

Test data, continued

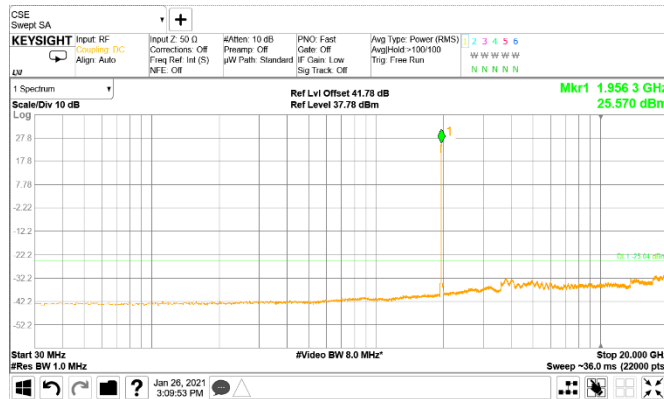


Figure 8.5-19: Conducted spurious emissions of 15 MHz two low channels, two-carrier operation

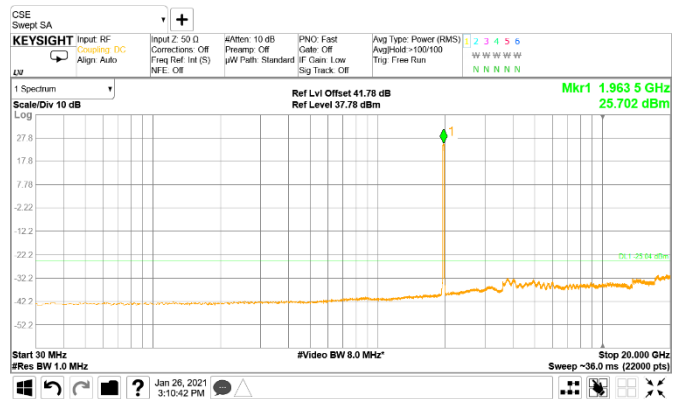


Figure 8.5-20: Conducted spurious emissions of 15 MHz two mid channels, two-carrier operation

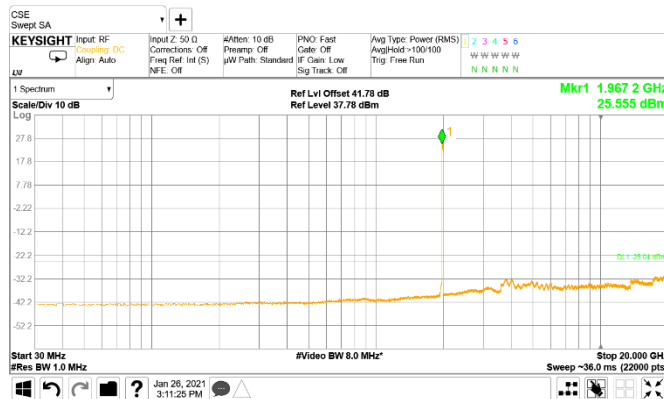


Figure 8.5-21: Conducted spurious emissions of 15 MHz two top channels, two-carrier operation

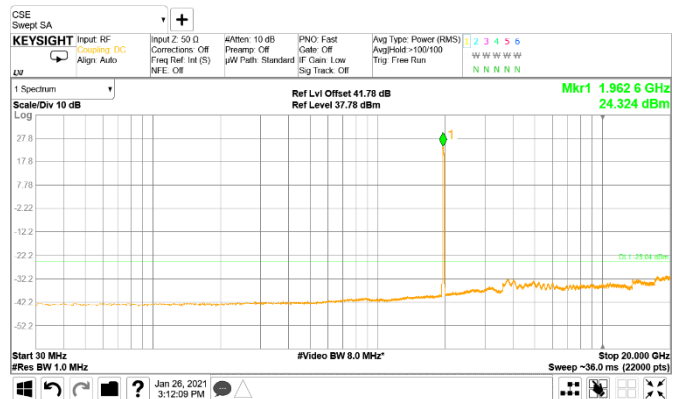


Figure 8.5-22: Conducted spurious emissions of 20 MHz two low channels, two-carrier operation

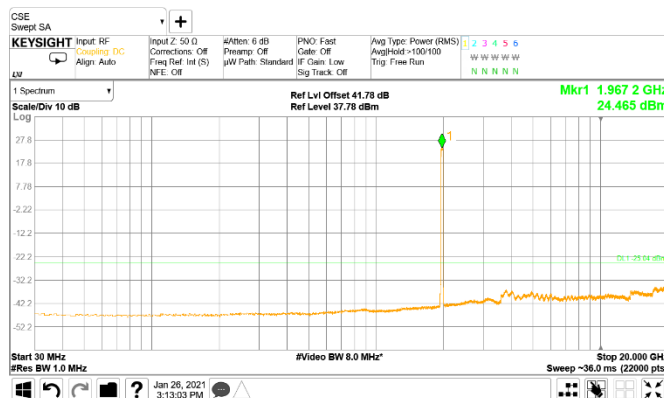


Figure 8.5-23: Conducted spurious emissions of 20 MHz two mid channels, two-carrier operation

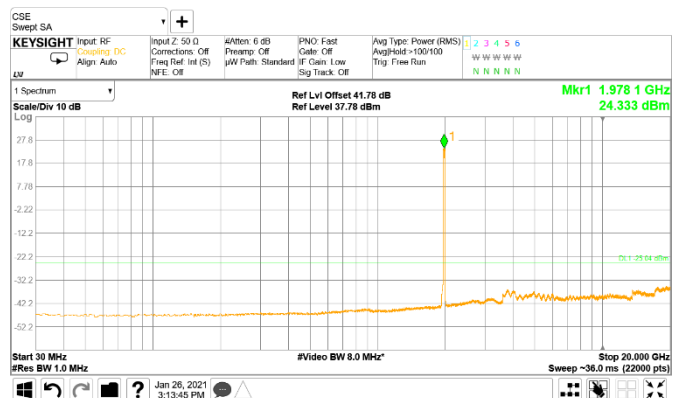


Figure 8.5-24: Conducted spurious emissions of 20 MHz two top channels, two-carrier operation

Test data, continued

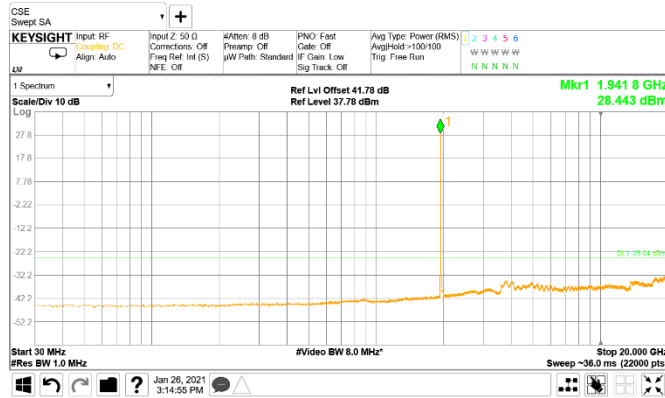


Figure 8.5-25: Conducted spurious emissions of 5 MHz three low channels, three-carrier operation

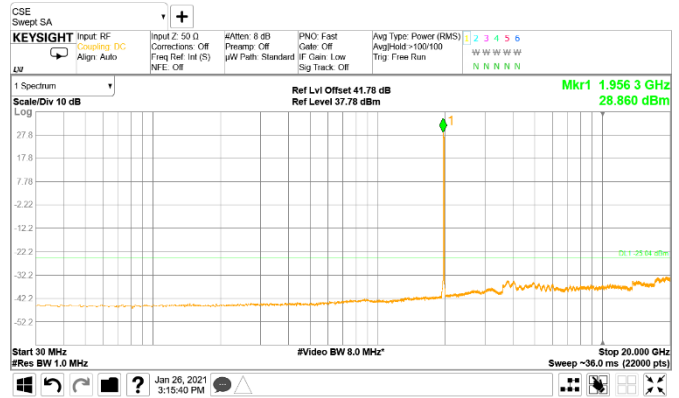


Figure 8.5-26: Conducted spurious emissions of 5 MHz three mid channels, three-carrier operation

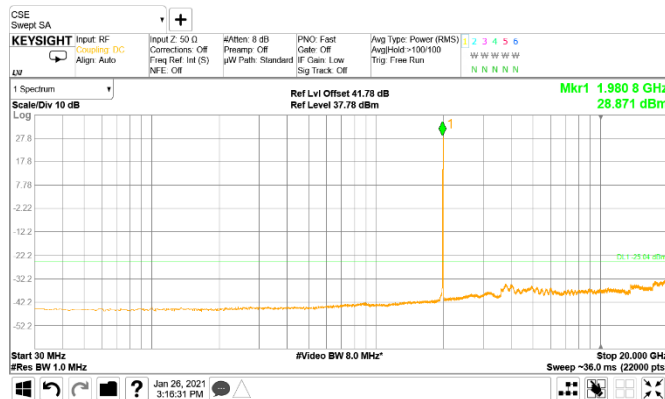


Figure 8.5-27: Conducted spurious emissions of 5 MHz three top channels, three-carrier operation

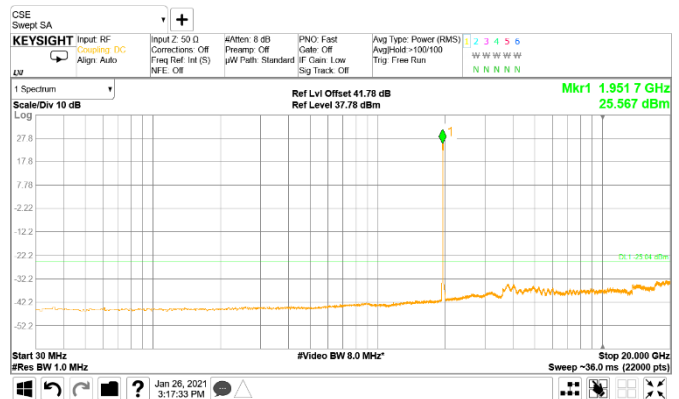


Figure 8.5-28: Conducted spurious emissions of 10 MHz three low channels, three-carrier operation

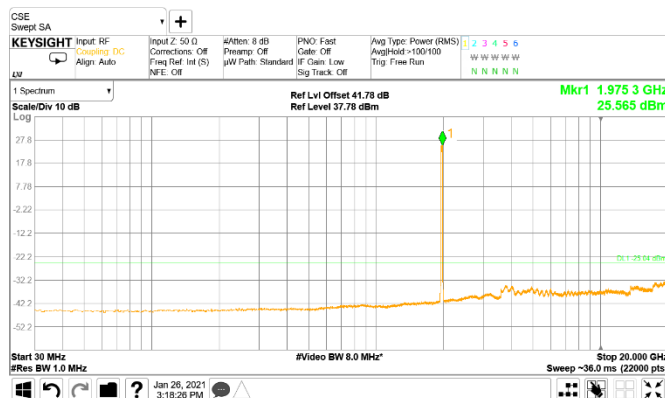


Figure 8.5-29: Conducted spurious emissions of 10 MHz three mid channels, three-carrier operation

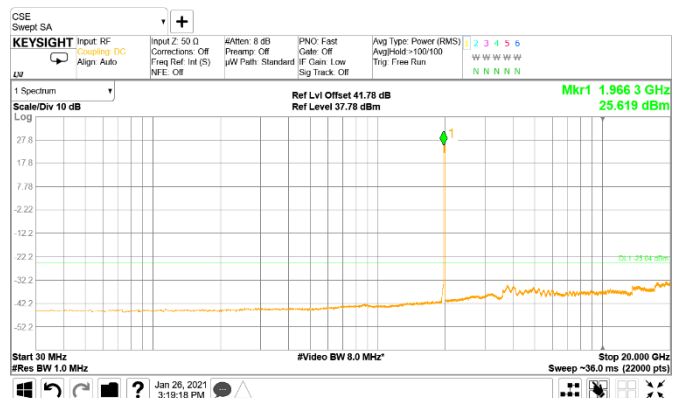


Figure 8.5-30: Conducted spurious emissions of 10 MHz three top channels, three-carrier operation

Test data, continued

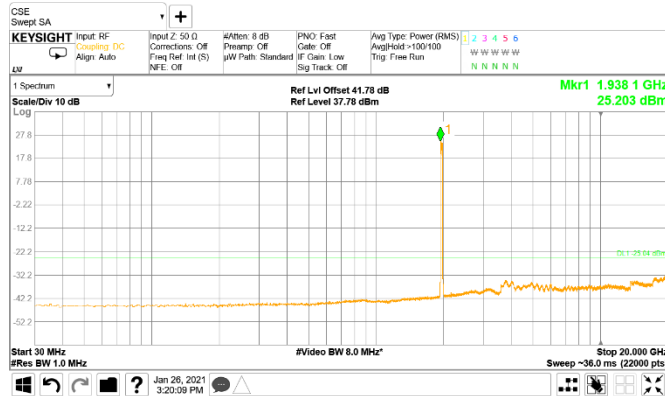


Figure 8.5-31: Conducted spurious emissions of 15 MHz three low channels, three-carrier operation

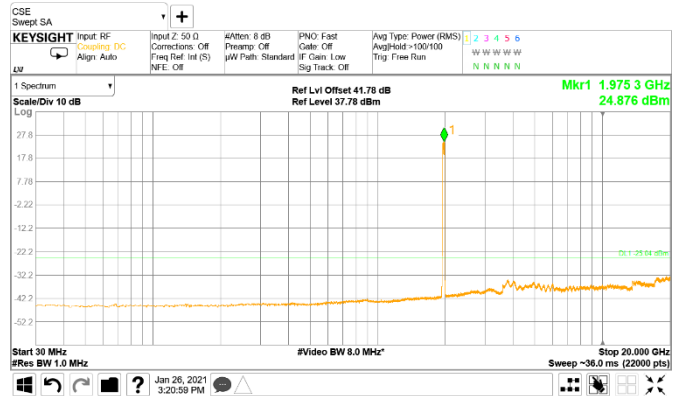


Figure 8.5-32: Conducted spurious emissions of 15 MHz three mid channels, three-carrier operation

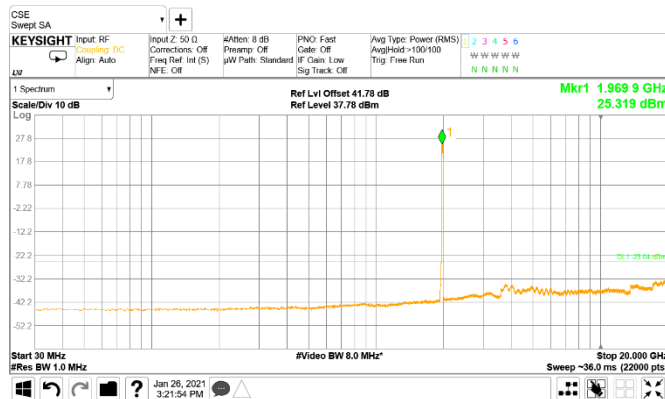


Figure 8.5-33: Conducted spurious emissions of 15 MHz three top channels, three-carrier operation

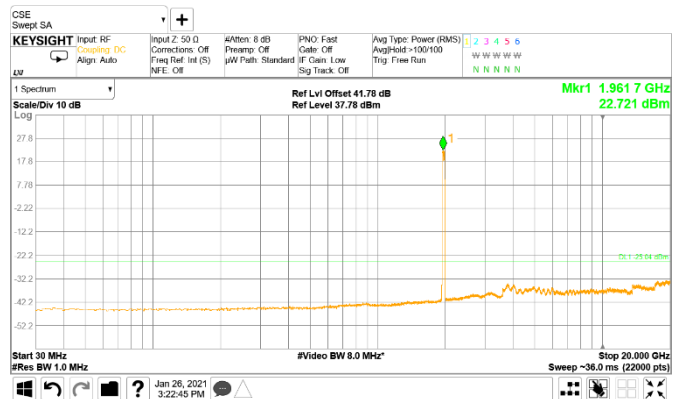


Figure 8.5-34: Conducted spurious emissions of 20 MHz three low channels, three-carrier operation

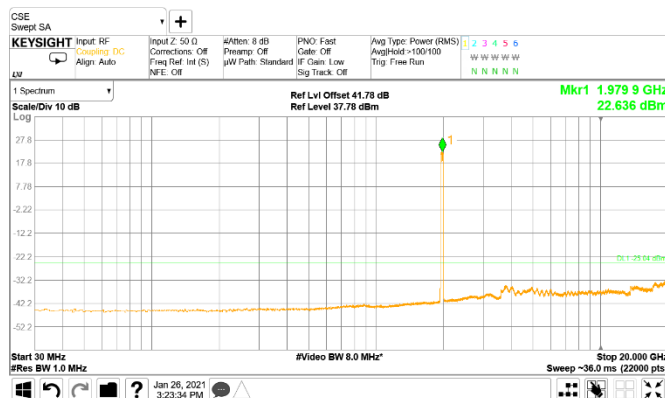


Figure 8.5-35: Conducted spurious emissions of 20 MHz three mid channels, three-carrier operation

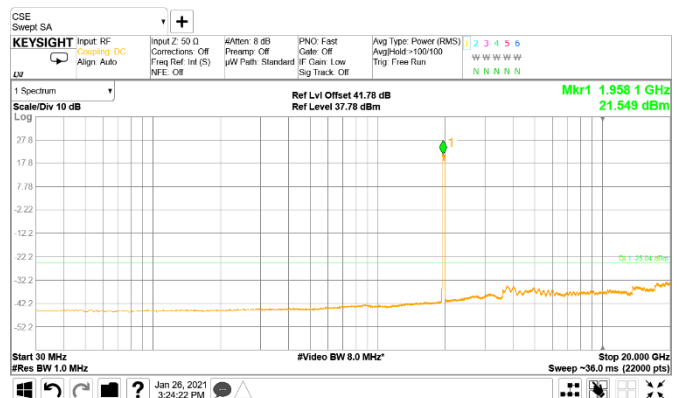


Figure 8.5-36: Conducted spurious emissions of 20 MHz three top channels, three-carrier operation

Test data, continued

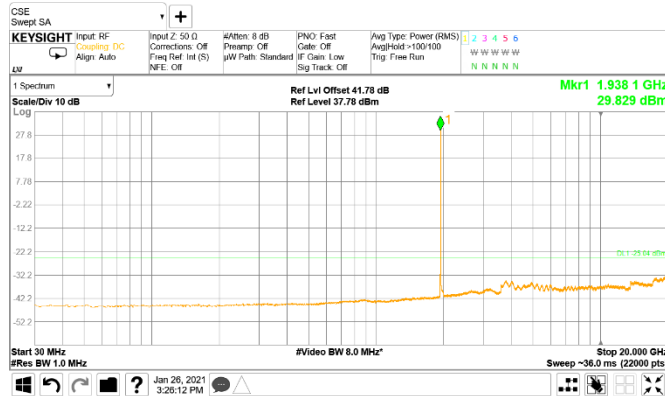


Figure 8.5-37: Conducted spurious emissions of 5 MHz two low channels, LTE + NR operation

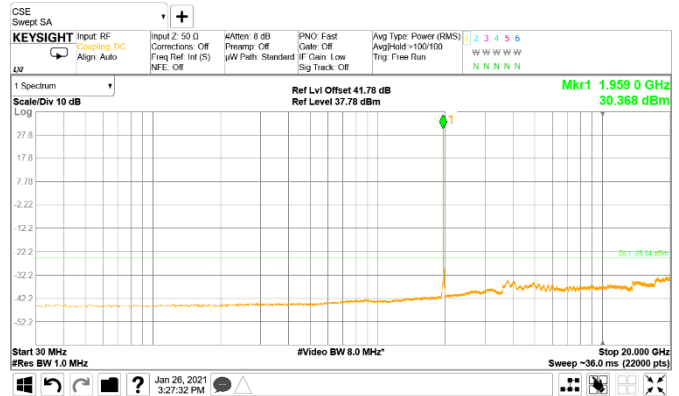


Figure 8.5-38: Conducted spurious emissions of 5 MHz two mid channels, LTE + NR operation

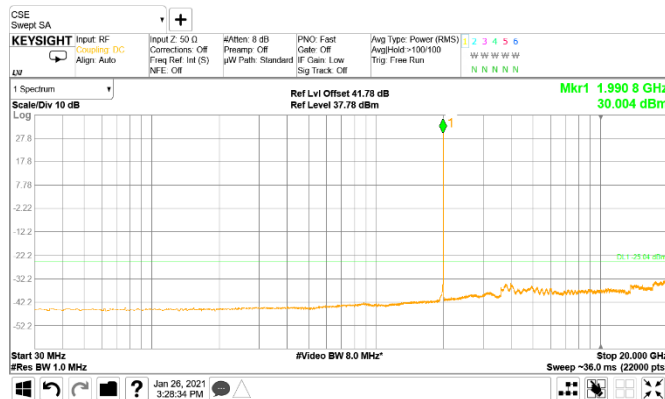


Figure 8.5-39: Conducted spurious emissions of 5 MHz two top channels, LTE + NR operation

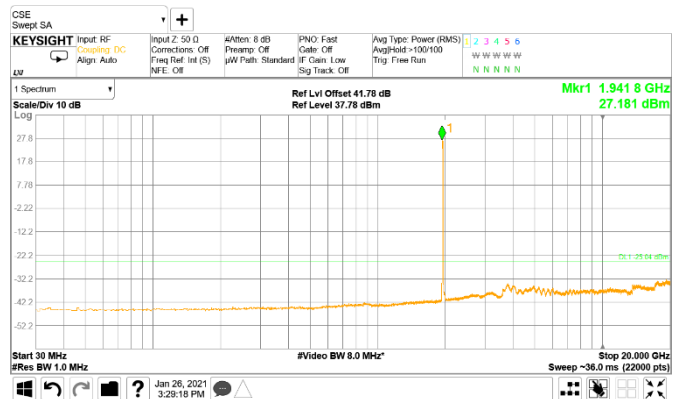


Figure 8.5-40: Conducted spurious emissions of 10 MHz two low channels, LTE + NR operation

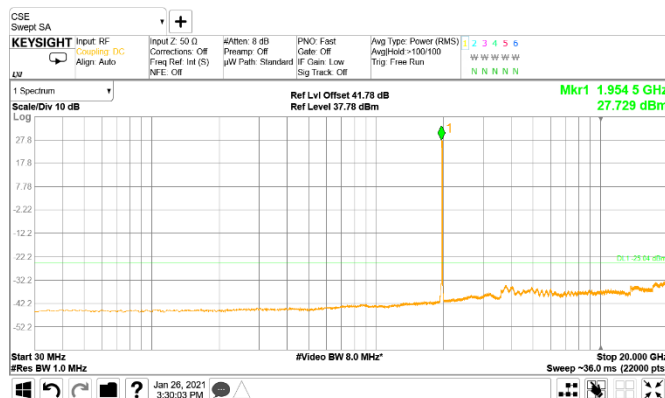


Figure 8.5-41: Conducted spurious emissions of 10 MHz two mid channels, LTE + NR operation

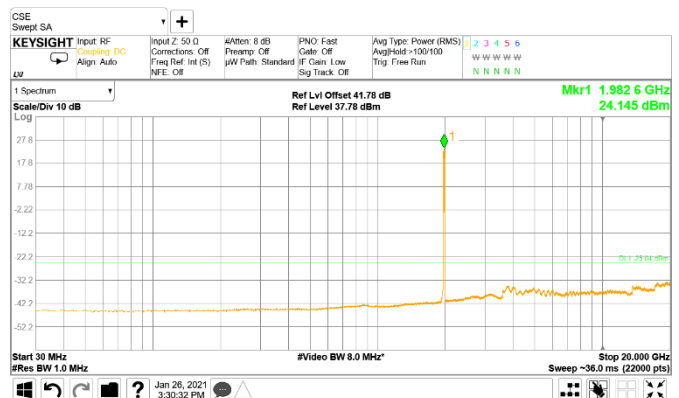


Figure 8.5-42: Conducted spurious emissions of 10 MHz two top channels, LTE + NR operation

Test data, continued

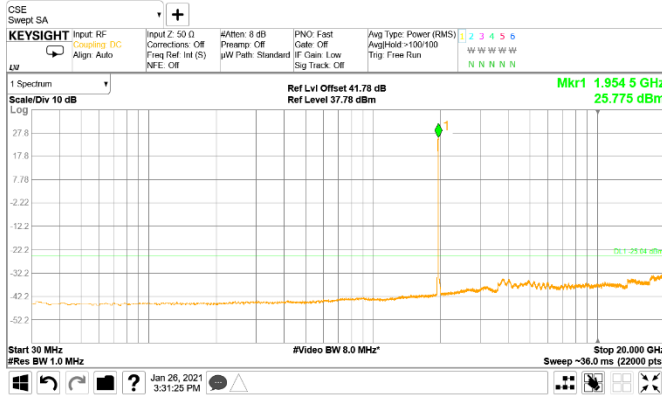


Figure 8.5-43: Conducted spurious emissions of 15 MHz two low channels, LTE + NR operation

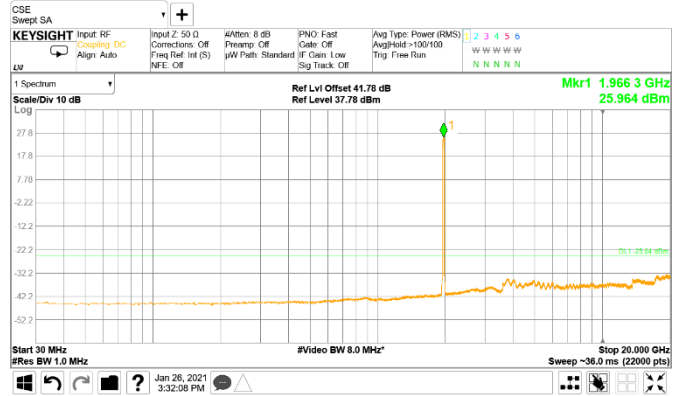


Figure 8.5-44: Conducted spurious emissions of 15 MHz two mid channels, LTE + NR operation

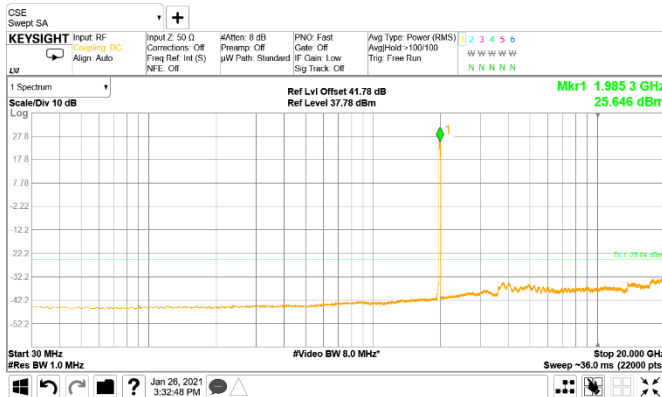


Figure 8.5-45: Conducted spurious emissions of 15 MHz two top channels, LTE + NR operation

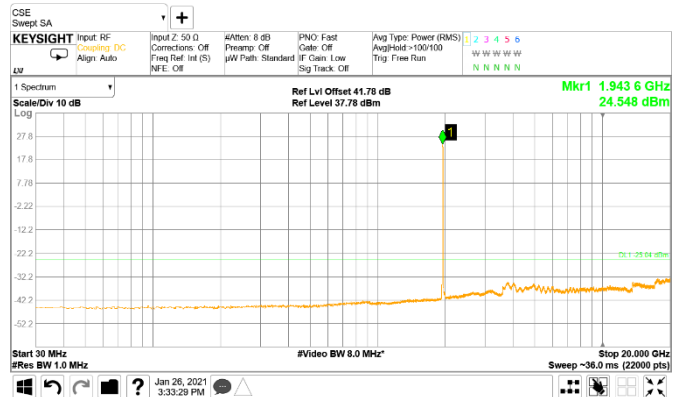


Figure 8.5-46: Conducted spurious emissions of 20 MHz two low channels, LTE + NR operation

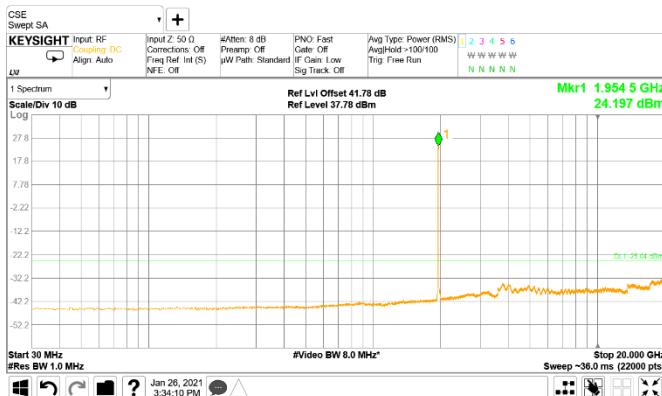


Figure 8.5-47: Conducted spurious emissions of 20 MHz two mid channels, LTE + NR operation

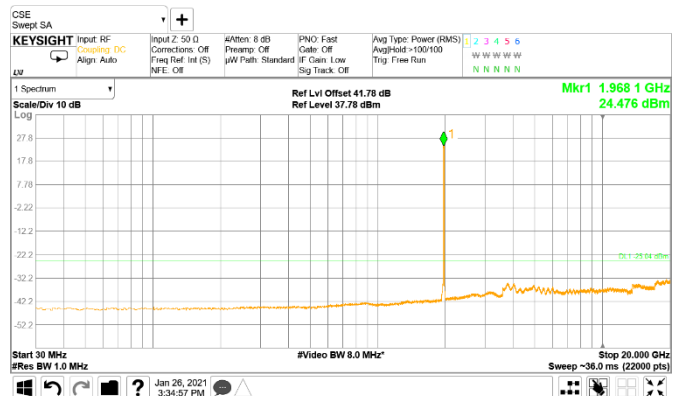


Figure 8.5-48: Conducted spurious emissions of 20 MHz two top channels, LTE + NR operation

Test data, continued

On the plots below the measured "Total Channel Power" value must be lower than -25.04 dBm

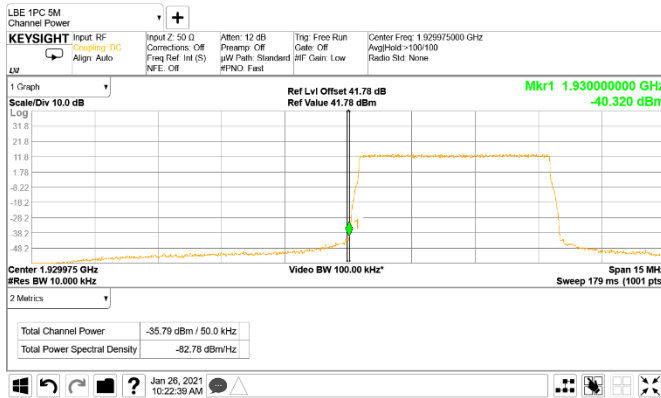


Figure 8.5-49: Conducted band edge emission at 1930 MHz, 5 MHz channel single-carrier operation (RBW = 1% of EBW)



Figure 8.5-50: Conducted band edge emission at 1929 MHz, 5 MHz channel single-carrier operation (RBW = 1 MHz)

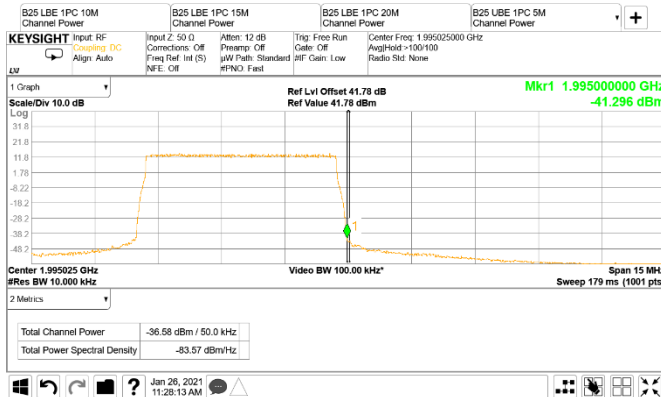


Figure 8.5-51: Conducted band edge emission at 1995 MHz, 5 MHz channel single-carrier operation (RBW = 1% of EBW)

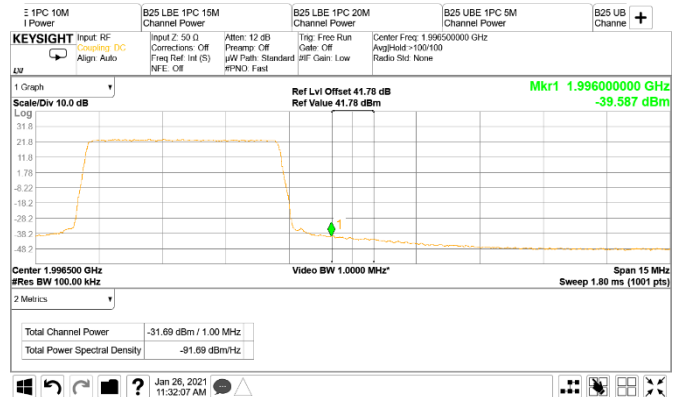


Figure 8.5-52: Conducted band edge emission at 1996 MHz, 5 MHz channel single-carrier operation (RBW = 1 MHz)

Test data, continued

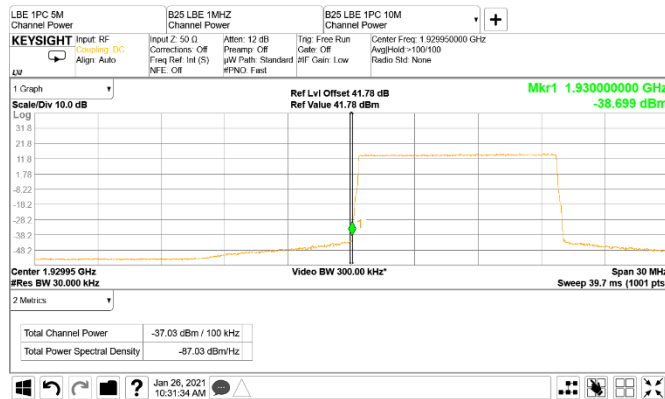


Figure 8.5-53: Conducted band edge emission at 1930 MHz, 10 MHz channel single-carrier operation (RBW = 1% of EBW)

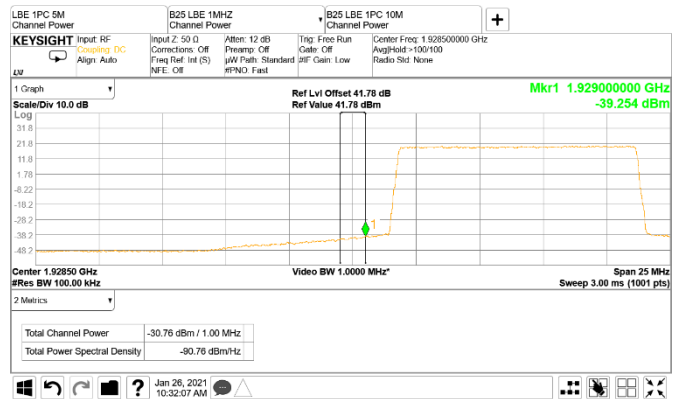


Figure 8.5-54: Conducted band edge emission at 1929 MHz, 10 MHz channel single-carrier operation (RBW = 1 MHz)

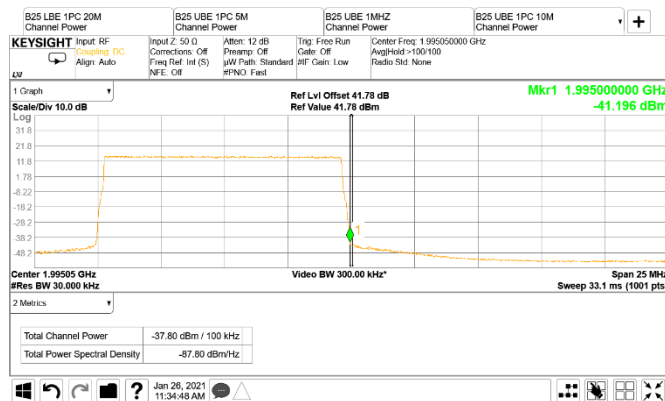


Figure 8.5-55: Conducted band edge emission at 1995 MHz, 10 MHz channel single-carrier operation (RBW = 1% of EBW)

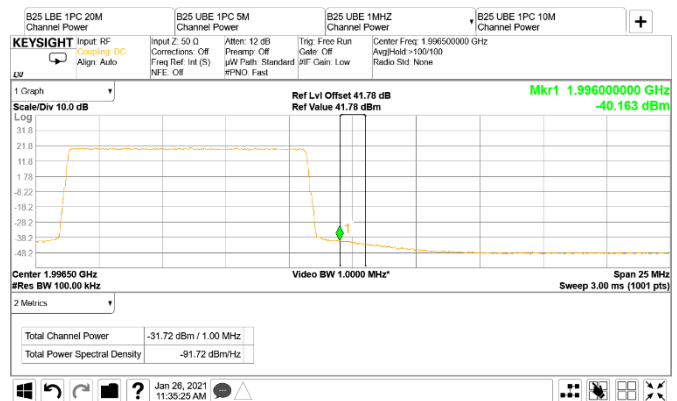
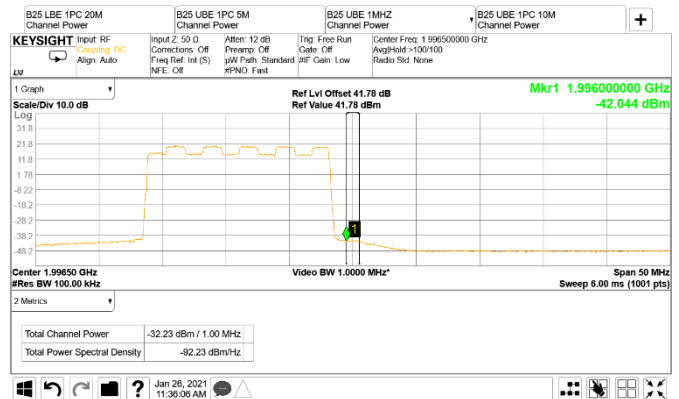
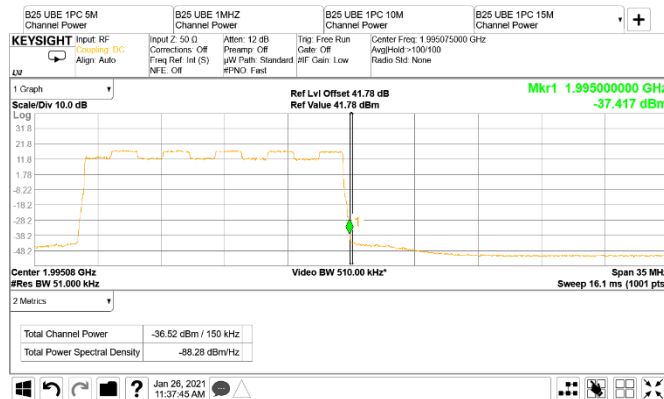
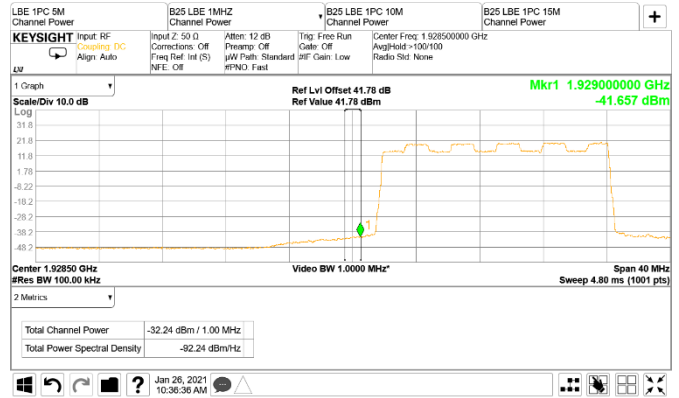
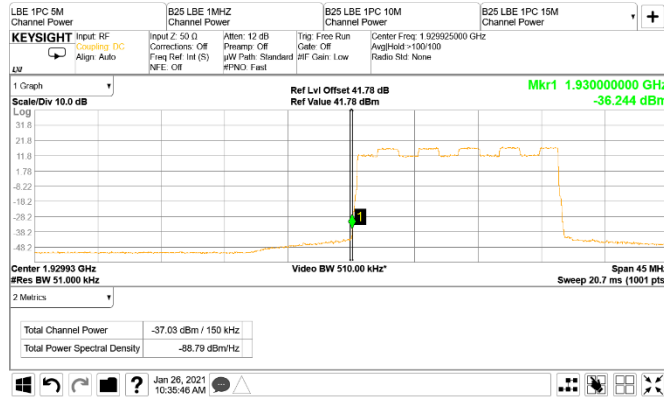


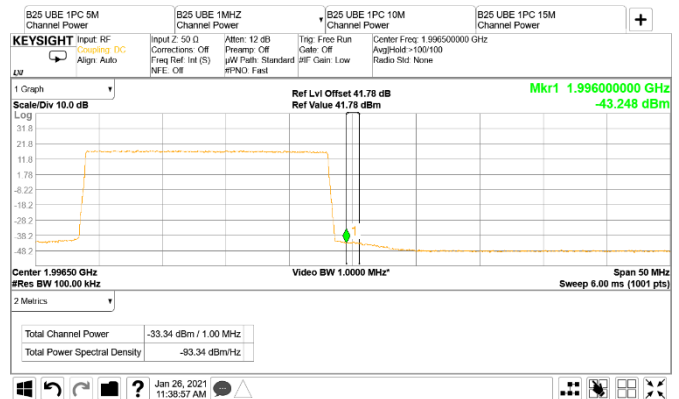
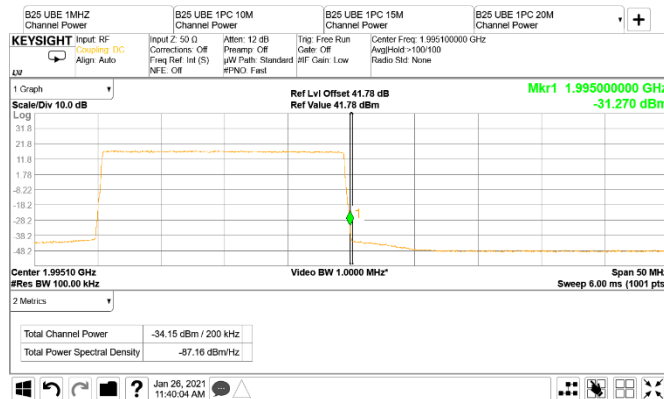
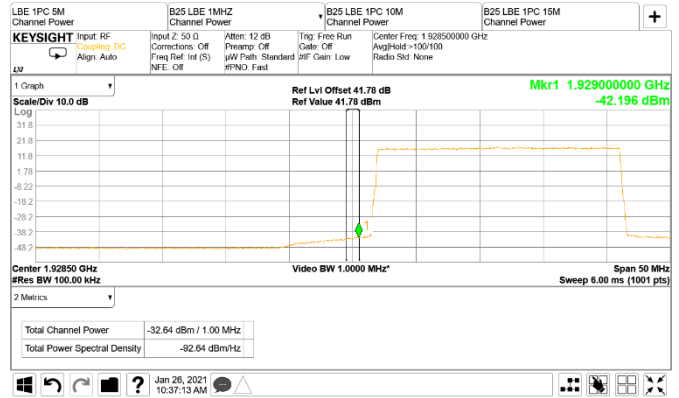
Figure 8.5-56: Conducted band edge emission at 1996 MHz, 10 MHz channel single-carrier operation (RBW = 1 MHz)

Test data, continued

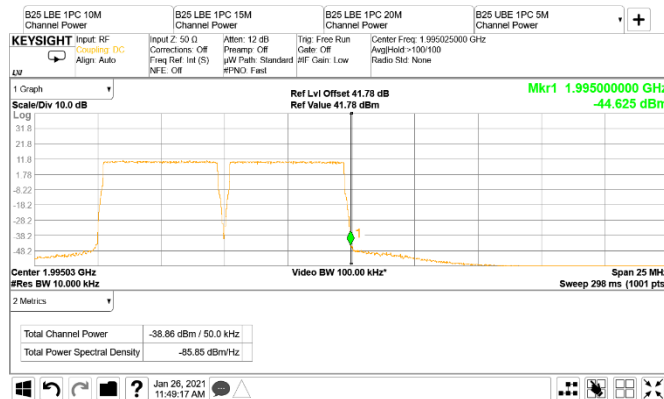
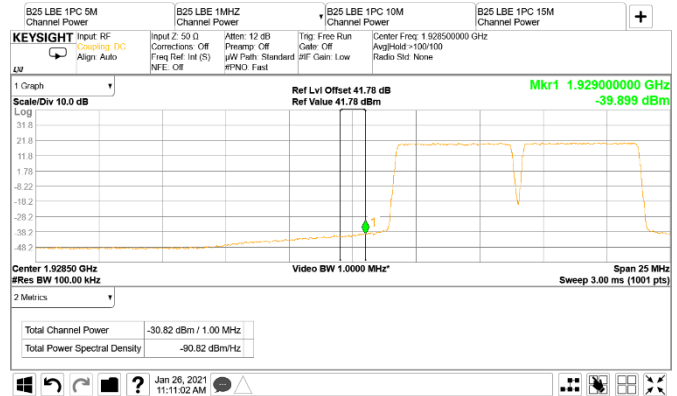
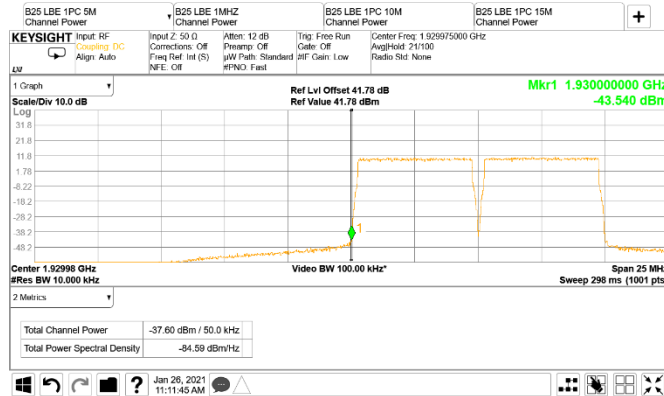




Test data, continued



Test data, continued



Test data, continued

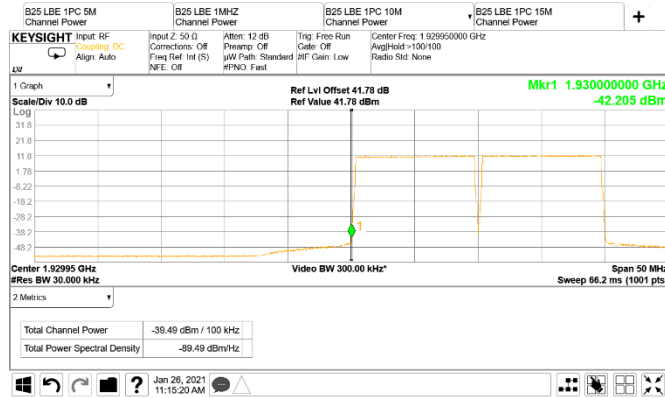


Figure 8.5-69: Conducted band edge emission at 1930 MHz, 10 MHz channel two-carrier operation (RBW = 1% of EBW)

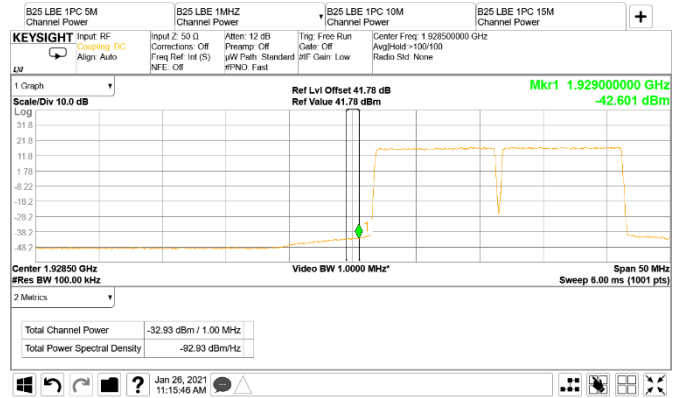


Figure 8.5-70: Conducted band edge emission at 1929 MHz, 10 MHz channel two-carrier operation (RBW = 1 MHz)

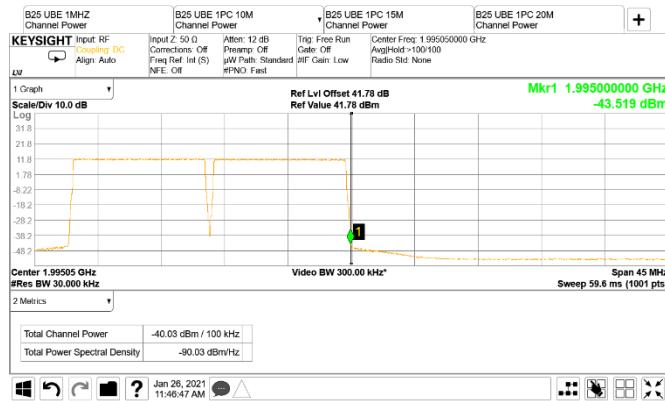


Figure 8.5-71: Conducted band edge emission at 1995 MHz, 10 MHz channel two-carrier operation (RBW = 1% of EBW)



Figure 8.5-72: Conducted band edge emission at 1996 MHz, 10 MHz channel two-carrier operation (RBW = 1 MHz)

Test data, continued

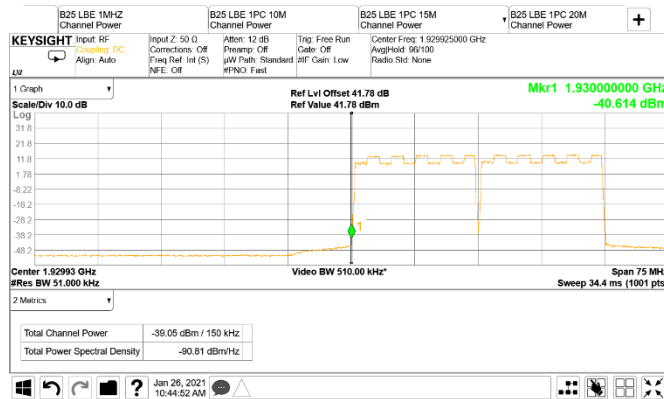


Figure 8.5-73: Conducted band edge emission at 1930 MHz, 15 MHz channel two-carrier operation (RBW = 1% of EBW)

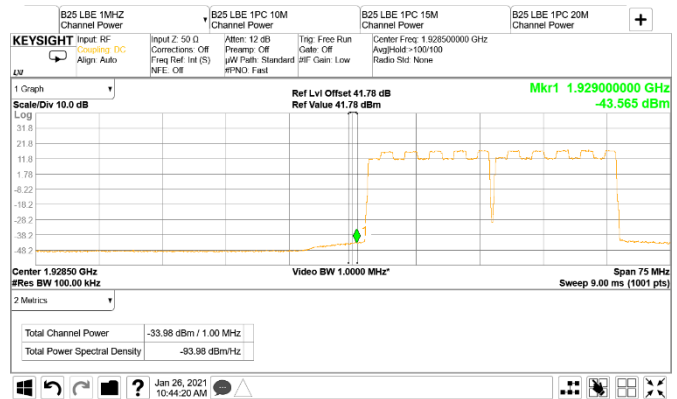


Figure 8.5-74: Conducted band edge emission at 1929 MHz, 15 MHz channel two-carrier operation (RBW = 1 MHz)

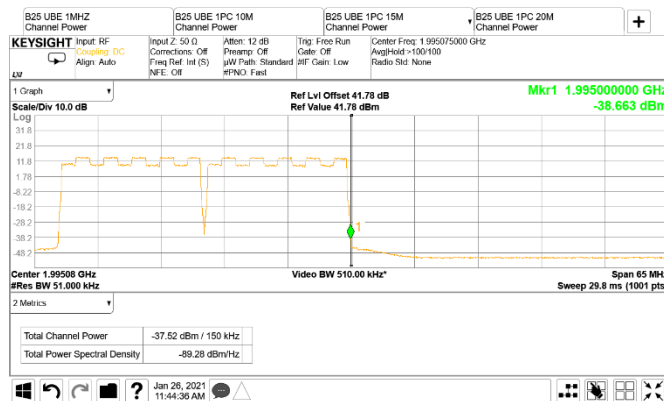


Figure 8.5-75: Conducted band edge emission at 1995 MHz, 15 MHz channel two-carrier operation (RBW = 1% of EBW)

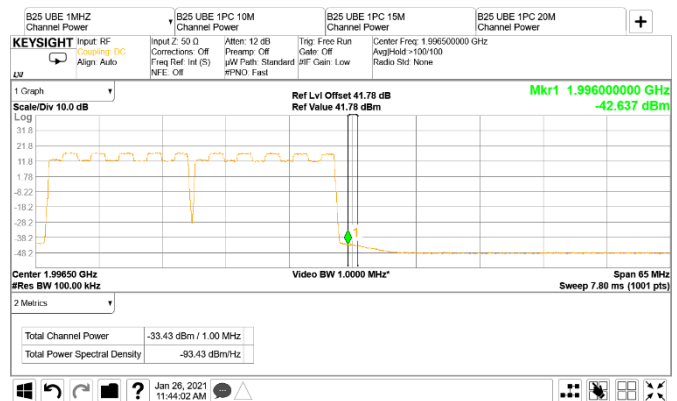
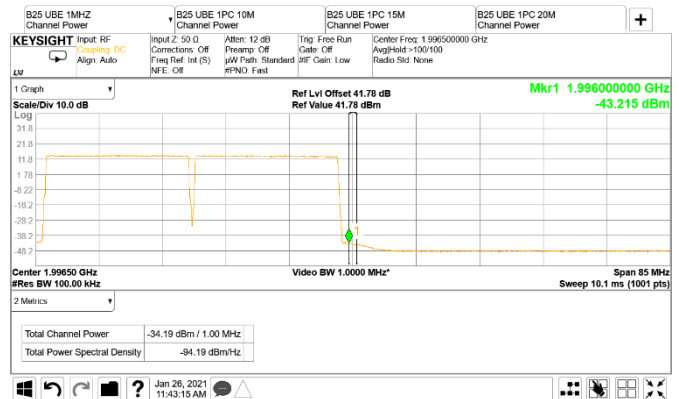
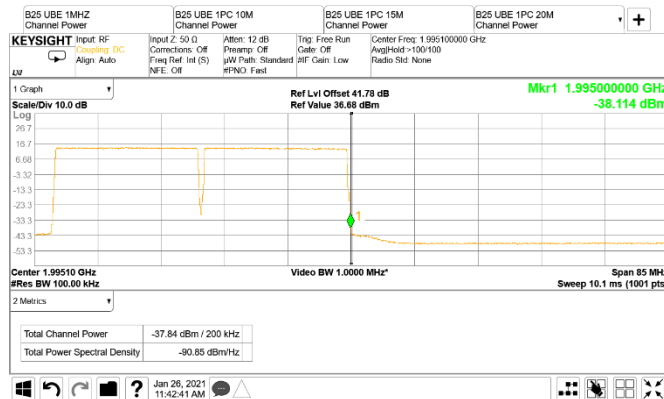
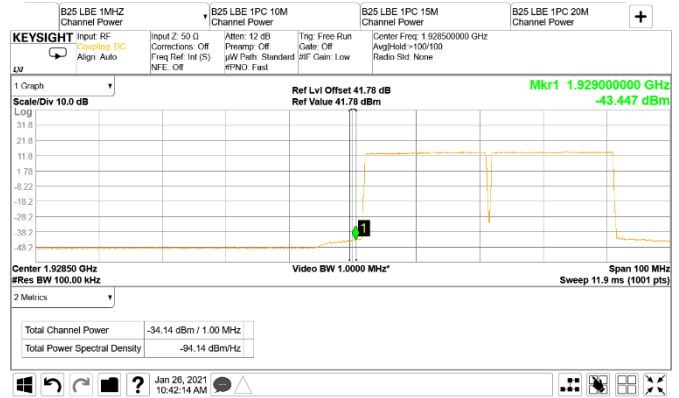
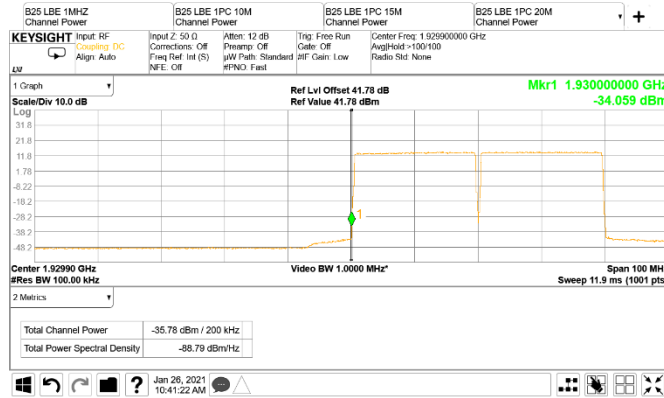


Figure 8.5-76: Conducted band edge emission at 1996 MHz, 15 MHz channel two-carrier operation (RBW = 1 MHz)

Test data, continued



Test data, continued

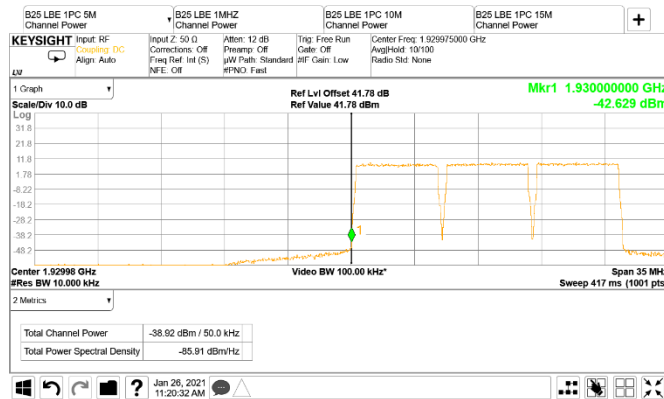


Figure 8.5-81: Conducted band edge emission at 1930 MHz, 5 MHz channel three-carrier operation (RBW = 1% of EBW)

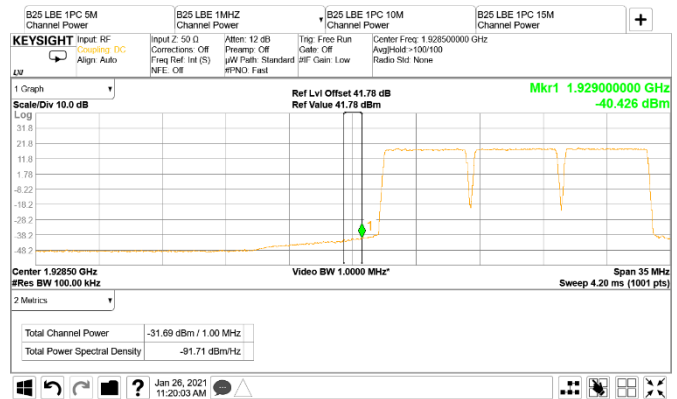


Figure 8.5-82: Conducted band edge emission at 1929 MHz, 5 MHz channel three-carrier operation (RBW = 1 MHz)

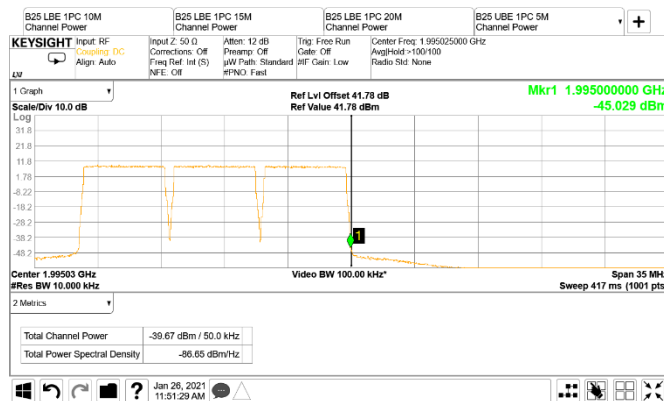


Figure 8.5-83: Conducted band edge emission at 1995 MHz, 5 MHz channel three-carrier operation (RBW = 1% of EBW)

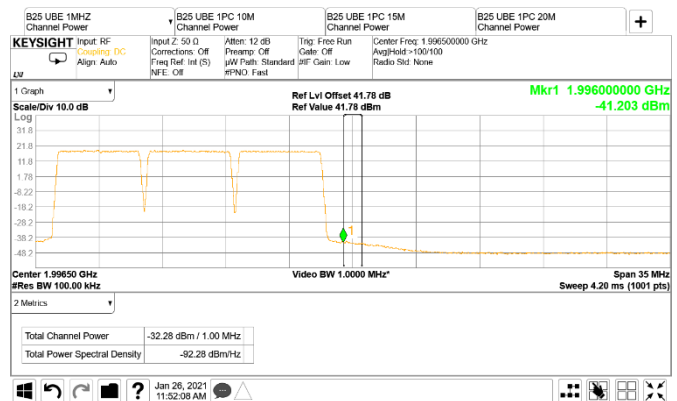
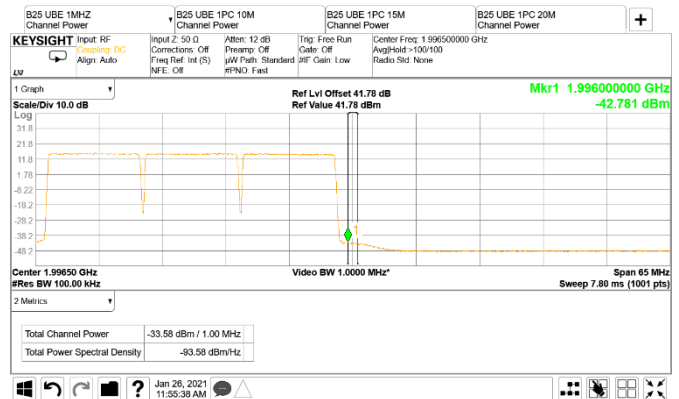
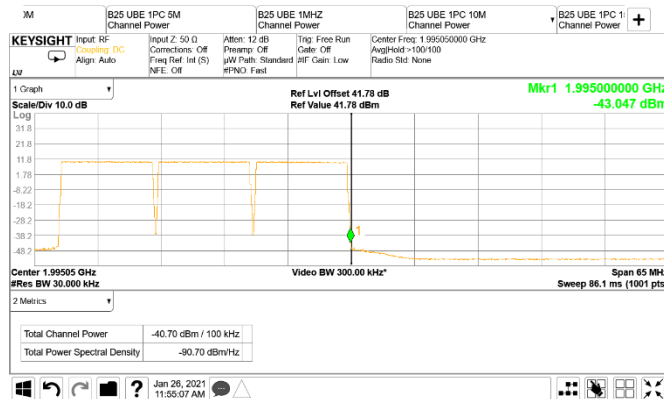
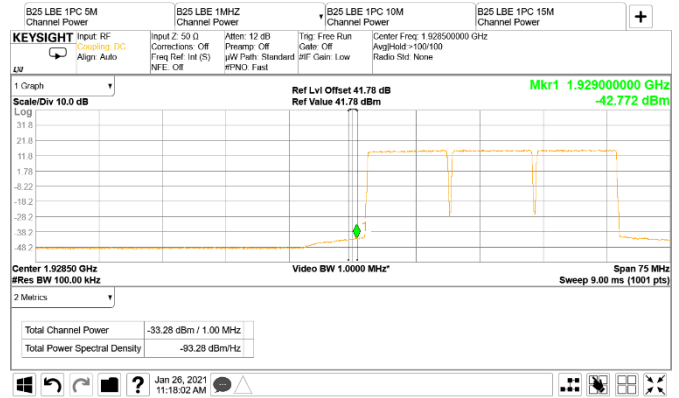
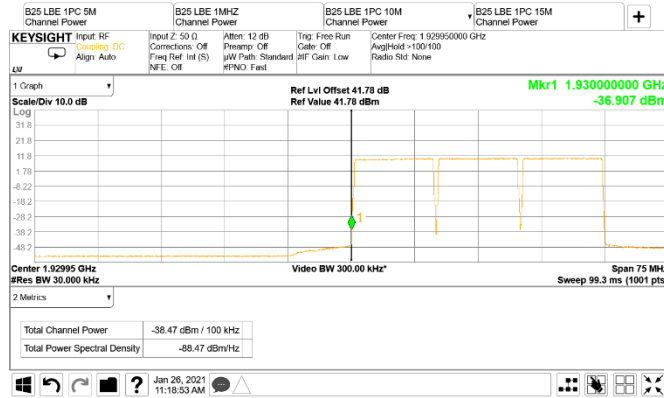


Figure 8.5-84: Conducted band edge emission at 1996 MHz, 5 MHz channel three-carrier operation (RBW = 1 MHz)

Test data, continued



Test data, continued

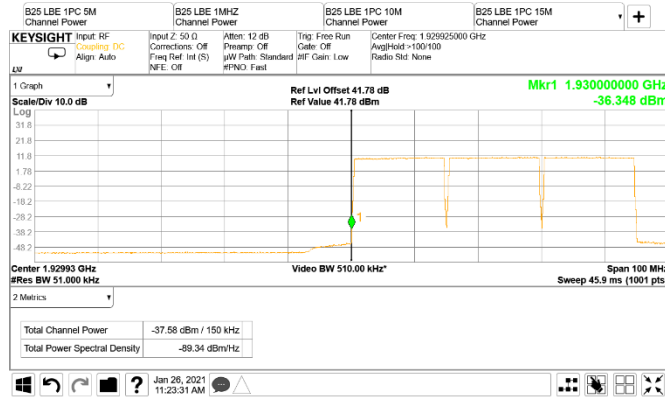


Figure 8.5-89: Conducted band edge emission at 1930 MHz, 15 MHz channel three-carrier operation (RBW = 1% of EBW)

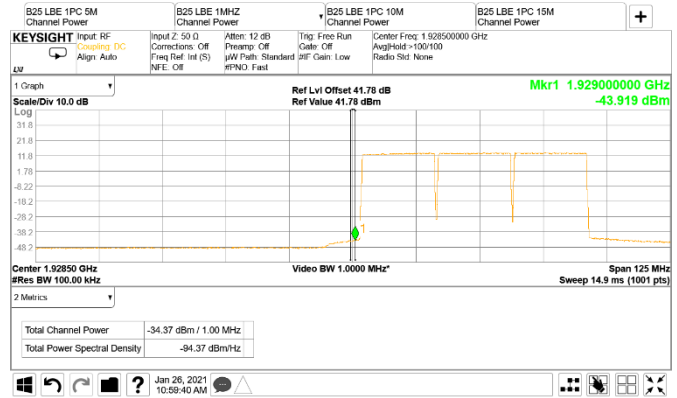


Figure 8.5-90: Conducted band edge emission at 1929 MHz, 15 MHz channel three-carrier operation (RBW = 1 MHz)

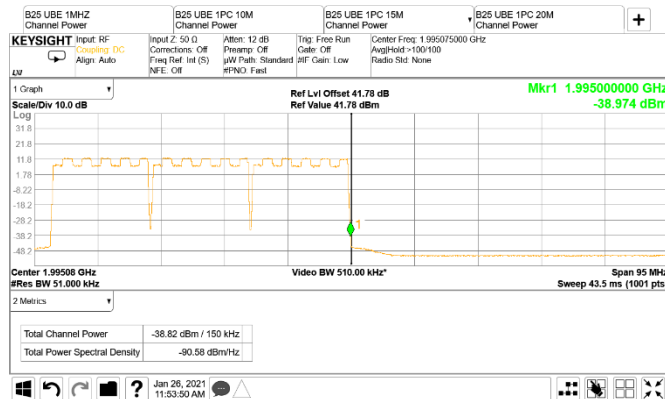


Figure 8.5-91: Conducted band edge emission at 1995 MHz, 15 MHz channel three-carrier operation (RBW = 1% of EBW)

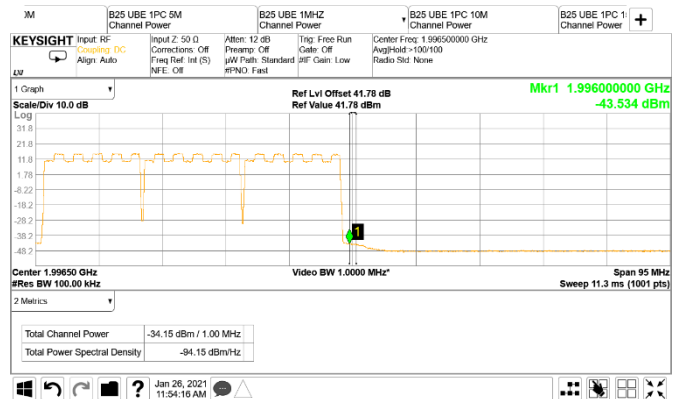


Figure 8.5-92: Conducted band edge emission at 1996 MHz, 15 MHz channel three-carrier operation (RBW = 1 MHz)



Test data, continued

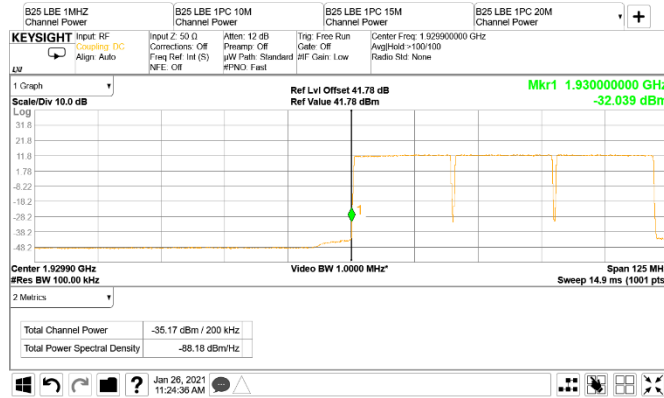


Figure 8.5-93: Conducted band edge emission at 1930 MHz, 20 MHz channel three-carrier operation (RBW = 1% of EBW)

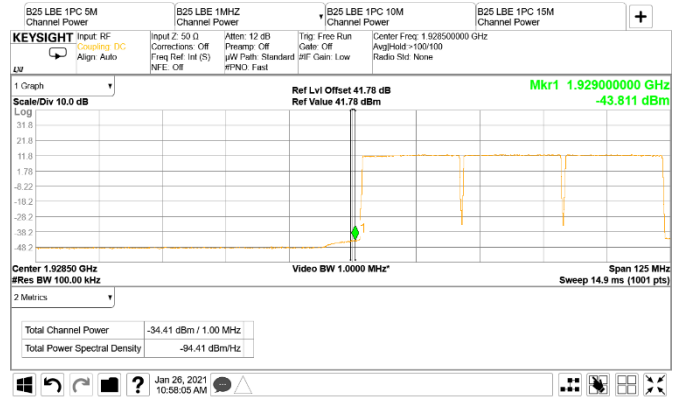


Figure 8.5-94: Conducted band edge emission at 1929 MHz, 20 MHz channel three-carrier operation (RBW = 1 MHz)

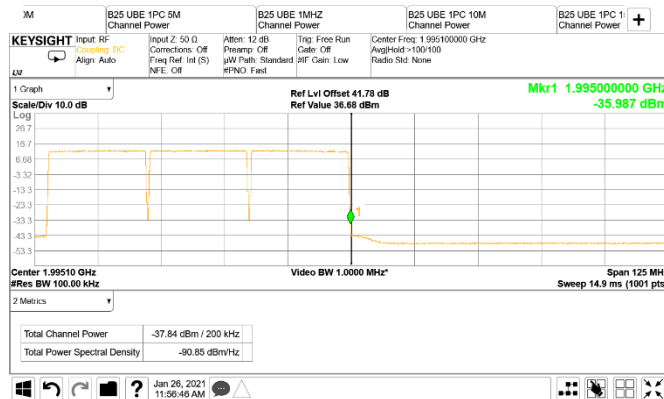


Figure 8.5-95: Conducted band edge emission at 1995 MHz, 20 MHz channel three-carrier operation (RBW = 1% of EBW)

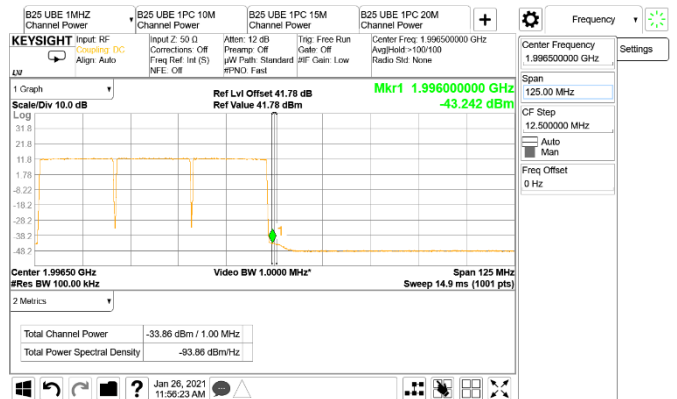


Figure 8.5-96: Conducted band edge emission at 1996 MHz, 20 MHz channel three-carrier operation (RBW = 1 MHz)

Test data, continued

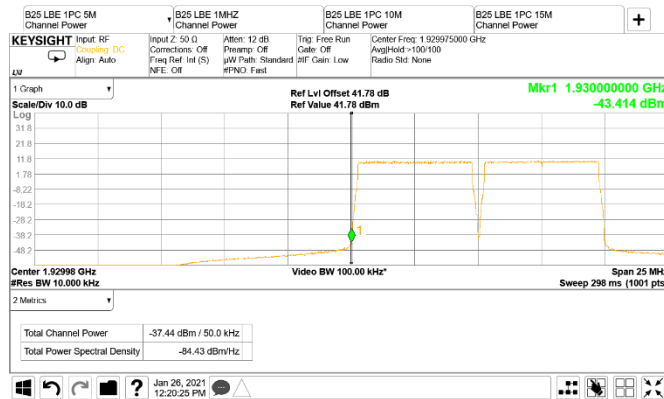


Figure 8.5-97: Conducted band edge emission at 1930 MHz, 5 MHz channel two-carrier LTE + NR operation (RBW = 1% of EBW)



Figure 8.5-98: Conducted band edge emission at 1929 MHz, 5 MHz channel two-carrier LTE + NR operation (RBW = 1 MHz)

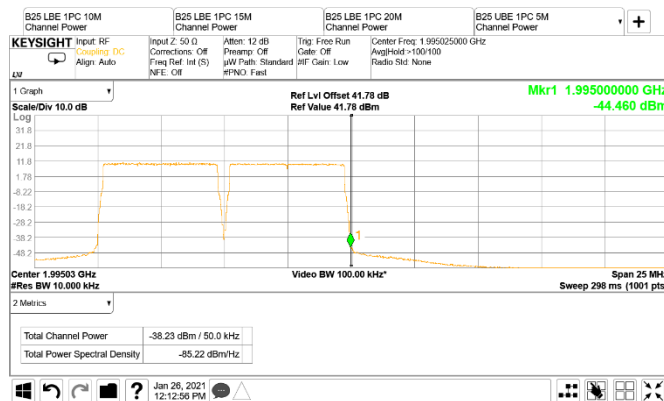


Figure 8.5-99: Conducted band edge emission at 1995 MHz, 5 MHz channel two-carrier LTE + NR operation (RBW = 1% of EBW)

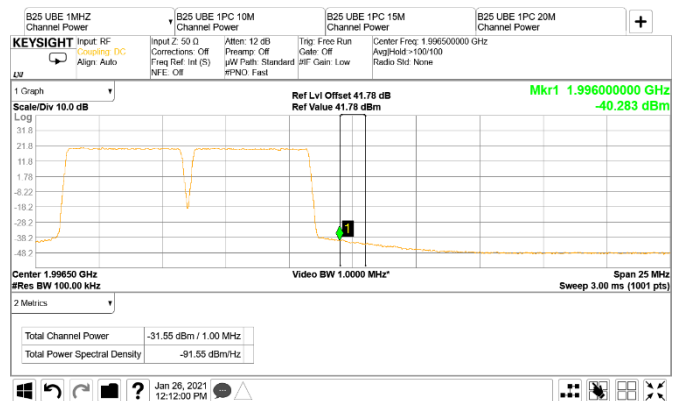
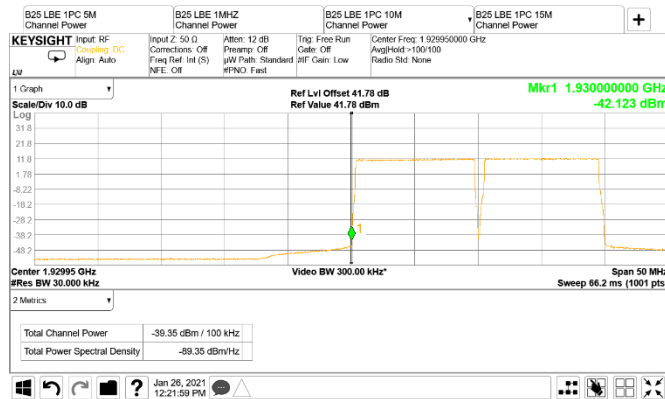
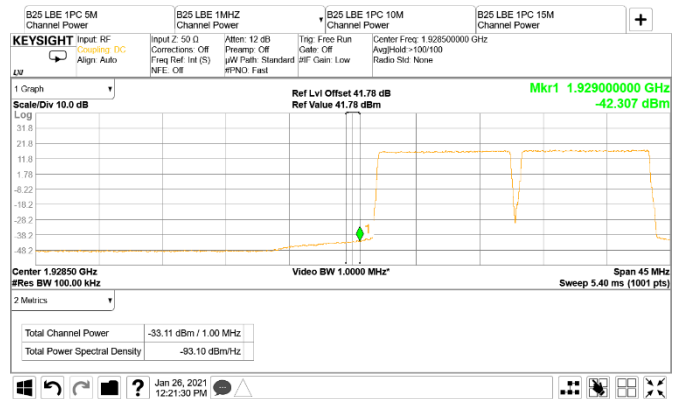


Figure 8.5-100: Conducted band edge emission at 1996 MHz, 5 MHz channel two-carrier LTE + NR operation (RBW = 1 MHz)

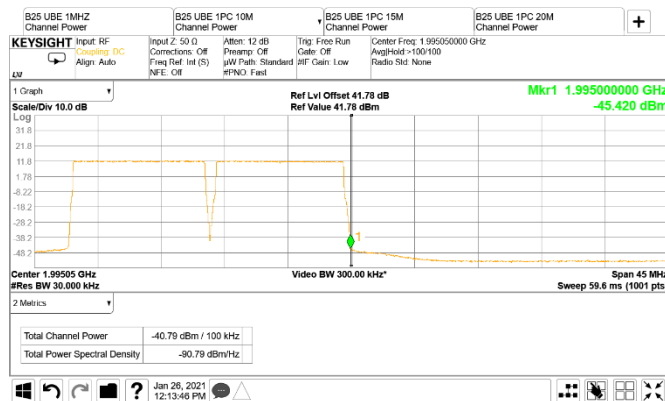
Test data, continued



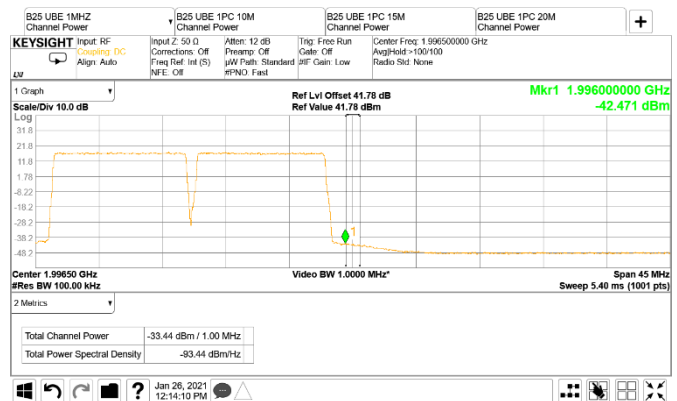
**Figure 8.5-101:** Conducted band edge emission at 1930 MHz, 10 MHz channel two-carrier LTE + NR operation (RBW = 1% of EBW)



**Figure 8.5-102:** Conducted band edge emission at 1929 MHz, 10 MHz channel two-carrier LTE + NR operation (RBW = 1 MHz)

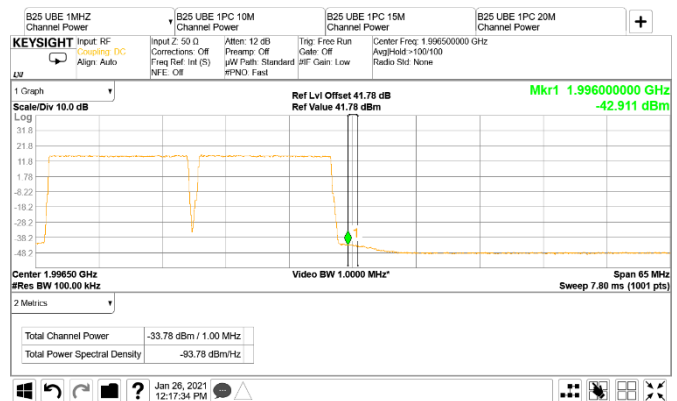
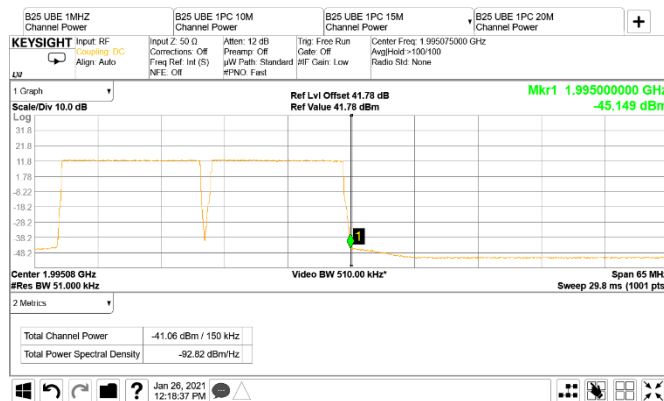
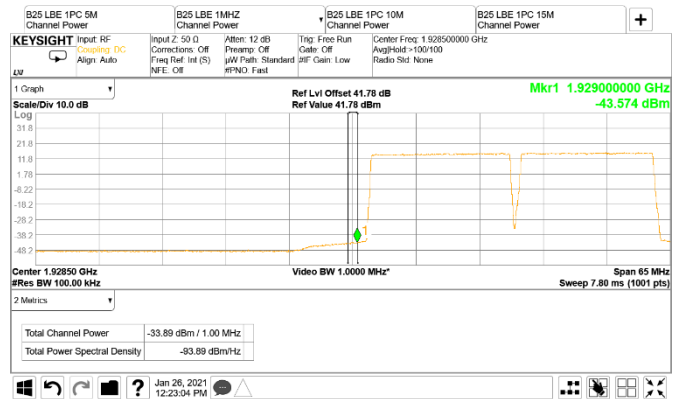
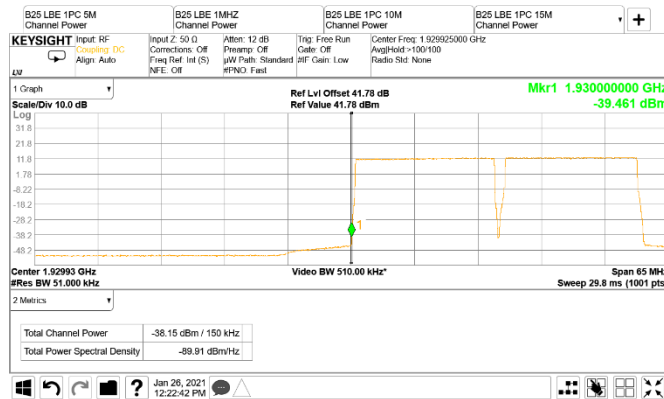


**Figure 8.5-103:** Conducted band edge emission at 1995 MHz, 10 MHz channel two-carrier LTE + NR operation (RBW = 1% of EBW)



**Figure 8.5-104:** Conducted band edge emission at 1996 MHz, 10 MHz channel two-carrier LTE + NR operation (RBW = 1 MHz)

Test data, continued



Test data, continued

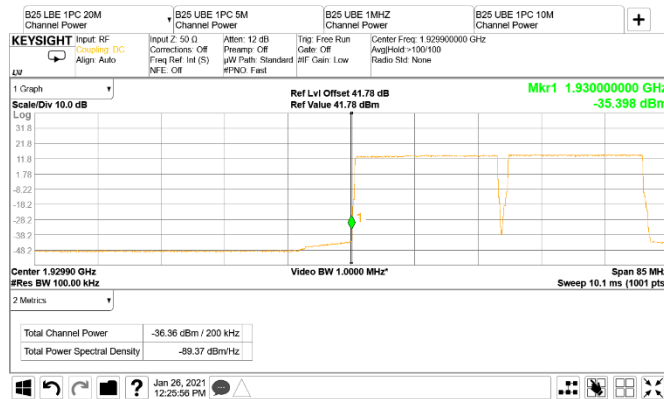


Figure 8.5-109: Conducted band edge emission at 1930 MHz, 20 MHz channel two-carrier LTE + NR operation (RBW = 1% of EBW)

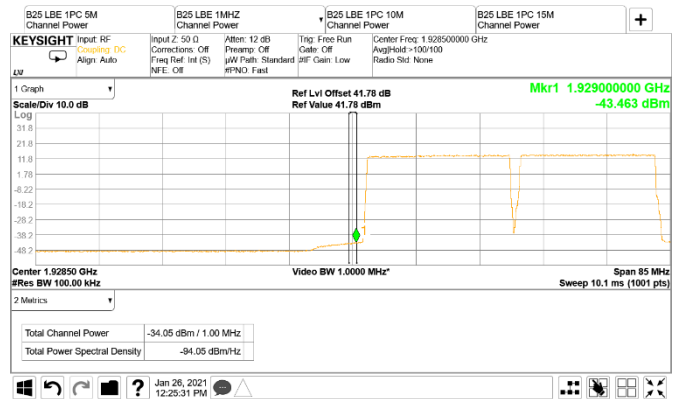


Figure 8.5-110: Conducted band edge emission at 1929 MHz, 20 MHz channel two-carrier LTE + NR operation (RBW = 1 MHz)

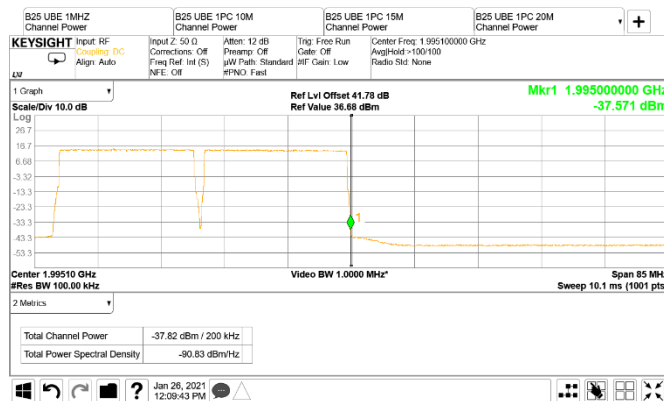


Figure 8.5-111: Conducted band edge emission at 1995 MHz, 20 MHz channel two-carrier LTE + NR operation (RBW = 1% of EBW)

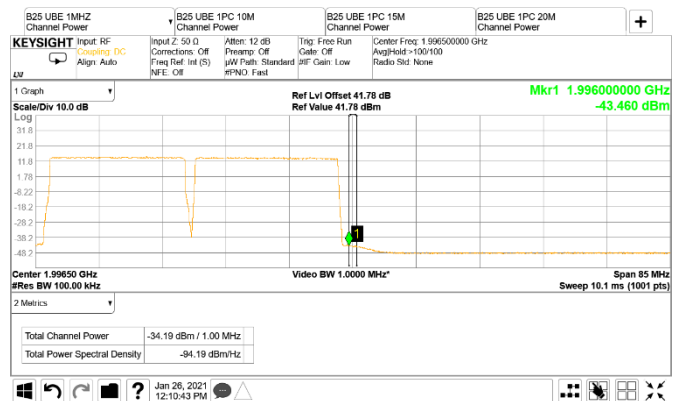


Figure 8.5-112: Conducted band edge emission at 1996 MHz, 20 MHz channel two-carrier LTE + NR operation (RBW = 1 MHz)

## 8.6 Occupied bandwidth (Band 66)

### 8.6.1 Definitions and limits

#### FCC §2.1049:

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.

#### RSS-Gen, 6.7

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

### 8.6.2 Test summary

Test date	January 22, 2021
Test engineer	Andrey Adelberg

### 8.6.3 Observations, settings and special notes

Testing was performed per ANSI C63.26 Paragraphs 5.4.3 and 5.4.4 methods.

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	≥1 % of EBW
Video bandwidth	RBW × 3
Trace mode	Max Hold

### 8.6.4 Test data

**Table 8.6-1: Occupied bandwidth results for 5 MHz channel**

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 5 MHz, Low channel	2112.5	4.783	4.4878
16QAM, 5 MHz, Low channel	2112.5	4.772	4.4752
64QAM, 5 MHz, Low channel	2112.5	4.793	4.4921
256QAM, 5 MHz, Low channel	2112.5	4.777	4.4822
QPSK, 5 MHz, Mid channel	2155.0	4.812	4.4896
QPSK, 5 MHz, High channel	2197.5	4.803	4.4907

**Table 8.6-2: Occupied bandwidth results for 10 MHz channel**

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 10 MHz, Low channel	2115.0	9.665	9.2704
16QAM, 10 MHz, Low channel	2115.0	9.597	9.1802
64QAM, 10 MHz, Low channel	2115.0	9.638	9.2767
256QAM, 10 MHz, Low channel	2115.0	9.646	9.2728
QPSK, 10 MHz, Mid channel	2155.0	9.738	9.2720
QPSK, 10 MHz, High channel	2195.0	9.718	9.2922

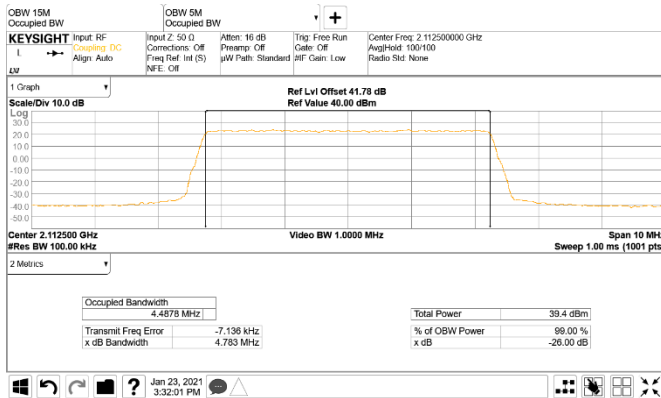
Test data, continued

**Table 8.6-3: Occupied bandwidth results for 15 MHz channel**

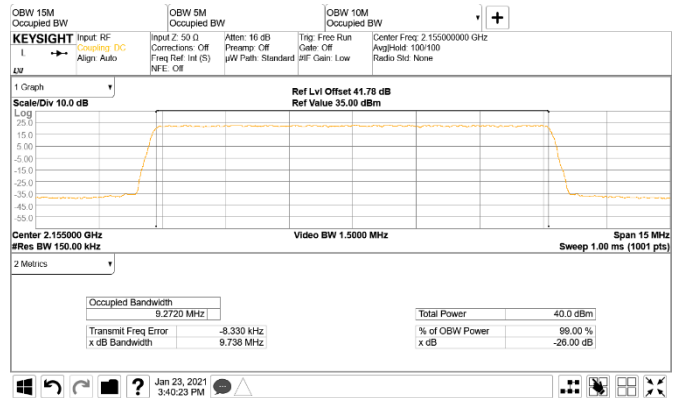
Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 15 MHz, Low channel	2117.5	14.90	14.121
16QAM, 15 MHz, Low channel	2117.5	14.86	14.101
64QAM, 15 MHz, Low channel	2117.5	14.92	14.134
256QAM, 15 MHz, Low channel	2117.5	14.90	14.109
16QAM, 15 MHz, Mid channel	2155.0	14.87	14.099
16QAM, 15 MHz, High channel	2192.5	14.87	14.106

**Table 8.6-4: Occupied bandwidth results for 20 MHz channel**

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 20 MHz, Low channel	2120.0	19.79	18.943
16QAM, 20 MHz, Low channel	2120.0	19.73	18.884
64QAM, 20 MHz, Low channel	2120.0	19.79	18.923
256QAM, 20 MHz, Low channel	2120.0	19.80	18.926
QPSK, 20 MHz, Mid channel	2155.0	19.79	18.892
QPSK, 20 MHz, High channel	2190.0	19.79	18.905



**Figure 8.6-1: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 5 MHz channel**



**Figure 8.6-2: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 10 MHz channel**

Test data, continued

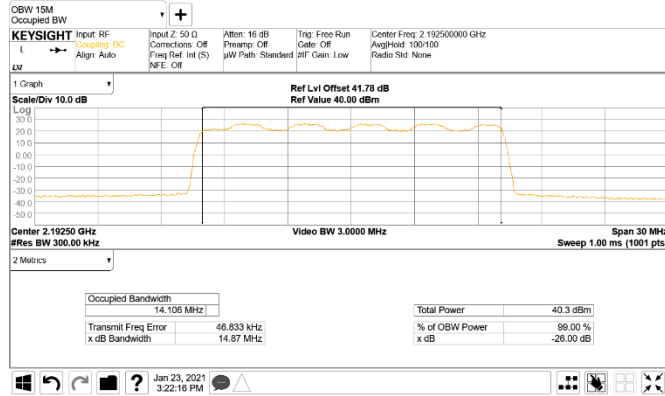


Figure 8.6-3: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 15 MHz channel

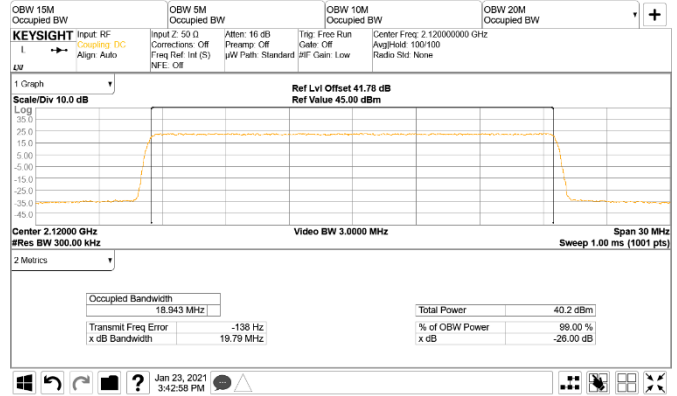


Figure 8.6-4: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 20 MHz channel



## 8.7 Occupied bandwidth (Band 2/25a)

### 8.7.1 Definitions and limits

#### FCC §2.1049:

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.

#### RSS-Gen, 6.7

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

### 8.7.2 Test summary

Test date	January 22, 2021
Test engineer	Andrey Adelberg

### 8.7.3 Observations, settings and special notes

Testing was performed per ANSI C63.26 Paragraphs 5.4.3 and 5.4.4 methods.

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	≥1 % of EBW
Video bandwidth	RBW × 3
Trace mode	Max Hold

### 8.7.4 Test data

**Table 8.7-1: Occupied bandwidth results for 5 MHz channel**

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 5 MHz, Low channel	1932.5	4.793	4.4803
16QAM, 5 MHz, Low channel	1932.5	4.760	4.4779
64QAM, 5 MHz, Low channel	1932.5	4.785	4.4882
256QAM, 5 MHz, Low channel	1932.5	4.764	4.4903
QPSK, 5 MHz, Mid channel	1962.5	4.793	4.4822
QPSK, 5 MHz, High channel	1992.5	4.768	4.4900

**Table 8.7-2: Occupied bandwidth results for 10 MHz channel**

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 10 MHz, Low channel	1935.0	9.734	9.2949
16QAM, 10 MHz, Low channel	1935.0	9.694	9.1777
64QAM, 10 MHz, Low channel	1935.0	9.749	9.2949
256QAM, 10 MHz, Low channel	1935.0	9.727	9.2920
QPSK, 10 MHz, Mid channel	1962.5	9.755	9.2816
QPSK, 10 MHz, High channel	1990.0	9.735	9.2802

Test data, continued

Table 8.7-3: Occupied bandwidth results for 15 MHz channel

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 15 MHz, Low channel	1937.5	14.91	14.152
16QAM, 15 MHz, Low channel	1937.5	14.85	14.096
64QAM, 15 MHz, Low channel	1937.5	14.90	14.138
256QAM, 15 MHz, Low channel	1937.5	14.91	14.111
16QAM, 15 MHz, Mid channel	1962.5	14.87	14.098
16QAM, 15 MHz, High channel	1987.5	14.86	14.077

Table 8.7-4: Occupied bandwidth results for 20 MHz channel

Remarks	Frequency, MHz	26 dB BW, MHz	99% OBW, MHz
QPSK, 20 MHz, Low channel	1940.0	19.77	18.919
16QAM, 20 MHz, Low channel	1940.0	19.71	18.833
64QAM, 20 MHz, Low channel	1940.0	19.78	18.926
256QAM, 20 MHz, Low channel	1940.0	19.77	18.908
QPSK, 20 MHz, Mid channel	1962.5	19.77	18.922
QPSK, 20 MHz, High channel	1985.0	19.78	18.897

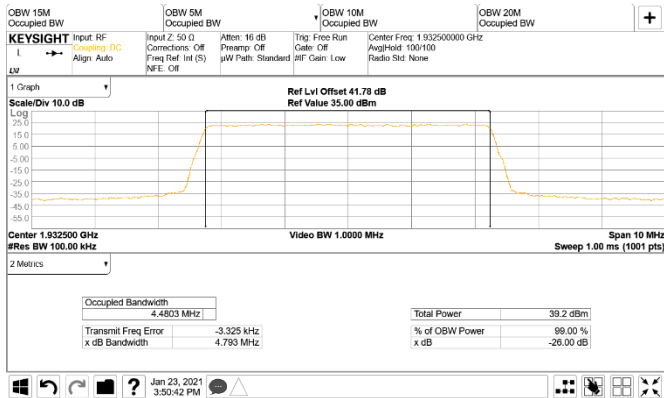


Figure 8.7-1: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 5 MHz channel

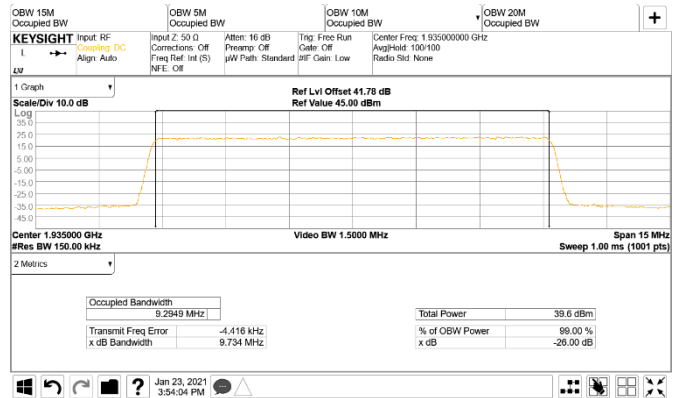


Figure 8.7-2: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 10 MHz channel

Test data, continued

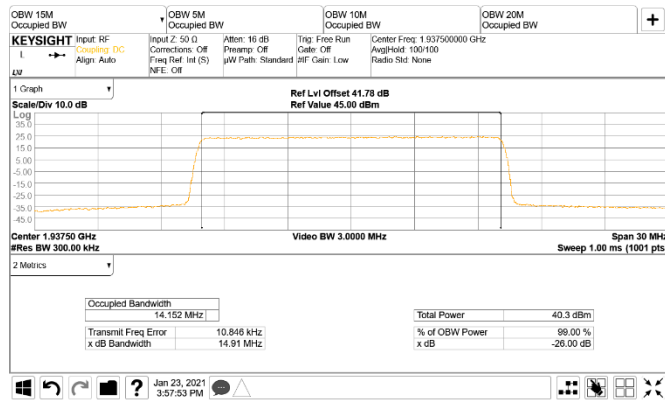


Figure 8.7-3: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 15 MHz channel

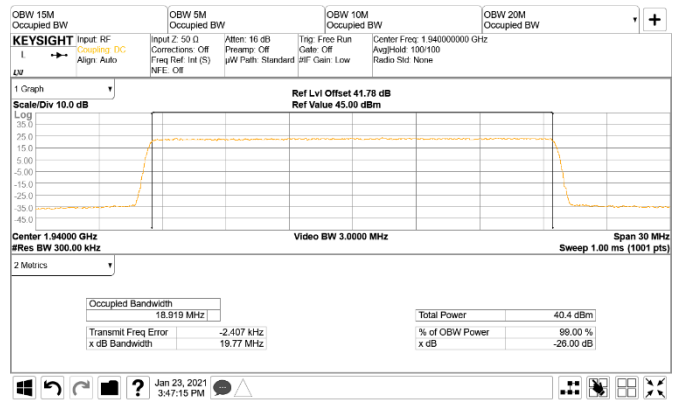
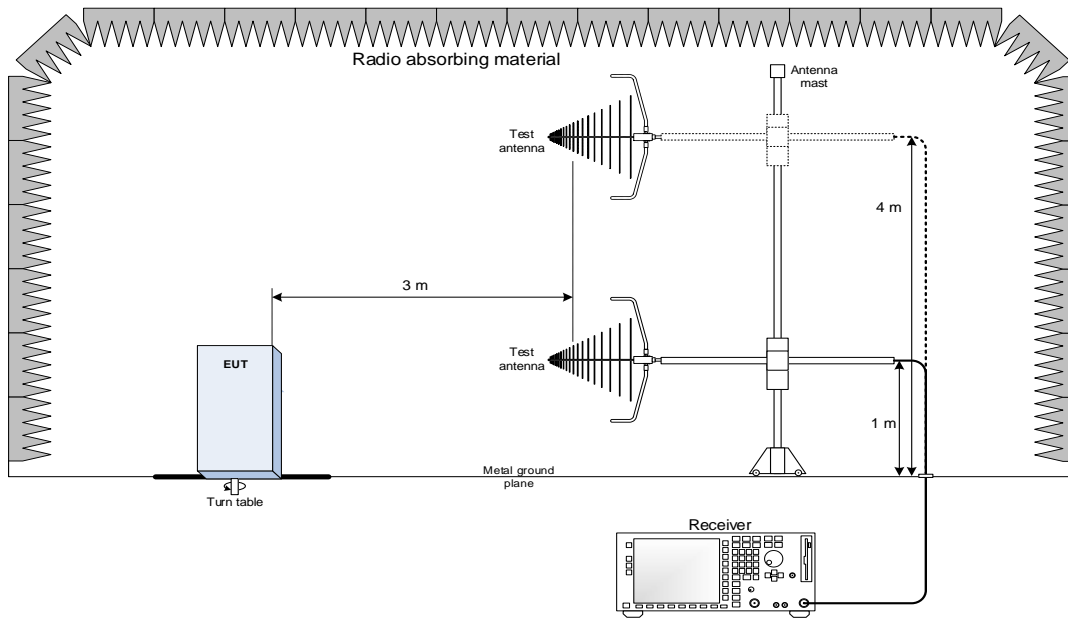


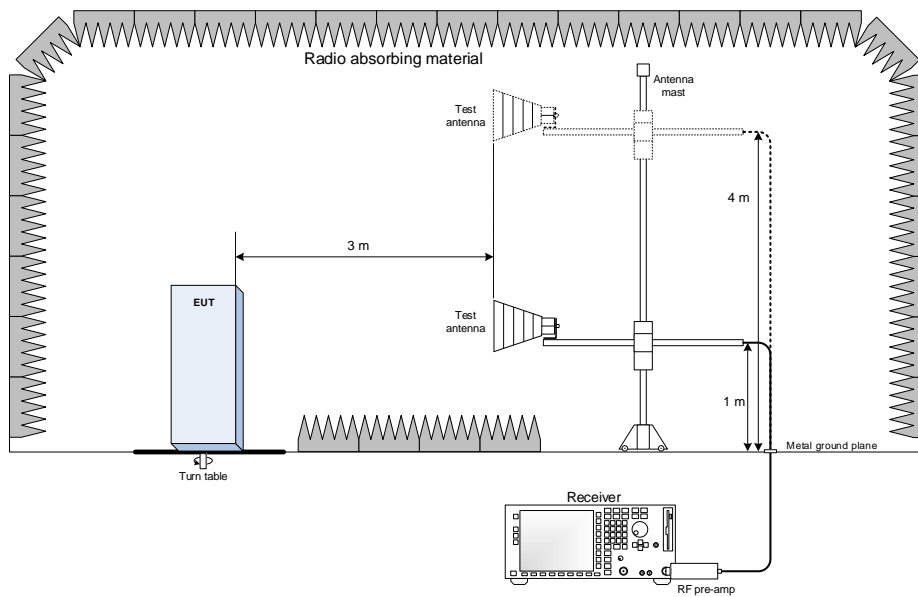
Figure 8.7-4: 99% Occupied bandwidth and 26 dB bandwidth sample plot for 20 MHz channel

## Section 9. Block diagrams of test setups

### 9.1 Radiated emissions set-up for frequencies below 1 GHz



### 9.2 Radiated emissions set-up for frequencies above 1 GHz



### 9.3 Conducted emissions set-up

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