

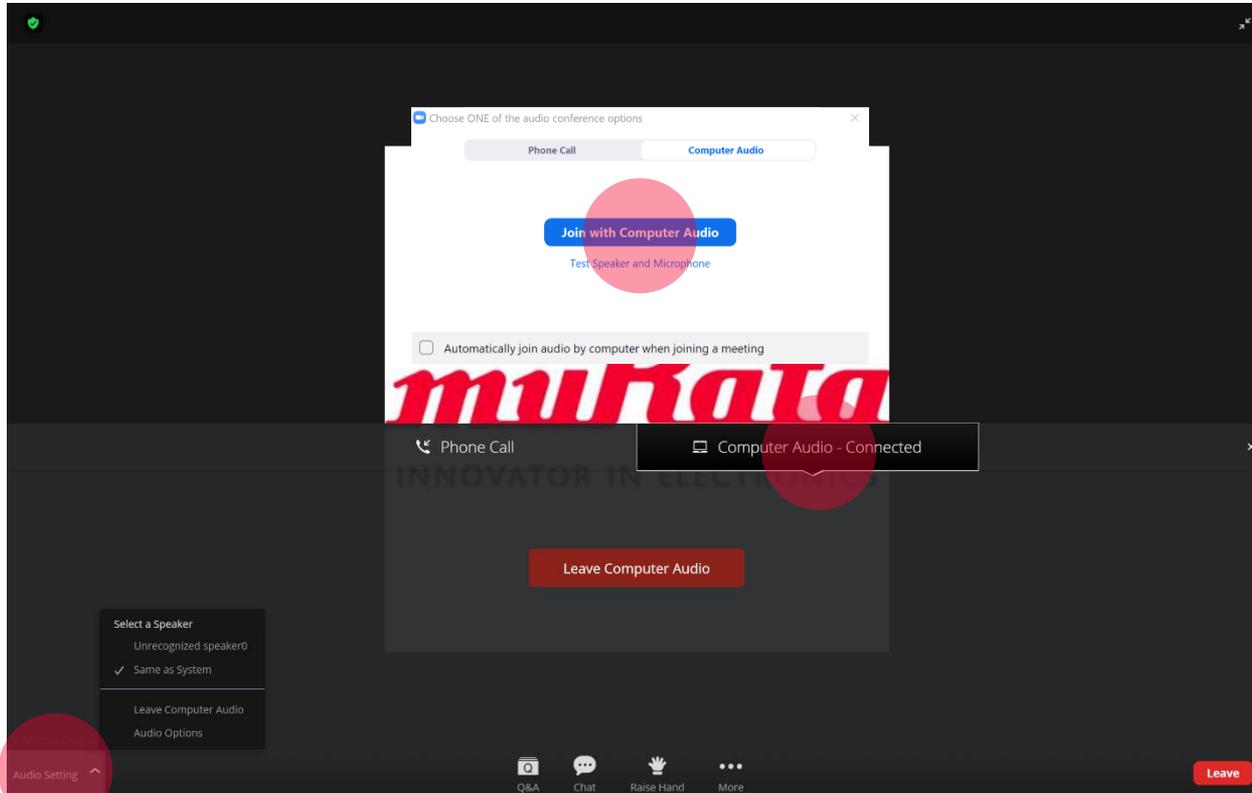
muRata SPEAKS

TECHNOLOGY | SOLUTIONS | INNOVATIONS

Murata Speaks - Monthly Webinar Series #26 [Oct 2022]

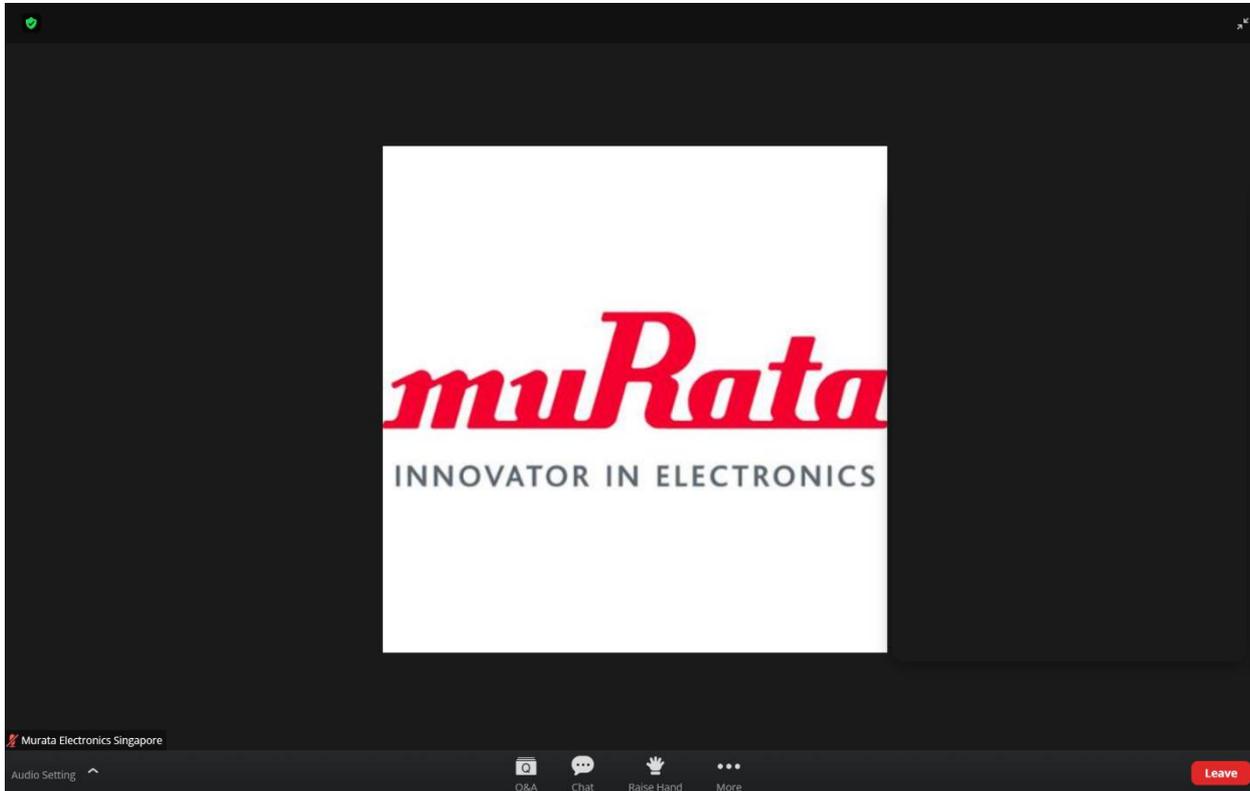


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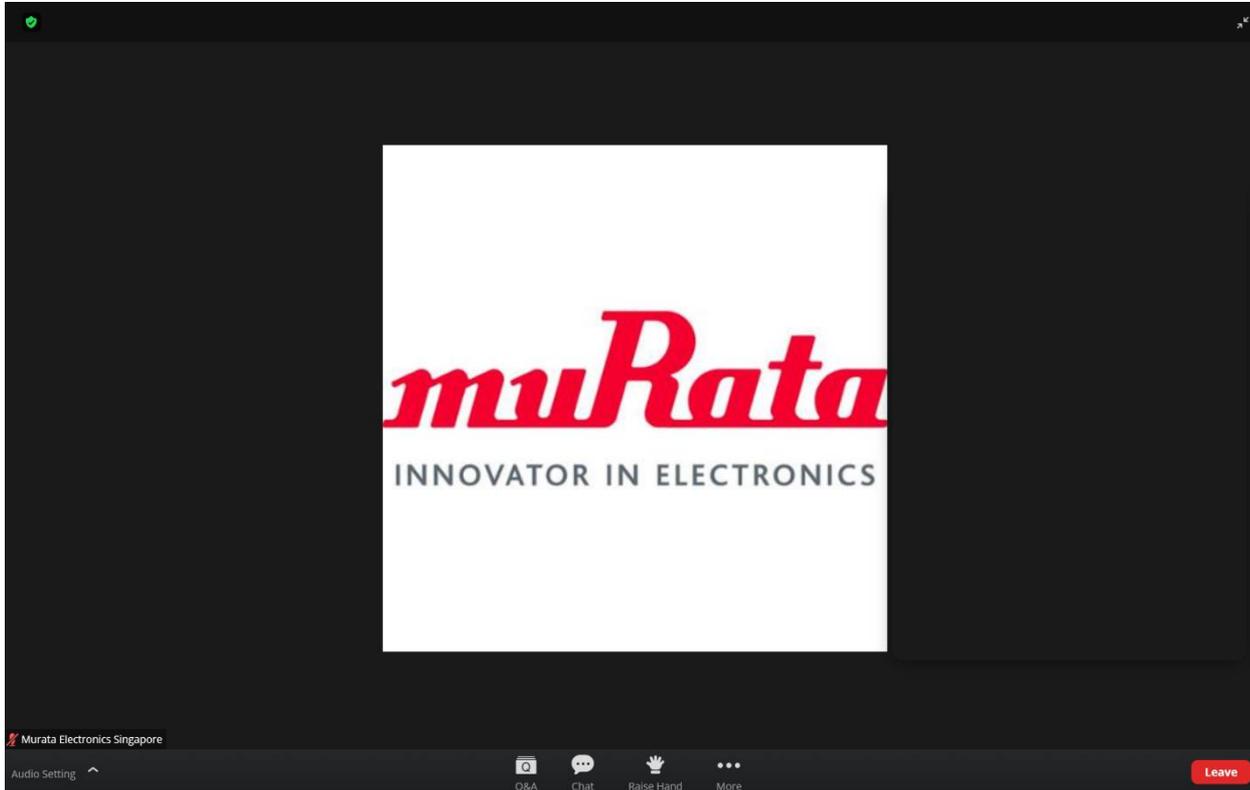


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DURING THE
WEBINAR.

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ATTENDEES
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ON MUTE
DURING THE
WEBINAR.



SLIDES AND
RECORDING WILL
BE AVAILABLE
AFTER THE
SESSION.

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CONTRIBUTING TO THE ADVANCEMENT OF A SUSTAINABLE SOCIETY

 20th October 2022, Thursday

 1:30 pm (AEDT)



Let's make our planet better together.

Today's Agenda

- **Introduction** (*Co-relationship between Arrow & Murata):
 - About **Arrow**
 - About **Murata** (Innovator in Electronics)
- **Past activities with ecosystem partners for Australia & New Zealand**
- **Murata's first ever exhibition in Australia (All Energy Australia)**
 - **Exhibit highlights:**
 - Battery Energy Storage System (FORTELION Battery)
 - Power Solutions for Open Compute & Data Center
 - UWB Modules
 - LPWA Products
 - SDG Initiatives
 - **Booth details**
- **Murata's Support Tools and Contacts**



Jaydyn Halliwell

Product Marketing Manager
Arrow Electronics
Australia/ New Zealand



Over 20 years experience in Product Marketing, Manufacturing and Supply Chain Management in the semiconductor and electronics industries in Australia and New Zealand. Passionate on seeing our Customers achieve their go-to-market plans and working closely with our Suppliers on meeting their expectations and those of our Customers and market place.



- Arrow provide guidance, find solutions and connect people with technology that makes life better.
- We guide innovation forward for over 180,000 leading technology manufacturers and service providers.
- Five Years Out is our way of thinking to bridge the gap between what's possible and the practical technologies to make it happen.
- ANZ: Local Warehousing, Technical Support, Supply Chain and Value Add Services

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INNOVATOR IN ELECTRONICS

**Murata is more than just
a capacitor manufacturer!**

Murata's Core Competency

CORE

Materials



Front-end process



Product design



Back-end process



Analytical



COMPREHENSIVE PRODUCT PORTFOLIO

Capacitors



Inductors



Sensors

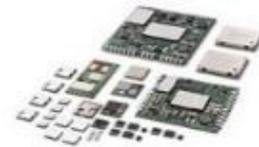


Timing Devices

(MEMS Resonator / Crystal Unit / Ceramic Resonator / Oscillator)



RFID Products



Power Products



Batteries



Wireless Communication

and many more...

SOLUTION PROVIDER *(*include numerous collaborations with major market/technology leaders)*



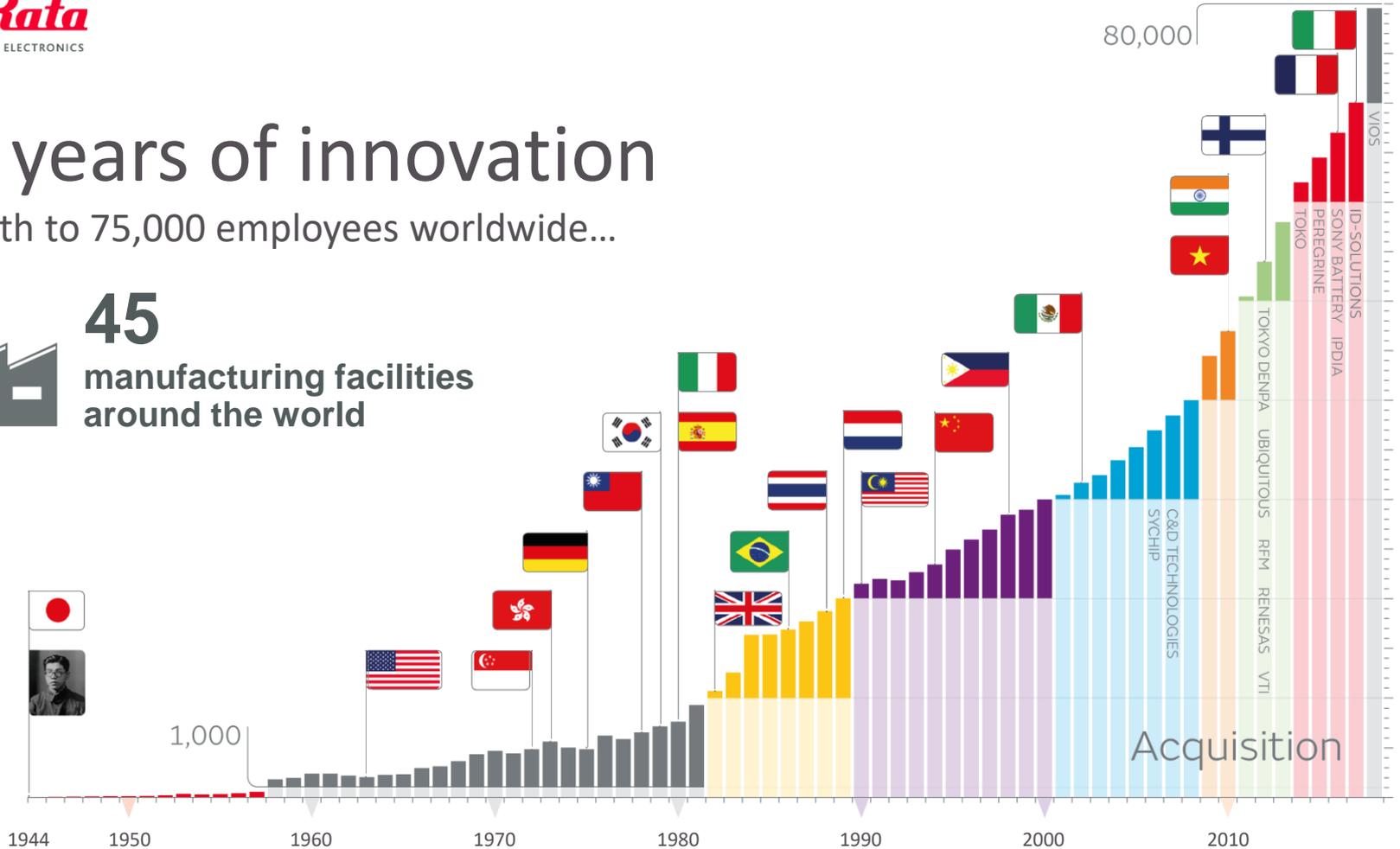
and many more...

78 years of innovation

Growth to 75,000 employees worldwide...



45
manufacturing facilities
around the world



■ Murata focuses on 4 key fields with business opportunities to create value

Core fields

Communications



All types of things will be connected and optimized by communications

We will correctly grasp the diversifying applications, changing customer structure and continue to offer value, taking an overwhelming lead with technological innovation.

Mobility



Automobile industry entering an age of once-in-a-century revolution

In addition to contributing to the evolution of the automobile (in-car), we will aim to capture business opportunities in the broader sense of mobility (out-car).

Challenge fields

Environment



Markets where promises have been made to become a sustainable society

Murata aims to create innovation bringing together our business and solutions to the energy issue and other environmental issues.

Wellness



Pursuing new prosperity for an age when people's expected lifespan reaches 100 years

We will use Murata's technology and our know-how in the electronics field to help the development of the medical field and seek to provide value in terms of preventing sickness and promoting health.

Australia & New Zealand Economic Policy

Australia's Digital Economy

Australia's vision to be a leading digital economy and society by 2030.

■ Key technologies shaping the future to 2030



Artificial Intelligence



Internet of Things



Data Analytics



Quantum Computing



Blockchain

Source: <https://digitaleconomy.pmc.gov.au/>

Industry Transformation Plan

New Zealand to be an early adopter and a world leader in the digital economy.

■ Key technologies shaping the future to 2030



Mobile Internet



Fintech



Cloud computing



Big Data



Advanced robotics



Additive manufacturing



AI



IoT

Source: <https://www.mbie.govt.nz/>

Murata contributing to Australia & New Zealand

■ Solutions

Smart Street Lighting



Smart Metering



Industrial



Telematics



Healthcare



Energy Storage System



Soil Sensor



■ Components/ Devices

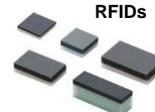
Wireless Modules



Sensors



RFIDs



Power Modules, Batteries



Target Audiences:

Design makers, Design houses, System Integrators
TELCO, Network providers, Government agencies, and more...

Activities:

Factory automation exhibitions, Roadshows & workshops,
Joint-webinars (with major local & global partners), Proof-of-
concept Design-IN activities

Future Plans:

More collaborations with existing or new business partners,
Events – Exhibitions, Technical workshops, etc.,
Sponsorship activities

Murata and Ecosystem Partners for ANZ

ARROW

Telstra

 **AVSYSTEM**

SONY

muRata

 **TRUPHONE**



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NN NATIONAL
NARROWBAND
NETWORK
Co.

aws


 **Spark^{nz}**

 **Actility**



Effortlessly and securely connecting your smart devices
[February 2022]



Uniting bright minds for IoT
[May 2022]



Leveraging LwM2M Protocol for Smarter Cellular-IoT Devices
[August 2022]

Presenters:



Jaydyn Halliwell
Product Marketing Manager
Arrow Electronics
Australia/ New Zealand



Kwang Meng Koh
Technical Marketing Manager
ST Microelectronics



Simon Churches
Product Owner
(IoT Connectivity)
Telstra



Desmond Sin
Regional Sales & Marketing
Sony Singapore



Gonzague Fraval
Product Marketing
Wireless Module
Murata Electronics Singapore



Franck Martins
IoT Lead Partner Development
Amazon Partners Network, IoT
Amazon Web Services



Presenters:



Tonie De Vries
Product Manager IoT/ Emerging Technology
Spark New Zealand



Tony Tilbrook
Chief Technical Officer /
Chief Operating Officer
NNCo



Sourmack Darboui
Regional Sales Director, APAC
Actility & Abewey



Gonzague Fraval
Product Marketing
Wireless Module
Murata Electronics Singapore



Zeno Maverick Low
Application Engineer
Murata Electronics Singapore



Jaydyn Halliwell
Product Marketing Manager
Arrow Electronics Australia/ New Zealand



Presenters:



Gonzague Fraval
Product Marketing
Wireless Module
Murata Electronics Singapore



Mieszko Mieruski
Embedded Team Lead
AVSystem Poland



Kwang Meng Koh
Technical Marketing Manager
ST Microelectronics



Cyrus Tsang
Pre-Sales Manager
Truphone

Murata Support Tool: Solution Page

Murata x ST x AVSystem

Effortlessly and securely connect your smart devices leveraging Cellular IoT technology and LwM2M Protocol with Murata, ST and AVSystem End-to-End solution

<https://solution.murata.com/en-sg/technology/st-avsystem>

Why Cellular IoT (LTE-M & NB-IoT)?

LTE-M

NB-IoT

LTE Cat. M1 is a licensed standard that requires a license to use the radio frequency band. It is ideal for cases whereby IoT needs to conserve costs and power consumption even if speeds are slow. LTE Cat. M1 is particularly suitable for mobile communications, such as when devices are moving, and because it uses licensed bands, radio interference is less likely to occur, and speeds are faster, allowing it to be used for wearable devices in IoT and other applications.

"NB" is an abbreviation for "Narrow Band". These modules can easily run on less power than LTE modules. These modules are expected to be used for IoT solutions that require low power consumption, and are suitable for environments where batteries are not easily replaceable or where a conventional power supply is unavailable, such as smart meters and other remote-mounted measurements, crop growth management, alarm notifications for security devices, and detection of anomalies when disasters occur. They are also expected to be used for predictive maintenance of public infrastructure and similar applications.

Example of Applications using Cellular IoT:

Smart City		Smart Agriculture / Aquaculture	
Smart Meters	Street Lighting	Livestock Monitoring	Soil Sensing
Parking Management	Vehicle Fleet Management	Water Quality Monitoring	Machinery Control
Environmental Monitoring	Waste Management	Wearable / Trackers	Industrial / Commercial
Emergency Flood Monitoring	Smart Access	Watches/ Bands/ Patches/ Patch Buttons	Yielding Machines
		Remote Delivery/Trackers	POS Terminals
		Retail/ Delivery/Trackers	Data Loggers
			Cold Chain Monitoring
			Smart Prints

To learn more:

- Murata's complete LPWA modules for Cat. M1 (LTE-M) and NB-IoT address the world's lowest power consumption. Learn more [1]
- NB-IoT modules can easily run on less power than LTE modules. Find out [2] why they are suitable for IoT solutions that require low power consumption.

Solution

Type 1SE and Type 1SC Modules Introduction

Murata's lineup includes two LTE Cat. M1 and NB-IoT modules to easily bring cellular connectivity to your smart IoT devices and scale your deployment globally.

Type 1SE
 Murata's lineup includes Type 1SC packaged with STMicroelectronics STM32L4 MCU and ST438M QDMA certified eSIM. It is certified globally with the MNOs in Europe, bringing seamless connectivity in over 100 countries and includes a U11 connector to just plug the antenna.

Type 1SC
 A standalone module based on Sony A11250 SoC, and certified with 3GPP cellular network operators globally. It also supports QDS (GPS, Glonass) & PDS for geolocation, Open MCU and an integrated eSIM (eUICC) on system.

Block Diagram

Certified Modern

- eSIM (7) supports profile
- eSIM (7) supports profile
- eSIM (7) supports profile

Leveraging LwM2M Protocol with ST & AVSystem solutions

Product Development Model

Murata Type 1SE module, in collaboration with STMicro and AVSystem, can be leveraged to develop complete End-to-End IoT Solutions, speeding up time to market.

3rd Party LwM2M End-to-End solution:

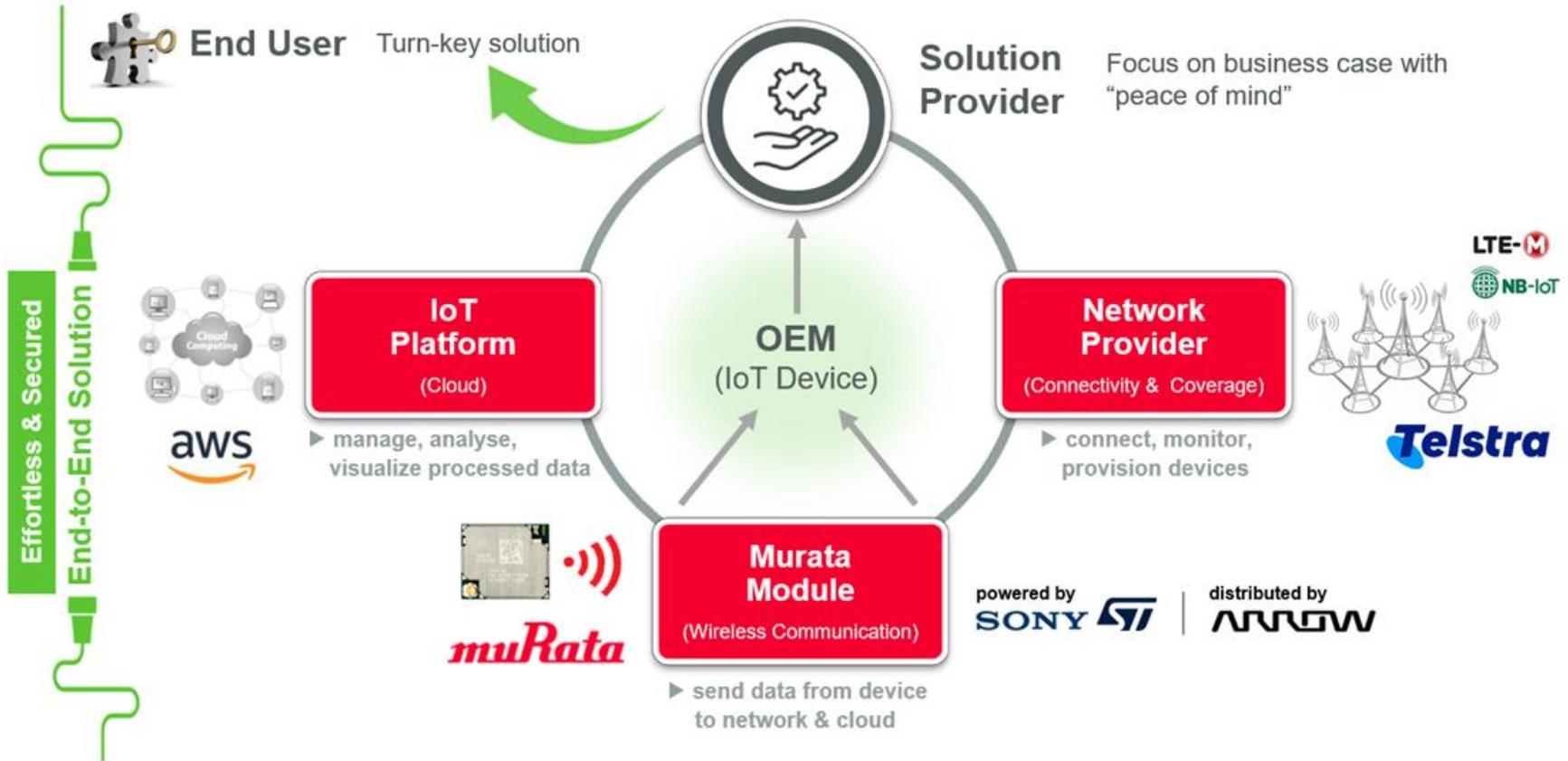
- Ready-to-use with X-CUBE-CELLULAR
- Source code and business friendly license
- Basic networking application provided
- Robust & low power cellular and network services management
- AT command handling
- Customer product on the market based on LRA020215E & peripherals
- Faster time to market
- Easier development: less cost/resources
- Ready for mass market

The solution utilizes STMicro's X-CUBE-CELLULAR SDK and AVSystem's Argy LwM2M Client SDK and Coiate IoT Device Management (DM) Platform to perform over-the-air updates or access 3rd party cloud platform such as AWS or Azure.

- Energy-optimized data transport (battery-operated)
 - Quick initial connection
 - Less data (optimized format)
- Single-step commissioning & easy bootstrapping
- Device management function
 - FOTA (Firmware update over the air)
 - Lightweight security (DTLS, CoAP)
- Easy configuration
 - One-Step Provisioning
- Secured connection (using IAM secured device enrollment)
- Access major cloud (AWS, Azure, etc.) (hundreds of fully featured services)

1. Creating an account to use the Coiate IoT DM platform

Ecosystem Partners' Complete End-To-End C-IoT Solution



Murata First-Ever Exhibition in Australia



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Murata Team @All Energy Australia 2022 (Melbourne)

Looking forward to meeting you in-person @Murata booth (LL123)!

Battery Energy Storage System		Energy & Power Device			Connectivity Module			Sensor
								
Sugiyanto Soh	Han Ren	William Phia	Takahiro Minagawa	Hiroshi Tanaka	Gonzague Fraval	Zeno Maverick Low	Jacey Ng	Andy Teo
Senior Manager	Regional Product Marketing	Product Manager	Senior Manager	Manager	Regional Product Marketing (Wireless Module)	Application Engineering	Product Engineer (Wireless Connectivity & RF Components)	Regional Product Marketing (Sensor Device)
Singapore		Japan			Singapore			

Murata Booth: LL123 (All-Energy Australia, MCEC)

ALL-ENERGY AUSTRALIA
EXHIBITION & CONFERENCE

IN PARTNERSHIP WITH
CLEAN ENERGY COUNCIL

26-27 OCTOBER 2022 | MELBOURNE CONVENTION AND EXHIBITION CENTRE



Exhibit Highlights

Contributing to the Advancement of a Sustainable Society

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Let's make our planet better together.

Communications



Mobility



Environment



Wellness



Booth LL123

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Murata Electronics Singapore (Pte.) Ltd.

Online Booth Preview



FORTELION Battery



Energy & Power Device



UWB Modules



LPWA Products

Contributing to the Advancement of a Sustainable Society

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Let's make our planet better together.

Communications



Mobility



Environment



Wellness



Booth LL123

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Murata Electronics Singapore (Pte.) Ltd.

Online Booth Preview



FORTELION Battery



Energy & Power Device



UWB Modules



LPWA Products

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FORTELION | Features

High safety

Long life

High input/output capacity

Cobalt free



Contributing to the Advancement of a Sustainable Society

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Let's make our planet better together.

Communications



Mobility



Environment



Wellness



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Murata Electronics Singapore (Pte.) Ltd.

Online Booth Preview



FORTELION Battery



Energy & Power Device



UWB Modules

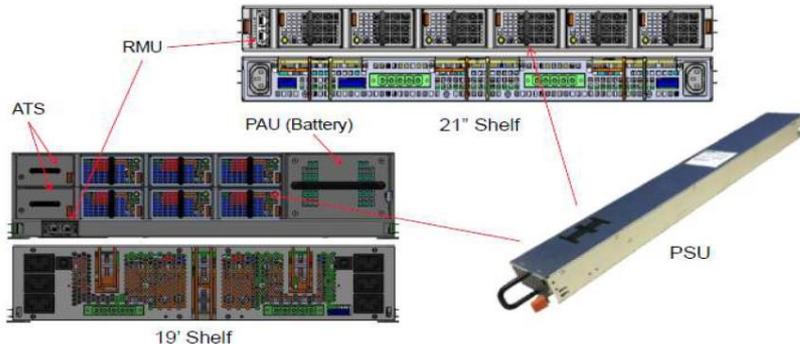


LPWA Products

Power Solutions for Open Compute & Data Center

Products include:

- 21" 10U Power Shelf
- 19" 2.5RU Power Shelf
- 3kW Titanium PSU
- RMU (Remote Management Unit)
- ATS (Automatic Transfer Switch)
- PAU (Power Assist Unit, aka Battery)



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Moving OCP Forward

Product experts from Singapore and Japan will be at the exhibition in-person.



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Open Compute
and Datacenter
Power Solutions

Contributing to the Advancement of a Sustainable Society

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Let's make our planet better together.

Communications



Mobility



Environment



Wellness



Booth LL123

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Murata Electronics Singapore (Pte.) Ltd.

Online Booth Preview



FORTELION Battery



Energy & Power Device



UWB Technologies



LPWA Module

UWB Modules: Follow Me Demo

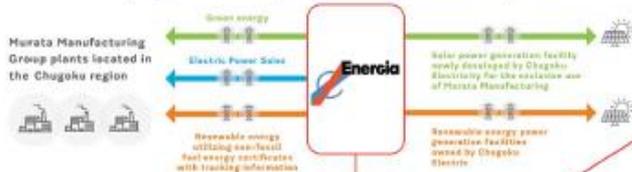


Smart Home Data Transfer and Multisession Demo

How can UWB be used in a smart home setting?

TRANSFORMATION TO RENEWABLES

Achieving RE 50% in Chugoku
Developing new solar plants to reach RE50 by 2030



EV trucks for logistics

Let's make our planet better together!



Achieving 100% RE + ESS



Murata Battery Energy Storage System



Achieving 100% RE



Achieving 100% RE

- Head Office
- Research Center
- Sales & Marketing Office
- Production Plant

<p>2 ZERO HUNGER</p>	<p>6 CLEAN WATER AND SANITATION</p>
<p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>
<p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>13 CLIMATE ACTION</p>



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Contributing to A Sustainable Society



New Business Development Div.
Murata Singapore

Picture: Rooftop PV solar plant at Murata Singapore

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in

f



YouTube



muRata 株式会社村田製作所 / Murata Electronics
3.78K subscribers



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Component simulation data
at your fingertips...

Now updated with new features



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Murata Community Forum

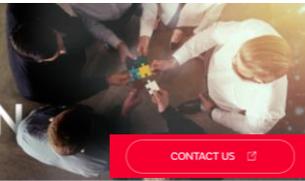
Your wireless-connectivity
questions answered by experts



TRY IT NOW!

To register, [click here](#)

**MURATA
OPEN
INNOVATION**



We are looking for collaboration partners to take
on the challenge of discovering new possibilities.

CONTACT US 

 **E-mail Magazine**

In this e-mail magazine, we provide information on products and
various events and campaigns. We also frequently introduce how to
use parts, and applications and technical information
service guides.

Register now

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February 2022



March 2022
*Thai Language



April 2022



May 2022



June 2022
*Thai Language



July 2022



August 2022



September 2022



VISIT OUR STAND LL123

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Registration: <https://www.all-energy.com.au/en-gb/register.html>

Contacts in Australia



muRata Authorized Distributor in ANZ



Jaydyn Halliwell

Product Marketing Manager
Arrow Electronics
Australia/ New Zealand



Arrow Electronics Australia Pty Ltd

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 [+61 3 9739 4900](tel:+61397394900)

 www.ecoinstallers.com.au

**For Battery Energy Storage System inquiry only*



Cameron Fear

Managing Director
Eco Installers
Australia/ New Zealand



Eco Installers Pty Ltd

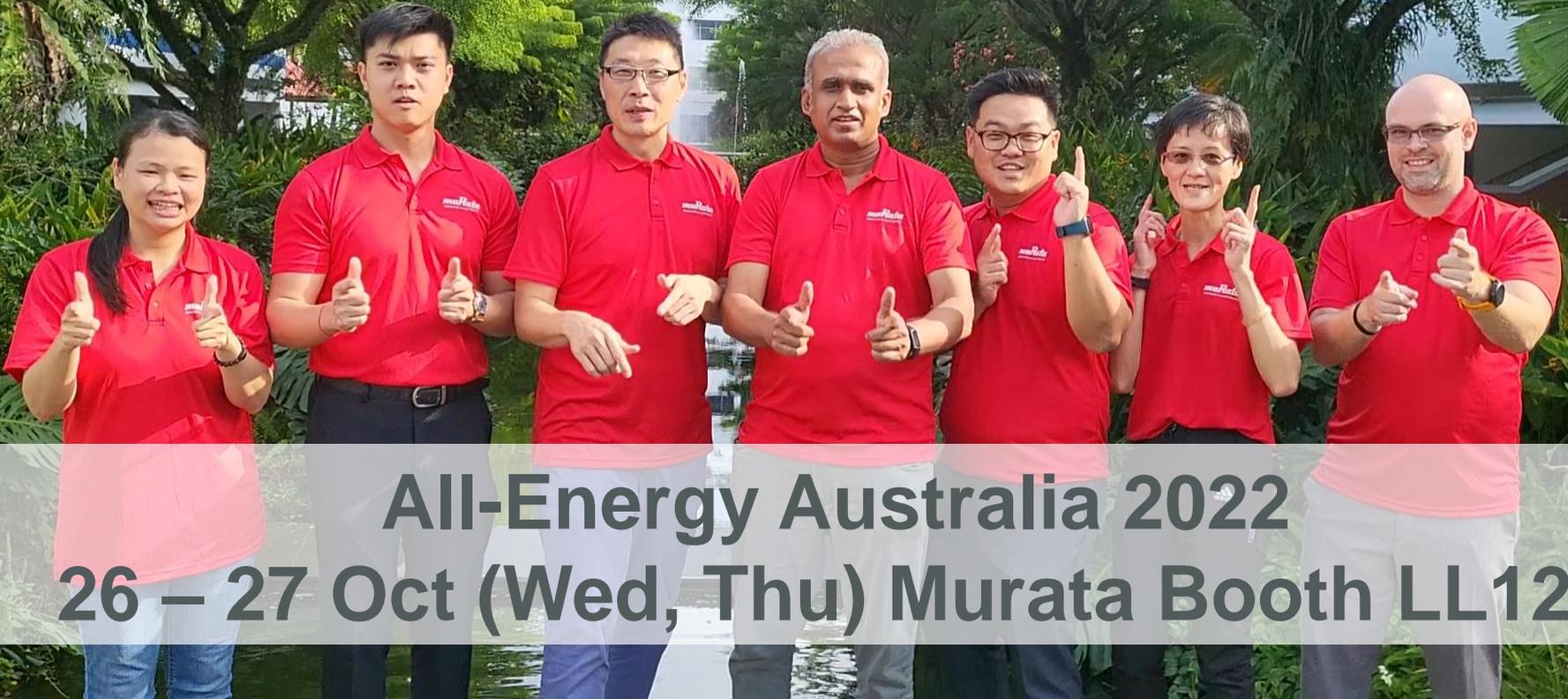
 2/1 Apollo Street, Warriewood, NSW, 2102

 [+61 1300 600123](tel:+611300600123)

 www.ecoinstallers.com.au

See you there!

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All-Energy Australia 2022
26 – 27 Oct (Wed, Thu) Murata Booth LL123