



## **TODAY'S AGENDA**

- Corporate outline
- Business results in FY2024Q4
- The new mid-term strategy, "Innovate100"
- Topics of THine Group's technology and solutions





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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

130, consolidated as of December 31, 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
The company name will be changed to "THine MobileTeK, Inc." in July 2025
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

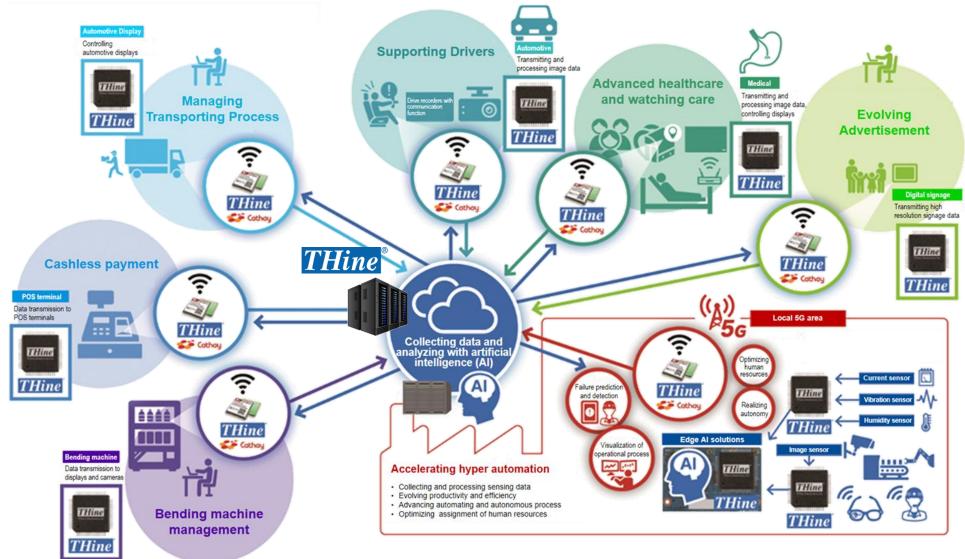
- Solution by Smart Connectivity -



**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
Optical Chipset (VCSEL driver, TIA) **Image 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 optical computing for optical interconnect in networks of data centers

AI & loT Biz.

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

AI & IoT Solution

<AI Server >

AI 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 FY2024 (12M)

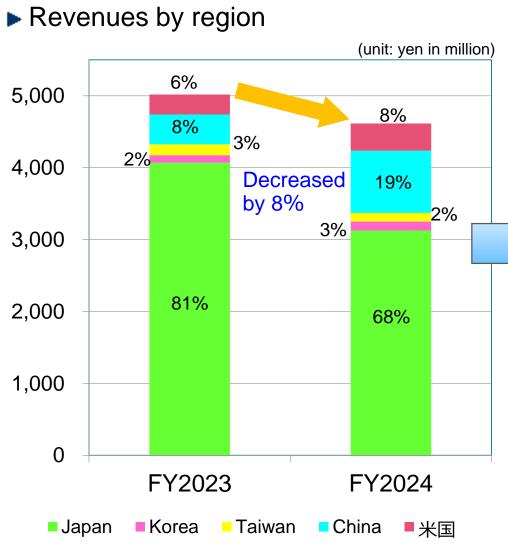
► Consolidated financial results

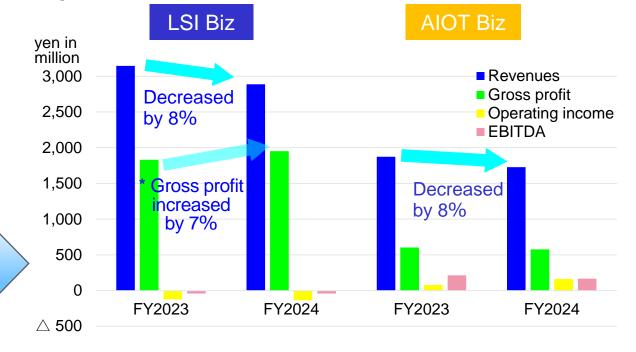
(yen in million)

	FY2024 (12M)			FY2023 (12M)	
		Portion%	YoY		Portion%
Revenues	4,614	100.0	91.9	5,018	100.0
Gross Profit	2,528	54.8	103.8	2,435	48.5
SG&A	2,500	54.2	101.0	2,476	49.3
(R&D expenses)	1,154	25.0	104.8	1,102	22.0
Operating Income	28	0.6		△40	△0.8
(EBITDA)	125	2.7	72.2	173	3.5
Ordinary Income	264	5.7	368.8	71	1.4
(Reference purpose only) Ordinary Income without FX effects	32	0.7	_	△32	△0.7
Net Income Attributable to Owners of the Parent	339	7.4		△69	△1.4



## Financial performance in FY2024 (12M) by region and segment



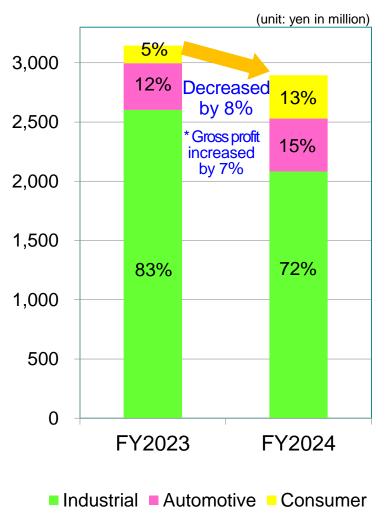


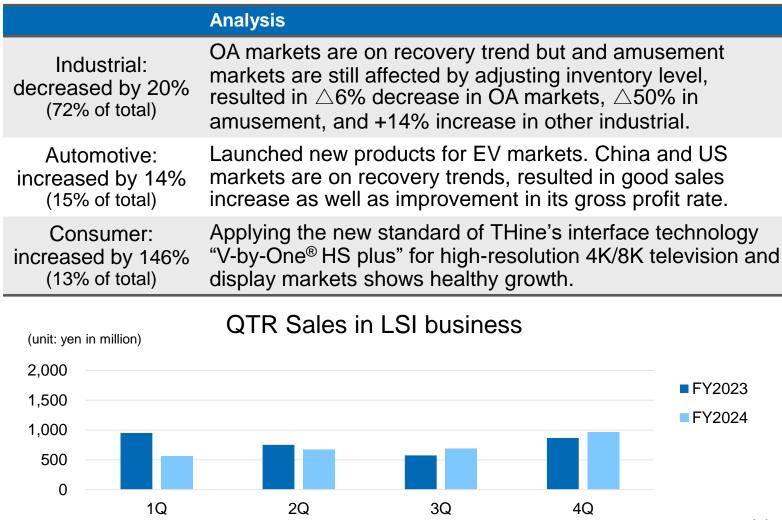
- LSI Biz in overseas markets such as China and the US have contributed to increase the gross profit on a recovery trend. Sales in OA markets found some recovery cases while those in amusement markets are still affected by inventory-level adjustment, resulted in revenue decrease and gross profit increase by 7%.
- AIOT Biz achieved healthy delivery of wireless communication modules to vending machines, elevators, AED (Automated External Defibrillator), etc., while customers in drive recorders reduced units and those in smart-meters postponed orders, resulted in revenue decrease by 8%.
- AIOT Biz is in its profitable stage, completing its goodwill amortization in FY2023.



## Financial performance in FY2024 (12M) LSI Business by application markets

## Revenues of LSI business by application

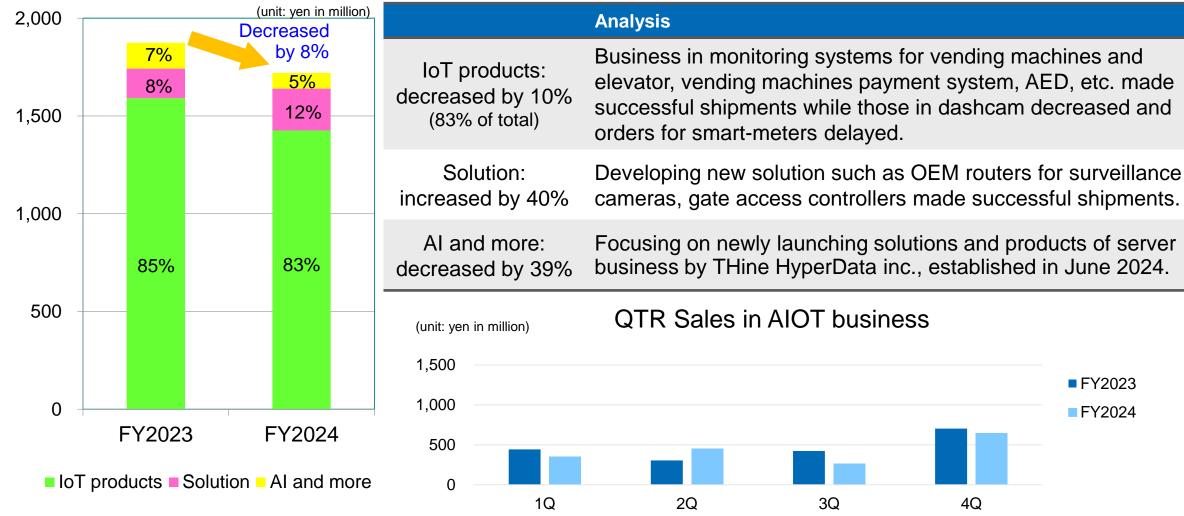






## Financial performance in FY2024 (12M) AIOT Business by segment

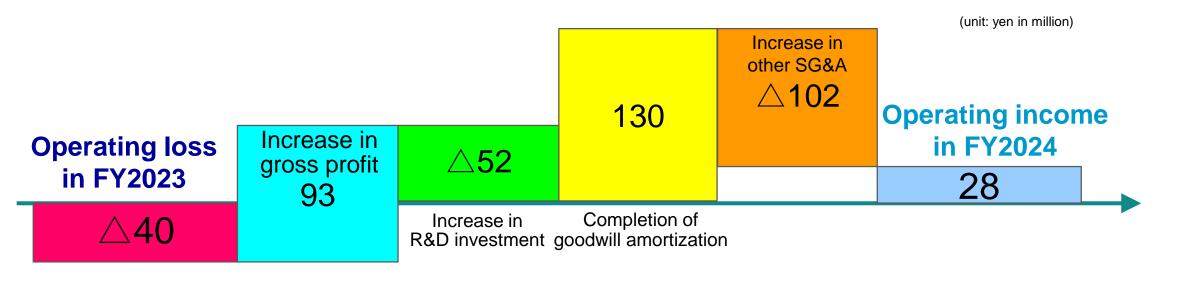
## ► Revenues of AIOT business segments





## Financial performance in FY2024 (12M) SGA compared to FY2023 (12M)

- ► Reasons of changes in operating income
- > Gross profit increased by 4% with the improved gross profit rate from 49% to 55% while revenues decreased
- > Made intensive investment in research and development (R&D) with JPY1,154M, increased by 5%: developing new products of V-by-One® HS for displays and cameras for EV markets, new power management products, the world-first optical chipsets for AI optical computing with low power and low latency features, 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 Japanese government, MIAC
- Goodwill amortization by acquiring AIOT business has been completed in FY2023.





## Financial performance in FY2024 (12M) R&D investment

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





## **R&D in FY2024 (12M)** (actual)

> JPY1,154M compared to the plan: 95% compared to FY2024 105%



## 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
- > The world-first optical chipset with low power and low latency features for AI optical computing
- Modules for edge AI processing
- Voice-communication-support gateway products
- > Smart IoT router products
- > Smart module solutions with neural processing units for AI processing
- High-speed wireless communication technology applicable to 1000Gbps data transmission (Beyond 5G), etc.



## **Financial performance in FY2024**

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

(unit: yen in million)

Assets			Liabilities and Net Assets		
	End of FY2024	End of FY2023		End of FY2024	End of FY2023
Cash and Cash Equivalent	7,306	7,377	Account Payable	289	270
Account Receivables	1,144	937	Other Current Liabilities	306	401
Inventories	842	846	Non-current Liabilities	141	137
Other Current Assets	264	303	Shareholders' Equity	9,309	9,139
Property, Plant and Equipment	161	212	Accumulated Other Comprehensive Income	79	73
Intangible Assets	55	69	Deferred Stock-based Compensation	73	150
Investments and others	554	504	Non-controlling Interests	130	77
Total Assets	10,329	10,250	Total Liabilities and Net Assets	10,329	10,250

<sup>&</sup>gt; US-dollar-based cash as of the end of FY2024 is approximately US\$10M.

<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 FY2024 (12M)**

▶ Outline of Cash Flow Statements

(unit: yen in million)

	FY2024	FY2023
CF from Operating Activity	△73	402
CF from Investing Activity	15	△148
CF from Financing Activity	△161	△285
Effect of Exchange Rate Changes	148	107
CCE at the beginning of the FY	7,377	7,302
CCE at the end of the QTR	7,306	7,377

- increase in net income before tax, account receivables, etc.
- > sales of investment securities, 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 JPY158 as of the end of FY2024





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LSI

**THine** 



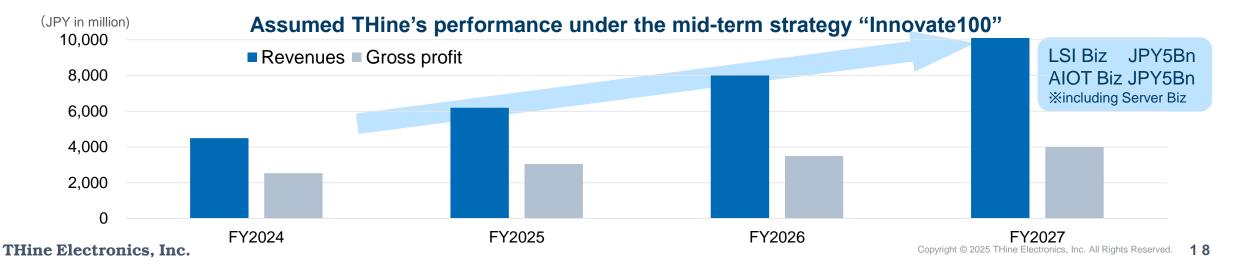
- ▶To increase the corporate value of THine
- **♦** Making our best effort to achieve the revenues of JPY10Billion in the mid-term strategy "Innovate100"



Innovate100 (2025—2027)

FY2027 Revenues of JPY10Bn or more

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





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 AI 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 1<sup>st</sup>, 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 effects.



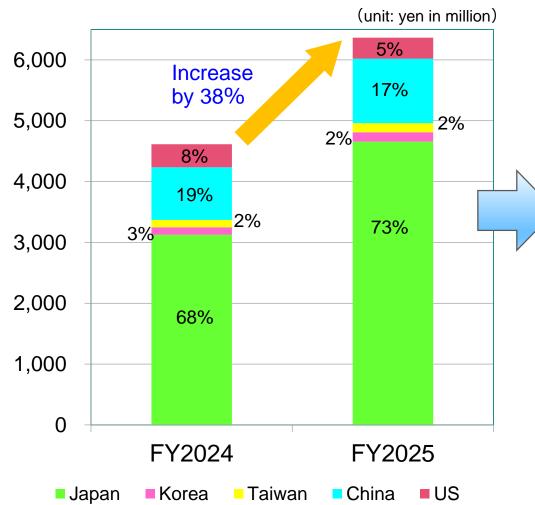
#### ► Forecast in FY2025

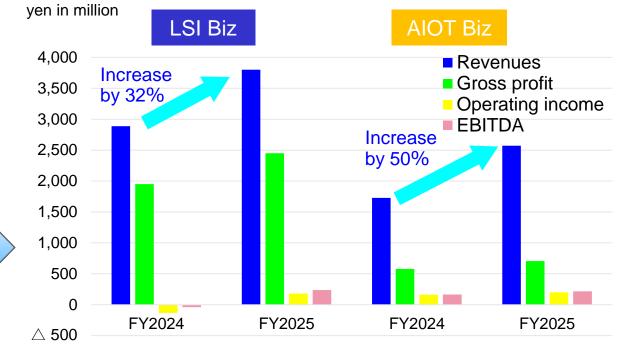
From this FY2025 THine Group has started its new mid-term strategy, "Innovate100," aiming its goal of revenues in FY2027 with 10 billion yen or more. (yen in million)

	Forecast in FY2025			FY2024 results		FY2023 results	
		Portion%	YoY		Portion%		Portion%
Revenues	6,366	100.0	138.0	4,614	100.0	5,018	100.0
<b>Gross Profit</b>	3,150	49.5	124.6	2,528	54.8	2,435	48.5
SG&A	2,768	43.5	110.7	2,500	54.2	2,476	49.3
(R&D expenses)	1,365	21.5	118.3	1,154	25.0	1,102	22.0
<b>Operating Income</b>	381	6.0	1360.5	28	0.6	△40	△0.8
EBITDA	455	7.2	363.4	125	2.7	173	3.5
Ordinary Income	360	5.7	136.2	264	5.7	71	1.4
Net income attributable to Owner of the Parent	301	4.7	88.9	339	7.4	△69	△1.4



► Forecast in FY2025 by region and segment

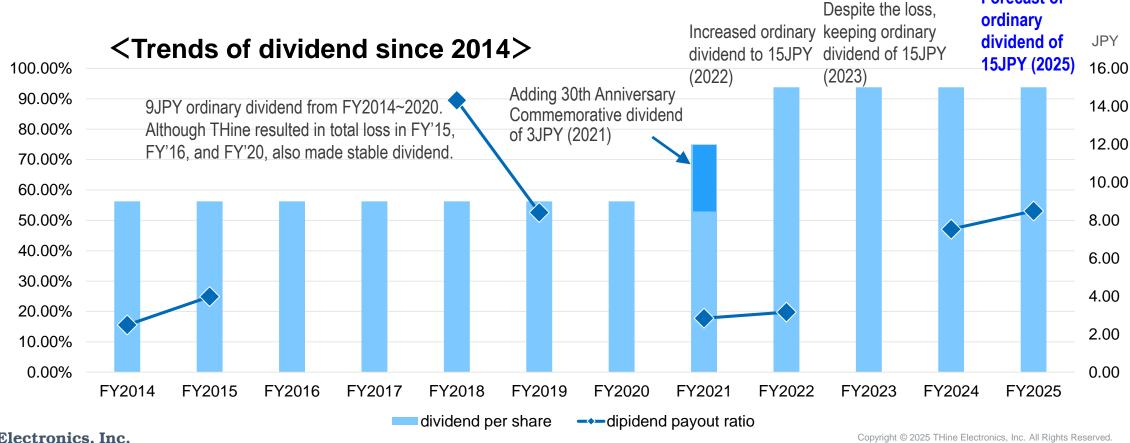




- LSI Biz' forecast increases by 32%. Its OA markets are on a recovery trends and overseas markets such as China and US are on a growing trend.
- AIOT Biz' forecast increases by 50%, making intensive efforts on launching business for smart-meters, in addition to existing drive recorders, wireless communication modules to vending machine, elevators, AED, etc.



- ► Shareholder return policy
  - THine Group makes efforts to achieve the new mid-term strategy, "Innovate100" and to return profits to shareholders based on assuming THine's future growth. Dividend for FY2024 is 15JPN per share as forecasted and the forecast of dividend for FY2025 is at the same level as FY2024. Forecast of







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► 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

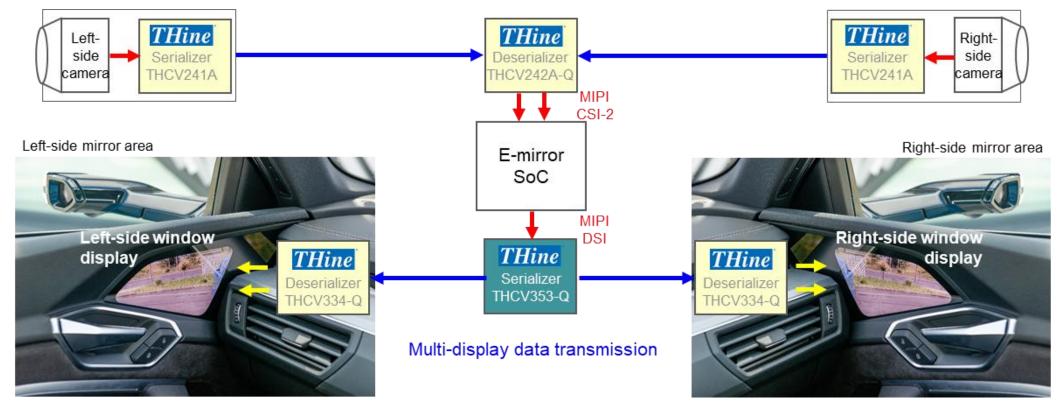




► Enhancing user experience – solution for multi-displays

#### New V-by-One®HS products for multi-panel solutions for EVs and Industrial equipment

- > 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.



THine Electronics, Inc.





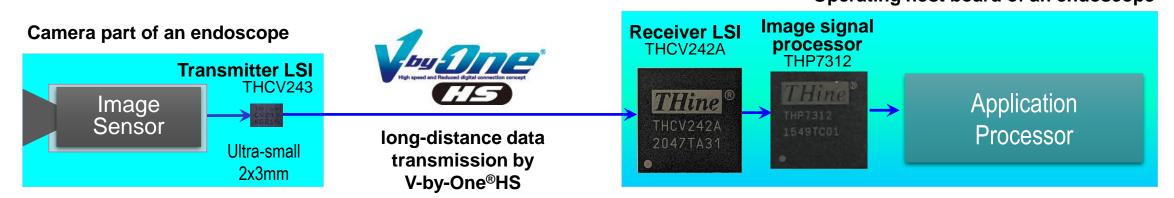
► Contribution to envolving medical cameras

#### 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 AI-based machine learning with 4K images for higher detection rates for early-stage cancers

Operating host board of an endoscope



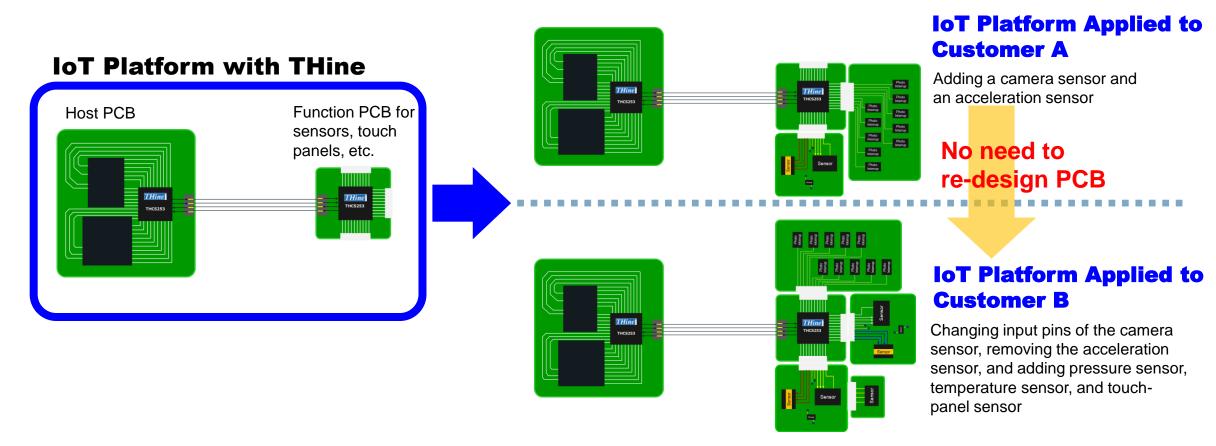




► Contribution to simplifying sensing & control systems

#### 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

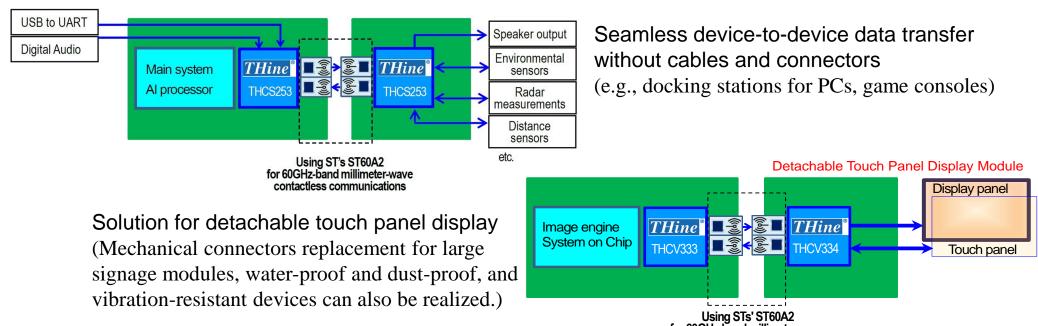




► Contribution to use cases with contactless communication

#### 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.



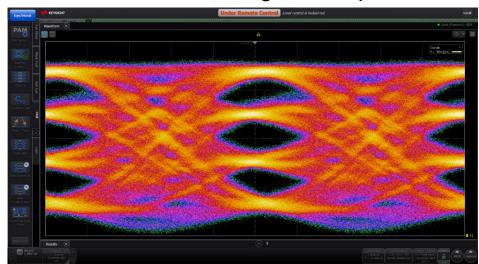




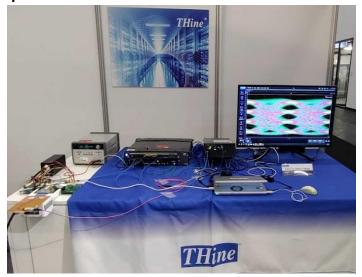
► Contribution to reducing power consumption in data centers, while generative AI requires more power consumption

## The world-first DSP-less optical chipset (ultra-low power and ultra-low latency) supporting VCSEL

- ➤ The world-first optical chipset without digital signal processors (DSPs) for advanced PCI express, supporting VCSEL with excellent signal integrity for server networks of AI and machine learning
- ➤ Reducing power consumption in data transmission by 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



Excellent performance with clear eye opening at VCSEL output using Thine's optical-DSP-less PAM4 64Gbps Driver



Demonstration in ECOC2024



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

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

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

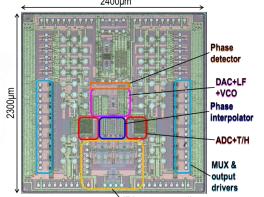
The National Institute of Information and Communications Technology (NICT)



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.



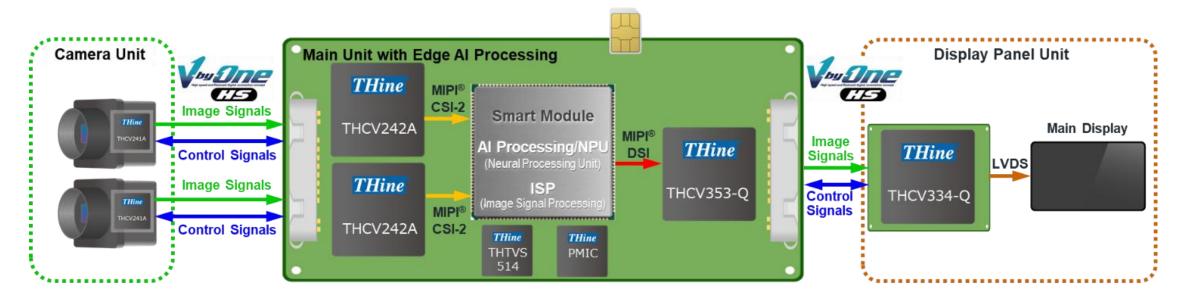


► THine's interface technology achieves smart connectivity and enhances smart analysis

## **EdgeAl-Link®** one stop solution, enabling to link with cloud Al solution

- > Accelerate customers' time-to-market of edge A solution, reducing total developing costs
- supporting 3.5 ~ 12 TOPS (Tera Operations Per Second)
- Preparing for faster-TOPS lineups

Applications: facial recognition, store marketing, crime prevention, drive recorders, etc.







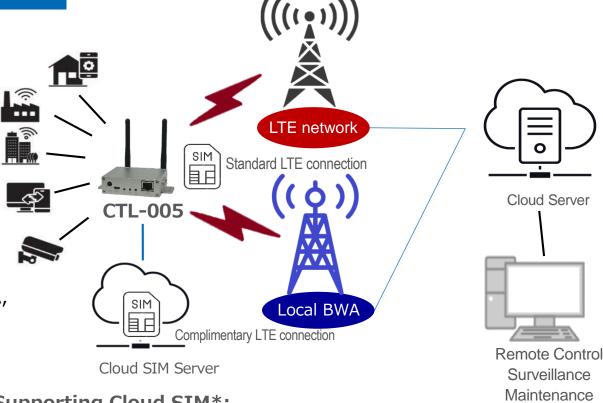
► Contribution to various IoT use cases

**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]
- 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.





► Contribution to various IoT use cases

#### **Video call terminal CTV-003**



■ Specification of the main terminal with stand

panel
io
D) mm
į

- Features (supporting LTE)
  Video call terminal, suitable for use cases in medical, welfare,
  and nursing case
  <Touch phone>
  - ◆ Easy calling at anytime from anywhere
    - LTE line supports calling at anytime from anywhere even from remote place, outside of office or home
  - ◆ Simple use allows even children or elderly people to operate easily
    - One touch operation on the touch panel
    - One push of a button of a remote controller
  - ◆ Comfortable communication with looking at speakers' face
    - Simple remote controller, using specified low power radio, less susceptible to walls and obstructions than infrared communication
    - Battery-powered

user can talk for a certain time even in a sudden power outage

■ Re-dialing/auto answer function, equipped with functions designed for use in the medical and welfare fields, such as an "auto answer function" that automatically starts a video call and a "redialing function" that repeatedly dials until communication with the other party is established.

\* Can also be used as a regular telephone.





#### ► Contribution to various IoT use cases

#### **Edge-Al Computing Box**



#### Specifications

-	
CPU	Qualcomm Snapdragon QCS6490
	Kryo™ CPU 6xx, Octa-core
	1 x A78 @ 2,7GHz
	2.x A78 @ 2.4GHz
	4 x A55 @ 1.9GHz
<b>GPU</b>	Adreno 642
OS	Ubuntu / Android
Memory	RAM: LPDDR4x/5, 8GB
	ROM: UFS, 128GB
	(customizable)
Comm.	Functioin Wi-Fi: 802.11ax
	2.4G/5G/6G

DBS, 2\*2 MIMO

BT: 5.1

nterface	USB-A 2.0: x1
	USB-A 3.1: x4
	USB-C 3.1: x1, DP over type-o
	HDMI_IN: x1, support I2S
	HDMI_OUT: x1, support I2S
	Ethernet: 100/1000 Mbps RJ4
	WAN: x1
	LAN: x3
	Micro SD: x1
	Antenna: 2 x Wi-Fi
Power Sup	oply DC_IN: 12V~24V
<b>Operating</b>	Temp20°C~+60°C
Size	135 x 115 x 55 mm

#### ■ Features

#### Edge AI computing box with wide varieties of interfaces

#### Equipped Qualcomm QCS6490

- Multiple large cores achieve high performance
- Less energy consumption, supporting light-duty tasks

#### Fast and smooth operability

- High performance cores enable smooth startup of applications and switching between multiple tasks; and
- Enable to run games and AR/VR applications smoothly even with heavy-duty tasks

#### Supporting multi-tasks

- The 8-core configuration enables simultaneous processing of many applications and background tasks
- Smooth operation even when editing videos or processing large amount of data

#### High performance of image processing

- Suitable for 4K videos and high-resolution streaming
- Supports advanced codecs (HEVC, etc.) to reduce amount of data usage

#### Supporting Ubuntu/Android

#### Supporting WiFi6/6E [IEEE802.11.ax]

- Supports the latest Wi-Fi protocols to provide a fast and stable connection
- Suitable for real-time communication with high bandwidth Bluetooth 5.1
- Supports high-speed data communication with low power consumption

#### Use Cases

Industrial IoT: Logistics center, Missing item detection, Behavior

monitoring, Security monitoring systems

 Smart City: Traffic monitoring, Streetlights control Healthcare: Medical imaging, Driving monitoring systems

 Robotics: Autonomous driving support, Agricultural product

seed color sorting, Robotic arm





Contribution to computational resources including AI server

#### Starting the server business, including Al servers with NVIDIA's latest GPU

- Establishing the server business subsidiary, THine HyperData, Inc.
- Contribution to further AI computational resources in Japan
- Starting sales including AI servers equipped with NVIDIA's GPUs



TA-8140 8U AI server (2024) NVIDIA H100/H200 HGX GPU model

8U AI server equipped with Intel 4th/5th generation Xeon® Scalable processors. Powered by NV HGX GPU modules, highly optimized for hyperscale AI training and AI inference in both cloud data centers and enterprise IT



Water cooling 8U Al server (2025) NVICIA B200 HGX GPU , model



► 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



# 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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