



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 ID: WFA118948

Product Info

Date of Certification	March 22, 2022
Company	Huawei Device Co., Ltd.
Product Name	NoteBook
Product Model Variant	CREF-X
Model Number	CREF-X
Category	Computers & Accessories
Sub-category	Laptop Computer

Summary of Certifications

CLASSIFICATION	CERTIFICATION
Access	Wi-Fi Protected Setup™
Alternative topologies	Wi-Fi Direct®
Network management	WMM® WMM®-Power Save Wi-Fi Agile Multiband™
Security	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
Wi-Fi (MAC/PHY)	2.4 GHz Spectrum Capabilities 5 GHz Spectrum Capabilities 6 GHz Spectrum Capabilities Spectrum & Regulatory Wi-Fi CERTIFIED 6® 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

22.70

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®

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
 Individual Target Wake Time
 LDPC Rx
 LDPC Tx
 MCS 8-9 Rx
 MCS 8-9 Tx

Wi-Fi CERTIFIED 6® (continued)

MCS 10-11 Rx
 MCS 10-11 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 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
 SU beamformee

Wi-Fi CERTIFIED™ b

Wi-Fi CERTIFIED™ g

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Wi-Fi CERTIFIED™ n (continued)

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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