# Wireless Device Purchasing Guide
# for VUMC Departments

## OVERVIEW

This guide is intended to help VUMC departmental purchasing agents understand the technical requirements for connecting to the VUMC wireless network.  To avoid costly purchases of hardware that will either not work on the VUMC wireless network or will only work in degraded performance and/or security modes, it is important to make informed decisions based on what the VUMC wireless infrastructure can support.

If you have any questions concerning devices and their technical specifications, VUMC IT is available to review your device's wireless specifications to ensure compatibility with the wireless network.  Submit a Pegasus Ticket to [Evaluate Wireless Device Technical Specifications](#).

## RECOMMENDATIONS

- **For best performance**, devices should support 5GHz.
- VUMC IT will support devices on the 2.4GHz wireless network, but *due to issues inherent with 2.4GHz wireless networks (limited capacity and performance as well as interference vulnerability), using these networks reliability cannot be guaranteed.*
- All device types should be tested on the VUMC production wireless network before purchasing devices and/or signing contracts.

## SPECIFICATIONS

1. 5GHz (Recommended)
    a. <u>Wireless Protocols</u> – 802.11a/n/ac/ax (any one or combination of the below)
        i. 802.11a
        ii. 802.11n (5GHz)
        iii. 802.11ac
        iv. 802.11ax

    b. <u>Voice Applications</u> – (see *vuVoice*/*Mobile5* in Specification Summary Table below) If purchasing a phone for enterprise voice applications (ex. Mobile Heartbeat), the device should also support:
        i. 2x2 MIMO (essentially has two antennas/spatial streams)
        ii. Roaming protocols 802.11k/r/v

2. 2.4GHz (Not Recommended*)
   a. Wireless Protocols – 802.11b/g/n (one or a combination of the below)
      i. 802.11b (not supported)
      ii. 802.11g
      iii. 802.11n (2.4GHz)

   *The 2.4GHz wireless is not recommended:
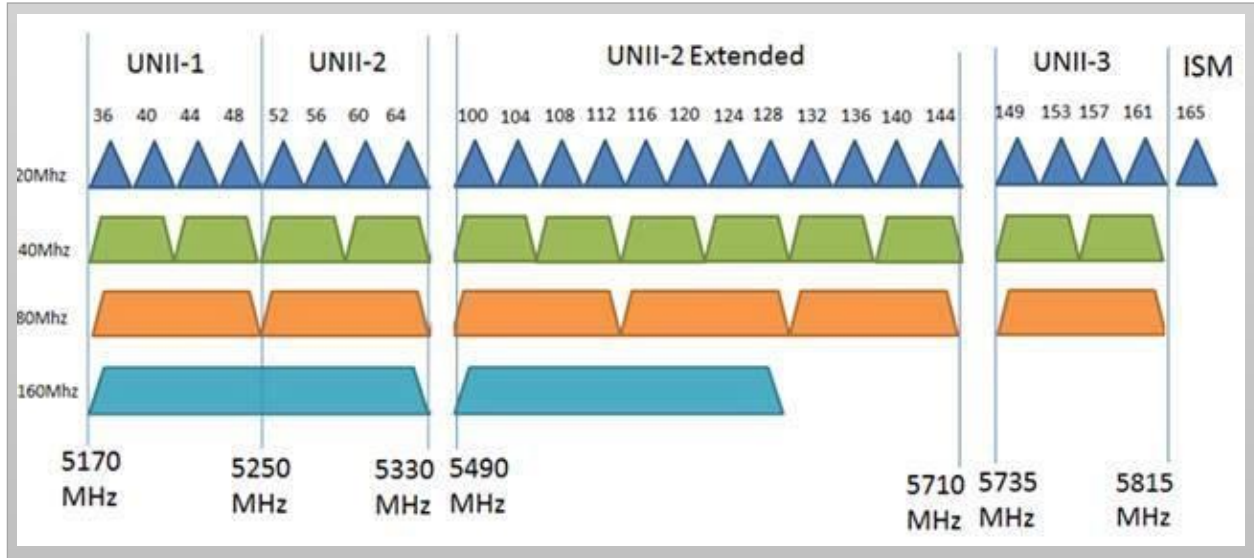   - Heavy Congestion
   - Prone to Interference
   - Unreliable performance
   - Low throughput

## SPECIFICATION SUMMARY TABLE

| Wireless Network / SSID | Radio Band | Usage | IEEE Protocol | Security Policy | Authentication | Encryption | FCC Domain | Channels | Frequencies |
|---|---|---|---|---|---|---|---|---|---|
| VUMCEmployee | 5GHz | Enterprise devices - VUNetID Required | 802.11a/n /ac/ax | WPA2 | 802.1X/EAP w/PEAP MSCHAPv2 | AES-CCMP | UNII-1 UNII-2 UNII-2e UNII-3 | 36-48 52-64 100-144 149-161 | 5170MHz-5250MHz 5250MHz-5330MHz 5490MHz-5730MHz 5735MHz-5815MHz |
| vuVoice / Mobile5 | 5GHz | Voice | 802.11a/n /ac/ax 802.11k/v /r | WPA2 | PSK | AES-CCMP | UNII-1 UNII-2 UNII-2e UNII-3 | 36-48 52-64 100-144 149-161 | 5170MHz-5250MHz 5250MHz-5330MHz 5490MHz-5730MHz 5735MHz-5815MHz |
| Device5 | 5GHz | Shared | 802.11a/n /ac/ax | WPA2 | PSK | AES-CCMP | UNII-1 UNII-2 UNII-2e UNII-3 | 36-48 52-64 100-144 149-161 | 5170MHz-5250MHz 5250MHz-5330MHz 5490MHz-5730MHz 5735MHz-5815MHz |
| Device24WPA | 2.4GHz | Shared | 802.11g/n | WPA2 | PSK | AES-CCMP | ISM | 1-13 | 2401MHz-2473MHz |
| VUMCGuest | 2.4GHz | Personal | 802.11g/n | WPA2 | PSK | AES-CCMP | ISM | 1-13 | 2401MHz-2473MHz |

APPENDIX

## 5GHz – Channel & Frequency



## 2.4GHz – Channel & Frequency