

TN00070

88W8987 Wi-Fi and Bluetooth Feature Lists

Rev. 1 — 3 December 2020

Product release notes

Revision history

Rev	Date	Description
v.1	20201203	Initial version



1 Wi-Fi features

1.1 Wireless Client features

1.1.1 802.11ac - Very high throughput

- 5 GHz band operation
- 5 GHz band supported channel bandwidths: 20 MHz, 40 MHz, and 80 MHz
- 802.11ac data rates – Up to 433.3 Mbit/s (MCS 0 to MCS 9)
- SU-AMPDU aggregation
- MU-MIMO beamforming (explicit and implicit)
- RTS/CTS with BW signaling
- CCA on secondary channel
- Operation mode notification
- Backward compatibility with non-VHT devices
- Tx VHT MCS rate adaptation

1.1.2 802.11n - High throughput

- 2.4 GHz and 5 GHz band operation
- 5 GHz band supported channel bandwidths: 20 MHz, 40 MHz
- 2.4 GHz band supported channel bandwidths: 20 MHz
- Short/long guard interval (400 ns/800 ns)
- 1 spatial stream (1x1)
- 11n data rates – Up to 150 Mbit/s (MCS 0 to MCS 7)
- Aggregated MAC Protocol Data Unit (AMPDU) Rx support
- Aggregated MAC Service Data Unit (AMSDU) 4k Rx support
- HT protection mechanisms
- Tx MCS rate adaptation (BGN)
- Rx LDPC

1.1.3 802.11a/b/g features

- 802.11g data rates up to 54 Mbit/s
- Tx rate adaptation (BG)
- Fragmentation/defragmentation
- ERP protection, slot time, preamble

1.1.4 802.11d and 802.11h

- 802.11d - Regulatory Domain/Operating Class/Country Info
- 802.11h – Dynamic Frequency Selection(DFS)
- DFS Radar Detection in Slave Mode(Follow AP)

1.1.5 802.11e - QoS

- EDCA[Enhanced Distributed Channel Access] / WMM (Wireless Multi-Media)

1.1.6 802.11i - Security

- Open and Shared Authentication
- WPA-PSK, WPA2-PSK Security (AES-CCMP Encryption)
- WPA + WPA2 mixed mode
- WEP Security (64/128 bit)
- Opensource WPA supplicant
- WPA2 Enterprise Security

1.1.7 WPA3 security

- Simultaneous Authentication of Equals (SAE)
- SAE Connectivity and PMK Caching
- Anti-Clogging
- SAE Finite Cyclic Group - Group-19, Group 20, Goup-21
- Reflection Attack
- WPA2 Personal Compatibility
- Commercial National Security Algorithm Suite (CSNA)
- Suite B - 192-bit Security ECC p384
- Suite B - 192-bit Security RSA 3K

1.1.8 802.11r – Fast BSS transition (FT)

- FT over Air and over DS (Distribution System)

1.1.9 WPS/WSC2.0 functionality

- PIN Config Method - 8 Digit/4 Digit
- PIN Config Method - Static/Dynamic PIN
- PBC - Virtual Push Button Config Method
- PBC Session Overlap Detection
- STA as Enrollee
- Backward Compatibility with WPS1.0 Devices
- Opensource WPA supplicant

1.1.10 802.11w - Protected management frames (PMF)

- PMF require and capable
- Unicast management frames - Encryption/decryption - using CCMP
- Broadcast management frames - Encryption/decryption - using BIP
- SA query request/response
- PMF Support using Opensource WPA

1.1.11 Power save mode

- Deep sleep
- IEEE power save

1.1.12 General features

- Host-based MLME
- EU adaptivity support
- Extended channel switch announcement (ECSA)
- Wake on Wireless (WoW)
- Auto Tx or Keep Alive
- MAC Address randomization (in Scan)

1.2 Mobile AP features

1.2.1 802.11ac - Very high throughput

- 5 GHz band operation
- 5 GHz band supported channel bandwidths: 20 MHz, 40 MHz, and 80 MHz
- Short/Long Guard Interval (GI) (400 ns/800 ns)
- 802.11ac data rates – Up to 433.3 Mbit/s (MCS 0 to MCS 9)
- SU-AMPDU aggregation
- RTS/CTS with BW signaling
- CCA on secondary channel
- Backward compatibility with non-VHT devices
- Tx VHT MCS rate adaptation
- Operation mode notification

1.2.2 802.11n - High throughput

- 2.4 GHz and 5 GHz band operation
- 2.4 GHz band supported channel bandwidths: 20 MHz
- 5 GHz band supported channel bandwidths: 20 MHz, 40 MHz
- Short/long guard interval (400 ns/800 ns)
- 1 spatial stream (1x1)
- 802.11n data rates – Up to 150 Mbit/s (MCS0 to MCS7)
- Tx MCS rate adaptation (BGN)
- Aggregated MAC Protocol Data Unit (AMPDU) Tx and Rx support
- Aggregated MAC Service Data Unit (AMSDU) – 4k Rx support
- Max client support (up to 8 clients)
- HT protection mechanisms
- Rx Low Density Parity Check (LDPC)

1.2.3 802.11b/g features

- Data rates (up to 54 Mbit/s)
- Tx rate adaptation (BG)
- ERP protection, slot time, preamble
- Handling of associated STAs with IEEE PS - PS-poll and null data

1.2.4 802.11d and 802.11h features

- 802.11d - Regulatory Domain/Operating Class/Country Info
- 802.11h – Dynamic Frequency Selection(DFS)

1.2.5 802.11e - QoS

- Enhanced Distributed Channel Access (EDCA) / Wireless Multi-Media (WMM)

1.2.6 802.11i - Security

- Open security
- WPA-PSK ,WPA2-PSK security (AES-CCMP encryption)
- WPA + WPA2 mixed mode
- WEP Security (64/128 bit)
- Opensource Hostapd

1.2.7 WPA3 Security

- Simultaneous Authentication of Equals (SAE)
- SAE Connectivity and PMK Caching
- Anti-clogging
- SAE finite cyclic group - Group-19, Group 20, Goup-21
- Reflection attack
- WPA2 personal compatibility
- Commercial National Security Algorithm Suite (CSNA)

1.2.8 802.11w - Protected management frames (PMF)

- PMF require and capable
- Unicast management frames - Encryption/decryption - using CCMP
- Broadcast management frames - Encryption/decryption - using BIP
- SA query request/response
- Support using Hostapd

1.2.9 WPS/WSC2.0 functionality

- PIN config method - 8 digit/4 digit
- PIN config method - Static/dynamic PIN
- PBC - Virtual push button config method
- PBC session overlap detection
- AP setup locked state - PIN method
- MMH as wireless registrar
- MMH as enrollee
- Opensource Hostapd

1.2.10 General features

- Deep sleep
- Host-based MLME
- EU adaptivity support
- Automatic channel selection (ACS)
- Extended channel switch announcement (ECSA)
- Wake on wireless (WoW)

1.3 Wi-Fi direct/P2P features

- P2P support using WPA supplicant

1.3.1 P2P basic functionality

- Autonomous GO mode
- WFD client mode
- P2P device mode

2 Simultaneous AP-STA operation (same channel)

- AP-STA functionality

3 Bluetooth features

3.1 Bluetooth Classic features

3.1.1 General features

- Bluetooth Class 1.5 and Class 2 support
- Scatternet support
- Maximum of seven simultaneous ACL connections
- Automatic packet type selection
- Bluetooth - 2.1 to 5.0 specification support
- Low power sniff

3.1.2 Bluetooth packet types supported

- ACL (DM1, DH1, DM3, DH3, DM5, DH5, 2-DH1, 2-DH3, 2-DH5, 3-DH1, 3-DH3, 3-DH5)
- SCO (HV1, HV3)
- eSCO (EV3, EV4, EV5, 2EV3, 3EV3, 2EV5, 3EV5)

3.1.3 Bluetooth profiles supported

- Bluetooth A2DP source/sink
- Bluetooth AVRCP controller
- Bluetooth HFP
- Bluetooth OPP server/client
- Bluetooth SPP
- Bluetooth HID

3.1.4 Bluetooth audio features

- PCM NBS slave
- PCM WBS slave

3.2 Bluetooth LE features

3.2.1 Generic features

- Maximum 16 Bluetooth LE connections (Master role)

3.2.2 Bluetooth LE profile support

- Bluetooth LE GATT
- Bluetooth LE GAP
- Bluetooth LE HOGP

3.2.3 Bluetooth LE 4.0 support

- Low Energy physical layer
- Low Energy link layer
- Enhancements to HCI for Low Energy
- Low Energy direct test mode
- Bluetooth LE - 1 Mbit/s support

3.2.4 Bluetooth LE 4.1 support

- Low duty cycle directed advertising
- Bluetooth LE dual mode topology
- Bluetooth LE privacy v1.1
- Bluetooth LE link layer topology

3.2.5 Bluetooth LE 4.2 support

- Bluetooth LE secure connection
- Bluetooth LE link layer privacy v1.2
- Bluetooth LE data length extension
- Link layer extended scanner filter policies

3.2.6 Bluetooth LE 5.0 support

- Bluetooth LE 2 Mbit/s support
- High duty cycle directed advertising

4 Bluetooth and Wi-Fi coexistence

4.1 Timeshare Coex mode

- STA + Bluetooth Coex
- STA + Bluetooth LE Coex
- STA + Bluetooth + Bluetooth LE Coex
- MMH + Bluetooth Coex
- MMH + Bluetooth LE Coex
- MMH + Bluetooth + Bluetooth LE Coex
- P2P + Bluetooth Coex
- P2P + Bluetooth LE Coex
- P2P + Bluetooth + Bluetooth LE Coex

Note: *Timeshare Coex mode is not applicable when Wi-Fi operating frequency is 5 GHz.*

5 Notes

None.

6 Legal information

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