Wi-Fi Bluetooth module manual

Product: Wi-Fi/Bluetooth module

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CHANGE HISTORY

Version	Date	Author	Changes
1.0	07.10.2024	NSi	Document created
1.1	09.10.2024	NSi	Document updated

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1 INTRODUCTION

This manual provides a regulatory overview and instructions about the Wi-Fi/Bluetooth module's use and installation in the host device.

This module is **not** for sale purposes for others to use, but only to be integrated into a specific host devices by the manufacturer (Nextfour Solutions).

All changes to the module are only authorized from the manufacturer's engineering department, and only for the manufacturer (Nextfour Solutions).

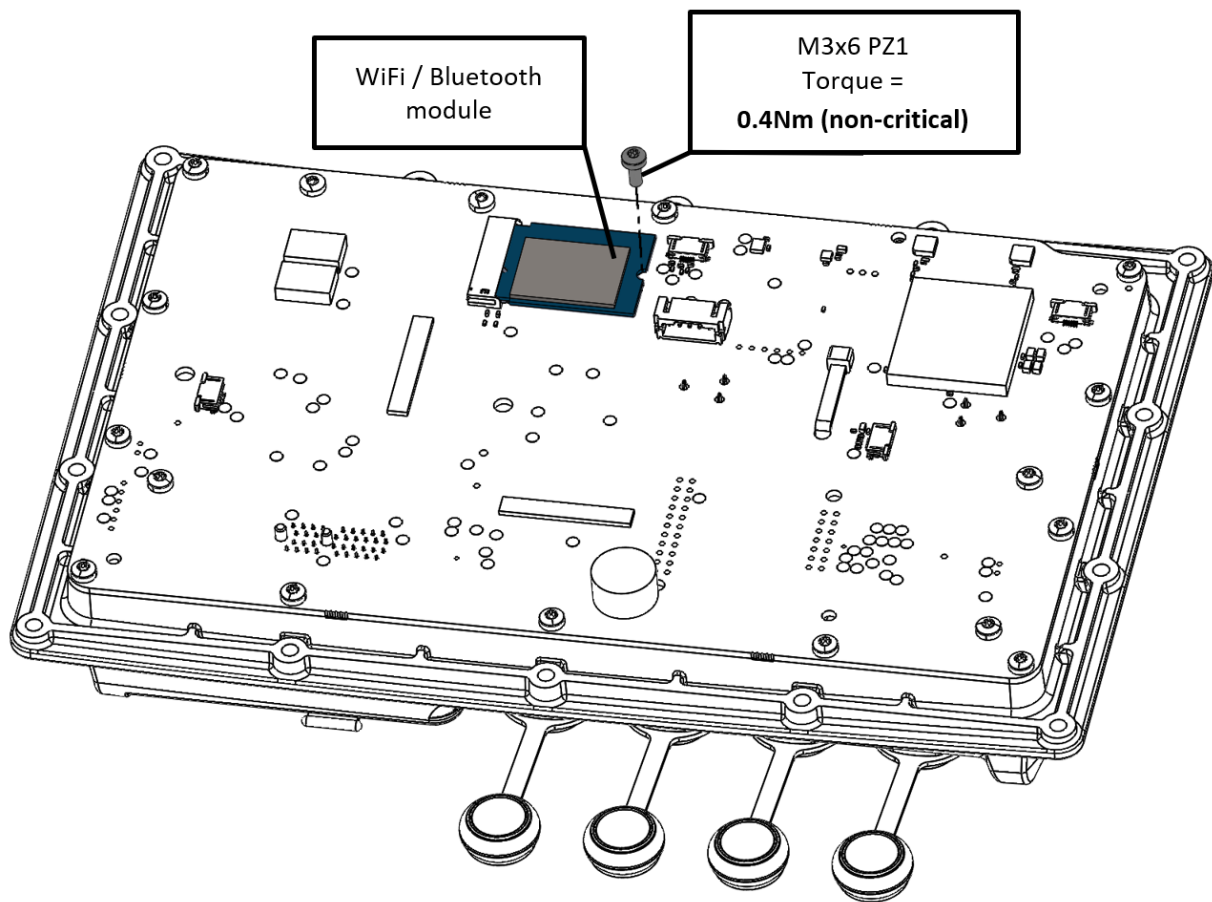The module is only accepted to be used in Nextfour Solutions Q products.

The WIFI/Bluetooth module does not support 5GHz operation in this application.

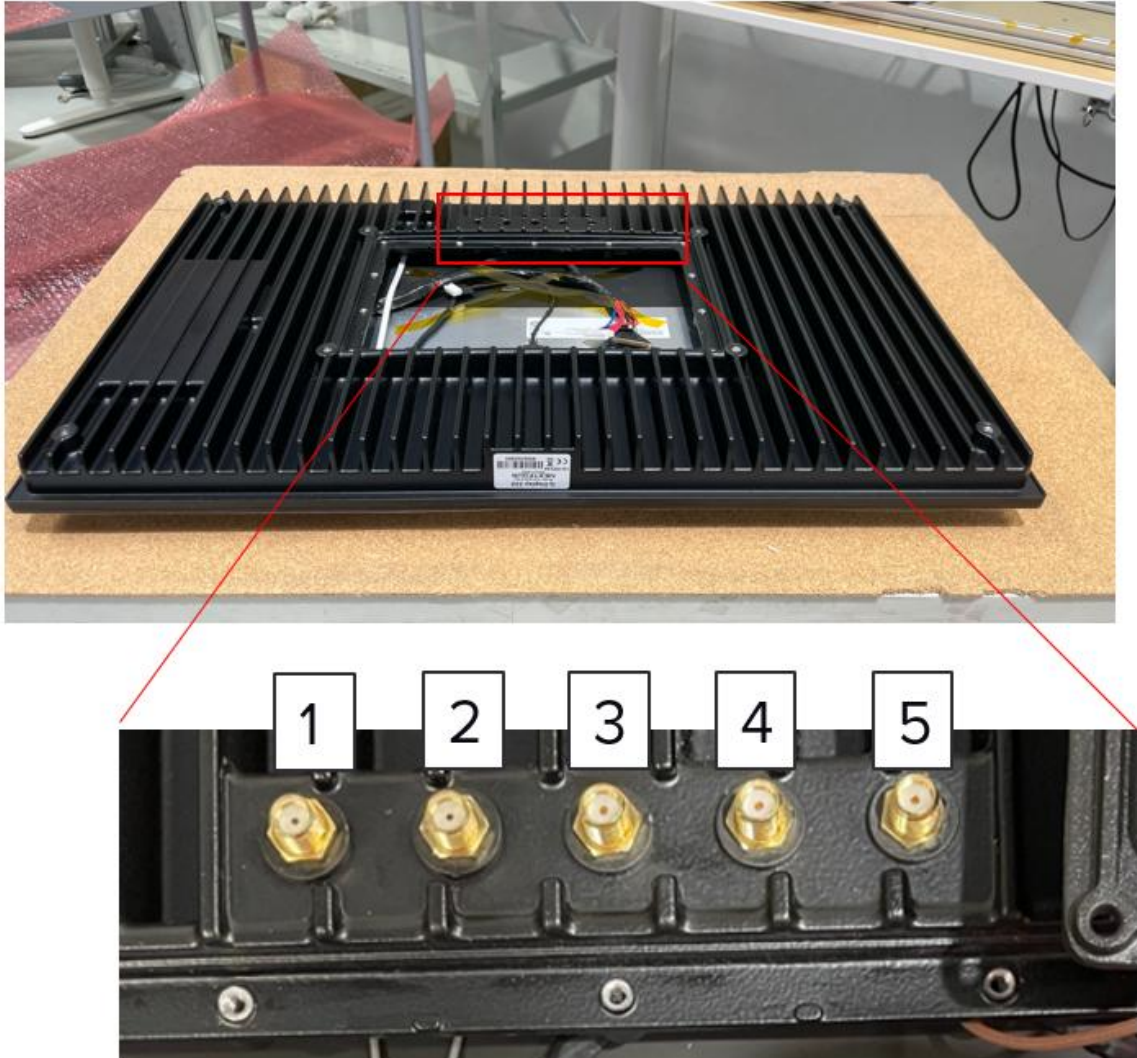## 2 INSTALLATION

2.1 WIFI/Bluetooth module installation

· Install WiFi / Bluetooth module to the reserved slot on engine module.

Note: WiFi module screw tightness is non-critical, as it will be opened and reinstalled during final assembly of the product. Tightening by hand without torque driver is accepted.
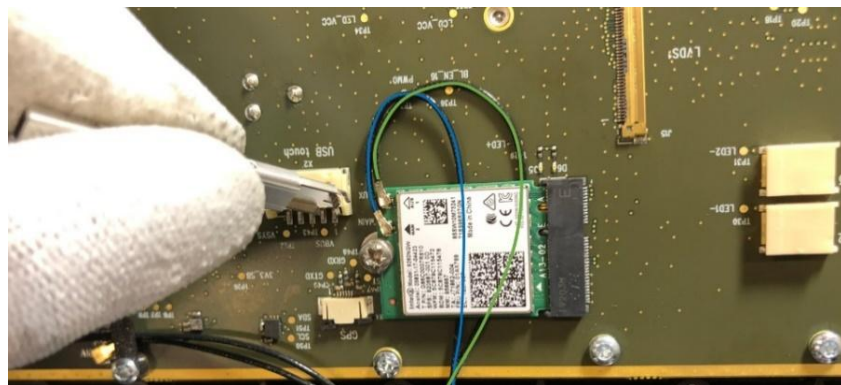
2.2 Antenna connector installation

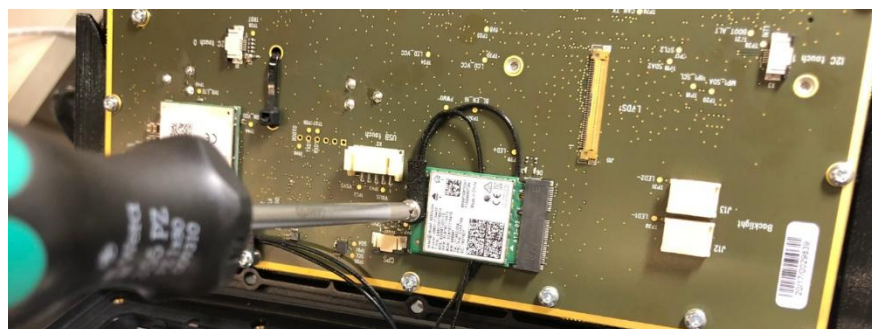Attach 4 Coaxial Cables according to the image:

1. Cell MAIN

2. Cell AUX (i.e. DIV)

3. WiFi/BT MAIN only for 2.4GHz operating mode.

4. WiFi/BT AUX only for 2.4GHz operating mode.

5. GNSS (i.e. GPS)

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Connect WiFi/BT cables using the MHF4 tool. Main antenna wire has a marking.

BE CAREFUL, THE CONNECTORS ARE FRAGILE. Approach the connector directly from above with the cable connector centred. You should hear/feel a distinctive 'click' when the connection is made successfully.

Attach WiFi/BT support with M3x6 PZ screw. Hand tighten. Check wire routing.

3 INTEGARTION INSTRUCIONS

This section contains all the required instructions for integrating the Wi-Fi module into the host device (Q2 device.)

3.1 Applicable FCC rules

These are the rules that specifically establish the bands of operation, the power, spurious emissions, and operating fundamental frequencies.

Applicable frequency band rules, transmitted power and spurious emissions on this module are established under §15.247.

3.2 Operational use conditions

Applicable rules do not apply any restrictions to the devices use conditions.

The WIFI/Bluetooth module should only be used and installed on its designed location within the host device. Only the specified external antenna should be used with the module connected to the host device.

3.3 Limited module procedures

Not applicable. The module in use is full module including all required components.

3.4 Trace antenna designs

Not applicable. The antenna connected to the module is an FCC approved external antenna. The module should only be connected to the approved antenna.

3.5 RF exposure considerations

The Bluetooth/Wifi module should always be installed on its purposed installation location inside the host device. This ensures the end installation location as fixed with the host device.

Correct installation inside the host device keeps the distance to the end used at least 50cm from the user's body.

3.6 Antennas

The WIFI/Bluetooth module shall only be used with the approved external antenna: 2J7086BGFa with RP-SMA connectors. The antenna is only used for 2.4GHz ISM band operating modes.

3.7 Label and compliance information

The host device in which the module is installed shall follow the KDB Publication 784748 guidelines and label the device accordingly.

3.8 Information on test modes and additional testing requirements

For any testing purposes regarding the WIFI/Bluetooth module, a verified test software "EMC" should be loaded to the host device. This provides all the required test modes.

3.9 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts listed on the grant. Please make sure the host device complies to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

3.10 Note EMI Considerations

Host manufacture is recommended to use D04 Module Integration Guide recommending as "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties

3.11 How to make changes

Only grantees are permitted to make permissive changes. If changes guidance on integration is required, please contact: ville.keskilohko@nextfour.com.