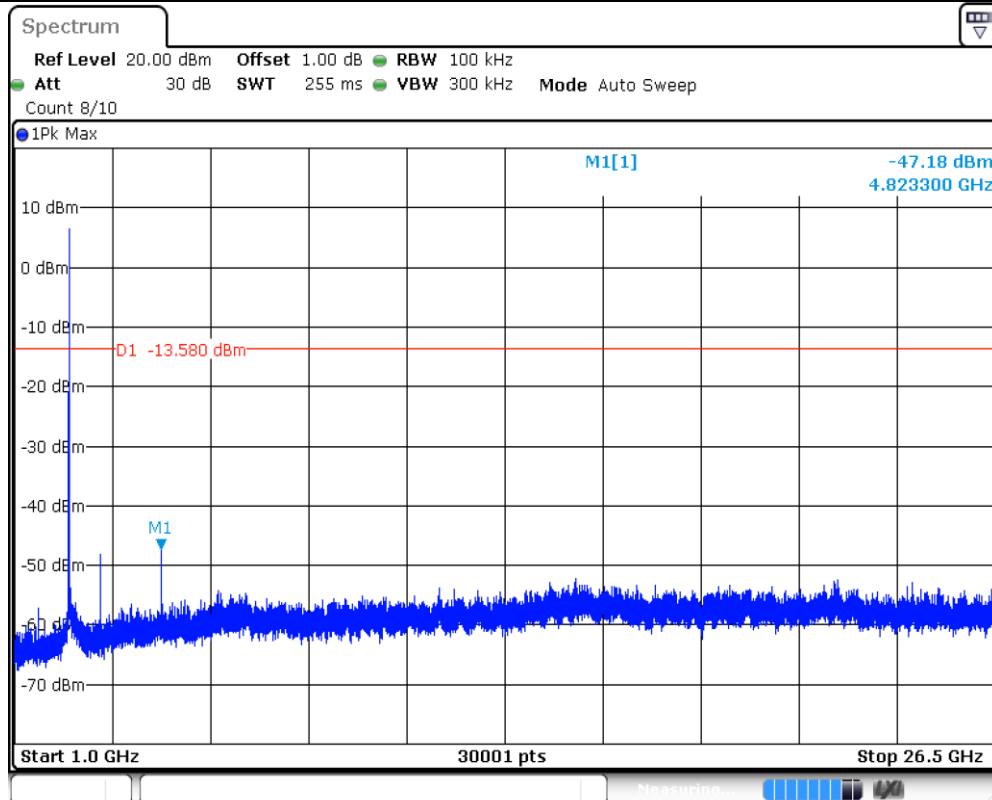
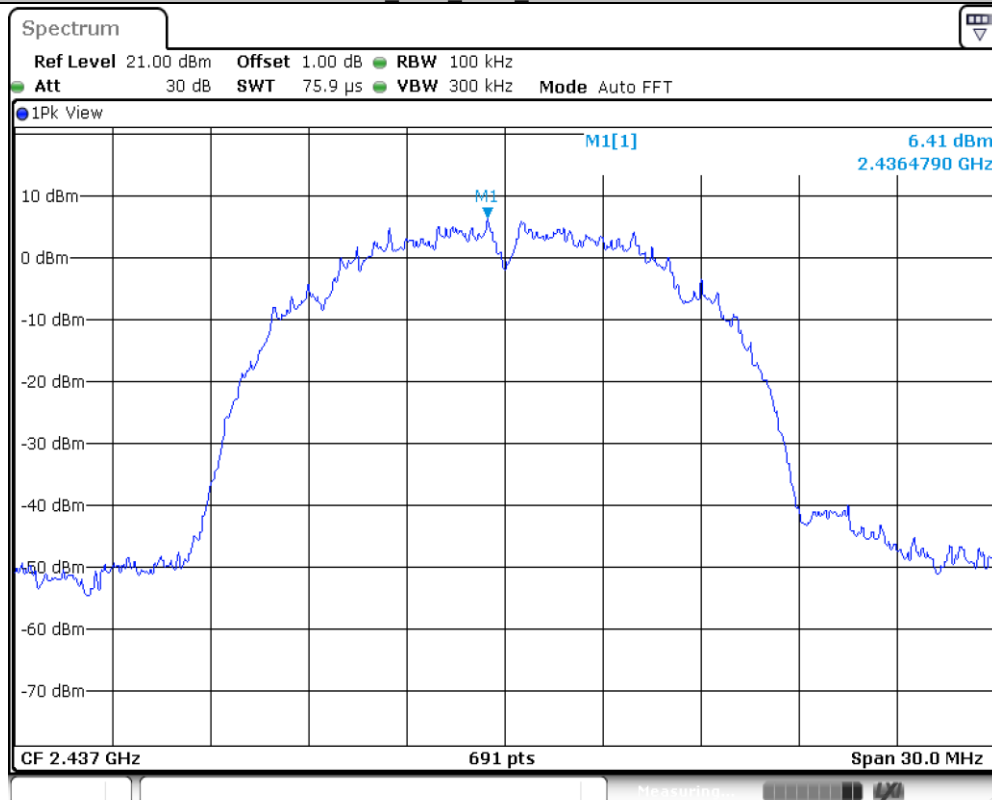
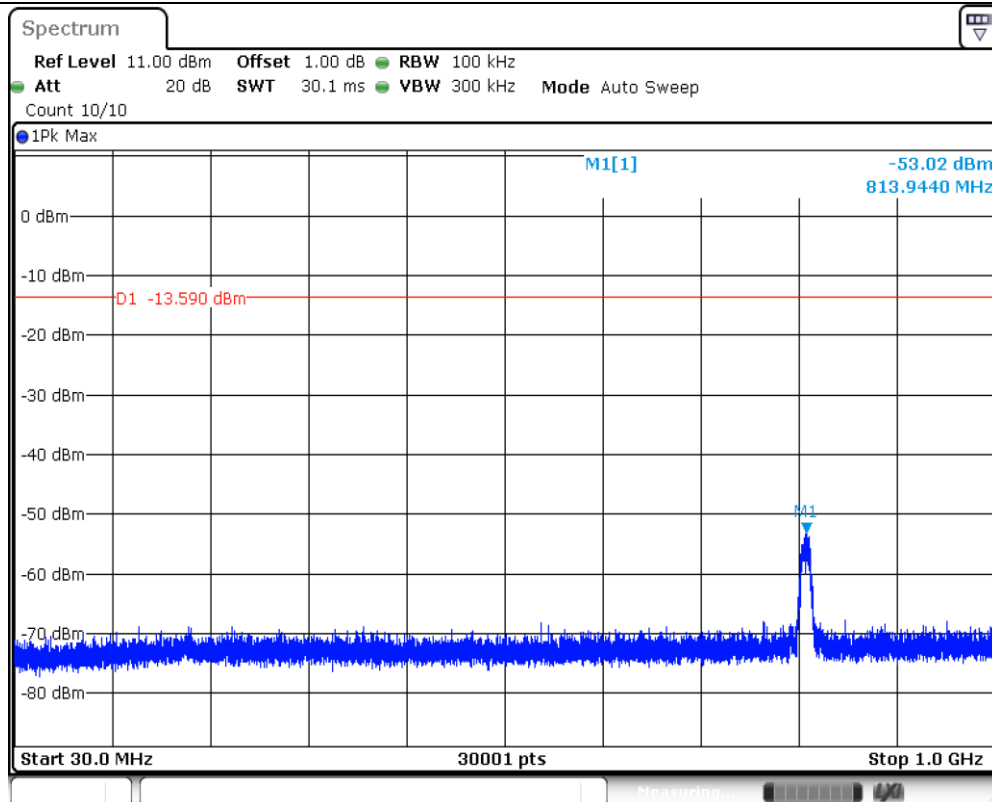




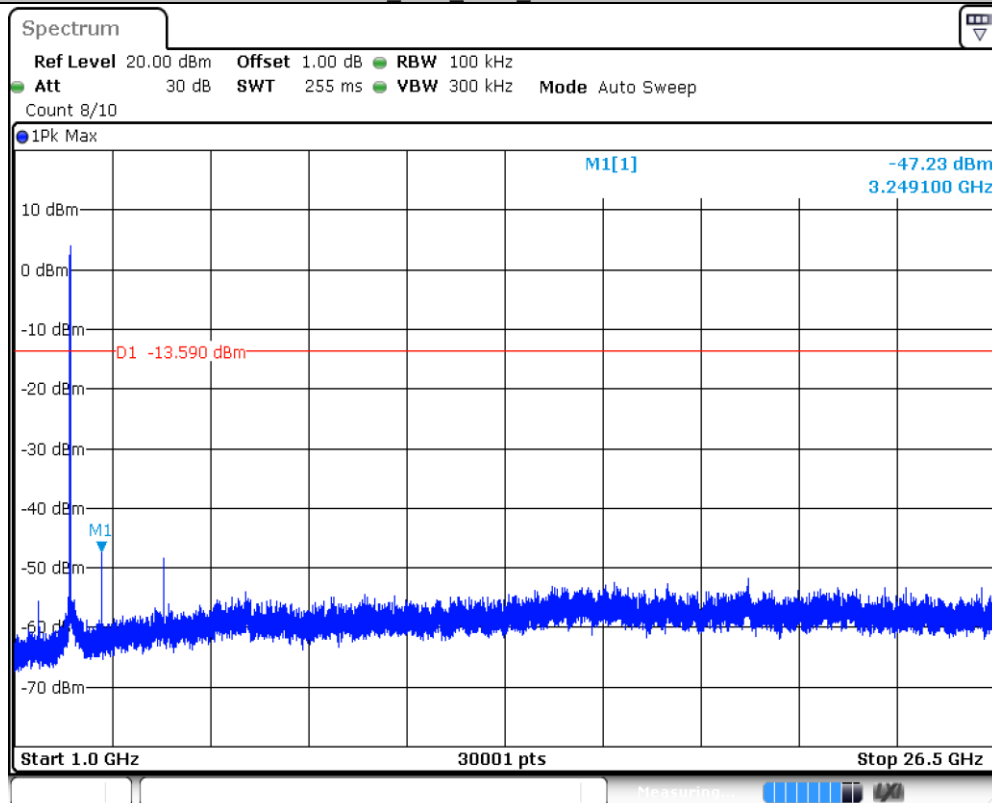
11B_Ant1_2437_0~Reference



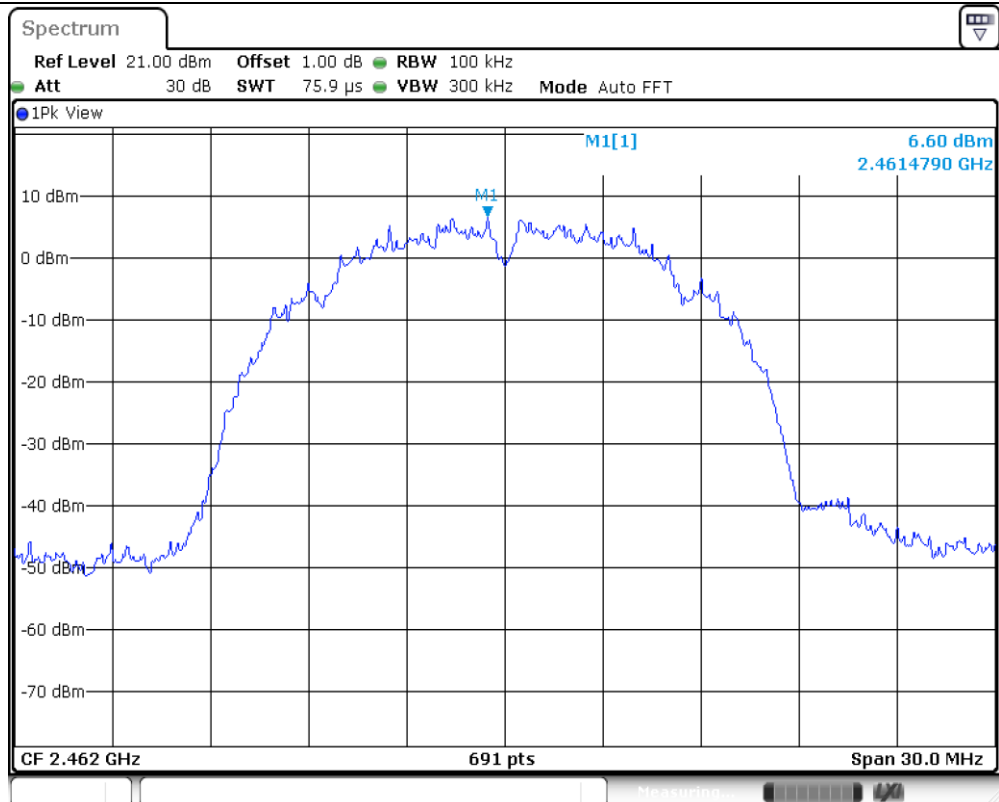
11B_Ant1_2437_30~1000



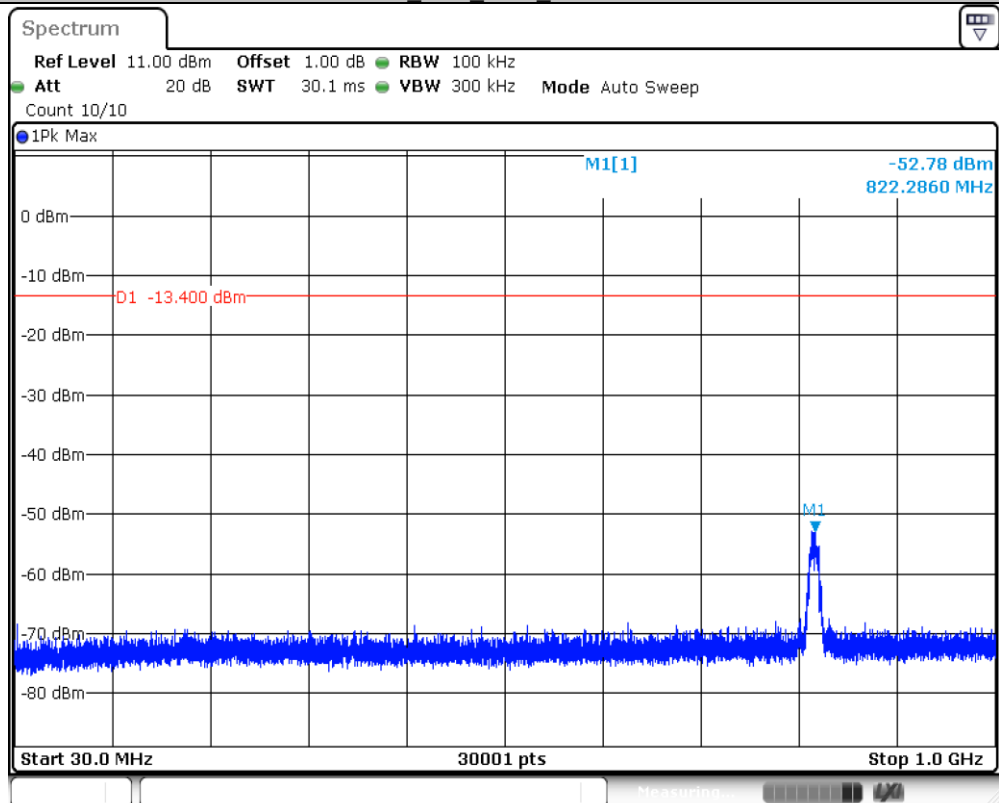
11B_Ant1_2437_1000~26500



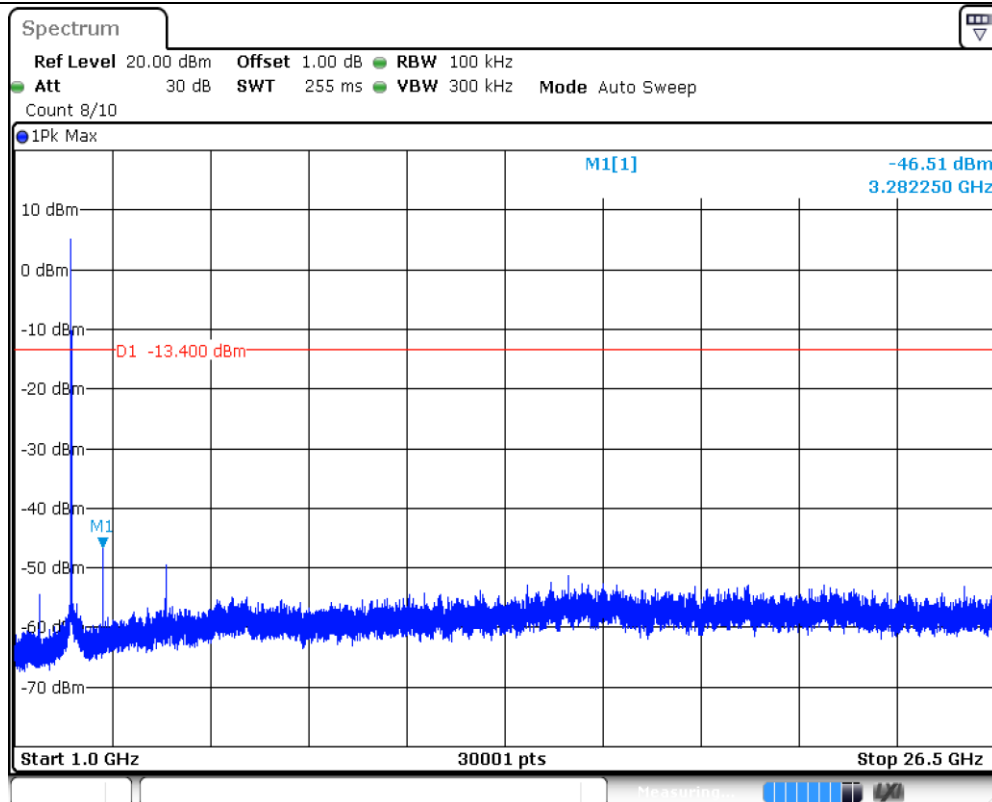
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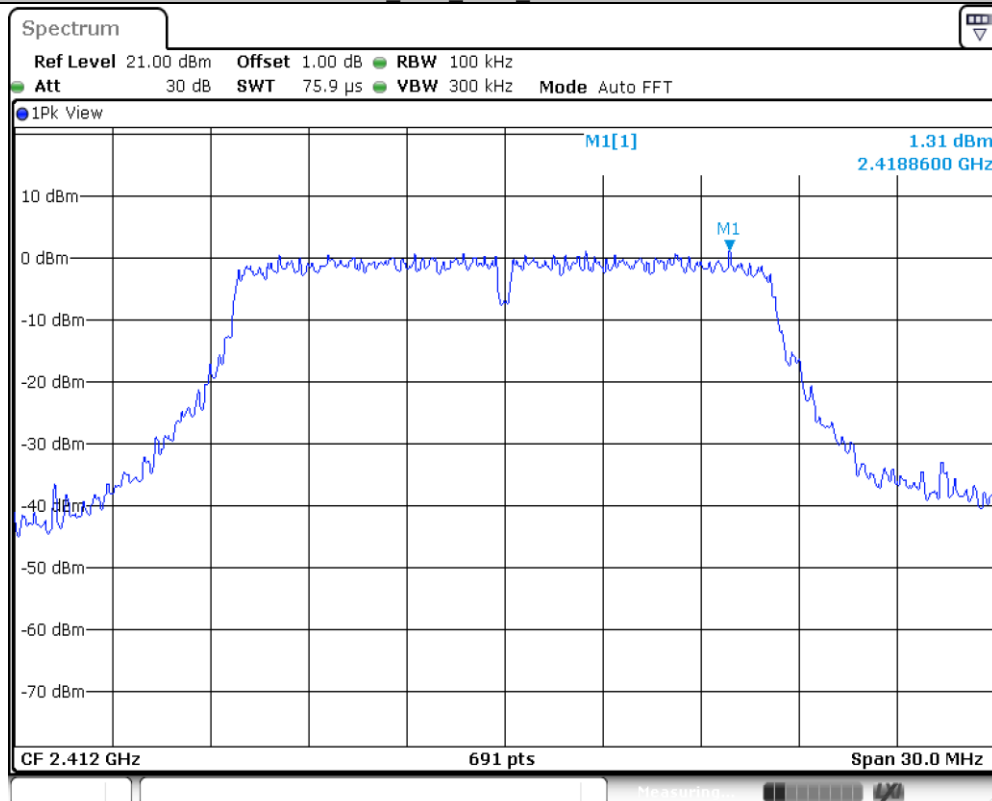
11B_Ant1_2462_30~1000



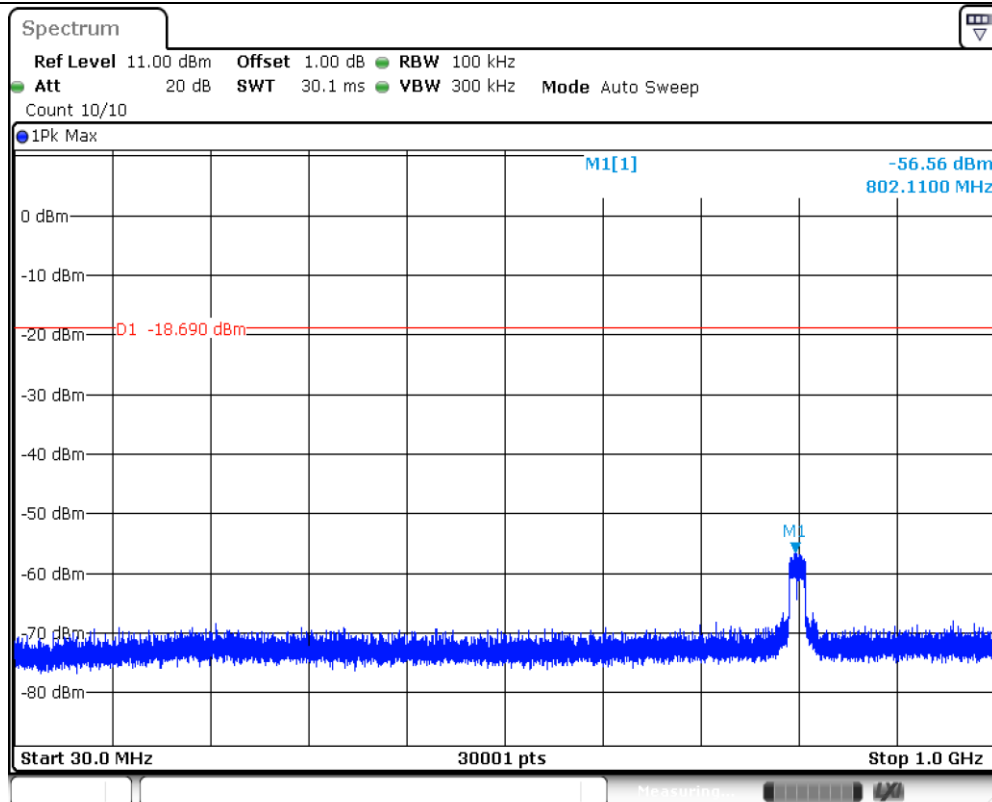
11B_Ant1_2462_1000~26500



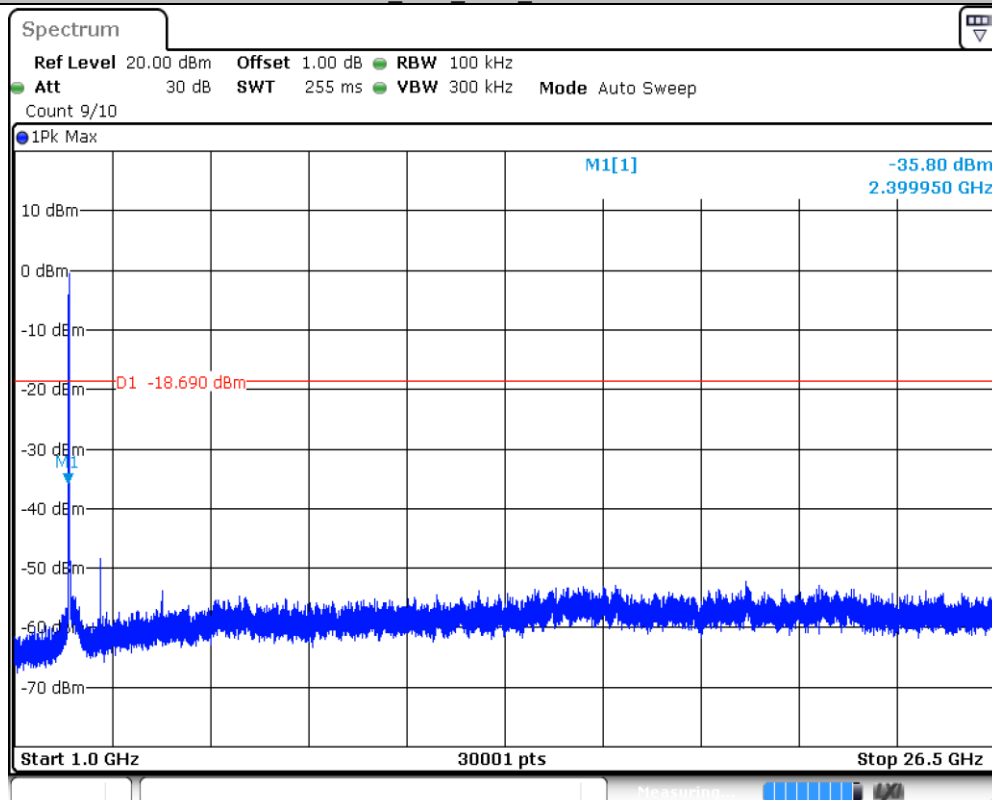
11G_Ant1_2412_0~Reference



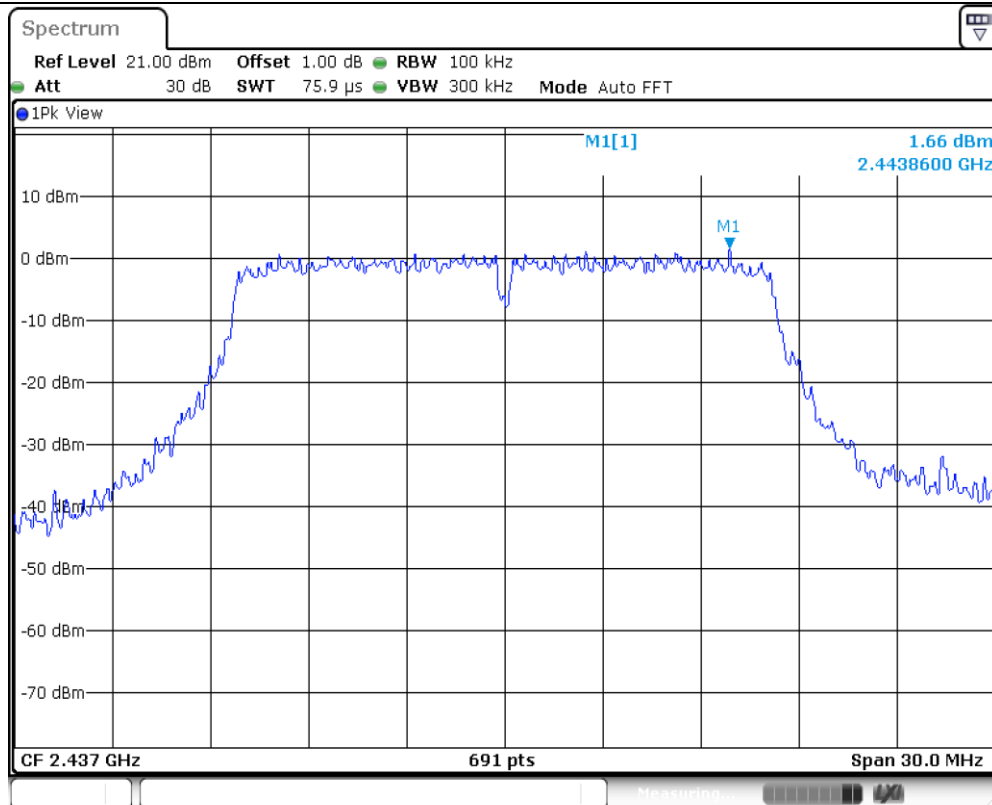
11G_Ant1_2412_30~1000



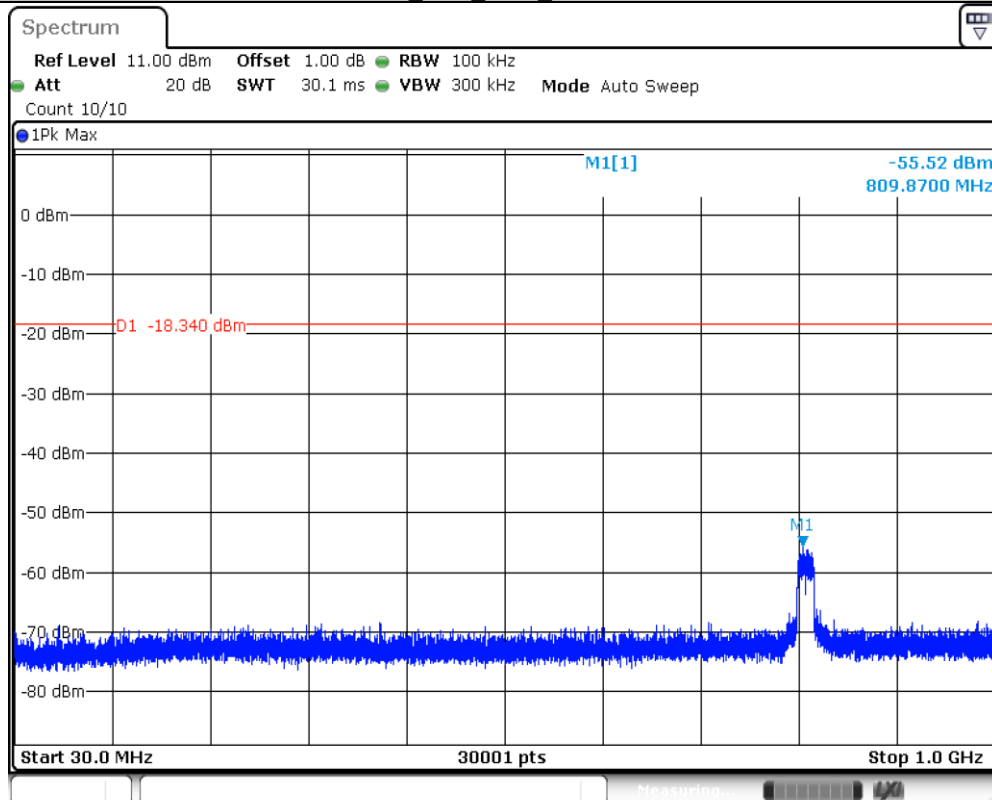
11G_Ant1_2412_1000~26500



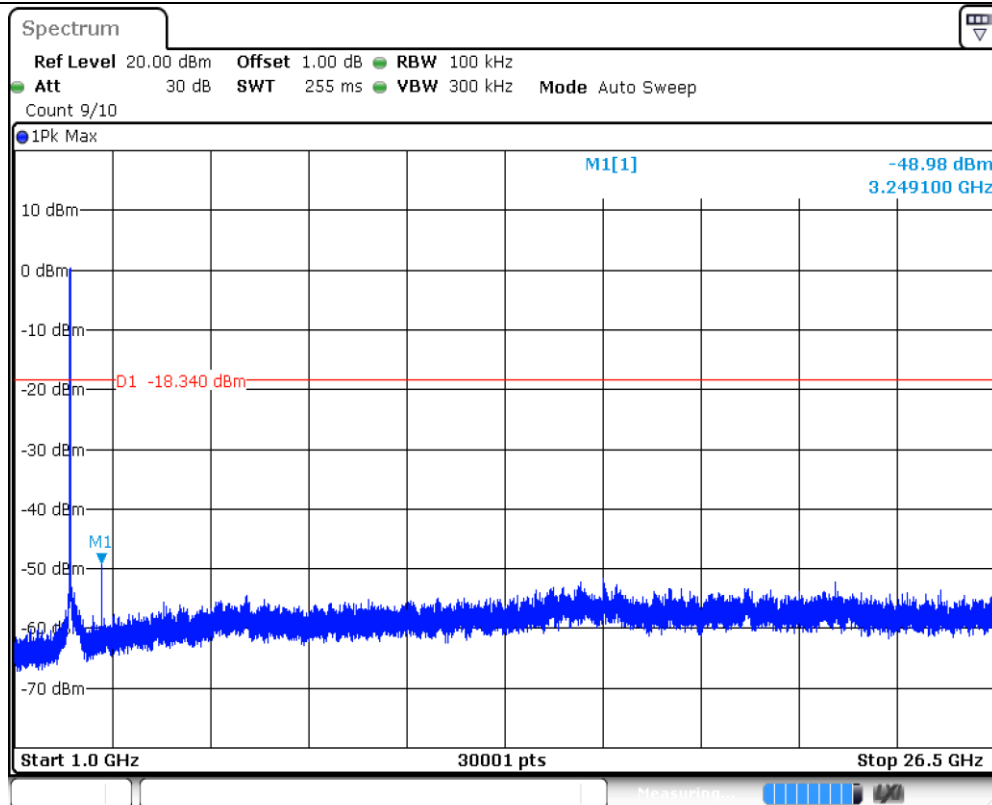
11G_Ant1_2437_0~Reference



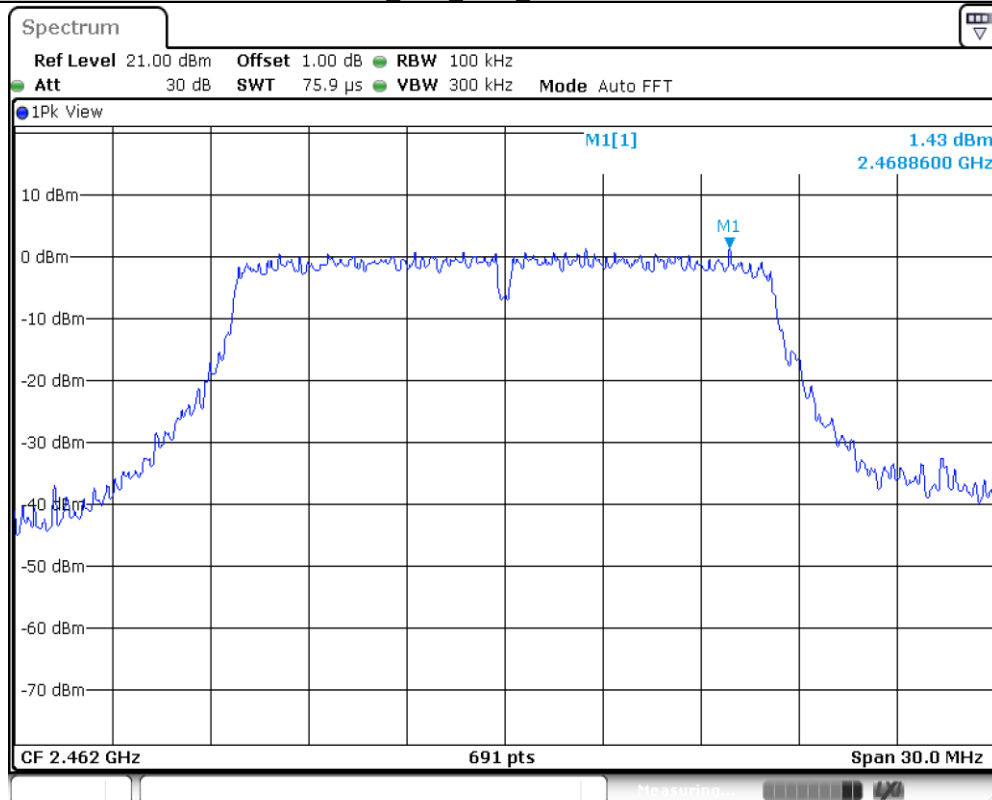
11G_Ant1_2437_30-1000



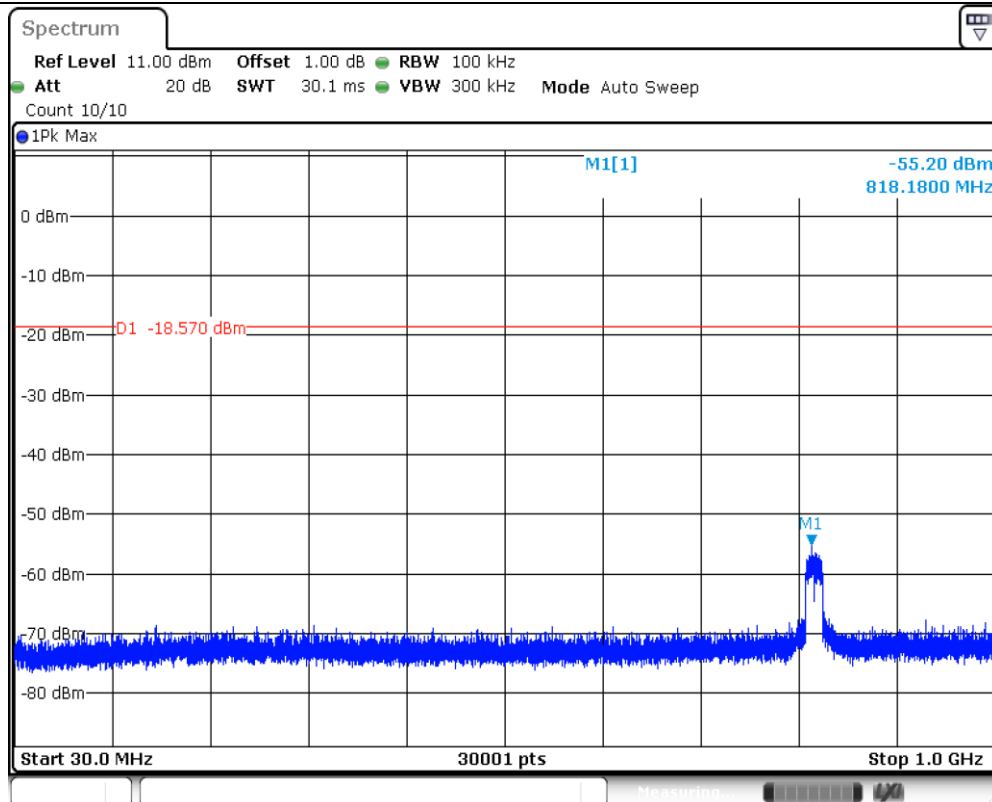
11G_Ant1_2437_1000-26500



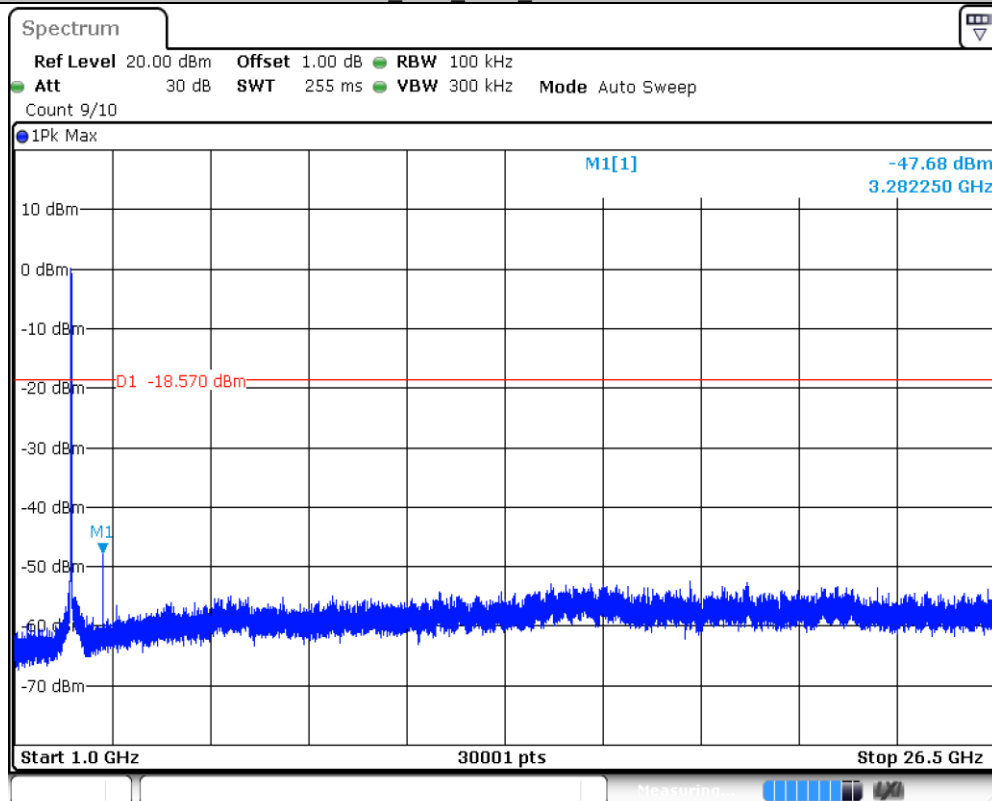
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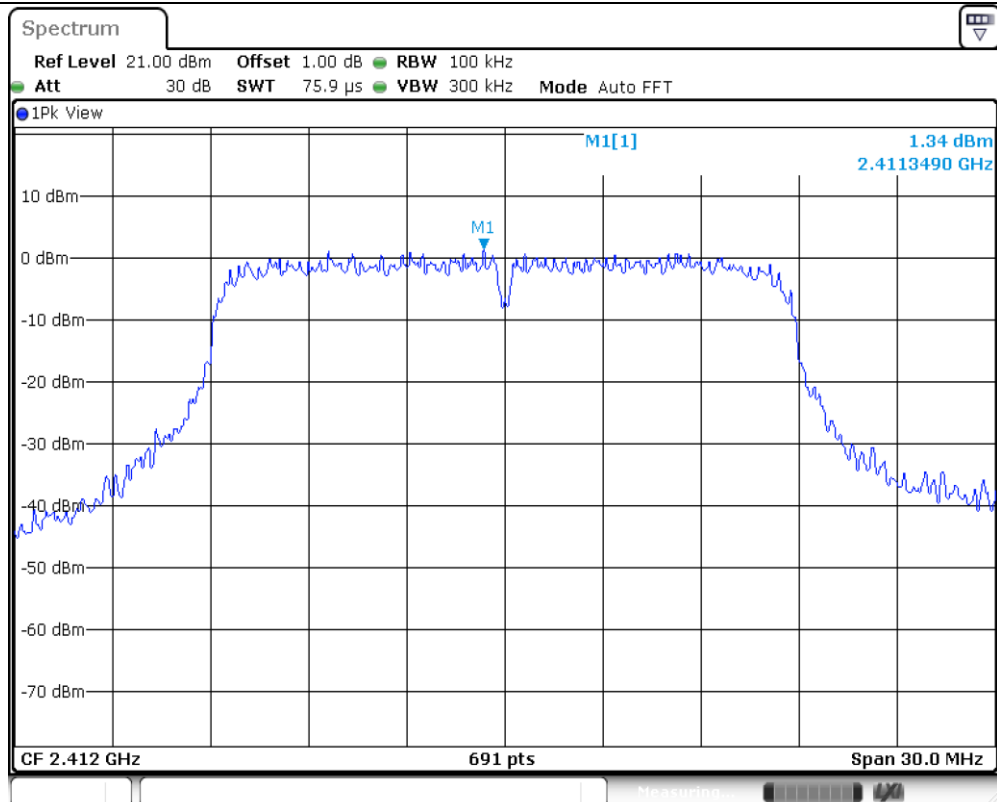
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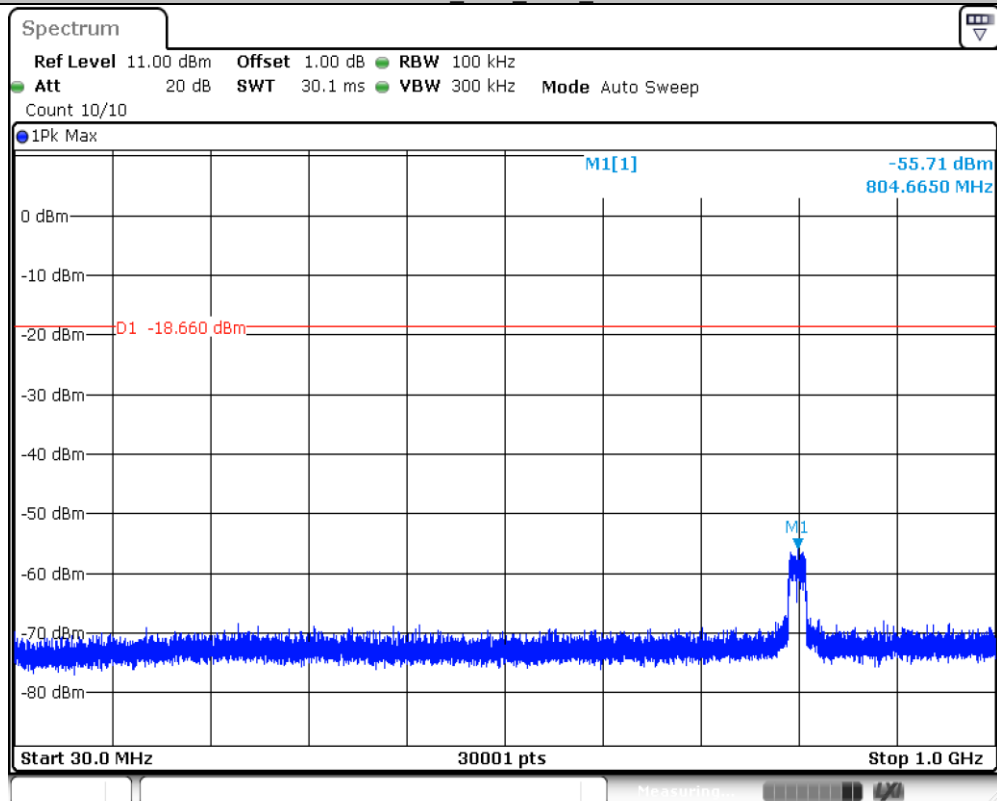
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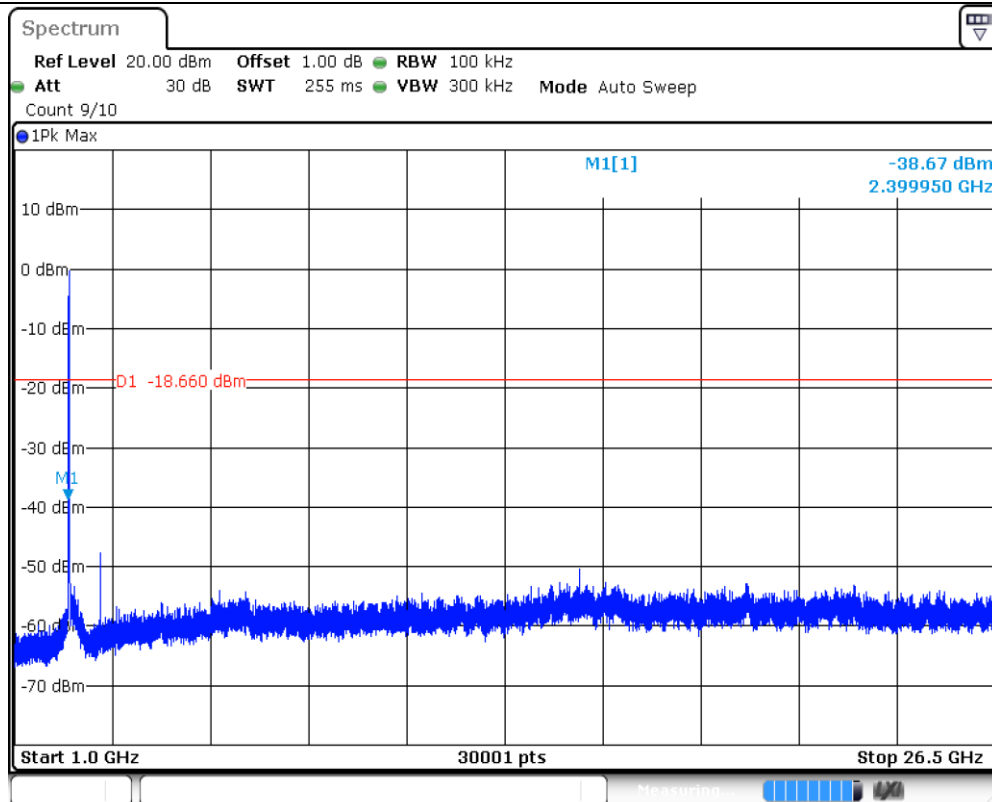
11N20SISO_Ant1_2412_0~Reference



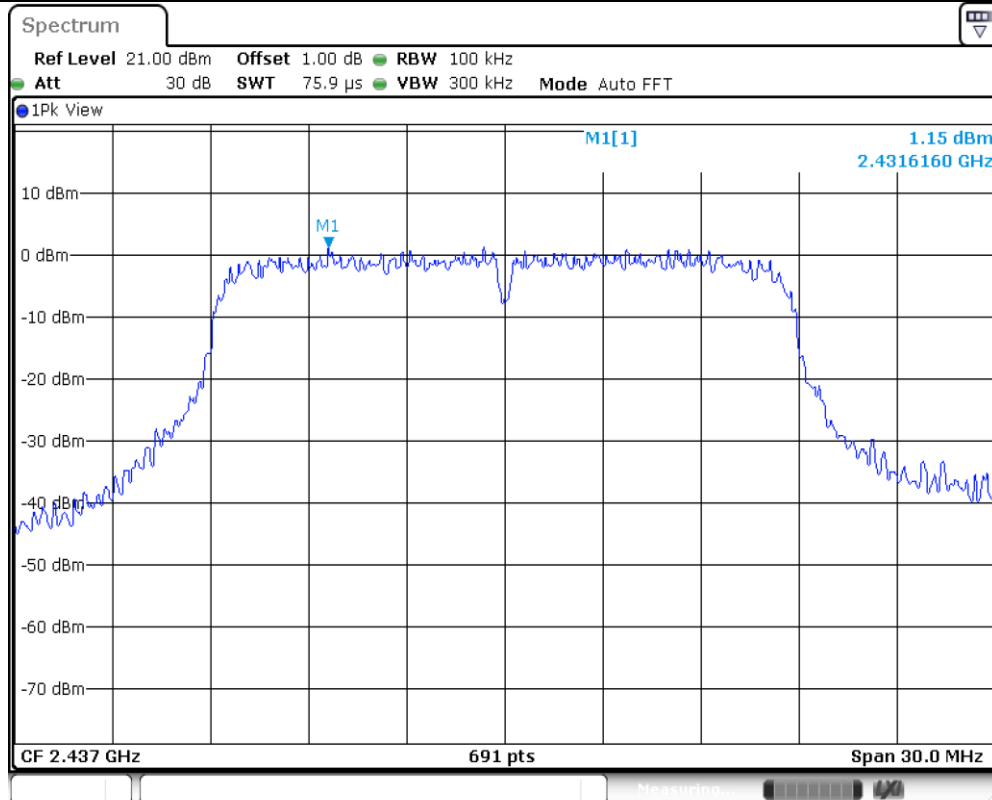
11N20SISO_Ant1_2412_30~1000



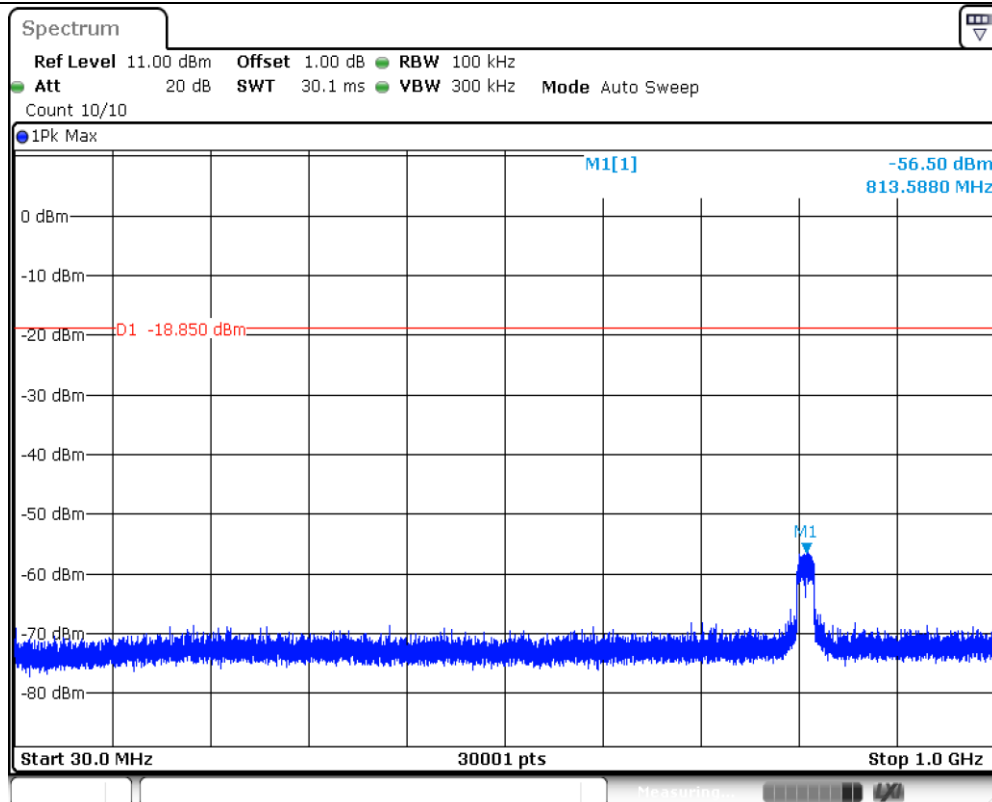
11N20SISO_Ant1_2412_1000~26500



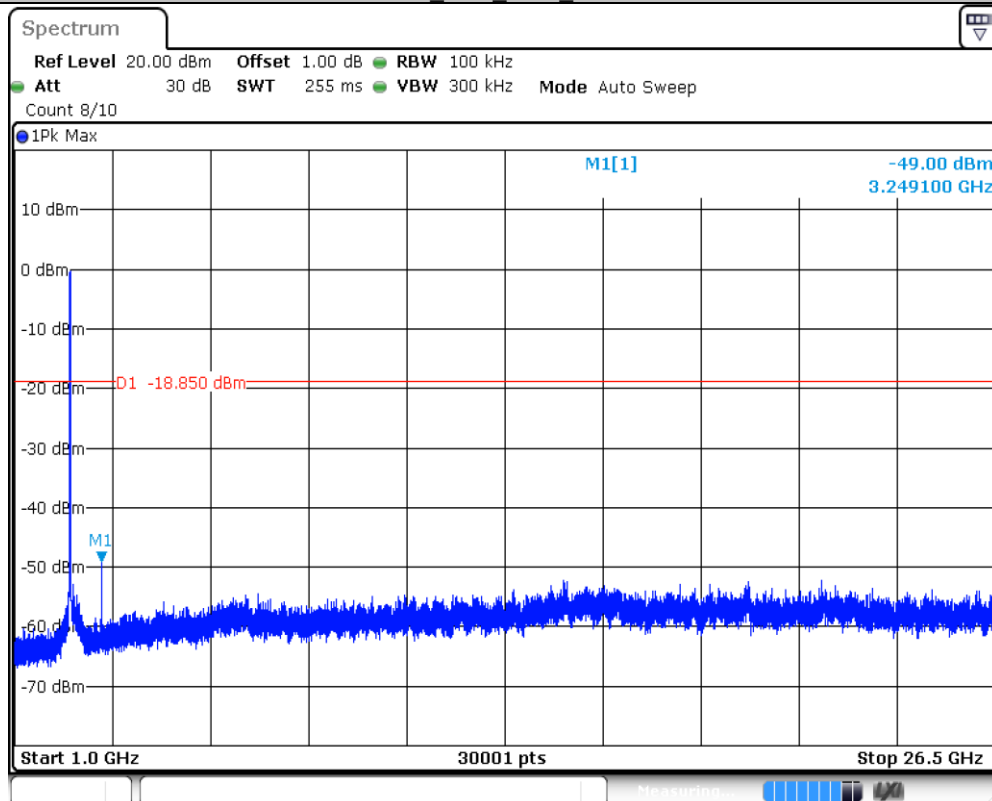
11N20SISO_Ant1_2437_0~Reference



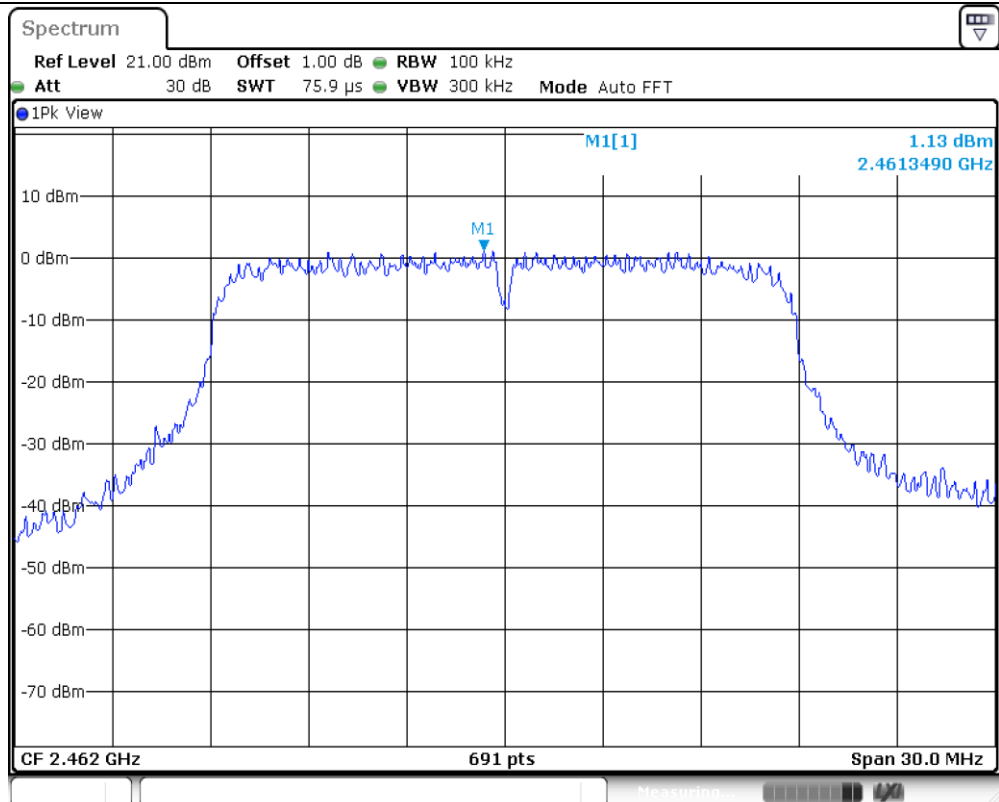
11N20SISO_Ant1_2437_30~1000



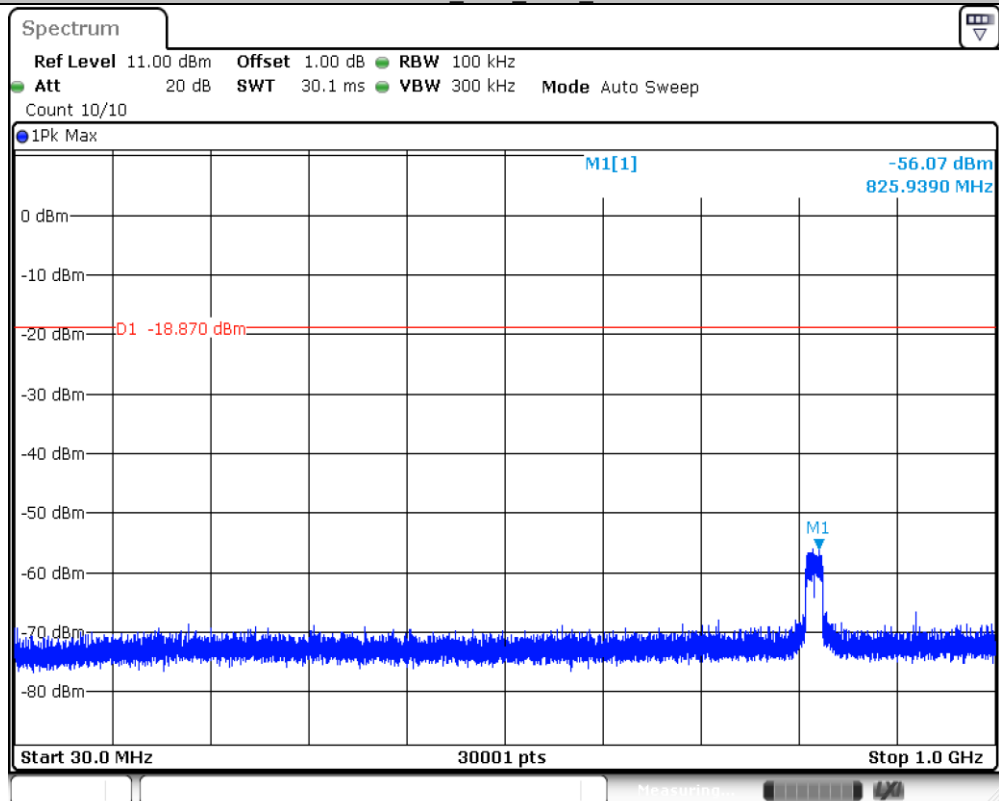
11N20SISO_Ant1_2437_1000~26500



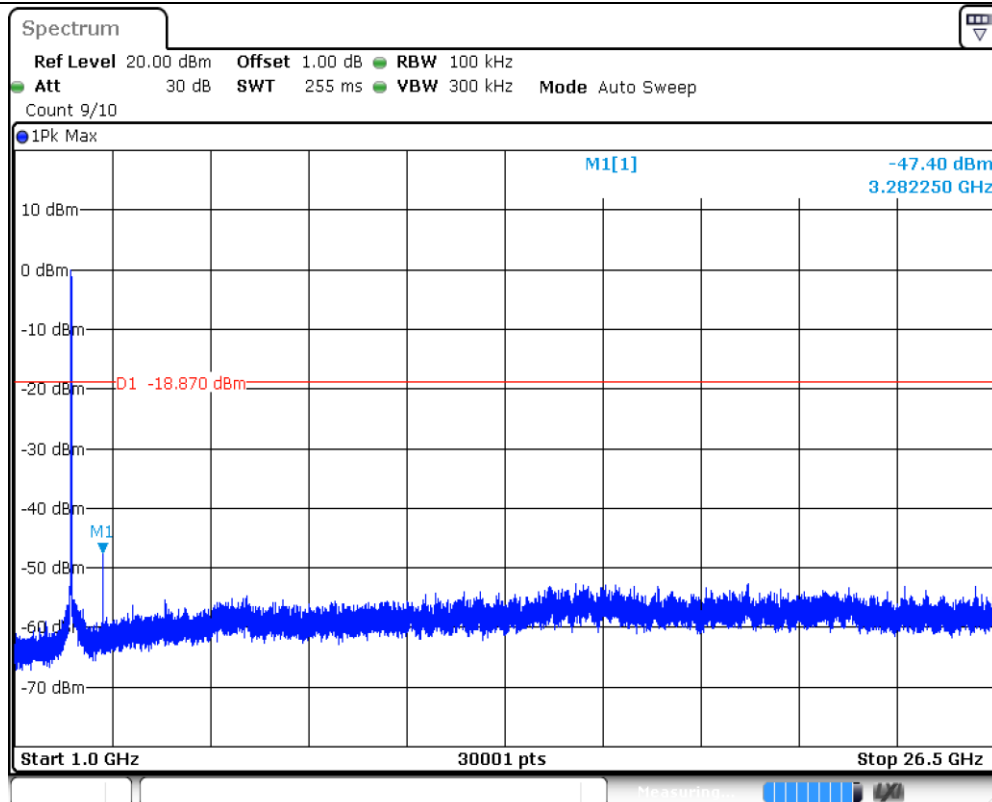
11N20SISO_Ant1_2462_0~Reference



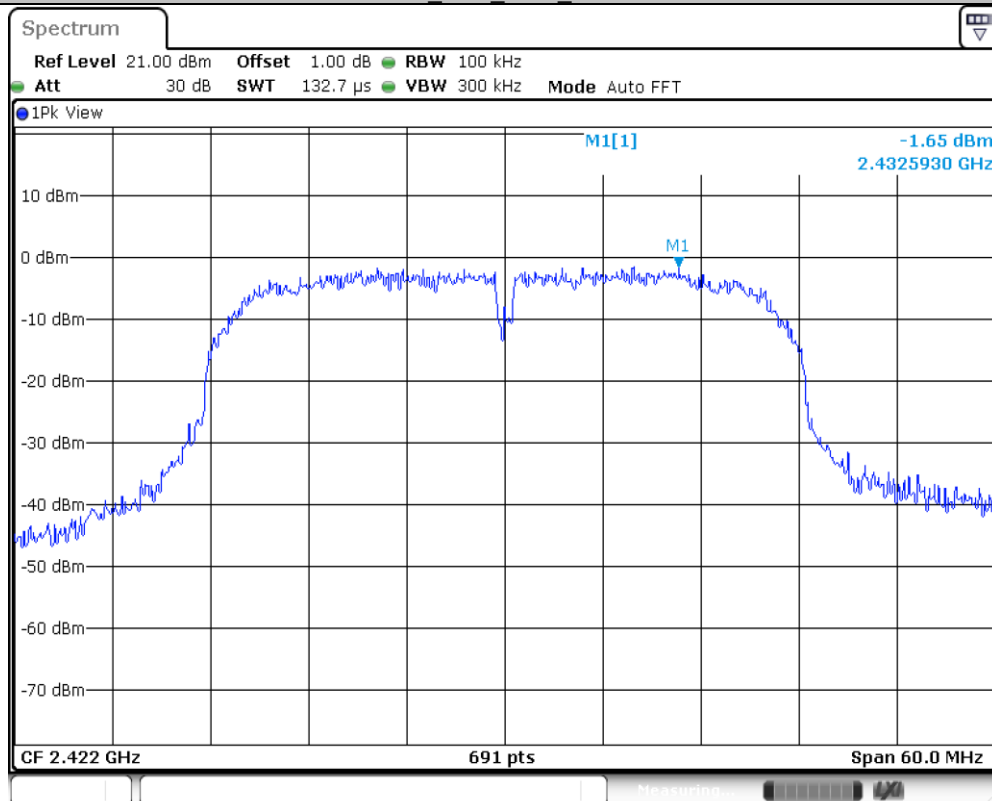
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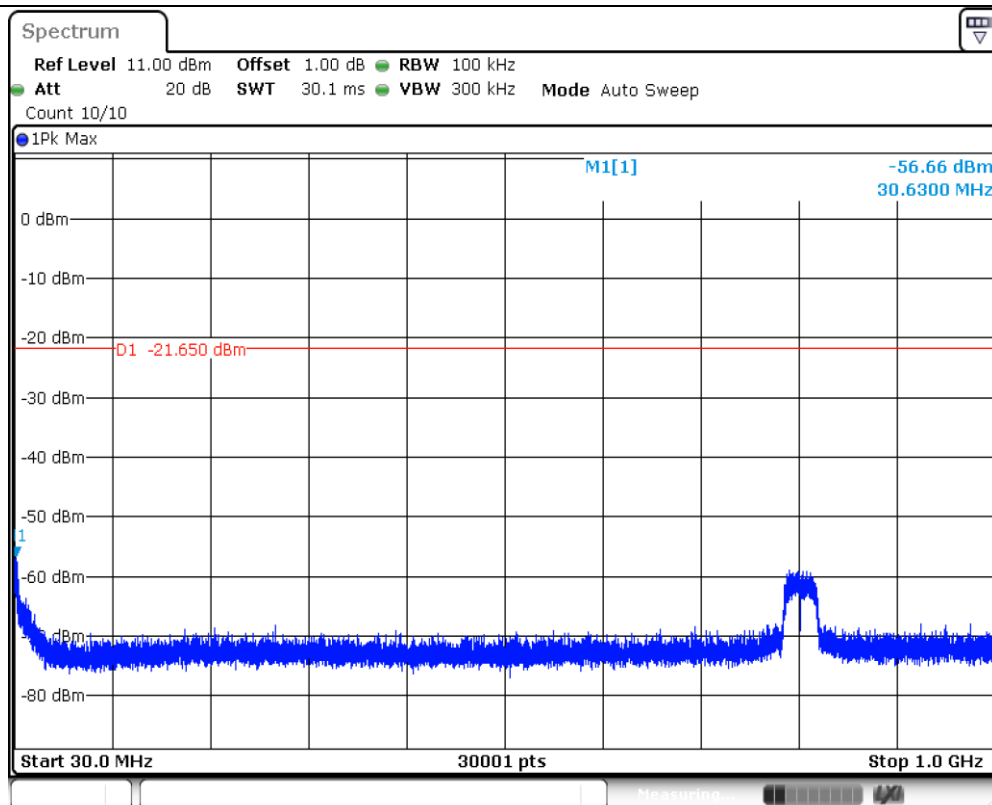
11N20SISO_Ant1_2462_1000~26500



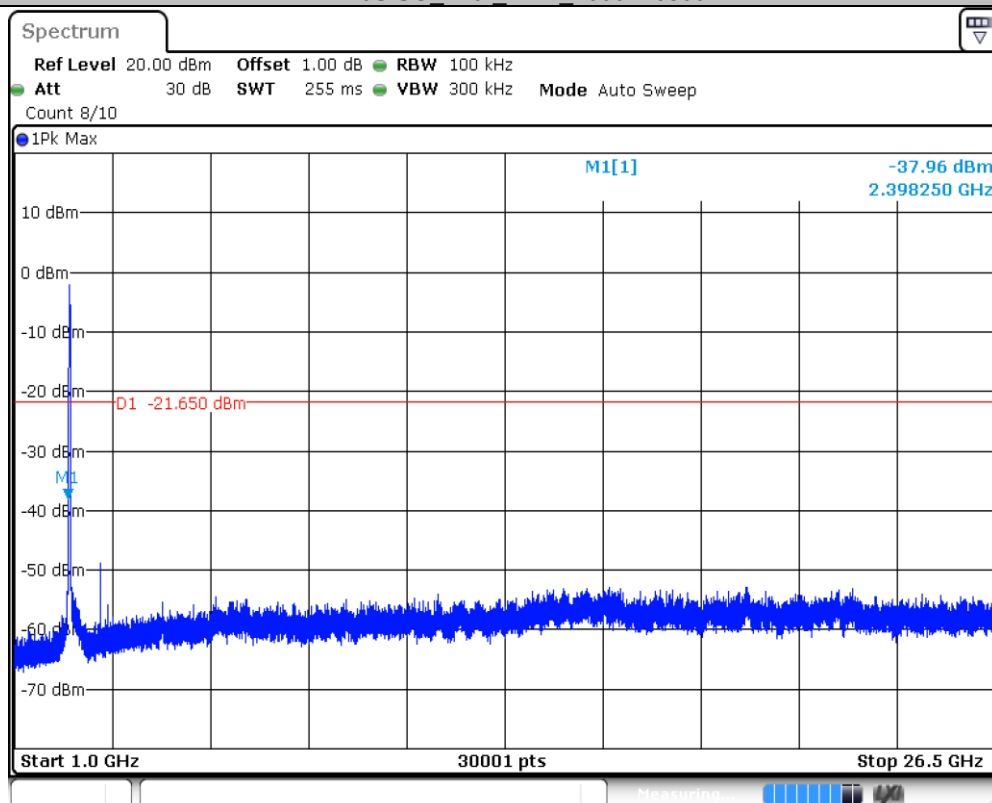
11N40SISO_Ant1_2422_0~Reference



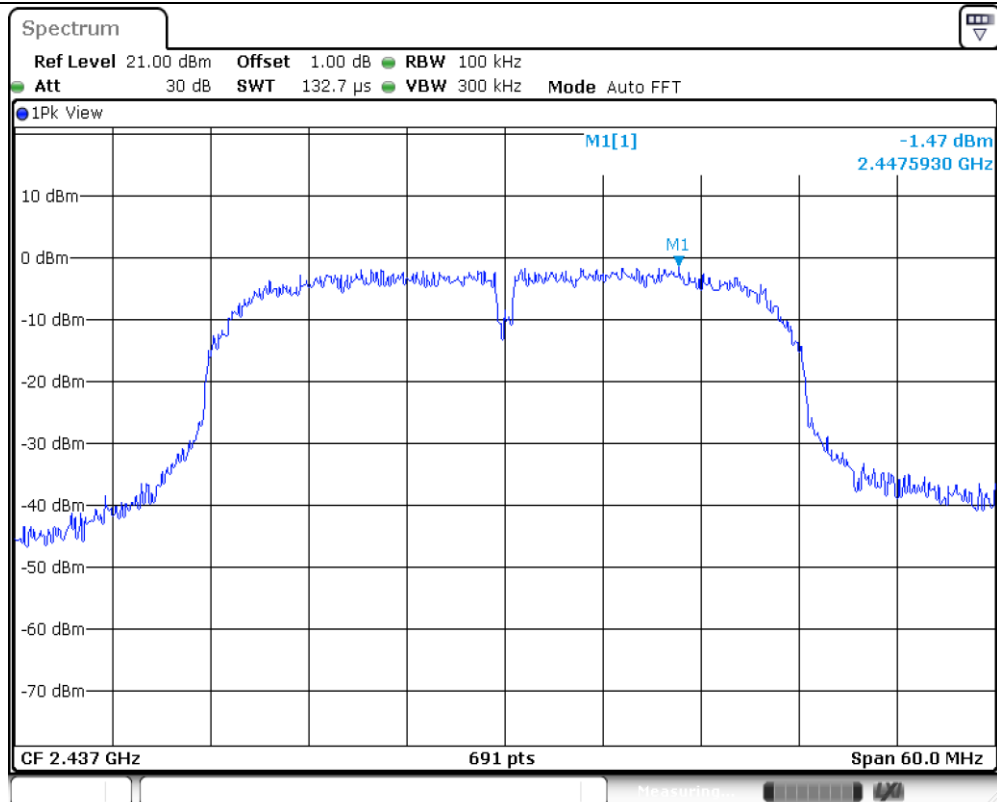
11N40SISO_Ant1_2422_30~1000



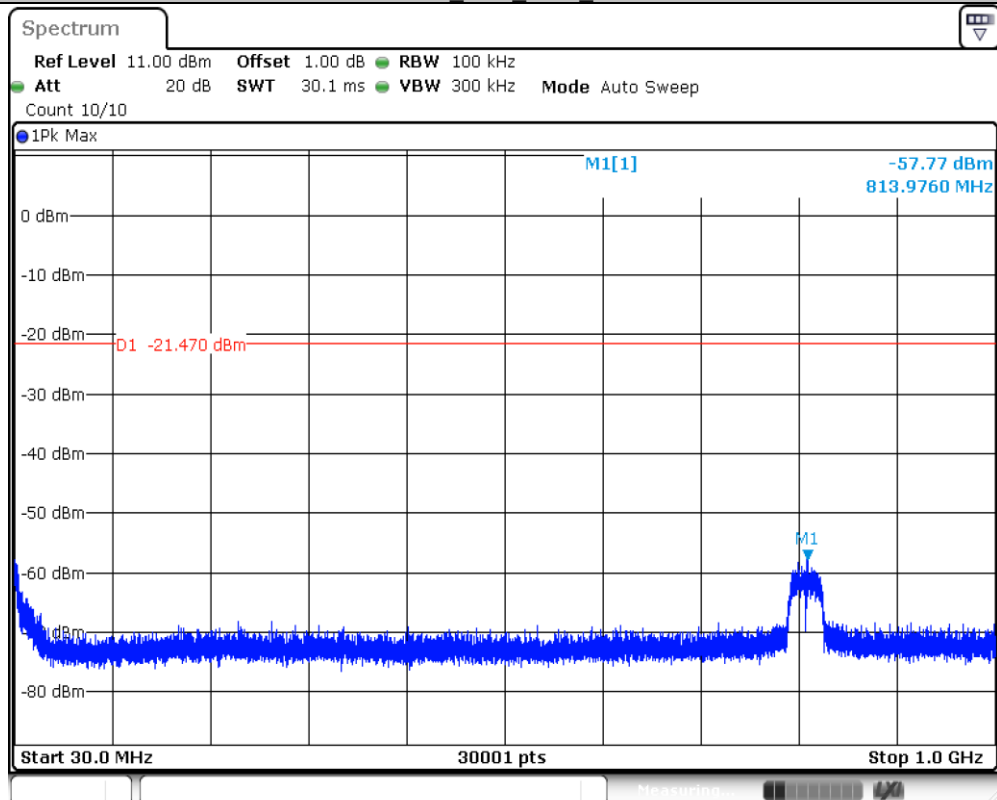
11N40SISO Ant1 2422 1000-26500



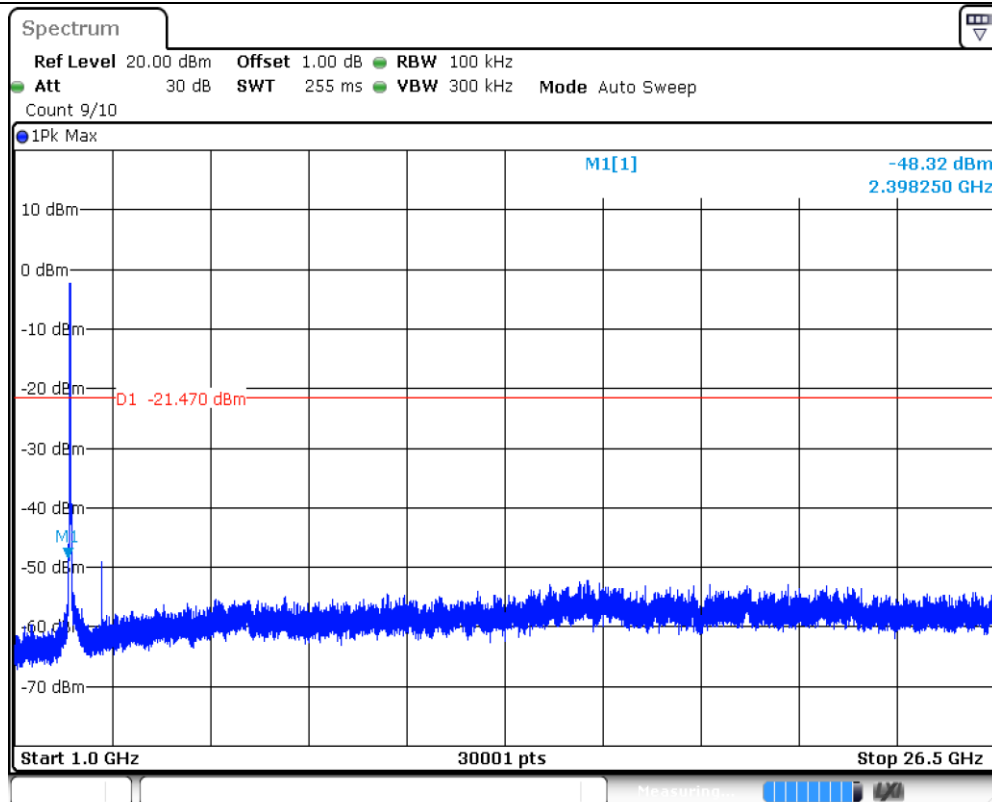
11N40SISO Ant1 2437 0-Reference



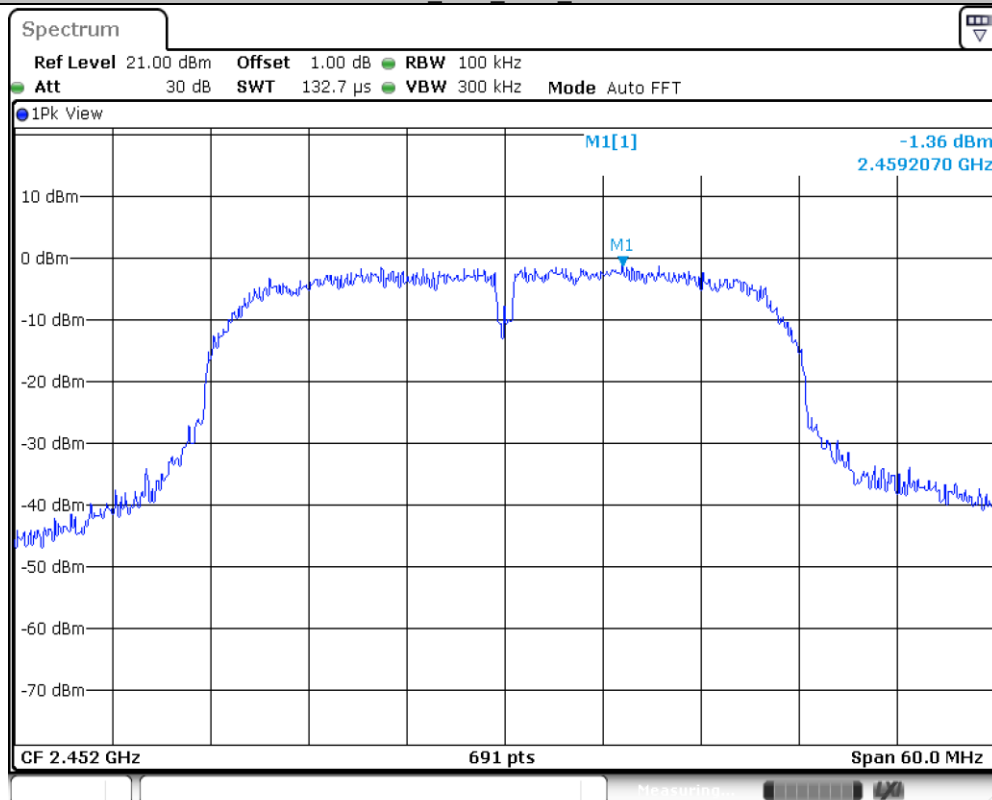
11N40SISO_Ant1_2437_30~1000



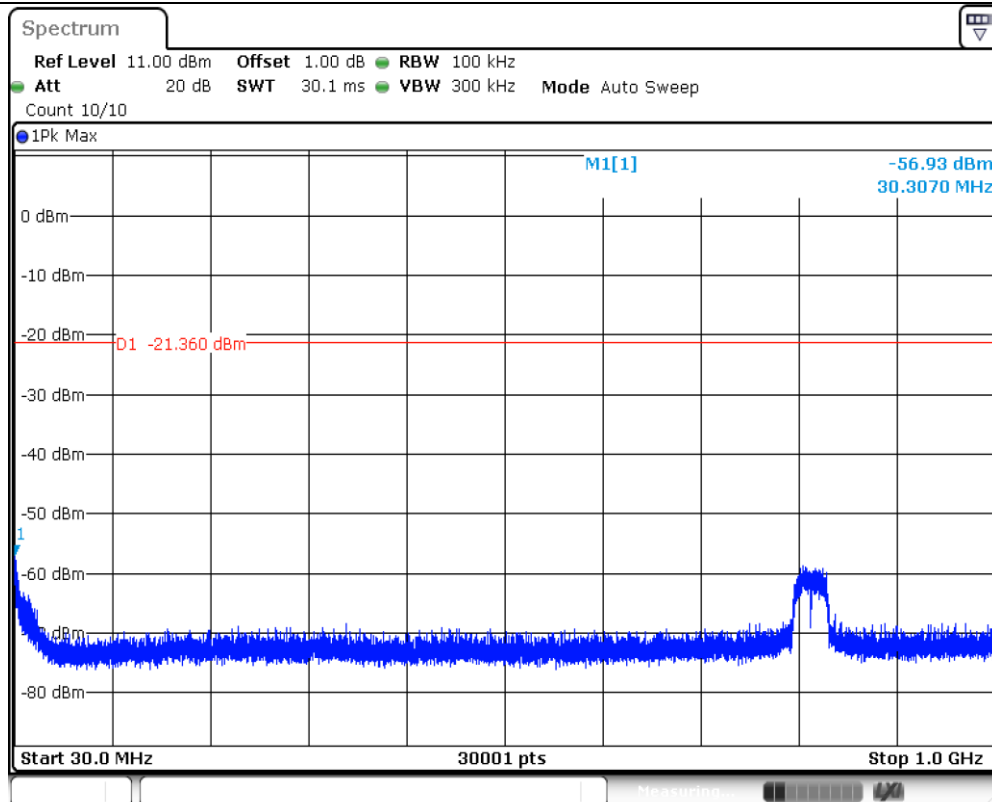
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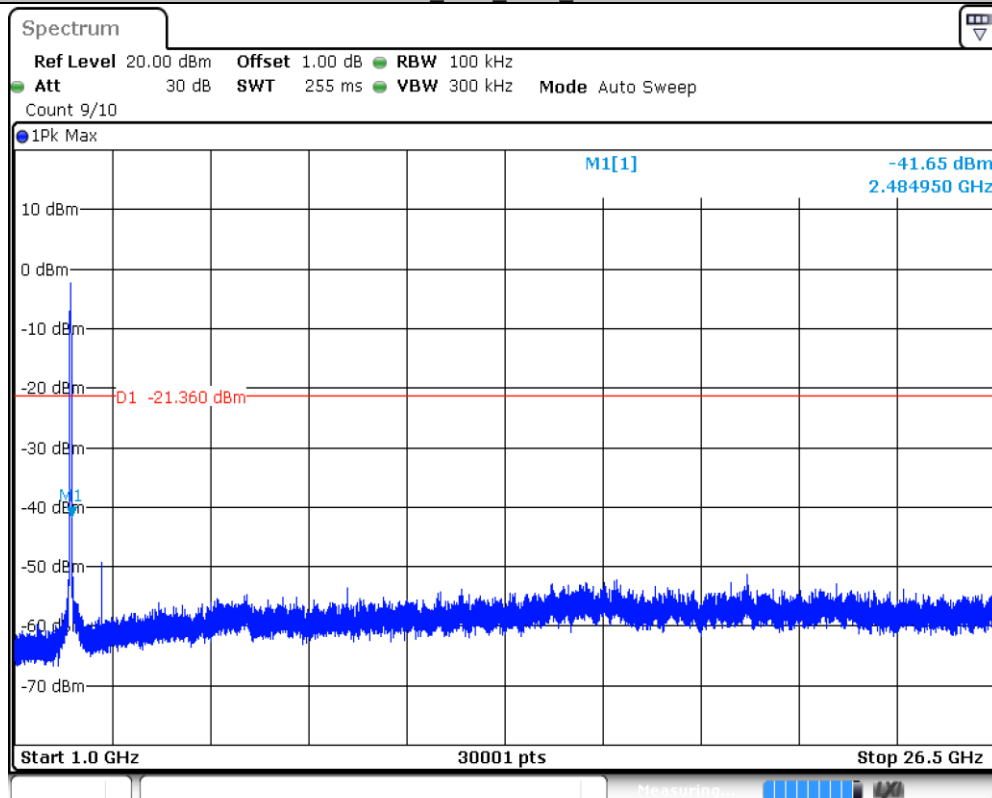
11N40SISO Ant1 2452 0~Reference



11N40SISO Ant1 2452 30~1000



11N40SISO_Ant1_2452_1000-26500



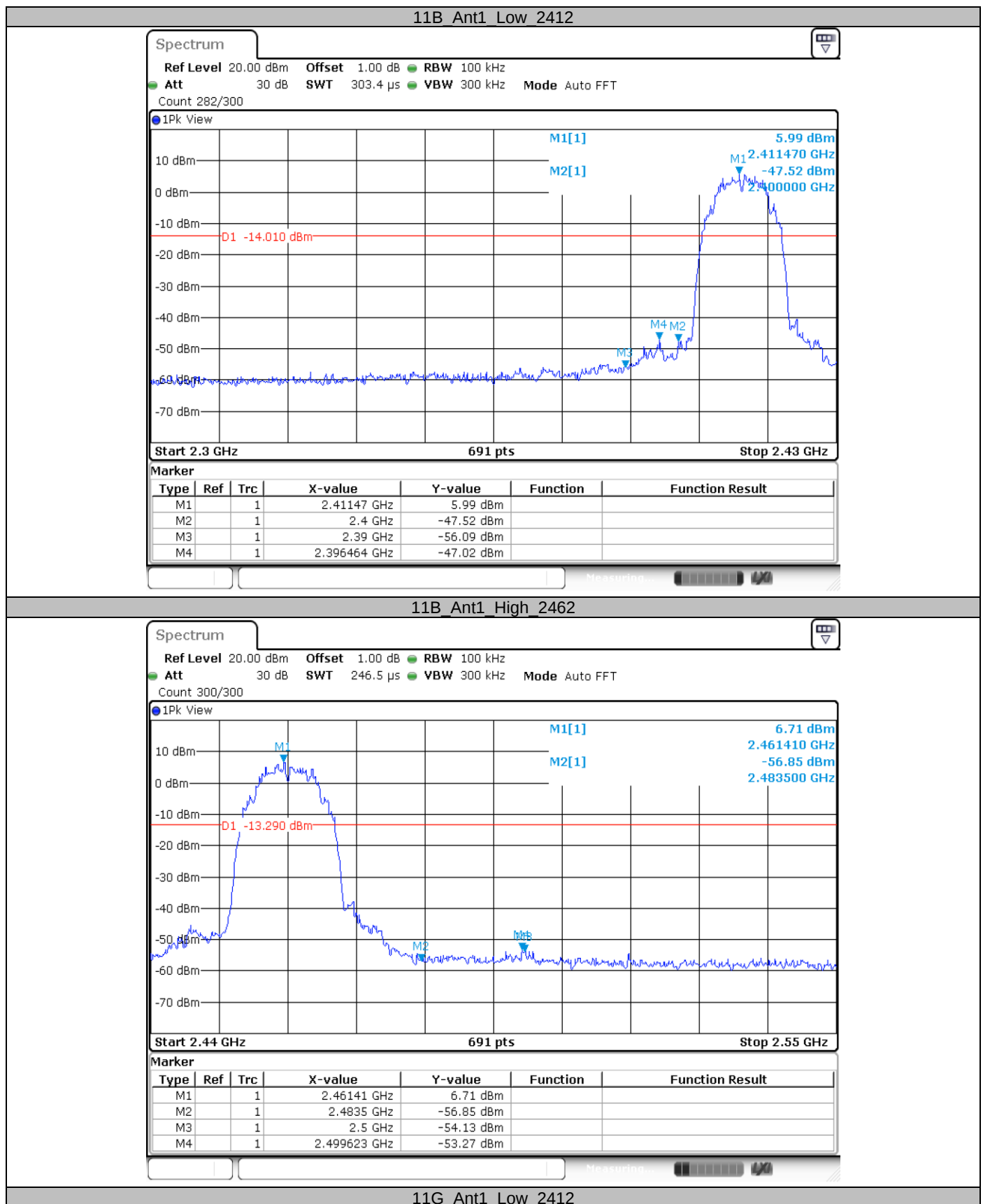
9.6 Band Edge Testing

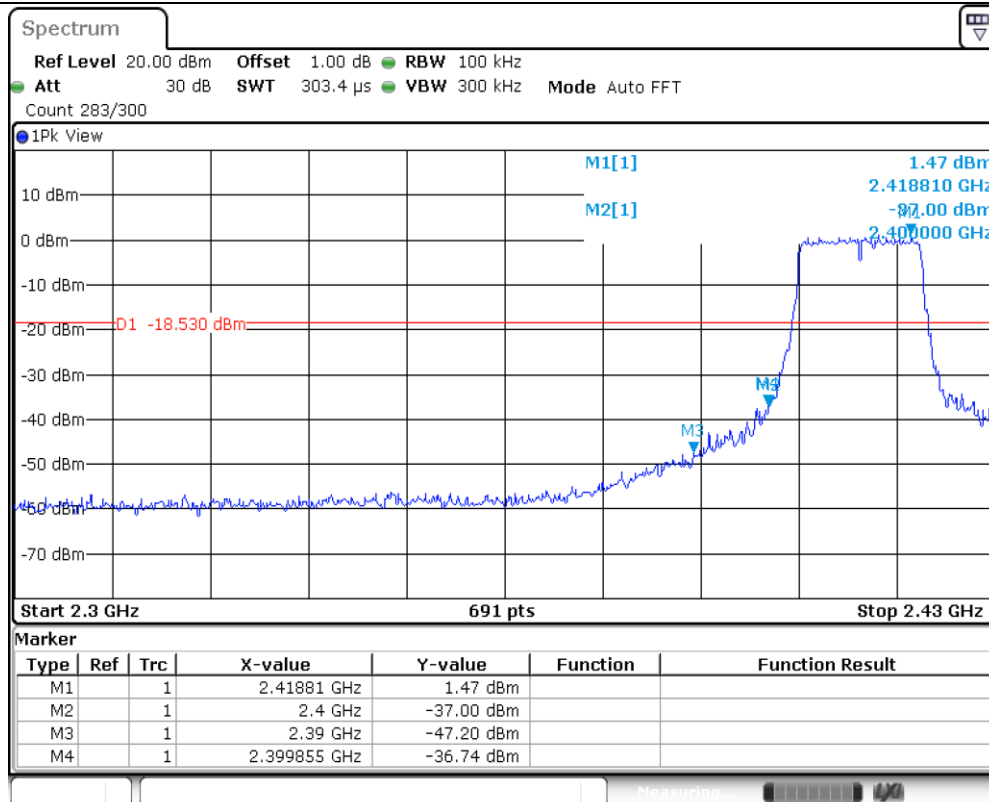
Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious
RBW = 100 kHz, VBW $\geq$ 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize, use the peak and delta measurement to record the result.
5. The level displayed must comply with the limit specified in this Section.
6. Repeat above procedures until all frequencies measured were complete and submit all the plots.

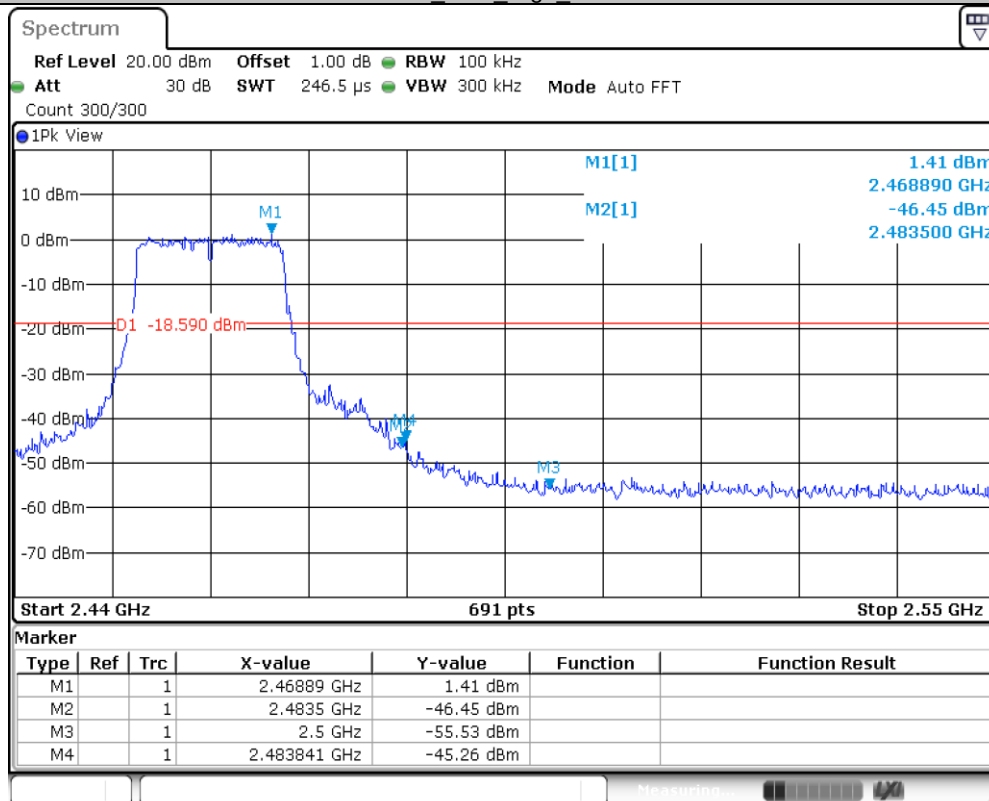
Limit:

Frequency Range MHz	Limit (dBc)
30-25000	-20

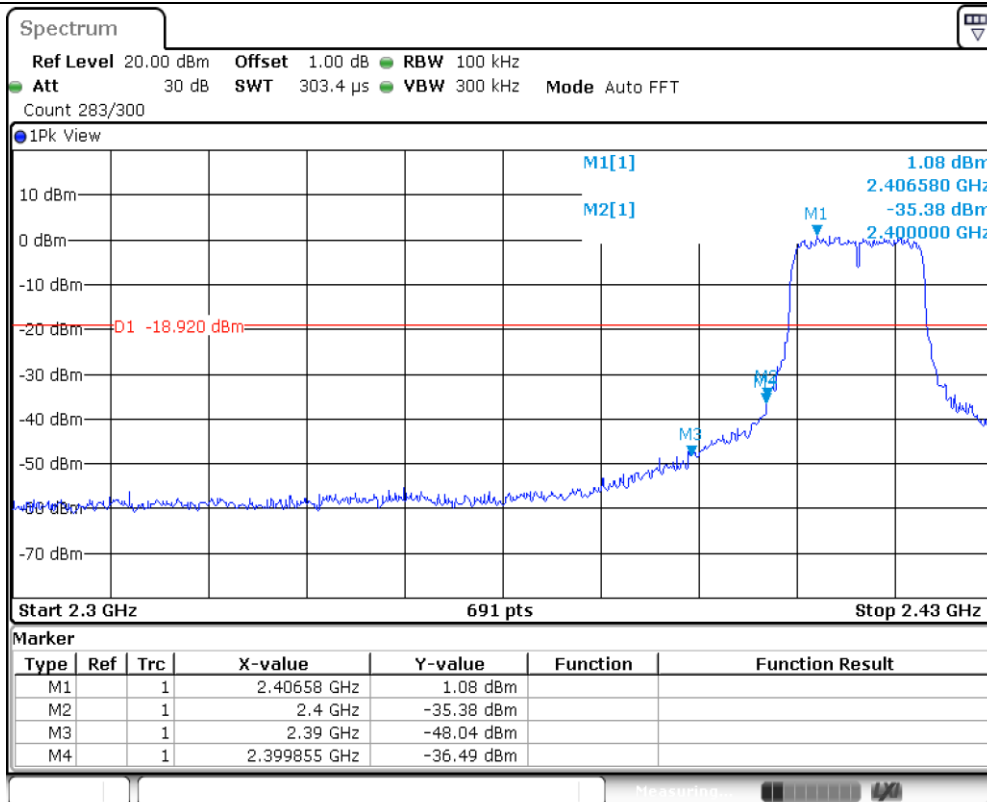
Band edge testing



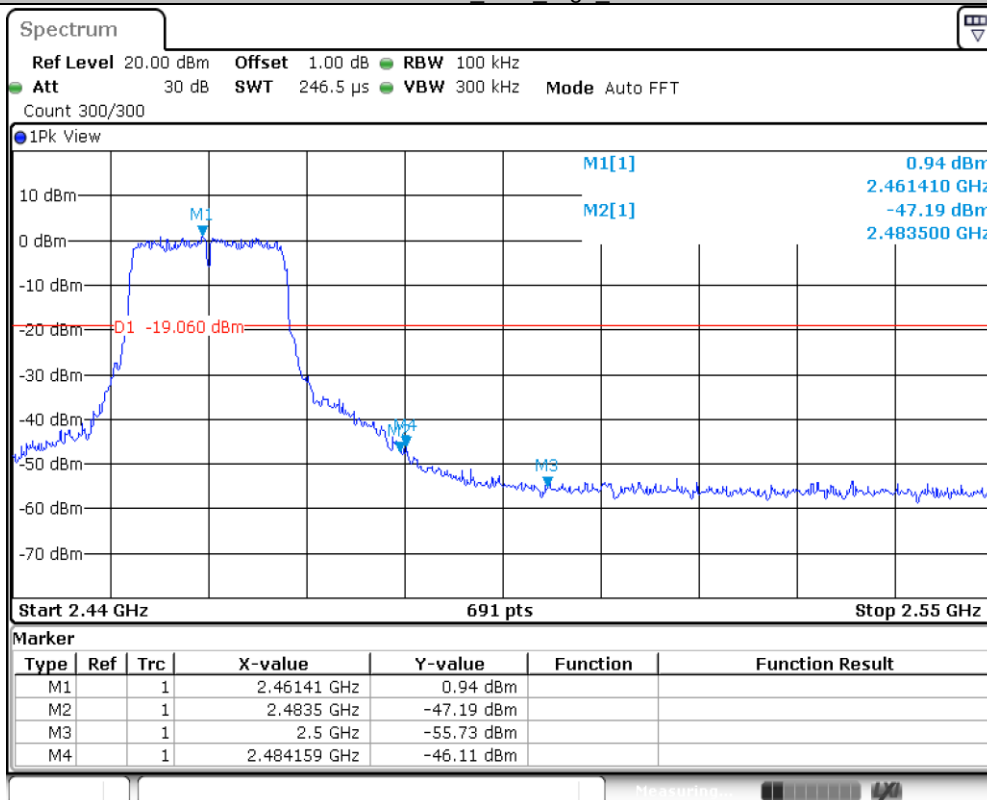
11G Ant1 High 2462



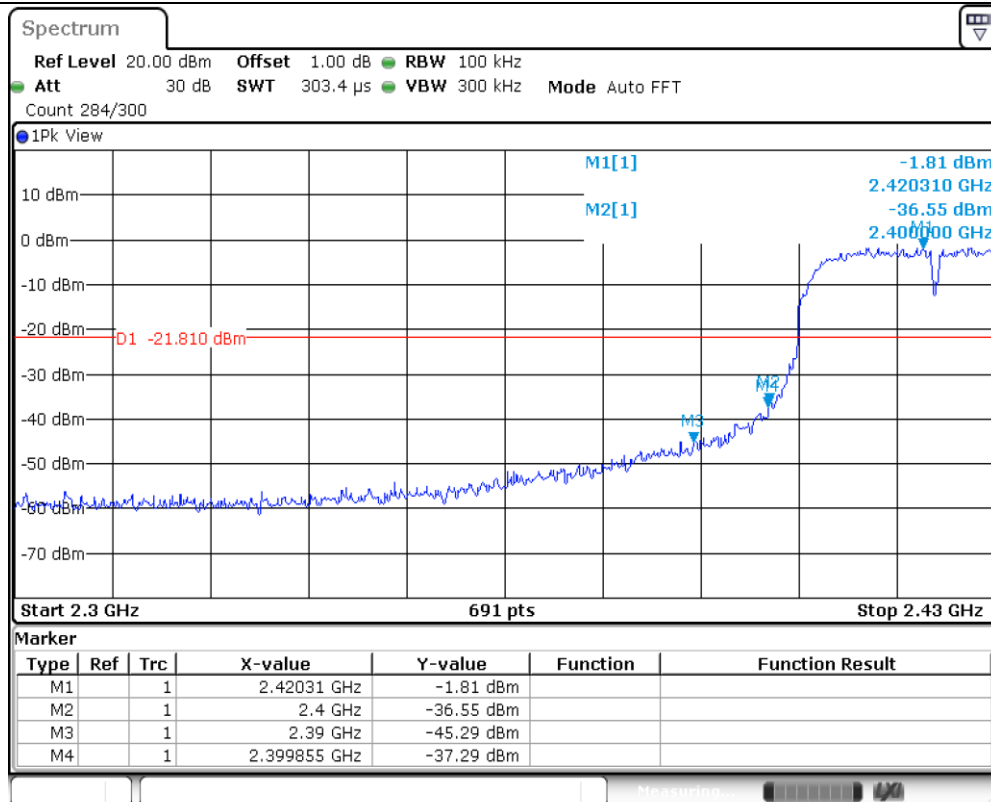
11N20SISO Ant1 Low 2412



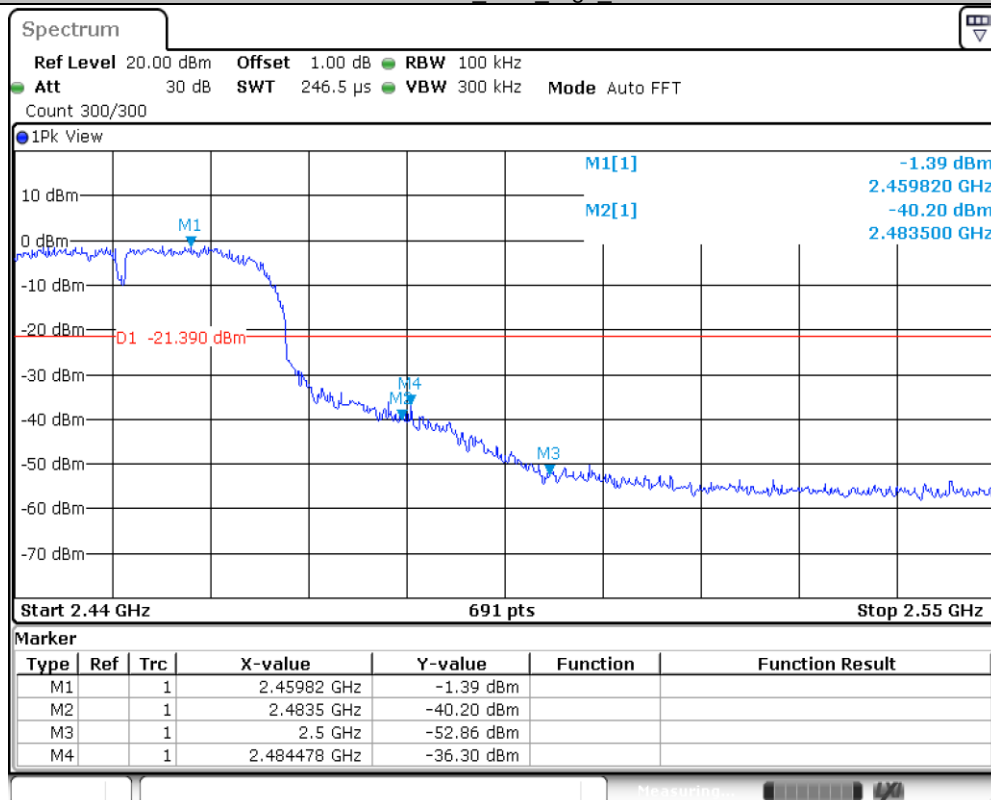
11N20SISO Ant1 High 2462



11N40SISO Ant1 Low 2422



11N40SISO Ant1 High 2452



9.7 Spurious Radiated Emissions for Transmitter

Test Method

1. The EUT was placed on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Use the following spectrum analyzer settings According to C63.10:

For Below 1GHz

Use the following test receiver settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious
 RBW = 100 KHz to 120KHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Peak unwanted emissions Above 1GHz:

Span = wide enough to capture the peak level of the in-band emission and all spurious
 RBW = 1MHz, VBW ≥ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Procedures for average unwanted emissions measurements above 1000 MHz

a) RBW = 1MHz.

b) VBW \ [3 × RBW].

c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2.

Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is $[10 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is $[20 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission (AV) at frequency above 1GHz.

Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section 15.205, must comply with the radiated emission limits specified in section 15.209.

Frequency MHz	Field Strength $\mu\text{V/m}$	Field Strength dB $\mu\text{V/m}$	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	AV	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Note 1: Limit 3m(dB $\mu\text{V/m}$)=Limit 300m(dB $\mu\text{V/m}$)+40Log(300m/3m) (Below 30MHz)

Note 2: Limit 3m(dB $\mu\text{V/m}$)=Limit 30m(dB $\mu\text{V/m}$)+40Log(30m/3m) (Below 30MHz)

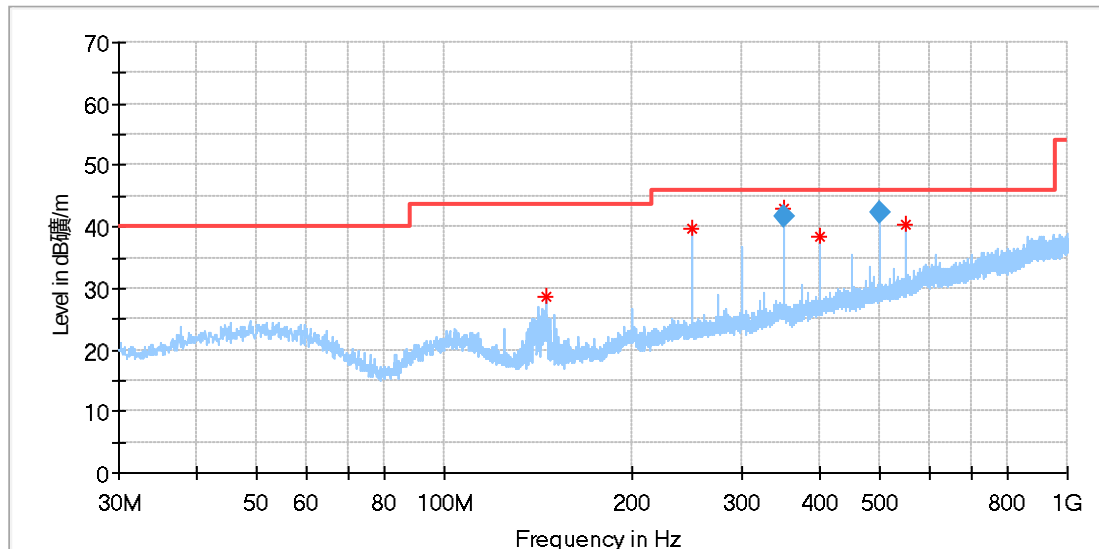
Spurious Radiated Emissions for Transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

The only worse case (802.11b) test result is listed in the report.

Transmitting spurious emission test result as below:

Below 1G:

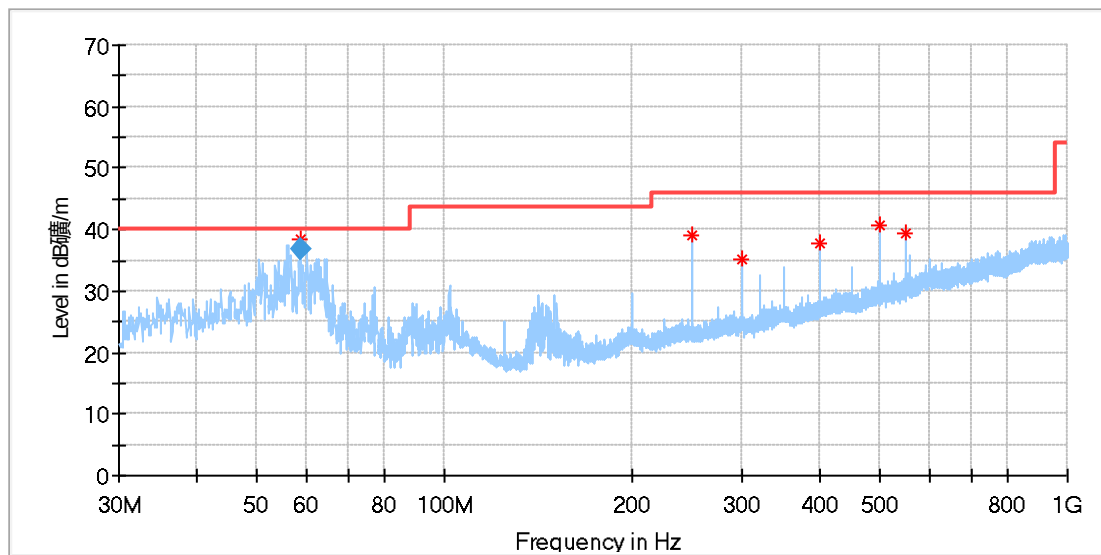


Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
145.248125	28.63	43.50	14.87	200.0	H	257.0	15.12
250.008125	39.63	46.00	6.37	100.0	H	86.0	20.32
350.001563	42.87	46.00	3.13	100.0	H	93.0	23.34
399.994375	38.40	46.00	7.60	100.0	H	270.0	23.99
500.003125	42.37	46.00	3.63	181.0	H	276.0	25.92
550.041250	40.37	46.00	5.63	200.0	H	304.0	26.68

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
350.001563	41.73	46.00	4.27	100.0	H	93.0	23.34
500.003125	42.44	46.00	3.56	181.0	H	276.0	25.92



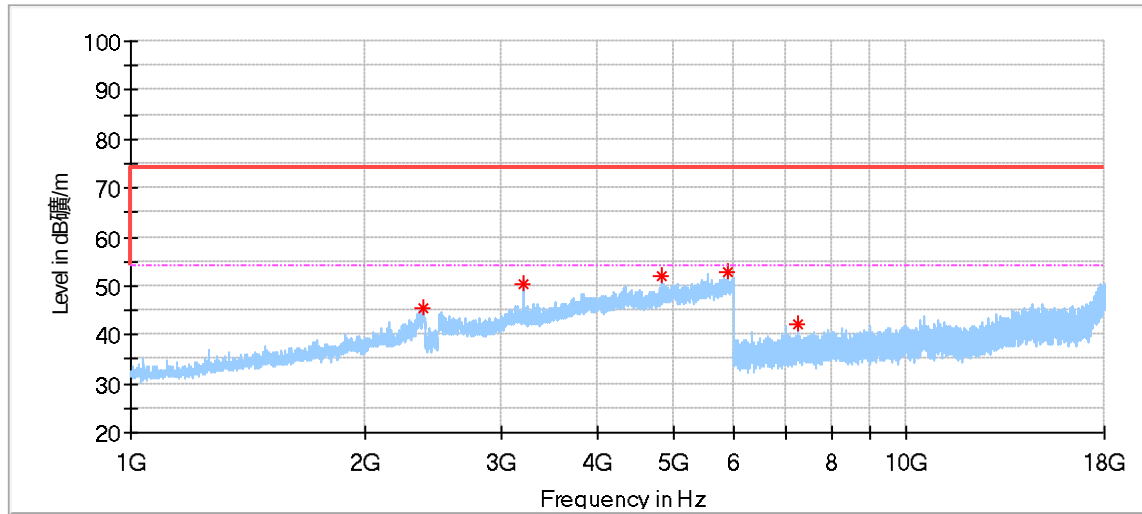
Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
58.712188	38.32	40.00	1.68	100.0	V	199.0	19.93
250.008125	38.91	46.00	7.09	100.0	V	220.0	20.32
299.963125	35.20	46.00	10.80	200.0	V	286.0	21.33
399.994375	37.86	46.00	8.14	100.0	V	331.0	23.99
500.025625	40.78	46.00	5.22	100.0	V	0.0	25.92
549.980625	39.40	46.00	6.60	100.0	V	237.0	26.68

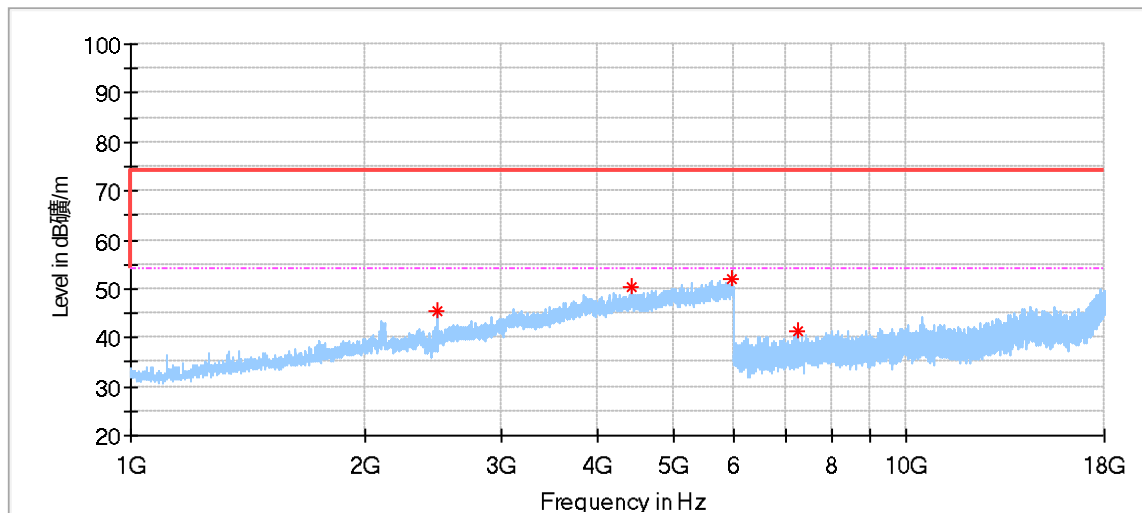
Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
58.712188	36.67	40.00	2.33	100.0	V	199.0	19.92

1GHz -18GHz:
2412MHz:

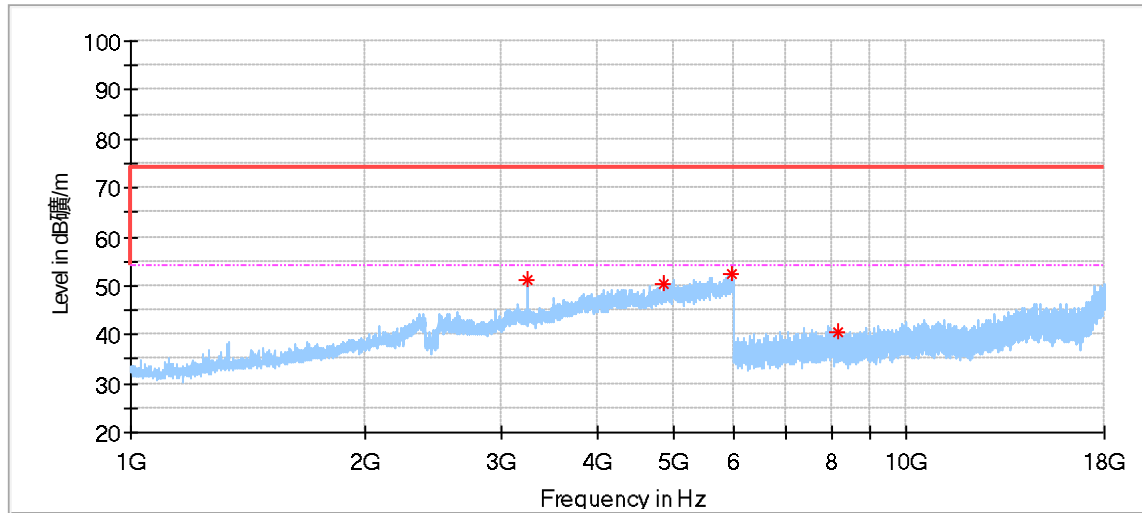


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2376.500000*	45.52	74.00	28.48	150.0	H	243.0	-4.78
3215.500000	50.32	74.00	23.69	150.0	H	274.0	-0.28
4824.000000*	51.91	74.00	22.09	150.0	H	202.0	5.24
5877.500000	52.69	74.00	21.31	150.0	H	233.0	7.99
7233.500000*	42.03	74.00	31.97	150.0	H	115.0	8.10

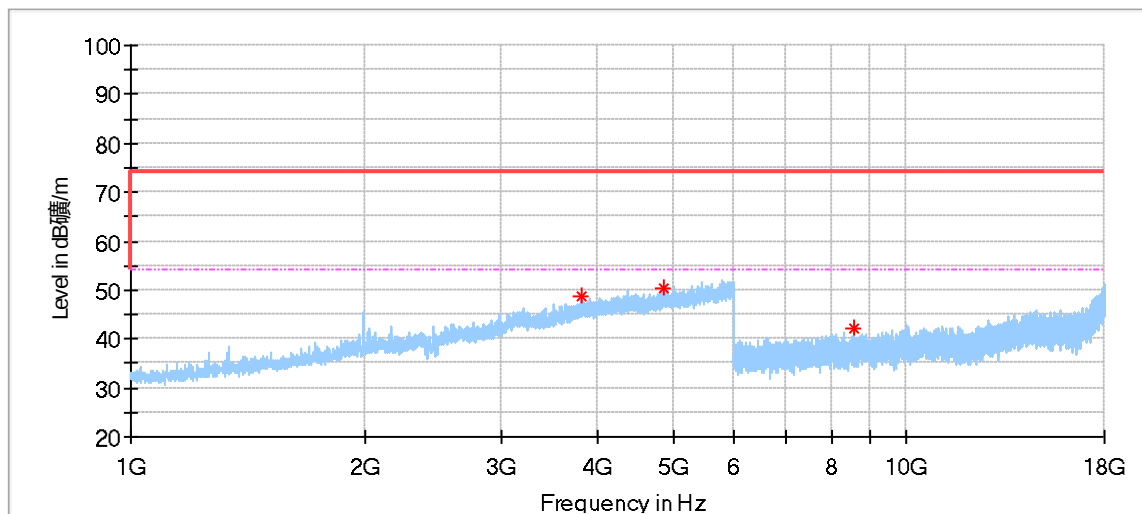


Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.500000	45.44	74.00	28.56	150.0	V	16.0	-4.28
4421.000000	50.46	74.00	23.54	150.0	V	347.0	4.32
5952.000000	51.93	74.00	22.07	150.0	V	150.0	8.14
7234.000000	41.17	74.00	32.83	150.0	V	222.0	8.10

2437MHz:

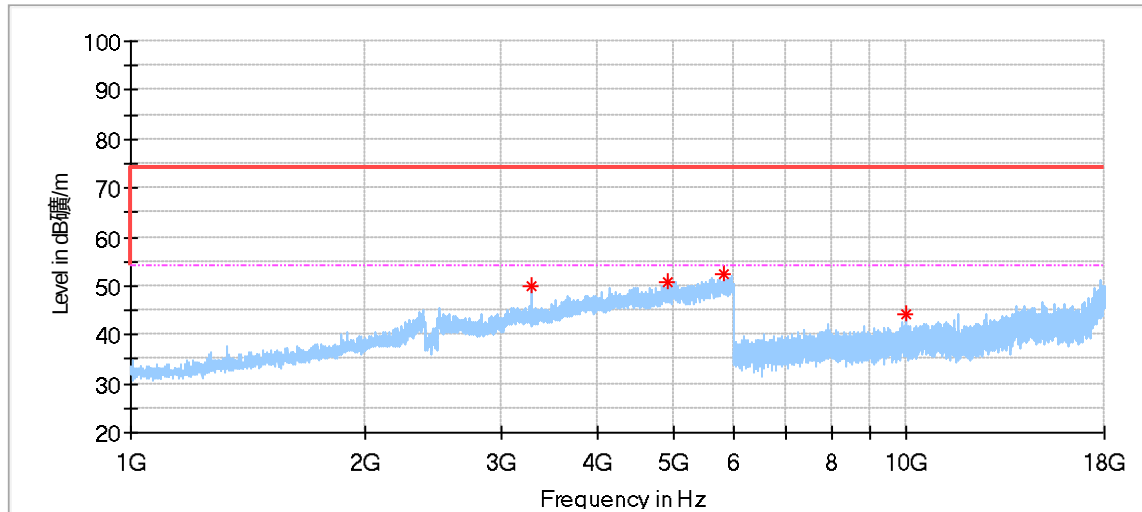


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3249.000000	50.99	74.00	23.01	150.0	H	264.0	-0.41
4873.500000*	50.52	74.00	23.48	150.0	H	223.0	5.60
5965.000000	52.25	74.00	21.75	150.0	H	129.0	8.19
8155.500000*	40.50	74.00	33.50	150.0	H	73.0	9.47

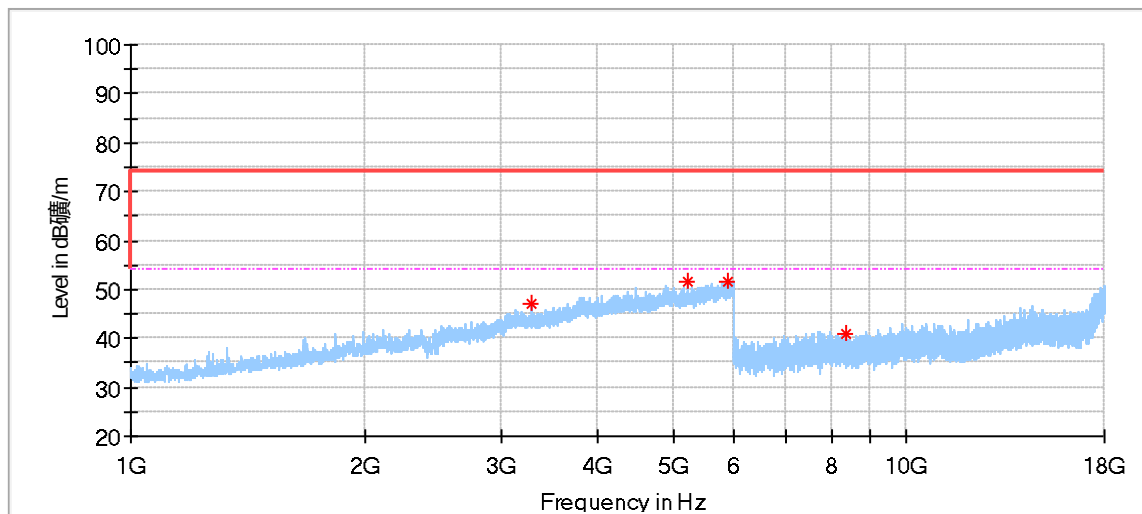


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3816.000000*	48.79	74.00	25.21	150.0	V	142.0	2.66
4868.500000*	50.45	74.00	23.55	150.0	V	214.0	5.58
8564.000000	42.27	74.00	31.73	150.0	V	219.0	9.69

2462MHz:



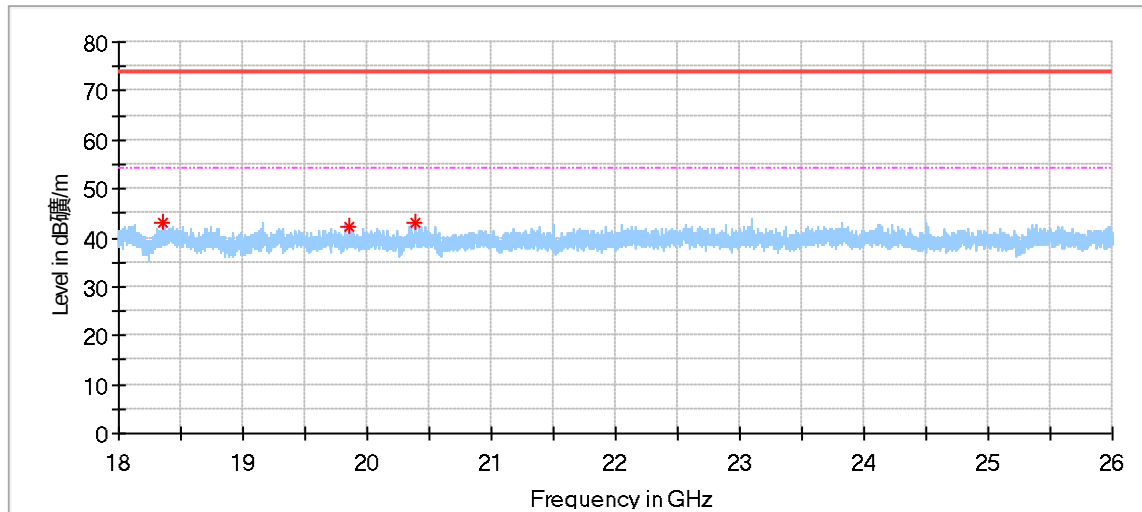
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3283.000000	50.03	74.00	23.97	150.0	H	265.0	-0.36
4923.500000*	50.79	74.00	23.21	150.0	H	160.0	5.80
5815.500000	52.22	74.00	21.78	150.0	H	119.0	7.71
9989.500000	44.33	74.00	29.67	150.0	H	222.0	11.26



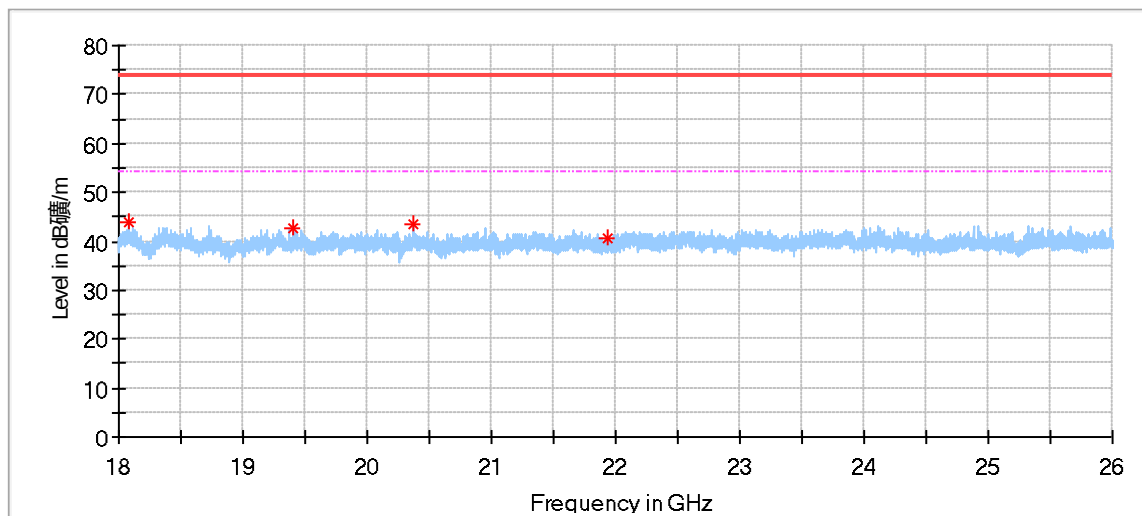
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3282.500000	46.94	74.00	27.06	150.0	V	120.0	-0.36
5221.000000	51.63	74.00	22.37	150.0	V	100.0	6.02
5880.500000	51.72	74.00	22.28	150.0	V	141.0	7.99
8333.000000*	41.08	74.00	32.92	150.0	V	200.0	9.57

18GHz -40GHz:

2412MHz:

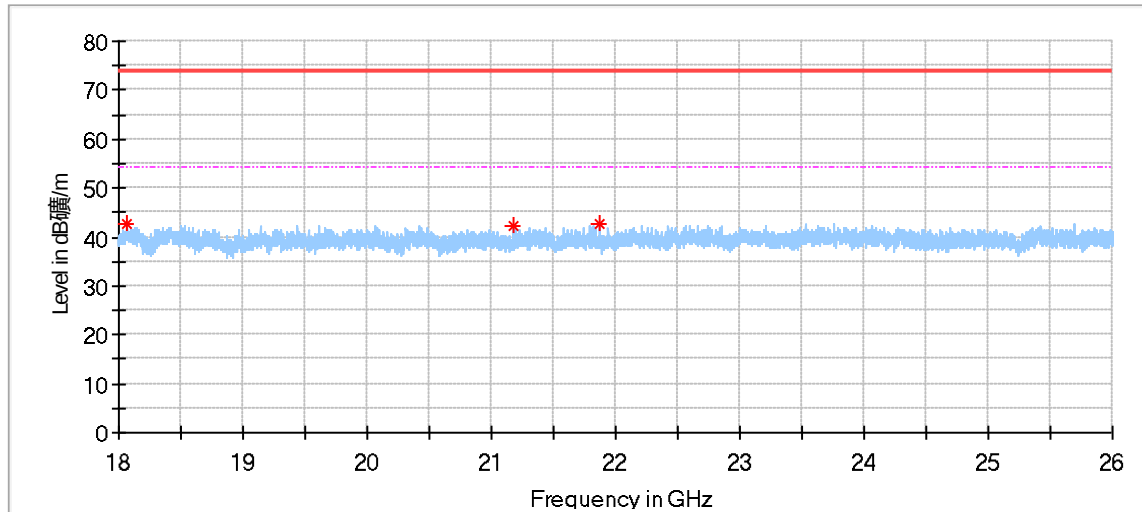


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18353.600000*	43.15	74.00	30.85	150.0	H	195.0	-1.82
19854.400000*	42.39	74.00	31.61	150.0	H	230.0	-0.88
20384.800000*	43.08	74.00	30.92	150.0	H	183.0	-0.39

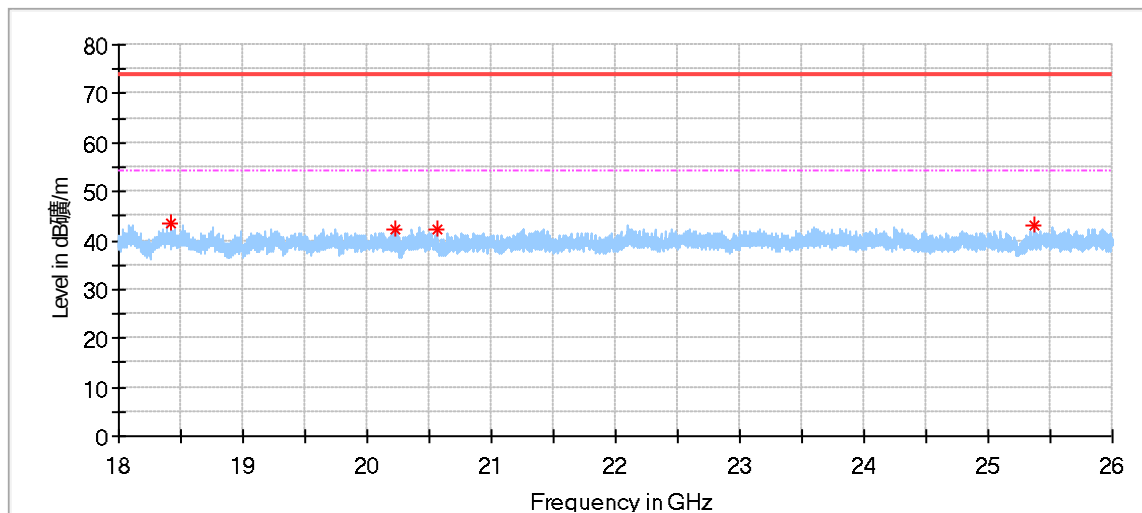


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18075.200000*	43.76	74.00	30.24	150.0	V	0.0	-1.84
19403.200000*	42.66	74.00	31.34	150.0	V	92.0	-1.38
20366.400000*	43.34	74.00	30.66	150.0	V	259.0	-0.41
21933.600000	40.79	74.00	33.21	150.0	V	148.0	0.77

2437MHz

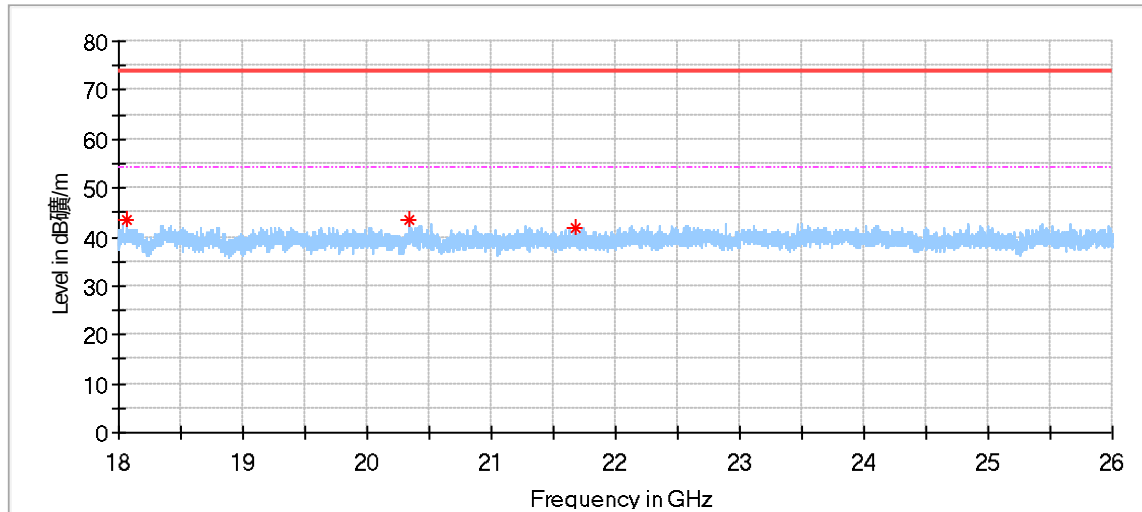


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18068.000000*	42.72	74.00	31.28	150.0	H	13.0	-1.86
21176.800000*	42.46	74.00	31.54	150.0	H	143.0	0.34
21865.600000	42.83	74.00	31.17	150.0	H	290.0	0.72

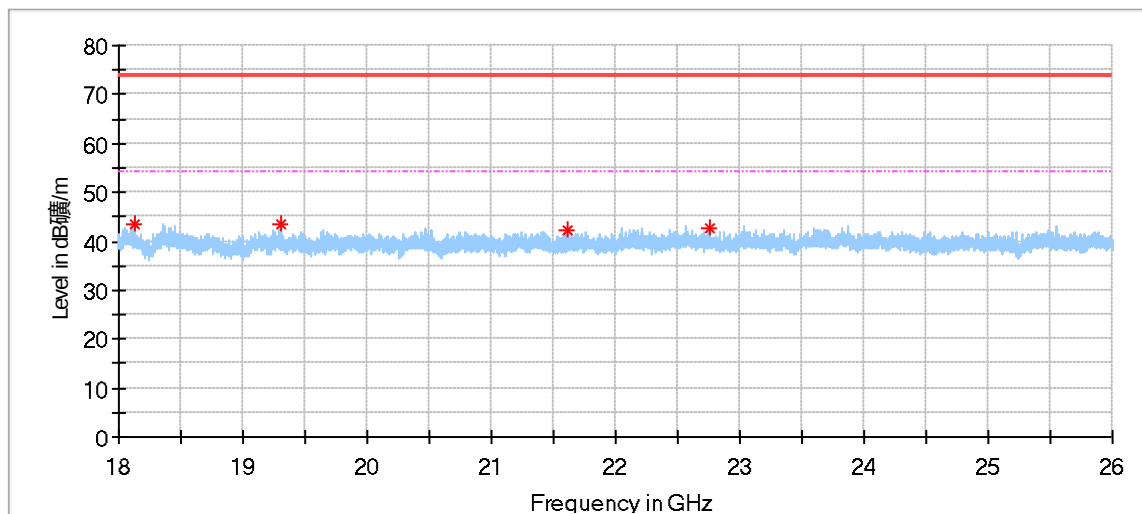


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18421.600000*	43.33	74.00	30.67	150.0	V	216.0	-1.73
20220.800000*	42.44	74.00	31.56	150.0	V	157.0	-0.65
20556.800000*	42.34	74.00	31.66	150.0	V	266.0	-0.25
25363.200000	43.14	74.00	30.86	150.0	V	200.0	2.22

2462MHz



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18068.000000*	43.41	74.00	30.59	150.0	H	132.0	-1.86
20340.000000*	43.33	74.00	30.67	150.0	H	212.0	-0.45
21680.800000	41.83	74.00	32.17	150.0	H	358.0	0.58



Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18128.800000*	43.60	74.00	30.40	150.0	V	290.0	-1.67
19313.600000*	43.43	74.00	30.57	150.0	V	247.0	-1.72
21618.400000	42.31	74.00	31.69	150.0	V	282.0	0.52
22756.000000	42.53	74.00	31.47	150.0	V	191.0	1.62

Remark:

- (1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (2) Data of measurement within frequency range 9kHz-30MHz are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so test data does not present in this report.
- (3) The report only shows the worst test data.
- (4) Level= Reading Level + Correction Factor
- (5) Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
(The Reading Level is recorded by software which is not shown in the sheet)

10 Test Equipment List

Radiated Emission Test(9K – 30MHz)

Description	Manufacturer	Model no.	Equipment ID	Serial no.	cal interval (year)	cal. due date
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2024-5-20
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	68-4-80-14-002	707	1	2024-7-18
Loop Antenna	Rohde & Schwarz	HFH2-Z2	68-4-80-14-006	100398	1	2024-5-28
Pre-amplifier	Rohde & Schwarz	SCU 18	68-4-29-14-001	102230	1	2024-8-7
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2024-5-19
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2024-5-19
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

Radiated Emission 2# Test(30MHz – 40GHz)

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2024-5-20
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2024-3-5
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2024-4-26
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2024-5-19
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2024-5-19
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2024-7-11
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2024-8-1
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2024-5-19
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

Conducted Emission 2# Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-19-002	102590	1	2024-5-19
LISN	Rohde & Schwarz	ENV216	68-4-87-19-001	102472	1	2024-5-20
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2024-5-19
Test software	Rohde & Schwarz	EMC32	68-4-90-19-005-A01	Version10.35.02	N/A	N/A
Shielding Room	TDK	CSR #2	68-4-90-19-005	----	3	2025-10-15

Conducted RF Test System

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2024-5-19
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.6.77.0518	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	3	2025-10-15

11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV432)	3.15dB
Uncertainty for Radiated Spurious Emission 9kHz-30MHz	4.70dB
Uncertainty for Radiated Spurious Emission 30MHz-1000MHz	Horizontal: 4.79dB; Vertical: 4.79dB;
Uncertainty for Radiated Spurious Emission 1000MHz-18000MHz	5.11dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	5.10dB;
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10^{-8} or 1%

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.

---THE END OF REPORT---