# 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: WFA128707

## Product Info

| | |
|---|---|
| **Date of Certification** | November 7, 2023 |
| **Company** | Samsung Electronics |
| **Product Name** | SC-52E |
| **Product Model Variant** | 2023-11-07 |
| **Model Number** | SC-52E |
| **Category** | Phones |
| **Sub-category** | Smartphone |

## Summary of Certifications

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

# Wi-Fi CERTIFIED™ Certificate

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| CLASSIFICATION | CERTIFICATION |
|---|---|
| **Security** | Protected Management Frames<br>WPA2™-Enterprise 2018-04<br>WPA2™-Personal 2021-01<br>WPA3™-Enterprise 2022-12<br>WPA3™-Personal 2022-06<br>WPA™-Enterprise<br>WPA™-Personal |
| **Spectrum & Regulatory Features** | Spectrum & Regulatory |

# Wi-Fi CERTIFIED™ Certificate

## Certification ID: WFA128707

## Wi-Fi Components

### Wi-Fi Component Operating System

Android 14.0

### Wi-Fi Component Firmware

2.0.0.0.1460.1

### RF Architecture

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

## Certifications

### 2.4 GHz Spectrum Capabilities

20 MHz Channel Width in 2.4 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

### WMM®

### WPA2™-Personal 2021-01

### WPA3™-Personal 2022-06

### Wi-Fi CERTIFIED 6®

A-MPDU with A-MSDU
Compressed Block Ack Rx (buffer size 256)
Compressed Block Ack Tx (buffer size 256)
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
SU-MIMO
TXOP RTS Threshold
Wi-Fi 6E

### Wi-Fi CERTIFIED™ b

### Wi-Fi CERTIFIED™ g

### Wi-Fi CERTIFIED™ n

A-MPDU Tx
Short Guard Interval
STBC

### Wi-Fi Enhanced Open™ 2021-01

# Wi-Fi CERTIFIED™ Certificate

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### RF Architecture

| Bands Supported | Transmit (Tx) | Receive (Rx) |
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| 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®

### 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

### 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

Server Certificate Validation

## WPA3™-Personal 2022-06

Fast Transition OTA on WPA3-Personal

Fast Transition OTA on WPA3-Personal transition mode

## WPA™-Enterprise

## WPA™-Personal

## Wi-Fi Agile Multiband™

ANQP

ANQP-based Neighbor report

Beacon Report Measurement Active Mode

Beacon Report Measurement Passive Mode

BTM Query

Cellular Data capable

Fast Transition OTA on WPA2-Personal

## 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

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

### Wi-Fi CERTIFIED 6® Release 2 (continued)

UL OFDMA
UL TB PPDU multi-tone
Wi-Fi 6E
    Multiple M-BSSID
Wi-Fi 6 Release 2 features
    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
Power Management
Short Guard Interval
STBC

### Wi-Fi Direct®

### Wi-Fi Enhanced Open™ 2021-01

### Wi-Fi Optimized Connectivity™ 2020

Active Scan
FILS Shared Key Authentication
Pushbutton
Probe Deferral and Suppression

### Wi-Fi QoS Management™

Default DSCP to UP mapping
DSCP QoS Map
DSCP Policy
Mirrored Stream Classification Service
    MSCS setup at association
Stream Classification Service