ACCESSORY
WLAN Kit
WLN-M22

WLAN KIT WITH WLAN CARD AND ANTENNAS FOR SHUTTLE XPC CUBE PCs

The Shuttle Accessory WLN-M22 is a Wireless LAN kit consisting of an Intel AX210 M.2-2230 card, two antennas and appropriate antenna cables (53 cm). The WLN-M22 is intended for Shuttle XPC cube PC products to equip them with the wireless LAN standard according to IEEE 802.11n/ac/ax at 2.4 / 5 / 6 GHz. At the same time, his combo device also supports Bluetooth 5.2.

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- M.2-2230 (NGFF) WLAN card: Intel® Wi-Fi 6E AX210 M.2 non vPro
- 2 dipole antennas
- 2 antenna cables for XPCs slim, length: 53 cm
- Quick Guide (English, German, French)

Note: device drivers are not included (download: go.shuttle.eu/drivers)

COMPATIBILITY

Compatible with the following Shuttle products:

- **Shuttle XPC cube Barebone PCs:**

SH110R4, SZ170R8V2, SZ270R8, SZ270R9, SH310R4(V2), SH370R6(V2)(Plus), SH370R8, SH510R4, SH570R6 (Plus), SH570R8, SW580R8, SH610R4, SB860R6

- **Supported operating systems**

Windows 10, Windows 11, Linux (64-bit)
Windows driver download: go.shuttle.eu/drivers

ADAPTER CARD

- Model: Intel® Wi-Fi 6E AX210 M.2 non vPro
- Manufacturer No.: AX210.NGWG.NV
- Format: M.2-2230, A-E-Key (NGFF) extension card
- Host interface: PCI-Express for WLAN, USB for Bluetooth
- Dimensions: 30 x 22 x 2,4 mm (LWH)
- Temperature Range: 0~80°C (Operating)

WLAN STANDARD

- Wi-Fi certification: WiFi 6E (802.11ax), supports WiFi IEEE 802.11b/g/n/ac/ax in the 2.4 / 5 / 6 GHz band, 2T2R (2x2)
- Security features:

Authentication: WPA2 and WPA3
Encryption: 128-bit AES-CCMP, 256-bit AES-GCMP

- Authentication Protocols:

802.1X EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2 (EAP-SIM, EAPAKA, EAP-AKA')

- Maximum PHY data rate (theoretical):

IEEE 802.11n data rate: up to 300 Mbps
IEEE 802.11ac data rate: up to 867 Mbps
IEEE 802.11ax data rate: up to 2400 Mbps

BLUETOOTH STANDARD

- Supports Bluetooth 5.2 in the 2.4 GHz band

ANTENNA CABLES

- Two WLAN cables (length: 53 cm)
- Connectors:
  1) RP-SMA Pigtail female
  2) MHF4/IPEX4 compatible
- Antennas: two external dipole antennas
- Frequency range: 2.4 / 5 / 6 GHz band, omnidirectional
- Total length: 109.5 mm, diameter: 7.8~10.0 mm

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Product Comparison

Product	Intel WLAN card	Wi-Fi Version	Antennas	Antenna Cables	EAN Bar Code
WLN-M1	Intel® Wi-Fi 6 **AX200** M.2 non vPro	**Wi-Fi 6** (802.11ax) – 2.4 / 5 GHz	2x	4x (21+29+53+53 cm)	4046047103690
WLN-M12	Intel® Wi-Fi 6E **AX210** M.2 non vPro	**Wi-Fi 6E** (802.11ax) – 2.4 / 5 / 6 GHz	2x	2x (21+29 cm)	4046047104451
WLN-M22	Intel® Wi-Fi 6E **AX210** M.2 non vPro	**Wi-Fi 6E** (802.11ax) – 2.4 / 5 / 6 GHz	2x	2x (53+53 cm) for Cube-PCs	4046047104468

Quick Installation Guide

1. Unpack the components of the WLAN accessory kit and remove the protective covers from the two antenna cables.

2. **Caution:** For safety reasons, please remove all connected cables from the PC before installation.

3. Remove the case cover of the PC.

4. Use a 6 mm screwdriver to puncture the two perforated 6.5 mm holes on the back panel. Then carefully remove the metal tag.

5. If the metal tag still does not detach, carefully bend it by pushing down from the inside of the chassis.

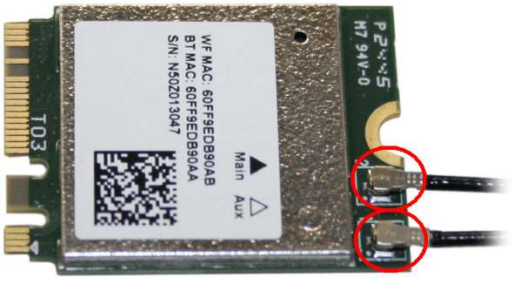
6. At one end of each antenna cable is an RP-SMA connector with an external thread, to which the antennas will later be attached. Install these connectors through the appropriate openings from the inside of the chassis.

7. **Caution:** When leading the connector through the opening, check the socket alignment and only push horizontally. Do not twist or bend the cable.

8. If you have difficulty inserting the antenna connector through the hole, ensure that the surface is clean. Finally, check the alignment again and carefully apply a little more force.

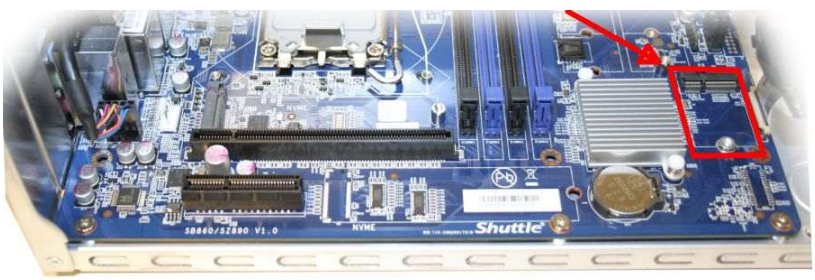
9. From the outside of the housing, first place a toothed washer and then a nut on the thread and tighten the nut with a suitable tool.

10. There are small plugs at the other end of the antenna cables. Carefully connect these to the IPEX4 connectors of the WLAN card.



11. **Caution:** Ensure you have good lighting and use a magnifying glass if necessary, as the IPEX4 connectors are relatively small and damageable.

12. Insert the WLAN card into the M.2-2230 slot and secure it with the appropriate screw.



13. When laying the cables, ensure that there is sufficient radius so that the cable is not damaged by kinking.	
14. Re-attach the case cover to the chassis. Finally, screw the antennas onto the external threads and align them vertically for optimal reception.	

Note: What are the advantages of WLN-M22 over a conventional WLAN USB stick?

1. The M.2 card sits in the case and is better protected from tampering and theft.
2. The integrated solution is more appealing.
3. For the best possible efficiency the antenna should be at least 6 cm long (half a wavelength at 2.4 GHz) which is a big advantage over the USB stick.
4. This WLAN card is a Combo card which supports both WLAN and Bluetooth.
5. The transmission protocol of the PCI-Express interface is less complex as compared to USB which helps keep processor load lower.