Erratum 28108: Alignment of BR/EDR with LE ACP and C/I Requirements

Bluetooth® Expedited Specification Update

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- **Prepared By:** Core Specification Working Group

This Expedited Specification Update applies to the following specifications (collectively, the "Source Specifications"):

- Bluetooth Core Specification, Version 6.2 ("Core Specification, v6.2")
- Bluetooth Core Specification, Version 6.1 ("Core Specification, v6.1")
- Bluetooth Core Specification, Version 6.0 ("Core Specification, v6.0")
- Bluetooth Core Specification (amended), Version 5.4 ("Core Specification (amended), v5.4")
- Bluetooth Core Specification (amended), Version 5.3 ("Core Specification (amended), v5.3")
- Bluetooth Core Specification (amended), Version 5.2 ("Core Specification (amended), v5.2")
- Bluetooth Core Specification (amended), Version 5.1 ("Core Specification (amended), v5.1")
- Bluetooth Core Specification (amended), Version 5.0 ("Core Specification (amended), v5.0")

Abstract:

This erratum aligns the in-band spurious emission and interference performance requirements in Volume 2, Part A (BR/EDR Radio Physical Layer Specification) with those in Volume 6, Part A (LE Radio Physical Layer Specification).

Version History

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1 Drafting conventions

1.1 Language

Refer to and follow any terminology, language conventions, and interpretation sections of the Source Specification(s).

1.2 Formatting and color

The formatting and color conventions described in Table 1.1 below are used in this Expedited Specification Update to describe the specific changes and additions to the Source Specification(s) identified on the cover page.

Text Color	Description
black	Text that is unmodified from the Source Specification.
red	Text that is added to the Source Specification.
~~red strikethrough~~	Text that is deleted from the Source Specification.
[green bracketed text]	Comments that explain the changes to be made to the Source Specification.
[...]	Indicates the section of the Source Specification that includes additional text that is not included in black text.
blue	Default color used for section numbers and headings of this document.

Table 1.1: Color key for headings, captions, and body text

2 Changes to Core Specification, v6.2

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification, v6.2.

2.1 Changes to Core Specification, v6.2, Volume 2, Part A: Radio Physical Layer Specification

2.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.1. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.1: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.1.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

2.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

2.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400 MHz to 2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB

Frequency of Interference	Ratio
Image frequency Interference[1, 2, 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image\pm1\ MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n MHz, then the image reference frequency is defined as the closest n MHz frequency for integer n.

[...]

2.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400 MHz to 2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	π/4-DQPSK Ratio	8DPSK Ratio
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n MHz, then the image reference frequency is defined as the closest n MHz frequency for integer n.

[...]

3 Changes to Core Specification, v6.1

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification, v6.1.

3.1 Changes to Core Specification, v6.1, Volume 2, Part A: Radio Physical Layer Specification

3.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.1. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.1: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.1.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

3.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

3.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400 MHz to 2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB

Frequency of Interference	Ratio
Image frequency Interference[1, 2, 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image \pm 1 MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n MHz, then the image reference frequency is defined as the closest n MHz frequency for integer n.

[...]

3.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400 MHz to 2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	π/4-DQPSK Ratio	8DPSK Ratio
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n MHz, then the image reference frequency is defined as the closest n MHz frequency for integer n.

[...]

4 Changes to Core Specification, v6.0

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification, v6.0.

4.1 Changes to Core Specification, v6.0, Volume 2, Part A: Radio Physical Layer Specification

4.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.1. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.1: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.1.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

4.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

4.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400 MHz to 2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

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Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB

Frequency of Interference	Ratio
Image frequency Interference[1, 2, 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image \pm 1 MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n MHz, then the image reference frequency is defined as the closest n MHz frequency for integer n.

[...]

4.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400 MHz to 2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	π/4-DQPSK Ratio	8DPSK Ratio
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n MHz, then the image reference frequency is defined as the closest n MHz frequency for integer n.

[...]

5 Changes to Core Specification (amended), v5.4

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification (amended), v5.4.

5.1 Changes to Core Specification (amended), v5.4, Volume 2, Part A: Radio Physical Layer Specification

5.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.2. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.2: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.2.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

5.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

5.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400 MHz to 2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB

Frequency of Interference	Ratio
Image frequency Interference[1, 2, 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image\pm1\ MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

5.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400 MHz to 2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	π/4-DQPSK Ratio	8DPSK Ratio
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

6 Changes to Core Specification (amended), v5.3

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification (amended), v5.3.

6.1 Changes to Core Specification (amended), v5.3, Volume 2, Part A: Radio Physical Layer Specification

6.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.2. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.2: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.2.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

6.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

6.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400 MHz to 2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB

Frequency of Interference	**Ratio**
Image frequency Interference[1, 2, 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image\pm1\ MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

6.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400 MHz to 2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

7 Changes to Core Specification (amended), v5.2

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification (amended), v5.2.

7.1 Changes to Core Specification (amended), v5.2, Volume 2, Part A: Radio Physical Layer Specification

7.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.2. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.2: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.2.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

7.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

7.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400-2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB
Image frequency Interference[1 2 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image\pm 1\ MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

7.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400-2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

8 Changes to Core Specification (amended), v5.1

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification (amended), v5.1.

8.1 Changes to Core Specification (amended), v5.1, Volume 2, Part A: Radio Physical Layer Specification

8.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.2. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.2: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in Table 3.2.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

8.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

8.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400-2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3 shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7. The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB
Image frequency Interference[1 2 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image\pm 1\ MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

8.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400-2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB
Adjacent (≥3 MHz) interference[1]	-~~40~~27 dB	-~~33~~20 dB
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

9 Changes to Core Specification (amended), v5.0

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 1.2, to Core Specification (amended), v5.0.

9.1 Changes to Core Specification (amended), v5.0, Volume 2, Part A: Radio Physical Layer Specification

9.1.1 [Modified Section] 3.1.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the transmitter shall pass a spectrum mask, given in Table 3.2. ~~The spectrum shall comply with the 20 dB bandwidth definition in FCC part 15.247 and shall be measured accordingly. In addition to the FCC requirement an~~An adjacent channel power ~~on adjacent~~is specified for channels ~~with a difference in RF channel number of two or greater is defined~~at least 1 MHz from the carrier. This adjacent channel power is defined as the sum of the measured power in a 1 MHz bandwidth. The ~~transmitted power~~spectrum measurement shall be ~~measured in~~performed with a 100 kHz resolution bandwidth ~~using maximum hold~~and an average detector. The device shall transmit on the RF channel with the center frequency M and the adjacent channel power shall be measured on ~~RF~~a 1 MHz channel ~~number~~centered on RF frequency N. The transmitter shall transmit a pseudo~~-~~-random data pattern in the payload throughout the test.

Frequency offset	~~Transmit~~ Spurious **Power**
~~± 500 kHz~~	~~-20 dBc~~
2 MHz (|M-N| = 2)	-20 dBm
3 MHz or greater (|M-N| ≥ 3)	~~-40~~30 dBm

Table 3.2: Transmit Spectrum mask

~~**Note:** If the output power is less than 0 dBm then, wherever appropriate, the FCC's 20 dB relative requirement overrules the absolute adjacent channel power requirement stated in the above table.~~

Exceptions are allowed in up to three bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

9.1.2 [Modified Section] 3.2.2.1 In-band spurious emission

[The modified text with changes is shown below.]

Within the ISM band the power spectral density of the transmitter shall comply with the following requirements when sending pseudo random data. All power measurements shall use a 100 kHz resolution bandwidth ~~with maximum hold. The power measurements between 1 MHz~~ and ~~1.5 MHz from the carrier shall be at least 26 dB below the maximum power measurement up to 500 kHz from the carrier~~ an average detector. The adjacent channel power for channels at least 2 MHz from the carrier is defined as the sum of the power measurements over a 1 MHz channel and shall not exceed -20 dBm for the second adjacent channels and -~~40~~30 dBm for the third and subsequent adjacent channels. ~~These requirements shall apply to the transmitted signal from the start of the guard time to the end of the power down ramp. The spectral mask is illustrated in Figure 3.2.~~

Exceptions are allowed in up to 3 bands of 1 MHz width centered on a frequency which is an integer multiple of 1 MHz. They shall ~~comply with an absolute~~have a value of –20 dBm or less.

[Delete Figure 3.2.]

9.1.3 [Modified Section] 4.1.2 Interference performance

[The modified text with changes is shown below.]

The interference performance ~~on Co-channel and adjacent 1 MHz and 2 MHz~~ shall be measured with ~~the~~a wanted signal ~~10 dB over the reference sensitivity level. For interference performance on all other RF channels the wanted signal shall be 3 dB over the reference sensitivity level~~of -67 dBm. If the frequency of an interfering signal is outside of the band 2400-2483.5 MHz, the out-of-band blocking specification (see Section 4.1.3) shall apply. The interfering signal shall be Bluetooth-modulated (see Section 4.1.7). The BER shall be ≤0.1% for all the signal-to-interference ratios listed in Table 4.1:

Frequency of Interference	**Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	11 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB
Image frequency Interference[1, 2, 3], C/I_{Image}	-9 dB
Adjacent (1 MHz) interference to in-band image frequency[1], $C/I_{Image\pm 1\ MHz}$	-~~20~~15 dB

Table 4.1: Interference performance

[1]If two adjacent channel specifications from Table 4.1 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency

[3]If the image frequency ≠ n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

9.1.4 [Modified Section] 4.2.3 Interference performance

[The modified text with changes is shown below.]

The interference performance~~for co-channel and adjacent 1 MHz and 2 MHz channels~~ shall be measured with ~~the~~a wanted signal ~~10 dB above the reference sensitivity level. On all other frequencies the wanted signal shall be 3 dB above the reference sensitivity level~~of -67 dBm. The requirements in this section shall only apply if the frequency of the interferer is inside of the band 2400-2483.5 MHz.

The interfering signal for co-channel interference shall be similarly modulated as the desired signal. The interfering signal for other channels shall be equivalent to a nominal Bluetooth Basic Rate GFSK transmitter. The interfering signal shall carry random data.

A BER of 0.1% or better shall be achieved for the signal to interference ratios defined in Table 4.3.

Frequency of Interference	**π/4-DQPSK Ratio**	**8DPSK Ratio**
Co-Channel interference, $C/I_{co\text{-}channel}$	13 dB	21 dB
Adjacent (1 MHz) interference[1], $C/I_{1\ MHz}$	0 dB	5 dB
Adjacent (2 MHz) interference[1], $C/I_{2\ MHz}$	-~~30~~17 dB	-~~25~~12 dB
Adjacent (≥3 MHz) interference[1], $C/I_{\geq 3\ MHz}$	-~~40~~27 dB	-~~33~~20 dB
Image frequency Interference[1, 2, 3], C/I_{Image}	-7 dB	0 dB
Adjacent (1 MHz) interference to in-band image frequency[1,2,3], $C/I_{Image\ \pm 1\ MHz}$	-~~20~~15 dB	-~~13~~8 dB

Table 4.3: Interference performance

[1]If two adjacent channel specifications from Table 4.3 are applicable to the same channel, the more relaxed specification applies.

[2]In-band image frequency.

[3]If the image frequency is not equal to n*1 MHz, then the image reference frequency is defined as the closest n*1 MHz frequency for integer n.

[...]

10 References

[1] Bluetooth Core Specification, Version 6.2

[2] Bluetooth Core Specification, Version 6.1

[3] Bluetooth Core Specification, Version 6.0

[4] Bluetooth Core Specification (amended), Version 5.4

[5] Bluetooth Core Specification (amended), Version 5.3

[6] Bluetooth Core Specification (amended), Version 5.2

[7] Bluetooth Core Specification (amended), Version 5.1

[8] Bluetooth Core Specification (amended), Version 5.0