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Measured Spectra for OFDM Transmission Based on PA Models of BRAN

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Submission

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Assumptions

- Baseband parameters as in IEEE 802.11
- 20 MHz sampling rate
- 48 sub-carriers used, no DC
- 64 point FFT

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PSD for Rapp's Model (p=2)

- Basis for decision on channel spacing for IEEE 802.11

Title: fig4IEEE_psd_Rapp2.eps
Creator: MATLAB, The Mathworks, Inc.
CreationDate: 11/06/98 15:34:57

PSD for Class A Model

Title: fig4IEEE_psd_A.eps
Creator: MATLAB, The Mathworks, Inc.
CreationDate: 11/06/98 15:25:29

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PSD for Class AB Model

Title: fig4IEEE_psd_AB.eps
Creator: MATLAB, The Mathworks, Inc.
CreationDate: 11/06/98 15:25:35

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Conclusions

- For Rapp's model with $p=2$
 - a distance from the UNII band edges in the order of 28 MHz is needed for a PA OBO of 6 dB
- For class AB amplifier
 - more than 30 MHz distance from the UNII band edges needed with a PA OBO of 10.5 dB
 - a distance from the HIPERLAN band edges in the order of 22 MHz is needed to fulfil CEPT regulations with a PA OBO of 5.5 dB
- For class A amplifier
 - more than 30 MHz distance from the UNII band edges needed with a PA OBO of 7.5 dB
 - a distance from the HIPERLAN band edges in the order of 20 MHz is needed to fulfil CEPT regulations with a PA OBO of 5.5 dB. The PA back-off could be relaxed by using 22 MHz distance

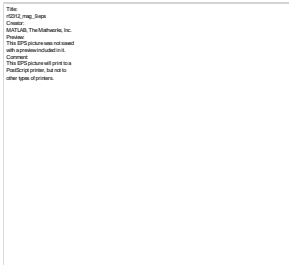
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Some Critical Considerations


- Are further results on PA needed before channel spacing is fixed for IEEE 802.11
- Does IEEE 802.11 really gain an additional channel by using 18 MHz instead of 20 MHz?
- Even with an additional channel, what is with the gain in the overall system throughput ?

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PA Models - Class A



(a) Magnitude




(b) Phase

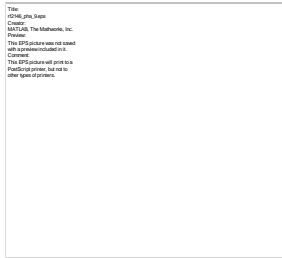
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PA Models - Class AB



(a) Magnitude



(b) Phase

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