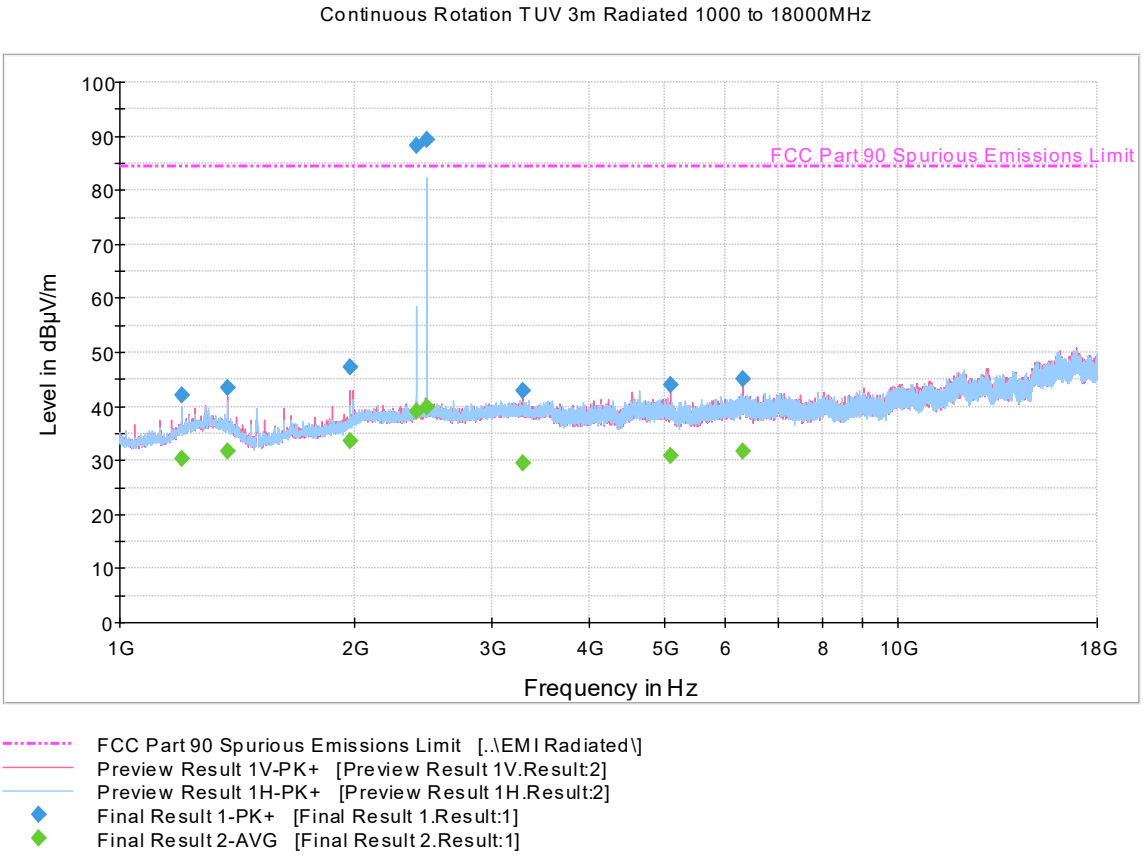
2.5.19 Test Results Above 1GHz (800MHz NPSPAC Public Safety Downlink Worst Case Configuration) – CQPSK 12.5 kHz Bandwidth Middle Channel



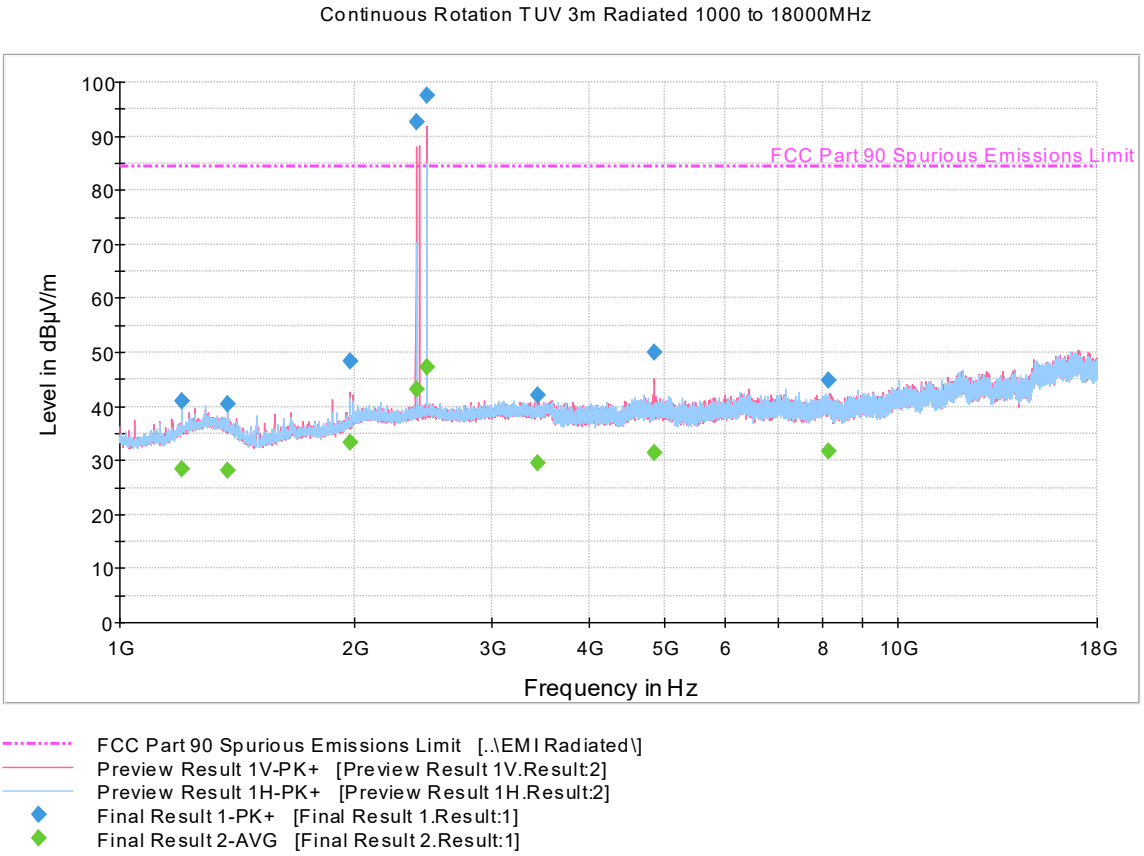
Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1200.066667	42.0	1000.0	1000.000	252.3	V	229.0	-6.6	42.4	84.4
1374.966667	43.3	1000.0	1000.000	142.7	V	13.0	-6.0	41.1	84.4
1976.600000	47.3	1000.0	1000.000	161.6	V	338.0	-2.9	37.1	84.4
2402.166667	88.2	1000.0	1000.000	308.2	H	20.0	-1.1	BTLE Carrier	
2479.933333	89.2	1000.0	1000.000	161.6	H	333.0	-0.7	BTLE Carrier	
3286.900000	42.8	1000.0	1000.000	280.2	V	176.0	1.0	41.6	84.4
5091.900000	44.0	1000.0	1000.000	152.2	V	176.0	4.3	40.4	84.4
6319.133333	45.0	1000.0	1000.000	295.2	V	270.0	6.3	39.4	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1200.066667	30.3	1000.0	1000.000	252.3	V	229.0	-6.6	54.2	84.4
1374.966667	31.8	1000.0	1000.000	142.7	V	13.0	-6.0	52.6	84.4
1976.600000	33.6	1000.0	1000.000	161.6	V	338.0	-2.9	50.8	84.4
2402.166667	39.0	1000.0	1000.000	308.2	H	20.0	-1.1	BTLE Carrier	
2479.933333	40.0	1000.0	1000.000	161.6	H	333.0	-0.7	BTLE Carrier	
3286.900000	29.6	1000.0	1000.000	280.2	V	176.0	1.0	54.8	84.4
5091.900000	30.8	1000.0	1000.000	152.2	V	176.0	4.3	53.6	84.4
6319.133333	31.8	1000.0	1000.000	295.2	V	270.0	6.3	52.6	84.4

2.5.20 Test Results Above 1GHz (800MHz NPSPAC Public Safety Downlink Worst Case Configuration) – CQPSK 12.5 kHz Bandwidth High Channel



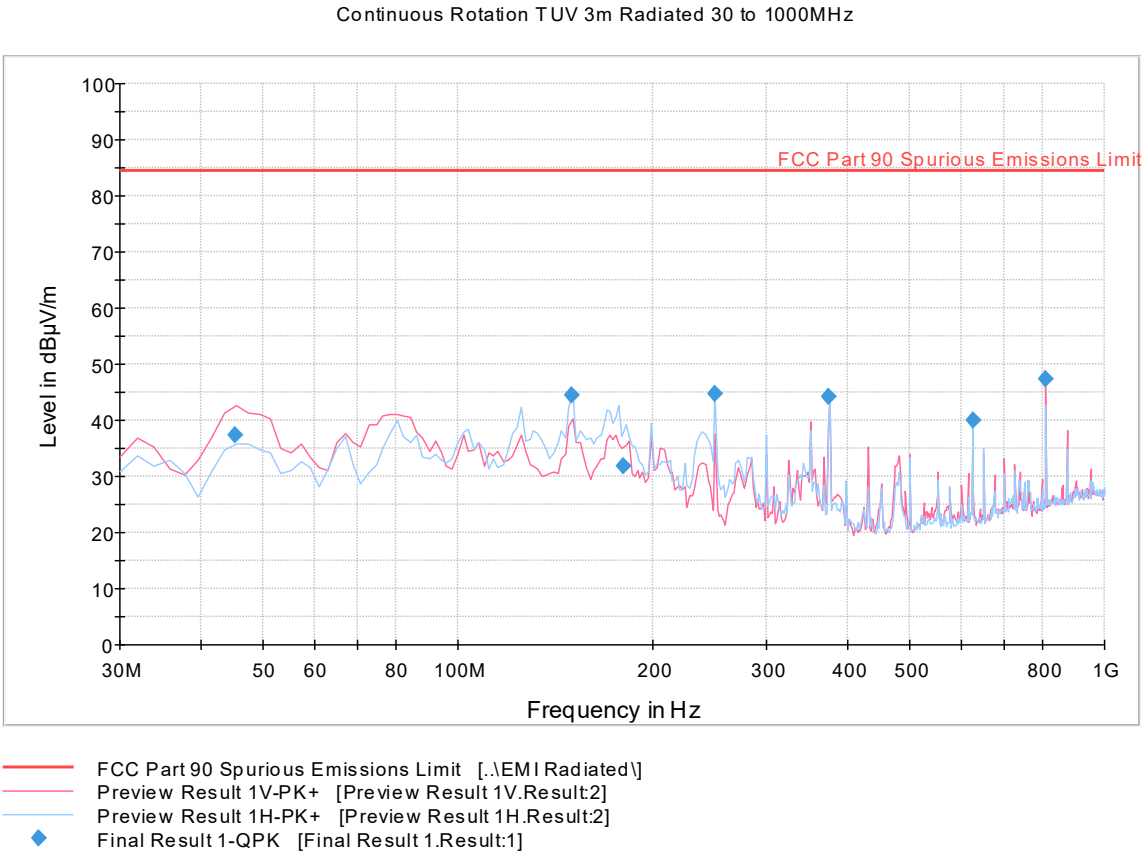
Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1199.866667	41.0	1000.0	1000.000	270.3	V	88.0	-6.6	43.4	84.4
1375.166667	40.4	1000.0	1000.000	127.7	H	166.0	-6.0	44.0	84.4
1976.800000	48.4	1000.0	1000.000	151.6	V	213.0	-2.9	36.0	84.4
2402.166667	92.6	1000.0	1000.000	312.2	V	323.0	-1.1	BTLE Carrier	
2479.966667	97.5	1000.0	1000.000	252.3	V	203.0	-0.7	BTLE Carrier	
3441.633333	42.2	1000.0	1000.000	327.2	V	244.0	1.2	42.2	84.4
4852.066667	50.1	1000.0	1000.000	103.7	V	101.0	4.1	34.3	84.4
8127.933333	44.9	1000.0	1000.000	169.6	V	303.0	7.4	39.5	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1199.866667	28.3	1000.0	1000.000	270.3	V	88.0	-6.6	56.1	84.4
1375.166667	28.0	1000.0	1000.000	127.7	H	166.0	-6.0	56.4	84.4
1976.800000	33.3	1000.0	1000.000	151.6	V	213.0	-2.9	51.1	84.4
2402.166667	43.1	1000.0	1000.000	312.2	V	323.0	-1.1	BTLE Carrier	
2479.966667	47.4	1000.0	1000.000	252.3	V	203.0	-0.7	BTLE Carrier	
3441.633333	29.5	1000.0	1000.000	327.2	V	244.0	1.2	54.9	84.4
4852.066667	31.5	1000.0	1000.000	103.7	V	101.0	4.1	52.9	84.4
8127.933333	31.8	1000.0	1000.000	169.6	V	303.0	7.4	52.6	84.4

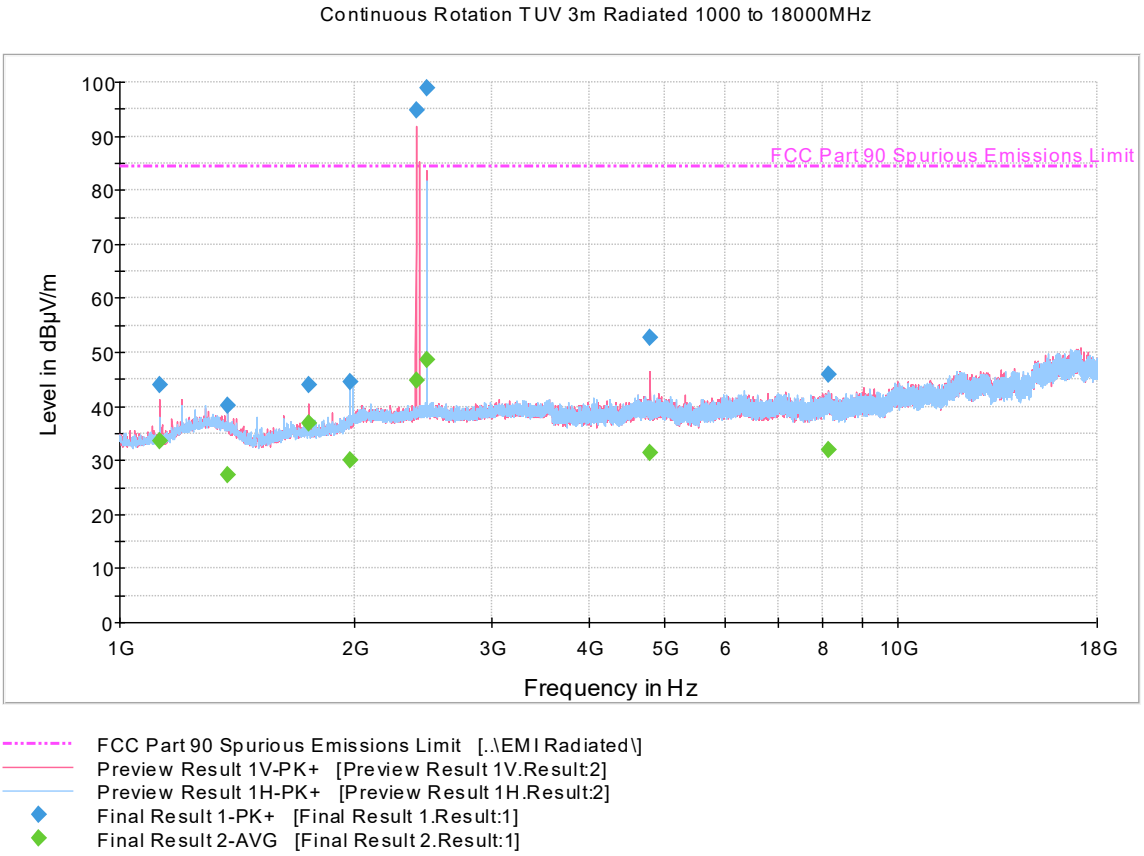
2.5.21 Test Results Below 1GHz (800MHz NPSPAC Public Safety Uplink Worst Case Configuration) – CQPSK 12.5 kHz Bandwidth Middle Channel



Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
45.311102	37.4	1000.0	120.000	100.0	V	208.0	-16.1	47.0	84.4
150.001042	44.5	1000.0	120.000	127.0	H	126.0	-14.9	39.9	84.4
180.015471	31.8	1000.0	120.000	100.0	H	122.0	-13.4	52.6	84.4
249.979319	44.7	1000.0	120.000	109.0	H	10.0	-10.8	39.7	84.4
374.972024	44.2	1000.0	120.000	178.0	V	7.0	-7.0	40.2	84.4
624.989659	40.0	1000.0	120.000	128.0	V	347.0	-1.2	44.4	84.4
810.882886	47.5	1000.0	120.000	100.0	V	191.0	1.6	Fundamental Carrier	

2.5.22 Test Results Above 1GHz (800MHz NPSPAC Public Safety Uplink Worst Case Configuration) – CQPSK 12.5 kHz Bandwidth Low Channel



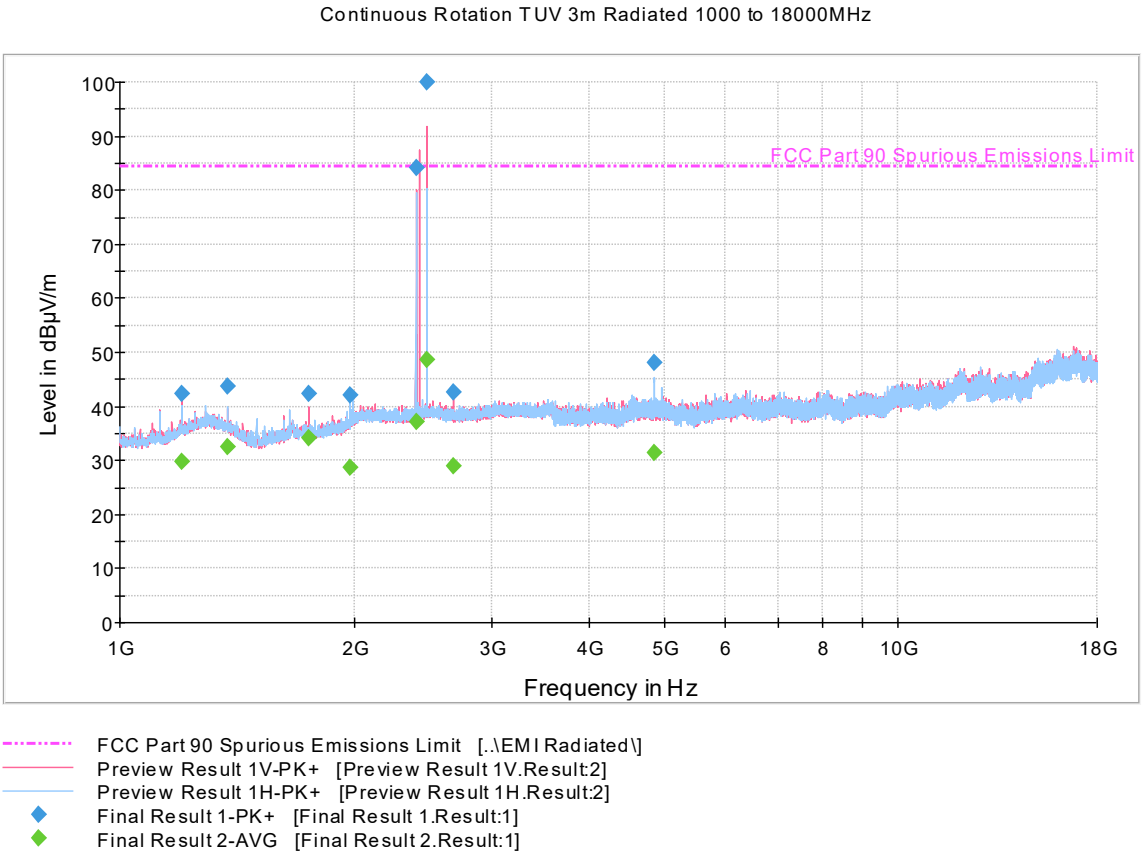
Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1125.066667	43.9	1000.0	1000.000	127.7	V	185.0	-7.6	40.5	84.4
1374.933333	40.3	1000.0	1000.000	252.4	V	5.0	-6.0	44.1	84.4
1749.700000	44.0	1000.0	1000.000	326.2	V	44.0	-4.7	40.4	84.4
1976.166667	44.6	1000.0	1000.000	138.7	H	192.0	-2.9	39.8	84.4
2402.166667	94.8	1000.0	1000.000	103.7	V	254.0	-1.1	BTLE Carrier	
2480.100000	99.0	1000.0	1000.000	103.7	V	228.0	-0.7	BTLE Carrier	
4803.266667	52.7	1000.0	1000.000	250.5	V	257.0	4.1	31.7	84.4
8142.800000	46.0	1000.0	1000.000	146.7	V	209.0	7.4	38.4	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1125.066667	33.7	1000.0	1000.000	127.7	V	185.0	-7.6	50.7	84.4
1374.933333	27.3	1000.0	1000.000	252.4	V	5.0	-6.0	57.1	84.4
1749.700000	37.0	1000.0	1000.000	326.2	V	44.0	-4.7	47.4	84.4
1976.166667	30.0	1000.0	1000.000	138.7	H	192.0	-2.9	54.4	84.4
2402.166667	44.9	1000.0	1000.000	103.7	V	254.0	-1.1	BTLE Carrier	
2480.100000	48.7	1000.0	1000.000	103.7	V	228.0	-0.7	BTLE Carrier	
4803.266667	31.4	1000.0	1000.000	250.5	V	257.0	4.1	53.0	84.4
8142.800000	31.9	1000.0	1000.000	146.7	V	209.0	7.4	52.5	84.4

2.5.23 Test Results Above 1GHz (800MHz NPSPAC Public Safety Uplink Worst Case Configuration) – CQPSK 12.5 kHz Bandwidth Middle Channel



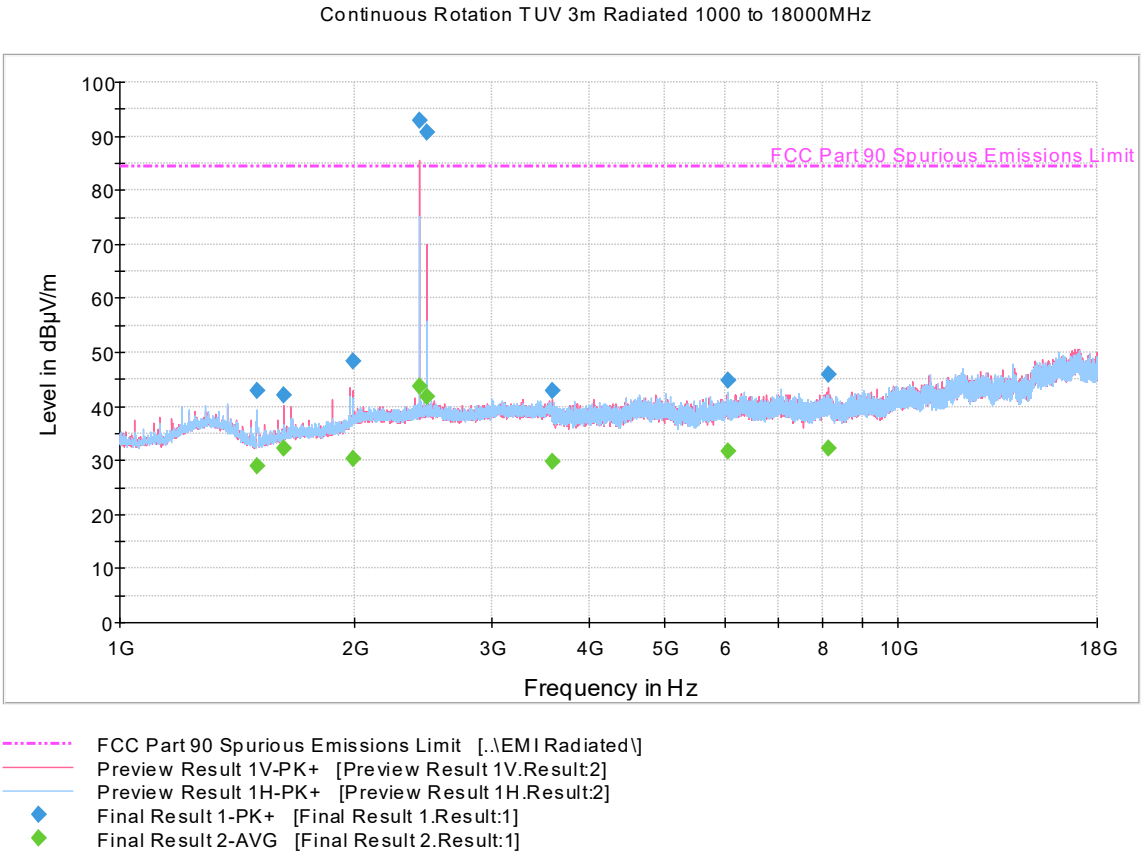
Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1199.833333	42.4	1000.0	1000.000	170.6	V	129.0	-6.6	42.0	84.4
1375.166667	43.6	1000.0	1000.000	200.5	V	41.0	-6.0	40.8	84.4
1750.100000	42.3	1000.0	1000.000	280.2	V	45.0	-4.7	42.1	84.4
1976.400000	42.0	1000.0	1000.000	270.3	H	158.0	-2.9	42.4	84.4
2402.133333	84.3	1000.0	1000.000	120.7	V	18.0	-1.1	BTLE Carrier	
2479.933333	100.0	1000.0	1000.000	132.7	V	243.0	-0.7	BTLE Carrier	
2680.966667	42.6	1000.0	1000.000	338.2	V	118.0	-0.4	41.8	84.4
4851.033333	48.1	1000.0	1000.000	227.4	H	275.0	4.1	36.3	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1199.833333	29.9	1000.0	1000.000	170.6	V	129.0	-6.6	54.5	84.4
1375.166667	32.4	1000.0	1000.000	200.5	V	41.0	-6.0	52.0	84.4
1750.100000	34.1	1000.0	1000.000	280.2	V	45.0	-4.7	50.3	84.4
1976.400000	28.8	1000.0	1000.000	270.3	H	158.0	-2.9	55.6	84.4
2402.133333	37.3	1000.0	1000.000	120.7	V	18.0	-1.1	BTLE Carrier	
2479.933333	48.7	1000.0	1000.000	132.7	V	243.0	-0.7	BTLE Carrier	
2680.966667	28.9	1000.0	1000.000	338.2	V	118.0	-0.4	55.5	84.4
4851.033333	31.3	1000.0	1000.000	227.4	H	275.0	4.1	53.1	84.4

2.5.24 Test Results Above 1GHz (800MHz NPSPAC Public Safety Uplink Worst Case Configuration) – CQPSK 12.5 kHz Bandwidth High Channel



Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1499.800000	43.0	1000.0	1000.000	209.4	H	-13.0	-7.0	41.4	84.4
1624.866667	42.0	1000.0	1000.000	143.7	V	239.0	-6.2	42.4	84.4
1992.033333	48.5	1000.0	1000.000	113.7	V	138.0	-2.6	35.9	84.4
2425.933333	92.9	1000.0	1000.000	152.2	V	45.0	-1.0	BTLE Carrier	
2480.100000	90.7	1000.0	1000.000	145.7	V	20.0	-0.7	BTLE Carrier	
3591.966667	43.0	1000.0	1000.000	252.3	V	176.0	1.7	41.4	84.4
6051.133333	44.7	1000.0	1000.000	352.7	H	200.0	5.9	39.7	84.4
8144.500000	45.9	1000.0	1000.000	344.1	V	239.0	7.4	38.5	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1499.800000	28.9	1000.0	1000.000	209.4	H	-13.0	-7.0	55.5	84.4
1624.866667	32.2	1000.0	1000.000	143.7	V	239.0	-6.2	52.2	84.4
1992.033333	30.4	1000.0	1000.000	113.7	V	138.0	-2.6	54.0	84.4
2425.933333	43.6	1000.0	1000.000	152.2	V	45.0	-1.0	BTLE Carrier	
2480.100000	41.7	1000.0	1000.000	145.7	V	20.0	-0.7	BTLE Carrier	
3591.966667	29.7	1000.0	1000.000	252.3	V	176.0	1.7	54.7	84.4
6051.133333	31.6	1000.0	1000.000	352.7	H	200.0	5.9	52.8	84.4
8144.500000	32.2	1000.0	1000.000	344.1	V	239.0	7.4	52.2	84.4

2.6 FREQUENCY STABILITY

2.6.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1055
FCC 47 CFR Part 90, Clause 90.539(b)
FCC 47 CFR Part 90, Clause 90.213(a)
RSS-119, Clause 5.9
RSS-131, Clause 5.2.4
KDB935210 D05, Clause 4.8

2.6.2 Standard Applicable

FCC 47 CFR Part 2, Clause 2.1055:
(a) The frequency stability shall be measured with variation of ambient temperature as follows:
(1) From -30° to + 50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

FCC 47 CFR Part 90, Clause 90.539(b):
Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the frequency stability requirements in this section.
(b) The frequency stability of base transmitters operating in the narrowband segment must be 100 parts per billion or better.

FCC 47 CFR Part 90, Clause 90.213:
(a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table:

MINIMUM FREQUENCY STABILITY

[Parts per million (ppm)]

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	[1 2 3] 100	100	200
25–50	20	20	50
72–76	5	.....	50
150–174	[5 11] 5	[6] 5	[4 6] 50
216–220	1.0	.....	1.0
220–222 [12]	0.1	1.5	1.5
421–512	[7 11 14] 2.5	[8] 5	[8] 5
806–809	[14] 1.0	1.5	1.5
809–824	[14] 1.5	2.5	2.5
851–854	1.0	1.5	1.5
854–869	1.5	2.5	2.5
896–901	[14] 0.1	1.5	1.5
902–928	2.5	2.5	2.5
902–928 [13]	2.5	2.5	2.5
929–930	1.5	.....	.....
935–940	0.1	1.5	1.5
1427–1435	[9] 300	300	300
Above 2450 [10]	.....	.....	.....

RSS-119, Clause 5.9:
The frequency error of frequency difference shall not exceed te limits specified in Table 18

Table 18 – Transient Frequency Behaviour

Channel Bandwidth (kHz)	Time Intervals (Notes 1, 2)	Maximum Frequency Difference (kHz)	Transient Duration Limit (ms)	
			138-174 MHz	406.1-512 MHz
25	t_1	±25	5	10
	t_2	±12.5	20	25
	t_3	±25	5	10
12.5	t_1	±12.5	5	10
	t_2	±6.25	20	25
	t_3	±12.5	5	10
6.25	t_1	±6.25	5	10
	t_2	±3.125	20	25
	t_3	±6.25	5	10

2.6.3 Equipment Under Test and Modification State

Serial No: 226141000161 / Test Configuration E and F

2.6.4 Date of Test/Initial of test personnel who performed the test

December 14, 2021 / XYZ

2.6.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.6.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.1 °C
Relative Humidity	49.4 %
ATM Pressure	100.3 kPa

2.6.7 Additional Observations

- This is a conducted test.
- The EUT was operated at 120.0VAC nominal voltage and was placed in the temperature chamber for the series of evaluations performed.
- CW signal was injected as the input signal.4
- The Temperature was increased to +50°C and allowed to sit for 1 hour to allow the equipment and chamber temperature to stabilize. The measurements on both downlink and uplink were then performed. The temperature was then reduced by 10°C steps and allowed to settle before taking the next set of measurements. The EUT was tested over the temperature -30°C to +50°C. Voltage variation was also performed at 85% and 115% of the nominal voltage.

2.6.8 Test Results Summary

700MHz Narrowband Public Safety Downlink – Middle Channel 771.875 MHz				
Voltage (VDC)	**Temperature (°C)**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
120	-30	-60	-0.078	0.1
	-20	-60	-0.078	0.1
	-10	-60	-0.078	0.1
	0	-60	-0.078	0.1
	+10	-60	-0.078	0.1
	+20	-60	-0.078	0.1
	+30	-60	-0.078	0.1
	+40	-60	-0.078	0.1
	+50	-60	-0.078	0.1
102	+20	-60	-0.078	0.1
138		-60	-0.078	0.1

700MHz Narrowband Public Safety Uplink – Middle Channel 801.875 MHz				
Voltage (VDC)	**Temperature (°C)**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
120	-30	-60	-0.075	0.1
	-20	-60	-0.075	0.1
	-10	-60	-0.075	0.1
	0	-60	-0.075	0.1
	+10	-60	-0.075	0.1
	+20	-60	-0.075	0.1
	+30	-60	-0.075	0.1
	+40	-60	-0.075	0.1
	+50	-60	-0.075	0.1
102	+20	-60	-0.075	0.1
138		-60	-0.075	0.1

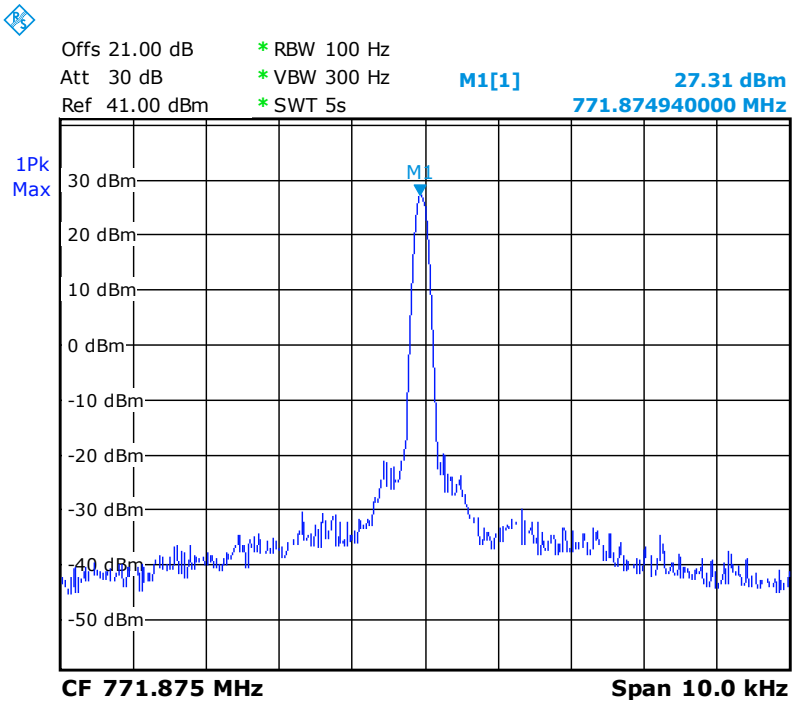
The frequency stability of the EUT is sufficient to keep it within the authorised frequency ranges at any temperature interval and voltage variations across the measured range.

800 MHz NPSPAC Public Safety Downlink – Middle Channel 855.884375 MHz				
Voltage (VDC)	**Temperature (°C)**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
120	-30	-60	-0.070	1.0
	-20	-60	-0.070	1.0
	-10	-60	-0.070	1.0
	0	-60	-0.070	1.0
	+10	-60	-0.070	1.0
	+20	-60	-0.070	1.0
	+30	-60	-0.070	1.0
	+40	-60	-0.070	1.0
	+50	-60	-0.070	1.0
102	+20	-60	-0.070	1.0
138		-60	-0.070	1.0

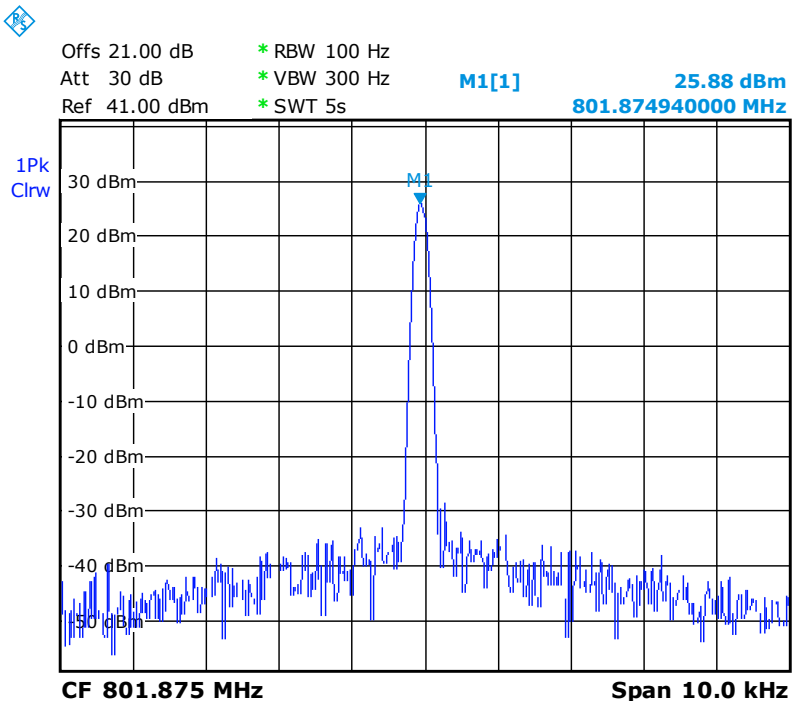
800 MHz NPSPAC Public Safety Uplink – Middle Channel 810.884375 MHz				
Voltage (VDC)	**Temperature (°C)**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
120	-30	-60	-0.074	1.0
	-20	-60	-0.074	1.0
	-10	-60	-0.074	1.0
	0	-60	-0.074	1.0
	+10	-60	-0.074	1.0
	+20	-60	-0.074	1.0
	+30	-60	-0.074	1.0
	+40	-60	-0.074	1.0
	+50	-60	-0.074	1.0
102	+20	-60	-0.074	1.0
138		-60	-0.074	1.0

The frequency stability of the EUT is sufficient to keep it within the authorized frequency ranges at any temperature interval and voltage variations across the measured range.

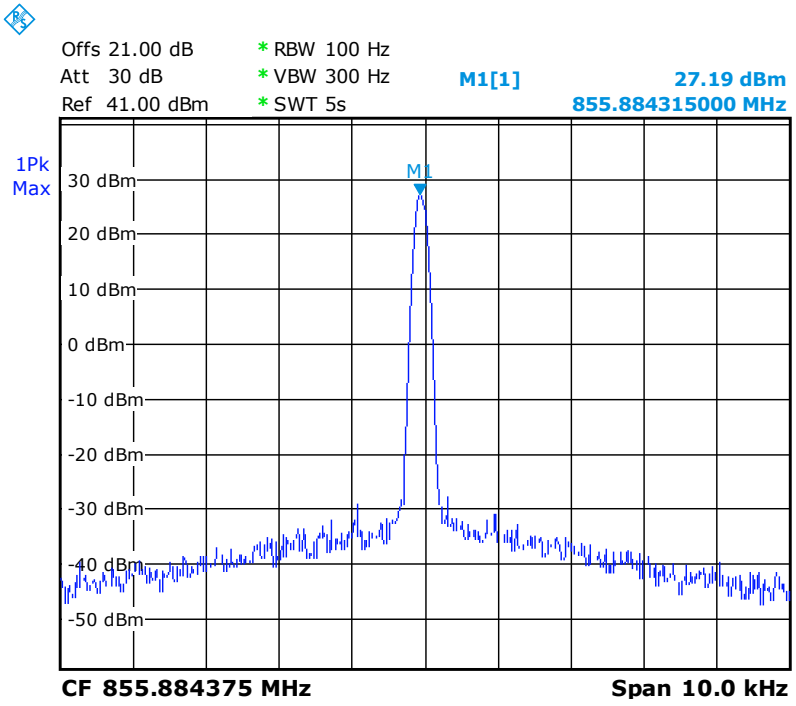
2.6.9 Sample Test Plots



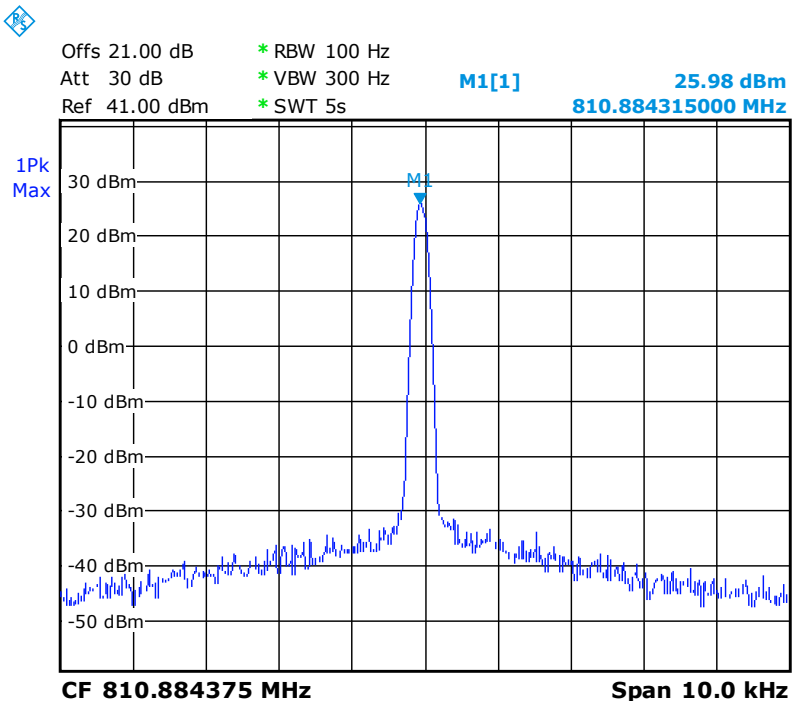
700MHz Narrowband Public Safety Downlink Middle Channel @ 20°C Nominal Voltage



700MHz Narrowband Public Safety Uplink Middle Channel @ 20°C Nominal Voltage



800 MHz NPSPAC Public Safety Downlink Middle Channel @ 20°C Nominal Voltage



800 MHz NPSPAC Public Safety Uplink Middle Channel @ 20°C Nominal Voltage

2.7 AGC THRESHOLD LEVEL

2.7.1 Specification Reference

KDB 935210 D05, Clause 4.2

2.7.2 Standard Applicable

AGC Threshold Level is tested according to KDB 935210 D05, Clause 4.2:

The AGC threshold shall be determined by applying the procedure of 4.2 (of the current KDB), but with the signal generator configured to produce a test signal defined in Table 1, a CW input signal or a digitally modulated signal, consistent with the discussion about signal type in 4.1.

Devices intended for used in 700 MHz Public Safety Broadband spectrum shall be tested using representative band-limited AWGN signal (99% OBW of 4.1 MHz) or the applicable signal type (e.g., LTE)

2.7.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.7.4 Date of Test/Initial of test personnel who performed the test

December 02 and 08, 2021 / ZXY

2.7.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.7.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.0 - 23.2 °C
Relative Humidity	43.5 - 47.2 %
ATM Pressure	99.2 - 99.5 kPa

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2.7.7 Additional Observations

- This is a conducted test.
- For 700 MHz narrowband and 800 MHz NPSPAC Public Safety, 12.5 kHz bandwidth signals were used when testing output power of the EUT using a power meter was used according to method 4.5.4 of this KDB, and a spectrum analyser was used according to method 4.5.3 with setting as below when testing input power of the EUT:
    a) RBW = 100 kHz, VBW ≥ 3 x RBW
    b) Peak Detector, Trace mode to Max Hold
    c) Span is at least 1 MHz
    d) Use Peak mark function and record the value as the maximum power
- The AGC threshold level was recorded when increasing the input level until a 1 dB increase in the input signal power no longer causes a 1 dB increase in the output signal power.
- Both downlink and uplink are tested.

2.7.8 Test Results

700MHz Narrowband C4FM Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	Average Power		AGC Threshold Level (dBm)
			(dBm)	(W)	
Downlink	12.5	771.875	26.73	0.47	-72.37
Uplink	12.5	801.875	26.07	0.40	-73.31

700MHz Narrowband CQPSK Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	Average Power		AGC Threshold Level (dBm)
			(dBm)	(W)	
Downlink	12.5	771.875	26.84	0.48	-68.73
Uplink	12.5	801.875	26.01	0.40	-69.06

700MHz Narrowband Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	Average Power		AGC Threshold Level (dBm)
			(dBm)	(W)	
Downlink H-DQPSK	12.5	771.875	26.80	0.48	-70.07
Uplink H-CPM	12.5	801.875	25.89	0.39	-73.13

800 MHz NPSPAC C4FM Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	Average Power		AGC Threshold Level (dBm)
			(dBm)	(W)	
Downlink	12.5	855.884375	26.91	0.49	-72.33
Uplink	12.5	810.884375	26.09	0.41	-73.0

800 MHz NPSPAC CQPSK Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	Average Power		AGC Threshold Level (dBm)
			(dBm)	(W)	
Downlink	12.5	855.884375	27.02	0.50	-69.12
Uplink	12.5	810.884375	26.28	0.42	-69.23

800 MHz NPSPAC Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	Average Power		AGC Threshold Level (dBm)
			(dBm)	(W)	
Downlink H-DQPSK	12.5	855.884375	26.99	0.50	-70.26
Uplink H-CPM	12.5	810.884375	26.02	0.40	-73.08

2.8 OUT-OF-BAND REJECTION

2.8.1 Specification Reference

KDB 935210 D05, Clause 4.3
RSS-131, Clause 5.2.1

2.8.2 Standard Applicable

RSS-131, Clause 5.2.1:
The gain-versus-frequency response and the 20 dB bandwidth of the zone enhancer shall be reported. The zone enhancer shall reject amplification of other signals outside the passband of the zone enhancer

Out-of-Band Rejection is tested according to KDB 935210 D05, Clause 4.3.

2.8.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.8.4 Date of Test/Initial of test personnel who performed the test

December 06, 2021 / ZXY

2.8.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.8.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	21.5 °C
Relative Humidity	43.0 %
ATM Pressure	99.1 kPa

2.8.7 Additional Observations

- This is a conducted test.
- The path loss was measured and entered as an offset.
- A swept CW signal whose frequency range is ±250% of the manufacturer's specified pass band is configured for the testing.
- The internal gain control of the EUT is set to the maximum gain. The input signal type is set to tones (CW).
- The CW is at least 3 dB below the ACG threshold (determined according to section 3.2 and 4.2 of the current KDB) and doesn't activate the AGC threshold throughout the test.
- Dwell time is 10 ms.
- Frequency Step is 50 kHz.
- RBW is between 1% and 5% of the manufacturer's rated pass band.
- VBW is 3 x RBW.
- Detector is peak and trace is max hold.
- The peak amplitude frequency f_0 is determined and two additional -20 dB markers are determined using the marker-delta method).

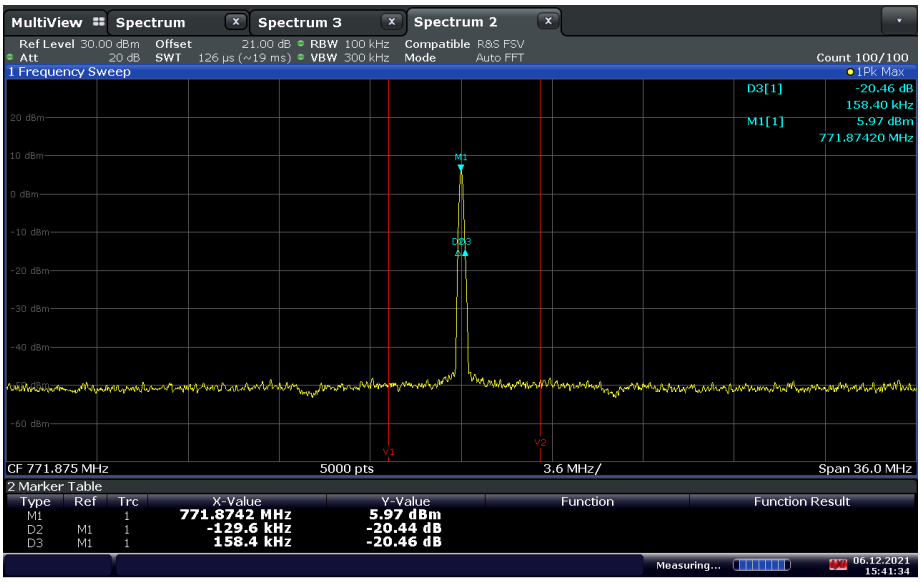
- The 20dB Bandwidth plot is recorded as the out-of-band rejection frequency response.
- Both downlink and uplink are tested.

2.8.8 Test Results

700MHz Narrowband Public Safety					
Mode	Bandwidth (kHz)	Frequency (MHz)	-20 dBc Point		20 dB BW (kHz)
			T1 (MHz)	T2 (MHz)	
Downlink	12.5	771.875	771.775	772.033	288.0
Uplink	12.5	801.875	801.749	802.008	259.0

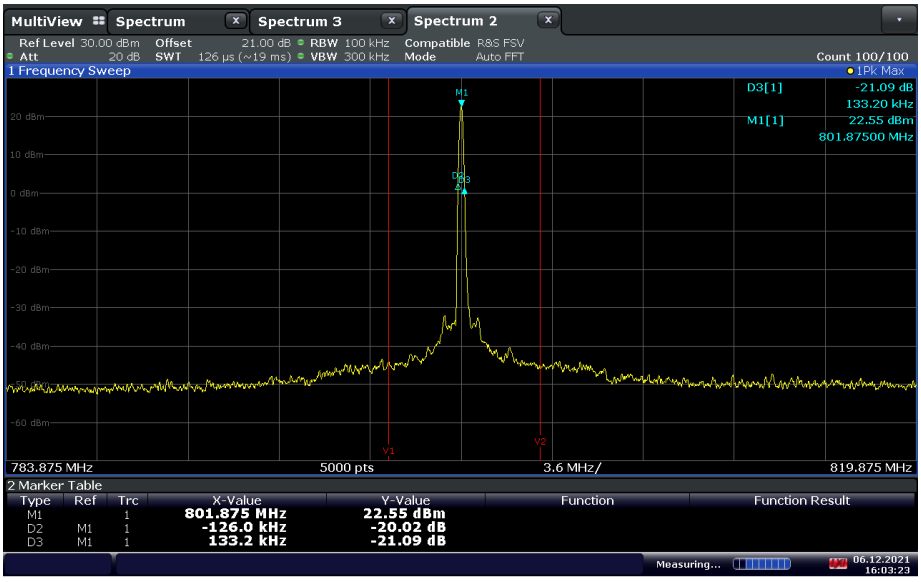
800 MHz NPSPAC Public Safety					
Mode	Bandwidth (MHz)	Frequency (MHz)	-20 dBc Point		20 dB BW (kHz)
			T1 (MHz)	T2 (MHz)	
Downlink	5	855.884375	855.734	856.034	300.0
Uplink	5	810.884375	810.746	811.022	276.0

700MHz Narrowband Public Safety Downlink Middle Channel / Out-of-Band Rejection



15:41:35 06.12.2021

700MHz Narrowband Public Safety Uplink Middle Channel / Out-of-Band Rejection



16:03:24 06.12.2021

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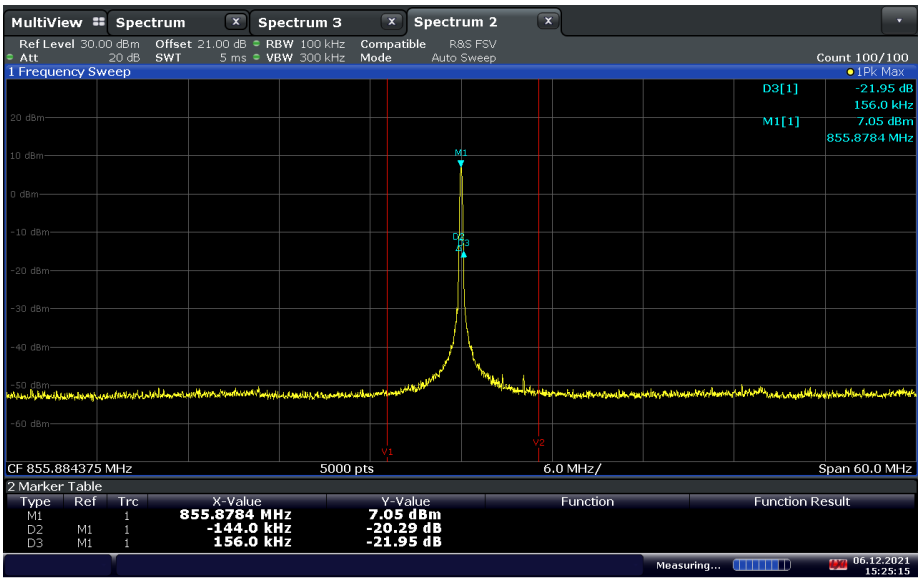
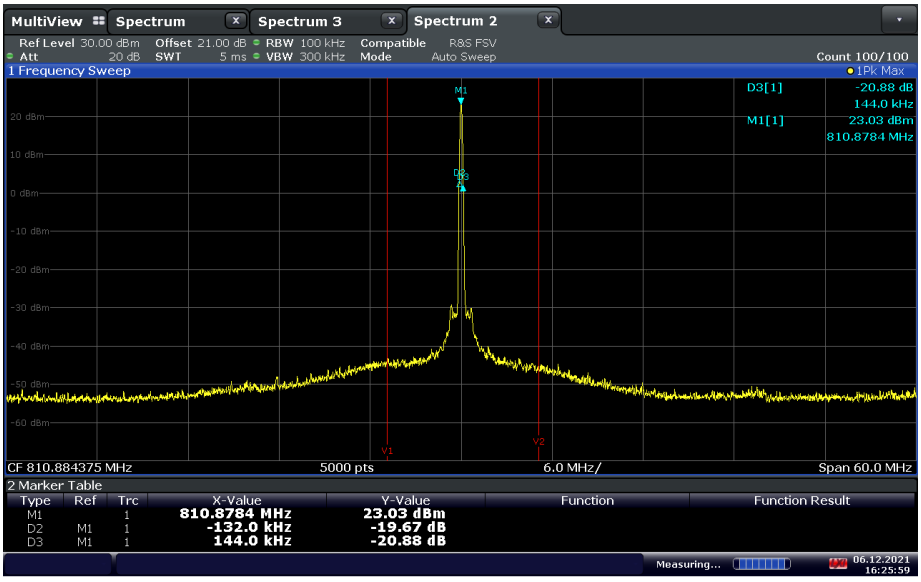
800 MHz NPSPAC Public Safety Downlink Middle Channel / Out-of-Band Rejection



15:25:16 06.12.2021

800 MHz NPSPAC Public Safety Uplink Middle Channel / Out-of-Band Rejection



16:26:00 06.12.2021

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2.9 INPUT-VERSUS-OUTPUT SIGNAL COMPARISON

2.9.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.219 (e)(4)(ii)
RSS-131, Clause 5.2.2
KDB 935210 D05, Clause 4.4

2.9.2 Standard Applicable

FCC 47 CFR Part 90, Clause 90.219 (e)(4):
(ii) There is no change in the occupied bandwidth of the retransmitted signals.

RSS-131, Clause 5.2.2:
The spectral growth of the 26 dB bandwidth of the output signal shall be less than 5% of the input signal spectrum.

Input-versus-Output Signal Comparison is tested according to KDB 935210 D05, Clause 4.4.

2.9.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.9.4 Date of Test/Initial of test personnel who performed the test

December 01 and 03, 2021 / ZXY

2.9.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.9.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	23.2 - 24.8 °C
Relative Humidity	33.9 - 45.4 %
ATM Pressure	99.0 - 99.5 kPa

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2.9.7 Additional Observations

- The path loss was measured and entered as an offset.
- For 700MHz narrow band and 800MHz NPSPAC Public Safety bands, the signal generator is configured for 12.5 kHz bandwidth public safety signals as the intended operating signal type.
- The signal amplitude is just below the ACG threshold (determined according to section 3.2 and 4.2 of the current KDB), and not more than 0.5 dB below.
- Span is between 2 times to 5 times the emission bandwidth (EBW) or alternatively, the OBW.
- RBW is 1% to 5% of the anticipated OBW, VBW is > 3 x RBW.
- Set the reference level of spectrum analyser to accommodate the maximum input amplitude level.
- The noise floor of the spectrum analyser is at least 36 dB below the reference level.
- Detector is positive peak and trace is max hold.
- The peak amplitude frequency f_0 is determined and the 99% occupied bandwidth was measured with the OBW function of spectrum analyser.
- Repeat the testing with the input signal connected directly to the spectrum analyser.
- Compare the spectral plot of the input signal to the output signal.
- Repeat the testing with input signal amplitude set to 3 dB above AGC threshold.
- Both downlink and uplink are tested.

2.9.8 Test Results

Compliant. There is no spectral growth of OBW and 26 dB bandwidth that is more than than 5% of the input signal spectrum.

700MHz Narrowband Public Safety C4FM Downlink				
Signal Level	**Bandwidth (kHz)**	**Frequency (MHz)**	**99% OBW / 26 dB BW (MHz)**	
			Output	**Input***
AGC Threshold Level	12.5	771.875	9.68 / 12.15	9.83 / 12.20
AGC + 3 dB Level			9.84 / 12.18	9.83 / 12.20

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

700MHz Narrowband Public Safety C4FM Uplink				
Signal Level	**Bandwidth (kHz)**	**Frequency (MHz)**	**99% OBW / 26 dB BW (MHz)**	
			Output	**Input***
AGC Threshold Level	12.5	801.875	9.86 / 11.82	9.83 / 12.18
AGC + 3 dB Level			9.81 / 12.18	9.83 / 12.18

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

700MHz Narrowband Public Safety CQPSK Downlink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	771.875	4.89 / 5.46	4.86 / 5.42
AGC + 3 dB Level			4.91 / 5.43	4.86 / 5.42

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

700MHz Narrowband Public Safety CQPSK Uplink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	801.875	4.99 / 5.47	4.86 / 5.40
AGC + 3 dB Level			4.91 / 5.47	4.86 / 5.40

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

700MHz Narrowband Public Safety H-DQPSK Downlink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	771.875	9.80 / 11.98	9.75 / 11.96
AGC + 3 dB Level			9.80 / 11.94	9.75 / 11.96

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

700MHz Narrowband Public Safety H-CPM Uplink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	801.875	8.15 / 10.77	8.12 / 10.77
AGC + 3 dB Level			8.16 / 10.65	8.12 / 10.77

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

800 MHz NPSPAC Public Safety C4FM Downlink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	855.884375	9.82 / 11.71	9.73 / 11.73
AGC + 3 dB Level			9.81 / 11.84	9.73 / 11.73

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

800 MHz NPSPAC Public Safety C4FM Uplink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	810.884375	9.91 / 12.12	9.90 / 12.18
AGC + 3 dB Level			9.90 / 11.84	9.90 / 12.18

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

800 MHz NPSPAC Public Safety CQPSK Downlink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	855.884375	4.89 / 5.42	4.86 / 5.40
AGC + 3 dB Level			4.86 / 5.47	4.86 / 5.40

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing..

800 MHz NPSPAC Public Safety CQPSK Uplink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	810.884375	4.99 / 5.47	4.85 / 5.42
AGC + 3 dB Level			4.96 / 5.47	4.85 / 5.42

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

800 MHz NPSPAC Public Safety H-DQPSK Downlink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	855.884375	9.70 / 11.73	9.73 / 11.73
AGC + 3 dB Level			9.74 / 11.73	9.73 / 11.73

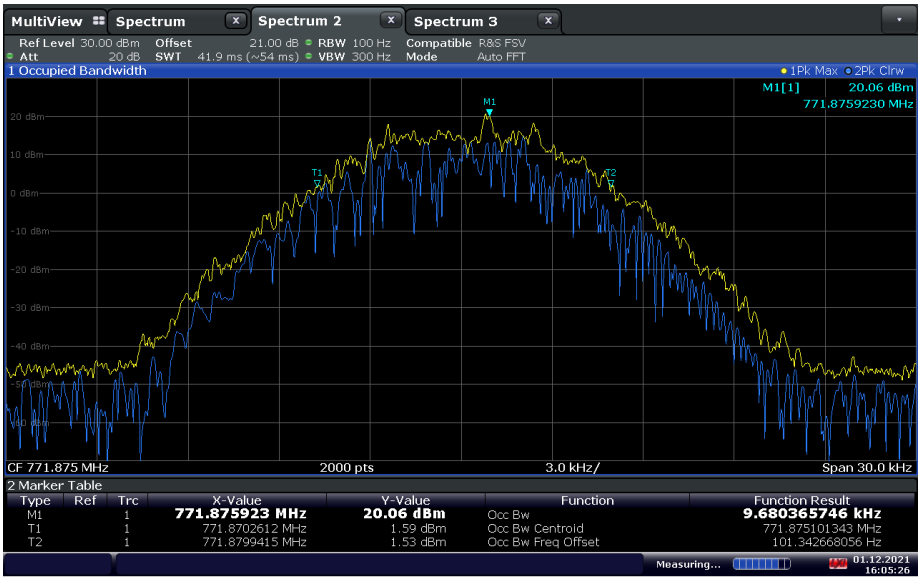
* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26 dB BW when testing.

800 MHz NPSPAC Public Safety H-CPM Uplink				
Signal Level	Bandwidth (kHz)	Frequency (MHz)	99% OBW / 26 dB BW (MHz)	
			Output	Input*
AGC Threshold Level	12.5	810.884375	8.09 / 10.37	8.12 / 10.50
AGC + 3 dB Level			8.13 / 10.63	8.12 / 10.50

* Since the AGC Threshold level and AGC + 3 dB level for downlink are as low as -65 dBm, which is about the noise floor, the input levels are adjusted in order to get the right input 99% OBW and 26dB BW when testing.

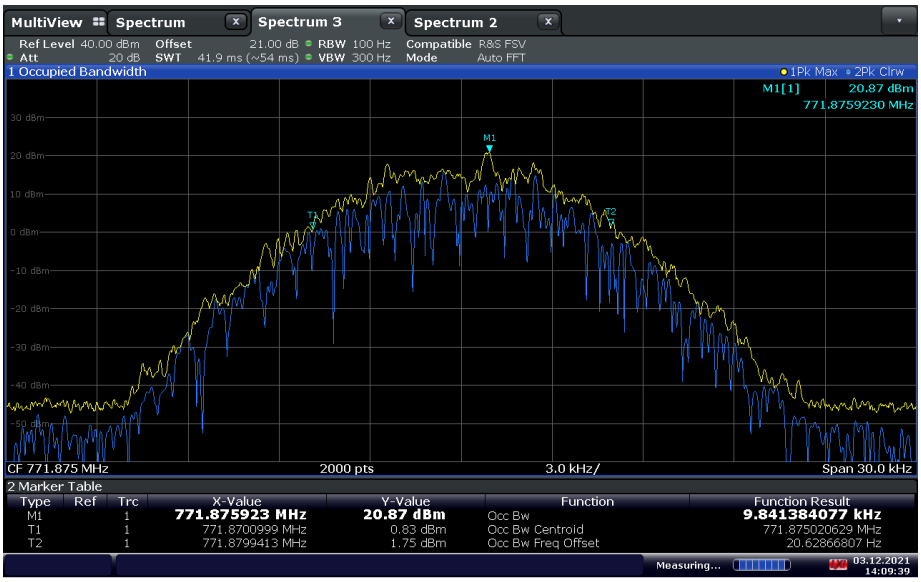
2.9.9 Sample Test Plots

700MHz Narrowband Public Safety Downlink (C4FM 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC Threshold Level



16:05:27 01.12.2021

700MHz Narrowband Public Safety Downlink (C4FM 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC + 3 dB Level



14:09:40 03.12.2021

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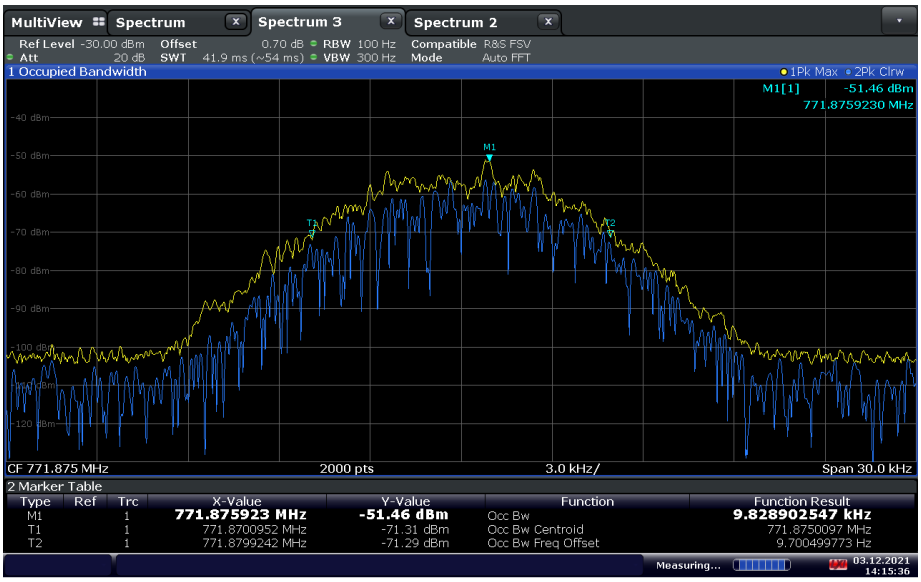
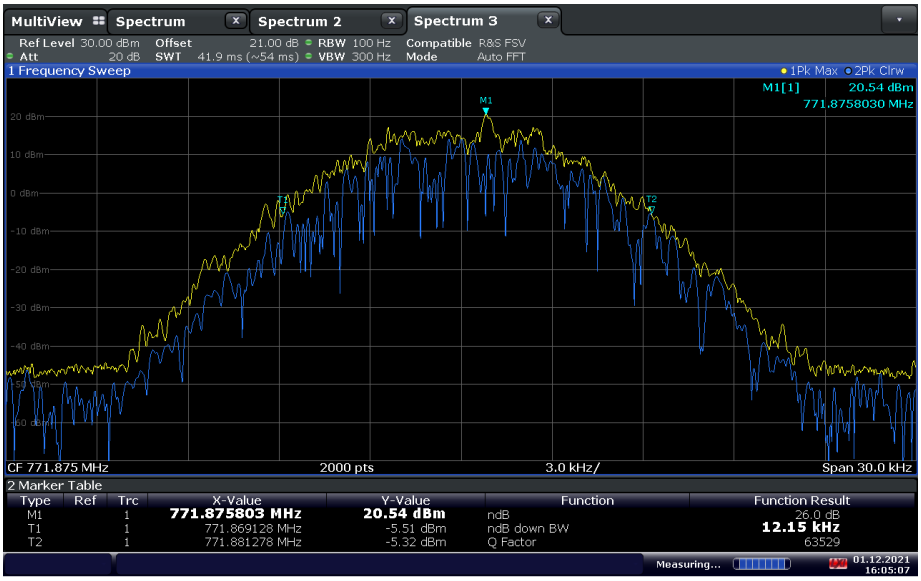
700MHz Narrowband Public Safety Downlink (C4FM 12.5 kHz BW) Mid Channel / 99% OBW at Input port (Adjusted Level)



14:15:37 03.12.2021

700MHz Narrowband Public Safety Downlink (C4FM 12.5 kHz BW) Mid Channel / 26 dB BW at Output port with Input signal at AGC Threshold Level



16:05:08 01.12.2021

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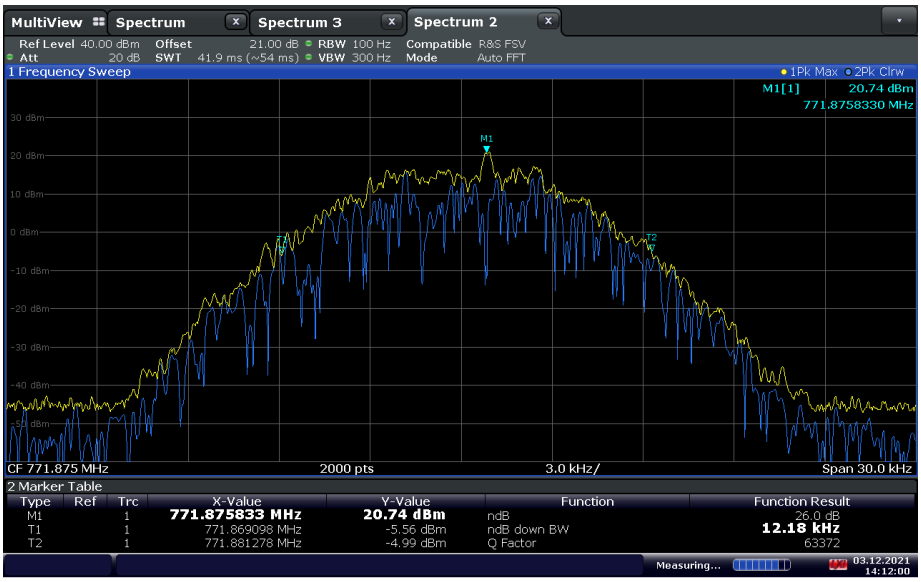
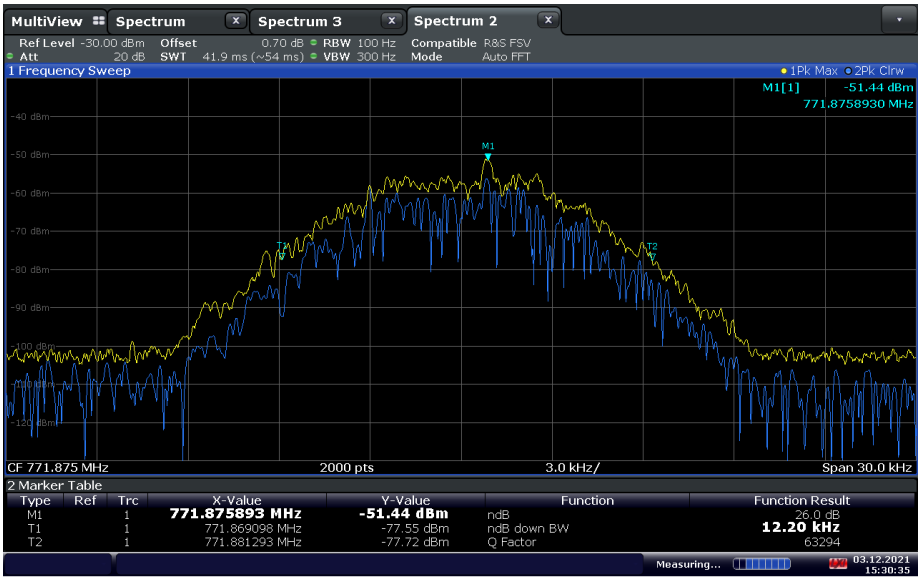
700MHz Narrowband Public Safety Downlink (C4FM 12.5 kHz BW) Mid Channel / 26dB BW at Output port with Input signal at AGC + 3 dB Level


14:12:01 03.12.2021

700MHz Narrowband Public Safety Downlink (C4FM 12.5 kHz BW) Mid Channel / 26dB BW at Input port (Adjusted Level)


15:30:35 03.12.2021

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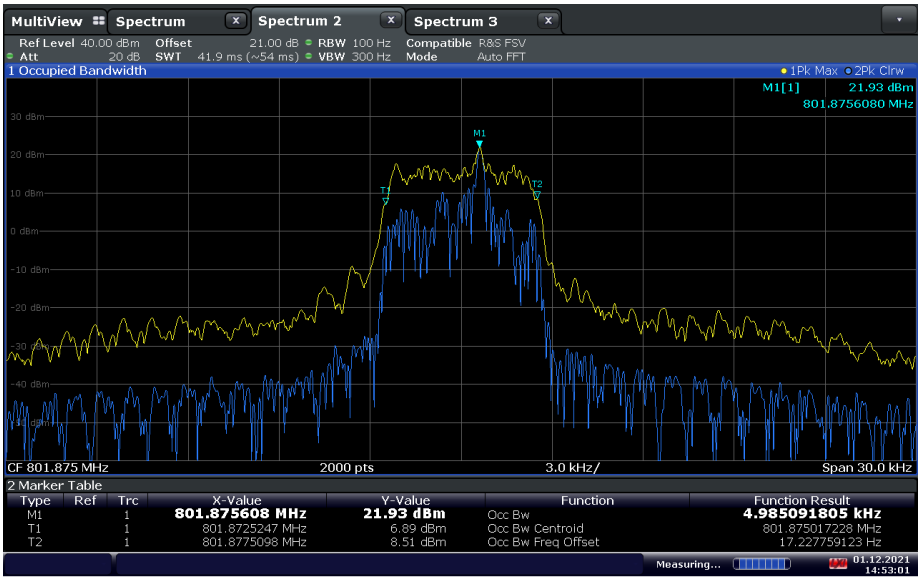
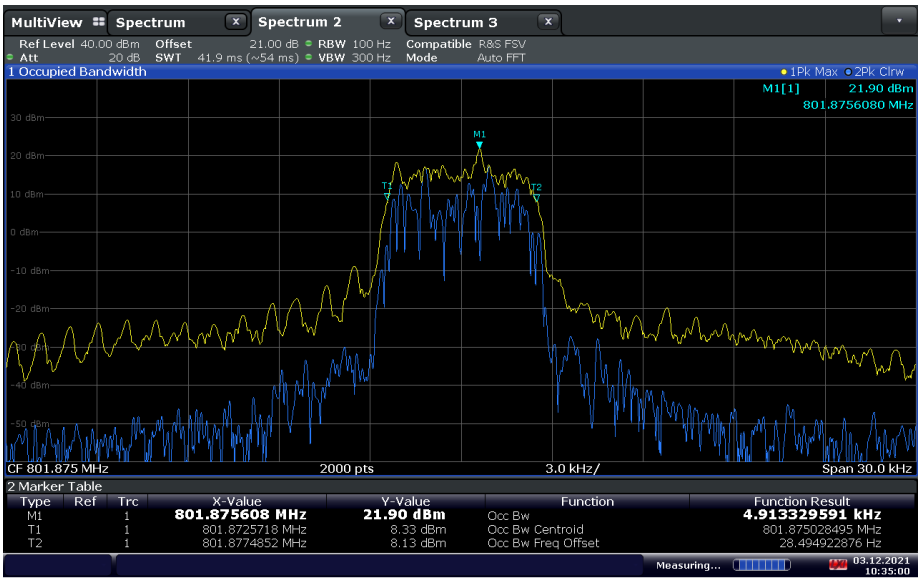
700MHz Narrowband Public Safety Uplink (CQPSK 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC Threshold Level



14:53:02 01.12.2021

700MHz Narrowband Public Safety Uplink (CQPSK 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC + 3 dB Level



10:35:00 03.12.2021

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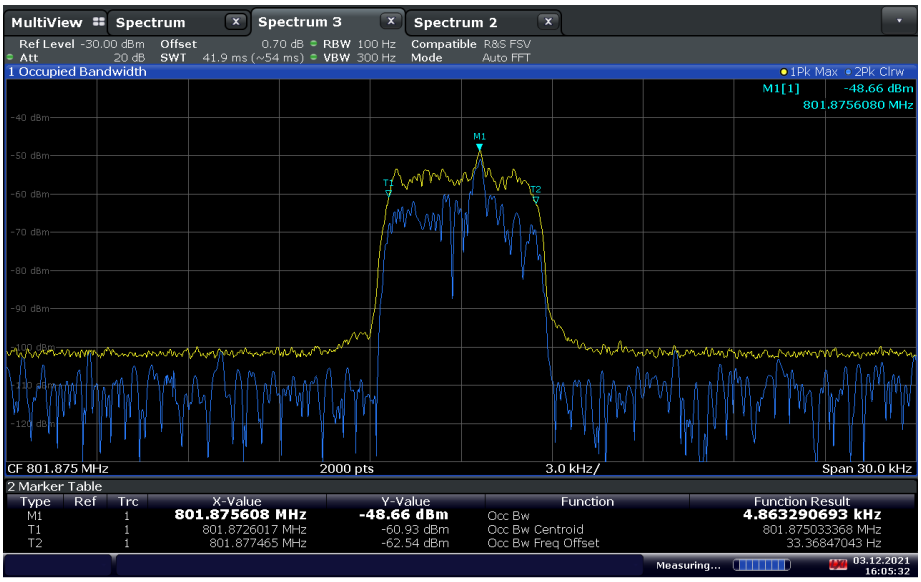
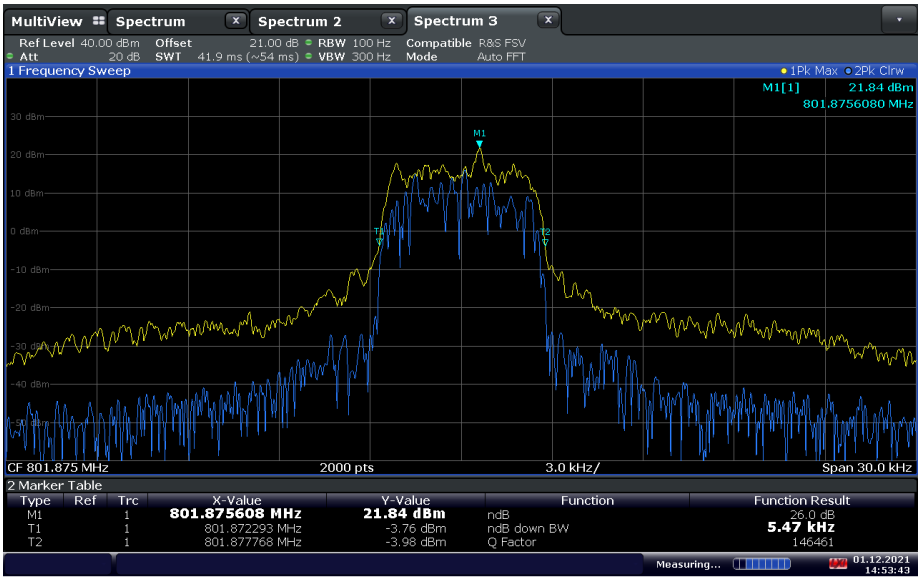
700MHz Narrowband Public Safety Uplink (CQPSK 12.5 kHz BW) Mid Channel / 99% OBW at Input port (Adjusted Level)



16:05:33 03.12.2021

700MHz Narrowband Public Safety Uplink (CQPSK 12.5 kHz BW) Mid Channel / 26 dB BW at Output port with Input signal at AGC Threshold Level



14:53:44 01.12.2021

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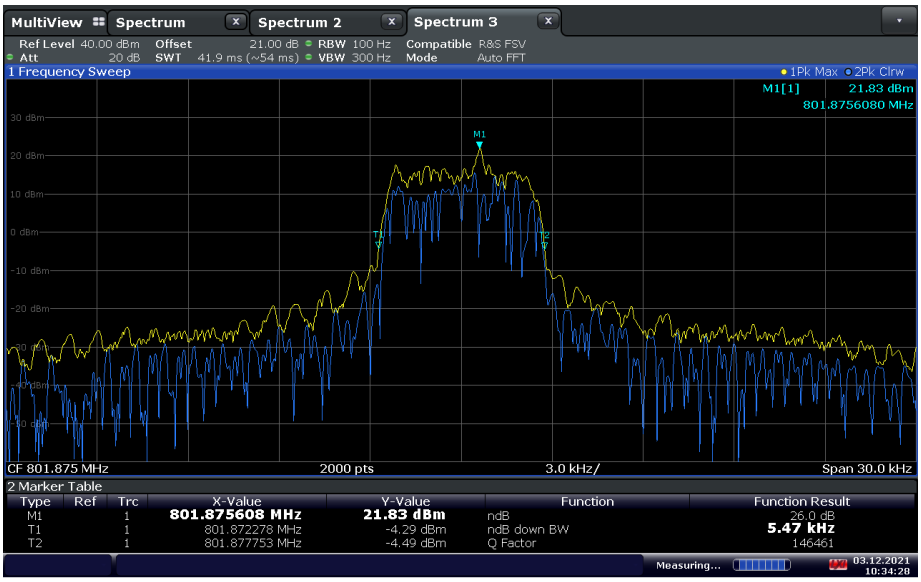
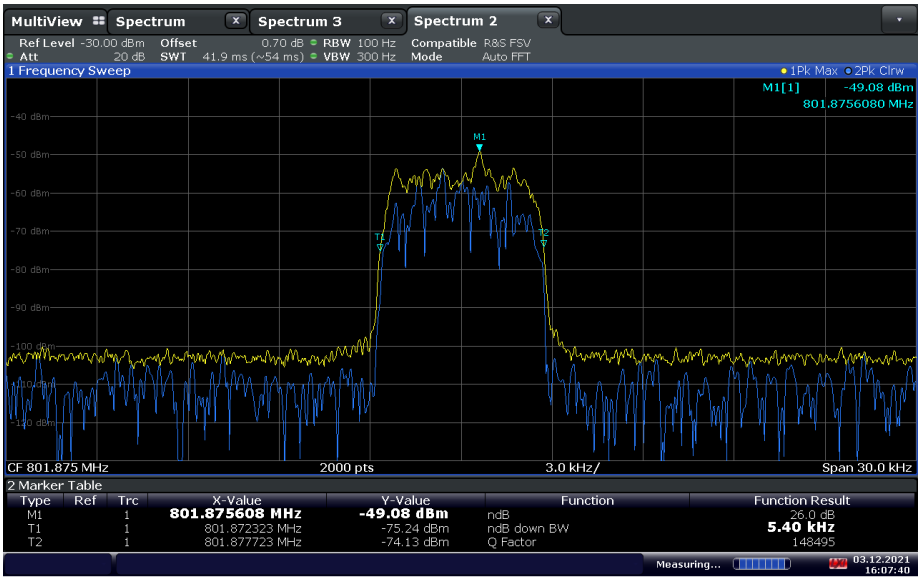
700MHz Narrowband Public Safety Uplink (CQPSK 12.5 kHz BW) Mid Channel / 26dB BW at Output port with Input signal at AGC + 3 dB Level


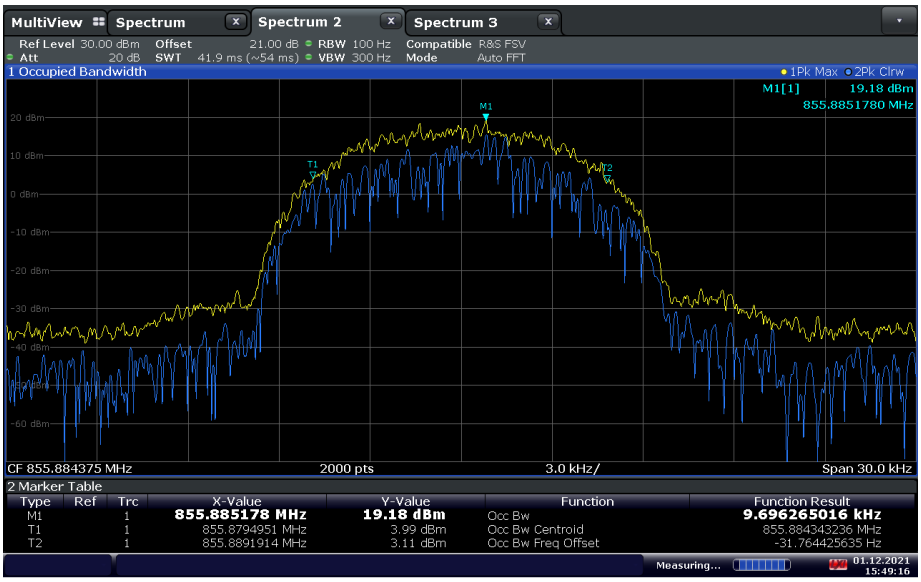
10:34:29 03.12.2021

700MHz Narrowband Public Safety Uplink (CQPSK 12.5 kHz BW) Mid Channel / 26dB BW at Input port (Adjusted Level)


16:07:40 03.12.2021

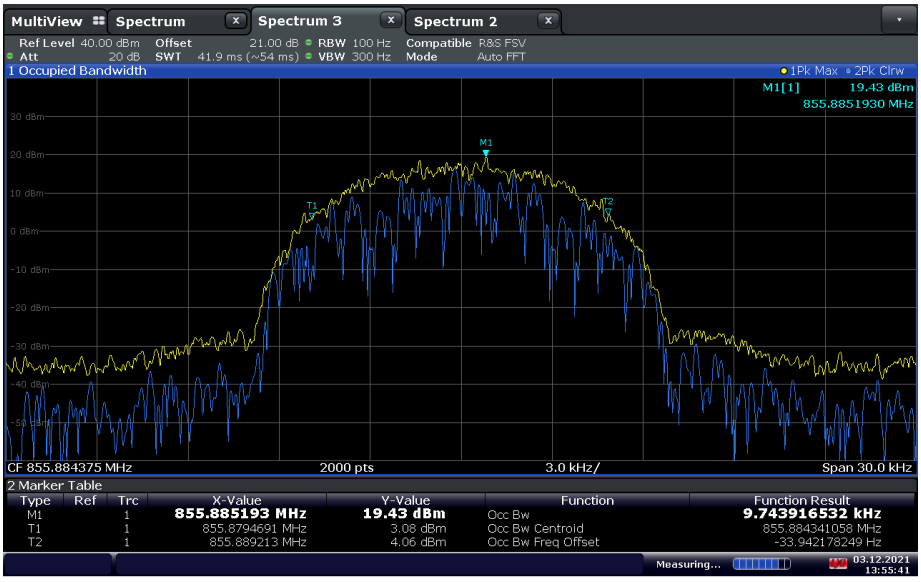
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800MHz Narrowband Public Safety Downlink (H-DQPSK 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC Threshold Level



15:49:17 01.12.2021

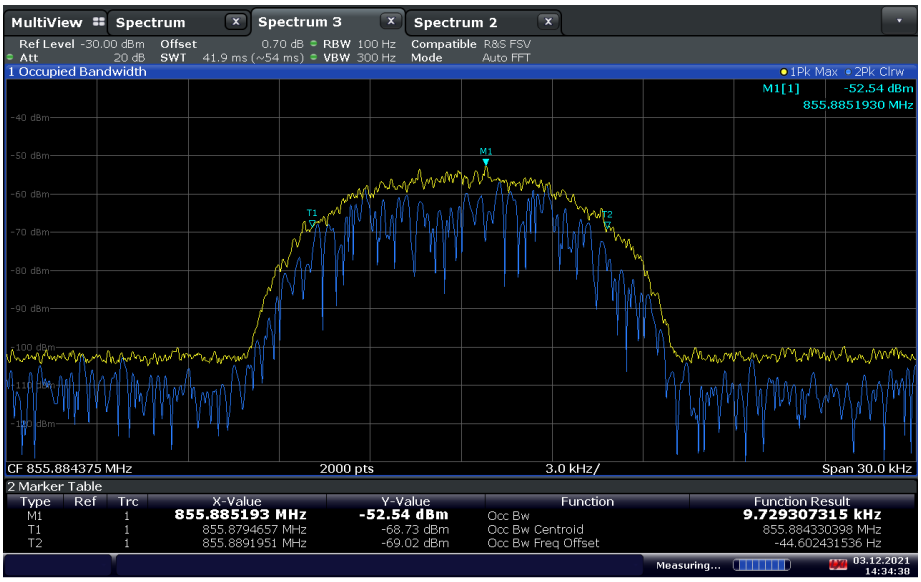
800MHz Narrowband Public Safety Downlink (H-DQPSK 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC + 3 dB Level



13:55:41 03.12.2021

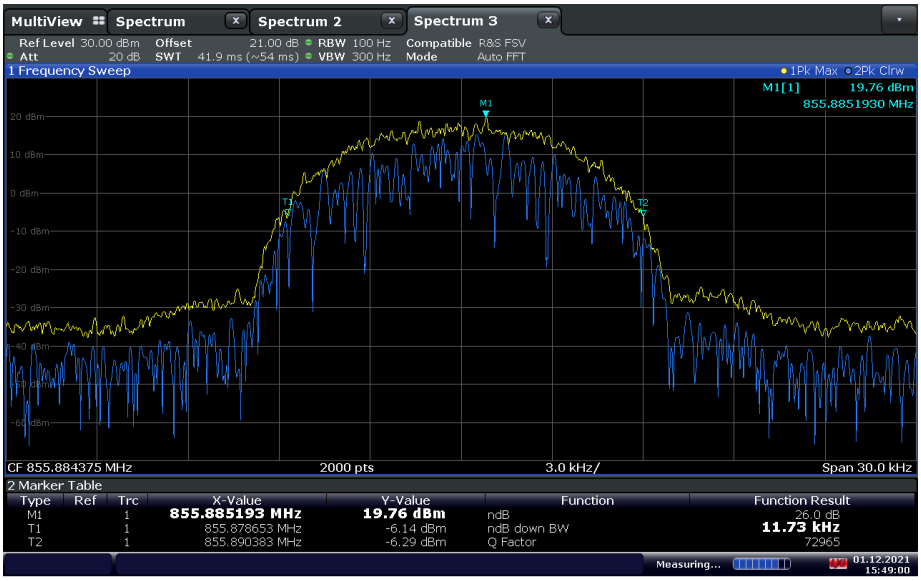
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800MHz Narrowband Public Safety Downlink (H-DQPSK 12.5 kHz BW) Mid Channel / 99% OBW at Input port (Adjusted Level)



14:34:38 03.12.2021

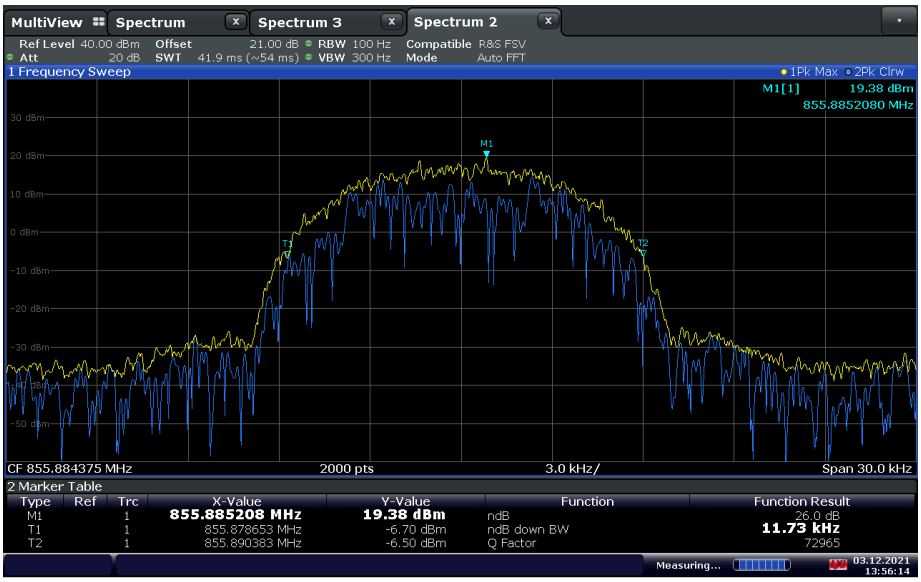
800MHz Narrowband Public Safety Downlink (H-DQPSK 12.5 kHz BW) Mid Channel / 26 dB BW at Output port with Input signal at AGC Threshold Level



15:49:00 01.12.2021

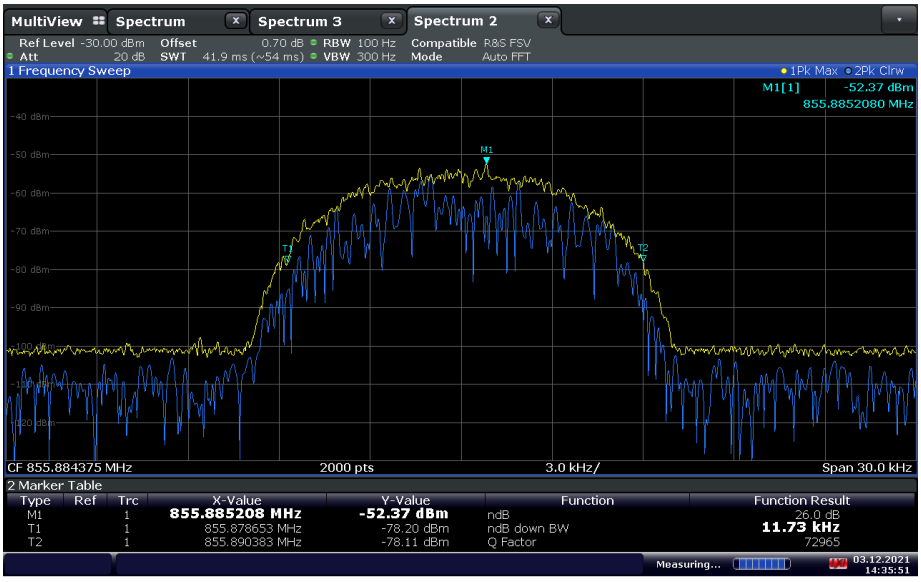
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800MHz Narrowband Public Safety Downlink (H-DQPSK 12.5 kHz BW) Mid Channel / 26dB BW at Output port with Input signal at AGC + 3 dB Level



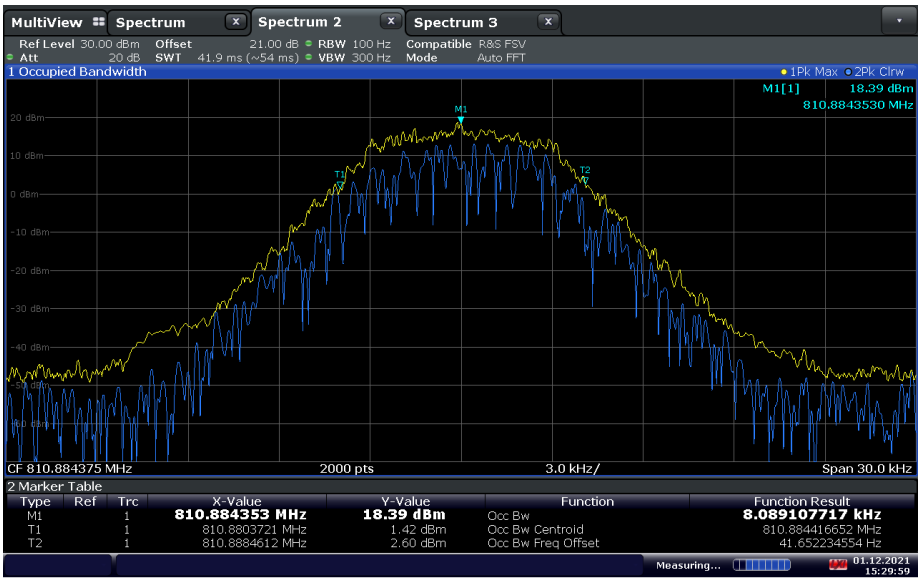
13:56:15 03.12.2021

800MHz Narrowband Public Safety Downlink (H-DQPSK 12.5 kHz BW) Mid Channel / 26dB BW at Input port (Adjusted Level)

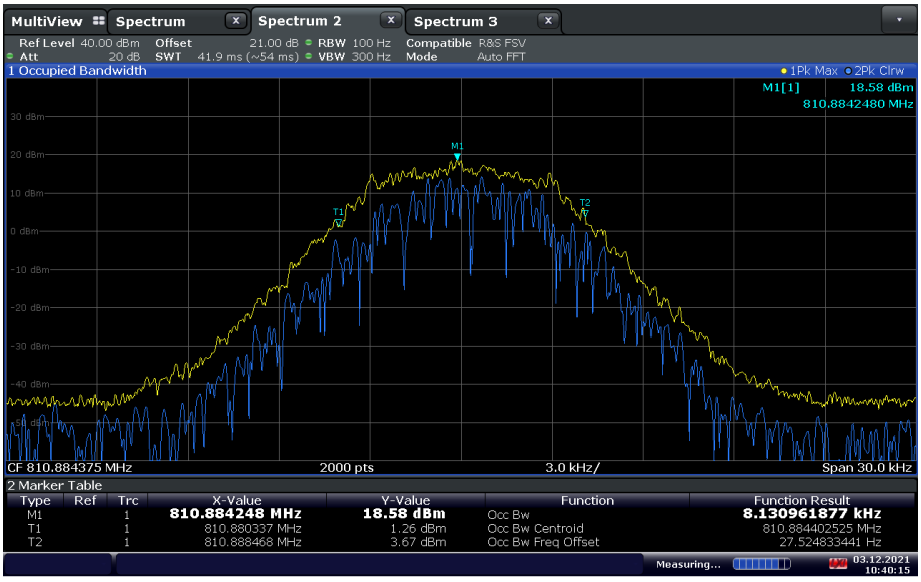


14:35:52 03.12.2021

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800MHz Narrowband Public Safety Uplink (H-CPM 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC Threshold Level


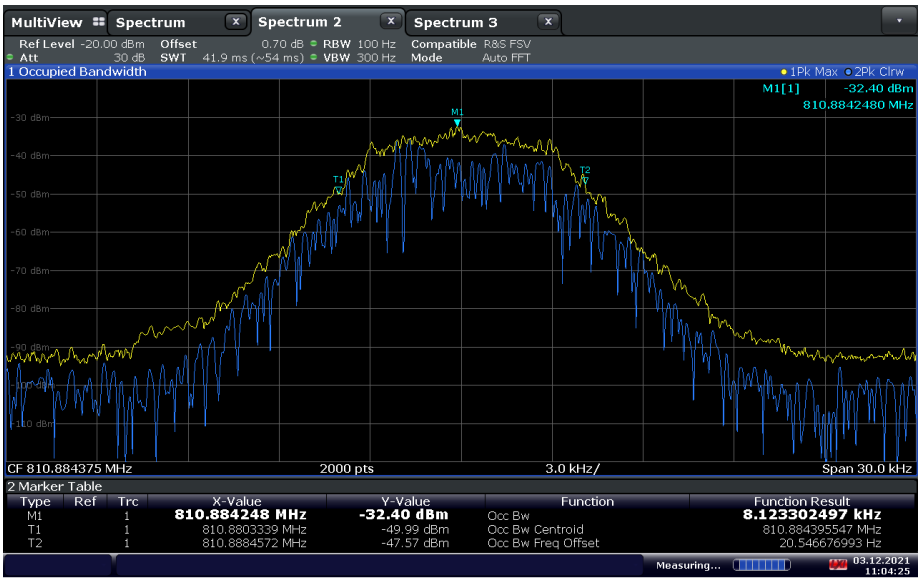
15:29:59 01.12.2021

800MHz Narrowband Public Safety Uplink (H-CPM 12.5 kHz BW) Mid Channel / 99% OBW at Output port with Input signal at AGC + 3 dB Level


10:40:15 03.12.2021

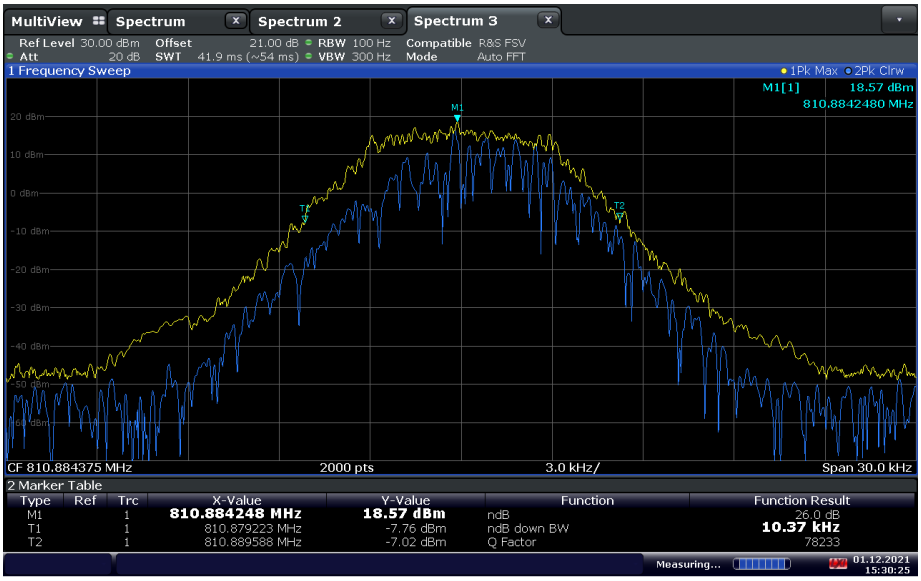
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800MHz Narrowband Public Safety Uplink (H-CPM 12.5 kHz BW) Mid Channel / 99% OBW at Input port (Adjusted Level)



11:04:26 03.12.2021

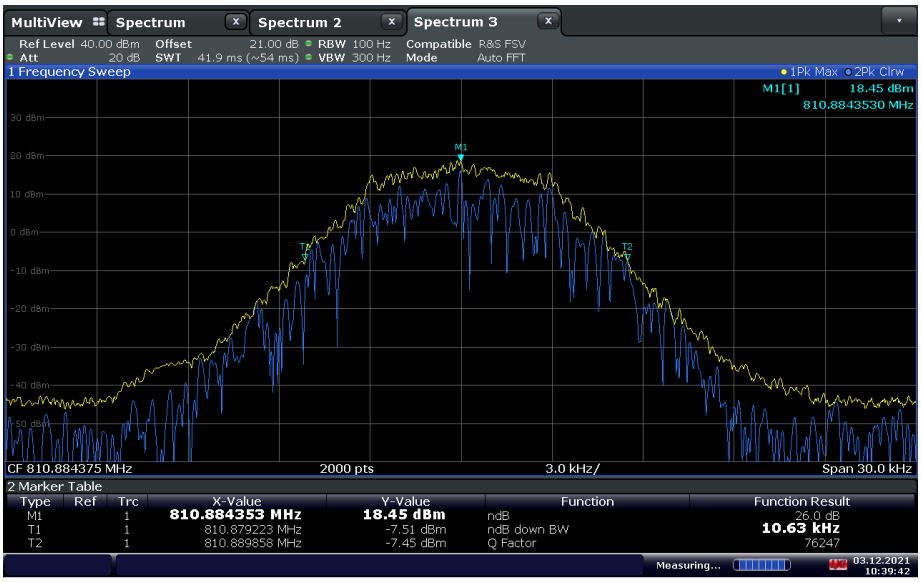
800MHz Narrowband Public Safety Uplink (H-CPM 12.5 kHz BW) Mid Channel / 26 dB BW at Output port with Input signal at AGC Threshold Level



15:30:26 01.12.2021

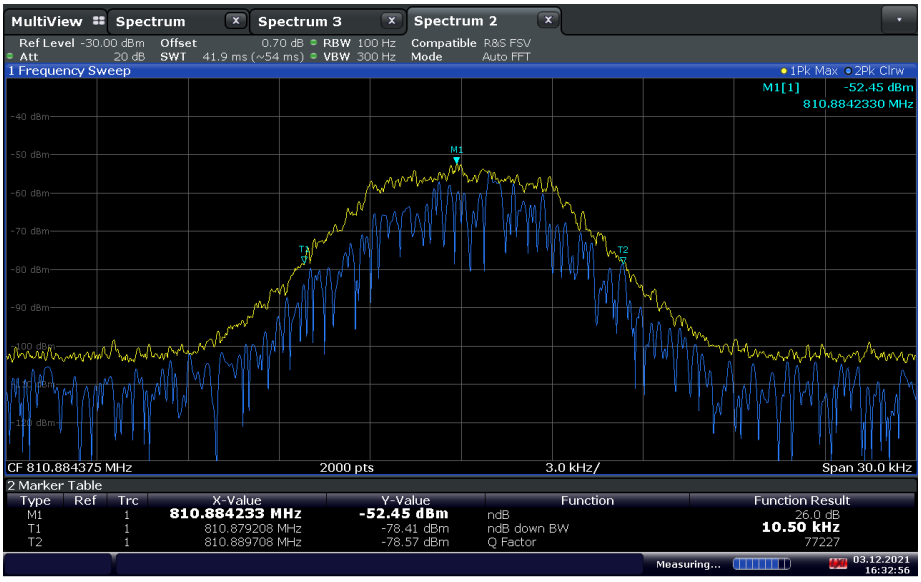
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800MHz Narrowband Public Safety Uplink (H-CPM 12.5 kHz BW) Mid Channel / 26dB BW at Output port with Input signal at AGC + 3 dB Level



10:39:43 03.12.2021

800MHz Narrowband Public Safety Uplink (H-CPM 12.5 kHz BW) Mid Channel / 26dB BW at Input port (Adjusted Level)



16:32:56 03.12.2021

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.10 EMISSION MASK AND ADJACENT CHANNEL POWER

2.10.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.210
FCC 47 CFR Part 90, Clause 90.219 (e)(4)(iii)
FCC 47 CFR Part 90, Clause 90.543(a)
RSS-119, Clause 5.8.9
KDB 935210 D05, Clause 4.4

2.10.2 Standard Applicable

FCC Part 90.219 (e)(4):
(iii) The retransmitted signals continue to meet the unwanted emissions limits of § 90.210 applicable to the corresponding received signals (assuming that these received signals meet the applicable unwanted emissions limits by a reasonable margin).

FCC Part 90.210:

Table 1: Applicable Emission Masks

Frequency band (MHz)	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
Below 25[1]	A or B	A or C
25-50	B	C
72-76	B	C
150-174[2]	B, D, or E	C, D or E
150 paging only	B	C
220-222	F	F
421-512[2 5]	B, D, or E	C, D, or E
450 paging only	B	G
806-809/851-854[6]	B	H
809-824/854-869[3 5]	B, D	D, G.
896-901/935-940	I	J
902-928	K	K
929-930	B	G
4940-4990 MHz	L or M	L or M
5895-5925[4]		
All other bands	B	C

[1] Equipment using single sideband J3E emission must meet the requirements of Emission Mask A. Equipment using other emissions must meet the requirements of Emission Mask B or C, as applicable.
[2] Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth must meet the requirements of Emission Mask E.
[3] Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of § 90.691 of this chapter.
[4] DSRCS Roadside Units equipment in the 5850–5925 MHz band is governed under subpart M of this part.
[5] Equipment designed to operate on 25 kilohertz bandwidth channels must meet the requirements of either Emission Mask B or G, whichever is applicable, while equipment designed to operate on 12.5 kilohertz bandwidth channels must meet the requirements of Emission Mask D. Equipment designed to operate on 25 kilohertz bandwidth channels may alternatively meet the Adjacent Channel Power limits of § 90.221.
[6] Transmitters utilizing analog emissions that are equipped with an audio low-pass filter must meet Emission Mask B. All transmitters utilizing digital emissions and those transmitters using analog emissions without an audio low-pass filter must meet Emission Mask H.

(c) *Emission Mask C*. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5 kHz, but not more than 10 kHz: at least 83 log(f_d/5) dB;
2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth: At least 29 log (f_d^2/11)dB or 50 dB, which ever is the lesser attenuation;
3) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

(d) Emission Mask D—12.5 kHz channel bandwidth equipment. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

1) On any frequency from the center of the authorized bandwidth f0 to 5.625 kHz removed from f_0: Zero dB.
2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(f_d-2.88 kHz) dB.
3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.
4) The reference level for showing compliance with the emission mask shall be established using a resolution bandwidth sufficiently wide (usually two or three times the channel bandwidth) to capture the true peak emission of the equipment under test. In order to show compliance with the emission mask up to and including 50 kHz removed from the edge of the authorized bandwidth, adjust the resolution bandwidth to 100 Hz with the measuring instrument in a peak hold mode. A sufficient number of sweeps must be measured to insure that the emission profile is developed. If video filtering is used, its bandwidth must not be less than the instrument resolution bandwidth. For emissions beyond 50 kHz from the edge of the authorized bandwidth, see paragraph (o) of this section. If it can be shown that use of the above instrumentation settings do not accurately represent the true interference potential of the equipment under test, an alternate procedure may be used provided prior Commission approval is obtained.

(h) Emission Mask H. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of 4 kHz or less: Zero dB.
(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 4 kHz, but no more than 8.5 kHz: At least 107 log (fd/4) dB;
(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 8.5 kHz, but no more than 15 kHz: At least 40.5 log (f_d/1.16) dB;
(4) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 15 kHz, but no more than 25 kHz: At least 116 log (f_d/6.1) dB;
(5) On any frequency removed from the center of the authorized bandwidth by more than 25 kHz: At least 43 + 10 log (P) dB.

FCC Part 90.543:
Transmitters designed to operate in 769–775 MHz and 799–805 MHz frequency bands must meet the emission limitations in paragraphs (a) through (d) of this section. Class A and Class B signal boosterss retransmitting signals in the 769-775 MHz and 799-805 MHz frequency bands are exempt from the limits listed in paragraph (a) of this section when simutaneously retransmitting multiple signals and instead shall be subject to the limit listed in paragraph (c) of this section when operating in this manner.

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(a) The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the following tables. Mobile station requirements apply to handheld, car mounted and control station units. The tables specify a value for the ACP as a function of the displacement from the channel center frequency and measurement bandwidth. In the following tables, ‘‘(s)’’ indicates a swept measurement may be used.

12.5 kHz Base Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
9.375	6.25	−40
15.625	6.25	−60
21.875	6.25	−60
37.5	25	−60
62.5	25	−65
87.5	25	−65
150	100	−65
250	100	−65
350.00	100	−65
>400 kHz to 12 MHz	30 (s)	−80
12 MHz to paired receive band	30 (s)	−80
In the paired receive band	30 (s)	[1] −85

[1] Although we permit individual base transmitters to radiate a maximum ACP of −85 dBc in the paired receive band, licensees deploying these transmitters may not exceed an ACP of −100 dBc in the paired receive band when measured at either the transmitting antenna input port or the output of the transmitter combining network. Consequently, licensees deploying these transmitters may need to use external filters to comply with the more restrictive ACP limit.

(c) Out-of-band emission limit. On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10log (P) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

2.10.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.10.4 Date of Test/Initial of test personnel who performed the test

December 10, 2021 and March 25, 2022 / ZXY

2.10.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.10.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	20.3 - 23.5 °C
Relative Humidity	27.6 - 48.9 %
ATM Pressure	99.3 - 99.4 kPa

2.10.7 Additional Observations

- The path loss was measured and entered as an offset.
- For 700MHz narrow band and 800MHz NPSPAC Public Safety bands, the signal generator is configured for un-modulated signals as the input signal type.
- The signal amplitude is just below the ACG threshold, and not more than 0.5 dB below.
- RBW is 100 Hz, VBW is > 3 x RBW.
- Set the reference level of spectrum analyser to accommodate the maximum input amplitude level.
- Detector is positive peak and trace is max hold.
- Repeat the testing with input signal amplitude set to 3 dB above AGC threshold.
- Both downlink and uplink are tested.

2.10.8 Justification

Only Emission Mask test results presented in the section. The EUT produces a full power unmodulated carrier. According to FCC Part 90.210, since all the emission mask limit requirements are relative to unmodulated carrier power, CW was used as the input signal.

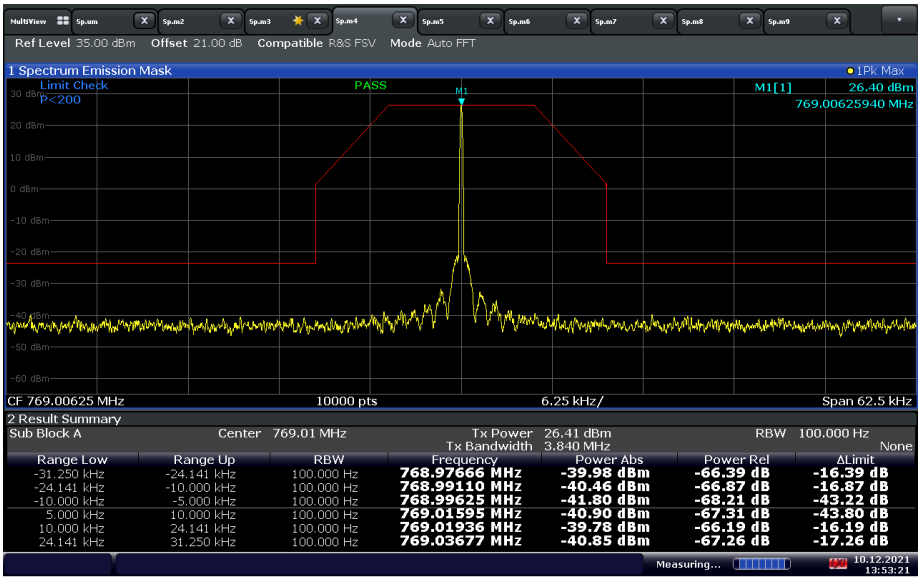
For 700 MHz Public Safety 90.543 ACP:

According to FCC Part 90.543, Class A and Class B signal boosters retransmitting signals in the 769-775 MHz and 799-805 MHz frequency bands are exempt from the limits listed in paragraph (a) of this section when simutaneously retransmitting multiple signals and instead shall be subject to the limit listed in paragraph (c) of this section when operating in this manner.

The EUT is a signal booster which retransmitting multiple signals simultaneously, and therefore is subject to the limit listed in paragraph (c) of FCC Par 90.543. Test Result refers to section 2.6 Conducted Spurious Emissions of this report.

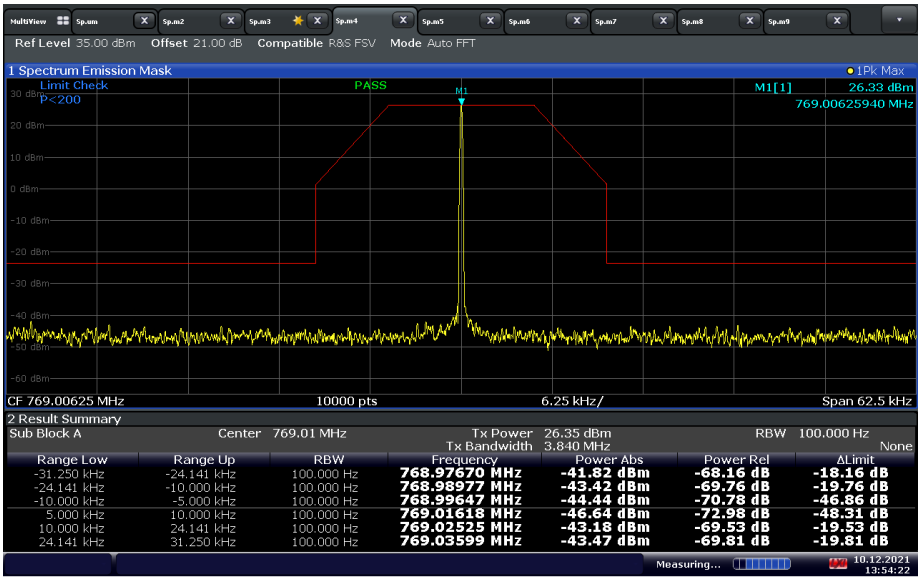
2.10.9 Test Results

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Low Channel Emissions Mask C (AGC Level)



13:53:21 10.12.2021

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Low Channel Emissions Mask C (AGC+3 Level)



13:54:23 10.12.2021

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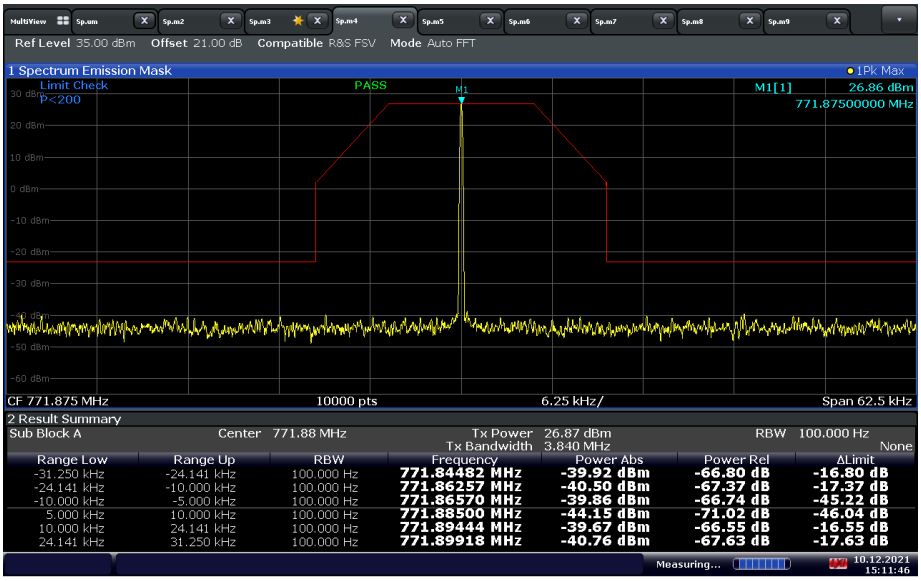
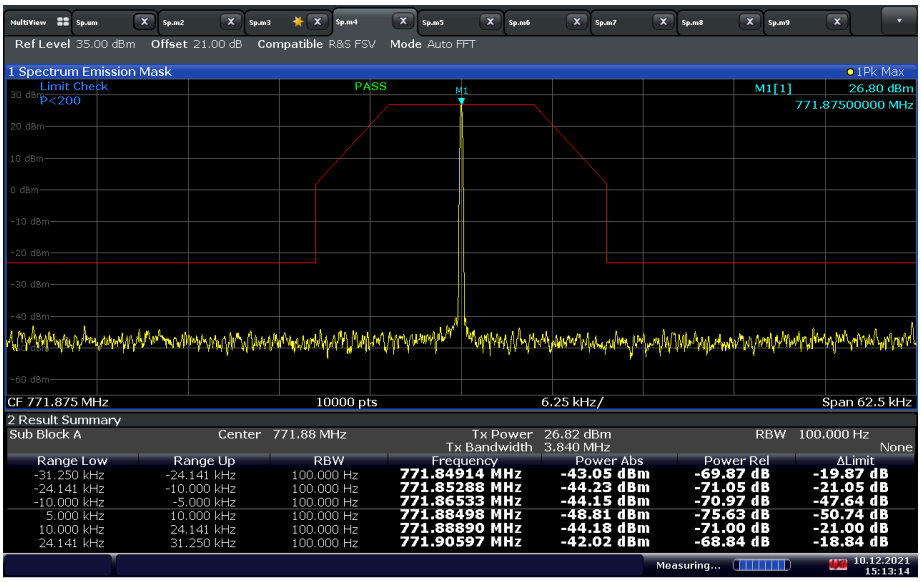
700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Middle Channel Emissions Mask C (AGC Level)



15:11:46 10.12.2021

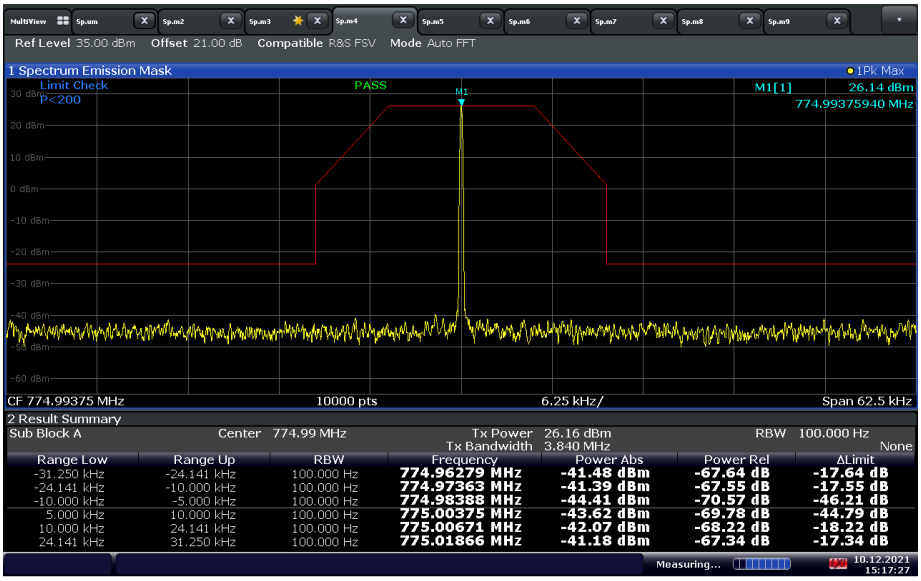
700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Middle Channel Emissions Mask C (AGC+3 Level)



15:13:15 10.12.2021

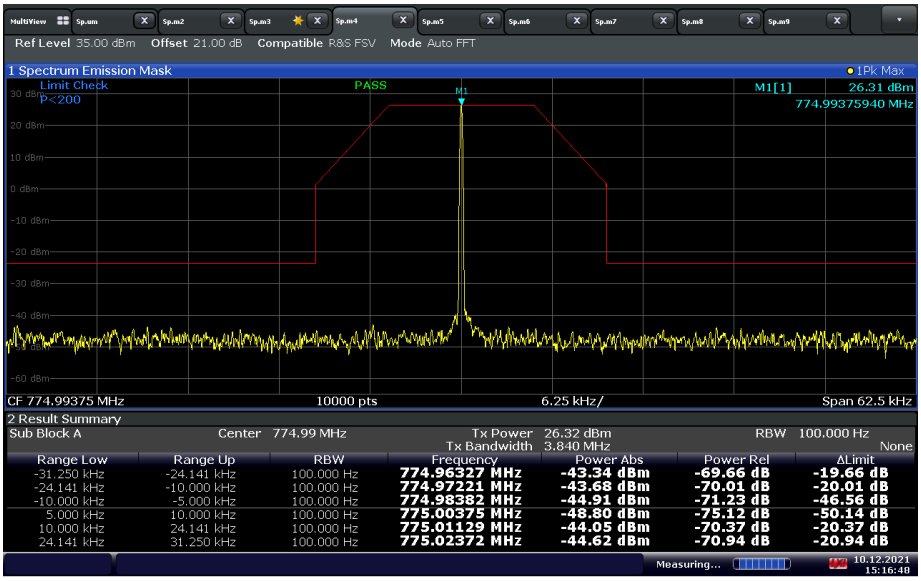
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) High Channel Emissions Mask C (AGC Level)



15:17:27 10.12.2021

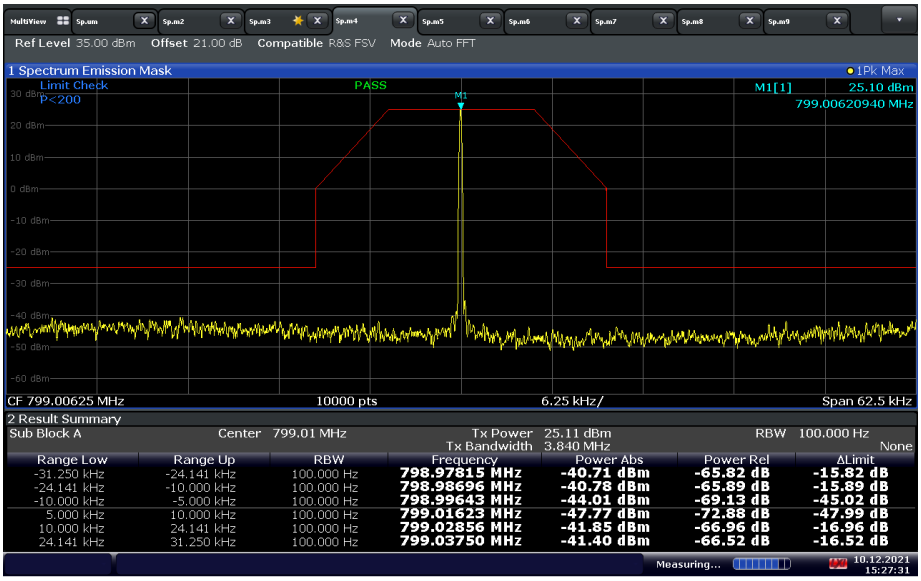
700MHz Narrowband Public Safety Downlink (12.5 kHz BW) High Channel Emissions Mask C (AGC+3 Level)



15:16:48 10.12.2021

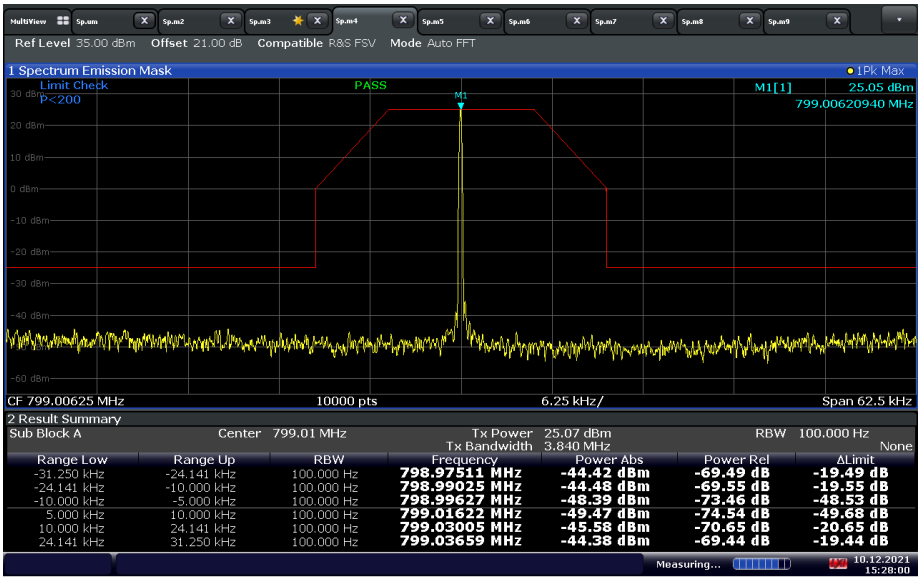
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Low Channel Emissions Mask C (AGC Level)



15:27:31 10.12.2021

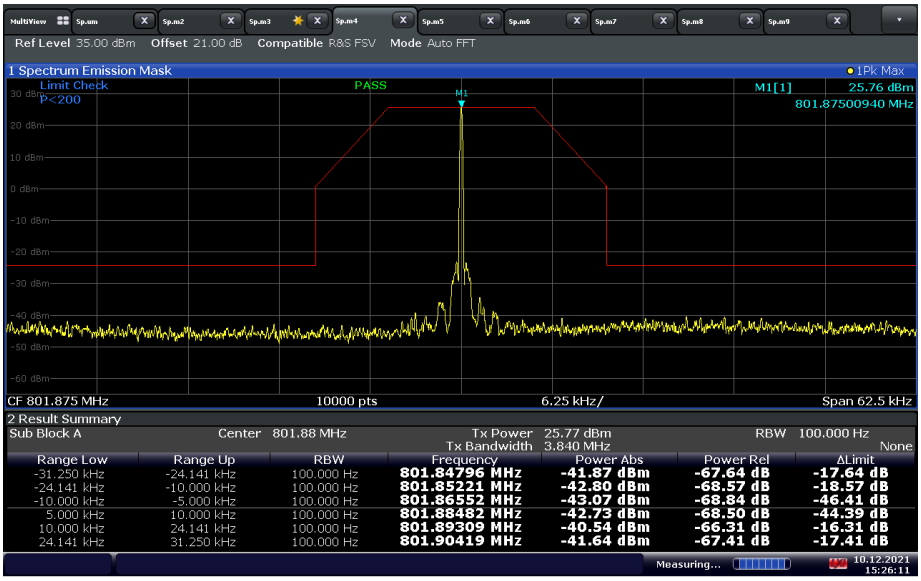
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Low Channel Emissions Mask C (AGC+3 Level)



15:28:01 10.12.2021

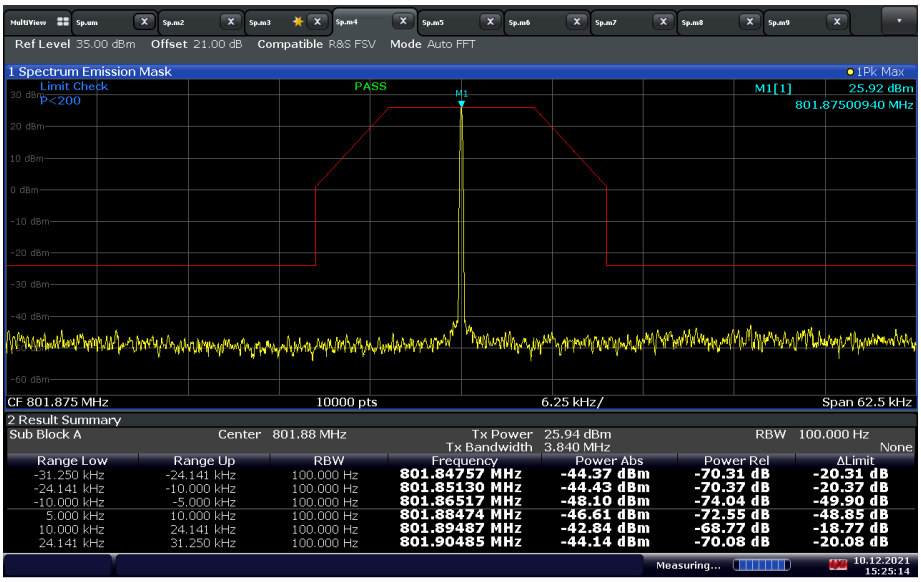
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Middle Channel Emissions Mask C (AGC Level)



15:26:11 10.12.2021

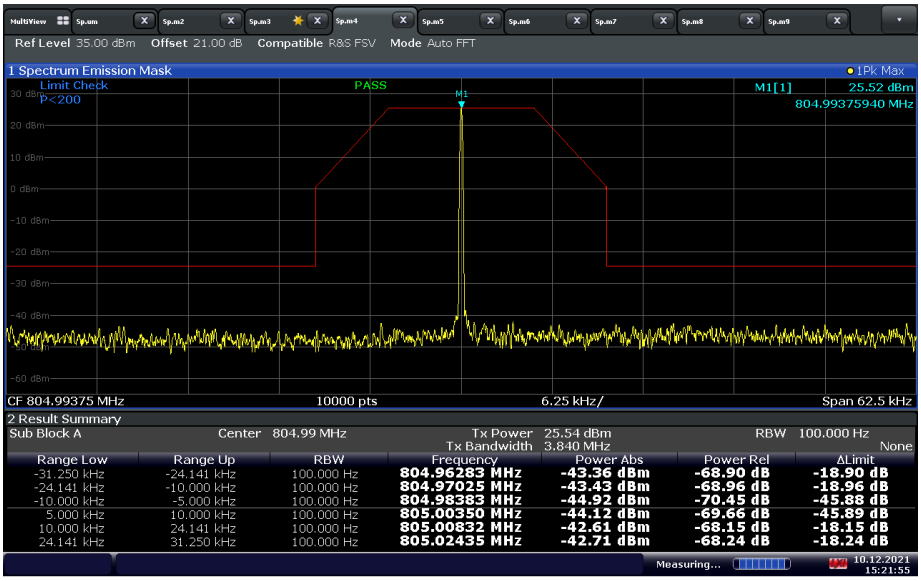
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Middle Channel Emissions Mask C (AGC+3 Level)



15:25:14 10.12.2021

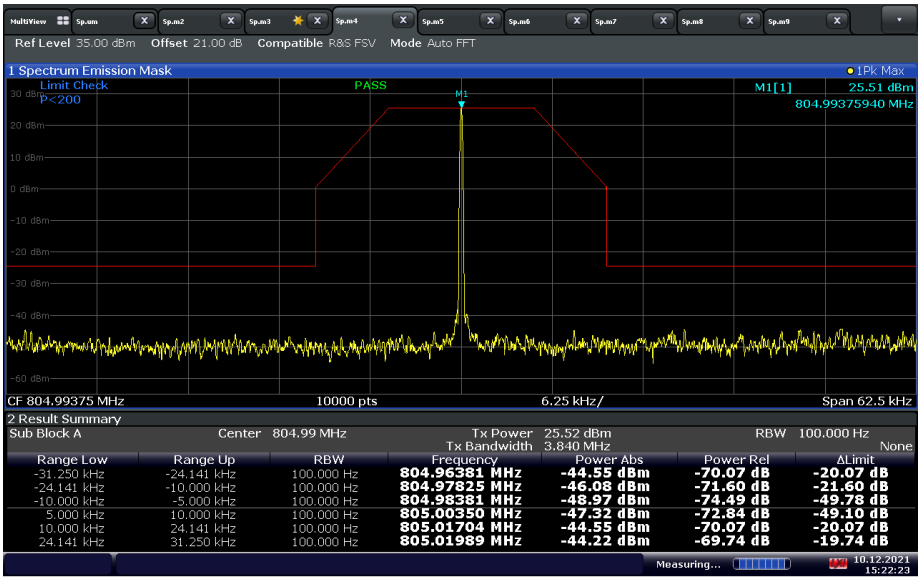
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Uplink (12.5 kHz BW) High Channel Emissions Mask C (AGC Level)



15:21:55 10.12.2021

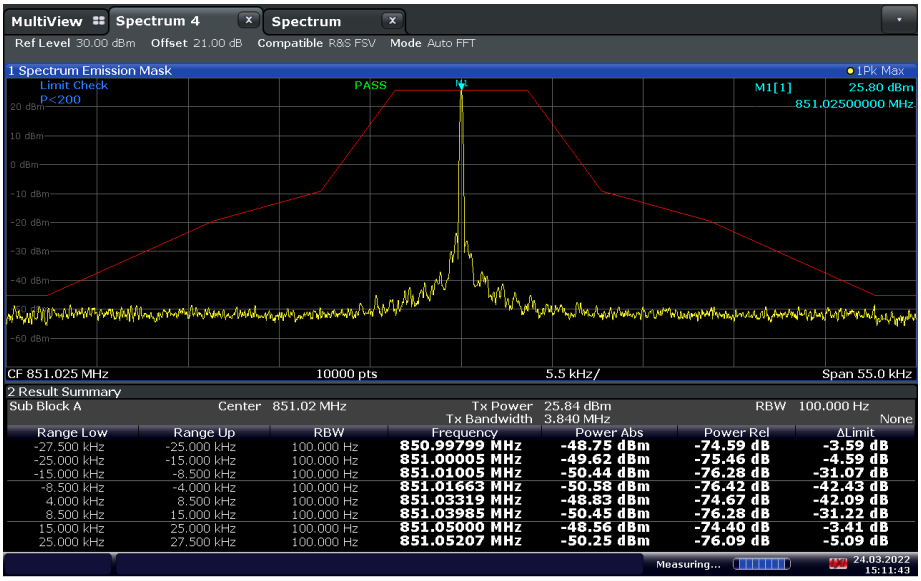
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) High Channel Emissions Mask C (AGC+3 Level)



15:22:24 10.12.2021

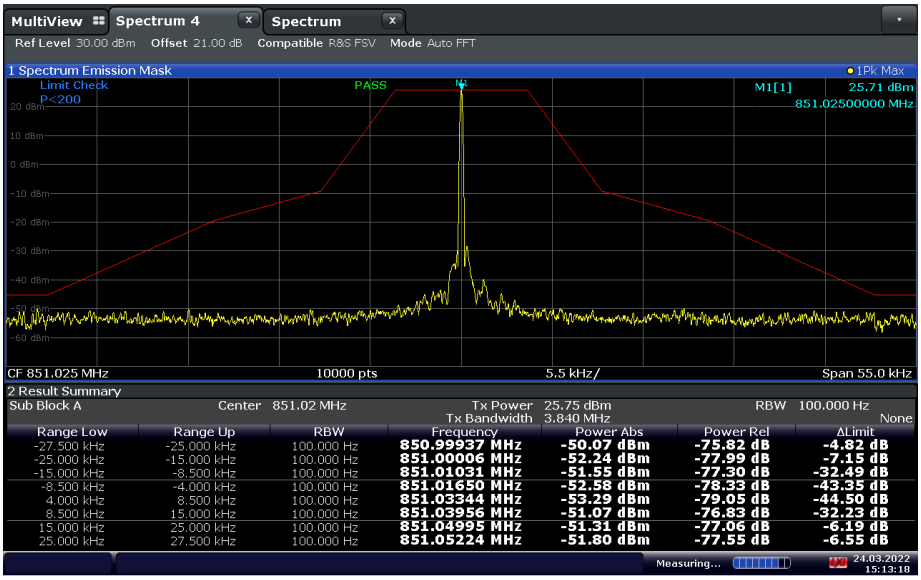
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Low Channel 851.025 MHz Emissions Mask H (AGC Level)



15:11:43 24.03.2022

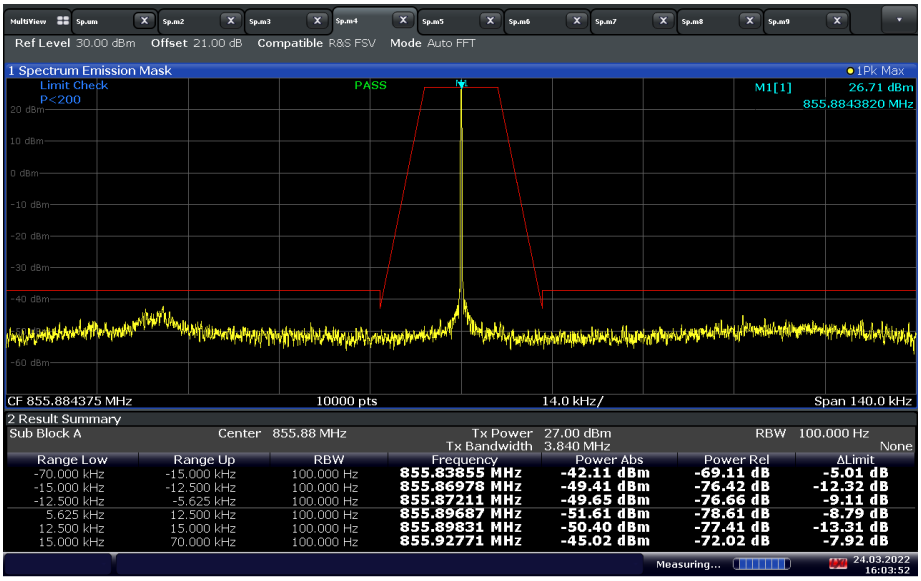
800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Low Channel 851.025 MHz Emissions Mask H (AGC+3 Level)



15:13:19 24.03.2022

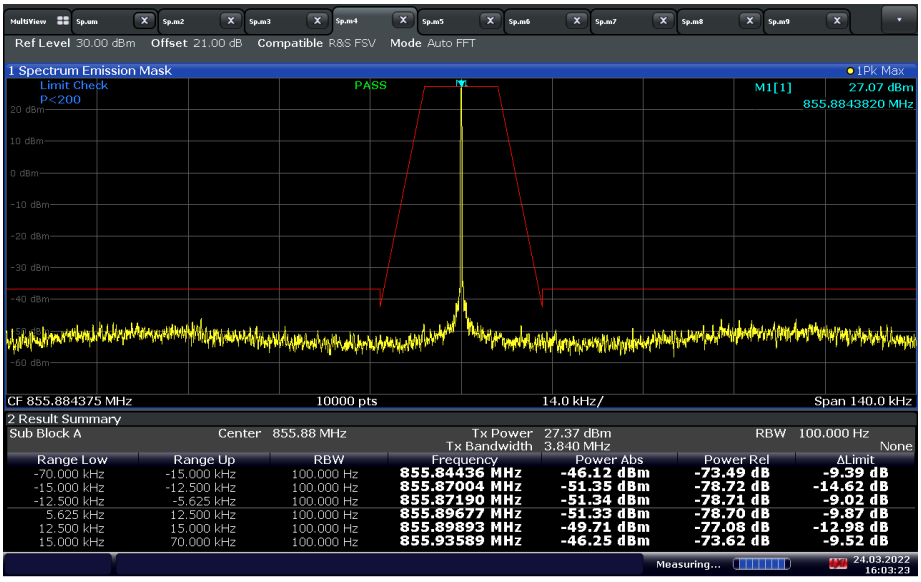
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Middle Channel 855.884375 MHz Emissions Mask D (AGC Level)



16:03:53 24.03.2022

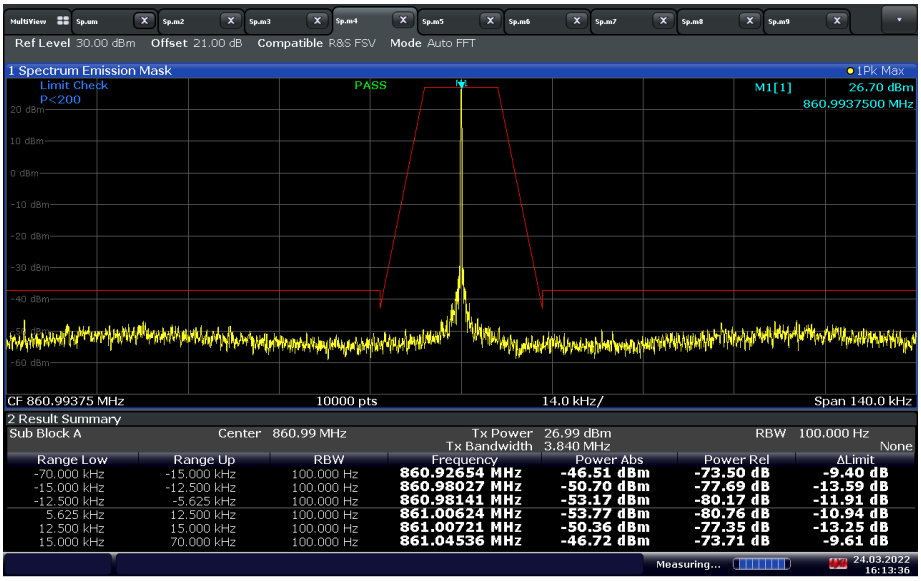
800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Middle Channel 855.884375 MHz Emissions Mask D (AGC+3 Level)



16:03:23 24.03.2022

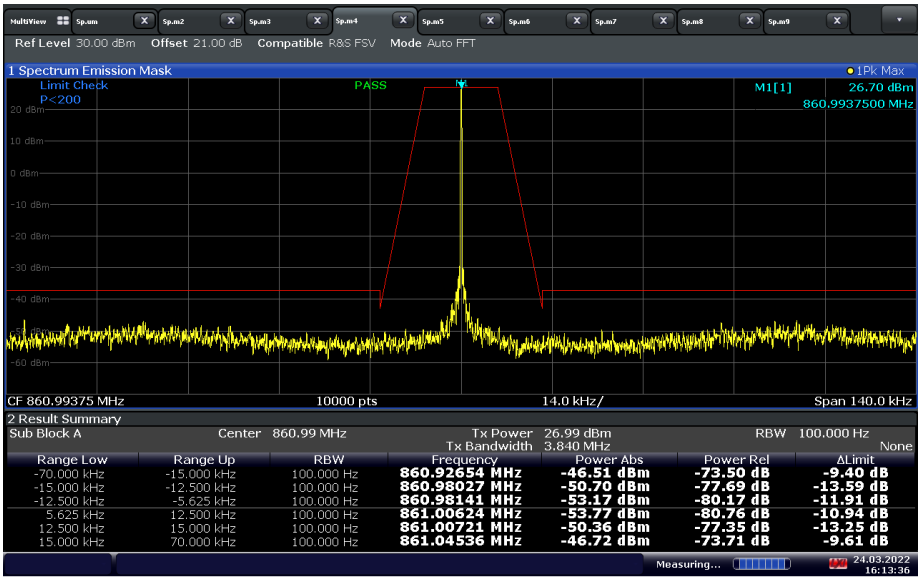
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) High Channel 860.99375 MHz Emissions Mask D (AGC Level)



16:13:36 24.03.2022

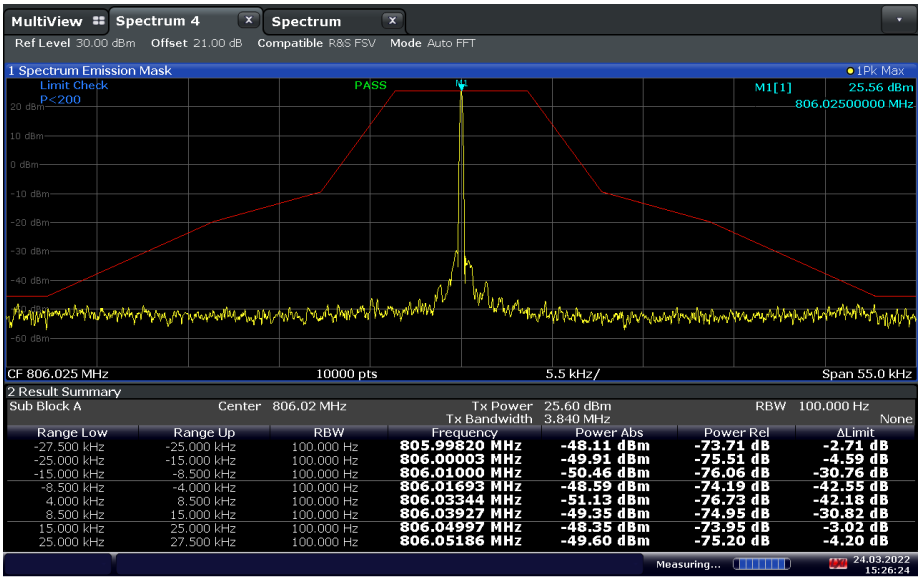
800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) High Channel 860.99375 MHz Emissions Mask D (AGC+3 Level)



16:13:36 24.03.2022

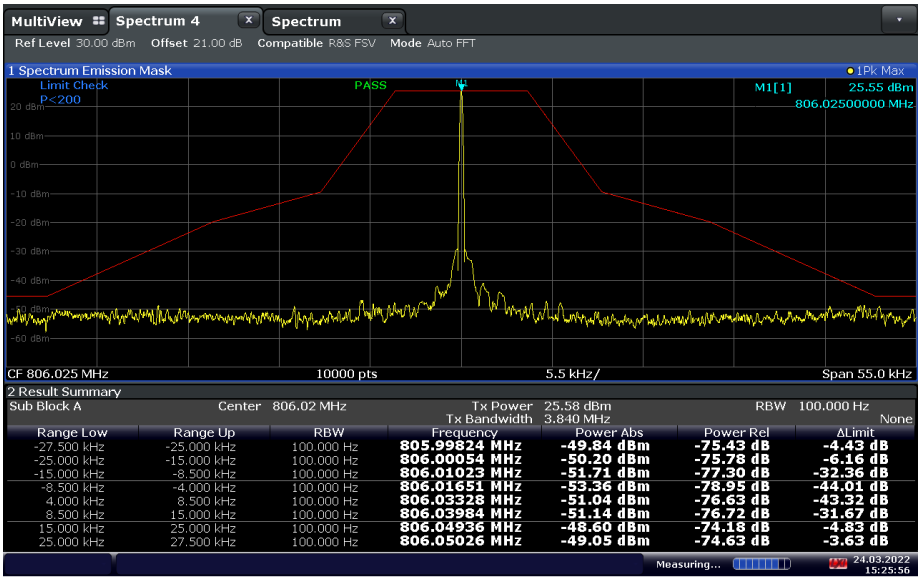
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) Low Channel 806.025 MHz Emissions Mask H (AGC Level)



15:26:24 24.03.2022

800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) Low Channel 806.025 MHz Emissions Mask H (AGC+3 Level)



15:25:56 24.03.2022

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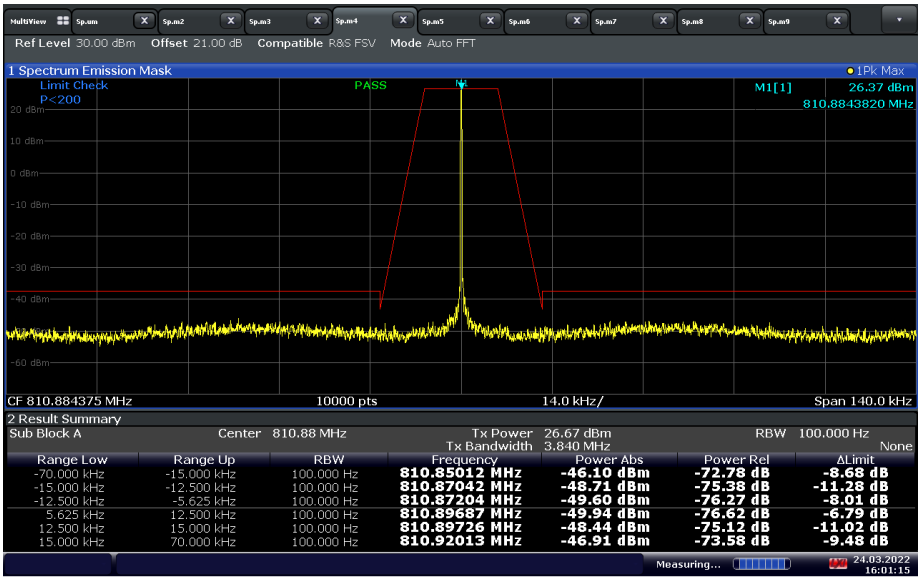
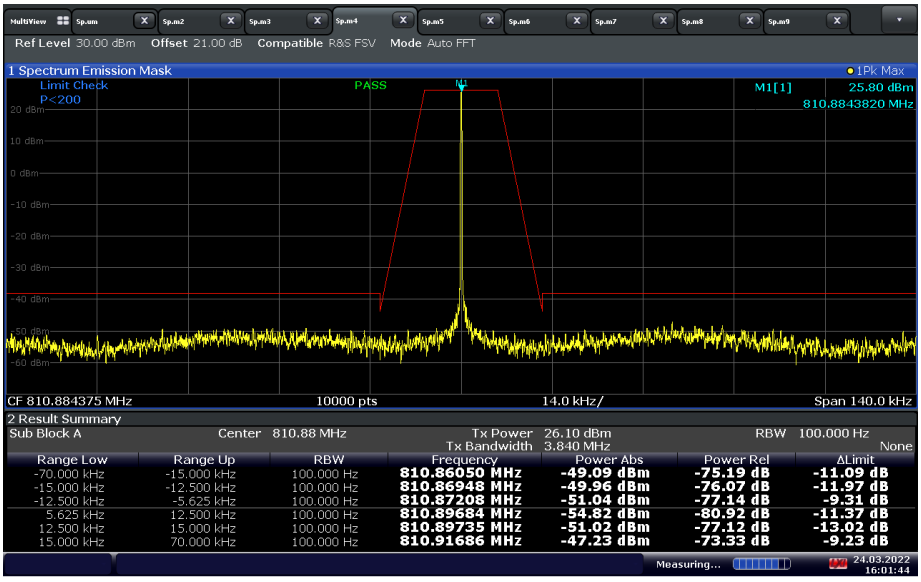
800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) Middle Channel 810.884375 MHz Emissions Mask D (AGC Level)



16:01:16 24.03.2022

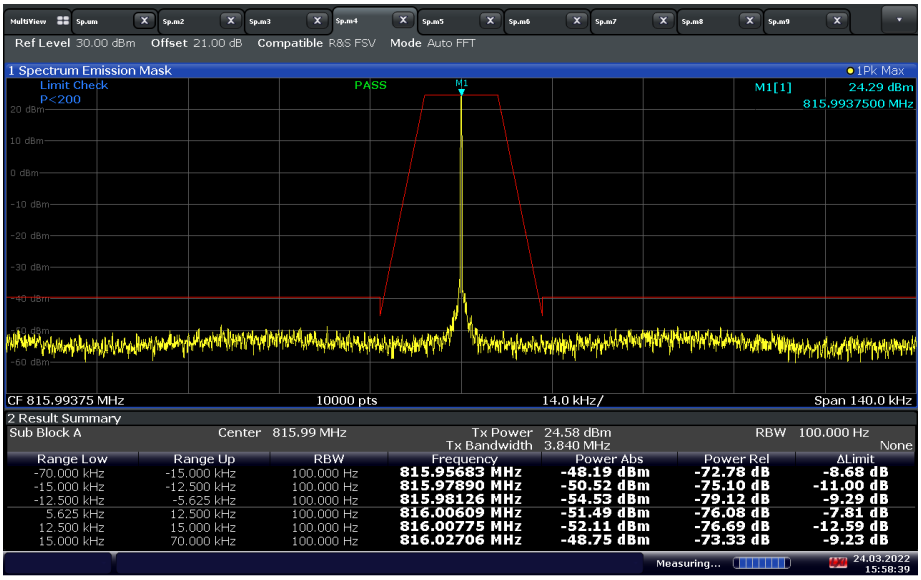
800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) Middle Channel 810.884375 MHz Emissions Mask D (AGC+3 Level)



16:01:45 24.03.2022

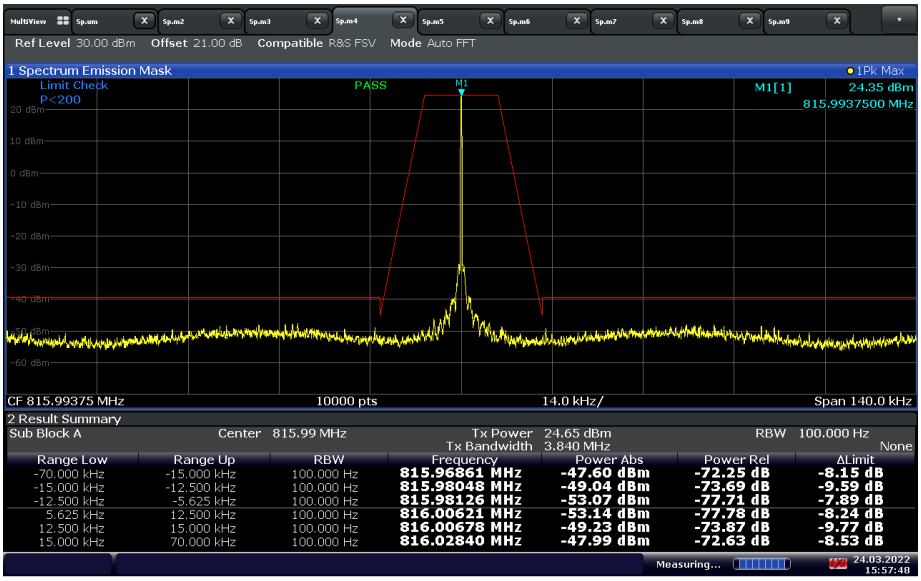
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) High Channel 815.99375 MHz Emissions Mask D (AGC Level)



15:58:39 24.03.2022

800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) High Channel 815.99375 MHz Emissions Mask D (AGC+3 Level)



15:57:49 24.03.2022

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2.11 INPUT AND OUTPUT POWER AND AMPLIFIER/BOOSTER GAIN

2.11.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.219(e)(1)
RSS-131, Clause 5.2.3
KDB 935210 D05, Clause 4.5

2.11.2 Standard Applicable

FCC 47 CFR Part 90, Clause 90.219(e):
(1) The output power capability of a signal booster must be designed for deployments providing a radiated power not exceeding 5 Watts ERP for each retransmitted channel.

RSS-131, Clause 5.2.3:
The zone enhancer gain shall not exceed the nominal gain by more than 1.0 dB.

2.11.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.11.4 Date of Test/Initial of test personnel who performed the test

December 02 and 08, 2021 / XYZ

2.11.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.11.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	22.0 - 23.2 °C
Relative Humidity	43.5 - 47.2 %
ATM Pressure	99.2 - 99.5 kPa

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2.11.7 Additional Observations

- This is a conducted test.
- The path loss was measured and entered as an offset.
- The internal gain control of the EUT is adjusted to the maximum gain (100 dB for 700MHz narrow band and 800MHz NPSPAC Public Safety bands).
- The input power levels (uplink and downlink) are set to maximum input ratings, and confirm the device is not capable of operating in saturation (non-linear mode) during the test.
- For 700MHz narrow band and 800MHz NPSPAC Public Safety bands, the signal generator is configured for 12.5 kHz bandwidth public safety signals as the intended operating signal type.
- A power meter was used to measure the output power according to KDB 935210 D05 clause 4.5.4, and a spectrum analyzer was used to measure the input power according to KDB 935210 D05 clause 4.5.3.
- Both downlink and uplink are tested.

2.11.8 Test Results

Compliant. The booster gain does not exceed the nominal gain (100 dB for 700MHz narrow band and 800MHz NPSPAC Public Safety bands) by more than 1.0 dB.

700MHz Narrowband Public Safety C4FM Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	771.875	-72.37	26.73	99.10
Uplink	12.5	801.875	-73.31	26.07	99.38

700MHz Narrowband Public Safety C4FM Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold + 3dB Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	771.875	-69.50	26.72	96.22
Uplink	12.5	801.875	-70.57	25.65	96.22

700MHz Narrowband Public Safety CQPSK Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	771.875	-68.73	26.84	95.57
Uplink	12.5	801.875	-69.06	26.01	95.07

700MHz Narrowband Public Safety CQPSK Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold + 3dB Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	771.875	-65.93	26.80	92.73
Uplink	12.5	801.875	-66.18	25.73	91.91

700MHz Narrowband Public Safety H-DQPSK Downlink Input and Output Power and Gain					
Input	**Input Level (dBm)**	**Bandwidth (kHz)**	**Frequency (MHz)**	**Output Power (dBm)**	**Booster Gain (dB)**
AGC Threshold	-70.27	12.5	771.875	26.80	97.07
AGC Threshold + 3dB	-67.39			26.74	94.13

700MHz Narrowband Public Safety H-CPM Uplink Input and Output Power and Gain					
Input	**Input Level (dBm)**	**Bandwidth (kHz)**	**Frequency (MHz)**	**Output Power (dBm)**	**Booster Gain (dB)**
AGC Threshold	-73.13	12.5	801.875	25.89	99.02
AGC Threshold + 3dB	-70.23			25.60	95.83

800 MHz NPSPAC Public Safety C4FM Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	855.884375	-72.33	26.91	99.24
Uplink	12.5	810.884375	-73.0	26.09	99.09

800 MHz NPSPAC Public Safety C4FM Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold + 3dB Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	855.884375	-69.55	26.81	96.36
Uplink	12.5	810.884375	-70.21	26.11	96.32

800 MHz NPSPAC Public Safety CQPSK Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	855.884375	-69.12	27.02	96.14
Uplink	12.5	810.884375	-69.23	26.28	95.51

800 MHz NPSPAC Public Safety CQPSK Input and Output Power and Gain					
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**AGC Threshold + 3dB Input (dBm)**	**Output Power (dBm)**	**Booster Gain (dB)**
Downlink	12.5	855.884375	-66.20	26.97	93.17
Uplink	12.5	810.884375	-66.15	26.16	92.31

800 MHz NPSPAC Public Safety H-DQPSK Downlink Input and Output Power and Gain					
Input	**Input Level (dBm)**	**Bandwidth (kHz)**	**Frequency (MHz)**	**Output Power (dBm)**	**Booster Gain (dB)**
AGC Threshold	-70.26	12.5	855.884375	26.99	97.25
AGC Threshold + 3dB	-67.07			26.81	93.88

800 MHz NPSPAC Public Safety H-CPM Uplink Input and Output Power and Gain					
Input	**Input Level (dBm)**	**Bandwidth (kHz)**	**Frequency (MHz)**	**Output Power (dBm)**	**Booster Gain (dB)**
AGC Threshold	-73.08	12.5	810.884375	26.02	99.10
AGC Threshold + 3dB	-70.33			26.14	96.47

Limit	
Band	**System Gain (dB)**
PS 700 MHz and 800 MHz	100

2.12 NOISE FIGURE

2.12.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.219 (e)(2)
KDB 935210 D05, Clause 4.6

2.12.2 Standard Applicable

FCC Part 90.219 (e)(2):
The noise figure of a signal booster must not exceed 9 dB in either direction.

2.12.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.12.4 Date of Test/Initial of test personnel who performed the test

March 31 and April 4, 2022 / OC

2.12.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.12.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	24.5 °C
Relative Humidity	45.3 %
ATM Pressure	98.8 kPa

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2.12.7 Additional Observations

- The path loss was measured and entered as an offset.
- EUT was set at its maximum gain for each band respectively.
- Noise power output was measured with the EUT input terminated with a 50Ω load therefore, AGC on the EUT was not active.
- The input of the EUT is terminated when measuring the noise output.
- The spectrum analyser trace was set as average in RMS mode.
- RBW is 1 MHz, VBW is > 3 x RBW.
- Channel power was recorded.
- The noise figure was calculated using the following formula:

  Noise Figure (NF) = N – Gain + 174 dB

  - N = Noise Power Output in dBm/Hz
  - Gain = Gain of the device under test
  - 174 = Thermal noise for 1 Hz RBW at room temperature

- Both Downlink and Uplink are tested.

2.12.8 Test Results

700MHz Narrowband Public Safety Noise Figure (CQPSK as the worst case)						
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**Noise Output (dBm/Hz)**	**Booster Gain (dB)**	**Noise Figure (dB)**	**Limit (dB)**
Downlink	12.5	771.875	-135.5	100	-51.5*	9
Uplink	12.5	801.875	-130.3	100	-46.3*	9

Downlink Noise Figure = N – Gain + 174 dB
= –135.5 – 90 + 174 dB
= – 51.5 dB

Uplink Noise Figure = N – Gain + 174 dB
= –130.3 – 90 + 174 dB
= – 46.3 dB

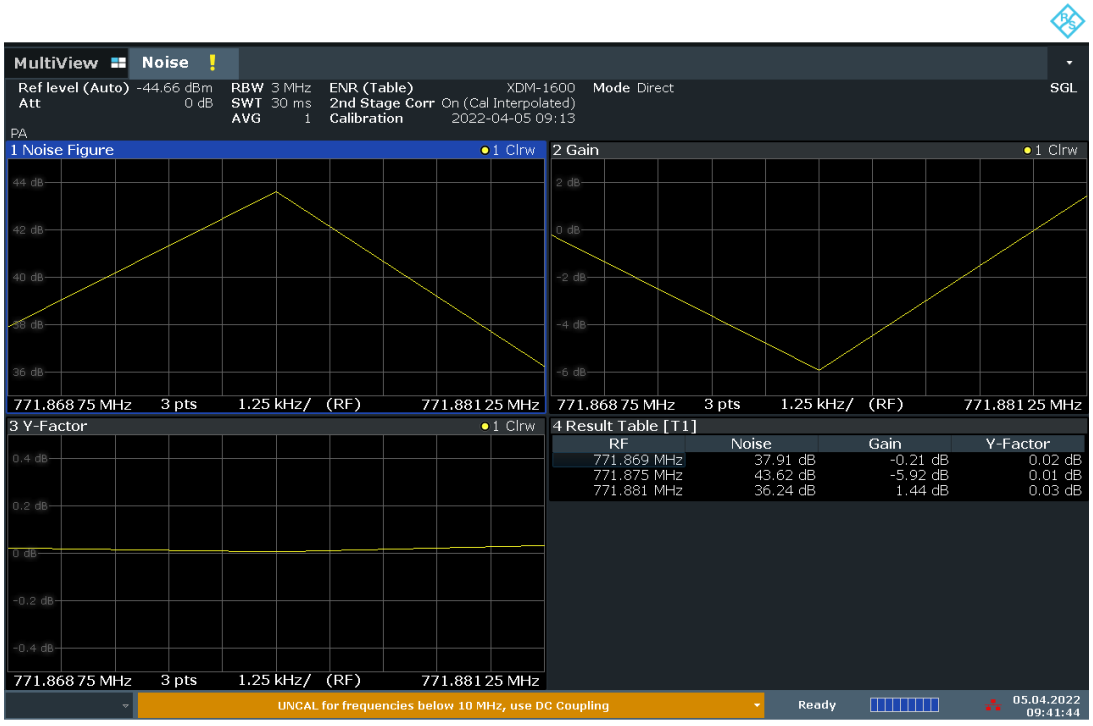
* For reference only: EUT doesn't amplify the band / channel measured when public safety signals are not injected at the input port.

800 MHz NPSPAC Public Safety Noise Figure (CQPSK as the worst case)						
Mode	**Bandwidth (kHz)**	**Frequency (MHz)**	**Noise Output (dBm/Hz)**	**Booster Gain (dB)**	**Noise Figure (dB)**	**Limit (dB)**
Downlink	12.5	855.884375	-133.78	90	-49.78*	9
Uplink	12.5	810.884375	-133.91	90	-49.91*	9

Downlink Noise Figure = N – Gain + 174 dB
= –133.78 – 90 + 174 dB
= -49.78 dB

Uplink Noise Figure = N – Gain + 174 dB
= –133.91 – 90 + 174 dB
= - -49.91 dB

* For reference only: EUT doesn't setup the channel when there is no injected signal. The EUT is also verified using standard noise source (at the input) method with identical results. The level of noise is not sufficient to trigger the EUT setting up a channel (no boosting occurred).



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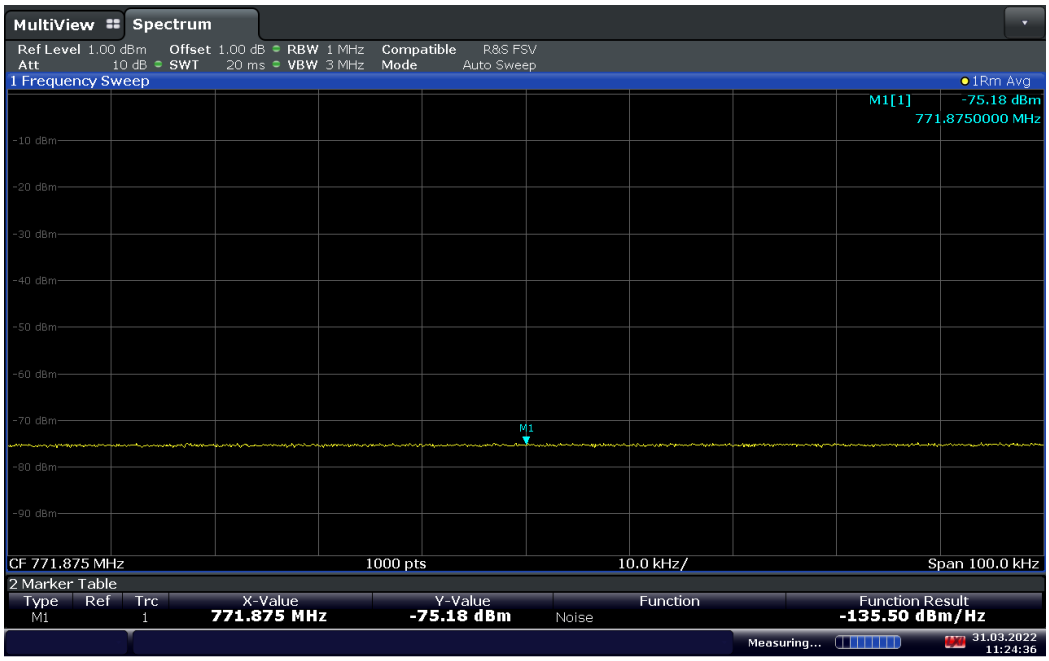
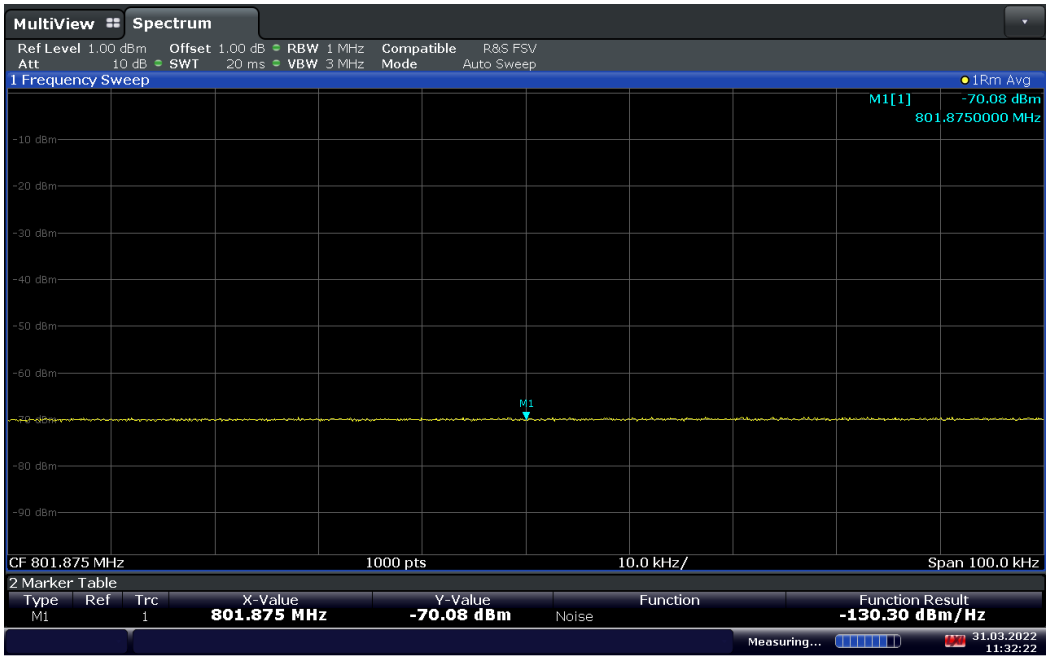
700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Middle Channel / Noise Output



11:24:37 31.03.2022

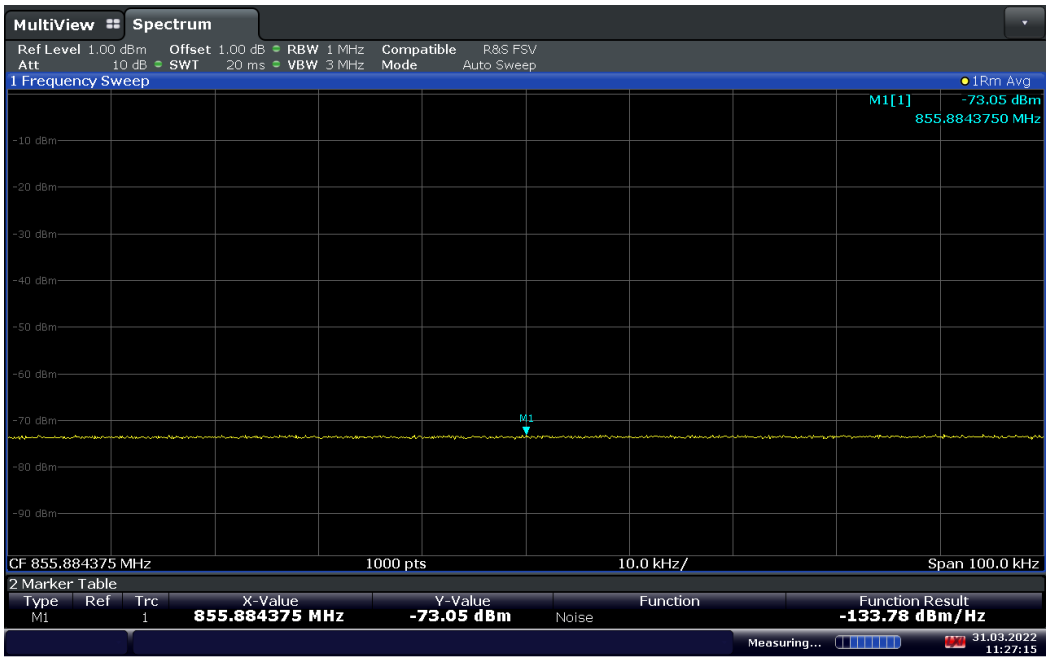
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Middle Channel / Noise Output



11:32:22 31.03.2022

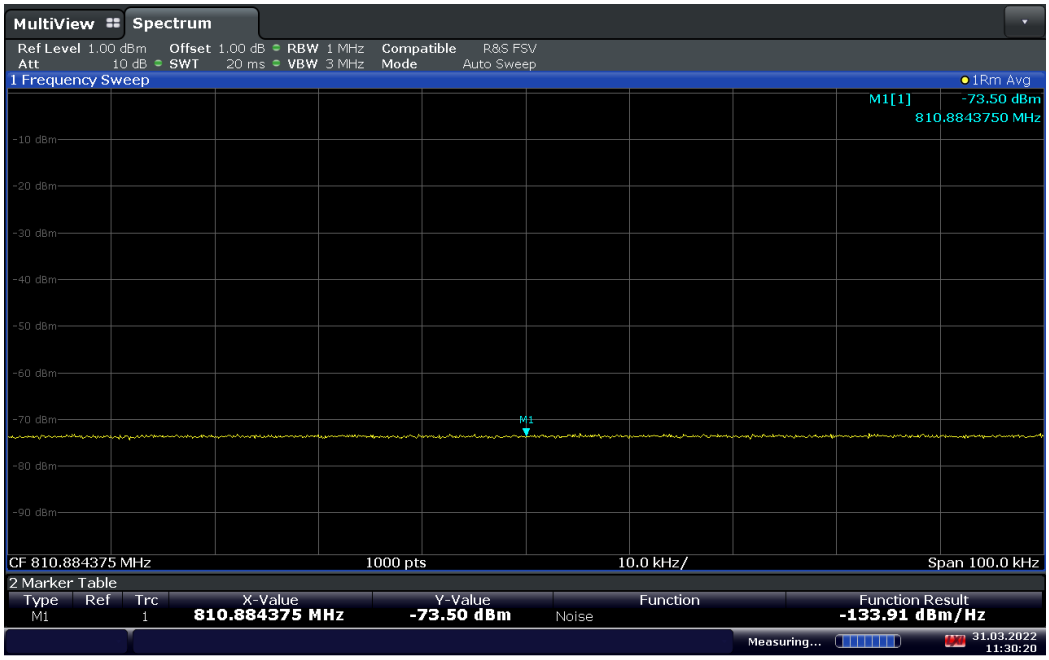
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Middle Channel / Noise Output



11:27:16 31.03.2022

800 MHz NPSPAC Public Safety Uplink (12.5 kHz BW) Middle Channel / Noise Output



11:30:20 31.03.2022

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.13 OUT-OF-BAND/OUT-OF-BLOCK (INTERMODULATION) AND SPURIOUS EMISSIONS

2.13.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1051
FCC 47 CFR Part 90, Clause 90.219(e)(3)
FCC 47 CFR Part 90, Clause 90.543(c)(f)
RSS-119, Clause 5.8.9.2
KDB 935210 D05, Clause 4.7

2.13.2 Standard Applicable

FCC 47 CFR Part 90.219(e):
(3) Spurious emission from a signal booster must not exceed -13 dBm within any 100kHz measureemnt bandwith.

FCC 47 CFR Part 90.543:
(c) Out-of-band emission limit. On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10 log (p) dB in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

(f) For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

RSS-119, Clause 5.8.9.2 Out-of-Band Emission Limit:
On any frequency outside of the ranges specified in the ACP tables 13 to 16, the power of any emission shall be attenuated below the mean output power P (dBW) by at least 43 + 10 log10(p), measured in a 100 kHz bandwidth for frequencies less than or equal to 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

In addition, for operations in the bands 768-776 MHz and 798-806 MHz, all emissions (including harmonics in the band 1559-1610 MHz), shall not exceed:
-70 dBW/MHz equivalent isotropically radiated power (e.i.r.p.) for wideband emissions, and
-80 dBW/kHz e.i.r.p. for discrete emissions of less than 700 Hz bandwidth

2.13.3 Equipment Under Test and Modification State

Serial No: 226141000048 / Test Configuration A and B

2.13.4 Date of Test/Initial of test personnel who performed the test

December 07 and 13, 2021 / XYZ

2.13.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.13.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	21.1 - 23.2 °C
Relative Humidity	39.5 - 45.3 %
ATM Pressure	99.4 kPa

2.13.7 Additional Observations

- The path loss or the transducer factor (TDF) from the external attenuators and cables was measured and entered as an offset.
- According to KDB 935210 D05, Clause 4.7, Signal generator was configured to produce a CW signal and injected to the input port for 700 MHz Narrowband Public Safety and 800 MHz NPSPAC Public Safety testing.
- For spurious emissions, the spectrum analyser was set to peak detector and trace is max hold.
- RBW is 100 kHz, VBW is > 3 x RBW.
- Intermodulation-product spurious emission measurements were tested using two CW signals 12.5kHz channel spacing for 700 MHz Narrowband Public Safety and 800 MHz NPSPAC Public Safety.
- For intermodulation, the spectrum analyser was set to RMS detector and at least 100 trace averaging.
- RBW is 300 Hz, VBW is > 3 x RBW.
- Span is set to 100 kHz.
- Both Downlink and Uplink are tested.

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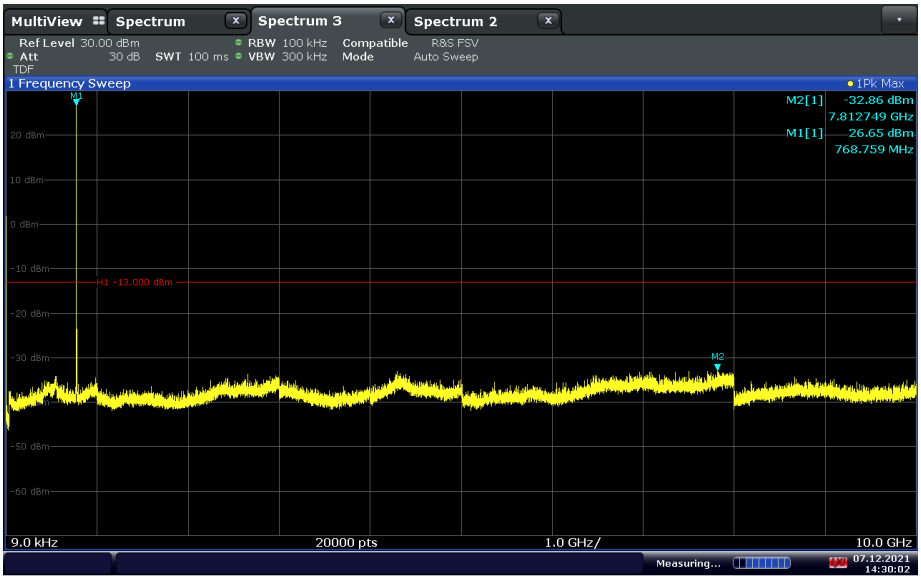
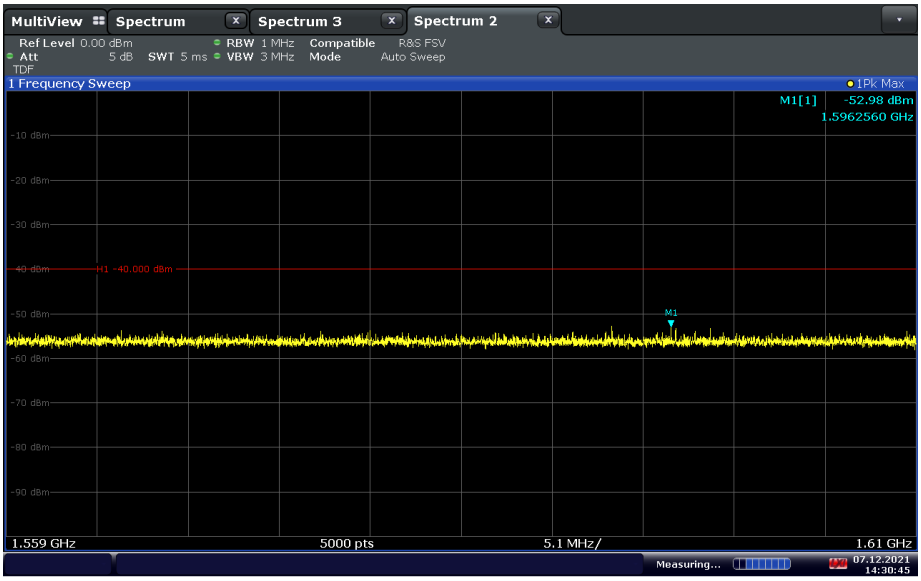
2.13.8 Test Results

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Low Channel / Spurious Emissions



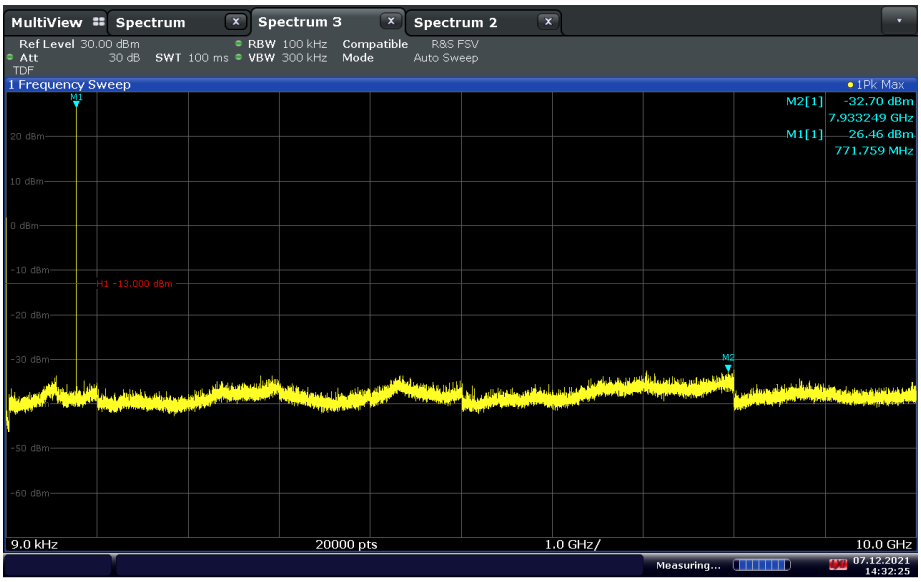
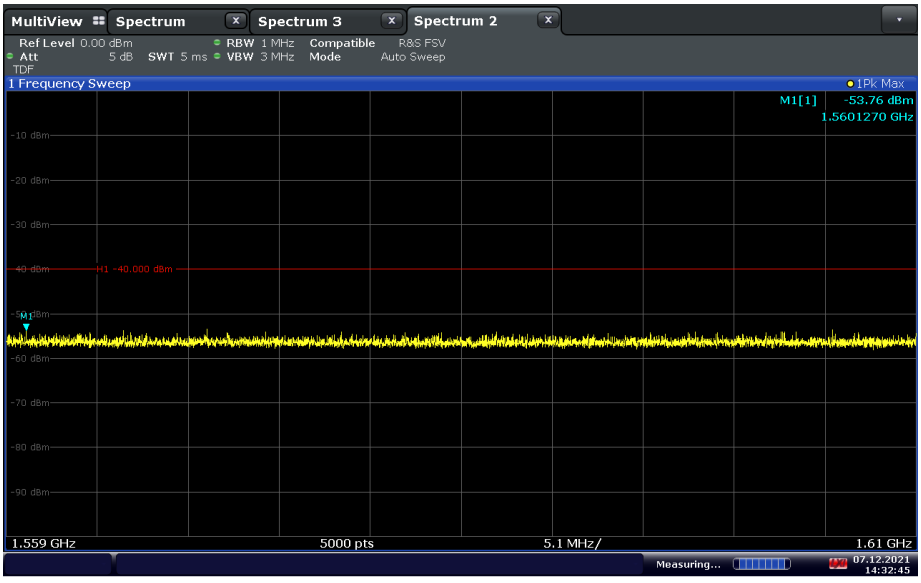
14:30:03 07.12.2021

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Low Channel / Spurious Emissions from 1559 MHz to 1610 MHz

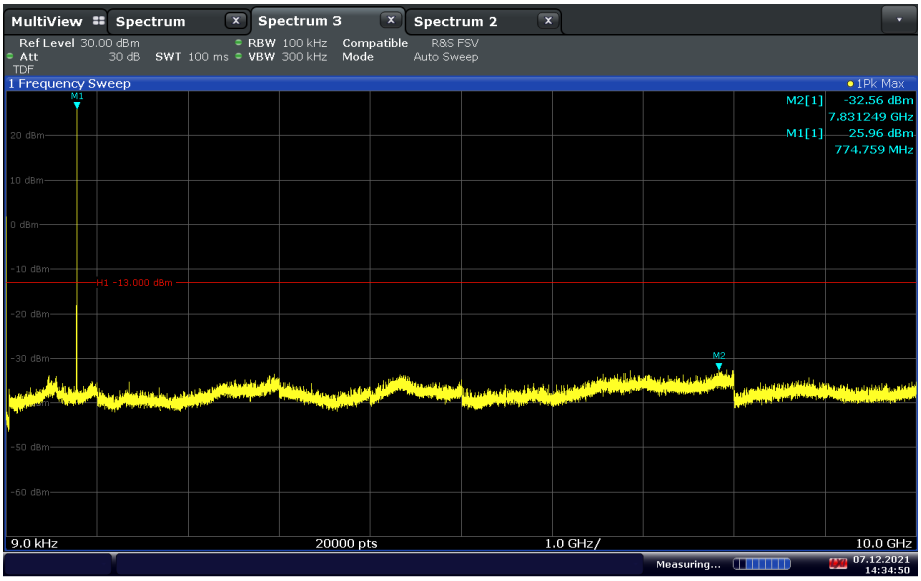
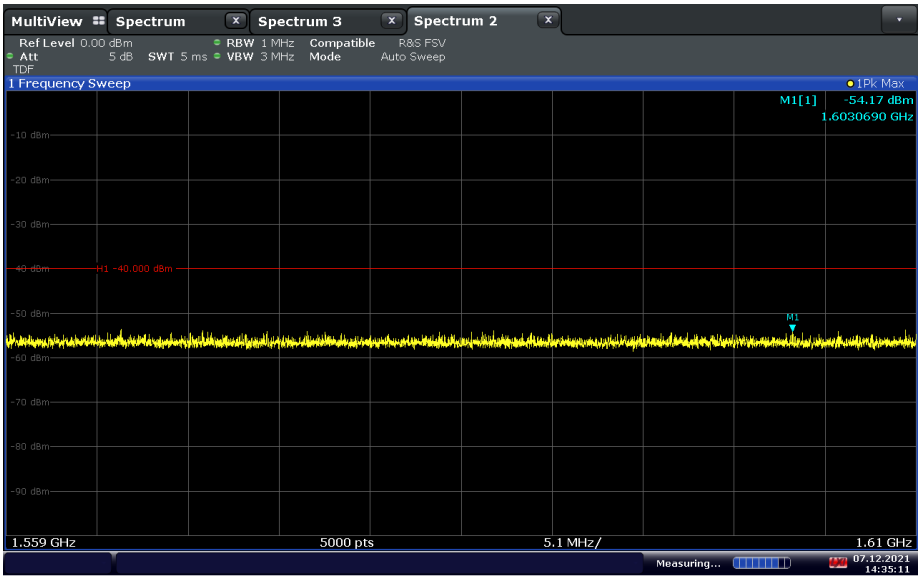


14:30:46 07.12.2021

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Middle Channel / Spurious Emissions
 14:32:26 07.12.2021
700MHz Narrowband Public Safety Downlink (12.5 kHz BW) Middle Channel / Spurious Emissions from 1559 MHz to 1610 MHz
 14:32:46 07.12.2021

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Downlink (12.5 kHz BW) High Channel / Spurious Emissions
 14:34:50 07.12.2021
700MHz Narrowband Public Safety Downlink (12.5 kHz BW) High Channel / Spurious Emissions from 1559 MHz to 1610 MHz
 14:35:12 07.12.2021

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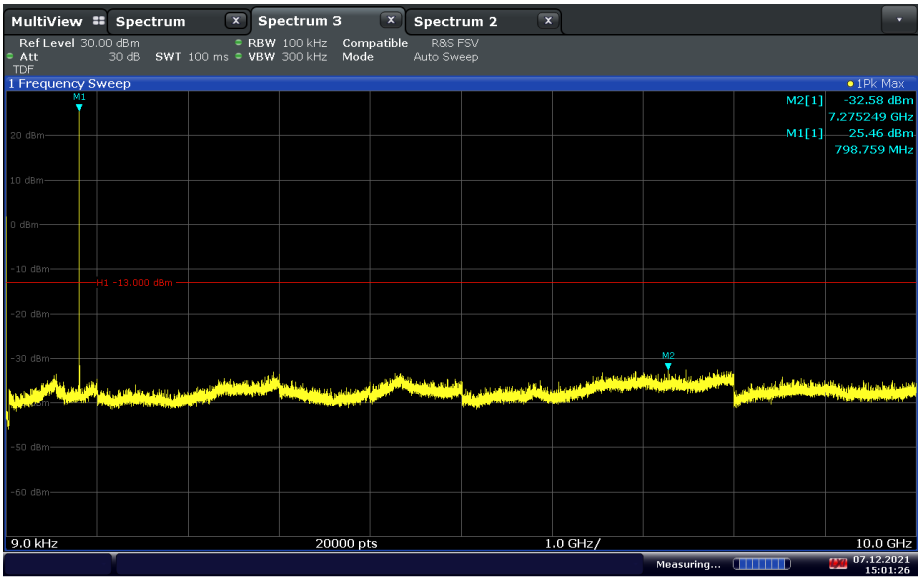
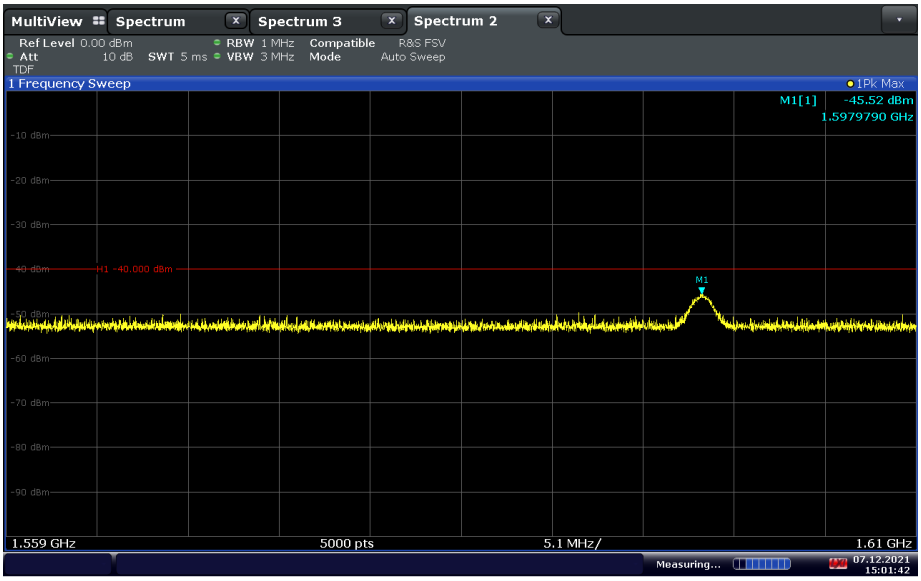
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Low Channel / Spurious Emissions
 15:01:27 07.12.2021
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Low Channel / Spurious Emissions from 1559 MHz to 1610 MHz
 15:01:43 07.12.2021

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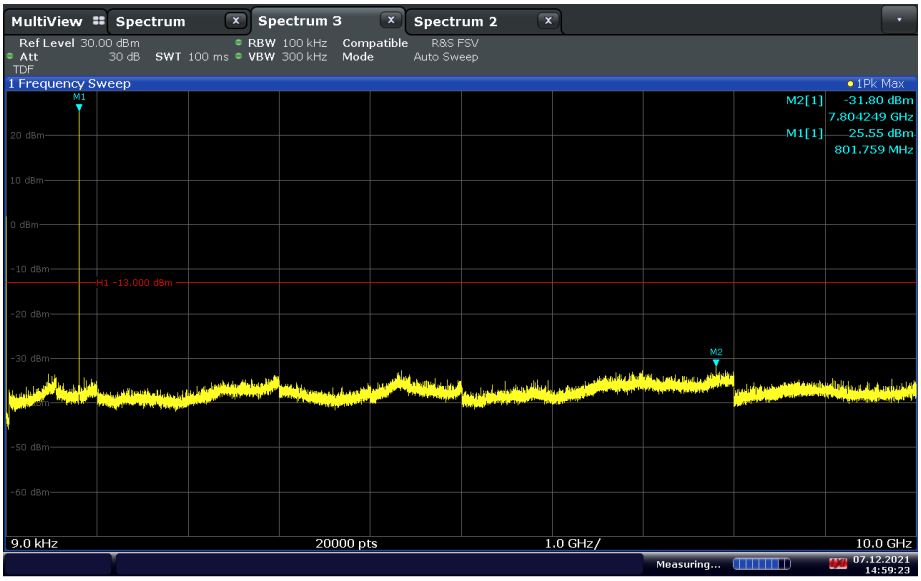
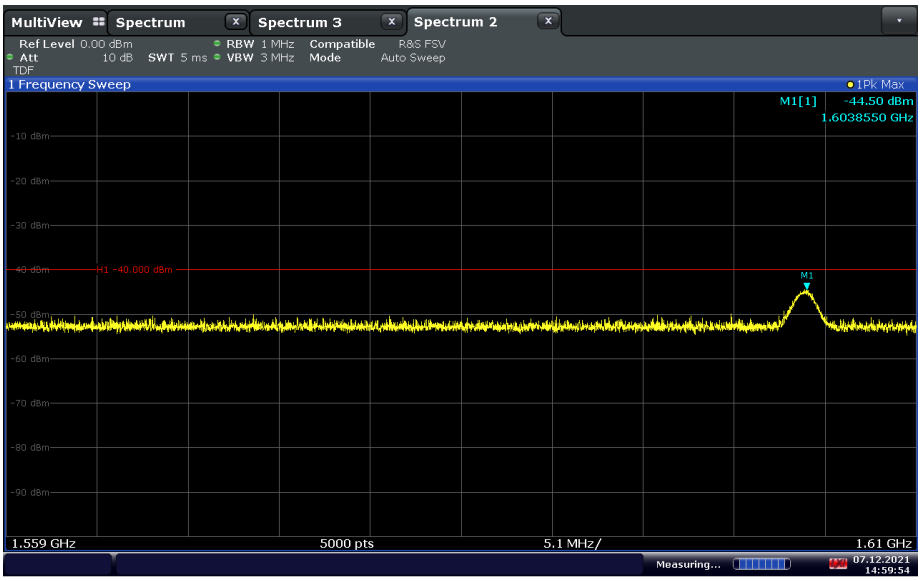
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Middle Channel / Spurious Emissions



14:59:24 07.12.2021

700MHz Narrowband Public Safety Uplink (12.5 kHz BW) Middle Channel / Spurious Emissions from 1559 MHz to 1610 MHz



14:59:54 07.12.2021

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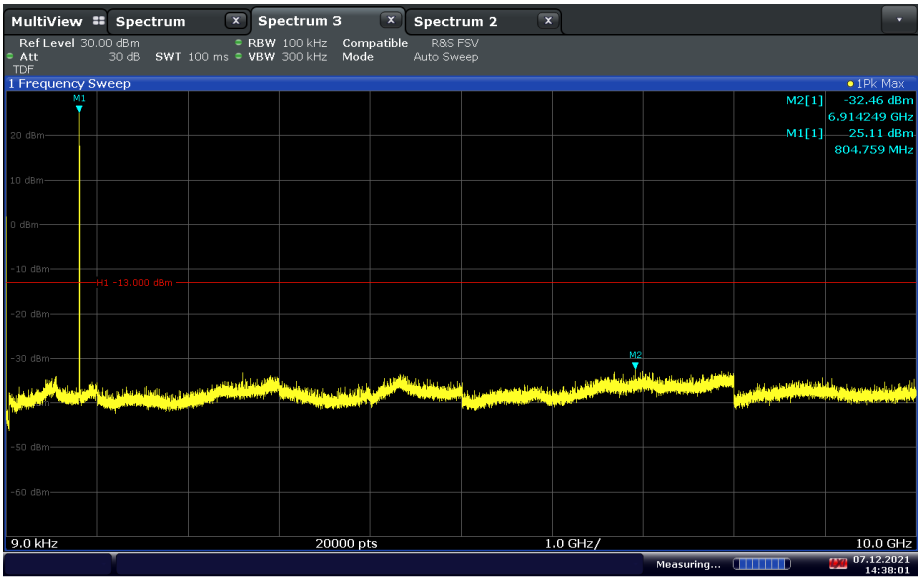
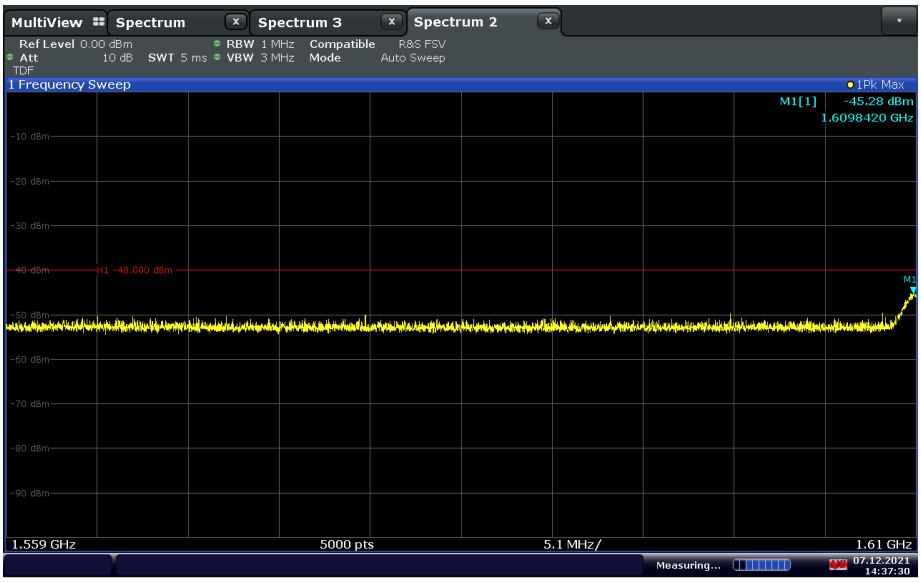
700MHz Narrowband Public Safety Uplink (12.5 kHz BW) High Channel / Spurious Emissions



14:38:02 07.12.2021

700MHz Narrowband Public Safety Uplink (12.5 kHz BW) High Channel / Spurious Emissions from 1559 MHz to 1610 MHz



14:37:31 07.12.2021

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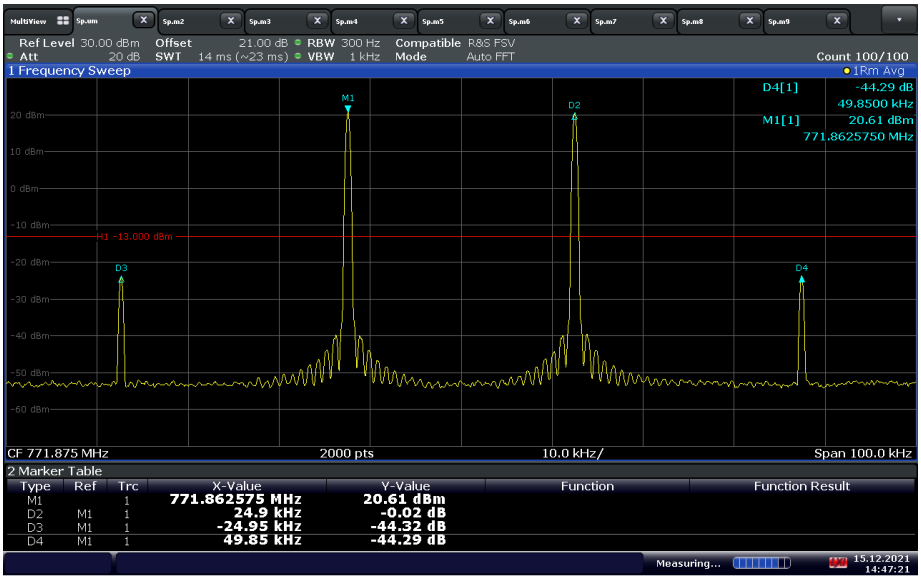
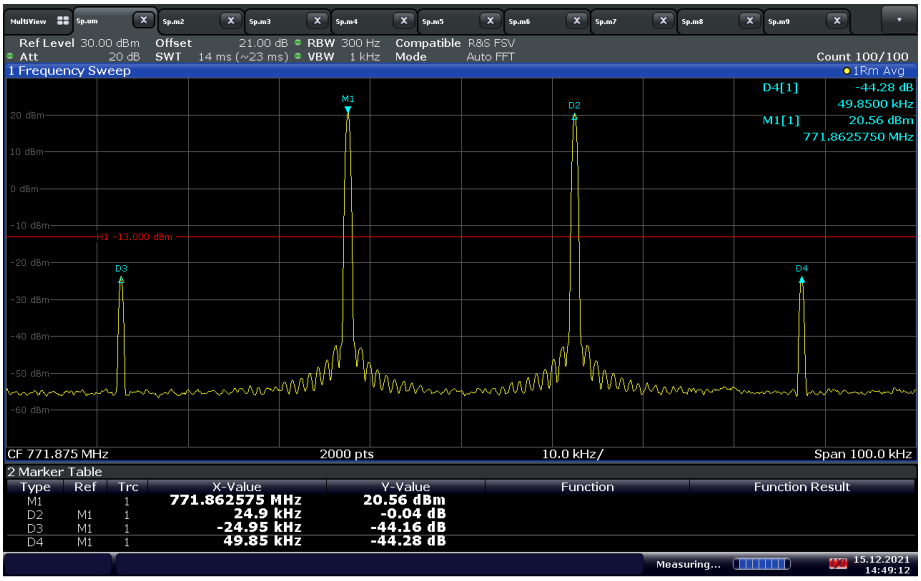
700MHz Narrowband Public Safety Downlink 2 Channels - Intermodulation (AGC Level) (771.8625 MHz and 771.875 MHz, 12.5 kHz Channel Space)



14:47:22 15.12.2021

700MHz Narrowband Public Safety Downlink 2 Channels - Intermodulation (AGC + 3 Level) (771.8625 MHz and 771.875 MHz, 12.5 kHz Channel Space)



14:49:12 15.12.2021

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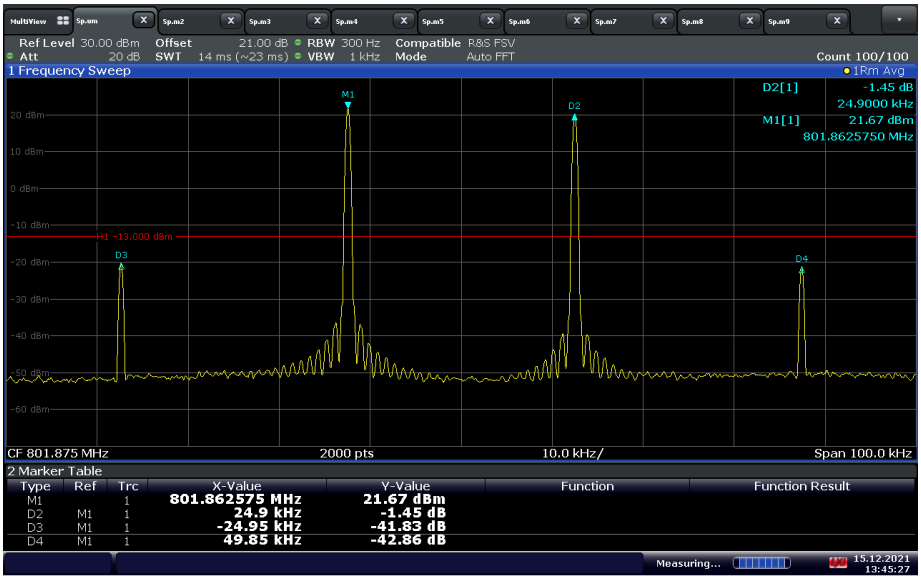
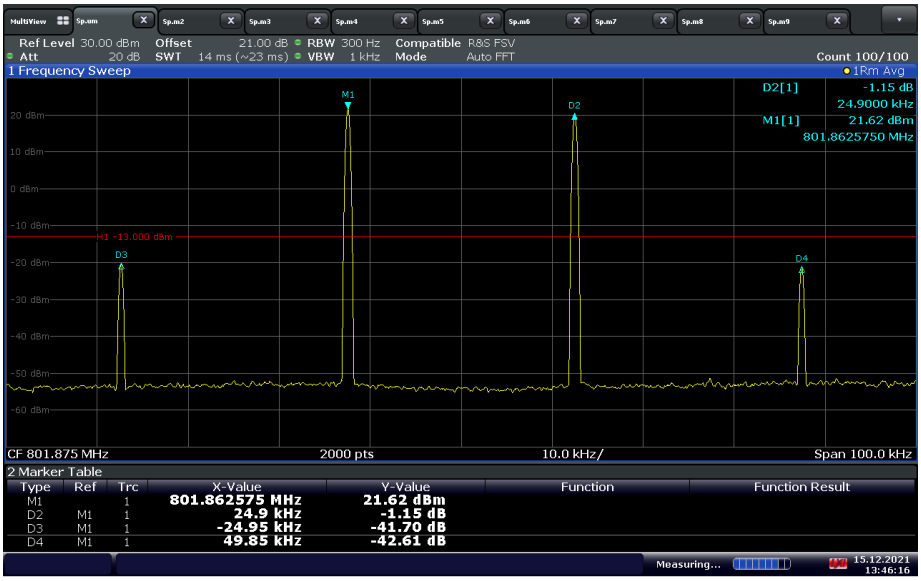
700MHz Narrowband Public Safety Uplink 2 Channels - Intermodulation (AGC Level) (801.8625 MHz and 801.875 MHz, 12.5 kHz Channel Space)



13:45:28 15.12.2021

700MHz Narrowband Public Safety Uplink 2 Channels - Intermodulation (AGC + 3 Level) (801.8625 MHz and 801.875 MHz, 12.5 kHz Channel Space)



13:46:16 15.12.2021

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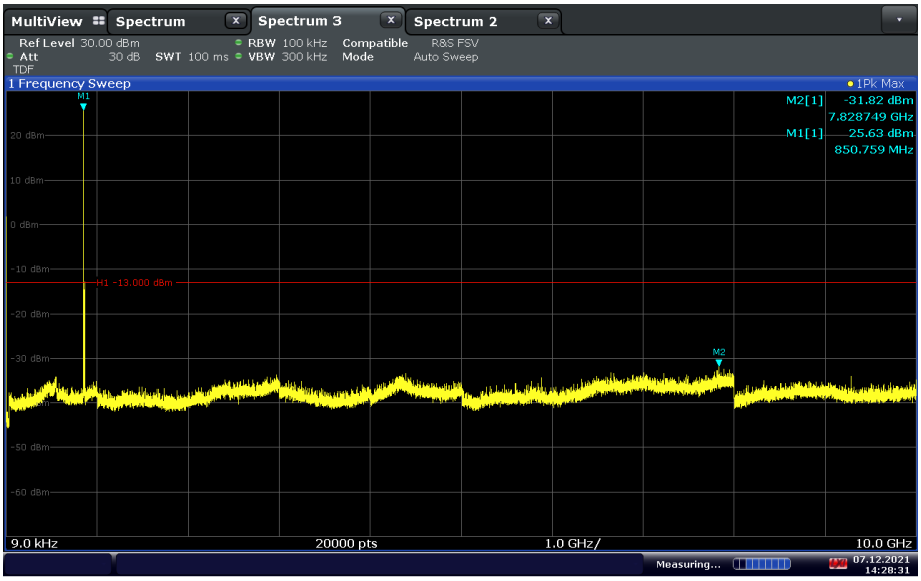
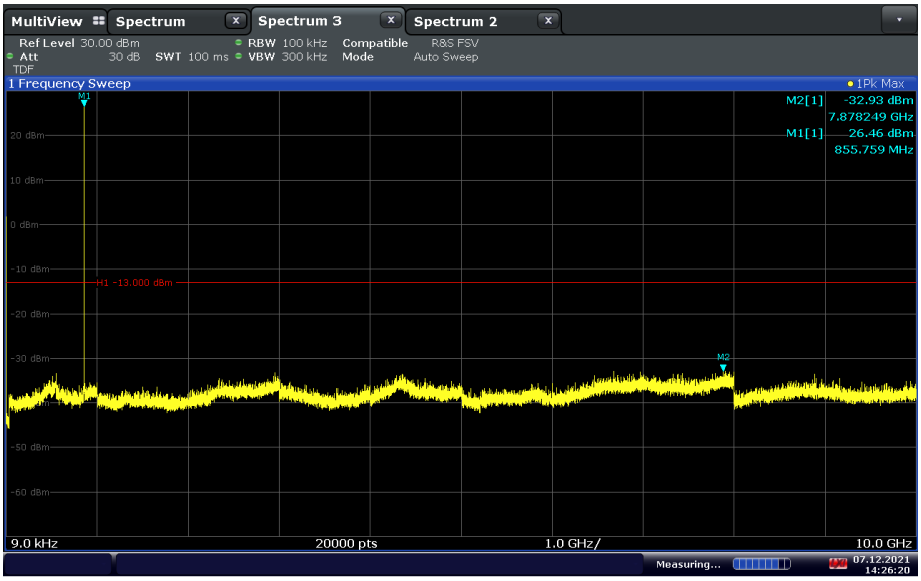
800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Low Channel / Spurious Emissions



14:28:32 07.12.2021

800 MHz NPSPAC Public Safety Downlink (12.5 kHz BW) Middle Channel / Spurious Emissions



14:26:20 07.12.2021

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