



# Wi-Fi CERTIFIED® Certificate



This certificate lists the features that have successfully completed Wi-Fi Alliance interoperability testing. Learn more: [www.wi-fi.org](http://www.wi-fi.org)

**Certification ID: WFA113735**

## Product Info

<b>Date of Certification</b>	March 16, 2022
<b>Company</b>	Intel
<b>Product Name</b>	Intel® Wi-Fi 6E AX411 (Gig+)
<b>Product Model Variant</b>	Win 11 - 22.90 - 6r2 Addition
<b>Model Number</b>	AX411
<b>Category</b>	Computers & Accessories
<b>Sub-category</b>	Internal Adapter

## Summary of Certifications

<b>CLASSIFICATION</b>	<b>CERTIFICATION</b>
<b>Access</b>	Wi-Fi Protected Setup™
<b>Alternative topologies</b>	Wi-Fi Direct®
<b>Network management</b>	WMM® WMM®-Power Save Wi-Fi Agile Multiband™
<b>Security</b>	Protected Management Frames WPA2™-Enterprise 2018-04 WPA2™-Personal 2021-01 WPA3™-Enterprise 2020-02 WPA3™-Personal 2020-12 Wi-Fi Enhanced Open™ 2021-01
<b>Wi-Fi (MAC/PHY)</b>	2.4 GHz Spectrum Capabilities 5 GHz Spectrum Capabilities 6 GHz Spectrum Capabilities Spectrum & Regulatory Wi-Fi CERTIFIED 6® Release 2 Wi-Fi CERTIFIED™ a Wi-Fi CERTIFIED™ ac Wi-Fi CERTIFIED™ b

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## Summary of Certifications (continued)

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### CLASSIFICATION

Wi-Fi (MAC/PHY)

### CERTIFICATION

Wi-Fi CERTIFIED™ g  
Wi-Fi CERTIFIED™ n

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Role: Station

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## Wi-Fi Components

### Wi-Fi Component Operating System

Windows 11

### Wi-Fi Component Firmware

22.90

### 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  
40 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

### Spectrum & Regulatory (continued)

802.11h

### WMM®

### WMM®-Power Save

Legacy Power Save  
Unschedule auto PS

### WPA2™-Enterprise 2018-04

EAP methods  
EAP TLS  
EAP TTLS  
PEAPv0

### WPA2™-Personal 2021-01

### WPA3™-Enterprise 2020-02

EAP methods

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## WPA3™-Enterprise 2020-02 (continued)

EAP TLS  
 EAP TTLS  
 PEAPv0  
 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 2020-12

Beacon Protection

## Wi-Fi Agile Multiband™

Beacon Report Measurement Active Mode  
 Beacon Report Measurement Passive Mode  
 Fast Transition OTA on WPA2-Enterprise

## 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  
 HE NDP  
 LDPC Tx  
 LDPC Rx  
 Individual Target Wake Time  
 MCS 10-11 Rx  
 MCS 10-11 Tx

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

MCS 8-9 Rx  
 MCS 8-9 Tx  
 MU EDCA Parameter Set element  
 MU-BAR Trigger frame  
 MU-RTS Trigger frame  
 M-BSSID  
 Operating mode control field  
 Operating mode subfield in A-Control field  
 Operating mode indication  
 SU beamformee  
 SU-MIMO  
 UL OFDMA  
 Wi-Fi 6E  
 Wi-Fi 6 Release 2 features  
 UL MU-MIMO  
 UL MU Control  
 UL Extended Range  
 Target Wake Time information frames  
 Broadcast Target Wake Time  
 Dynamic MU SMPS  
 M-BSSID control frames  
 Preamble Puncturing

## 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  
 STBC  
 LDPC Tx

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## Wi-Fi CERTIFIED™ ac (continued)

SU beamformee

## Wi-Fi CERTIFIED™ b

## Wi-Fi CERTIFIED™ g

## Wi-Fi CERTIFIED™ n

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

## Wi-Fi Direct®

## Wi-Fi Enhanced Open™ 2021-01

## Wi-Fi Protected Setup™

PIN  
Pushbutton

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