MWC Barcelona 2024 Japan Pavilion Guide



JAPAN PAVILION

Welcome to Japan's next generation, vibrant and ambitious technology exhibition pavilion

The Japan Pavilion will feature 15 Japanese companies that promote ICT research and development with the support of the Ministry of Internal Affairs and Communications (MIC) of Japan, which contributes to solve world issues by promoting these technologies globally.



Floor Map



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- National Institute of Information and Communications Technology; NICT
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Infrastructures & Network

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- Enplas Corporation
- 🛂 Elephantech Inc.
- Dai Nippon Printing Co., Ltd.
- Tokyo Institute of Technology、 Maxell, Ltd.
- DI SEIWA ELECTRIC MFG. CO., LTD.
- 🛯 Sumitomo Electric Industries, Ltd.



01 Company Introduction

The National Institute of Information and Communications Technology (NICT), Japan's only public research institute in information and communications, promotes information and communications technology R&D from a comprehensive perspective, from basic to applied research. Our other missions include aiming to generate innovation by giving back to society with the results of our R&D through cooperation with universities, industry, local governments, and domestic and overseas research institutions.

02 Products Details

The Dome Theater: visualization of how the Beyond 5G/6G world looks like in the 2030s



This unique theater takes you to the world in the 2030s when various industries harmonize their technologies in both physical and cyber spaces. In such a future world, which we call the Beyond 5G/6G world, we will enjoy lives filled with new values and enriched and convenient environments.

While riding in a flying car, you will explore the beyond 5G/6G future society. Following a brief introduction of some elemental technologies, the theater tour details the new world comprising new value, new services and the reduction of energy consumption. We will also show you a supply chain in the marine product industry in the future world.

Demonstration of wireless transmission in terahertz-band infrastructure technology

1. Ultra-high-capacity data upload system from a robot car passing through an ultra-spot

An autonomous driving robot car on which a specially designed 60-GHz band ultra-high-capacity transceiver & a camera are mounted very quickly establish a communication link with another transceiver placed on a TV monitor and upload a recorded video file with hundreds Mega Bytes during passing through an ultra-narrow wireless zone, i.e., ultra-spot, which take only less than several hundreds milliseconds.



2. Uncompressed 4K video transmission in terahertz-band

A pair of a 300-GHz transmitter and a 300-GHz receiver er demonstrate the uncompressed 4K video transmission. 4K video data from a laptop computer is put on a 300-GHz carrier using the OOK modulation scheme. The modulated 300-GHz radio wave is transmitted via optics lens antennas. The received signal is displayed on a 4K monitor.



https://swipevideo.jp/en/



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https://www.youtube.com/watch?v=DptKQ4GisX0 https://www.youtube.com/watch?v=ca-sccllODc

01 Company Introduction

Our company has developed distribution software for volumetric video, free-viewpoint video, and multi-angle video.

We have obtained an international patent for our unique distribution technology and offer it as a product called "SwipeVideo."

We are expanding into industries such as entertainment, sports, technical education, EC, and events.

02 Products Details

SwipeVideo

SwipeVideo is patented software.

SwipeVideo is a completely new video system that allows you to freely switch viewpoints with just a swipe.

SwipeVideo operates only on web technology (HTML5), so you can switch between videos (slow playback, still images, zoom) at any time without stress, without the need for any applications. Just swipe to switch video perspectives.





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01 Company Introduction

RevComm Inc. is one of the fastest growing startups in Japan. Our mission is to reinvent communication to create a society that cares for one another. We were founded in 2017 with the business domain Al \times Voice \times Cloud software & IP-Phone. From here we gave birth to RevComm, a telephone system equipped with artificial intelligence that is able to minimize differences in team performance, to increase sales conversions, while reducing communication training costs. Similarly, we have also introduced RevComm Meetings for online, and RevComm RecPod α for offline meetings in the following years. In 2023, Forbes, Sequoia Capital, and Meritech Capital endorsed RevComm as a 2023 Top 50 Al company.

02 Products Details

RevComm is AI-powered analytics that provides real-time insights into your team's calls, video meetings, and offline meetings. This enables you to make data driven decisions to increase sales and improve customer satisfaction scores.



Japan Aviation Electronics Industry, Limited Booth No. D-1



01 Company Introduction

Since our establishment in 1953, we at JAE, under the corporate philosophy of "Explore, Create and Practice", have successfully developed and globally expanded our three core business areas of connectors, user interface related devices, and aviation electronics supported by our outstanding development capability in innovative and creative technologies. With our global corporate slogan "Technology to Inspire Innovation", JAE focuses on technological development and product creation that inspire customer's innovation. For many years, as a basic management policy, JAE has promoted global business expansion based on the consolidated management of the JAE Group including all its subsidiaries; enhancement of global marketing and product development capabilities; and innovation of product quality and manufacturing technology, in order to gain a high level of trust as partners with our worldwide customers. All staff of the JAE Group, as good corporate citizens, will strive together to contribute to the prosperity of 21st century society.

02 Products Details

FO-BD7D Series Weather-resistant Optical Connector



FO-BD7D is an optical pluggable connector for outdoor use which can be assembled on-site. This connector series addresses common thermal issues caused by optical modules by embedding the optical module into the FO-BD7D plug. With the optical module embedded into the plug connector, field technicians can mate and assemble the optical harness while safely on the ground rather than assembling on the installed base station. In contrast to the FO-BD7 Series, which is already for sale, the FO-BD7D Series is compatible with an LC duplex connection. It is possible to attach the general-purpose LC harness to the connector rather than a custom harness, making it more convenient to use.

JL10/W Series Outdoor Environmentally Resistant Circular Connector



The JL10/W Series connectors are IP67 rated water and dustproof, and use a special electro-deposition coating on the outer components for high environmental durability. The connectors feature outstanding ease of operation and allow for reliable mating with a one-touch mate and lock mechanism.

In addition to the conventional contact pin arrangement, 22-22, we have added a variation with a new contact arrangement, 22-A3. We will continue to respond to a wide variety of market needs by developing new connectors such as this to add to our existing product lineup.

224Gbps Jumper Cable Interconnect solution

As requirements for data transmission speed is reaching upper limit of existing printed circuit board (PCB) technologies, it is becoming more difficult to realize constant and reliable data transmission performance. To solve this problem, JAE and Yamaichi Electronics jointly developed a jumper cable interconnect solution which can perform stable data transmission at 112Gbps/224Gbps PAM4 signaling.



This interconnect solution has been designed with a compact connector size to be able to fit in a high density design requirement, and can be utilized in several different usages including direct jumper cabling from the front panel pluggable IO to host chip, or the internal chip to chip connection.

NIHON DENGYO KOSAKU Co., Ltd.

DENGYO

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Booth No. D-2

https://global.den-gyo.com/

01 Company Introduction

DENGYO was established in 1947 in Japan. Since then we have been providing indoor/outdoor base station antennas and filters of GSM/CDMA/LTE/5G systems for Japanese and global MNOs. Main customers are NTT Docomo, KDDI, SoftBank, US Cellular, AT&T, T-Mobile and Sasktel.

02 Products Details

$((\mathbf{I}))$ -Seamless Integration with the Environment and High-Speed Communication-





Film Wrap Antenna[®]

- Camouflageable Design
- Flexible Mounting
- Easy Installation



Product Name	VLTA 2T2R Model				VLTA 4T4R Model				Film Wrap Antenna	
Frequency Band [MHz]	617-960	1427-2170	2545-5850	5850-7200	1710-1850	1850-2700	2700-5000	5000-7200	3400-4100	4400-4900
Impedance [Ω]	50				50				50	
Polarization	Horizontal				Horizontal				± 45	
VSWR	≦2.0				≦2.0				≦2.0	
Gain [dBi]	2.0	3.0	4.0	5.0	3.0	4.0	5.0	5.0	9.0	
Isolation [dB]	> 15	> 17	> 20	> 20	> 15	> 15	> 17	> 18	> 20	
Max. Input Power [W]	50				50				20	
IM3 [dBc, @20W*2]	< -150				< -150				< -150	

Enplas Corporation



01 Company Introduction

Enplas has contributed to building a more prosperous society with the high-precision molding technology we have cultivated since our founding(1962).

We have developed and put on the market a variety of lenses in the visible light, infrared, and ultraviolet regions, and we now produce lens antenna by applying the high-precision processing technology we have cultivated in these short wavelength fields to the radio wave region.

02 Products Details

Lens antenna for 6G (edge device / Base Station) : - 1/3rd the height(6.2mm)

compared to Polypropylene(PP) lens and horn size

- 3x the transmission distance- (1/10th reduction in power consumption)

compared to horn antenna only

•for 300GHz

•26dBi , 6.2mm height , φ 10mm diameter

$\mathbf{\Phi} \, \boldsymbol{\varphi}$ 5mm diameter, 2.9mm height lens antenna is also

available (Please see picture with €1 coin)
•for 300GHz, 20.3dBi

Lens antenna for mm-wave radar : - 1/2 the height(9mm)

compared to existing lens antenna

- for 60GHz
- •19dBi , 9mm height , arphi 20mm diameter

Our lens antenna uses a precise anti-reflection structure and unique material technology.









Lens surface(anti-reflection structure)

Elephantech Inc.



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- https://youtu.be/6atSBDg5uGM

01 Company Introduction

Elephantech has achieved mass production and sales of sustainable flexible circuits for the first time in human history, using an additive process that does not use etching, which conventional FPC manufacturing methods use. Our Pure Additive[™] process reduces copper consumption by 70%, carbon footprint by 75%, and water consumption by 95%.

02 Products Details

Key Challenge -PCB industry causes a huge environmental Impact

The subtractive process, which has been the standard PCB manufacturing method for more than a century, has significant environmental impacts, including high water and rare metal consumption, as well as the generation of large amounts of wastewater and greenhouse gas emissions due to the need for copper etching to remove most of the copper layer deposited in the earlier processes.

Our Solution - Extremely Sustainable Flexible Circuits

Elephantech's Pure Additive[™] process is a sustainable alternative to the conventional subtractive process used in electronics manufacturing for over a century. Elephantech's initial focus is on Flexible printed boards(FPCs) a type of PCB, a \$90 billion market that generates 0.1% of global greenhouse gas emissions and 10% of Apple's carbon footprint. In addition, the Pure Additive[™] process has the potential for multiple applications in the electronics industry beyond PCBs and has the ability to significantly reduce industrial greenhouse gas emissions, making it possible to contribute to a more sustainable world.



Dai Nippon Printing Co., Ltd.



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https://www.global.dnp/biz/eventseminar/event/20170043_4123.html %For inquiries regarding products, please contact us from the URL above.

01 Company Introduction

DNP has expanded its business based on printing process technologies such as data processing, microfabrication, and precision coating. DNP provide a variety of products and services in area of smart communication, life & healthcare, and electronics.

02 Products Details

DNP is developing environmentally friendly products for building effective 5G radio propagation applying our functional film technology.

A: Reflect Array

DNP Reflect Array is passive device for improving quality of telecommunication that works without consuming electric power. It can be designed for various angles of incidence, reflection, and spread of reflected waves.

B: 5G Film Antenna

The 5G Film Antenna is compatible with either Sub-6GHz or mmWav e 5G bands, and its flexibility and designability allows to installation for harmonizing with living space. DNP develops thin and light-weight sheet that selectively absorbs radio waves in 5G Band.

C: Transparent EMI Shielding

Our EMI shield films, which is composed of materials with low environmental impacts, can prevent electromagnetic interference from external noise while maintaining high transparency, and reduce electric power and equipment costs.



Tokyo Institute of Technology (Tokyo Tech) Maxell, Ltd

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		bttps:/	//youtu.be/e5ZRvM3z	zOrY				

01 Company Introduction

Tokyo Institute of Technology and Maxell Corporation have developed high-frequency radio-wave technologies to realize Beyond 5G applications through joint development under the "Beyond 5G R&D Promotion Project Seeds Creation Type Program" promoted by the National Institute of Information and Communications Technology (JPJ012368C07401) and through collaboration in the National Institute of Science and Technology Agency A-STEP Tryout Project (JPMJTM22C5).

02 Products Details

We have developed radio-wave absorbers, reflectors, and radomes with ultra-broadband properties. These have properties that can be used not only in the 5G millimeter-wave frequency band but also in the Beyond 5G frequency band.

We will also exhibit our transparent and broadband 300-GHz-band products for the Beyond 5G applications. These technologies are attracting attention as the foundation for supporting next-generation telecommunications infrastructure, which is anticipated by the industry.



Booth No. D-6

Transparent&flexible, thinner than 1mm!

SEIWA ELECTRIC MFG. CO., LTD.





01 Company Introduction

SEIWA is contributing to the development of a safer and more comfortable smart society by providing high quality electronic components and devices. We will exhibit the latest EMC and thermal management technologies in the 5G and 6G industry, including high-speed, high-capacity, reliable communication, low-latency and massively parallel connectivity.

02 Products Details

Electromagnetic Wave Control Materials for Millimeter (MMW) to Tera Waves (TW)

This product contributes to the Intra-EMC prevention, communication accuracy improvement and weight reduction in MMW to TW applications.

Noise Suppression Tubes for millimeter wave (MMW) shielding

Just by covering the cable, it attenuates high-frequency noise transmission and suppresses unnecessary radiated components. Noise suppression is possible by partial attachment without affecting high-speed transmission signals. Noise suppression of high-speed communication cables is easily possible.

Slim thermal management sheets

Highly thermally conductive graphite sheets are composited with thin heat insulators to insulate the backside of heat sources and conduct heat in the flat direction. Lighter weight, thinner thickness and higher functionality are possible. Thermal management of information and communication devices and optical devices can be easily achieved. Suitable for thermal management of lithium-ion batteries. **EMC Engineering Service**

We provide a wide variety of solution services related to EMC and thermal management through various seminars, consulting and EMC laboratories.









Sumitomo Electric Industries, Ltd.



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- https://sumitomoelectric.com/
- https://youtu.be/nnzZa9ngQnc

01 Company Introduction

Sumitomo Electric Industries (SEI) is a leading company in optical communication industry. Its products enable high-capacity data transmission, serving as the foundation of modern communication infrastructure. SEI also develops related equipment and systems like multi-core fibers, high-frequency GaN devices, access network equipment, and FTTH systems. Its business for future network, such as 5G and 6G, improves mobile network efficiency and performance, meeting rapidly evolving communication demands. Furthermore, SEI contributes to energy-efficient communication networks by promoting sustainable product and technology development.

2 Products Details

Analog Radio over Fiber SFP Optical Module



SEI has developed the world's first SFP optical module for Analog Radio over Fiber (A-RoF), leveraging its years of experience in the optical communication industry. This module enhances high-capacity communication and enables distributed MIMO in the context of 6G.

mmWave-ready Antenna Distribution Systm



SEI is actively involved in the development of Distributed Antenna Systems (DAS) utilizing A-RoF technology. Its unique concept enables mmWave-ready DAS, which was previously unachievable with coaxial cables. Furthermore, A-RoF streamlines DAS architecture, leading to equipment miniaturization, cost reduction, and lower power consumption. This innovative solution significantly reduces CAPEX and OPEX for customer systems.

This activity is including results obtained from a project (JPNP20017) commissioned by the New Energy and Industrial Technology DevelopmentOrganization (NEDO).

MORITA TECH CO.,Ltd.



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 https://www.youtube.com/watch?v=mvZMrX8dGvI

01 Company Introduction

For over 30 years, Morita Tech has been successfully involved in the construction of test systems for cell phones and base stations. We have dedicated our effort to the development of improved 5G/6G test solutions.

Today, we offer you the new compact OTA test system that combines our internationally patented antenna coupler with a shielded box developed by our own company. Engineers will be delighted at the ease of use that this product offers.

02 Products Details

Today, we are facing the challenge of an "OTA test environment" in practically applying 5G/6G mobile communication.

Testing MIMO and Carrier Aggregation with the conventional methods of using horn antennas is very difficult. And protocol tests and EVM tests are not cost-effective due to the large size equipment. But we can propose an OTA test environment realize these tests in a small shielded box easily.

Instead of the conventional huge anechoic chamber, Morita-tech presents the Shielded Box and the Antenna Couplers that allow desktop scale OTA testing.

By using MIMO test Antenna Couplers, maximum throughput communication tests and protocol communication tests between terminals and base stations are easily accommodated for OTA tests (4X4MIMO, 8X8MIMO, ENDC test,NRDC test) in a compact OTA Shielded Box.



Japan Radio Co., Ltd.



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01 Company Introduction

JRC contributes to the safety and security of people around the world by utilizing the technology, knowledge, and experience it has cultivated over many years in various fields of the information and communications society.

02 Products Details

O-RAN Outdoor Radio Unit

NTG-1012/1013/1014 is outdoor 5G TDD RU (Radio Unit) with 4x5 watts output power (4x4 MIMO with 5 watts output each channel), which is compact, light and has excellent performance. With high capacity and easy deployment, the NTG-1012/1013/1014 TDD series RU can provide better coverage and higher capacity with minimal effort. It can realize data access for MBB (Mobile Broadband) network. The typical topology of NTG-1012/1013/1014 deployment is as follows.



Application

- MCPTT

- •An application software that facilitates mission-critical communication.
- •Key features: MCPTT (Mission-Critical Push-to-Talk), MCVideo, MCData.

- RMS: Radio Monitoring System

An application visualizes the wireless status of Private LTE/Local 5G and collects the radio signal strength measured on the terminal and displays it on a map on the server.

- BS Navigator

A derivative application of RMS, with this app, users can check the position and radio wave conditions of the base station.





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 https://youtu.be/PgYj2CBQjSY
- 01 Company Introduction

Since our establishment in 1972, SEIKOH GIKEN has expanded our business specializing in our core technology - precision processing technology, and we have devoted ourselves to providing products that suit market needs. Both our optical disc mold and optical communications businesses, which have their basis in precision processing technology, have concentrated management resources in the information industry, and are business areas that we have built up through our activities aimed at meeting the requirements of customers for quality, precision and performance.

By promptly adapting to changes in the business environment and by building on the core competencies we have established over the history of the Company, we at SEIKOH GIKEN are aiming to contribute to a wide variety of industrial sectors and to become a company trusted by our customers.

02 Products Details

RF over Fiber Unit for GNSS

Optical transmission of GNSS signals used for network time sync

- (1) Transmits all signals in the frequency range of 1 to 2 GHz: GPS/QZSS/GLONASS/BeiDou/Galileo, etc.
- (2) No need to install coaxial cables by using existing optical fiber network.
- (3) GNSS signals can be provided underground malls and tunnels for long distance transmission
- (4) Effective for lightning protection as isolated by fiber optic cable
- (5) Capable of multi-point reception by optical splitter



Meritech Co., Ltd.

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01 Company Introduction

Your efficiency, Our passion

Meritech stands at the forefront of mobile network monitoring and performance optimization solutions. The company provides cutting-edge tools designed to enhance the efficiency of NR5G, LTE-A, LTE, WCDMA, HSPA, GSM/GPRS and WiFi networks.

02 Products Details

Sigma-ML

Sigma-ML is a compact, lightweight wireless network measurement application that operates on a smartphone.

Sigma-One

Sigma-One is a ruggedized hardware & software solution designed to capture modem communication with the network.

Sigma-LA

Sigma-LA is a Windows-based drive test solution designed to capture and monitor RF log data from UEs and devices.

Sigma-PA

Sigma-PA is a Windows-based application that processes and analyzes network log.

Centra-SD

Centra-SD can consolidate the data into a single server and display the performance in an intuitive Dashboard and UI.

Booth No. |-4









About Us

Ministry of Internal Affairs and Communications (MIC)

The Ministry of Internal Affairs and Communications (MIC) has various institutional frameworks to undertake information and communications technology (ICT).

Regarding the MIC's international strategy of ICT, in order to solve the social issues facing the world and Japan and improve Japan's technology and competitiveness, MIC manages ICT research and development, social implementation, international standardization and deployment of infrastructure system services including 5G/Open RAN, 6G/Beyond5G and AI domestically and internationally.

In order to introduce the vibrant and ambitious technologies of Japanese companies to the world, MIC has taken MWC, one of the largest events in the world, as a great opportunity and has supported the Japan Pavilion exhibit.





Contact

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