

# *muRata* SPEAKS

TECHNOLOGY | SOLUTIONS | INNOVATIONS

## Murata Speaks - Monthly Webinar Series #09 [May 2021]

Murata Electronics Singapore

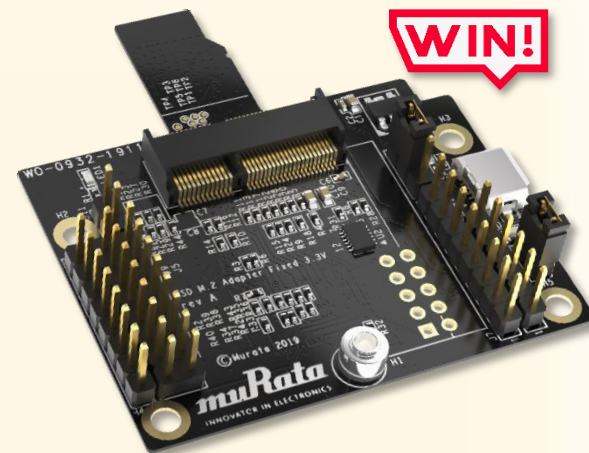


# Murata Wireless Connectivity - Can You Afford Not To?



# What you will be expecting in the next hour...

- In this 60-minutes session, you will learn:
  - How to streamline your wireless connectivity design process, avoiding unnecessary and costly delays.
  - Why cheaper module solutions cost you more.
  - How real-world IoT connectivity challenges have been met by Murata innovation.
  - How Murata differentiates against other module providers.
  - The advantages of leveraging the implementation experience of a world-leader in connectivity.
  - Why support needs to be global and comprehensive to ensure your success



# About the Presenters



**Tony Garcia**

**Sr. Manager**  
Business Development

[tgarcia@murata.com](mailto:tgarcia@murata.com)

Having been at Murata for 13 years, Tony is currently responsible for promoting wireless modules and supporting customer designs. His experience includes **24 years in the wireless industry**.

During this tenure, Tony developed RF and HW designs for CDMA, TDMA, GSM and analog cellular phones, as well as a test set for the Globastar phone. He also worked on **developing wireless designs** using UltraWide Band (3GHz to 6GHz) and various wireless module designs, including GPS and WiFi solutions.



**Rui Ramalho**

**Product Manager**  
Connectivity Module

[rramalho@murata.com](mailto:rramalho@murata.com)

Over **28 years of engineering experience** in the semiconductor industry and wireless module market. After occupying several engineering roles developing and marketing System-On-Chip, Rui has spent the last ten years developing Murata **IoT wireless connectivity** market in EMEA.

His **area of expertise** is **WLAN/BT systems** with a strong knowledge of the customer and partners' network.



**Lynn Tan**

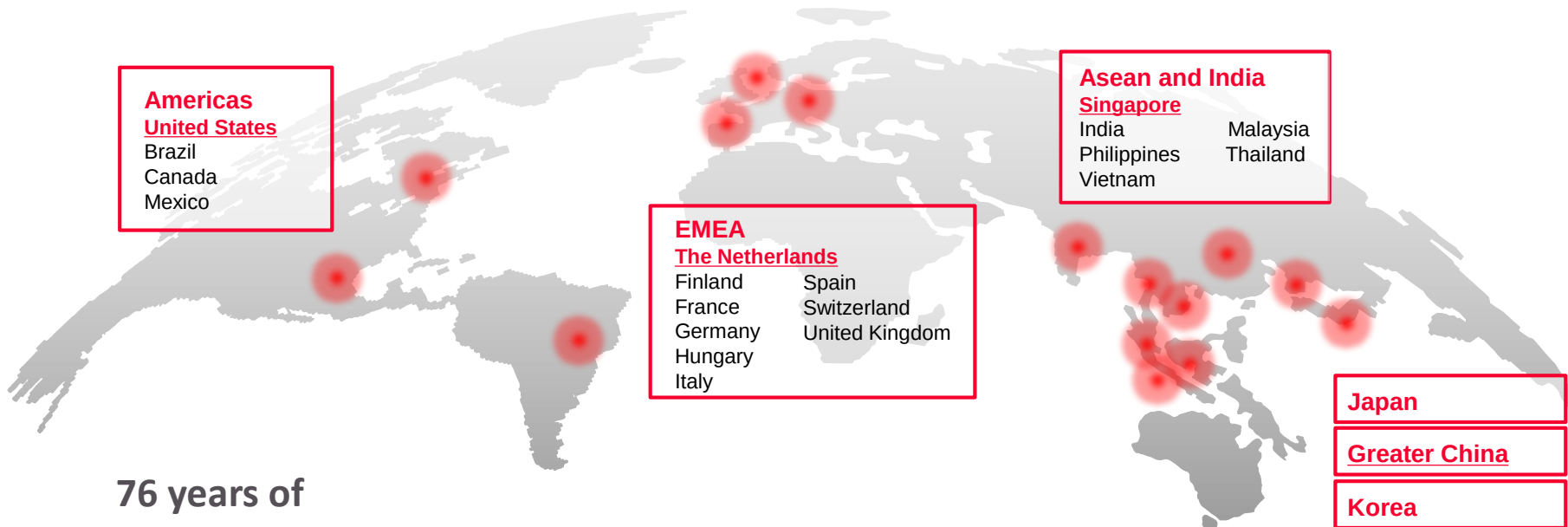
**Sr. Product Engineer**  
RF/Wireless Connectivity

[lynn.tan@murata.com](mailto:lynn.tan@murata.com)

Over 9 years of engineering and technical marketing experience in **RF and wireless sensing systems**, covering the challenging markets of **Southeast Asia and Oceania**.

With a strong passion for IoT, Lynn is actively seeking opportunities to collaborate with like-minded partners focusing on ever-changing telecommunications and smart industry.

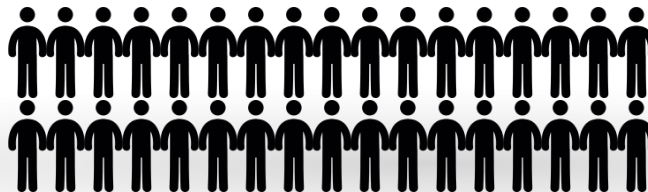
# Our Global Locations



76 years of  
innovation



A total of **43**  
manufacturing  
facilities around  
the world

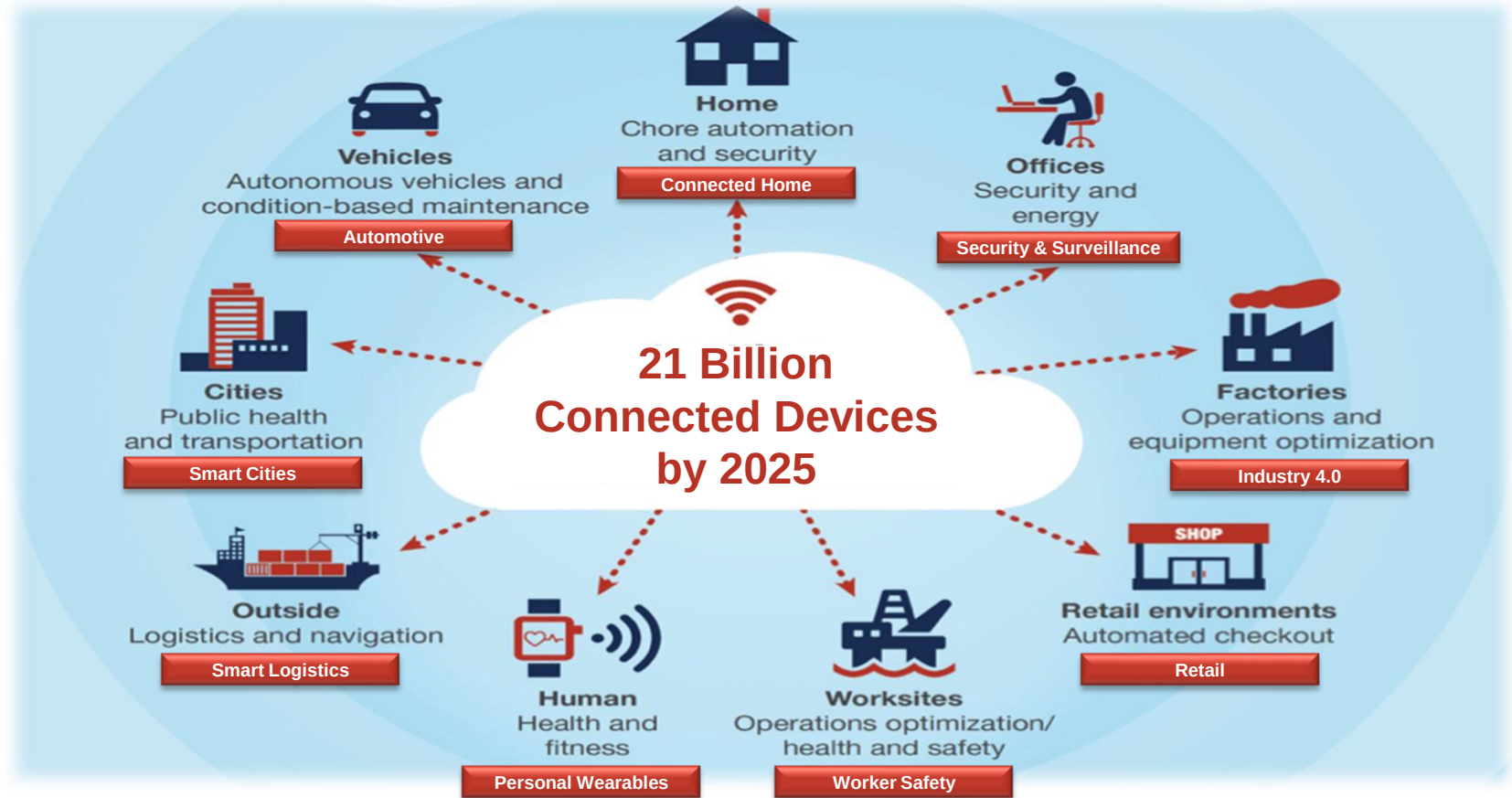


No. of Employees:

**74,109**

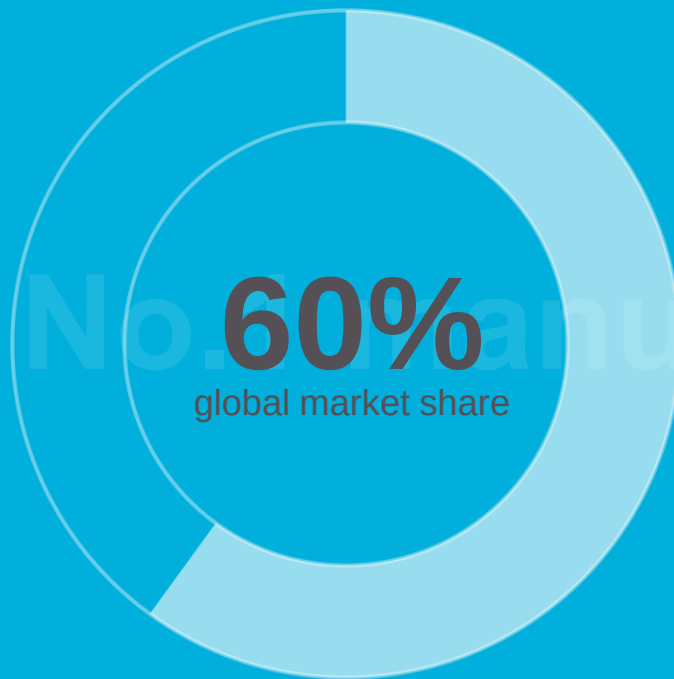
*\*as of 31 March 2020*

# IoT Enables Connected World & New Opportunities

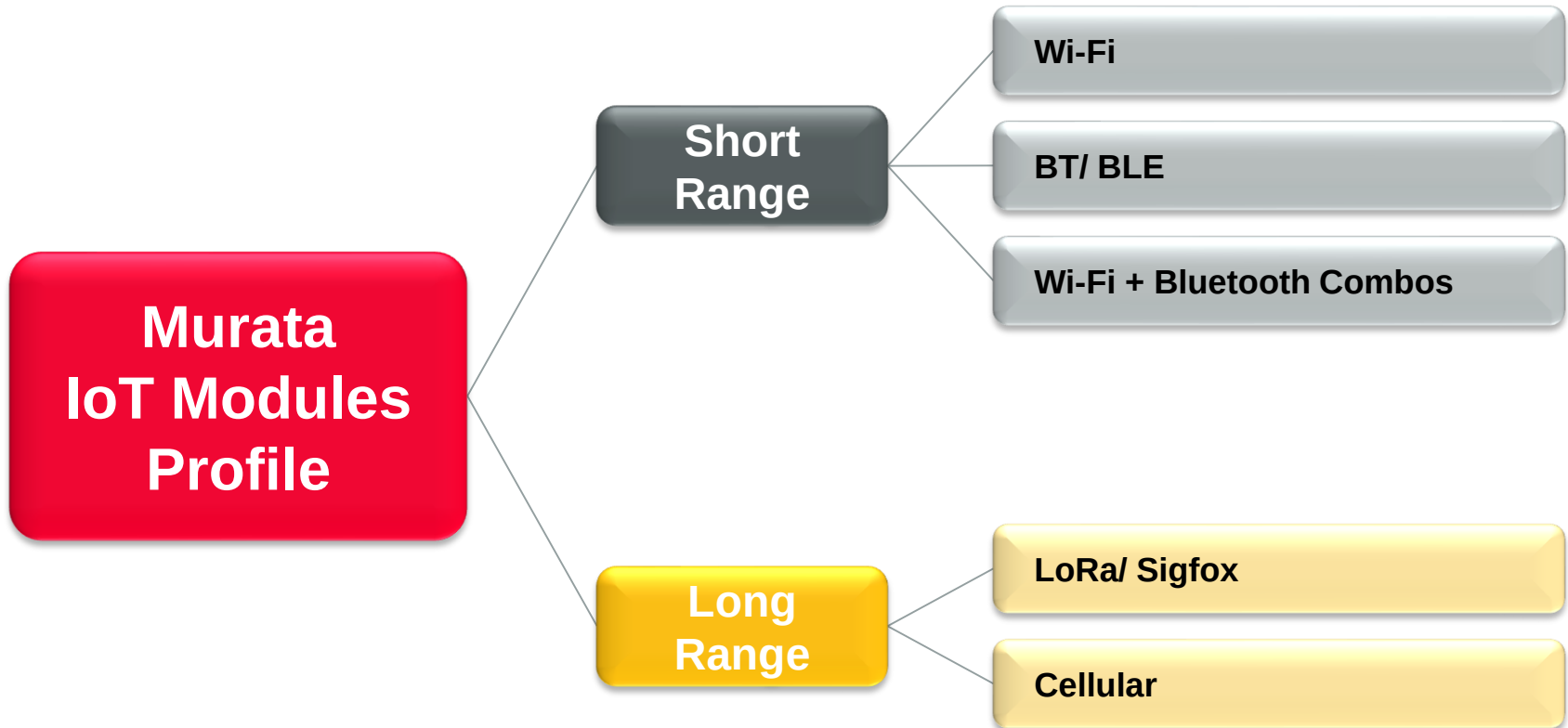




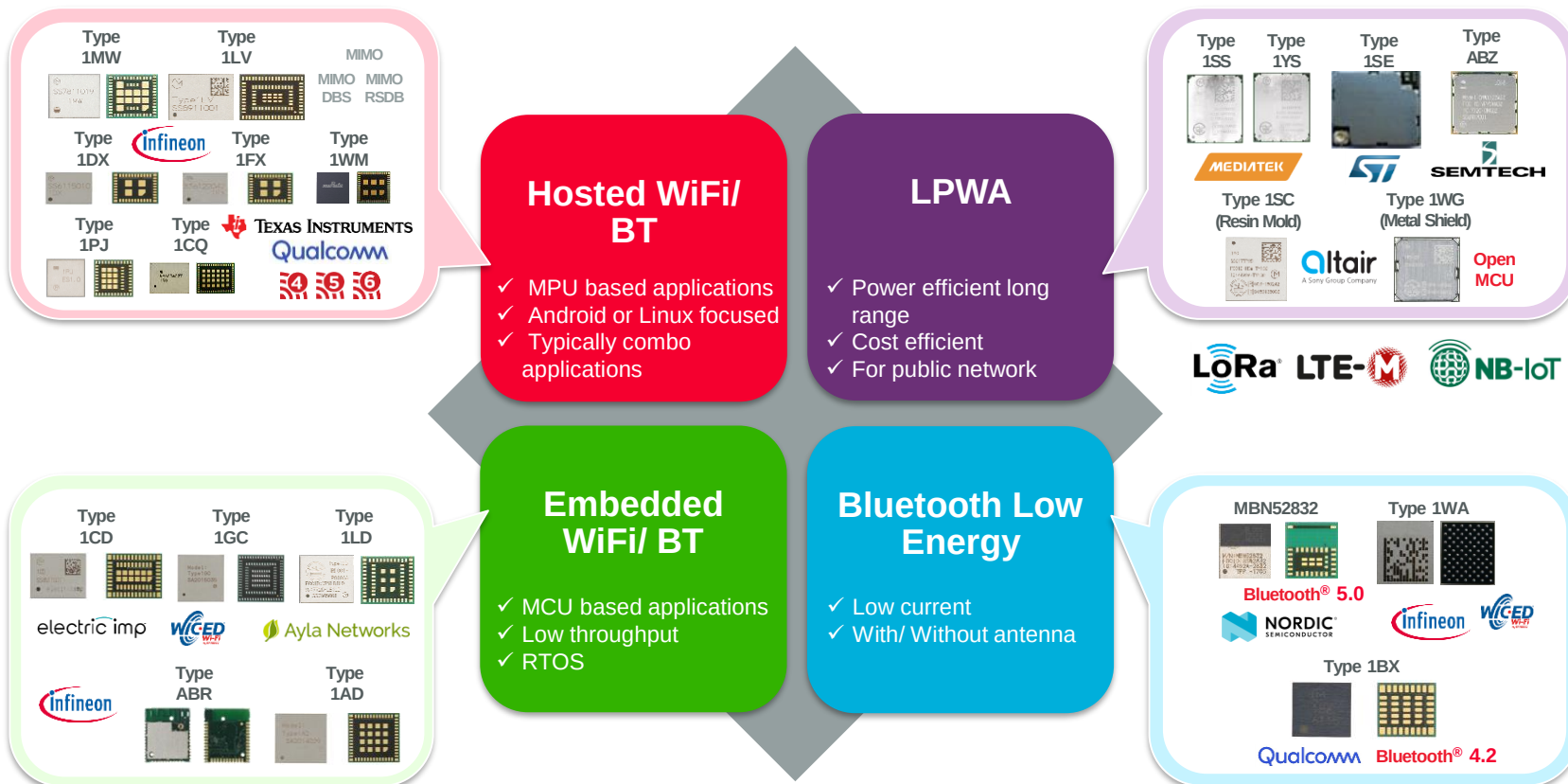
Wireless  
modules



World's No. 1 manufacturer



# Examples of Murata Wireless Modules...





# IoT Market/ Application:

Using Murata Wi-Fi®/ Bluetooth®/ LoRa/ LTE-M/ NB-IoT Modules

**muRata**  
INNOVATOR IN ELECTRONICS



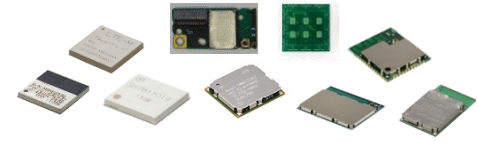
Bluetooth®



Various Certification Support



Driver Soft / Middleware Stack



Bluetooth Low Energy/ Wi-Fi/ LPWA/ UWB  
802.15.4 ISM Communications

● Software Embedded Module

● Connectivity Software Expert

● Cloud ~ Mobile application

● New Software

## Connected Home

### Product Lineup:

- WiFi/ BLE MCU
- LPWA (LoRa/ LTE-M/ NB-IoT)

- ✓ WiFi driver, TCP/IP
- ✓ Radio certification
- ✓ Cloud
- ✓ Serial to WiFi

Thermostats



Air-Con/HVAC



Coffee Machines



Smart Appliances



Smart Speakers



Smart Switches/ Bulbs



Smart Access



Security Cameras



## Smart City

Smart Meters



Street Lighting



Environment Monitoring



Sewage Flood Monitoring



Parking



Vehicle Fleet management



Waste Management



## DSC/ AV/ VR/ PC

Audio / Video Equipment



Digital Cameras



### Product Lineup:

- 11ac/ 11ax WiFi module/ WiGig module

- ✓ Certified for 120 countries
- ✓ Antenna optimization
- ✓ Super high through-put
- ✓ 60GHz antenna (WiGig)

## Healthcare/ Wearables

Smart Scale



Panic Buttons



Tracker



Headphones



Watches/ Bands/ Patch



### Product Lineup:

- LPWA (LoRa/ NB-IoT/ LTE-M)
- BLE module (wAnt; w/o Ant)

- ✓ Small/ Thin
- ✓ Low power consumption
- ✓ Radio certification
- ✓ BLE profiles

## Industrial/ Commercial

### Product Lineup:

- WiFi/ Bluetooth/ BLE
- LPWA (LoRa/ NB-IoT/ LTE-M)

- ✓ High reliability
- ✓ Wide coverage
- ✓ Industrial temperature
- ✓ Mesh network



Smart Panels



POS Terminals



CPE



Vending Machines



Retail/ Package Delivery



Water Heaters



PDA's



## Smart Agriculture/ Aquaculture

Livestock Monitoring



Soil Sensing



Machinery Control



Water Quality Monitoring



# Case Study 1: US (Wi-Fi®/ Bluetooth® Module)

**Application**      **Wireless Temperature Monitoring**

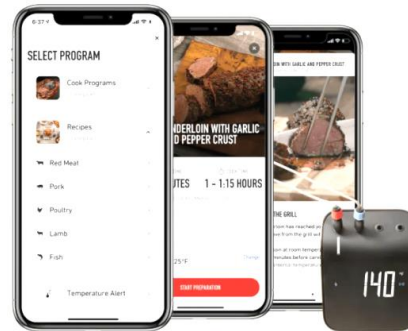
**Product**      **Type 1DX**

## Customer's challenges

- Time to market
- Software
- Regulatory

## How Murata stacks up?

- Size – small form factor module
- Software and Hardware support
- Competitive pricing
- Type 1DX is one of the most popular modules and has been integrated with many platforms



### Type 1DX



PN: LBEE5KL1DX-883

CYW4343W Chipset

6.95 x 5.15 x 1.1 mm

FCC/IC/CE\*/Japan Certified



802.11 b/g/n + Bluetooth® 5.1

# Case Study 2: US (Wi-Fi® MCU Module)

**Application**      **Wireless Outlet Control**

**Product**        **Type 1GC**

## Customer's challenges

- Software
- Regulatory

## How Murata stacks up?

- Size – small form factor module
- Software and Hardware support
- Competitive pricing
- Proven reliability – Type 1GC is being designed in multiple designs and has on board micro-controller



### Type 1GC/Imp005

PN: LBWA1UZ1GC-958

PN: LBWA1UZ1GC-901 (Imp005)

CYW43907 Chipset

10.0 x 10.0 x 1.3 mm



FCC/IC/CE\* Reference Certified



802.11 a/b/g/n

+ Ethernet + ARM Cortex-R4

# Case Study 3: US (Wi-Fi®/ Bluetooth® Module)

## Application

Wall Switch (with voice command)

## Product

Type 1DX

## Customer's challenges

- Software
- Hardware RF design
- Regulatory

## How Murata stacks up?

- Size – small form factor module
- Software and Hardware support
- Competitive pricing
- Close relationship with customers Engineering team



### Type 1DX



PN: LBEE5KL1DX-883

CYW4343W Chipset

6.95 x 5.15 x 1.1 mm

FCC/IC/CE\*/Japan Certified



802.11 b/g/n + Bluetooth® 5.1

# Case Study 4: Europe (Wi-Fi®/ Bluetooth® Module)

## Application

EV Charging

## Product

Type 1MW/1DX

## Customer's challenges

- Customers looking for reliable solution, long term supply and easy to integrate

## How Murata stacks up?

- Platform integration with MPU that simplifies the design
- Reliable solution and supply chain for industrial application
- Good performance



### Type 1MW



PN: LBEE5HY1MW-230

CYW43455 Chipset

7.9 x 7.3 x 1.1 mm

FCC/IC/CE\*/Japan Certified



802.11 a/b/g/n/ac + Bluetooth® 5.0

# Case Study 5: Europe (Wi-Fi® MCU Module)

**Application** Sensor Node Data Acquisition

**Product** Type 1PS

## Customer's challenges

- Customer has a field of sensors that are set in the environment for a period of time. When collected, data of 1000+ sensors need to be quickly transferred to be analyzed. This operation takes place inside a container

## How Murata stacks up?

- 802/11ac; higher bandwidth
- Good proposal – dual band was proposed
- Testing capability – tested and approved



### Type 1PS

PN: LBWA1UZ1PS-241

CYW54907 Chipset

10.0 x 10.0 x 1.3 mm



FCC/IC/CE\*/Japan Certified



802.11 a/b/g/n/ac

+ Ethernet + ARM Cortex-R4

# Case Study 6: Australia (Wi-Fi®/ Bluetooth® Module)

Application

Point of Sales

Product

Type 1MW

## Customer's challenges

- Need a ready Wi-Fi/ BT module which can meet their RF performance requirement and development schedule

## How Murata stacks up?

- Both module performance and price are able to meet customer's requirement
- Strong support – Murata and Arrow follow up closely and response promptly to customer's technical questions and price request



### Type 1MW



PN: LBEE5HY1MW-230

CYW43455 Chipset

7.9 x 7.3 x 1.1 mm

FCC/IC/CE\*/Japan Certified



802.11 a/b/g/n/ac + Bluetooth® 5.0

# Case Study 7: Singapore (LoRa Module)

**Application** Livestock Tracking

**Product** Type ABZ

## Customer's challenges

- Looking for a LoRa module to track cattle location and monitor health condition
- Considering to reduce manpower on field
- Requiring small form factor and small battery operated device

## How Murata stacks up?

- Small size
- Low power consumption
- Engineering support and EVK availability to speed up customer's evaluation and development process



### Type ABZ

PN: CMWX1ZZABZ

Semtech SX1276 + ST Micro STM32L0  
12.5 x 11.6 x 1.76 mm

### For Open MCU



FCC/IC/CE\*/Japan/KC/Anatel Certified  
(LoRa only)



# Case Study 8: Singapore (NB-IoT Module)

**Application**

**Pest Control**

**Product**

**Type 1SS**

## Customer's challenges

- Mapping pest in facilities to plan next action
- Reduce manual on-site checking
- Operate 3+ years on a single battery
- Little experience in hardware and software design

## How Murata stacks up?

- Low power consumption
- Good technical support
- Overall cost efficiency
- Strong partnerships



### Type 1SS

PN: LBAD0XW1SS

MT2625 w/ ARM Cortex-M4

10.6 x 13.2 x 1.7 mm

### For AT command

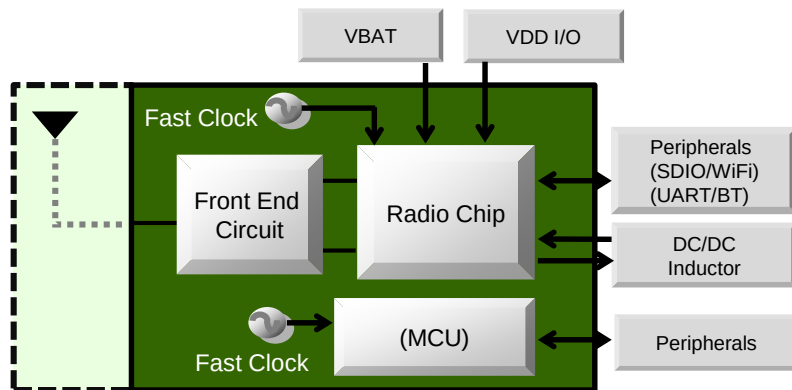


FCC/IC/CE\*/Japan/KC Certified  
(NB-IoT only)

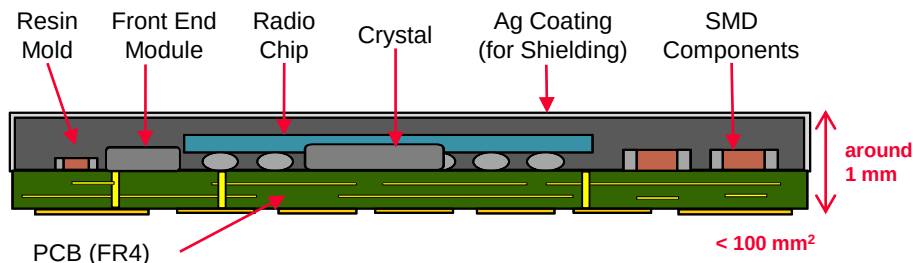
**MEDIATEK**

# About Murata Modules...

## Block Diagram



## Hardware Structure



## Murata key competency

- RF system Know-how
- Packaging technology to achieve small form factor

## Features

- Small size (<50% of COB)
- Best RF performance
- Highly reliable; good for long life
- Very large production capacity
- 100% tested



# Murata module solution over chip-on-board



## Chip-on-board

Certification required

Additional passives required

More space needed

Testing needed

More time and resources consuming

Production management investment



## Modules

Reference certified

Embedded passives

Compact

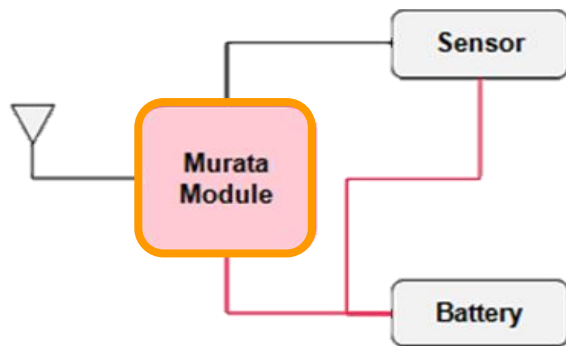
Pre-tested

Easier implementation

No extra investment

# Hostless or Hosted Architecture

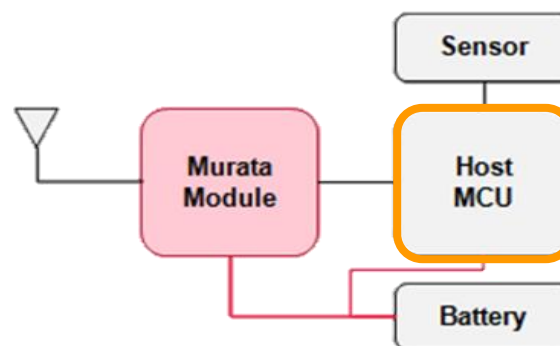
## “Hostless” Module



- No external MCU required
- Price includes all (Radio, MCU, software etc.)
- Use the SDK (software development kit) to develop Application FW to run inside the module
- Use SW libraries and commands available to easily connect to AWS IoT and cloud services

► **Fast go-to-market and robust design**

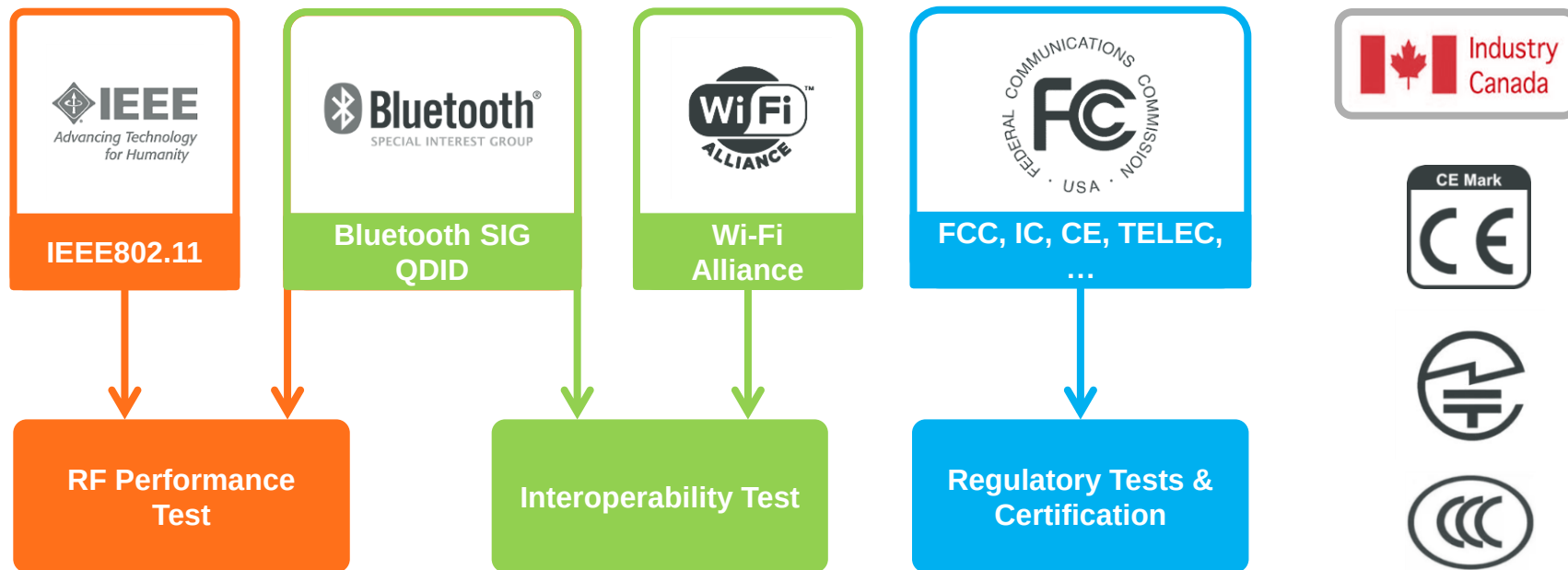
## “Hosted” Module



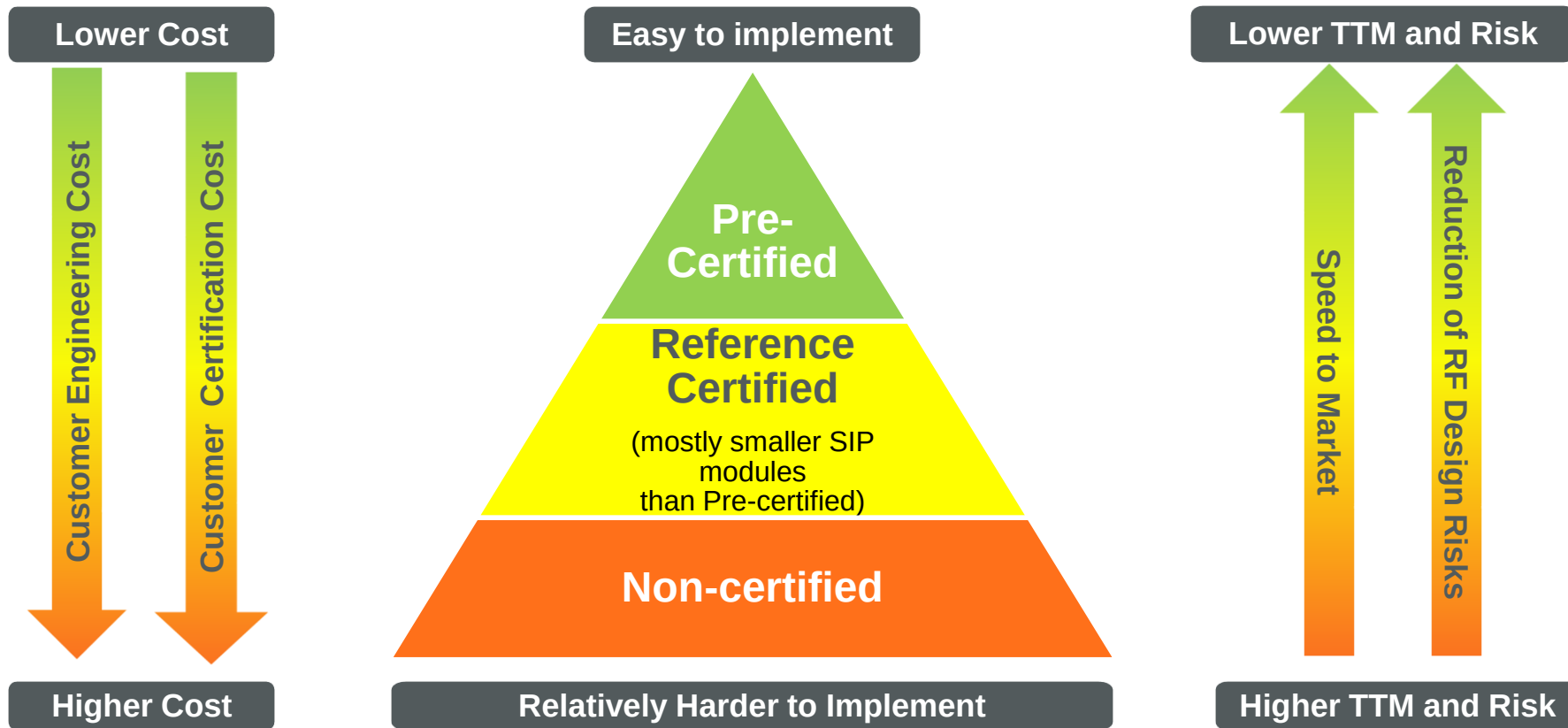
- External MCU required
- Module (modem only) + External host MCU cost add
- Application run in the external host MCU, additional HW & SW development can be required
- Additional SW development and validation can be required

► **Flexible or customized design approach**

# Support - Regulatory Compliance



# Support - Regulatory Compliance



# Strong online website presence

- All Murata module documentation supporting NXP wireless solution available. (No login/ authentication required)
- Minimize “wait time” for any customers.  
(Access information necessary to support Murata module design-in activities)
- Everything included in online access.  
(Datasheets, product briefs, module footprints, hardware/ software application notes, antenna/ regulatory guides, etc.)
- **\*New feature:**  
Direct link to Murata Community Forum.

<http://de.wireless.murata.com/products/rf-modules-1/wi-fi-bluetooth-for-nxp-i-mx.html>



## Documentation

Murata

Quick-start guide

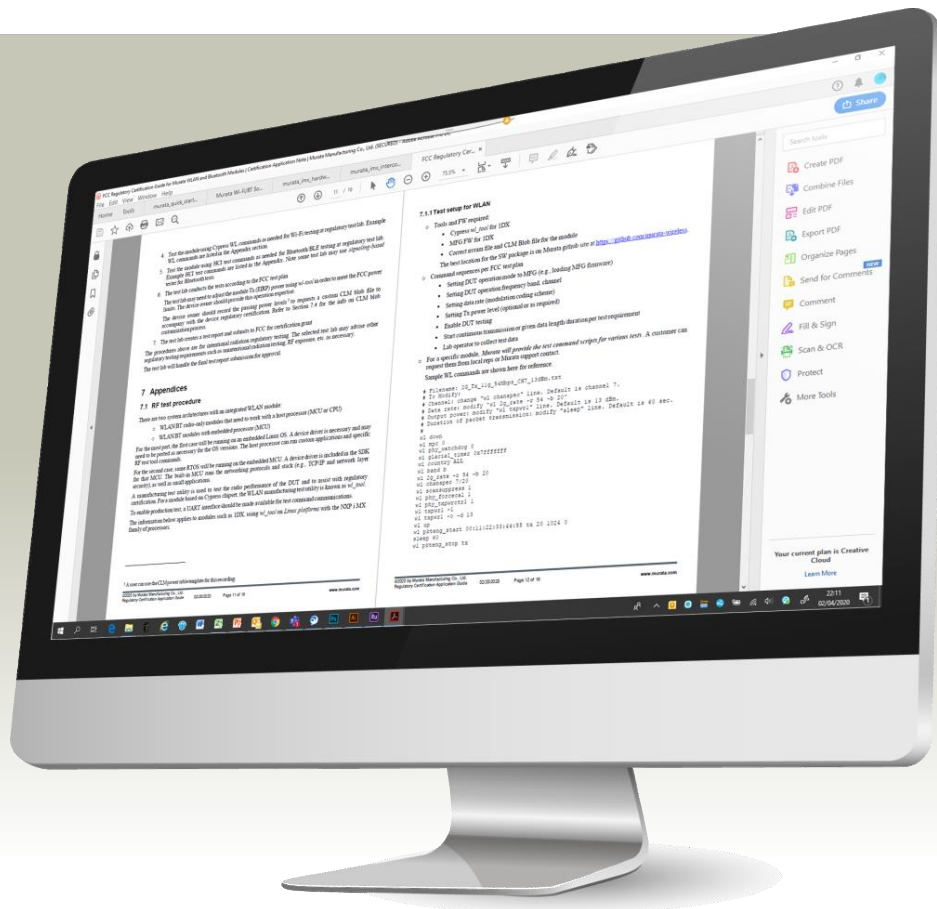
Linux user manual

Hardware user manual

Reference schematics

RF test manual

[wireless.murata.com/imx](https://wireless.murata.com/imx)



# Support - Linux

## GitHub

Murata

Open source

Supports Murata's modules on NXP i.MX

Includes latest fixes

Simple Script for building images

[github.com/murata-wireless](https://github.com/murata-wireless)



# Support - FreeRTOS

## Documentation

Murata

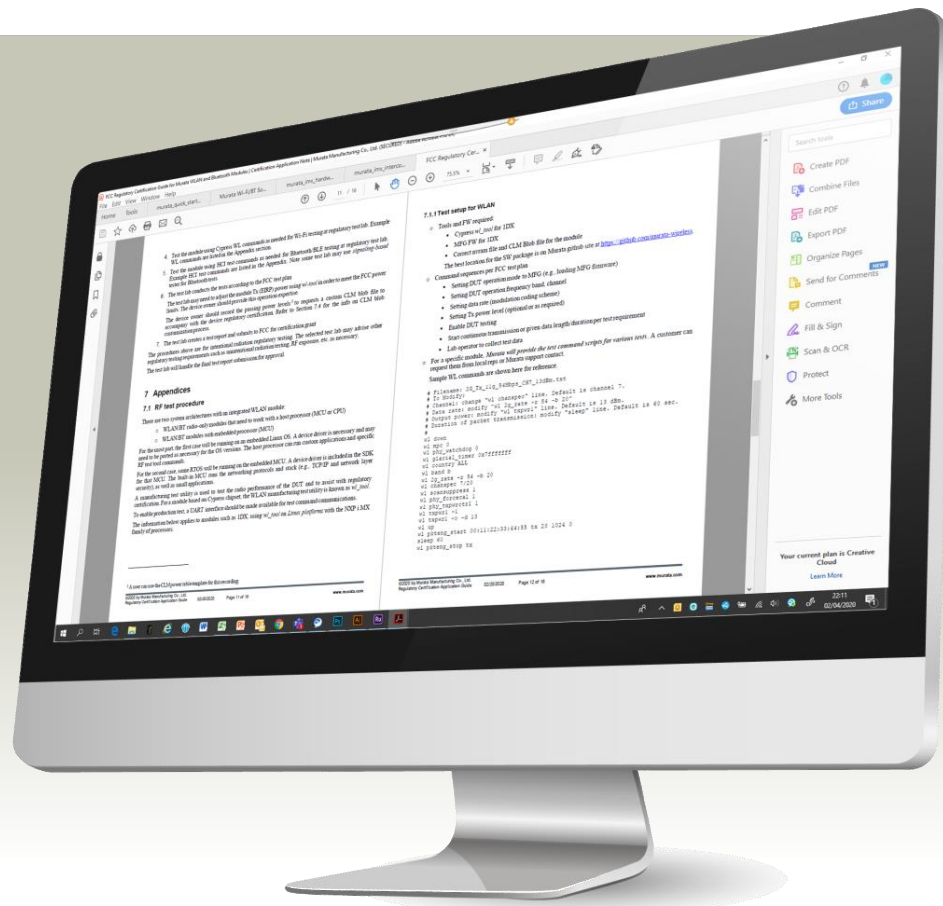
Quick-start guide

Hardware user manual

Reference schematics

RF test manual

[wireless.murata.com/imx](https://wireless.murata.com/imx)



# \*New Support: Murata Community Forum



**Wireless connectivity**

Your questions answered by experts at the **Murata Community Forum**

Forum-based support for every step of your product design journey. Ask RF module-related questions, view answers and join conversations. Access the knowledge of RF professional from around the world.



<https://community.murata.com>



# From broad market solutions to customization...



## WHERE TO PURCHASE?



**muRata**  
INNOVATOR IN ELECTRONICS

Wireless Part Number Search

Wireless Products | Other Products | Applications | Design Tools | Support | About Murata | my Murata

Home > Products > Type 1YM

**Description** | Specs | Documents | Applications | Software | Block Diagram | Eval Tool | **Purchase**

**Type 1YM**

Order Number LBEE5XV1YM-574

Shielded Ultra Small Dual band Wi-Fi® 11a/b/g/n/ac  
2x2 MIMO • Bluetooth® 5.2 Module

- 2.4 GHz & 5 GHz Wi-Fi® • Bluetooth® Module
- Network Topology: uAP and STA dual mode
- Chipset: NXP (BQW997)
- Processor: No
- FCC/IC "Reference" Certified
- Modulation: DSSS / CCK / OFDM

**High Performance Capabilities for Internet of Things**

- For Industrial IoT, Smart Home, Audio/AK, Video/Voice, Gateway
- 802.11 a/b/g/n/ac 2x2 MIMO 650Mbps
- NXP Linux, Android

[Data Sheet](#) [Where To Buy / Distributor Inventory](#)

[Contact JIS](#) [Request A Sample](#)

[Technical Support](#) [Request A Quote](#)

[ADD TO COMPARE LIST](#)

Order Number LBEE5XV1YM-574

[Where to Buy / Distributor Inventory](#)

Purchase Please check distributor inventory for 1YM module.  
Please check distributor inventory for Embedded Artists' 1YM M4.2 module.  
Please check Embedded Artists' inventory for 1YM M4.2 module.  
No annual volume requirement for purchasing from distributors.

**Related Links**

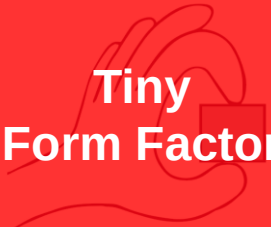
- Applications for Wireless
- Support for Wireless
- Wireless Modules for IoT Applications
- WiFi/Bluetooth Modules for NXP LMX
- LoRa Modules
- MICS Band Modules

**Related Product Categories**

- « Go Back
- WiFi Modules
- WiFi • Bluetooth Modules
- Bluetooth Modules
- LPWA LoRa & Sigfox Modules
- LPWA Cellular IoT Modules
- WiFi Bluetooth Modules for NXP LMX
- Wired Mesh / FHSS
- MICS Band Modules

For general product information and enquiry, please check out: [wireless.murata.com](https://wireless.murata.com)

# Murata wireless solutions in a nutshell



**Tiny  
Form Factor**



**Hosted &  
Hostless**



**RF Design  
Support**



**Huge Supply  
Capability**



**Strong  
Partnerships**



**Global  
Support**

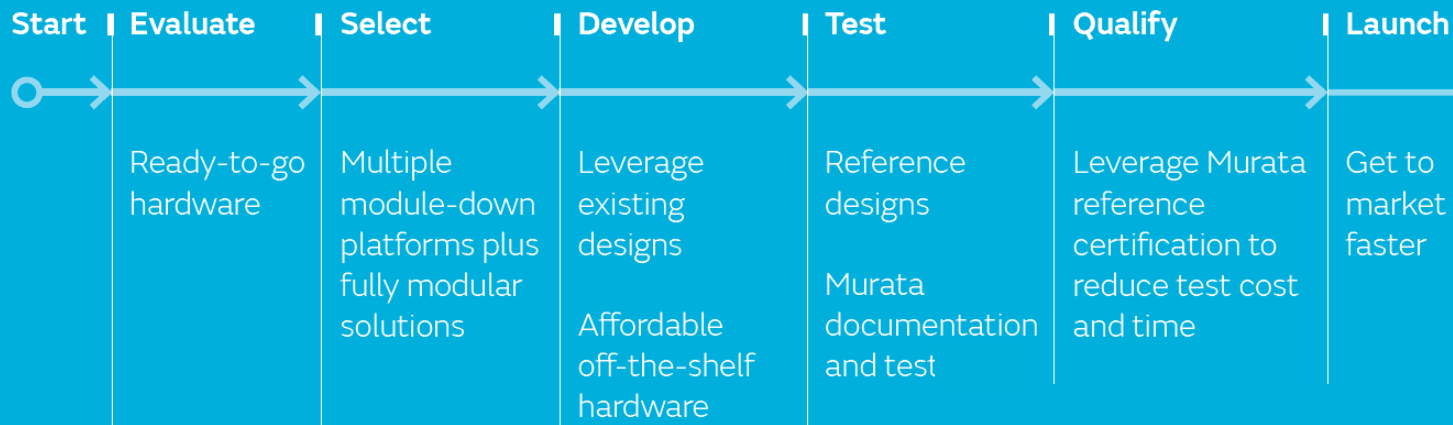


**Online  
Support Tools**



**Community  
Forum**

# Wireless connectivity development has never been easier...

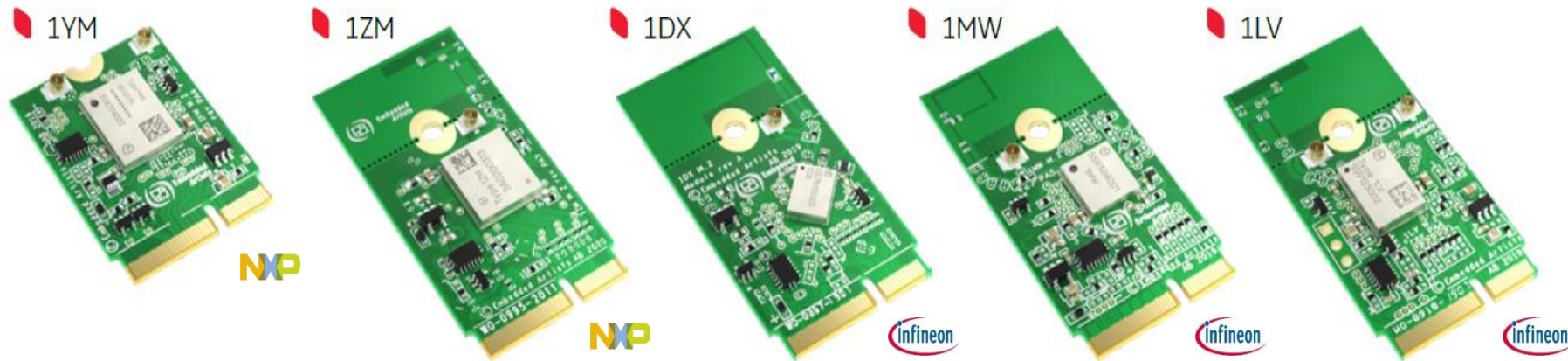


**Murata's rich ecosystem will support you throughout your project lifecycle**



# Wi-Fi®/ Bluetooth® M.2 modules

## M.2 modules line-up



**More details:**

<https://wireless.murata.com/usd-m2>

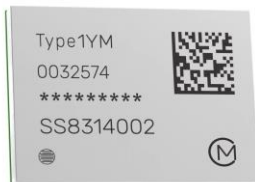
<https://www.embeddedartists.com/m2>



# Murata/ NXP wireless modules



## Type 1YM: 2x2 MIMO/Bluetooth® 5.2 Module



**Type 1YM**  
88W8997 2x2 Radio  
802.11 a/b/g/n/ac  
BR/EDR/BLE 5.2

- 802.11 a/b/g/n/ac 2x2 MIMO + Bluetooth® 5.2
- 11.8 x 8.4 x 1.3 (typ) mm
- SDIO3.0 Wi-Fi® Host Interface
- UART/SDIO3.0 Bluetooth® Host Interface
- PCM for Bluetooth® audio
- Shielded, FCC/IC “Reference” Certified
- CE Complaint
- U.FL-connected patch antennas
- [wireless.murata.com/type-1ym.html](https://wireless.murata.com/type-1ym.html)

## Type 1ZM: Wi-Fi®/Bluetooth® Hosted Module



**Type 1ZM**  
88W8987  
802.11 a/b/g/n/ac  
BR/EDR/BLE 5.1

- 802.11 a/b/g/n/ac + Bluetooth® 5.1
- 10.2 x 9.3 x 1.3 (typ) mm
- SDIO3.0 Wi-Fi® Host Interface
- UART/SDIO3.0 Bluetooth® Host Interface
- PCM for Bluetooth® audio
- Shielded, FCC/IC/TELEC “Reference” Certified
- CE Conducted Test Report available
- U.FL-connected PCB antenna or Murata customized PCB trace antenna options
- [wireless.murata.com/type-1zm.html](https://wireless.murata.com/type-1zm.html)

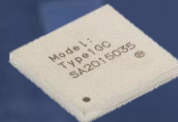
# Murata/ Infineon wireless modules



## Best sellers...



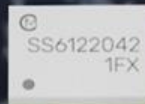
**Type 1LD**  
CYW43438 Radio  
802.11 b/g/n + BR/EDR/BLE 4.2



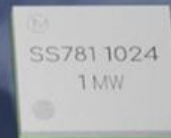
**Type 1GC**  
CYW43907 Wi-Fi MCU  
802.11 a/b/g/n Cortex®-R4



**Type 1DX**  
CYW4343W Radio  
802.11 b/g/n + BR/EDR/BLE 5.1



**Type 1FX**  
CYW43364 Radio  
802.11 b/g/n



**Type 1MW**  
CYW43455 Radio  
802.11 a/b/g/n/ac + BR/EDR/BLE 5.0

**Type 1XA**  
CYW54591 2X2 Radio  
802.11 a/b/g/n/ac  
BR/EDR/BLE 5.2

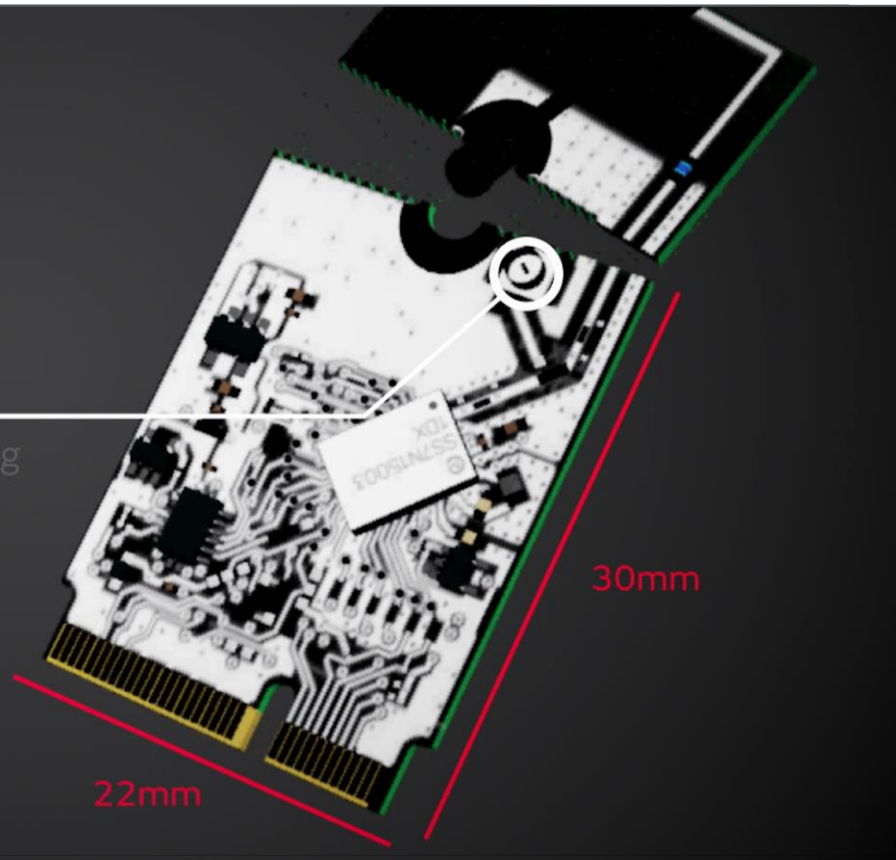


**Type 1LV**  
CYW43012 Radio  
802.11 a/b/g/n & 11ac-Friendly™  
BR/EDR/BLE 5.0

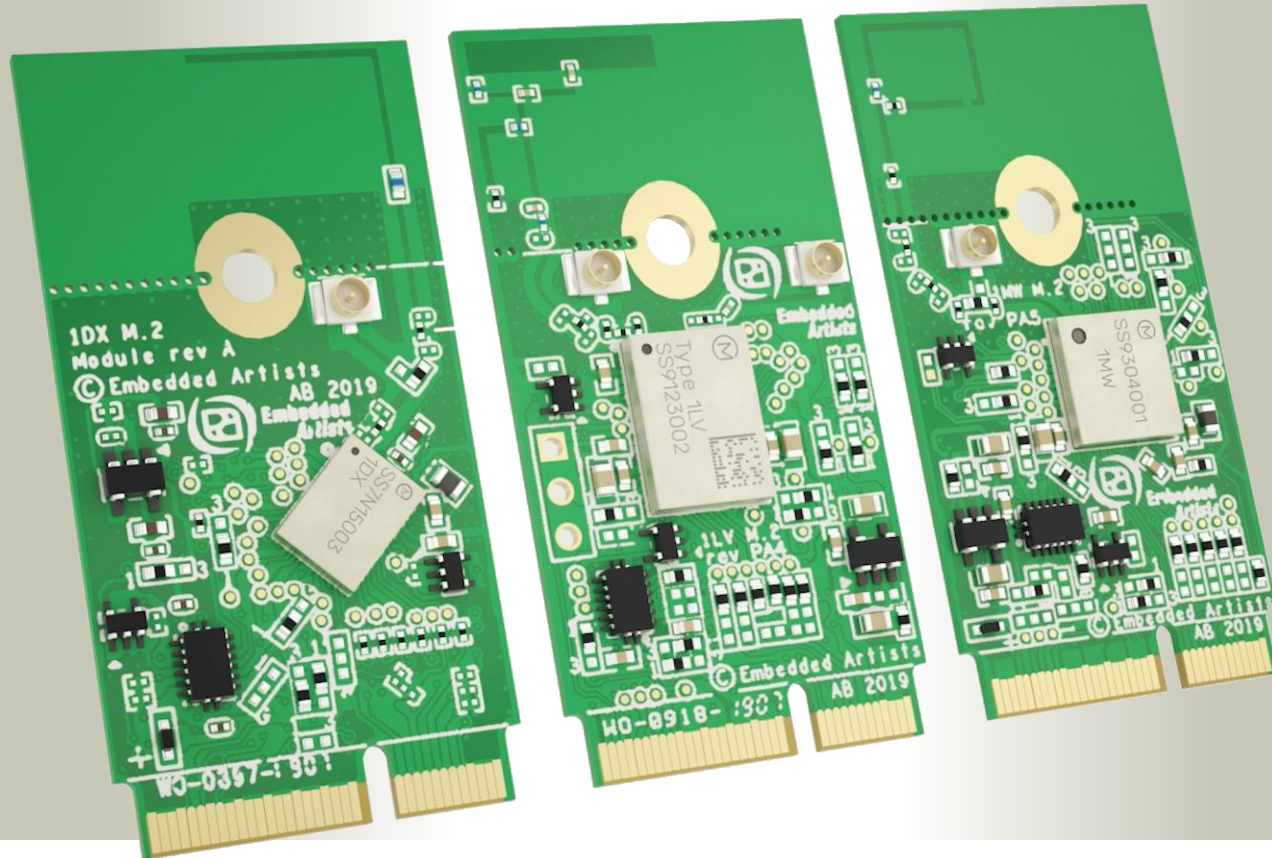
# M.2 boards

## U.FL antenna

for external antenna or conducted testing



# M.2 boards



# NXP i.MX RT EVKs



**i.MX RT  
1060  
crossover  
processor**  
ARM Cortex-M7 core

High speed  
performance

Best real-time  
response

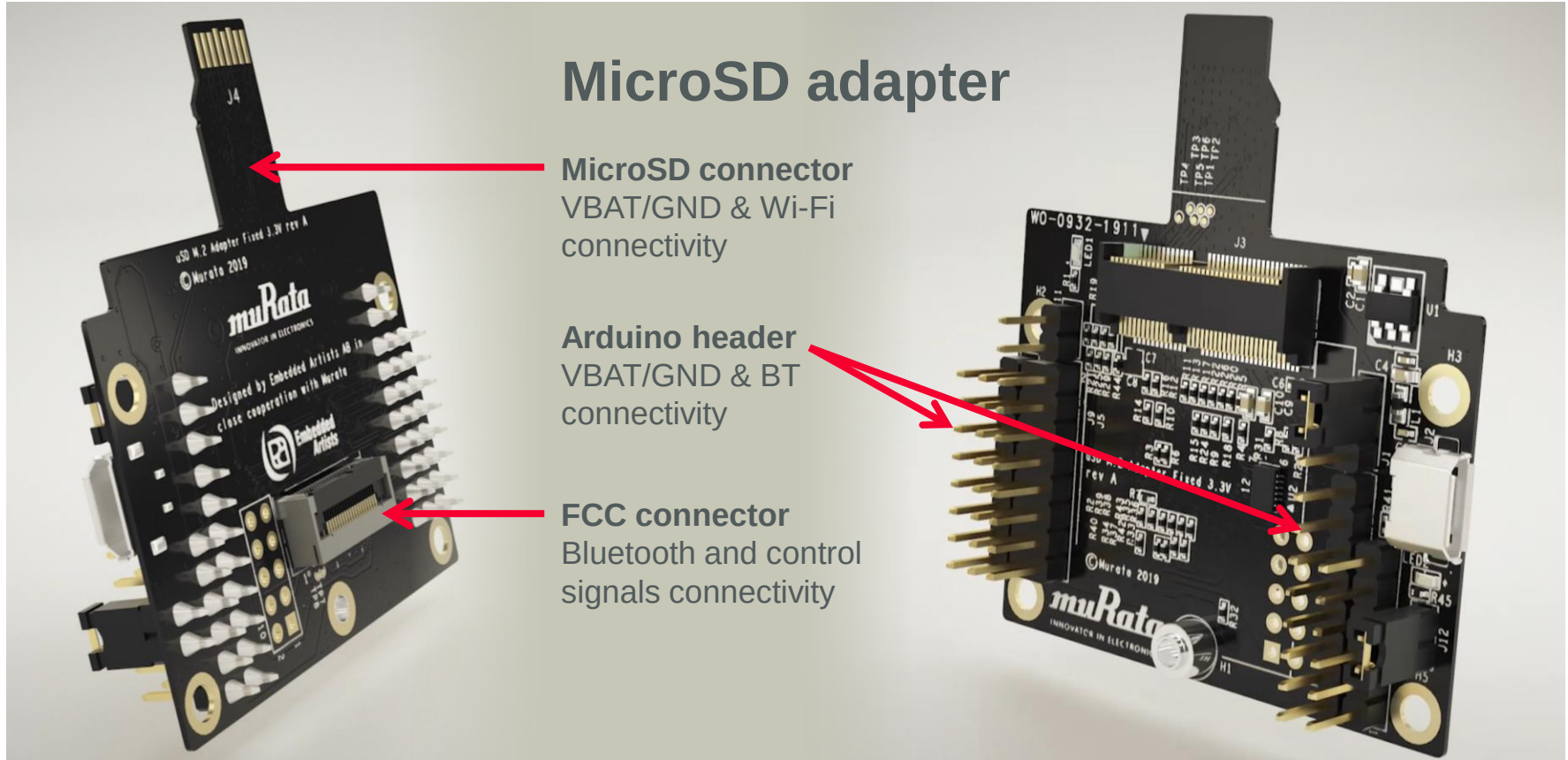
# Connecting M.2 boards

## MicroSD adapter

**MicroSD connector**  
VBAT/GND & Wi-Fi  
connectivity

**Arduino header**  
VBAT/GND & BT  
connectivity

**FCC connector**  
Bluetooth and control  
signals connectivity



# Connecting M.2 boards

## Insert M.2 board into MicroSD adapter



**1DX**  
For cost  
optimization



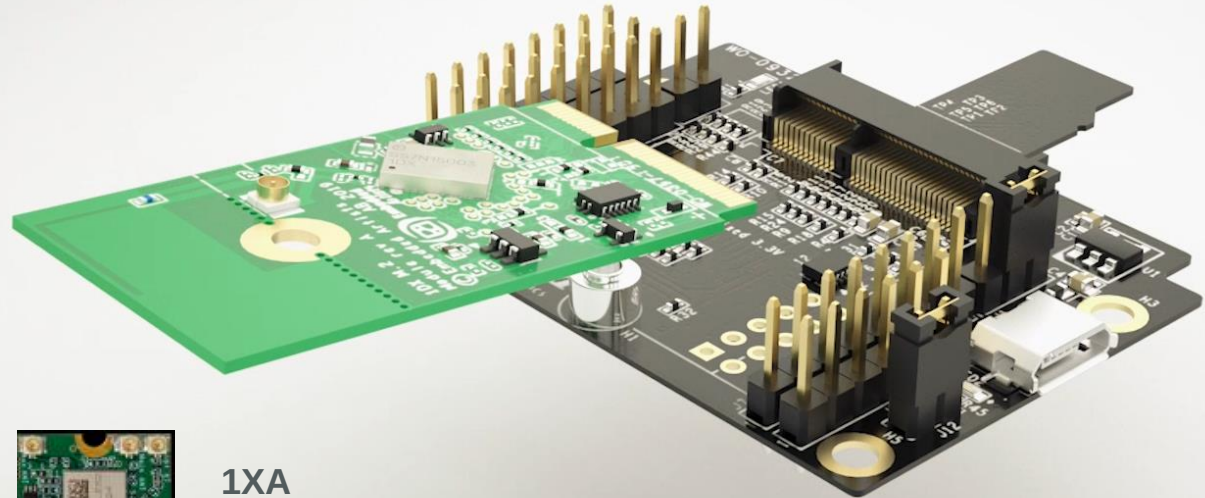
**1MW**  
For Dual  
Band support



**1LV**  
For low power  
consumption



**1XA**  
For high  
performance



# Connecting M.2 boards

## Insert M.2 board into MicroSD adapter



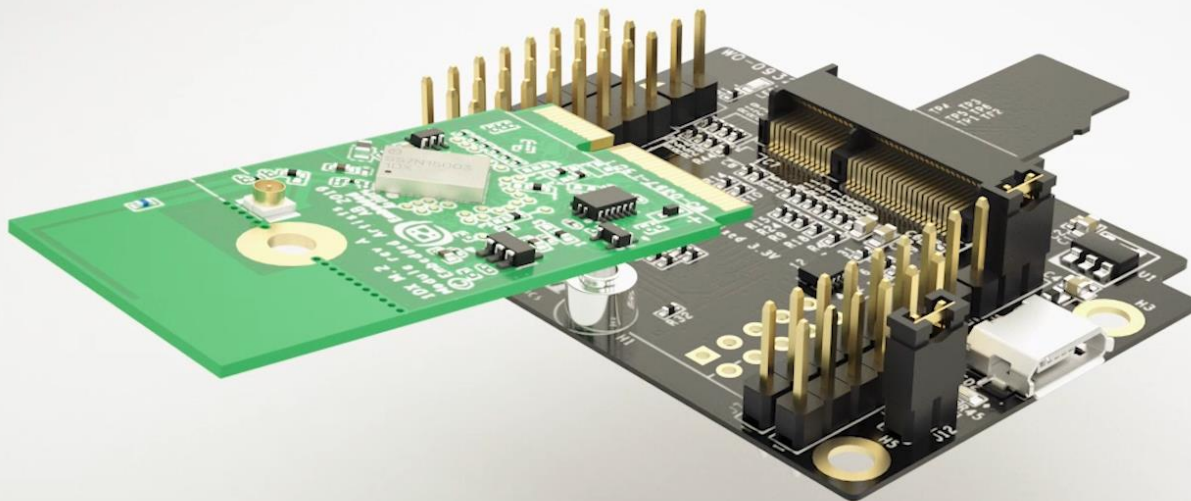
**1ZM**

For Dual band  
support



**1YM**

For high  
performance



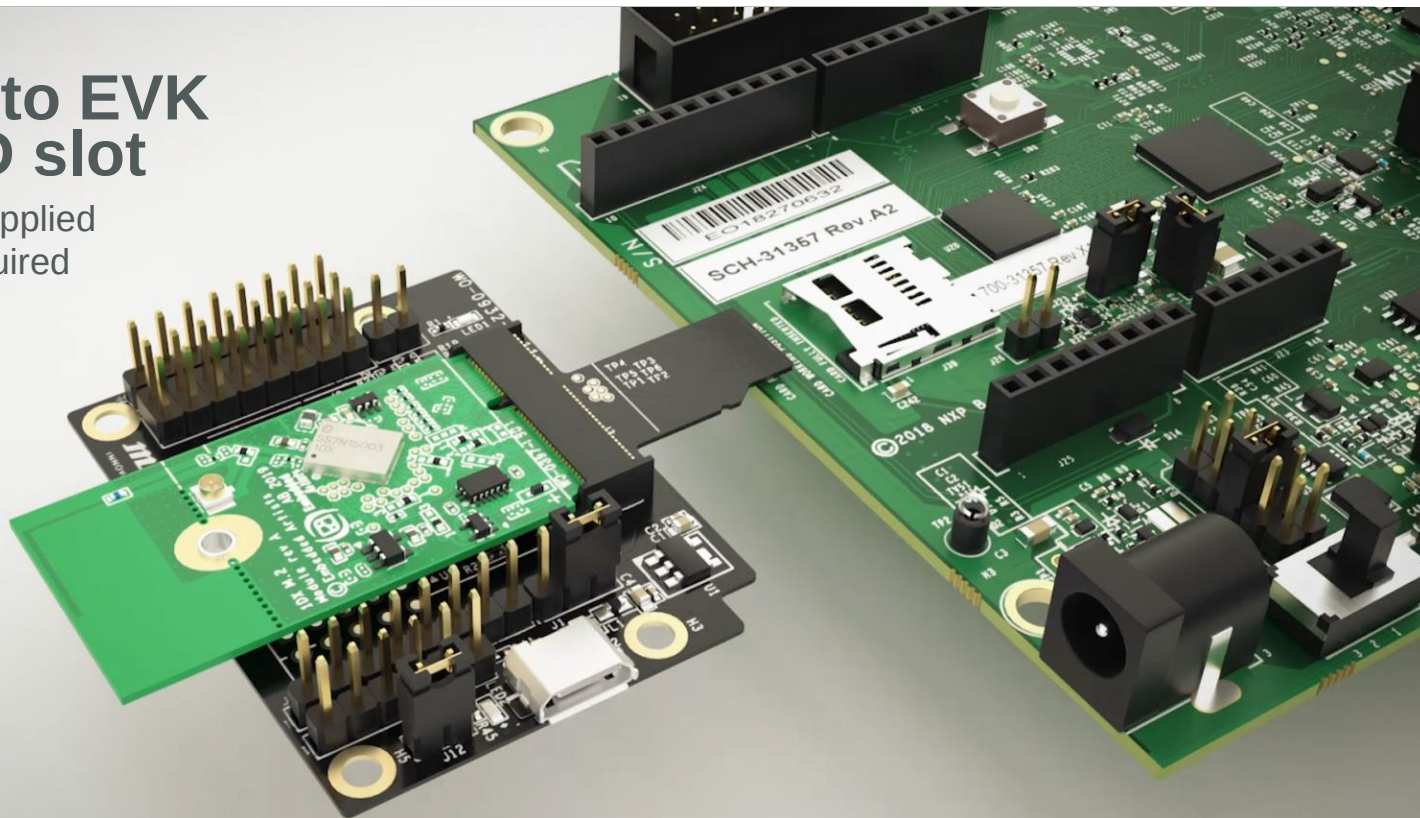
# Connecting M.2 boards

## Insert into EVK microSD slot

And connect supplied  
jumpers as required

## ...or SD slot

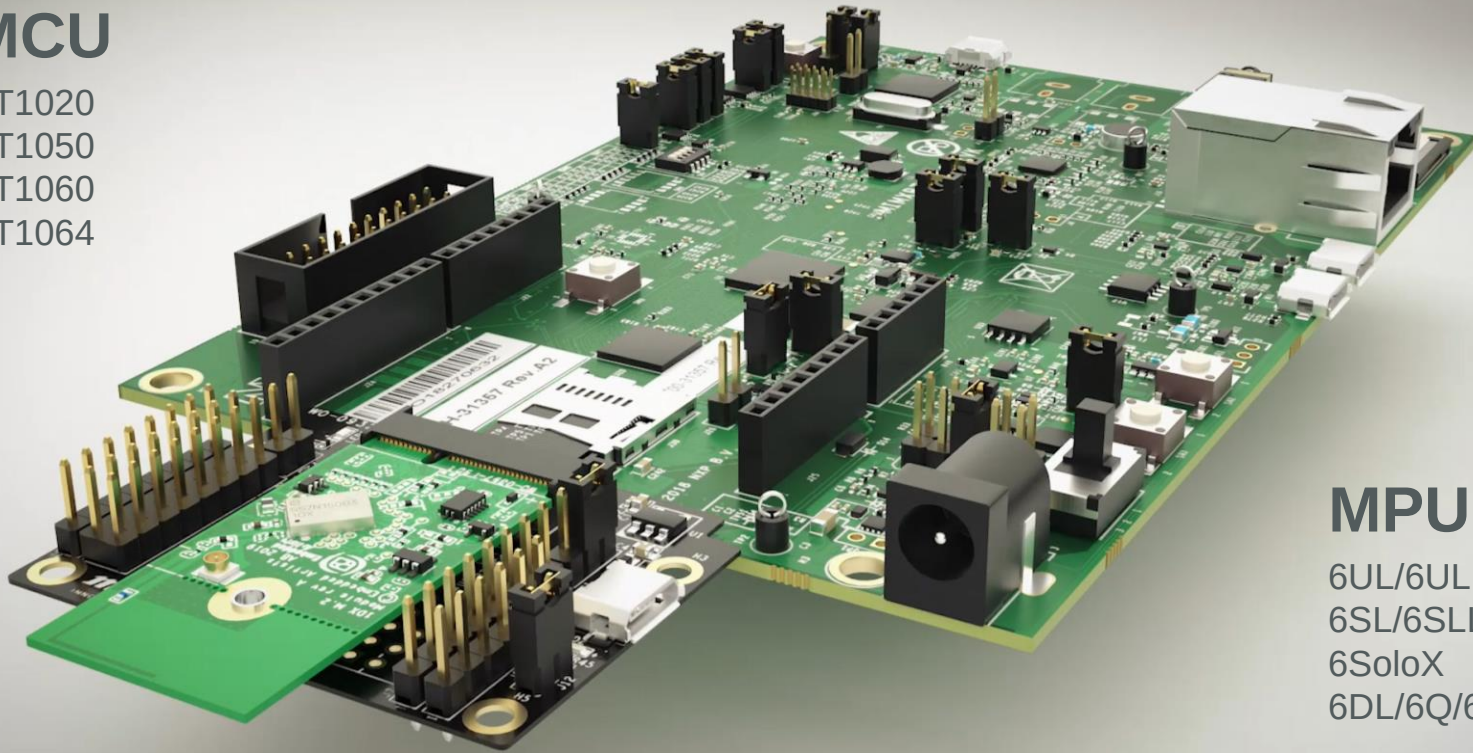
microSD to SD  
adaptor also  
supplied



# Supported i.MX EVKs

## MCU

RT1020  
RT1050  
RT1060  
RT1064



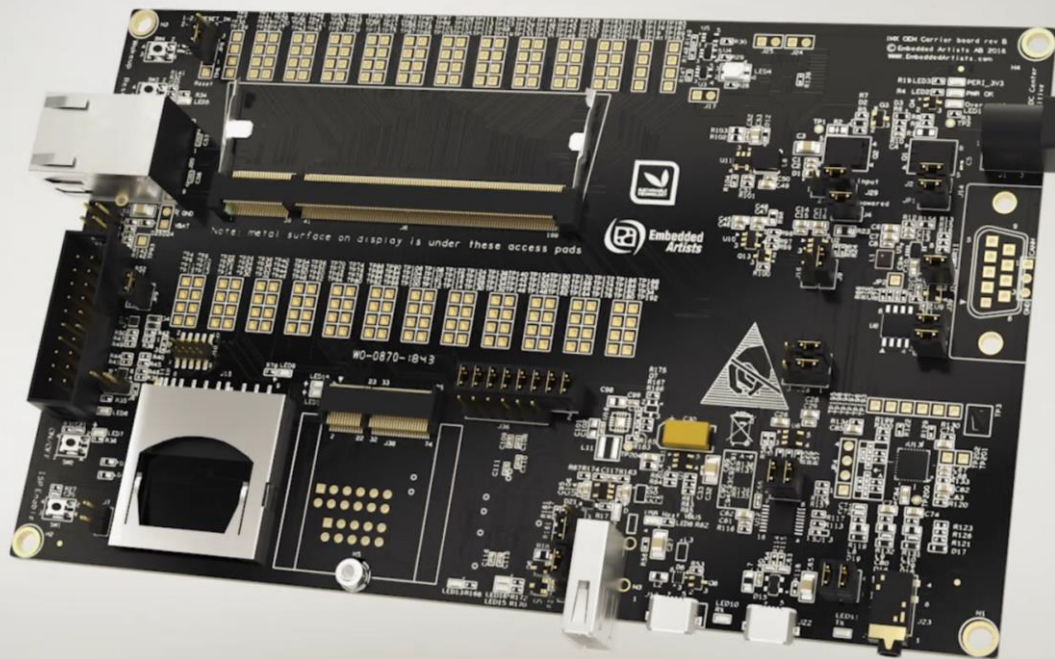
## MPU

6UL/6ULL/6ULZ  
6SL/6SLL  
6SoloX  
6DL/6Q/6QP

# Fully modular system

## i.MX RT carrier board

i.MX RT1062  
developers kit  
with i.MX RT1062 or  
RT1052 OEM board



## Also available

Large COM carrier  
board compatible  
with COM boards:

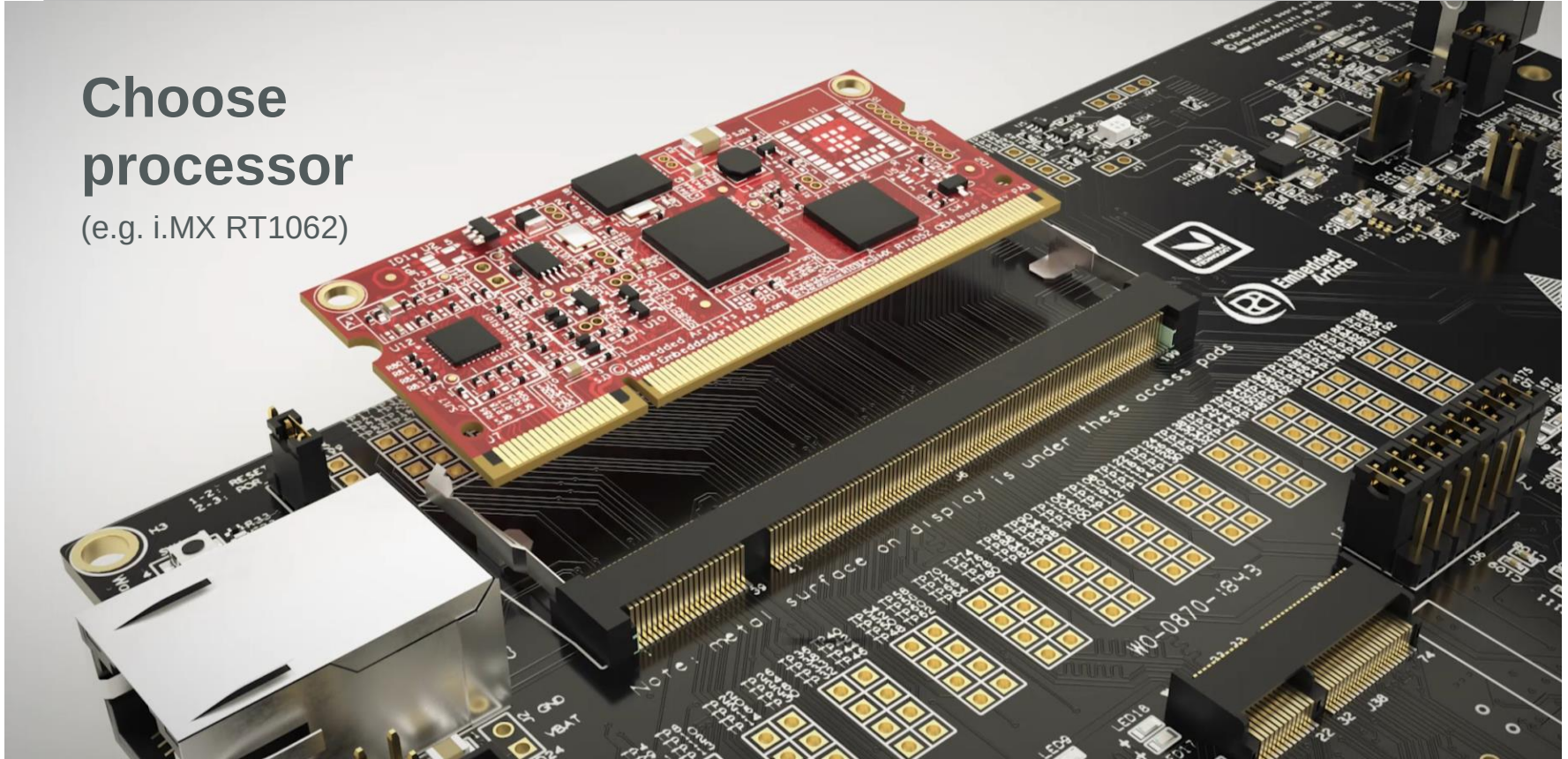
- i.MX8M Quad
- i.MX8M Mini uCOM
- i.MX8M Nano uCOM
- i.MX6 Quad
- i.MX6 DualLite
- i.MX6 Ultralite
- i.MX6 SoloX
- i.MX7 Dual
- i.MX7 Dual uCOM
- i.MX7ULP uCOM

# Fully modular system



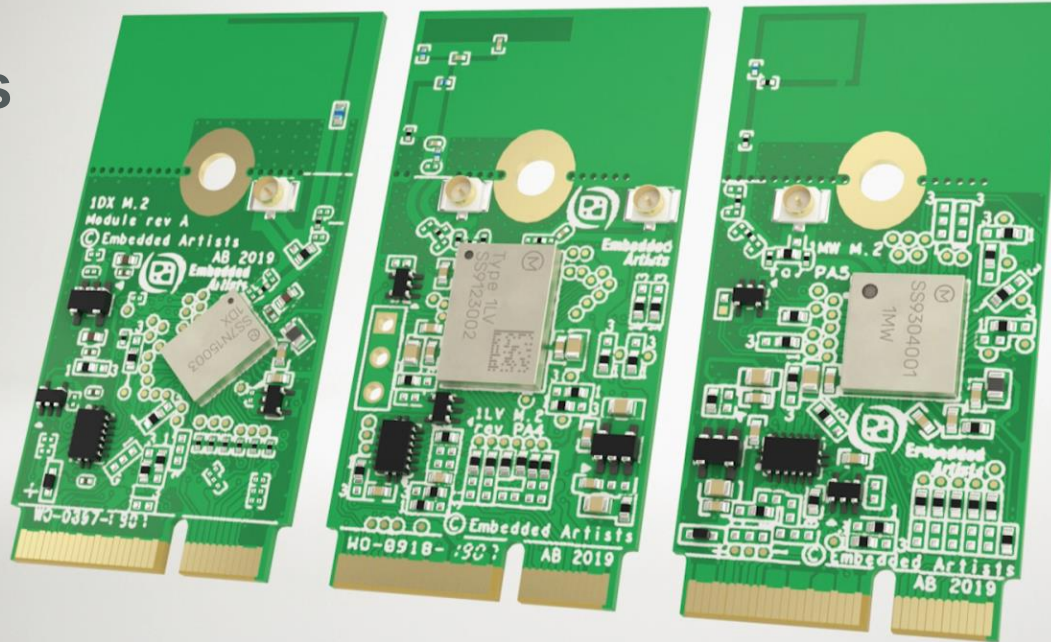
## Choose processor

(e.g. i.MX RT1062)



# Fully Modular System

Choose  
wireless  
module

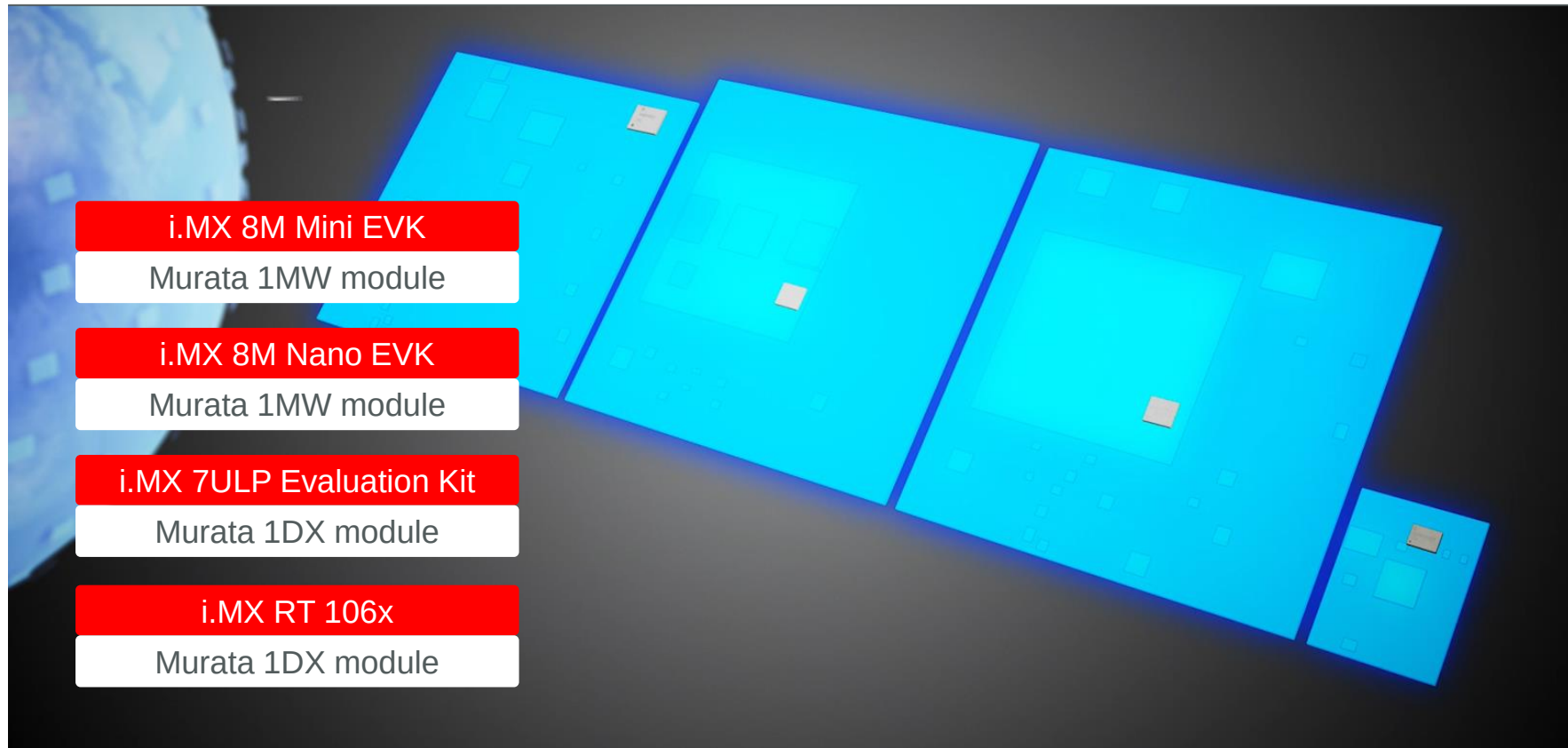


# Fully modular system



**Insert M.2 module  
directly into the carrier board**

# i.MX module-down platforms



**i.MX 8M Mini EVK**

Murata 1MW module

**i.MX 8M Nano EVK**

Murata 1MW module

**i.MX 7ULP Evaluation Kit**

Murata 1DX module

**i.MX RT 106x**

Murata 1DX module



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**Alternative solutions**

# Infineon module-down platforms



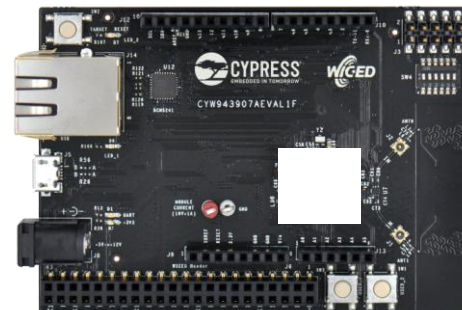
## MCUs for IoT applications

### PSoC® 6 MCU

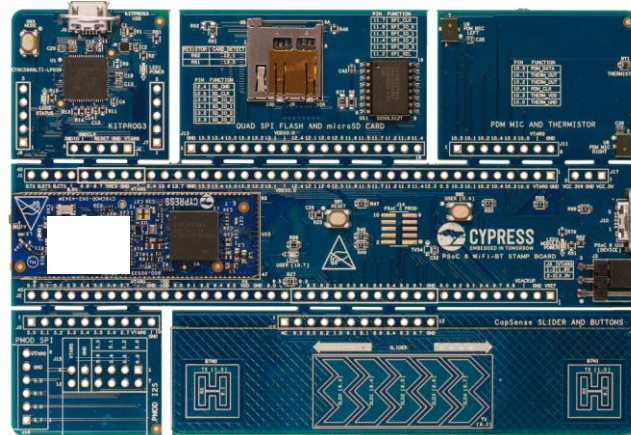
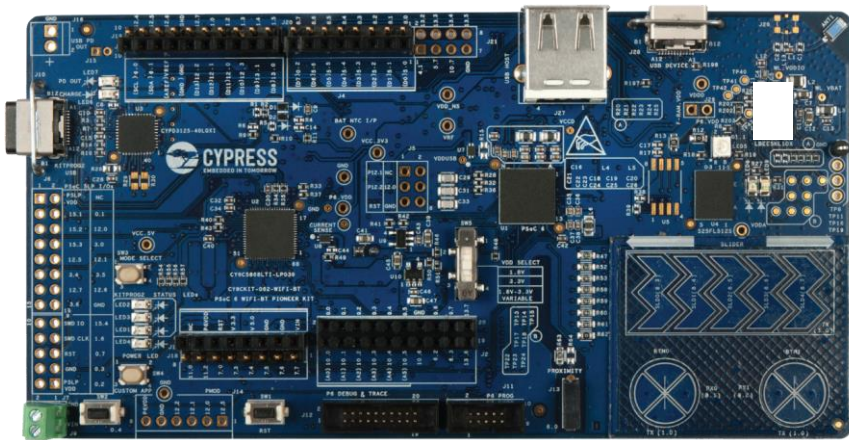
- Dual-core Cortex®-M4/M0+
- Type 1DX or Type 1LV
- Supported in Arm® Mbed™ & Amazon FreeRTOS

### Type 1GC

- Type 1GC
- Cypress CYW43907 Wi-Fi MCU
- 2 Cortex®-R4 MCUs



Type 1GC



Type 1DX  
Type 1LV



## STM32MP1 Discovery Kit

### Processor

STM32MP157 Arm®-based dual  
Cortex®-A7 32 bits + Cortex®-M4 32  
bits MPU in TFBGA361 package

### Radio Module

Murata 1DX dual Wi-Fi  
802.11b/g/n 65 Mbps and  
Bluetooth 5.1 BR/EDR/LE

Type 1DX





## Arduino Portenta H7

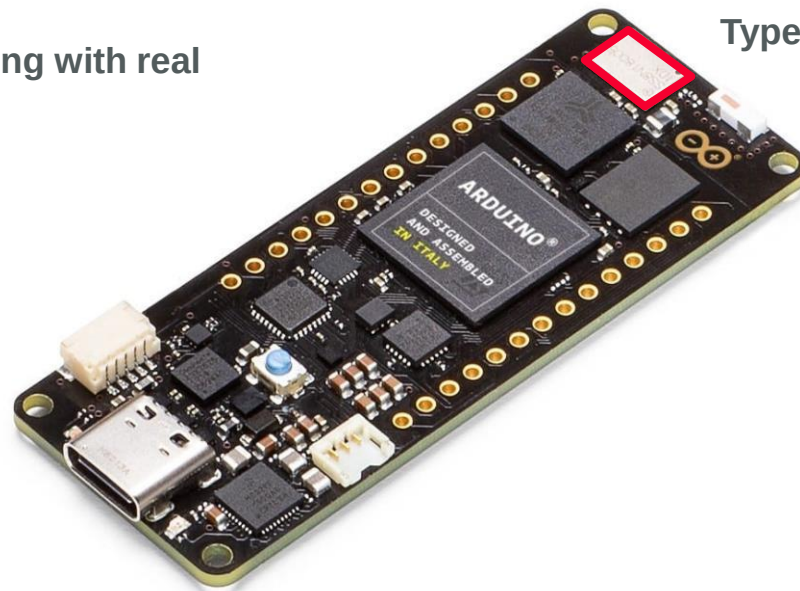
Simultaneously runs high level code along with real time tasks

### Microcontroller

STM32H747XI dual Cortex®-M7+M4 32bit low power Arm® MCU

### Radio Module

Murata 1DX dual Wi-Fi 802.11b/g/n 65 Mbps and Bluetooth 5.1 BR/EDR/LE



Type 1DX

# Product Roadmap: Wi-Fi®+Bluetooth®/ Wi-Fi®/Bluetooth®+MCU/ LPWA



## Wi-Fi/ Bluetooth

Wi-Fi/ BT

## Wi-Fi/ BLE + MCU

Wi-Fi/ BLE + MCU

## LPWA

LPWA



Infineon (Cypress)



NXP



Qualcomm



TI



Altair



STMicro



Semtech



MediaTek



Nordic



Dialog

## In Production

### Wi-Fi/ Bluetooth

**Type 1LV**

CYW43012

11b/g/n + BT5.0  
Ultra Low Power/ SDIO

**Type 1MW**

CYW43455

1x1 11ac + BT5.0  
SDIO

**Type 1PJ**

QCA9377

1x1 11ac + BT5.0  
SDIO

**Type 1XA**

CYW54591

2x2 11ac + BT5.1  
RSDB/ PCIe

**Type 1YM**

88W8997

2x2 11ac + BT5.0  
PCIe/ SDIO/ USB

**Type 1ZM**

88W8987

1x1 11ac + BT5.1  
SDIO

### Wi-Fi/ BLE + MCU

**Type 1GC**

CYW43907

11a/b/g/n + Ethernet

**Type 1KS**

CC3220

11b/g/n  
TI SimpleLink™ Gen2  
SimpleLink™ SDK

**Type 1LD**

CYW43438 +  
STM32F412

11b/g/n + BT4.2

**Type ABR**

88MW320

11b/g/n

### LPWA

LoRa/ Sigfox

Cat M1

NB-IoT/ NB1/NB2

**Type 1SJ**

SX1262

(STM32L072)

**Type 1SE**

ALT1250

(STM32F462)

**Type 1SC**

ALT1250

Cat M1  
Resin mould

**Type 1SS**

MT2625DA

NB-IoT

**Type ABZ**

SX1276

(STM32L082)

**Type 1YS**

MT2625DPA

NB1/ NB2

## CY2021

**Type 1YN**

CYW43439

11b/g/n + BT5.1  
SDIO

**Type 2BC/2AE**

CYW4373(E)

11b/g/nac + BT5.1  
SDIO

**Type 1XZ**

CYW5459x

2x2 11ac + BT5.1  
RSDB/ SDIO

**Type 2CX**

QCA206X(WCN6855)

2x2 Wi-Fi6E + BT5.x  
PCIe

**Type 2DS**

88W8801

1x1 11b/g/n  
SDIO

**Type 1XK**

IW416

1x1 11n + BT5.0  
Ultra Low Power/ SDIO

**Type 1XL**

88W9098

2x2 11ax + BT5.x  
PCIe/ SDIO

**Type 1PS**

CYW54907

1 X 1; 11ac

**Type 2AH**

nRF52805

BLE 5.2

**Type 2AY**

DA14531

BLE 5.2

**Type ABZ-104**

SX1276

(STM32L082)

LoRa reference module  
Modem for Semtech cloud

**Type 1SC-DM**

ALT1250

Cat M1/NB-IoT  
Resin mould

**Type 2AS**

ALT1250

Cat M1/NB-IoT+2G  
Metal shield

\*Not for US market

## CY2022

- New chipsets targeting Wi-Fi 6
- Murata + (Infineon, NXP, Qualcomm, OnSemi...)

- New module targeting small size and low power consumption

**Disclaimer:** Development plans subject to changes without prior notice.

  Under Development  
  Planning

# Why work with Murata?



**Strong  
Partnerships**

**Global  
Footprint**

**Online  
Support**

**Ready-to-go  
Hardware**

**Regulatory  
Certifications**

**Community  
Forum**

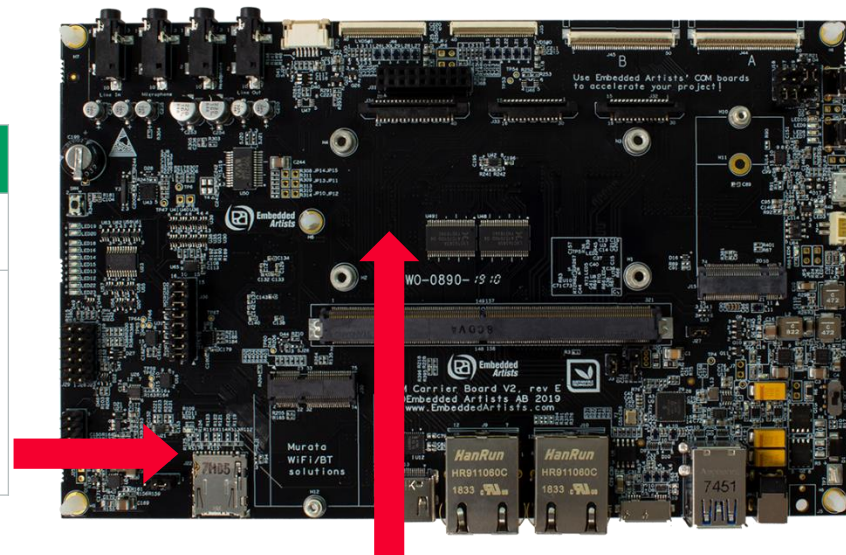
**Murata makes your IoT challenges easier  
... and get you to market faster!**

# Embedded Artists' i.MX 6/7/8 Dev Kit

## “Swiss Army Knife”

→ Combine i.MX COM with Wi-Fi/BT M.2 EVB

| 1DX                                                                              | 1MW                                                                               | 1LV                                                                               | 1XA                                                                               | 1ZM                                                                               | 1YM                                                                               |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| CYW 4343W                                                                        | CYW 43455                                                                         | CYW 43012                                                                         | CYW 54591                                                                         | 88W8987                                                                           | 88W8997                                                                           |
|  |  |  |  |  |  |



|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |  |
| 6Quad COM                                                                        | 6Dual COM                                                                         | 6SoloX COM                                                                        | 7Dual COM                                                                         | 6UL COM                                                                            | 7Dual uCOM*                                                                         | 8MQuad COM                                                                          | 7ULP uCOM*                                                                          | 8M Mini/Nano uCOM*                                                                  |

\*7Dual, 7ULP, and 8M Mini, 8M Nano uCom uses Interposer COM board

# \*New Support: Murata Community Forum



**Wireless connectivity**

Your questions answered by experts at the **Murata Community Forum**

Forum-based support for every step of your product design journey.

Ask RF module-related questions, view answers and join conversations.

Access the knowledge of RF professional from around the world.



<https://community.murata.com>



# From broad market solutions to customization...



## WHERE TO PURCHASE?



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Home > Products > Type 1YM

**Type 1YM**

Order Number LBEE5XV1YM-574

Shielded Ultra Small Dual band Wi-Fi® 11a/b/g/n/ac  
2x2 MIMO • Bluetooth® 5.2 Module

- 2.4 GHz & 5 GHz Wi-Fi® • Bluetooth® Module
- Network Topology: uAP and STA dual mode
- Chipset: NXP (BQW997)
- Processor: No
- FCC/IC "Reference" Certified
- Modulation: DSSS / CCK / OFDM

**High Performance Capabilities for Internet of Things**

- For Industrial IoT, Smart Home, Audio/AK, Video/Voice, Gateway
- 802.11 a/b/g/n/ac 2x2 MIMO 65dBm
- NXP Linux, Android

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**Description** | Specs | Documents | Applications | Software | Block Diagram | Eval Tool | **Purchase**

**Related Links**

- Applications for Wireless
- Support for Wireless
- Wireless Modules for IoT Applications
- WiFi/Bluetooth Modules for NXP LMX
- LoRa Modules
- MICS Band Modules

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- LPWA Cellular IoT Modules
- WiFi Bluetooth Modules for NXP LMX
- Wired Mesh / FHSS
- MICS Band Modules

Order Number LBEE5XV1YM-574

[Where To Buy / Distributor Inventory](#)

**Purchase**

Please check distributor inventory for 1YM module.  
Please check distributor inventory for Embedded Artists' 1YM M4.2 module.  
Please check Embedded Artists' inventory for 1YM M4.2 module.  
No annual volume requirement for purchasing from distributors.

For general product information  
and enquiry, please check out:  
[wireless.murata.com](https://wireless.murata.com)

**GIVEAWAY:**

**Murata uSD-M2 adapter board**



**\*Winners will be notified via email after the webinar.**

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TECHNOLOGY | SOLUTIONS | INNOVATIONS



**Questions & Answers**

# Panelists

---



**Lynn Tan**

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Murata Electronics Singapore



**Shafi Ahmed**

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Murata Electronics India



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**Gonzague Fraval**

Senior Product Engineer  
Wireless Module

Murata Electronics Singapore

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**Questions & Answers**

# Thank You

We will email you with the On-Demand video for today's webinar.

[www.murata.com](http://www.murata.com)

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