JMC ELECTRONICS CO.,LTD.

TAIEX：6552

2022/11/29

* JMC's statements of its current expectations are forward looking statements subject to significant risks and uncertainties and actual results may differ materially from those contained in the forward-looking statements.
* Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.

1.Company Introduction - Company Snapshot

- Established：October 6 ,1973
- Chairman：Canon Huang
- General Manager：Jane Lee
- Capital Stock：830 million
- Major Shareholders：CWE 42%、ChipMos 10%
- Number of employees as of Oct. 31,2022：587
- Major Product：COF(Reel to Reel Chip on Film)
- Headquarter：Kaohsiung,Taiwan

1.Company Introduction - Product Application

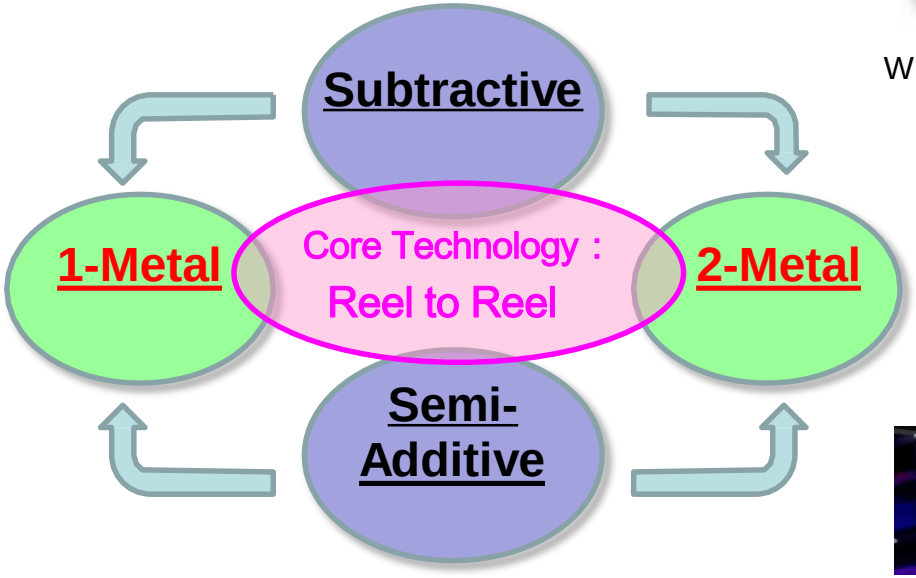
LCD Monitor

LCD TV

Notebook

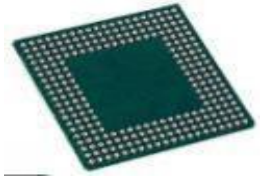
Smartphone

•High Productivity
•Low Cost

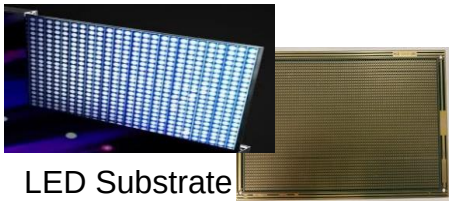


•Fine Pitch
•High Trace Accuracy

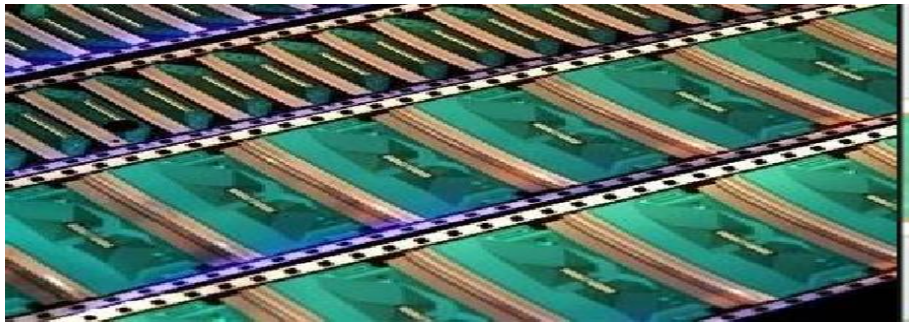
Wearable Device
Substrate

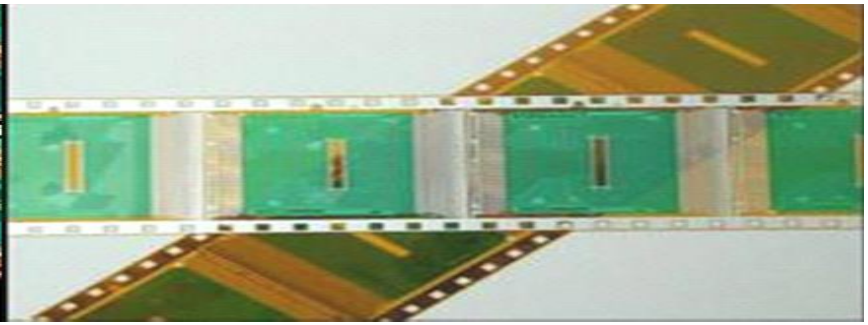


IC Substrate

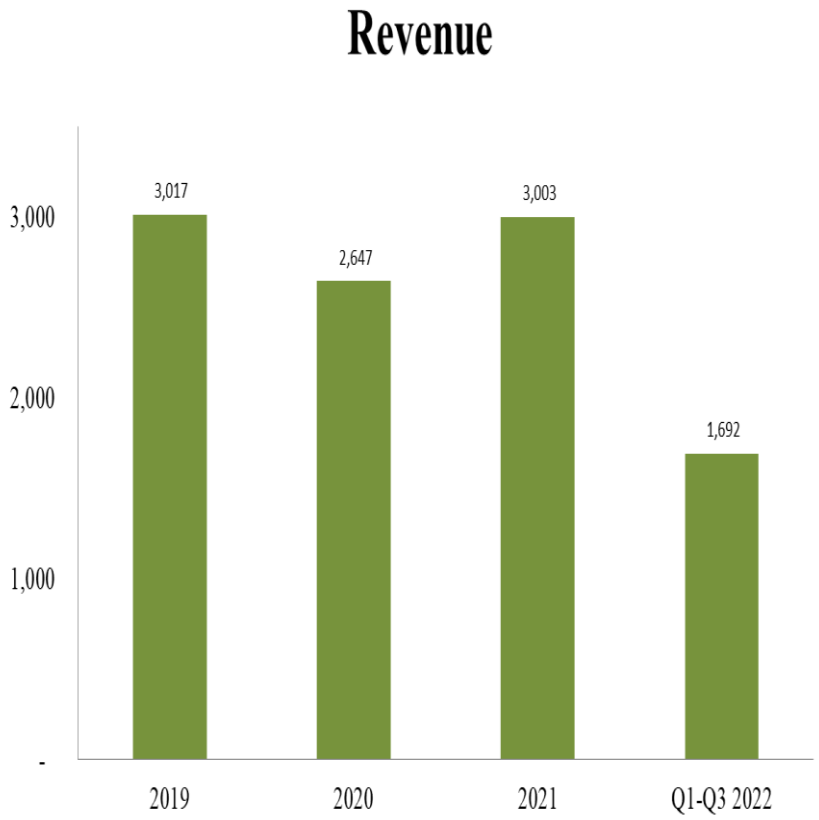


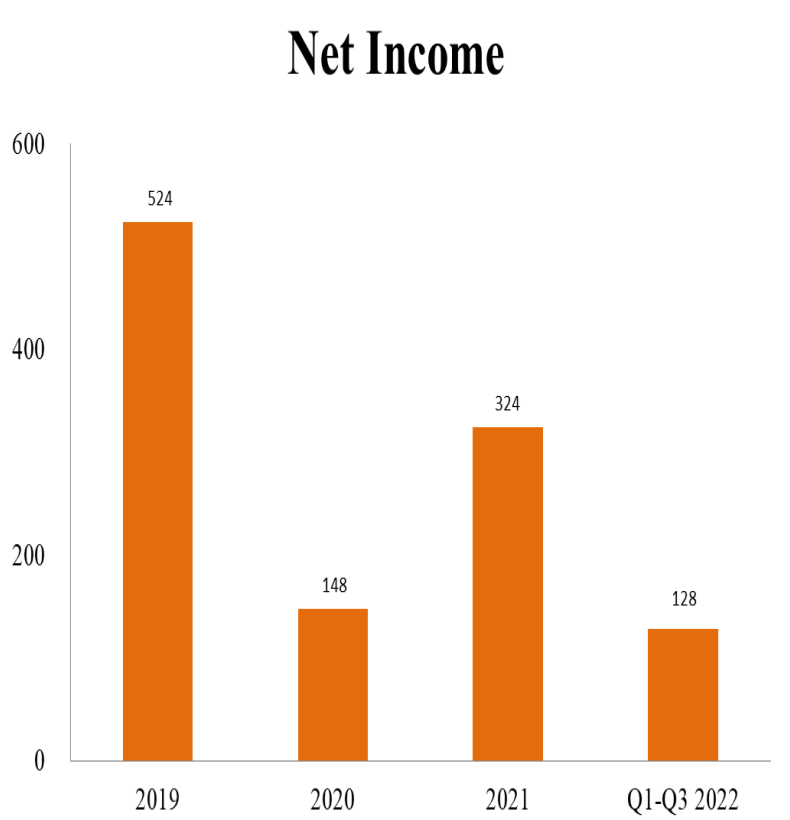
LED Substrate





2.Financial Results - Results Highlights

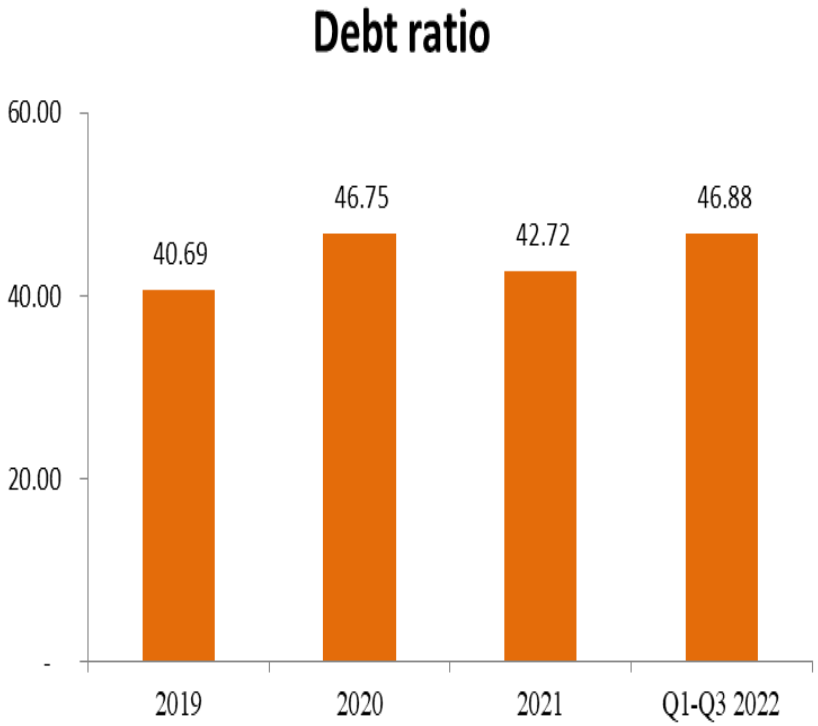


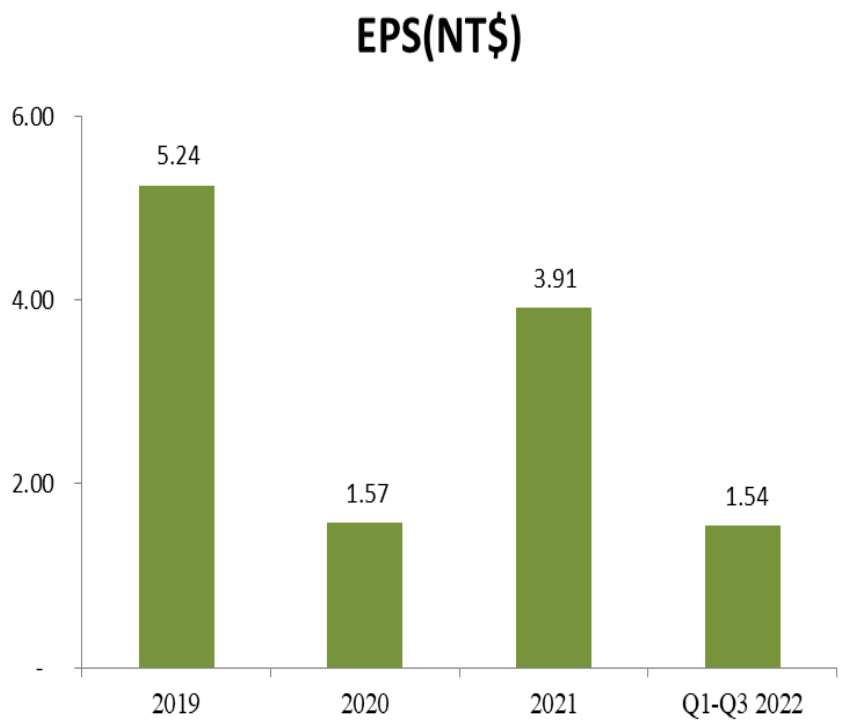


(In NT$ Million)

Year	2019	2020	2021	Q1-Q3 2022
Revenue	3,017	2,647	3,003	1,692
Net Income	524	148	324	128

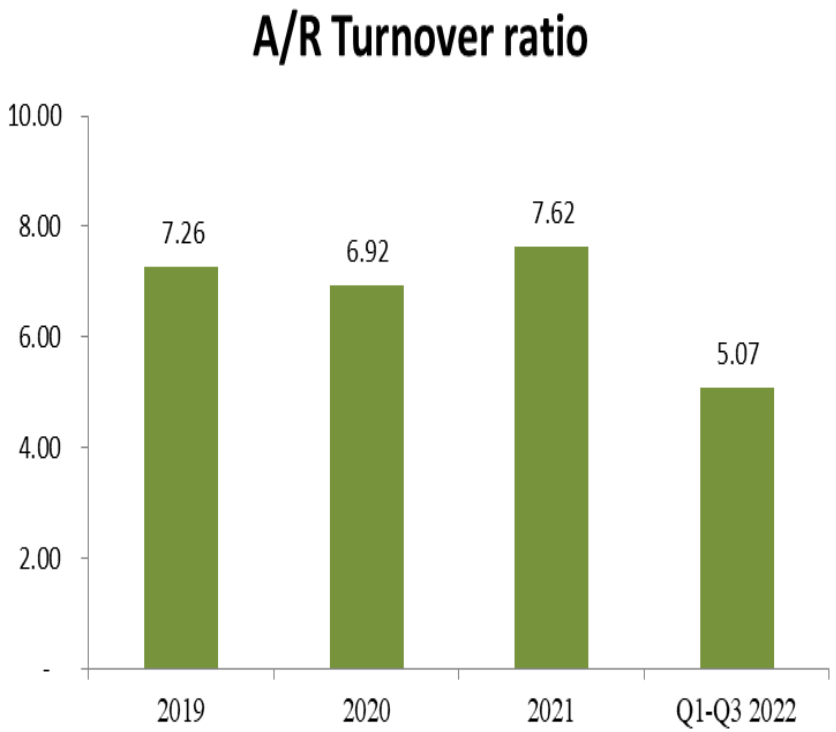
2.Financial Results - Results Highlights

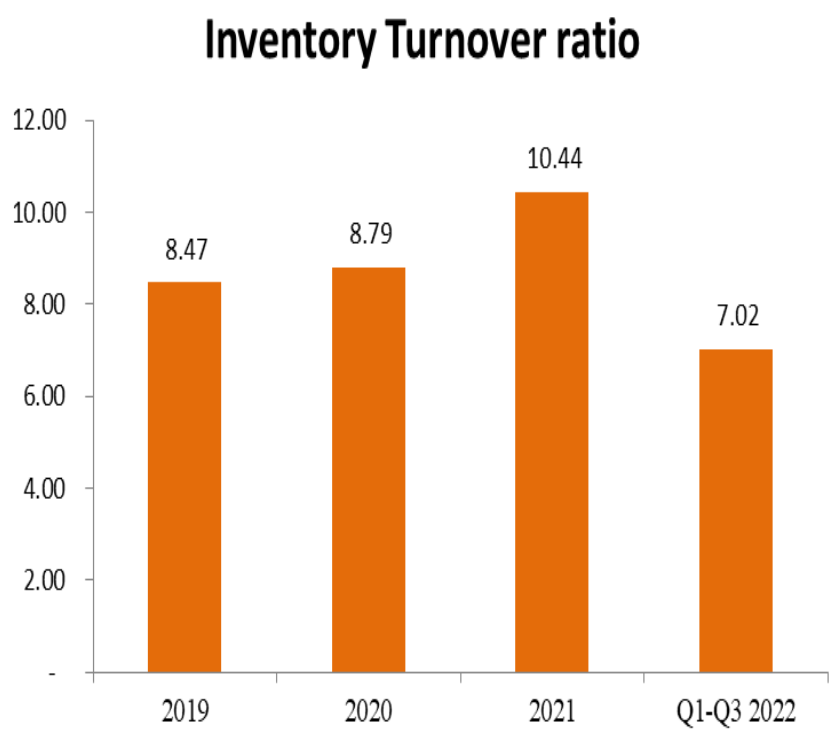




Year	2019	2020	2021	Q1-Q3 2022
Debt Ratio(%)	40.69	46.75	42.72	46.88
EPS(NT$)	5.24	1.57	3.91	1.54

2.Financial Results - Results Highlights





Year	2019	2020	2021	Q1-Q3 2022
A/R Turnover Ratio	7.26	6.92	7.62	5.07
Inventory Turnover ratio	8.47	8.79	10.44	7.02

3.Market & Business Overview – 1 Metal COF for Large Panel

✓ Currently – COVID-19 & Ukrainian-Russian war affects global inflation

* In China COVID-19 attacked again in March 2022, the epidemic situation resurged ; strict control policies, supply chains and manufacturing activities are severely affected.
* Coupled with the continual geopolitical conflicts such as the Ukrainian-Russian War, the terminal application market is in chaos.
* The IMF announced an updated "World Economic Outlook" report in July 2022 and downgraded the global economy again. The forecast of economic growth for 2022 and 2023 has been revised down to 3.2% and 2.9%, and mainly in the United States, China and India, these three countries are dragged down and revised down the most.
* The output value of TV panels and IT panels grew significantly in 2020 and 2021, especially in 2021, up to 30%~40% . However, there's a sharp drop in this high-growth demand markets since 2022, the demand market would return to a stable situation in 2022 to 2025.

✓ Future trend – New design and application ;Trend unchanged; Demand time deferred

* TV Panel – 4K to 8K ; the trend has emerged, just wait for the timing.
* Monitor/NB/Tablet Panel – COG moves to COF due to full-screen/narrow edge design.
* Automotive Panel – comes to COF.

3.Market & Business Overview – 1 Metal COF for Small Panel

✓ Currently – Driver IC design of hand-held device ;Trend changed constantly.

* Due to the tighter wafer capacity supply and the increase in COP designs, the use of driver IC chips for mobile phone panels of COF has decreased.
* Wearable Device has health management functions and this trend is taking place. Therefore, the COF market in this field is stable.

✓ Future trend – New design and application ;Trend unchanged

* High-end Smartphone with Flexable OLED: COP ↑ / 1-Metal COF ↓ .
* Mid-range Smartphone with Rigid OLED/LTPS: FHD TDDI/FTDDI uses 1-Metal COF / partial COG.
* Low-end Smartphone with a-Si/LTPS: HD uses COG / FHD TDDI uses 1-Metal COF.
* Wearable Device: The design turns to 1-Metal COF instead of COG due to the narrow border panel. The market is still growing up.

3.Market & Business Overview – 2 Metal IC Substrate

Currently – Mini LED ：direct display and backlight market go hand in hand；application is well -developed.

* 2021can be called a year of increase in Mini LED-related products, which will accelerate the development of next-generation display technology in 2022. At the CES exhibition in early 2022, various brand manufacturers actively released new displays, among which there are many Micro LED-related products in the market, which shows that manufacturers attach importance to the development of the advanced display product market.
* The report of the Industrial Technology Research Institute indicates that ENNOSTAR joins hands with AUO and INNOLUX through private equity, consolidate the power of the supply chain to accelerate the introduction of Micro LED into mass production as soon as possible, ENNOSTAR integrates the research and development energy and technology of its three subsidiaries EPISTAR, LEXTAR and UNIKORN.
* In 2023, it is expected that the development and application of Micro LED will be more active.

✓ Future trend – New design and application

* 2-Metal technology：JMC will become one of the Mini LED/Micro LED IC Substrate suppliers.

3.Market & Business Overview – Technology & Product Development

✓ **A full service of flexible IC substrate provider**

Process Technology	Competitive advantages	Technology/ Application	Targeted Market/ **Development**
1-Metal Subtractive (Etching)	◎Fast production and high efficiency. ◎Independent technical ability and stable production yield.	*Copper thickness #~8um *Pitch >=20um Pitch *Pin count =<1440 Channel/48mm	@ LCD TV @ OLED TV **@ Dual Cell LCD**
1-Metal Semi-Additive (Plating)	◎High precision size controlled COF products, and can improve the assembly of the panel module rate; help customers to lower total cost. ◎High production yield and good quality stability; absolute competitive advantage in production costs.	*Copper thickness #~12um *Pitch >=18/16/14um Pitch *Pin count =<1900 Channel/48mm =<3000 Channel/70mm	@ High-end smartphone @ wearable device **@ FoD** **@ FTDDI**
2-Metal	◎New process technology development capabilities. ◎Equipment design capability. ◎Good cost control.	*Thin Film IC Substrate *LED IC Substrate *Pin count =<2500 Channel/48mm =<4000 Channel/70mm	**@ NAND Flash** **@ Mini LED** **@ Micro LED**

4.Industry Outlook - Driver IC Supply Chain

✓ **IC Design House provides total solution.**

IC Design House	Foundry	Assembly/Testing	Panel
Novatek、Himax、Raydium、Fitipower、Ilitek、Solomon、Chipone、Synaptics、Samsung LSI、MagnaChip、Dongbu、Silicon...	TSMC、UMC、VIS、Powerchip、SMIC、Samsung LSI、MagnaChip、Dongbu…	Chipbond、ChipMos、Union、Lusem、Steco、Nepes、Sharp Takaya…	AUO、Innolux、BOE、Luxnet、Tianma、K&D、SHARP、Samsung、LGD…
	COF LGIT、Stemco、Chipbond、JMC、Flexceed…		

IC Design House provieds total solution

✓ **Five COF suppliers have mass production capacity currently , and JMC is just one of the two vendors in Taiwan.**

Process Technology			1-Metal Subtractive(Etching)	1-Metal Semi-Additive(Plating)	2-Metal
Application	Channel/48mm		=<1400 /48mm	1400~1900 /48mm	1900~2500 /48mm
	Channel/70mm		=<2000 /70mm	2000~3000 /70mm	3000~4000 /70mm
Capacity	Korea	S社	90~100KK	?KK(2-Metal→1-Metal)	7-10KK
		L社	120~130KK	?KK(2-Metal→1-Metal)	5-7KK
	Japan	F社	20KK	X	2KK
	Taiwan	C社	70~90KK	X	X
		JMC	40KK	40KK	5KK
	China	ESWIN Aplus	? ?	? ?	? ?

Q&A