



# 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: WFA132451**

## Product Info

Date of Certification	September 4, 2024
Company	Fujitsu Client Computing Limited
Product Name	M.2 Module /FCZSW11H85139-11be
Product Model Variant	A Derivative of original model
Model Number	FCZSW11H85139-11be
Category	Computers & Accessories
Sub-category	External Adapter

## Summary of Certifications

CLASSIFICATION	CERTIFICATION
Connectivity	2.4 GHz Spectrum Capabilities 5 GHz Spectrum Capabilities 6 GHz Spectrum Capabilities Wi-Fi CERTIFIED 6® Release 2 Wi-Fi CERTIFIED 7™ Wi-Fi CERTIFIED™ a Wi-Fi CERTIFIED™ ac Wi-Fi CERTIFIED™ b Wi-Fi CERTIFIED™ g Wi-Fi CERTIFIED™ n Wi-Fi Enhanced Open™ 2023-12
Optimization	WMM® WMM®-Power Save Wi-Fi Agile Multiband™ Wi-Fi QoS Management™
Security	Protected Management Frames WPA2™-Enterprise 2018-04 WPA2™-Personal 2021-01 WPA3™-Enterprise 2022-12 WPA3™-Personal 2023-12



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## Summary of Certifications (continued)

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### CLASSIFICATION

### CERTIFICATION

Spectrum & Regulatory  
Features

Spectrum & Regulatory



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Role: Station

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## Wi-Fi Components

### Wi-Fi Component Operating System

Windows 11

### Wi-Fi Component Firmware

23.70

### 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

### Spectrum & Regulatory (continued)

802.11d  
802.11h

### 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

### WMM®

### WMM®-Power Save

Legacy Power Save  
Unschedule auto PS

### 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  
320 MHz channel width in 6 GHz

### WPA2™-Enterprise 2018-04

EAP methods  
EAP TLS  
EAP TTLS  
PEAPv0

### Protected Management Frames

### WPA2™-Personal 2021-01

### Spectrum & Regulatory

### WPA3™-Enterprise 2022-12



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## WPA3™-Enterprise 2022-12 (continued)

EAP methods  
    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  
Server Certificate Validation

## WPA3™-Personal 2023-12

AKM 24  
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  
DL MU PPDU multi-tone  
HE NDP  
LDPC Tx  
LDPC Rx  
Individual Target Wake Time

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

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  
Operating mode control field  
Operating mode 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 MU-MIMO  
    UL MU Control  
    Target Wake Time information frames  
    Broadcast Target Wake Time  
    Dynamic MU SMPS  
    M-BSSID control frames  
    Preamble Puncturing

## Wi-Fi CERTIFIED 7™

Advertised TID-to-link mapping  
A-MPDU with A-MSDU  
Beamforming sounding  
BSS critical update  
Compressed Block Ack Rx (buffer size 256)  
Compressed Block Ack Tx (buffer size 256)  
Compressed Block Ack Rx (buffer size 512)  
Compressed Block Ack Tx (buffer size 512)



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## Wi-Fi CERTIFIED 7™ (continued)

DL MU-MIMO  
Dynamic MU SMPS  
EMLSR (Enhanced Multilink Single-Radio)  
LDPC Rx  
LDPC Tx  
Load Balancing in MLO  
MCS 8-9 Rx  
MCS 8-9 Tx  
MCS 10-11 Rx  
MCS 10-11 Tx  
MCS 12-13 Rx  
MCS 12-13 Tx  
Multi-link reconfiguration – AP removal  
Multi-link reconfiguration – AP restart  
Multi-RU  
Operating mode indication  
    Operating mode indication for 320 MHz  
Static puncturing  
SU-MIMO  
Triggered uplink access optimization  
UL MU-MIMO  
UL OFDMA

## 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

## Wi-Fi CERTIFIED™ ac (continued)

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 Enhanced Open™ 2023-12

## Wi-Fi QoS Management™

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