

Test data, continued

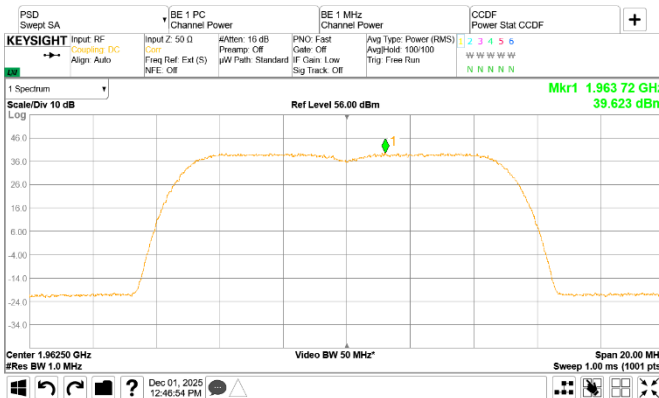


Figure 8.2-21: PSD of 2xNR 5 MHz channel bandwidth, multi-carrier operation, sample plot, Contiguous

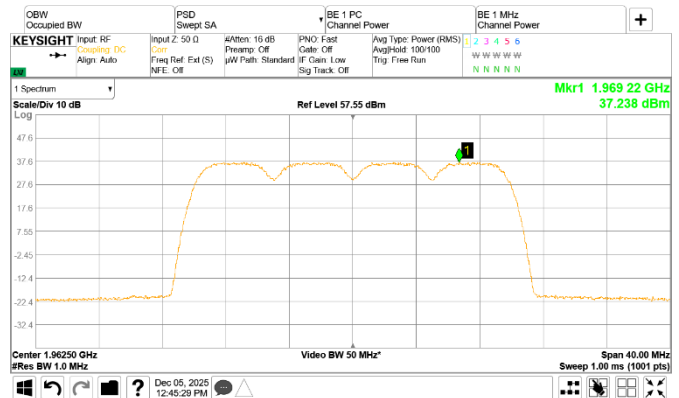


Figure 8.2-22: PSD of 4xWCDMA channel, multi-carrier operation, sample plot, Contiguous

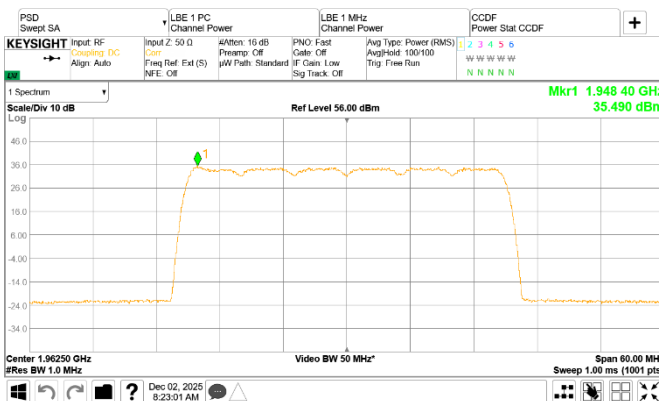


Figure 8.2-23: PSD of 6xLTE 5 MHz channel bandwidth, multi-carrier operation, sample plot, Contiguous

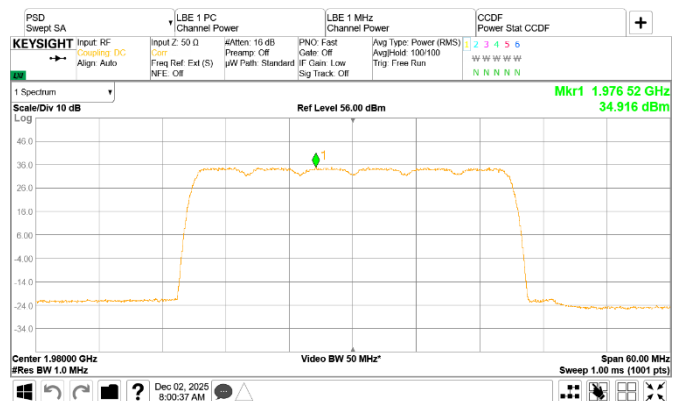


Figure 8.2-24: PSD of 6xNR 5 MHz channel bandwidth, multi-carrier operation, sample plot, Contiguous



Figure 8.2-25: PSD of 6xLTE 10 MHz channel bandwidth, multi-carrier operation, sample plot, Contiguous

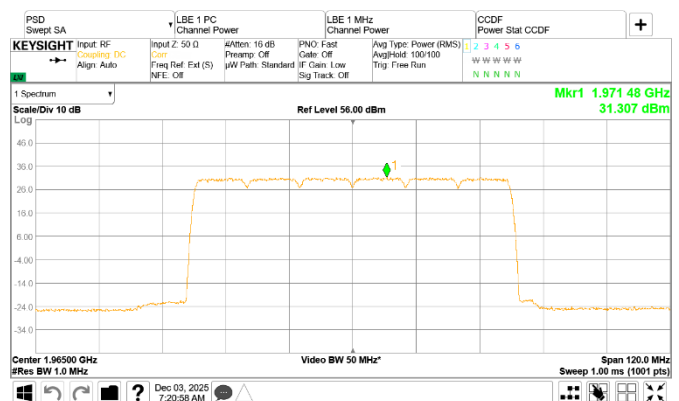


Figure 8.2-26: PSD of 6xNR 10 MHz channel bandwidth, multi-carrier operation, sample plot, Contiguous

Test data, continued

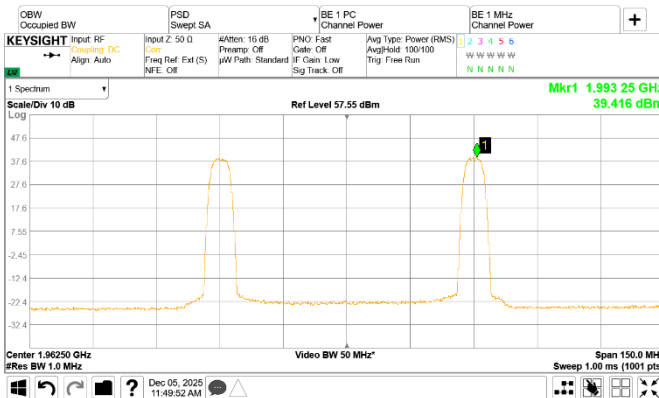


Figure 8.2-27: PSD of 2xWCDMA channel, multi-carrier operation, sample plot, Non-contiguous

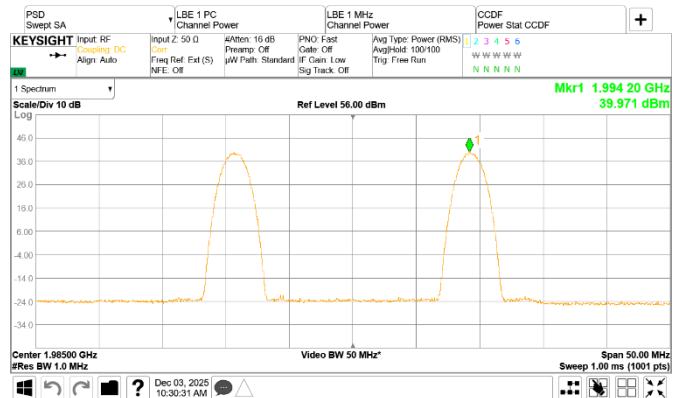


Figure 8.2-28: PSD of 2xLTE 1.4 MHz channel, multi-carrier operation, sample plot, Non-contiguous

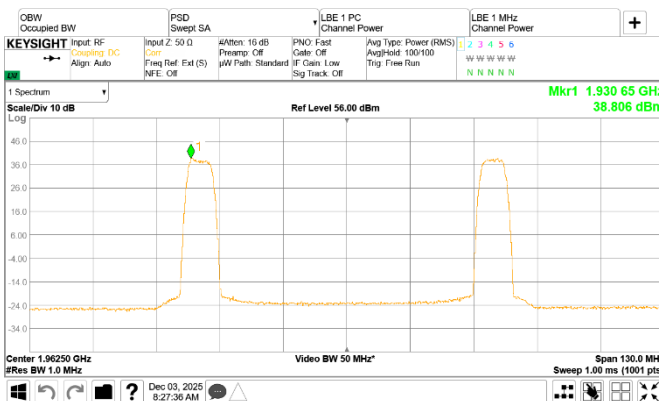


Figure 8.2-29: PSD of 2xLTE 5 MHz channel bandwidth, multi-carrier operation, sample plot, Non-contiguous

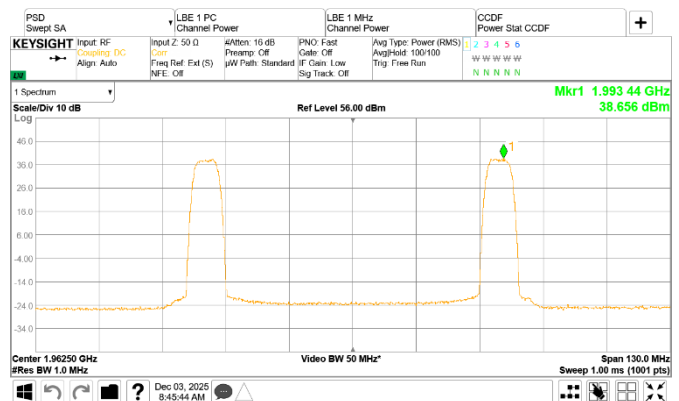


Figure 8.2-30: PSD of 2xNR 5 MHz channel bandwidth, multi-carrier operation, sample plot, Non-contiguous

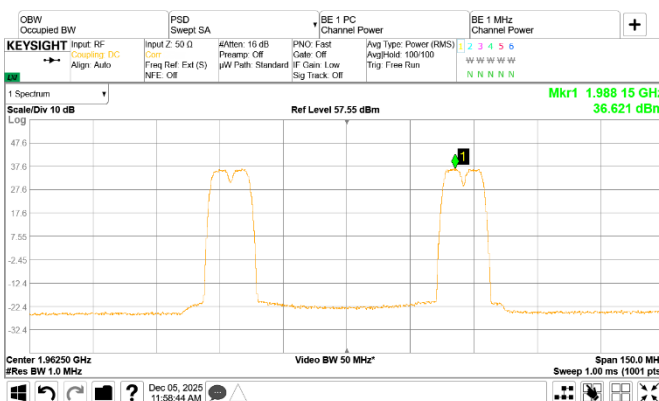


Figure 8.2-31: PSD of 4xWCDMA channel, multi-carrier operation, sample plot, Non-contiguous

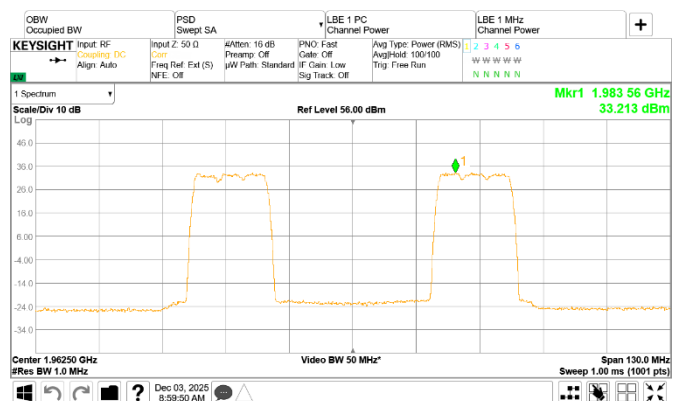


Figure 8.2-32: PSD of 6xLTE 5 MHz channel bandwidth, multi-carrier operation, sample plot, Non-contiguous

Test data, continued

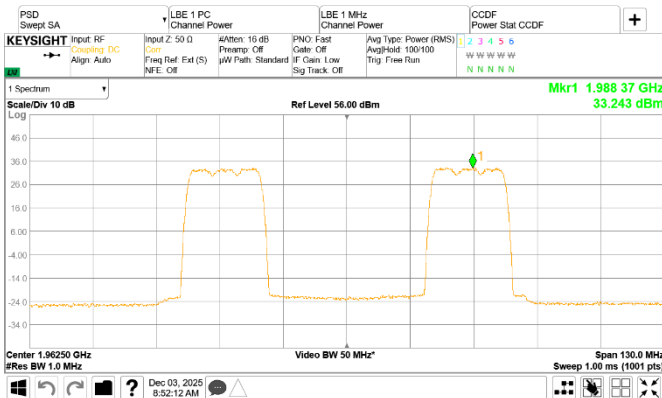


Figure 8.2-33: PSD of 6xNR 5 MHz channel bandwidth, multi-carrier operation, sample plot, Non-contiguous

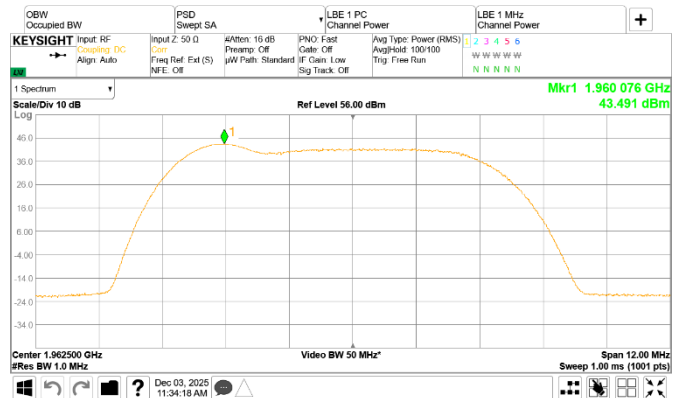


Figure 8.2-34: PSD of GSM + WCDMA channel, multi-RAT operation, sample plot, Contiguous

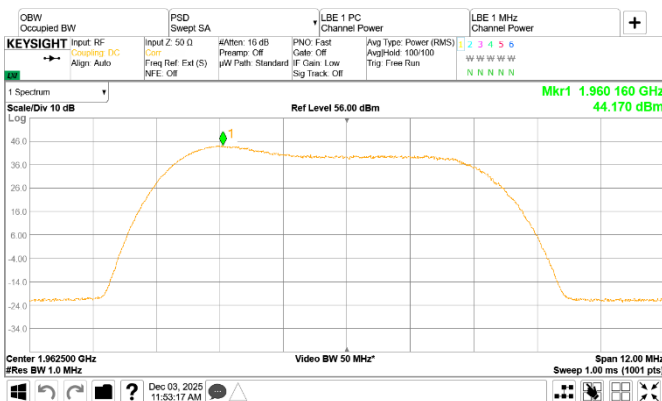


Figure 8.2-35: PSD of GSM + LTE 5 MHz channel, multi-RAT operation, sample plot, Contiguous

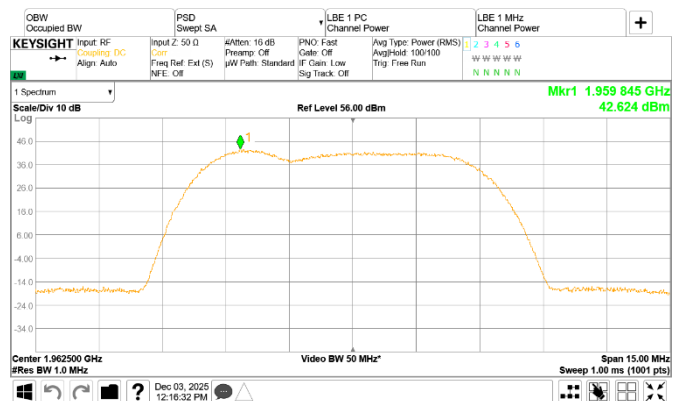


Figure 8.2-36: PSD of LTE 1.4 + WCDMA channel, multi-RAT operation, sample plot, Contiguous



Figure 8.2-37: PSD of WCDMA + NR 5 MHz channel, multi-RAT operation, sample plot, Contiguous

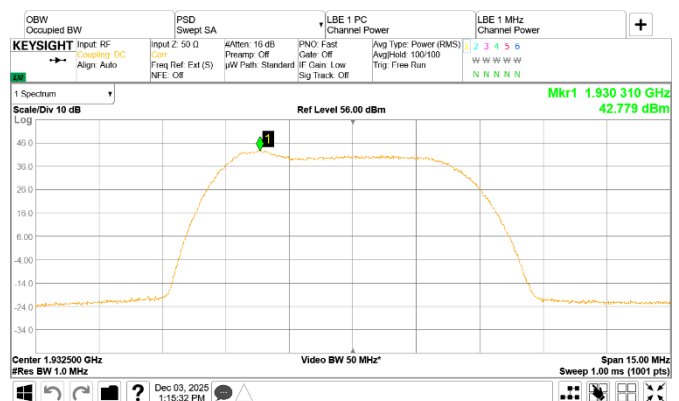


Figure 8.2-38: PSD of SA + WCDMA channel, multi-RAT operation, sample plot, Contiguous

Test data, continued

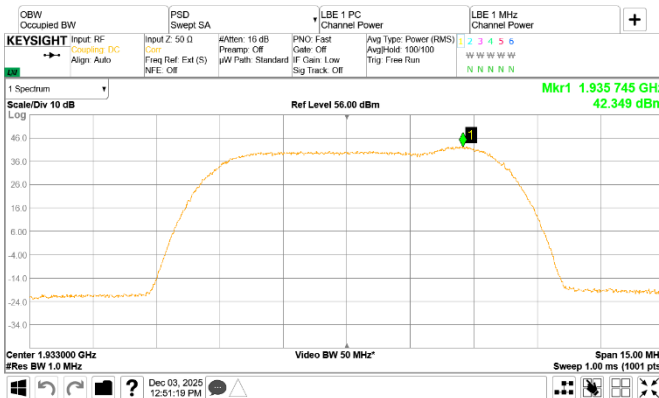


Figure 8.2-39: PSD of NR 5 MHz + LTE 1.4 MHz channel, multi-RAT operation, sample plot, Contiguous

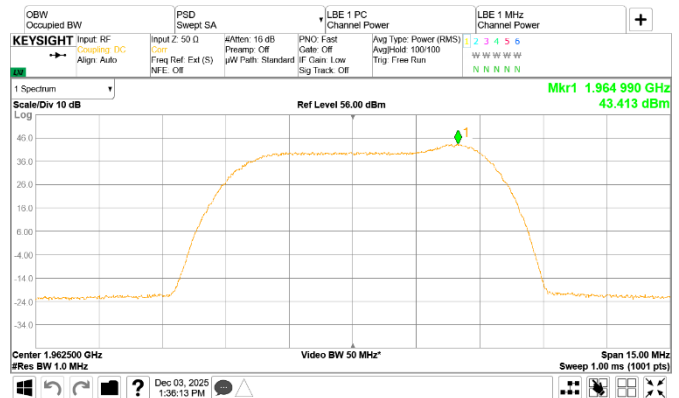


Figure 8.2-40: PSD of NR 5 MHz + SA channel, multi-RAT operation, sample plot, Contiguous

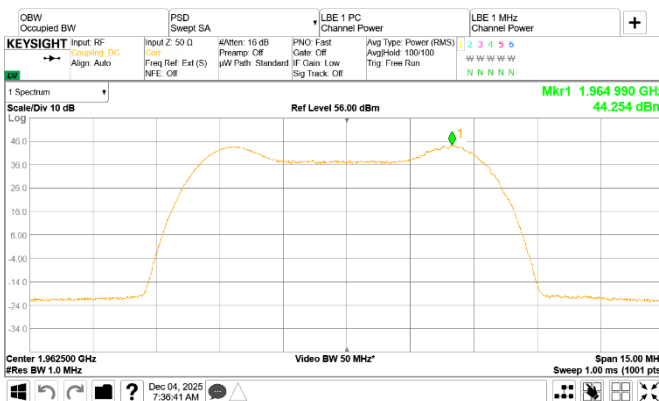


Figure 8.2-41: PSD of GSM + LTE 5 MHz + SA channel, multi-RAT operation, sample plot, Contiguous

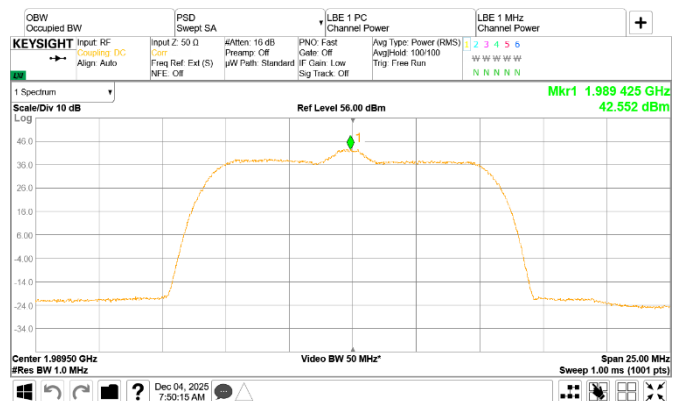


Figure 8.2-42: PSD of WCDMA + LTE 1.4 MHz + NR 5 MHz channel, multi-RAT operation, sample plot, Contiguous

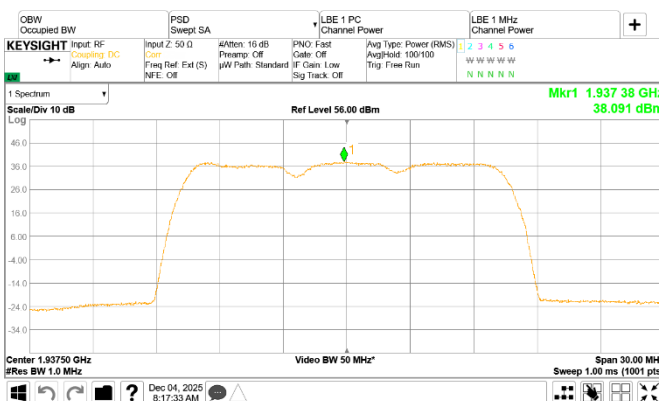


Figure 8.2-43: PSD of LTE 5 MHz + WCDMA + NR 5 MHz channel, multi-RAT operation, sample plot, Contiguous

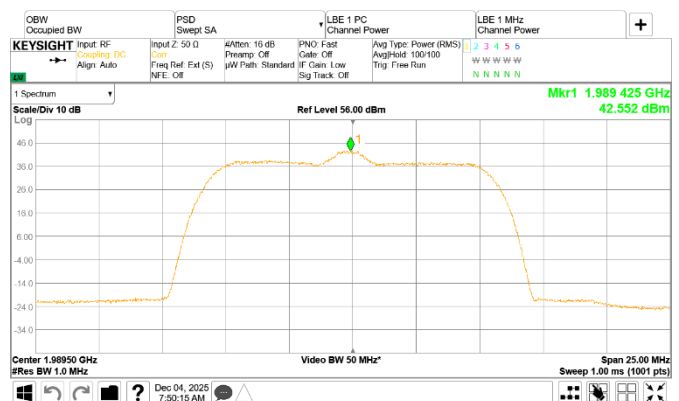


Figure 8.2-44: PSD of WCDMA + LTE 1.4 MHz + NR 5 MHz channel, multi-RAT operation, sample plot, Contiguous

Test data, continued

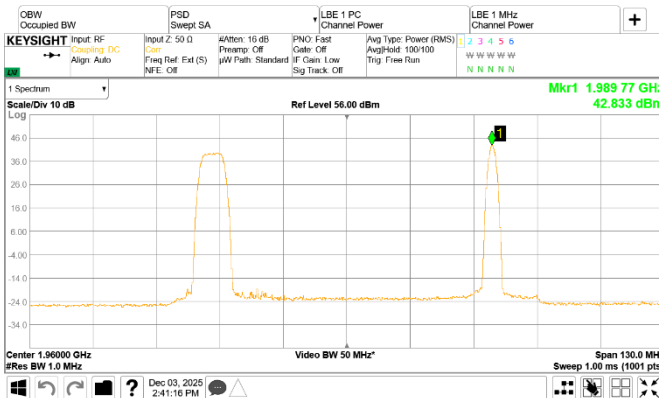


Figure 8.2-45: PSD of NR 5 MHz + GSM channel, multi-RAT operation, sample plot, Non-contiguous

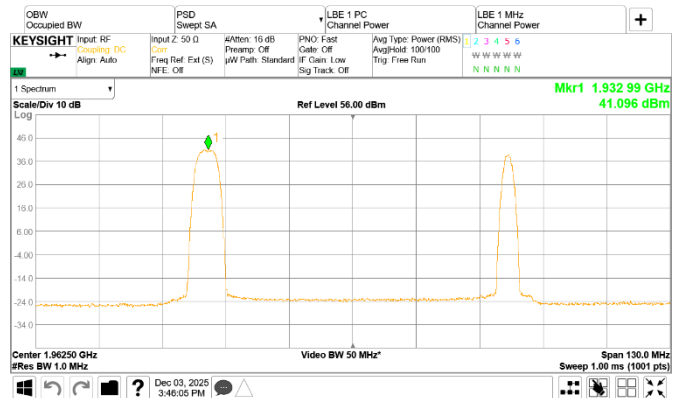


Figure 8.2-46: PSD of WCDMA + LTE 1.4 MHz (10W) channel, multi-RAT operation, sample plot, Non-contiguous

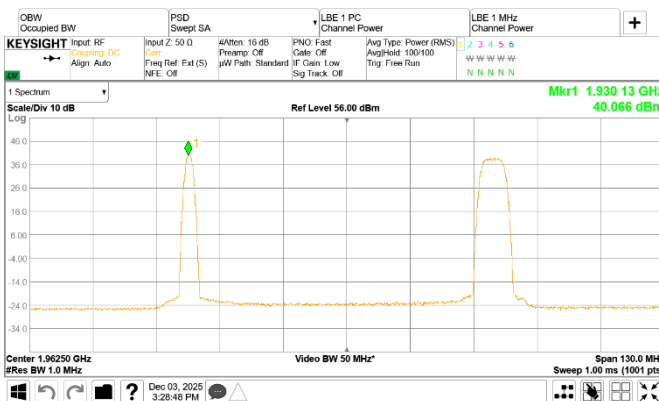


Figure 8.2-47: PSD of SA + NR 5 MHz channel, multi-RAT operation, sample plot, Non-contiguous

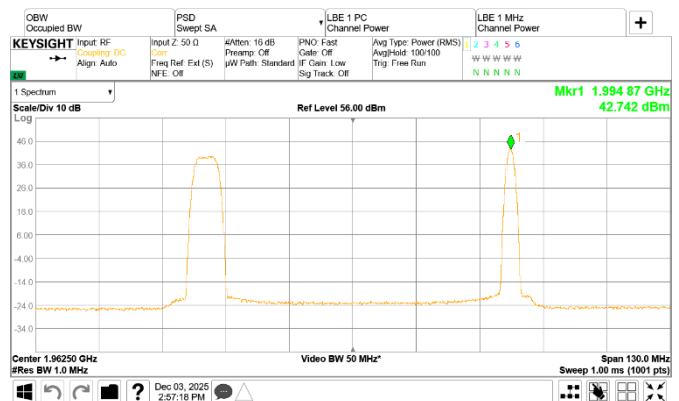


Figure 8.2-48: PSD of LTE 5 MHz + SA channel, multi-RAT operation, sample plot, Non-contiguous



Figure 8.2-49: PSD of GSM + SA + LTE 10 MHz channel, multi-RAT operation, sample plot, Non-contiguous

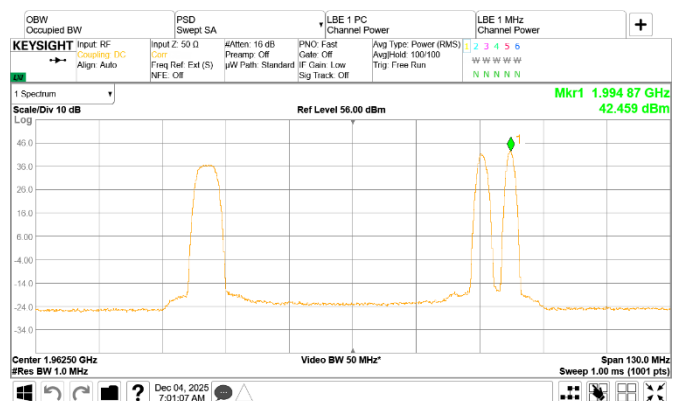


Figure 8.2-50: PSD of WCDMA + LTE 1.4 MHz + SA channel, multi-RAT operation, sample plot, Non-contiguous

Test data, continued

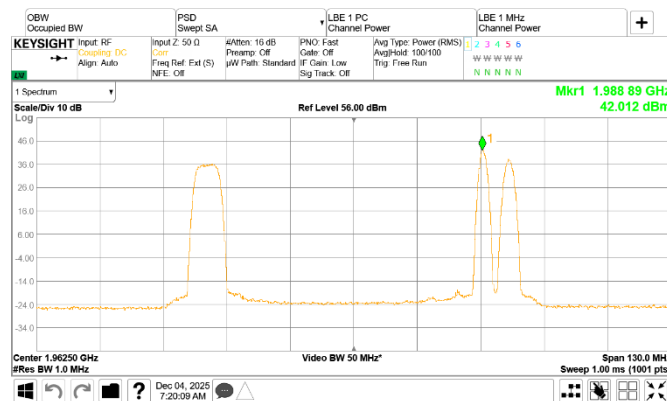


Figure 8.2-51: PSD of NR 5 MHz + SA +LTE 1.4 MHz (10W) channel, multi-RAT operation, sample plot, Non-contiguous

Table 8.2-103: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for SA

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Low channel	1930.1	5.07	13.00	7.93
Mid channel	1962.5	5.00	13.00	8.00
Top channel	1994.9	5.08	13.00	7.92

Table 8.2-104: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for WCDMA

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Low channel	1932.5	7.17	13.00	5.83
Mid channel	1962.5	7.17	13.00	5.83
Top channel	1992.5	7.19	13.00	5.81

Table 8.2-105: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for LTE 1.4 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Low channel	1930.7	8.10	13.00	4.90
Mid channel	1962.5	8.16	13.00	4.84
Top channel	1994.3	8.09	13.00	4.91

Table 8.2-106: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for LTE 3 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Low channel	1933.7	8.17	13.00	4.83
Mid channel	1962.5	8.17	13.00	4.83
Top channel	1993.5	8.21	13.00	4.79

Table 8.2-107: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for LTE 5 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
5 MHz, Low channel	1932.5	8.11	13.00	4.89
5 MHz, Mid channel	1962.5	8.10	13.00	4.90
5 MHz, Top channel	1992.5	8.13	13.00	4.87

Test data, continued

Table 8.2-108: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for LTE 10 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
10 MHz, Low channel	1935.0	7.51	13.00	5.49
10 MHz, Mid channel	1962.5	7.35	13.00	5.65
10 MHz, Top channel	1990.0	7.35	13.00	5.65

Table 8.2-109: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for LTE 15 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
15 MHz, Low channel	1937.5	7.41	13.00	5.59
15 MHz, Mid channel	1962.5	7.30	13.00	5.70
15 MHz, Top channel	1987.5	7.39	13.00	5.61

Table 8.2-110: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for LTE 20 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
20 MHz, Low channel	1940.0	7.49	13.00	5.51
20 MHz, Mid channel	1962.5	7.31	13.00	5.69
20 MHz, Top channel	1985.0	7.42	13.00	5.58

Table 8.2-111: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 5 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
5 MHz, Low channel	1932.5	8.13	13.00	4.87
5 MHz, Mid channel	1962.5	8.14	13.00	4.86
5 MHz, Top channel	1992.5	8.14	13.00	4.86

Table 8.2-112: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 10 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
10 MHz, Low channel	1935.0	7.28	13.00	5.72
10 MHz, Mid channel	1962.5	7.24	13.00	5.76
10 MHz, Top channel	1990.0	7.26	13.00	5.74

Table 8.2-113: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 15 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
15 MHz, Low channel	1937.5	7.43	13.00	5.57
15 MHz, Mid channel	1962.5	7.24	13.00	5.76
15 MHz, Top channel	1987.5	7.33	13.00	5.67

Table 8.2-114: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 20 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
20 MHz, Low channel	1940.0	7.51	13.00	5.49
20 MHz, Mid channel	1962.5	7.30	13.00	5.70
20 MHz, Top channel	1985.0	7.35	13.00	5.65

Test data, continued

Table 8.2-115: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 25 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
25 MHz, Low channel	1942.5	7.51	13.00	5.49
25 MHz, Mid channel	1962.5	7.24	13.00	5.76
25 MHz, Top channel	1982.5	7.36	13.00	5.64

Table 8.2-116: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 30 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
30 MHz, Low channel	1945.0	7.64	13.00	5.36
30 MHz, Mid channel	1962.5	7.26	13.00	5.74
30 MHz, Top channel	1980.0	7.37	13.00	5.63

Table 8.2-117: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 35 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
35 MHz, Low channel	1947.5	7.63	13.00	5.37
35 MHz, Mid channel	1962.5	7.26	13.00	5.74
35 MHz, Top channel	1977.5	7.43	13.00	5.57

Table 8.2-118: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results for single carrier operation for NR 40 MHz

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
40 MHz, Low channel	1950.0	7.74	13.00	5.26
40 MHz, Mid channel	1962.5	7.28	13.00	5.72
40 MHz, Top channel	1975.0	7.41	13.00	5.59

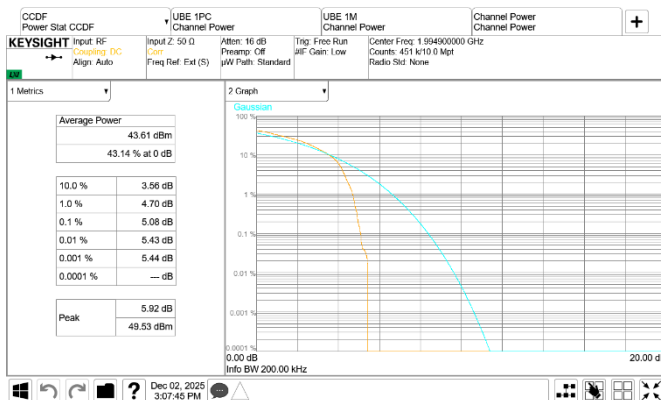


Figure 8.2-52: CCDF sample plot, SA

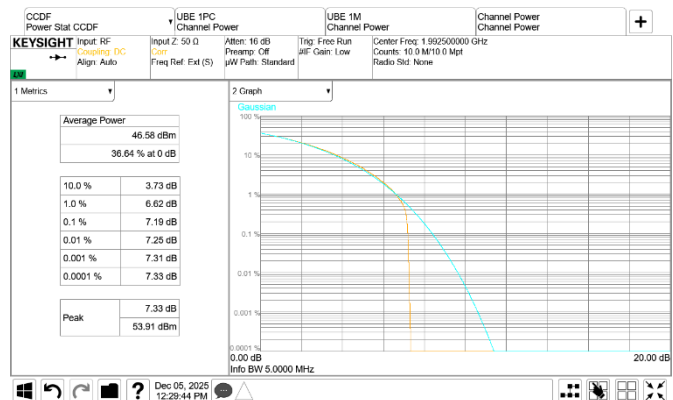


Figure 8.2-53: CCDF sample plot, WCDMA

Section 8
Test name
Specification

Testing data
Transmitter output power (EIRP) and antenna height (Band 2/25)
FCC Part 24 and RSS-133 Issue 6



Test data, continued

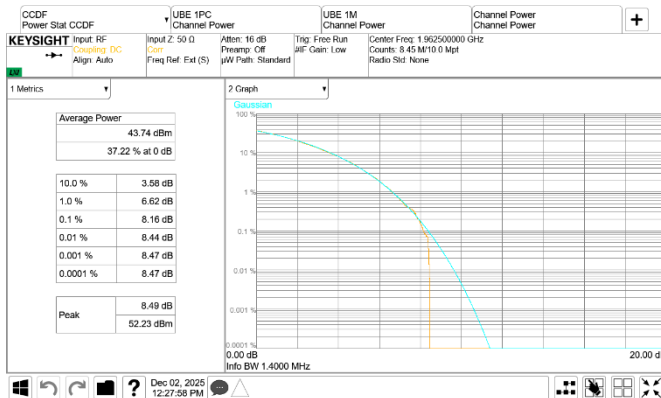


Figure 8.2-54: CCDF sample plot, LTE 1.4 MHz

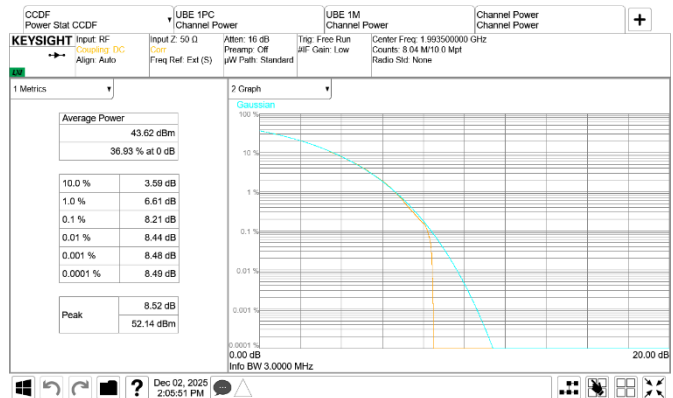


Figure 8.2-55: CCDF sample plot, LTE 3 MHz

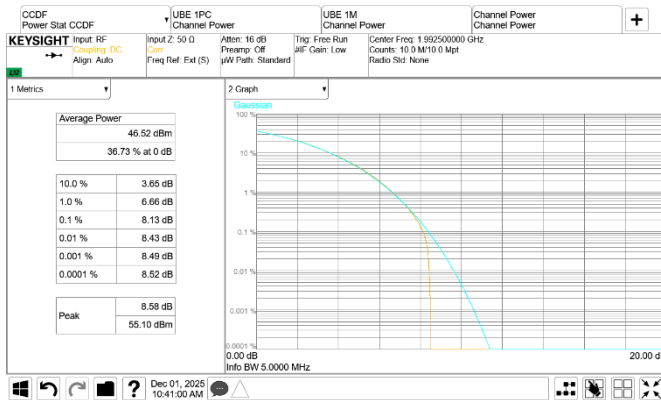


Figure 8.2-56: CCDF sample plot, LTE 5 MHz

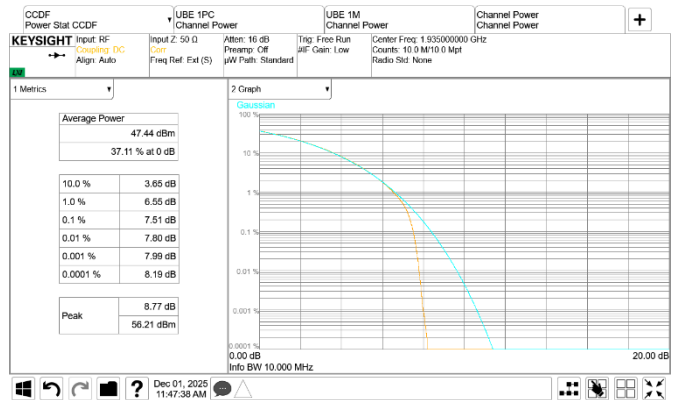


Figure 8.2-57: CCDF sample plot, LTE 10 MHz

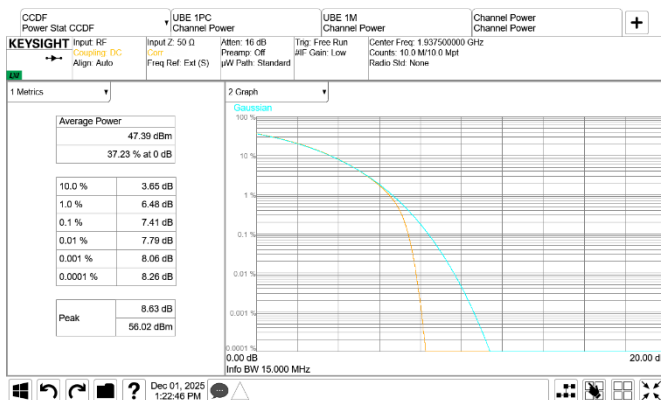


Figure 8.2-58: CCDF sample plot, LTE 15 MHz

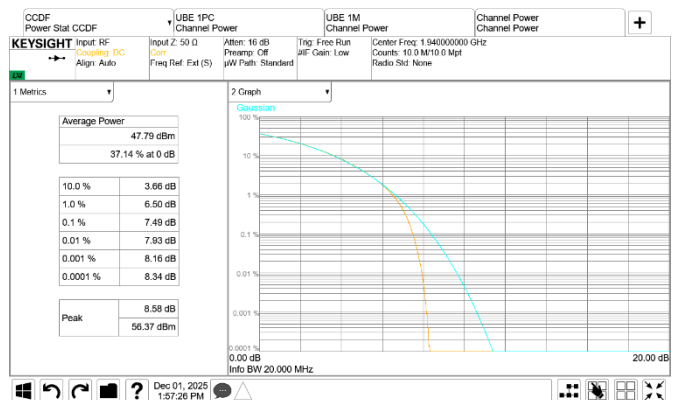


Figure 8.2-59: CCDF sample plot, LTE 20 MHz

Test data, continued

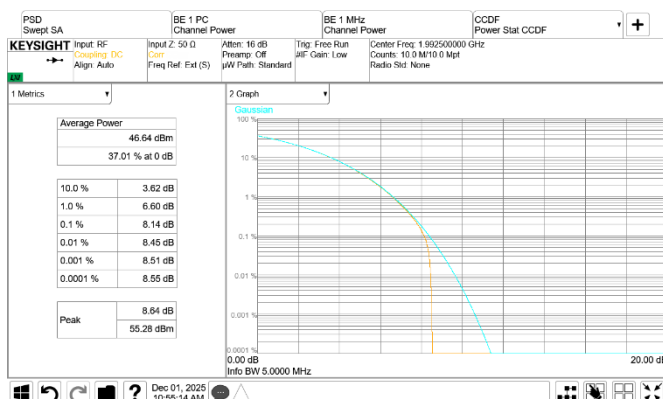


Figure 8.2-60: CCDF sample plot, NR 5 MHz

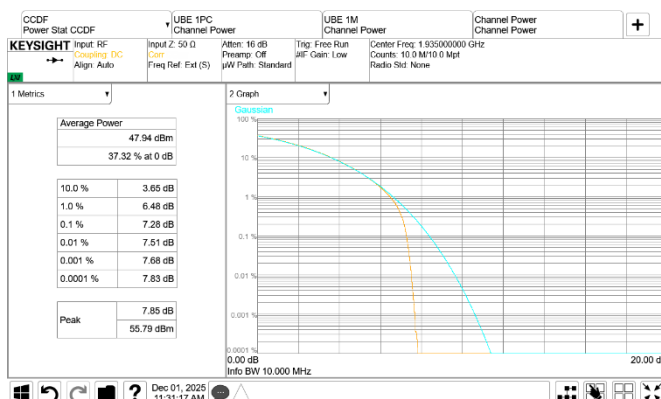


Figure 8.2-61: CCDF sample plot, NR 10 MHz

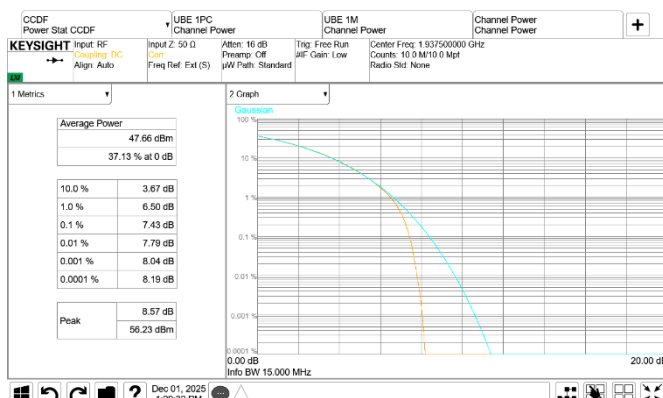


Figure 8.2-62: CCDF sample plot, NR 15 MHz

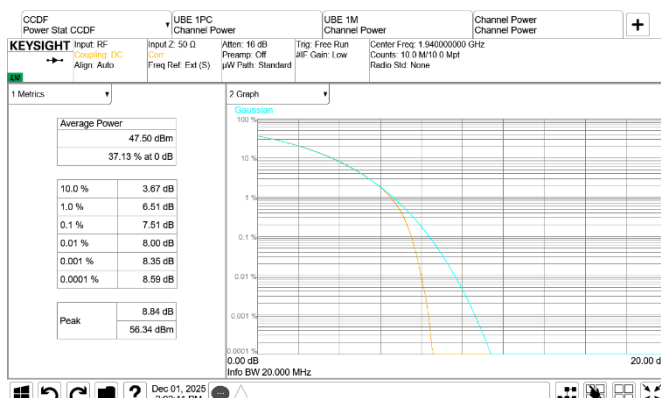


Figure 8.2-63: CCDF sample plot, NR 20 MHz

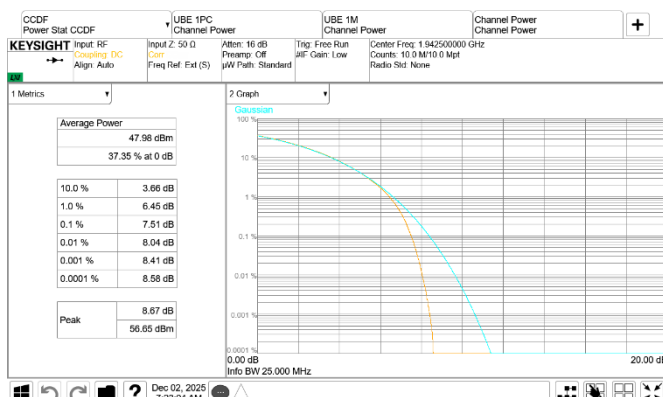


Figure 8.2-64: CCDF sample plot, NR 25 MHz

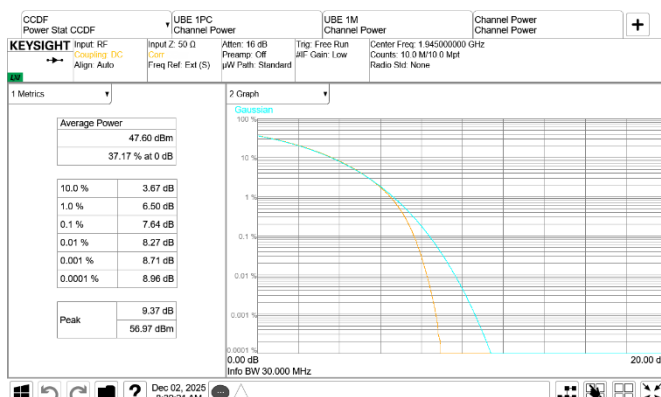


Figure 8.2-65: CCDF sample plot, NR 30 MHz

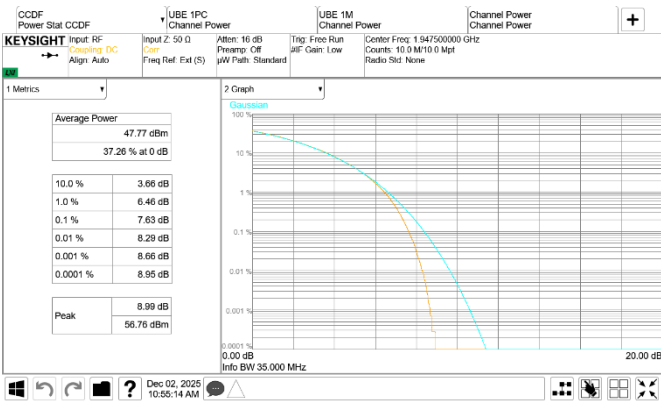


Figure 8.2-66: CCDF sample plot, NR 35 MHz

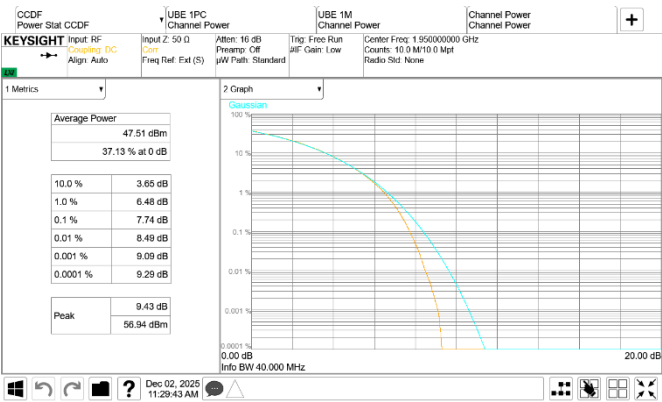


Figure 8.2-67: CCDF sample plot, NR 40 MHz

8.3 Spurious emissions at RF antenna connector (Band 66)

8.3.1 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 $43 + 10 \log_{10}(P)$ 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 5.6:

Unwanted emissions shall be measured in terms of average values.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table below:

Table 8.3-1: Unwanted emissions limits

Offset from the edge of the frequency block or frequency group	Unwanted emission limits
1 MHz	-13 dBm/(1% of OB*)
> 1 MHz	-13 dBm/MHz

Notes: *OB is the occupied bandwidth

8.3.2 Test summary

Test date	December 1, 2025 - December 5, 2025
Test engineer	Dhara Patel

8.3.3 Observations, settings and special notes

- The spectrum was searched from 30 MHz to the 10th harmonic.
- All measurements were performed using an average (RMS) detector per ANSI C63.26 Paragraph 5.7.2 method.
 - All modulation configurations were pretested to identify the representative modulation yielding the worst-case power level. The modulations that resulted in the worst-case scenarios were MODtm1p1 or QPSK.
 - The measurements were performed using the calibrated path. For NR and LTE the duty cycle is 100%, therefore no additional compensation factor was applied. Setup correction factors were added to the input correction factors of the spectrum analyzer.
- Limit line ($43 + 10 \log_{10}(P)$ or -13 dBm) was adjusted for MIMO operation by 6 dB*: -13 dBm - 6 dB = -19 dBm
* MIMO correction factor for 4 antenna ports: $10 \times \log_{10}(4) = 6$ dB
- RBW 1 MHz, VBW was wider than RBW.

8.3.4 Test data

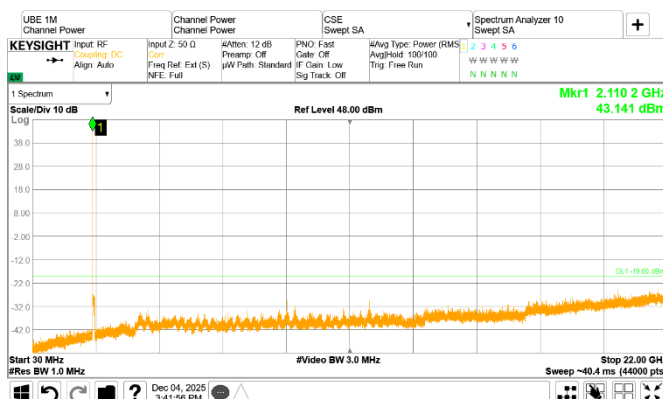


Figure 8.3-1: Conducted spurious emissions of SA low channel, single carrier operation

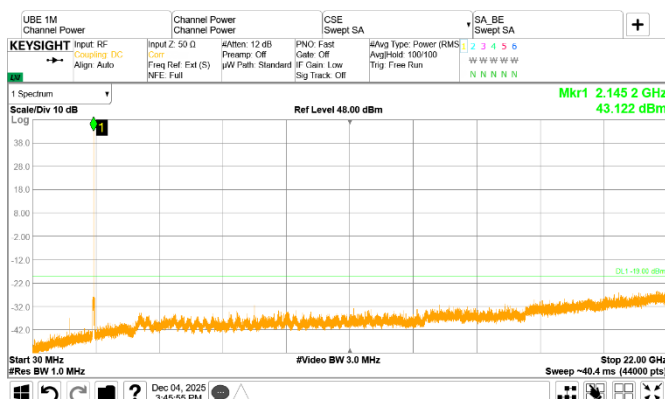


Figure 8.3-2: Conducted spurious emissions of SA mid channel, single carrier operation

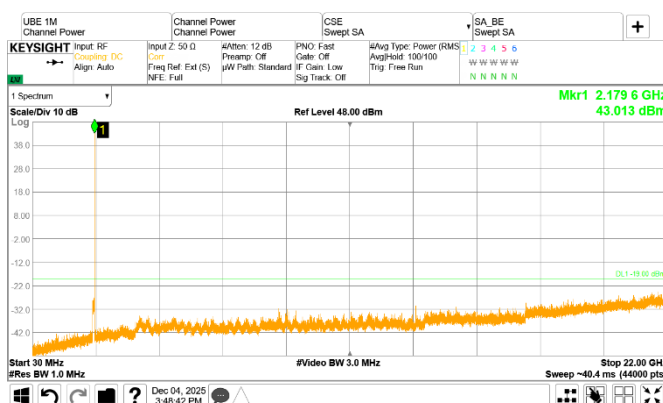


Figure 8.3-3: Conducted spurious emissions of SA top channel, single carrier operation

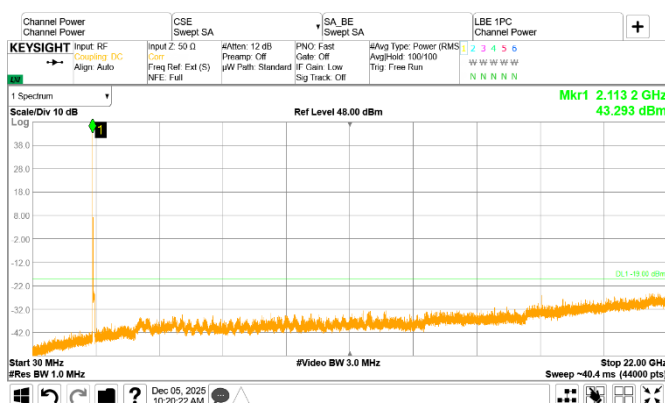


Figure 8.3-4: Conducted spurious emissions of WCDMA low channel, single carrier operation

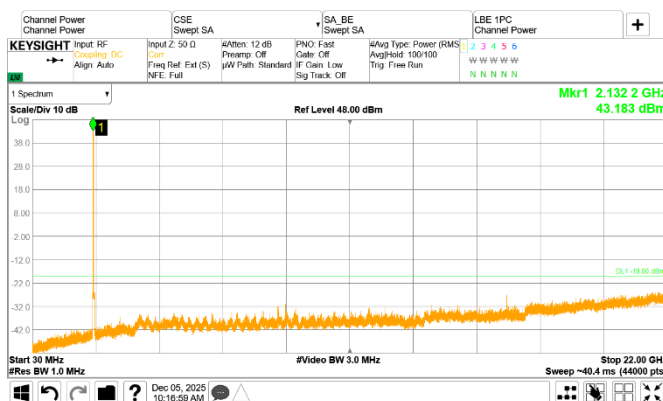


Figure 8.3-5: Conducted spurious emissions of WCDMA mid channel, single carrier operation

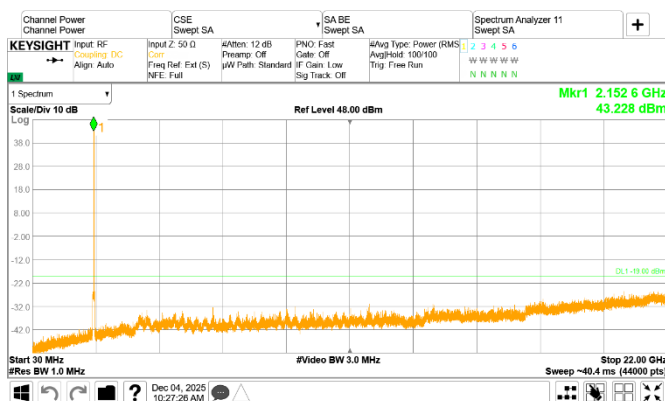


Figure 8.3-6: Conducted spurious emissions of WCDMA top channel, single carrier operation

Test data, continued

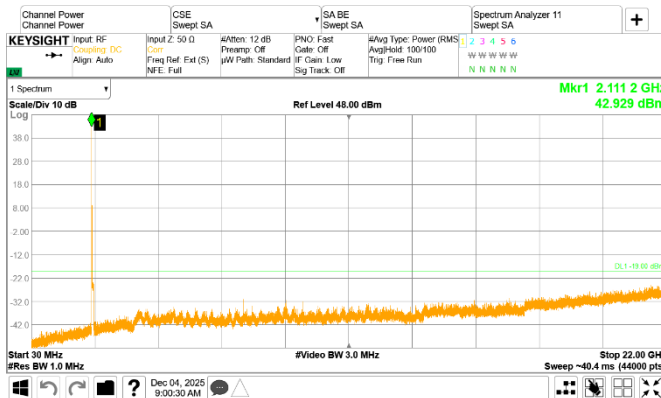


Figure 8.3-7: Conducted spurious emissions of LTE 5 MHz low channel, single carrier operation

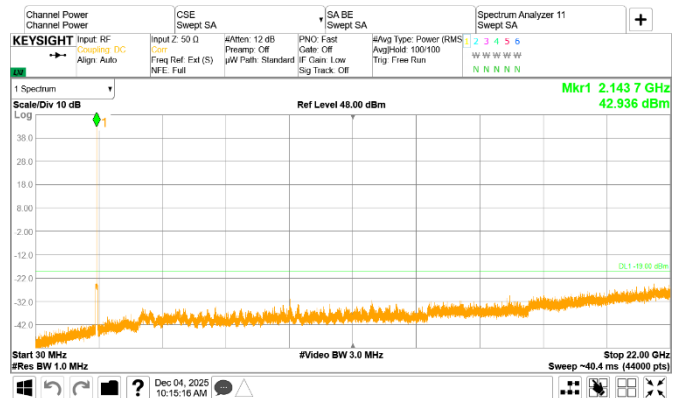


Figure 8.3-8: Conducted spurious emissions of LTE 5 MHz mid channel, single carrier operation

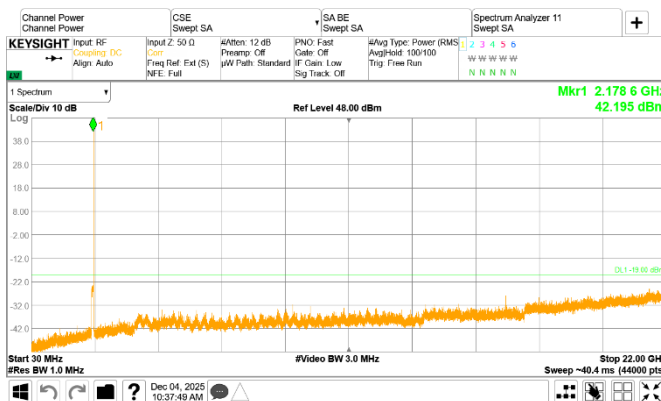


Figure 8.3-9: Conducted spurious emissions of LTE 5 MHz top channel, single carrier operation

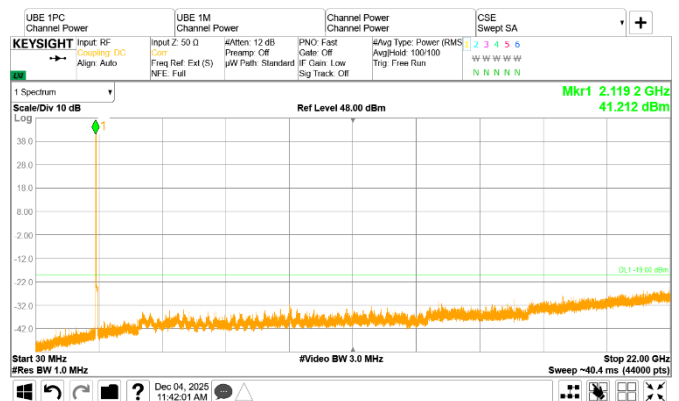


Figure 8.3-10: Conducted spurious emissions of LTE 10 MHz low channel, single carrier operation

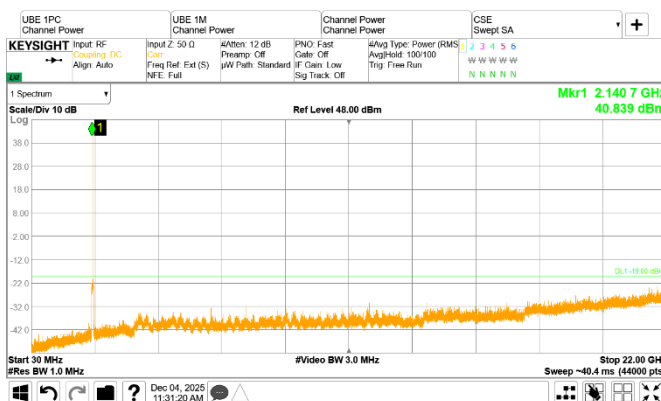


Figure 8.3-11: Conducted spurious emissions of LTE 10 MHz mid channel, single carrier operation

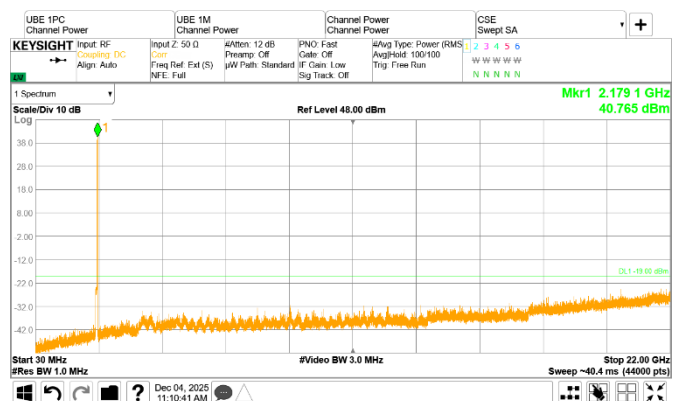


Figure 8.3-12: Conducted spurious emissions of LTE 10 MHz top channel, single carrier operation

Test data, continued

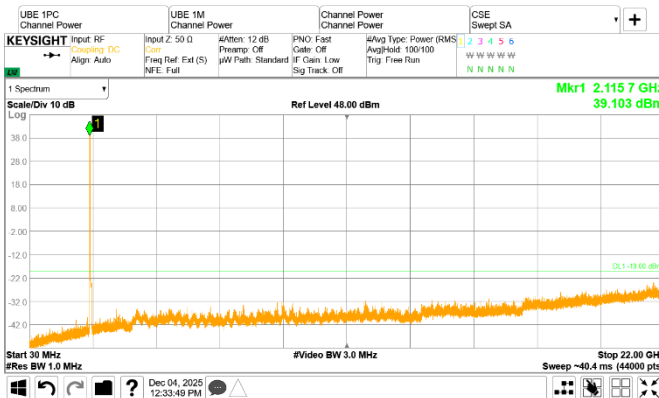


Figure 8.3-13: Conducted spurious emissions of LTE 15 MHz low channel, single carrier operation

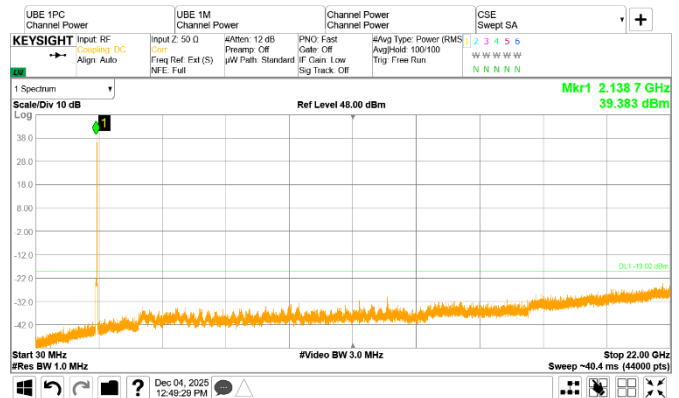


Figure 8.3-14: Conducted spurious emissions of LTE 15 MHz mid channel, single carrier operation

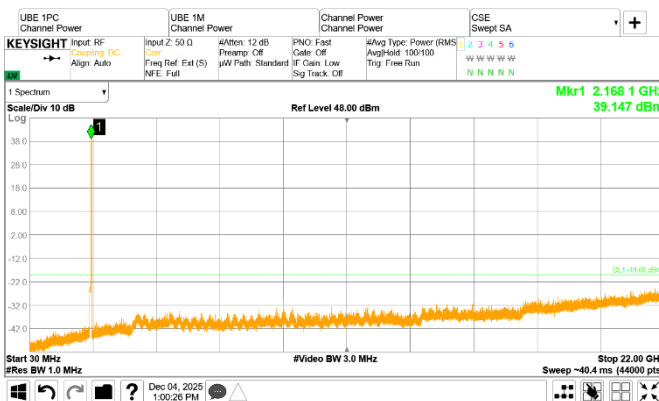


Figure 8.3-15: Conducted spurious emissions of LTE 15 MHz top channel, single carrier operation

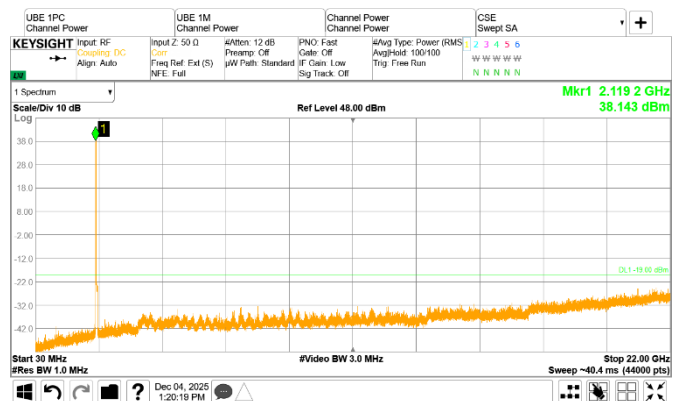


Figure 8.3-16: Conducted spurious emissions of LTE 20 MHz low channel, single carrier operation

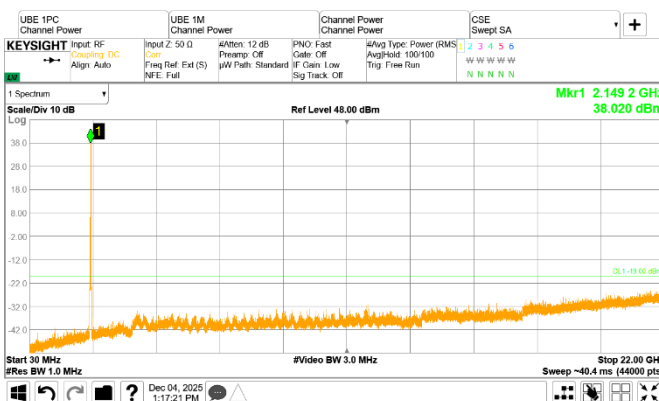


Figure 8.3-17: Conducted spurious emissions of LTE 20 MHz mid channel, single carrier operation

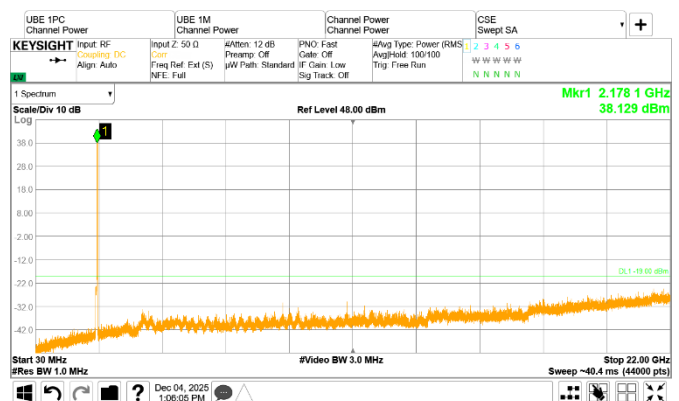


Figure 8.3-18: Conducted spurious emissions of LTE 20 MHz top channel, single carrier operation

Test data, continued

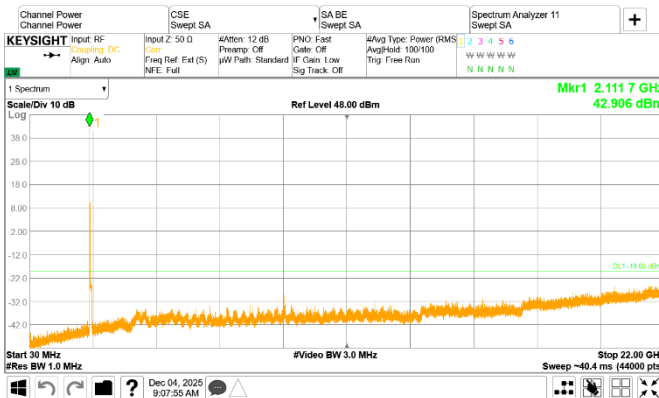


Figure 8.3-19: Conducted spurious emissions of NR 5 MHz low channel, single carrier operation



Figure 8.3-20: Conducted spurious emissions of NR 5 MHz mid channel, single carrier operation

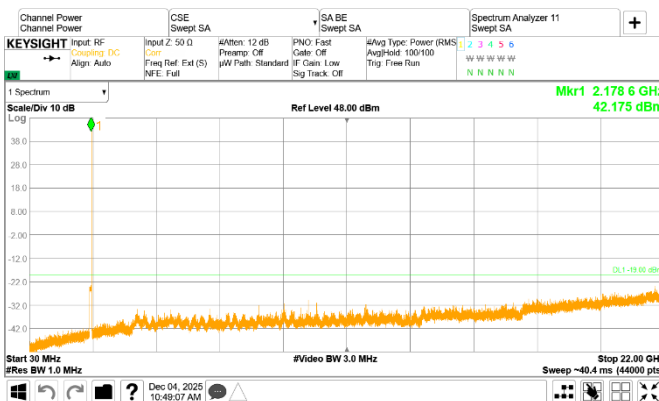


Figure 8.3-21: Conducted spurious emissions of NR 5 MHz top channel, single carrier operation

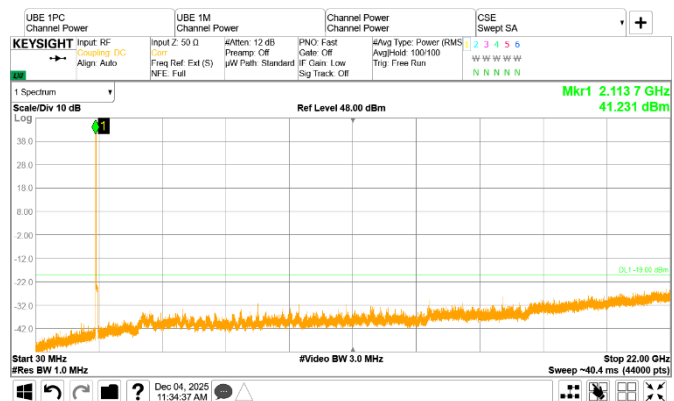


Figure 8.3-22: Conducted spurious emissions of NR 10 MHz low channel, single carrier operation

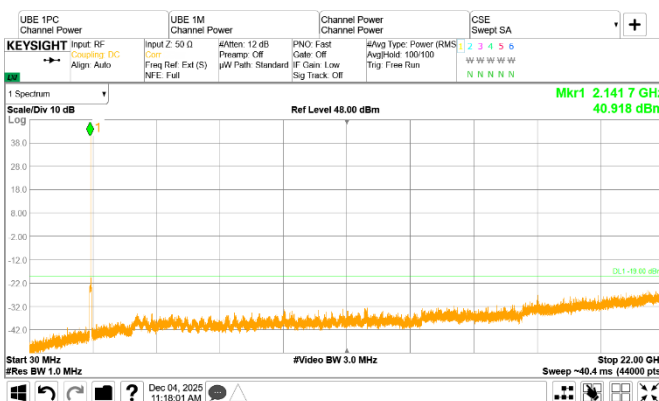


Figure 8.3-23: Conducted spurious emissions of NR 10 MHz mid channel, single carrier operation

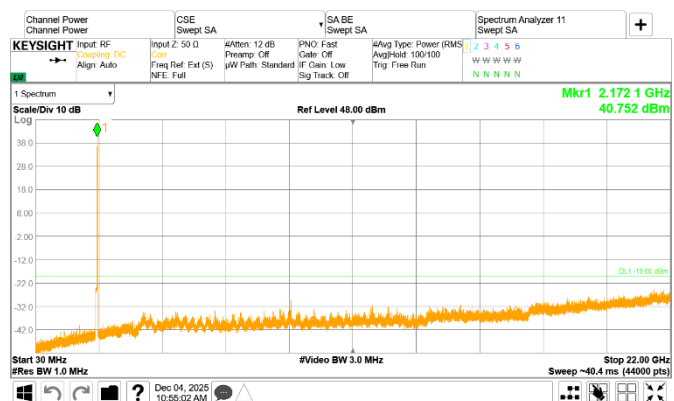


Figure 8.3-24: Conducted spurious emissions of NR 10 MHz top channel, single carrier operation

Test data, continued

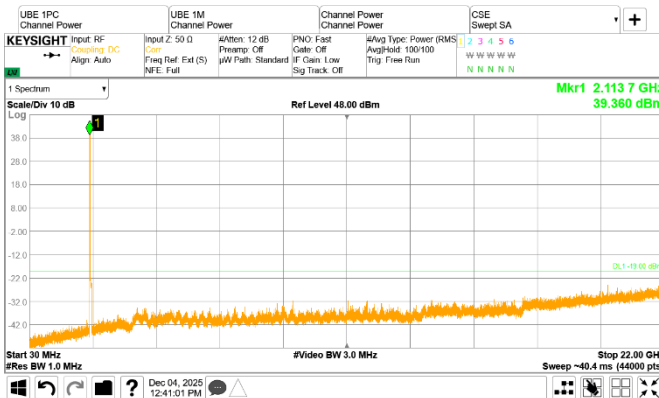


Figure 8.3-25: Conducted spurious emissions of NR 15 MHz low channel, single carrier operation

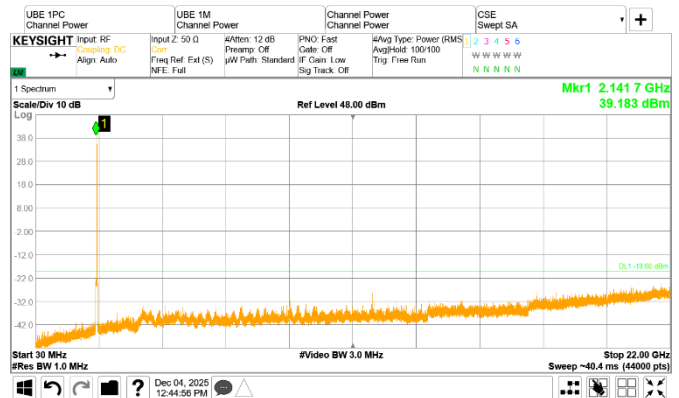


Figure 8.3-26: Conducted spurious emissions of NR 15 MHz mid channel, single carrier operation

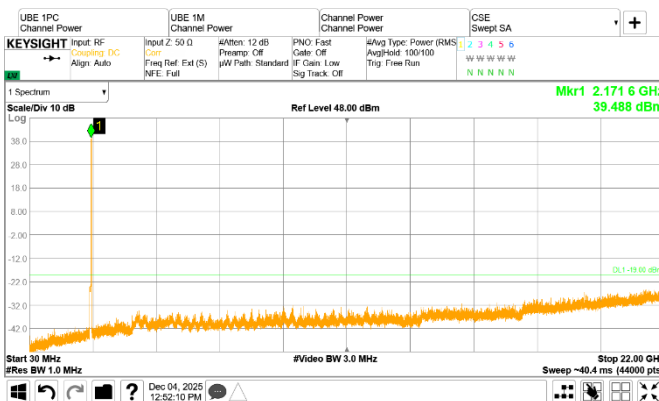


Figure 8.3-27: Conducted spurious emissions of NR 15 MHz top channel, single carrier operation

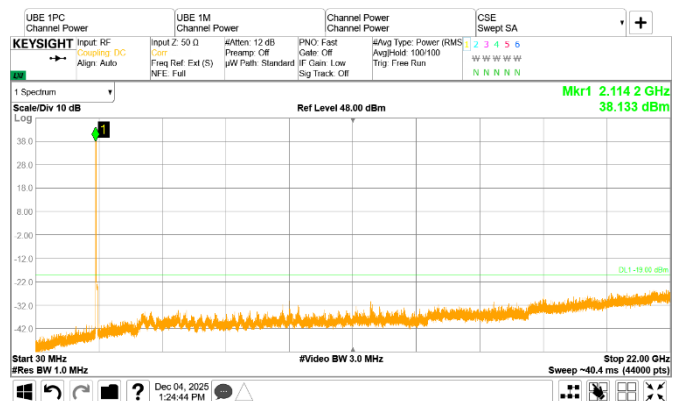


Figure 8.3-28: Conducted spurious emissions of NR 20 MHz low channel, single carrier operation

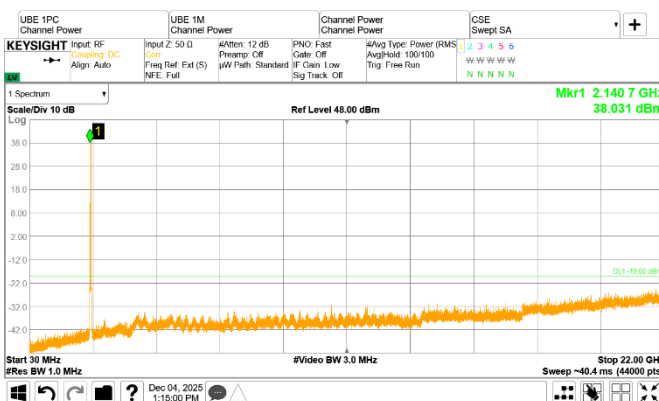


Figure 8.3-29: Conducted spurious emissions of NR 20 MHz mid channel, single carrier operation

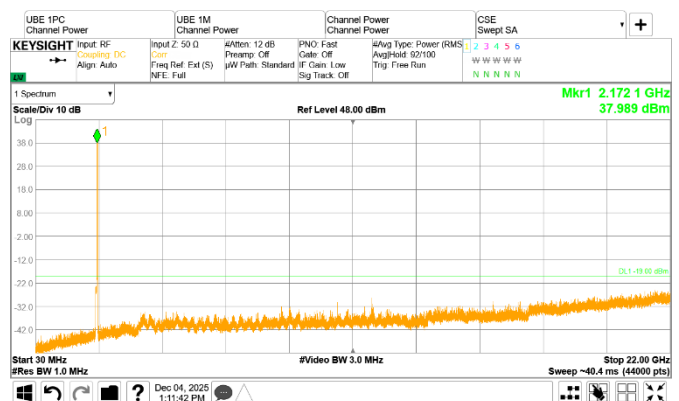


Figure 8.3-30: Conducted spurious emissions of NR 20 MHz top channel, single carrier operation

Test data, continued

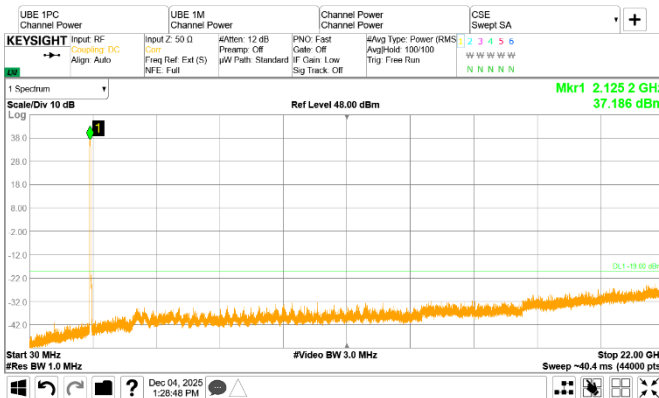


Figure 8.3-31: Conducted spurious emissions of NR 25 MHz low channel, single carrier operation

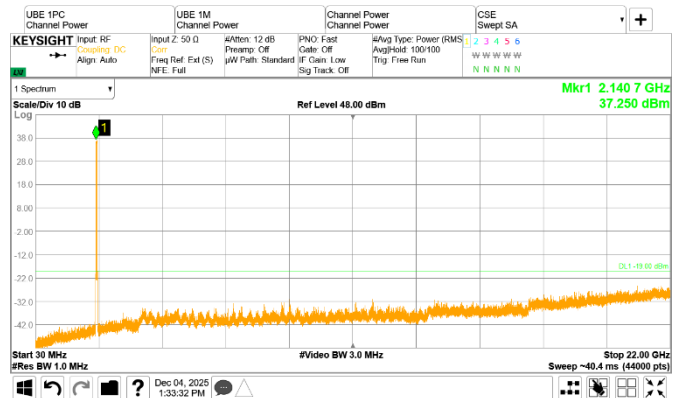


Figure 8.3-32: Conducted spurious emissions of NR 25 MHz mid channel, single carrier operation

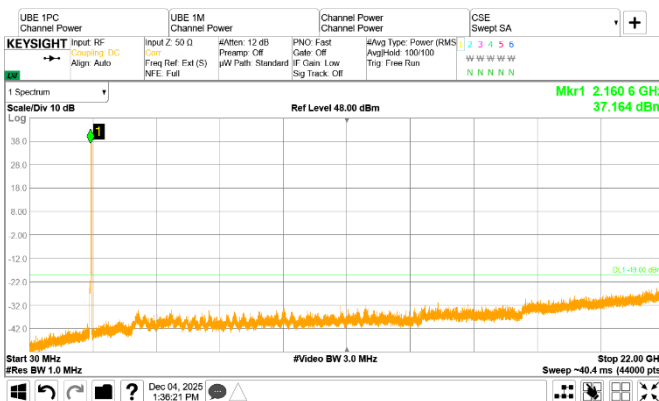


Figure 8.3-33: Conducted spurious emissions of NR 25 MHz top channel, single carrier operation

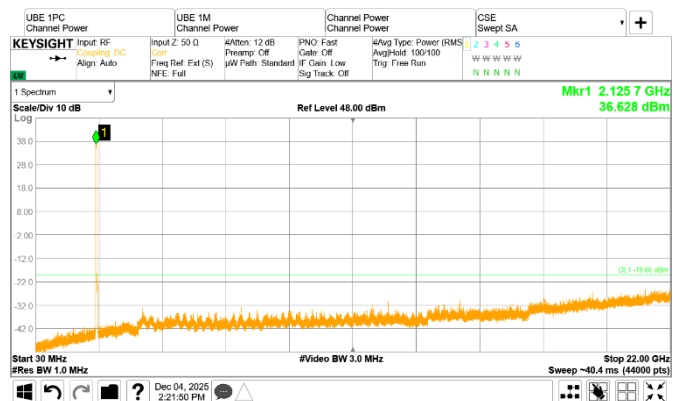


Figure 8.3-34: Conducted spurious emissions of NR 30 MHz low channel, single carrier operation

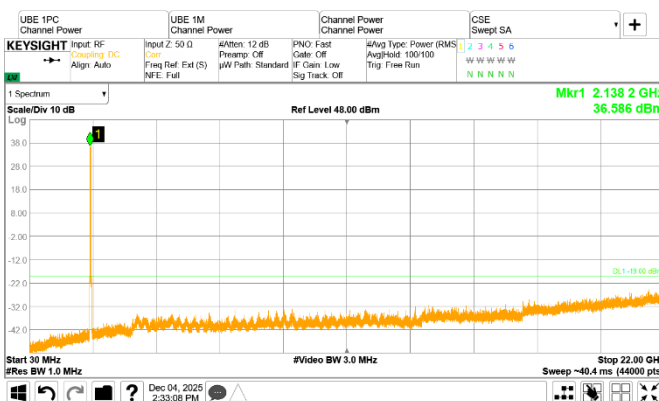


Figure 8.3-35: Conducted spurious emissions of NR 30 MHz mid channel, single carrier operation

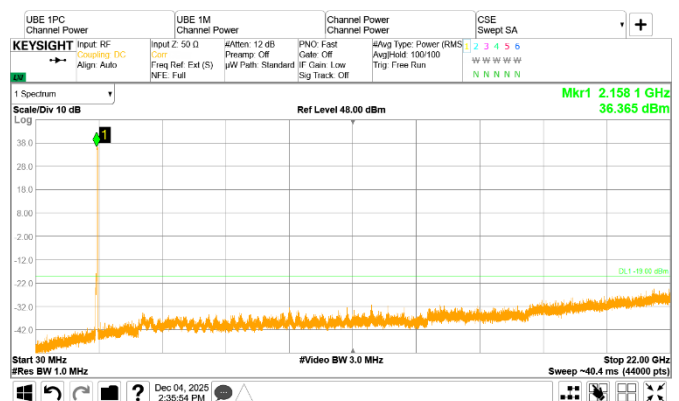


Figure 8.3-36: Conducted spurious emissions of NR 30 MHz top channel, single carrier operation

Test data, continued

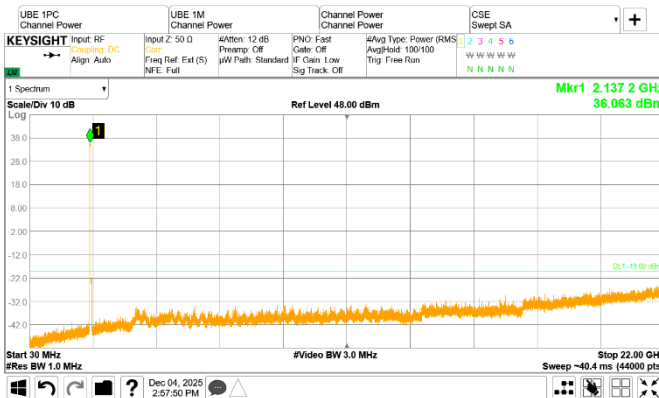


Figure 8.3-37: Conducted spurious emissions of NR 35 MHz low channel, single carrier operation

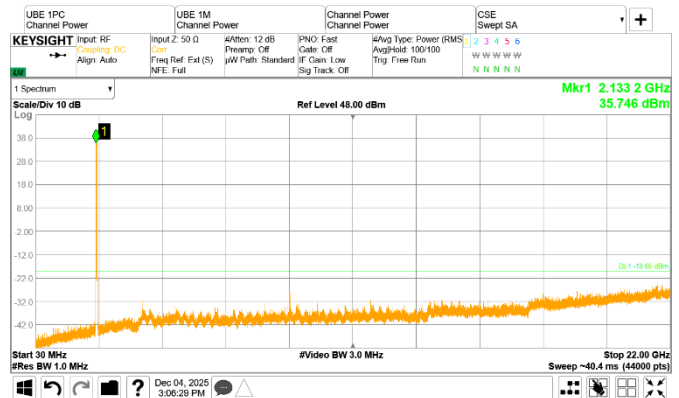


Figure 8.3-38: Conducted spurious emissions of NR 35 MHz mid channel, single carrier operation

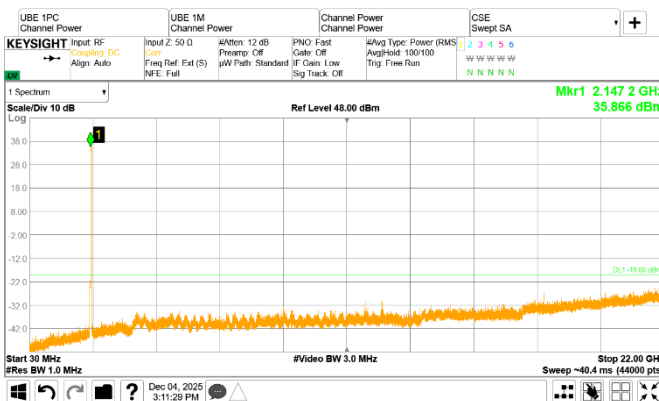


Figure 8.3-39: Conducted spurious emissions of NR 35 MHz top channel, single carrier operation

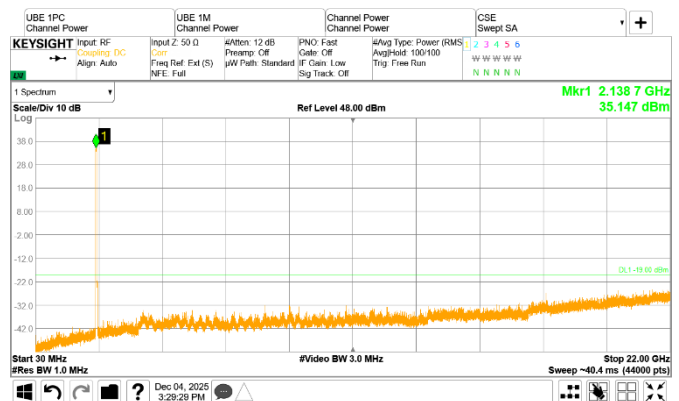


Figure 8.3-40: Conducted spurious emissions of NR 40 MHz low channel, single carrier operation

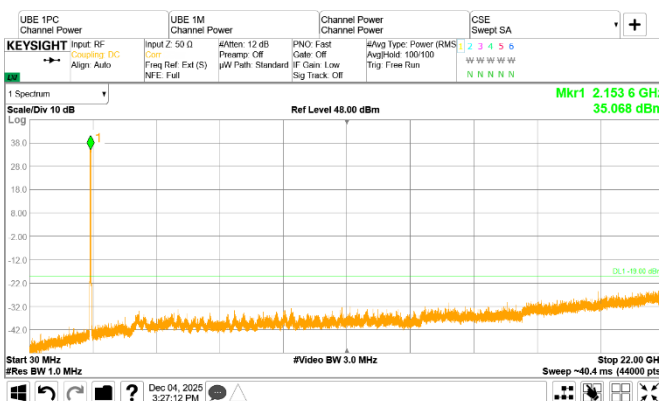


Figure 8.3-41: Conducted spurious emissions of NR 40 MHz mid channel, single carrier operation

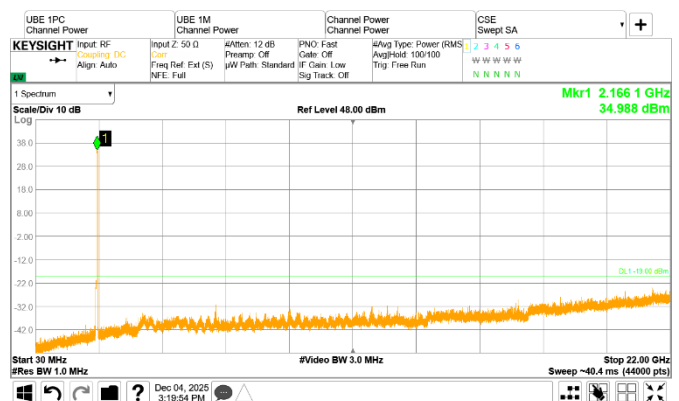


Figure 8.3-42: Conducted spurious emissions of NR 40 MHz top channel, single carrier operation

Test data, continued

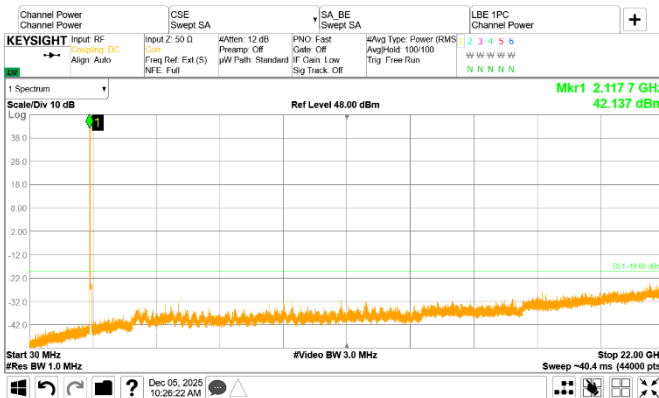


Figure 8.3-43: Conducted spurious emissions of 2xWCDMA low channel, two-carrier contiguous operation

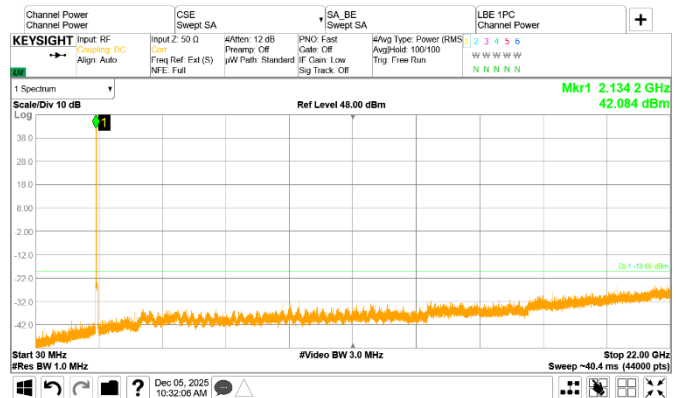


Figure 8.3-44: Conducted spurious emissions of 2xWCDMA mid channel, two-carrier contiguous operation

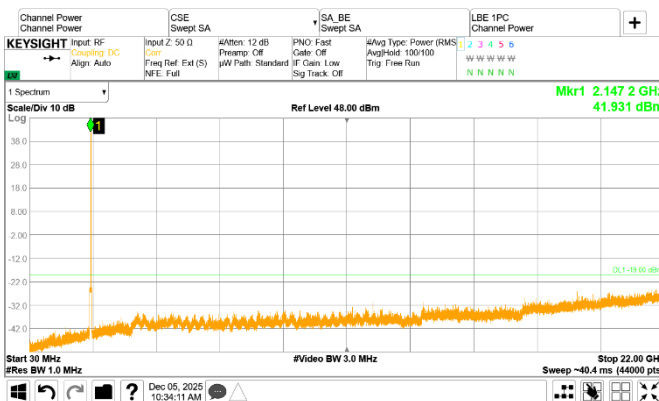


Figure 8.3-45: Conducted spurious emissions of 2xWCDMA top channel, two-carrier contiguous operation

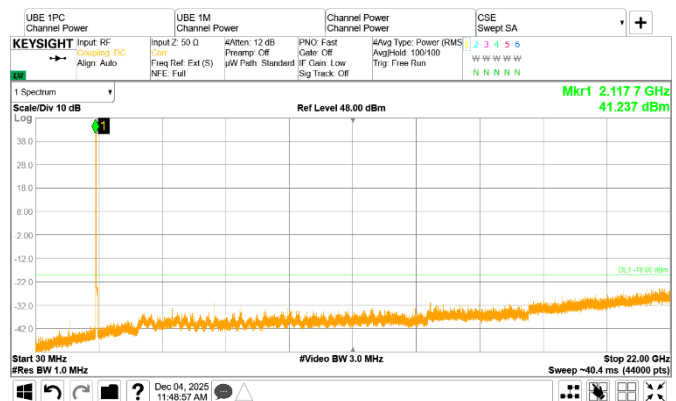


Figure 8.3-46: Conducted spurious emissions of 2xLTE 5 MHz (with IoT) low channel, two-carrier contiguous operation

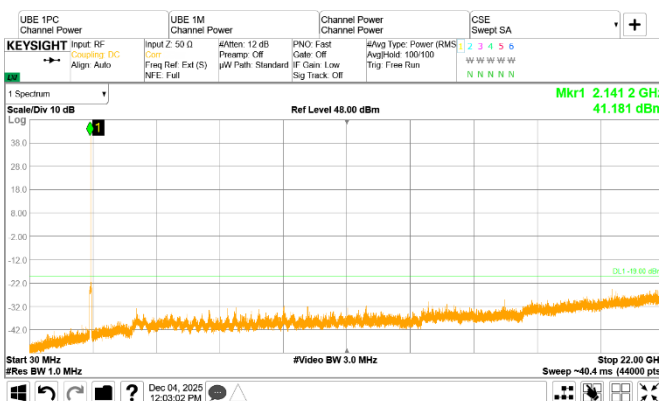


Figure 8.3-47: Conducted spurious emissions of 2xLTE 5 MHz (with IoT) mid channel, two-carrier contiguous operation

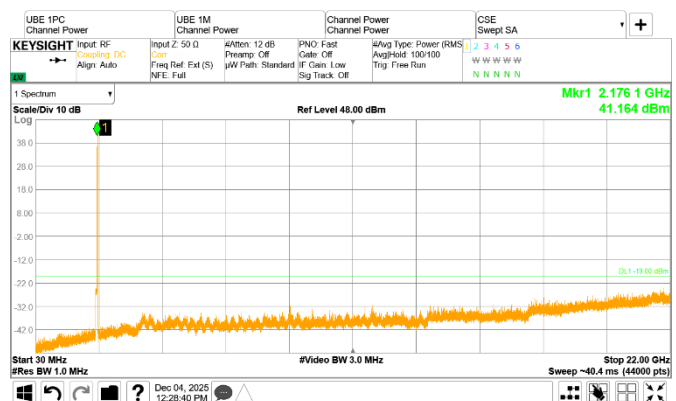


Figure 8.3-48: Conducted spurious emissions of 2xLTE 5 MHz (with IoT) top channel, two-carrier contiguous operation

Test data, continued

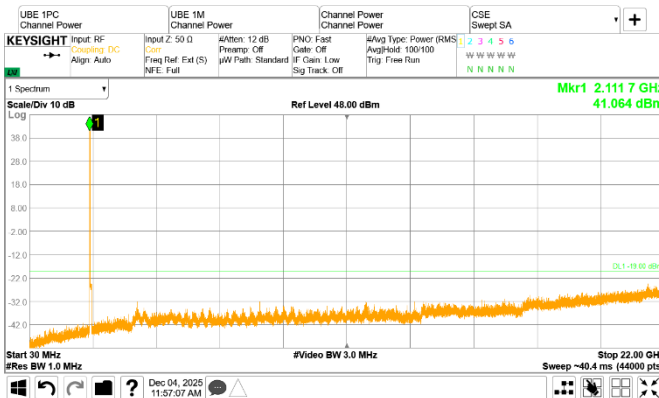


Figure 8.3-49: Conducted spurious emissions of 2xNR 5 MHz low channel, two-carrier contiguous operation

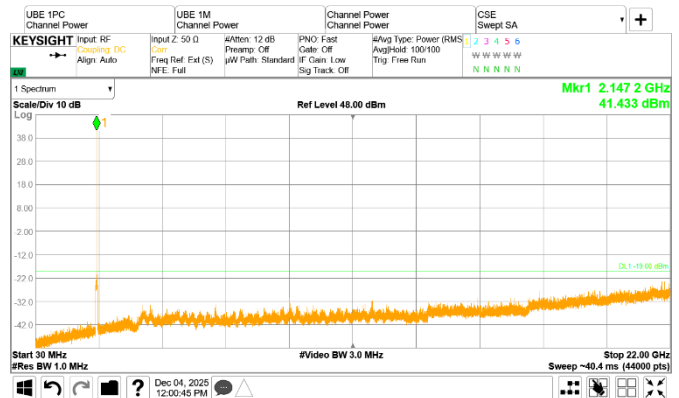


Figure 8.3-50: Conducted spurious emissions of 2xNR 5 MHz mid channel, two-carrier contiguous operation

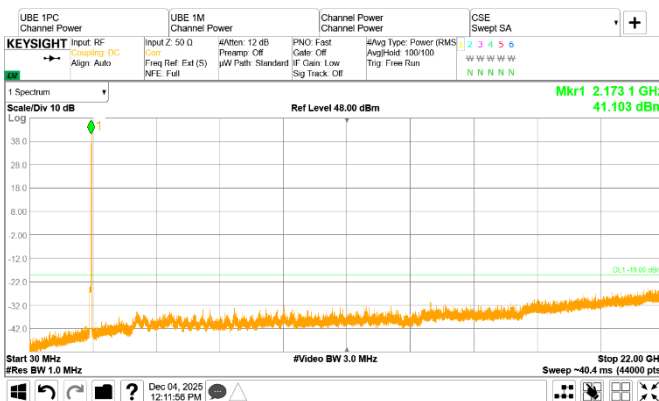


Figure 8.3-51: Conducted spurious emissions of 2xNR 5 MHz top channel, two-carrier contiguous operation

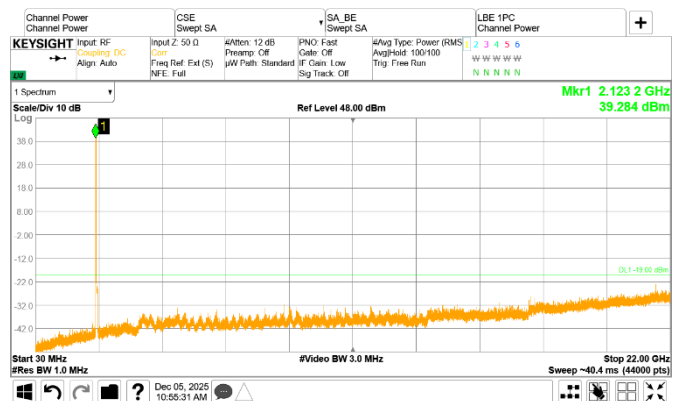


Figure 8.3-52: Conducted spurious emissions of 4xWCDMA low channel, four-carrier contiguous operation

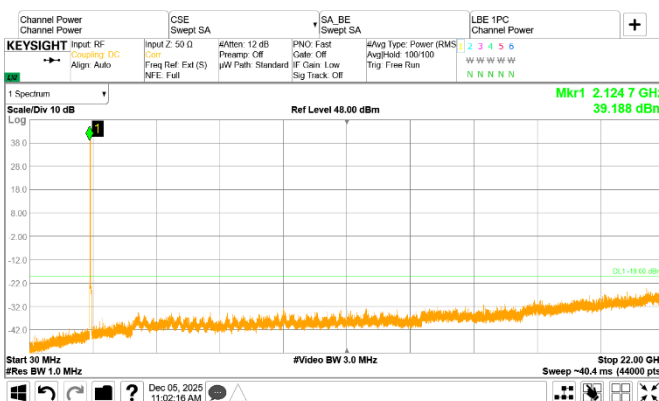


Figure 8.3-53: Conducted spurious emissions of 4xWCDMA mid channel, four-carrier contiguous operation

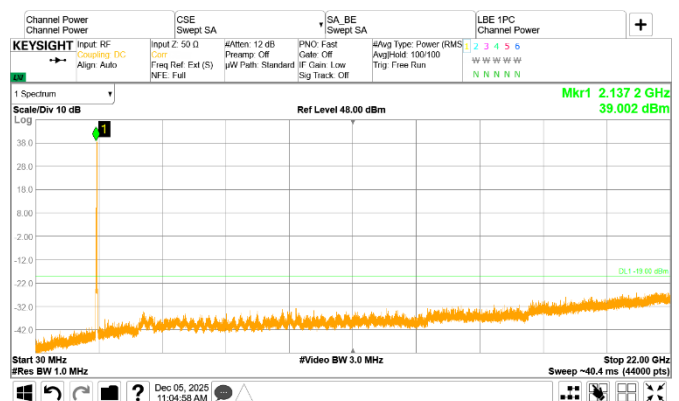


Figure 8.3-54: Conducted spurious emissions of 4xWCDMA top channel, four-carrier contiguous operation