

# 2-Way RF Transceiver: TPS-RFGWX

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## Purpose

This addendum provides additional detail to the description of Wi-Fi Technology that begins on page 2 of the TPS-RFGWX Operations Guide (Doc. 5847A).

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## Additional Description of Wi-Fi Technology

The paragraphs below follow the last paragraph of the “Wi-Fi Technology” topic:

When configuring a Cresnet system that includes Crestron RF wireless devices that broadcast in the 2.4 GHz spectrum, in a facility that also contains one or more 802.11b-compliant RF devices, it is important to bear in mind how each implementation uses the frequency bandwidth, and how they may interact.

The 802.11b spectrum ranges from 2400 MHz to 2497 MHz, and is divided into channels spaced at 5 MHz intervals. Each channel, though, is 22 MHz wide ( $\pm 11$  MHz around the center frequency), which results in some overlap between channels. For instance: Channel 1 is centered at 2412 MHz, but extends from 2401 MHz to 2423 MHz, overlapping Channels 2 through 5; Channel 6 is centered at 2437 MHz, but extends from 2426 MHz to 2448 MHz, overlapping Channels 2 through 10. In an installation with two or more 802.11b RF devices, the use of Channels 1, 6, and 11 is safest since that choice produces no overlap.

As described earlier, Crestron RF devices make use of bands that define frequency ranges within the same spectrum. For example, Band 5 uses frequencies that correspond to 802.11b Channels 1 through 5, but do not overlap Channels 6 and higher. Band 9 uses frequencies that correspond to Channels 5 through 13, but do not overlap Channels 4 and below. The goal is to select bands for the Crestron RF devices and channels for adjacent 802.11b devices to minimize or eliminate overlap between them. For example, if the Crestron devices are set to Band 5, and nearby 802.11b devices are set to Channels 6 and/or 11, there is no overlap.

