

# “芯”有大“智”，看英飞凌如何使冰箱更智能

Infineon CSS ICW  
JIA Zhiyong



# Infineon is undisputed Leader of the **Home Appliance**



## “Home appliance devices - be smarter!”

- › Infineon is a Top supplier of solutions for air conditioners, Wash machine, refrigerators and other home appliances.
- › HMI, AI/ML, Security and connectivity need to be improved to make home appliances real smart. Infineon products roadmap perfectly match for those requirements.
- › Wireless Leaders and Proven Quality Supplier for wireless connectivity.

## Why can we win?

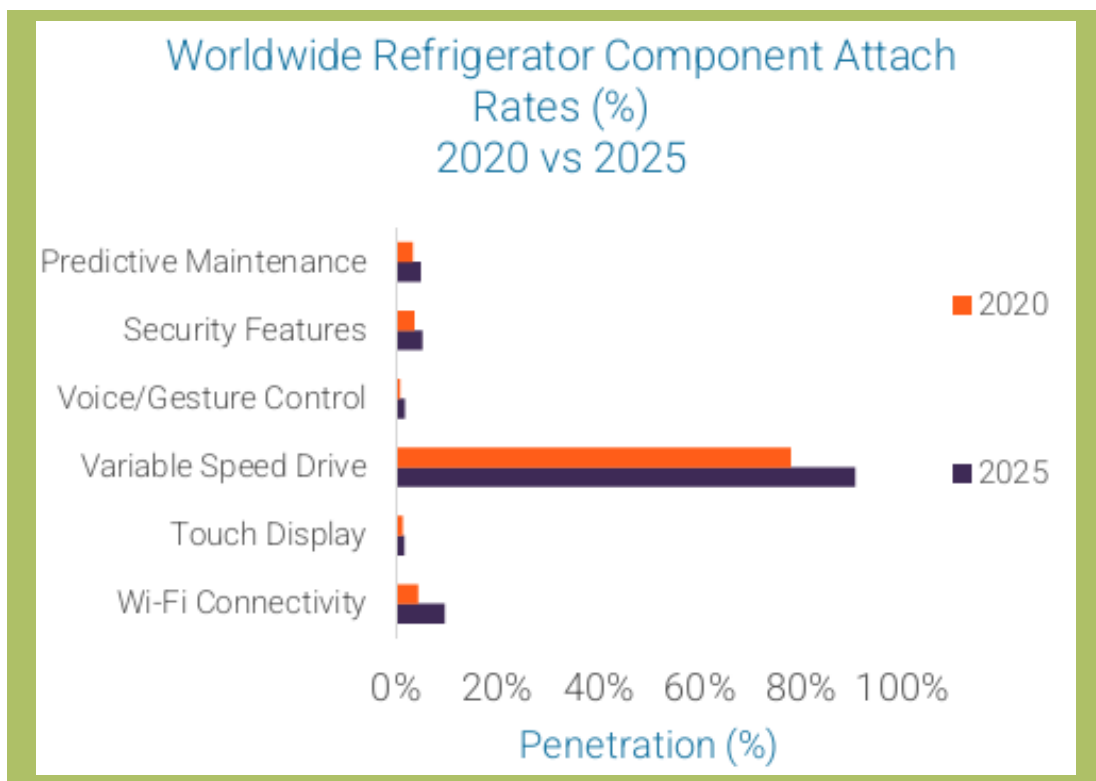


To experience excellent smart home solutions Infineon will ...

- › **...enable new use cases in smart home system control & HMI & connectivity** (e.g. system control & HMI : Capsense & Display 2-in-1, TFT LCD display, etc. BLE mesh & WiFi for devices inter-connectivity.)
- › **...extend Appliance devices smart capability** through more friendly HMI, integrated AI/ML, Cloud connection etc.

# Refrigerator IoT Connectivity Outlook

- › Wi-Fi connectivity in refrigerator is more popular. The number of Wi-Fi connected refrigerator is expected to grow from 9M in 2021, reaching to 19M by 2025, with a CAGR of 20%



Voice Control

Connect with other devices

Roll out new firmware

Get alerts on maintenance

Obtain usage patterns

Get temperature or air quality info

Browse web on door's TFT

Check content (cam) via phone

# Infineon AIROC™ Family Delivers Powerful Wireless Connectivity

## RELIABLE

- More than 1 Billion Wi-Fi devices in the field
- High-performance RF design provides longer range (more than double some competitors) and better interference rejection
- More than 1 Billion events captured from devices in the field to improve reliability
- Continuous improvement of in-field robustness to improve performance, reduce support calls and boost sales



## LOW POWER

- Ultra low power – very low sleep, transmit, and receive current
- High-performance RF ensures the most robust connection, which substantially reduces power consumption
- Continuous improvements to battery life via a unique visibility into real-world power consumption

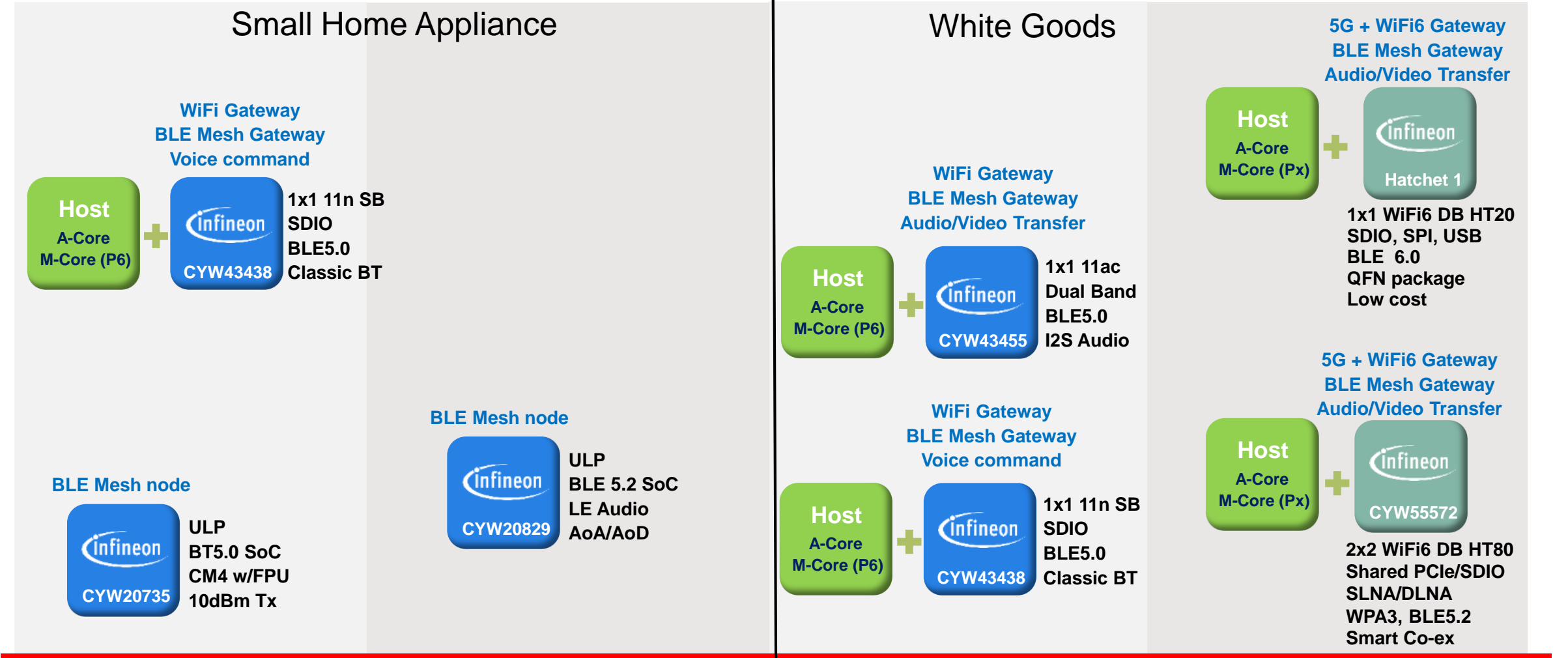


## SECURED

- Most widely vetted Wi-Fi chips on the market, Deep domain knowledge and processes to help partners and customers secure products throughout the lifecycle
- High-performance RF design ensures your device works when needed in increasingly congested environments due to longer range
- Industry's best Coex performance: configuration options per antenna design and system-level use cases



# ICW Connectivity Roadmap for Home Appliances



2020

2020+

2020

2020+



40nm



28nm

# Infineon AIROC can differentiate and benefit refrigerator customer



<b>Good Wi-Fi connectivity requirement for refrigerator</b>	<b>Infineon Wireless solution could provide and support</b>
<p>If you cannot <b><u>connect your IoT device to the AP</u></b>, it is unusable</p>	<p>Field proven <b>compatibility</b> with AP/Gateway Device connects at up to <b>2x the distance</b> Build-in BT will make pairing more easily</p>
<p>Once you are connected, your device should be able to <b><u>communicate efficiently</u></b></p>	<p>Provides up to <b>3x throughput</b> at same distance by high speed interface with host <b>Low latency</b> for run-time interaction</p>
<p>It's great to perform well when you are alone out there. But, IoT requires a device to perform well in a congested spectrum with other devices for good <b><u>network efficiency</u></b></p>	<p><b>8x better spectrum utilization at range</b> – transfers faster and <b>much lower impact on other devices</b></p>
<p>Wi-Fi in an IoT device needs to <b><u>coexist</u></b> with wireless technologies such as Bluetooth</p>	<p><b>90% throughput sustain even</b> in presence of Bluetooth continuous Beacon TX</p>
<p>Product need to support <b><u>OTA upgrade</u></b> potential ability for future maintains and seamless cloud connection</p>	<p>Abundant RAM and separate FW&amp;Driver architecture support online upgrade Local technical team support</p>





Part of your life. Part of tomorrow.

