5by5 Wireless™

FAQs – Introductory

- **What is 5by5 Wireless?**
  It is a patented hardware technology that provides full-duplex wireless extended tower range over UHF in rural and remote areas (internet, VoIP, HD entertainment), as well as doubling the data rate in metro areas.

- **What are the main benefits of having 5by5 Wireless in my smart phone or my tablet?**
  You will have full duplex, which means simultaneous send and receive. What that means is that you could have perfectly clear phone discussions while, for instance, at the same time downloading a movie with greater speed that you can now.

- **How far does the signal reach when I am in a rural area (UHF) that supports 5Bars Wireless?**
  Up to 20 miles (32 km) for fixed locations such as a house router to the rural areas, remote tower and mobile devices.

- **Can I still get five bars in my cellphone or mobile device if I am moving from a metro (SHF) to a remote area (UHF) or vice-versa?**
  Yes and yes.

- **If I am at home or at my office, is there a limit to the number of devices that can be connected to the 5by5 Wireless router?**
  No practical limit.

- **What is the operating frequency for the 5by5 Wireless chipset for mobile devices and wireless routers?**
  It operates across all frequencies (dynamic range).

- **What are the benefits of using 5by5 Wireless router at home or in the workplace?**
  Your wired network connections use full duplex whereas, currently, wireless devices are connecting using half duplex - which you can compare, efficiency-wise, as a two lane highway versus a single lane highway.

- **Is 5by5 Wireless limited to 3G in rural markets?**
  No, flexible to all systems

- **Does 5by5 Wireless support voice, data and video across all frequencies?**
  Yes.

- **How does this chipset affect the battery life of my mobile device?**
  The chipset is a hardware based solution with minimal process overhead for transferring connections between remote towers and metro towers. Therefore, there is little or no impact on battery life - and certainly justifiable impact, given the benefits.

- **Will I get the same benefits across all mobile devices?**
  Yes, provided they have 5by5 Wireless chipset and are talking to either a 5by5 Wireless router or a 5by5 Wireless enabled tower.

- **Will this device increase the size of my phone?**
  No.

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FAQs – Technical

- **Is this a hardware or software technology?**
  This is a 100% hardware implementation technology.

- **How many antennas are required for this chipset?**
  5by5 Wireless is capable of achieving a full duplex broadband system with one omnidirectional antenna.

- **What is the signal separation/isolation achieved?**
  There is an effective 120dB of separation between the transmitting and receiving signal.

- **What impact will this have on the processor?**
  There will be no impact on your processor, as no computer power is required.

- **How much will it cost to implement this technology?**
  The cost is extremely low, as low as 10 cents per unit for CPE and up to $1,000 on base stations.

- **What is the connection speed between my mobile device and the router?**
  Less errors (improvement) with the possibility of doubling the speed.

- **How much information can I transmit and receive at the same time?**
  It is possible to transmit 14 Mbps and receive up to 27 Mbps per channel over entire useable service area (DOCSIS 3.0).

- **Will this device increment the transmit (TX) and receive (RX) power of my mobile phone?**
  5by5 Wireless is capable of transmitting signals at 0.5 Watts (76dBmV) and receive them at 1.000^{e-12} Watts (-40dBmV).

- **What are the factors that could cause performance problems on my connectivity?**
  Powerful RF signals at or near the base station (electro magnetic fields causing problems to the Low Noise Amplifier).

- **Is it possible to install or implement this chipset on any operating system?**
  Yes. This is a simple and elegant hardware implementation which is adaptable on any device.

- **Is there any latency factors to be considered?**
  Latency is always a factor to be considered. However, 5by5 Wireless presents a latency in the range of picoseconds (*pS*), whereas other technology presents latency in the range of milliseconds (*mS*) and microseconds (μS).

- **Is it required to install multiples antennas on the tower in order to cover a wider area?**
  We will minimize the number of Antennas on the Tower. As few as one that will cover the full spectrum allocated to you.

- **Do I need to set up one antenna per channel?**
  No, we can run multiple channels into one single bidirectional antenna

- **Do you currently have 5by5 Wireless technology modems on stock?**
  Yes, we can provide a cable modem that also has WiFi built into the modem so you have four Ethernet connections, WiFi and two telephone connections on the modem.

- **What is the cheapest CP antenna you can have to go with a home or business router if you are out 20 to 25 miles?**
  Currently we use the same antenna for distances up to 25 miles, with a fix cost of $35. If you would like to get higher gain and cover a wider area, it is necessary to purchase a parabolic antenna for $250.

- **For businesses and residences that have a standard router now hooked up to cable, can this router work or do they need a new one?**
  The standard router works perfectly with our technology. As simple as connecting the standard router to 5by5 cable (wireless) modem to enjoy the benefits of full duplex connectivity.

- **What are the benefits of using full duplex DOCSIS 3.0 system for wireless connectivity?**
  - Allows a much higher throughput
  - Multiple upstream and downstream channels bonding capability to increase bandwidth, maintaining the maximum possible speed (operates in multiple channels simultaneously for download and upload)
  - Allows up to 8 times more bandwidth with consistent connections
  - Experience less of a speed drop during peak usage hours
  - Supports:
    - ✓ IPv6 and IPTV
    - ✓ QAM128 for upstream traffic
    - ✓ 108MHz to 1GHz downstream and,
    - ✓ 5MHz to 85MHz upstream

- **What are the benefits of using full duplex DOCSIS 3.1 system for wireless connectivity?**
  - This is a new generation of cable technology
  - Enables higher speed connections
  - Significantly reduce network delays as data traffic grows (increase responsiveness and higher resolution graphics)
  - Improves responsiveness for a variety of applications
  - Transmit up to 50 percent more data throughput over the same spectrum
  - Supports:
    - ✓ IPv4, IPv6, ICMPv6
    - ✓ Upstream traffic: SC-QAM and OFDMA
    - ✓ The demodulator should be able to support 2048-QAM and 4096-QAM
    - ✓ 10 Gbps downstream and,
    - ✓ Up to 1 Gbps upstream