

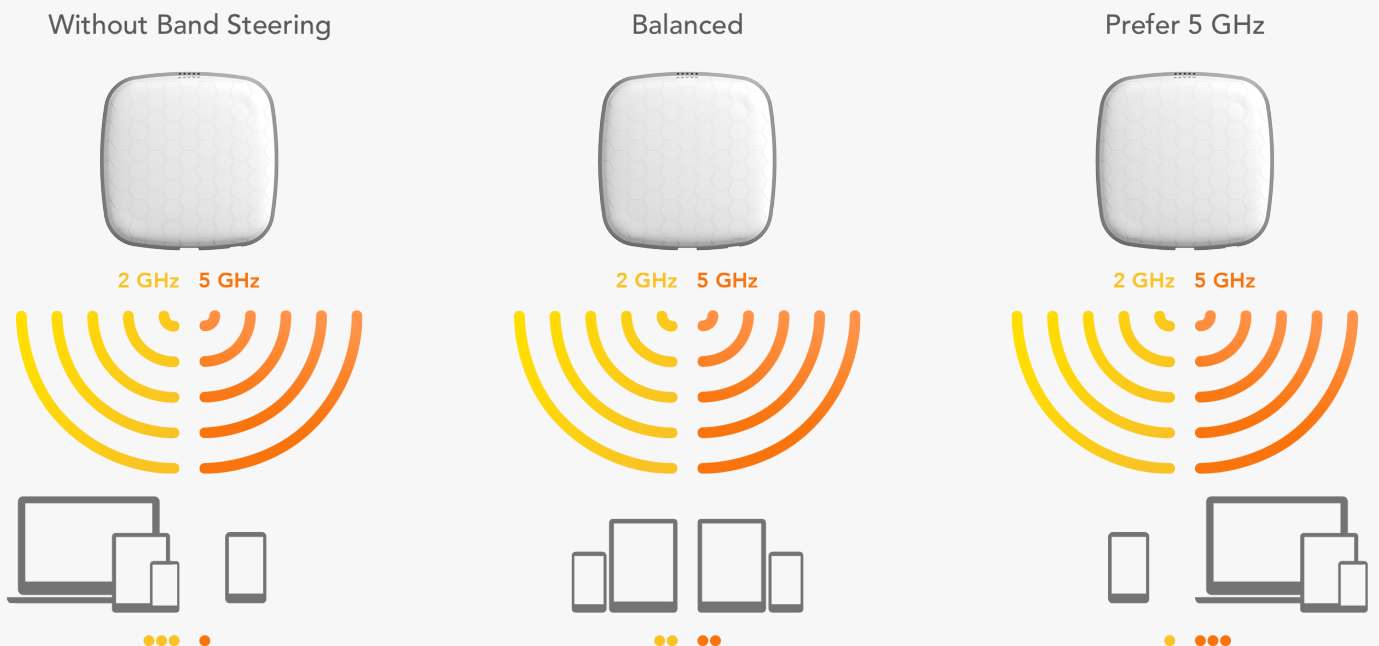


LigoWave

## Band steering in Infinity devices

Band steering technology allows achieving maximum performance of Infinity dual-band access points. Dual-band stations (clients) select the radio to connect randomly and 2.4 GHz may be a more preferred option due to a better signal propagation. The main advantage of band steering feature is that legacy 2.4 GHz stations always stay on the same radio but dual-band (2.4 and 5 GHz) clients most of the time will be moved to a 5 GHz radio depending on the channel utilization. Infinity access points are able to detect if clients have dual-band capability. First time station can connect to any radio but later 5GHz radio preferred. Configuration parameter (Balanced or Prefer 5GHz) defines the priority of moving stations to a 5 GHz radio. Moving back to 2.4 GHz radio also is possible but not configurable.

*Client division per radio using different band steering settings*

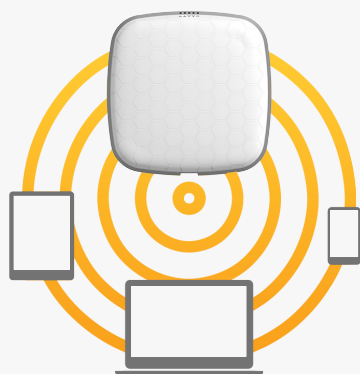


| Band steering mode | 2.4 GHz radio utilization, % | 5 GHz radio utilization, % | AP decision                    |
|--------------------|------------------------------|----------------------------|--------------------------------|
| Balanced           | <80                          | <=10                       | Leave as it is                 |
|                    | 80                           | <=10                       | Move 2.4G stations to 5G radio |
|                    | 90                           | <=20                       | Move 2.4G stations to 5G radio |
|                    | 100                          | <=30                       | Move 2.4G stations to 5G radio |
|                    | 100                          | >30                        | Leave as it is                 |
| Prefer 5 GHz       | <30                          | <=10                       | Leave as it is                 |
|                    | 30                           | <=10                       | Move 2.4G stations to 5G radio |
|                    | 40                           | <=20                       | Move 2.4G stations to 5G radio |
|                    | 50                           | <=30                       | Move 2.4G stations to 5G radio |
|                    | 80                           | <=60                       | Move 2.4G stations to 5G radio |
|                    | 100                          | <=80                       | Move 2.4G stations to 5G radio |
|                    | 100                          | >80                        | Leave as it is                 |
| Any                | 10                           | >80                        | Move 5G stations to 2.4G radio |
|                    | 20                           | >90                        | Move 5G stations to 2.4G radio |
|                    | <=30                         | 100                        | Move 5G stations to 2.4G radio |
|                    | >30                          | 100                        | Leave as it is                 |

## Beamforming

Beamforming is supported on the latest Infinity series access points with 802.11ac radios. (NFT 2ac, NFT 3ac and NFT 2ac outdoor) It is available for 2.4 GHz radio only, is enabled in the wireless driver and not configurable. Access points support so called explicit beamforming, which is based on the transmitter and receiver exchanging information about the characteristics of the radio channel to wring out maximum performance based on communication measurements. In order for beamforming to work properly, stations should support this functionality as well. Beamforming concentrates radio signal directly to the station. Practically received signal is improved by 2-3 dB resulting in better distance and performance characteristics.

Today's WiFi



802.11ac Beamforming Technology

