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UPDATE

May 12, 2026 07:09 AM GMT

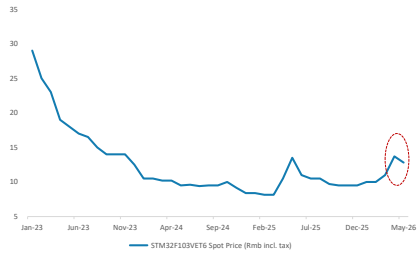
Greater China Technology Semiconductors | Asia Pacific

May MCU Spot Prices: STM's 32-Bit down 7% MoM, while GD's 32-Bit down 11% MoM

Key update:

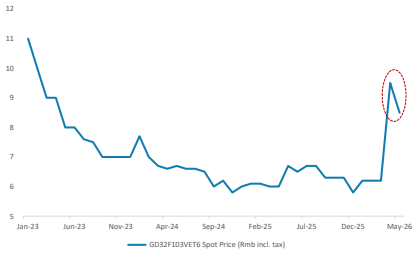
- In May, STMicro's 32-bit MCU fell 7% MoM to Rmb12.8, and GigaDevice's (GD) 32-bit MCU spot price fell 11% MoM to Rmb8.5. Following STMicro's price adjustment, we noticed GigaDevice hiked price again effective 1 May.
- Despite contract price hikes, spot prices declined in May as overall demand remains lukewarm; only server and drone demand remains robust. As for supply, we believe mature node foundries are likely to hike prices again, which could pressure MCU design houses' gross margin.
- We still expect an 'L-shaped' recovery unless we see a meaningful decline in memory prices or a pickup in edge AI. We prefer large MCU players (e.g., GigaDevice) and WiFi MCU vendors (Espressif) for long-term edge AI opportunities, while we remain UW on Nuvoton, waiting for GM recovery before turning more positive on the stock.

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**

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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 of Rmb301 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 April 30, 2026)

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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1546	42%	467	51%	30%	709	44%
Equal-weight/Hold	1568	43%	358	39%	23%	715	44%
Not-Rated/Hold	4	0%	0	0%	0%	1	0%
Underweight/Sell	555	15%	84	9%	15%	202	12%
Total	3,673		909			1627	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

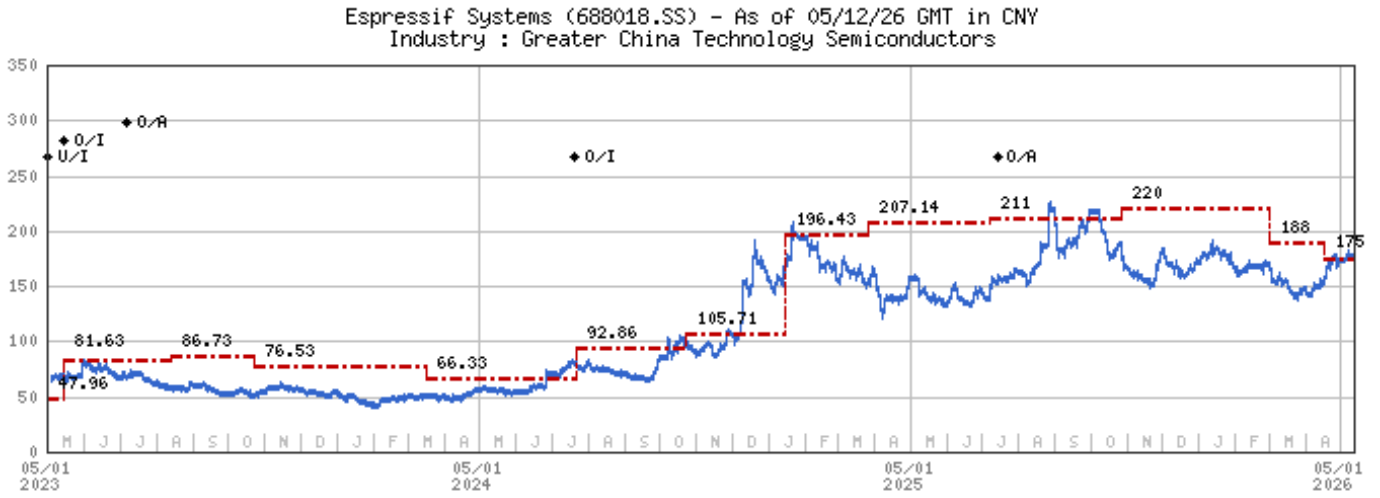
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Stock Price, Price Target and Rating History (See Rating Definitions)



Stock Rating History: 7/19/21 : 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

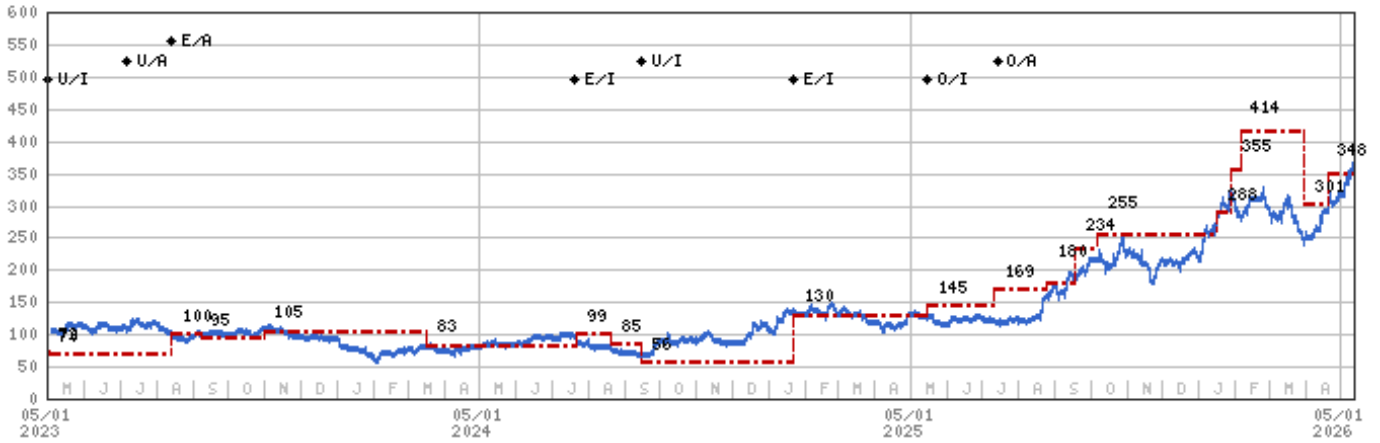
Price Target History: 7/19/21 : 102.04; 1/19/22 : 76.53; 3/12/22 : 66.33; 5/11/22 : 39.8; 10/18/22 : 33.67; 2/22/23 : 47.96; 5/15/23 : 81.63; 8/14/23 : 86.73; 10/23/23 : 76.53; 3/18/24 : 66.33; 7/23/24 : 92.86; 10/23/24 : 105.71; 1/15/25 : 196.43; 3/27/25 : 207.14; 7/8/25 : 211; 10/28/25 : 220; 3/2/26 : 188; 4/17/26 : 175

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
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GigaDevice Semiconductor Beijing Inc (603986.SS) - As of 05/12/26 GMT in CNY
Industry : Greater China Technology Semiconductors



Stock Rating History: 5/1/21 : O/I; 10/12/21 : O/C; 10/19/21 : E/C; 12/3/21 : O/C; 7/13/22 : E/C; 10/4/22 : E/A; 10/18/22 : U/A; 2/22/23 : U/I; 7/7/23 : U/A; 8/14/23 : E/A; 7/21/24 : E/I; 9/15/24 : U/I; 1/22/25 : E/I; 5/15/25 : O/I; 7/14/25 : O/A

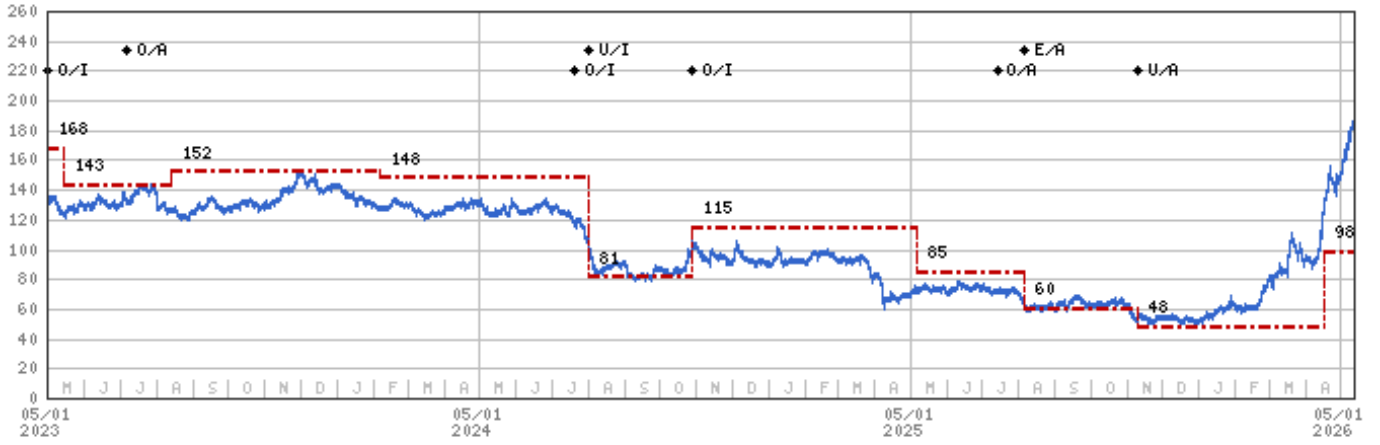
Price Target History: 3/19/21 : 157.14; 5/27/21 : 175; 7/19/21 : 222; 8/12/21 : 233; 9/17/21 : 208; 10/19/21 : 150; 12/3/21 : 222; 4/29/22 : 192; 7/5/22 : 168; 7/13/22 : 120; 8/27/22 : 122; 9/28/22 : 105; 10/18/22 : 72; 5/2/23 : 70; 8/14/23 : 100; 9/8/23 : 95; 10/31/23 : 105; 3/18/24 : 83; 7/23/24 : 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

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
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Nuvoton Technology Corporation (4919.TW) - As of 05/12/26 GMT in TWD
Industry : Greater China Technology Semiconductors



Stock Rating History: 7/19/21 : O/I; 10/12/21 : O/C; 10/4/22 : O/A; 2/22/23 : O/I; 7/7/23 : O/A; 7/21/24 : O/I; 8/2/24 : U/I; 10/29/24 : O/I; 7/14/25 : O/A; 8/6/25 : E/A; 11/10/25 : U/A

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

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
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INDUSTRY COVERAGE: Greater China Technology Semiconductors

COMPANY (TICKER)	RATING (AS OF)	PRICE* (05/12/2026)

Charlie Chan

ACM Research Inc (ACMR.O)	O (03/07/2023)	US$64.67
Advanced Micro-Fabrication Equipment Inc (688012.SS)	O (11/06/2023)	Rmb383.64
Advanced Wireless Semiconductor Co (8086.TWO)	U (07/14/2025)	NT$162.00
Alchip Technologies Ltd (3661.TW)	O (05/14/2021)	NT$5,310.00
ASE Technology Holding Co. Ltd. (3711.TW)	O (09/15/2024)	NT$555.00
Cambricon Technology Corporation (688256.SS)	O (04/27/2026)	Rmb1,200.00
Global Unichip Corp (3443.TW)	O (07/27/2024)	NT$5,570.00
GlobalWafers Co Ltd (6488.TWO)	O (09/19/2025)	NT$835.00
Gudeng Precision (3680.TWO)	O (11/25/2025)	NT$616.00
Hua Hong Semiconductor Ltd (1347.HK)	E (03/12/2026)	HK$134.00
Iluvatar CoreX Semiconductor Co., Ltd. (9903.HK)	O (04/27/2026)	HK$533.00
King Yuan Electronics Co Ltd (2449.TW)	O (03/03/2023)	NT$301.00
Maxscend Microelectronics Co Ltd (300782.SZ)	U (01/11/2021)	Rmb107.39
MediaTek (2454.TW)	O (11/28/2025)	NT$3,700.00
MetaX Integrated Circuits (688802.SS)	E (04/27/2026)	Rmb787.50
Nanya Technology Corp. (2408.TW)	E (03/20/2026)	NT$321.00
NAURA Technology Group Co Ltd (002371.SZ)	O (11/06/2023)	Rmb573.19
OmniVision Integrated Circuits Group Inc (603501.SS)	E (11/17/2025)	Rmb101.38
Phison Electronics Corp (8299.TWO)	E (02/25/2026)	NT$2,670.00
SG Micro Corp. (300661.SZ)	E (11/03/2025)	Rmb98.40
Silergy Corp. (6415.TW)	E (04/21/2026)	NT$476.50
SMIC (0981.HK)	O (10/21/2025)	HK$76.60
TSMC (2330.TW)	O (02/07/2022)	NT$2,255.00
UMC (2303.TW)	E (04/20/2026)	NT$104.50
Vanguard International Semiconductor (5347.TWO)	E (01/14/2026)	NT$174.50
WIN Semiconductors Corp (3105.TWO)	U (07/14/2025)	NT$526.00
Daisy Dai, CFA		
ASMPT Ltd (0522.HK)	O (07/24/2025)	HK$173.40
China Resources Microelectronics Limited (688396.SS)	U (03/02/2026)	Rmb59.70
Elan Microelectronics Corp (2458.TW)	O (10/03/2025)	NT$145.50
Empyrean Technology Co Ltd (301269.SZ)	E (01/17/2025)	Rmb94.42
Hangzhou Silan Microelectronics Co. Ltd. (600460.SS)	U (08/25/2025)	Rmb30.47
Innoscience (2577.HK)	E (10/13/2025)	HK$68.15
JCET Group Co Ltd (600584.SS)	E (01/16/2026)	Rmb55.83
Shanghai Fudan Microelectronics (1385.HK)	O (03/07/2025)	HK$44.80
SICC Co Ltd (688234.SS)	O (03/20/2026)	Rmb125.25
StarPower Semiconductor Ltd (603290.SS)	O (03/01/2022)	Rmb111.15
Unigroup Guoxin Microelectronics Co Ltd (002049.SZ)	U (01/10/2023)	Rmb81.94
Universal Scientific Ind. (Shanghai) (601231.SS)	O (11/05/2025)	Rmb41.18
Yangjie Technology (300373.SZ)	O (06/10/2022)	Rmb77.73
Daniel Yen, CFA		
AP Memory Technology Corp (6531.TW)	O (07/11/2025)	NT$1,055.00
ASMedia Technology Inc (5269.TW)	U (10/03/2025)	NT$1,525.00
Aspeed Technology (5274.TWO)	O (06/09/2025)	NT$17,825.00
Egis Technology Inc (6462.TWO)	E (01/28/2026)	NT$129.50
Espressif Systems (688018.SS)	O (05/15/2023)	Rmb176.68
GigaDevice Semiconductor Beijing Inc (603986.SS)	O (05/15/2025)	Rmb362.13
Macronix International Co Ltd (2337.TW)	O (09/18/2025)	NT$153.00
Montage Technology Co Ltd (6809.HK)	O (03/18/2026)	HK$418.60
Montage Technology Co Ltd (688008.SS)	O (03/18/2026)	Rmb249.22
Novatek (3034.TW)	U (02/04/2026)	NT$487.00
Nuvoton Technology Corporation (4919.TW)	U (11/10/2025)	NT$181.00
Parade Technologies Ltd (4966.TWO)	E (01/30/2026)	NT$735.00
Powerchip Semiconductor Manufacturing Co (6770.TW)	O (10/27/2025)	NT$62.10
Realtek Semiconductor (2379.TW)	E (01/30/2026)	NT$555.00

Shenzhen Goodix Technology Co Ltd (603160.SS)	U (07/14/2025)	Rmb67.24
Winbond Electronics Corp (2344.TW)	E (03/20/2026)	NT$121.50
WPG Holdings (3702.TW)	O (03/16/2026)	NT$114.00
WT Microelectronics Co. Ltd. (3036.TW)	O (01/27/2026)	NT$275.50
Duan Liu		
Dosilicon Co Ltd (688110.SS)	U (09/06/2024)	Rmb165.30
Shenzhen Longsys Electronics Co Ltd (301308.SZ)	E (02/25/2026)	Rmb556.66
Tiffany Yeh		
AllRing Tech Co. (6187.TWO)	O (09/23/2025)	NT$1,110.00
FOCI Fiber Optic Communications Inc (3363.TWO)	O (01/15/2025)	NT$853.00
Himax Technologies Inc (HIMX.O)	E (02/04/2026)	US$20.65
Hon Precision (7769.TW)	O (04/17/2026)	NT$6,870.00
MPI Corporation (6223.TWO)	O (04/17/2026)	NT$4,985.00
Silicon Motion (SIMO.O)	O (05/06/2024)	US$262.05
Winway Technology Co Ltd (6515.TW)	O (04/17/2026)	NT$9,950.00

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