



## Wi-Fi and Cellular Calling Comparisons

As demand for cellular service shifts from the outdoor domain to indoor coverage, many enterprises have been caught off guard and are seeing decreased leasing of office space, hotel occupancy rate and just poor productivity due to very poor cellular coverage.

Causes can be from lack of IDF space, green friendly LEED certified windows, budget constraints or architectural vision. The inescapable fact is that business is conducted in a dynamic environment. Communication cannot be isolated to just the desk or conference room anymore.

For this reason, many business owners attempt to provide a solution for either the lack of cellular signal or budgetary dollars by utilizing Wi-Fi calling. This document does not attempt to persuade or justify Wi-Fi or Cellular calling. This document just attempts to provide a comparison chart. It is incumbent upon the reader to utilize the methodology that works best for their business. Utilizing Wi-Fi calling is dependent upon an enterprises' resources for support staff and how dense and well-engineered their Wi-Fi network is.

	Cellular Calling	Wi-Fi Calling
Frequency Bands	Licensed FCC Cellular Band	Public Open Band
E-911 Liability	Cellular Provider	Enterprise
Quality of Service [QoS] <sup>1</sup>	Cellular Provider	Enterprise
Control of Interference <sup>1</sup>	Cellular Provider	NA
Reliability or 'Up time' <sup>2</sup>	Cellular Provider	NA
Wireless Policy <sup>3</sup>	FCC/ Cellular Provider	NA
Handset Sensitivity	FCC/ Cellular Provider	Varies by Handset Vendor

<sup>1</sup> Cellular providers have stringent metrics called KPI [Key Point Indicators] that monitor noise, data throughput, dropped calls; just to name a few. This is done utilizing the unique message layering used by the handset to communicate back to the base station. KPI's are monitored from an hourly to a daily basis. Software is then utilized to make adjustments.

<sup>2</sup>Please refer to Note 1 on QoS, KPI's also monitor reliability.

<sup>3</sup>Because cellular calling utilizes licensed bands, cellular providers adhere to governmental policy on the control and rebroadcast of assigned frequencies. Many enterprises, especially in the healthcare and municipal space, have wireless policies however network users are the only ones that fall under this policy. Due to the nature of open public bands, other users and devices cannot be made to conform with wireless policy.

Example: a high-power microwave utilizing 2.4GHz [Wi-Fi channels 1-14] is a public band and therefore not restricted in its channel use. Same can be said for consumer Wi-Fi range extenders.