

Technology

MacBook Air M3 – Apple's entry into AI PC arena

Apple unveiled new MacBook Air M3 models yesterday (5 March), claiming the device “the world's best consumer laptop for AI”. We believe the new device suggested a pivotal role for AI in Apple's product roadmap in 2024. Leveraging Apple's proprietary M3 chip, the new laptop is built to run most optimized LLMs (and diffusion models) at edge, and enable powerful camera features, real-time speech to text, translation, text predictions, and visual understanding features. Following Apple's recent strategic shift towards generative AI, we expect more new software development in upcoming Worldwide Developers Conference (WWDC) in June, with iOS 18 and macOS 15 anticipated to bring more AI features on its ecosystem across iPhones, iPads, Watches and AirPods. Overall, we believe Apple and other industry leaders are set to boost AI-related investment, and edge AI (PC/smartphone/IoT), will emerge as new growth drivers for brands such as **Xiaomi, Apple, Lenovo and Transsion**, as well as supply chain such as **BYDE, Luxshare and Huaqin**.

- **M3 chip powered MacBook Air released.** M3 MacBook model come with an 8-core CPU and 8- or 10-core GPU, and is manufactured using the TSMC 3nm process. With the M3 chip, the latest MacBook Air offers a 16-core Neural Engine that can run optimized AI models at the edge as well as the built-in GPU that allows for mesh shading and ray tracing. Apple claims that the M3 performance is up to 60% faster when compared with M1, while both the CPU and GPU are more than 20% faster than the M2 version, and it is also 13 times faster than most potent MacBook Air that used Intel's processors. The M3 Series processors have M3, M3 Pro and M3 Max versions, which are equipped with increasing numbers of transistors, GPU and CPU cores.
- **AI PCs poised to take off with 50mn/167mn shipment in 2024/27.** Following releases of AI-enabled processors from Intel (Core Ultra) and AMD (Ryzen), major PC brands (e.g. Lenovo, Asus, Dell, HP) have showcased their latest AI PCs lineup in CES and MWC in past two months. AI PCs is expected to reach 167mn by 2027 (vs 50mn in 2024), implying 60% penetration, based on IDC. With the introduction of MacBook Air M3, we believe Apple takes a major step forward, positioning itself as a contender in AI PC market.
- **Apple's WWDC in June set to launch more AI devices, open-sources LLMs and AI applications.** Overall, we believe Apple's recent shift towards generative AI is a good strategic move, which should generate meaningful development of its edge AI devices and boost user experience. We believe AI hardware supply chain will continue to benefit from growing investment/ CAPEX from CSPs and technology leaders, and new edge AI products will emerge as new growth drivers, benefiting AI PC/smartphone supply chain stocks, such as Xiaomi, Apple, Transsion, BYDE, Luxshare and Huaqin.

Valuation Table

Name	Ticker	Rating	Mkt Cap (US\$ mn)	Price (LC)	P/E (x) FY23E	P/E (x) FY24E	P/B (x) FY23E	P/B (x) FY24E	ROE FY23E	ROE FY24E
Xiaomi	1810 HK	BUY	40,952	12.76	15.5	14.9	1.8	1.6	11.5	10.9
Apple	AAPL US	NR	2,703,873	175.10	28.9	26.5	46.6	35.8	169.4	146.0
Transsion	688036 CH	NR	18,740	167.27	25.5	21.5	6.9	5.6	28.4	27.0
Lenovo	992 HK	NR	15,334	9.67	9.0	16.5	2.4	2.5	30.6	16.2
Huaqin	603296 CH	NR	7,841	77.77	21.2	19.0	2.7	2.4	14.7	13.6
BYDE	285 HK	BUY	8,641	30.00	15.4	11.3	2.1	1.8	13.4	15.7
Luxshare	002475 CH	BUY	28,039	28.19	18.2	14.4	2.0	1.8	10.9	12.3

Source: Company data, CMBIGM estimates

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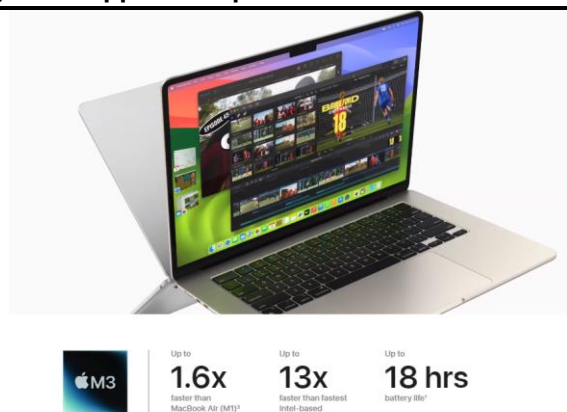
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Figure 1: Apple's M3 powered MacBook Air

Source: Apple, CMBIGM

Figure 2: MacBook Air AI imaging engine

Source: Apple, CMBIGM

Figure 3: Comparison between M2 & M3 version MacBook Air

	MacBook Air M3	MacBook Air M2
Display size	13-inch and 15-inch	13-inch and 15-inch
Chip	M3	M2
CPU and GPU	8-core CPU and 10-core GPU	8-core CPU and 8-core GPU
Unified memory	Up to 24 GB	Up to 24 GB
Storage	256GB SSD, configurable to 512 GB, 1TB, or 2Tb	256GB SSD, configurable to 512GB, 1TB, or 2TB
Ports	Two Thunderbolt/USB 4	Two Thunderbolt/USB 4
Battery	Up to 18 hours	Up to 18 hours
Camera	1080p FaceTime HD camera	1080p FaceTime HD camera
WiFi	WiFi 6E	WiFi 6
Dual monitors support	Yes	No
Starting price	US\$1,099	US\$999

Source: Apple, CMBIGM

Figure 4: M3 Series Apple Silicon

	CPU		Graphics		Neural Engine Cores	Memory		Transistor Count	Model launched
	Performance cores	Efficiency cores	GPU cores	ALU		Controllers	Bandwidth (GB/s)		
M3	4	4	8	1024	16	8	102.4	25 bn	MacBook Air (Mar 2024), iMac, MacBook Pro (Nov 2023)
			10	1280					
M3 Pro	5	6	14	1792	16	12	153.6	37 bn	MacBook Pro (Nov 2023)
	6		18	2304					
M3 Max	10	4	30	3840	16	24	307.2	92 bn	MacBook Pro (Nov 2023)
	12		40	5120		32	409.6		

Source: Apple, CMBIGM

Figure 5: PC processor product roadmap for AI PCs

Manufacturer	Processor	Release date	Process	Architecture	OS System	First PC product release date
Qualcomm	Snapdragon X Elite-Oryon	Oct 2023	4nm	Arm	Windows	1H24
Intel	Meteor Lake Core Ultra	Sep 2023	7nm	x86	Windows	1H24
Apple	M3	Oct 2023	3nm	Arm	Mac OS	November 2023
AMD	Phoenix	Exp. 2025	4nm	x86/Arm	Windows	TBD
MediaTek, Nvidia	Kompanio	Exp. 2025	6nm	Arm	Windows	TBD

Source: Apple, CMBIGM

Figure 6: Peers' valuation

Figure 6.1 Core Valuation											
Company	Ticker	Rating	Market Cap (US\$ mn)	Price (LC)	P/E (x)		P/B (x)		ROE (%)		Perf. YTD
Brand											
Apple	AAPL US	NR	2,703,873	175.10	28.9	26.5	46.6	35.8	169.4	146.0	(9.1)
Xiaomi	1810 HK	BUY	40,952	12.76	15.5	14.9	1.8	1.6	11.5	10.9	(18.2)
Transsion	688036 CH	NR	18,740	167.27	25.5	21.5	6.9	5.6	28.4	27.0	20.9
Samsung	005930 KS	NR	329,929	73,700	44.4	16.4	1.4	1.3	3.1	8.0	(6.1)
LG	066570 KS	NR	11,462	93,400	11.4	7.7	0.8	0.7	7.1	9.7	(8.3)
Average					25.1	17.4	11.5	9.0	43.9	40.3	(4.2)
ODM/EMS											
BYDE	285 HK	BUY	8,641	30.00	15.4	11.3	2.1	1.8	13.4	15.7	(18.0)
Luxshare	002475 CH	BUY	28,039	28.19	18.2	14.4	2.0	1.8	10.9	12.3	(18.2)
Hon Hai Precision	2317 TT	NR	46,754	106.50	11.1	9.9	1.0	0.9	8.9	9.4	1.9
Average					14.9	11.8	1.7	1.5	11.1	12.5	(11.4)
Optics											
Sunny Optical	2382 HK	HOLD	6,919	49.35	42.2	23.3	2.1	2.0	5.0	8.6	(30.3)
Q Tech	1478 HK	BUY	456	3.01	10.8	5.6	0.6	0.6	5.9	10.3	(32.2)
Truly	732 HK	NR	291	0.72	-	-	-	-	-	-	(10.0)
Cowell	1415 HK	NR	2,007	18.40	31.4	18.1	4.7	3.8	14.9	22.3	(20.2)
Largan	3008 TT	NR	10,778	2,550	18.4	16.0	2.1	1.9	11.5	12.5	(11.1)
Genius	3406 TT	NR	1,471	412.00	15.9	15.2	2.2	2.0	14.0	13.7	(2.0)
O-Film	002456 CH	NR	4,249	9.39	-	60.2	10.6	9.9	(8.1)	8.8	7.8
Lg Innotek	011070 KS	NR	3,629	204,500	8.4	7.3	1.0	0.9	12.5	13.1	(14.6)
Average					21.2	20.8	3.3	3.0	8.0	12.7	(14.1)
Acoustics/Haptics											
AAC Tech	2018 HK	HOLD	3,064	20.00	35.2	20.2	0.9	0.9	2.7	4.6	(13.8)
Goertek	002241 CH	BUY	8,268	17.42	40.5	22.6	1.9	1.8	4.6	7.8	(17.1)
Luxshare	002475 CH	BUY	28,039	28.19	18.2	14.4	2.0	1.8	10.9	12.3	(18.2)
Merry	2439 TT	NR	795	114.50	18.4	16.6	1.9	1.8	10.0	11.0	4.6
Knowles	KN US	NR	1,479	16.50	18.5	14.8	-	-	-	-	(7.9)
Nidec	6594 JP	NR	22,459	5,664	40.8	21.2	2.5	2.1	7.0	11.4	(0.5)
Average					28.6	18.3	1.8	1.7	7.0	9.4	(8.8)
Connector											
FIT Hon Teng	6088 HK	BUY	1,016	1.09	7.5	6.0	0.4	0.4	5.3	6.2	(7.6)
Luxshare	002475 CH	BUY	28,039	28.19	18.2	14.4	2.0	1.8	10.9	12.3	(18.2)
TE	TEL US	NR	44,177	143.06	21.3	18.9	3.9	3.3	19.1	18.5	1.8
Amphenol	APH US	NR	67,136	111.92	37.8	33.9	8.4	7.1	24.4	22.8	12.9
Average					21.2	18.3	3.7	3.1	14.9	14.9	(2.8)
Casing											
BYDE	285 HK	BUY	8,641	30.00	15.4	11.3	2.1	1.8	13.4	15.7	(18.0)
Tongda	698 HK	BUY	112	0.09	5.0	3.1	0.1	0.1	2.3	3.5	(12.6)
TK Group	2283 HK	BUY	142	1.33	4.8	3.5	0.6	0.6	13.3	16.3	(5.7)
Ju Teng	3336 HK	NR	181	1.18	-	-	-	-	-	-	0.9
Everwin	300115 CH	NR	1,665	9.96	69.7	18.7	2.1	1.9	2.2	9.4	(24.8)
Lens Tech	300433 CH	NR	8,715	12.59	20.3	15.5	1.4	1.3	6.8	8.4	(4.6)
Catcher	2474 TT	NR	4,288	199.00	11.3	16.0	0.8	0.8	7.2	4.7	2.6
Jabil	JBL US	NR	18,956	148.62	17.5	16.5	6.9	15.6	43.5	51.0	16.7
Average					20.5	12.1	2.0	3.1	12.7	15.6	(5.7)
Hinge											
AAC Tech	2018 HK	HOLD	3,064	20.00	35.2	20.2	0.9	0.9	2.7	4.6	(13.8)
Jiangsu Gian	300709 CH	NR	768	29.73	26.5	19.6	2.6	2.3	11.1	13.2	(4.7)
KH Vatec	060720 KS	NR	240	13,490	7.8	8.6	1.2	1.1	15.6	13.1	(8.2)
Foseltek	6805 TT	NR	1,795	827.00	79.8	36.5	13.0	9.9	15.5	28.7	116.2
Jarlytec	3548 TT	NR	546	261.00	31.1	18.0	-	-	11.9	19.9	37.7
NBTM	600114 CH	NR	1,187	13.86	41.6	22.6	3.3	3.1	7.9	13.8	(10.5)
Dongguan Eontec	300328 CH	NR	488	5.09	-	-	-	-	-	-	(26.9)
Average					37.0	20.9	4.2	3.5	10.8	15.5	12.8

Source: Bloomberg, CMBIGM

Figure 7: Peers' valuation

Figure 11: Core Valuation											
Company	Ticker	Rating	Market Cap (US\$ mn)	Price (LC)	P/E (x) FY23E	P/E (x) FY24E	P/B (x) FY23E	P/B (x) FY24E	ROE (%) FY23E	ROE (%) FY24E	Perf YTD
PC/Server											
Lenovo	992 HK	NR	15,334	9.67	9.0	16.5	2.4	2.5	30.6	16.2	(11.4)
Dell	DELL US	NR	86,659	121.78	16.3	18.3	-	-	(179.3)	(156.9)	59.2
HP Enterprise	HPE US	NR	22,292	17.15	8.0	9.1	1.1	1.0	13.7	11.2	1.0
HP Inc	HPQ US	NR	28,435	29.06	8.8	8.5	-	-	(139.1)	(247.6)	(3.4)
ASUSTeK	2357 TT	NR	10,961	466.00	20.5	14.4	1.5	1.5	7.1	9.7	(4.8)
Inspur	000977 CH	NR	8,601	42.06	37.5	27.9	3.3	3.0	8.6	10.6	26.7
Dawning	603019 CH	NR	10,763	52.94	40.8	32.3	4.1	3.7	10.3	11.8	34.1
Average					20.1	18.1	2.5	2.3	(35.4)	(49.3)	14.5
ODM/OEM											
Foxconn Industrial	601138 CH	NR	62,771	22.75	19.2	16.0	3.2	2.8	16.6	17.7	50.5
Super Micro	SMCI US	NR	60,091	1,074.34	95.0	49.5	29.2	17.6	36.3	43.0	277.9
Huaqing	603296 CH	NR	7,841	77.77	21.2	19.0	2.7	2.4	14.7	13.6	(2.7)
Quanta	2382 TT	NR	29,968	245.00	24.1	18.9	5.2	4.6	21.9	25.4	9.1
Wistron	3231 TT	NR	11,157	121.50	29.3	18.3	3.3	2.7	11.4	15.7	23.2
Wiwynn	6669 TT	NR	14,174	2,560.00	38.7	23.9	10.6	8.3	28.7	38.0	40.3
Inventec	2356 TT	NR	6,419	56.50	35.1	25.6	3.4	3.3	9.6	12.7	7.0
GigaByte	2376 TT	NR	7,277	361.50	43.8	24.1	6.2	5.4	14.2	22.2	35.9
Average					38.3	24.4	8.0	5.9	19.2	23.5	55.2
Switch/Storage											
Cisco	CSCO US	NR	198,937	49.13	12.9	13.2	4.6	4.2	35.1	31.3	(2.8)
Arista	ANET US	NR	90,020	287.94	43.9	38.7	13.0	9.9	33.0	27.4	22.3
Juniper	JNPR US	NR	12,210	37.64	16.4	16.8	2.8	2.6	16.8	15.4	27.7
Keysight	KEYS US	NR	27,547	157.50	19.2	24.9	5.6	5.5	30.6	20.5	(1.0)
Seagate	STX US	NR	20,612	98.38	870.6	136.3	-	-	(2.6)	(1.4)	15.2
Western Digital	WDC US	NR	20,959	64.32	-	-	1.8	2.0	(11.2)	(6.0)	22.8
Average					143.4	38.1	5.1	4.5	17.8	15.9	16.4
EMS/Distributor											
Flextronics	FLEX US	NR	12,622	29.97	13.0	11.9	3.4	2.2	26.3	18.1	35.3
Jabil	JBL US	NR	18,956	148.62	17.5	16.5	6.9	15.6	43.5	51.0	16.7
Arrow	ARW US	NR	6,490	120.61	7.2	10.1	1.2	1.1	16.1	12.8	(1.3)
Avnet	AVT US	NR	4,300	47.59	6.2	9.1	0.9	0.8	14.8	9.1	(5.6)
Average					11.0	11.9	3.1	4.9	25.2	22.8	11.3
Substrate											
Unimicron	3037 TT	NR	8,597	178.00	23.6	20.5	3.0	2.7	12.8	14.7	1.1
Ibiden	4062 JP	NR	6,793	7,252.00	21.1	28.7	2.5	2.2	12.2	8.3	(7.2)
NYPCCB	8046 TT	NR	4,297	210.00	23.5	21.6	2.6	2.5	11.4	11.9	(16.5)
Average					22.7	23.6	2.7	2.5	12.1	11.7	(7.5)
PCB											
WUS Printed	002463 CH	NR	7,507	28.32	36.7	27.1	5.6	4.7	15.9	18.1	28.0
Victory Giant	300476 CH	NR	2,936	24.50	24.6	17.9	2.8	2.4	11.1	14.2	32.8
Gold Circuit	2368 TT	NR	4,135	265.50	36.0	20.5	8.0	6.2	23.8	33.1	21.8
Average					31.2	22.0	4.8	4.0	15.3	19.1	21.8
Power Supply											
Delta	2308 TT	NR	23,896	290.50	22.6	20.8	3.9	3.5	16.6	16.4	(7.3)
Lite-on	2301 TT	NR	8,495	114.00	17.3	16.4	3.0	2.9	18.3	18.0	(2.6)
Average					19.9	18.6	3.5	3.2	17.4	17.2	(5.0)
Thermal											
Foxconn Industrial	601138 CH	NR	62,771	22.75	19.2	16.0	3.2	2.8	16.6	17.7	50.5
Sunowearth	2412 TT	NR	29,725	121.00	25.1	24.7	2.4	2.4	9.8	9.9	0.8
AVC	3017 TT	NR	7,101	585.00	42.5	32.6	10.7	8.8	28.4	30.9	73.8
Average					29.0	24.4	5.4	4.7	18.3	19.5	41.7

Source: Bloomberg, CMBIGM.

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