

Securities ID code:6859

Reference

## Company Presentation and Business Overview

ESPEC CORP.  
May 25, 2026

# Company Profile

## 【Industry-leading manufacturer of environmental test chambers】

Name	ESPEC CORP.
Head Office	3-5-6, Tenjinbashi, Kita-ku, Osaka
Representative	President Satoshi Arata
Established	July 25, 1947
Incorporated	January 13, 1954
Paid-up Capital	¥6,895 million
Issued shares	23,781,394 Shares
Employees	1,898 (consolidated)
Main Business	Manufacture and Sales of Environmental Test Chambers, Energy Device Equipment, Semiconductor Equipment and Plant Factory. After-sales Service, Laboratory Testing Services and others.
Share of Environmental Test Chambers	Over 30% worldwide, Over 60% domestic

\* Market shares are ESPEC estimates



Head Office

(As of March 31, 2026)

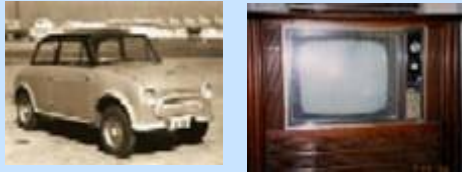
# History of Environmental Test

## What is Environmental Test

Test to analyze and evaluate effects of environmental factors such as temperature, humidity, pressure, and vibration on various industrial products like electronic components in order to ensure product quality.

1950s

The environmental test was JIS-standardized in Japan for consumer products.



1970s–1990s

“Reliability” and “quality control” became important issues in product development. Demand increased dramatically due to a rapid shift toward computerization and the use of electronic components.



Present

Demand is expanding in the development fields of AI/IoT and next-generation automobiles against the backdrop of digitalization and decarbonization.

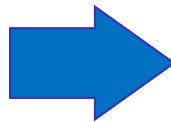


**1961 Japan's First Environmental Test Chamber**



Low Temperature & Humidity Chamber "Lucifer"

**Worldwide Market Share No.1**



Over 60%  
domestic  
  
Over 30%  
worldwide

\* Market shares are ESPEC estimates

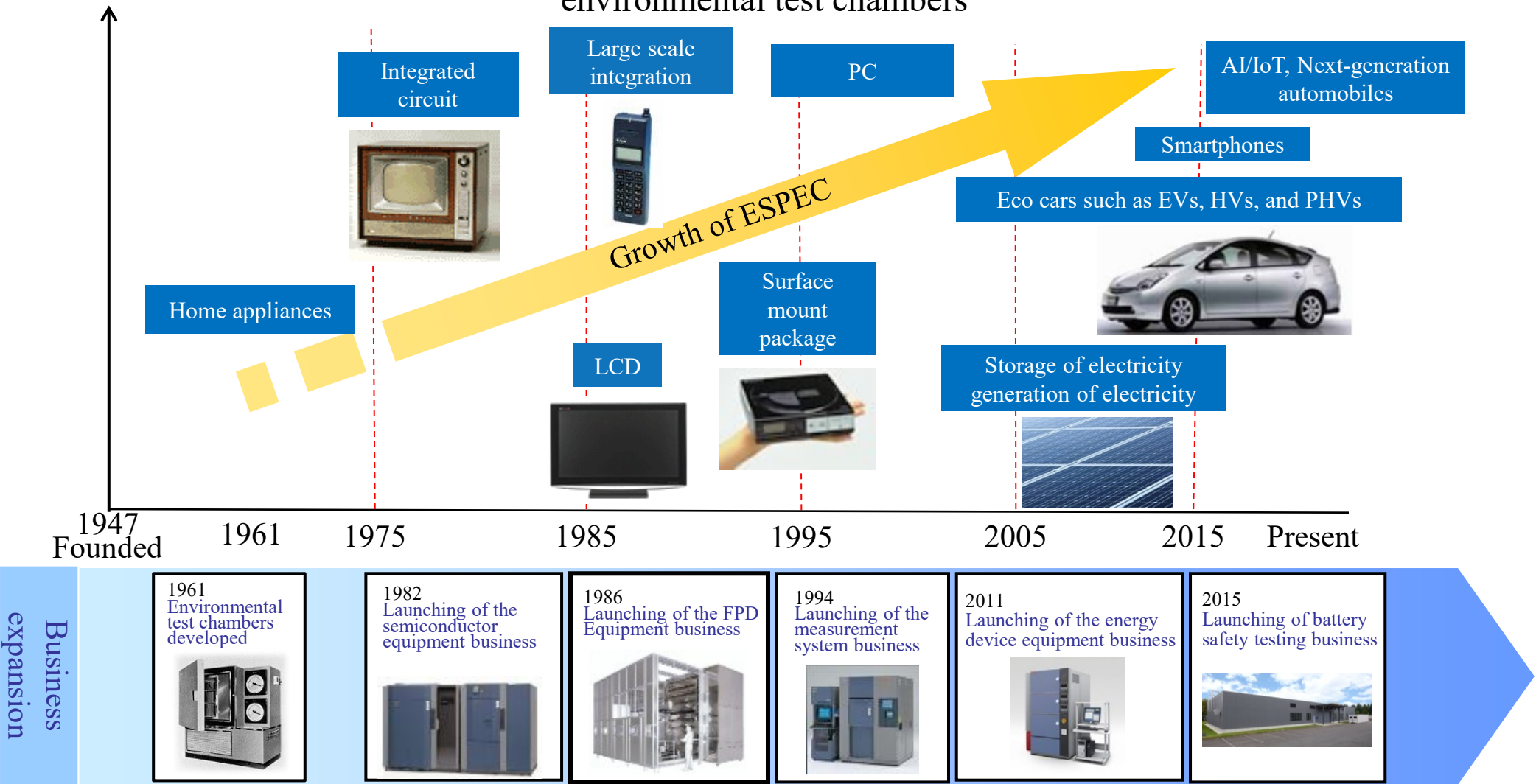
Consecutively selected as a winner of Ministry of Economy, Trade and Industry (METI)  
“Global Niche Top Companies Selection 100” (FY 2013, FY 2020)



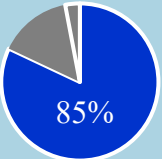
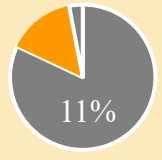
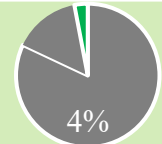
Temperature & Humidity Chamber “Platinous J series”

# Transition in Business

Expanding business based on the “environmental creation technology” refined during the course of developing environmental test chambers



# Summary of ESPEC Business (Per Market / Use)

		Main Products	Market	Use	Sales Composition (FY2025)
Equipment Business	Environmental Test Chambers	<div>- Temperature &amp; humidity chamber</div> <div>- Walk-in type temperature &amp; humidity chamber</div> <div>- Thermal shock chamber</div> <div>- Combined temperature &amp; humidity chamber</div> <div>- Bench-top type temperature &amp; humidity chamber</div> <div>- HALT test system</div> <div>- HAST chamber</div>	<div>- Electronic component and equipment market</div> <div>- Automobile market</div> <div>- Semiconductor market</div> <div>- Satellite Communications market</div> <div>- Pharmaceuticals and foods market</div>	<div>- For R &amp; D about 70%</div> <div>- For credibility and evaluation about 20%</div> <div>- For production and inspection about 10%</div>	
	Energy Device Equipment	<div>- LIB charge-discharge cycle evaluation equipment</div> <div>- LIB safety evaluation system</div> <div>- Fuel cells evaluation system</div>	<div>- Next generation automobile market</div> <div>- Secondary batteries market</div> <div>- Fuel cells market</div>	<div>- For R &amp; D</div> <div>- For credibility and evaluation</div> <div>- For safety evaluation</div> <div>- For production</div>	
	Semiconductor Equipment	<div>- Burn-in system</div> <div>- Semiconductor evaluation system</div>	<div>- Semiconductor market</div> <div>- Electronic component and equipment market</div> <div>- Automobile market</div>	<div>- For R &amp; D</div> <div>- For credibility and evaluation</div> <div>- For production and inspection</div>	
Service Business	After-sales Service and Engineering	<div>- Repairs and preventive maintenance</div> <div>- Inspection and calibration</div> <div>- Construction around equipment</div>	<div>- Electronic component and equipment market</div> <div>- Automobile market</div>	<div>—</div>	
	Laboratory Testing Services and Facility Rentals	<div>- Laboratory testing services</div> <div>- Equipment rental</div> <div>- Resale</div> <div>- Calibration</div>	<div>- Semiconductor market</div> <div>- Aerospace equipment</div>	<div>- For R &amp; D</div> <div>- For credibility and evaluation</div>	
Other Business	Environmental Conservation	Reforestation (Tree planting), Waterfront biotope restoration, Urban greening			
	Plant Production Systems	Plant factory, Research seedling cultivation systems			

# Business Overview: Equipment Business

Providing comprehensive environmental testing solutions that support the development of advanced technologies

**Environmental Test Chambers**  
Over 60% market share in Japan and over 30% worldwide

Providing products that support advanced technology development, reliability evaluation, production, and inspection processes across a wide range of fields, including electronic components, electronic devices, automobiles, semiconductors, satellite communications, pharmaceuticals, and foods.

Offering a diverse lineup according to temperature, humidity, pressure ranges, temperature change rate, size, and other requirements



Platinous J Series Temperature & Humidity Chambers



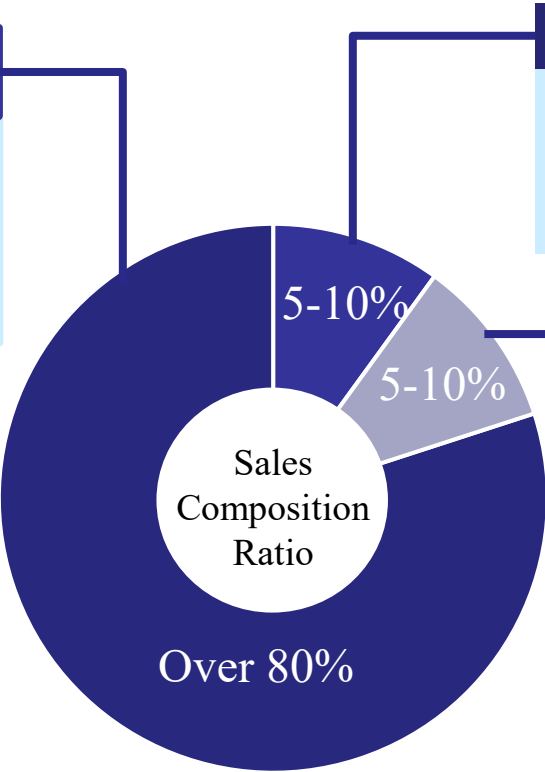
Thermal Shock Chamber



Walk-In Temperature & Humidity Chamber



Bench-top Type Temperature & Humidity Chamber



**Semiconductor Equipment**

Providing burn-in systems that sort good and defective products in semiconductor inspection processes, as well as measurement systems that evaluate the electrical characteristics of semiconductors, electronic components, and other products.



Measurement & Evaluation System



Burn-in Chamber

**Energy Device Equipment**

Providing rechargeable battery charge-discharge cycle test systems that evaluate the performance and service life of rechargeable batteries, safety evaluation systems, and fuel cell evaluation systems.



Rechargeable Battery Charge-Discharge Evaluation System



Temperature Chamber For Charge-Discharge Testing

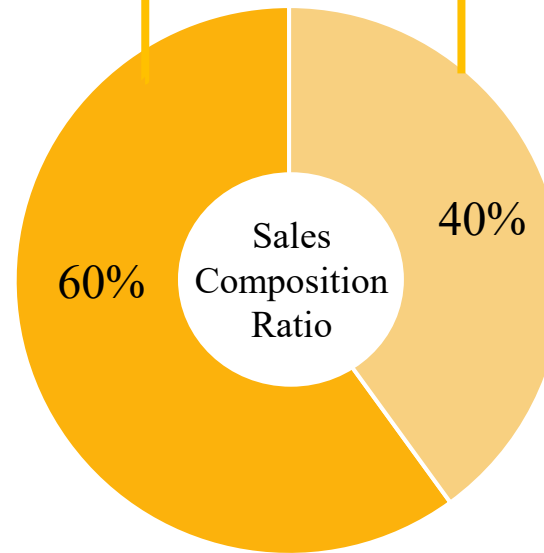


# Business Overview: Service Business

Providing services that resolve customer issues and offering total support for customer testing in accordance with various standards

## After-Sales Service and Engineering

- Provide product maintenance and preventive maintenance so customers can use the equipment with confidence.
- Provide installation and relocation, peripheral construction work, and sales of peripheral equipment.
- Provide cloud-based network services.



## Laboratory Testing Services and Facility Rentals

- Propose optimal solutions for the evaluation needs specific to each industry and conduct customers' environmental testing on their behalf at the Company's test laboratories.
- Provide rental and resale of environmental test chambers, as well as calibration services for measurement instruments.

Testing areas for laboratory testing services:

- Automobiles
- Rechargeable batteries
- Aviation and electric vertical takeoff and landing aircraft (eVTOLs)
- Electronic components and electronic devices
- Semiconductors, etc.



Five locations in Japan (Utsunomiya, Tokoname, Toyota, Kariya, and Kobe)  
Test laboratories established at two locations in China (Shanghai and Suzhou) and one location in Thailand



Laboratory testing service in Japan  
powered 100% by renewable energies

# Business Overview: Other Business

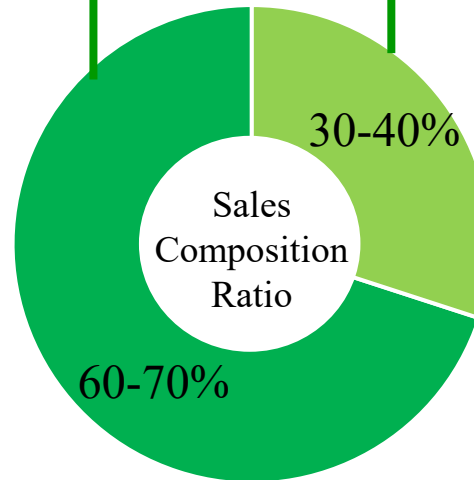
## Plant Production Systems

Provide plant factories that control light, temperature, humidity, nutrients, as well as seedling cultivation systems for research purposes.



## Environmental Preservation

Forest and waterfront development focused on local species.





# ESPEC's Strengths

## Top Market Share

Share of Environmental Test Chambers:

Over 30% worldwide, Over 60% domestic (ESPEC estimates)

First in Japan to develop environmental test chambers, rapidly established a brand in Japan and overseas and have held the top market share for many years

## Technological Capabilities Product and Service Capabilities

Developed a variety of products with high quality and meeting customer requirements

Production technology capabilities that enable high-mix, low-volume production

Total solutions for environmental tests, including products, laboratory testing services and technical support, and after-sales service capabilities

## Global Structure

Provide products globally that comply with the needs of respective countries through an extensive global network

- Consolidated subsidiaries: 13 (9 overseas, 4 domestic)
- Overseas production bases: North America 1 company,  
China 2 companies, South Korea 1 company
- Overseas network: 50 locations (countries or territories), 44 companies

# Global Network

Consolidated Subsidiaries  
13 companies  
(Global 9 companies, Domestic 4 companies)

Global Network  
50 locations  
44 companies

Business Facilities in Japan: 16  
Domestic Agencies in Japan: 46

## EUROPE

- ESPEC EUROPE GmbH
- ESPEC IKLIM KABINLERI SATIS VE MUHENDISLIK LIMITED Sirketi

## ASIA

- SHANGHAI ESPEC ENVIRONMENTAL EQUIPMENT CORP. \*
- ESPEC ENVIRONMENTAL EQUIPMENT (SHANGHAI) CO., LTD.
- ESPEC TEST EQUIPMENT (GUANGDONG) CO., LTD. \*
- ESPEC TEST TECHNOLOGY (SHANGHAI) CO., LTD.
- ESPEC (CHINA) LIMITED
- ESPEC KOREA CORP. \*
- ESPEC ENGINEERING (THAILAND) CO., LTD.
- ESPEC ENGINEERING VIETNAM CO., LTD.

## U.S.A.

- ESPEC NORTH AMERICA, INC \*

## JAPAN

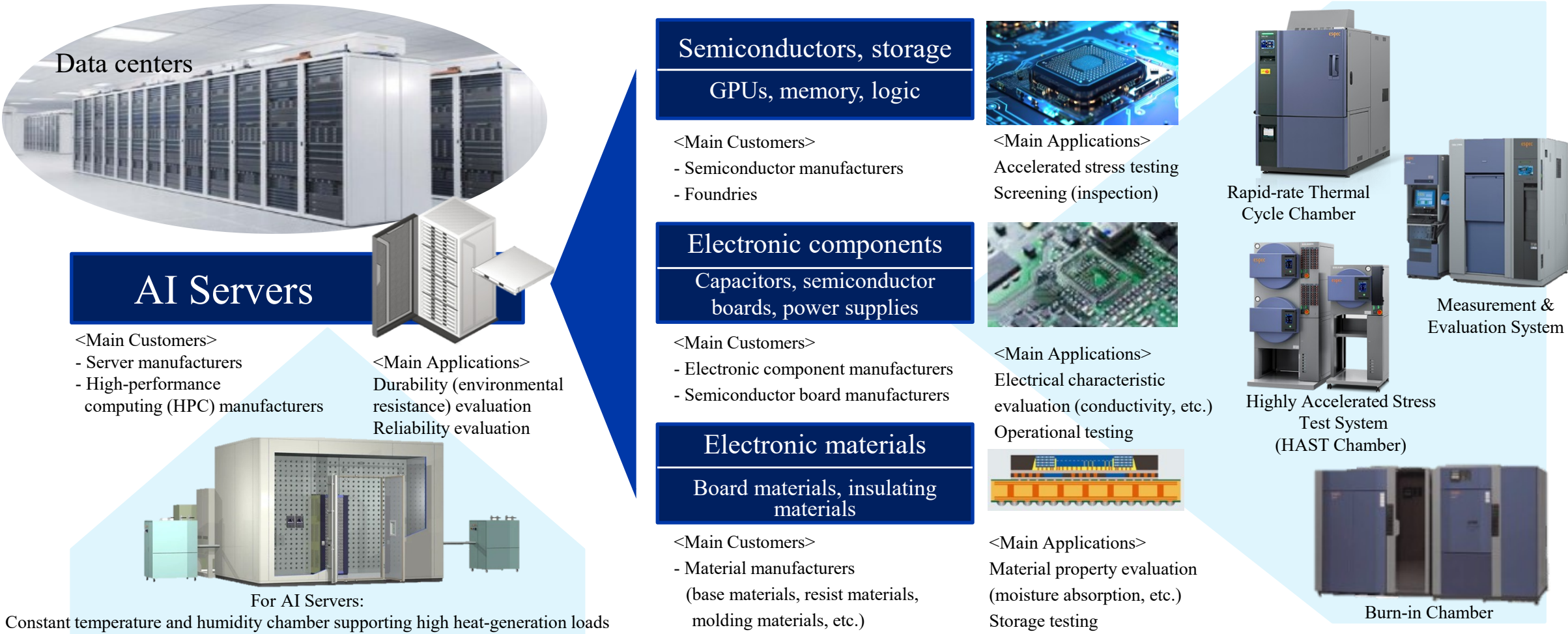
- ESPEC CORP. \*
- ESPEC ASSIST CORP.
- ESPEC MIC CORP.
- ESPEC THERMAL TECH SYSTEM CORP. \*
- COSMOPIA HIGHTECH CORP. \*

● : Consolidated Subsidiaries  
- : Non-consolidated Subsidiaries

\*Denotes company with production functions.

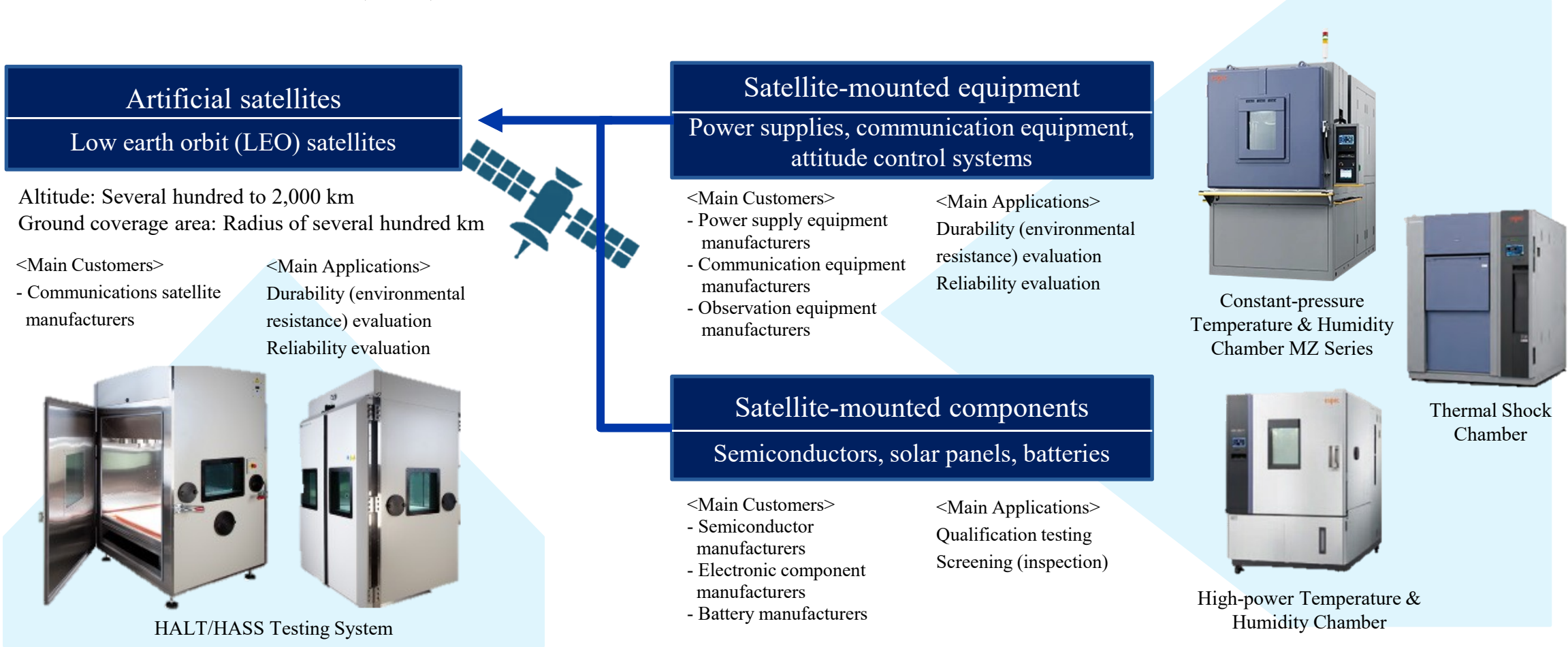
# Medium-Term Management Plan (FY2025-2027) :Target Markets <AI Semiconductor>

As generative AI spreads throughout society, demand is increasing for environmental testing aimed at evaluating the reliability of AI servers and the semiconductors, storage devices, electronic components, and electronic materials that comprise them.



# Medium-Term Management Plan (FY2025-2027): Target Markets <Satellite Communications>

In the field of commercial satellite communications technology led by private operators, demand is increasing for environmental testing to evaluate the reliability of communication equipment, semiconductors, and electronic components installed in low earth orbit (LEO) satellites and other artificial satellites.





# Equipment Business/ Service Business: All Weather Simulation Chamber

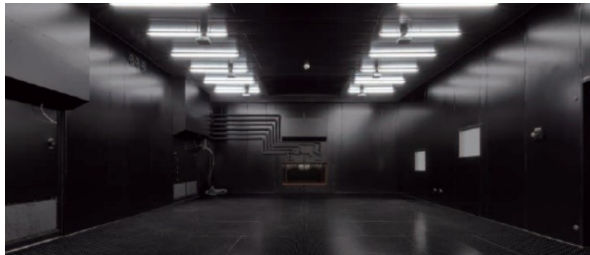
(in the Kobe R&D Center)

Opened the world's first All Weather Simulation Chamber  
Encouraging open innovation and strengthening environmental creation technology

(Mar. 2021)

Replicates dynamic climate environments with high-precision control and variation of seven environmental factors (temperature, humidity, snow, fog, rain, sunlight and wind)

## ■ All Weather Simulation Chamber



Test chamber: Width 6 m x Depth 9 m x Height 3 m

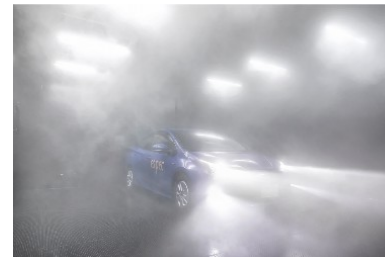
A black coating is applied to suppress the diffuse reflection of light.

## ■ Examples of tests in dynamic environments



### (1) Tests to replicate the change from sleet to snow

Snow with different amounts of water content can be replicated, including snowfall at temperatures around 0°C, which is close to snowfall in a natural environment. By controlling the snow quality and temperature, the laboratory replicates the change from sleet to snow. The laboratory can confirm the performance of automated driving sensors for which snow accretion has become a problem.



### (2) Experiment to replicate the change from rain to fog

The laboratory controls the thickness, temperature and humidity of fog and replicates the change from rain to fog. The laboratory can confirm the performance of automated driving sensors in response to the effects of fog.

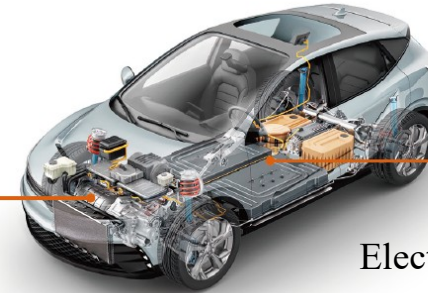


# Equipment Business: Usage Case with Environmental Test Chambers

Ensure reliability of new technologies and new products by repeatedly testing each component, module and finished product

In-vehicle parts/electrical components

- ECU      ▪ Inverter
- Converter    ▪ Sensor    ▪ Motor etc.






Automotive Batteries

- Lithium-ion battery
- All solid-state battery etc.

Electric Vehicle (EV) image

## Representative Examples for Environmental Testing

Device	Process/Test Condition		Our Products
<b>【Power Device】</b> 	Inspection	■ Thermal shock test: $-40^{\circ}\text{C} \Leftrightarrow +125^{\circ}\text{C}$	Thermal shock chamber
		■ High temperature exposure: $+175^{\circ}\text{C}$ , $+85^{\circ}\text{C}$	(Compact size) Oven
		■ Burn-in test	Burn-in chamber
<b>【In-vehicle Sensor】</b> 	Inspection	■ Temperature cycle test of printed circuit board: $-40^{\circ}\text{C} \Leftrightarrow +110^{\circ}\text{C}$	Temperature & humidity chamber (Platinous) / Oven
	Evaluation	■ Temperature characteristic test after soldering: Linear change between $-30^{\circ}\text{C}$ and $+85^{\circ}\text{C}$	Burn-in chamber, Rapid-rate thermal cycle chamber
<b>【CCD/CMOS】</b> 	Production	■ Diffusion Test: $+150^{\circ}\text{C}$	Compact size Oven
		■ Drying after cleaning: $+85^{\circ}\text{C}$	Clean Oven
	Evaluation	■ Screening: $+85^{\circ}\text{C}$	Temperature chamber (Platinous) / Burn-in chamber
	Inspection	■ Temperature and humidity test: $+85^{\circ}\text{C} / +85\%\text{rh}$ , $+60^{\circ}\text{C} / 90\%\text{rh}$	Temperature & humidity chamber (Platinous)
		■ Acceleration test: $+120^{\circ}\text{C} / 100\%\text{rh}$	HAST chamber
		■ Thermal shock test: $-40^{\circ}\text{C} \Leftrightarrow +125^{\circ}\text{C}$ , $-20^{\circ}\text{C} \Leftrightarrow +85^{\circ}\text{C}$	Thermal shock chamber

# Equipment Business: Main New Products

Release Date	Name of product	Features
Dec. 2025	Walk-in Temperature & Humidity Chamber for High Heat-generation Loads	<ul style="list-style-type: none"> <li>-Handling high heat-generation loads for AI server reliability testing.</li> <li>-Enables testing compliant with ASHRAE standards used for server reliability evaluation.</li> </ul>
Oct. 2025	Highly Accelerated Stress Test System (HAST Chamber) Model supporting large substrates	<ul style="list-style-type: none"> <li>-Meeting testing demands in the AI semiconductor and autonomous driving markets.</li> <li>-Capable of evaluating a large number of samples in a single test, and improving testing efficiency</li> </ul>
Apr. 2025	Ultra-Low-Temperature Shock Freezer	<ul style="list-style-type: none"> <li>-Preservation of perishable food freshness through rapid freezing to an ultra-low temperature of -70° C</li> <li>-Automatically completes the entire process of food freezing, storing, defrosting and reheating</li> </ul>
Apr. 2025	Rapid-Rate Thermal Cycle Chamber High-Performance Model	<ul style="list-style-type: none"> <li>-Capable of specimen temperature ramp control at a rate of 20K/min</li> <li>-Complies with semiconductor package reliability test standards and international standards for electronics and automotive markets, among others</li> </ul>
Jan. 2025	Expansion of Commissioned Measurement Services (Thermal Dependent Warpage Measurement Service / Thermal Image Analysis Service )	<ul style="list-style-type: none"> <li>-Thermal Dependent Warpage Measurement System: Supports reflow oven temperature environment (up to 260°C) and large substrate sizes</li> <li>-Thermal Image Analysis System: High-speed, high-precision thermal image analysis</li> </ul>
Nov. 2024	Low Temperature (& Humidity) Chamber Featuring R-449A low GWP* refrigerant Platinous J Series ECO Type	<ul style="list-style-type: none"> <li>-Offers up to a 70% reduction in power consumption compared to current models through proprietary refrigeration technology.</li> </ul>
Oct. 2024	Rapid-Rate Thermal Cycle Chamber Premium Excellent Series (EC-28PXHH) Featuring R-473A, R449A Low GWP* Refrigerant	<ul style="list-style-type: none"> <li>-Launched by COSMOPIA HIGHTECH CORP., a group company.</li> <li>-Capable of rapid temperature change testing in compliance with international testing standards.</li> </ul>

\*GWP:Global Warming Potential. The smaller the value, the less environmental impact.

# Equipment Business: New Product Introduction 1

## Launched low temperature (& humidity) chambers Platinous J Series ECO Type with low-GWP refrigerant

- In November 2024, launched the ECO Type in the Platinous J Series, the global standard model for environmental test chambers
- Proprietary refrigeration technology reduces power consumption by up to 70% compared to conventional models, contributing to the reduction of greenhouse gas emissions by adopting low- GWP\* refrigerant “R-449A”



low temperature (& humidity) chambers  
Platinous J Series ECO Type

## First domestic launch by COSMOPIA HIGHTECH of a rapid temperature change device using low-GWP refrigerant

- In October 2024, COSMOPIA HIGHTECH, part of our Group, launched the first domestic rapid temperature change device equipped with low-GWP\* refrigerant “R-473A”
- Complies with international test standards and contributes to the reduction of greenhouse gas emissions



Rapid Temperature Change Device Premium Excellent Series  
(EC-28PXHH)

\*GWP: Global Warming Potential. The smaller the value, the less environmental impact.

# Equipment Business: New Product Introduction 2

## Commissioned Measurement Services

Contribute to improving the accuracy of thermal analysis CAE and heat dissipation design of semiconductor packages, mounting substrates, etc.

(Expansion in Jan. 2025)

- Thermal Dependent Warpage Measurement Service
  - Visualize the warpage deformation of semiconductor packages and mounting substrates
  - Supports reflow oven temperature environment (-40°C to +260 °C)
  - Supports large substrate sizes up to 300 mm
- Thermal Image Analysis Service
  - Visualize the temperature distribution of specimens under constant temperature environment (-40 °C to +100 °C)



Thermal Dependent Warpage Measurement Service

## -70°C Ultra-Low Temperature Shock Freezer for delicious rapid freezing

- In April 2025, launched the “Ultra-Low Temperature Shock Freezer” capable of freezing food rapidly at -70°C, preserving freshness even for perishable items
- Enables freezing in a low airflow environment, preventing food from drying out, and allows a seamless process from freezing to thawing and reheating in a single unit



Ultra-Low Temperature Shock Freezer

# Equipment Business: Examples of Products Delivered

## Walk-in Type Temperature (& Humidity) Chamber, for building materials

(Delivered in Jul. 2018)

### Uses:

Reproduce the environment inside apartments (temperature and humidity) and outdoors (weather such as rain, snow, and sunlight), conduct performance evaluations and durability tests of building materials for sash, balcony, etc.



Walk-in Type Temperature (& Humidity) Chambers,  
for use for building materials



Temperature (& Humidity) Chambers are movable so that building materials for testing can be easily changed



Furnished with irradiation equipment and watering (rain) equipment, to reproduce an outdoor weather environment



# Equipment Business: Usage Case with Energy Device Equipment

## Charge-discharge Cycle Evaluation Equipment

Equipment for ensuring the reliability and safety of lithium-ion secondary batteries for next-generation vehicles (e.g., hybrid and electric vehicles)

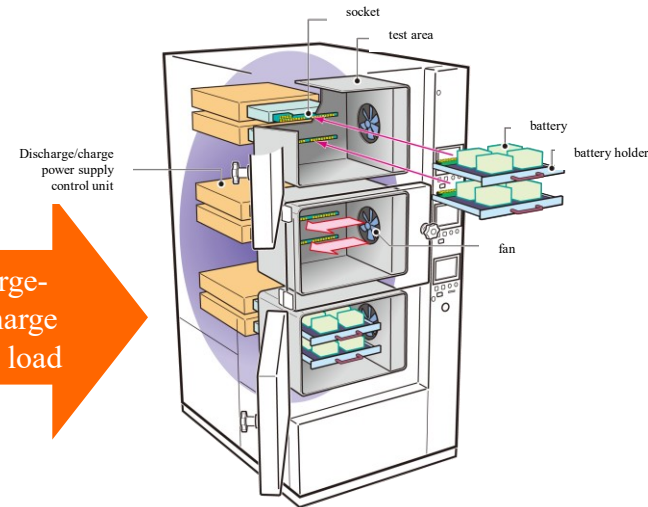


Secondary Battery Charge-Discharge Evaluation System

Secondary Batteries



Charge-discharge cycle load



Checking the charge-discharge characteristics of secondary batteries

Evaluating the performance and life of secondary batteries

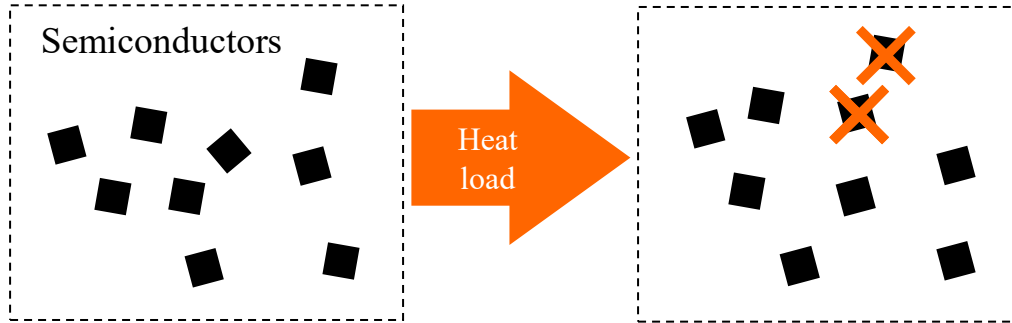
# Equipment Business: Usage Case with Semiconductor Equipment

## Screening

Eliminate defective products to maintain initial-period quality at the final inspection stage of semiconductor device manufacturing



Burn-In Chamber



Elimination of latent early failures

## Reliability Evaluation

Used to evaluate basic failure patterns to ensure reliability in the development of new technologies

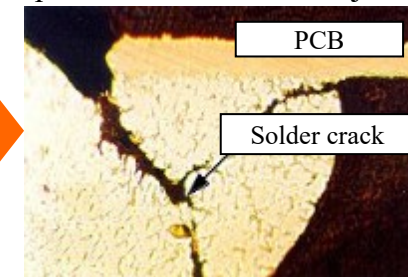


Conductor Resistance Evaluation System



Heat cycle  
load

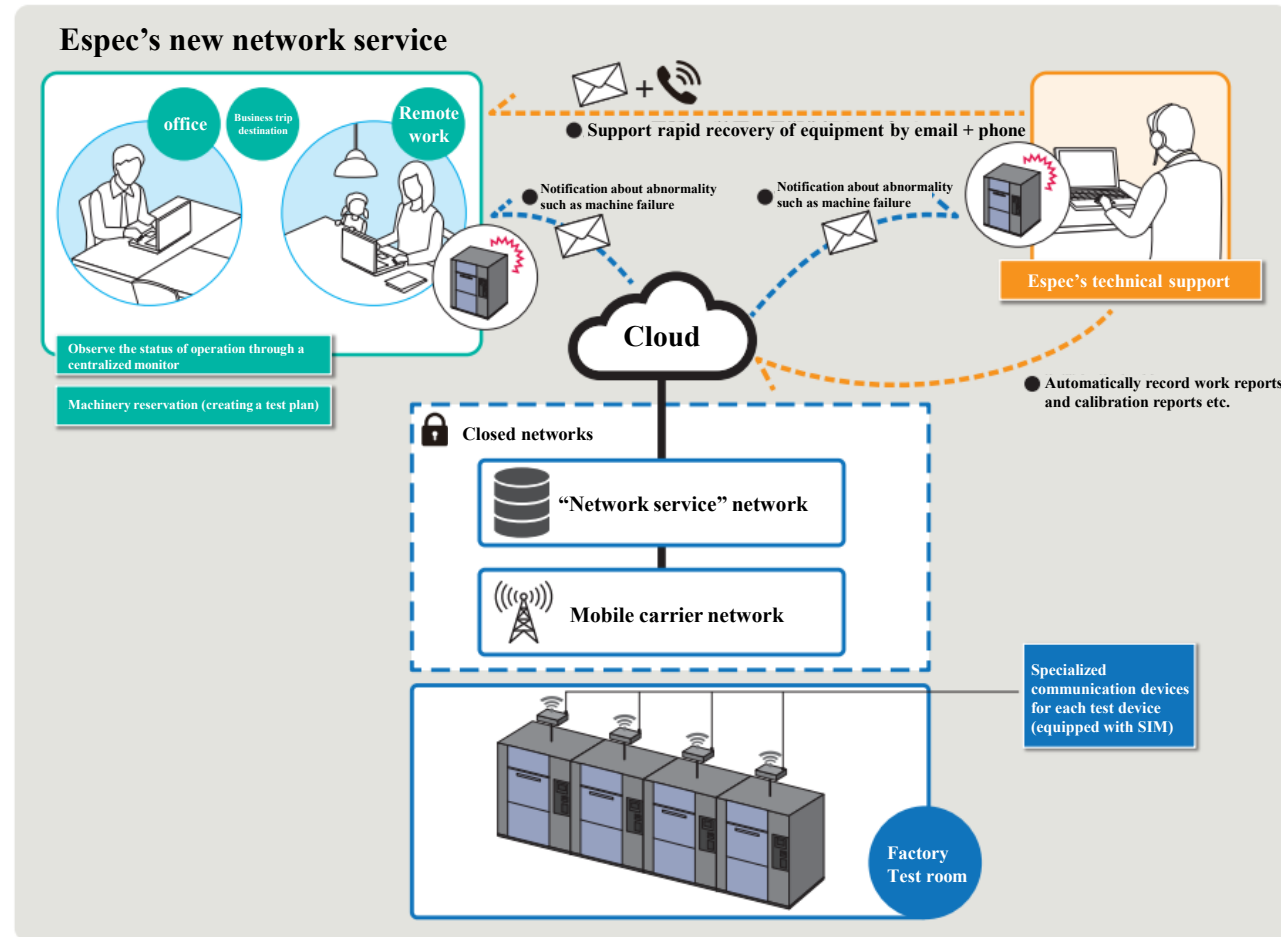
Example of defect in soldered joint



Electrical evaluation of reliability of joints in electronic parts

# Service Business: After-Sales Service

“Network service” utilizing mobile communications and cloud computing.  
Eases the burden on customers’ tests and machinery management, and reduces equipment downtime.



(Started in Apr. 2022)

# Service Business: Laboratory Testing Services

Supporting testing of a wide range of in-vehicle electrical components including automation modules

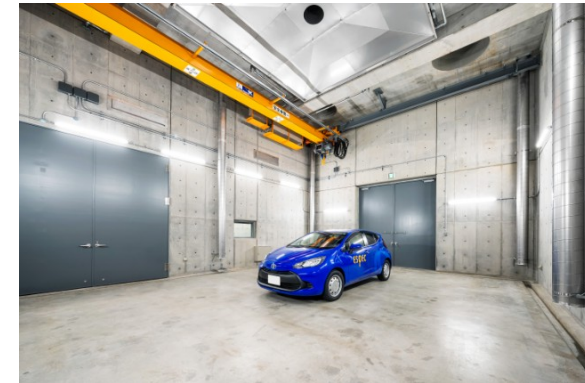
- In September 2019, Toyota Test Center became compatible with all test items set forth by the LV124 German Automotive Manufacturer Testing Standards.
- In April 2025, functions were expanded to simulate the usage environment while EV and automation modules are in operation, and services were newly enhanced for conducting evaluation and measurement.



Toyota Test Center

Aichi xEV Battery Safety Test & Certification Center, One of Japan's Largest Dedicated Automotive Rechargeable Battery Testing Centers

- Opened in February 2025 at the Tokoname site of Aichi Next Generation Mobility Test Lab.
- Supports larger and higher capacity automotive rechargeable batteries with cutting-edge testing facilities.



A safety testing room that can accommodate one car

# Other Business: Environmental Preservation/ Plant Production Systems

## At Expo 2025 Osaka-Kansai cooperating in venue greening and aquaponics exhibitions

### ■ Provision of planted mats and seedlings at the venue

- Supplying mats planted with Japanese native cogon grass and seedlings of silver grass for the “Grand Ring”, and wild grasses and aquatic plants to border the pond’s edge in the “Forest of Tranquility”.
- Also supplying for the EXPO National Day Hall, Hungary Pavilion, Kuwait Pavilion, Signature Pavilions, etc.



The Grand Ring

### ■ Cooperation in exhibitions at the Osaka Healthcare Pavilion

- Collaboration with the Osaka Metropolitan University R&D Center for the Plant Factory to support aquaponics exhibits.
- Provision of vegetable cultivation technologies and expertise.

#### What is aquaponics?

A recycling production system that combines hydroponics and land-based cultivation. Bodily waste from fish is decomposed by microorganisms and used as a source of nutrients needed to grow plants. This enables vegetables to be grown either without using chemical fertilizers or reducing the amount of their use.



Aquaponics “Cradle of Life”



# Other Business: Examples of Products Delivered

## ■ Arid Land Research Center, Tottori University

(Delivered in Mar. 2016)

### Products delivered:

Experimental System for Analyzing Responses of Dryland plants to Climate Changes (2 units)  
(Simulates the climates of arid lands, including high temperature, low humidity, strong sunlight, and high winds)

### Uses:

Plant cultivation experiments and experiments to develop efficient water-usage technologies in arid lands, research to solve issues facing arid lands



Experimental System for Analyzing Responses of  
Dryland plants to Climate Changes



Experiment in progress  
(Testing wheat for drought stress)

INQUIRIES:

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