



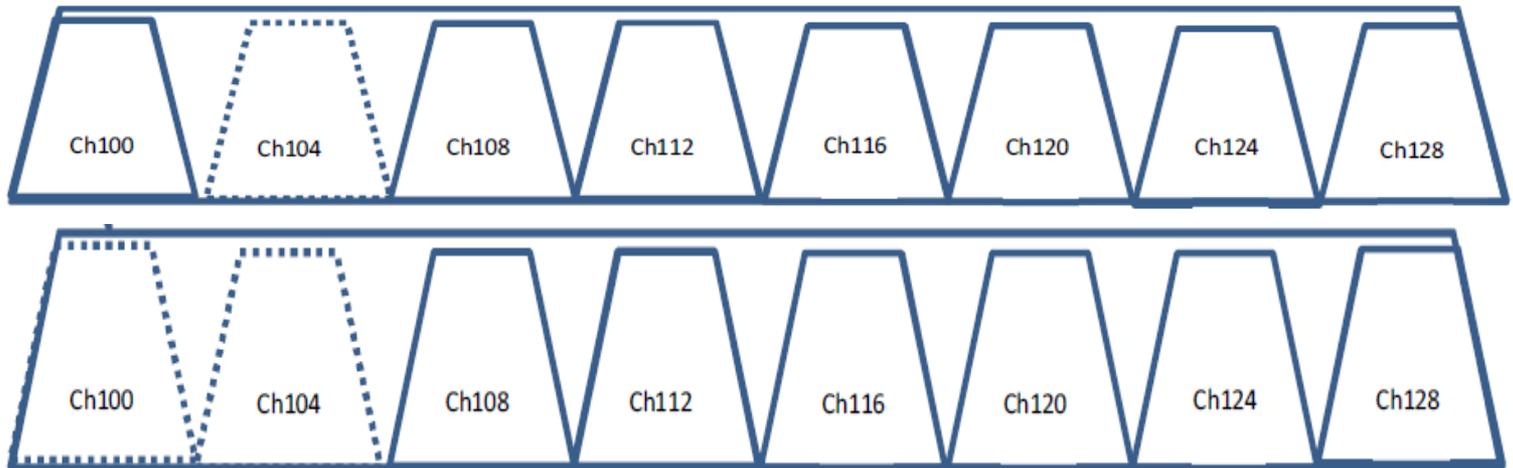
Updates and Reminders

November 13, 2019



Channel Puncturing

- 802.11ax allows for 80 MHz or 160MHz channels to notch a 20 MHz portion of its operating bandwidth when radar detected within that 20 MHz slice of spectrum.
 - ❖ Verify channel closing and move times when a 20MHz channel sees radar. Repeat for a second 20 MHz





Average Detectors

- 3 common detectors available on a modern SA:
 1. Power Averaging (RMS)
 2. Voltage Averaging (linear)
 3. Log Averaging
- Log averaging is not permitted for compliance measurements under any FCC rule part.



Average Detectors

- If a rule specifies a limit on avg. power or on avg. PSD → power averaging is required.
- If a rule specifies average detection of a field strength → voltage averaging is required.

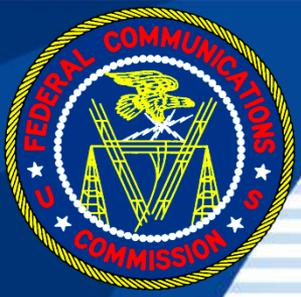


NB-IoT in Bands 12 & 13

FCC band 12: 698 – 716 MHz

FCC band 13: 776 – 788 MHz

- FCC rules state to use no less than 30 kHz resolution bandwidth for measuring band edge emissions outside the band.
- Many devices have been certified with much less than required resolution bandwidth.
- Note that 3GPP and FCC frequency ranges maybe different.
- There might be other bands with similar issues



NB-IoT in Bands 12 & 13

- FCC and WB looking at non-conforming devices. Will update once a resolution has been reached.
- TCBs should not grant devices that do not meet the rules.



NB-IoT in Bands 12 & 13

● Possible solutions:

- I. Move channels in from band edge*
- II. Reduce power
- III. Better filtering

*The device cannot operate outside the frequency range listed on the grant.

Note: US carriers may operate in 3GPP guard bands

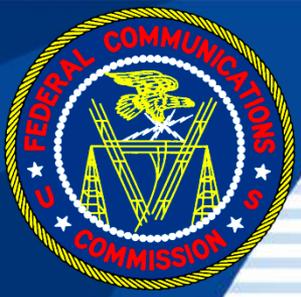


Duty Cycle

● KDB 558074 Q#3

- update to allow duty cycle correction for BLE among other technologies

- Spurious emissions in restricted bands
- Duty cycle in a max 100ms window per 15.35
- Data showing how duty cycle was calculated in test report



Duty cycle

- A duty cycle correction can also be used for FHSS devices.
 - can only be used for spurious emissions in restricted bands
 - Based on duty cycle of a single hopping channel.
 - 15.35 100ms window applies.