



# 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](http://www.wi-fi.org/certification/programs)

**Certification ID: WFA119877**

## Product Info

|                              |              |
|------------------------------|--------------|
| <b>Date of Certification</b> | May 25, 2022 |
| <b>Company</b>               | Google, Inc. |
| <b>Product Name</b>          | GE2AE, GFE4J |
| <b>Product Model Variant</b> | GE2AE, GFE4J |
| <b>Model Number</b>          | GE2AE, GFE4J |
| <b>Category</b>              | Phones       |
| <b>Sub-category</b>          | Smartphone   |

## Summary of Certifications

| <b>CLASSIFICATION</b>              | <b>CERTIFICATION</b>                                                                                                                                                                                                                                                              |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Access</b>                      | Wi-Fi Protected Setup™                                                                                                                                                                                                                                                            |
| <b>Applications &amp; Services</b> | Voice-Enterprise<br>Wi-Fi Aware™                                                                                                                                                                                                                                                  |
| <b>Connectivity</b>                | 2.4 GHz Spectrum Capabilities<br>5 GHz Spectrum Capabilities<br>6 GHz Spectrum Capabilities<br>Wi-Fi CERTIFIED 6®<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 |
| <b>Optimization</b>                | WMM®<br>WMM®-Admission Control<br>WMM®-Power Save<br>Wi-Fi Agile Multiband™                                                                                                                                                                                                       |
| <b>Security</b>                    | Protected Management Frames                                                                                                                                                                                                                                                       |



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## Summary of Certifications (continued)

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| CLASSIFICATION                 | CERTIFICATION                                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Security                       | WPA2™-Enterprise 2018-04<br>WPA2™-Personal 2021-01<br>WPA3™-Enterprise 2020-02<br>WPA3™-Personal 2020-02<br>WPA3™-Personal 2020-12 |
| 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

### Wi-Fi Component Firmware

20.25.485.7

### 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®

### WPA2™-Personal 2021-01

### WPA3™-Personal 2020-02

### Wi-Fi CERTIFIED 6®

A-MPDU with A-MSDU

LDPC Rx

LDPC Tx

MCS 8-9 Rx

MCS 8-9 Tx

### Wi-Fi CERTIFIED 6® (continued)

Operating mode indication

SU-MIMO

### Wi-Fi CERTIFIED™ a

### Wi-Fi CERTIFIED™ ac

A-MPDU with A-MSDU

LDPC Rx

LDPC Tx

MCS 8-9 Rx

Short Guard Interval

### Wi-Fi CERTIFIED™ b

### Wi-Fi CERTIFIED™ g

### Wi-Fi CERTIFIED™ n

OBSS on Extension Channel

Short Guard Interval

A-MPDU Tx



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Role: Station

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## Wi-Fi Components

### Wi-Fi Component Operating System

Android

### Wi-Fi Component Firmware

20.25.485.7

### 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®

#### 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



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Role: Station

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## WPA3™-Enterprise 2020-02

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  
Server Certificate Validation

## WPA3™-Personal 2020-12

## 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  
Fast Transition OTA on WPA2-Enterprise

## Wi-Fi Aware™

## Wi-Fi CERTIFIED 6®

A-MPDU with A-MSDU  
Beamforming sounding  
BSRP Trigger frame  
DL MU PPDU multi-tone  
DL MU-MIMO

## Wi-Fi CERTIFIED 6® (continued)

HE NDP  
Individual Target Wake Time  
LDPC Rx  
LDPC Tx  
MCS 8-9 Rx  
MCS 8-9 Tx  
MCS 10-11 Rx  
MCS 10-11 Tx  
MU EDCA Parameter Set element  
MU-BAR Trigger frame  
MU-RTS Trigger frame  
Operating mode control field  
Operating mode indication  
SU beamformee  
SU-MIMO  
UL OFDMA  
UL TB PPDU multi-tone  
Wi-Fi 6E

## Wi-Fi CERTIFIED™ a

## Wi-Fi CERTIFIED™ ac

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

## Wi-Fi CERTIFIED™ b

## Wi-Fi CERTIFIED™ g



# Wi-Fi CERTIFIED™ Certificate

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Role: Station

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## Wi-Fi CERTIFIED™ n

A-MPDU Tx  
OBSS on Extension Channel  
Short Guard Interval

## Wi-Fi Direct®

## Wi-Fi Enhanced Open™ 2021-01

## Wi-Fi Protected Setup™

Pushbutton