Morgan Stanley | RESEARCH

UPDATE

August 12, 2026 03:28 PM GMT

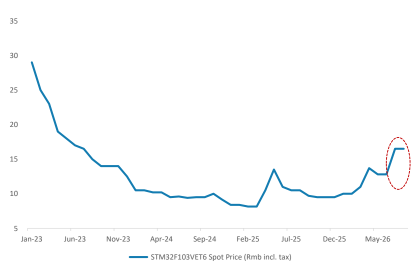
Greater China Technology Semiconductors | Asia Pacific

MCU: Chip inflation continuing in 2H26

Key update:

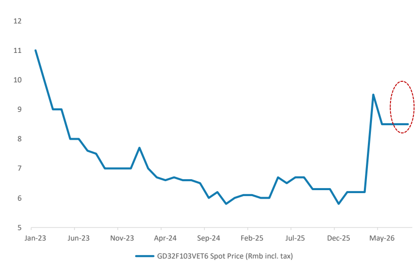
- **Flat spot pricing in August:** STMicro's 32-bit MCU and GigaDevice's (GD) 32-bit MCU spot prices were flat MoM at Rmb16.5 and to Rmb8.5, respectively. STMicro spot pricing saw a 29% MoM increase, as the company notified customers of a new round of contract price adjustments effective June 28, 2026. Separately, local MCU companies such as Nationstech continued to increase prices by another 10-20%, its second round of price hikes this year.
- **Cost side pressure continuing in 2H26:** As mature node foundry suppliers allocate more capacity to AI power-related applications, we expect supply to remain tight for MCU design houses. Recently, some mature node foundries hiked pricing again; we think MCU companies need to raise prices to pass through cost increases.
- **Strong data center demand, but weak consumer:** Data center related demand such as optical transceiver, battery management and power control remains strong, while consumer demand has been weak in the MCU market. As for industrial, demand is good but largely the same as seen last month.
- **Stock implication:** We prefer large MCU players such as GigaDevice and WiFi MCU vendors such as Espressif for their long-term edge AI opportunities. We remain UW on Nuvoton and await GM recovery before turning more constructive.

Exhibit 1: STMicro - 32F103VET6 spot market price trend



Source: Bom.ai, Morgan Stanley Research

Exhibit 2: GigaDevice - 32F103VET6 spot market price trend



Source: Bom.ai, Morgan Stanley Research

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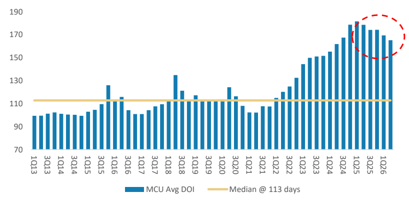
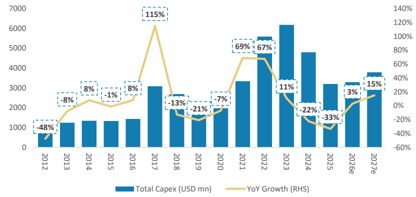
GREATER CHINA TECHNOLOGY SEMICONDUCTORS	
Asia Pacific	
Industry View	**Attractive**

Exhibit 3: Global leading MCU companies inventory days continue to decline



Source: Bloomberg, Morgan Stanley Research

Exhibit 4: Capex expected to recover to meet AI data demand



Source: Bloomberg, Morgan Stanley Research. Bloomberg consensus forecasts for estimate years.

Valuation Methodology and Risks

Nuvoton Technology Corporation (4919.TW)

Base case, residual income model. We assume a 9.2% cost of equity (beta 1.2, risk-free rate 2.0% and risk premium 6.0%), a payout ratio of 55%, a medium-term growth rate of 7.0%, and a terminal growth rate of 3.5%.

Risks to Upside

- MCU up-cycle is more sustained than expected.
- China's MCU localization is faster than expected.
- Traction from auto and BMC business is greater.
- Margin improvement is more significant.

Risks to Downside

- MCU up-cycle ends earlier with severe pricing erosion.
- China's MCU localization is slower than expected.
- Traction from auto and BMC business is less.
- Margins contract amid more intensified competition.

GigaDevice Semiconductor Beijing Inc (603986.SS)

Our price target is our base case value, derived from our residual income model. Key assumptions: cost of equity of 8.9% (beta 1.1, risk-free rate 2% and risk premium 6%), a payout ratio of 40%, medium-term growth rate of 16.4%, and a terminal growth rate of 3.0%.

Risks to Upside

- NOR up-cycle driven by stronger demand
- Superior chip design, leading to increasing exposure to low-density NOR
- Faster-than-expected DRAM development

Risks to Downside

- NOR down-cycle driven by weaker demand
- Inferior chip design, leading to increasing exposure to mid-/high-density NOR
- Slower-than-expected DRAM development

Espressif Systems (688018.SS)

Base case, residual income model. We assume an 8.9% cost of equity (beta 1.1, risk-free rate 2.0% and risk premium 6.0%), a payout ratio of 40%, a medium-term growth rate of 18.5%, and a terminal growth rate of 4.5%.

Risks to Upside

- China's MCU localization goes faster than expected.
- Gains traction from new customers.
- Margin expansion is more significant.

Risks to Downside

- China's MCU localization pace is slower than expected.
- Traction from new customers is less than expected.
- Margins erode amid more intense competition.

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(as of July 31, 2026)

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Equal-weight/Hold	1582	43%	396	42%	25%	773	44%
Not-Rated/Hold	3	0%	1	0%	33%	1	0%
Underweight/Sell	560	15%	97	10%	17%	217	12%
Total	3,674		936			1741	

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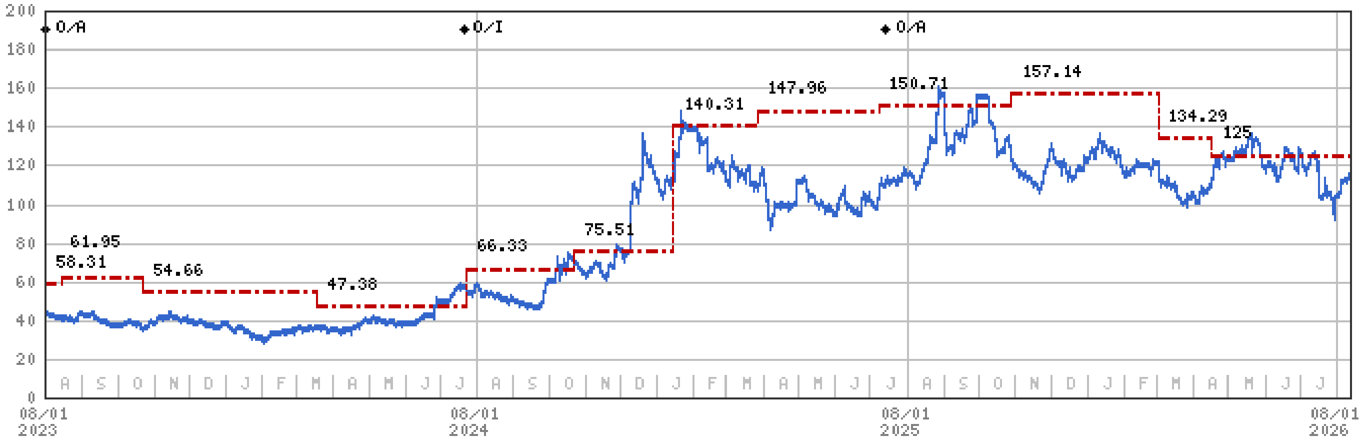
Espressif Systems (688018.SS) - As of 08/12/26 GMT in CNY
Industry : Greater China Technology Semiconductors



Stock Rating History: 8/1/21 : U/I; 10/12/21 : U/C; 10/4/22 : U/A; 2/22/23 : U/I; 5/15/23 : O/I; 7/7/23 : O/A; 7/21/24 : O/I; 7/14/25 : O/A

Price Target History: 7/19/21 : 72.89; 1/19/22 : 54.66; 3/12/22 : 47.38; 5/11/22 : 28.43; 10/18/22 : 24.05; 2/22/23 : 34.26; 5/15/23 : 58.31; 8/14/23 : 61.95; 10/23/23 : 54.66; 3/18/24 : 47.38; 7/23/24 : 66.33; 10/23/24 : 75.51; 1/15/25 : 140.31; 3/27/25 : 147.96; 7/8/25 : 150.71; 10/28/25 : 157.14; 3/2/26 : 134.29; 4/17/26 : 125

Source: Morgan Stanley Research   Date Format : MM/DD/YY   Price Target   No Price Target Assigned (NA)
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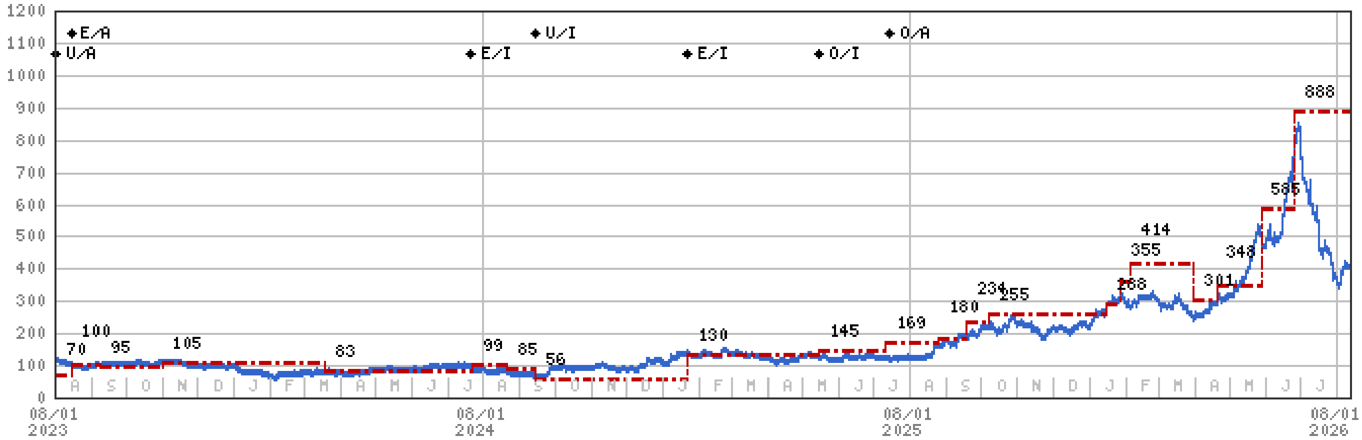

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Price Target History: 7/19/21 : 222; 8/12/21 : 233; 9/17/21 : 208; 10/19/21 : 150; 12/3/21 : 222; 4/29/22 : 192; 7/5/22 : 168; 7/13/22 : 120; 8/27/22 : 122; 9/28/22 : 105; 10/18/22 : 72; 5/2/23 : 70; 8/14/23 : 100; 9/8/23 : 95; 10/31/23 : 105; 3/18/24 : 83; 7/23/24 : 99; 8/21/24 : 85; 9/15/24 : 56; 1/22/25 : 130; 5/15/25 : 145; 7/11/25 : 169; 8/25/25 : 180; 9/18/25 : 234; 10/7/25 : 255; 1/16/26 : 288; 1/28/26 : 355; 2/5/26 : 414; 3/31/26 : 301; 4/20/26 : 348; 5/28/26 : 585; 6/26/26 : 888

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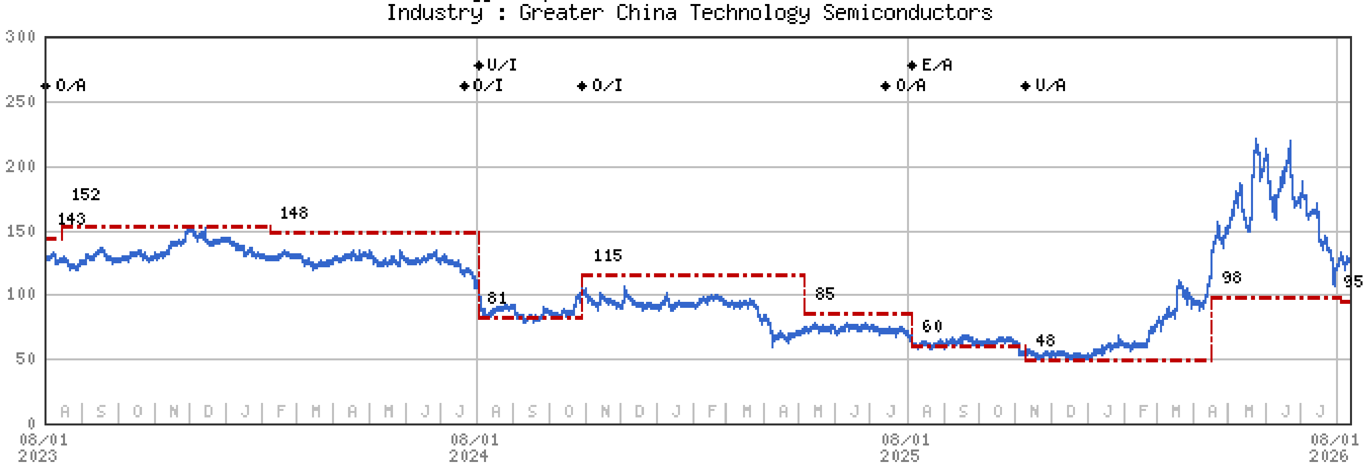

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Price Target History: 7/19/21 : 155; 8/5/21 : 200; 1/17/22 : 212; 5/6/22 : 242; 7/12/22 : 168; 5/15/23 : 143; 8/14/23 : 152; 2/7/24 : 148; 8/2/24 : 81; 10/29/24 : 115; 5/7/25 : 85; 8/6/25 : 60; 11/10/25 : 48; 4/17/26 : 98; 8/5/26 : 95

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INDUSTRY COVERAGE: Greater China Technology Semiconductors

COMPANY (TICKER)	RATING (AS OF)	PRICE* (08/12/2026)
Charlie Chan		

ACM Research Inc (ACMR.O)	O (03/07/2023)	US$79.92
Advanced Micro-Fabrication Equipment Inc (688012.SS)	O (11/06/2023)	Rmb380.95
Advanced Wireless Semiconductor Co (8086.TWO)	U (07/14/2025)	NT$119.00
Alchip Technologies Ltd (3661.TW)	O (05/14/2021)	NT$4,055.00
ASE Technology Holding Co. Ltd. (3711.TW)	O (09/15/2024)	NT$621.00
Cambricon Technology Corporation (688256.SS)	O (04/27/2026)	Rmb1,105.38
Global Unichip Corp (3443.TW)	O (06/24/2026)	NT$5,130.00
GlobalWafers Co Ltd (6488.TWO)	E (05/19/2026)	NT$933.00
Gudeng Precision (3680.TWO)	O (11/25/2025)	NT$452.50
Hua Hong Semiconductor Ltd (1347.HK)	E (03/12/2026)	HK$142.80
Iluvatar CoreX Semiconductor Co., Ltd. (9903.HK)	O (04/27/2026)	HK$416.60
King Yuan Electronics Co Ltd (2449.TW)	O (03/03/2023)	NT$259.00
Maxscend Microelectronics Co Ltd (300782.SZ)	U (01/11/2021)	Rmb80.12
MediaTek (2454.TW)	O (11/28/2025)	NT$4,015.00
MetaX Integrated Circuits (688802.SS)	E (04/27/2026)	Rmb715.29
Nanya Technology Corp. (2408.TW)	O (05/28/2026)	NT$482.50
NAURA Technology Group Co Ltd (002371.SZ)	O (11/06/2023)	Rmb760.00
OmniVision Integrated Circuits Group Inc (603501.SS)	E (11/17/2025)	Rmb91.52
Phison Electronics Corp (8299.TWO)	E (02/25/2026)	NT$2,210.00
SG Micro Corp. (300661.SZ)	E (11/03/2025)	Rmb116.02
Silergy Corp. (6415.TW)	U (05/19/2026)	NT$449.00
SMIC (0981.HK)	O (10/21/2025)	HK$67.40
TSMC (2330.TW)	O (02/07/2022)	NT$2,415.00
UMC (2303.TW)	O (05/19/2026)	NT$123.00
Vanguard International Semiconductor (5347.TWO)	E (01/14/2026)	NT$159.50
WIN Semiconductors Corp (3105.TWO)	U (07/14/2025)	NT$400.00
Daisy Dai, CFA		
ASMPT Ltd (0522.HK)	O (07/24/2025)	HK$169.50
China Resources Microelectronics Limited (688396.SS)	U (03/02/2026)	Rmb62.02
Empyrean Technology Co Ltd (301269.SZ)	E (01/17/2025)	Rmb98.35
Hangzhou Silan Microelectronics Co. Ltd. (600460.SS)	U (08/25/2025)	Rmb32.85
Hygon Information Technology Co., Ltd. (688041.SS)	O (07/03/2026)	Rmb287.66
Innoscience (2577.HK)	E (10/13/2025)	HK$44.78
JCET Group Co Ltd (600584.SS)	E (01/16/2026)	Rmb78.18
Shanghai Fudan Microelectronics (1385.HK)	O (03/07/2025)	HK$26.98
SICC Co Ltd (688234.SS)	O (03/20/2026)	Rmb110.36
StarPower Semiconductor Ltd (603290.SS)	E (05/14/2026)	Rmb88.19
Unigroup Guoxin Microelectronics Co Ltd (002049.SZ)	U (01/10/2023)	Rmb67.28
Universal Scientific Ind. (Shanghai) (601231.SS)	O (11/05/2025)	Rmb28.13
Yangjie Technology (300373.SZ)	O (06/10/2022)	Rmb96.64
Daniel Yen, CFA		
AP Memory Technology Corp (6531.TW)	O (07/11/2025)	NT$878.00
ASMedia Technology Inc (5269.TW)	U (10/03/2025)	NT$1,440.00
Aspeed Technology (5274.TWO)	O (06/09/2025)	NT$17,370.00
Egis Technology Inc (6462.TWO)	E (01/28/2026)	NT$101.50
Elan Microelectronics Corp (2458.TW)	O (10/03/2025)	NT$146.00
Espressif Systems (688018.SS)	O (05/15/2023)	Rmb114.10
GigaDevice Semiconductor Beijing Inc (603986.SS)	O (05/15/2025)	Rmb413.17
Macronix International Co Ltd (2337.TW)	O (09/18/2025)	NT$136.50
Montage Technology Co Ltd (6809.HK)	O (03/18/2026)	HK$283.00
Montage Technology Co Ltd (688008.SS)	O (03/18/2026)	Rmb215.43
Novatek (3034.TW)	U (02/04/2026)	NT$537.00
Nuvoton Technology Corporation (4919.TW)	U (11/10/2025)	NT$125.50
Parade Technologies Ltd (4966.TWO)	O (05/27/2026)	NT$591.00
Powerchip Semiconductor Manufacturing Co (6770.TW)	O (10/27/2025)	NT$73.70

Realtek Semiconductor (2379.TW)	E (01/30/2026)	NT$766.00
Shenzhen Goodix Technology Co Ltd (603160.SS)	U (07/14/2025)	Rmb52.20
Winbond Electronics Corp (2344.TW)	O (05/28/2026)	NT$177.00
WPG Holdings (3702.TW)	O (03/16/2026)	NT$122.50
WT Microelectronics Co. Ltd. (3036.TW)	O (01/27/2026)	NT$217.50
Duan Liu		
Dosilicon Co Ltd (688110.SS)	U (09/06/2024)	Rmb114.69
Shenzhen Longsys Electronics Co Ltd (301308.SZ)	E (02/25/2026)	Rmb414.30
Tiffany Yeh		
AllRing Tech Co. (6187.TWO)	O (09/23/2025)	NT$1,155.00
FOCI Fiber Optic Communications Inc (3363.TWO)	O (01/15/2025)	NT$630.00
Himax Technologies Inc (HIMX.O)	E (02/04/2026)	US$14.98
Hon Precision (7769.TW)	O (04/17/2026)	NT$6,480.00
MPI Corporation (6223.TWO)	O (04/17/2026)	NT$6,600.00
Silicon Motion (SIMO.O)	O (05/06/2024)	US$224.00
WinWay Technology Co Ltd (6515.TW)	O (04/17/2026)	NT$7,170.00

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* Historical prices are not split adjusted.