





- Corporate outline
- Business results in FY2024Q3
- The mid-term strategy, "5G&Beyond-NE"
  - The new mid-term strategy, "Innovate100"



# **TODAY'S AGENDA**

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# **Corporate outline**

Interface to the Future - Solution by Smart Connectivity -

Provider of unique value to the world, de facto standard technology of high-speed interface, etc.

Company Name

THine Electronics, Inc.

(listed on Tokyo Stock Exchange, code: 6769)

JPX
STANDARD
TOKYO

Interface to the Future

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,

Providing AI & IoT devices/Solutions,

Planning, Designing and Sales of Al/Data Server

133, consolidated as of September 30, 2024

Employees



#### **THine team**



# Korea

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

# **United States**

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

# 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

Shanghai-Branch Established in Oct.2013







# Tokyo – Headquarters –

Tokyo, Japan Start-up in May 1991

# **AIOT**

#### Cathay Tri-Tech, Inc.

Yokohama, Japan Acquired in Dec., 2018

# Server

# THine HyperData, Inc.

Yokohama, Japan Establish in June 2024

# **Taiwan**

#### 哉英電子股份有限公司

THine Electronics Taiwan, Inc.
Taipei, Taiwan
Established in Sep. 2000



#### **THine value**

# Interface to the Future

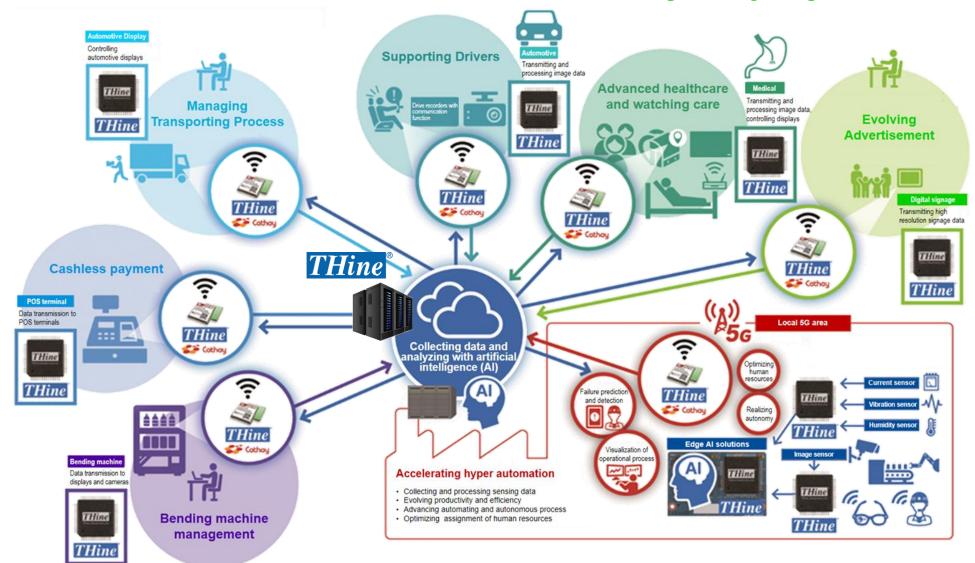
- Solution by Smart Connectivity -

LSI as smart interface,

**AIOT** as smart IoT solution, and

**Al/Data Server** providing computational resources







#### **Business Area**

#### Product and solution

#### Application market

LSI Biz. <High-speed interface LSI>

V-by-One® HS plus V-by-One® HS **LVDS** 





Serial Transceiver IOHA:B

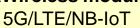
<lmage signal processing> Image Signal Processor Camera Development Kit

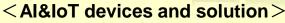
- Camera solution: automotive cameras, security cameras, AR/VR, recognition camera, medical cameras, etc.
- Display solution: high-resolution displays such as 8K / 4K, gaming monitors with high refresh rate
- Drive recorders, automotive CID, exp. for EVs
- Mobile, PC, and single board computers
- OA (multi-function printers), amusement
- Industrial equipment such as inspection equipment for semiconductors and LCD displays

**AI &** IoT Biz.

<Wireless modules>







IoT Gateway / Router AI & IoT Solution



< Al Server >

Al Server with NVIDIA H100 GPU

< Data Server > **General Server** Smart NIC/Switch



#### <AI/IoT Solution>

- 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
- <Server>
- ·AI servers and data servers for companies and AI research institutes though ODM/OEM





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# Financial performance in FY2024Q3(9M)

► Consolidated financial results

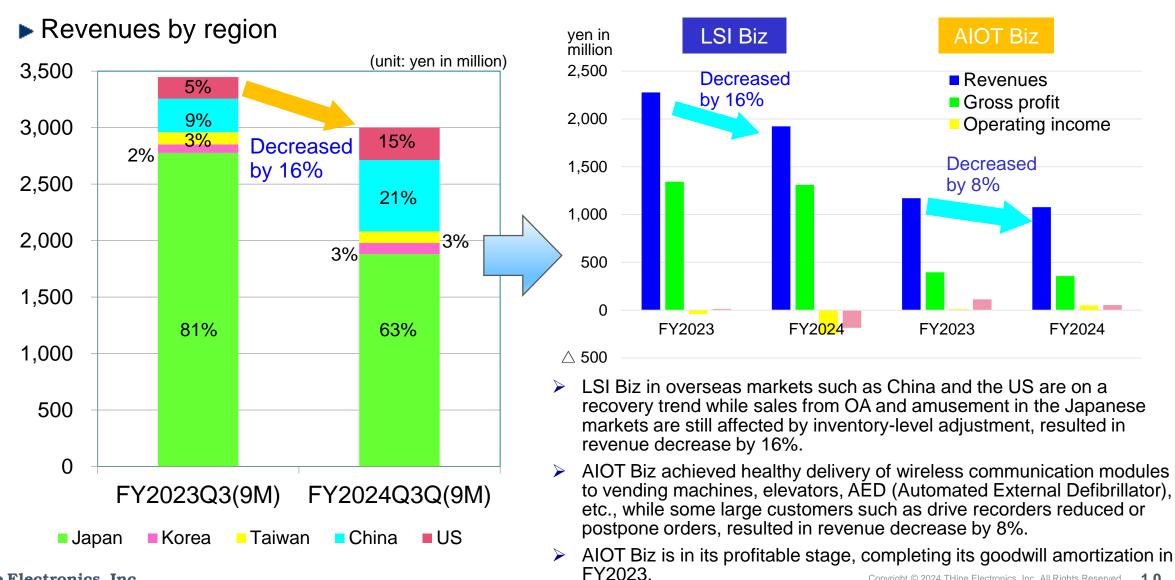
(yen in million)

	FY2024Q3 (9M)			FY2023Q3 (9M)		
		Portion%	YoY		Portion%	
Revenues	3,000	100.0	87.0	3,447	100.0	
Gross Profit	1,665	55.5	95.7	1,740	50.5	
SG&A	1,867	62.2	105.5	1,769	51.3	
(R&D expenses)	897	29.9	113.7	789	22.9	
Operating Income	△201	△6.7		△29	△0.8	
(EBITDA)	△129	△4.3	_	127	3.7	
Ordinary Income	△196	△6.6	_	173	5.0	
(Reference purpose only) Ordinary Income without FX effects	△198	△6.6	_	△25	△0.7	
Net Income Attributable to Owners of the Parent	△196	△6.6	_	53	1.6	



FY2024

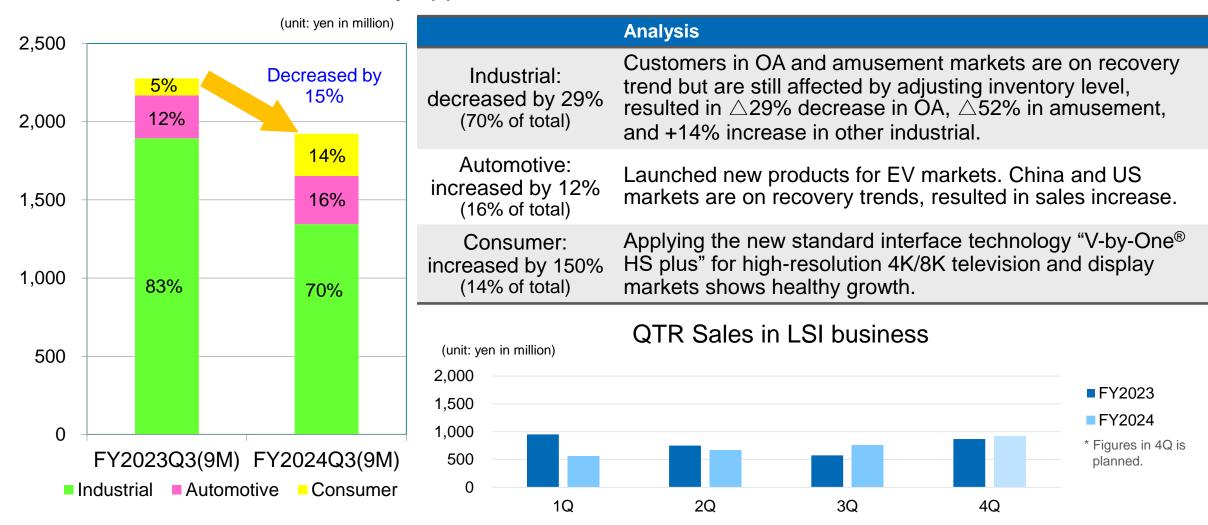
# Financial performance in FY2024Q3(9M) by region and segment





# Financial performance in FY2024Q3(9M) LSI Business by application markets

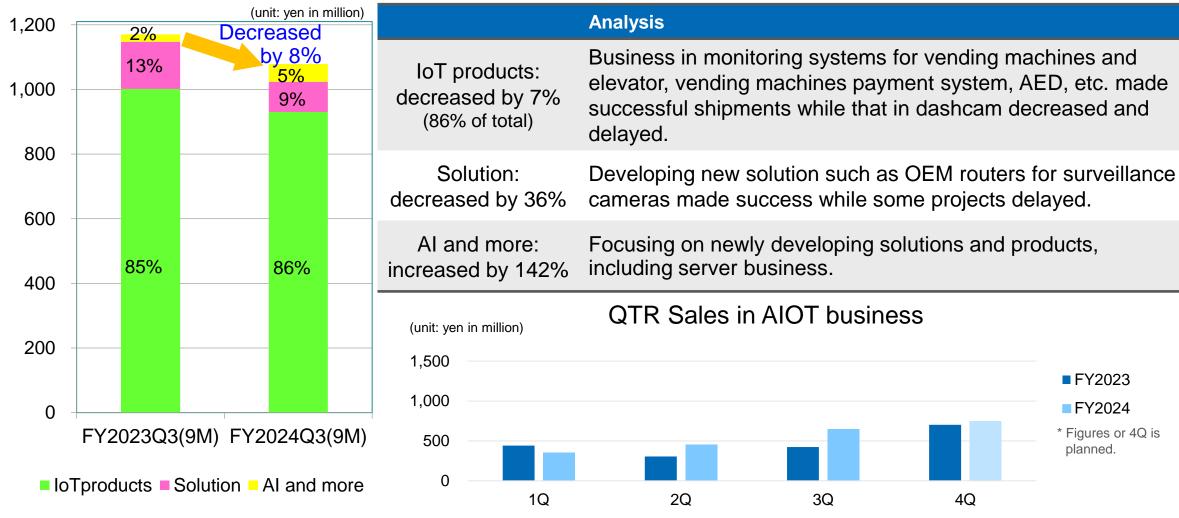
► Revenues of LSI business by application





# Financial performance in FY2024Q3(9M) AIOT Business by segment

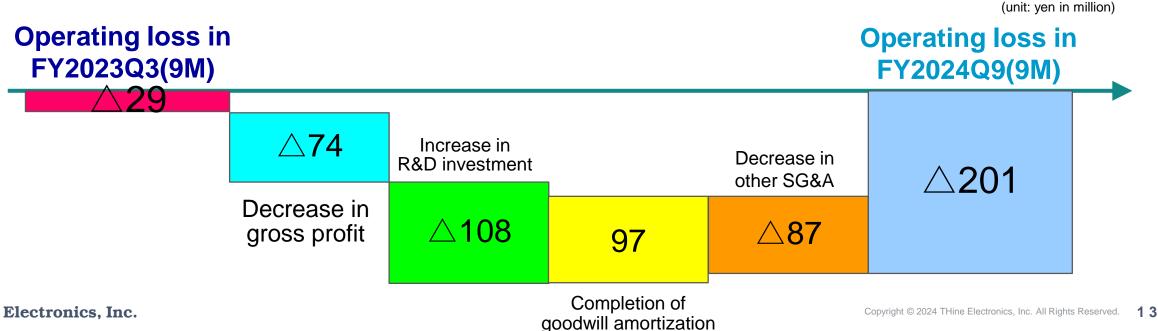
#### ► Revenues of AIOT business segments





# Financial performance in FY2024Q3(9M) SGA compared to FY2023Q2-6M

- ► Reasons of changes in operating income
- Gross profit decreased by 4% with the improved gross profit rate from 51% to 56%.
- Made intensive investment in research and development (R&D) with JPY897M, increased by 14%: developing new V-by-One® HS products for displays and cameras for EV markets, new power management products, low power and low latency optical chipset for advanced PCI Express 6.0/7.0, 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
- Goodwill amortization by acquiring AIOT business has been completed in FY2023.





# Financial performance in FY2024Q2(6M) R&D investment

- ▶ Intensive investment in R&D
- R&D investment plan in FY2024: totally JPY1,220M (increased by 11%)





#### **R&D in FY2024Q3(9M)** (actual)

> JPY897M compared to the plan: 74% compared to FY2023Q3 114%



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

- New V-by-One®HS products for display panels and cameras of EVs.
- New power management products
- Low power and low latency optical chipset for advanced PCI Express 6.0/7.0
- Modules for edge AI processing
- Voice-communication-support gateway products
- Smart IoT router products
- > High-speed wireless communication technology applicable to 1000Gbps data transmission (Beyond 5G), etc.



# Financial performance in FY2024Q3(9M)

▶ Outline of Balance Sheet as of the end of September, 2024

(unit: yen in million)

Assets			Liabilities and Net Assets			
	End/Sep/2024	End 2023		End/Sept/2024	End 2023	
Cash and Cash Equivalent	7,146	7,377	Account Payable	243	270	
Account Receivables	538	937	Other Current Liabilities	297	401	
Inventories	995	846	Non-current Liabilities	141	137	
Other Current Assets	283	303	Shareholders' Equity	8,772	9,139	
Property, Plant and Equipment	183	212	Accumulated Other Comprehensive Income	73	73	
Intangible Assets	59	69	Deferred Stock-based Compensation	67	150	
Investments and others	503	504	Non-controlling Interests	112	77	
Total Assets	9,710	10,250	Total Liabilities and Net Assets	9,710	10,250	

<sup>&</sup>gt; US-dollar-based cash as of the end of FY2024Q3 is approximately US\$9M.

<sup>&</sup>gt; The amortization of goodwill by acquisition of Cathay Tri-Tech (AIOT business) has been completed in FY2023.

<sup>&</sup>gt; THine HyperData, Inc. has been established in June 2024 with its capital of JPY100M.



# Financial performance in FY2024Q3(9M)

▶ Outline of Cash Flow Statements

(unit: yen in million)

	FY2024Q3(9M)	FY2023Q3(9M)
CF from Operating Activity	2	753
CF from Investing Activity	△91	△78
CF from Financing Activity	△161	△160
Effect of Exchange Rate Changes	19	178
CCE at the beginning of the FY	7,377	7,302
CCE at the end of the QTR	7,146	7,995

- > net loss before tax, decrease account receivables and account payable, and increase in inventories
- investment in fixed asset, etc.
- payment of dividend for FY2023, acquisition of treasury stock, exercise of stock options, establishing THine HyperData Inc., etc.
- Exchange rate JPY142 as of the end of FY2023 JPY142 as of the end of FY2024Q3



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



► Outline of "5G&Beyond-NE"



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



#### Beyond5G/8K

Ultra-High-Speed Data Transmission 8K Video Solution



#### **5G/AI·IoT Solution**

5G Wireless Communication
Face Recognition, Smart Infrastructure



#### **Mobility**

High Resolution / Multiple Automotive Cameras and Displays





Hyper Automation
Serial Transceiver for IoT Platform

#### Medical

Medical Cameras(ex. Endoscope)
High Resolution Monitor





#### ► Action in FY2024

- 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 loT communication, including drive recorders and smart meters
- 4 Cultivate future growing opportunities in **5G**, **Al&IoT**, **medical**
- ⑤Positively invest in *research and development* as well as *talented HR* to create value from new products, making developing projects more efficient within shorten periods
- ©Entering the **server business** as **the third portfolio** following to LSI and AIOT
- Provide effective solutions with THine's interface technology, seeking alliance and collaboration opportunities aggressively







► 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)





- 1) Automotive in-vehicle touch panel display
- ➤ Information display
- ➤ Rear seat entertainment
- ➤ Navigation
- ➤ Display Audio



- 2) Industrial embedded touch panel display
- ➤ HMI/programmable display
- ➤ Vending machines with touch panel
- ➤ Elevator interior panel
- > Traffic monitors

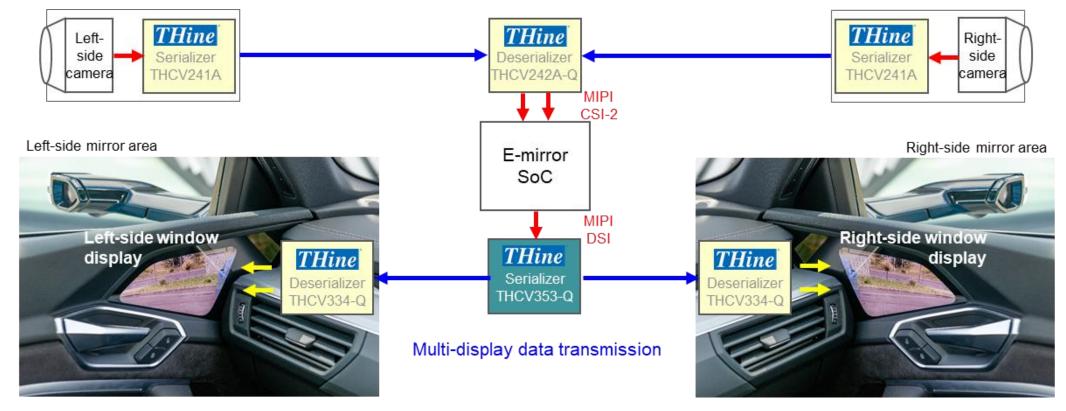








- ► Enhancing user experience solution for multi-displays 車載・産機組み込みパネル向けV-by-One®HS技術応用 新製品出荷開始
- > Images from left/right-side mirrors can be displayed on left/right-side window displays, simplifying automotive systems.
- > Achieves well-performing tach-panel responses, transmitting together with sound data through the same cables.







► Contribution to envolving medical cameras

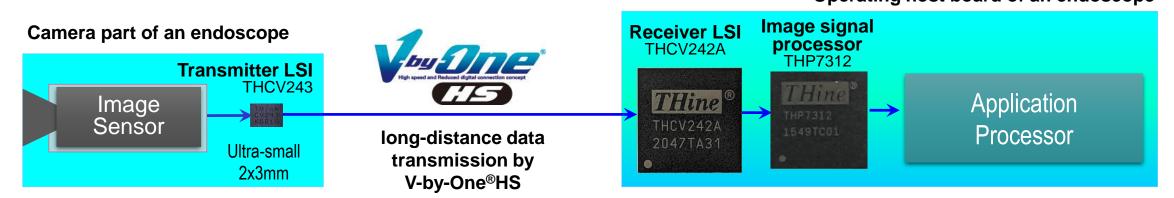
**Medical** 

#### V-by-One®HS product supports 4K medical cameras

- ➤ 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 Al-based machine learning with 4K images for higher detection rates for early-stage cancers

Operating host board of an endoscope





► Contribution to high-speed video data transmission

**Mobility** 

**Medical** 

**Beyond 5G/8K** 

#### Providing "V-by-One®HS plus Standard" since June, 2023

- Double-speed interface technology of today's de facto standard V-by-One® HS for 4K/8K TVs and displays
- Contributing to enhanced eco-design requirements in Europe, US, etc.

Comparison of video data transmission systems in case of 8K60fps or 4K240fps

Video data transmission by V-by-One® HS plus

Only 16 lanes required, reducing pin counts of LSIs and lowering power consumption

Print circuit board of image engine Print circuit board of display panel

Video Processor Controller

(Video Data: 32 pin)

# Print circuit board of image engine Video Processor (Video Data:) 64 pin Print circuit board of display panel Timing Controller (Video Data:) 64 pin

Current video data transmission

<sup>\*</sup> These images are for illustrative purposes only.



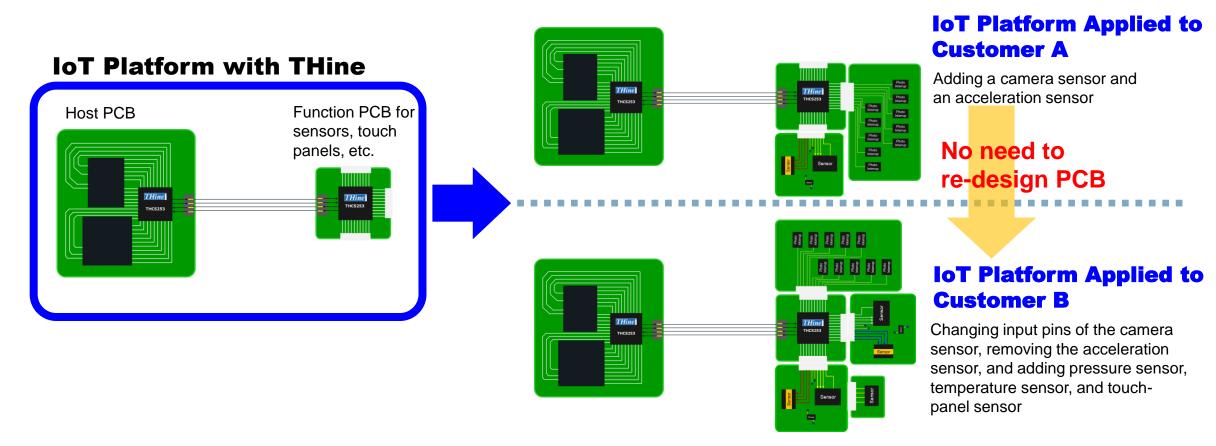


► Contribution to simplifying sensing & control systems



#### 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





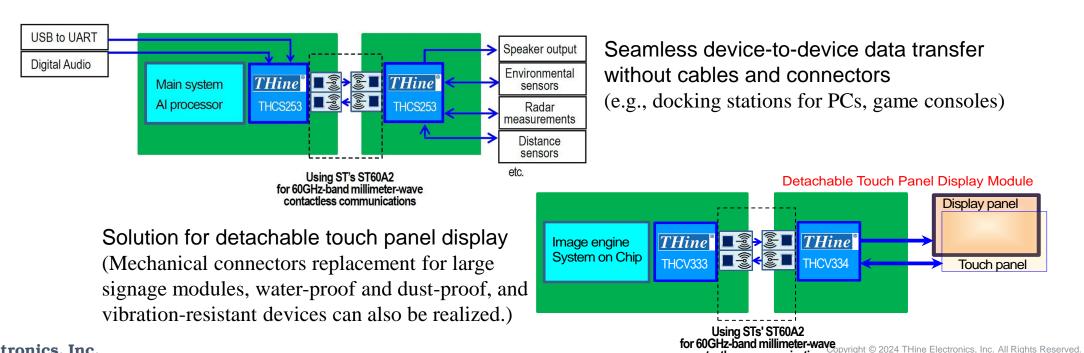
► Contribution to use cases with contactless communication

**Medical** 

Hyper Automation

#### Collaboration with STMicroelectronics's 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.





► Contribution to AI camera use cases

**Mobility** 

**Medical** 

Hyper Automation

**5G Al/loT** 

#### 13MP PDAF Camera Kit for NVIDIA Jestson Orin NX/Nano

Users can easily integrate advanced imaging capabilities with NVIDIA Jetson Orin into their systems.





- ✓ Ultra-quick phase detection autofocus (PDAF)
- ✓ Perfect unit-to-unit image quality for high volume production
- ✓ Selectable high-resolution: e.g.,13MP at 20fps, 4K2K at 30fps, and 1080p at 60fps, etc.



► Contribution to reducing power consumption in data centers, while generative AI requires more power consumption 5G Al/loT **Beyond 5G/8K** 

#### The industry first DSP-less optical chipset (low power and low latency) for advanced PCI Express

- > Developed the world first optical chipset without digital signal processors (DSPs) for PCI express 6.0, supporting VCSEL as well as developing chipset for PCI express 7.0
- > Reducing power consumption in data transmission by more than 60% and reducing latency by approximately 90%, resulting in faster response in faster computational response in AI use cases
- > Exhibited in ECOC2024, receiving a lot of praise for its excellent performance



Demonstration of THine's optical chipset in ECOC2024, showing excellent performance

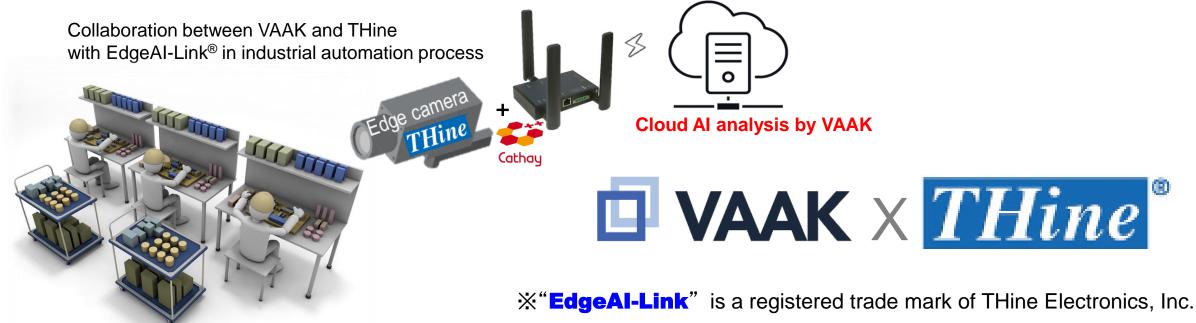


► Real-time-based AI image diagnosis from remoted video cameras

**5G Al/IoT** 

#### Collaboration with VAAK by **EdgeAl-Link®**, a cloud-linked Edge-Al cameras

- Collaboration with VAAK, a company with strengths in AI-based video analysis in crime prevention, industrial automation
- Combining VAAK's highly-accurate analysis technology in detection and recognition with THine's cutting edges in video data transmission technology
- Cooperation in providing a video analysis starter kit that enables easy application of AI services







► Contribution to computational resources including AI server



5G Al/loT

#### Entering the server business, establishing "THine HyperData, Inc."

- Contribution to further utilization of generative AI and AI research in Japan
- > Starting sales with 7 models, including AI servers equipped with NVIDIA's GPUs, H100.

Al server model with NVIDIA's GPU H100



#### Outline of the new server company

Name	THine HyperData, Inc.
Address	3-24-11, Shin-yokohama, Kohoku-ku, Yokohama, Japan
Representatives	Chairman and CEO: Takashi Nakahara (Director for AIOT Biz, THine Electronics, Inc.)  President: Kenji Mizuno (the former president of Fujitsu Isotec Limited)
Business	Planning, development, manufacturing, sales and maintenance of AI server and data server products, storage products, switch products, etc., and development, provision and construction of related software, systems and solutions, etc.





► Contribution to various IoT use cases

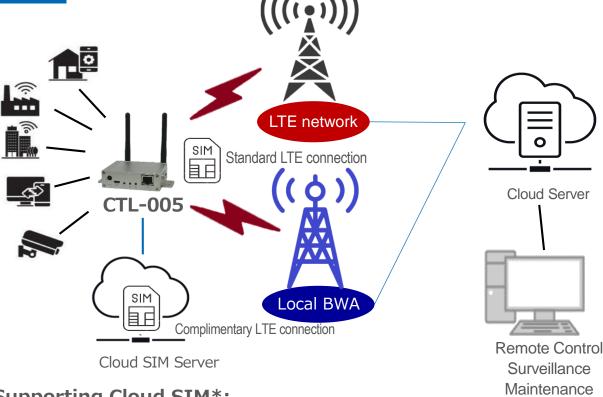
**5G Al/loT** 

# Compact LTD router for industrial use: CTL-005



#### **■** Feature of CTL-005

- 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) Use of Cloud SIM is available that enhance the use in case of communication network failure
- 4) Aluminum alloy case with excellent durability and heat dissipation
- 5) Compact and light weight design: size:80.2x68.8x28.7mm, weight approx.108g
- 6) Easy setup with Web GUI



#### **Supporting Cloud SIM\*:**

Users can keep network connection in case of communication failure by SIM card connection through connecting to Cloud SIM as back up line.

\*Connecting Cloud SIM requires additional contracts with its service providers.



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

**Beyond 5G/8K** 

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

Successfully developed the World's First Mixed-Signal Baseband Demodulator Technology

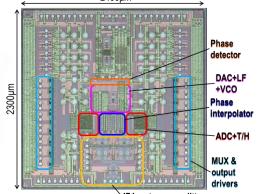
The National Institute of Information and Communications Technology (NICT)



Ministry of Internal Affairs and Communications (MIAC)

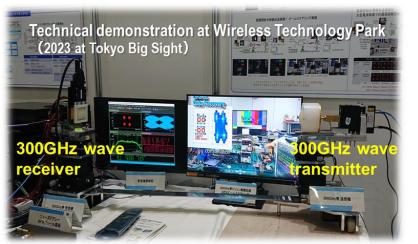
Hiroshima University Nagoya Institute of Technology

Tokyo University of Science



# Wide application

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





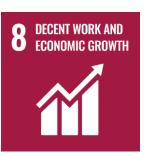
► Contribution to SDGs

# Interface to the Future

- Solution by Smart Connectivity -

















- √ V-by-One® HS plus contributes to reduce energy consumption in high-resolution displays
- ✓ 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



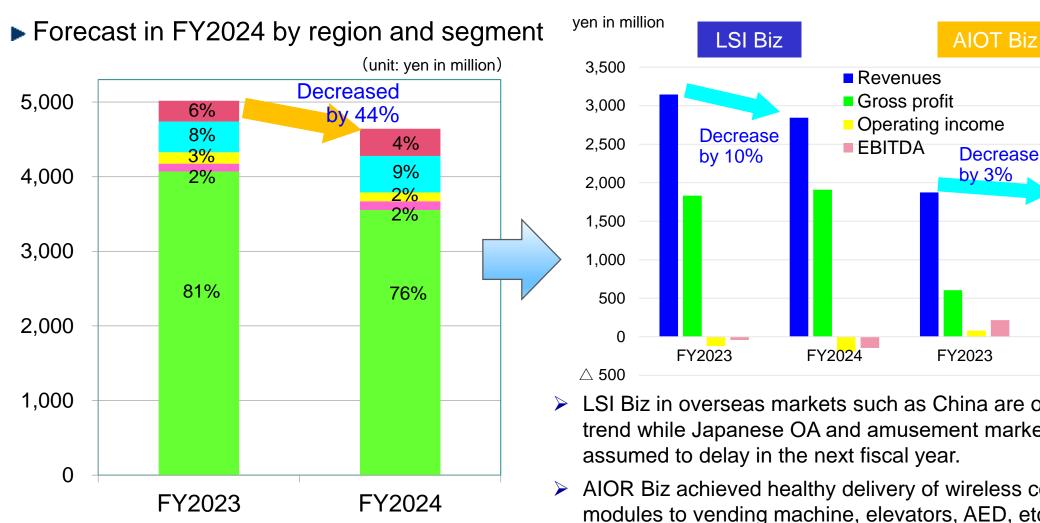
#### ► Forecast in FY2024

FY2024 is the last year of "5G&Beyond-NE." Thine has amended its forecast of FY2024 as follows.

(yen in million)

	Forecast in FY2024			FY2023		FY2022	
		Portion%	YoY		Portion%		Portion%
Revenues	4,668	100.0	93.0	5,018	100.0	5,456	100.0
<b>Gross Profit</b>	2,535	54.3	104.1	2,435	48.5	2,987	54.8
SG&A	2,525	54.1	102.0	2,476	49.3	2,386	43.7
(R&D expenses)	1,220	26.1	110.7	1,102	22.0	1,009	18.5
<b>Operating Income</b>	10	0.2	_	△40	△0.8	601	11.0
EBITDA	61	1.3	35.6	173	3.5	775	14.2
Ordinary Income	87	1.9	122.3	71	1.4	906	16.6
(Ordinary Income* without foreign currency exchange gain or loss)	13	0.3	_	△32	△0.7	636	11.7
Net income attributable to Owner of the Parent	111	2.4	_	△69	△1.4	820	15.0





FY2023 FY2024 LSI Biz in overseas markets such as China are on a recovery trend while Japanese OA and amusement markets' recovery is assumed to delay in the next fiscal year.

AIOR Biz achieved healthy delivery of wireless communication modules to vending machine, elevators, AED, etc. while some large customers such as drive recorders reduced or postpone orders in or in the next fiscal year.

Japan

China

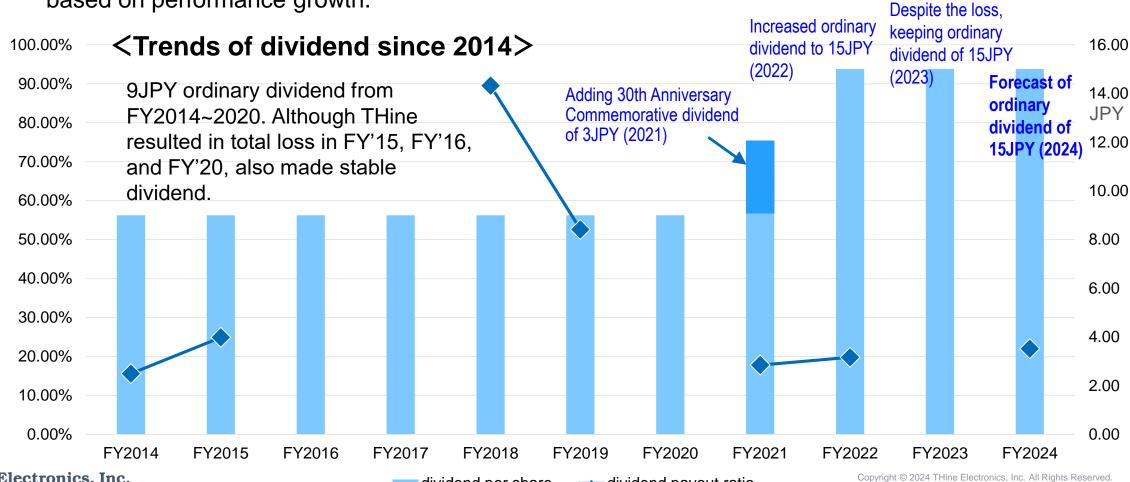
**Decrease** 

by 3%



► Shareholder return policy

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







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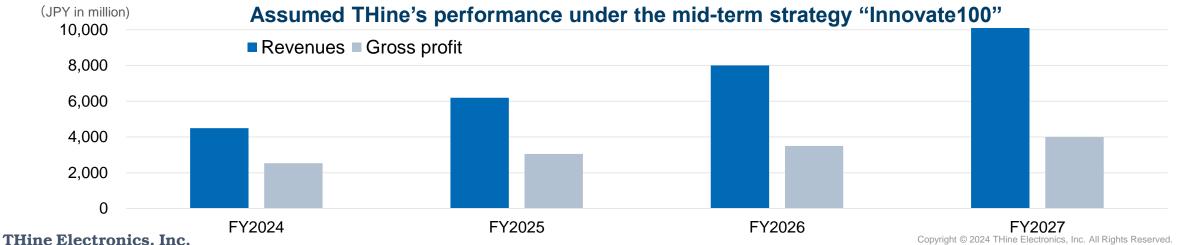
# The next mid-term strategy, "Innovate 100" from 2025 to 2027

- ▶To increase the corporate value of THine
- Making our best effort to achieve the revenues of JPY10Billion in Mid-term Strategy "Innovate100"



Innovate100 (2025 - 2027)FY2027 Revenues of JPY10Bn or more

> Assuming in the case of achieving the goal **ROIC** (return on invested capital) exceeds 10%





# The next mid-term strategy, "Innovate 100" from 2025 to 2027

Outline of the next mid-term strategy, "Innovate100"

#### **Basic strategy**

Thine Group will contribute to accelerating implementation of AI use cases through its three business portfolio of LSI, AIOT, and Server, proposing low power solution for data center markets that shall increase power consumption enormously.

Thine Group will proactively cultivate collaboration opportunities with partners, including M&A deals.

#### Typical action items

- Launching solution business with Al processors
- Widely applying Thine's LSI solution that can aggregate IoT wiring drastically
- > Launching EdgeAl solution business, supporting industrial IoT use cases
- > Developing new DSP-less optical chipsets that extraordinary reduce power consumption and latency
- > Providing wireless communication solution for smart meters that can be data source for AI-based sensing
- > Applying wireless communication solution to automotive and industrial equipment that communicate with cloud
- > Starting business for telecommunications carriers
- Widely applying server business, including AI servers

#### Enhancing synergy among Thine Group's 3 business of LSI, AIOT solution, and Servers

On July 1st, 2025, Cathay Tri-Tech., Inc., Thine Group's AIOT solution company, will change its company name to "THine MobileTek., Inc.", enhancing THine Group's synergy.



# Interface to the Future - Solution by Smart Connectivity -

URL <a href="https://www.thine.co.jp/corporate/investors/">https://www.thine.co.jp/corporate/investors/</a>

Please inquire through the inquiry form in the URL.

Contact: IR Team, General Dept.

9-1, Kanda-mitoshiro-cho, Chiyoda-ku, Tokyo, 101-0013 Japan

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