RN00174

NXP Wireless SoC Features and Release Notes for FreeRTOS

Rev. 9 — 4 July 2024 **Release notes**

Document information

Information	Content
Keywords	SD-Wi-Fi-UART-BT-FP91-88W8987, SD-Wi-Fi-UART-BT-FP91-IW416, SD-Wi-Fi-UART-BT-15.4-FP99-IW612, SD-Wi-Fi-UART-BT-FP99-IW611, SD-Wi-Fi-UART-BT-FP99-AW611, RW610, RW612, SD-Wi-Fi-FP91-88W8801
Abstract	FreeRTOS release notes for NXP wireless SoCs

1 About this document

This document provides information about the supported features, release versions, fixed and/or known issues, performance of the Wi-Fi, Bluetooth/802.15.4 radios, including the coexistence.

The SDK release version 2.16.0 has been tested for the wireless SoCs listed in Section 1.1.

1.1 Supported products

- 88W8987
- IW416
- IW611[1]
- IW612[2]
- AW611[3]
- RW610
- RW612
- 88W8801

1 The support of IW611 is enabled in i.MX RT1170 EVKB and i.MX RT1060 EVKC.
2 The support of IW612 is enabled in i.MX RT1170 EVKB and i.MX RT1060 EVKC.
3 AW611 module support is available only in i.MX RT1180 EVKA and SDK version 2.16.0.

2 Features

2.1 Wi-Fi radio

2.1.1 Client mode

Table 1. Features for the Wi-Fi radio and client mode

Features	Sub features	SDIO-UART					SDIO
		88W8987	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11n - High throughput	2.4 GHz band operation supported channel bandwidth: 20 MHz	Y	Y	Y	Y	Y	Y
	2.4 GHz band supported channel bandwidth: 40 MHz	Y	Y	Y	N	Y	N
	5 GHz band supported channel bandwidth: 20 MHz	Y	Y	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 40 MHz	Y	Y	Y	N	Y	N
	Short/long guard interval (400 ns/800 ns)	Y	Y	Y	Y	Y	Y
	11n data rates – Up to 72 Mbit/s (MCS 0 to MCS 7)	Y	Y	Y	Y	Y	Y
	11n data rates – Up to 150 Mbit/s (MCS 0 to MCS 7)	Y	Y	Y	N	Y	N
	1 spatial stream (1x1)	Y	Y	Y	Y	Y	Y
	HT protection mechanisms	Y	Y	Y	Y	Y	Y
	Aggregated MAC protocol data unit (AMPDU) RX support	Y	Y	Y	Y	Y	Y
	Aggregated MAC service data unit (AMSDU) -4k RX support	Y	Y	Y	Y	Y	Y
	TX MCS rate adaptation (BGN)	Y	Y	Y	Y	Y	Y
	RX low density parity check (LDPC)	Y	N	Y	N	Y	N

Table 1. Features for the Wi-Fi radio and client mode*...continued*

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11 ac - Very high throughput	2.4 GHz band supported channel bandwidth: 20MHz	Y	N	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 20 MHz	Y	N	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 40 MHz	Y	N	Y	N	Y	N
	5 GHz band supported channel bandwidth: 80 MHz	Y	N	Y	N	Y	N
	11ac Data rates - Up to 86.7 Mbps (MCS0 to MCS 8)	Y	N	Y	Y	Y	N
	11ac data rates - Up to 433.3 Mbps (MCS 0 to MCS 9) - 1x1	Y	N	Y	N	Y	N
	MU-MIMO Beamformee (Explicit and Implicit)	Y	N	Y	Y	Y	N
	RTS/CTS with BW signaling	Y	N	N	N	N	N
	Operation mode notification	Y	N	Y	N	Y	N
	Backward compatibility with non-VHT devices	Y	N	Y	Y	Y	N
	TX VHT MCS rate adaptation	Y	N	Y	Y	Y	N
802.11ax - High efficiency	2.4 GHz band supported channel bandwidth: 20MHz	N	N	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 20 MHz	N	N	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 40 MHz	N	N	Y	N	Y	N
	5 GHz band supported channel bandwidths: 80 MHz	N	N	Y	N	Y	N
	OFDMA (UL/DL, 106 RU)	N	N	Y	Y	Y	N
	OFDMA (UL/DL, 484 RU)	N	N	Y	N	Y	N
	1024 QAM	N	N	Y	N	Y	N
	Target wake time (TWT)	N	N	Y	Y	Y	N
802.11ax - High efficiency	DCM	N	N	Y	Y	Y	N
	ER (extended range)	N	N	Y	Y	Y	N
	SU Beamforming	N	N	Y	Y	Y	N
	OMI (operating mode indication)	N	N	Y	Y	Y	N

Table 1. Features for the Wi-Fi radio and client mode*...continued*

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11 a/b/g features	11 b/g data rates - Up to 54 Mbit/s	Y	Y	Y	Y	Y	Y
	11 a data rates - Up to 54 Mbit/s	Y	Y	Y	Y	Y	N
	Tx rate adaptation (BG)	Y	Y	Y	Y	Y	Y
	Fragmentation/defragmentation	Y	Y	Y	Y	Y	Y
	ERP protection, slot time, preamble	Y	Y	Y	Y	Y	Y
802.11d	802.11d - Regulatory domain/operating class/country info	Y	Y	Y	Y	Y	Y
802.11e QoS	EDCA [enhanced distributed channel access] / WMM (wireless multi-media)	Y	Y	Y	Y	Y	Y
802.11i security	Open security	Y	Y	Y	Y	Y	Y
	WPA2-PSK security (AES-CCMP encryption)	Y	Y	Y	Y	Y	Y
	WPA2-PSK security (AES-CCMP encryption) (host-based)	Y	Y	Y	Y	Y	Y
	WPA + WPA2 mixed mode	Y	Y	Y	Y	Y	Y
	WPA + WPA2 mixed mode (host-based)	Y	Y	Y	Y	Y	Y
	WPA2+WPA3 PSK mixed mode (WPA3 transition mode) (host-based)	Y	Y	Y	Y	Y	Y
	WPA3 SAE (R3)	Y	Y	Y	Y	Y	Y
	WPA3 SAE (R3) (host-based)	Y	Y	Y	Y	Y	Y
	WPA2 enterprise support (Host based - TLS, TTLS, PEAP v0, PEAP v1, SIM,AKA, AKA-Prime, and FAST)[4]	Y	Y	Y	Y[1]	Y	Y
	WPA3 enterprise support (Host based - TLS, TTLS, PEAP v0, PEAP v1, SIM,AKA, AKA-Prime, and FAST) with SUITE B and SUITE B 192 [4]	Y	Y	Y	Y[1]	Y	N
	WPS (host-based)	Y	Y	Y	Y	Y	N
	OWE (host-based)	Y	Y	Y	N	Y	N
Power save mode	Deep sleep	Y	Y	Y	Y	Y	Y
	IEEE power save	Y	Y	Y	Y	Y	Y
	Host Ssleep/WoWLAN	Y	Y	Y	Y	Y	N
	U-APSD	N	N	N	Y	N	N

Table 1. Features for the Wi-Fi radio and client mode*...continued*

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11w - PMF (protected management frames)	PMF require and capable	Y	Y	Y	Y	Y	Y
	Unicast management frames - Encryption/decryption - using CCMP	Y	Y	Y	Y	Y	Y
	Broadcast management frames - Encryption/decryption - using BIP	Y	Y	Y	Y	Y	Y
	SA query request/response	Y	Y	Y	Y	Y	Y
	PMF support using embedded supplicant	Y	Y	Y	Y	Y	Y
DPP functionality	Wi-Fi easy connect[4]	N	N	Y	N	Y	N
General features	Embedded supplicant	Y	Y	Y	Y	Y	Y
	Host sleep packet filtering	N	N	Y	Y	Y	N
	Host-based supplicant	Y	Y	Y	Y	Y	Y
	Embedded MLME	Y	Y	Y	Y	Y	Y
	EDMAC - EU adaptivity support (ETSI certification)	Y	Y	Y	Y	Y	Y
	External coexistence	N	N	N	N	N	Y
	IPv6 NS offload	Y	Y	Y	Y	Y	Y
	FIPS	Y	Y	Y	N	Y	N
	TKIP[2]	Y	Y	Y	N	Y	Y
	RF test mode	Y	Y	Y	Y	Y	Y
	802.11k	Y	Y	Y	Y	Y	N
	802.11v	Y	Y	Y	Y	Y	N
	802.11r	Y	Y	Y[3]	Y	Y[3]	N
	DFS radar detection in slave mode (follow AP)	Y	Y	Y	Y	Y	N
	Embedded roaming based on RSSI threshold beacon loss	N	N	Y	Y	Y	N
	ARP offload	N	N	Y	Y	Y	N
	Cloud keep alive	Y	Y	Y	Y	Y	N
	UNII-4 channel support	N	N	Y	Y	Y	N
	ClockSync using TSF	N	N	Y	Y	Y	N
	Auto reconnect	Y	Y	N	N	N	N
	CSI (channel state information) [4]	Y	N	Y	Y	Y	N
	Independent reset (in-band)[4]	Y	Y	Y	Y	Y	N
	Independent reset (out-band)[4]	Y	Y	Y	N	Y	N
	Wi-Fi agile multiband	N	N	Y	Y	Y	N
	Network co-processor (NCP) mode	N	N	N	Y	N	N

[1] Supported enterprise security options: TLS, TTLS, PEAP v0, PEAP v1
[2] As per Wi-Fi specification, connecting in TKIP security in non 802.11n mode is allowed.
[3] Support available in host-base supplicant
[4] Feature not enabled by default in the SDK. Refer to Section 3 for the macro to enable the feature and the impact on the memory when enabling the feature.

2.1.2 AP mode

Table 2. Features for the Wi-Fi radio and AP mode

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11n - High throughput	2.4 GHz band operation supported channel bandwidth: 20 MHz	Y	Y	Y	Y	Y	Y
	2.4 GHz band supported channel bandwidth: 40 MHz	Y	Y	Y	N	Y	N
	5 GHz band supported channel bandwidth: 20 MHz	Y	Y	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 40 MHz	Y	Y	Y	N	Y	N
	Short/long guard interval (400 ns/800 ns)	Y	Y	Y	Y	Y	Y
	11n data rates – Up to 72 Mbit/s (MCS 0 to MCS 7)	Y	Y	Y	Y	Y	Y
	11n data rates – Up to 150 Mbit/s (MCS 0 to MCS 7)	Y	Y	Y	N	Y	N
	1 spatial stream (1x1)	Y	Y	Y	Y	Y	Y
	HT protection mechanisms	Y	Y	Y	Y	Y	Y
	Aggregated MAC protocol data unit (AMPDU) Rx support	Y	Y	Y	Y	Y	Y
802.11n - High throughput	Aggregated MAC service data unit (AMSDU) -4k RX support	Y	Y	Y	N	Y	Y
	Max client support (up to 8 devices)	Y	Y	Y	Y	Y	Y
	TX MCS rate adaptation (BGN)	Y	Y	Y	Y	Y	Y
	RX low density parity check (LDPC)	Y	N	Y	N	Y	N

Table 2. Features for the Wi-Fi radio and AP mode*...continued*

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11ac – Very high throughput	5 GHz band supported channel bandwidth: 20 MHz	Y	N	Y	Y	Y	N
	5 GHz band supported channel bandwidth: 40 MHz	Y	N	Y	N	Y	N
	5 GHz band supported channel bandwidth: 80MHz	Y	N	Y	N	Y	N
	Short/long guard interval (400ns/800ns)	Y	N	Y	Y	Y	N
	802.11ac Data rates - Up to 86.7 Mbps (MCS0 to MCS 8)	Y	N	Y	Y	Y	N
	802.11ac Data rates – Up to 433.3 Mbps (MCS 0 to MCS 9)	Y	N	Y	N	Y	N
	802.11ac Data rates - Up to 866.7 Mbps (MCS 0 to MCS 9)	Y	N	Y	N	Y	N
	Single user- Aggregated MAC protocol data unit (SU-AMPDU) aggregation	Y	N	Y	Y	Y	N
	RTS/CTS with BW signaling	Y	N	N	Y	N	N
	Backward compatibility with non-VHT devices	Y	N	Y	Y	Y	N
	TX VHT MCS rate adaptation	Y	N	N	Y	N	N
	MU-MIMO Beamformee (explicit and implicit)	Y	N	Y	Y	Y	N
	Operation mode notification	Y	N	Y	N	Y	N
802.11ax – High efficiency	2.4 GHz band operation (20 MHz channel bandwidth)	N	N	Y	Y	Y	N
	2.4 GHz band operation (40 MHz channel bandwidth)	N	N	Y	N	Y	N
	5 GHz band operation (20MHz channel bandwidth)	N	N	Y	Y	Y	N
	5 GHz band operation (40MHz channel bandwidth)	N	N	Y	N	Y	N
	5 GHz band operation (80 MHz channel bandwidth)	N	N	Y	N	Y	N
802.11d	802.11d - Regulatory domain/operating class/country info	Y	Y	Y	Y	Y	Y
802.11e -QoS	EDCA [enhanced distributed channel access] / WMM (wireless multi-media)	Y	Y	Y	Y	Y	Y

Table 2. Features for the Wi-Fi radio and AP mode*...continued*

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
802.11i - security	Open security	Y	Y	Y	Y	Y	Y
	WPA2-PSK security (AES-CCMP encryption)	Y	Y	Y	Y	Y	Y
	WPA2 + WPA3 (SAE) mixed mode	Y	Y	Y	Y	Y	Y
	WPA3 SAE (R1)	Y	Y	Y	Y	Y	Y
	WPA3 SAE (R3)	Y	Y	Y	Y	Y	N
	WPA3 SAE (R3) (host-based)	Y	Y	Y	Y	Y	Y
	WPA2+WPA3 PSK Mixed Mode (WPA3 Transition Mode) (host-based)	Y	Y	Y	Y	Y	Y
	WPA2 Enterprise support (Host based - TLS, TTLS, PEAP v0, PEAP v1)[1]	Y	Y	Y	Y[2]	Y	Y
	WPA3 enterprise support (Host based - TLS, TTLS, PEAP v0, PEAP v1) with SUITE B and SUITE B 192[1]	Y	Y[3]	Y	Y	Y	N
	WPA3 suite B (host-based)	Y	Y	Y	Y	Y	N
	WPS (host-based)	Y	Y	Y	Y	Y	N
	OWE (host-based)	Y	Y	Y	N	Y	N
802.11y	Extended channel switch announcement (ECSA)	Y	Y	Y	Y	Y	Y
802.11w - protected management frames (PMF)	PMF require and capable	Y	Y	Y	Y	Y	Y
	Unicast management frames - Encryption/decryption - using CCMP	Y	Y	Y	Y	Y	Y
	Broadcast management frames - encryption/decryption - using BIP	Y	Y	Y	Y	Y	Y
	SA query request/response	Y	Y	Y	Y	Y	Y
General features	Embedded authenticator	Y	Y	Y	Y	Y	Y
	Embedded MLME	Y	Y	Y	Y	Y	Y
	EU adaptivity support	Y	Y	Y	Y	Y	Y
	Automatic channel selection (ACS)	Y	Y	Y	Y	Y	Y
	External coexistence (software interface)	N	N	N	N	N	Y
	STBC RX	Y	N	N	N	N	N
	Independent reset (in-band)[1]	Y	Y	Y	Y	Y	N
	Network co-processor (NCP) mode	N	N	N	Y	N	N

[1] Feature not enabled by default in the SDK. Refer to Section 3 for the macro to enable the feature and the impact on the memory when enabling the feature.
[2] Supported enterprise security options: TLS, TTLS, PEAP v0, and PEAP v1.
[3] SUITE B and SUITE B 192 not supported

2.1.3 AP-STA mode

Table 3. Features for the Wi-Fi radio and STA-AP mode

Features	Sub features	SDIO-UART					SDIO
		88W898	IW416	IW611/ IW612	RW610/ RW612	AW611	88W8801
Simultaneous AP-STA operation (same channel)	AP-STA functionality	Y	Y	Y	Y	Y	Y
SAD	Software antenna diversity	Y	Y	Y	Y	Y	Y
Generic	Firmware download (parallel)[1]	Y	Y	Y	N	Y	N

[1] Feature not enabled by default in the SDK. Refer to Section 3 for the macro to enable the feature and the impact on the memory when enabling the feature.

2.2 Bluetooth radio

2.2.1 Bluetooth classic

Table 4. Features for Bluetooth radio

Feature	Sub feature	SDIO-UART				
		88W8987	IW416	IW611/IW612	RW610/ RW612	AW611
General features	Bluetooth Class 1.5 and Class 2 support	Y	Y	Y	N	Y
	Scatternet support	Y	Y	Y	N	Y
	Maximum of seven simultaneous ACL connections	Y	Y	Y	N	Y
	Automatic packet type selection	Y	Y	Y	N	Y
	Bluetooth - 2.1 to 5.0 specification support	Y	Y	Y	N	Y
	Low power sniff	Y	Y	Y	N	Y
	Deep sleep using out-of-band	Y	Y	N	N	N
	Wake on Bluetooth (SoC to host)	Y	N	N	N	N
	Independent reset (in-band)[1]	Y	Y	Y	N	Y
	Independent reset (out-band)[1]	Y	Y	Y	N	Y
	Firmware download (parallel)[1]	Y	Y	Y	N	Y
	RF test mode	Y	Y	Y	N	Y
Bluetooth packet type supported	ACL (DM1, DH1, DM3, DH3, DM5, DH5, 2-DH1, 2-DH3, 2-DH5, 3-DH1, 3-DH3, 3-DH5)	Y	Y	Y	N	Y
	SCO (HV1, HV3)	Y	Y	Y	N	Y
	eSCO (EV3, EV4, EV5, 2EV3, 3EV3, 2EV5, 3EV5)	Y	Y	Y	N	Y
Bluetooth profiles supported	A2DP source/sink	Y	Y	Y	N	Y
	AVRCP target/controller	Y	Y	Y	N	Y
	HFP Dev/AG	Y	Y	Y	N	Y
	OPP server/client	Y	Y	Y	N	Y
	SPP server/client	Y	Y	Y	N	Y
	HID target/device	Y	Y	Y	N	Y
Bluetooth audio features	PCM NBS central/peripheral	Y	Y	Y	N	Y
	PCM WBS central/peripheral	Y	Y	Y	N	Y

[1] Experimental feature intended for evaluation/early development only and not production. Incomplete mandatory certification.

2.2.2 Bluetooth LE

Table 5. Features for Bluetooth LE radio

Features	Sub features	SDIO-UART				
		88W8987	IW416	IW611/IW612	RW610/ RW612	AW611
Generic features	Maximum 16 Bluetooth LE connections (central role)	Y	Y	Y	Y	Y
	Deep sleep using out-of-band	Y	Y	N	N	N
	Wake on Bluetooth LE (SoC to Host)	Y	Y	Y	N	Y
	RF Test mode	Y	Y	Y	Y	Y
Bluetooth profile support	Bluetooth LE GATT	Y	Y	Y	Y	Y
	Bluetooth LE HID over GATT	Y	Y	Y	Y	Y
	Bluetooth LE GAP	Y	Y	Y	Y	Y
Bluetooth LE 4.0 support	Low Energy physical layer	Y	Y	Y	Y	Y
	Low Energy link layer	Y	Y	Y	Y	Y
	Enhancements to HCI for Low Energy	Y	Y	Y	Y	Y
	Low energy direct test mode	Y	Y	Y	Y	Y
Bluetooth 4.1 support	Low duty cycle directed advertising	Y	Y	Y	Y	Y
	Bluetooth LE dual mode topology	Y	Y	Y	Y	Y
	Bluetooth LE privacy v1.1	Y	Y	Y	Y	Y
	Bluetooth LE link layer topology	Y	Y	Y	Y	Y
Bluetooth 4.2 support	Bluetooth LE secure connection	Y	Y	Y	Y	Y
	Bluetooth LE link layer privacy v1.2	Y	Y	Y	Y	Y
Bluetooth 4.2 support	Bluetooth LE data length extension	Y	Y	Y	Y	Y
	Link layer extended scanner filter policies	Y	Y	Y	Y	Y
Bluetooth 5.0 support	Bluetooth LE 2 Mbps support	Y	Y	Y	Y	Y
	High duty cycle directed advertising	Y	Y	Y	Y	Y
	Low Energy advertising extension	N	Y	Y	Y	Y
	Low Energy long range	N	Y	Y	Y	Y
	Low Energy periodic advertisement	N	Y	Y	Y	Y
Bluetooth 5.2 support	Low Energy power control	N	N	Y	Y	Y

Table 5. Features for Bluetooth LE radio*...continued*

Features	Sub features	SDIO-UART				
		88W8987	IW416	IW611/IW612	RW610/ RW612	AW611
Bluetooth LE audio support[1][2]	Isochronous channel	N	N	Y	Y	Y
	Broadcast LE Audio BIS source	N	N	Y	N	Y
	Broadcast LE Audio BIS sink	N	N	Y	N	Y
	Broadcast LE Audio BIG Validation	N	N	Y	N	Y
	Broadcast LE Audio Phy: 1M/2M/ coded	N	N	Y	N	Y
	Broadcast LE Audio framed mode	N	N	Y	N	Y
	Broadcast LE Audio unframed mode	N	N	Y	N	Y
	Broadcast LE Audio sequential packing	N	N	Y	N	Y
	Broadcast LE Audio: Mono and Stereo	N	N	Y	N	Y
	Broadcast LE Audio BIS encrypted audio	N	N	Y	N	Y
	Broadcast LE Audio BIS unencrypted audio	N	N	Y	N	Y
	Unicast LE Audio CIS source	N	N	Y	N	Y
	Unicast LE Audio CIS sink	N	N	Y	N	Y
	Unicast LE Audio CIG validation	N	N	Y	N	Y
	Unicast LE Audio CIS synchronization	N	N	Y	N	Y
	Unicast LE Audio Phy: 1M/2M/ coded	N	N	Y	N	Y
	Unicast LE Audio framed mode	N	N	Y	N	Y
	Unicast LE Audio unframed mode	N	N	Y	N	Y
	Unicast LE Audio sequential packing	N	N	Y	N	Y
	Unicast LE Audio: mono and stereo	N	N	Y	N	Y
	Unicast LE Audio CIS encrypted audio	N	N	Y	N	Y
	Unicast LE Audio CIS unencrypted audio	N	N	Y	N	Y
	Unicast LE Audio TX/RX and bidirectional traffic	N	N	Y	N	Y
	ISO interval for LE Audio: 7.5ms 10ms 20ms 30ms	N	N	Y	N	Y
	Sampling frequency for LE Audio: 8kHz 16kHz 24kHz, 32kHz, 44.1kHz, 48kHz	N	N	Y	N	Y
	LE Audio Auracast use cases: Auracast streaming 2 BISes	N	N	Y	N	Y
	LE Audio Unicast use cases: Unicast streaming 2 CISes	N	N	Y	N	Y
	LE Audio Unicast Use cases: Unicast streaming 4 CISes	N	N	Y	N	Y

Table 5. Features for Bluetooth LE radio*...continued*

Features	Sub features	SDIO-UART				
		88W8987	IW416	IW611/IW612	RW610/ RW612	AW611
BCA TDM Coexistence mode (shared antenna)	STA + Bluetooth coexistence	Y	Y	Y	N	Y
	STA + Bluetooth LE coexistence	Y	Y	Y	Y	Y
	STA + Bluetooth + Bluetooth LE coexistence	Y	Y	Y	N	Y
	AP + Bluetooth coexistence	Y	Y	Y	N	Y
	AP + Bluetooth LE coexistence	Y	Y	Y	Y	Y
	AP + Bluetooth + Bluetooth LE coexistence	Y	Y	Y	N	Y
BCA TDM coexistence mode (separate antenna)	STA + Bluetooth coexistence	Y	Y	Y	N	Y
	STA + Bluetooth LE coexistence	Y	Y	Y	Y	Y
	STA + Bluetooth + Bluetooth LE coexistence	Y	Y	Y	N	Y
	AP + Bluetooth coexistence	Y	Y	Y	N	Y
	AP + Bluetooth LE coexistence	Y	Y	Y	Y	Y
	AP + Bluetooth + Bluetooth LE coexistence	Y	Y	Y	N	Y

[1] Experimental feature intended for evaluation/early development only and not production. Incomplete mandatory certification.

[2] LE audio feature is supported for standalone scenarios only and not for BR/EDR and Wi-Fi coexistence scenarios such as LE audio + BR/EDR link or LE audio + Wi-Fi link.

From the perspective of NXP Edgefast Bluetooth host stack, LE audio feature can be disabled by the CONFIG_BT_AUDIO macro without impact on any other features. LE audio feature can be tested by the user, using their own supported host stack.

2.3 802.15.4 radio

Table 6. Features of 802.15.4 radio

Features	Sub features	SDIO-UART	
		IW612	RW612
General features	Spinel over SPI	Y	N
	OpenThread RCP Mode implementing Thread1.3	Y	N
	802.15.4-2015 MAC/PHY as required by Thread 1.3	Y	Y
	OpenThread Border Router (OTBR) v1.1	Y	Y
	Direct/indirect transmission with/without ACK	Y	Y
	15.4 CSL parent feature implementation	Y	Y
	Enhanced Frame Pending	Y	Y
	Enhanced keep alive	Y	Y
	Router	Y	Y
	Leader	Y	Y
	Router Eligible End Device (REED)	Y	Y
	End Device (FED, MED)	Y	Y
Matter features	Matter over Wi-Fi	Y	N
	Matter over Thread	Y	Y

2.4 Coexistence

2.4.1 Wi-Fi and Bluetooth/802.15.4 coexistence

Table 7. Features of Wi-Fi and Bluetooth/802.15.4 coexistence

Features	Sub features	SDIO-UART	
		IW612	RW612
BCA_TDM separate antenna[1] (lower and higher isolation) 1x1 Wi-Fi, (Bluetooth+15.4 shared)	STA + Bluetooth	Y	N
	Mobile AP + Bluetooth	Y	N
	Bluetooth LE + Wi-Fi	Y	Y
	Bluetooth + Bluetooth LE + Wi-Fi	Y	N
	OpenThread + Bluetooth	Y	N
	OpenThread + Bluetooth LE	Y	Y
	OpenThread + Bluetooth + Bluetooth LE	Y	N
	OpenThread + Wi-Fi	Y	Y
	Bluetooth + OpenThread + Wi-Fi	Y	N
	Bluetooth LE + OpenThread + Wi-Fi	Y	Y
	Bluetooth + Bluetooth LE + OpenThread + Wi-Fi	Y	N
	Single antenna configuration	Y	Y
	External Coexistence PTA	N	Y

[1] Experimental feature intended for evaluation/early development only and not production. Incomplete mandatory certification.

3 Feature enable and memory impact

Table 8. Feature enable and memory impact

Features	Macros to enable the feature	Memory Impact
CSI	CONFIG_CSI	Flash - 60K, RAM - 4K
DPP	CONFIG_WPA_SUPP_DPP	Flash - 240K, RAM - 12K
Independent reset	CONFIG_WIFI_IND_DNLD, CONFIG_WIFI_IND_RESET	Minimal
Parallel firmware download Wi-Fi	CONFIG_WIFI_IND_DNLD	Minimal
Parallel firmware download Bluetooth	CONFIG_BT_IND_DNLD	Minimal
WPA3 enterprise	CONFIG_WPA_SUPP_CRYPTO_ENTERPRISE [Macros specific to EAP-methods included] CONFIG_EAP_TLS CONFIG_EAP_PEAP CONFIG_EAP_TTLS CONFIG_EAP_FAST CONFIG_EAP_SIM CONFIG_EAP_AKA CONFIG_EAP_AKA_PRIME	Flash - 165K, RAM - 18K
WPA2 enterprise		
Host sleep	CONFIG_HOST_SLEEP	Minimal
WMM	CONFIG_WMM[1]	Flash - 10K, RAM - 57K

[1] The macro is not used for IW416.

Note:

- *For Wi-Fi, the macros are set with the value "**0**" by default in the file wifi_config_default.h located in <SDK_PATH>/middleware/wifi_nxp/incl/ directory.*
  *To enable the features, set the value of the macros to "**1**" in the file wifi_config.h located in <SDK_Wi-Fi_Example_PATH>/ directory.*
- *Bluetooth*
  *To enable the features, set the value of the macros to "**1**" in the file app_bluetooth_config.h located in <SDK_Bluetooth_Example_PATH>/ directory.*

4 88W8987 release notes

4.1 Package information

- SDK version: 2.16.0

4.2 Version information

- Wireless SoC: 88W8987
- Wi-Fi and Bluetooth/Bluetooth LE firmware version: 16.91.21.p133
  - 16 - Major revision
  - 91 - Feature pack
  - 21 - Release version
  - p133- Patch number

4.3 Host platform

- All i.MX RT platforms running FreeRTOS.
- Host interfaces
  - Wi-Fi over SDIO (SDIO 2.0 support, SDIO clock frequency: 50 MHz)
  - Bluetooth/Bluetooth LE over UART
- Test tools
  - iPerf (version 2.1.9)

4.4 Wi-Fi and Bluetooth certification

The Wi-Fi and Bluetooth certification is obtained with the following combinations.

4.4.1 WFA certifications

- STA | 802.11n
- STA | 802.11ac
- STA | PMF
- STA | FFD
- STA | SVD
- STA | WPA3 SAE (R3)
- STA | QTT

Refer to [5].

Note: *This release supports STAUT only certifications.*

4.4.2 Bluetooth controller certification

QDID: refer to [4].

4.5 Wi-Fi throughput

4.5.1 Throughput test setup

- Environment: Shield Room - Over the Air
- External Access Point: ASUS AX88U
- DUT: W8987 Murata (Module: **1ZM M.2**) with EVK-MIMXRT1060 EVKC platform
- DUT Power Source: External power supply
- External Client: Apple MacBook Air
- Channel: 6 | 36
- Wi-Fi application: wifi_wpa_supplicant
- Compiler used to build application: armgcc
- Compiler Version: gcc-arm-none-eabi-13.2
- iPerf commands used in test:

TCP TX

```
iperf -c <remote_ip> -t 60
```

TCP RX

```
iperf -s
```

UDP TX

```
iperf -c <remote_ip> -t 60 -u -B <local_ip> -b 120
```

Note: *The default rate is 100 Mbps.*

UDP RX

```
iperf -s -u -B <local_ip>
```

Note: *Read more about the throughput test setup and topology in [2].*

4.5.2 STA throughput

External APs: ASUS AX88U

Table 9. STA mode throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	46	51	60	63
WPA2-AES	46	50	60	62
WPA3-SAE	46	49	60	62

Table 10. STA mode throughput - BGN Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	66	77	122	116
WPA2-AES	66	74	121	116
WPA3-SAE	66	73	121	117

Table 11. STA mode throughput - AN Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	45	50	61	64
WPA2-AES	45	50	61	64
WPA3-SAE	45	50	61	63

Table 12. STA mode throughput - AN Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	68	78	124	134
WPA2-AES	66	80	123	133
WPA3-SAE	67	79	123	133

Table 13. STA mode throughput - AC Mode | 5 GHz Band | 20 MHz (VHT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	51	58	74	76
WPA2-AES	51	57	74	75
WPA3-SAE	51	57	74	75

Table 14. STA mode throughput - AC Mode | 5 GHz Band | 40 MHz (VHT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	73	87	125	175
WPA2-AES	74	87	125	173
WPA3-SAE	73	87	125	174

Table 15. STA mode throughput - AC Mode | 5 GHz Band | 80 MHz (VHT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	74	95	125	198
WPA2-AES	72	93	125	194
WPA3-SAE	71	92	125	194

4.5.3 Mobile AP throughput

External client: Apple Macbook Air

Table 16. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 20MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	44	50	59	61
WPA2-AES	44	50	58	60
WPA3-SAE	41	49	58	60

Table 17. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 40MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	67	83	114	127
WPA2-AES	67	83	113	126
WPA3-SAE	67	83	114	126

Table 18. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	46	51	61	63
WPA2-AES	46	51	61	63
WPA3-SAE	46	51	61	63

Table 19. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	71	84	121	103
WPA2-AES	70	84	120	103
WPA3-SAE	70	83	120	103

Table 20. Mobile AP Mode Throughput - AC Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	51	59	74	77
WPA2-AES	51	58	74	77
WPA3-SAE	51	58	74	77

Table 21. Mobile AP Mode Throughput - AC Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	79	94	127	102
WPA2-AES	79	92	125	102
WPA3-SAE	78	93	125	102

Table 22. Mobile AP Mode Throughput - AC Mode | 5 GHz Band | 80 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	93	110	126	197
WPA2-AES	92	105	125	191
WPA3-SAE	92	105	125	192

4.6 EU conformance tests

- EU Adaptivity test - EN 300 328 v2.1.1 (for 2.4 GHz)
- EU Adaptivity test - EN 301 893 v2.1.1 (for 5 GHz)

4.7 Bug fixes and/or feature enhancements

4.7.1 Firmware version: From 16.91.21.p64.1 to 16.91.21.p82

Table 23.

Component	Description
Wi-Fi	• WPA3-R3 enabled APUT beacons does not have RSNXE when configured in H2E mode • Associated event is received even when connecting using wrong password • WFA APUT Low iperf TCP/UDP Tx throughput with Realtek station

4.7.2 Firmware version: From 16.91.21.p82 to 16.91.21.p91.6

Table 24.

Component	Description
Wi-Fi	• In wrong password scenario, After updating new password the phone is not able to connect with DUTAP

4.7.3 Firmware version: From 16.91.21.p91.6 to 16.91.21.p124

Table 25.

Component	Description
Wi-Fi	• Cloud keep alive packets not seen after DUT enters host sleep. DUT is sending QOS null packets even in host sleep

4.7.4 Firmware version: From 16.91.21.p124 to 16.91.21.p133

Table 26.

Component	Description
Wi-Fi	• Samsung S24 Ultra and Google Pixel 7 mobiles having Android 14 are not able connect to the DUTAP with WPA3 SAE security.

4.8 Known issues

Table 27. SDIO-UART 88W8987 known issues

Component	Description
Wi-Fi	• DUT STA does not associate to hidden SSID beaconing in DFS channel

5 IW416 release notes

5.1 Package information

- SDK version: 2.16.0

5.2 Version information

- Wireless SoC: IW416
- Wi-Fi and Bluetooth/Bluetooth LE firmware version: 16.91.21.p133
  - 16 - Major revision
  - 91 - Feature pack
  - 21 - Release version
  - p133- Patch number

5.3 Host platform

- All i.MX RT platforms running FreeRTOS.
- Host interfaces
  - Wi-Fi over SDIO (SDIO 2.0 Support, SDIO clock frequency: 50 MHz)
  - Bluetooth/Bluetooth LE over UART
- Test tools
  - iPerf (version 2.1.9)

5.4 Wi-Fi and Bluetooth certification

The Wi-Fi and Bluetooth certification is obtained with the following combinations.

5.4.1 WFA certifications

- STA | 802.11n
- STA | PMF
- STA | FFD
- STA | SVD
- STA | WPA3 SAE (R3)
- STA | QTT

Refer to [5].

Note: *This release supports STAUT only certifications.*

5.4.2 Bluetooth controller certification

QDID: refer to [4].

Note: *QDID upgrade to Bluetooth Core Specification Version 5.4 is in progress.*

5.5 Wi-Fi throughput

5.5.1 Throughput test setup

- Environment: Shield Room - Over the Air
- Access Point: Asus AX88u
- DUT: IW416 Murata (Module: 1XK M.2) with EVK-MIMXRT1060 EVKC platform
- DUT Power Source: External power supply
- Client: Apple MacBook Air
- Channel: 6 | 36
- Wi-Fi application: wifi_wpa_supplicant
- Compiler used to build application: armgcc
- Compiler Version: gcc-arm-none-eabi-13.2
- iPerf commands used in test:

TCP TX

```
iperf -c <remote_ip> -t 60
```

TCP RX

```
iperf -s
```

UDP TX

```
iperf -c <remote_ip> -t 60 -u -B <local_ip> -b 120
```

Note: *The default rate is 100 Mbps.*

UDP RX

```
iperf -s -u -B <local_ip>
```

Note: *Read more about the throughput test setup and topology in [2].*

5.5.2 STA throughput

External AP: Asus AX88u

Table 28. STA mode throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	43	44	60	56
WPA2-AES	40	44	60	51
WPA3-SAE	40	41	58	51

Table 29. STA mode throughput - BGN Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	51	75	112	118
WPA2-AES	55	76	111	99
WPA3-SAE	55	79	111	110

Table 30. STA mode throughput - AN Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	49	61	62
WPA2-AES	40	47	61	60
WPA3-SAE	40	46	61	59

Table 31. STA mode throughput - AN Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	61	72	116	121
WPA2-AES	58	64	116	121
WPA3-SAE	59	64	116	125

5.5.3 Mobile AP throughput

External client: Apple MacBook Air

Table 32. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 20MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	43	45	60	59
WPA2-AES	41	44	60	58
WPA3-SAE	42	44	61	58

Table 33. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 40MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	67	82	116	131
WPA2-AES	66	67	112	128
WPA3-SAE	65	67	113	122

Table 34. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	43	52	61	63
WPA2-AES	42	51	61	62
WPA3-SAE	42	51	61	63

Table 35. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	67	80	118	102
WPA2-AES	65	68	115	102
WPA3-SAE	65	68	115	102

5.6 EU conformance tests

- EU Adaptivity test - EN 300 328 v2.1.1 (for 2.4 GHz)
- EU Adaptivity test - EN 301 893 v2.1.1 (for 5 GHz)

5.7 Bug fixes and/or feature enhancements

5.7.1 Firmware version: From 16.91.21.p64.1 to 16.91.21.p82

Table 36.

Component	Description
Wi-Fi	• WPA3-R3 enabled APUT beacons does not have RSNXE when configured in H2E mode

5.7.2 Firmware version: From 16.91.21.p82 to 16.91.21.p91.6

Table 37.

Component	Description
Wi-Fi	NA

5.7.3 Firmware version: From 16.91.21.p91.6 to 16.91.21.p124

Table 38.

Component	Description
Wi-Fi	• Cloud keep alive packets not seen after DUT enters host sleep. DUT is sending QOS null packets even in host sleep

5.7.4 Firmware version: From 16.91.21.p124 to 16.91.21.p133

Table 39.

Component	Description
Wi-Fi	NA

5.8 Known issues

Table 40. SDIO-UART IW416 known issues

Component	Description
Wi-Fi	• Samsung S24 Ultra and Google Pixel 7 mobiles having Android 14 are not able connect to the DUT AP with WPA3 SAE security. • DUT STA getting rebooted after 15~20 iterations of 11R-Command based roaming • DUT fails to reconnect after the configured auto-reconnect time interval
Coex	• During HFP call, TX side noise is observed with coex CLI

6 IW611/IW612 release notes

Note: *The IW611/IW612 support is enabled in i.MX RT1170 EVKB and i.MX RT1060 EVKC.*

6.1 Package information

- SDK version: 2.16.0

6.2 Version information

- Wireless SoC: IW611/IW612
- Wi-Fi and Bluetooth/Bluetooth LE firmware version: 18.99.3.p10.5
  - 18 - Major revision
  - 99 - Feature pack
  - 3 - Release version
  - p10.5 - Patch number

6.3 Host platform

- i.MX RT1170 EVKB and i.MX RT1060 EVKC Platforms running FreeRTOS
- Host interfaces
  - Wi-Fi over SDIO (SDIO 2.0 support, SDIO clock frequency: 50 MHz)
  - Bluetooth/Bluetooth LE over UART
  - 802.15.4 over SPI (IW612 only)
- Test tools
  - iPerf (version 2.1.9)

6.4 Wi-Fi and Bluetooth certification

The Wi-Fi and Bluetooth certification is obtained with the following combinations.

6.4.1 WFA certifications

- STA | 802.11n
- STA | PMF
- STA | FFD
- STA | SVD
- STA | WPA3 SAE (R3)
- STA | 802.11ac
- STA | 802.11ax
- STA | QTT

Refer to [5].

Note: *This release supports STAUT only certifications.*

6.4.2 Bluetooth controller certification

QDID: refer to [4].

Note: *QDID upgrade to Bluetooth Core Specification Version 5.4 is in progress.*

6.5 Wi-Fi throughput

6.5.1 Throughput test setup

- Environment: Shield Room - Over the Air
- Access Point: Asus AX88u
- DUT: IW612 Murata (Module: 2EL M.2) with EVK-MIMXRT1060 EVKC platform
- DUT Power Source: External power supply
- Client: Apple MacBook Air
- Channel: 6 | 36
- Wi-Fi application: wifi_wpa_supplicant
- Compiler used to build application: armgcc
- Compiler Version gcc-arm-none-eabi-13.2
- iPerf commands used in test:

TCP TX

```
iperf -c <remote_ip> -t 60
```

TCP RX

```
iperf -s
```

UDP TX

```
iperf -c <remote_ip> -t 60 -u -B <local_ip> -b 120
```

Note: *The default rate is 100 Mbps.*

UDP RX

```
iperf -s -u -B <local_ip>
```

Note: *Read more about the throughput test setup and topology in [2]*

The throughput numbers are captured with default configurations using *wifi_wpa_supplicant* sample application.

6.5.2 STA throughput

External AP: Asus AX88u

Table 41. STA mode throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	49	60	63
WPA2-AES	41	48	64	62
WPA3-SAE	41	48	63	62

Table 42. STA mode throughput - BGN Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	65	80	131	131
WPA2-AES	63	79	131	130
WPA3-SAE	63	79	131	130

Table 43. STA mode throughput - AN Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	41	50	64	65
WPA2-AES	40	50	64	65
WPA3-SAE	40	50	64	65

Table 44. STA mode throughput - AN Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	63	82	129	134
WPA2-AES	63	82	129	133
WPA3-SAE	63	82	129	133

Table 45. STA mode throughput - VHT Mode | 2.4 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	46	55	76	74
WPA2-AES	45	54	74	73
WPA3-SAE	45	54	74	73

Table 46. STA mode throughput - VHT Mode | 2.4 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	68	90	169	174
WPA2-AES	68	90	165	172
WPA3-SAE	68	90	165	172

Table 47. STA mode throughput - VHT Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	45	56	77	78
WPA2-AES	48	56	74	77
WPA3-SAE	44	56	74	77

Table 48. STA mode throughput - VHT Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	69	91	175	173
WPA2-AES	69	90	173	172
WPA3-SAE	69	91	173	172

Table 49. STA mode throughput - VHT Mode | 5 GHz Band | 80 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	81	94	209	200
WPA2-AES	80	95	208	200
WPA3-SAE	79	95	209	200

Table 50. STA mode throughput - HE Mode | 2.4 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	55	63	98	123
WPA2-AES	54	62	96	118
WPA3-SAE	55	64	96	122

Table 51. STA mode throughput - HE Mode | 2.4 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	69	91	169	195
WPA2-AES	69	91	165	194
WPA3-SAE	67	91	165	194

Table 52. STA mode throughput - HE Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	55	60	98	126
WPA2-AES	54	61	97	124
WPA3-SAE	54	61	97	128

Table 53. STA mode throughput - HE Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	74	95	193	200
WPA2-AES	74	96	209	199
WPA3-SAE	74	95	188	199

Table 54. STA mode throughput - HE Mode | 5 GHz Band | 80 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	81	93	209	199
WPA2-AES	81	94	209	199
WPA3-SAE	81	94	209	199

6.5.3 Mobile AP throughput

External client: Apple MacBook Air

Table 55. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 20MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	39	51	63	60
WPA2-AES	39	51	57	62
WPA3-SAE	39	51	63	59

Table 56. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 40MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	59	89	121	128
WPA2-AES	57	87	106	131
WPA3-SAE	56	88	127	109

Table 57. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	40	52	63	62
WPA2-AES	39	52	61	60
WPA3-SAE	39	52	63	59

Table 58. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	61	89	114	127
WPA2-AES	60	88	128	127
WPA3-SAE	59	88	120	134

Table 59. Mobile AP Mode Throughput - VHT Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	60	60	72
WPA2-AES	41	59	67	75
WPA3-SAE	42	59	71	75

Table 60. Mobile AP Mode Throughput - VHT Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	65	99	133	170
WPA2-AES	65	98	131	168
WPA3-SAE	63	98	131	168

Table 61. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	60	76	73
WPA2-AES	43	59	74	73
WPA3-SAE	42	59	74	74

Table 62. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	66	102	150	178
WPA2-AES	66	101	140	176
WPA3-SAE	62	101	155	176

Table 63. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 80 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	80	120	207	198
WPA2-AES	72	120	210	198
WPA3-SAE	78	119	189	198

Table 64. Mobile AP Mode Throughput - HE Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	44	67	87	123
WPA2-AES	45	65	85	116
WPA3-SAE	45	65	85	122

Table 65. Mobile AP Mode Throughput - HE Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	70	104	134	180
WPA2-AES	69	104	139	182
WPA3-SAE	69	105	123	175

Table 66. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	45	67	87	118
WPA2-AES	44	66	83	115
WPA3-SAE	45	66	85	120

Table 67. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	72	110	158	198
WPA2-AES	67	109	155	196
WPA3-SAE	72	106	155	197

Table 68. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 80 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	77	119	201	203
WPA2-AES	75	118	209	197
WPA3-SAE	78	118	209	196

6.6 EU conformance tests

- EU Adaptivity test - EN 300 328 v2.1.1 (for 2.4 GHz)
- EU Adaptivity test - EN 301 893 v2.1.1 (for 5 GHz)

6.7 Bug fixes and/or feature enhancements

6.7.1 Firmware version: 18.99.2.p7.19

Table 69.

Component	Description
-	NA

6.7.2 Firmware version: 18.99.2.p7.19 to 18.99.2.p49.9

Table 70.

Component	Description
-	NA

6.7.3 Firmware version: 18.99.2.p49.9 to 18.99.2.p155

Table 71.

Component	Description
Bluetooth	• Audio lost occurs due to periodic adv sync lost, during 2 BIS 44.1kHz unencrypted streams with 1M PHY configuration. • BIS sync loss may occur in long audio streaming sessions.

6.7.4 Firmware version: 18.99.2.p155 to 18.99.2.p66.30

Table 72.

Component	Description
Wi-Fi	• 802.11R Fast BSS roaming works only with hostapd and does not work with standard APs (supporting 11R)
Bluetooth	• DUT is not able to sustain a connection with the remote device that does extended advertisement with coded PHY configuration. • When 2 CIS streams are active, after the first device disconnects followed by the second device disconnecting, the second peripheral device hangs. • Audio Play/Pause does not work in BIS case.

6.7.5 Firmware version: 18.99.2.p66.30 to 18.99.3.p10.5

Table 73.

Component	Description
Wi-Fi	• STAUT not sending Neighbor Advertisement packet after receiving Neighbor Solicitation packet from Ex-AP. • Antenna selection time exceeds configured evaluation time
Bluetooth	• When DUT works as CIS source and CIS Offset is 612us, high packet drops observed which affects the audio streaming. • For BIS Source Use Cases, Periodic Interval & ISO Interval should be multiple of each other value. • In 1-CIS and 2-CIS, Continuous Audio Glitches are observed with 96 kbps bit rate.

6.8 Known issues

Table 74. SDIO-UART-SPI IW611/IW612 known issues

Component	Description
Wi-Fi	• After performing Independent Reset (Out of band mode), STAUT fails to connect to External AP via wlan-connect command, observed command timeout 0x107 error.
Bluetooth	• Packet lost observed in CIS case, which causes audio noise. • Audio Glitches observed with Google Pixel 7 Pro streaming audio after CIS is established with DUT. • During Call Gateway (CG) / Call Terminal (CT) Use Case, FW periodically sends NULL PDU which results in frequent Audio Glitch on both CG & CT Side. • CIS Sink frequently fails to acknowledge CIS Source Tx PDU. • Sequential Removal of CIS Handles as per current Controller implementation i.e CIS Disconnection sequence should be in sequence => CIS - 4,3,2,1 • 48_6 Stereo Configuration is not supported. • Heavy audio glitches observed with CIS SRC Google Pixel 7 Pro • While 4-CIS streaming, audio glitches observed on all CIS SINK with Samsung Galaxy buds • While 4-CIS streaming, disconnection with connection timeout observed on first CIS SINK with Samsung Galaxy buds • Continuous audio glitches observed in 1 CIS & 2 CIS for 48_3 & 48_4 config • During 2-BIS stereo case periodic advertising sync fail

7 RW610/RW612 release notes

7.1 Package information

- SDK version: 2.16.0

7.2 Version information

- Wi-Fi firmware version: 18.99.6.p7.1
  - rw61x_sb_wifi_a1.bin for A1
  - rw61x_sb_wifi_a2.bin for A2
  - 18 - Major revision
  - 99 - Feature pack
  - 6 - Release version
  - p7.1 - Patch number
- Bluetooth LE firmware version: 18.25.6.p7.1
  - rw61x_sb_ble_a1.bin for A1
  - rw61x_sb_ble_a2.bin for A2
  - 18 - Major revision
  - 25 - Feature pack
  - 6 - Release version
  - p7.1 - Patch number
- 802.15.4 and Bluetooth LE (up to core 4.1) firmware version: 18.34.6.p7.1
  - rw61x_sb_ble_15d4_combo_a1.bin for A1
  - rw61x_sb_ble_15d4_combo_a2.bin for A2
  - 18 - Major revision
  - 34 - Feature pack
  - 6 - Release version
  - p7.1 - Patch number

Note: *Bluetooth LE functionality is limited to support Matter over Thread provisioning only.*

7.3 Host platform

- RW610/RW612 platform running FreeRTOS
- Test tools
  - iPerf (version 2.1.9)

7.4 Wireless certification

The Wi-Fi and Bluetooth certification is obtained with the following combinations.

7.4.1 WFA certifications

- STA | 802.11n
- STA | PMF
- STA | FFD
- STA | SVD
- STA | WPA3 SAE (R3)
- STA | 802.11ac
- STA | 802.11ax
- STA | QTT

Refer to [1].

Note: *This release supports STAUT only certifications.*

7.4.2 Bluetooth LE controller certification

QDID: Refer to [4].

7.4.3 Thread

Thread group: refer to [6].

Product Name: NXP RW612 Wireless MCU with Integrated Tri-Radio

Thread version: V1.3.0

CID #: 13A109

7.4.4 Matter

RW612 certification: refer to [7].

Certificate ID: CSA23C36MAT41746-24

Device type: Root Node, Thermostat

Transport: Matter over Wi-Fi

RW610 certification: refer to [8].

Certificate ID: CSA23C43MAT41753-50

Device type: Root Node, Thermostat

Transport: Matter over Wi-Fi and Matter over Thread

7.5 Wi-Fi throughput

7.5.1 Throughput test setup

- Environment: Shield Room - Over the Air
- Access Point: Asus AX88u
- DUT: RW610/RW612
- External Client: Intel AX210
- Channel: 6 | 36
- Wi-Fi application: wifi_cli
- Compiler used to build application: armgcc
- Compiler version gcc-arm-none-eabi-13.2
- iPerf commands used in test:

TCP TX

```
iperf -c <remote_ip> -t 60
```

TCP RX

```
iperf -s
```

UDP TX

```
iperf -c <remote_ip> -t 60 -u -B <local_ip> -b 120
```

Note: *The default rate is 100 Mbps.*

UDP RX

```
iperf -s -u -B <local_ip>
```

Note: *Read more about the throughput test setup and topology in [3].*

7.5.2 STA throughput

External AP: Asus AX88u

Table 75. STA mode throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	36	35	62	64
WPA2-AES	35	35	61	63
WPA3-SAE	36	35	61	63

Table 76. STA mode throughput - AN Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	37	36	64	65
WPA2-AES	36	35	62	64
WPA3-SAE	36	35	62	64

Table 77. STA mode throughput - VHT Mode | 2.4 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	39	38	75	75
WPA2-AES	38	38	73	74
WPA3-SAE	38	38	73	74

Table 78. STA mode throughput - VHT Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	40	39	77	77
WPA2-AES	40	39	75	76
WPA3-SAE	40	39	75	75

Table 79. STA mode throughput - HE Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	42	97	99
WPA2-AES	41	42	96	98
WPA3-SAE	41	42	96	98

Table 80. STA mode throughput - HE Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	43	43	98	102
WPA2-AES	43	43	98	102
WPA3-SAE	43	43	98	102

7.5.3 Mobile AP throughput

External client: Apple MacBook Air

Table 81. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	38	38	62	62
WPA2-AES	37	37	61	61
WPA3-SAE	37	37	61	61

Table 82. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	38	38	63	63
WPA2-AES	38	38	62	62
WPA3-SAE	38	37	62	62

Table 83. Mobile AP Mode Throughput - VHT Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	41	41	70	73
WPA2-AES	40	40	71	71
WPA3-SAE	40	40	70	71

Table 84. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	41	41	74	74
WPA2-AES	41	41	74	72
WPA3-SAE	41	41	74	73

Table 85. Mobile AP Mode Throughput - HE Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	44	44	94	95
WPA2-AES	44	43	95	95
WPA3-SAE	44	44	95	95

Table 86. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	45	45	96	97
WPA2-AES	44	44	97	96
WPA3-SAE	44	44	97	96

7.6 Known issues

Table 87. SDIO-UART-SPI RW610/RW612 known issues

Component	Description
Wi-Fi	—
Bluetooth LE	—

8 AW611 release notes

Note: *The AW611 support is enabled in i.MX RT1180 EVKA.*

8.1 Package information

- SDK version: 2.16.0

8.2 Version information

- Wireless SoC: AW611
- Wi-Fi and Bluetooth/Bluetooth LE firmware version: 18.99.3.p10.5
  - 18 - Major revision
  - 99 - Feature pack
  - 3 - Release version
  - p10.5 - Patch number

8.3 Host platform

- i.MX RT1180 EVKA Platform running FreeRTOS
- Host interfaces
  - Wi-Fi over SDIO (SDIO 2.0 Support, SDIO clock frequency: 50 MHz)
  - Bluetooth/Bluetooth LE over UART
- Test tools
  - iPerf (version 2.1.9)

8.4 Wi-Fi and Bluetooth certification

The Wi-Fi and Bluetooth certification is obtained with the following combinations.

8.4.1 WFA certifications

- STA | 802.11n
- STA | PMF
- STA | FFD
- STA | SVD
- STA | WPA3 SAE (R3)
- STA | 802.11ac
- STA | 802.11ax
- STA | QTT

Refer to [5].

Note: *This release supports STAUT only certifications.*

8.4.2 Bluetooth controller certification

QDID: Refer to [4].

Note: *QDID upgrade to Bluetooth Core Specification Version 5.4 is in progress.*

8.5 Wi-Fi throughput

8.5.1 Throughput test setup

- Environment: Shield Room - Over the Air
- Access Point: Asus AX88u
- DUT: AW611 uBlox (Module: U-BLOX_Jody_W5 M.2) with EVK-MIMXRT1180 EVKA platform
- DUT Power Source: External power supply
- Client: Apple MacBook Air
- Channel: 6 | 36
- Wi-Fi application: wifi_wpa_supplicant
- Compiler used to build application: armgcc
- Compiler Version: gcc-arm-none-eabi-13.2
- iPerf commands used in test:

TCP TX

```
iperf -c <remote_ip> -t 60
```

TCP RX

```
iperf -s
```

UDP TX

```
iperf -c <remote_ip> -t 60 -u -B <local_ip> -b 120
```

Note: *The default rate is 100 Mbps.*

UDP RX

```
iperf -s -u -B <local_ip>
```

Note: *Read more about the throughput test setup and topology in [2].*

The throughput numbers are captured with default configurations using *wifi_wpa_supplicant* sample application.

8.5.2 STA throughput

External AP: Asus AX88u

Table 88. STA mode throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	49	60	63
WPA2-AES	41	48	64	62
WPA3-SAE	41	48	63	62

Table 89. STA mode throughput - BGN Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	65	80	131	131
WPA2-AES	63	79	131	130
WPA3-SAE	63	79	131	130

Table 90. STA mode throughput - AN Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	41	50	64	65
WPA2-AES	40	50	64	65
WPA3-SAE	40	50	64	65

Table 91. STA mode throughput - AN Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	63	82	129	134
WPA2-AES	63	82	129	133
WPA3-SAE	63	82	129	133

Table 92. STA mode throughput - VHT Mode | 2.4 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	46	55	76	74
WPA2-AES	45	54	74	73
WPA3-SAE	45	54	74	73

Table 93. STA mode throughput - VHT Mode | 2.4 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	68	90	169	174
WPA2-AES	68	90	165	172
WPA3-SAE	68	90	165	172

Table 94. STA mode throughput - VHT Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	45	56	77	78
WPA2-AES	48	56	74	77
WPA3-SAE	44	56	74	77

Table 95. STA mode throughput - VHT Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	69	91	175	173
WPA2-AES	69	90	173	172
WPA3-SAE	69	91	173	172

Table 96. STA mode throughput - VHT Mode | 5 GHz Band | 80 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	81	94	209	200
WPA2-AES	80	95	208	200
WPA3-SAE	79	95	209	200

Table 97. STA mode throughput - HE Mode | 2.4 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	55	63	98	123
WPA2-AES	54	62	96	118
WPA3-SAE	55	64	96	122

Table 98. STA mode throughput - HE Mode | 2.4 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	69	91	169	195
WPA2-AES	69	91	165	194
WPA3-SAE	67	91	165	194

Table 99. STA mode throughput - HE Mode | 5 GHz Band | 20 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	55	60	98	126
WPA2-AES	54	61	97	124
WPA3-SAE	54	61	97	128

Table 100. STA mode throughput - HE Mode | 5 GHz Band | 40 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	74	95	193	200
WPA2-AES	74	96	209	199
WPA3-SAE	74	95	188	199

Table 101. STA mode throughput - HE Mode | 5 GHz Band | 80 MHz (HT)

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	81	93	209	199
WPA2-AES	81	94	209	199
WPA3-SAE	81	94	209	199

8.5.3 Mobile AP throughput

External client: Apple MacBook Air

Table 102. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	39	51	63	60
WPA2-AES	39	51	57	62
WPA3-SAE	39	51	63	59

Table 103. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	59	89	121	128
WPA2-AES	57	87	106	131
WPA3-SAE	56	88	127	109

Table 104. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	40	52	63	62
WPA2-AES	39	52	61	60
WPA3-SAE	39	52	63	59

Table 105. Mobile AP Mode Throughput - AN Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	61	89	114	127
WPA2-AES	60	88	128	127
WPA3-SAE	59	88	120	134

Table 106. Mobile AP Mode Throughput - VHT Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	60	60	72
WPA2-AES	41	59	67	75
WPA3-SAE	42	59	71	75

Table 107. Mobile AP Mode Throughput - VHT Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	65	99	133	170
WPA2-AES	65	98	131	168
WPA3-SAE	63	98	131	168

Table 108. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	42	60	76	73
WPA2-AES	43	59	74	73
WPA3-SAE	42	59	74	74

Table 109. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	66	102	150	178
WPA2-AES	66	101	140	176
WPA3-SAE	62	101	155	176

Table 110. Mobile AP Mode Throughput - VHT Mode | 5 GHz Band | 80 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	80	120	207	198
WPA2-AES	72	120	210	198
WPA3-SAE	78	119	189	198

Table 111. Mobile AP Mode Throughput - HE Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	44	67	87	123
WPA2-AES	45	65	85	116
WPA3-SAE	45	65	85	122

Table 112. Mobile AP Mode Throughput - HE Mode | 2.4 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	70	104	134	180
WPA2-AES	69	104	139	182
WPA3-SAE	69	105	123	175

Table 113. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	45	67	87	118
WPA2-AES	44	66	83	115
WPA3-SAE	45	66	85	120

Table 114. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 40 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	72	110	158	198
WPA2-AES	67	109	155	196
WPA3-SAE	72	106	155	197

Table 115. Mobile AP Mode Throughput - HE Mode | 5 GHz Band | 80 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	77	119	201	203
WPA2-AES	75	118	209	197
WPA3-SAE	78	118	209	196

8.6 EU conformance tests

- EU Adaptivity test - EN 300 328 v2.1.1 (for 2.4 GHz)
- EU Adaptivity test - EN 301 893 v2.1.1 (for 5 GHz)

8.7 Known issues

Table 116. SDIO-UART AW611 known issues

Component	Description
Wi-Fi	• After performing Independent Reset (Out of band mode), STAUT fails to connect to External AP via wlan-connect command, observed command timeout 0x107 error.
Bluetooth	• Packet lost would be observed in CIS case which causes audio noise. • Audio Glitches observed with Google Pixel 7 Pro streaming audio after CIS is established with DUT. • During Call Gateway (CG) / Call Terminal (CT) Use Case, FW periodically sends NULL PDU which results in frequent Audio Glitch on both CG & CT Side. • CIS Sink frequently fails to acknowledge CIS Source Tx PDU. • Sequential Removal of CIS Handles as per current Controller implementation i.e CIS Disconnection sequence should be in sequence => CIS - 4,3,2,1 • 48_6 Stereo Configuration is not supported. • For 2 Stream CIS & BIS Use Cases, 1-Channel per CIS/BIS Stream is validated. • Heavy audio glitches observed with CIS SRC Google Pixel 7 Pro • While 4-CIS streaming, audio glitches observed on all CIS SINK with Samsung Galaxy buds • While 4-CIS streaming, disconnection with connection timeout observed on first CIS SINK with Samsung Galaxy buds • Continuous audio glitches observed in 1 CIS & 2 CIS for 48_3 & 48_4 config • During 2-BIS stereo case periodic advertising sync fail

9 88W8801 release notes

9.1 Package information

- SDK Version: 2.16.0

9.2 Version information

- Wireless SoC: 88W8801
- Wi-Fi firmware version: 14.91.36.p192
  - 14 - Major revision
  - 91 - Feature pack
  - 36 - Release version
  - p192 - Patch number

9.3 Host platform

- All i.MX RT platforms running FreeRTOS.
- Host interface
  - Wi-Fi over SDIO (SDIO 2.0 Support, SDIO clock frequency: 50 MHz)
- Test Tools
  - iPerf (version 2.1.9)

9.4 Wi-Fi certification

The Wi-Fi certification is obtained with the following combinations.

9.4.1 WFA certifications

- STA | 802.11n
- STA | PMF
- STA | FFD
- STA | SVD
- STA | WPA3 SAE (R3)

Refer to [5].

Note: *This release Sspports STAUT only certifications.*

9.5 Wi-Fi throughput

9.5.1 Throughput test setup

- Environment: Shield Room - Over the Air
- External Access Point: Asus-AX88U
- DUT: W8801 Murata (Module: 2DS M.2) with EVK-MIMXRT1060 platform
- DUT Power Source: External power supply
- External Client: IW620-Kestrel
- Channel: 6
- Wi-Fi application: wifi_cli
- Compiler used to build application: armgcc
- Compiler Version: gcc-arm-none-eabi-13.2
- iPerf commands used in test:

TCP TX

```
iperf -c <remote_ip> -t 60
```

TCP RX

```
iperf -s
```

UDP TX

```
iperf -c <remote_ip> -t 60 -u -B <local_ip> -b 120
```

Note: *The default rate is 100 Mbps.*

UDP RX

```
iperf -s -u -B <local_ip>
```

Note: *Read more about the throughput test setup and topology in [2].*

The throughput numbers are captured with the default configurations.

9.5.2 STA throughput

External AP: Asus-AX88U (Open/WPA2/WPA3-SAE)

Table 117. STA mode throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	33	43	43	61
WPA2-AES	33	43	42	62
WPA3-SAE	32	43	43	62

9.5.3 Mobile AP throughput

External client: IW620-Kestrel

Table 118. Mobile AP Mode Throughput - BGN Mode | 2.4 GHz Band | 20 MHz

Protocol	TCP (Mbit/s)		UDP (Mbit/s)	
Direction	TX	RX	TX	RX
Open Security	33	49	36	61
WPA2-AES	32	48	36	61
WPA3-SAE	32	48	35	61

9.6 EU conformance tests

- EU Adaptivity test - EN 300 328 v2.1.1 (for 2.4 GHz)

9.7 Bug fixes and/or feature enhancements

9.7.1 Firmware version: From 14.91.36.p178 to 14.91.36.p180

Table 119.

Component	Description
--	NA

9.7.2 Firmware version: From 14.91.36.p180 to 14.91.36.p185

Table 120.

Component	Description
--	NA

9.7.3 Firmware version: From 14.91.36.p185 to 14.91.36.p188

Table 121.

Component	Description
--	NA

9.7.4 Firmware version: From 14.91.36.p188 to 14.91.36.p192

Table 122.

Component	Description
--	NA

9.8 Known issues

Table 123. SDIO 88W8801 known issues

Component	Description
--	NA

10 Note about the source code in the document

The example code shown in this document has the following copyright and BSD-3-Clause license:

Copyright 2022-2024 NXP Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials must be provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

11 Acronyms and abbreviations

Table 124. Acronyms and abbreviations

Acronyms	Definitions
A2DP	Advanced audio distribution profile
AMPDU	Aggregated MAC protocol data unit
AMSDU	Aggregated MAC service data unit
AP	Access point
BW	Bandwidth
CCMP	Counter mode CBC-MAC protocol
CSI	Channel state information
CTS	Clear To Send
DL	Down link
EDCA	Enhanced distributed channel access
ER	Extended range
ERP	Extended rate physical
GATT	Generic attribute profile
HFP	Hands free profile
HID	Human interface device
HT	High throughput
LDPC	Low density parity check
MCS	Modulation and coding scheme
MLME	Mac layer management entity
OMI	Operating mode indication
PMF	Protected management frames
RTS	Request to send
SAE	Simultaneous authentication of equals
STA	Station
TWT	Target wake time
UL	Up link
VHT	Very high throughput
WEP	Wired equivalent private
WFD	Wi-Fi direct
WMM	Wireless multi-media
WPA	Wi-Fi protected access
WPS	Wi-Fi protected setup
WSC	Wi-Fi Simple Configuration

12 References

[1] Application note - AN13681 – Wi-Fi Alliance (WFA) Derivative Certification Process (available in the SDK package)

[2] User manual – UM11442 - NXP Wi-Fi and Bluetooth Demo Applications User Guide for i.MX RT Platforms (available in the SDK package)

[3] User manual – UM11799 - NXP Wi-Fi and Bluetooth Demo Applications User Guide for RW61x (available in the SDK package)

[4] Certification – Bluetooth controller - QDID (*link*)

[5] Technical note - TN00066 – Wi-Fi Alliance (WFA) Derivative Certification Process (available in the SDK package)

[6] Web page – Thread certified products (link)

[7] Web page – Connectivity standard alliance (csa) – NXP RW612 Tri-Radio Wireless MCU Development Platform (link)

[8] Web page – Connectivity standard alliance (csa) – NXP RW610 Wireless MCU Development Platform (link)

13 Revision history

Revision history

Document ID	Date	Change details
RN00174 v.9	04 July 2024	• Features and Debug macros configurations restructured • Updated SDK version to 2.16.0 and foot note for AW611 • Added AW611 and RW610/RW612 • Section 2 "Features": – Wi-Fi: General Features – Added CSI, Independent reset, and FW parallel download for IW611/612 and AW611. – Bluetooth: General Features, LE Audio – Added independent reset, firmware parallel download, and Unicast_LE_Audio: mono and stereo for IW611/612 and AW611. • Section 4 "88W8987 release notes": updated the SDK and firmware versions, throughput numbers, fixes and known issues. • Section 5 "IW416 release notes": updated the SDK and firmware versions, throughput numbers, fixes and known issues. • Section 6 "IW611/IW612 release notes": updated the SDK and firmware versions, throughput numbers, fixes and known issues. • Section 7 "RW610/RW612 release notes": added. • Section 8 "AW611 release notes": added. • Section 9 "88W8801 release notes": updated the SDK and firmware versions.
RN00174 v.8	15 April 2024	• Updated SDK version to 2.15.1 • Section 2 "Features": – Wi-Fi: updated 802.11i – Security. added antenna diversity. – Bluetooth: added Bluetooth LE audio support. – Coex: added BCA TDM Co-ex Mode (separate antenna). – 802.15.4: added Open Thread Border Router (OTBR) v1.1. • Section 4 "88W8987 release notes": updated the SDK version and known issues. • Section 5 "IW416 release notes": updated the SDK version and known issues. • Section 6 "IW611/IW612 release notes": updated the SDK version, firmware version, throughput numbers, fixes and known issues. • Section 6.8 "Known issues": updated the SDK version.

Revision history...*continued*

Document ID	Date	Change details
RN00174 v.7	10 January 2024	• Updated the SDK version to 2.15.0 and the footnote for IW612. • Section 2 "Features": – Added the footnote for by-default disabled features. – Wi-Fi: updated Enterprise security methods. – Wi-Fi: added auto reconnect, CSI, independent reset, Wi-Fi agile multiband, and firmware download. • Section 3 "Feature enable and memory impact": added. • Section 4 "88W8987 release notes": updated the SDK version, firmware version, throughput numbers, fixes and known issues. • Section 4.4.1 "WFA certifications" added QTT. • Section 5 "IW416 release notes": updated the SDK version, firmware version, throughput numbers, fixes and known issues. • Section 5.4.1 "WFA certifications": added QTT. • Section 5.4.2 "Bluetooth controller certification": added a note about QDID. • Section 6 "IW611/IW612 release notes": updated the SDK version, firmware version, throughput numbers, fixes and known issues. • Section 6.4.1 "WFA certifications": added QTT. • Section 6.4.2 "Bluetooth controller certification": added a note about QDID. • Section 6.8 "Known issues": updated the SDK version, firmware version, and throughput numbers.
RN00174 v.6	19 October 2023	• Updated SDK version to 2.13.3 and the footnote about IW612. • Section 2 "Features": – Added the footnote about experimental features. – Wi-Fi: added SU beamforming, DPP, and embedded roaming for IW612. – Wi-Fi: removed TPC. – Bluetooth: added Bluetooth LE audio features. – Matter: added Matter over Wi-Fi, and Matter over thread. – Coex: added BCA_TDM separate antenna (lower and higher isolation) 1x1 Wi-Fi, (Bluetooth + 802.15.4 shared) • Section 6 "IW611/IW612 release notes": – Updated the SDK version, firmware version, throughput numbers, and known issues. – Added a note about Bluetooth LE audio. – Updated the list of WFA certification cases.

Revision history...*continued*

Document ID	Date	Change details
RN00174 v.5	01 August 2023	• Updated the SDK version to 2.14.0. Added IW612 with a footnote about IW612 support. • Section 2 "Features": – Added IW612 with a footnote. – Wi-Fi: Host-based supplicant features: Enterprise security, wpa3 R3, WPA3 Suite B, WPS, OWE for AP and STA – Wi-Fi: added the general features: RF test mode, TPC, STBC RX. – Bluetooth: RF test mode, Deep Sleep using Out of Band, Low Energy Periodic Advertisement, Low Energy Power Control, Low Energy Long Range. • Section 4 "88W8987 release notes": updated the SDK version, firmware version, iPerf version, throughput numbers, fixes and known issues. • Section 5 "IW416 release notes": updated the SDK version, firmware version, iPerf version, throughput numbers, fixes and known issues. • Section 6 "IW611/IW612 release notes": added. • Section 6.8 "Known issues": updated the SDK version, firmware version, iPerf version, and throughput numbers.

Revision history...*continued*

Document ID	Date	Change details
RN00174 v.4	21 March 2023	• Section 2 "Features": – Removed Shared Authentication from Wi-Fi Client – Added 802.11k, 802.11v, and 802.11r in Wi-Fi Client General feature – Added TKIP and a footnote about TKIP in Wi-Fi Client General feature – Removed FIPS from Wi-Fi AP general features • Section 4.1 "Package information": updated the SDK version. • Section 4.2 "Version information": updated the firmware version. • Section 4.4.1 "WFA certifications": mentioned FFD, SVD and WPA3 SAE (R3) for STA. • Section 4.5.1 "Throughput test setup": updated External AP details. • Section 4.5.1 "Throughput test setup": updated the throughput numbers. • Section 4.5.2 "STA throughput": updated the throughput numbers. • Section 4.7 "Bug fixes and/or feature enhancements": updated the firmware version and added details about fixed issues. • Section 5.1 "Package information": updated the SDK version. • Section 5.2 "Version information": updated the firmware version. • Section 5.4.1 "WFA certifications": mentioned FFD, SVD and WPA3 SAE (R3) for STA. • Section 5.5.1 "Throughput test setup": : updated External AP details. • Section 5.5.2 "STA throughput": updated. • Section 5.5.3 "Mobile AP throughput": updated. • Section 5.7 "Bug fixes and/or feature enhancements": updated the firmware version and added details about the fixed issues. • Section 9.1 "Package information": updated the SDK version. • Section 9.2 "Version information": updated the firmware version. • Section 9.4.1 "WFA certifications": mentioned FFD, SVD and WPA3 SAE (R3) for STA. • Section 9.5.2 "STA throughput": updated. • Section 9.5.3 "Mobile AP throughput": updated. • Section 9.7 "Bug fixes and/or feature enhancements": updated the firmware version and added details about the fixed issues

Revision history...*continued*

Document ID	Date	Change details
RN00174 v.3	03 January 2023	• Section 4.1 "Package information": updated the SDK version. • Section 4.2 "Version information": updated the firmware version. • Section 5.1 "Package information": updated the SDK version. • Section 5.2 "Version information": updated the firmware version. • Section 9.1 "Package information": updated the SDK version. • Section 9.2 "Version information": updated the firmware version. • Section 9.5.2 "STA throughput": updated. • Section 9.5.3 "Mobile AP throughput": updated.
RN00174 v.2	15 September 2022	• Removed all occurrences of 88W8977. • Section 2 "Features": – Removed Shared Authentication from Wi-Fi Client – Added FIPS in Wi-Fi Client General feature – Removed TxPower Config V2 from Wi-Fi AP and Client General Features • Section 4.1 "Package information": updated the SDK version. • Section 4.2 "Version information": updated the firmware version. • Section 4.4.1 "WFA certifications": mentionned 802.11ac and WPA3(SAE). • Section 4.5.1 "Throughput test setup": added Murata module details. • Section 4.5.1 "Throughput test setup": updated the throughput numbers. • Section 4.5.2 "STA throughput": updated the throughput numbers. • Section 4.7 "Bug fixes and/or feature enhancements": updated the firmware version and fixed issues. • Section 5.1 "Package information": updated the SDK version. • Section 5.2 "Version information": updated the firmware version. • Section 5.4.1 "WFA certifications": added WPA3(SAE). • Section 5.5.1 "Throughput test setup": added Murata module details. • Section 5.5.2 "STA throughput": updated. • Section 5.5.3 "Mobile AP throughput": updated. • Section 5.7 "Bug fixes and/or feature enhancements": updated the firmware version and fixed issues. • Section 9.1 "Package information": updated the SDK version. • Section 9.5.2 "STA throughput": updated the throughput numbers. • Section 9.5.3 "Mobile AP throughput": updated the throughput numbers.
RN00174 v.1	24 June 2022	Initial release

Legal information

Definitions

Draft — A draft status on a document indicates that the content is still under internal review and subject to formal approval, which may result in modifications or additions. NXP Semiconductors does not give any representations or warranties as to the accuracy or completeness of information included in a draft version of a document and shall have no liability for the consequences of use of such information.

Disclaimers

Limited warranty and liability — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. NXP Semiconductors takes no responsibility for the content in this document if provided by an information source outside of NXP Semiconductors.

In no event shall NXP Semiconductors be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Notwithstanding any damages that customer might incur for any reason whatsoever, NXP Semiconductors' aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms and conditions of commercial sale of NXP Semiconductors.

Right to make changes — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Suitability for use — NXP Semiconductors products are not designed, authorized or warranted to be suitable for use in life support, life-critical or safety-critical systems or equipment, nor in applications where failure or malfunction of an NXP Semiconductors product can reasonably be expected to result in personal injury, death or severe property or environmental damage. NXP Semiconductors and its suppliers accept no liability for inclusion and/or use of NXP Semiconductors products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Customers are responsible for the design and operation of their applications and products using NXP Semiconductors products, and NXP Semiconductors accepts no liability for any assistance with applications or customer product design. It is customer's sole responsibility to determine whether the NXP Semiconductors product is suitable and fit for the customer's applications and products planned, as well as for the planned application and use of customer's third party customer(s). Customers should provide appropriate design and operating safeguards to minimize the risks associated with their applications and products.

NXP Semiconductors does not accept any liability related to any default, damage, costs or problem which is based on any weakness or default in the customer's applications or products, or the application or use by customer's third party customer(s). Customer is responsible for doing all necessary testing for the customer's applications and products using NXP Semiconductors products in order to avoid a default of the applications and the products or of the application or use by customer's third party customer(s). NXP does not accept any liability in this respect.

Terms and conditions of commercial sale — NXP Semiconductors products are sold subject to the general terms and conditions of commercial sale, as published at https://www.nxp.com/profile/terms, unless otherwise agreed in a valid written individual agreement. In case an individual agreement is concluded only the terms and conditions of the respective agreement shall apply. NXP Semiconductors hereby expressly objects to applying the customer's general terms and conditions with regard to the purchase of NXP Semiconductors products by customer.

Export control — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from competent authorities.

Suitability for use in non-automotive qualified products — Unless this document expressly states that this specific NXP Semiconductors product is automotive qualified, the product is not suitable for automotive use. It is neither qualified nor tested in accordance with automotive testing or application requirements. NXP Semiconductors accepts no liability for inclusion and/or use of non-automotive qualified products in automotive equipment or applications.

In the event that customer uses the product for design-in and use in automotive applications to automotive specifications and standards, customer (a) shall use the product without NXP Semiconductors' warranty of the product for such automotive applications, use and specifications, and (b) whenever customer uses the product for automotive applications beyond NXP Semiconductors' specifications such use shall be solely at customer's own risk, and (c) customer fully indemnifies NXP Semiconductors for any liability, damages or failed product claims resulting from customer design and use of the product for automotive applications beyond NXP Semiconductors' standard warranty and NXP Semiconductors' product specifications.

Translations — A non-English (translated) version of a document, including the legal information in that document, is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

Security — Customer understands that all NXP products may be subject to unidentified vulnerabilities or may support established security standards or specifications with known limitations. Customer is responsible for the design and operation of its applications and products throughout their lifecycles to reduce the effect of these vulnerabilities on customer's applications and products. Customer's responsibility also extends to other open and/or proprietary technologies supported by NXP products for use in customer's applications. NXP accepts no liability for any vulnerability. Customer should regularly check security updates from NXP and follow up appropriately.

Customer shall select products with security features that best meet rules, regulations, and standards of the intended application and make the ultimate design decisions regarding its products and is solely responsible for compliance with all legal, regulatory, and security related requirements concerning its products, regardless of any information or support that may be provided by NXP.

NXP has a Product Security Incident Response Team (PSIRT) (reachable at PSIRT@nxp.com) that manages the investigation, reporting, and solution release to security vulnerabilities of NXP products.

NXP B.V. — NXP B.V. is not an operating company and it does not distribute or sell products.

Trademarks

Notice: All referenced brands, product names, service names, and trademarks are the property of their respective owners.

NXP — wordmark and logo are trademarks of NXP B.V.

Amazon Web Services, AWS, the Powered by AWS logo, and FreeRTOS — are trademarks of Amazon.com, Inc. or its affiliates.

Bluetooth — the Bluetooth wordmark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by NXP Semiconductors is under license.

i.MX — is a trademark of NXP B.V.

Matter, Zigbee — are developed by the Connectivity Standards Alliance. The Alliance's Brands and all goodwill associated therewith, are the exclusive property of the Alliance.

Tables

Contents