

Figure 8.5-43: Conducted spurious emissions of NR 5 MHz low channel, single-carrier operation

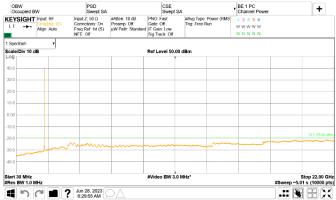


Figure 8.5-44: Conducted spurious emissions of NR 5 MHz mid channel, single-carrier operation

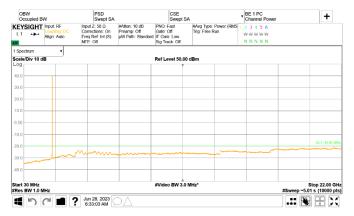


Figure 8.5-45: Conducted spurious emissions of NR 5 MHz top channel, single-carrier operation



Figure 8.5-46: Conducted spurious emissions of NR 10 MHz low channel, single-carrier operation



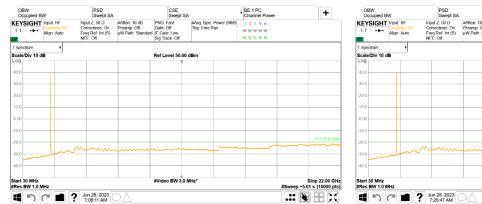


Figure 8.5-47: Conducted spurious emissions of NR 10 MHz mid channel, single-carrier operation

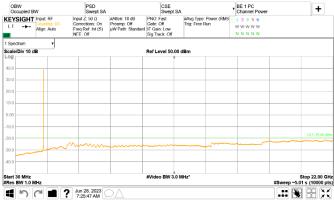


Figure 8.5-48: Conducted spurious emissions of NR 10 MHz top channel, single-carrier operation

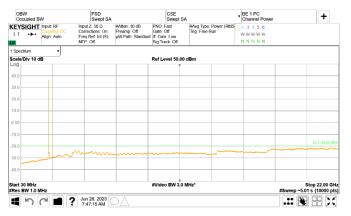


Figure 8.5-49: Conducted spurious emissions of NR 15 MHz low channel, single-carrier operation

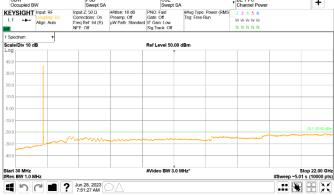


Figure 8.5-50: Conducted spurious emissions of NR 15 MHz mid channel, single-carrier operation

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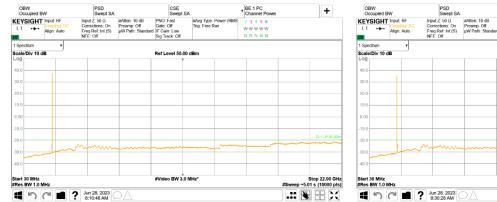


Figure 8.5-51: Conducted spurious emissions of NR 15 MHz top channel, single-carrier operation

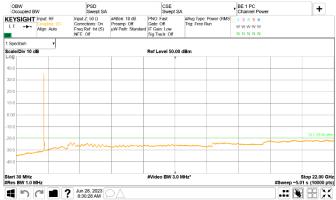


Figure 8.5-52: Conducted spurious emissions of NR 20 MHz low channel, single-carrier operation

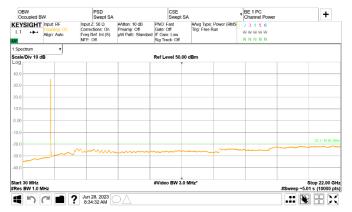


Figure 8.5-53: Conducted spurious emissions of NR 20 MHz mid channel, single-carrier operation

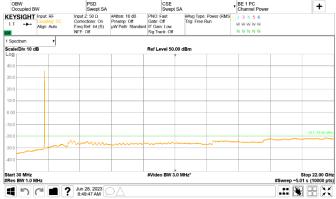


Figure 8.5-54: Conducted spurious emissions of NR 20 MHz top channel, single-carrier operation



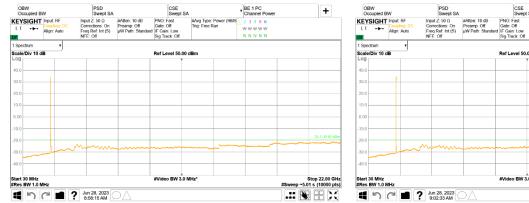


Figure 8.5-55: Conducted spurious emissions of NR 25 MHz low channel, single-carrier operation

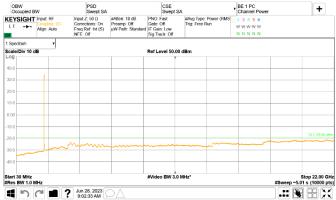


Figure 8.5-56: Conducted spurious emissions of NR 25 MHz mid channel, single-carrier operation

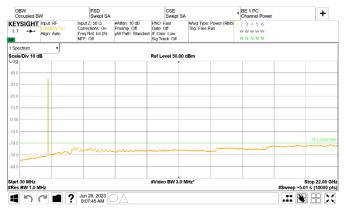


Figure 8.5-57: Conducted spurious emissions of NR 25 MHz top channel, single-carrier operation



Figure 8.5-58: Conducted spurious emissions of NR 30 MHz low channel, single-carrier operation

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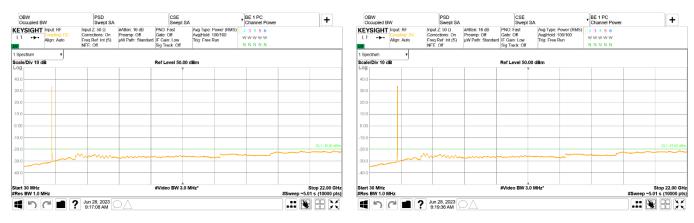


Figure 8.5-59: Conducted spurious emissions of NR 30 MHz mid channel, single-carrier operation

Figure 8.5-60: Conducted spurious emissions of NR 30 MHz top channel, single-carrier operation

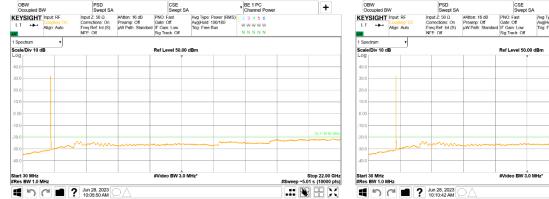


Figure 8.5-61: Conducted spurious emissions of NR 40 MHz low channel, single-carrier operation



Figure 8.5-62: Conducted spurious emissions of NR 40 MHz mid channel, single-carrier operation

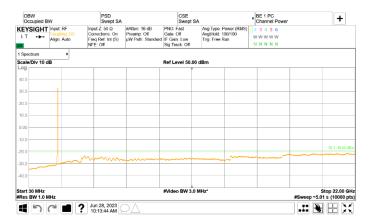


Figure 8.5-63: Conducted spurious emissions of NR 40 MHz top channel, single-carrier operation

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Stop 22.00 GHz ~5.01 s (10000 pts)

Test data, continued

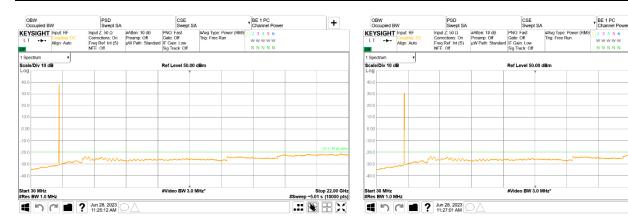


Figure 8.5-64: Conducted spurious emissions of NR 5 MHz two noncontiguous channels, two-carrier operation

Figure 8.5-65: Conducted spurious emissions of NR 30 MHz two noncontiguous channels, two-carrier operation

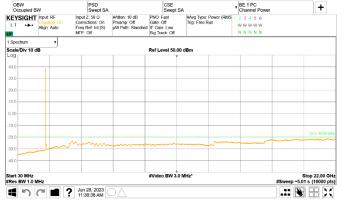


Figure 8.5-66: Conducted spurious emissions of NR 5 MHz two contiguous low channels, two-carrier operation



Figure 8.5-67: Conducted spurious emissions of NR 5 MHz two contiguous mid channels, two-carrier operation

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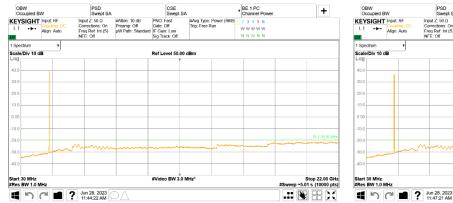


Figure 8.5-68: Conducted spurious emissions of NR 5 MHz two contiguous top channels, two-carrier operation

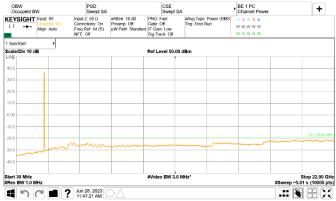


Figure 8.5-69: Conducted spurious emissions of NR 5 MHz three noncontiguous channels, three-carrier operation

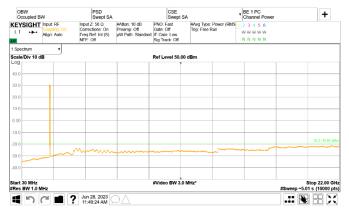


Figure 8.5-70: Conducted spurious emissions of NR 20 MHz three noncontiguous channels, three-carrier operation

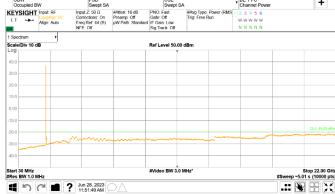
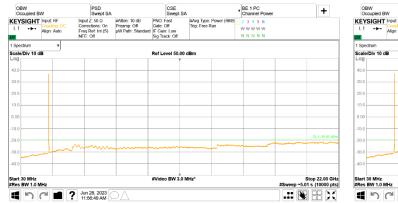


Figure 8.5-71: Conducted spurious emissions of NR 5 MHz three contiguous low channels, three-carrier operation





BE 1 PC Channel Power + KEYSIGHT Input: RF
L T ---- Coupling: [
Align: Auto #Video BW 3.0 MHz* Stop 22.00 GHz -5.01 s (10000 pts) 11:59:00 AM

Figure 8.5-72: Conducted spurious emissions of NR 5 MHz three contiguous mid channels, three-carrier operation

Figure 8.5-73: Conducted spurious emissions of NR 5 MHz three contiguous top channels, three-carrier operation



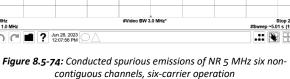




Figure 8.5-75: Conducted spurious emissions of NR 10 MHz six noncontiguous channels, six-carrier operation

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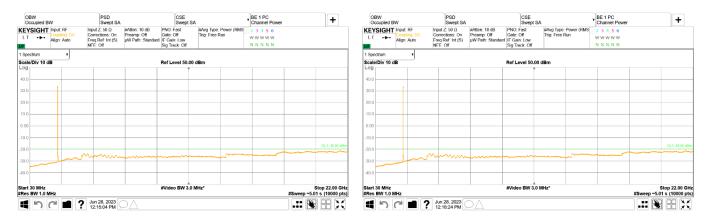


Figure 8.5-76: Conducted spurious emissions of NR 5 MHz six contiguous low channels, six-carrier operation

Figure 8.5-77: Conducted spurious emissions of NR 5 MHz six contiguous mid channels, six-carrier operation

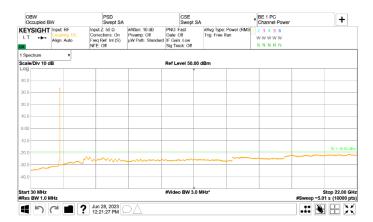


Figure 8.5-78: Conducted spurious emissions of NR 5 MHz six contiguous top channels, six-carrier operation

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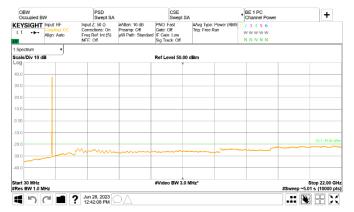
Testing data

Spurious out-of-band emissions (Band 2/25)

FCC Part 24 and RSS-133, Issue 6



Test data, continued



| PSD | Cozupied BW | PSD

Figure 8.5-79: Conducted spurious emissions of multi-RAT operation, NR 5 MHz and LTE with IoT1 5 MHz

Figure 8.5-80: Conducted spurious emissions of multi-RAT operation, $3 \times NR$ 5 MHz and $3 \times LTE$ with IoT1 5 MHz

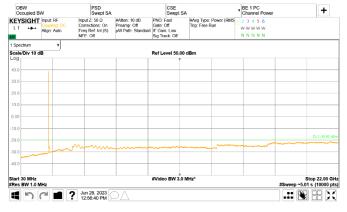




Figure 8.5-81: Conducted spurious emissions of multi-RAT operation, NR 5 MHz + LTE with IoT1 5 MHz, Low Channel

Figure 8.5-82: Conducted spurious emissions of multi-RAT operation, NR 5 MHz + LTE with IoT1 5 MHz, Mid Channel

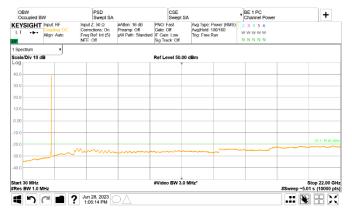
Note: "and": non-contiguous channels; "+": contiguous channels

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Test data, continued



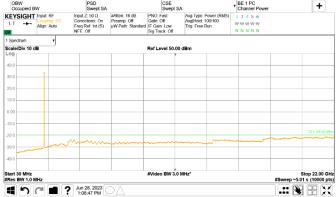
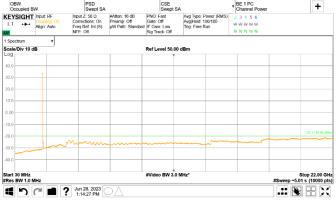
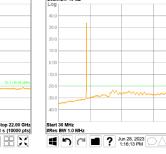


Figure 8.5-83: Conducted spurious emissions of multi-RAT operation, NR 5 MHz + LTE with IoT1 5 MHz, Top Channel

Figure 8.5-84: Conducted spurious emissions of multi-RAT operation, $3 \times NR$ 5 MHz + $3 \times LTE$ with IoT1 5 MHz, Low Channel





KEYSIGHT Input: RF
L T ->- Coupling:
Align: Auto

Figure 8.5-85: Conducted spurious emissions of multi-RAT operation, $3 \times NR$ 5 MHz + $3 \times LTE$ with IoT1 5 MHz, Mid Channel

Figure 8.5-86: Conducted spurious emissions of multi-RAT operation, $3 \times NR$ 5 MHz + $3 \times LTE$ with IoT1 5 MHz, Top Channel

#Video BW 3.0 MHz

Note: "and": non-contiguous channels; "+": contiguous channels

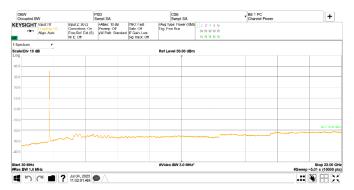
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Section 8 Test name Specification Testing data

Spurious out-of-band emissions (Band 2/25) FCC Part 24 and RSS-133, Issue 6



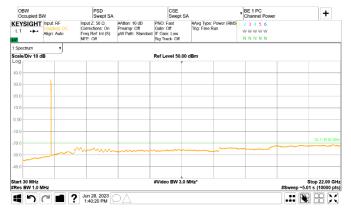
Test data, continued



+ KEYSIGHT Input: RF
L T ---- Coupling: [
Align: Auto #Video BW 3.0 MHz* Stop 22.00 GHz 5.01 s (10000 pts)

Figure 8.5-87: Conducted spurious emissions of multi-RAT operation, LTE 10 MHz with GB + $3 \times NR$ 5 MHz, Low Channel

Figure 8.5-88: Conducted spurious emissions of multi-RAT operation, LTE 10 MHz with GB + $3 \times NR$ 5 MHz, Top Channel



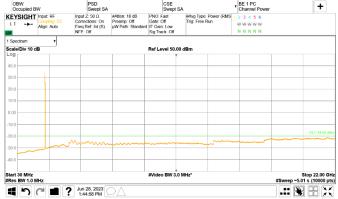


Figure 8.5-89: Conducted spurious emissions of multi-RAT operation, NR 40 MHz + 3 × LTE 5 MHz + NR 10 MHz, Low Channel

Figure 8.5-90: Conducted spurious emissions of multi-RAT operation, NR 40 MHz + 3 × LTE 5 MHz + NR 10 MHz, Top Channel

Note: "and": non-contiguous channels; "+": contiguous channels

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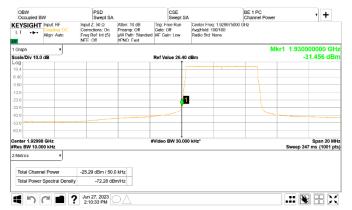


+

Test data, continued

On the plots below the measured Channel Power value in the "Total Channel Power" column must be −19 dBm and lower.

BE 1 MHz



Channel Power

KEYSIGHT Input RF Mkr1 1.929000000 GH -33.301 dBn Total Power Spectral Density -84.87 dBm/Hz 4 5 C 2 2:10:48 PM

Figure 8.5-91: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation Meas. BW: 1% of EBW Tech.: LTE 5 MHz -19 dBm/50 kHz Limit: Notes: None

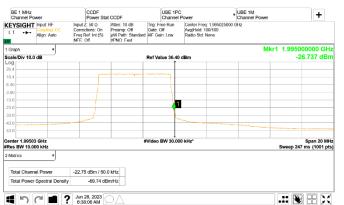


Figure 8.5-92: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Single-carrier operation LTE 5 MHz Meas. BW: 1 MHz Tech.: -19 dBm/MHz Limit: Notes: None

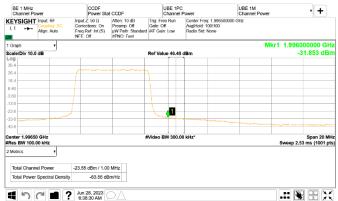


Figure 8.5-93: Conducted emission at the upper band edge

Frequency:	1995 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	LTE 5 MHz

Frequency: Limit: -19 dBm/50 kHz Notes: None

Figure 8.5-94: Conducted emission 1 MHz away from the upper band edge

Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 5 MHz Limit: -19 dBm/MHz Notes: None

1996 MHz

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Test data, continued

On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.

BE 1 MHz

Channel Power

KEYSIGHT Input RF



Mkr1 1.929000000 GH -33.566 dBn Total Power Spectral Density -84.55 dBm/Hz 4 5 C 2 2:15:10 PM

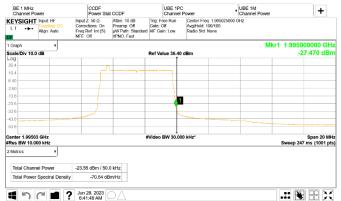
Figure 8.5-95: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation Meas. BW: 1% of EBW Tech.: LTE 5 MHz with IB (IoT1)

-19 dBm/50 kHz Limit: Notes: None

Figure 8.5-96: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 5 MHz with IB (IoT1) -19 dBm/MHz Limit: Notes: None



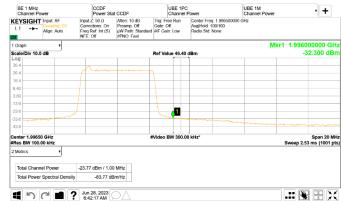


Figure 8.5-97: Conducted emission at the upper band edge

Frequency:	1995 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	LTE 5 MHz with IB (IoT1)
Limit:	–19 dBm/50 kHz	Notes:	None

-19 dBm/50 kHz Notes: None

Figure 8.5-98: Conducted emission 1 MHz away from the upper band edge

Frequency: 1996 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 5 MHz with IB (IoT1)

Limit: -19 dBm/MHz Notes: None

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Test data, continued

On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.

BE 1 MHz



Channel Power

KEYSIGHT Input RF 1.929000000 GH -32.802 dBn Total Power Spectral Density -84.73 dBm/Hz **■** ? Jun 27, 2023 ○ △

Figure 8.5-99: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation Meas. BW: 1% of EBW Tech.: LTE 5 MHz with IB (IoT2)

-19 dBm/50 kHz Limit: Notes: None

Frequency: 1929 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 5 MHz with IB (IoT2)

Figure 8.5-100: Conducted emission 1 MHz away from the lower band edge

-19 dBm/MHz Limit: Notes: None





Figure 8.5-101: Conducted emission at the upper band edge

Frequency: 1995 MHz Mode: Sinale-carrier operation Meas. BW: 1% of EBW Tech.: LTE 5 MHz with IB (IoT2)

Limit: -19 dBm/50 kHz Notes: None

Figure 8.5-102: Conducted emission 1 MHz away from the upper band edge

1996 MHz Mode: Single-carrier operation Freauencv: Meas. BW: 1 MHz Tech.: LTE 5 MHz with IB (IoT2)

Limit: -19 dBm/MHz Notes: None

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On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.

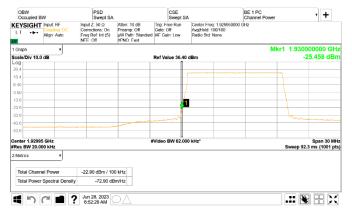




Figure 8.5-103: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation 1% of EBW Tech.:



Figure 8.5-104: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 10 MHz -19 dBm/MHz Limit: Notes: None





Figure 8.5-105: Conducted emission at the upper band edge

Single-carrier operation Frequency: 1995 MHz Mode: Meas. BW: 1% of EBW Tech.: LTE 10 MHz Limit: -19 dBm/100 kHz Notes: None

Single-carrier operation Frequency: 1996 MHz Mode:

Figure 8.5-106: Conducted emission 1 MHz away from the upper band edge

Meas. BW: 1 MHz Tech.: LTE 10 MHz Limit: -19 dBm/MHz Notes: None

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Test data, continued

On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.

BE 1 MHz

Channel Power

KEYSIGHT Input RF



Mkr1 1.929000000 GH -31.898 dBn Total Power Spectral Density -82.49 dBm/Hz **■** ? Jun 28, 2023 ○△

Figure 8.5-107: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation LTE 10 MHz with IoT Meas. BW: 1% of EBW Tech.:



Figure 8.5-108: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Single-carrier operation LTE 10 MHz with IoT Meas. BW: 1 MHz Tech.: -19 dBm/MHz Limit: Notes: None





Figure 8.5-109: Conducted emission at the upper band edge

Frequency:	1995 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	LTE 10 MHz with IoT

Limit: -19 dBm/100 kHz Notes: None

Figure 8.5-110: Conducted emission 1 MHz away from the upper band edge

1996 MHz Frequency: Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 10 MHz with IoT

Limit: -19 dBm/MHz Notes: None

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On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.





Figure 8.5-111: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation Meas. BW: 1% of EBW Tech.: LTE 15 MHz -19 dBm/150 kHz Limit: Notes: None



Figure 8.5-113: Conducted emission at the upper band edge

Single-carrier operation Frequency: 1995 MHz Mode: Meas. BW: 1% of EBW Tech.: LTE 15 MHz Limit: -19 dBm/150 kHz Notes: None



Figure 8.5-112: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 15 MHz -19 dBm/MHz Limit: Notes: None



Figure 8.5-114: Conducted emission 1 MHz away from the upper band edge

Single-carrier operation Frequency: 1996 MHz Mode:

Meas. BW: 1 MHz Tech.: LTE 15 MHz Limit: -19 dBm/MHz Notes: None

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Test data, continued

On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.

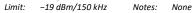
BE 1 MHz





Figure 8.5-115: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation LTE 15 MHz with IoT Meas. BW: 1% of EBW Tech.:



Frequency: 1929 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 15 MHz with IoT -19 dBm/MHz Limit: Notes: None

Figure 8.5-116: Conducted emission 1 MHz away from the lower band edge

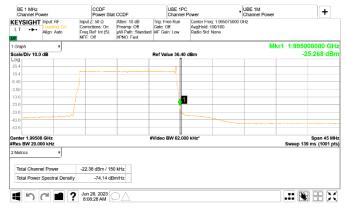




Figure 8.5-117: Conducted emission at the upper band edge

Frequency: 1995 MHz Mode: Sinale-carrier operation Meas. BW: 1% of EBW Tech.: LTE 15 MHz with IoT Limit: -19 dBm/150 kHz Notes: None

Figure 8.5-118: Conducted emission 1 MHz away from the upper band edge

Frequency: 1996 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 15 MHz with IoT Limit: -19 dBm/MHz Notes: None

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On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.





Frequency: 1930 MHz Mode: Single-carrier operation
Meas. BW: 1% of EBW Tech.: LTE 20 MHz
Limit: -19 dBm/200 kHz Notes: None



Figure 8.5-121: Conducted emission at the upper band edge

Frequency: 1995 MHz Mode: Single-carrier operation
Meas. BW: 1% of EBW Tech.: LTE 20 MHz
Limit: -19 dBm/200 kHz Notes: None



Figure 8.5-120: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Single-carrier operation
Meas. BW: 1 MHz Tech.: LTE 20 MHz
Limit: -19 dBm/MHz Notes: None



Figure 8.5-122: Conducted emission 1 MHz away from the upper band edge

Frequency: 1996 MHz Mode: Single-carrier operation

Meas. BW: 1 MHz Tech.: LTE 20 MHz Limit: -19 dBm/MHz Notes: None



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Test data, continued

On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.

BE 1 MHz

Channel Power

KEYSIGHT Input RF



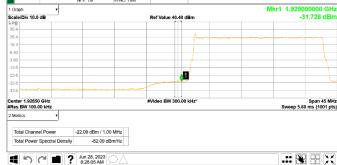


Figure 8.5-123: Conducted emission at the lower band edge

Frequency: 1930 MHz Mode: Single-carrier operation LTE 20 MHz with IoT Meas. BW: 1% of EBW Tech.:

-19 dBm/200 kHz Limit: Notes: None

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Frequency: 1929 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 20 MHz with IoT

Figure 8.5-124: Conducted emission 1 MHz away from the lower band edge

-19 dBm/MHz Limit: Notes: None





Figure 8.5-125: Conducted emission at the upper band edge

Frequency: 1995 MHz Mode: Single-carrier operation Meas. BW: 1% of EBW Tech.: LTE 20 MHz with IoT

Limit: -19 dBm/200 kHz Notes: None

Figure 8.5-126: Conducted emission 1 MHz away from the upper band edge

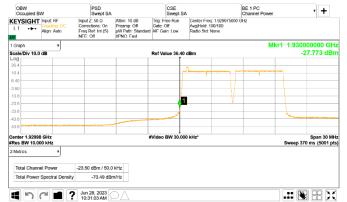
Frequency: 1996 MHz Mode: Single-carrier operation Meas. BW: 1 MHz Tech.: LTE 20 MHz with IoT

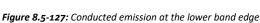
Limit: -19 dBm/MHz Notes: None

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On the plots below the measured Channel Power value in the "Total Channel Power" column must be -19 dBm and lower.





Frequency: 1930 MHz Mode: Multi-carrier operation
Meas. BW: 1% of EBW Tech.: 2 × LTE 5 MHz with IoT1

Limit: -19 dBm/50 kHz Notes: None



Figure 8.5-129: Conducted emission at the upper band edge

Frequency: 1995 MHz Mode: Multi-carrier operation
Meas. BW: 1% of EBW Tech.: 2 × LTE 5 MHz with IoT1

Limit: -19 dBm/50 kHz Notes: No



Figure 8.5-128: Conducted emission 1 MHz away from the lower band edge

Frequency: 1929 MHz Mode: Multi-carrier operation
Meas. BW: 1 MHz Tech.: 2 × LTE 5 MHz with IoT1

Limit: -19 dBm/MHz Notes: None



Figure 8.5-130: Conducted emission 1 MHz away from the upper band edge

Frequency: 1996 MHz Mode: Multi-carrier operation
Meas. BW: 1 MHz Tech.: 2 × LTE 5 MHz with IoT1

Limit: -19 dBm/MHz Notes: None