Draft For Review
OET

Federal Communications Commission
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Laboratory Division Public Draft Review

Title: 15 231 Periodic Operation on Multiple Frequencies

Short Title: Section 15 231 Operation on Mult Freq

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Keyword: 15.231, Operating on Multiple Carrier Frequencies

First Category: Radio Service Rules
Second Category: Part 15 Intentional Radiators
Third Category:

Question:

Can a Section 15.231 device operate on multiple carrier frequencies?

Answer:
Section 15.231 systems can operate either simultaneously on, or sequence through, multiple frequencies under the following conditions:

All frequencies transmitted must operate with a receiver, or with receivers, as part of an operating system that makes use of all the frequencies transmitted. A system that transmits on multiple frequencies when a set of the frequencies is not utilized by a receiver, or with receivers, as part of an operating system is not permitted. For systems that can use different combinations or sets of multiple frequencies depending on different installed configurations, the applicants must demonstrate how they ensure that the installed configuration only employs frequencies operating with a receiver, or with receivers, as part of an operating system.

The lowest frequency used must be equal to or greater than 70 MHz.

The bandwidth is determined as follows:

If the highest frequency used is less than 900 MHz, the device bandwidth is restricted to 0.0025 (.25%) of the center frequency.

If the highest frequency used is equal to or greater than 900 MHz and the lowest frequency used is less than 900 MHz the device bandwidth is restricted to 0.0025 (.25%) of the center frequency.

If the lowest frequency used is equal to or greater than 900 MHz, the device bandwidth is restricted to 0.005 (.5%) of the center frequency.

The lowest frequencies used is at the lower frequency point 20 db down from the lowest modulated carrier and the highest frequency used is the higher 20 db down point of highest modulated carrier used.

The center frequency is centered between the lowest frequency used and the highest frequency used.

The device bandwidth is the difference between the highest frequency used and the lowest frequencies used.

As an alternative, for systems employing non sweeping frequencies, the total bandwidth may be the sum of the individual occupied bandwidths of each carrier frequency. Each carrier's bandwidth is the difference between the upper and lower 20 dB down points of the individual modulated carrier frequency.

For systems employing sweeping frequencies, the bandwidth is the difference between the highest frequency and the lowest frequencies of the sweep. These systems can not use the alternative method to sum the individual occupied bandwidths of each carrier frequency as described above.

A system that uses simultaneous multiple carriers that can not demonstrate that the sum of all the carriers' emissions comply with the emission limits for the band established by the lowest frequency used must contact the FCC for guidance.