

# Radio Module Manual

## A. General Description

The WNFQ268AXI(BT) is a Qualcomm Atheros WCN6856-based Wi-Fi 6E (IEEE 802.11ax) radio module in an M.2 2230 E-key form factor. The module interfaces via PCI Express (PCIe) and is integrated into Varex Imaging wireless X-ray detector systems

The FCC and IC identifiers for the **WNFQ268AXI(BT)** radio module integrated into Varex Imaging products are listed below:

- FCC ID: ZZ6-WNFQ268AXIBT
- IC: 9909A-WNFQ268AXIB

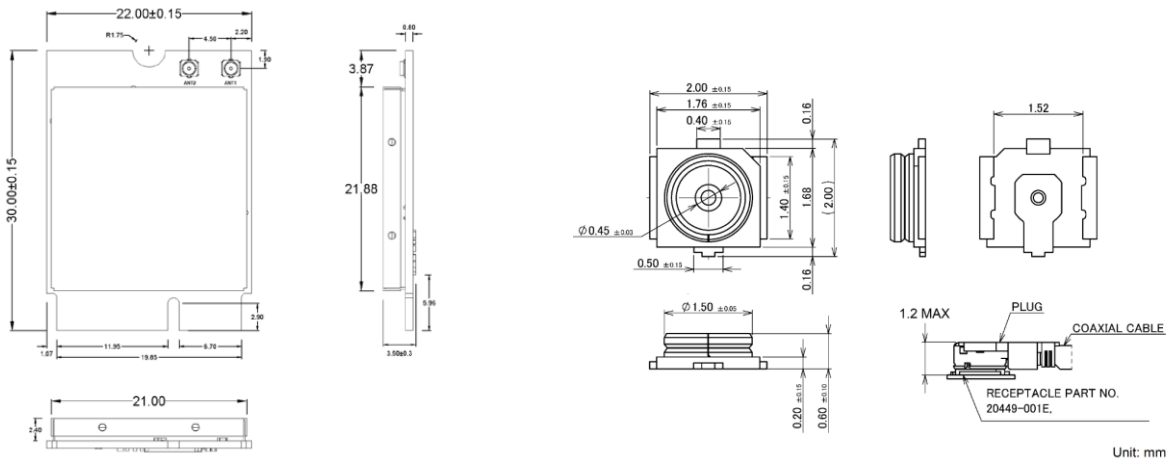
This transmitter module is approved exclusively for use within Varex Imaging Corporation products and is not authorized for standalone sale or third-party integration.

## B. Key Feature

- Compliant with IEEE 802.11 ax/ac/n
- Supports 2x2 Multi-User Multiple-Input Multiple Output (MU-MIMO)
- 5 GHz/6 GHz support
- 20 MHz/40 MHz/80 MHz/160 MHz channel bandwidth for 5 GHz/6 GHz
- Supports STA mode and Soft AP Mode
- Antenna Connector: 2 x IPEX MHF4
- Data rate:
  - 802.11n: MCS0~15
  - 802.11ac: MCS0~9
  - 802.11ax: HE0~11
- Frequency:
  - 5.150GHz~5.850GHz
  - 5.925~7.125GHz
- Modulation:
  - 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
  - 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
  - 802.11ax: OFDMA (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM)
- Security: WPA2, WPA3

- Operating Voltage DC 3.3V

## C. Mechanical Dimension (mm)



## D. Installation

- Connect the Radio module to the PCIe slot of the host
- Install Wi-Fi driver
- Connect the antennas to the MHF4 ports of the radio module using coaxial cables
- Connect to the Wireless Network

## E. FCC and ISED Applicable Rules

This radio module has been tested and found compliant with the following standards:

- FCC 47 CFR PART 15 SUBPART E
- ISED RSS-247 ISSUE 4
- ISED RSS-248 ISSUE 3
- ISED RSS-GEN ISSUE 5+A1+A2

The FCC and ISED applicable rules must be included in the host manual for any host device that incorporates this radio module.

## F. Operational Use Condition

This radio module has been tested and found to comply with emissions limits for a Class B, part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encourage to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver

## G. RF Exposure Statements

This transmitter must not be co-located with, or operated in conjunction with, any other antenna or transmitter.

This equipment complies with the FCC RF exposure limits set forth for an uncontrolled environment. This radio module should be installed and operated with a minimum distance of 20cm between the radiator and your body or nearby persons.

This radio module has been approved by Federal Communications Commission to operate with the antenna listed below.

Antenna Type	Brand	Antenna Part Number	Maximum Gain at 5GHz	Maximum Gain at 6 GHz	Antenna Connector
CBSA-PCB	Varex Imaging Corporation	171434	5.84 dBi	7.87 dBi	MHF4L

The RF exposure statements must be included in the host manual for any host device that incorporates this radio module.

## H. Host Product Compliance Verification Requirements

When this radio module is integrated into a host device, the final host product must be evaluated to confirm continued compliance with FCC requirements. The host manufacturer is responsible for performing verification testing with all transmitter(s) in the

host operating simultaneously. This may be accomplished by spot-checking emissions from the fully assembled host device while it is configured in typical operational modes. Testing should confirm that both fundamental-frequency emissions and spurious emissions comply with all applicable FCC rules when the host operates as a composite system.

## I. Host Labeling Requirement

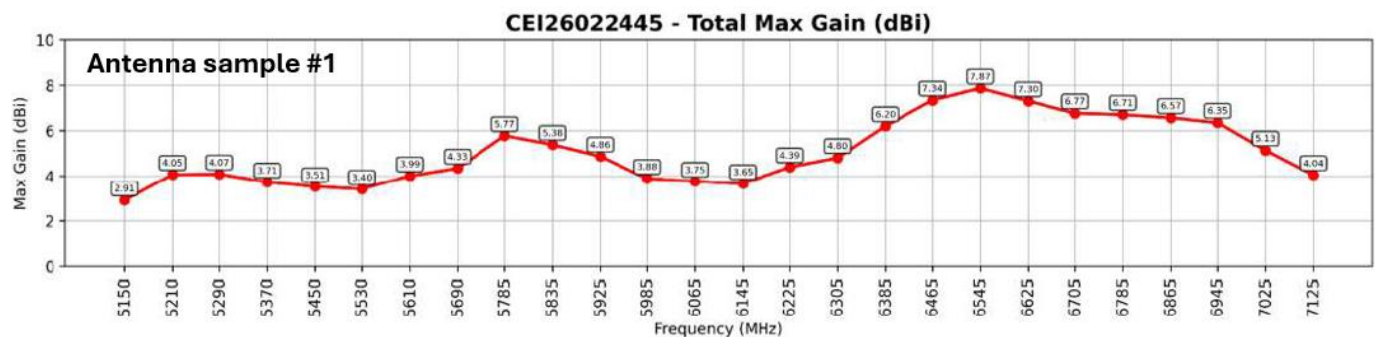
If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. The exterior label can use wording such as the following:

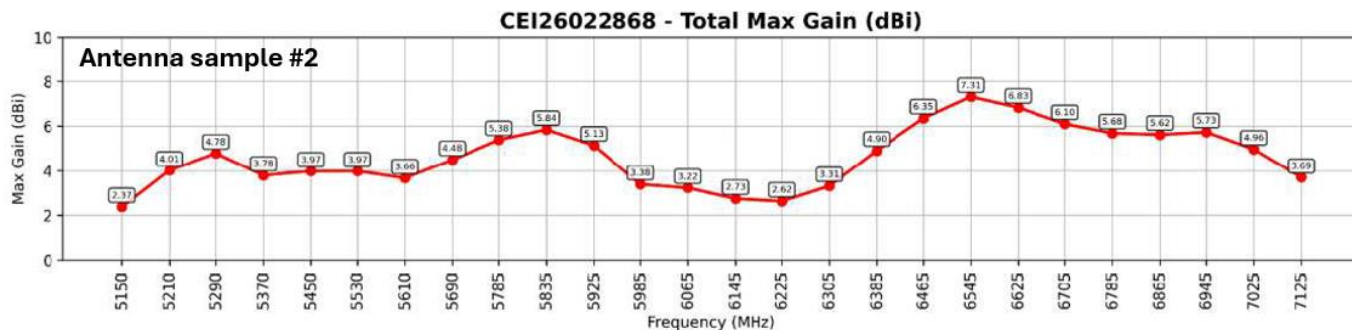
“Contains FCC ID: ZZ6-WNFQ268AXIBT”

“Contains IC: 9909-WNFQ268AXIB”.

## J. Antenna Specifications

- The radio module uses two identical antennas for MIMO 2X2 operation
- The antenna type is CBSA (cavity back slot antenna) – PCB which is designed to be embedded inside Varex Imaging wireless detectors
- Varex part number of the antenna is 171434
- The antenna supports 5GHz and 6GHz bands for WiFi 6E operation
- Antenna is connected to WiFi 6E radio module with coaxial cable
- Antenna connector is MHF4L
- Antenna gain measurements were performed on two antenna samples, and the total maximum gain values are provided below.





## K. Additional Notes

- The radio module supports Bluetooth, BLE, 2.4 GHz Wi-Fi, and 802.11a functionality; however, these features are not enabled when the module is integrated into Varex Imaging products. The host software disables these capabilities in the final product configuration
- AP mode is enabled in the radio module at 5GHz and 6 GHz bands
- AP mode operation in DFS band is disabled in the host software
- Software security declaration check list is addressed in “UNII Software Security” document
- The bandwidth reduction technique is used for the purpose of incumbent avoidance.
- Channel puncturing is not used for the purpose of incumbent avoidance.
- The new antenna is being certified with this radio module

## L. Radio Module Label

