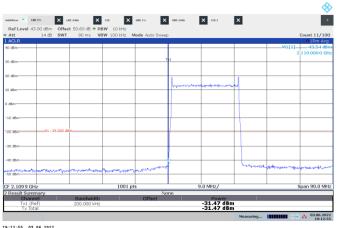
Testing data Spurious emissions at RF antenna connector (Band 66) FCC Part 27, RSS-139, Issue 3, RSS-170 Issue 3



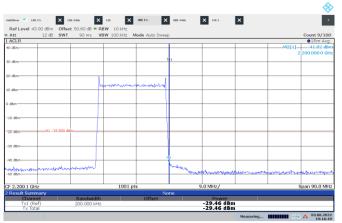
Test data, continued



19:12:55 03.06.2022

Figure 8.4-63: Conducted emission at the lower band edge

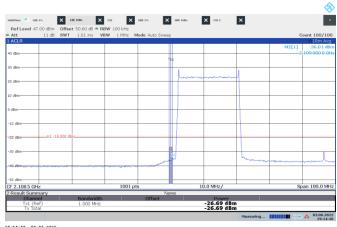
Frequency:	2110 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	LTE 20 MHz with IoT
Limit:	–19 dBm/200 kHz	Notes:	None



19:16:50 03.06.2022

Figure 8.4-65: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	LTE 20 MHz with IoT
Limit:	–19 dBm/200 kHz	Notes:	None

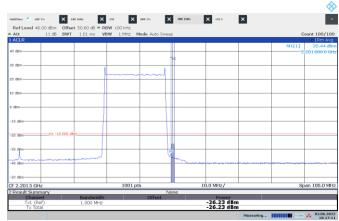


19:14:40 03.06.2022

Figure 8.4-64: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Single-carrier operation Tech.: LTE 20 MHz with IoT Notes: None



19:17:11 03.06.2022

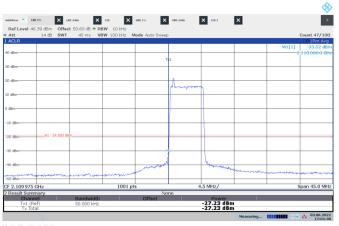
Figure 8.4-66: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 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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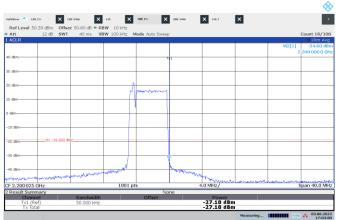
Test data, continued



17:01:38 03.06.2022

Figure 8.4-67: Conducted emission at the lower band edge

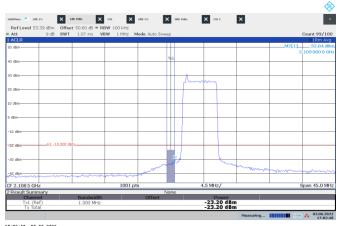
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × LTE 5 MHz with IoT
Limit:	–19 dBm/50 kHz	Notes:	None



17:03:00 03.06.2022

Figure 8.4-69: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × LTE 5 MHz with IoT
Limit:	–19 dBm/50 kHz	Notes:	None

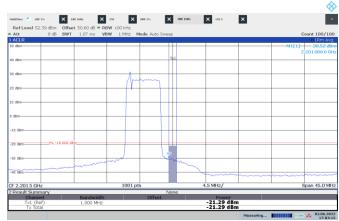


17:02:40 03.06.2022

Figure 8.4-68: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2 × LTE 5 MHz with IoT Notes: None



17:03:16 03.06.2022

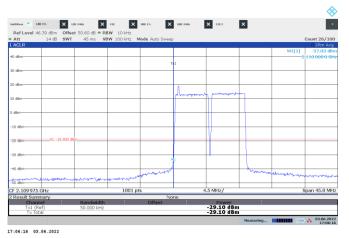
Figure 8.4-70: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2 × LTE 5 MHz with IoT
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued



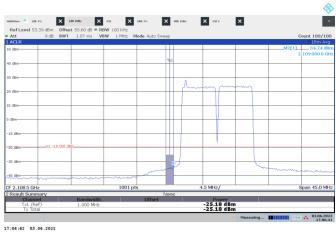
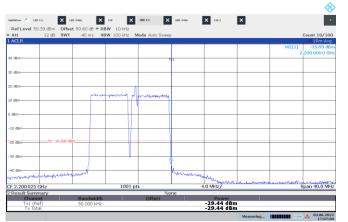


Figure 8.4-72: Conducted emission 1 MHz away from the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × LTE 5 MHz with IoT
Limit:	–19 dBm/50 kHz	Notes:	None

Figure 8.4-71: Conducted emission at the lower band edge



17:07:00 03.06.2022

Figure 8.4-73: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × LTE 5 MHz with IoT
Limit:	–19 dBm/50 kHz	Notes:	None

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode:Multi-carrier operationTech.:4 × LTE 5 MHz with IoTNotes:None



Figure 8.4-74: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	4 × LTE 5 MHz with IoT
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued

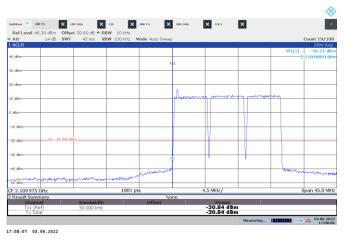
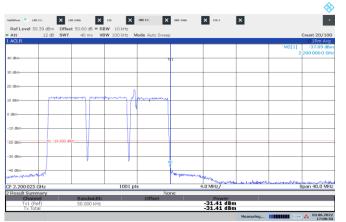




Figure 8.4-76: Conducted emission 1 MHz away from the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × LTE 5 MHz with IoT
Limit:	–19 dBm/50 kHz	Notes:	None

Figure 8.4-75: Conducted emission at the lower band edge



17:08:50 03.06.2022

Figure 8.4-77: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × LTE 5 MHz with IoT
Limit:	–19 dBm/50 kHz	Notes:	None

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode:Multi-carrier operationTech.:6 × LTE 5 MHz with IoTNotes:None



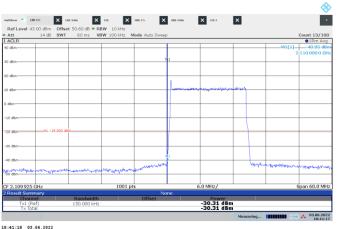
Figure 8.4-78: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	6 × LTE 5 MHz with IoT
Limit:	–19 dBm/MHz	Notes:	None

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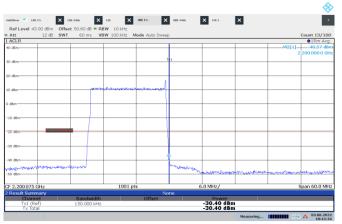
Test data, continued



18:41:18 03.06.2022

Figure 8.4-79: Conducted emission at the lower band edge

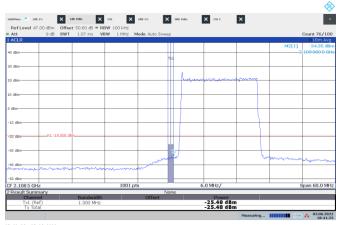
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × LTE 15 MHz with IoT
Limit:	–19 dBm/150 kHz	Notes:	None



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Figure 8.4-81: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × LTE 15 MHz with IoT
Limit:	–19 dBm/150 kHz	Notes:	None

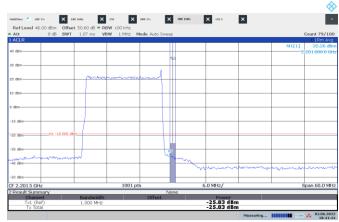


18:41:26 03.06.2022

Figure 8.4-80: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2 × LTE 15 MHz with IoT Notes: None



18:41:45 03.06.2022

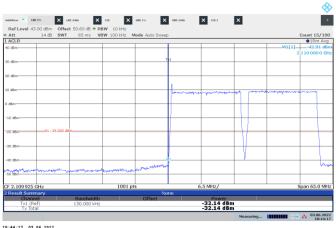
Figure 8.4-82: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2 × LTE 15 MHz with IoT
Limit:	–19 dBm/MHz	Notes:	None

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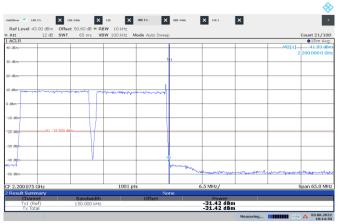
Test data, continued



18:44:17 03.06.2022

Figure 8.4-83: Conducted emission at the lower band edge

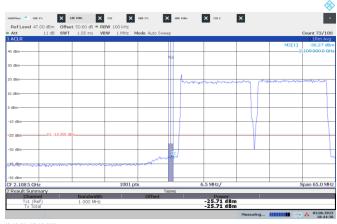
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × LTE 15 MHz with IB
Limit:	–19 dBm/150 kHz	Notes:	None



18:44:50 03.06.2022

Figure 8.4-85: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × LTE 15 MHz with IB
Limit:	–19 dBm/150 kHz	Notes:	None

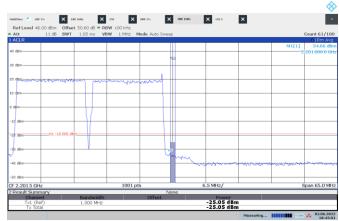


18:44:30 03.06.2022

Figure 8.4-84: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 4 × LTE 15 MHz with IB Notes: None



18:45:01 03.06.2022

Figure 8.4-86: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	4 × LTE 15 MHz with IB
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued

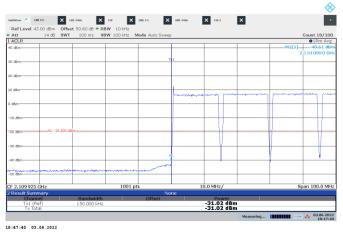


Figure 8.4-87: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × LTE 15 MHz with IB
Limit:	–19 dBm/150 kHz	Notes:	None

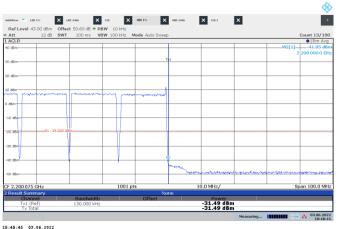
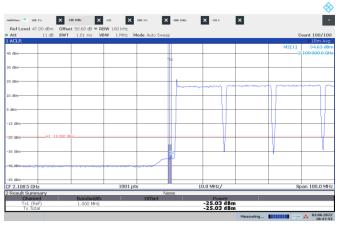


Figure 8.4-89: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × LTE 15 MHz with IB
Limit:	–19 dBm/150 kHz	Notes:	None



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Figure 8.4-88: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz	
Meas. BW:	1 MHz	
Limit:	–19 dBm/MHz	

Mode: Multi-carrier operation Tech.: 6 × LTE 15 MHz with IB Notes: None



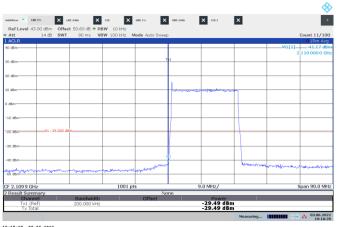
Figure 8.4-90: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	6 × LTE 15 MHz with IB
Limit:	–19 dBm/MHz	Notes:	None

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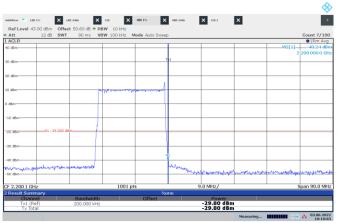
Test data, continued



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Figure 8.4-91: Conducted emission at the lower band edge

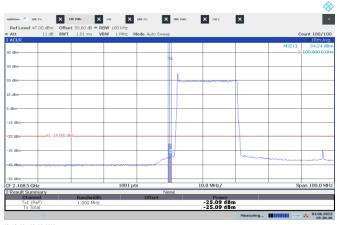
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × LTE 20 MHz with IB
Limit:	–19 dBm/200 kHz	Notes:	None



19:19:03 03.06.2022

Figure 8.4-93: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × LTE 20 MHz with IB
Limit:	–19 dBm/200 kHz	Notes:	None

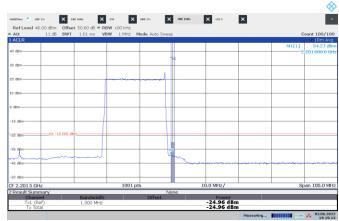


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Figure 8.4-92: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2 × LTE 20 MHz with IB Notes: None



19:19:13 03.06.2022

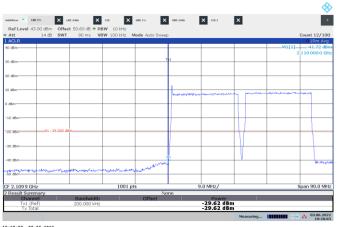
Figure 8.4-94: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2 × LTE 20 MHz with IB
Limit:	–19 dBm/MHz	Notes:	None

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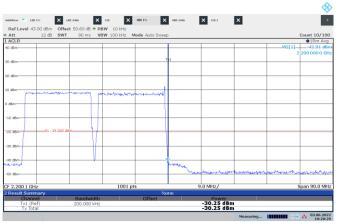
Test data, continued



19:20:03 03.06.2022

Figure 8.4-95: Conducted emission at the lower band edge

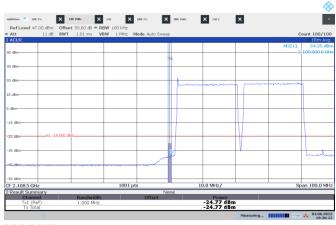
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × LTE 20 MHz with IB
Limit:	–19 dBm/200 kHz	Notes:	None



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Figure 8.4-97: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × LTE 20 MHz with IB
Limit:	–19 dBm/200 kHz	Notes:	None



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Figure 8.4-96: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 4 × LTE 20 MHz with IB Notes: None

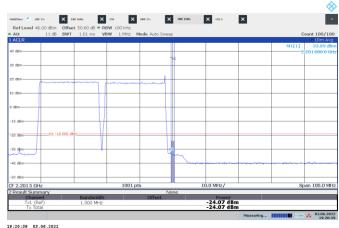


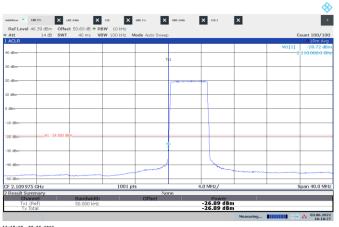
Figure 8.4-98: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	4 × LTE 20 MHz with IB
Limit:	–19 dBm/MHz	Notes:	None

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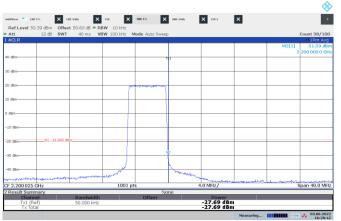
Test data, continued



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Figure 8.4-99: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



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Figure 8.4-101: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None

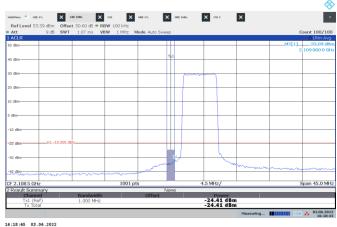
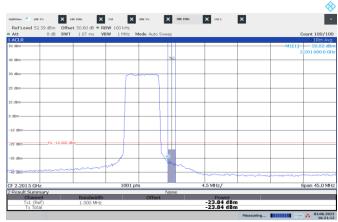


Figure 8.4-100: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz	Mode:	Single-carrier o
Meas. BW:	1 MHz	Tech.:	NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	Measured resu

r operation sult is < 23 dBm/MHz



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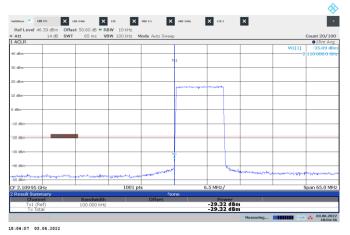
Figure 8.4-102: Conducted emission 1 MHz away from the upper band edge

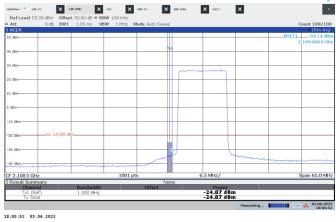
Frequency:	2201 MHz	Mode:	Single-carrier operation
Meas. BW:	1 MHz	Tech.:	NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	None

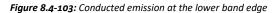
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Test data, continued







Frequency:	2110 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None

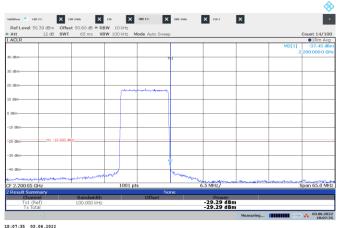


Figure 8.4-105: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None

Figure 8.4-104: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Single-carrier operation Tech.: NR 10 MHz Notes: None

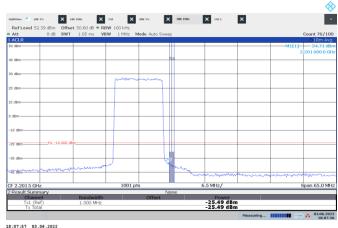


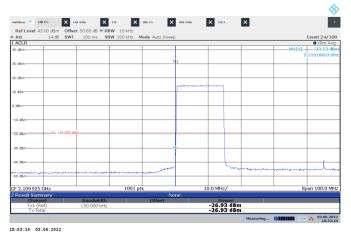
Figure 8.4-106: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Single-carrier operation
Meas. BW:	1 MHz	Tech.:	NR 10 MHz
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued





Frequency:	2110 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

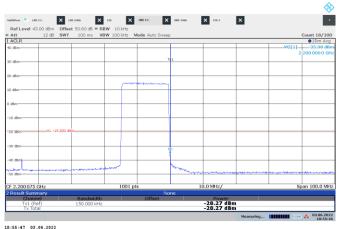


Figure 8.4-109: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

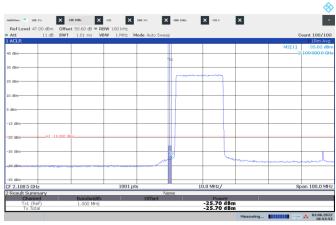




Figure 8.4-108: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Single-carrier operation Tech.: NR 15 MHz Notes: None



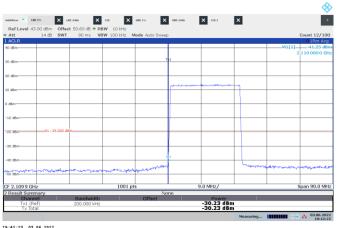
Figure 8.4-110: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Single-carrier operation
Meas. BW:	1 MHz	Tech.:	NR 15 MHz
Limit:	–19 dBm/MHz	Notes:	None

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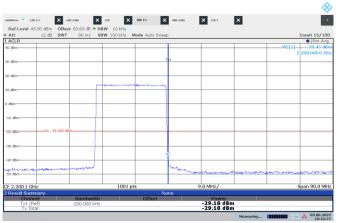
Test data, continued



19:42:23 03.06.2022

Figure 8.4-111: Conducted emission at the lower band edge

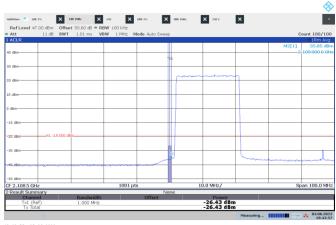
Frequency:	2110 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



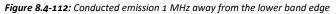
19:45:28 03.06.2022

Figure 8.4-113: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Single-carrier operation
Meas. BW:	1% of EBW	Tech.:	NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



19:42:58 03.06.2022



Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Single-carrier operation Tech.: NR 20 MHz Notes: None

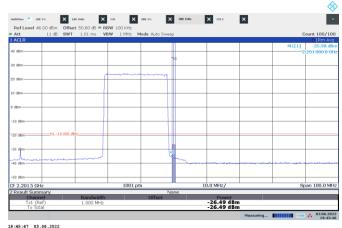


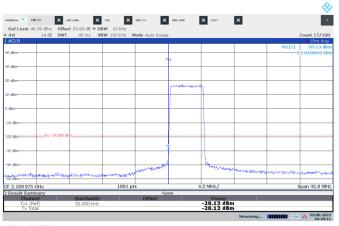
Figure 8.4-114: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Single-carrier operation
Meas. BW:	1 MHz	Tech.:	NR 20 MHz
Limit:	–19 dBm/MHz	Notes:	None

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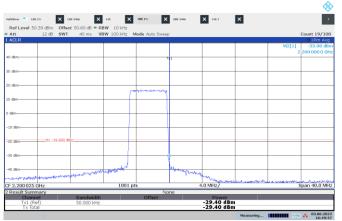
Test data, continued



16:49:11 03.06.2022

Figure 8.4-115: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



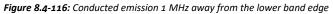
16:49:57 03.06.2022

Figure 8.4-117: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



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Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2 × NR 5 MHz Notes: None

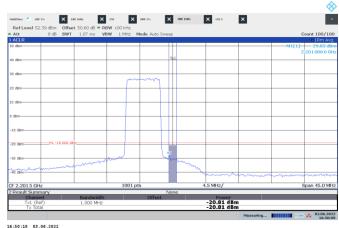


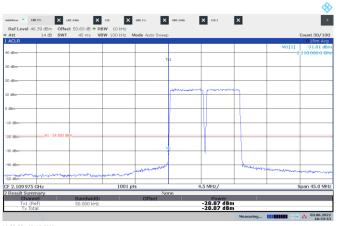
Figure 8.4-118: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2 × NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	None

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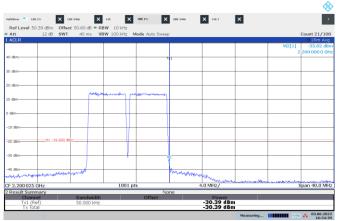
Test data, continued



16:53:53 03.06.2022

Figure 8.4-119: Conducted emission at the lower band edge

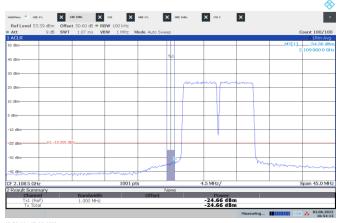
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



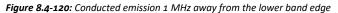
16:54:39 03.06.2022

Figure 8.4-121: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None

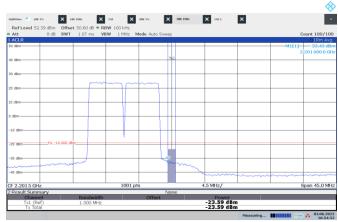






Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 4 × NR 5 MHz Notes: None



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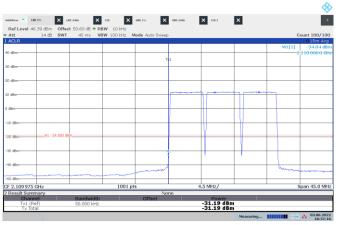
Figure 8.4-122: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	4 × NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	None

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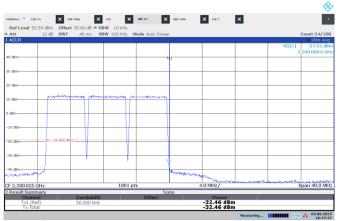
Test data, continued



16:57:16 03.06.2022

Figure 8.4-123: Conducted emission at the lower band edge

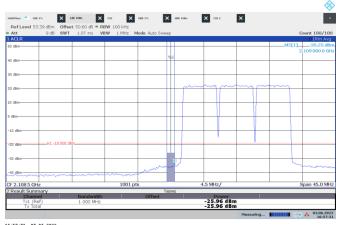
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



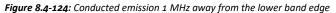
16:57:58 03.06.2022

Figure 8.4-125: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6× NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None







Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 6 × NR 5 MHz Notes: None



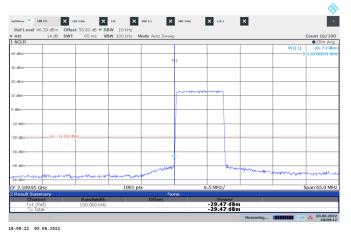
Figure 8.4-126: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	6 × NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued



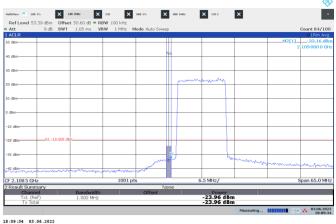


Figure 8.4-127: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None

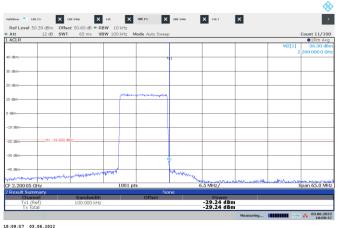


Figure 8.4-129: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None

Figure 8.4-128: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2 × NR 10 MHz Notes: None



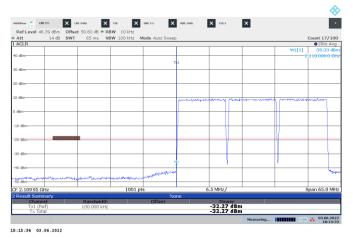
Figure 8.4-130: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2 × NR 10 MHz
Limit:	–19 dBm/MHz	Notes:	None

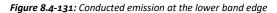
Testing data Spurious emissions at RF antenna connector (Band 66) FCC Part 27, RSS-139, Issue 3, RSS-170 Issue 3



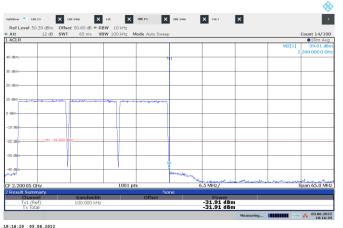
Test data, continued



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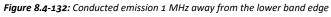
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None



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Figure 8.4-133: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None



Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 6 × NR 10 MHz Notes: None

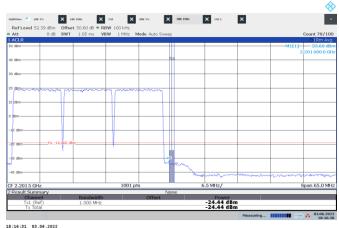


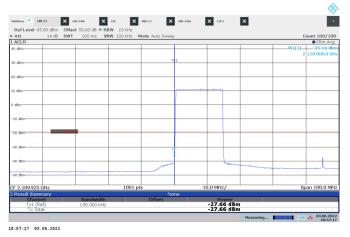
Figure 8.4-134: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	6 × NR 10 MHz
Limit:	–19 dBm/MHz	Notes:	None

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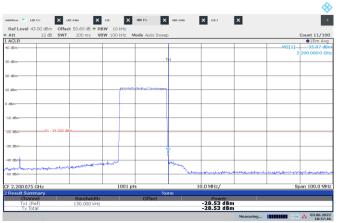


Test data, continued





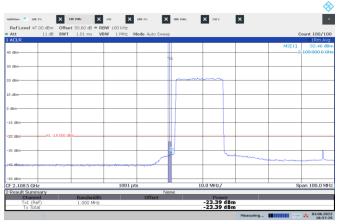
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2× NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None



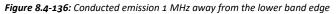
18:57:47 03.06.2022

Figure 8.4-137: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2× NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

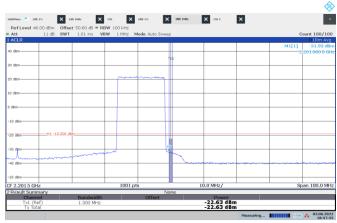


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Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2× NR 15 MHz Notes: None



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Figure 8.4-138: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2× NR 15 MHz
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued

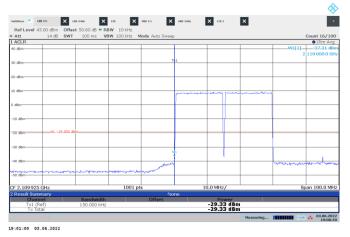
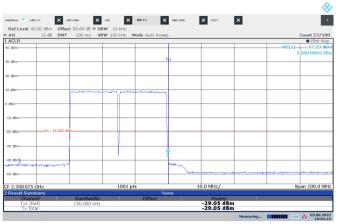




Figure 8.4-139: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4× NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None



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Figure 8.4-141: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4× NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

Figure 8.4-140: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 4× NR 15 MHz Notes: None



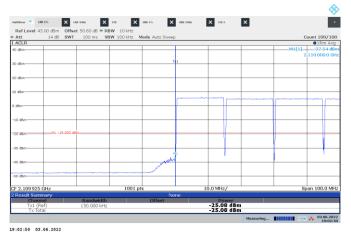
Figure 8.4-142: Conducted emission 1 MHz away from the upper band edge

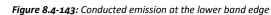
Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	4× NR 15 MHz
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued





Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6× NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

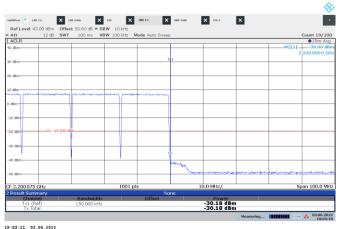
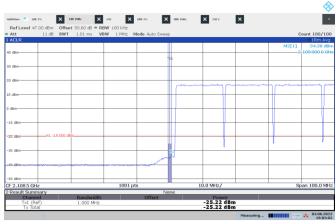
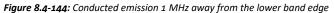


Figure 8.4-145: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	6× NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

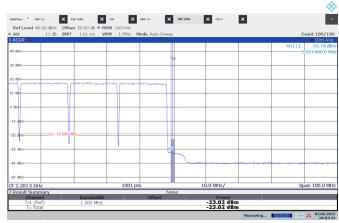






Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 6× NR 15 MHz Notes: None



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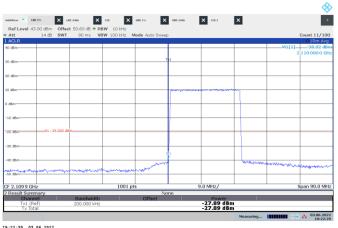
Figure 8.4-146: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	6× NR 15 MHz
Limit:	–19 dBm/MHz	Notes:	None

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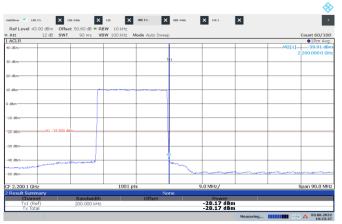
Test data, continued



19:22:30 03.06.2022

Figure 8.4-147: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2× NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



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Figure 8.4-149: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	2× NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



19:23:05 03.06.2022

Figure 8.4-148: Conducted emission 1 MHz away from the lower band edge

Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 2× NR 20 MHz Notes: None



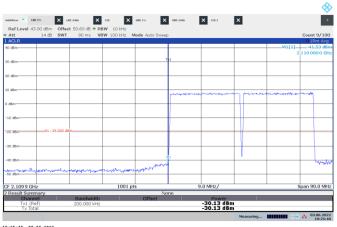
Figure 8.4-150: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	2× NR 20 MHz
Limit:	–19 dBm/MHz	Notes:	None

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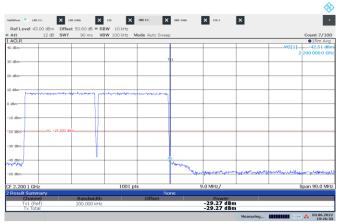
Test data, continued



19:25:40 03.06.2022

Figure 8.4-151: Conducted emission at the lower band edge

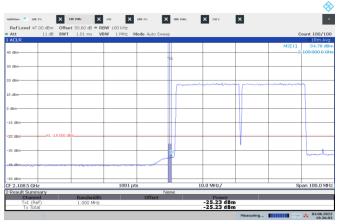
Frequency:	2110 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4× NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



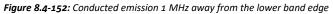
19:26:30 03.06.2022

Figure 8.4-153: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-carrier operation
Meas. BW:	1% of EBW	Tech.:	4× NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



19:26:04 03.06.2022



Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

Mode: Multi-carrier operation Tech.: 4× NR 20 MHz Notes: None



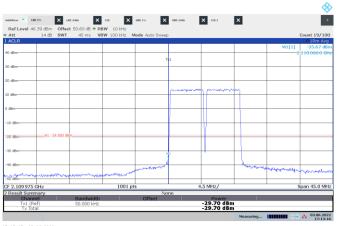
Figure 8.4-154: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-carrier operation
Meas. BW:	1 MHz	Tech.:	4× NR 20 MHz
Limit:	–19 dBm/MHz	Notes:	None

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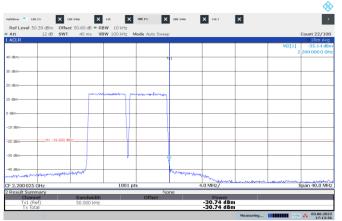
Test data, continued



17:13:17 03.06.2022

Figure 8.4-155: Conducted emission at the lower band edge

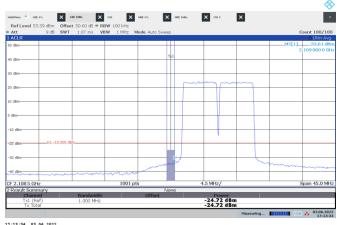
Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 5 MHz + 2 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



17:13:57 03.06.2022

Figure 8.4-157: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 5 MHz + 2 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None



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Figure 8.4-156: Conducted emission 1 MHz away from the lower band edge

Frequency: 2109 MHz Meas. BW: 1 MHz –19 dBm/MHz Limit:

Mode: Multi-RAT operation Tech.: 2× LTE 5 MHz + 2 × NR 5 MHz Notes: None



17:14:07 03.06.2022

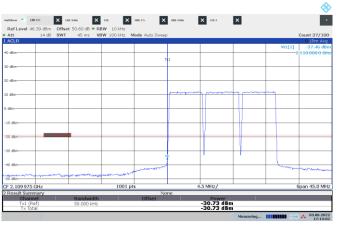
Figure 8.4-158: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	2× LTE 5 MHz + 2 × NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	None

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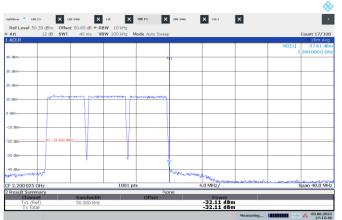
Test data, continued



17:15:02 03.06.2022

Figure 8.4-159: Conducted emission at the lower band edge

Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	3× LTE 5 MHz + 3 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None

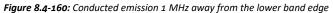


17:15:36 03.06.2022

Figure 8.4-161: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	3× LTE 5 MHz + 3 × NR 5 MHz
Limit:	–19 dBm/50 kHz	Notes:	None





```
Frequency: 2109 MHz
Meas. BW: 1 MHz
Limit: –19 dBm/MHz
```

Mode: Multi-RAT operation Tech.: 3× LTE 5 MHz + 3 × NR 5 MHz Notes: None

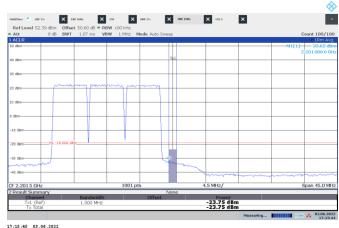


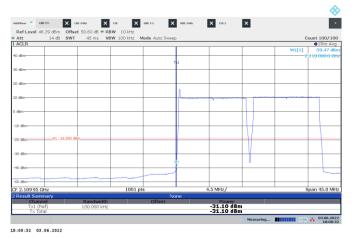
Figure 8.4-162: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	3× LTE 5 MHz + 3 × NR 5 MHz
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued



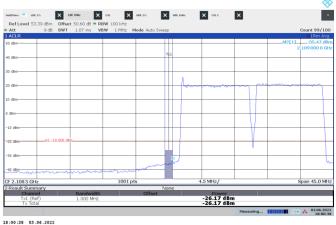
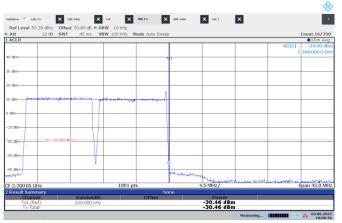


Figure 8.4-163: Conducted emission at the lower band edge

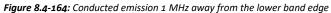
Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 10 MHz + 2 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None



18:00:56 03.06.2022

Figure 8.4-165: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 10 MHz + 2 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None



Frequency: 2109 MHz Meas. BW: 1 MHz Limit: –19 dBm/MHz
 Mode:
 Multi-RAT operation

 Tech.:
 2× LTE 10 MHz + 2 × NR 10 MHz

 Notes:
 None

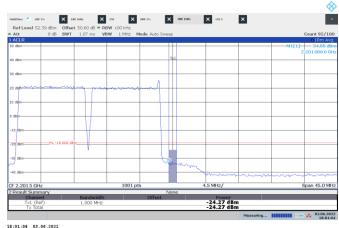


Figure 8.4-166: Conducted emission 1 MHz away from the upper band edge

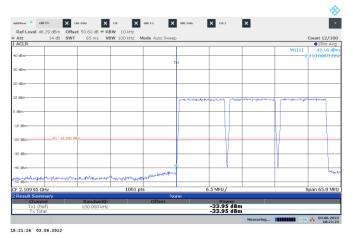
Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	2× LTE 10 MHz + 2 × NR .
Limit:	–19 dBm/MHz	Notes:	None

10 MHz

Testing data Spurious emissions at RF antenna connector (Band 66) FCC Part 27, RSS-139, Issue 3, RSS-170 Issue 3



Test data, continued



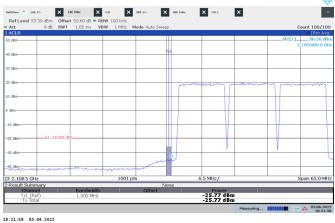
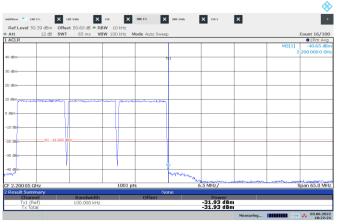


Figure 8.4-167: Conducted emission at the lower band edge

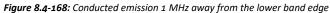
Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	3× LTE 10 MHz + 3 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None



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Figure 8.4-169: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	3× LTE 10 MHz + 3 × NR 10 MHz
Limit:	–19 dBm/100 kHz	Notes:	None



Frequency: 2109 MHz Meas. BW: 1 MHz Limit: -19 dBm/MHz
 Mode:
 Multi-RAT operation

 Tech.:
 3× LTE 10 MHz + 3 × NR 10 MHz

 Notes:
 None

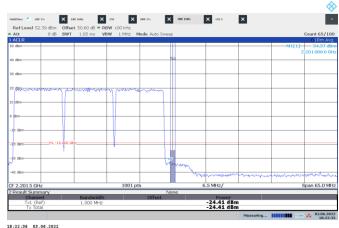


Figure 8.4-170: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	3× LTE 10 MHz + 3 × NR 10 MHz
Limit:	–19 dBm/MHz	Notes:	None

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Test data, continued

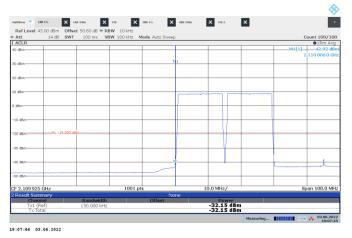
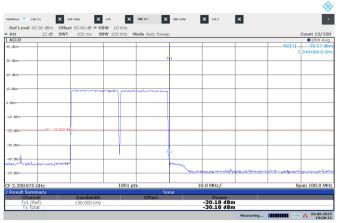




Figure 8.4-171: Conducted emission at the lower band edge

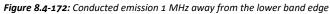
Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 15 MHz + 2 × NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None



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Figure 8.4-173: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 15 MHz + 2 × NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

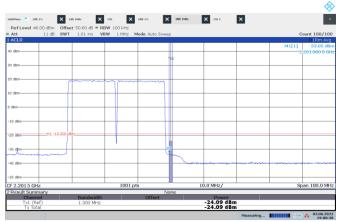


Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

 Mode:
 Multi-RAT operation

 Tech.:
 2× LTE 15 MHz + 2 × NR 15 MHz

 Notes:
 None



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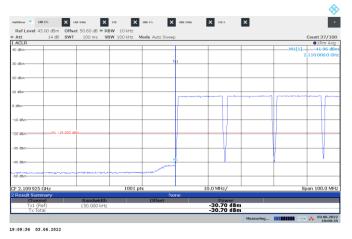
Figure 8.4-174: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	2× LTE 15 MHz + 2 × NR 15 MHz
Limit:	–19 dBm/MHz	Notes:	None

Testing data Spurious emissions at RF antenna connector (Band 66) FCC Part 27, RSS-139, Issue 3, RSS-170 Issue 3



Test data, continued



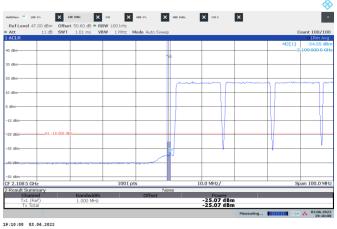
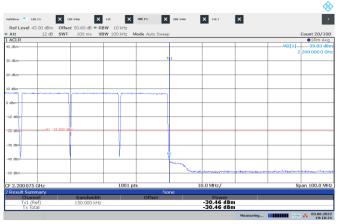


Figure 8.4-175: Conducted emission at the lower band edge

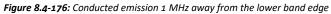
Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	3× LTE 15 MHz + 3 × NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None



19:10:24 03.06.2022

Figure 8.4-177: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	3× LTE 15 MHz + 3 × NR 15 MHz
Limit:	–19 dBm/150 kHz	Notes:	None

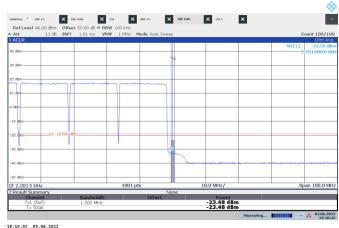


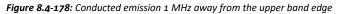
Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

 Mode:
 Multi-RAT operation

 Tech.:
 3× LTE 15 MHz + 3 × NR 15 MHz

 Notes:
 None





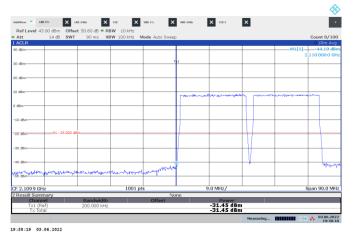
Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	3× LTE 15 MHz + 3 ×
Limit:	–19 dBm/MHz	Notes:	None

NR 15 MHz

Testing data Spurious emissions at RF antenna connector (Band 66) FCC Part 27, RSS-139, Issue 3, RSS-170 Issue 3



Test data, continued



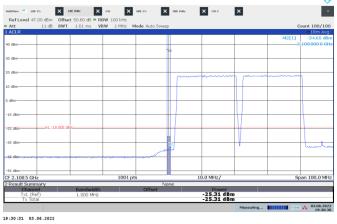
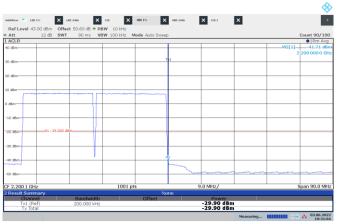


Figure 8.4-179: Conducted emission at the lower band edge

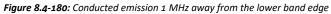
Frequency:	2110 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 20 MHz + 2 × NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



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Figure 8.4-181: Conducted emission at the upper band edge

Frequency:	2200 MHz	Mode:	Multi-RAT operation
Meas. BW:	1% of EBW	Tech.:	2× LTE 20 MHz + 2 × NR 20 MHz
Limit:	–19 dBm/200 kHz	Notes:	None



Frequency:	2109 MHz
Meas. BW:	1 MHz
Limit:	–19 dBm/MHz

 Mode:
 Multi-RAT operation

 Tech.:
 2× LTE 20 MHz + 2 × NR 20 MHz

 Notes:
 None

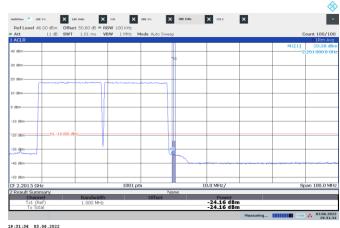


Figure 8.4-182: Conducted emission 1 MHz away from the upper band edge

Frequency:	2201 MHz	Mode:	Multi-RAT operation
Meas. BW:	1 MHz	Tech.:	2× LTE 20 MHz + 2 × NR 20 MHz
Limit:	–19 dBm/MHz	Notes:	None



8.5 Radiated spurious emissions (Band 66 & 70& 70A)

8.5.1 Definitions and limits

FCC §27.53:

(h) AWS emission limits

(1) General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log₁₀ (P) dB.

(3) Measurement procedure.

(i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1-megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(ii) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.

(iii) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

RSS-139, Section 6.6:

i. In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 log₁₀ p (watts) dB.

ii. After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least 43 + 10 $\log_{10} p$ (watts) dB.

RSS-170, Section 5.4:

The transmitter unwanted emissions shall be measured for all channel bandwidths with the carrier frequency set at both the highest and lowest channels in which the equipment is designed to operate.

The e.i.r.p. density of unwanted and carrier-off state emissions outlined in this section (Section 5.4) shall be averaged over any 2-ms active transmission using an RMS detector with a resolution bandwidth of 1 MHz for broadband emissions and a resolution bandwidth of 1 kHz for discrete emissions, unless stated otherwise.

For ATC equipment operating in the bands 2000-2020 MHz and 2180-2200 MHz, the unwanted emission limits shall be determined using a measurement bandwidth of 1 MHz or greater. However, in the 1 MHz band immediately outside and adjacent to the equipment's operating frequency block, a resolution bandwidth of at least 1% of the occupied bandwidth may be employed.

5.4.1.2 ATC Base Station Equipment operating in bands 2000-2020 MHz and 2180-2200 MHz

he unwanted emissions of ATC base station equipment transmitting in the bands 2000–2020 MHz and 2180–2200 MHz shall comply with the following: (1) The power of any unwanted emissions at frequencies outside the equipment's operating frequency block shall be attenuated below the transmitter power P (dBW), by 43 + 10 log p (watts), dB.

(2) *For equipment operating in the band 2180–2200 MHz, in addition to (1), the power of any emissions on all frequencies between 2200 MHz and 2290 MHz shall not exceed an e.i.r.p. of –100.6 dBW/4 kHz (–70.6 dBm/4 kHz).

* This requirement is for implementation and is enforced at the time of licensing. <u>Therefore, results are not included in this report.</u>

Requirement number 2 above is amended as detailed in the following ISED document... https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11536.html