

Interface to the Future - Solution by Smart Connectivity -

Thine Electronics, Inc. (TSE: 6769) FY2023 Business Results and Opportunities

February 2, 2024

Mid-term Strategy from 2022 to 2024 5G&Beyond-NE





TODAY'S AGENDA

- Corporate outline
- Business results in FY2023
- Future opportunities under mid-term strategy, "5G&Beyond-NE"





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Corporate outline: Provider of unique value to the world,



Interface to the Future de facto standard technology of high-speed interface, etc.

Company Name

THine Electronics, Inc.

(listed on Tokyo Stock Exchange, code: 6769)

- Founder & CEO
- President & COO
- Capital
- Founded
- Incorporated
- Business Area



Tetsuya lizuka, Ph. D

Yoichiro Minami

1,175 million Yen

May, 1991

June, 1992



Planning, Designing and Sales of Mixed Signal LSI and

Providing AI & IoT devices and solutions

133 (consolidated basis as of Dec. 31, 2023)





THine teams



Korea

THine Electronics Korea, Inc. Seoul, Korea Established in Mar. 2010

China

賽恩電子香港股份有限公司 THine Electronics Hong Kong, Co., Ltd. Established in Nov.2012 前海赛恩电子(深圳)有限公司

THine Electronics Shenzhen, Co., Ltd. Established in May 2013 上海分公司

Established in Oct.2013

THine Electronics, Inc.



Taiwan

哉英電子股份有限公司

THine Electronics Taiwan, Inc.

Taipei, Taiwan Established in Sep. 2000



United States

THine Solutions, Inc. Santa Clara, CA USA Established in Feb. 2018

Tokyo – Headquarters –

Tokyo, Japan Start-up in May 1991

Cathay Tri-Tech

Yokohama, Japan Acquired in Dec., 2018

Thine value as smart connectivity: LSI as smart interface × AIOT as smart IoT solution



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THine

Interface to the Future - Solution by Smart Connectivity -



Business area

Product and solution

<High-speed interface LSI> V-by-One[®] HS plus

V-by-One[®] HS

LSI Biz.



<lmage signal processing> Image Signal Processor Camera Development Kit

Serial Transceiver IOHA:B

<Wireless modules> 5G/LTE/NB-IoT < Al&IoT devices and solution > IoT Gateway / Router

Edge AI Processor / Module AI & IoT Solution

Application market

- Camera solution: automotive cameras, security cameras, AR/VR, recognition camera, medical cameras, etc.
- Display solution: high-resolution displays such as 8K / 4K, gaming monitors with high refresh rate
- Drive recorders, automotive CID, exp. for EVs
- Mobile, PC, and single board computers
- OA (multi-function printers), amusement
- Industrial equipment such as inspection equipment for semiconductors and LCD displays
- Drive recorders with wireless modules
- AED monitoring modules
- IP transceivers
- Remote monitoring module for vending machines and elevators
- GPS tracker
- AI thermography with facial recognition
- IoT monitoring system for

A &

IoT

Biz.





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Financial performance in FY2023

Consolidated financial results

	FY2023			FY2022	
		Portion%	YoY		Portion%
Revenues	5,018	100.0	92.0	5,456	100.0
Gross Profit	2,435	48.5	81.5	2,987	54.8
SG&A	2,476	49.3	103.8	2,386	43.7
(R&D expenses)	1,102	22.0	109.4	1,009	18.5
Operating Income	△40	△0.8		601	11.0
(EBITDA)	173	3.5	22.4	775	14.2
Ordinary Income	71	1.4	7.9	906	16.6
(Reference purpose only) Ordinary Income without FX effects	△32	△0.7	—	636	11.7
Net Income Attributable to Owners of the Parent	△69	△1.4	_	820	15.0

(yen in million)



Financial performance in FY2023 by region and segment





- Consolidated revenues decreased by 8%. While amusement business is healthy, LSI Biz decreased because of customers' inventory adjustment in OA markets, etc.
- AIOT Biz made significantly successful growth, achieving profitable operating income after its goodwill amortization.
- Because sales mix has shifted more to AIOT Biz with relatively moderate gross profit rate, consolidated gross profit decreased by 18%.



Financial performance of LSI business in FY2023 by application markets

Revenues of LSI business by application





Financial performance of AIOT business in FY2023 by segment

Revenues of AIOT business segments



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Financial performance in FY2023 compared to that in FY2022

- Reason of changes in operating income
- Solution Series Seri
- Made intensive investment in research and development (R&D) with JPY1,102M, increased by 9%: developing the advanced high-speed interface standard "V-by-One[®] HS plus" technology, new V-by-One[®] HS products for display panels in EVs, image signal processing solution, high-speed serial transceiver products, advanced redriver technology, modules for edge AI, gateway products with voice communication, smart IoT router products, etc.
 - * Also continued government-contracted R&D project using 300GHz communication mostly at the cost of MIAC





Financial performance of R&D in FY2023

- Intensive investment in R&D
- R&D investment plan in FY2023: totally JPY1,210M (increased by 20%)

R&D plan in FY2023



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Actual R&D investment in FY2023

> JPY1,102M compared to the plan: 91% compared to FY2022: 109%



Focused development to achieve the 5 goals of the mid-term strategy, "5G&Beyond-NE"

- New V-by-One®HS products for display panels of EVs
- > The industry-first serial transceiver products for sensing controlling systems
- New high-speed interface standard "V-by-One[®] HS plus" technology for high-resolution TVs and gaming monitors, contributing to achieve systems under the new eco-design regulation in EU and US
- Cloud-server-linked drive recorders
- > Modules for edge AI processing
- > Voice-communication-support gateway products
- > Smart IoT router products, including smart care link
- High-speed wireless communication technology applicable to 1000Gbps data transmission (Beyond 5G), etc. Copyright © 2024 THine Electronics, Inc. All Rights Reserved. 14



Financial performance in FY2023

Outline of balance sheet as of the end of December, 2023

(unit: yen in million)

Assets			Liabilities and Net Assets			
	End of FY'23	End of FY'22		End of FY'23	End of FY'22	
Cash and Cash Equivalent	7,377	7,302	Account Payable	270	282	
Account Receivables	937	1,058	Other Current Liabilities	401	515	
Inventories	846	1,048	Non-current Liabilities	137	136	
Other Current Assets	303	358	Shareholders' Equity	9,139	9,494	
Property, Plant and Equipment	212	206	Accumulated Other Comprehensive Income	73	59	
Intangible Assets	69	148	Deferred Stock-based Compensation	150	128	
Investments and others	504	547	Non-controlling Interests	77	52	
Total Assets	10,250	10,669	Total Liabilities and Net Assets	10,250	10,669	

> US-dollar-based cash as of the end of FY2023 is approximately US\$7M.

> The amortization of goodwill by acquisition of Cathay Tri-Tech (AIOT business) has been completed with amortization of ¥130M in FY2023.

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Financial performance in FY2023

Outline of Cash Flow Statements

	FY2023	FY2023
Cash Flow from Operating Activity	402	△191
Cash Flow from Investing Activity	△148	△423
Cash Flow from Financing Activity	△285	△100
Effect of Exchange Rate Changes	108	273
CCE at the beginning of the FY	7,302	7,743
CCE at the end of the Quarter	7,377	7,302

(unit: yen in million)

> decrease in net income before tax, account receivables and inventories, etc.

investment in fixed asset and VC fund, dividend from VC investment, etc.

payment of dividend for FY'22, acquisition of treasury stock, etc.

Exchange rate JPY133 as of the end of FY2022 JPY142 as of the end of FY2023





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- ► Outline of "5G&Beyond-NE"
 - <Basic strategy>

Thine provides differentiated values for customers based on the prior mid-term strategy, "5G&Beyond," corresponding to business environment, and contribute to customers' innovation.

Thine re-defines "Strategic 5 Goals", focuses on growing application markets, and aims to achieve x3 operating income in FY2024, compared to FY2021.







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► Action in FY2023

①Enhance growing business in **automotive and industrial markets**, contributing to support new use cases of autonomous, unmanned, and remoted situation

②Continuously launch new LSI products for automotive cameras and displays, targeting automotive markets in China

③Promote products and solutions for smart IoT communication, including drive recorders and smart meters

(4) Cultivate future growing opportunities in 5G, Al&IoT, medical

⑤ Positively invest in research and development as well as talented HR to create value from new products, making developing projects more efficient within shorten periods

⑥Provide effective solutions with THine's interface technology, seeking alliance and collaboration opportunities aggressively

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5G&Beyond-NE, the mid-term strategy from 2022 to 2024

Enhancing user experience – simplifying cable wiring solution for in-vehicle touch panels for EVs

Start volume production shipping of new V-by-One®HS products for EVs and industrial equipment

> Enabling to transmit and receive fullHD60fps images, controlling signals, and voice signals only with 1 chip

Capable to handle approximately +28% more data volume, compared to similar-class products in automotive industry the world-fastest class SerDes support OpenLDI(LVDS)





Mobility Hyper Automation

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Camera part of an endoscope Transmitter LSI

5G&Beyond-NE, the mid-term strategy from 2022 to 2024

- Contribution to evolving medical cameras
 V-by-One® HS product supports 4K medical cameras
 - \succ Contributing to achieve 4K high-resolution endoscope cameras
 - The world smallest V-by-One[®] HS product enables to transmit images from 4K cameras to operating equipment for several meters through just one cable
 - > THine's image signal processor applicable simultaneously
 - > Contributing for users to apply AI-based machine learning with 4K images for higher detection rates for early-stage cancers





Medical

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5G&Beyond-NE, the mid-term strategy from 2022 to 2024

LSI Biz

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LSI Biz

5G&Beyond-NE, the mid-term strategy from 2022 to 2024

Contributing to Simplifying Sensing & Control Systems

Launching the industry-first unique serial transceiver that enables to achieve IoT platform

> Flexible I/O pattern of sensors and controlling signals up to 4.3-billion different configuration degrees of freedom



Hyper Automation Interface to the Future

Hyper Automation Contribution to use cases with contactless communication Collaboration with STMicroelectronics' near field communication technology

- > To support for new use cases in high-speed contact connectivity, combining THine's high-speed interface technology and ST's 60GHz RF millimeter-wave
- THine's V-by-One[®] and other interface technologies, together with ST's ST60A2 contactless 60GHz transceiver, enables high-speed data transmitting solutions of board-to-board contactless connections.

Seamless device-to-device data transfer without cables and connectors (e.g., docking stations for PCs, game consoles)





Medical

Real-time-based AI image diagnosis from remoted video cameras

Solution by EdgeAl-Link[™], a cloud-linked Edge-Al cameras

Advantages to use cloud-linked Edge-AI in addition to Cloud-AI:

Achieving real-time AI diagnosis

AIOT Biz

LSI Biz

- > Drastically reducing costs of video data communication with AI diagnostic accuracy
- > No need to communicate privacy data to cloud servers
- > Collaboration in AI algorithm with Digital Media Professionals Inc. (DMP)



Applications:

- Achieving advanced smart BEMS
- Monitoring industrial equipment with less workers
- Inspecting infrastructures with less workers
- Achieving industrial IoT

etc.

THine Electronics, Inc. \mathbb{E} **EdgeAl-Link**TM is a trade mark of THine Electronics, Inc.



5G Al/loT

Hyper Automation



5G&Beyond-NE, the mid-term strategy from 2022 to 2024

Contribution to various IoT use cases

5G Al/loT

Wireless LAN router with LTE module: CTL-128



■ Feature of CTL-128

- 1) Supporting Japaneses communication carriers: NTT docomo/KDDI/SoftBank*/Rakuten Mobile*and MVNO [loading wireless module SIM7600JC-HG]
- 2) Supporting local BWA, private LTE(self-operated BWA, sXGP)
- 3) Wireless LAN as standard equipment (IEEE802.11b/g/n)
- 4) Supporting VPN: PPTP, L2pt, IPSec, Open VPN, etc.
- 5) Can be equipped with a wide variety of protocols developed for industrial use
- 6) Users' applications can be developed, embedded and used according to user needs.
- 7) Serial port [RS485/RS232C] as standard equipment
- 8) Supports PLCs of more than 300 makers worldwide and can be coupled with many industrial facilities, enabling easy data collection, reporting, alarm functions and facility management.
- 9) Compact and light weight design: size:127.0x83.0x24.0 mm weight approx.250g

10)Wide operating temperature range: -30° C \sim 70°C

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*Softbank and Rakuten Mobile will be supported in the future





Contribution to various IoT use cases 5G AI/IoT

Smart Care Link Terminal

SANDEN KOGYO

- Feature of the product
- Adopt SIMCom Wireless Module (SIM7600JC-H)
- Reduce installation works and internet contract
- Voice communication function
- $\boldsymbol{\cdot}$ Text read function
- Various monitoring of environment or movement by human sensors, temperature/humidity sensors, and illuminance sensors
- Changes in users' situation can be emailed to their family









5G&Beyond-NE, the mid-term strategy from 2022 to 2024

► Contribution to various IoT use cases ■Feature



Feature of LTE smart module

Qualcomm 4-core 64-bit ARM Cortex-A53

AdrenoTM 702 GPU

4-lane MIPI_DSI (max.1680x720 @60fps)

◆2x ISP at 30fps ZSL (13 MP + 13 MP or 25 MP)

- Support 1080P30fps video recording and playback
- Support global multi-network mode (LTE Cat 4)
- Integrate Android OS, Wi-Fi[802.11 a/b/g/n/ac], Bluetooth[BT5.0], GNSS multi-mode in one module

 Suitable for industrial use cases such as smart POS, advertising media, automotive electronics, smart diagnosis, smart security devices, etc.





5G&Beyond-NE, the mid-term strategy from 2022 to 2024

► Contribution to various IoT use cases **5G AI/IoT**

Bluetooth Module BLUE X : mRF04c-S1a



Features of Bluetooth Module:

This Bluetooth module have ARM CPU core inside, enabling executing application programs without outside host CPU

- Users can originally develop application by structuring development environment
- In terms of customized development, Cathay Tri-Tech can made its technical supports

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Applicable frequency: 2.4 GHz ISM band with protocol of BLE 4.2 / 5.0 Operating temperature: -25°C ~ +80°C Current consumption: with 4.3V on-chip DCDC converter: Rx: 4.3mA, Tx: 4.4mA with 3.3V on-chip DCDC converter: Rx: 5.5mA, Tx: 5.7mA

Supporting digital interfaces:

- Up to 14 GPIO
- Internal Quad-SPI flash interface
- General purpose SPI interface (supporting both of SPIM and SPIS mode)
- Support 2xUART: supporting flow controls up to 1Mbps and all baud rates below 1Mbps, also supporting IRDA
- Supporting 2x I2C: programmable master/slave up to 1Mbps
- Supporting 2x timers
- Supporting a watchdog timer
- Supporting 5x PWM output

LSI Biz

5G&Beyond-NE, the mid-term strategy from 2022 to 2024

Innovating solution of beyond 5G and 8K, obtaining beyond growth advantages
Beyond 5G/8K

R&D toward 1000Gbps ultra-high-speed data transmission

the National Institute of Information and Communications Technology (NICT)



Ministry of Internal Affairs and Communications

Hiroshima University Nagoya Institute of Technology

8K TV, remote medical diagnosis, eSports, etc.



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Interface to the Future



Contribution to SDGs

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- ✓ V-by-One[®] HS plus contributes to reduce energy consumption in high-resolution displays
- $\checkmark\,$ Smarter data transmission in automotive sensing
- Reducing number of cables
 by high-speed data transmission technology
- Reducing energy consumptions
 by achieving low power consumption and
 by achieving heat efficiency in power system
- Reducing energy consumptions in transporting and delivering through AI and IoT technology



Focusing on growing markets, achieving strategic 5 Goals, aiming to achieve <u>3x operating income</u> in FY2024, compared to FY2021





5G&Beyond-NE, the mid-term strategy from 2022 to 2024 ► Forecast in FY2024

FY2023 is the second year of the mid-term strategy, "5G&Beyond-NE." THine makes its best efforts to achieve this goal.
 ➢ LSI Biz forecast in FY2024 plans to recover to the level of FY2022 from domestic/overseas customers' inventory adjustment.
 ➢ AIOT Biz forecast in FY2024 increases due to successful shipments of wireless modules, etc., supporting expansion of smart infrastructure.

	Forecast in FY2024			FY2023 results		FY2022 results	
		Portion%	YoY		Portion%		Portion%
Revenues	7,207	100.0	143.6	5,018	100.0	5,456	100.0
Gross Profit	3,617	50.2	148.5	2,435	48.5	2,987	54.8
SG&A	2,592	36.0	104.7	2,476	49.3	2,386	43.7
(R&D expenses)	1,220	16.9	110.7	1,102	22.0	1,009	18.5
Operating Income	1,024	14.2	—	△40	△0.8	601	11.0
EBITDA	1,090	15.1	627.5	173	3.5	775	14.2
Ordinary Income	1,026	14.2		71	1.4	906	16.6
(Ordinary Income [*] without foreign currency exchange gain or loss)	1,026	14.2	—	∆ 32	△0.7	636	11.7
Net income attributable to Owner of the Parent	744	10.3	_	△69	△1.4	820	15.0

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- In FY2024 LSI Biz plans to recover especially in Japanese OA market and China automotive market and to achieve increase in revenues and profits.
- In FY2024 AIOT Biz plans to achieve continuous growth in wireless modules. In addition to drive recorders, remote monitoring to elevators and vending machines, IoT solutions for infrastructure markets are expected to grow as well.



- Measures to increase corporate value of THine
- Making our best effort to achieve the Mid-term Strategy "5G&Beyond-NE"



Operating income: JPY1,024M* (FY2024 forecast) * 2.1x of FY2021 The next Mid-term Strategy (2025 - 202x)

ROIC more than 10%

Cf. FY2021 4.0% FY2022 4.5% FY2023 -0.3%

[Measures toward increasing corporate value]

- 1) Further enhancing earning capability: <u>enhancing profitability of AIOT Biz (achieved in 2023)</u>, <u>strengthening overseas Biz</u>, and <u>accelerating investment in growing Biz</u>
- 2) Appropriate shareholders return: taking measurements to improve capital efficiency, including <u>implementation of stable dividend</u>, and <u>implementation of flexible acquisition of treasury stock</u>
- 3) Enhancing our IR activities: proactively disclosing information including new products and SDGs as well as enhancing IR information



Shareholder return policy

The entire team will work together to realize our growth strategy and implement shareholder returns based on performance growth.

Despite the loss in FY2023, the dividend is decided to be 15JPY/share as forecasted. The dividend in FY2024 is forecasted to be 15JPY/share as well.





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