

WILC6 Wi-Fi 6 + Bluetooth® 6.1 Combo Connectivity Solution

Wi-Fi 6 + Bluetooth® 6.1 Combo Connectivity for the Asia AIoT Edge

CONFIDENTIAL

SALES BRIEFING — TAIWAN · JAPAN · KOREA · SOUTHEAST ASIA · AUSTRALIA/NZ



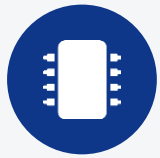
SMART | CONNECTED | SECURE

Microchip Proprietary and Confidential

WSG

September 2026

Agenda



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Product & Technology

Architecture, feature set and product family



02

Sensing, Power & Coexistence

CSI Wi-Fi sensing, Target Wake Time and radio coexistence, explained



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Competitive Analysis

Legacy combo/IoT MCUs and the real Wi-Fi 6 + BT competition



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AI at the Edge

Pairing WILC6 connectivity with the Hailo-15 AI processor



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Applications & Reference Designs

Smart camera, industrial HMI and edge-AI platforms



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Products, Timeline & Next Steps

SKUs, release plan and regional go-to-market

Wi-Fi® 6 Link Controller — Product Overview



Wi-Fi 6 Dual-Band Support

IEEE 802.11ax on 2.4 GHz / 5 GHz with high throughput (> 250 Mbps)



Multi-Protocol IoT Connectivity

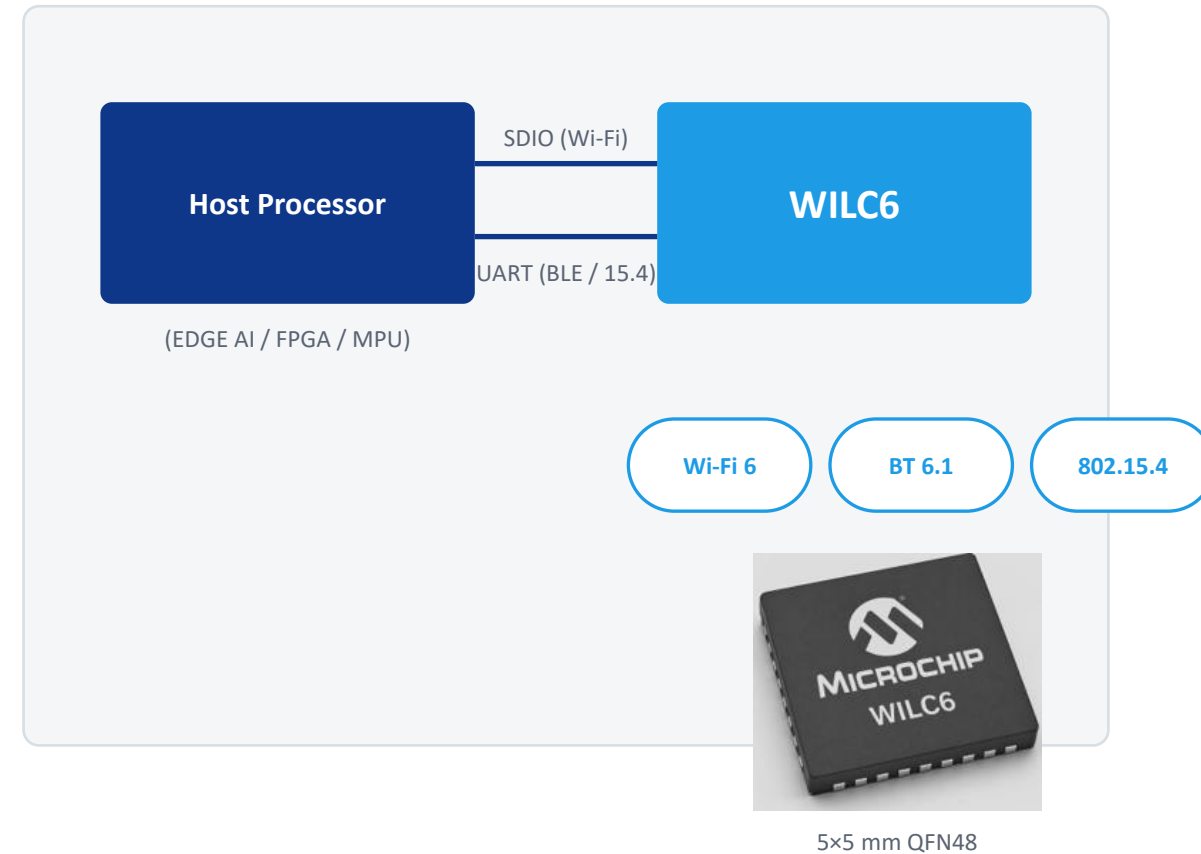
Bluetooth® 6.1, plus IEEE 802.15.4 for Thread and Zigbee



Advanced Coexistence

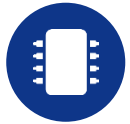
Optimized arbitration between Wi-Fi, Bluetooth and 802.15.4 on one radio

Designed to attach to Linux/Android host platforms — edge-AI processors, FPGAs and MPUs — common across Taiwan/Japan/Korea camera and industrial designs.



WILC6 Feature Set

One combo device: Wi-Fi 6, Bluetooth® 6.1 and IEEE 802.15.4



General

- Compact 5×5 mm QFN48, integrated PMU, MAC, PHY and RF
- Optimized Wi-Fi / Bluetooth / 802.15.4 coexistence
- Single 3.3 V supply, -40°C to +85°C industrial range
- Cost-optimized for embedded designs



Wi-Fi 6

- Dual-band 2.4 / 5 GHz Wi-Fi 6 (802.11ax)
- 80 MHz channels, 1024-QAM, throughput > 250 Mbps
- Low power with Target Wake Time; CSI Wi-Fi sensing
- WPA3 Personal and Enterprise security



Bluetooth® 6.1

- Dual-Mode 5.4 (Classic and LE), qualified to Core 6.1
- Classic (BDR/EDR) and BLE run concurrently over one HS-UART link
- Long-range and high-speed LE, up to +12 dBm Class 1
- Adaptive interference mitigation (AFH) and privacy



IEEE 802.15.4

- 2.4 GHz operation on a shared Wi-Fi / Bluetooth radio
- Thread and Zigbee support, Matter (over Wi-Fi) ready
- Secure mesh, beacon and non-beacon PAN operation
- Coordinator and End Device roles over HS-UART

Microchip Wi-Fi Product Evolution

Feature	WILC3000	WILCS02	WILC6 (Next Gen)
Product Type	Wi-Fi Link Controller	Wi-Fi Link Controller	Combo: Wi-Fi 6 + BT 6.1 + 802.15.4
Wi-Fi Standard & Band	802.11 b/g/n (Wi-Fi 4), 2.4 GHz	802.11 b/g/n (Wi-Fi 4), 2.4 GHz	802.11 a/b/g/n/ac/ax (Wi-Fi 6), 2.4+5 GHz
Bluetooth / 802.15.4	BLE 5 / No	— / No	BT 6.1 (Dual Mode) / Yes (2.4 GHz OQPSK)
Max Throughput	~20–25 Mbps (20 MHz)	~20–25 Mbps (20 MHz)	~250 Mbps (80 MHz)
Wi-Fi Modes & Sensing	STA, softAP · no sensing	STA, softAP · no sensing	Concurrent STA/SoftAP/P2P · CSI sensing
Power & Security	Sleep modes · WPA/WPA2/WPA3	Sleep modes · WPA/WPA2/WPA3	Sleep + TWT · WPA/WPA2/WPA3 Per. & Ent.
Host Interface	SPI / SDIO / UART	SPI / SDIO	SDIO 3.0 or USB 2.0, HS-UART

Why WILC6 — Performance, Security and Power

1



Wi-Fi 6 Performance

Faster data transfer, lower response times and higher network efficiency via dual-band operation and 80 MHz channels.

2



Target Wake Time

Device and access point negotiate scheduled wake windows, so the radio and host can sleep far longer between them — see next page for details.

3



Wi-Fi Sensing (CSI)

Reads reflections in the Wi-Fi signal itself to sense presence and motion with no camera or extra sensor — see next page for details.

4



WPA3 Security

Robust protection and the highest level of data security available over a Wi-Fi connection, for Personal and Enterprise networks alike.

Applications: surveillance cameras · video streaming devices · home entertainment hubs · drones and AMRs · connected factory panels · AI battery-powered doorbells · body cameras · handheld industrial scanners

Wi-Fi Sensing (CSI) — Turning the Radio Into a Sensor

Channel State Information (CSI): how the Wi-Fi signal itself becomes a presence and motion sensor

How It Works

- 1** Every Wi-Fi packet's amplitude and phase are subtly altered as radio waves reflect off people, furniture and motion in the space.
- 2** WILC6 continuously extracts this Channel State Information (CSI) from the existing Wi-Fi link — no extra antenna, sensor or bill-of-materials cost.
- 3** The host processor analyzes CSI patterns over time to recognize presence, motion, and simple gestures — even through walls, furniture and in complete darkness.

Where It's Used



Smart cameras & doorbells

Detect a person approaching before waking the camera/video pipeline — saving power on battery-powered designs.



Occupancy for smart building

Room-level presence for HVAC and lighting control, without a dedicated PIR or mmWave sensor.

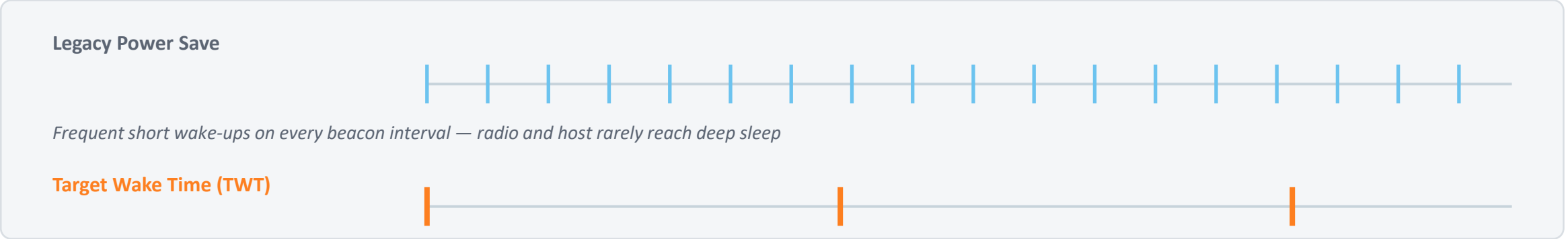


Security when the camera is asleep

Sense motion/intrusion using the Wi-Fi link alone, complementing or replacing a separate motion sensor.

Target Wake Time — Wi-Fi 6 Power Efficiency, Explained

Scheduled wake windows let WILC6 and the host sleep far longer between transmissions



Negotiated wake windows

The device and access point agree on exact times to communicate — not a fixed, frequent beacon-listen interval.



Longer, deeper sleep

Between negotiated windows, WILC6 and the host MPU can drop into deep sleep, only waking when there is real data to send or receive.



Latency vs. power, by design

Individual and broadcast TWT let designers tune the wake schedule per application — a battery doorbell vs. an always-on gateway need very different tradeoffs.



Real-world benefit

Extends battery life in battery-powered cameras and sensors, and cuts standby power draw for mains-powered gateways and HMIs on dense Wi-Fi networks.

Advanced Coexistence — One Radio, Three Protocols

Wi-Fi, Bluetooth® and 802.15.4 share a single 2.4 GHz front-end, arbitrated in hardware and firmware



Time-critical links protected

A Zigbee/Thread control command or a Bluetooth link is protected from long Wi-Fi bursts, and vice versa — avoiding dropped packets on either side.



No bolted-on second radio

Many competing designs pair Wi-Fi with a separate, uncoordinated Bluetooth/802.15.4 chip, causing interference, retries and higher power draw. WILC6 arbitrates all three in one device.



Built for dense environments

Industrial HMI panels, smart-home hubs and gateways where Wi-Fi, BLE commissioning and a Zigbee/Thread mesh must all run reliably at the same time.

Two Fronts. One Winner.



Legacy Combo & IoT MCUs

Nordic nRF700x · Silicon Labs SiWx917 · Espressif ESP32-C5/C6

Single-band or 20 MHz-only Wi-Fi 6, limited or bolted-on Bluetooth, built as standalone IoT endpoints rather than a link controller for a host SoC.



Real Wi-Fi 6 + BT Combos

NXP IW612/611/610 · TI CC3350/3351 · Infineon CYW55571

True dual-band competitors — but larger packages, higher cost per unit, and fragmented IC/module/support ownership.

WILC6 wins on both fronts — wider bandwidth, richer protocol integration and a lower total cost.

Technical Advantage vs. Nordic, Silicon Labs, Espressif

WILC6	Nordic	Silicon Labs	Espressif
<i>Combo Link Controller</i>	<i>nRF7001/7002 — Wi-Fi companion IC</i>	<i>SiWx917 — companion + wireless MCU</i>	<i>ESP32-C6/C5 — integrated wireless MCU</i>
BAND	BAND	BAND	BAND
2.4 / 5 GHz — dual-band	7001: 2.4 GHz · 7002: dual	917 companion: 2.4 GHz	C6: 2.4 GHz · C5: dual
11AX WIDTH	11AX WIDTH	11AX WIDTH	11AX WIDTH
Up to 80 MHz	20 MHz only	20 MHz only	20 MHz only
RADIO	INTEGRATION	INTEGRATION	INTEGRATION
Wi-Fi 6 + Bluetooth® combo	No integrated Bluetooth	SiWG917 adds M4F + memory	Wi-Fi + BLE + 15.4 + CPU
HOST LINK	SYSTEM	SYSTEM	SYSTEM
SDIO 3.0	Separate host / wireless MCU	Self-contained IoT endpoint	Standalone IoT endpoint
SYSTEM FIT			
Edge AI / MPU / FPGA host			

Why WILC6 wins: 80 MHz Wi-Fi 6 dual-band + Bluetooth® integration, and SDIO 3.0 host attachment better aligned for video, imaging and edge-AI platforms.

Real Competition: NXP, TI and Infineon

	WILC6	IW612/611/610 (NXP)	CC3350/3351 (TI)	CYW55571 (Infineon)
Wi-Fi Spec & Bandwidth	Wi-Fi 6 1x1, Dual Band 2.4/5 GHz 20/40/80 MHz	Wi-Fi 6 1x1, Dual Band 2.4/5 GHz 20/40/80 MHz	Wi-Fi 6 1x1, Dual Band 2.4/5 GHz 20 MHz only	Wi-Fi 6/6E 1x1, Tri Band 2.4/5/6 GHz 20/40/80 MHz
Wi-Fi Interface	4-bit SDIO 3.0 @208 MHz + USB	4-bit SDIO 3.0 @208 MHz	SDIO, max 52 MHz	4-bit SDIO 3.0 @208 MHz + PCIe
Bluetooth	Dual Mode Classic + BLE 6.1	Dual Mode Classic + BLE 5.4	BLE 5.4	Dual Mode Classic + BLE 6.0
802.15.4 / Thread / Zigbee	Yes (Future)	Yes	—	—
OS Support	Linux, Android & RTOS (Future)	Android, Linux, RTOS	Android, Linux, RTOS	Android, Linux
Package & Price	QFN48 5x5 mm · ~\$2.15 @1k EAU	HVQFN116 9x9 · \$7.40 @1k EAU	VQFN40 5x5 mm · \$2.22 @1k EAU	FCFBGA-289 · \$8.96 @5k EAU
Module & Support	LGA 13x12 · 1-Stop Shop	Module makers only · Selective	LGA-65 11x11 · Selective	Module makers only · Selective

Why we win: Wi-Fi 6 + BLE 6.1 and 802.15.4 in a QFN48 5x5, at ~\$2.15 (1k EAU) — about 1/3 the price of NXP and Infineon.

Why We Win



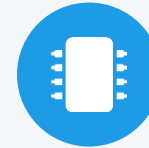
~1/3

the price of NXP / Infineon combo ICs (~\$2.15 vs. \$7-\$9 @ 1k-5k EAU)



4x

wider Wi-Fi channel than TI CC3350 (80 MHz vs. 20 MHz)



5x5mm

QFN48 — smallest combo package with integrated Bluetooth® and 802.15.4



1-Stop Shop

IC, certified module and M.2 card, all from one supplier with unified support

Right Ring, Right Rivals, Right Reasons, Right Time

WILC6 targets first Linux-MPU, high-throughput designs and existing Microchip WILC/MPU customers across Taiwan, Japan and Korea — leading discussions on performance and value against NXP, TI and Infineon, backed by a non-China supply chain and long product longevity.

Target Applications for Taiwan, Japan and Korea



Security, Video & Edge AI

AI cameras, doorbells, intercoms · smart authentication
· edge video streaming

*Strongest fit: Taiwan's IP-camera and security
ODM/OEM base*



Industrial & Robotics

Factory HMI panels and controllers · robotics, AGVs,
machine vision · industrial gateways

Strongest fit: Japan automation · Korea robotics OEMs



Medical & Healthcare

Portable imaging and diagnostics · continuous patient
monitoring · connected lab instruments

Strongest fit: Japan medical-device manufacturers



Smart Home

Smart appliances and gateways · energy management
(HVAC) · Bluetooth-connected wearables

Strongest fit: Korea & Japan consumer electronics

Why Pair WILC6 with Hailo-15

- Hailo-15 delivers local, real-time AI inference — object/person detection, analytics and video enhancement — entirely at the edge.
- WILC6 delivers the dual-band Wi-Fi 6 + Bluetooth® 6.1 link that streams video, carries AI metadata and enables provisioning and OTA control.
- Together they form the connectivity + compute pairing device makers need for next-gen smart cameras, robots and industrial vision systems — with Foxconn and Socionext already partnering with Hailo on edge-AI video platforms built in Taiwan's supply chain.



Concept: Hailo-15H (AI inference) + WILC6 (Wi-Fi 6 / BT 6.1) in a single smart-camera design

Hailo-15 AI Vision Processor — Platform Overview

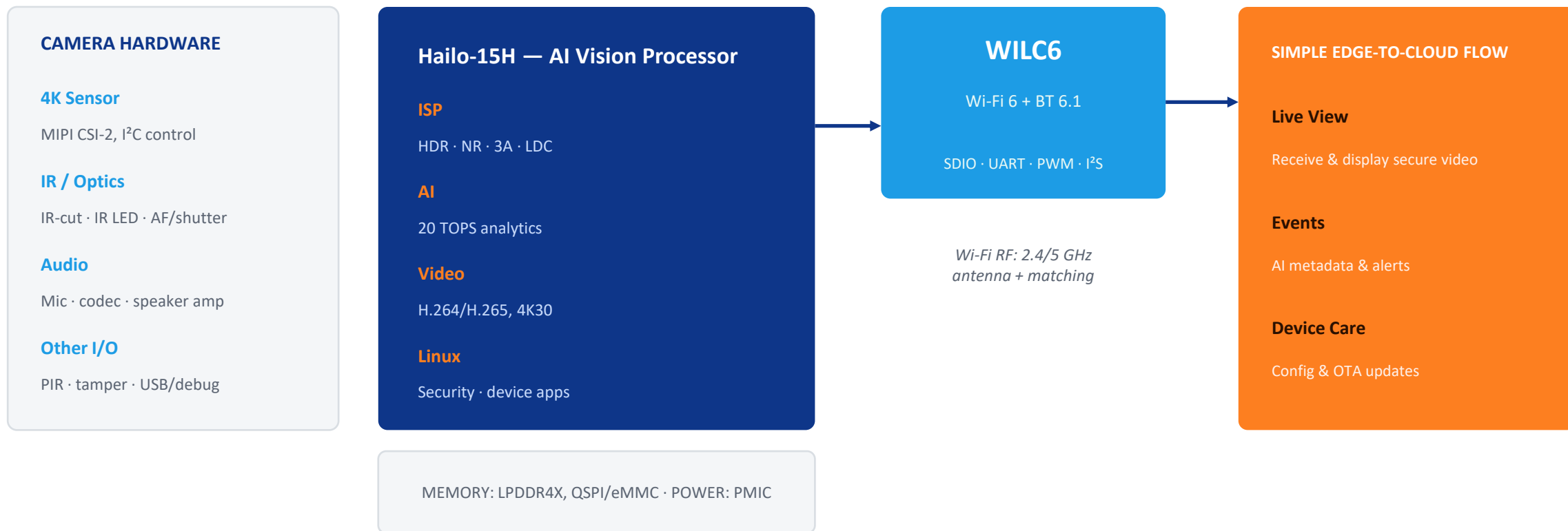
AI processors purpose-built for edge inference — the compute half of the WILC6 pairing

Specification	Hailo-15H	Hailo-15L
NN Core (AI Performance)	20 TOPS (8-bit) · up to 32 TOPS (4-bit)	7 TOPS (8-bit) · up to 11 TOPS (4-bit)
Vector DSP	256 MACs @ 700 MHz, up to 350 GOPS	256 MACs @ 750 MHz, up to 380 GOPS
ISP / Video In	Up to 4K30, dual MIPI CSI, HDR, LDC	Up to 5MP dual-stream, MIPI CSI
Video Encoding	H.265/H.264 up to 4K45, multi-stream	H.265/H.264 up to 4K60, multi-stream
Application Processor	Quad-core Arm® A53 @ 1.3 GHz, 12k DMIPS	Quad-core Arm® A53 @ 1.1 GHz, 10.1k DMIPS
Host / Data Interfaces	PCIe Gen3 x4, USB 3.1 Gen2, GbE	PCIe Gen3 x2, USB 2.0, GbE
Package	FCCSP 15×15 mm	FCCSP 13×13 mm

Hailo-15H targets the highest-performance camera and robotics designs; Hailo-15L fits cost-sensitive dual-stream cameras — both pair directly with WILC6 over SDIO / USB.

Reference Design: Hailo-15H + WILC6 Smart Camera

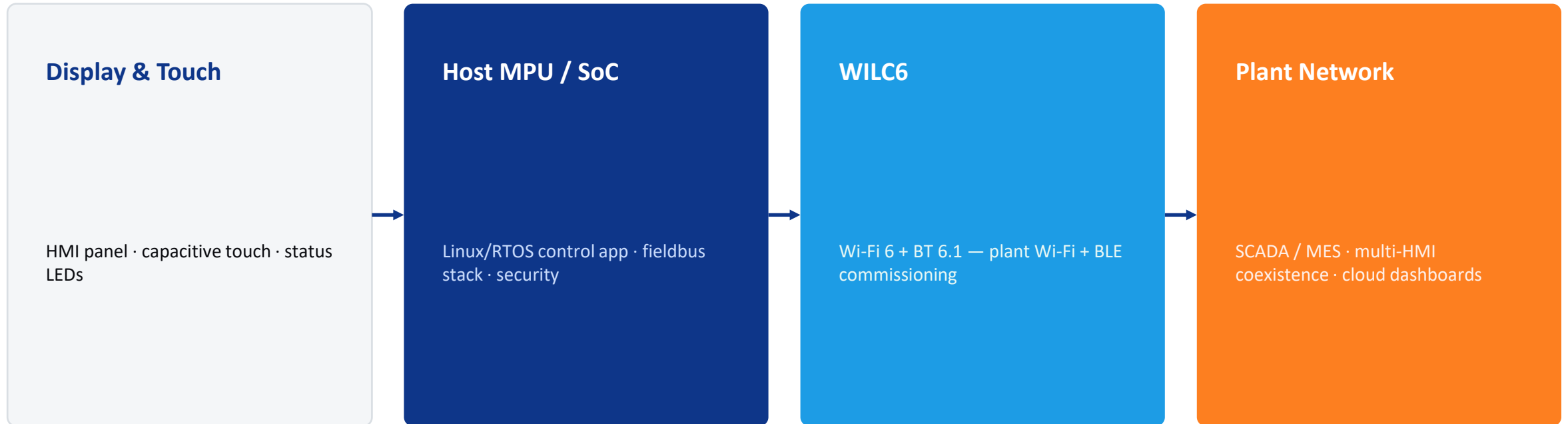
System-level block diagram



Hailo processes video and AI locally at the edge — WILC6 provides the dual-band wireless link for streaming, control and OTA updates.

Reference Design: Industrial HMI / Edge-AI Panel

Total system solution — display, control and wireless in one platform



Wi-Fi 6 is particularly valuable on the plant floor, where multiple HMIs and devices must operate reliably in dense, high-interference industrial environments — a common requirement across Japan and Korea factory automation programs.

WILC6 Products — SoC, Module and M.2 Card



WILC6S101IC

TYPE

SoC

DESCRIPTION

SDIO IC

TEMP RANGE

–40°C to +85°C

PACKAGE

5×5 mm QFN48



WILC6S101RE

TYPE

Module

DESCRIPTION

SDIO, single-antenna RF pin-out

TEMP RANGE

–40°C to +85°C

PACKAGE

13×12 mm LGA



WILC6 M.2 Card

TYPE

M.2 Key E

DESCRIPTION

SDIO, single-antenna u.FL connector

TEMP RANGE

–40°C to +85°C

PACKAGE

22×30 mm

Note: IEEE 802.15.4 software support is enabled through a separate future release.

Release Timeline

Late CQ4'26

Internal Evaluation

Internal evaluation and engineering samples

End CQ2'27

Production Release (RTP)

Full production release to trade

CQ1'27

Early Adopter

IC and Module samples · M.2 evaluation board · host demos: SAMA7D65 + WILC6 M.2, Hailo-15 platform + WILC6 M.2

Silicon development: DONE · Data brief: NOW · Qualify opportunities: NOW

Go-to-Market: APAC Trade Show Calendar

Regional engagement across Taiwan, Japan, Korea, Southeast Asia and Australia/New Zealand, timed to the release plan

JAPAN

CEATEC 2026
Oct 13–16, 2026 · Makuhari Messe, Chiba

Introduce WILC6 during Internal Evaluation — engage industrial and smart-home customers

KOREA

SEMICON Korea 2027
Feb 17–19, 2027 · COEX, Seoul

Early Adopter samples in hand — engage robotics, security and semiconductor ecosystem

TAIWAN

Computex Taipei 2027
Jun 1–4, 2027 · Taipei

Align with Production Release (RTP) — showcase with ODM/OEM camera and AI edge partners

SOUTHEAST ASIA

SEMICON Southeast Asia 2027
May 25–27, 2027 · MITEC, Kuala Lumpur

Reach SEA's semiconductor supply chain — engage EMS/ODM manufacturers and fab/packaging partners

AUSTRALIA / NZ

Electronex 2027
May 12–13, 2027 · MCEC, Melbourne

Connect with ANZ distributors and robotics/mining-tech OEMs evaluating Wi-Fi 6 designs

Customer engagement priorities

Existing WILC/MPU customers everywhere for fastest design-in · Taiwan IP-camera ODMs/OEMs · Japan/Korea industrial & robotics OEMs · Southeast Asia EMS/ODM and fab supply-chain partners · Australia/NZ robotics and mining-tech integrators

Key Takeaways



Right Ring

WILC6 targets first Linux-MPU, high-throughput designs — plus existing Microchip WILC/MPU customers across Taiwan, Japan and Korea.



Right Rivals

NXP, TI and Infineon. Lead discussions on performance — our 80 MHz Wi-Fi 6 + BT 6.1 pricing is highly competitive at ~1/3 their cost.



Right Reasons

System performance and value, a 1-stop shop (IC / Module / Support), long product longevity, and a non-China supply chain.



Right Time

Silicon development done. Data brief available now. Early Adopter CQ1'27. Production release end CQ2'27. Qualify opportunities now.

Thank You

WILC6 — Wi-Fi 6 + Bluetooth® 6.1 Combo Connectivity for the Asia AIoT Edge

Let's qualify your opportunity today

