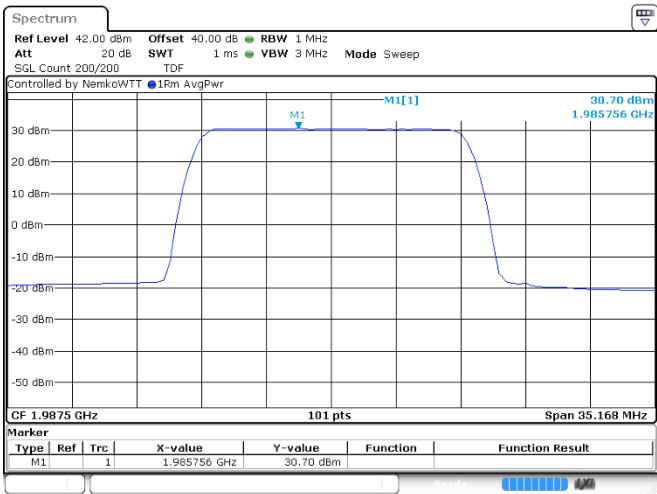
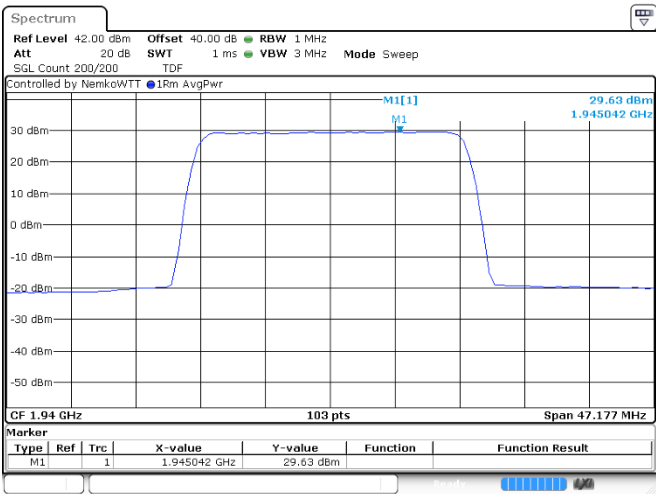
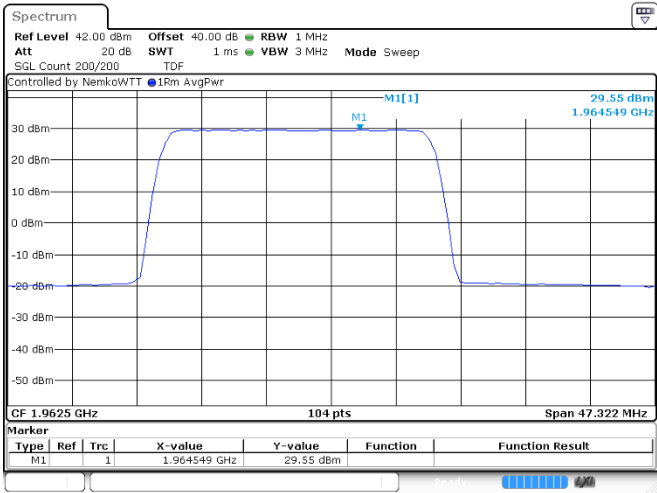




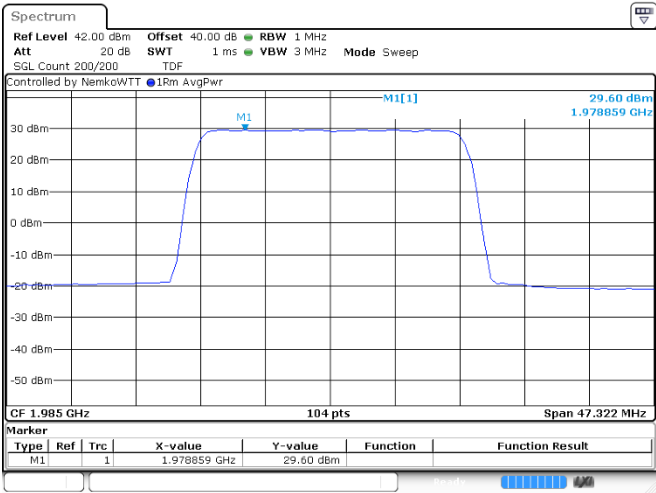
Average PSD, TX: 1987.5 MHz, BW: 15MHz, MOD: 1024QAM



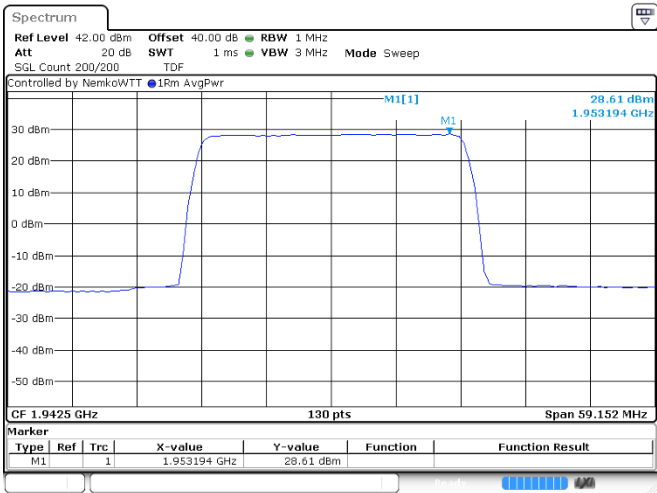
Average PSD, TX: 1940 MHz, BW: 20MHz, MOD: 1024QAM



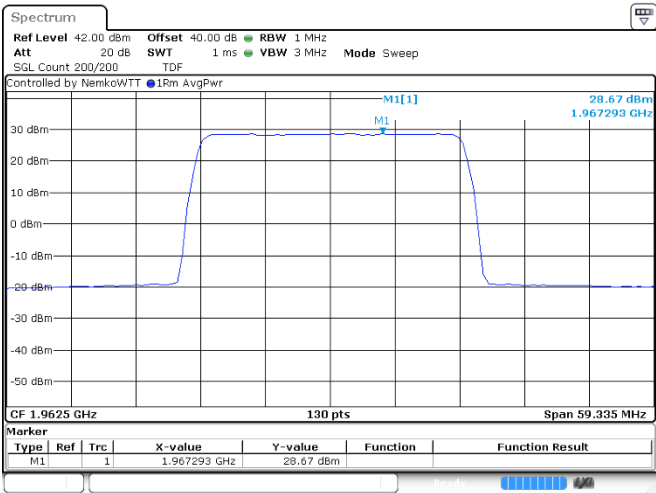
Average PSD, TX: 1962.5 MHz, BW: 20MHz, MOD: 1024QAM



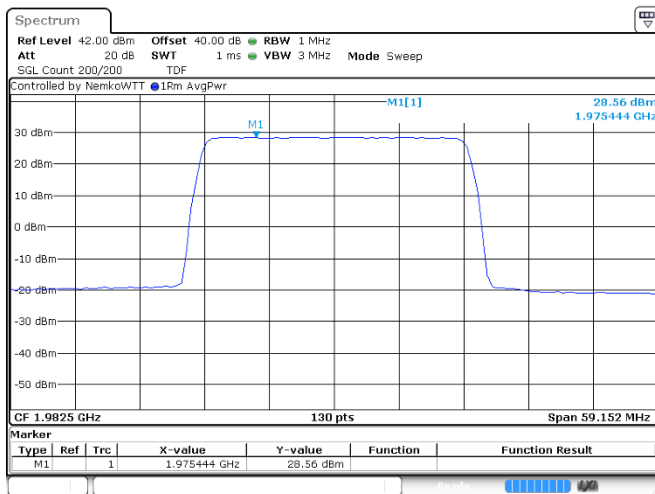
Average PSD, TX: 1985 MHz, BW: 20MHz, MOD: 1024QAM



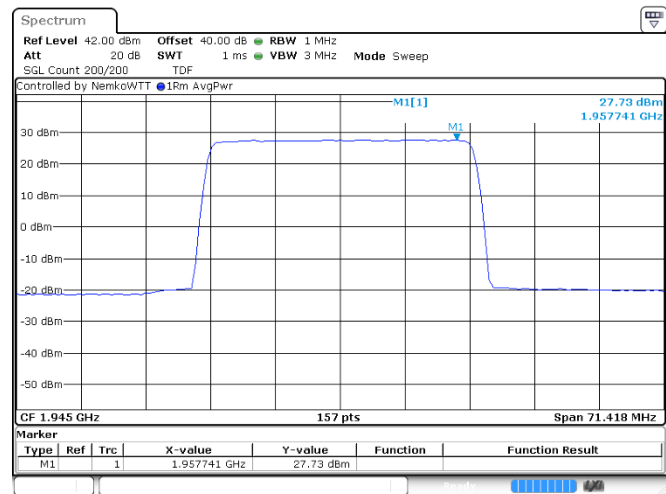
Average PSD, TX: 1942.5 MHz, BW: 25MHz, MOD: 1024QAM



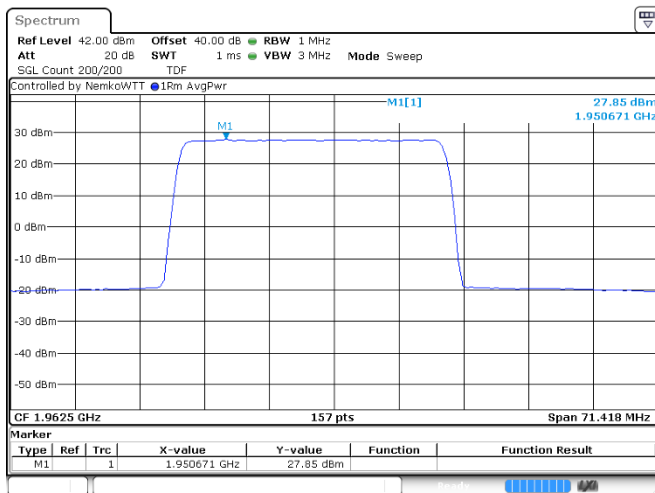
Average PSD, TX: 1962.5 MHz, BW: 25MHz, MOD: 1024QAM



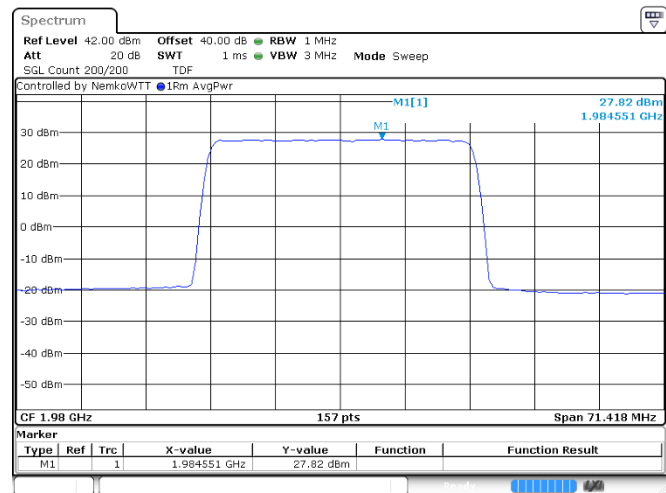
Average PSD, TX: 1982.5 MHz, BW: 25MHz, MOD: 1024QAM



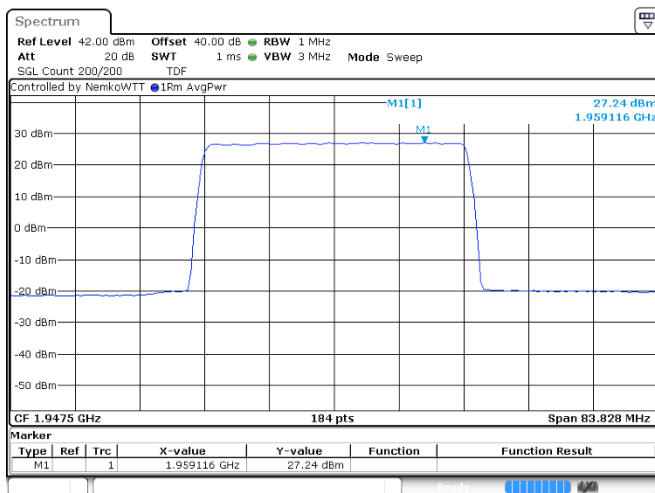
Average PSD, TX: 1945 MHz, BW: 30MHz, MOD: 1024QAM



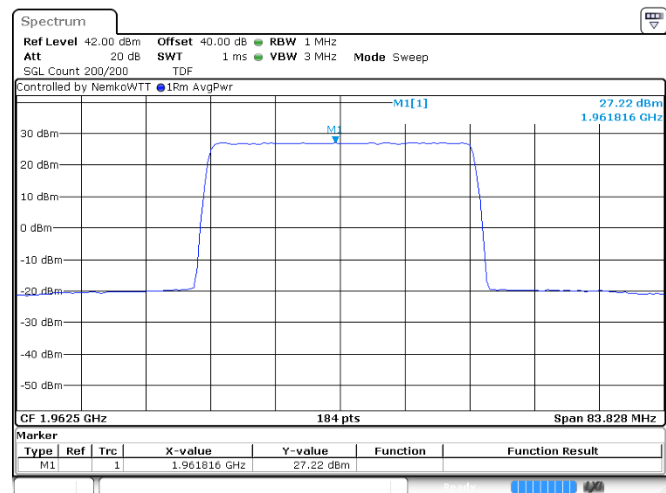
Average PSD, TX: 1962.5 MHz, BW: 30MHz, MOD: 1024QAM



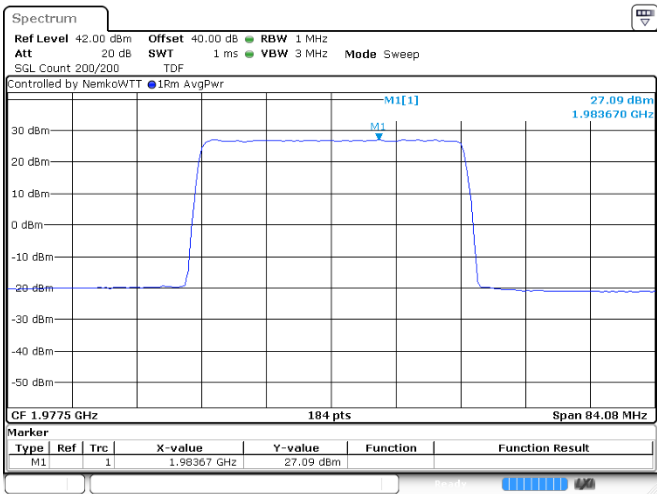
Average PSD, TX: 1980 MHz, BW: 30MHz, MOD: 1024QAM



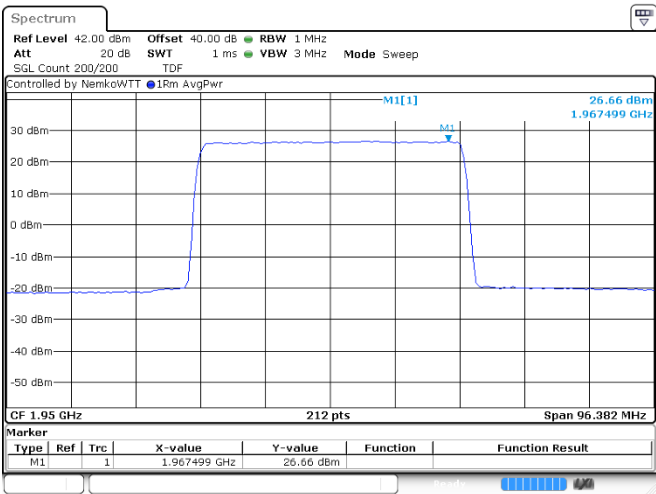
Average PSD, TX: 1947.5 MHz, BW: 35MHz, MOD: 1024QAM



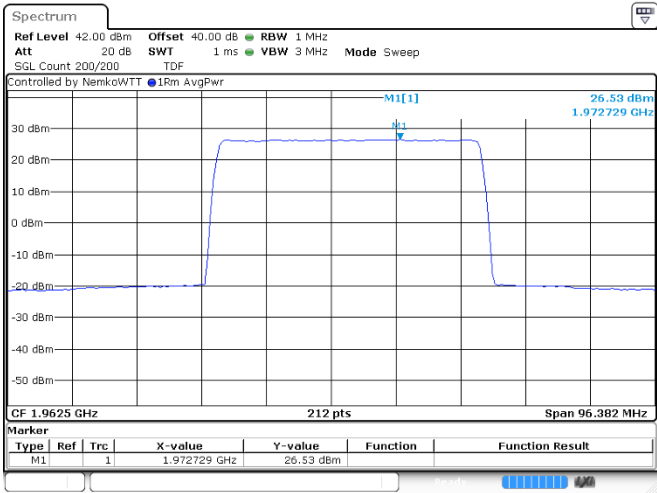
Average PSD, TX: 1962.5 MHz, BW: 35MHz, MOD: 1024QAM



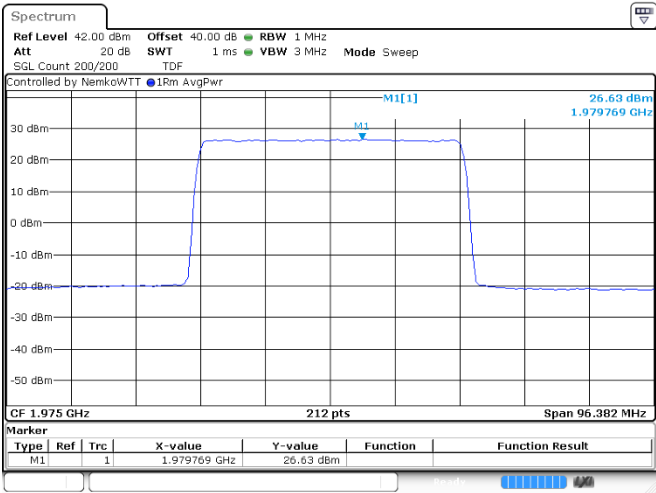
Average PSD, TX: 1977.5 MHz, BW: 35MHz, MOD: 1024QAM



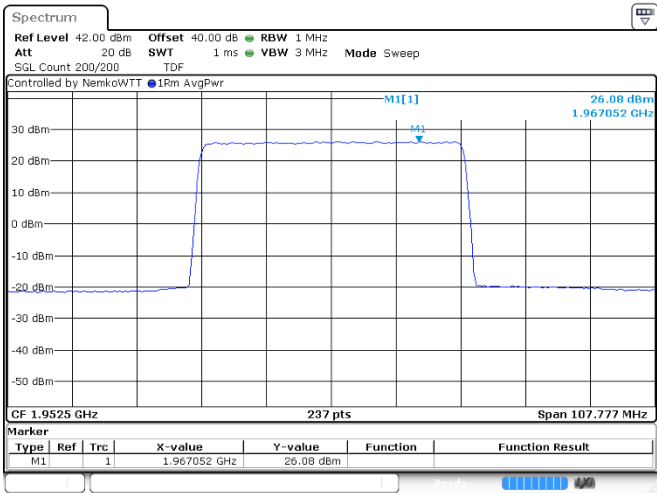
Average PSD, TX: 1950 MHz, BW: 40MHz, MOD: 1024QAM



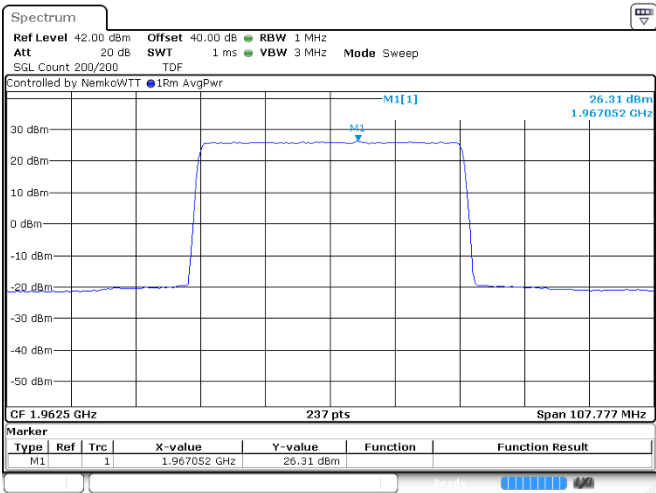
Average PSD, TX: 1962.5 MHz, BW: 40MHz, MOD: 1024QAM



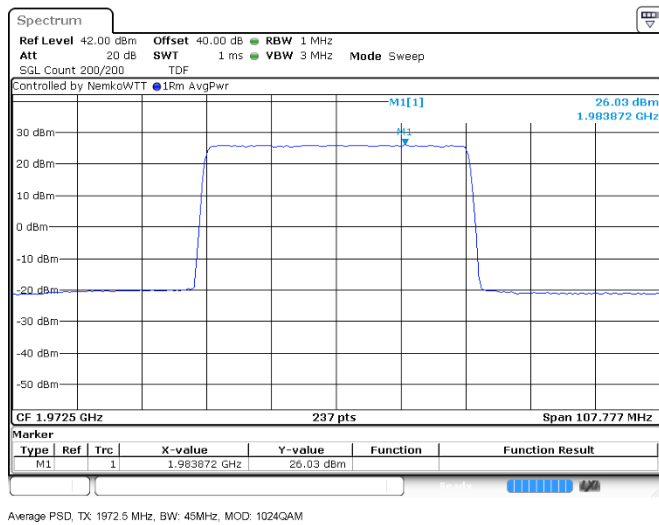
Average PSD, TX: 1975 MHz, BW: 40MHz, MOD: 1024QAM



Average PSD, TX: 1952.5 MHz, BW: 45MHz, MOD: 1024QAM



Average PSD, TX: 1962.5 MHz, BW: 45MHz, MOD: 1024QAM



8.4.7 Test data – 5G NR multi-carrier operation

5G NR multi-carrier operation was verified in the following operational modes:

Table 8.4-17: 5G NR multi-carrier operating modes

Scenario	# Carrier	Bandwidth (MHz)	F1 (DL MHz)	F2 (DL MHz)	F3 (DL MHz)	Comments
1	2	5/5	1932.5	1937.5	N/A	QPSK modulation, 2 contiguous carriers at lowest channels
2	2	5/5	1987.5	1992.5	N/A	QPSK modulation, 2 contiguous carriers at highest channels
3	2	5/5	1932.5	1992.5	N/A	QPSK modulation, 2 non-contiguous carriers; one at lowest channel, one at highest channel
4	3	5/5/5	1932.5	1937.5	1942.5	QPSK modulation, 3 contiguous carriers at lowest channels
5	3	5/5/5	1932.5	1962.5	1992.5	QPSK modulation, 3 non-contiguous channels; one at lowest channel, one at middle channel, one at highest channel

(5 MHz channel bandwidth selected to maximize the power spectral density)

Table 8.4-18: Scenario 1 – Total channel power / EIRP

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1935.0	QPSK	5/5	38.65	18.00	56.65	6.02	62.67

Table 8.4-19: Scenario 1 – Power spectral density

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1935.0	QPSK	5/5	25.58	18.00	43.58	6.02	49.60	91.2

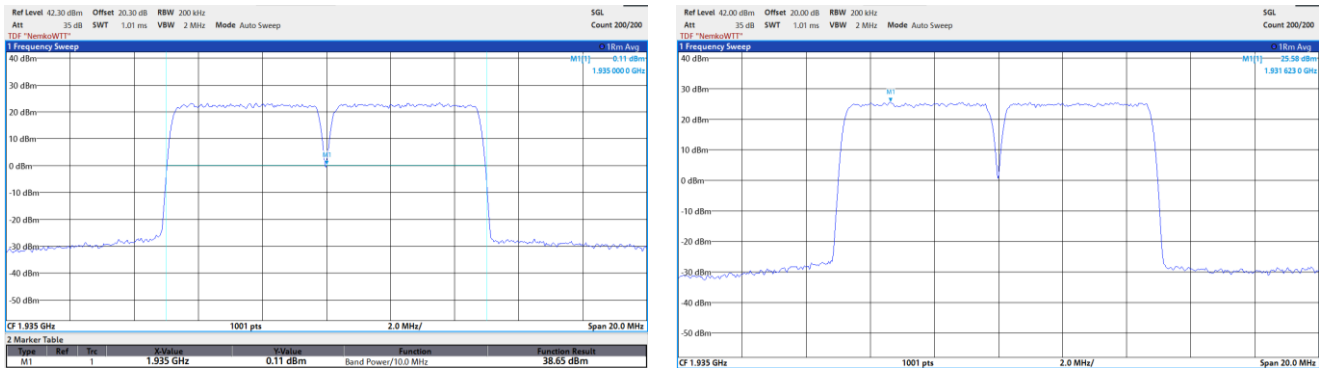


Figure 8.4-18: Scenario 1 – Total channel power / power spectral density

Table 8.4-20: Scenario 2 – Total channel power / EIRP

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1990.0	QPSK	5/5	39.05	18.00	57.05	6.02	63.05

Table 8.4-21: Scenario 2 – Power spectral density

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1990.0	QPSK	5/5	24.95	18.00	42.95	6.02	48.87	79.0

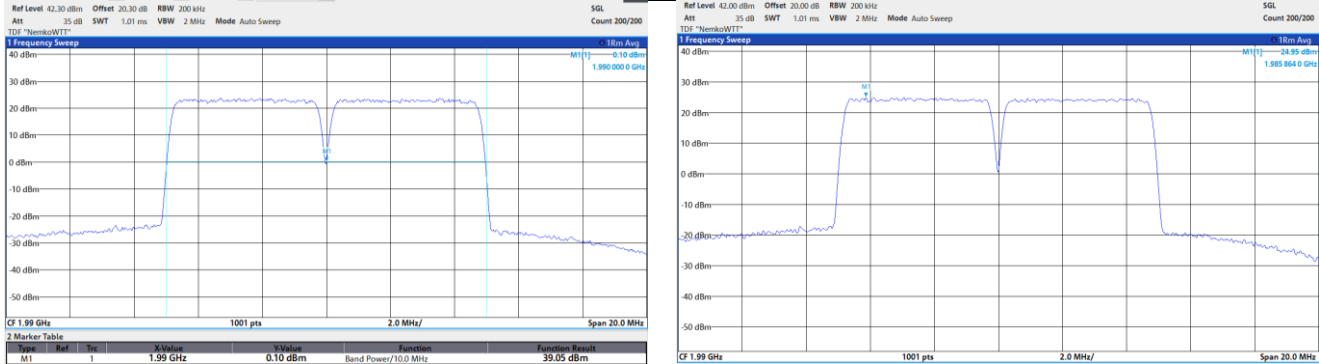


Figure 8.4-19: Scenario 2 – Total channel power / power spectral density

Table 8.4-22: Scenario 3 – Total channel power / EIRP

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1932.5	QPSK	5	35.60	18.00	53.60	6.02	59.62
1992.5	QPSK	5	36.04	18.00	54.04	6.02	60.06

Table 8.4-23: Scenario 3 – Power spectral density

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1932.5	QPSK	5	25.23	18.00	43.23	6.02	49.25	84.1
1992.5	QPSK	5	25.43	18.00	43.43	6.02	49.45	88.0

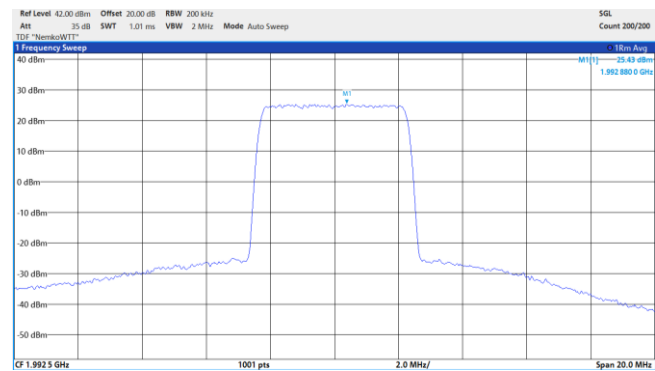
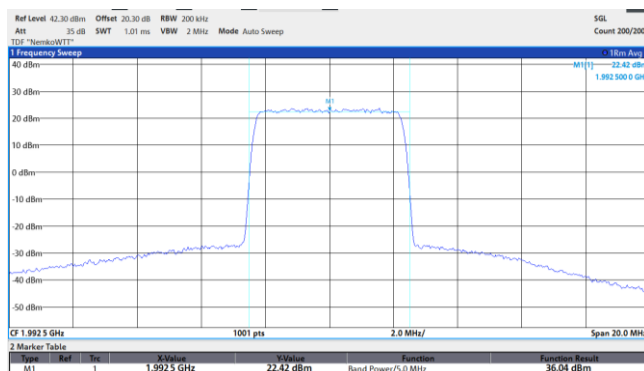
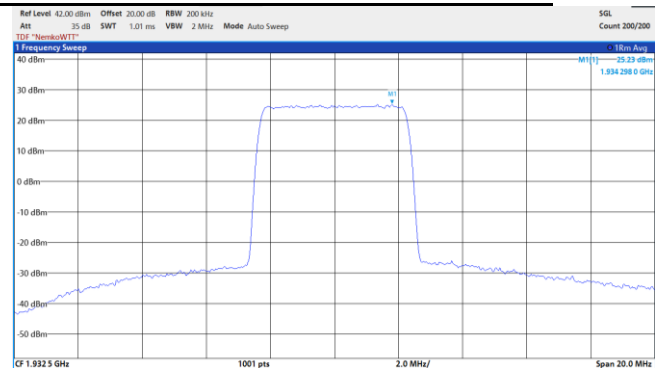
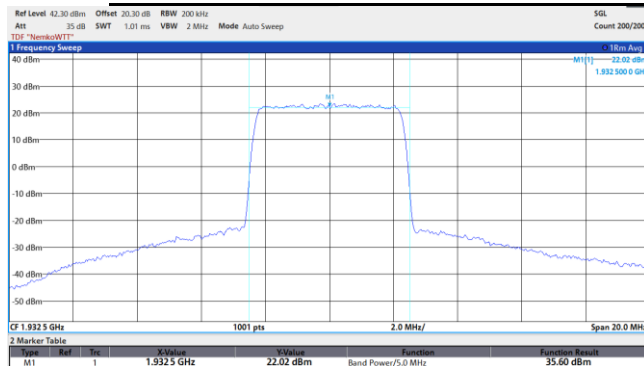


Figure 8.4-20: Scenario 3 – Total channel power / power spectral density

Table 8.4-24: Scenario 4 – Total channel power / EIRP

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1937.5	QPSK	5/5/5	38.89	18.00	56.89	6.02	62.91

Table 8.4-25: Scenario 4 – Power spectral density

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1937.5	QPSK	5/5/5	21.08	18.00	39.08	6.02	45.10	32.4

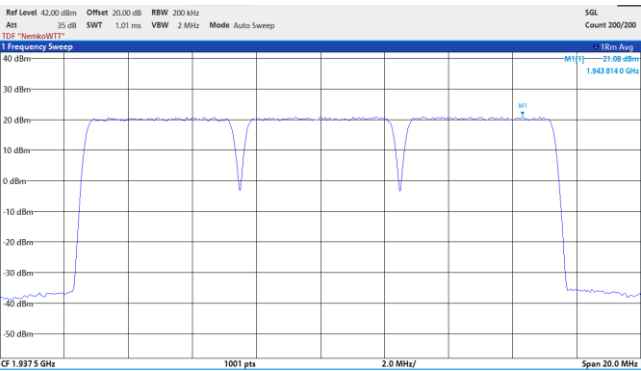
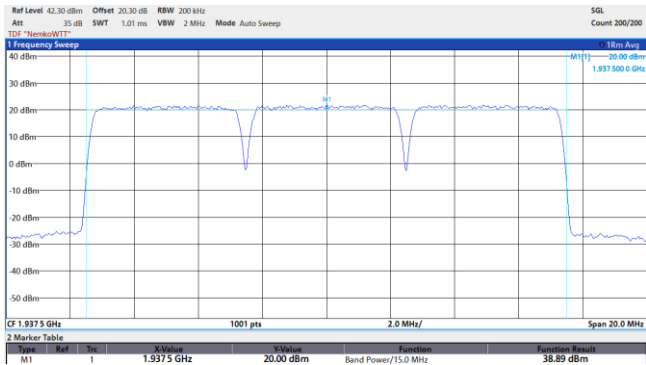


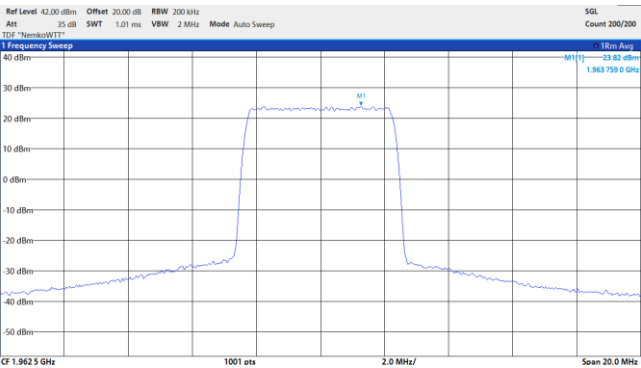
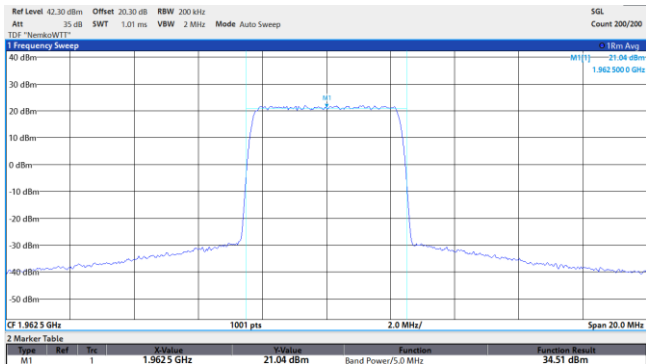
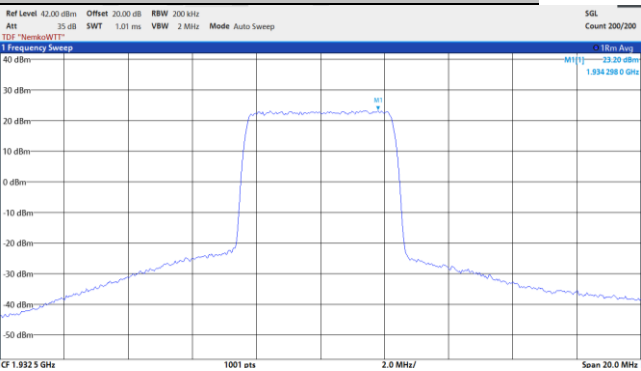
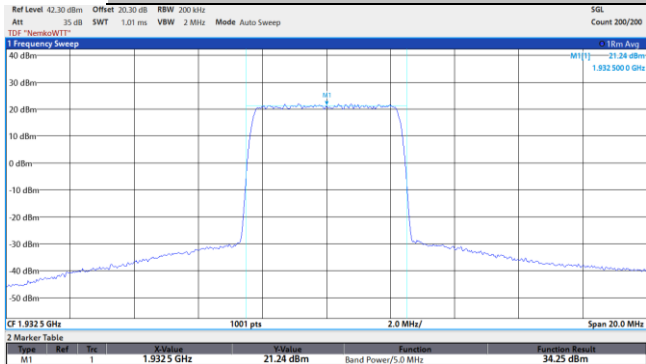
Figure 8.4-21: Scenario 4 – Total channel power / power spectral density

Table 8.4-26: Scenario 5 – Total channel power / EIRP

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1932.5	QPSK	5	34.25	18.00	52.25	6.02	58.27
1962.5	QPSK	5	34.51	18.00	52.51	6.02	58.53
1992.5	QPSK	5	34.35	18.00	52.35	6.02	58.37

Table 8.4-27: Scenario 5 – Power spectral density

Frequency (MHz)	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1932.5	QPSK	5	23.20	18.00	41.20	6.02	47.22	52.8
1962.5	QPSK	5	23.82	18.00	41.82	6.02	47.84	60.8
1992.5	QPSK	5	23.75	18.00	41.75	6.02	47.77	59.9



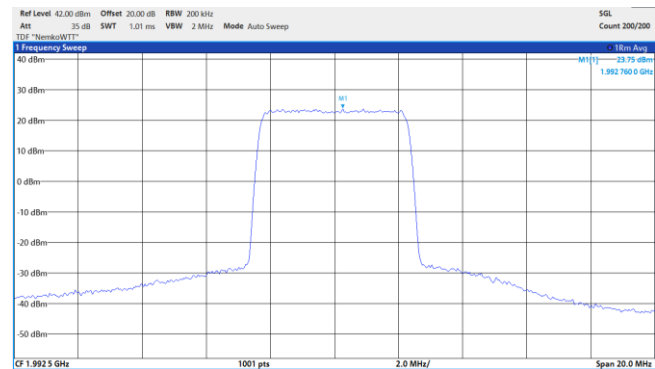
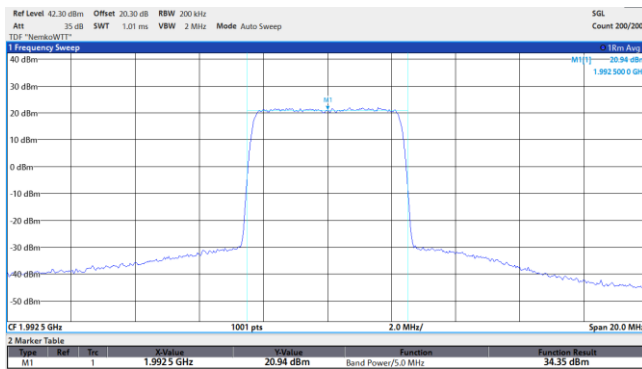


Figure 8.4-22: Scenario 5 – Total channel power / power spectral density

8.4.8 Test data – LTE + 5G NR multi-RAT capability

LTE + 5G NR multi-RAT operation was verified in the following operational modes:

Table 8.4-28: LTE multi-carrier operating modes

Scenario	# Carrier	Bandwidth (MHz)	F1 (DL MHz)	F2 (DL MHz)	F3 (DL MHz)	Comments
1	3	5/5/5	1932.5 (5G NR)	1937.5 (5G NR)	1992.5 (LTE)	QPSK modulation. 2 contiguous 5G NR carriers at the lowest channels, one LTE carrier at highest channel
2	3	5/5/5	1932.5 (5G NR)	1987.5 (LTE)	1992.5 (LTE)	QPSK modulation, 1 5G NR carrier at the lowest channel, 2 contiguous LTE carriers at highest channels

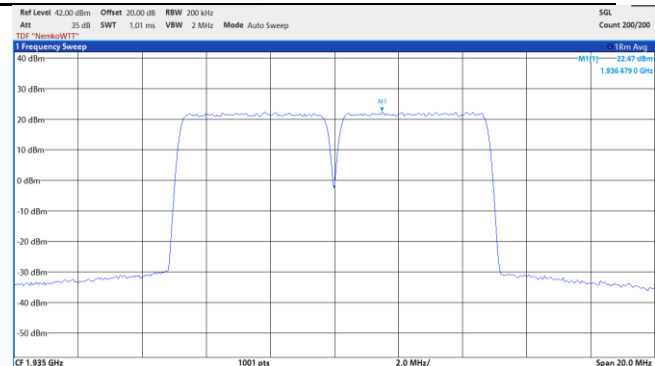
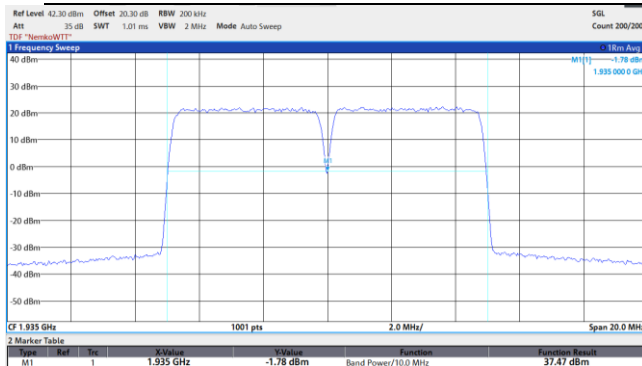
(5 MHz channel bandwidth selected to maximize the power spectral density)

Table 8.4-29: Scenario 1 – Total channel power / EIRP

Frequency (MHz)	RAT	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1935.0	5G NR	QPSK	5/5	37.47	18.00	55.47	6.02	61.49
1992.5	LTE	QPSK	5	34.50	18.00	52.50	6.02	58.52

Table 8.4-30: Scenario 1 – Power spectral density

Frequency (MHz)	RAT	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1935.0	5G NR	QPSK	5/5	22.47	18.00	40.47	6.02	46.49	44.6
1992.5	LTE	QPSK	5	23.92	18.00	41.92	6.02	47.94	62.3



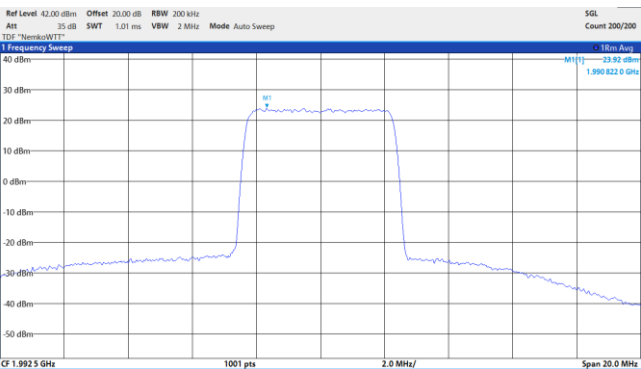
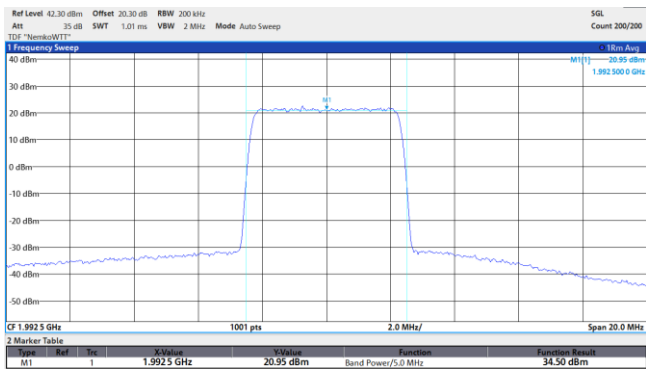


Figure 8.4-23: Scenario 1 – Total channel power / power spectral density

Table 8.4-31: Scenario 2 – Total channel power / EIRP

Frequency (MHz)	RAT	Modulation	Channel Bandwidth (MHz)	Conducted power (dBm)	Antenna gain (dBi)	EIRP (dBm)	MIMO Correction (dB)	EIRP (4 ports) (dBm)
1932.5	5G NR	QPSK	5	34.43	18.00	52.43	6.02	58.45
1990	LTE	QPSK	5/5	37.65	18.00	55.65	6.02	61.67

Table 8.4-32: Scenario 2 – Power spectral density

Frequency (MHz)	RAT	Modulation	Channel Bandwidth (MHz)	Conducted power density (dBm/MHz)	Antenna gain (dBi)	EIRP density (dBm/MHz)	MIMO Correction (dB)	EIRP density (4 ports) (dBm/MHz)	EIRP density (4 ports) (W/MHz)
1932.5	5G NR	QPSK	5	22.01	18.00	40.01	6.02	46.03	40.1
1990	LTE	QPSK	5/5	24.03	18.00	42.03	6.02	48.05	63.7

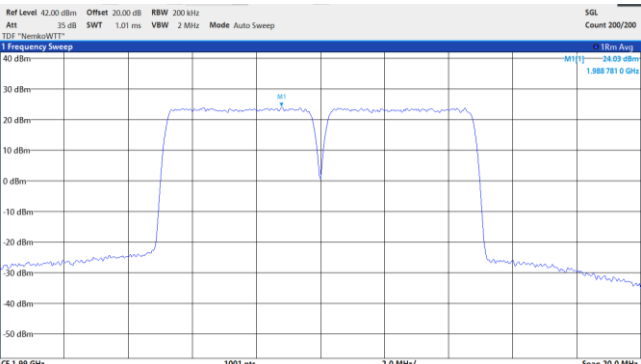
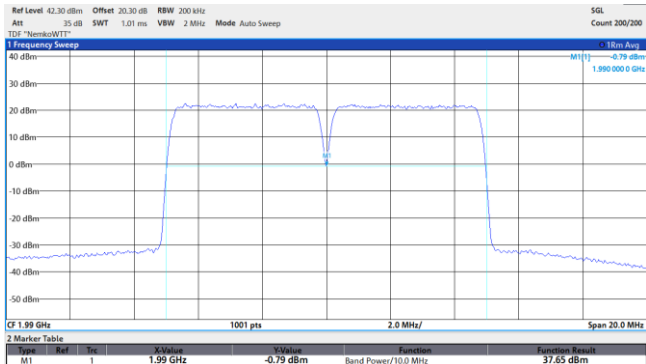
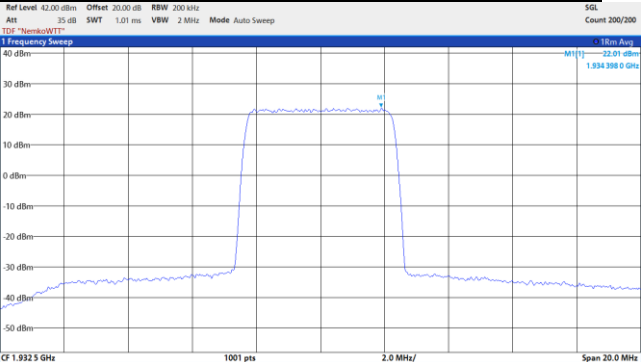
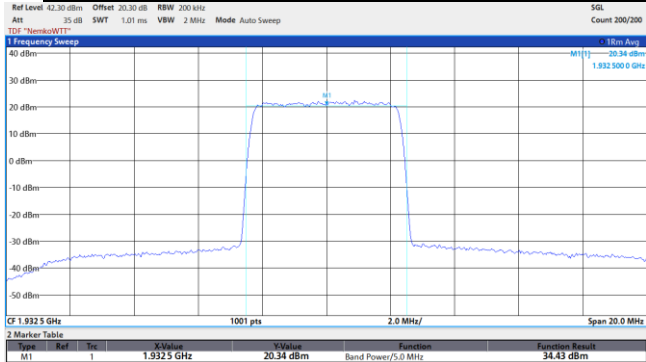


Figure 8.4-24: Scenario 2 – Total channel power / power spectral density

8.5 FCC 24.238 Peak to Average Power Ratio

8.5.1 Definitions and limits

(d) Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of § 24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

8.5.2 Test summary

Test date	August 27, 2025	Temperature	22 °C
Test engineer	Lan Sayasane, EMC Test Engineer	Air pressure	1004.0 mbar
Verdict	Pass	Relative humidity	58 %

8.5.3 Observations, settings and special notes

Declared occupied bandwidths of 10 MHz or less were tested using the CCDF measurement function of the equipment for the peak to average power ratio. Due to resolution bandwidth limitations in the measurement equipment, declared occupied bandwidths greater than 10 MHz could not being tested with this function. Instead, two plots were measured, one for peak power and another for average power.. The difference between both magnitudes were recorded as peak to average power ratio.

8.5.4 Test data – LTE operation

Table 8.5-1: Peak to average power ratio test results.

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	PAPR 0.1% (dB)	Limit (dB)
1932.5	QPSK	5	7.14	13
1962.5	QPSK	5	7.11	13
1992.5	QPSK	5	7.02	13
1932.5	16QAM	5	8.59	13
1962.5	16QAM	5	8.55	13
1992.5	16QAM	5	8.67	13
1932.5	64QAM	5	7.62	13
1962.5	64QAM	5	7.44	13
1992.5	64QAM	5	7.55	13
1935	QPSK	10	7.68	13
1962.5	QPSK	10	7.66	13
1990	QPSK	10	7.52	13
1935	16QAM	10	9.11	13
1962.5	16QAM	10	8.96	13
1990	16QAM	10	8.99	13
1935	64QAM	10	7.91	13
1962.5	64QAM	10	7.84	13
1935	64QAM	10	7.68	13
1937.5	QPSK	15	8.01	13
1962.5	QPSK	15	8.15	13
1987.5	QPSK	15	8.16	13
1937.5	16QAM	15	8.24	13
1962.5	16QAM	15	8.12	13
1987.5	16QAM	15	8.22	13
1937.5	64QAM	15	8.19	13
1962.5	64QAM	15	8.22	13
1987.5	64QAM	15	8.23	13
1940	QPSK	20	8.06	13
1962.5	QPSK	20	8.13	13
1985	QPSK	20	8.06	13
1940	16QAM	20	9.10	13
1962.5	16QAM	20	9.03	13

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	PAPR 0.1% (dB)	Limit (dB)
1985	16QAM	20	9.10	13
1940	64QAM	20	8.18	13
1962.5	64QAM	20	8.12	13
1985	64QAM	20	8.23	13

8.5.5 Test data – 5G NR operation

Table 8.5-2: Peak to average power ratio test results.

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	PAPR 0.1% (dB)	Limit (dB)
1932.5	QPSK	5	3.28	13
1962.5	QPSK	5	3.22	13
1992.5	QPSK	5	3.36	13
1932.5	16QAM	5	3.25	13
1962.5	16QAM	5	3.22	13
1992.5	16QAM	5	3.33	13
1932.5	64QAM	5	3.25	13
1962.5	64QAM	5	3.22	13
1992.5	64QAM	5	3.36	13
1932.5	256QAM	5	3.28	13
1962.5	256QAM	5	3.25	13
1992.5	256QAM	5	3.39	13
1932.5	1024QAM	5	3.30	13
1962.5	1024QAM	5	3.25	13
1992.5	1024QAM	5	3.36	13
1935	QPSK	10	3.51	13
1962.5	QPSK	10	3.42	13
1990	QPSK	10	3.54	13
1935	16QAM	10	3.48	13
1962.5	16QAM	10	3.39	13
1990	16QAM	10	3.51	13
1935	64QAM	10	3.54	13
1962.5	64QAM	10	3.45	13
1935	64QAM	10	3.57	13
1935	256QAM	10	3.54	13
1962.5	256QAM	10	3.45	13
1990	256QAM	10	3.57	13
1935	1024QAM	10	3.51	13
1962.5	1024QAM	10	3.42	13
1990	1024QAM	10	3.57	13
1937.5	QPSK	15	8.14	13
1962.5	QPSK	15	8.21	13
1987.5	QPSK	15	8.19	13
1937.5	16QAM	15	8.26	13
1962.5	16QAM	15	8.20	13
1987.5	16QAM	15	7.99	13
1937.5	64QAM	15	8.11	13
1962.5	64QAM	15	7.87	13
1987.5	64QAM	15	8.19	13
1937.5	256QAM	15	8.04	13
1962.5	256QAM	15	7.96	13
1987.5	256QAM	15	8.09	13
1937.5	1024QAM	15	8.05	13
1962.5	1024QAM	15	8.11	13
1987.5	1024QAM	15	8.12	13
1940	QPSK	20	8.14	13
1962.5	QPSK	20	8.12	13
1985	QPSK	20	8.17	13
1940	16QAM	20	8.18	13
1962.5	16QAM	20	8.06	13
1985	16QAM	20	8.20	13

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	PAPR 0.1% (dB)	Limit (dB)
1940	64QAM	20	8.04	13
1962.5	64QAM	20	8.00	13
1985	64QAM	20	8.1	13
1940	256QAM	20	7.99	13
1962.5	256QAM	20	8.00	13
1985	256QAM	20	8.08	13
1940	1024QAM	20	8.08	13
1962.5	1024QAM	20	8.13	13
1985	1024QAM	20	8.09	13
1942.5	QPSK	25	8.36	13
1962.5	QPSK	25	8.46	13
1982.5	QPSK	25	8.41	13
1942.5	16QAM	25	8.32	13
1962.5	16QAM	25	8.26	13
1982.5	16QAM	25	8.33	13
1942.5	64QAM	25	8.33	13
1962.5	64QAM	25	8.24	13
1982.5	64QAM	25	8.40	13
1942.5	256QAM	25	8.21	13
1962.5	256QAM	25	8.24	13
1982.5	256QAM	25	8.22	13
1942.5	1024QAM	25	8.33	13
1962.5	1024QAM	25	8.31	13
1982.5	1024QAM	25	8.34	13
1945	QPSK	30	8.32	13
1962.5	QPSK	30	8.19	13
1980	QPSK	30	8.38	13
1945	16QAM	30	8.27	13
1962.5	16QAM	30	8.50	13
1980	16QAM	30	8.35	13
1945	64QAM	30	8.25	13
1962.5	64QAM	30	8.76	13
1980	64QAM	30	8.27	13
1945	256QAM	30	8.14	13
1962.5	256QAM	30	8.06	13
1980	256QAM	30	8.13	13
1945	1024QAM	30	8.31	13
1962.5	1024QAM	30	8.19	13
1980	1024QAM	30	8.31	13
1947.5	QPSK	35	8.73	13
1962.5	QPSK	35	8.87	13
1977.5	QPSK	35	8.93	13
1947.5	16QAM	35	8.78	13
1962.5	16QAM	35	8.84	13
1977.5	16QAM	35	8.76	13
1947.5	64QAM	35	8.84	13
1962.5	64QAM	35	8.85	13
1977.5	64QAM	35	8.77	13
1947.5	256QAM	35	8.61	13
1962.5	256QAM	35	8.61	13
1977.5	256QAM	35	8.62	13
1947.5	1024QAM	35	8.77	13
1962.5	1024QAM	35	8.75	13
1977.5	1024QAM	35	8.77	13
1950	QPSK	40	8.83	13
1962.5	QPSK	40	8.63	13
1975	QPSK	40	8.73	13
1950	16QAM	40	8.79	13
1962.5	16QAM	40	8.72	13
1975	16QAM	40	8.73	13
1950	64QAM	40	8.67	13
1962.5	64QAM	40	8.74	13

Frequency channel (MHz)	Modulation	Occupied Bandwidth Declared (MHz)	PAPR 0.1% (dB)	Limit (dB)
1975	64QAM	40	8.66	13
1950	256QAM	40	8.48	13
1962.5	256QAM	40	8.51	13
1975	256QAM	40	8.54	13
1950	1024QAM	40	8.61	13
1962.5	1024QAM	40	8.83	13
1975	1024QAM	40	8.65	13
1952.5	QPSK	45	8.74	13
1962.5	QPSK	45	8.66	13
1972.5	QPSK	45	8.56	13
1952.5	16QAM	45	8.65	13
1962.5	16QAM	45	8.53	13
1972.5	16QAM	45	8.62	13
1952.5	64QAM	45	8.63	13
1962.5	64QAM	45	8.72	13
1972.5	64QAM	45	8.66	13
1952.5	256QAM	45	8.54	13
1962.5	256QAM	45	8.48	13
1972.5	256QAM	45	8.45	13
1952.5	1024QAM	45	8.57	13
1962.5	1024QAM	45	8.62	13
1972.5	1024QAM	45	8.60	13

Sample plots below for 1024QAM operation:

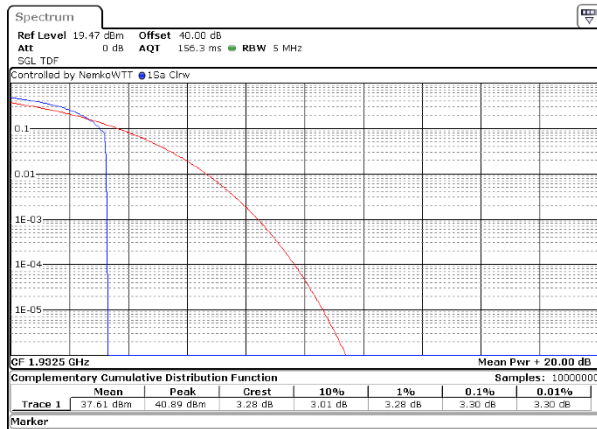


Figure 8.5-1: PAPR, Low CH 1932.5 MHz, 5 MHz, 1024QAM.

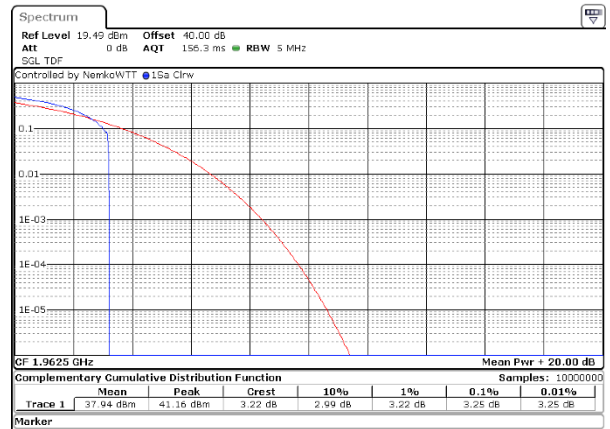


Figure 8.5-2: PAPR, Mid CH 1962.5 MHz, 5 MHz, 1024QAM.

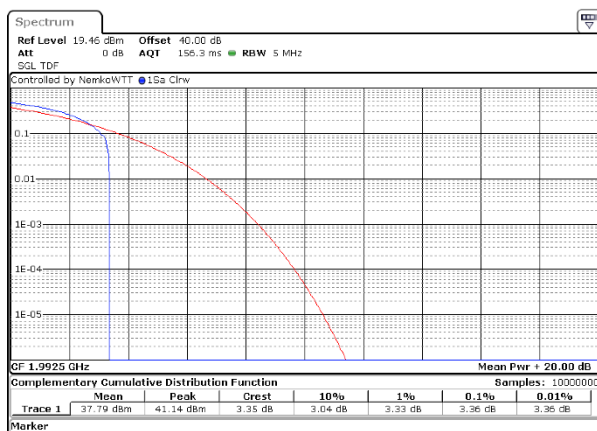


Figure 8.5-3: PAPR, High CH 1992.5 MHz, 5 MHz, 1024QAM.

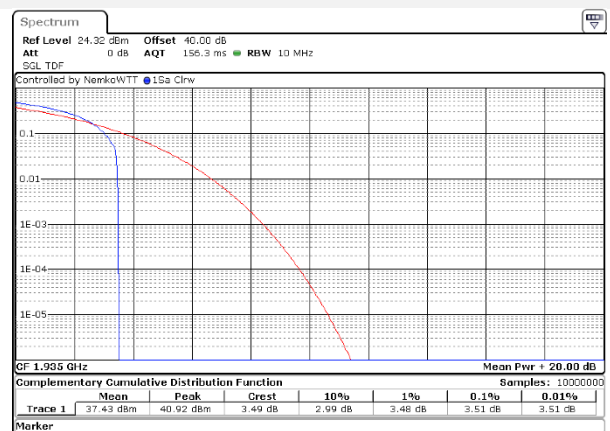


Figure 8.5-4: PAPR, Low CH 1935 MHz, 10 MHz, 1024QAM.

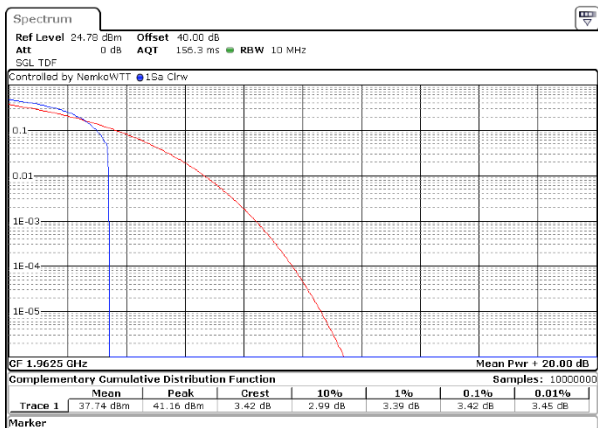


Figure 8.5-5: PAPR, Mid CH 1962.5 MHz, 10 MHz, 1024QAM.

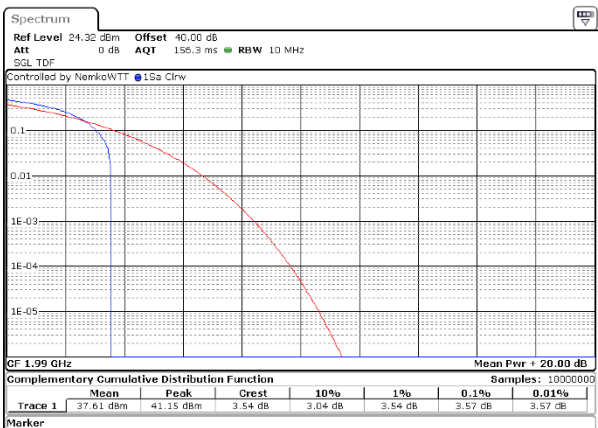
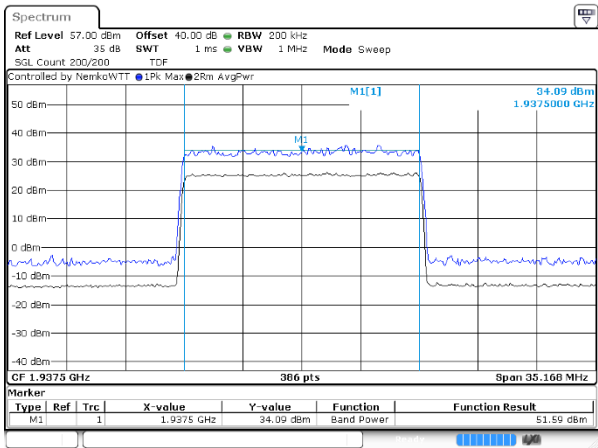
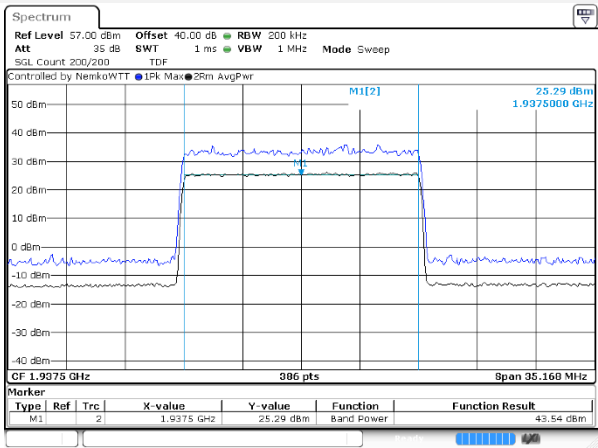


Figure 8.5-6: PAPR, High CH 1990 MHz, 10 MHz, 1024QAM.

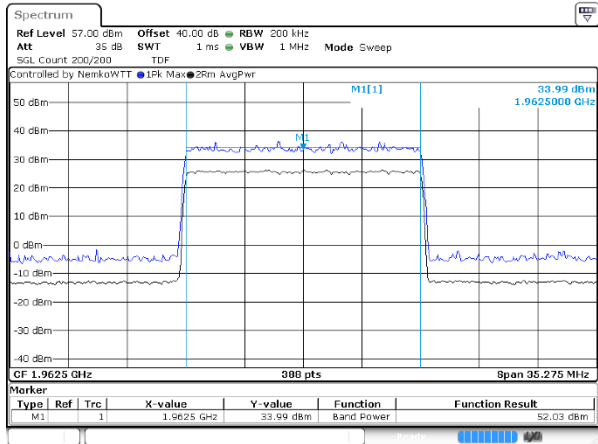


PAPR TX 1937.5 MHz, BW: 15MHz, MOD: 1024QAM

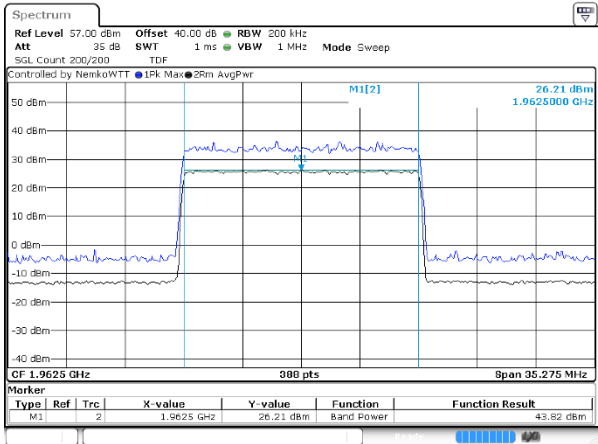


PAPR TX 1937.5 MHz, BW: 15MHz, MOD: 1024QAM

Figure 8.5-7: PAPR, Low CH 1937.5 MHz, 15 MHz, 1024QAM.

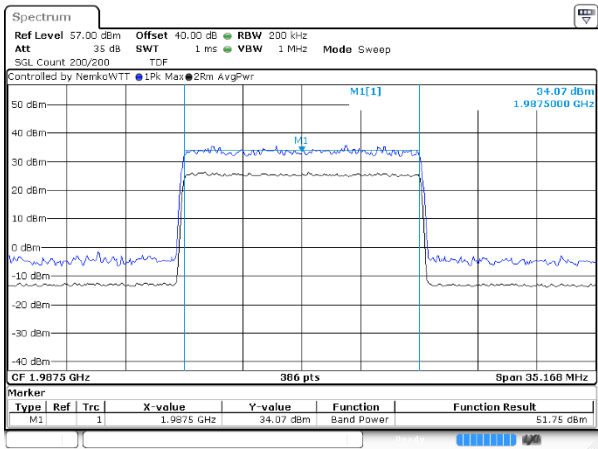


PAPR TX 1962.5 MHz, BW: 15MHz, MOD: 1024QAM

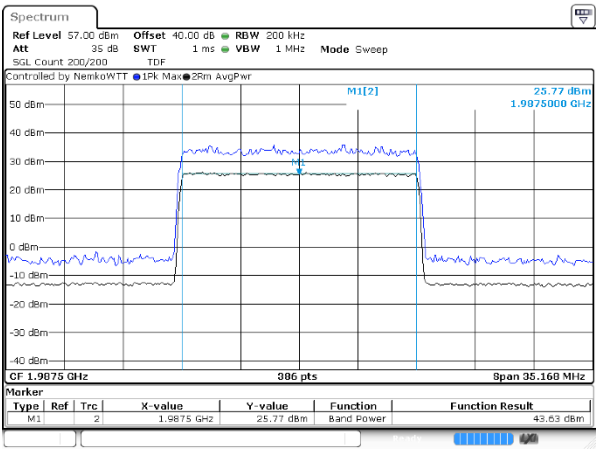


PAPR TX 1962.5 MHz, BW: 15MHz, MOD: 1024QAM

Figure 8.5-8: PAPR, Mid CH 1962.5 MHz, 15 MHz, 1024QAM.

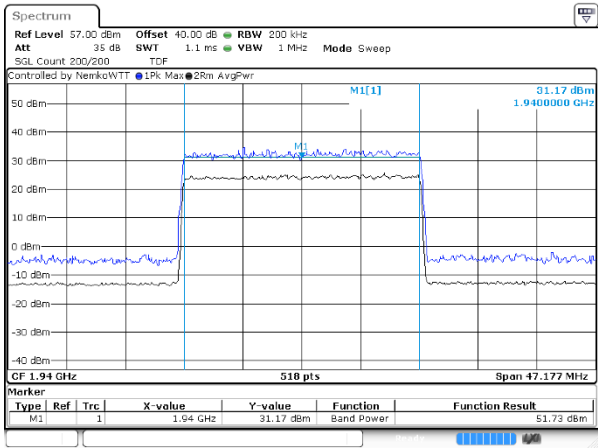


PAPR, TX 1987.5 MHz, BW: 15MHz, MOD: 1024QAM

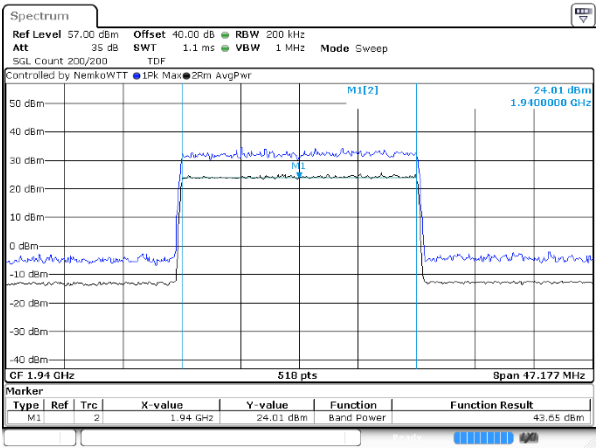


PAPR, TX 1987.5 MHz, BW: 15MHz, MOD: 1024QAM

Figure 8.5-9: PAPR, High CH 1987.5 MHz, 15 MHz, 1024QAM.

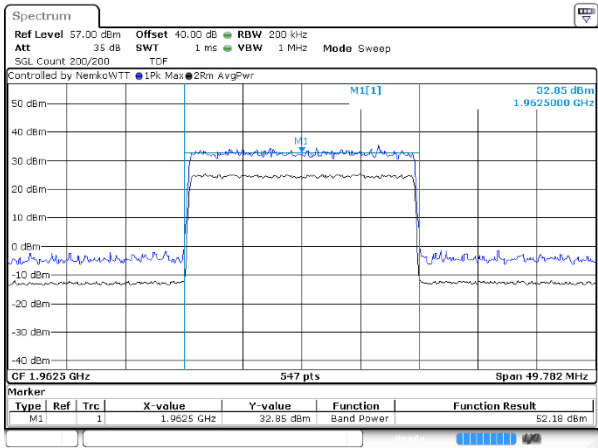


PAPR, TX 1940 MHz, BW: 20MHz, MOD: 1024QAM

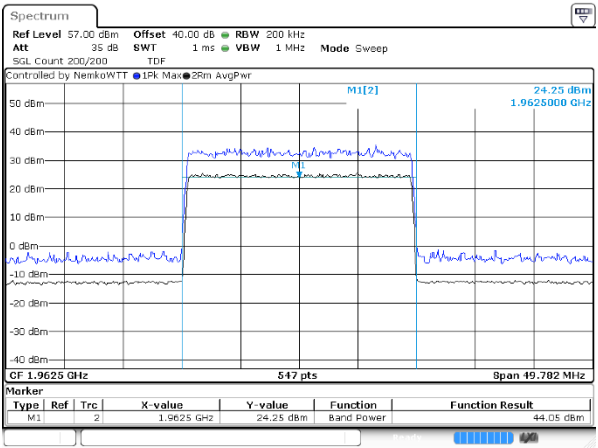


PAPR, TX 1940 MHz, BW: 20MHz, MOD: 1024QAM

Figure 8.5-10: PAPR, Low CH 1940 MHz, 20 MHz, 1024QAM.

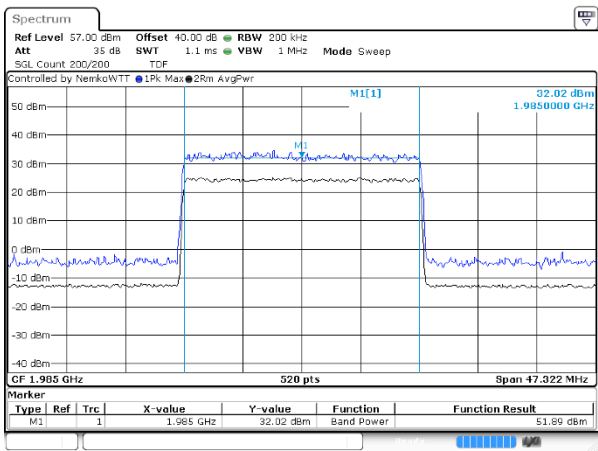


PAPR, TX 1962.5 MHz, BW: 20MHz, MOD: 1024QAM

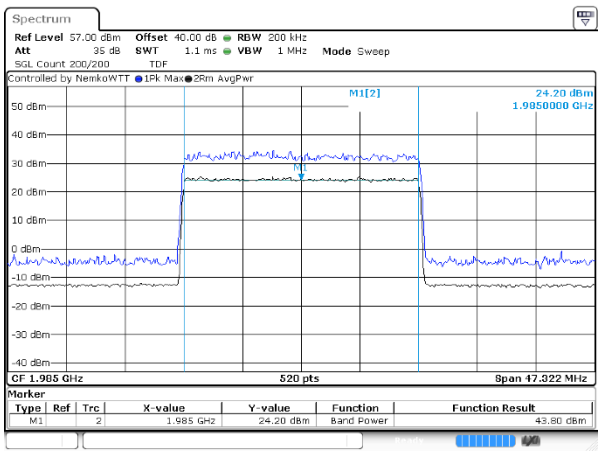


PAPR, TX 1962.5 MHz, BW: 20MHz, MOD: 1024QAM

Figure 8.5-11: PAPR, Mid CH 1962.5 MHz, 20 MHz, 1024QAM.

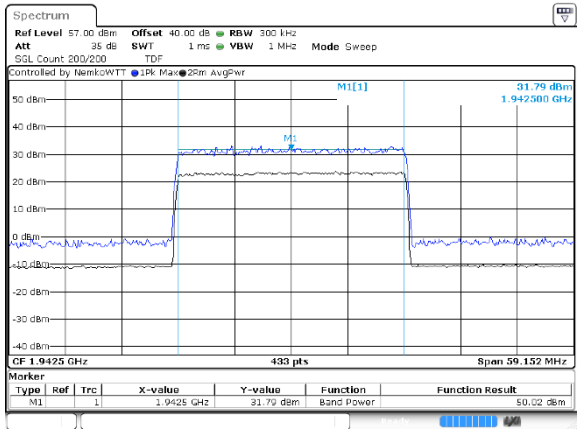


PAPR, TX 1985 MHz, BW: 20MHz, MOD: 1024QAM

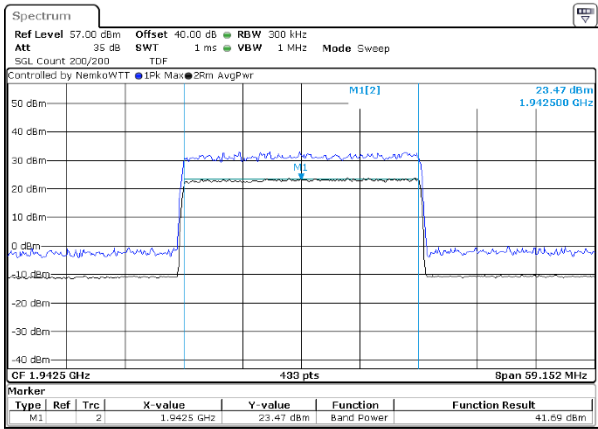


PAPR, TX 1985 MHz, BW: 20MHz, MOD: 1024QAM

Figure 8.5-12: PAPR, High CH 1985 MHz, 20 MHz, 1024QAM.

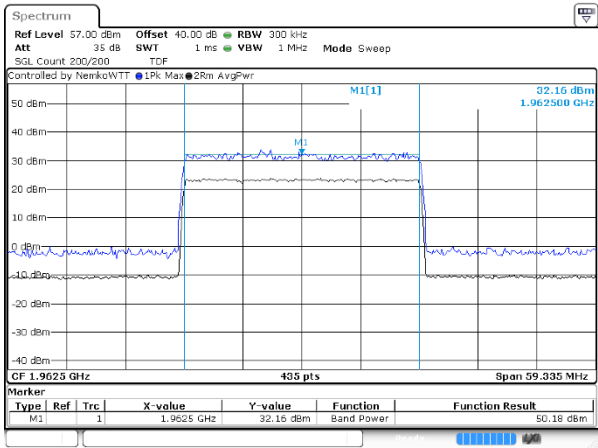


PAPR, TX 1942.5 MHz, BW: 25MHz, MOD: 1024QAM

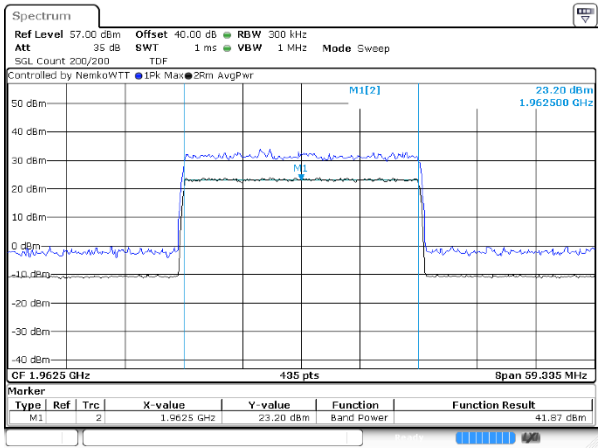


PAPR, TX 1942.5 MHz, BW: 25MHz, MOD: 1024QAM

Figure 8.5-13: PAPR, Low CH 1942.5 MHz, 25 MHz, 1024QAM.

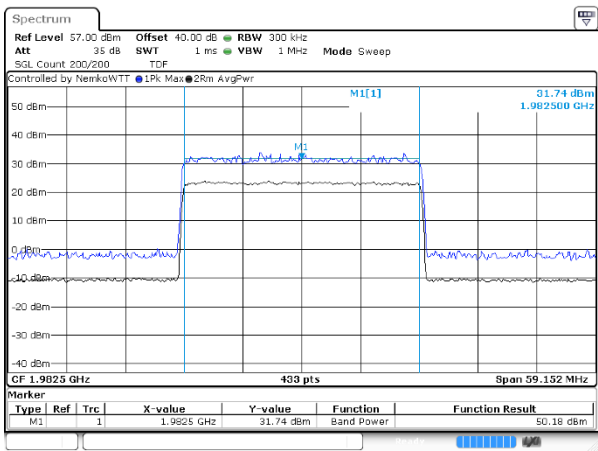


PAPR, TX 1962.5 MHz, BW: 25MHz, MOD: 1024QAM

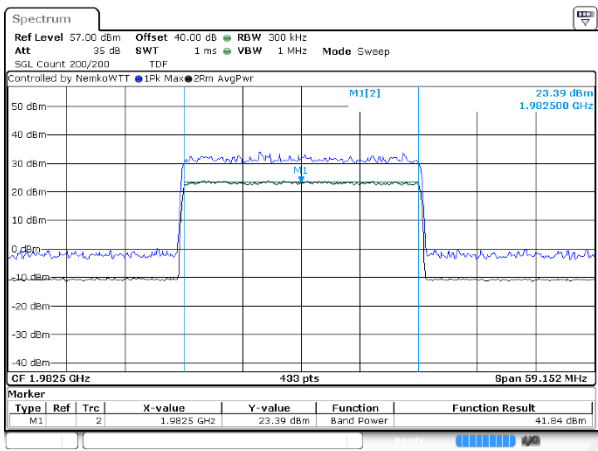


PAPR, TX 1962.5 MHz, BW: 25MHz, MOD: 1024QAM

Figure 8.5-14: PAPR, Mid CH 1962.5 MHz, 25 MHz, 1024QAM.

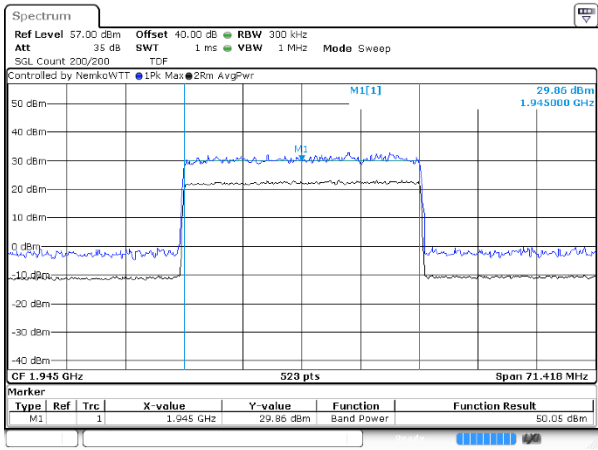


PAPR, TX 1982.5 MHz, BW: 25MHz, MOD: 1024QAM

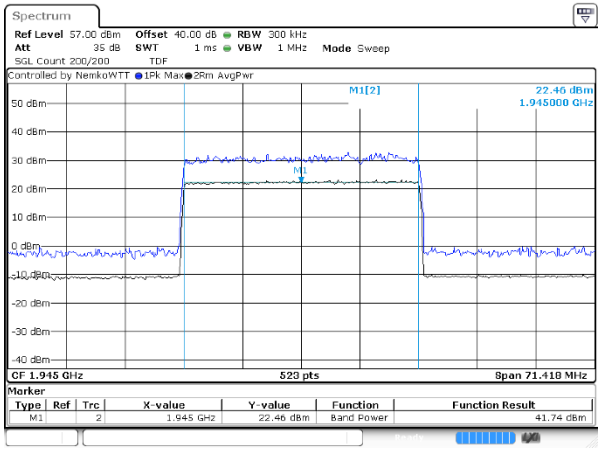


PAPR, TX 1982.5 MHz, BW: 25MHz, MOD: 1024QAM

Figure 8.5-15: PAPR, High CH 1982.5 MHz, 25 MHz, 1024QAM.

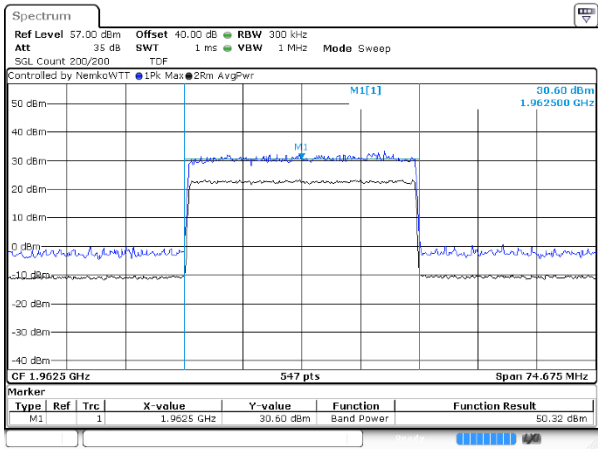


PAPR, TX 1945 MHz, BW: 30MHz, MOD: 1024QAM

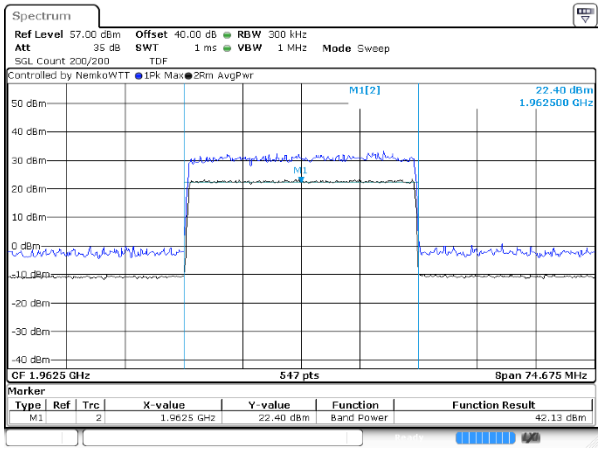


PAPR, TX 1945 MHz, BW: 30MHz, MOD: 1024QAM

Figure 8.5-16: PAPR, Low CH 1945 MHz, 30 MHz, 1024QAM.

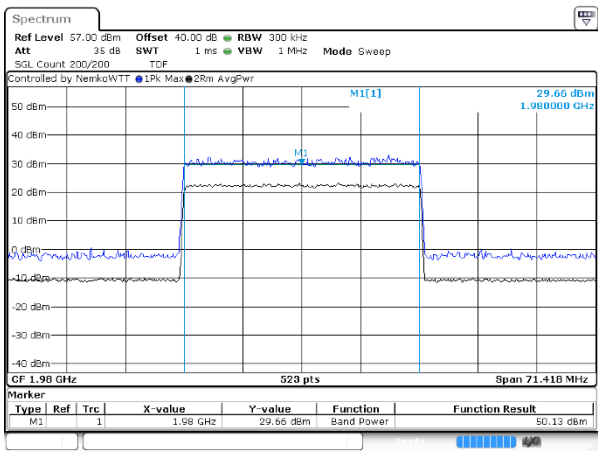


PAPR, TX 1962.5 MHz, BW: 30MHz, MOD: 1024QAM

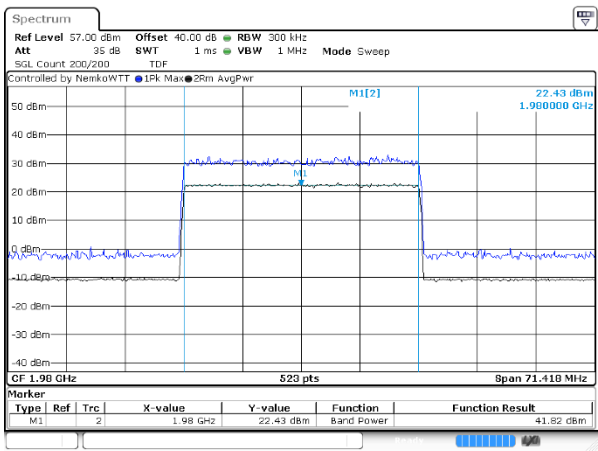


PAPR, TX 1962.5 MHz, BW: 30MHz, MOD: 1024QAM

Figure 8.5-17: PAPR, Mid CH 1962.5 MHz, 30 MHz, 1024QAM.

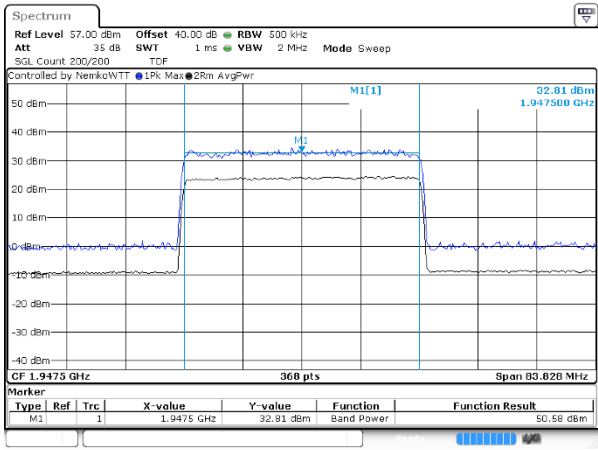


PAPR, TX 1980 MHz, BW: 30MHz, MOD: 1024QAM

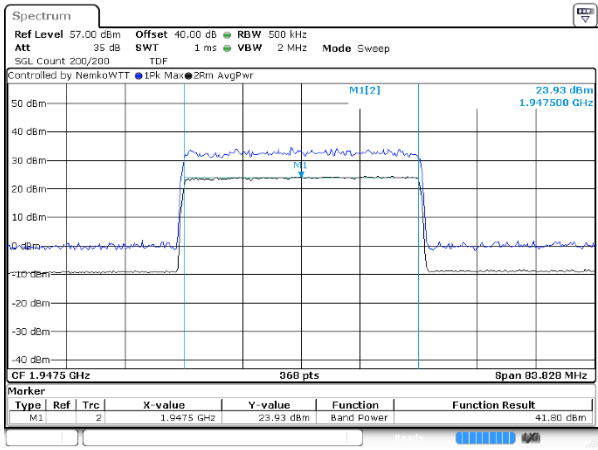


PAPR, TX 1980 MHz, BW: 30MHz, MOD: 1024QAM

Figure 8.5-18: PAPR, High CH 1980 MHz, 30 MHz, 1024QAM.

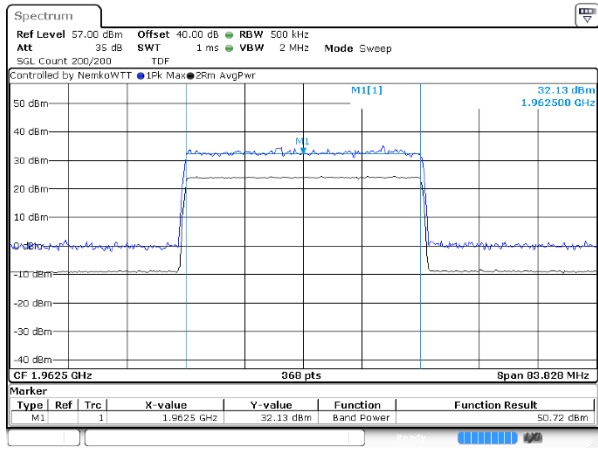


PAPR, TX 1947.5 MHz, BW: 35MHz, MOD: 1024QAM

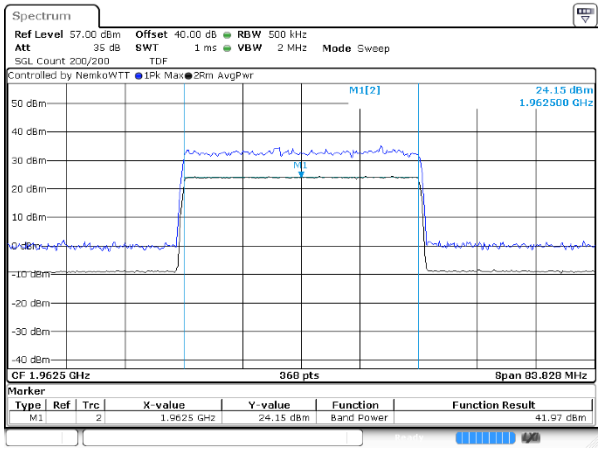


PAPR, TX 1947.5 MHz, BW: 35MHz, MOD: 1024QAM

Figure 8.5-19: PAPR, Low CH 1947.5 MHz, 35 MHz, 1024QAM.

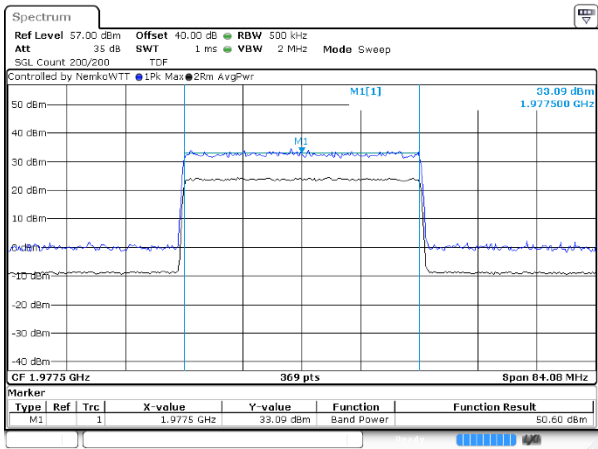


PAPR, TX 1962.5 MHz, BW: 35MHz, MOD: 1024QAM

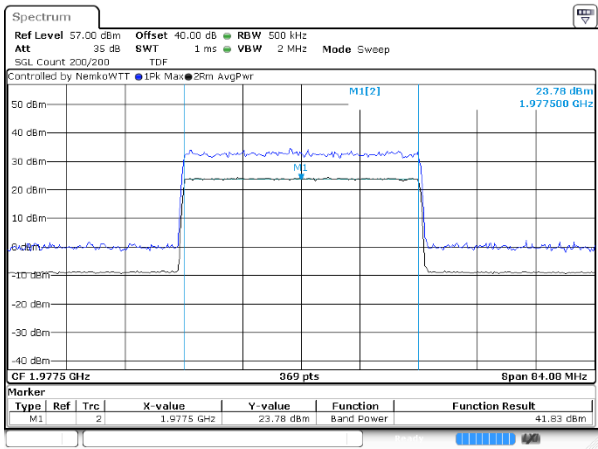


PAPR, TX 1962.5 MHz, BW: 35MHz, MOD: 1024QAM

Figure 8.5-20: PAPR, Mid CH 1962.5 MHz, 35 MHz, 1024QAM.

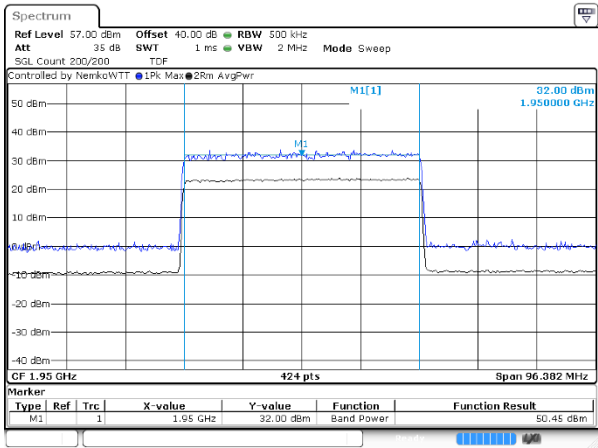


PAPR, TX 1977.5 MHz, BW: 35MHz, MOD: 1024QAM

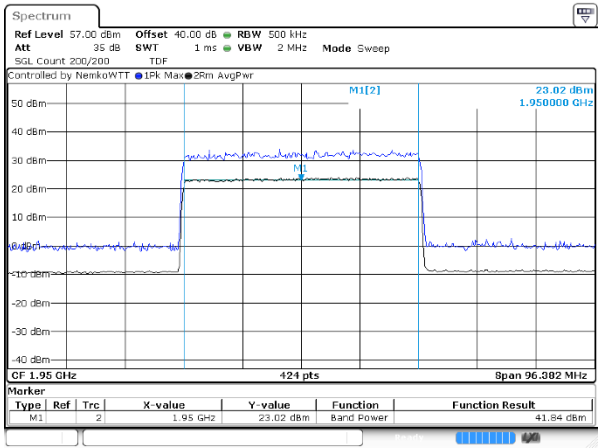


PAPR, TX 1977.5 MHz, BW: 35MHz, MOD: 1024QAM

Figure 8.5-21: PAPR, High CH 1977.5 MHz, 35 MHz, 1024QAM.

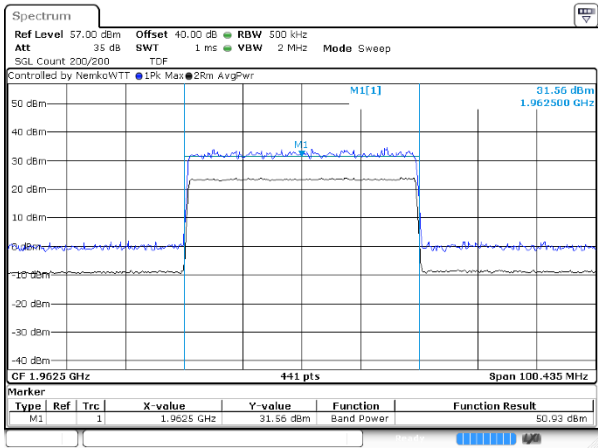


PAPR, TX 1950 MHz, BW: 40MHz, MOD: 1024QAM

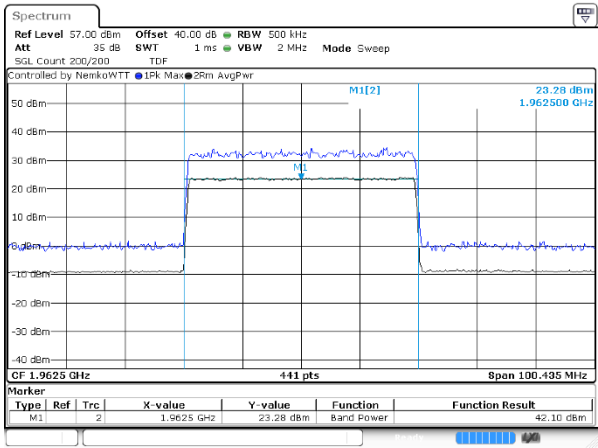


PAPR, TX 1950 MHz, BW: 40MHz, MOD: 1024QAM

Figure 8.5-22: PAPR, Low CH 1950 MHz, 40 MHz, 1024QAM.

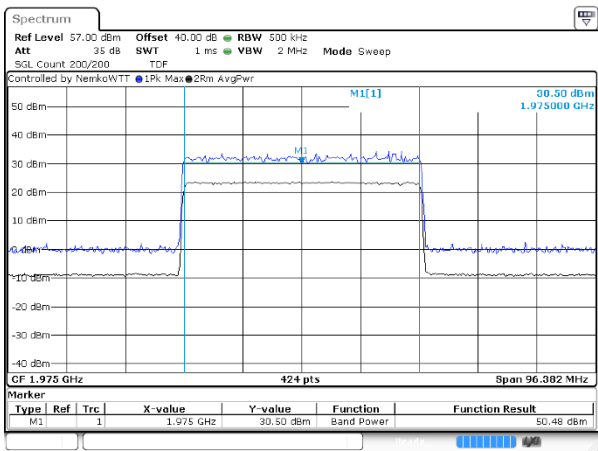


PAPR, TX 1962.5 MHz, BW: 40MHz, MOD: 1024QAM

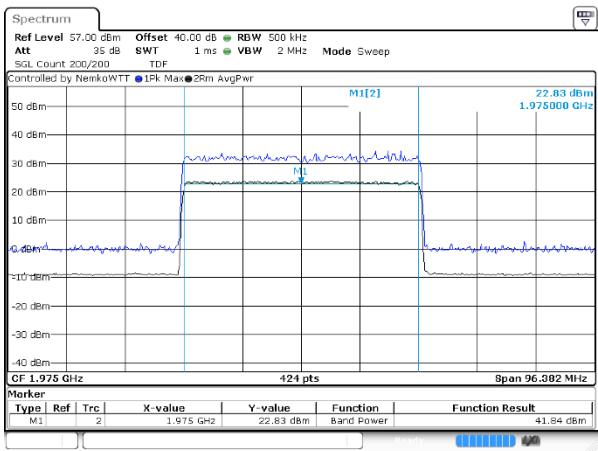


PAPR, TX 1962.5 MHz, BW: 40MHz, MOD: 1024QAM

Figure 8.5-23: PAPR, Mid CH 1962.5 MHz, 40 MHz, 1024QAM.

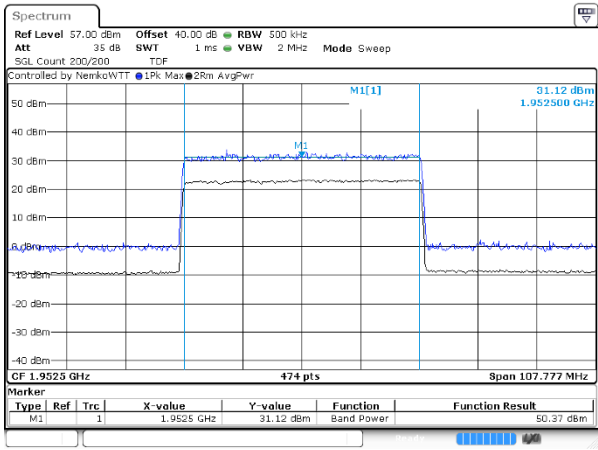


PAPR, TX 1975 MHz, BW: 40MHz, MOD: 1024QAM

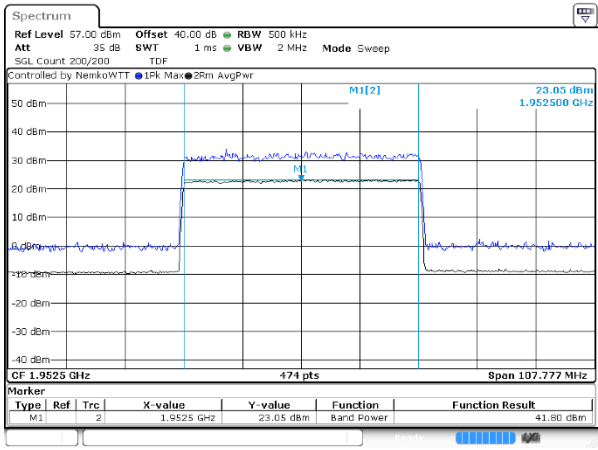


PAPR, TX 1975 MHz, BW: 40MHz, MOD: 1024QAM

Figure 8.5-24: PAPR, High CH 1975 MHz, 40 MHz, 1024QAM.

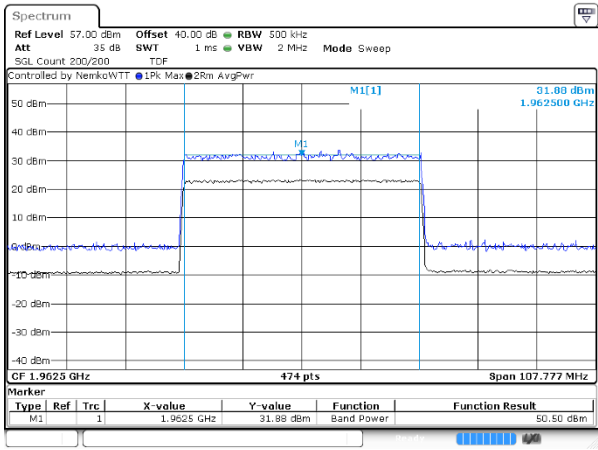


PAPR, TX 1952.5 MHz, BW: 45MHz, MOD: 1024QAM

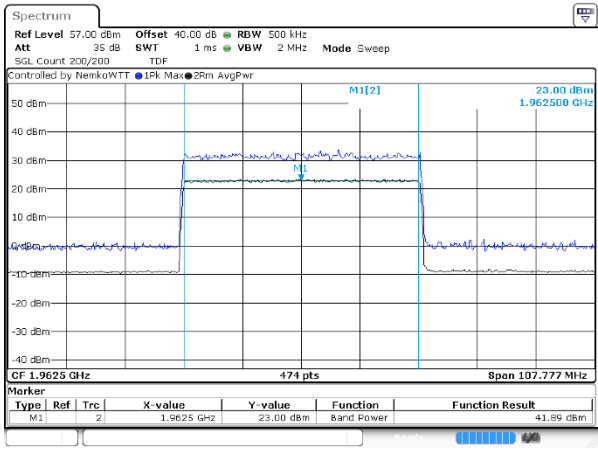


PAPR, TX 1952.5 MHz, BW: 45MHz, MOD: 1024QAM

Figure 8.5-25: PAPR, Low CH 1952.5 MHz, 45 MHz, 1024QAM.

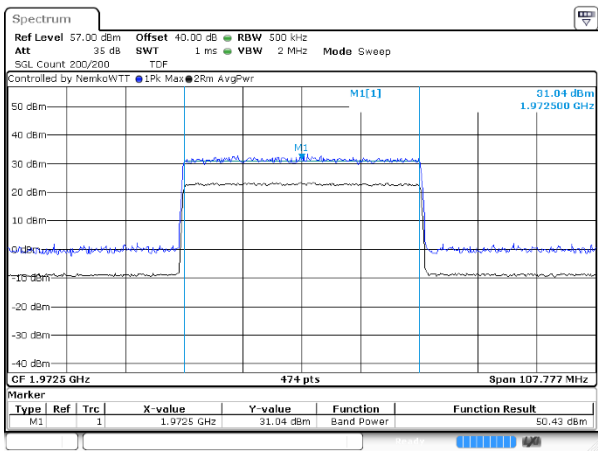


PAPR, TX 1962.5 MHz, BW: 45MHz, MOD: 1024QAM

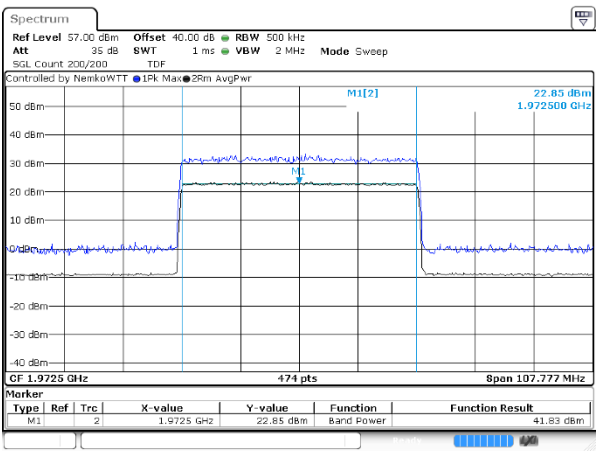


PAPR, TX 1962.5 MHz, BW: 45MHz, MOD: 1024QAM

Figure 8.5-26: PAPR, Mid CH 1962.5 MHz, 45 MHz, 1024QAM.



PAPR, TX 1972.5 MHz, BW: 45MHz, MOD: 1024QAM



PAPR, TX 1972.5 MHz, BW: 45MHz, MOD: 1024QAM

Figure 8.5-27: PAPR, High CH 1972.5 MHz, 45 MHz, 1024QAM.

8.6 FCC 24.238 Emission Limits

8.6.1 Definitions and limits

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

8.6.2 Test summary

Test date	September 2, 2025	Temperature	22 °C
Test engineer	Lan Sayasane, EMC Test Engineer	Air pressure	1004.0
Verdict	Pass	Relative humidity	59%

8.6.3 Observations, settings and special notes

EUT setup configuration	Table top
Test facility	3 m Semi anechoic chamber
Measuring distance	3m
Antenna height variation	1–4 m
Turn table position	0–360°
Measurement details	A preview measurement was generated with receiver in continuous scan or sweep mode while the EUT was rotated and antenna adjusted to maximize radiated emission. Emissions detected within 6 dB or above limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

Receiver/spectrum analyzer settings for frequencies below 1 GHz:

Resolution bandwidth	120 kHz
Video bandwidth	300 kHz
Detector mode	– Peak (Preview measurement) – Quasi-peak (Final measurement)
Trace mode	Max Hold
Measurement time	– 100 ms (Peak preview measurement) – 5000 ms (Quasi-peak final measurement)

Receiver/spectrum analyzer settings for frequencies above 1 GHz:

Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Detector mode	Peak (Preview measurement) Peak and CAverage (Final measurement)
Trace mode	Max Hold
Measurement time	– 100 ms (Peak preview measurement) – 5000 ms (Peak and CAverage final measurement)

Spectrum analyzer settings (conducted test):

Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Frequency span	Sufficient for making an accurate measurement
Detector mode	RMS
Trace mode	Max Hold

This test was realized in two parts: one with a conducted setup and another one with a radiated setup.

The conducted test was made one antenna port, transmitting at max power and with the other three ports loaded with 50 Ω loads. Transducer factors to compensate the losses caused by a cable and attenuator used to protect the test equipment. Additional to this number, a 6.02 dB correlation factor was added to evaluate the complete power across the four ports, considering the ranges where harmonic can be observed. The evaluation was made using the three channels and all the modulations.

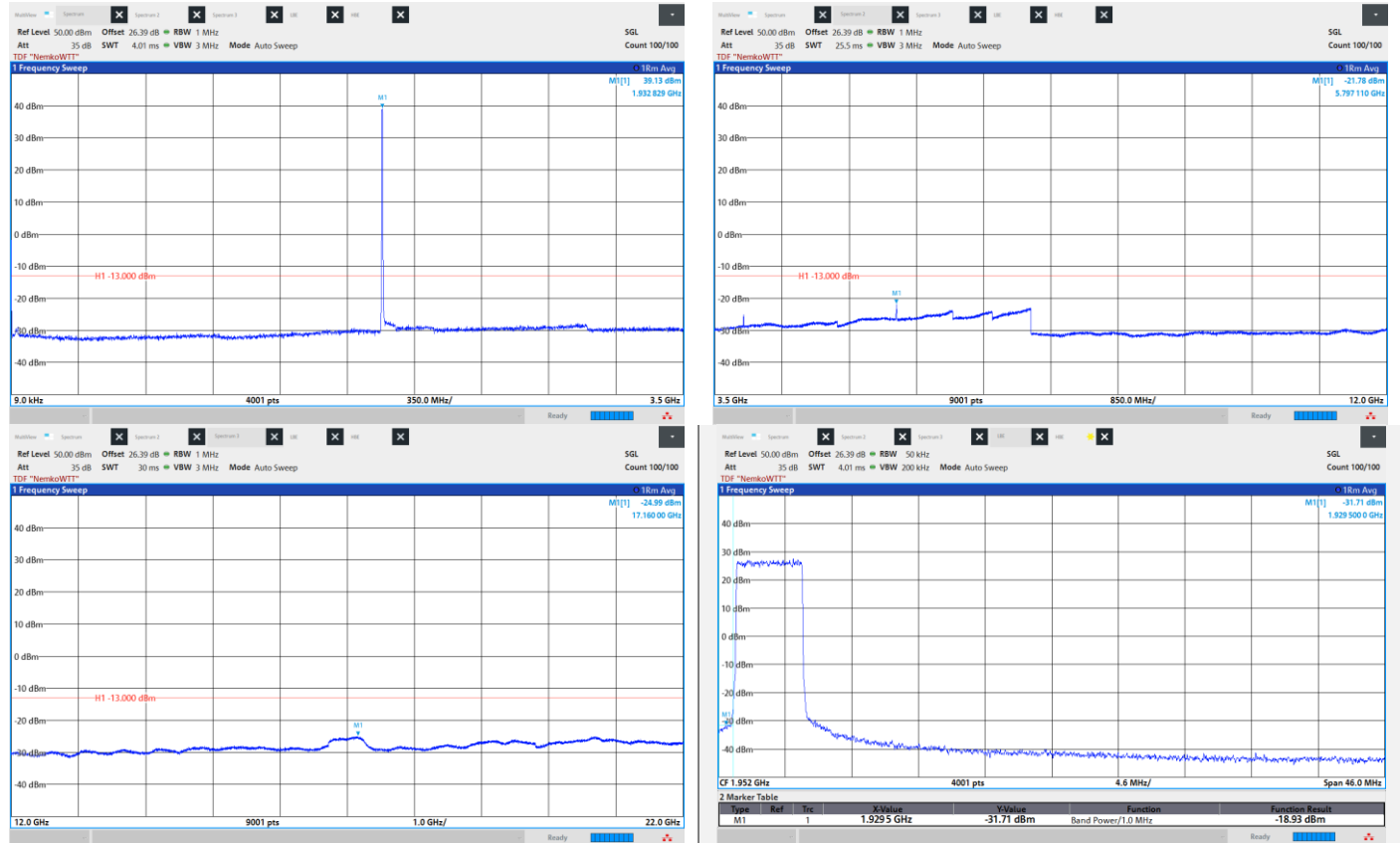
The radiated test was made transmitting at maximum power with the four ports terminated with 50 Ω loads. The scans were made from 30 MHz to 40 GHz considering all the channels. Only the worst case modulation with the highest power, is reported below.

The emission limit is -13 dBm/MHz (conducted and radiated test) or the equivalent field strength at 3m: 82.23 dB μ V/m above 1 GHz and 84.38 dB μ V/m below 1 GHz.

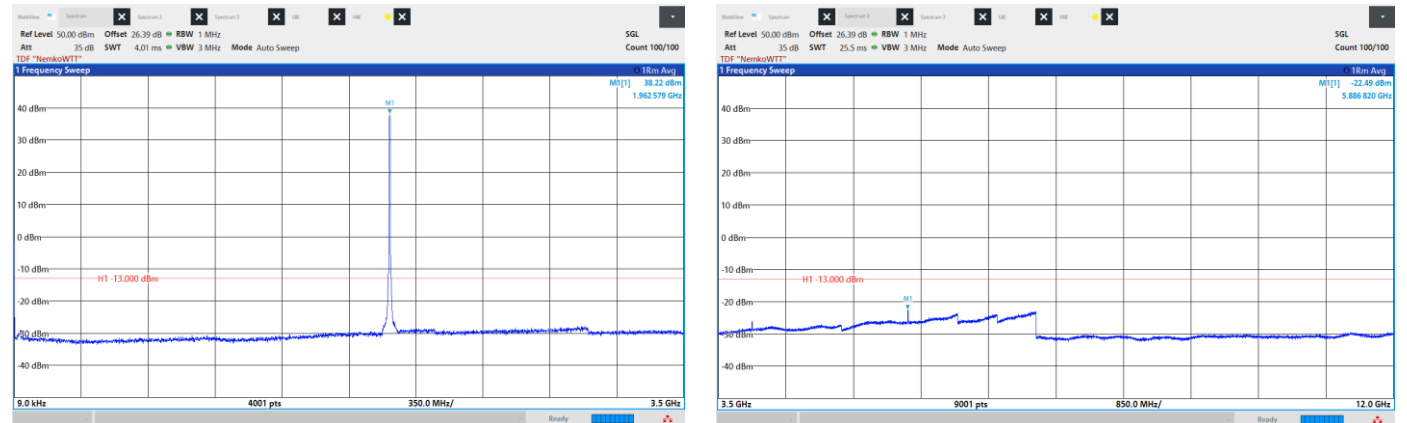
The band edges testing is included. The RBW for this testing was made around the 1% of the bandwidth under test and then integrated over 1 MHz.

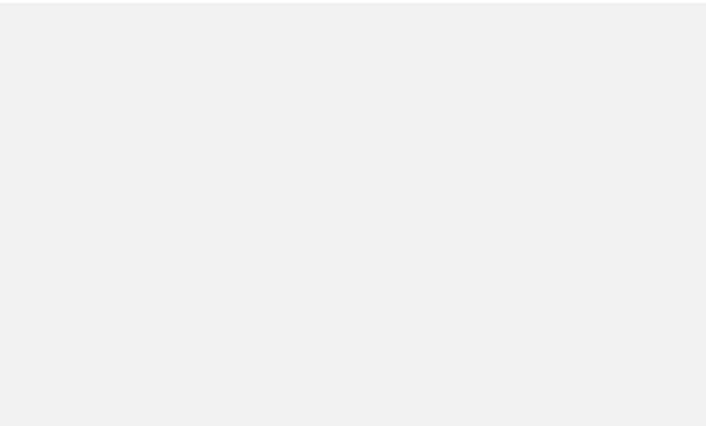
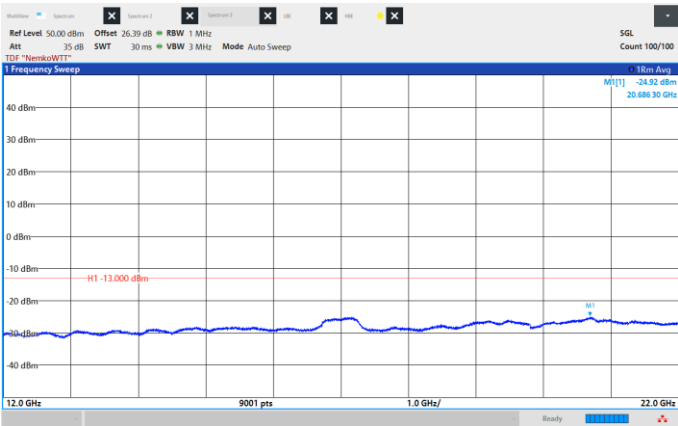
8.6.4 Test data (conducted spurious emissions – LTE 5 MHz)

QPSK operation: LOW channel

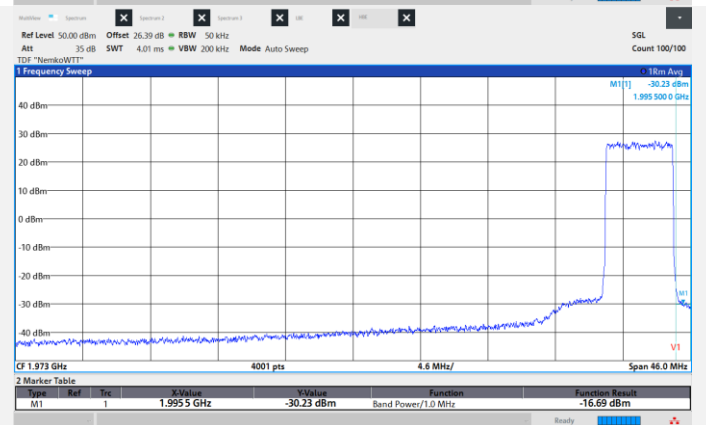
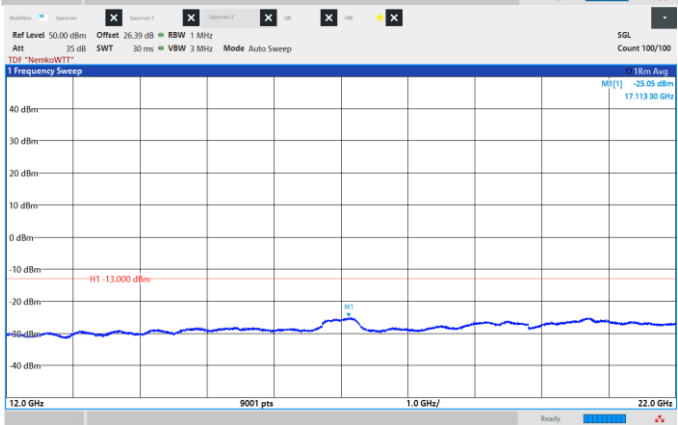
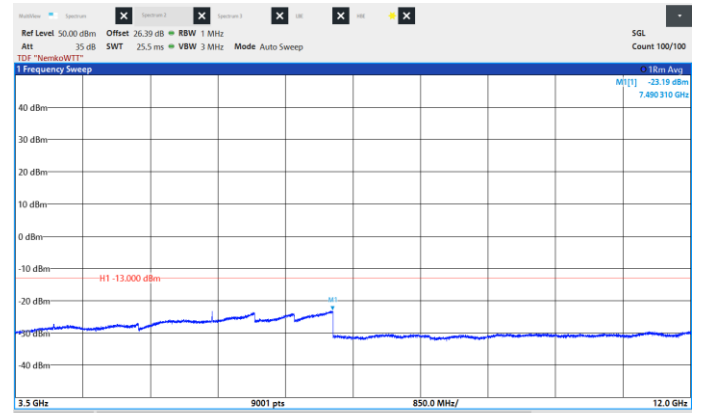
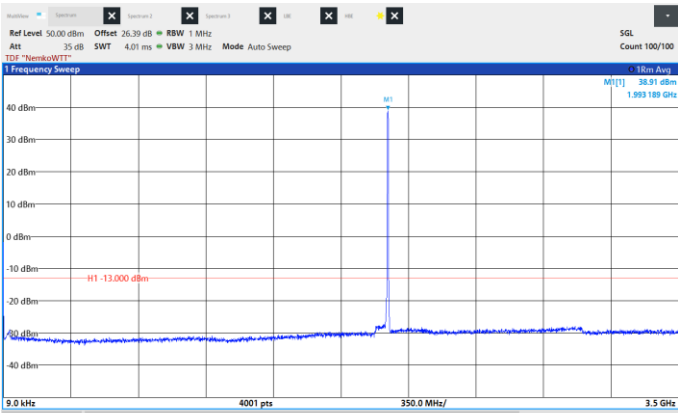


QPSK operation: MIDDLE channel



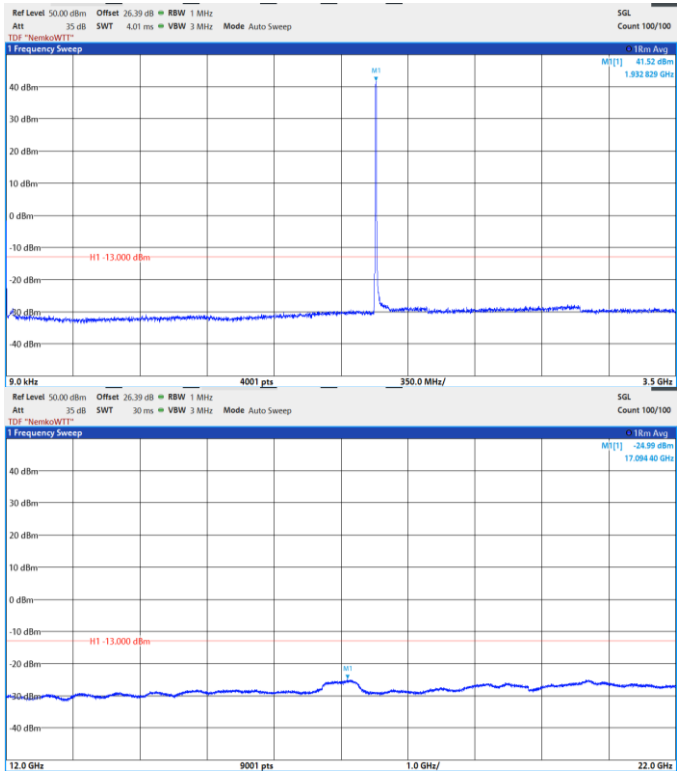


QPSK operation: HIGH channel





16QAM operation: LOW channel



16QAM operation: MID channel

