



Wi-Fi CERTIFIED™ Certificate



This certificate lists the features that have successfully completed Wi-Fi Alliance interoperability testing. Learn more: www.wi-fi.org/certification/programs

Certification ID: WFA128160

Product Info

| | |
|-----------------------|---------------------|
| Date of Certification | October 23, 2023 |
| Company | Samsung Electronics |
| Product Name | SM-S921U |
| Product Model Variant | 2023-09-15 |
| Model Number | SM-S921U |
| Category | Phones |
| Sub-category | Smartphone |

Summary of Certifications

| CLASSIFICATION | CERTIFICATION |
|-------------------------|---|
| Applications & Services | Voice-Enterprise Wi-Fi Aware™ |
| Connectivity | 2.4 GHz Spectrum Capabilities 5 GHz Spectrum Capabilities 6 GHz Spectrum Capabilities Wi-Fi CERTIFIED 6® Wi-Fi CERTIFIED 6® Release 2 Wi-Fi CERTIFIED™ a Wi-Fi CERTIFIED™ ac Wi-Fi CERTIFIED™ b Wi-Fi CERTIFIED™ g Wi-Fi CERTIFIED™ n Wi-Fi Direct® Wi-Fi Enhanced Open™ 2021-01 |
| Optimization | WMM® WMM®-Admission Control WMM®-Power Save Wi-Fi Agile Multiband™ Wi-Fi Optimized Connectivity™ 2020 Wi-Fi QoS Management™ |



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Summary of Certifications (continued)

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CLASSIFICATION

CERTIFICATION

Security

Protected Management Frames
WPA2™-Enterprise 2018-04
WPA2™-Personal 2021-01
WPA3™-Enterprise 2022-12
WPA3™-Personal 2022-06
WPA™-Enterprise
WPA™-Personal

Spectrum & Regulatory Features

Spectrum & Regulatory



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Role: Access Point

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Wi-Fi Components

Wi-Fi Component Operating System

Android 14.0

Wi-Fi Component Firmware

2.0.0.0.1518.1

RF Architecture

| Bands Supported | Transmit (Tx) | Receive (Rx) |
|-----------------|---------------|--------------|
| 2.4 GHz | 2 | 2 |
| 5 GHz | 2 | 2 |

Certifications

2.4 GHz Spectrum Capabilities

20 MHz Channel Width in 2.4 GHz

5 GHz Spectrum Capabilities

20 MHz Channel Width in 5 GHz

40 MHz Channel Width in 5 GHz

80 MHz Channel Width in 5 GHz

Protected Management Frames

WMM®

Max Throughput

WPA2™-Personal 2021-01

WPA3™-Personal 2022-06

Wi-Fi CERTIFIED 6®

A-MPDU with A-MSDU

LDPC Rx

Wi-Fi CERTIFIED 6® (continued)

LDPC Tx

MCS 8-9 Rx

MCS 8-9 Tx

MCS 10-11 Rx

MCS 10-11 Tx

SU beamformer

Wi-Fi CERTIFIED™ a

Wi-Fi CERTIFIED™ ac

A-MPDU with A-MSDU

LDPC Rx

LDPC Tx

MCS 8-9 Rx

Short Guard Interval

STBC

SU beamformer

Wi-Fi CERTIFIED™ b

Wi-Fi CERTIFIED™ g

Wi-Fi CERTIFIED™ n



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Wi-Fi CERTIFIED™ n (continued)

A-MPDU Tx
OBSS on Extension Channel
Short Guard Interval
STBC



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Role: Station

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Wi-Fi Components

Wi-Fi Component Operating System

Android 14.0

Wi-Fi Component Firmware

2.0.0.0.1518.1

RF Architecture

| Bands Supported | Transmit (Tx) | Receive (Rx) |
|-----------------|---------------|--------------|
| 2.4 GHz | 2 | 2 |
| 5 GHz | 2 | 2 |
| 6 GHz | 2 | 2 |

Certifications

2.4 GHz Spectrum Capabilities

20 MHz Channel Width in 2.4 GHz

5 GHz Spectrum Capabilities

20 MHz Channel Width in 5 GHz

40 MHz Channel Width in 5 GHz

80 MHz Channel Width in 5 GHz

160 MHz Channel Width in 5 GHz

6 GHz Spectrum Capabilities

20 MHz Channel Width in 6 GHz

40 MHz Channel Width in 6 GHz

80 MHz Channel Width in 6 GHz

160 MHz Channel Width in 6 GHz

Protected Management Frames

Spectrum & Regulatory

802.11h

Voice-Enterprise

WMM®

Max Throughput

WMM®-Admission Control

WMM®-Power Save

Legacy Power Save

Unschedule auto PS

WPA2™-Enterprise 2018-04

EAP methods

EAP AKA

EAP AKA Prime

EAP SIM

EAP TLS

EAP TTLS

PEAPv0

PEAPv1



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Role: Station

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WPA2™-Personal 2021-01

WPA3™-Enterprise 2022-12

EAP methods

- EAP AKA
- EAP AKA Prime
- EAP SIM
- EAP TLS
- EAP TTLS
- PEAPv0
- PEAPv1

192-bit security

- 192-bit security RSA 3K with the TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 cipher suite

Fast Transition OTA on WPA3-Enterprise

Fast Transition OTA on WPA3-Enterprise transition mode

Fast Transition OTDS on WPA3-Enterprise

Server Certificate Validation

WPA3™-Personal 2022-06

Fast Transition OTA on WPA3-Personal

Fast Transition OTA on WPA3-Personal transition mode

Fast Transition OTDS on WPA3-Personal

WPA™-Enterprise

WPA™-Personal

Wi-Fi Agile Multiband™

- ANQP
- ANQP-based Neighbor report
- Beacon Report Measurement Active Mode
- Beacon Report Measurement Passive Mode

Wi-Fi Agile Multiband™ (continued)

- BTM Query
- Cellular Data capable
- Fast Transition OTA on WPA2-Personal
- Fast Transition OTA on WPA2-Enterprise

Wi-Fi Aware™

- Bluetooth® Low Energy
 - Bluetooth® Low Energy - Browser
 - Bluetooth® Low Energy - Provider
 - Bluetooth® Low Energy - Seeker
- TCP/UDP NDP Initiator
- TCP/UDP NDP Responder
- Device Ranging
- Wi-Fi Aware pairing
- Unsynchronized Service Discovery

Wi-Fi CERTIFIED 6® Release 2

- A-MPDU with A-MSDU
- Beamforming sounding
- BSRP Trigger frame
- Compressed Block Ack Rx (buffer size 256)
- Compressed Block Ack Tx (buffer size 256)
- DL MU-MIMO
- DL Mu PPDU multi-tone
- HE NDP
- LDPC Tx
- LDPC Rx
- Individual Target Wake Time
- MCS 10-11 Rx
- MCS 10-11 Tx
- MCS 8-9 Rx
- MCS 8-9 Tx
- MU EDCA Parameter Set element



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Wi-Fi CERTIFIED 6® Release 2 (continued)

MU-BAR Trigger frame
MU-RTS Trigger frame
OM Control field Tx
OM subfield in A-Control field
Operating Mode indication
SU beamformee
SU-MIMO
UL OFDMA
UL TB PPDU multi-tone
Wi-Fi 6E
 Multiple M-BSSID
Wi-Fi 6 Release 2 features
 UL Extended Range
 M-BSSID control frames

Wi-Fi CERTIFIED™ a

Wi-Fi CERTIFIED™ ac

Extended 5 GHz Channel Support
RTS with BW Signaling
A-MPDU with A-MSDU
DL MU-MIMO
LDPC Rx
MCS 8 Rx
MCS 8-9 Rx
Short Guard Interval
STBC
LDPC Tx
SU beamformee

Wi-Fi CERTIFIED™ b

Wi-Fi CERTIFIED™ g

Wi-Fi CERTIFIED™ n

A-MPDU Tx
OBSS on Extension Channel
Short Guard Interval
STBC

Wi-Fi Direct®

Wi-Fi Enhanced Open™ 2021-01

Wi-Fi Optimized Connectivity™ 2020

Active Scan
Fast Transition OTA on WPA2-Enterprise
Pushbutton

Wi-Fi QoS Management™

Default DSCP to UP mapping
DSCP QoS Map
Mirrored Stream Classification Service