

HANA MICROELECTRONICS

THAILAND / ELECTRONIC COMPONENT

HANA TB

BUY

UNCHANGED

Bet on a recovery in 2H24

- The 1H24 purchase order recovery outlook remains slow due to weak purchasing power. Also, HANA does not get any positive impact from AI growth.
- Maintain a 2H24 recovery optimism, especially SiC, which could reach EBITDA breakeven.
- Cut our profit estimate and TP to THB50, but share price plunges have factored in a slow recovery.

TARGET PRICE	THB50.00
CLOSE	THB36.75
UP/DOWNSIDE	+36.1%
PRIOR TP	THB60.00
CHANGE IN TP	-16.7%
TP vs CONSENSUS	-1.6%

KEY STOCK DATA

YE Dec (THB m)	2023	2024E	2025E	2026E
Revenue	26,152	26,260	28,108	29,998
Net profit	1,761	2,189	2,442	2,707
EPS (THB)	1.99	2.47	2.76	3.06
vs Consensus (%)	-	(8.3)	(2.4)	(6.1)
EBITDA	3,752	4,058	4,426	4,732
Recurring net profit	2,009	2,189	2,442	2,707
Core EPS (THB)	2.27	2.47	2.76	3.06
Chg. In EPS est. (%)	nm	(5.7)	(8.1)	nm
EPS growth (%)	(23.8)	8.9	11.5	10.9
Core P/E (x)	16.2	14.9	13.3	12.0
Dividend yield (%)	2.7	3.0	3.4	5.0
EV/EBITDA (x)	6.7	6.2	5.5	4.9
Price/book (x)	1.1	1.1	1.0	1.0
Net debt/Equity (%)	(26.0)	(24.7)	(25.7)	(29.1)
ROE (%)	7.6	7.4	7.9	8.4

1H24 demand and purchase orders remain dull

We have a neutral view of the analyst meeting on March 5, 2024. The overall tone is in line. Management guided that 1Q24-2Q24 purchase orders would not recover due to IC and SiC mainly from weak Chinese demand. Although Gartner forecasted global semiconductor sales in 2024 would resume growth of 17% y-y, it would get support mainly from AI-related products. Since HANA does not have any product in this segment, it may not grow in line with the industry outlook. Despite that, we anticipate an indirect positive impact from smartphone sales, which started to recover in 4Q23. Also, we expect continued growth in 2024 due to an AI system upgrade in smartphones, even though HANA does not know if customers use its products for production in the AI segment.

Expect a recovery in 2H24, especially SiC

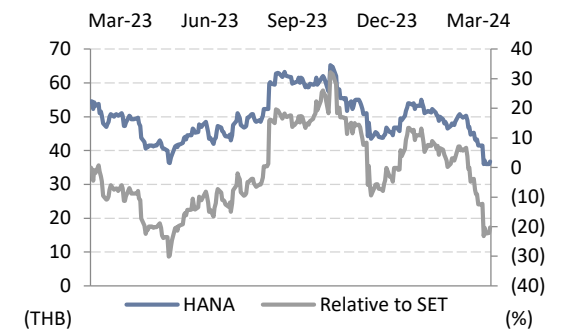
Management anticipates a recovery in 2H24 due to IC PCBA and SiC (under PMS in South Korea) after a completed installation of machinery. It can help support more SiC revenue since PMS currently generates 85% of its revenue from Si. In 2024, the focus is still on Solar, Data centers, and EV charging stations, while HANA is qualifying on-board EVs. If successful, HANA will begin to realize them in 2025. Management targets PMS to achieve EBITDA breakeven by the end of 2024 or early 2025. Meanwhile, the write-off of SiC inventory of THB262m in 4Q23 should be a one-time event. Also, it should not reoccur after machinery improvement.

1Q24 should be the trough of this year

In the short term, we expect a q-q profit recovery in 1Q24 due to an absence of extra items. Also, it would get support from Baht weakness. As a result, the gross margin should recover q-q and y-y. The profit recovery should continue in 2Q24. Besides, the earnings should resume its normalized quarterly level of THB600-700m in 2H24. However, given a slower-than-expected 1H24 recovery outlook, we have decreased our 2024-26E net profit by 5-10%. Despite such cuts, our 2024E core profit still implies a growth of 9% y-y.

Slash TP to THB50 but retain a BUY call to bet on a 2H24 recovery

Similarly, we have cut our TP to THB50 from THB60 after we decreased our PE target to 20x from 23x to reflect a lower-than-expected profit growth. However, share price plunges of 33% YTD has factored in the disappointing 4Q23 profit and a slow recovery. Hence, we retain our BUY rating on HANA.



Share price performance	1 Month	3 Month	12 Month
Absolute (%)	(26.9)	(19.2)	(32.6)
Relative to country (%)	(25.5)	(17.8)	(20.3)
Mkt cap (USD m)	909		
3m avg. daily turnover (USD m)	14.3		
Free float (%)	58		
Major shareholder	OMAC and related companies (29%)		
12m high/low (THB)	66.25/35.25		
Issued shares (m)	885.36		

Sources: Bloomberg consensus; FSSIA estimates



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Investment thesis

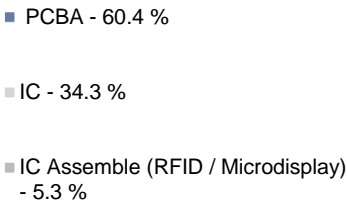
HANA is a leading EMS provider in Southeast Asia with a long experience of over 45 years. Since its inception in 1978, although it is mainly a midstream producer, it has strength in its diversification to several end products, such as telecommunications, computers, consumer products, automobiles, radio frequency identification (RFID), and medical products. Also, it has manufacturing bases in several countries while constantly developing new products, i.e., SiC, to catch up with industrial customer demands, particularly in EVs.

Company profile

HANA provides integrated electronic manufacturing services (EMS), including IC PCBA, RFID, and LCOS. It has seven manufacturing bases in Thailand, China, the U.S., Cambodia, and South Korea, with a total production area of 1.7m SQF and over 10,000 employees worldwide. At the end of 2023, HANA generated revenue from PCBA (61% of total revenue), followed by IC (31%), RFID (6%), and SiC (2%).

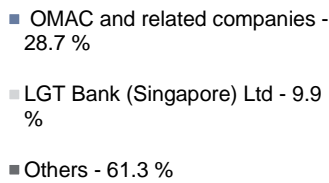
www.hanagroup.com

Principal activities (revenue, 2023)



Source: Hana Microelectronics

Major shareholders



Source: Hana Microelectronics

Catalysts

Potential catalysts for HANA’s earnings growth in 2024 are 1) a recovery in the global economy and purchasing power, especially in China, 2) a decrease in raw material costs, and 3) a faster-than-expected capacity expansion.

Risks to our call

Downside risks to our P/E-based TP include 1) a slower-than-expected recovery in the global economy and purchasing power, 2) higher-than-expected raw material costs, 3) Baht strength, and 4) higher minimum wage and labor shortages.

Event calendar

Date	Event
May 2024	1Q24 results announcement

Key assumptions

	2024E	2025E	2026E
USD total revenue (USD m)	796	852	909
SiC revenue (USD m)	35	65	98
FX rate (USD/THB)	33	33	33
THB revenue growth (%)	0.4	7.0	6.7
Gross margin (%)	13.0	13.4	13.7

Source: FSSIA estimates

Earnings sensitivity

- For every THB1/USD increase, we estimate 2024 net profit to fall by 6.8%, and vice versa, all else being equal.
- For every 0.5% increase in GPM, we estimate 2024 net profit to rise by 5.7%, and vice versa, all else being equal.
- For every 0.2% increase in SG&A, we estimate 2024 net profit to fall by 1.3%, and vice versa, all else being equal.
- For every 10% increase in labour cost, we estimate 2024 net profit to fall by 6.6%, and vice versa, all else being equal.

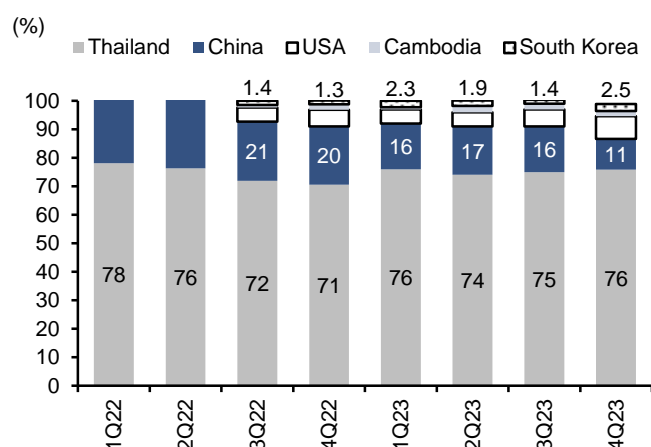
Source: FSSIA estimates

Exhibit 1: HANA - 1Q24 earnings preview

	1Q23	2Q23	3Q23	4Q23	1Q24E	Change		
	(THB m)	(THB m)	(THB m)	(THB m)	(THB m)	(q-q%)	(y-y%)	
Total revenue	6,466	6,910	6,555	6,221	6,272	0.8	(3.0)	
Cost of sales	5,913	5,871	5,523	5,602	5,582	(0.4)	(5.6)	
Gross profit	553	1,039	1,031	619	690	11.5	24.7	
SG&A	382	392	449	408	395	(3.1)	3.5	
Operating profit	171	646	582	211	295	39.8	72.0	
Interest expense	1.8	8.0	17.4	24.7	25.0	1.3	1312.4	
Tax expense	12	33	21	20	20	(0.0)	68.7	
Reported net profit	266	635	734	125	375	200.3	40.7	
Core profit	295	749	674	291	375	29.0	27.2	
Key Ratios (%)							(ppt)	(ppt)
Gross margin	8.6	15.0	15.7	9.9	11.0	1.1	2.4	
SG&A to sales	5.9	5.7	6.9	6.6	6.3	(0.3)	0.4	
Operating margin	2.7	9.4	8.9	3.4	4.7	1.3	2.0	
Net margin	4.1	9.2	11.2	2.0	6.0	4.0	1.9	
Core margin	4.6	10.8	10.3	4.7	6.0	1.3	1.4	

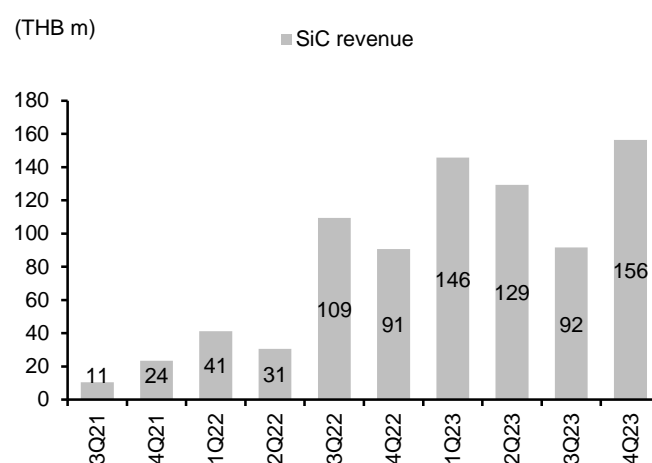
Sources: HANA; FSSIA estimates

Exhibit 2: Revenue breakdown by plant location



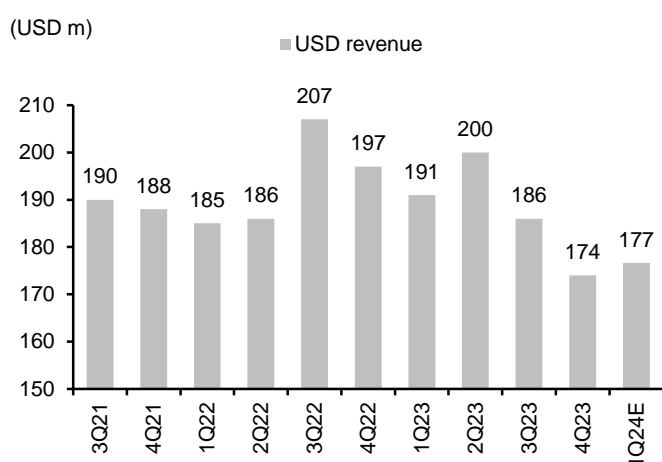
Sources: HANA

Exhibit 3: Quarterly SiC revenue



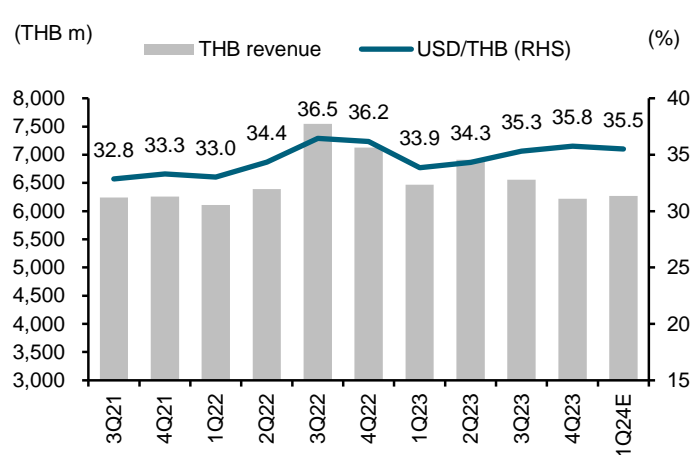
Sources: HANA

Exhibit 4: Quarterly USD revenue



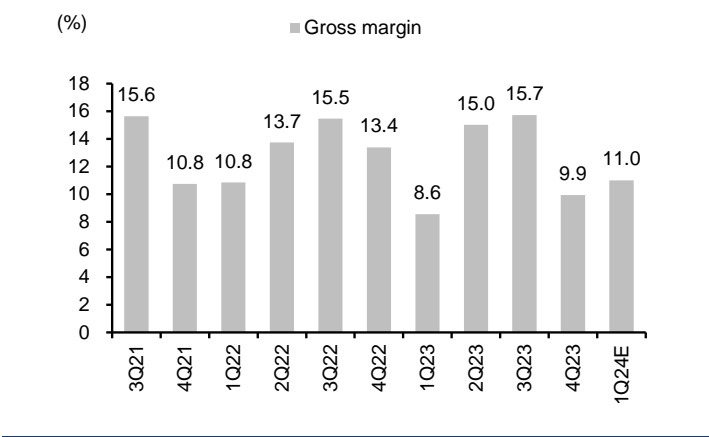
Sources: HANA, FSSIA estimates

Exhibit 5: Quarterly THB revenue



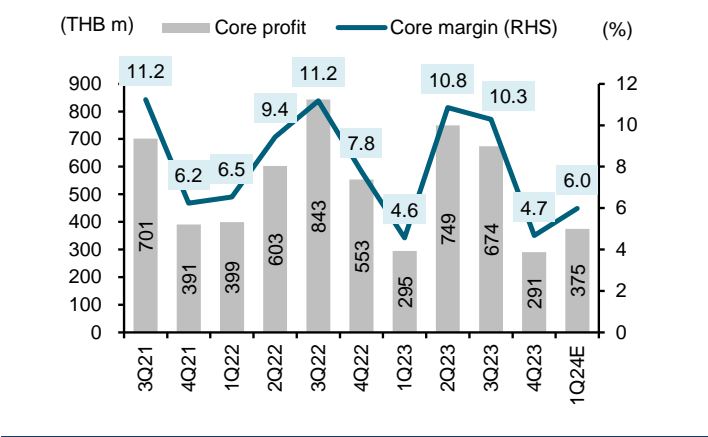
Sources: HANA, FSSIA estimates

Exhibit 6: Quarterly gross margin



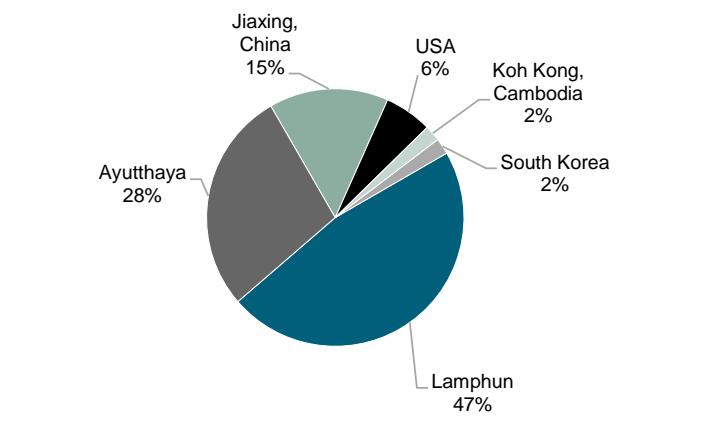
Sources: HANA, FSSIA estimates

Exhibit 7: Quarterly core profit and core margin



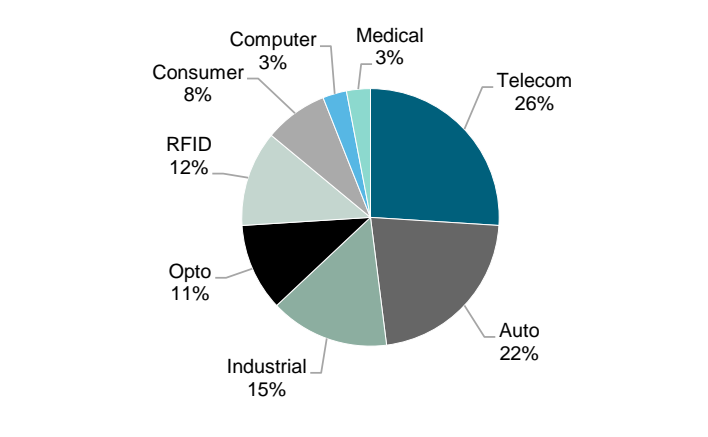
Sources: HANA, FSSIA estimates

Exhibit 8: Revenue breakdown by plant location in 2023



Source: HANA

Exhibit 9: Revenue breakdown by end application in 2023

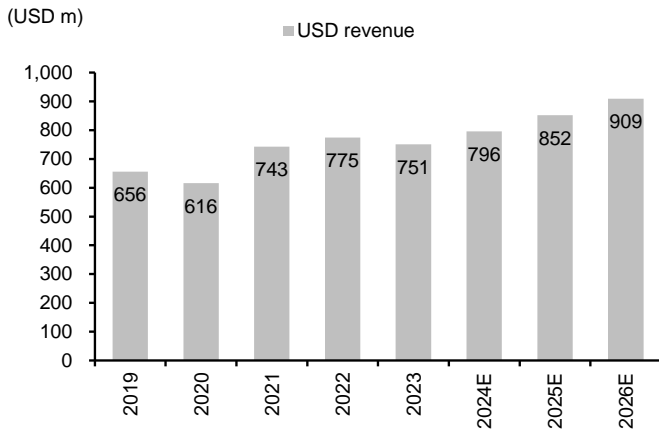


Source: HANA

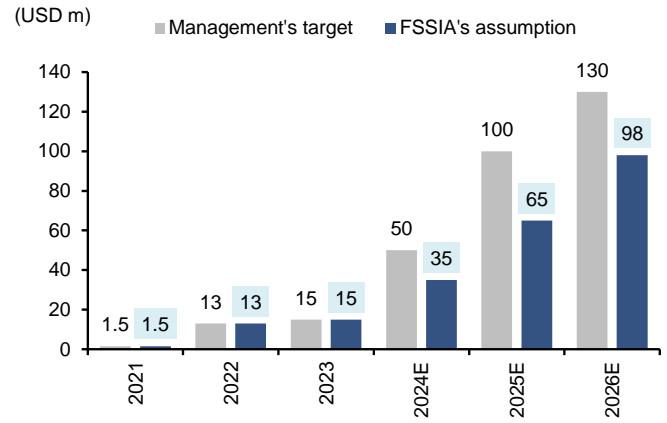
Exhibit 10: Changes in key assumptions for HANA

	Current			Previous			Change		
	2024E (THB m)	2025E (THB m)	2026E (THB m)	2024E (THB m)	2025E (THB m)	2026E (THB m)	2024E (%)	2025E (%)	2026E (%)
Total sale value (THB m)	26,260	28,108	29,998	26,895	29,931	32,967	(2.4)	(6.1)	(9.0)
Costs	22,846	24,341	25,888	23,280	25,836	28,378	(1.9)	(5.8)	(8.8)
Gross profit	3,414	3,766	4,110	3,615	4,095	4,589	(5.6)	(8.0)	(10.4)
SG&A expense	1,654	1,771	1,890	1,694	1,886	2,077	(2.4)	(6.1)	(9.0)
Interest expense	19	15	15	19	15	15	0.0	0.0	0.0
Reported net profit	2,189	2,442	2,707	2,322	2,658	3,019	(5.7)	(8.1)	(10.3)
Core profit	2,189	2,442	2,707	2,322	2,658	3,019	(5.7)	(8.1)	(10.3)
EPS (THB/share)	2.47	2.76	3.06	2.62	3.00	3.41	(5.7)	(8.1)	(10.3)
Key ratios (%)									
Total revenue growth	0.4	7.0	6.7	2.8	11.3	10.1	(2.4)	(4.3)	(3.4)
Net profit growth	24.3	11.5	10.9	31.9	14.5	13.6	(7.6)	(2.9)	(2.7)
Core profit growth	8.9	11.5	10.9	15.6	14.5	13.6	(6.6)	(2.9)	(2.7)
Gross margin	13.0	13.4	13.7	13.4	13.7	13.9	(0.4)	(0.3)	(0.2)
SG&A to sales	6.3	6.3	6.3	6.3	6.3	6.3	0.0	0.0	0.0
Net margin	8.3	8.7	9.0	8.6	8.9	9.2	(0.3)	(0.2)	(0.1)
Core margin	8.3	8.7	9.0	8.6	8.9	9.2	(0.3)	(0.2)	(0.1)
Operating statistics									
Total revenue (USD m)	796	852	909	815	907	999	(2.4)	(6.1)	(9.0)
SiC revenue (USD m)	35	65	98	48	90	132	(27.1)	(27.8)	(25.8)
FX rate (THB/USD)	33.0	33.0	33.0	33.0	33.0	33.0	0.0	0.0	0.0

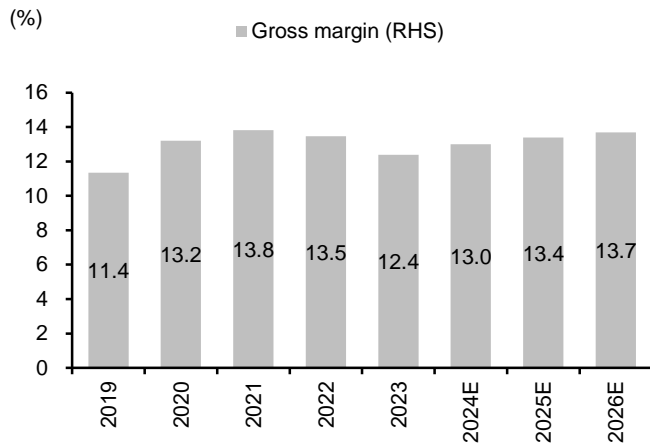
Source: FSSIA estimates

Exhibit 11: Yearly USD revenue


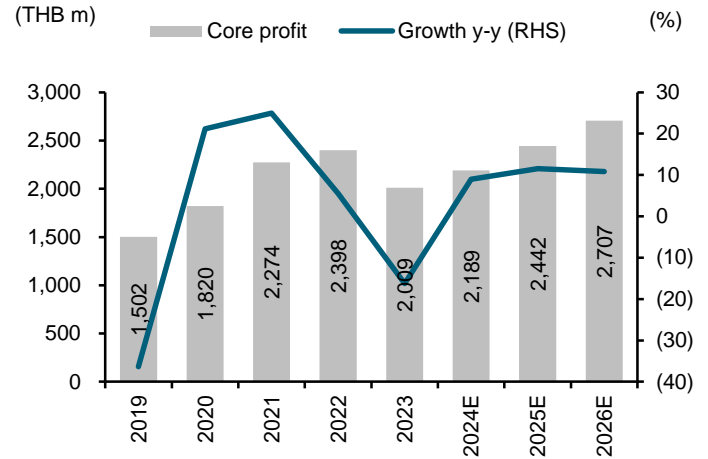
Sources: HANA; FSSIA estimates

Exhibit 12: Yearly SiC revenue


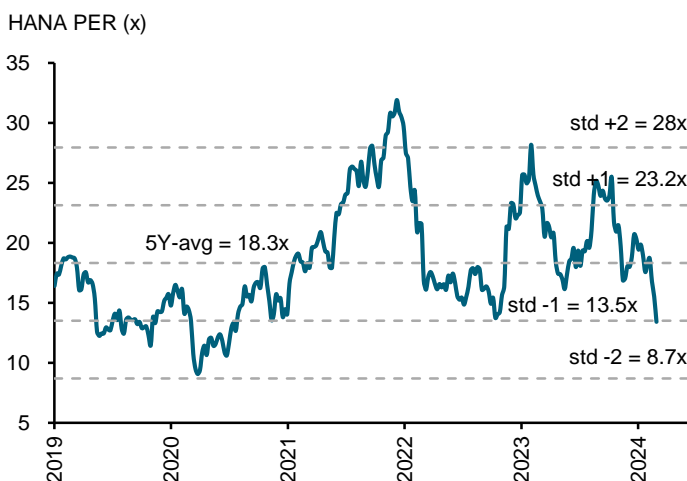
Sources: HANA, FSSIA estimates

Exhibit 13: Yearly gross margin


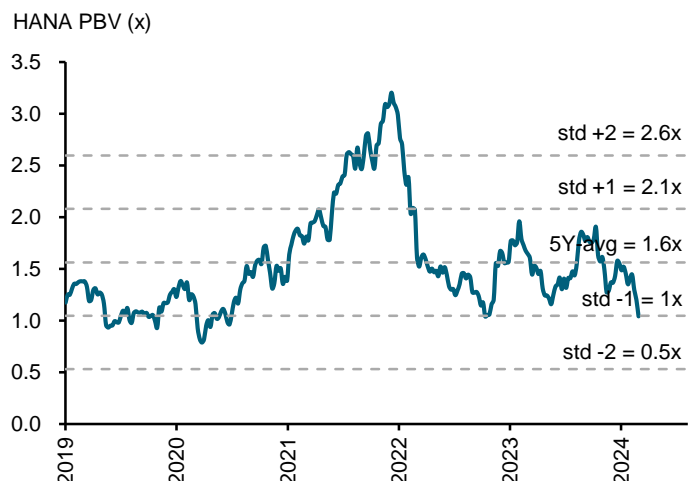
Sources: HANA; FSSIA estimates

Exhibit 14: Yearly core profit and growth


Sources: HANA; FSSIA estimates

Exhibit 15: Historical P/E band


Sources: Bloomberg, FSSIA estimates

Exhibit 16: Historical P/BV band


Sources: Bloomberg, FSSIA estimates

Financial Statements

Hana Microelectronics

Profit and Loss (THB m) Year Ending Dec	2022	2023	2024E	2025E	2026E
Revenue	27,167	26,152	26,260	28,108	29,998
Cost of goods sold	(23,506)	(22,910)	(22,846)	(24,341)	(25,888)
Gross profit	3,661	3,242	3,414	3,766	4,110
Other operating income	458	439	446	478	510
Operating costs	(1,695)	(1,631)	(1,654)	(1,771)	(1,890)
Operating EBITDA	4,054	3,752	4,058	4,426	4,732
Depreciation	(1,630)	(1,702)	(1,852)	(1,952)	(2,002)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	2,425	2,050	2,206	2,473	2,730
Net financing costs	81	45	86	83	105
Associates	0	0	0	0	0
Recurring non-operating income	0	0	0	0	0
Non-recurring items	(296)	(249)	0	0	0
Profit before tax	2,209	1,846	2,292	2,557	2,835
Tax	(107)	(85)	(103)	(115)	(128)
Profit after tax	2,102	1,761	2,189	2,442	2,707
Minority interests	0	0	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	2,102	1,761	2,189	2,442	2,707
Non-recurring items & goodwill (net)	296	249	0	0	0
Recurring net profit	2,398	2,009	2,189	2,442	2,707
Per share (THB)					
Recurring EPS *	2.98	2.27	2.47	2.76	3.06
Reported EPS	2.61	1.99	2.47	2.76	3.06
DPS	1.00	1.00	1.11	1.24	1.83
Diluted shares (used to calculate per share data)	805	885	885	885	885
Growth					
Revenue (%)	14.2	(3.7)	0.4	7.0	6.7
Operating EBITDA (%)	15.1	(7.5)	8.2	9.1	6.9
Operating EBIT (%)	9.2	(15.5)	7.6	12.1	10.4
Recurring EPS (%)	5.4	(23.8)	8.9	11.5	10.9
Reported EPS (%)	36.0	(23.9)	24.3	11.5	10.9
Operating performance					
Gross margin inc. depreciation (%)	13.5	12.4	13.0	13.4	13.7
Gross margin exc. depreciation (%)	19.5	18.9	20.1	20.3	20.4
Operating EBITDA margin (%)	14.9	14.3	15.5	15.7	15.8
Operating EBIT margin (%)	8.9	7.8	8.4	8.8	9.1
Net margin (%)	8.8	7.7	8.3	8.7	9.0
Effective tax rate (%)	4.9	4.6	4.5	4.5	4.5
Dividend payout on recurring profit (%)	33.6	44.1	45.0	45.0	60.0
Interest cover (X)	(29.9)	(45.4)	(25.5)	(29.7)	(26.0)
Inventory days	136.1	158.6	154.1	147.5	147.2
Debtor days	64.0	70.9	71.0	67.7	67.8
Creditor days	64.0	65.0	56.7	52.7	52.6
Operating ROIC (%)	10.2	7.7	7.8	8.4	9.2
ROIC (%)	9.9	7.5	7.7	8.3	9.0
ROE (%)	10.2	7.6	7.4	7.9	8.4
ROA (%)	8.1	6.1	6.1	6.7	7.1

* Pre-exceptional, pre-goodwill and fully diluted

Revenue by Division (THB m)	2022	2023	2024E	2025E	2026E
PCBA	15,214	15,791	16,107	16,912	18,265
IC	10,595	8,962	8,726	9,697	10,115
IC Assemble (RFID / Microdisplay)	1,358	1,399	1,427	1,498	1,618

Sources: Hana Microelectronics; FSSIA estimates

Financial Statements

Hana Microelectronics

Cash Flow (THB m) Year Ending Dec	2022	2023	2024E	2025E	2026E
Recurring net profit	2,398	2,009	2,189	2,442	2,707
Depreciation	1,630	1,702	1,852	1,952	2,002
Associates & minorities	-	-	-	-	-
Other non-cash items	24	(241)	0	0	0
Change in working capital	(2,626)	(491)	63	(695)	(716)
Cash flow from operations	1,426	2,980	4,104	3,699	3,994
Capex - maintenance	-	-	-	-	-
Capex - new investment	(2,821)	(2,550)	(3,000)	(2,000)	(1,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	14	162	(21)	(28)	(28)
Cash flow from investing	(2,807)	(2,389)	(3,021)	(2,028)	(1,028)
Dividends paid	(1,191)	(859)	(985)	(1,099)	(1,624)
Equity finance	0	4,588	0	0	0
Debt finance	(2)	1,280	(1,280)	0	0
Other financing cash flows	209	(342)	(191)	55	57
Cash flow from financing	(984)	4,667	(2,457)	(1,043)	(1,568)
Non-recurring cash flows	-	-	-	-	-
Other adjustments	0	0	0	0	0
Net other adjustments	0	0	0	0	0
Movement in cash	(2,365)	5,258	(1,374)	628	1,398
Free cash flow to firm (FCFF)	(1,368.15)	643.40	1,101.54	1,686.10	2,965.63
Free cash flow to equity (FCFE)	(1,174.20)	1,529.93	(389.12)	1,726.43	3,022.33
Per share (THB)					
FCFF per share	(1.55)	0.73	1.24	1.90	3.35
FCFE per share	(1.33)	1.73	(0.44)	1.95	3.41
Recurring cash flow per share	5.03	3.92	4.56	4.96	5.32
Balance Sheet (THB m) Year Ending Dec	2022	2023	2024E	2025E	2026E
Tangible fixed assets (gross)	28,300	29,984	32,984	34,984	35,984
Less: Accumulated depreciation	(17,446)	(18,283)	(20,135)	(22,087)	(24,089)
Tangible fixed assets (net)	10,853	11,701	12,849	12,897	11,895
Intangible fixed assets (net)	0	0	0	0	0
Long-term financial assets	72	72	72	72	72
Invest. in associates & subsidiaries	-	-	-	-	-
Cash & equivalents	3,634	8,893	7,518	8,146	9,544
A/C receivable	4,981	5,178	5,036	5,391	5,753
Inventories	9,457	8,969	8,763	9,336	9,930
Other current assets	171	119	131	141	150
Current assets	18,243	23,159	21,449	23,014	25,377
Other assets	534	373	394	422	450
Total assets	29,703	35,306	34,764	36,404	37,794
Common equity	23,862	29,147	30,292	31,634	32,717
Minorities etc.	0	0	0	0	0
Total shareholders' equity	23,862	29,147	30,292	31,634	32,717
Long term debt	0	204	0	0	0
Other long-term liabilities	813	921	788	843	900
Long-term liabilities	814	1,125	788	843	900
A/C payable	4,161	3,391	3,130	3,334	3,546
Short term debt	274	1,105	30	30	30
Other current liabilities	593	538	525	562	600
Current liabilities	5,027	5,034	3,685	3,927	4,176
Total liabilities and shareholders' equity	29,703	35,306	34,764	36,404	37,794
Net working capital	9,856	10,338	10,276	10,971	11,687
Invested capital	21,316	22,485	23,591	24,362	24,103
* Includes convertibles and preferred stock which is being treated as debt					
Per share (THB)					
Book value per share	29.65	32.92	34.21	35.73	36.95
Tangible book value per share	29.65	32.92	34.21	35.73	36.95
Financial strength					
Net debt/equity (%)	(14.1)	(26.0)	(24.7)	(25.7)	(29.1)
Net debt/total assets (%)	(11.3)	(21.5)	(21.5)	(22.3)	(25.2)
Current ratio (x)	3.6	4.6	5.8	5.9	6.1
CF interest cover (x)	(19.3)	(89.4)	(29.2)	(43.7)	(37.3)
Valuation	2022	2023	2024E	2025E	2026E
Recurring P/E (x) *	12.3	16.2	14.9	13.3	12.0
Recurring P/E @ target price (x) *	16.8	22.0	20.2	18.1	16.4
Reported P/E (x)	14.1	18.5	14.9	13.3	12.0
Dividend yield (%)	2.7	2.7	3.0	3.4	5.0
Price/book (x)	1.2	1.1	1.1	1.0	1.0
Price/tangible book (x)	1.2	1.1	1.1	1.0	1.0
EV/EBITDA (x) **	6.5	6.7	6.2	5.5	4.9
EV/EBITDA @ target price (x) **	9.1	9.8	9.1	8.2	7.3
EV/invested capital (x)	1.2	1.1	1.1	1.0	1.0
* Pre-exceptional, pre-goodwill and fully diluted ** EBITDA includes associate income and recurring non-operating income					

Sources: Hana Microelectronics; FSSIA estimates

Hana Microelectronics PCL (HANA TB)

FSSIA ESG rating


56.35 /100

Exhibit 17: FSSIA ESG score implication

Rating	Score	Implication
★★★★★	>79-100	Leading its industry peers in managing the most significant ESG risks which not only better cost efficiency but also lead to higher profitability.
★★★★★	>59-79	A mixed track record of managing the most significant ESG risks and opportunities relative to industry peers.
★★★	>39-59	Relevant ESG materiality matrix has been constructively addressed, well-managed and incorporated into day-to-day operations, in which targets and achievements are evaluated annually.
★★	>19-39	Relevant ESG materiality matrix has been identified with key management in charge for progress to be followed up on and to provide intensive disclosure. Most targets are conventional and achievable.
★	1-19	The company has adopted the United Nations Sustainable Development Goals (UN SDGs), established sustainability management guidelines and fully complies with regulations or ESG suggested guidance from related organizations such as the SET and SEC.

Sources: FSSIA estimates

Exhibit 18: ESG – peer comparison

	FSSIA ESG score	Domestic ratings						Global ratings					Bloomberg		
		DJSI	SET THSI	THSI	CG score	AGM level	Thai CAC	Morningstar ESG risk	ESG Book	MSCI	Moody's	Refinitiv	S&P Global	ESG score	Disclosure score
SET100	69.20	5.34	4.40	4.40	4.76	4.65	3.84	Medium	51.76	BBB	20.87	58.72	63.91	3.72	28.17
Coverage	67.12	5.11	4.15	4.17	4.83	4.71	3.53	Medium	52.04	BB	16.97	56.85	62.09	3.40	31.94
DELTA	87.59	Y	Y	Y	5.00	5.00	Certified	Low	68.81	AA	--	91.19	74.00	4.15	--
HANA	56.35	--	Y	Y	5.00	5.00	Certified	Negligible	56.93	BBB	--	44.01	31.00	1.81	--
KCE	45.77	--	--	--	5.00	5.00	Certified	Medium	52.70	--	--	61.53	16.00	2.16	52.98

Sources: [SETTRADE.com](https://www.settrade.com); FSSIA's compilation

Exhibit 19: ESG score by Bloomberg

FY ending Dec 31	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
ESG financial materiality scores - ESG score	0.91	0.98	0.99	1.39	1.61	1.81	—
BESG environmental pillar score	0.00	0.00	0.00	0.00	0.00	0.00	—
BESG social pillar score	0.37	0.37	0.37	1.14	1.63	1.66	—
BESG governance pillar score	3.51	3.89	3.96	3.95	3.95	4.88	—
ESG disclosure score	25.98	25.98	25.98	30.50	36.02	36.02	—
Environmental disclosure score	1.66	1.66	1.66	7.13	22.92	22.92	—
Social disclosure score	15.90	15.90	15.90	24.00	24.79	24.79	—
Governance disclosure score	60.26	60.26	60.26	60.26	60.26	60.26	—
Environmental							
Emissions reduction initiatives	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Climate change policy	No	No	No	Yes	Yes	Yes	Yes
Climate change opportunities discussed	No	No	No	Yes	Yes	Yes	Yes
Risks of climate change discussed	No	No	No	No	No	No	No
GHG scope 1	—	—	—	—	1	1	1
GHG scope 2 location-based	—	—	—	26	26	23	23
GHG Scope 3	—	—	—	—	—	—	—
Carbon per unit of production	—	—	—	—	—	—	—
Biodiversity policy	No	No	No	No	No	No	No
Energy efficiency policy	No	No	No	No	No	No	Yes
Total energy consumption	—	—	—	—	—	—	—
Renewable energy use	—	—	—	—	—	—	—
Electricity used	—	—	—	—	—	—	—
Fuel used - natural gas	—	—	—	—	—	—	—

Sources: Bloomberg; FSSIA's compilation

Exhibit 20: ESG score by Bloomberg (cont.)

FY ending Dec 31	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Fuel used - crude oil/diesel	No	No	No	No	No	No	No
Waste reduction policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hazardous waste	—	—	—	—	—	—	—
Total waste	—	—	—	—	—	—	—
Waste recycled	—	—	—	—	—	—	—
Waste sent to landfills	—	—	—	—	—	—	—
Environmental supply chain management	No	No	No	No	Yes	Yes	Yes
Water policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Water consumption	—	—	—	—	—	—	—
Social							
Human rights policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Policy against child labor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quality assurance and recall policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Consumer data protection policy	No	No	No	No	No	No	No
Equal opportunity policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender pay gap breakout	No	No	No	No	No	No	No
Pct women in workforce	—	—	—	73	73	72	—
Pct disabled in workforce	—	—	—	1	1	1	—
Business ethics policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Anti-bribery ethics policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Health and safety policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lost time incident rate - employees	—	—	—	0	0	0	—
Total recordable incident rate - employees	—	—	—	—	—	—	—
Training policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fair remuneration policy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of employees – CSR	4,038	3,947	3,969	3,957	3,742	3,636	3,324
Employee turnover pct	—	—	—	—	—	—	—
Total hours spent by firm - employee training	199,881	165,774	182,574	197,850	179,616	207,252	150,148
Social supply chain management	No	No	No	No	Yes	Yes	Yes
Governance							
Board size	6	6	6	6	6	6	8
No. of independent directors (ID)	3	3	3	3	3	3	4
No. of women on board	1	1	1	1	1	1	2
No. of non-executive directors on board	3	3	3	3	3	3	4
Company conducts board evaluations	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of board meetings for the year	7	7	7	7	7	7	6
Board meeting attendance pct	100	100	100	100	100	100	100
Board duration (years)	—	—	—	—	—	—	—
Director share ownership guidelines	No	No	No	No	No	No	No
Age of the youngest director	56	53	54	55	56	57	58
Age of the oldest director	82	72	73	73	74	75	65
No. of executives / company managers	5	5	5	5	5	5	6
No. of female executives	1	1	1	1	1	1	1
Executive share ownership guidelines	No	No	No	No	No	No	No
Size of audit committee	3	3	3	3	3	3	4
No. of ID on audit committee	3	3	3	3	3	3	4
Audit committee meetings	4	4	4	4	4	4	4
Audit meeting attendance %	100	100	100	100	100	100	100
Size of compensation committee	0	0	0	0	0	0	0
No. of ID on compensation committee	—	—	—	—	—	—	—
No. of compensation committee meetings	—	—	—	—	—	—	—
Compensation meeting attendance %	—	—	—	—	—	—	—
Size of nomination committee	3	3	3	3	3	3	4
No. of nomination committee meetings	3	2	3	3	2	3	3
Nomination meeting attendance %	100	100	100	100	100	100	100
Sustainability governance							
Verification type	No	No	No	No	No	No	No

Sources: Bloomberg; FSSIA's compilation

Disclaimer for ESG scoring

ESG score	Methodology		Rating																				
The Dow Jones Sustainability Indices (DJSI) By S&P Global	The DJSI World applies a transparent, rules-based component selection process based on the companies' Total Sustainability Scores resulting from the annual S&P Global Corporate Sustainability Assessment (CSA). Only the top-ranked companies within each industry are selected for inclusion.		Be a member and invited to the annual S&P Global Corporate Sustainability Assessment (CSA) for DJSI. Companies with an S&P Global ESG Score of less than 45% of the S&P Global ESG Score of the highest scoring company are disqualified. The constituents of the DJSI indices are selected from the Eligible Universe.																				
Sustainability Investment List (THSI) by The Stock Exchange of Thailand (SET)	THSI quantifies responsibility in Environmental and Social issues by managing business with transparency in Governance, updated annually. Candidates must pass the preemptive criteria, with two crucial conditions: 1) no irregular trading of the board members and executives; and 2) free float of >150 shareholders, and combined holding must be >15% of paid-up capital. Some key disqualifying criteria include: 1) CG score of below 70%; 2) independent directors and free float violation; 3) executives' wrongdoing related to CG, social & environmental impacts; 4) equity in negative territory; and 5) earnings in red for > 3 years in the last 5 years.		To be eligible for THSI inclusion , verified data must be scored at a minimum of 50% for each indicator, unless the company is a part of DJSI during the assessment year. The scoring will be fairly weighted against the nature of the relevant industry and materiality. SETTHSI Index is extended from the THSI companies whose 1) market capitalization > THB5b (~USD150b); 2) free float >20%; and 3) liquidity >0.5% of paid-up capital for at least 9 out of 12 months. The SETTHSI Index is a market capitalisation-weighted index, cap 5% quarterly weight at maximum, and no cap for number of stocks.																				
CG Score by Thai Institute of Directors Association (Thai IOD)	An indicator of CG strength in sustainable development, measured annually by the Thai IOD, with support from the Stock Exchange of Thailand (SET). The results are from the perspective of a third party, not an evaluation of operations.		Scores are rated in six categories: 5 for Excellent (90-100), 4 for Very Good (80-89), 3 for Good (70-79), 2 for Fair (60-69), 1 for Pass (60-69), and not rated for scores below 50. Weightings include: 1) the rights; 2) and equitable treatment of shareholders (weight 25% combined); 3) the role of stakeholders (25%); 4) disclosure & transparency (15%); and 5) board responsibilities (35%).																				
AGM level By Thai Investors Association (TIA) with support from the SEC	It quantifies the extent to which shareholders' rights and equitable treatment are incorporated into business operations and information is transparent and sufficiently disclosed. All form important elements of two out of five the CG components to be evaluated annually. The assessment criteria cover AGM procedures before the meeting (45%), at the meeting date (45%), and after the meeting (10%). <i>(The first assesses 1) advance circulation of sufficient information for voting; and 2) facilitating how voting rights can be exercised. The second assesses 1) the ease of attending meetings; 2) transparency and verifiability; and 3) openness for Q&A. The third involves the meeting minutes that should contain discussion issues, resolutions and voting results.)</i>		The scores are classified into four categories: 5 for Excellent (100), 4 for Very Good (90-99), 3 for Fair (80-89), and not rated for scores below 79.																				
Thai CAC By Thai Private Sector Collective Action Against Corruption (CAC)	The core elements of the Checklist include corruption risk assessment, establishment of key controls, and the monitoring and developing of policies. The Certification is good for three years. <i>(Companies deciding to become a CAC certified member start by submitting a Declaration of Intent to kick off an 18-month deadline to submit the CAC Checklist for Certification, including risk assessment, in place of policy and control, training of managers and employees, establishment of whistleblowing channels, and communication of policies to all stakeholders.)</i>		The document will be reviewed by a committee of nine professionals. A passed Checklist will move for granting certification by the CAC Council approvals whose members are twelve highly respected individuals in professionalism and ethical achievements.																				
Morningstar Sustainability	The Sustainability's ESG risk rating provides an overall company score based on an assessment of how much of a company's exposure to ESG risk is unmanaged. <i>Sources to be reviewed include corporate publications and regulatory filings, news and other media, NGO reports/websites, multi-sector information, company feedback, ESG controversies, issuer feedback on draft ESG reports, and quality & peer reviews.</i>		A company's ESG risk rating score is the sum of unmanaged risk. The more risk is unmanaged, the higher ESG risk is scored. <table><tr><th>NEGL</th><th>Low</th><th>Medium</th><th>High</th><th>Severe</th></tr><tr><td>0-10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40+</td></tr></table>	NEGL	Low	Medium	High	Severe	0-10	10-20	20-30	30-40	40+										
NEGL	Low	Medium	High	Severe																			
0-10	10-20	20-30	30-40	40+																			
ESG Book	The ESG score identifies sustainable companies that are better positioned to outperform over the long term. The methodology considers the principle of financial materiality including information that significantly helps explain future risk-adjusted performance. Materiality is applied by over-weighting features with higher materiality and rebalancing these weights on a rolling quarterly basis.		The total ESG score is calculated as a weighted sum of the features scores using materiality-based weights. The score is scaled between 0 and 100 with higher scores indicating better performance.																				
MSCI	MSCI ESG ratings aim to measure a company's management of financially relevant ESG risks and opportunities. It uses a rules-based methodology to identify industry leaders and laggards according to their exposure to ESG risks and how well they manage those risks relative to peers. <table><tr><td>AAA</td><td>8.571-10.000</td><td rowspan="3">Leader:</td><td rowspan="3">leading its industry in managing the most significant ESG risks and opportunities</td></tr><tr><td>AA</td><td>7.143-8.570</td></tr><tr><td>A</td><td>5.714-7.142</td></tr><tr><td>BBB</td><td>4.286-5.713</td><td rowspan="3">Average:</td><td rowspan="3">a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers</td></tr><tr><td>BB</td><td>2.857-4.285</td></tr><tr><td>B</td><td>1.429-2.856</td></tr><tr><td>CCC</td><td>0.000-1.428</td><td>Laggard:</td><td>lagging its industry based on its high exposure and failure to manage significant ESG risks</td></tr></table>			AAA	8.571-10.000	Leader:	leading its industry in managing the most significant ESG risks and opportunities	AA	7.143-8.570	A	5.714-7.142	BBB	4.286-5.713	Average:	a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers	BB	2.857-4.285	B	1.429-2.856	CCC	0.000-1.428	Laggard:	lagging its industry based on its high exposure and failure to manage significant ESG risks
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B	1.429-2.856																						
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Moody's ESG solutions	Moody's assesses the degree to which companies take into account ESG objectives in the definition and implementation of their strategy policies. It believes that a company integrating ESG factors into its business model and relatively outperforming its peers is better positioned to mitigate risks and create sustainable value for shareholders over the medium to long term.																						
Refinitiv ESG rating	Designed to transparently and objectively measure a company's relative ESG performance, commitment and effectiveness across 10 main themes, based on publicly available and auditable data. The score ranges from 0 to 100 on relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly. <i>(Score ratings are 0 to 25 = poor; >25 to 50 = satisfactory; >50 to 75 = good; and >75 to 100 = excellent.)</i>																						
S&P Global	The S&P Global ESG Score is a relative score measuring a company's performance on and management of ESG risks, opportunities, and impacts compared to its peers within the same industry classification. The score ranges from 0 to 100.																						
Bloomberg	ESG Score	Bloomberg score evaluating the company's aggregated Environmental, Social and Governance (ESG) performance. The score is based on Bloomberg's view of ESG financial materiality. The score is a weighted generalized mean (power mean) of Pillar Scores, where the weights are determined by the pillar priority ranking. Values range from 0 to 10; 10 is the best.																					
Bloomberg	ESG Disclosure Score	Disclosure of a company's ESG used for Bloomberg ESG score. The score ranges from 0 for none to 100 for disclosure of every data point, measuring the amount of ESG data reported publicly, and not the performance on any data point.																					

[Rating](#) regarding the sustainable development of Thai listed companies, both on the SET and MAI, are publicly available on the website of the Securities and Exchange Commission of Thailand (SEC). Currently, ratings available are 1) "**CG Score**"; 2) "**AGM Level**"; 3) "**Thai CAC**"; and 4) **THSI**. The ratings are updated on an annual basis. FSSIA does not confirm nor certify the accuracy of such ratings.
Source: FSSIA's compilation

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Sureeporn Teewasuwet FSS International Investment Advisory Securities Co., Ltd

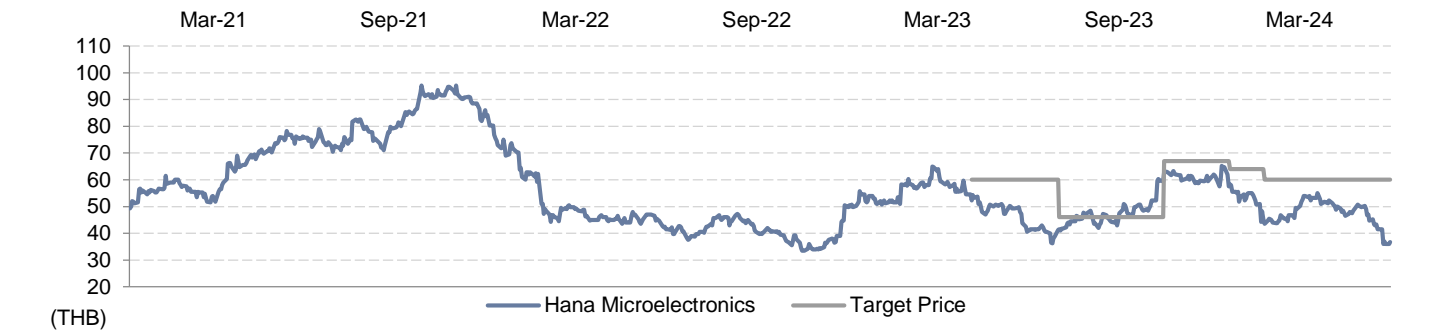
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History of change in investment rating and/or target price

Hana Microelectronics (HANA TB)



Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
07-Mar-2023	HOLD	60.00	21-Aug-2023	BUY	67.00	16-Nov-2023	BUY	60.00
22-May-2023	BUY	46.00	17-Oct-2023	BUY	64.00			

Sureeporn Teewasuwet started covering this stock from 07-Mar-2023

Price and TP are in local currency

Source: FSSIA estimates

Company	Ticker	Price	Rating	Valuation & Risks
Hana Microelectronics	HANA TB	THB 36.75	BUY	Downside risks to our P/E-based TP include 1) a slower-than-expected consumption recovery; 2) a potential rise in raw material costs; and 3) a stronger-than-expected THB against USD.

Source: FSSIA estimates

Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finansia Syrus Securities Public Company Limited.

All share prices are as at market close on 05-Mar-2024 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as $(\text{target price}^* - \text{current price}) / \text{current price}$.

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

Industry Recommendations

Overweight. The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

Neutral. The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

Underweight. The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (O). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.