

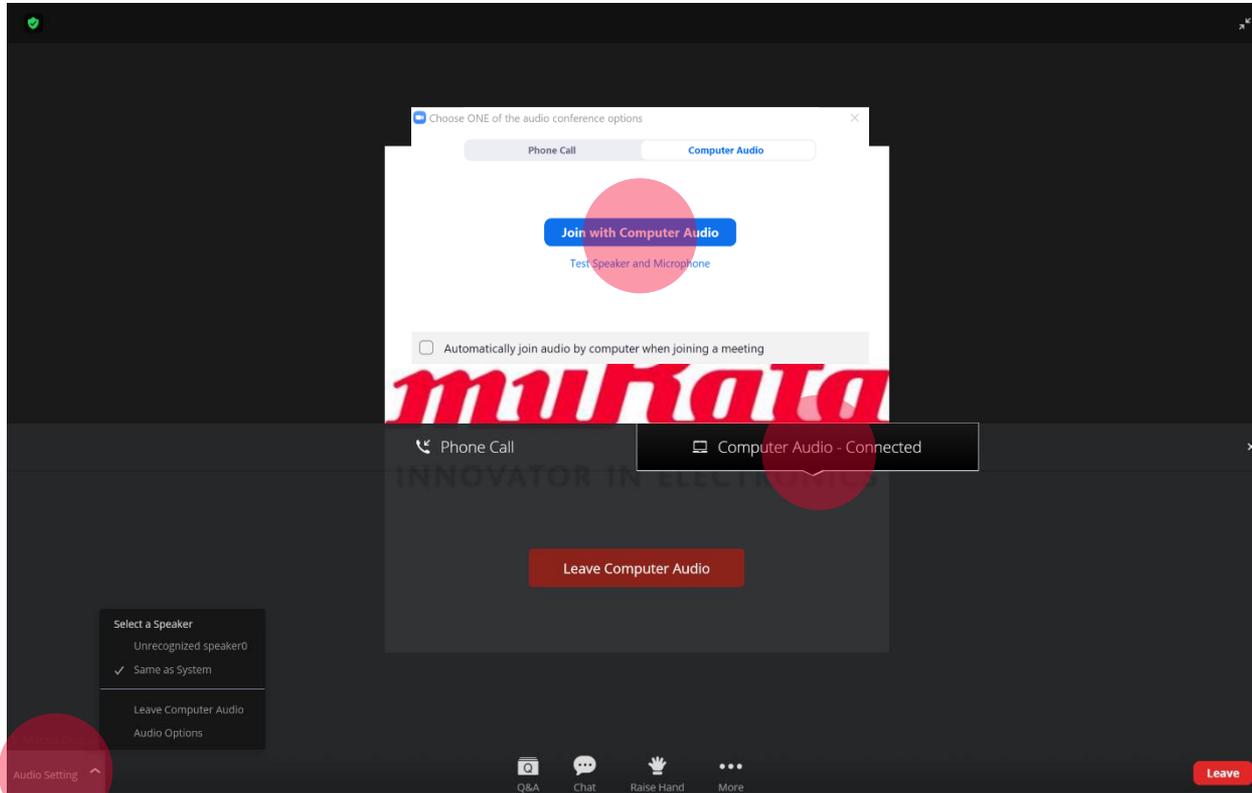
# *muRata* SPEAKS

TECHNOLOGY | SOLUTIONS | INNOVATIONS

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

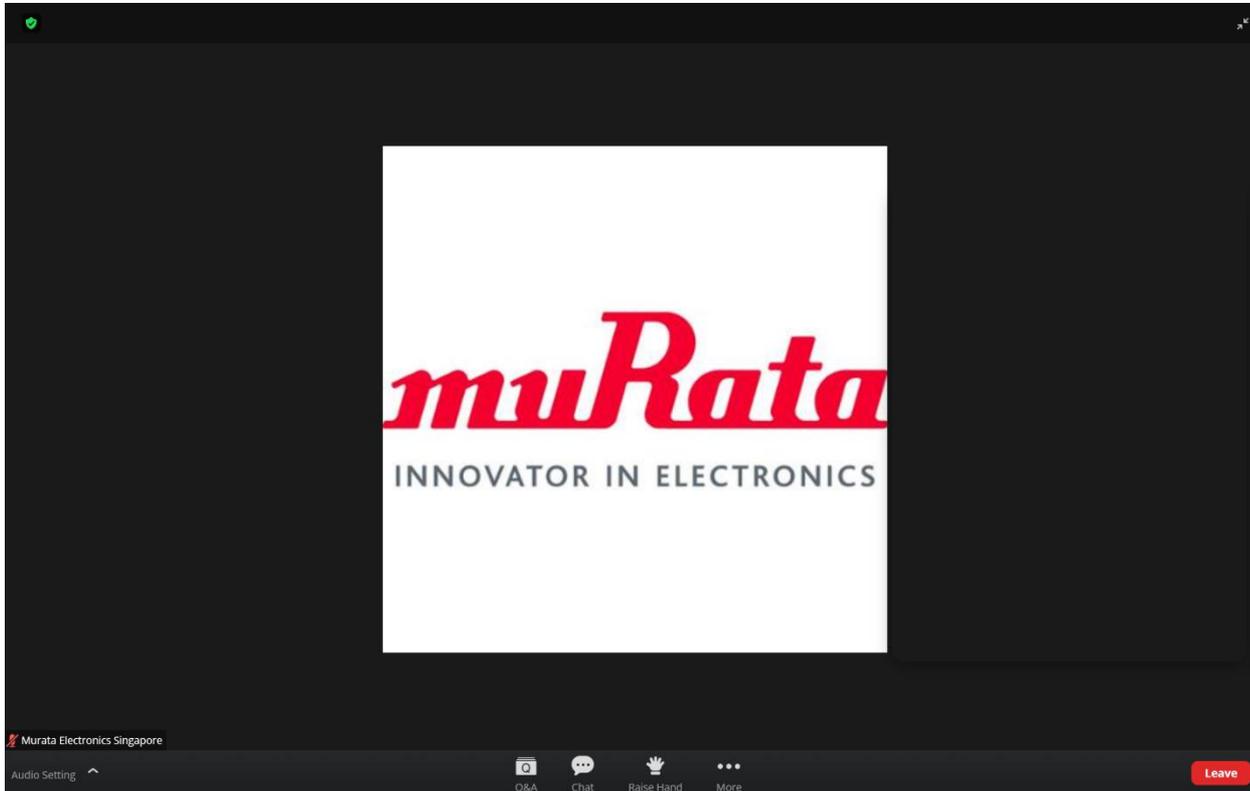


# House Rules | Navigation Guide



ENABLE  
"COMPUTER  
AUDIO"

# House Rules | Navigation Guide

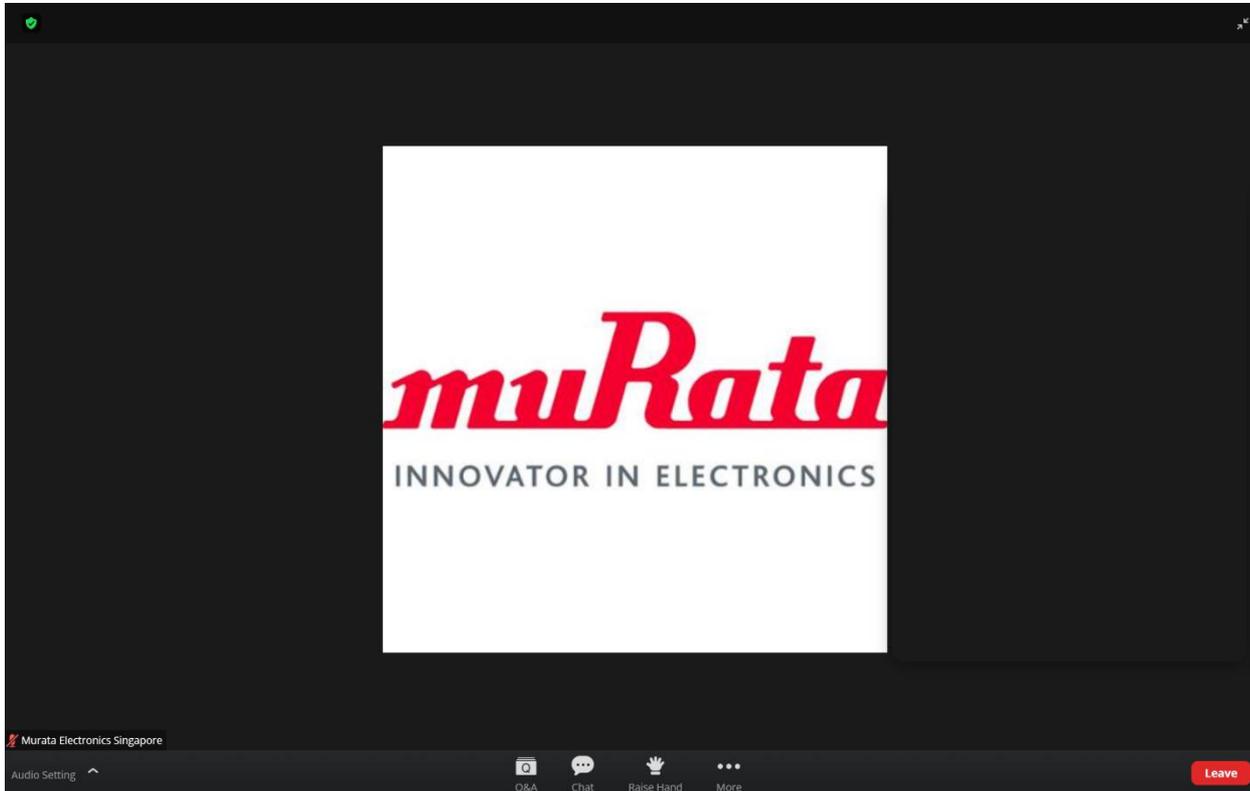


ENABLE  
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ATTENDEES  
WILL BE KEPT  
ON MUTE  
DURING THE  
WEBINAR.

# House Rules | Navigation Guide



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WEBINAR.



SLIDES AND  
RECORDING WILL  
BE AVAILABLE  
AFTER THE  
SESSION.

*muRata*

# 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

*muRata*

INNOVATOR IN ELECTRONICS

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

# Murata's Core Competency

## CORE

Materials



Materials  
Design

Front-  
end  
process



Laminating  
& Stacking

Product  
design



High Frequency  
Design

Back-  
end  
process



Packaging

Analytic  
al



Materials  
Characterization

## COMPREHENSIVE PRODUCT PORTFOLIO

Capacitors



Inductors



Sensors

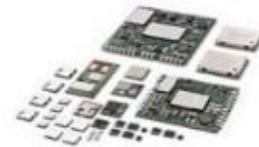


Timing Devices

(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)*



**Telkom IOT**  
INTERNET OF THINGS  
by Telkom Indonesia

**everynet**

Easily and securely connect devices to the LoRaWAN network.



**AWS IoT Core**

Easily and securely connect devices to the cloud.  
Reliability scale to billions of devices and trillions of messages.



Wireless Sensing Solution



Traffic Counter System

*and many more...*



## ■ 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

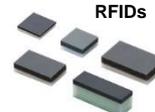
Wireless Modules



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**



INNOVATOR IN ELECTRONICS

**NN** NATIONAL  
NARROWBAND  
NETWORK  
Co.

**aws**  


 **Spark<sup>nz</sup>**

 **Actility**

# Murata SPEAKS Monthly Webinar

[Australia & New Zealand]



**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



**Gonzague Fraval**  
Product Marketing  
Wireless Module  
Murata Electronics Singapore



**Tony Tilbrook**  
Chief Technical Officer /  
Chief Operating Officer  
NNNCo



**Zeno Maverick Low**  
Application Engineer  
Murata Electronics Singapore



**Sourmack Darbouy**  
Regional Sales Director, APAC  
Actility & Abewavey



**Jaydyn Halliwell**  
Product Marketing Manager  
Arrow Electronics Australia/ New Zealand



**Presenters:**



**Gonzague Fraval**  
Product Marketing  
Wireless Module  
Murata Electronics Singapore



**Mieszko Mieruński**  
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 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-IoT 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	GPS 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.
- NB-IoT modules can easily run on less power than LTE modules. Find out 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 1st cellular network operators globally. It also supports QDS (GPS, Glonass) & PDS for geolocation, Open MCU and an integrated eSIM (eUICC) on system.

**Type 1SE**  
"All-in-One"

Type 1SE consists of Type 1SC module & External eSIM

**Type 1SC**

Type 1SC is a standalone IoT Type 1SE

#### Block Diagram

External eSIM

STM32L4 MCU CPU

Application

STM32L4 MCU

- STM32L4 MCU
- eSIM (eUICC) profile
- eSIM (eUICC) profile

UART

- STM32L4 I/O
- I2C
- SPI
- ADC
- PWM
- CPU

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STM32L4 MCU

- STM32L4 MCU
- eSIM (eUICC) profile
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UART

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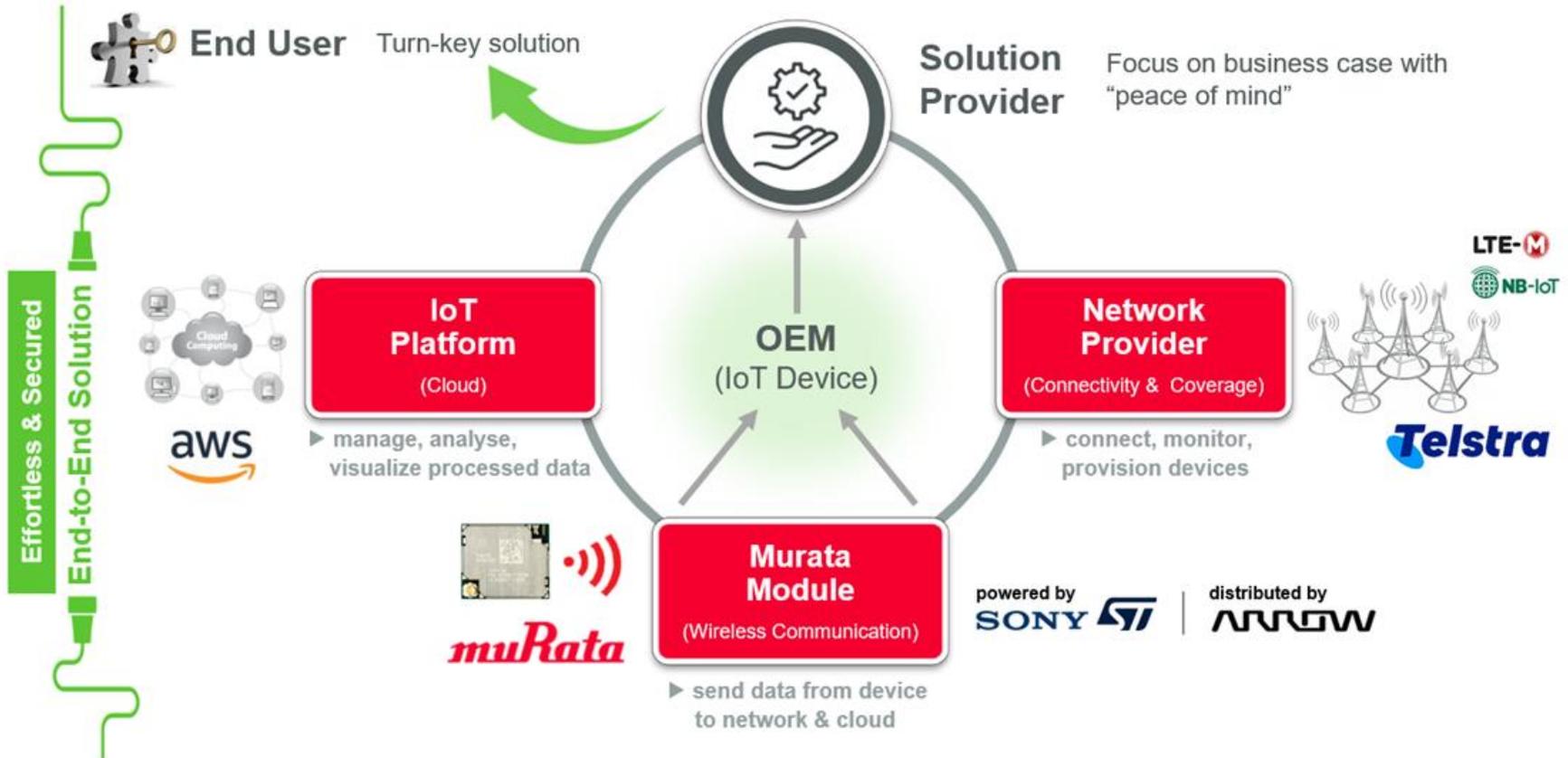
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- STM32L4 MCU
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- eSIM (eUICC) profile

UART

- STM32L4 I/O

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



# Murata First-Ever Exhibition in Australia



***muRata***

INNOVATOR IN ELECTRONICS

# 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
								
<b>Sugiyanto Soh</b>	<b>Han Ren</b>	<b>William Phia</b>	<b>Takahiro Minagawa</b>	<b>Hiroshi Tanaka</b>	<b>Gonzague Fraval</b>	<b>Zeno Maverick Low</b>	<b>Jacey Ng</b>	<b>Andy Teo</b>
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

**muRata**  
INNOVATOR IN ELECTRONICS



Let's make our planet better together.

Communications



Mobility



Environment



Wellness



**Booth LL123**

**muRata**  
INNOVATOR IN ELECTRONICS

## Murata Electronics Singapore (Pte.) Ltd.

Online Booth Preview



**FORTELION Battery**



**Energy & Power Device**



**UWB Modules**



**LPWA Products**

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**Booth LL123**

**muRata**  
INNOVATOR IN ELECTRONICS

## Murata Electronics Singapore (Pte.) Ltd.

Online Booth Preview



**FORTELION Battery**



**Energy & Power Device**



**UWB Modules**



**LPWA Products**

**muRata**

# FORTELION | Features

High safety

Long life

High input/output capacity

Cobalt free



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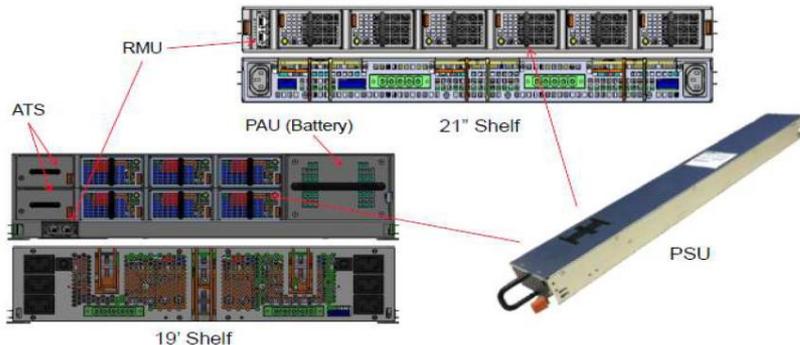


LPWA Products

# 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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Mobility



Environment



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**Booth LL123**

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FORTELION Battery



Energy & Power Device



UWB Technologies



LPWA Module

# UWB Modules: Follow Me Demo

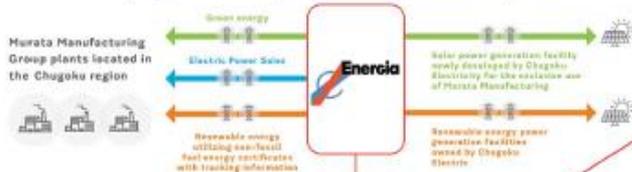


# Smart Home Data Transfer and Multisession Demo

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**



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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



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3.78K subscribers



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at your fingertips...

Now updated with new features



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**Murata Community Forum**

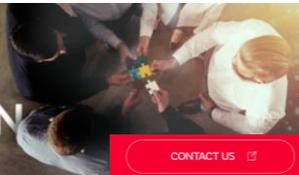
Your wireless-connectivity questions answered by experts



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OPEN  
INNOVATION**



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

CONTACT US 

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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.

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TECHNOLOGY | SOLUTIONS | INNOVATIONS



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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



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 [www.ecoinstallers.com.au](http://www.ecoinstallers.com.au)

*\*For Battery Energy Storage System inquiry only*



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

 [www.ecoinstallers.com.au](http://www.ecoinstallers.com.au)

# See you there!

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