 1, 2025, and January 15, 2026, Chinese universities and research institutions procured at least 56 restricted U.S.-designed AI chips for a total value of 11.9 million renminbi (US\$1.7 million), potentially in violation of U.S. export control laws. According to corporate and open-source records, many of the buyer institutions have reported ties with China's defense industrial base and several have been linked to entities associated with China's intelligence community.²⁷ These contracts only cover a small portion of such activity, given that C4ADS leveraged only the most recent records and included only contracts that explicitly name NVIDIA products that remained controlled as of January 2026. In addition, larger contracts involving private and military buyers did not appear in these public Chinese government documents.

Chinese universities are able to avoid detection, in part, by bundling controlled NVIDIA GPUs inside sprawling multi-vendor contracts. It appears these universities and research institutions are being used to obscure connections to intelligence and defense entities and/or the ultimate end use of this hardware.

The total value of these projects, expressed in U.S. dollars, that C4ADS identified as linked to universities and research institutions tracks with previous C4ADS investigations into China's acquisition of U.S.-controlled AI chips. For example, a 2024 C4ADS investigation that analyzed two to three years' worth of publicly released government records found that China declared contracts involving restricted U.S.-designed AI chips totaling a value of US\$6.48 million.²⁸

Continued Chinese acquisition of restricted U.S.-designed chips suggests that despite political tension and changing regulatory environments in the United States and the PRC, the latter continues to require and acquire U.S.-designed chips for its computing needs. The steady pace of acquisition demonstrated by Chinese government records could be interpreted as a failure of export restrictions since the problem persists, or as a partial success because arguably the 2025 numbers would be higher without restrictions.

Figure 1: Network of Chinese Universities Procuring Controlled NVIDIA Chips and Their Suppliers (July 2025-January 2026)²⁹

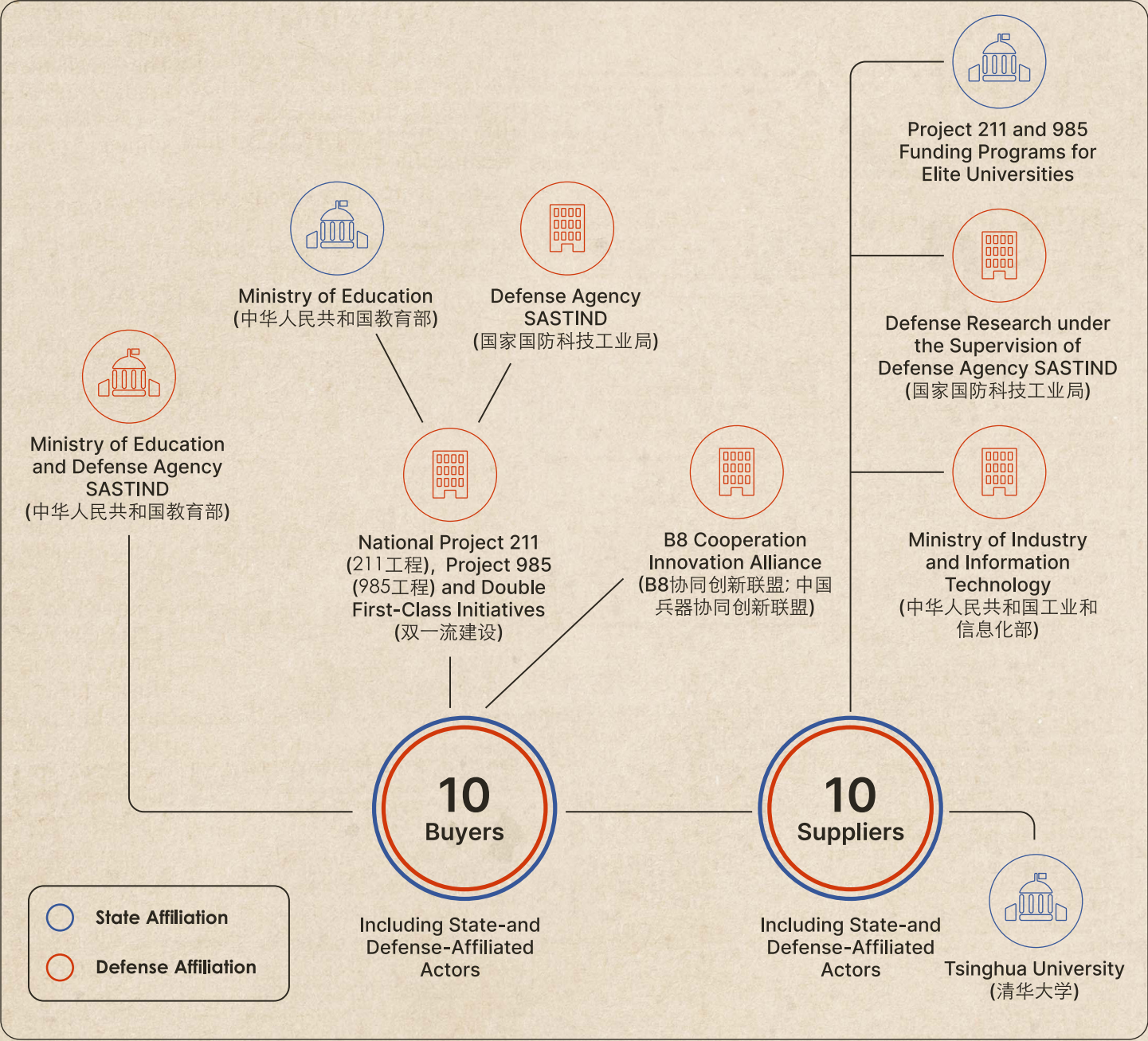


Figure 2: Examples of Acquisition of Restricted U.S.-Designed AI Hardware by Chinese Universities and Research Institutions in Chinese Government Documents (July 2025–January 2026)³⁰

Institution	Hardware / Chips	Stated Purpose	Concerns / Notes
Peking University Health Science Center³¹ (People's Hospital AI platform) (Contract awarded on September 5, 2025)	1 lot: NVIDIA Quantum-2 QM9700 + Dell ME5084 storage + Huawei G5500 V7	Medical AI	Networking hardware is subject to U.S. export controls; it enables the high-speed connections between chips that multiply AI computing power. Peking University has indirect ties to China's defense industry. "PKU is involved in defense research under the supervision of defense agency SASTIND, including nuclear-related physics, technology, and chemical engineering."³²
China Academy of Information and Communications Technology (CAICT)³³ (Contract awarded on November 5, 2025)	4× NVIDIA A100 GPU	Refined communications management platform	The A100 has been restricted from export to China since October 2022. CAICT is a state-owned institute under China's Ministry of Industry and Information Technology (MIIT).³⁴ MIIT serves as a primary state driver fusing civilian technology development with national intelligence, cyber posture, and defense manufacturing. MIIT acts as a bureaucratic link within China's broader "military-civil fusion" strategy.³⁵ Corporate records indicate that the supplier, Unigroup Guoxin, is a subsidiary of Tsinghua Unigroup³⁶ – a state-linked technology conglomerate – and as of June 24, 2026, was not an authorized NVIDIA distributor.

Institution	Hardware / Chips	Stated Purpose	Concerns / Notes
Shanghai Maritime University ³⁷ (Tender document, announced September 22, 2025, not yet awarded; identical equipment re-issued via competitive negotiation on November 29, 2025)	2× A800 data center GPUs; 10× RTX 4090 gaming cards	Container terminal remote control	The university has served as a supplier for the Marine Design and Research Institute of China, which is ultimately owned by the China State Shipbuilding Corporation, a state-owned defense manufacturer. ³⁸

Chinese government contracts are consistent with a sophisticated effort to circumvent U.S. export controls through China’s university system. The purchases could instead reflect independent research acquisitions by individual universities. However, restricted NVIDIA chips are scarce and difficult to obtain even through legitimate channels, making independent acquisition by multiple universities less plausible. Several of these institutions also have ties to China’s defense industrial base. Taken together, these factors indicate that the procurement may be coordinated between state actors and research institutions.

None of these transactions involve direct NVIDIA sales or major authorized distributors. Instead, all 12 projects route through small Chinese regional integrators – such as Touchpoint Digital, Yijia Industrial Electronic Co. Ltd., and Shenzhen Zhongxiang Technology Co. Ltd. – which, according to open-source data, are not among NVIDIA’s authorized distributors.³⁹ Restricted items are consistently bundled within massive contracts. This routing pattern – through intermediaries that are not established, authorized, and credentialed semiconductor distributors – is consistent with an effort to undermine U.S. law enforcement and due diligence efforts in end-user verifications. Ultimately, export control compliance depends on exporters verifying the ultimate end user of controlled items, not merely the immediate buyer.

Moreover, the geographic spread across Beijing, Shanghai, Xiamen, Kunming, Changchun, Shenzhen, Liaoyang, and Nanjing may demonstrate nationwide coordination and a widespread pattern rather than isolated violations. This appears to be a distributed acquisition network that could evade detection, using universities’ educational legitimacy to access hardware denied to military entities.

DIVERSION AND/OR TRANSSHIPMENT THROUGH SOUTHEAST ASIAN TRADE NETWORKS

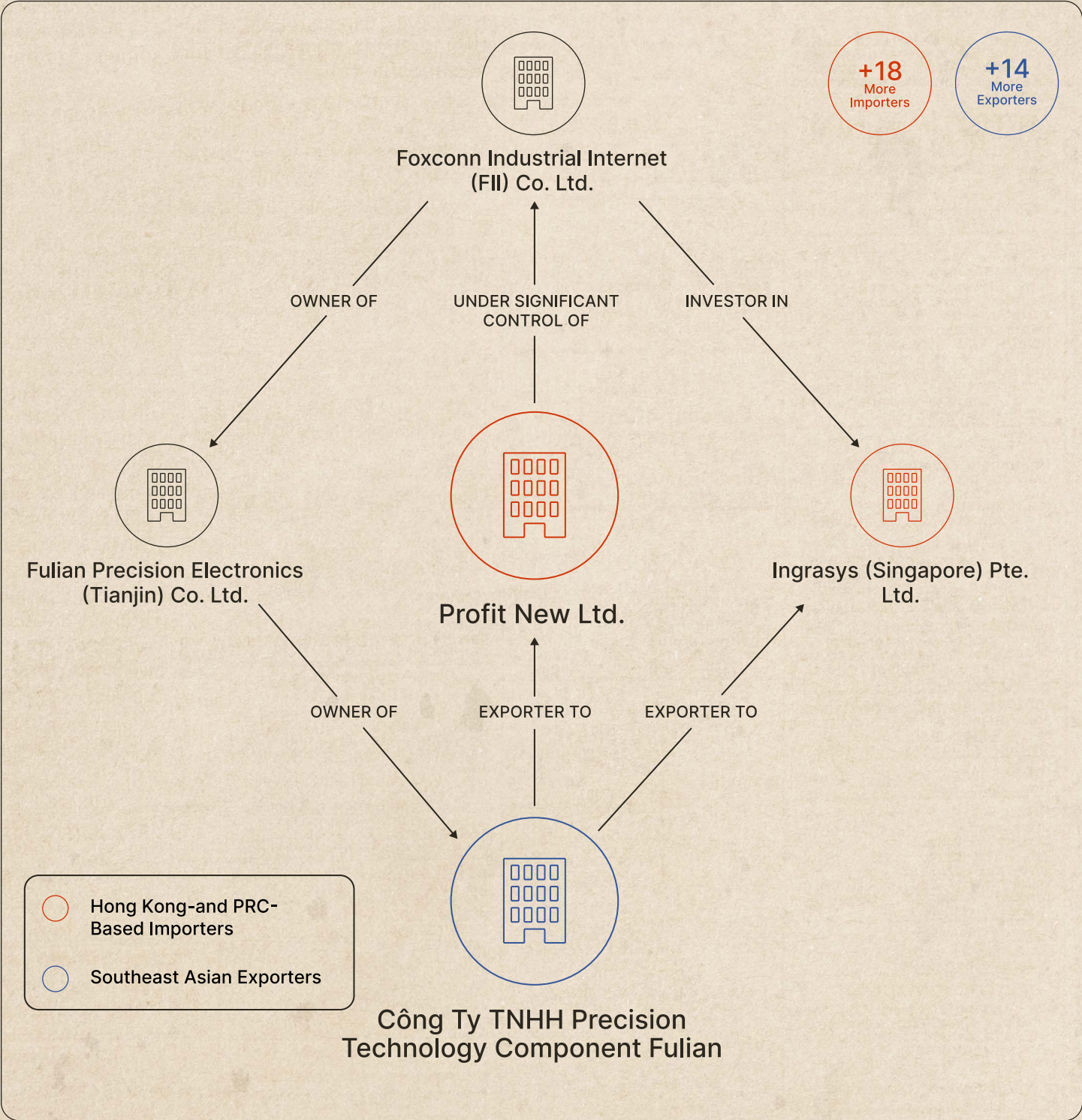
C4ADS analysis also demonstrates how diversion networks likely exploit gaps between export regimes, moving restricted chips through third countries faster than enforcement can coordinate a response, exposing a structural weakness at the center of the controls regime that depends on partners to police their borders. For this report, diversion refers not to routine multi-leg shipping logistics, but instead to the practice of routing controlled chips through an intermediate jurisdiction to obscure their true origin or destination and thereby evade U.S. export controls. Using the available trade data records, C4ADS identified 50 export shipments of restricted NVIDIA GPUs to Hong Kong and China between 2022 and 2025, totaling approximately US\$13.4 million in value, that demonstrate a pattern indicative of diversion.⁴⁰

Trade data reveals a layered GPU chip export operation, primarily involving high-end NVIDIA data center processors (A100, H100/GH100, and AD102 series) flowing from Vietnam, India, Malaysia, and other Southeast Asian countries to Hong Kong and China between 2022 and mid-2025. C4ADS analysis shows Taiwan-origin chips being processed through Vietnamese facilities, particularly Công Ty TNHH Precision Technology Component Fulian and Etron Vietnam Technologies Company Limited.⁴¹ Such shipments may be intended to exploit the multistage global manufacturing ecosystem.

Profit New Limited (a Hong Kong offshore entity) and ELB International Limited⁴² dominate the import side, handling individual shipments ranging from single units to nearly 1,000 pieces totaling US\$1.9 million. The transactions are classified as “Returned export for cargoes imported” under HS code 85423900, suggesting these are not traditional exports but rather chips that underwent testing, quality control, or minor processing in Vietnam before being shipped onward – a pattern consistent with diversion. Diversion obscures the chips’ true origin and final destination in trade records and creates a paper trail that appears compliant while evading the end-user scrutiny that export controls depend on. The routing through Vietnam may serve multiple strategic purposes: leveraging Vietnam’s position in semiconductor supply chains, potentially circumventing direct semiconductor export controls, or utilizing Vietnam’s manufacturing ecosystem for final assembly and testing of AI-capable GPUs destined for regional data center markets. Vietnam’s electronics manufacturing infrastructure provides plausible deniability – chips genuinely are tested and repaired there – but the scale, timing, and offshore entities of the many transactions suggest the primary purpose may be to facilitate chip flow to restricted Chinese markets.

The data shows a surge of exports in March 2025, with six massive GH100-855N-A1 shipments totaling US\$8.7 million flowing through Profit New Limited in a single day. This may indicate either stockpiling ahead of tightening controls or the clearing of accumulated inventory.

Figure 3: Ownership and Export Links Among Entities Trading Controlled NVIDIA Chips (2022–2025)⁴³

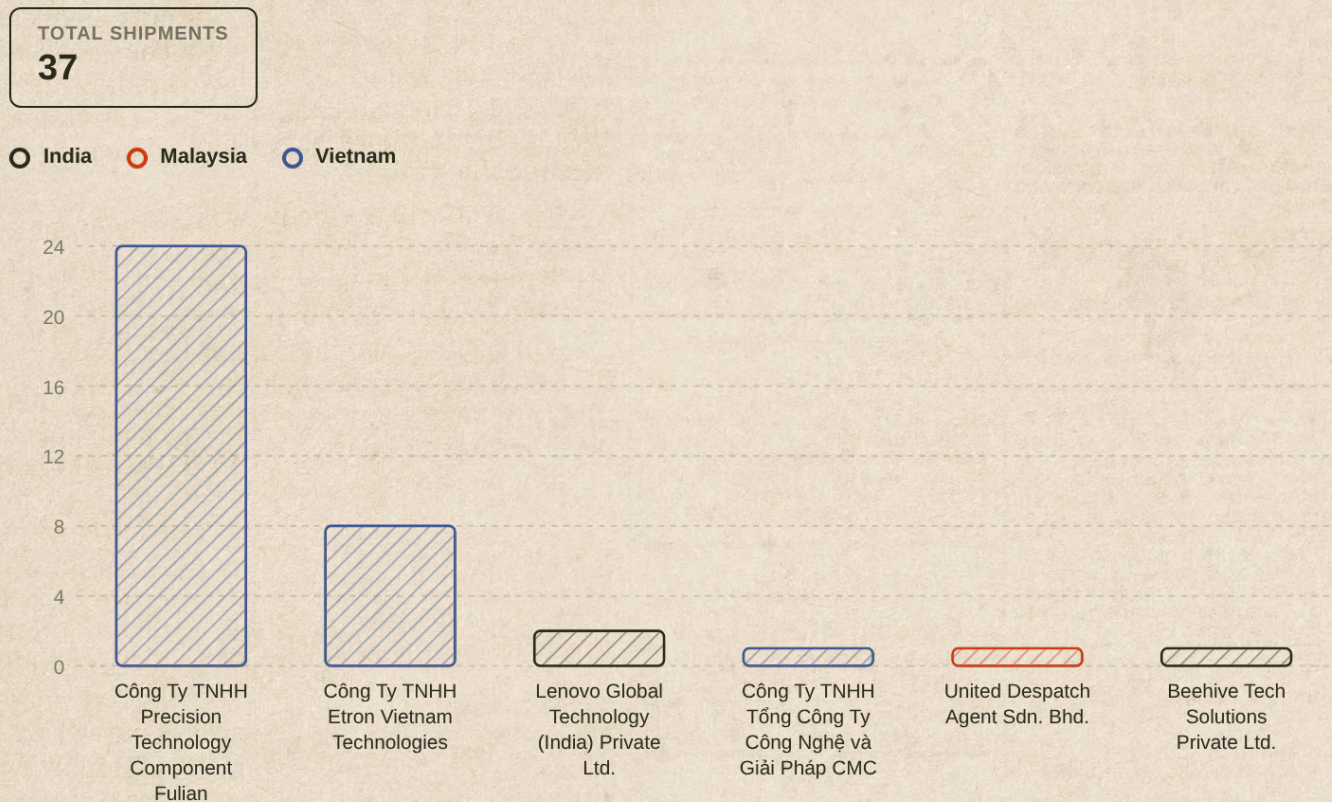


Multiple Hong Kong and Chinese importers, including Profit New Limited and Golden Hawk Information Technology Ltd., received identical chip models from the same Vietnamese exporter, suggesting a concentrated distribution pattern in which Vietnam plays a key role.⁴⁴ However, this activity extends beyond Vietnam; the A100 GPU baseboard shipment from Malaysia to China and the Lenovo motherboard exports from India indicate that such high-risk exports – potentially constituting export control violations – are occurring across the South and Southeast Asian region. The absence of cost, insurance, and freight values, or the total landed value of imported goods (all showing US\$0), along with missing weight data for many high-value shipments, raises questions about documentation completeness. While not “smuggling” in the traditional sense – hidden shipments, false declarations, criminal networks – this activity exploits gaps between jurisdictions’ laws and the practical challenges of enforcing them across borders, undermining U.S. export controls.

The Corporate Entities Behind Apparent South and Southeast Asian Diversion Networks

Profit New Limited is a Hong Kong-based entity under the significant control of Foxconn Industrial Internet Company Limited (富士康工业互联网股份有限公司, hereinafter FII).⁴⁵ FII is a China-based company, majority owned by Taiwan-based Hon Hai Precision Industry Co. Ltd. (鴻海精密工業股份有限公司, commonly known as Foxconn, hereinafter Hon Hai),⁴⁶ with the remaining three beneficial owners being Hong Kong-based corporations: the Hong Kong Exchanges and Clearing Limited (香港交易及結算所有限公司), Rich Pacific Holdings Limited, and Robot Holding Company Limited.⁴⁷ Hon Hai, FII’s parent company according to WireScreen, is the world’s largest contract electronics manufacturer with factories around the world, including Vietnam, India, Taiwan, Brazil, Mexico, the Czech Republic, Slovakia, and Hungary,⁴⁸ and is also China’s largest private employer.⁴⁹ This reflects a critical economic relationship between China and Taiwan. Hon Hai has a history of supplying companies such as Apple, Dell, Nintendo, Sony, and Huawei.⁵⁰ As of May 2026, BIS cleared Hon Hai to be a distributor of NVIDIA chips in the PRC.⁵¹ FII has invested in 33 companies, one of which is Fulian Precision Electronics (Tianjin) Co. Ltd. (富联精密电子(天津)有限公司, hereinafter Fulian Precision).⁵²

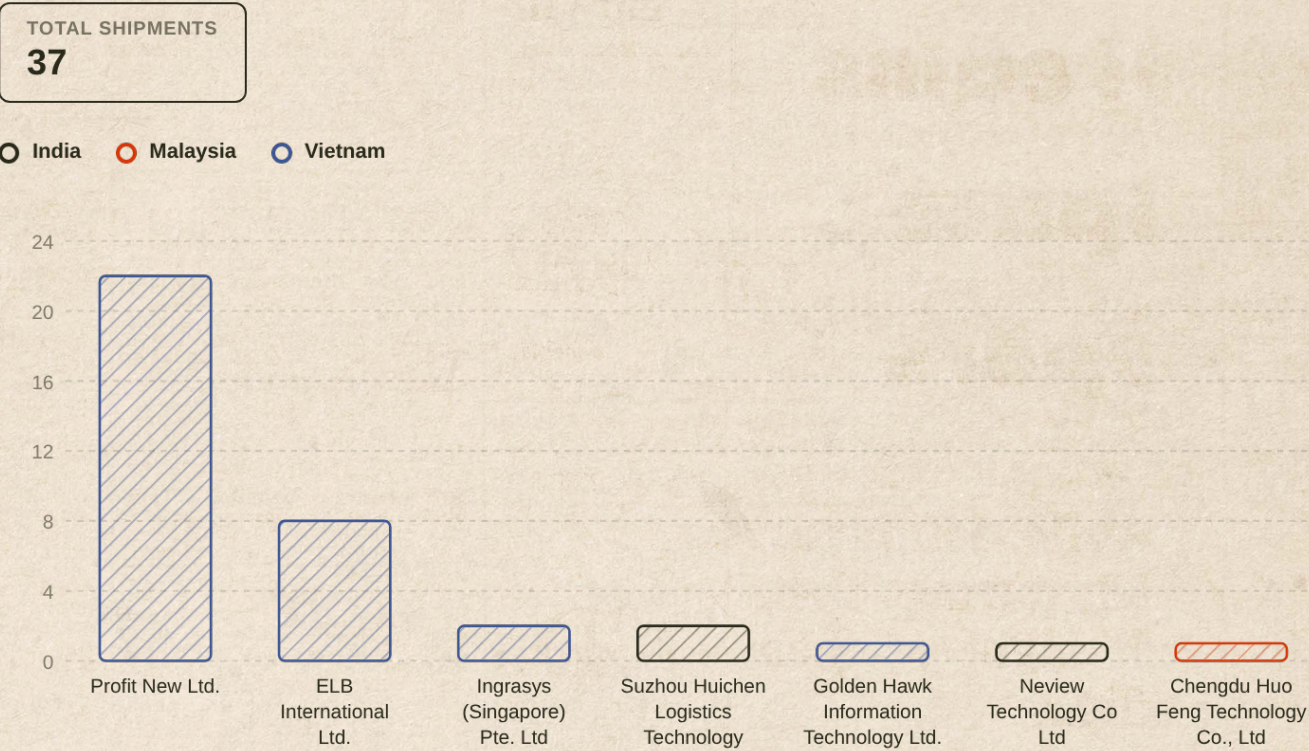
In December 2023, U.S. BIS added Fulian Precision to its Unverified List because it had been unable to verify the company’s bona fides through an end-use check. In July 2024, BIS reversed this decision, confirming it had succeeded in verification. Separately, Fulian Precision owns the Vietnamese company Công Ty TNHH Precision Technology Component Fulian, which C4ADS identified as the top exporter of NVIDIA-controlled items to Hong Kong and China.

Figure 4: Top Exporters of Controlled NVIDIA Chips to Hong Kong and China (2022-2025)⁵³

Công Ty TNHH Precision Technology Component Fulian also exports to the Hong Kong location of Ingrasys (Singapore) Pte. Ltd., in which Hon Hai holds an investment.⁵⁴ According to corporate data, Ingrasys (Singapore) Pte. Ltd. is a global cloud infrastructure provider specializing in servers, storage systems, AI accelerators, and customized rack-scale IT solutions.⁵⁵ The company leverages Hon Hai's worldwide operational network and has built a strong position in the cloud computing market through engineering expertise, smart manufacturing capabilities, and a highly vertically integrated supply chain.⁵⁶

While C4ADS has prioritized analyzing the corporate structures of these entities given their significant presence in trade data and the scale of their parent companies, numerous other corporations across Malaysia, India, Indonesia, and Taiwan also appear to be engaged in legally ambiguous exports of highly advanced chips.

Figure 5: Top Chinese and Hong Kong Importers of Controlled NVIDIA Chips by Country of Shipment (2022-2025)⁵⁷



OPAQUE CORPORATE OWNERSHIP STRUCTURES

The third pathway C4ADS identified involves corporate obfuscation: the acquisition of restricted U.S.-designed AI chips through companies that appear legitimate on paper but whose layered ownership structures are often specifically designed to obscure their true beneficial owners and ultimate end users. Corporate obfuscation underscores a core enforcement gap. When ownership is layered across multiple entities and jurisdictions, standard licensing reviews cannot distinguish a lawful buyer from an intermediary set up to conceal the true acquiring party.⁵⁸ Post-sale audits and end-use verification exist under BIS's export control framework, but remain limited in scale and scope, covering only a small fraction of licensed transactions.

The case of Megaspeed International Pte. Ltd. illustrates how this likely works in practice. Media reporting identified Megaspeed as the largest Southeast Asian importer of NVIDIA hardware between 2023 and 2025, with transactions totaling approximately US\$4.6 billion in that period.⁵⁹ Yet, who ultimately controls the company – and therefore who controls its access to advanced U.S.-designed AI chips – remains unresolved.⁶⁰

Megaspeed operates as a multi-jurisdictional corporate entity with registered companies in Singapore, Indonesia, and Malaysia, focused on data processing, hosting infrastructure, and cloud computing services.⁶¹ SwiftData Pte. Ltd. has held all 10 million of Megaspeed's outstanding ordinary shares since December 1, 2023.⁶²

Megaspeed was previously a wholly owned subsidiary of the Chinese gaming company 7Road Holdings Limited.⁶³ In March 2023, Huang Le (黄乐 or 黄乐, also known as Huang Xiaole), a Chinese national, became Megaspeed's controlling shareholder;⁶⁴ she claims CEO status on LinkedIn under the name "Huang Xiaole." Huang Le played a significant role in Megaspeed's Indonesian operations that year, serving in dual capacities as director and managing director of PT Megaspeed International Indonesia from March 6 to November 10, 2023.⁶⁵ Her eight-month tenure coincided with a critical period of corporate restructuring and regional expansion.

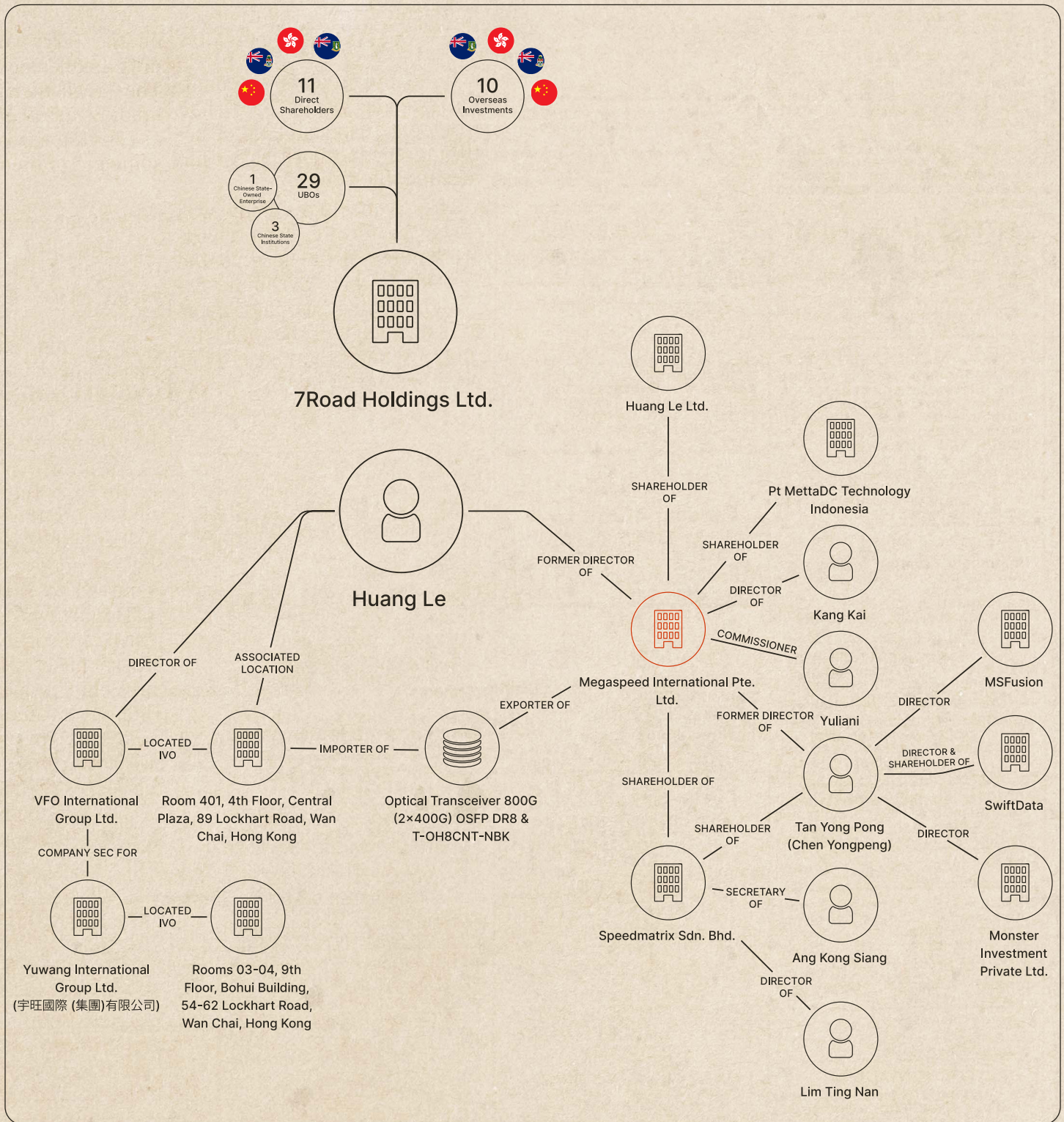
Huang Le's corporate relationships represent risk indicators concerning whether Megaspeed's Singaporean identity is genuine or effectively Chinese-controlled. Evidence of her continued Chinese ties includes her previously owned company in Hong Kong.⁶⁶

These corporate risks are underscored by the speed and totality of SwiftData's acquisition of Megaspeed.⁶⁷ Within a single month in late 2023, all 10 million shares transferred from Huang Le to SwiftData Pte. Ltd.: a single symbolic share on November 10, followed by the remaining 9,999,999 shares on December 1, consolidating 100% ownership under SwiftData in fewer than 30 days.⁶⁸

On the same day that the first share was transferred, November 10, 2023, Tan Yong Pong was installed as Singapore director, while Huang Le's side ceded management of the company alongside the share transfer to SwiftData. This was not a routine personnel change: it was a same-day swap coinciding precisely with the transfer of control – a pattern that experts recognize as a red flag for nominal rather than genuine change of beneficial ownership.⁶⁹

The central unanswered question is: Who actually controls SwiftData Pte. Ltd.? If SwiftData is effectively Chinese-controlled, then Megaspeed's access to advanced AI chips may be a violation of U.S. export controls. Despite officially selling the company to SwiftData and ceding management to Tan Yong Pong for US\$10 million, C4ADS assesses that as of late 2025, Huang Le may have retained practical control of Megaspeed, based on her public identification as "chairwoman" of Megaspeed at conferences. She also serves as director of Hong Kong-based VFO International Group Limited, which, as of November 2024, was receiving 800G optical transceivers from Megaspeed Indonesia, high-performance components used in AI data center infrastructure.⁷⁰

Reporting by Bloomberg and The New York Times indicates that Megaspeed obtained chips from NVIDIA's Blackwell lineup, which remains restricted under U.S. export controls despite the January 2026 policy changes.⁷¹ In recent years, the company has become a focal point of concerns about semiconductor smuggling into the PRC. The question of whether those chips ultimately transited to China (and if so, who in China actually received them) remains the core enforcement challenge this case exemplifies. Without mandatory post-sale end-use verification, layered corporate structures like Megaspeed's can move advanced AI chips into restricted markets while nominally complying with existing licensing requirements.⁷²

Figure 6: Entities Associated with Megaspeed International Pte. Ltd.⁷³

CONCLUSION

This report documents three active and overlapping pathways China uses to acquire restricted U.S.-designed AI chips despite comprehensive export controls: direct acquisition by universities through bulk contracts that help conceal the presence of restricted chips, likely diversion through South and Southeast Asian trade networks, and apparent corporate obfuscation by entities deliberately structured to evade scrutiny.⁷⁴

The picture that emerges is not one of isolated violations, but instead may represent a sustained, adaptive ecosystem: Chinese universities bundling controlled NVIDIA GPUs inside sprawling multi-vendor contracts, chips moving through Vietnamese and Malaysian facilities before arriving in Hong Kong and China, and individuals like Huang Le building layered corporate structures across multiple jurisdictions that appear to be designed to obscure who is ultimately in control.

Most of the examples of Chinese acquisition of restricted AI chips that C4ADS' research surfaced occurred under even more stringent export controls than those currently in place. Additionally, the consistency with which China has procured restricted chips reflects the resilience of smuggling networks and the limitations of existing export controls. Public records capture only a fraction of illicit transfers, and these investigations almost certainly understate the true volume of diverted chips.

Closing the enforcement gap will require more than stronger rules on paper. It will require deepened intelligence sharing between the United States and its regional partners, meaningful end-use verification by law enforcement and due diligence officers, and coordinated pressure across allied jurisdictions. For the private sector, it means treating compliance as a core obligation rather than an obstacle to market access. Under the current regulatory and enforcement environment, direct acquisition, diversion, and corporate obfuscation pathways for China to access restricted semiconductor chips remain exploitable, enabling restricted AI chips to continue reaching Chinese end users. So long as the legislative environment around advanced AI chips continues to change regularly, the private sector will lack adequate incentives to safeguard against the diversion of restricted chips to Chinese entities.

RECOMMENDATIONS

U.S. Government and Friend-Shoring Jurisdictions

To close the direct-acquisition pathway, BIS should commit additional staff and analytic resources toward implementation and enforcement of existing semiconductor export controls, including post-sale audits and end-use monitoring, Entity List investigations, and determinations under the Foreign Direct Product Rule, paying particular attention to university and research-institution buyers with defense and/or intelligence ties. BIS should consider tightening the legal requirements for companies to ensure due diligence is conducted thoroughly.

To close the diversion pathway through South and Southeast Asian trade networks, the United States should continue to coordinate control lists, licensing standards, and enforcement mechanisms with friend-shoring partners through existing multilateral channels.

Private Sector

To close the corporate obfuscation pathway, companies should treat end-user and end-use due diligence as an ongoing obligation rather than a one-time transaction check, given that intermediaries, shell entities, and ownership structures – like those in the Megaspeed case – can change after an initial sale is approved.

To close both the diversion and corporate obfuscation issues, U.S. and friend-shored semiconductor manufacturers, equipment makers, and distributors should invest in a robust end-user verification system that goes beyond standard restricted-party list screening, incorporating on-the-ground due diligence, corporate ownership tracing, and post-shipment verification.

To further support closing the corporate obfuscation pathway, the private sector should incorporate long-term geopolitical and dual-use risk analysis into standard due diligence and compliance frameworks, evaluating not only a buyer's current stated use case but the likelihood that downstream customers, joint ventures, or successor entities could redirect controlled technology toward PRC military or intelligence applications over time.

APPENDIX 1

Table 1. U.S. Export Control Amendments Relevant to Advanced AI Chips

Policy	Agency	Date	Description
Advanced Computing and Semiconductors Rule	BIS, Department of Commerce	October 7, 2022	New ECCNs added under 3A090, 4A090, 4D090, 3B090; several more ECCNs revised.
Updates to Modify and Reinforce Restrictions Initially Released on October 7, 2022	BIS, Department of Commerce	October 17, 2023	Expands restrictions for chips under 3A090 to ICs by introducing new "performance density parameter."
Framework for Artificial Intelligence Diffusion (AI Diffusion Rule)	BIS, Department of Commerce	January 15, 2025	Established three-tier global framework for advanced chips and AI model weights; created ECCN 4E091 for model weights.
Rescission of AI Diffusion Rule	BIS, Department of Commerce	May 13, 2025	Rescinded AI Diffusion Rule before May 15, 2025, effective date; returned to pre-January 2025 controls.
Revision to License Review Policy for Advanced Computing Commodities	BIS, Department of Commerce	January 15, 2026	Changed review policy from presumption of denial to case-by-case for H200/M1325X-class chips to China/Macau with strict conditions.
Tariff on Advanced AI Semiconductors	White House	January 14, 2026	Imposed 25% tariff on advanced AI chips not destined for U.S. supply chain, effective January 15, 2026.

Table 2. Select NVIDIA Chips Restricted Under BIS Controls, October 2022, October 2023, and January 2026⁷⁵

GPU Chip/ Assembly	Designer	Controlled?	Data Center Chip	Notes
H200 SXM	NVIDIA	Case-by-case (China/Macau)	Yes	Subject to January 15, 2026, revised policy
B200	NVIDIA	Reg. License	Yes	Blackwell architecture, released 2025
B100	NVIDIA	Reg. License	Yes	Blackwell architecture, released 2025
H100 SXM	NVIDIA	Reg. License	Yes	Controlled since October 2022
H100 PCIe	NVIDIA	Reg. License	Yes	Controlled since October 2022
A100 PCIe (80GB)*	NVIDIA	Reg. License	Yes	Controlled since October 2022
A100 SXM (80GB)*	NVIDIA	Reg. License	Yes	Controlled since October 2022
H800 SXM	NVIDIA	Reg. License	Yes	China-specific variant
A800 SXM	NVIDIA	Reg. License	Yes	China-specific variant
H800 PCIe	NVIDIA	Reg. License	Yes	China-specific variant
L40S	NVIDIA	Reg. License	Yes	
A800 PCIe	NVIDIA	Reg. License	Yes	China-specific variant
L4	NVIDIA	Reg. License	Yes	
A100 PCIe (40GB)*	NVIDIA	Reg. License	Yes	Controlled since October 2022
A100 SXM (40GB)*	NVIDIA	Reg. License	Yes	Controlled since October 2022
GeForce RTX 4090	NVIDIA	NAC-eligible	Yes	
RTX 6000 Ada Generation	NVIDIA	NAC-eligible	Yes	
A800 Active	NVIDIA	NAC-eligible	Yes	
L40	NVIDIA	NAC-eligible	Yes	

A40	NVIDIA	NAC-eligible	Yes	
A30	NVIDIA	NAC-eligible	Yes	
H20	NVIDIA	Varies	Yes	China-compliant variant; production suspended in 2025, subject to licensing requirements

Note: This list is not exhaustive nor meant to serve as a compliance substitute. The regulatory landscape continues to evolve, and BIS has indicated that a replacement rule for the rescinded AI Diffusion Rule is forthcoming.

APPENDIX 2

Complete List of Universities and Research Institutions' Acquisition of NVIDIA Chips (July 1, 2025-January 15, 2026)⁷⁶

INSTITUTION	HARDWARE / CHIPS	STATED PURPOSE	CONCERNS / NOTES
China University of Political Science and Law (Sole-source award, July 2025)	2× NVIDIA A800 GPU boards, sold by a reseller ("京原" Beijing Zhongtian Ruihe Technology)	"High-performance GPU cards" – unspecified research/teaching compute.	The A800 was NVIDIA's first China-specific, ⁷⁷ export-compliant part after the October 2022 A100 ban – but the A800 itself was banned from export to China in October 2023. ⁷⁸ Beijing Zhongtian Ruihe Technology Co. Ltd. sold these chips in mid-2025, nearly two years later, suggesting old inventory, refurbished/secondary-market units, or diverted stock. This university is the CCP's premier institution for training judges, prosecutors, and political-legal system personnel, adding political sensitivity beyond the chip issue. ⁷⁹
Southeast University – Regional & Country Studies Institute, corpus-building platform servers (Tender, July 2025)	2× servers, each with 6× NVIDIA RTX 5090 32GB GPUs	Server infrastructure for building a text corpus for the university's regional/area studies institute.	Area-studies institutes in China have been found to sometimes support government foreign-policy and influence work. ⁸⁰
Peking University Health Science Center⁸¹ (People's Hospital AI platform) (Contract awarded on September 5, 2025)	1 lot: NVIDIA Quantum-2 QM9700 + Dell ME5084 storage + Huawei G5500 V7	Medical AI.	Networking hardware is subject to U.S. export controls; it enables the high-speed connections between chips that multiply AI computing power. Peking University has indirect ties to China's defense industry. "PKU is involved in defense research under the supervision of defense agency SASTIND, including nuclear-related physics, technology, and chemical engineering." ⁸²

INSTITUTION	HARDWARE / CHIPS	STATED PURPOSE	CONCERNS / NOTES
Shanghai Maritime University ⁸³ (Tender document, announced September 22, 2025, not yet awarded; identical equipment re-issued via competitive negotiation on November 29, 2025)	2× A800 data center GPUs; 10× RTX 4090 gaming cards	Container terminal remote control.	The university has served as a supplier for the Marine Design and Research Institute of China, which is ultimately owned by the China State Shipbuilding Corporation, a state-owned defense manufacturer. ⁸⁴
University of Chinese Academy of Sciences (UCAS) (Contract awarded, September 2025)	6× Dell PowerEdge XE9680 servers, each with 8× NVIDIA HGX H20 96GB SXM GPUs, plus 4× "KunTai" AI inference servers each with 8× Huawei Ascend 910B4 accelerators.	"Data and science computing platform."	Largest award in the table. UCAS is the graduate university of the Chinese Academy of Sciences (CAS), whose institute network includes units that conduct dual-use and defense-adjacent research. ⁸⁵ The award mixes NVIDIA's China-compliant H20 chip with Huawei's Ascend 910B. Huawei is on the U.S. Entity List. ⁸⁶ Washington restricted H20 exports again in April 2025, months before this September 2025 award, and the chip's export status swung repeatedly through 2025–26. The timing raises questions about how the units were sourced at the time of this order.
Changchun University of Science and Technology – Optical Engineering construction project (Contract awarded, September 2025)	1× laser-communication transceiver test module; 5× NVIDIA L40 GPUs	"High-quality development / Double First-Class" optical engineering build-out.	The university is co-administered by China's State Administration of Science, Technology and Industry for National Defense (SASTIND). ⁸⁷

INSTITUTION	HARDWARE / CHIPS	STATED PURPOSE	CONCERNS / NOTES
Yunnan University of Chinese Medicine (Contract awarded, September 2025)	4× NVIDIA A30 GPU cards	Multimedia-classroom construction (phase 2).	Small-scale classroom AV/compute build-out.
"Computing Card Project" / "Large-Model Data-Processing Graphics Card Project" Buyer listed only as code "zycgr21071303," Shenzhen Nanshan District (Two awards, September 2025 & January 2026)	Award 1: 25× NVIDIA RTX 5880 Ada workstation GPUs Award 2: 6× NVIDIA A100 80GB GPUs	Unspecified "computing cards" / "large-model data processing" compute.	China's government document, the source for this project, uses masked codes (prefix "zycgr" + digits) in place of the purchasing entity's name for certain centrally-administered buyers; other reporting has shown at least one such code independently traced back to a central ministry. ⁸⁸ Here, the same masking pattern covers two separate advanced-GPU purchases, including a second batch of the export-banned A100, by an unnamed Shenzhen entity, i.e., the real end-user of restricted-generation AI chips is not publicly disclosed.
China Academy of Information and Communications Technology (CAICT)⁸⁹ (Contract awarded on November 5, 2025)	4× NVIDIA A100 GPU	Refined communications management platform.	The A100 has been restricted from export to China since October 2022. CAICT is a state-owned institute under China's Ministry of Industry and Information Technology (MIIT). ⁹⁰ MIIT serves as a primary state driver fusing civilian technology development with national intelligence, cyber posture, and defense manufacturing. MIIT acts as a bureaucratic link within China's broader "military-civil fusion" strategy. ⁹¹ Corporate records indicate that the supplier, Unigroup Guoxin, is a subsidiary of Tsinghua Unigroup ⁹² – a state-linked technology conglomerate – and as of June 24, 2026, was not an authorized NVIDIA distributor.

INSTITUTION	HARDWARE / CHIPS	STATED PURPOSE	CONCERNS / NOTES
Xiamen University – Life Sciences School, biology intelligent-teaching platform (phase 2) (Contract awarded, November 2025)	8-GPU server platform with NVIDIA RTX 5090 32GB GPUs, plus a bundled "teaching agent" AI software package	Intelligent/AI-assisted biology teaching platform.	Consumer-class GPUs for an educational AI tutoring tool.
Liaoyang Vocational and Technical College (Tender, November – December 2025)	2× NVIDIA RTX 4090 "48G" cards (modified/aftermarket cards with doubled 48GB VRAM, not a stock NVIDIA SKU)	Data-recovery training lab.	The RTX 4090 itself was named in the U.S.'s October 2023 export restrictions on high-performance consumer GPUs. The "48G" variant here is not a standard NVIDIA product – it reflects a known practice of Chinese resellers re-engineering (re-soldering memory onto) restricted consumer GPUs to boost VRAM for AI workloads, approximating data center GPU capability while nominally selling a "gaming" card.
Southeast University – Computer Science & Engineering School, "industrial big data edge-cloud development system" (Contract awarded, December 2025)	NVIDIA A100 40GB GPU/ Inspur NF5468M6 server, sold as a bundled "cloud data hub" module	Industrial big-data / edge-cloud development platform.	The A100 has been banned for export to China since October 2022. ⁹³ A project listing an A100 in December 2025, more than three years after the ban, again points to continued availability of restricted-generation NVIDIA chips inside China through resale/black and gray-market channels rather than direct authorized import.

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