



Part 30 Publication Updates and a few Reminders

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Publication Status

- Knowledge Database (KDB) Publication 842590 D01 has been updated and published
- Major Updates:
 - Section 4.2
 - Added three distinct scenarios that may be encountered during power or power spectral density measurements
 - Introduced rolling integration method to determine maximum power spectral density

Reminder: The limits (power or power spectral density) are per band. Authorized bands are defined in §30.4



Some Notes on OOB and Spurious Emission Measurements (1 of 4)

- It is becoming more common among test labs to perform multiple unwanted emission measurements and display the results on a single plot
 - A new capability in some modern test equipment (spectrum analyzers, etc.)
 1. Multiple ranges of frequency defined
 2. Emission in each range is measured
 3. The results are displayed on a single plot
- Using this technique may result in missing frequencies that otherwise should have been investigated! See next slide for more discussion!



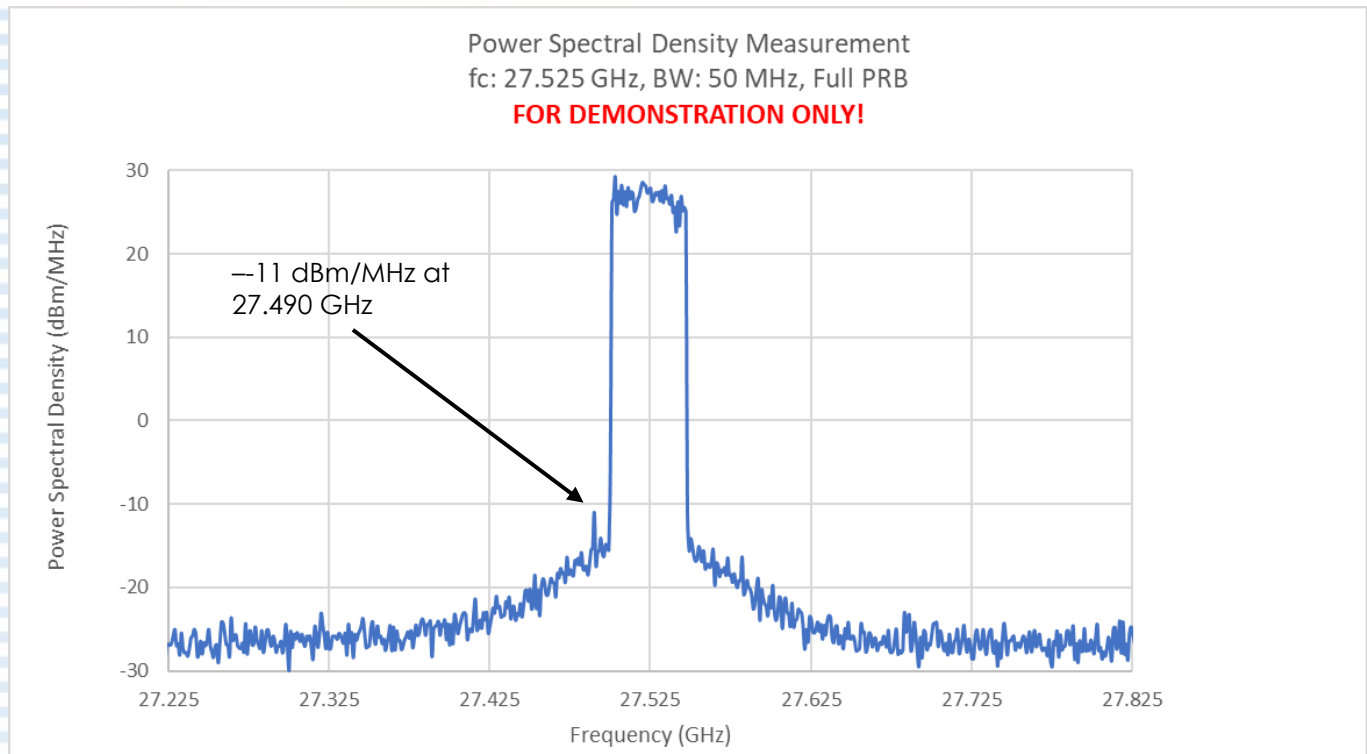
Some Notes on OOB and Spurious Emission Measurements (2 of 4)

- The following must be accounted for if this technique is used for unwanted emission measurements:
 - Each frequency to be investigated must be displayed or otherwise identified.
 - Appropriate measurement settings (pertaining to each frequency range of investigation) must be selected and displayed or otherwise specified
 - For example, RBW for frequencies above and below 1 GHz, sweep time, number of measurement points, etc.
 - All requisite precautionary measures for proper spurious emission measurements must be implemented regardless of the manner of measurement (manual or automated).



Some Notes on OOB and Spurious Emission Measurements (3 of 4)

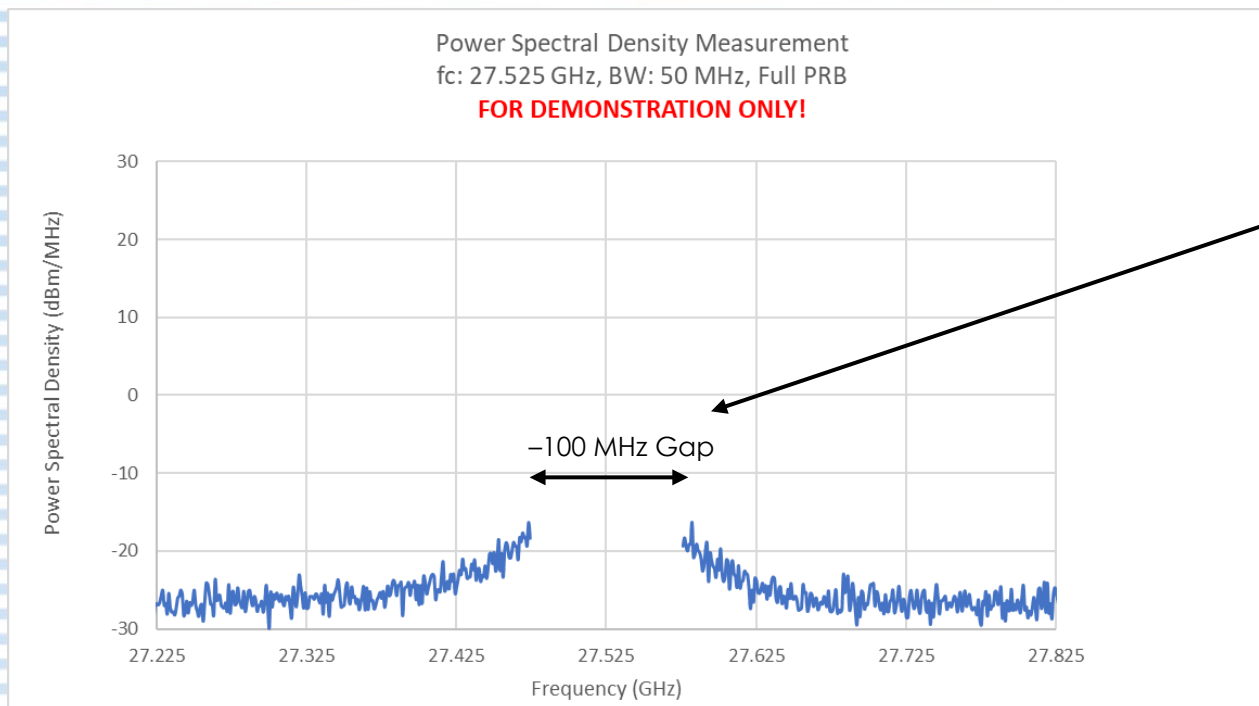
For tutorial purposes only, consider plot of a 50 MHz wide transmission below where unwanted emission limit is exceeded at 27.490 GHz





Some Notes on OOB and Spurious Emission Measurements (4 of 4)

For tutorial purposes only, Now, let's see what happens if a range wider than fundamental transmission is omitted during unwanted emission investigation



100 MHz is omitted that includes 50 MHz wide in-band transmission and the non-compliant spur!



Some Notes on OOB and Spurious Emission Measurements (Summary)

- In summary, if there is a desire to use the technique (described in slide 3) for unwanted emissions investigation, then
 - Each frequency must be displayed or otherwise identified.
 - This includes the band edges and beyond
 - If compliance to band edge limits are demonstrated by alternative methods (such as EIRP to the conducted power conversion method) then it must be clearly stated in the test report
 - Appropriate measurement settings (pertaining to each frequency range of investigation) must be selected and individually displayed or otherwise specified and verified
 - For example, RBW for frequencies above and below 1 GHz, type of detectors, VBW, sweep time, number of measurement points, etc.
 - All precautionary measures required for proper spurious emission measurements must be implemented



Questions?