



Interface to the Future
- Solution by Smart Connectivity -

THine Electronics, Inc. (TSE: 6769) FY2024Q1 Business Results and Opportunities

May 7, 2024

Mid-term Strategy from 2022 to 2024

5G&Beyond-NE

TODAY'S AGENDA

- Corporate outline
- Business results in FY2024Q1
- Future opportunities under mid-term strategy, “5G&Beyond-NE”

Corporate outline: Provider of unique value to the world, Interface to the Future - Solution by Smart Connectivity -

de facto standard technology of high-speed interface, etc.

- Company Name THine Electronics, Inc.
(listed on Tokyo Stock Exchange, code: 6769)
- Founder & CEO Tetsuya Iizuka, Ph. D
- President & COO Yoichiro Minami
- Capital 1,175 million Yen
- Founded May, 1991
- Incorporated June, 1992
- Business Area Planning, Designing and Sales of Mixed Signal LSI and
Providing AI & IoT devices and solutions
- Employees 133 (consolidated basis as of March 31, 2024)



THine teams

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
前海賽恩電子(深圳)有限公司
THine Electronics Shenzhen, Co., Ltd.
Established in May 2013
上海分公司
Established in Oct.2013



Tokyo – Headquarters –



Tokyo, Japan
Start-up in May 1991

LSI

AIOT

Cathay Tri-Tech

Yokohama, Japan
Acquired in Dec., 2018

Taiwan

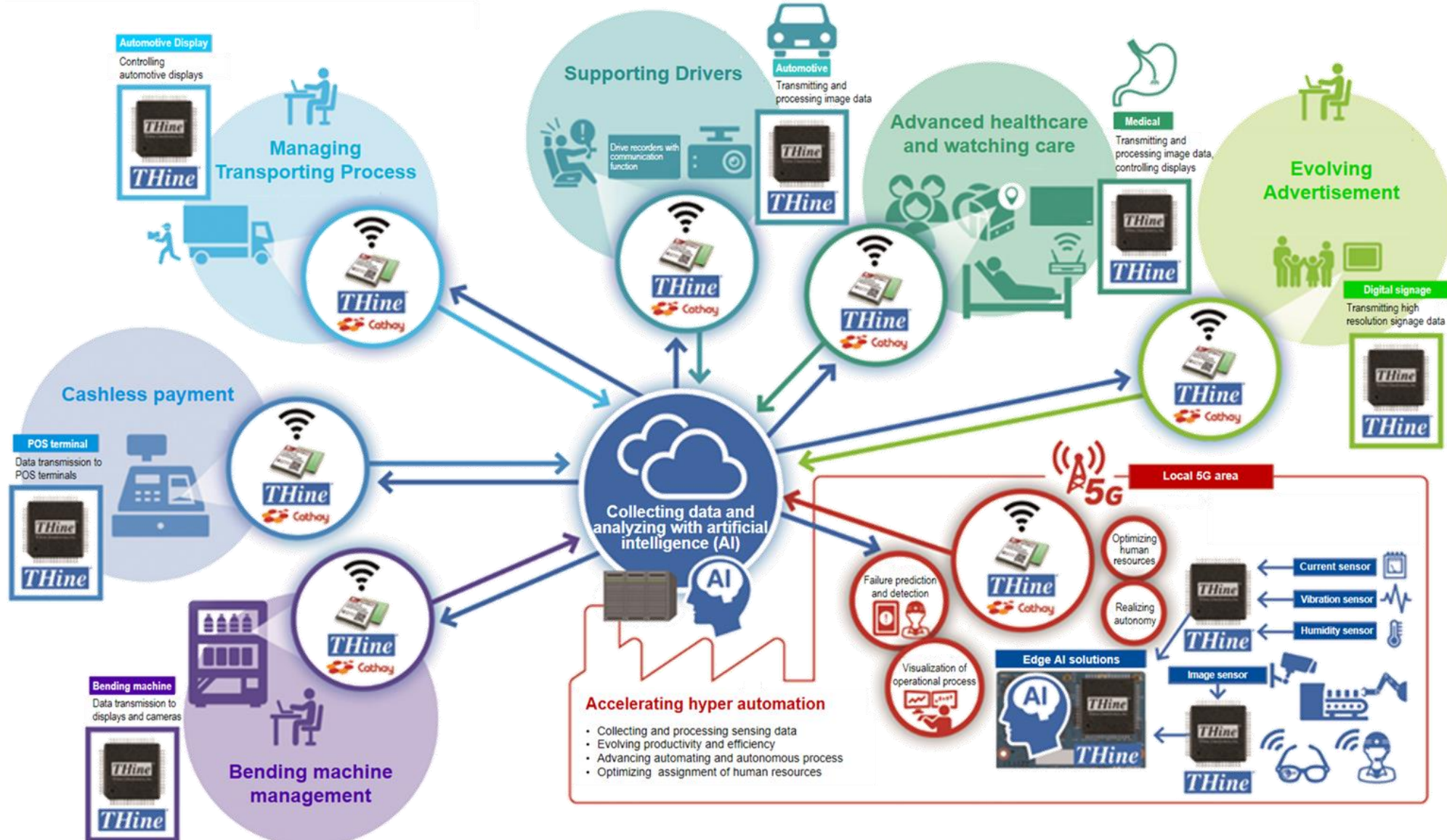
哉英電子股份有限公司
THine Electronics Taiwan, Inc.
Taipei, Taiwan
Established in Sep. 2000








Server THine HyperData

Yokohama, Japan
Plan to establish in 2024

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



Business area

	Product and solution	Application market
LSI Biz.	<p><High-speed interface LSI> V-by-One® HS plus V-by-One® HS LVDS Serial Transceiver IOHA:B</p> <p><Image signal processing> Image Signal Processor Camera Development Kit</p>  	<ul style="list-style-type: none"> • 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.	<p><Wireless modules> 5G/LTE/NB-IoT</p> <p><AI&IoT devices and solution> IoT Gateway / Router Edge AI Processor / Module AI & IoT Solution</p> <p><Server> AI Server / Data Server</p>   	<ul style="list-style-type: none"> • 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

Financial performance in FY2024Q1

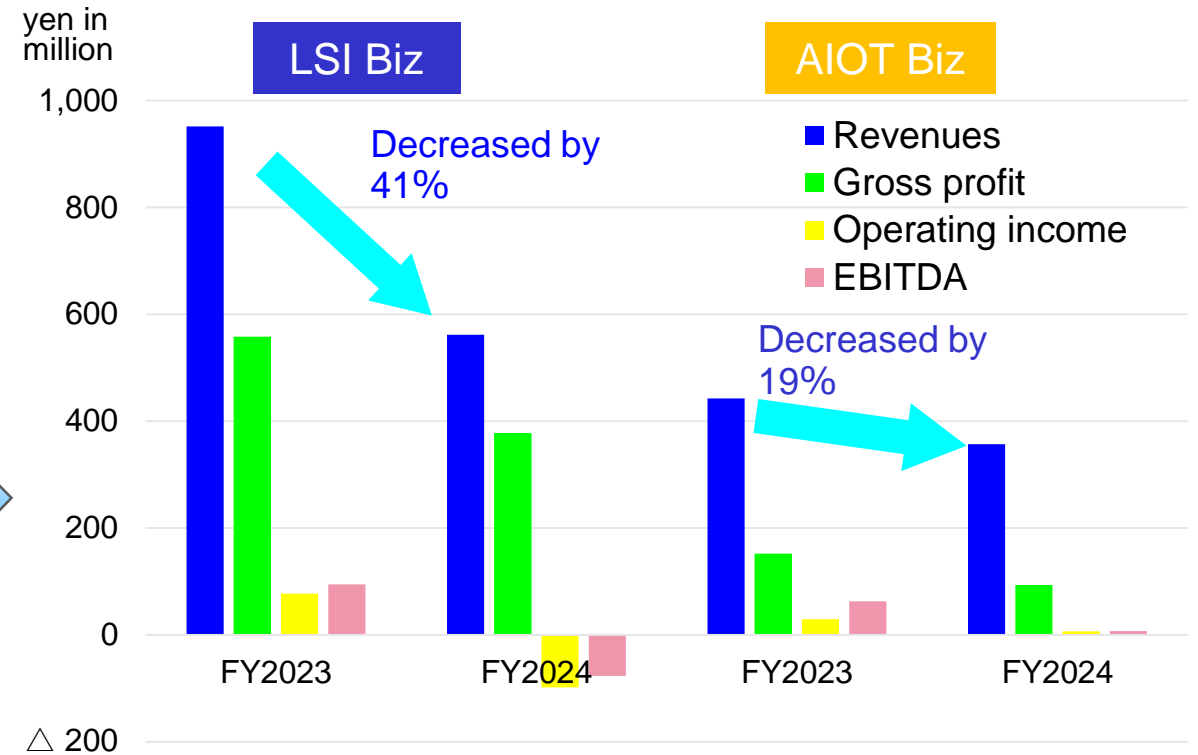
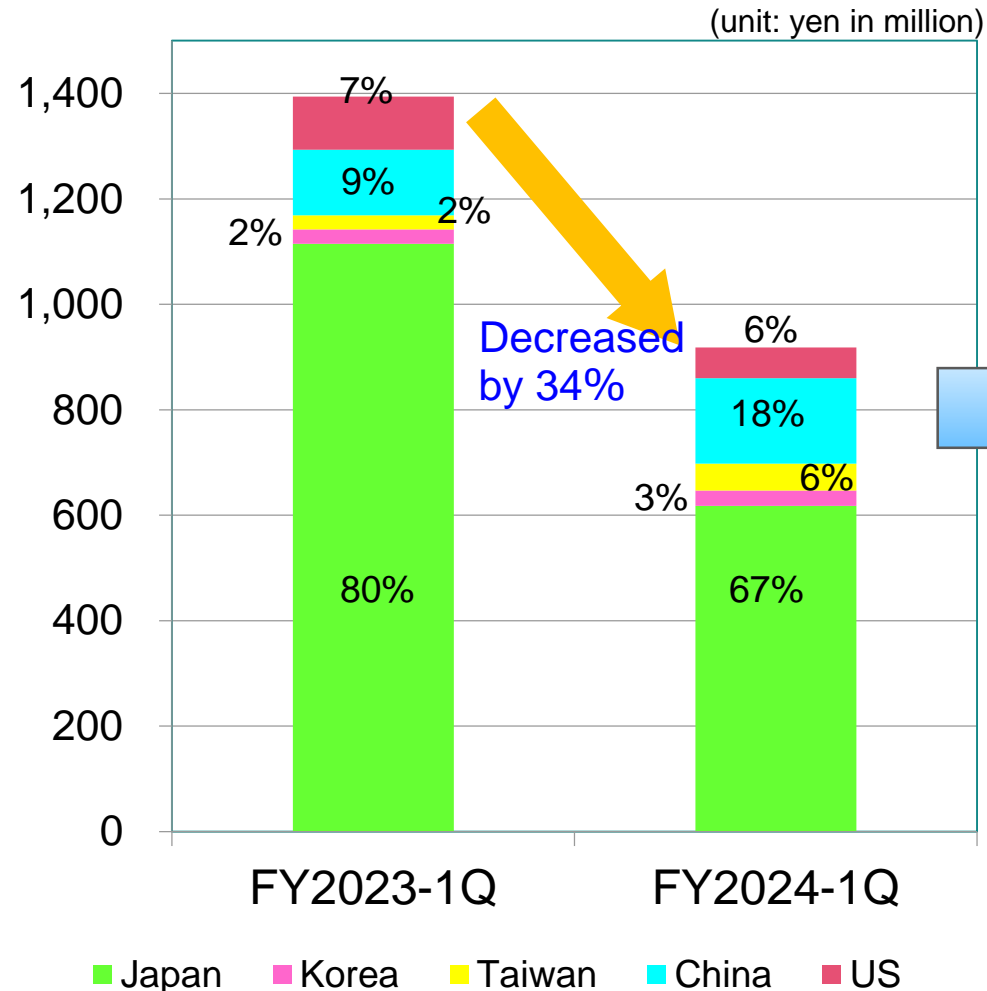
► Consolidated financial results

(yen in million)

	FY2024Q1			FY2023Q1	
		Portion%	YoY		Portion%
Revenues	917	100.0	65.8	1,394	100.0
Gross Profit	471	51.3	66.3	710	51.0
SG&A	562	61.3	93.2	603	43.3
(R&D expenses)	250	27.3	100.0	250	18.0
Operating Income	△91	△10.0	—	106	7.7
(EBITDA)	△69	△7.5	—	157	11.3
Ordinary Income	42	4.6	36.4	116	8.3
(Reference purpose only) Ordinary Income without FX effects	△84	△9.2	—	107	7.7
Net Income Attributable to Owners of the Parent	13	1.5	17.8	75	5.4

Financial performance in FY2024Q1 by region and segment

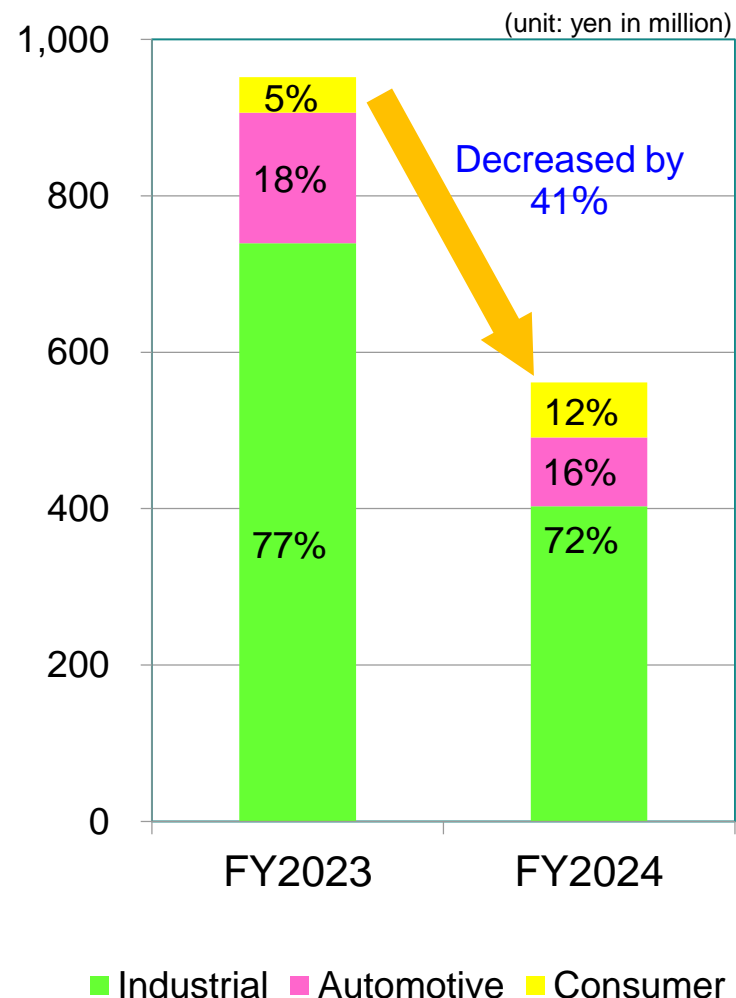
► Revenues by region



- Consolidated revenues decreased by 34%. While China and oversea markets show signs of recovery, some of Japanese customers are still adjusting inventory level.
- AIOT Biz enters into profitable stage with operating income, completed its goodwill amortization.

Financial performance of LSI business in FY2024Q1 by application markets

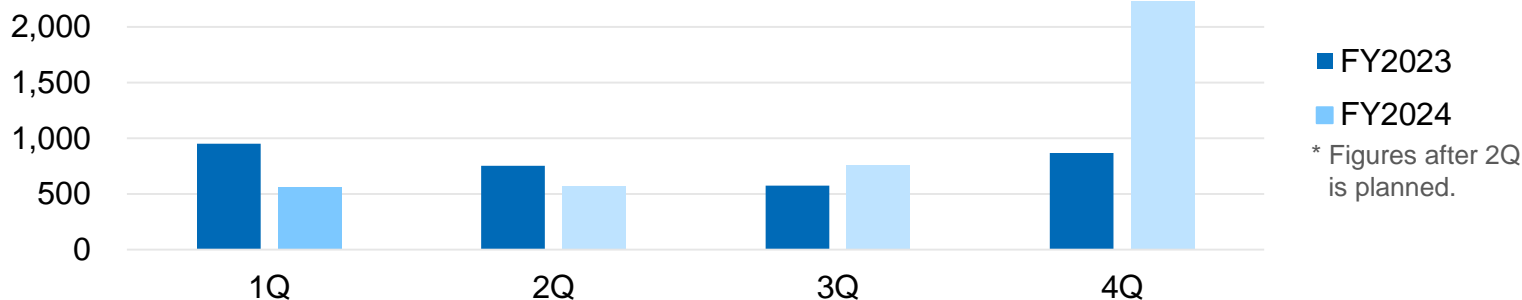
► Revenues of LSI business by application



Analysis	
Industrial: decreased by 45% (72% of total)	Customers in OA and amusement markets were still adjusting their inventory level, resulted in △53% decrease in OA, △55% in amusement, and △11% in other industrial.
Automotive: decreased by 47% (16% of total)	Launched new products for EV markets. China and Taiwan markets show the sign of recovery while Japan and US business decreased.
Consumer: increased by 56% (12% of total)	Applying the new standard interface technology “V-by-One [®] HS plus” for high-resolution television and display markets shows healthy growth.

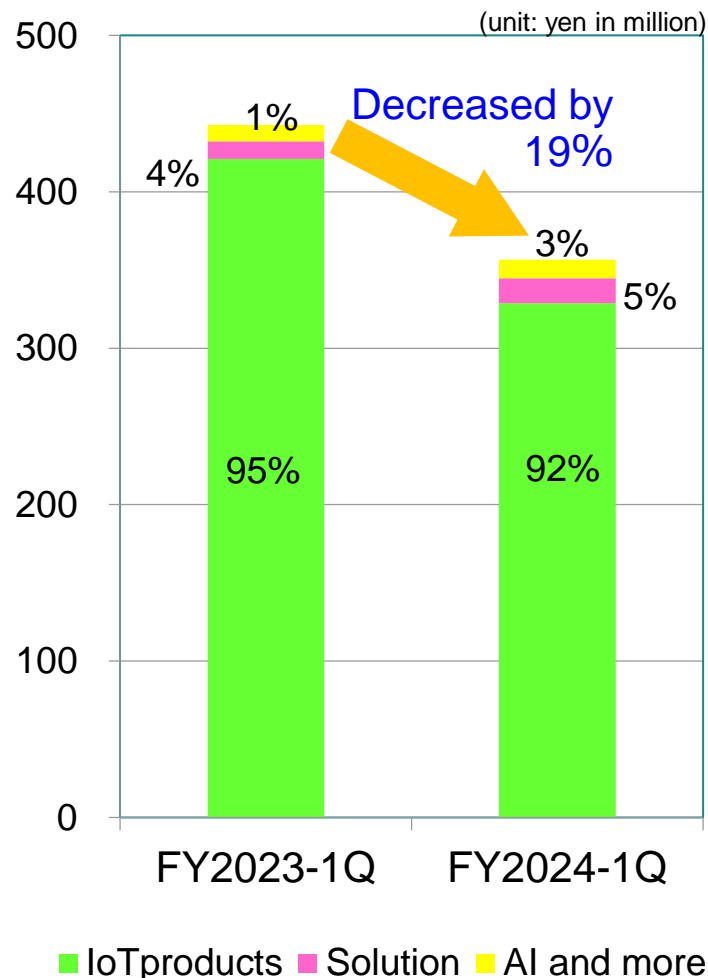
(unit: yen in million)

Quarterly-based sales in LSI business



Financial performance of AIOT business in FY2024Q1 by segment

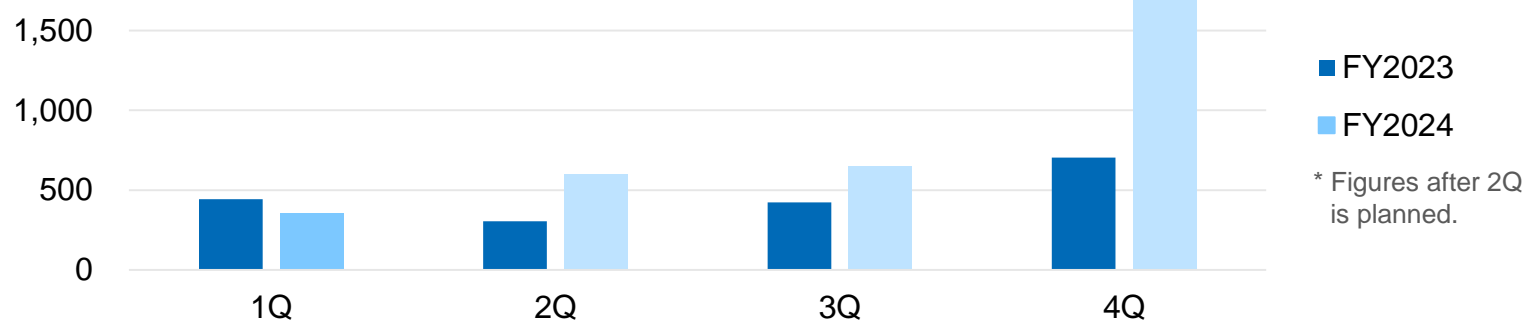
► Revenues of AIOT business segments



要因分析	
IoT products: decreased by 22% (92% of total)	Business in vending machines, elevator monitoring systems, AED, etc. made successful shipments while business for a few large-lot-customers delayed to the 2 nd quarter.
Solution: increased by 43%	Developing new solution such as OEM routers for surveillance cameras made great success.
AI and more: increased by 15%	Focusing on newly developing solutions and products. AI-based thermometer Biz almost over due to exit from COVID-19.

(unit: yen in million)

Quarterly-based sales of AIOT business



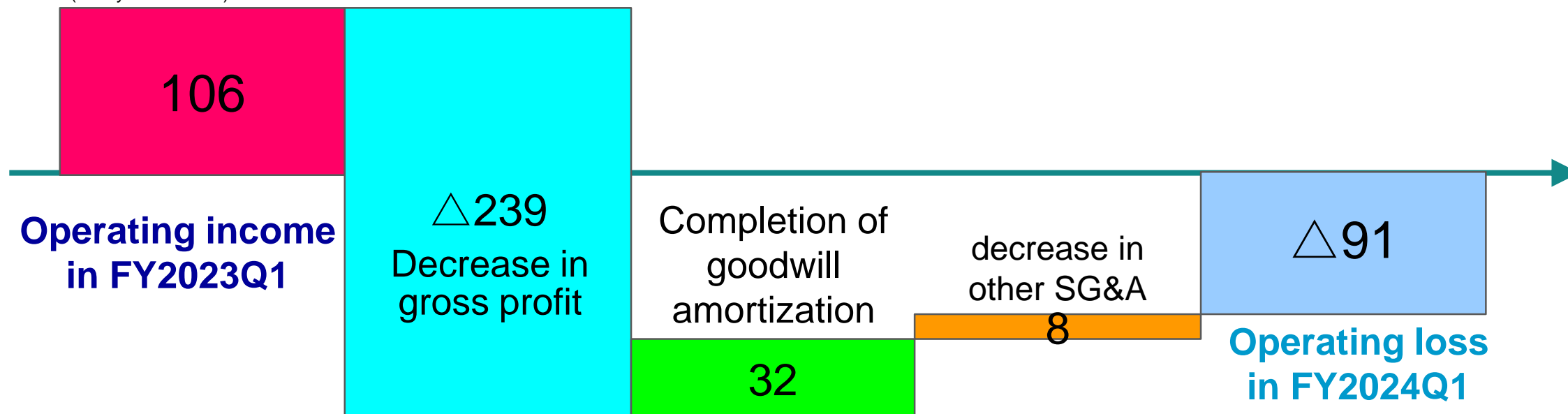
Financial performance in FY2024Q1 compared to that in FY2023Q1

► Reason of changes in operating income

- Gross profit decreased by 34% with the same level of gross profit rate
- Made intensive investment in research and development (R&D) with JPY250M, same as 2023-1Q (+0%), developing new V-by-One[®] HS products for displays and cameras for EV markets, advanced redriver technology, new power management products, 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

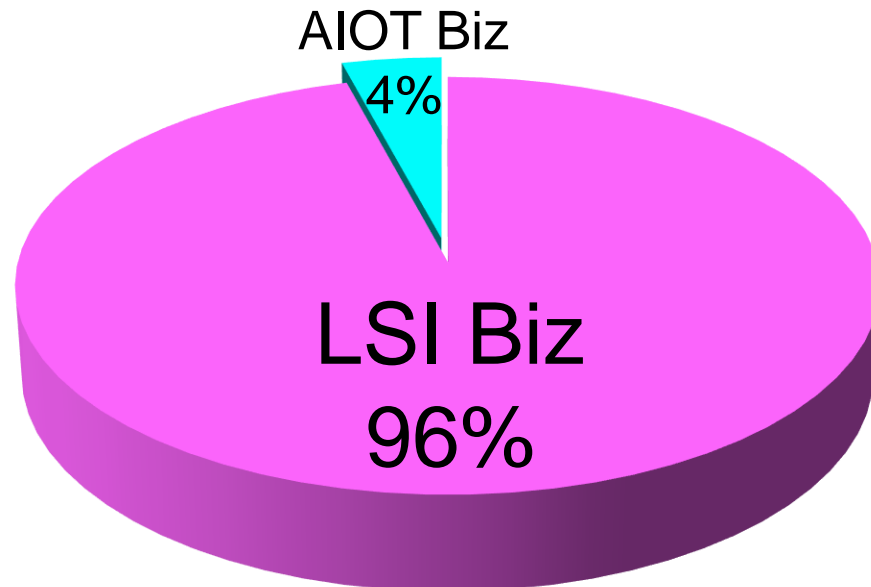
(unit: yen in million)



Financial performance of R&D in FY2024Q1

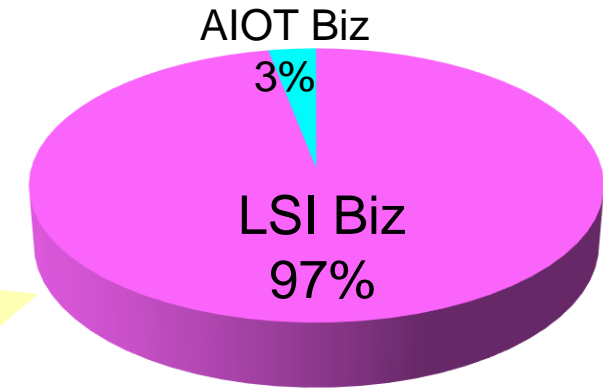
- ▶ Intensive investment in R&D
- R&D investment plan in FY2024:
totally JPY1,220M (increased by 11%)

R&D plan in FY2024



Actual R&D investment in FY2024Q1

- **JPY250M**
compared to the plan: 21%
compared to FY2023Q1: 100%



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
- Advanced redriver technology
- New power management products
- 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 FY2024Q1

► Outline of balance sheet as of the end of March, 2024

(unit: yen in million)

Assets			Liabilities and Net Assets		
	End of FY'24Q1	End of FY'23		End of FY'24Q1	End of FY'23
Cash and Cash Equivalent	7,362	7,377	Account Payable	365	270
Account Receivables	582	937	Other Current Liabilities	339	401
Inventories	926	846	Non-current Liabilities	144	137
Other Current Assets	416	303	Shareholders' Equity	8,966	9,139
Property, Plant and Equipment	227	212	Accumulated Other Comprehensive Income	64	73
Intangible Assets	65	69	Deferred Stock-based Compensation	140	150
Investments and others	519	504	Non-controlling Interests	79	77
Total Assets	10,100	10,250	Total Liabilities and Net Assets	10,100	10,250

➤ US-dollar-based cash as of the end of FY2024Q1 is approximately US\$10M.

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

Financial performance in FY2024Q1

► Outline of Cash Flow Statements

(unit: yen in million)

	FY2024Q1	FY2023Q1
Cash Flow from Operating Activity	140	519
Cash Flow from Investing Activity	△42	19
Cash Flow from Financing Activity	△204	△162
Effect of Exchange Rate Changes	91	10
CCE at the beginning of the FY	7,377	7,302
CCE at the end of the Quarter	7,362	7,689

- decrease in net income before tax and account receivables and increase in inventories and account payable, etc.
- investment in fixed asset, etc.
- payment of dividend for FY'23, acquisition of treasury stock, exercise of stock options, etc.
- Exchange rate
JPY142 as of the end of FY2023
JPY151 as of the end of FY2024Q1

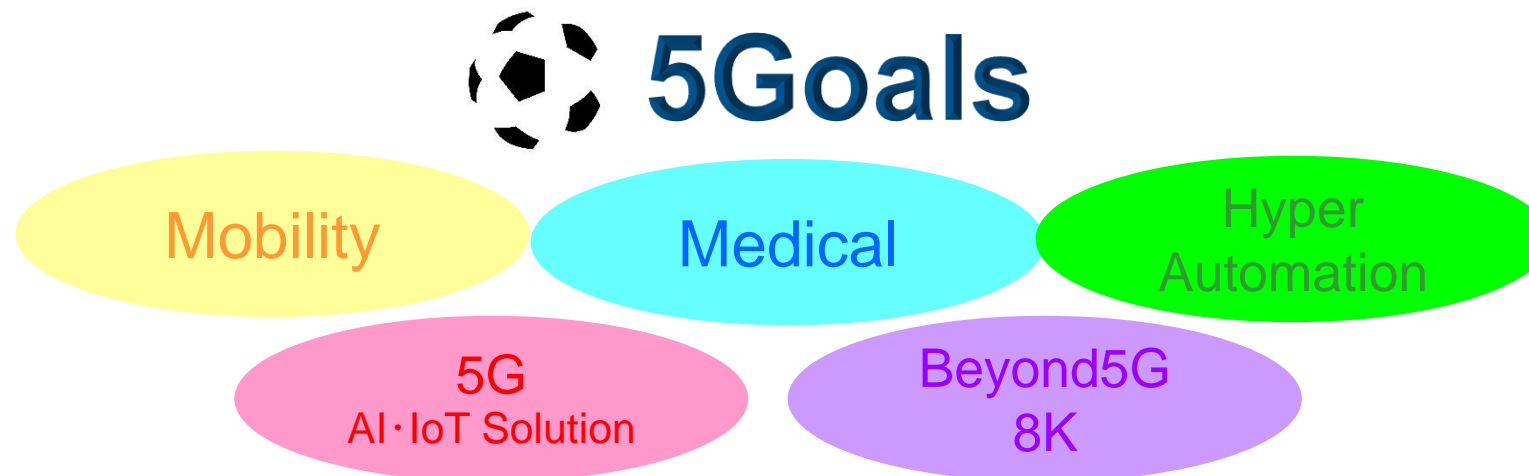
5G&Beyond-NE, the mid-term strategy from 2022 to 2024

► 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.



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

► Action in FY2024

- ① Enhance growing business in **automotive and industrial markets**, contributing to support new use cases of autonomous, unmanned, and remoted situation
- ② Continuously launch new LSI products for **automotive cameras and displays**
- ③ Promote products and solutions for **smart IoT communication, including drive recorders and smart meters**
- ④ Cultivate future growing opportunities in **5G, AI&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**
- ⑥ Entering the **server business** as **the third portfolio** following to LSI and AIOT
- ⑦ Provide **effective solutions with THine's interface technology**, seeking **alliance and collaboration opportunities** aggressively

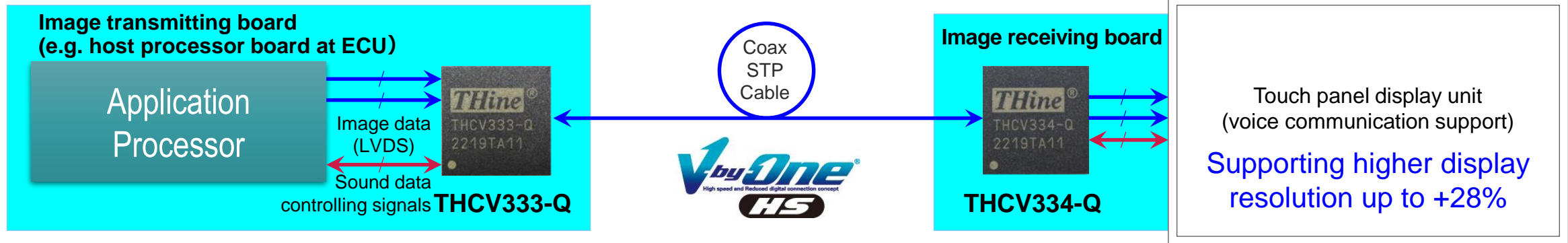
5G&Beyond-NE, the mid-term strategy from 2022 to 2024

Mobility
**Hyper
Automation**

- ▶ 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

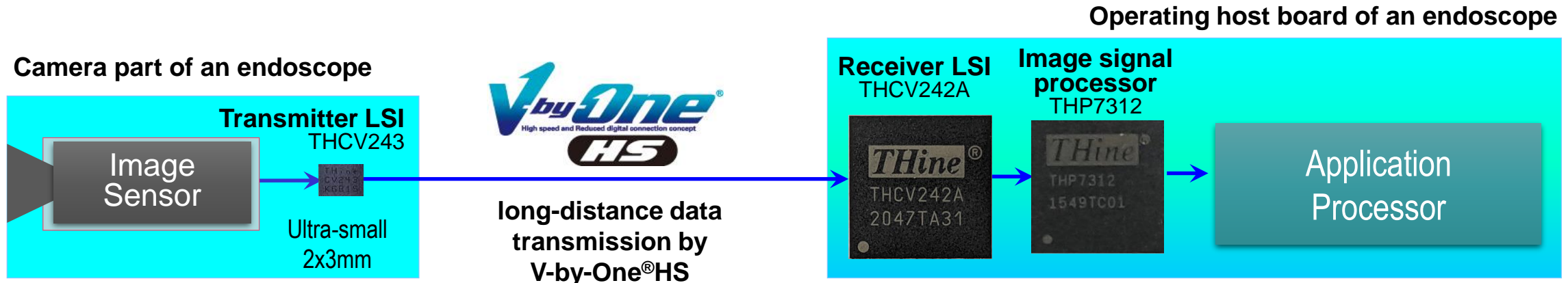
5G&Beyond-NE, the mid-term strategy from 2022 to 2024

► Contribution to evolving 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 AI-based machine learning with 4K images for higher detection rates for early-stage cancers



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

- Contribution to high-speed video data transmission

Mobility

Medical

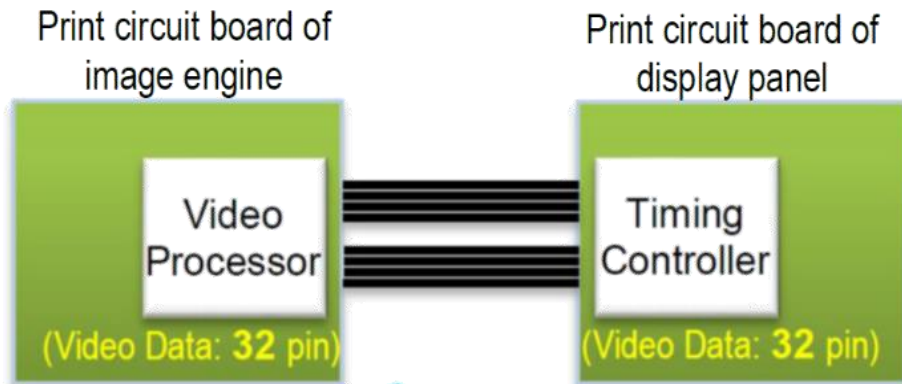
Beyond 5G/8K

Providing “V-by-One®HS plus Standard” since June, 2023

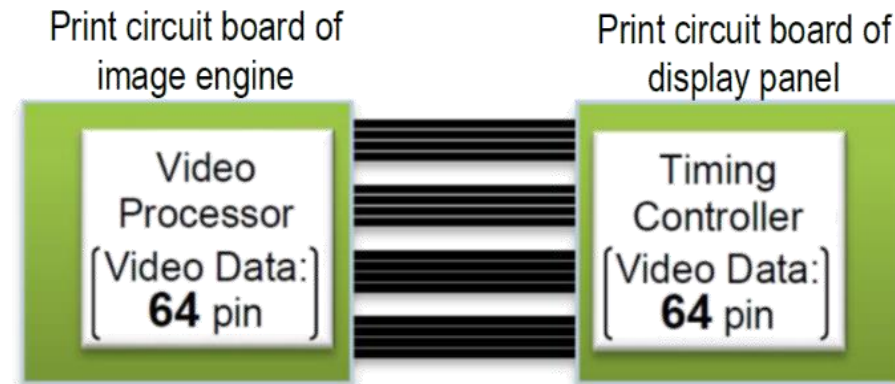
- Double-speed interface technology of today's *de facto* standard V-by-One® HS for 4K/8K TVs and displays
- Contributing to enhanced eco-design requirements in Europe, US, etc.

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



Current video data transmission
requires **32 lanes**



* These images are for illustrative purposes only.



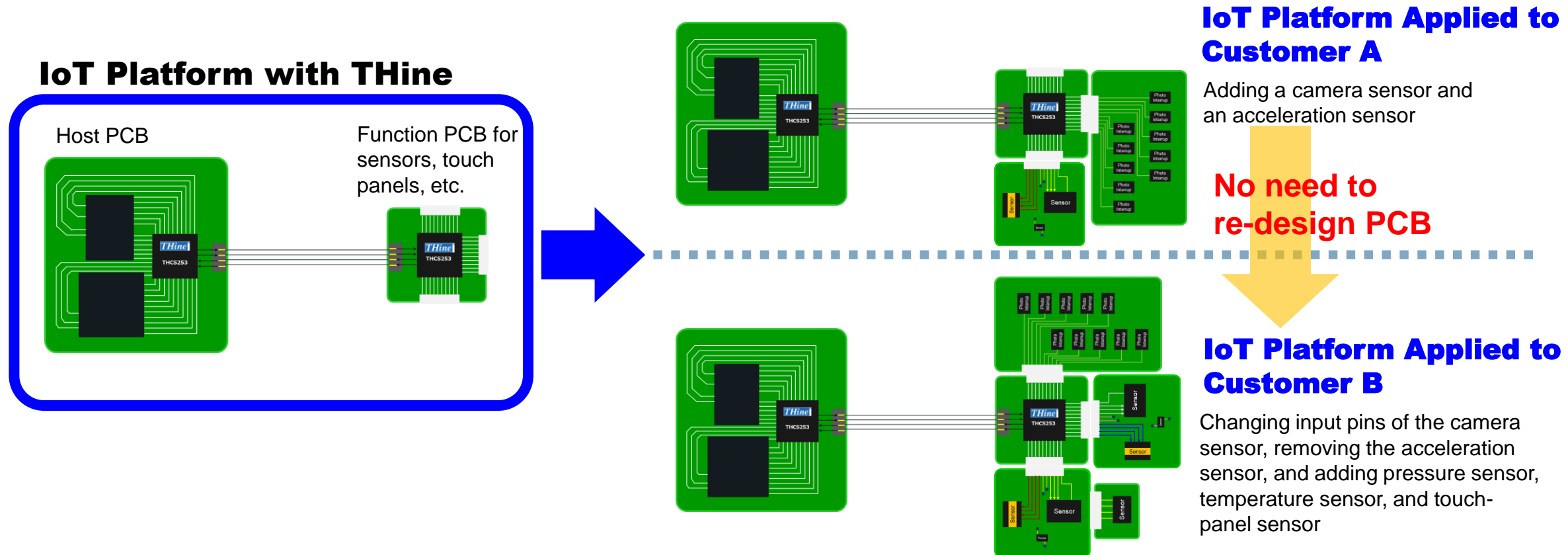
5G&Beyond-NE, the mid-term strategy from 2022 to 2024

- ▶ Contributing to Simplifying Sensing & Control Systems

**Hyper
Automation**

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



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

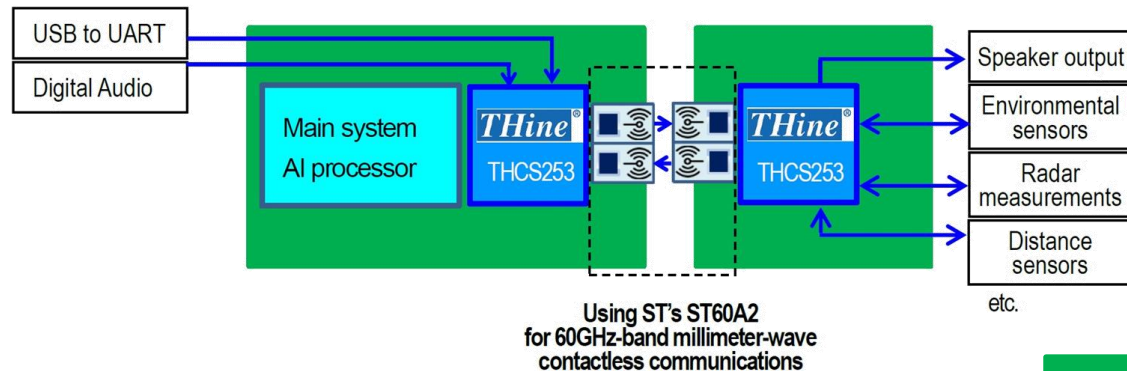
► Contribution to use cases with contactless communication

Medical
**Hyper
Automation**

Collaboration with STMicroelectronics' near field communication technology

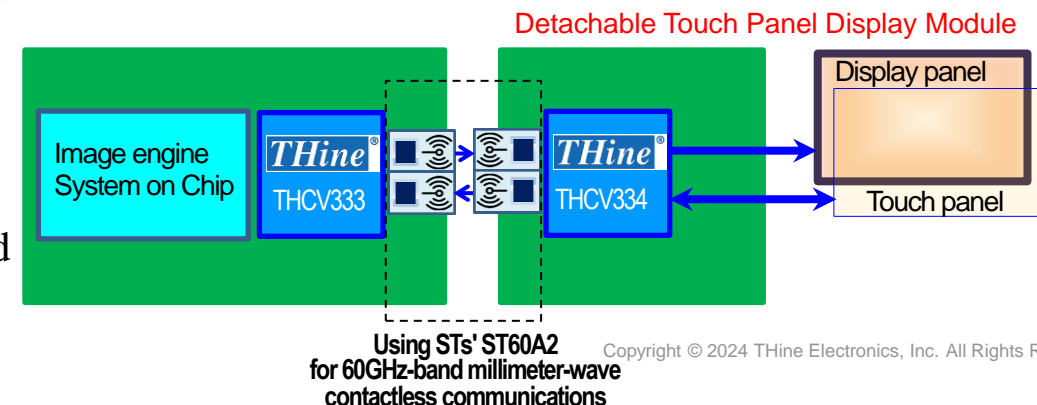
- To support for new use cases in high-speed contact connectivity, combining THine's high-speed interface technology and ST's 60GHz RF millimeter-wave
- THine's V-by-One[®] and other interface technologies, together with ST's ST60A2 contactless 60GHz transceiver, enables high-speed data transmitting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



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

Solution for detachable touch panel display (Mechanical connectors replacement for large signage modules, water-proof and dust-proof, and vibration-resistant devices can also be realized.)



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

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

Hyper
Automation

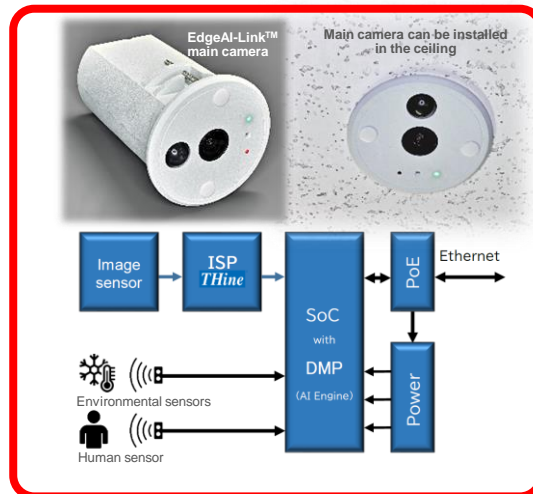
5G AI/IoT

Solution by EdgeAI-Link[®], a cloud-linked Edge-AI cameras

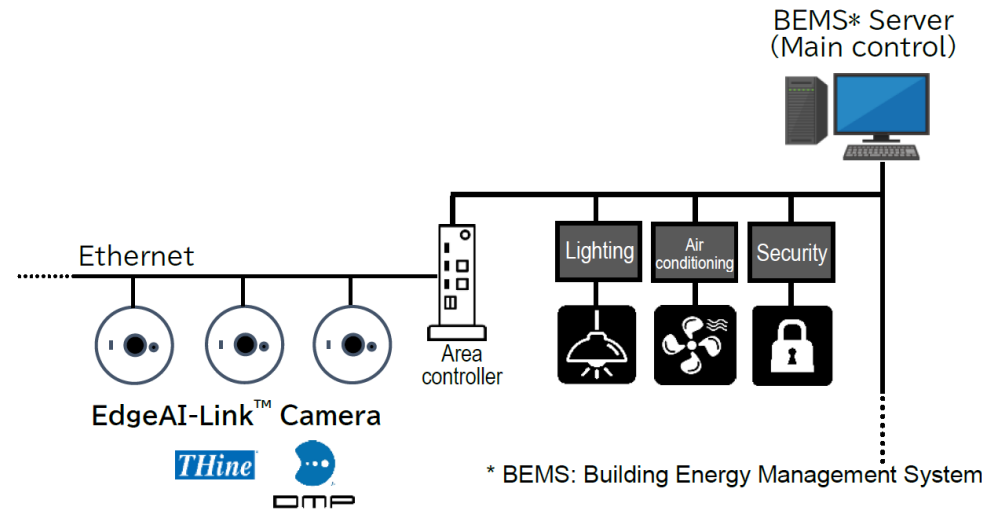
Advantages to use cloud-linked Edge-AI in addition to Cloud-AI:

- Achieving real-time AI diagnosis
- 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)

EdgeAI-Link[™] Camera



Example of advanced smart BEMS



Applications:

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

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

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

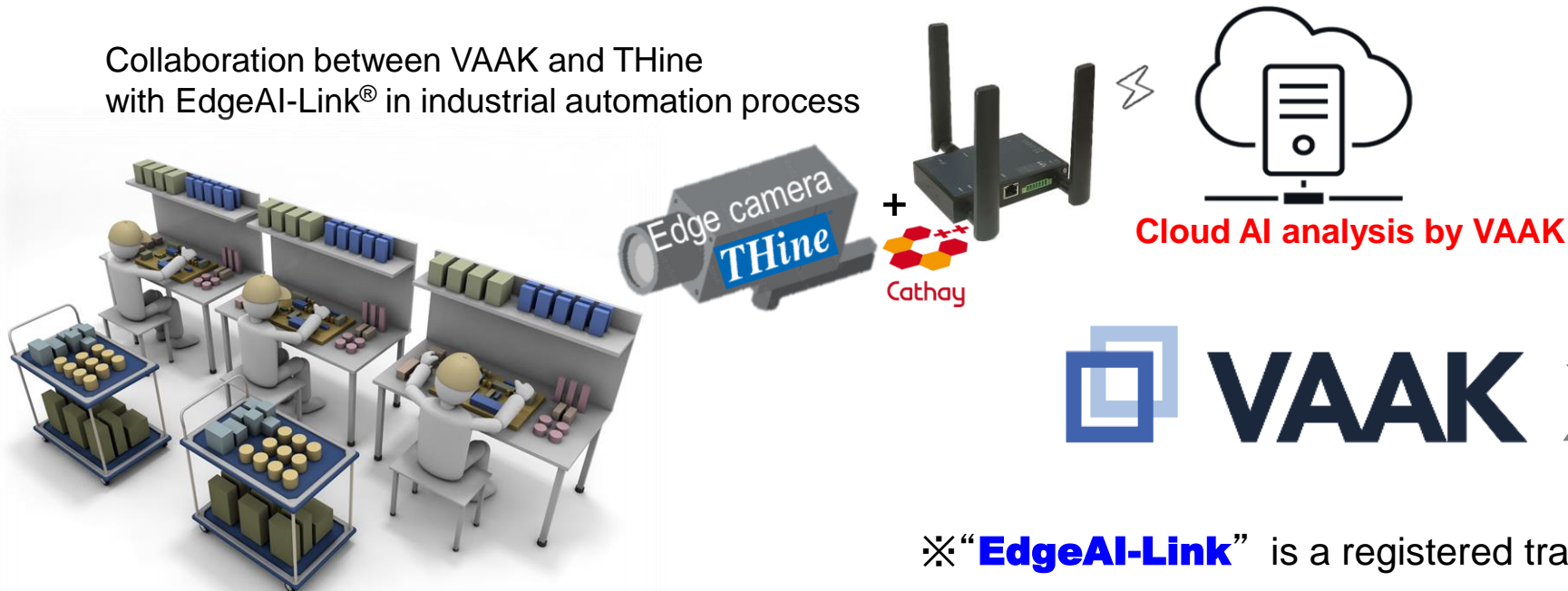
Hyper
Automation

5G AI/IoT

Collaboration with VAAK by EdgeAI-Link[®], a cloud-linked Edge-AI 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

Collaboration between VAAK and THine
with EdgeAI-Link[®] in industrial automation process



※“**EdgeAI-Link**” is a registered trade mark of THine Electronics, Inc.

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

- ▶ Contribution to computational resources including AI server

Hyper
Automation

5G AI/IoT

Entering the server business, establishing THine HyperData, Inc.

- Contribution to further utilization of generative AI and AI research in Japan
- Providing data servers, including AI servers equipped with NVIDIA's GPUs.

Planned outline of the new server company

Name	THine HyperData, Inc.
Address	3-24-11, Shinyokohama, Kohoku-ku, Yokohama, Japan
Representatives	Chairman and CEO: Takashi Nakahara (THine's director for AIOT Biz) 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.
Capital	JPN 100 million
Planned establishment	The first half of 2024, right after approval of application under Japan's Foreign Exchange and Foreign Trade Act

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

- Contribution to various IoT use cases

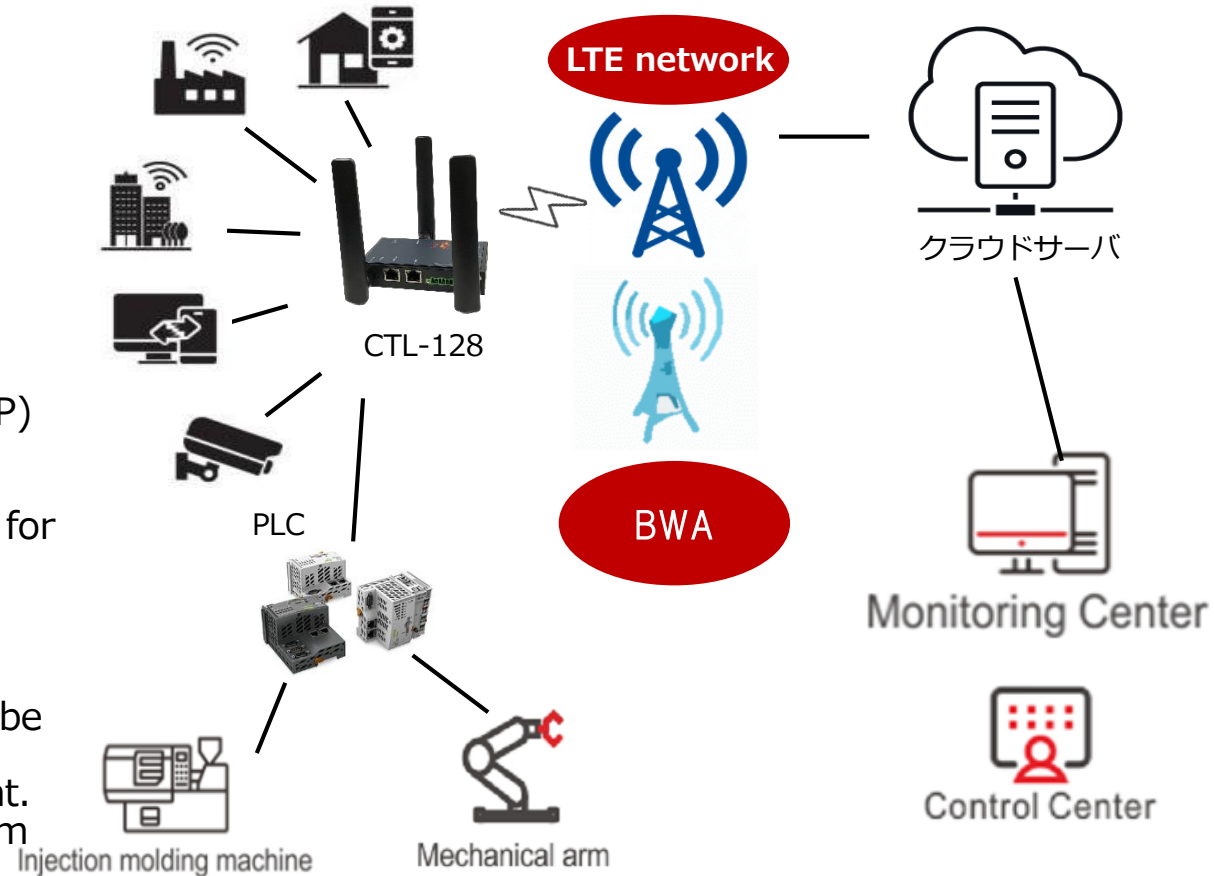
Wireless LAN router with LTE module: CTL-128



■ Feature of CTL-128

- 1) Supporting Japanese 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 ~ 70°C

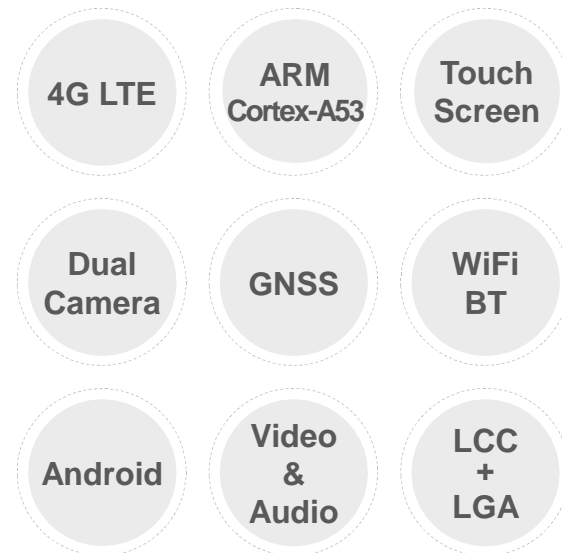
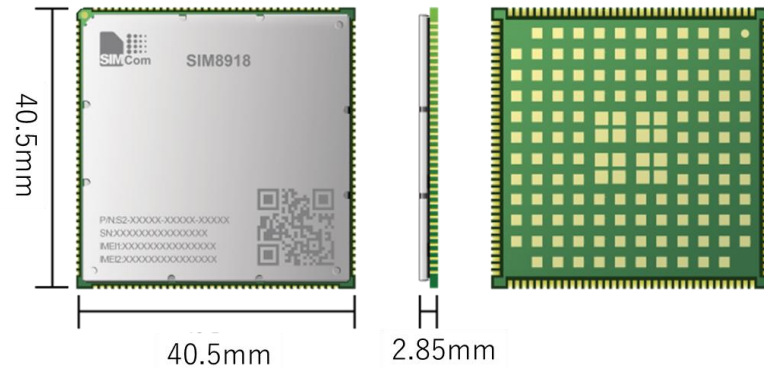
5G AI/IoT



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

► Contribution to various IoT use cases

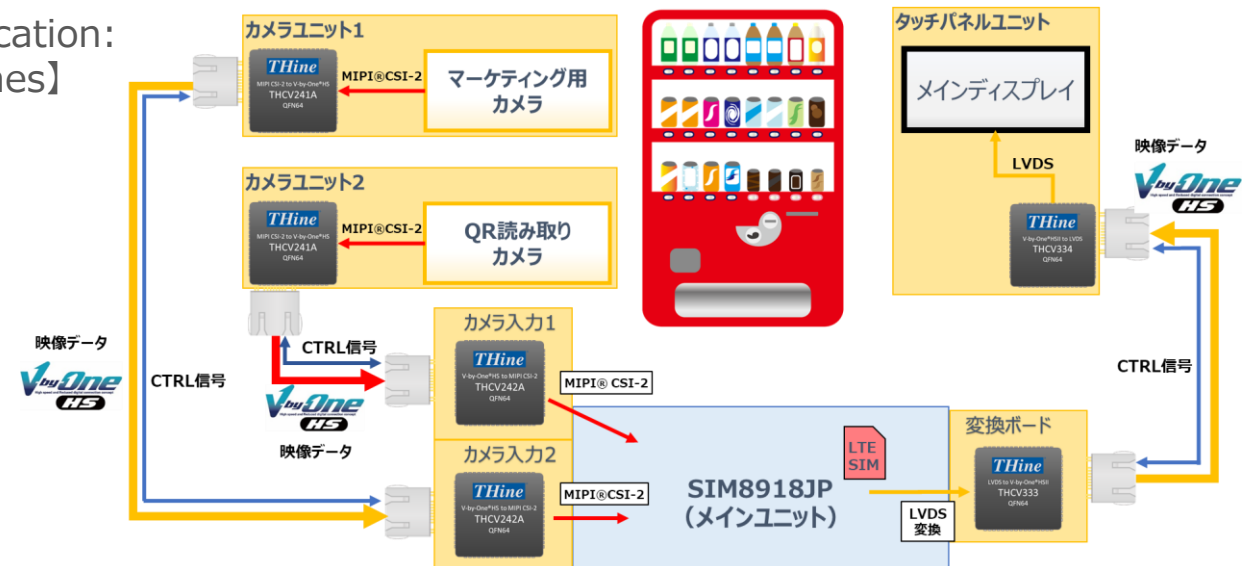
LTE smart module SIM8918JP



【Example of application:
in vending machines】

■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

- 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)

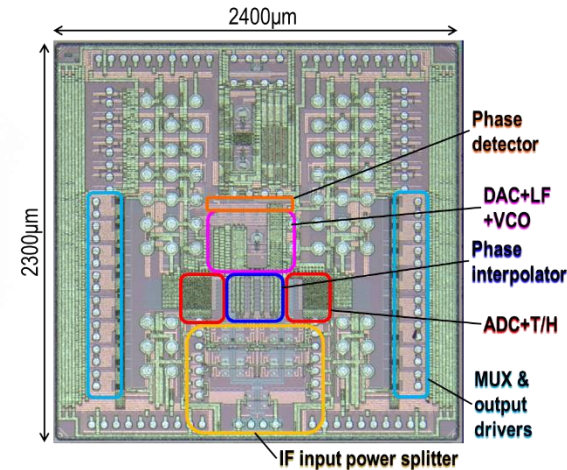


Ministry of Internal Affairs
and Communications

Hiroshima
University

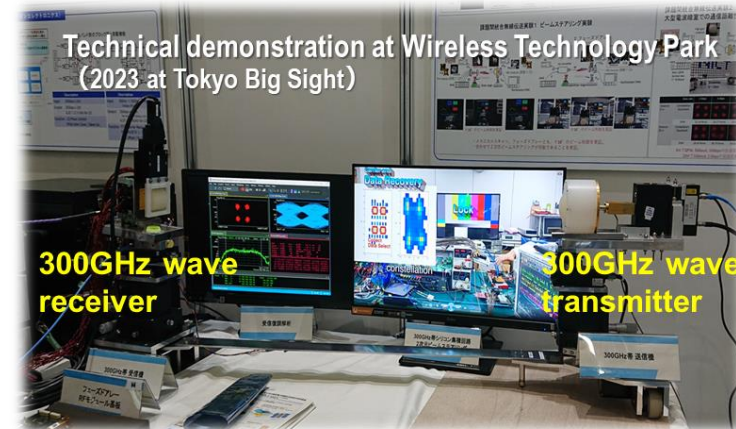
Nagoya Institute
of Technology

Tokyo University
of Science



Wide application

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



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

► Contribution to SDGs

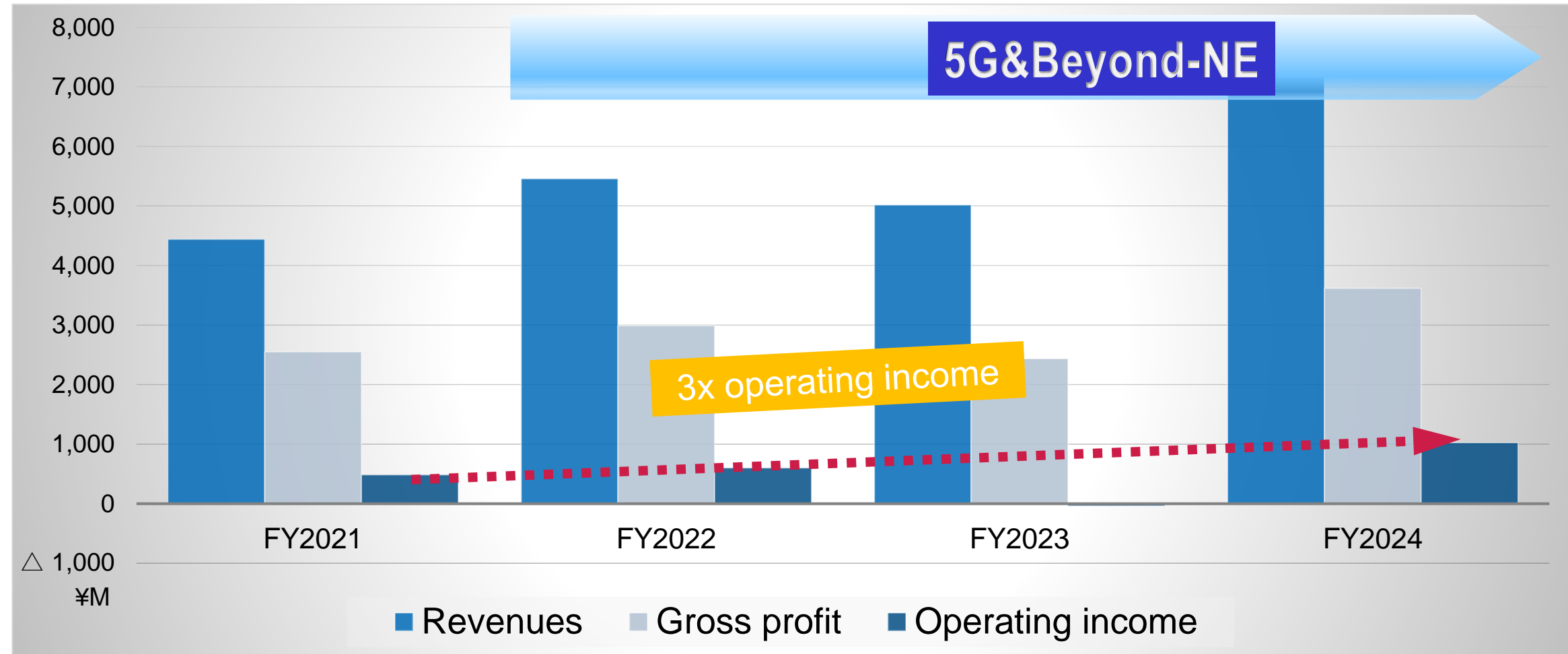
Interface to the Future - Solution by Smart Connectivity -



- ✓ 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

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

- Focusing on growing markets, achieving strategic 5 Goals, aiming to achieve **3x operating income** in FY2024, compared to FY2021



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

► Forecast in FY2024

FY2024 is the last year of the mid-term strategy, “5G&Beyond-NE.” THine makes its best efforts to achieve this goal.

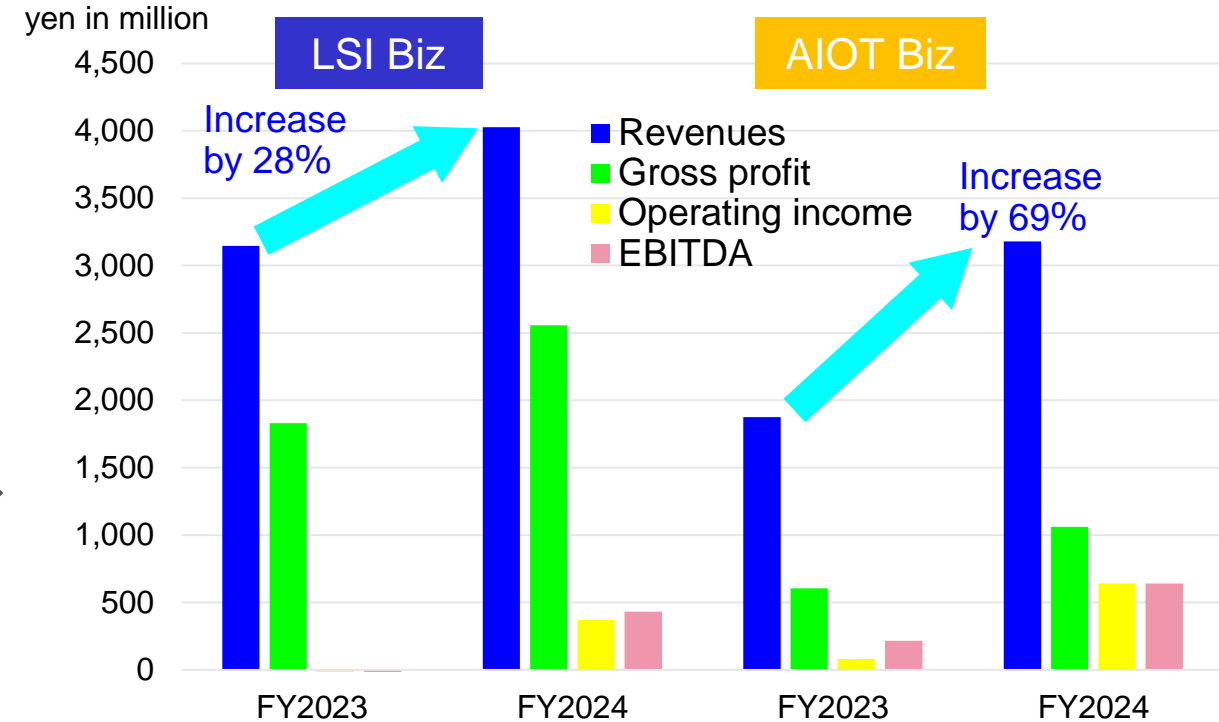
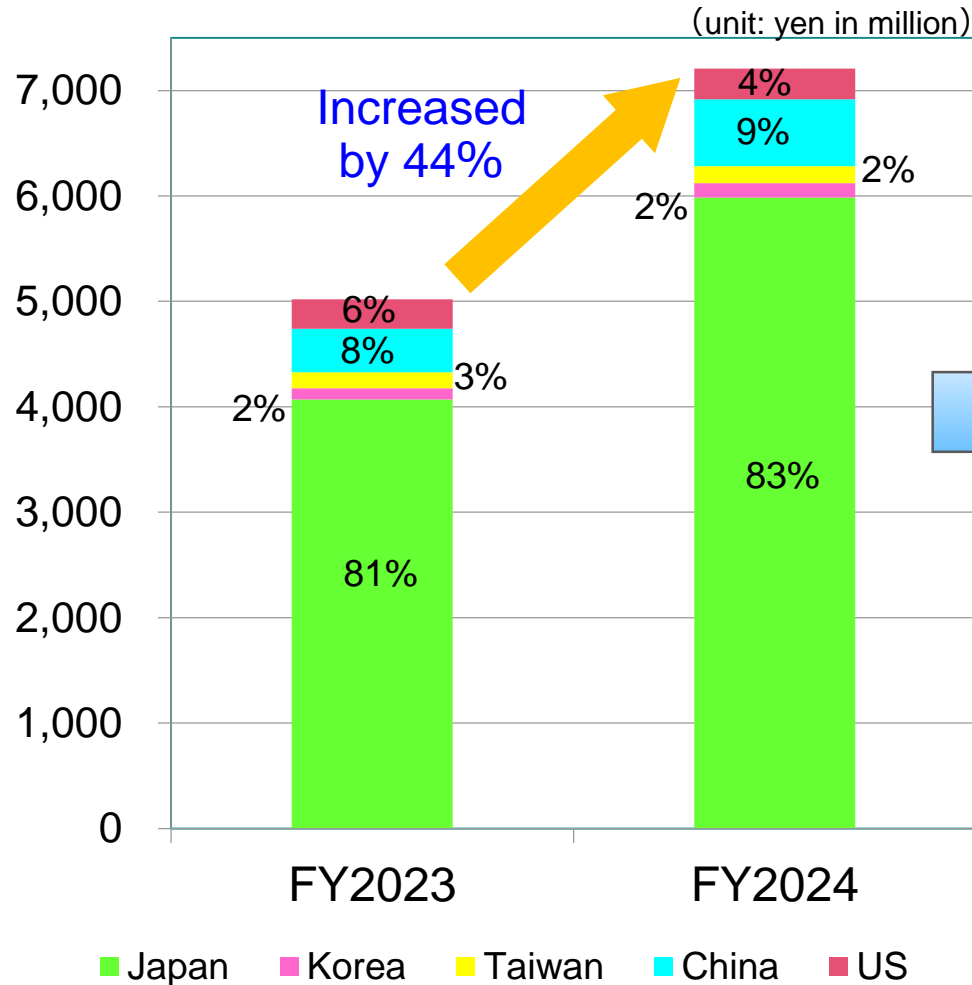
- LSI forecast in FY2024 plans to recover to the level of FY2022 from domestic/overseas customers’ inventory adjustment.
- AIOT forecast in FY2024 increases due to successful shipments of wireless modules, etc., supporting expansion of smart infrastructure.

(yen in million)

	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

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

► Forecast in FY2024 by region and segment



- 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.

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

► Measures to increase corporate value of THine

◆ Making our best effort to achieve the Mid-term Strategy “5G&Beyond-NE”

5G&Beyond-NE (2022 - 2024)

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%

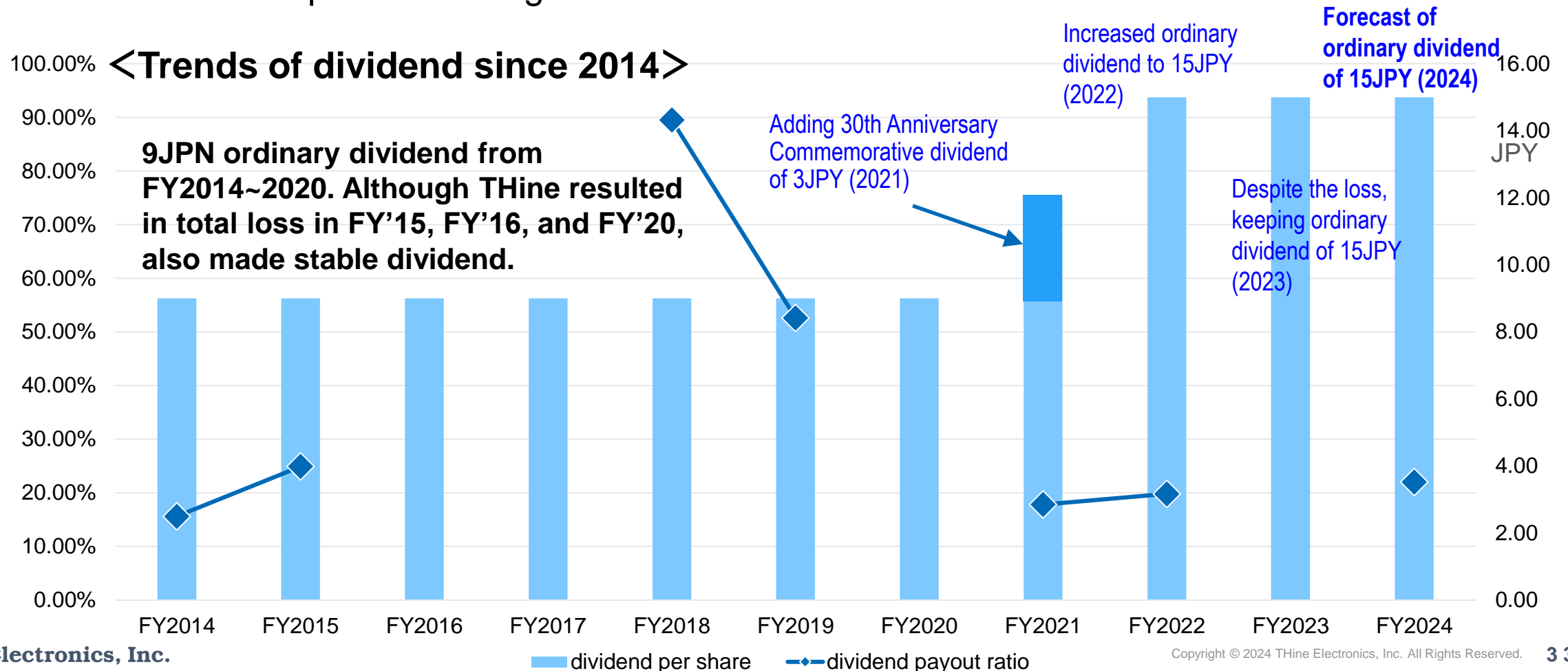
【Measures toward increasing corporate value】

- 1) Further enhancing earning capability: [enhancing profitability of AIOT Biz \(achieved in 2023\)](#), [strengthening overseas Biz](#), [accelerating investment in growing Biz](#) and [promoting the server business as our third portfolio](#)
- 2) Appropriate shareholders return: taking measurements to improve capital efficiency, including [implementation of stable dividend](#), and [implementation of flexible acquisition of treasury stock](#)
- 3) Enhancing our IR activities: [proactively disclosing information](#) including new products and SDGs as well as enhancing IR information

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

► Shareholder return policy

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



Interface to the Future

- Solution by Smart Connectivity -

URL <https://www.thine.co.jp/>

Contact: IR Team, General Dept.

mail: investors@thine.co.jp phone: +81-3-5217-6660

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

Disclaimer: Certain statements in this presentation are “forward-looking statements.” Forward-looking statements may be identified by the use of words such as “estimate,” “plan,” “project,” “forecast,” “intend,” “will,” “expect,” “anticipate,” “believe,” “seek,” “target” or other similar expressions that predictor indicate future event sort rends or that are not statements of historical matters. These forward-looking statements include, but are not limited to, statements regarding our anticipated future results, including financial results, currency exchange rates, contract wins, future economic and market conditions. These statements are based on various assumptions, whether or not identified in this presentation, and on the current expectations of THine’s management and are not predictions of actual performance. These forward-looking statements are provided for illustrative purposes only and are not intended to serve as, and must not be relied on by any investor as a guarantee, an assurance, a prediction or a definitive statement of factor probability. Actual events and circumstances are difficult or impossible to predict and will differ from assumptions. Many actual events and circumstances are beyond the control of THine. All trademarks and registered trademarks are the property of their respective owners.