

8.6 CONDUCTED SPURIOUS EMISSIONS

Limits

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

Test Procedures

1. According to KDB 971168 D01,
2. The EUT was connect to spectrum analyzer and call box.
3. The RF output of EUT was connected to the spectrum analyzer.
4. Set the spectrum analyzer , RBW=1MHz, VBW=3MHz.
5. Record the maximum spurious emission.
6. The fundamental frequency should be excluded against the limit in operating band.

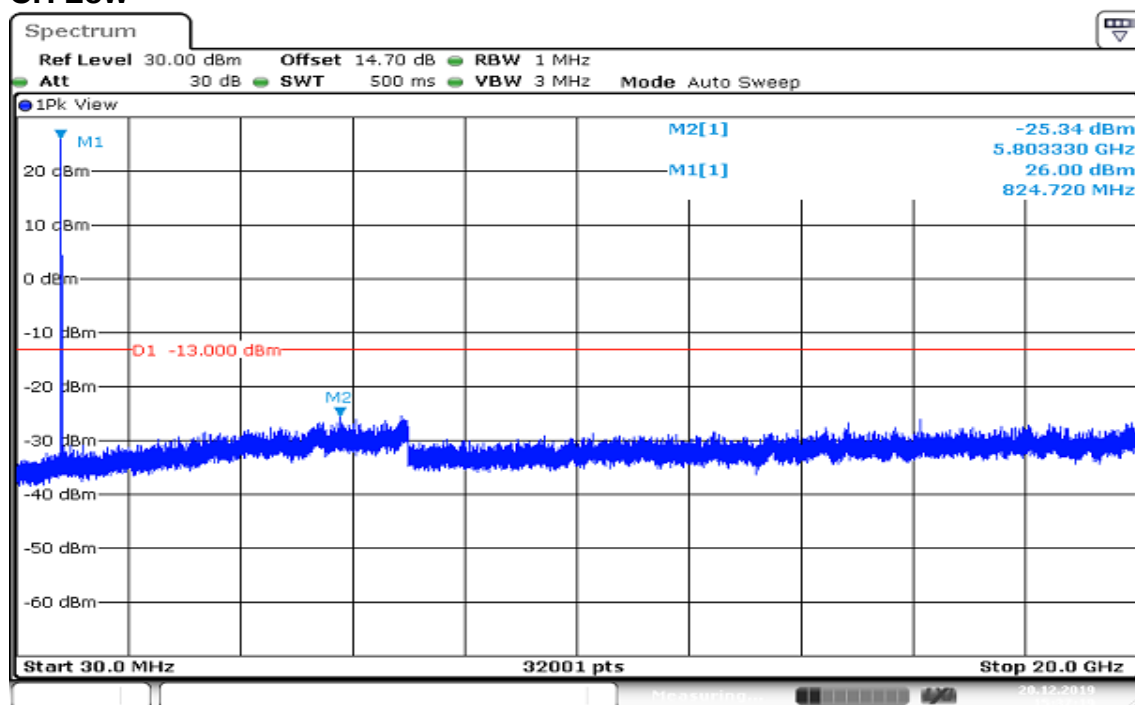
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Test Results

LTE Band 26

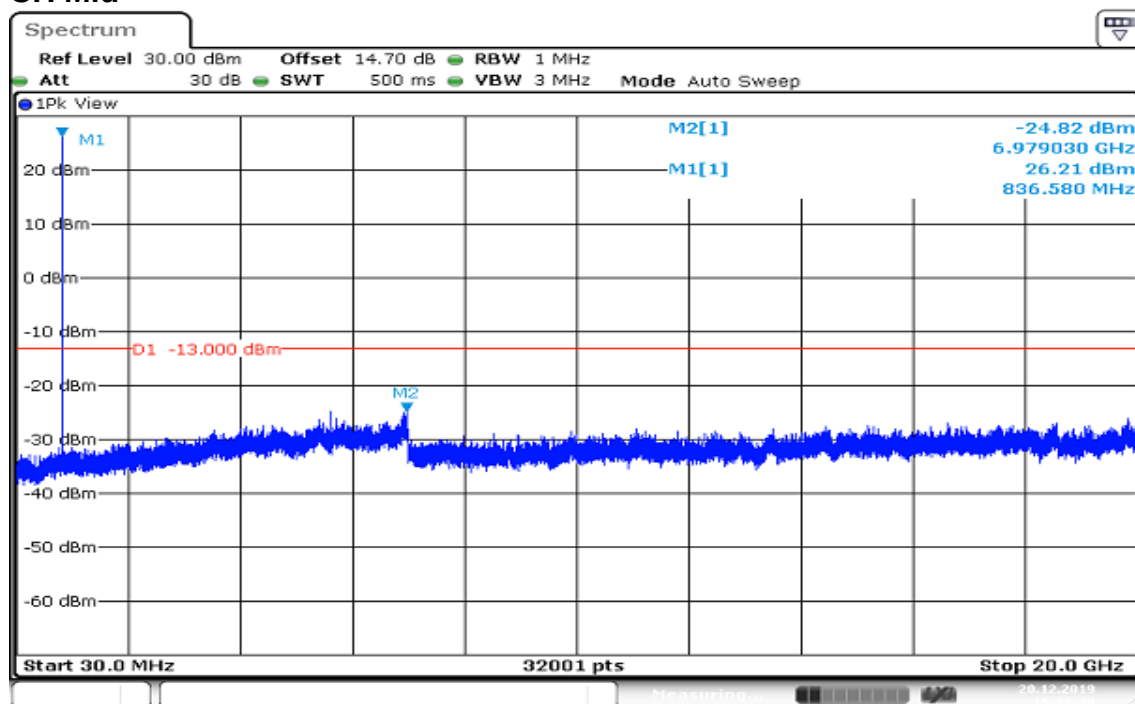
CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH Low



Date: 20.DEC.2019 15:37:20

CH Mid



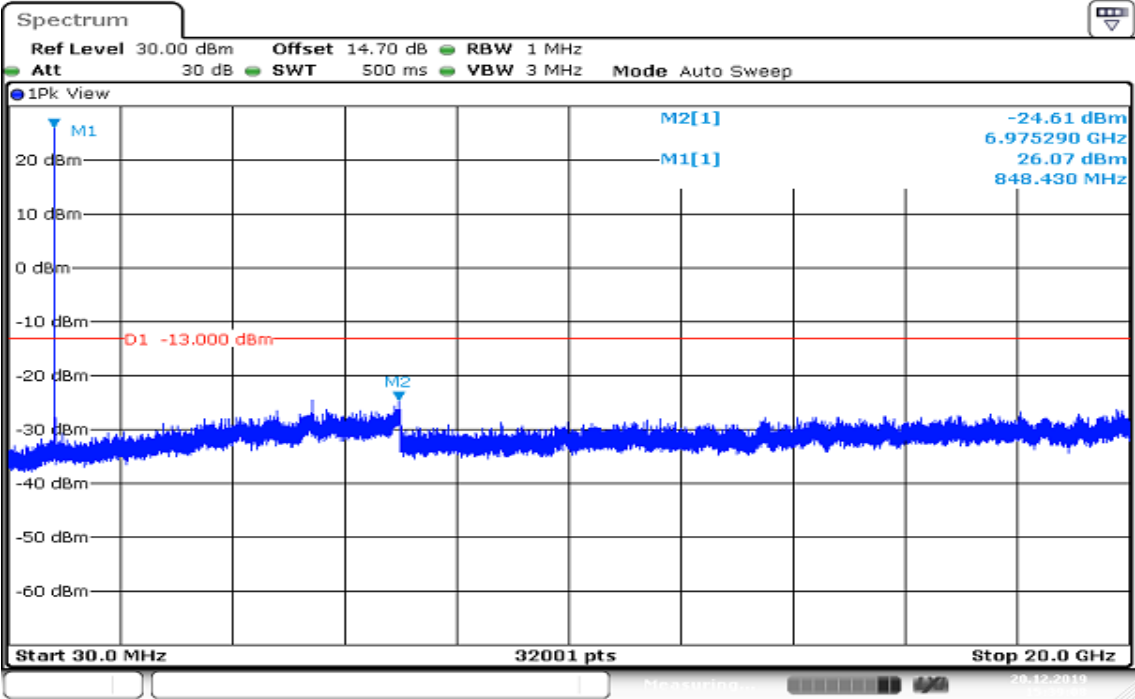
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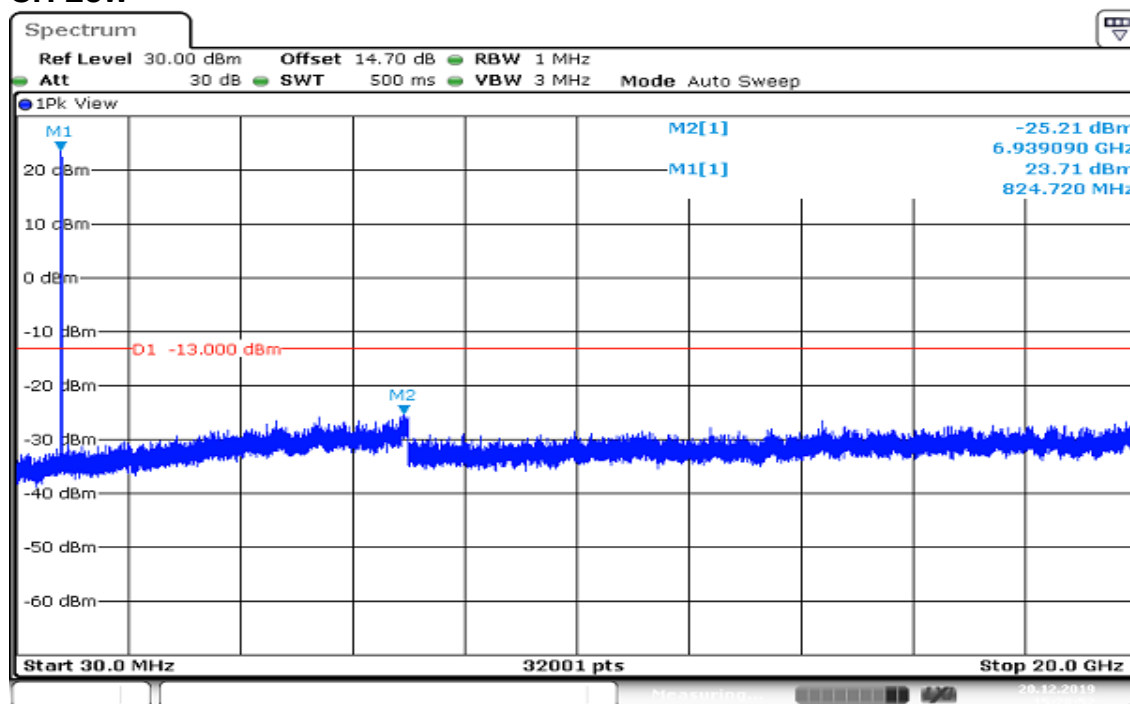
CH High



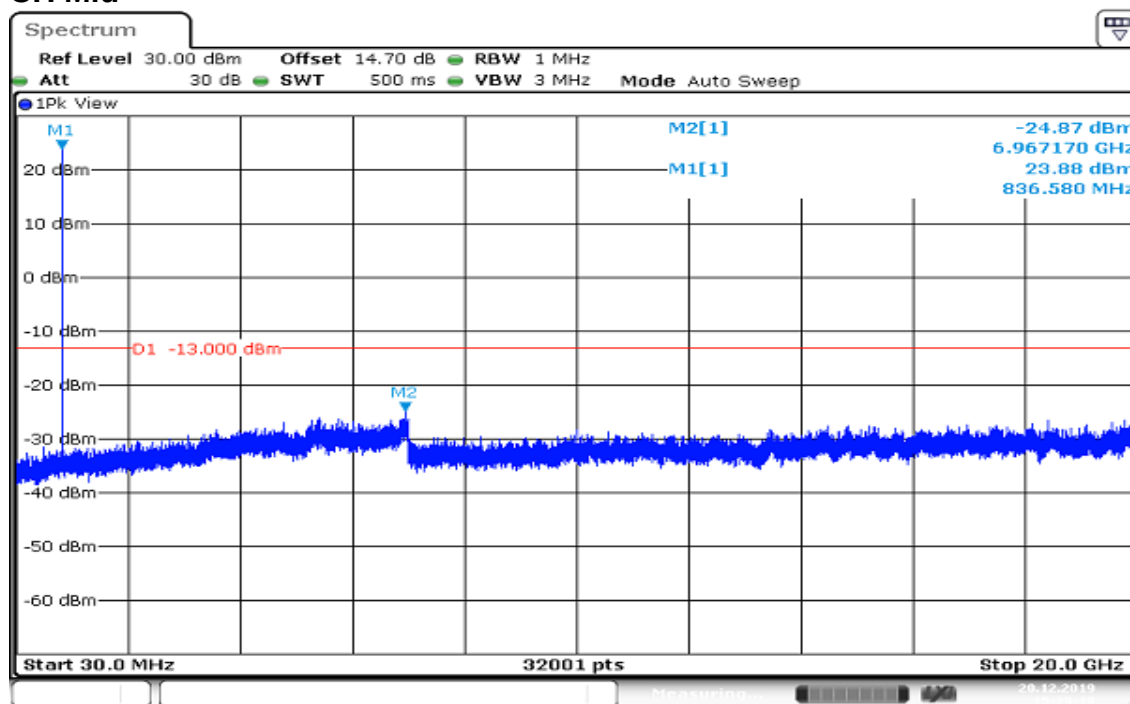
Date: 20.DEC.2019 15:39:09

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CHANNEL BANDWIDTH: 3MHz / QPSK CH Low



CH Mid

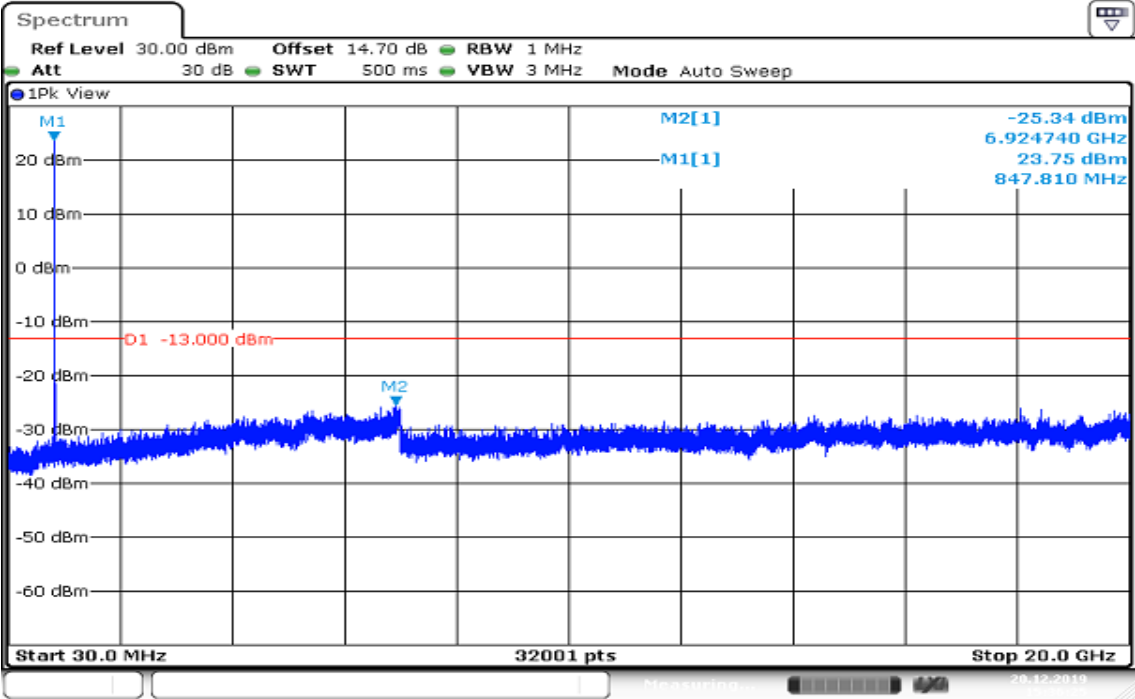




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CH High

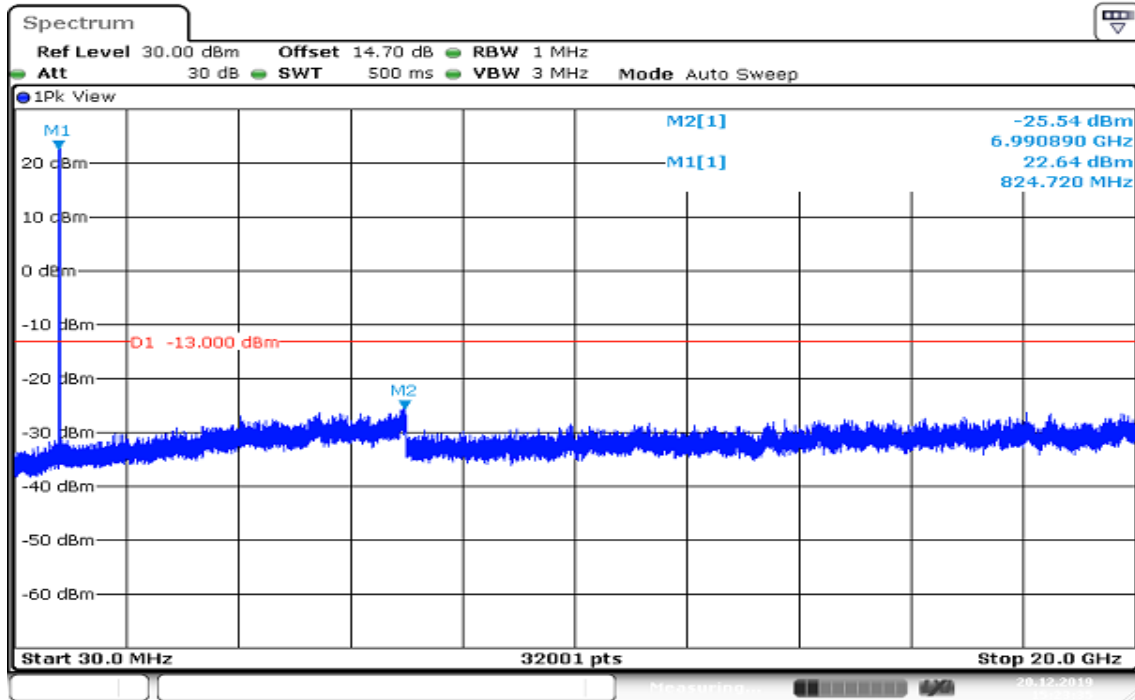


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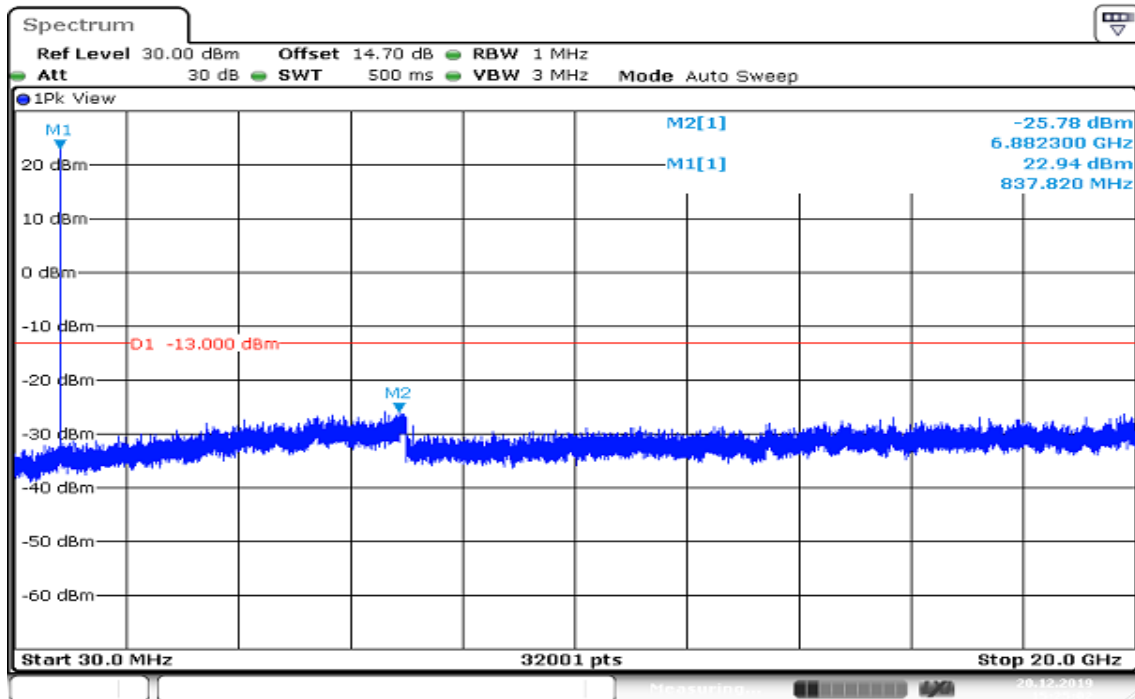
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CHANNEL BANDWIDTH: 5MHz / QPSK

CH Low



CH Mid

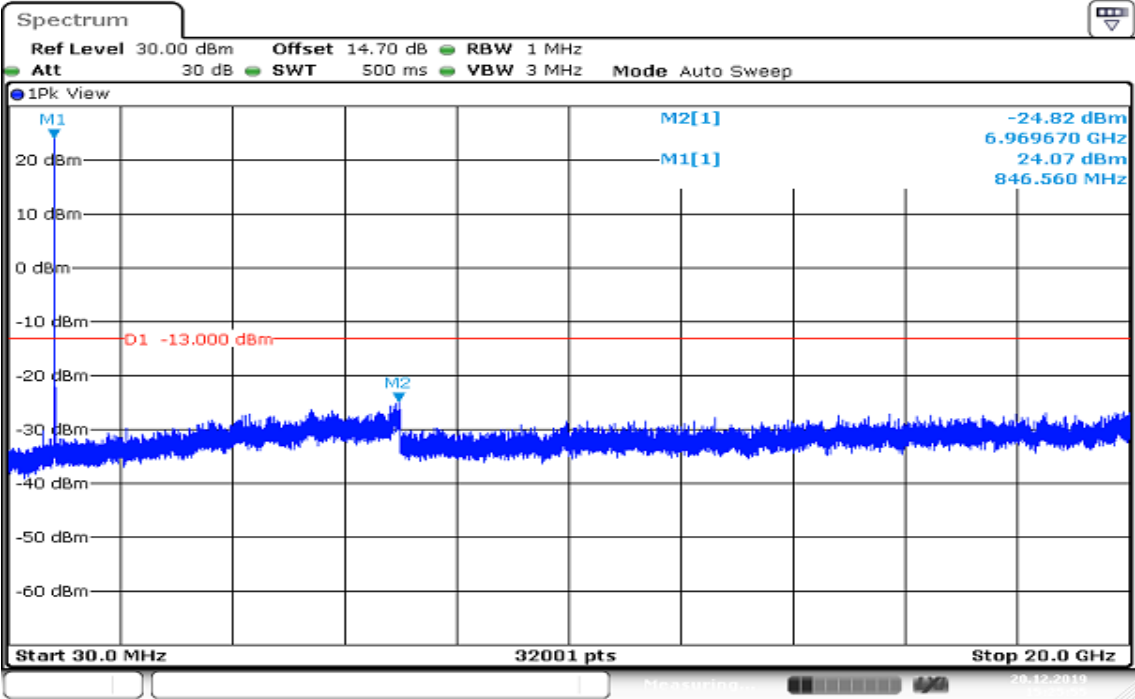




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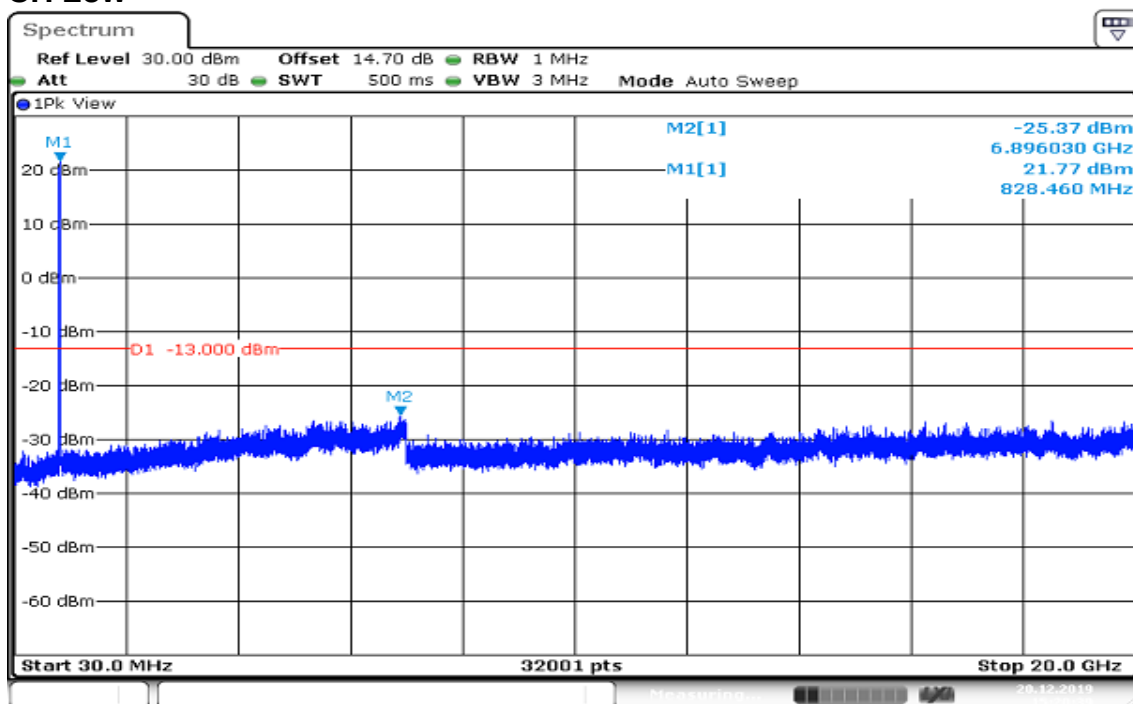
CH High



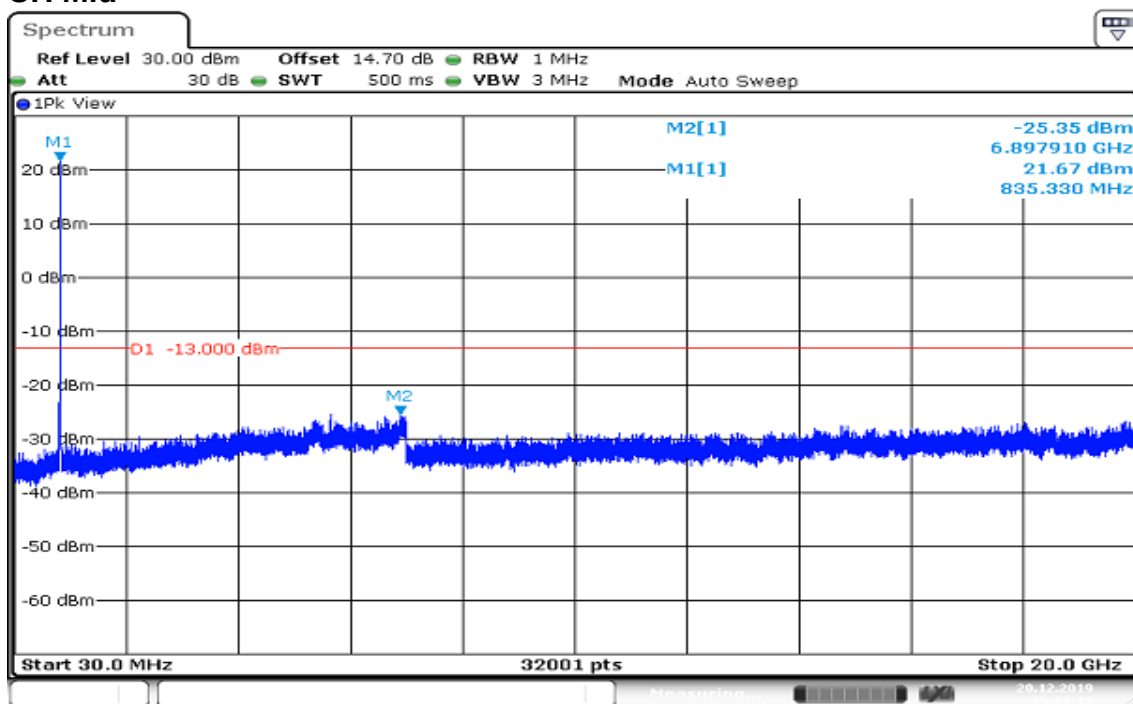
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CHANNEL BANDWIDTH: 10MHz / QPSK CH Low



CH Mid

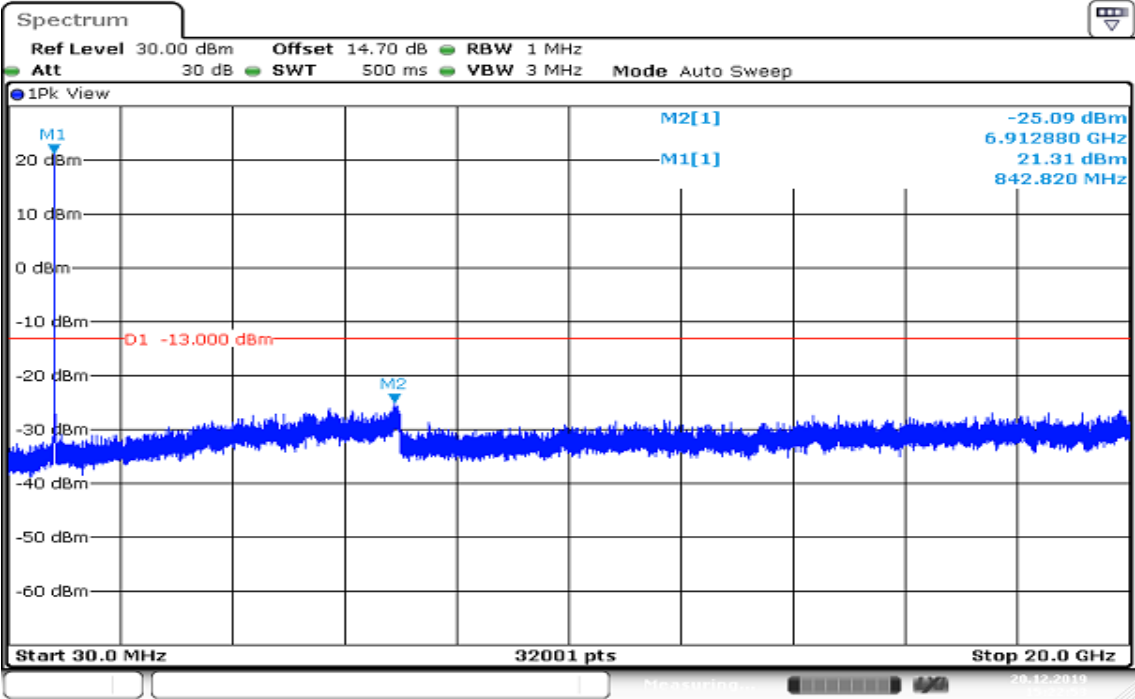




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CH High

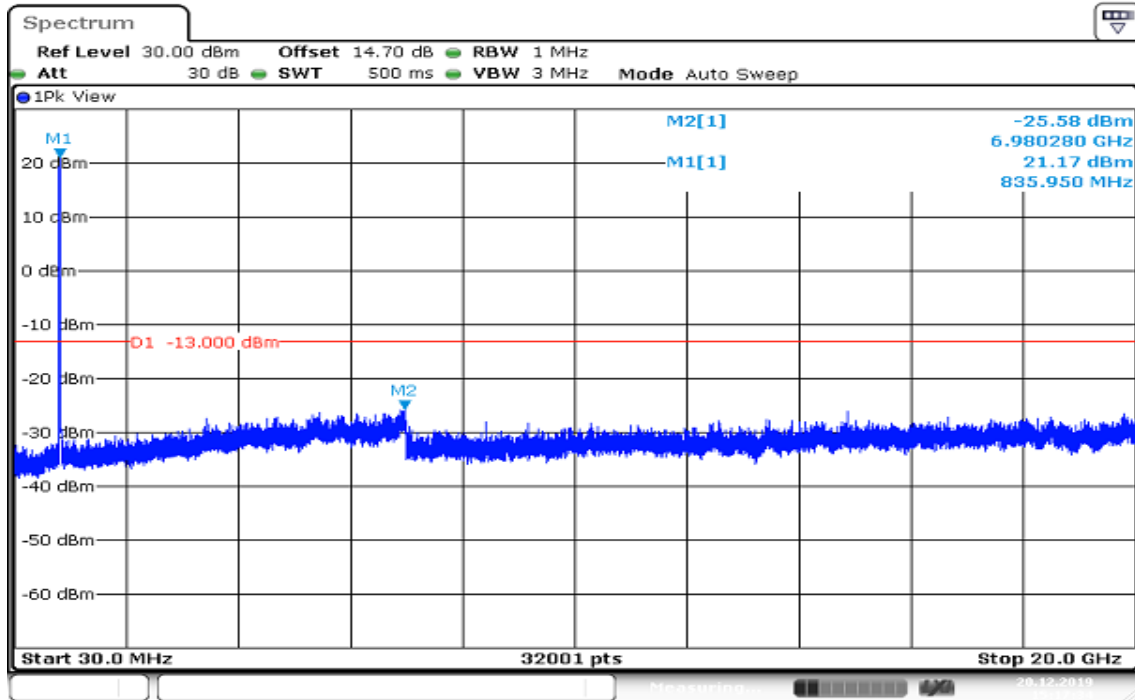


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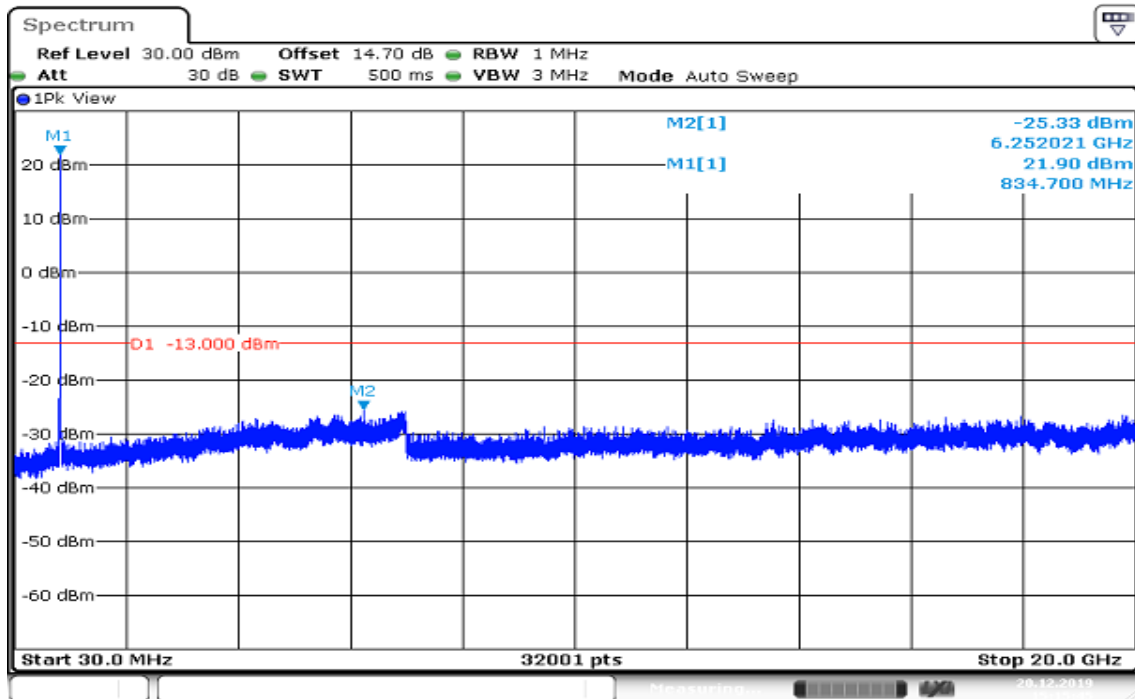
Report No.: T191120D05-RP11

CHANNEL BANDWIDTH: 15MHz / QPSK

CH Low



CH Mid

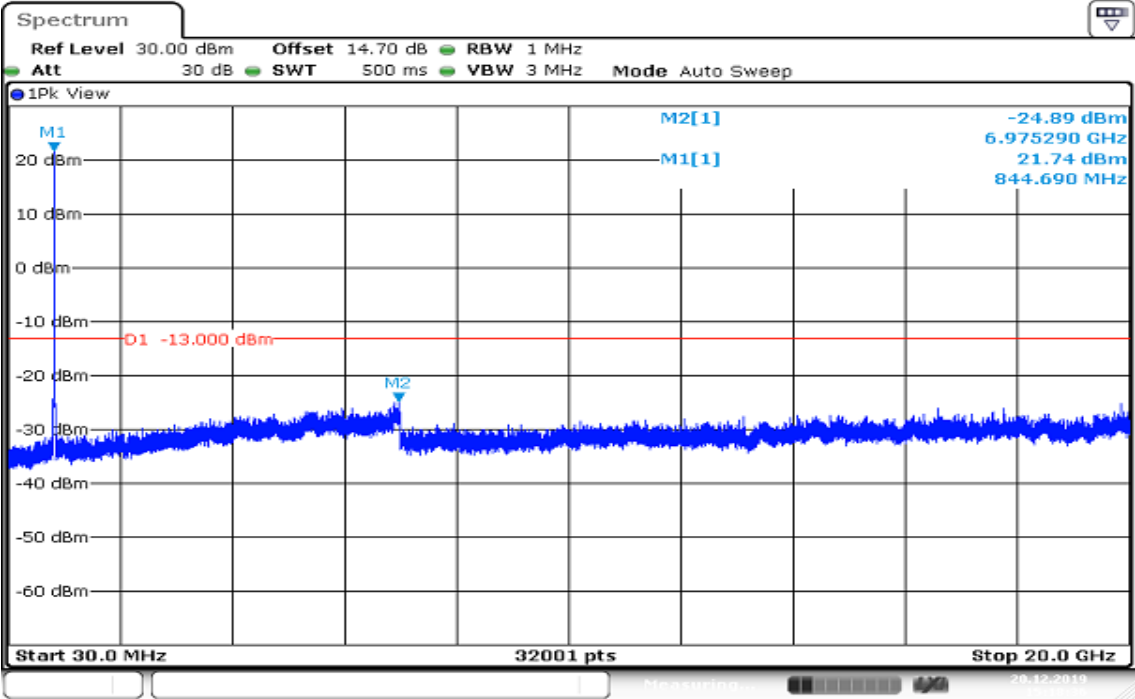




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CH High

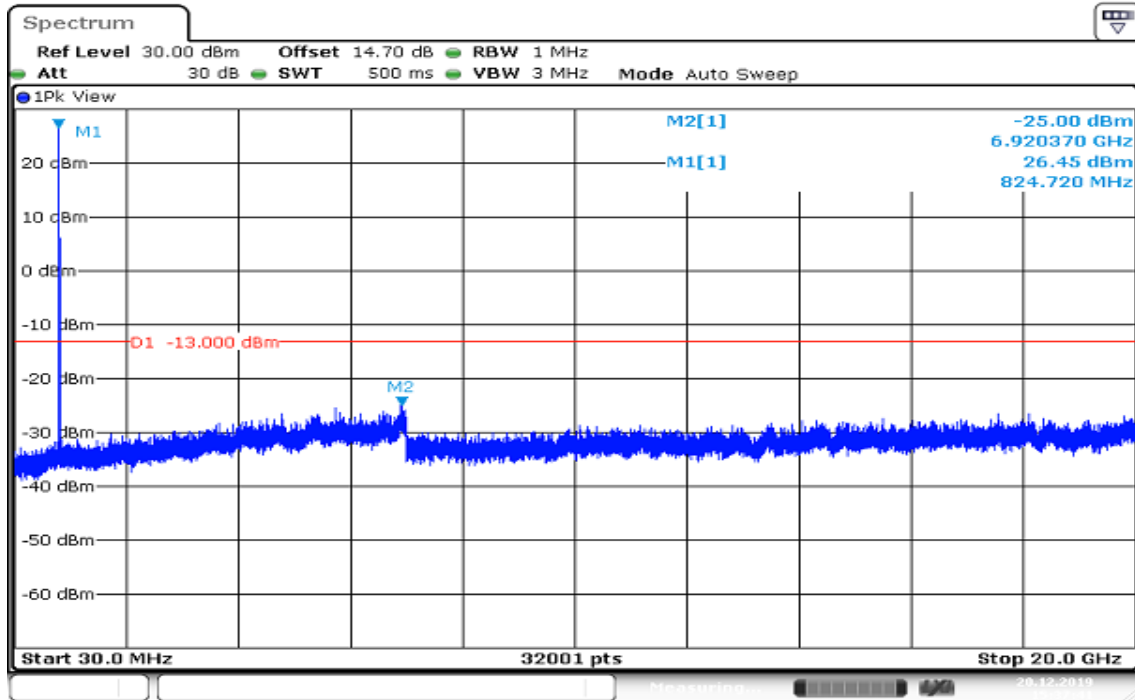


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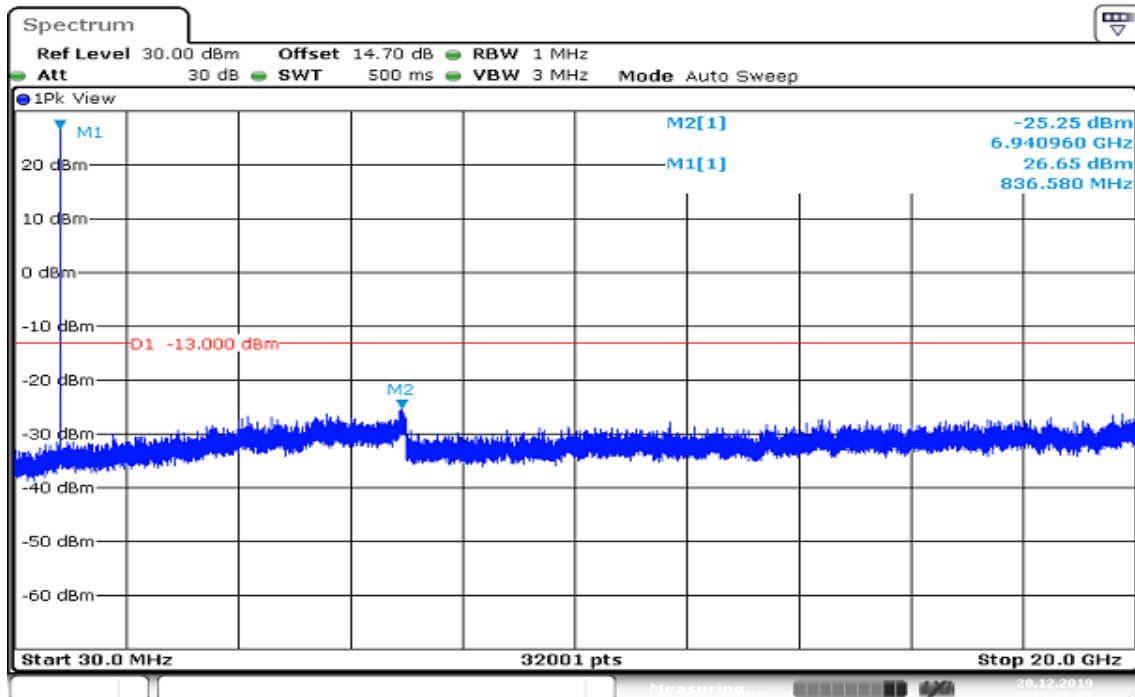
CHANNEL BANDWIDTH: 1.4MHz / 16QAM

CH Low



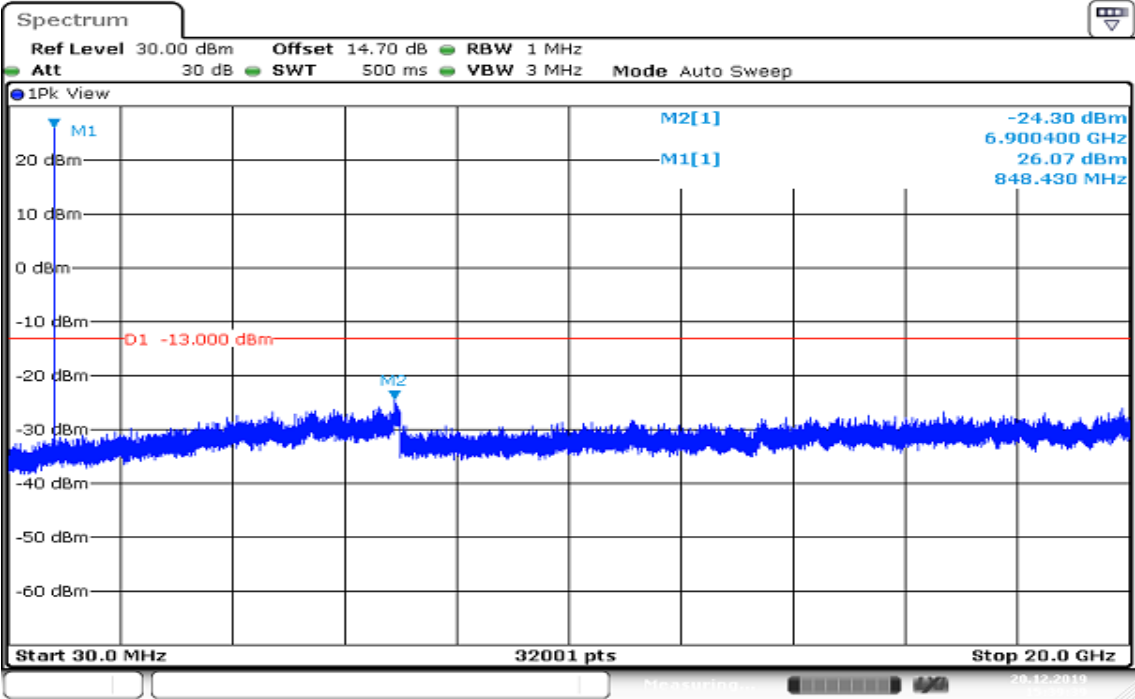
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CH Mid



Date: 20.DEC.2019 15:38:08

CH High

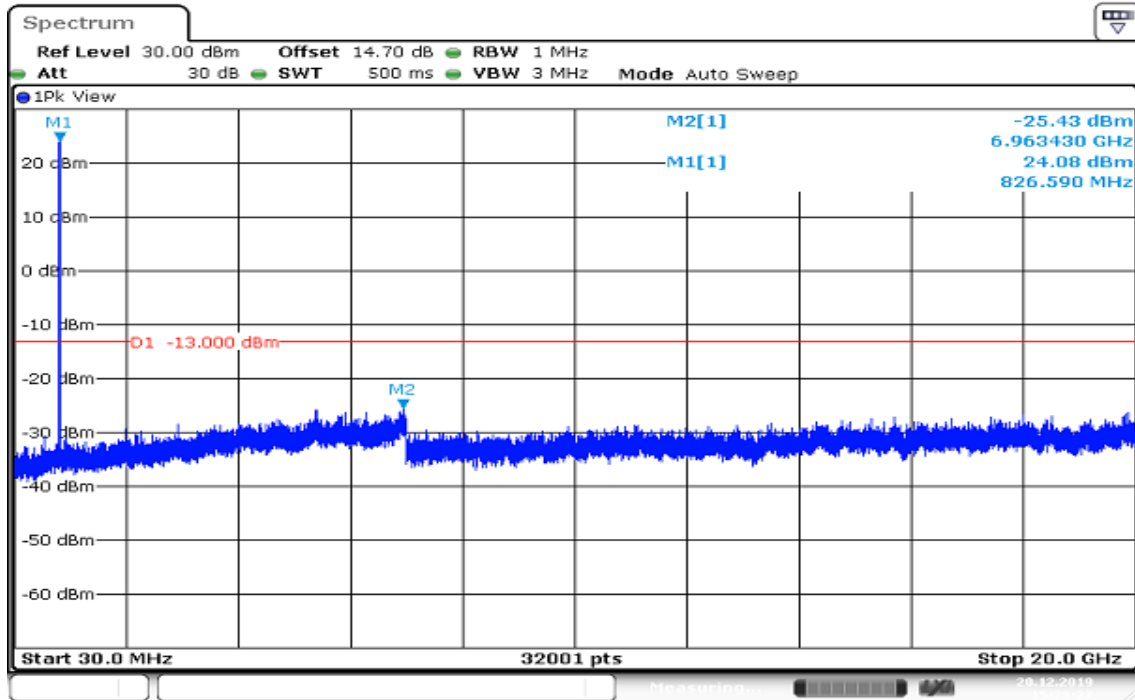


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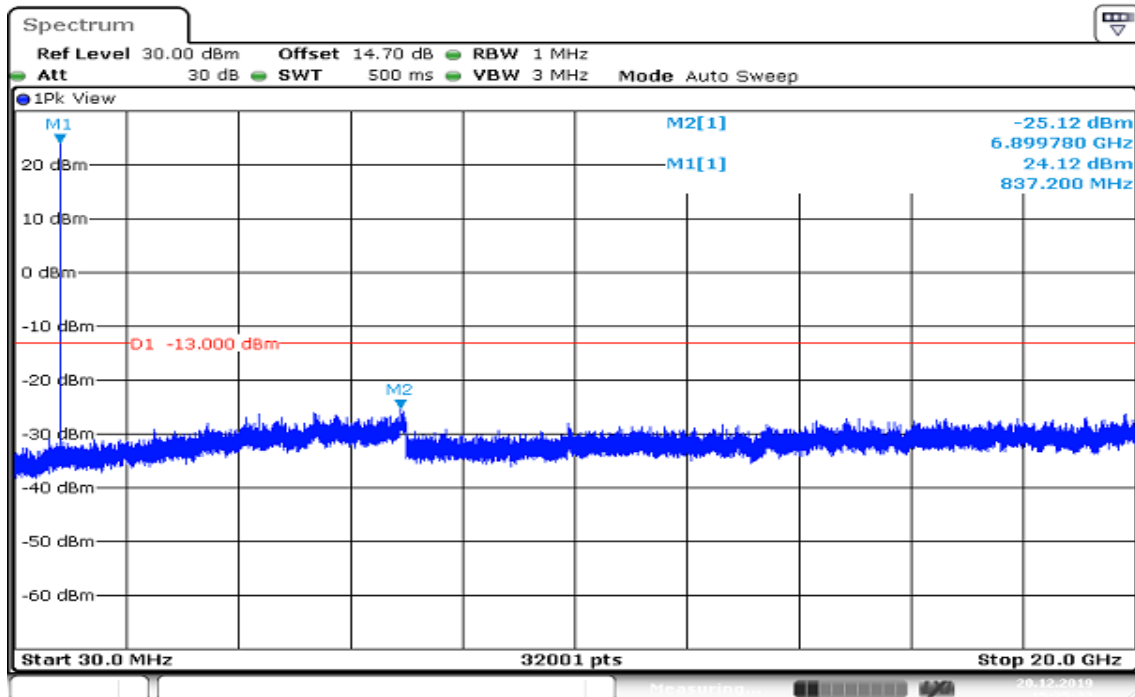
CHANNEL BANDWIDTH: 3MHz / 16QAM

CH Low



Date: 20.DEC.2019 15:28:28

CH Mid



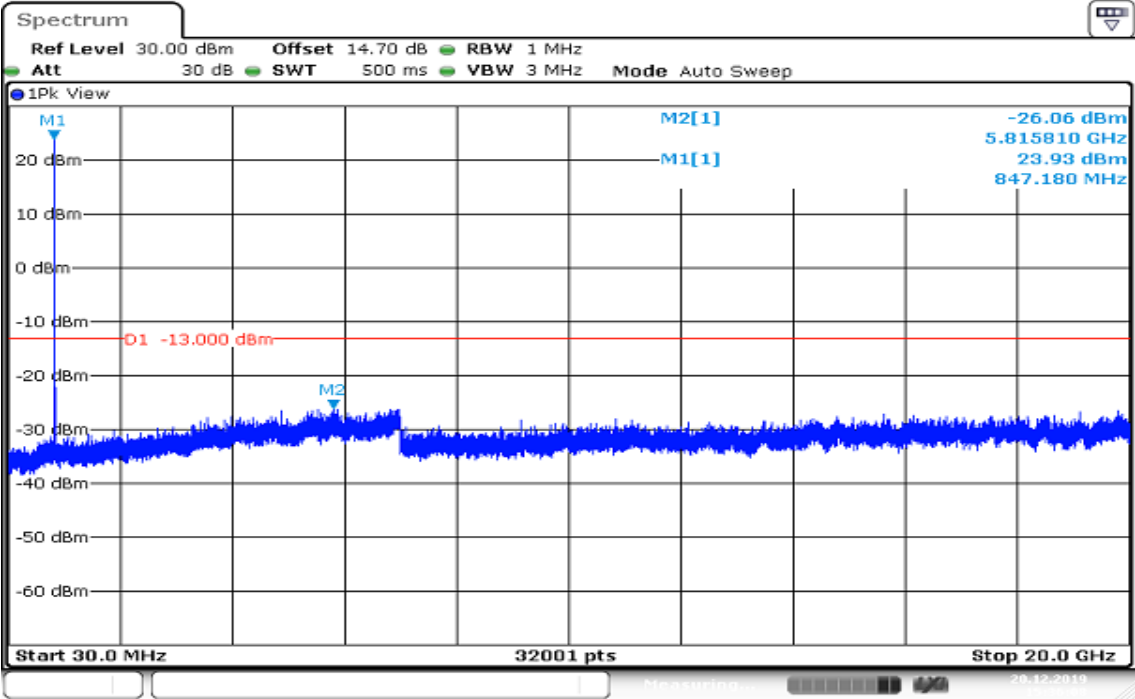
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CH High



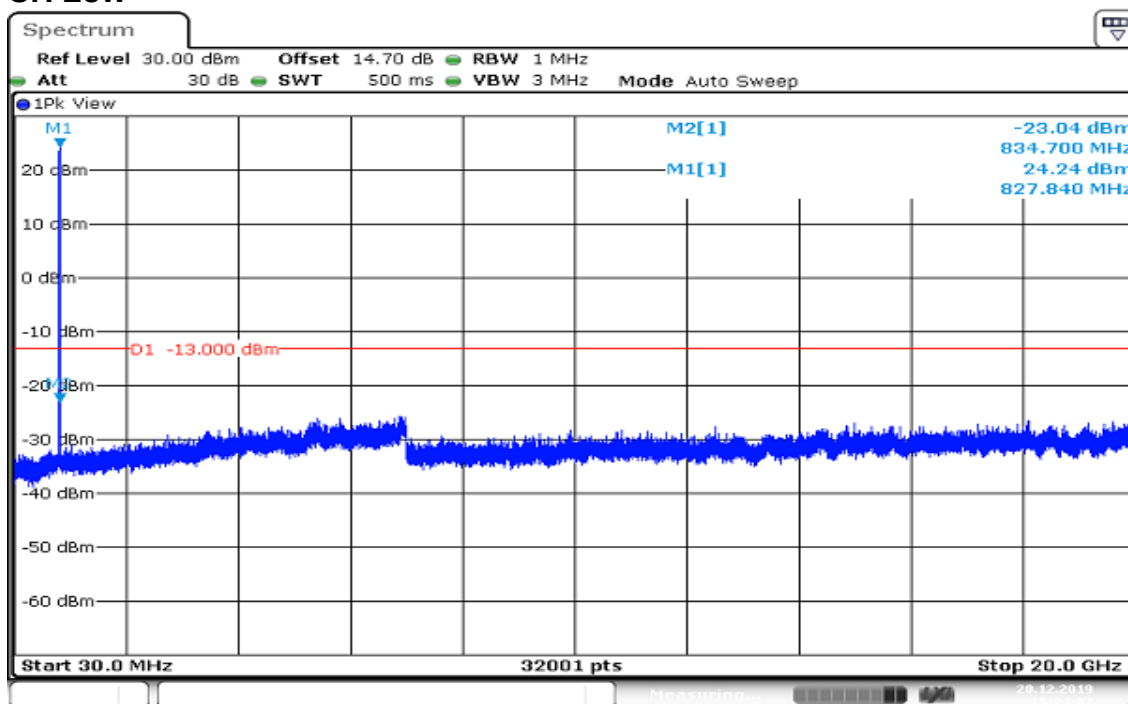
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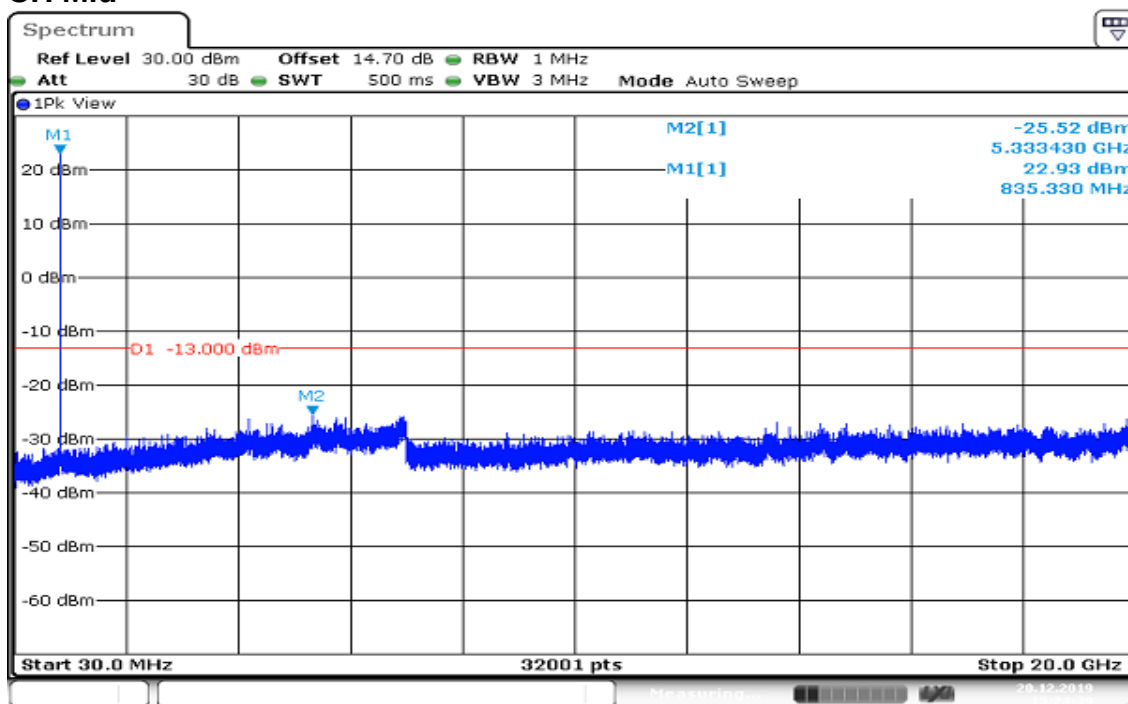
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CHANNEL BANDWIDTH: 5MHz / 16QAM CH Low



CH Mid

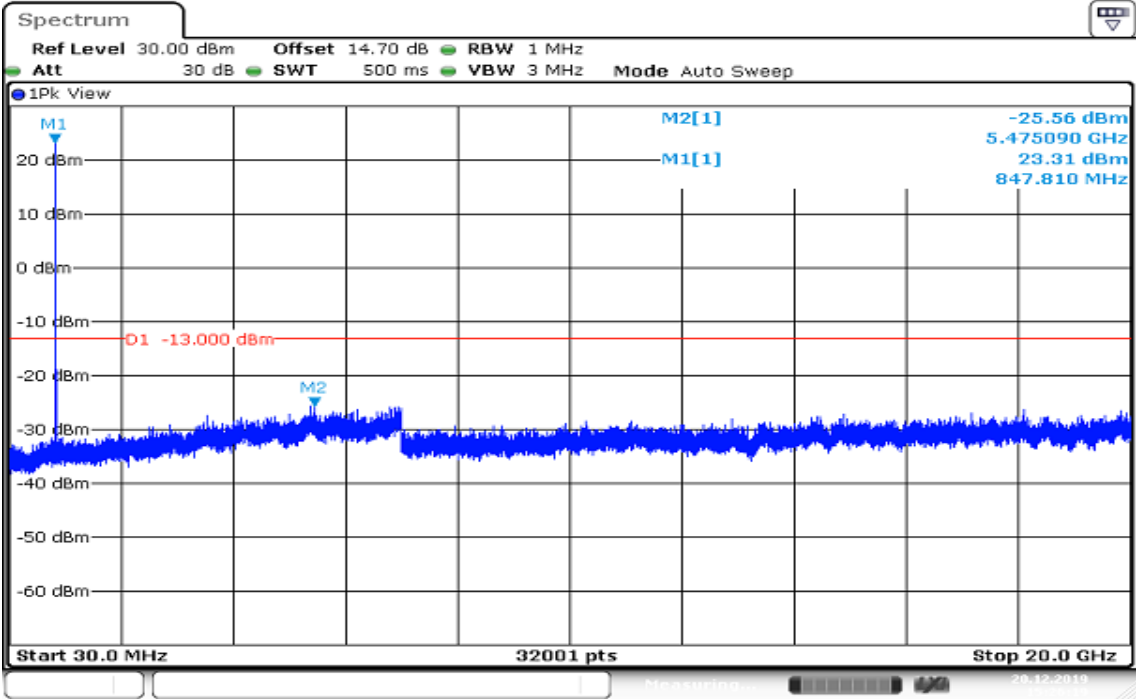




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CH High

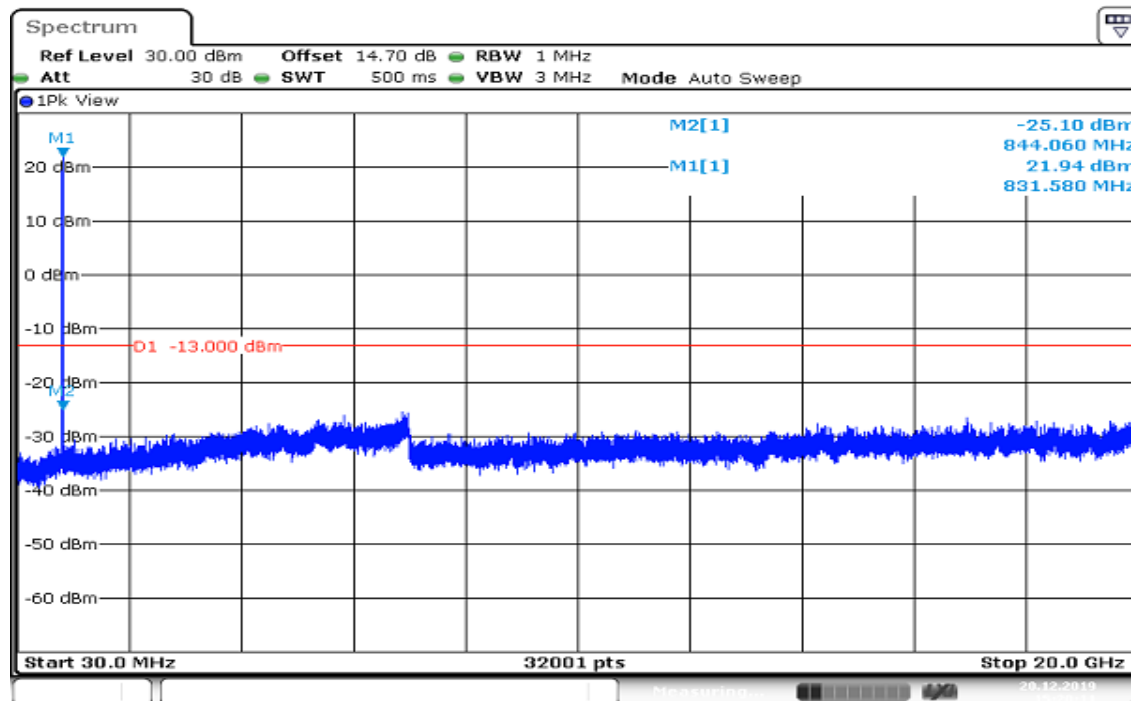


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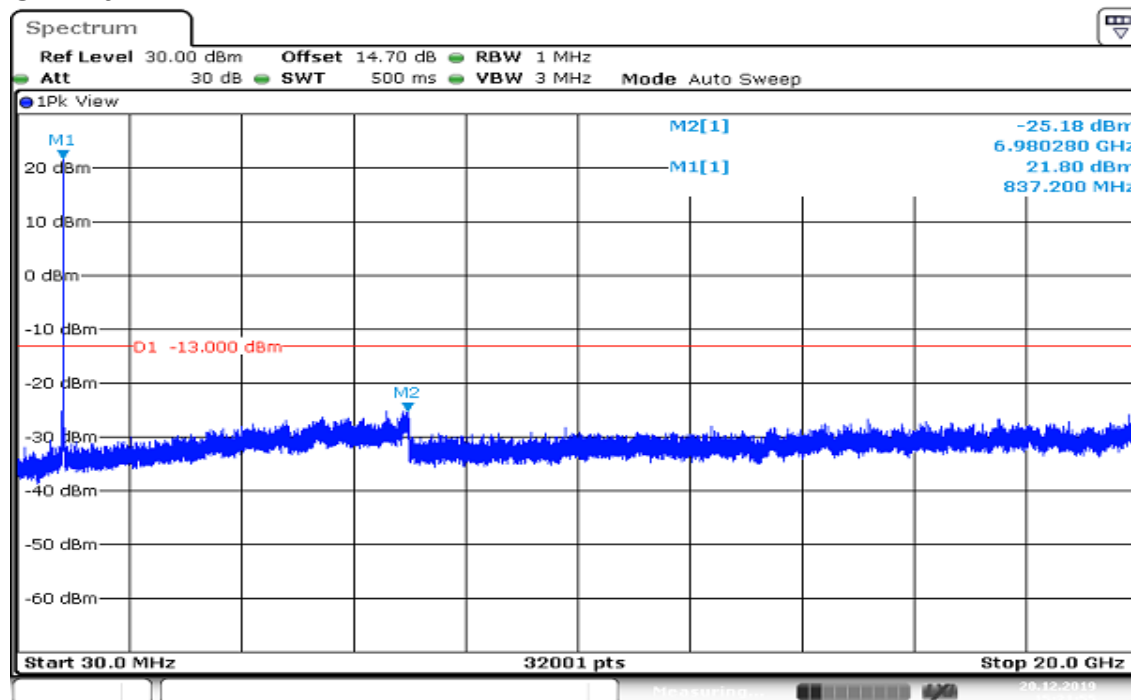
Report No.: T191120D05-RP11

CHANNEL BANDWIDTH: 10MHz / 16QAM

CH Low



CH Mid

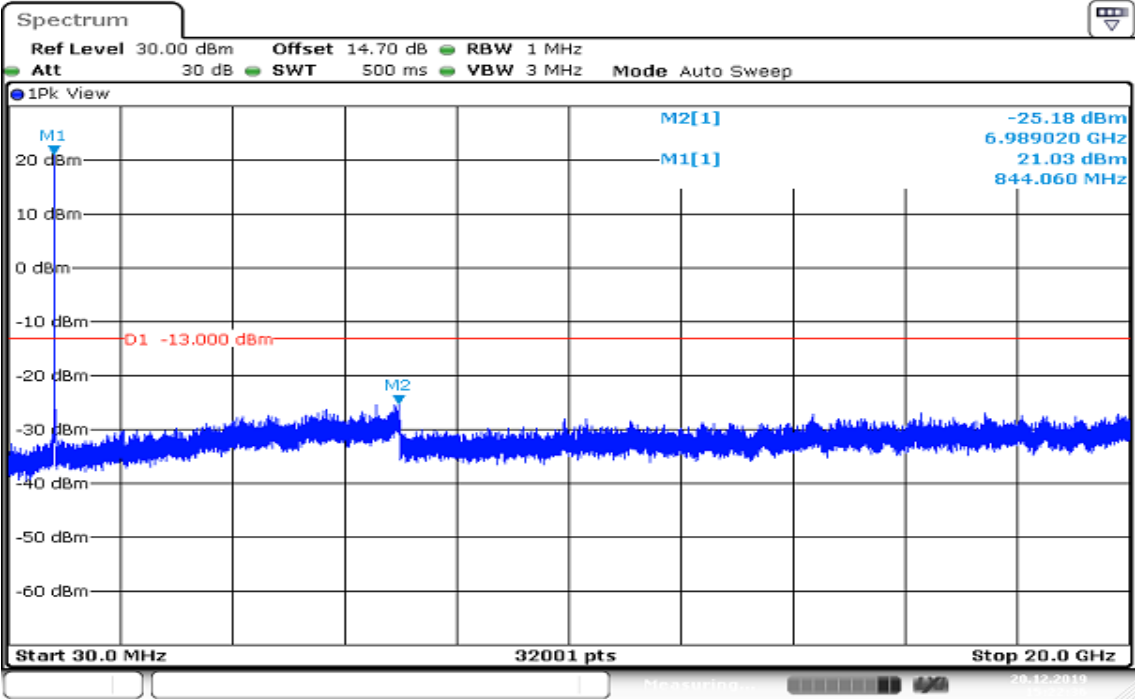




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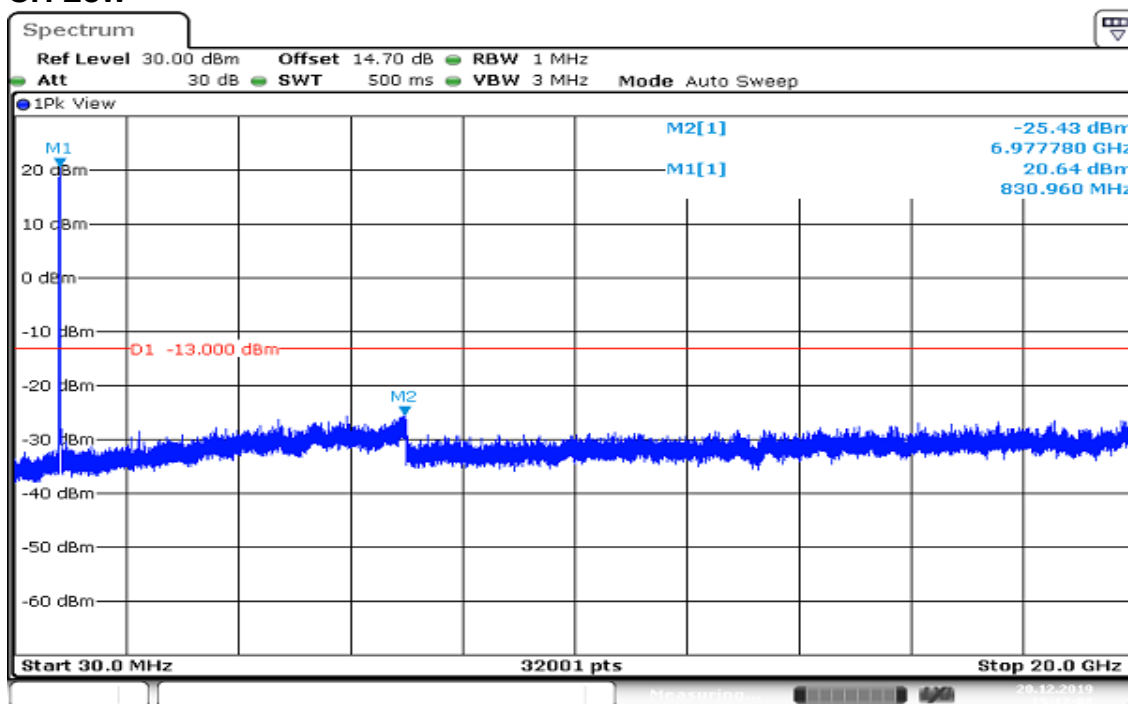
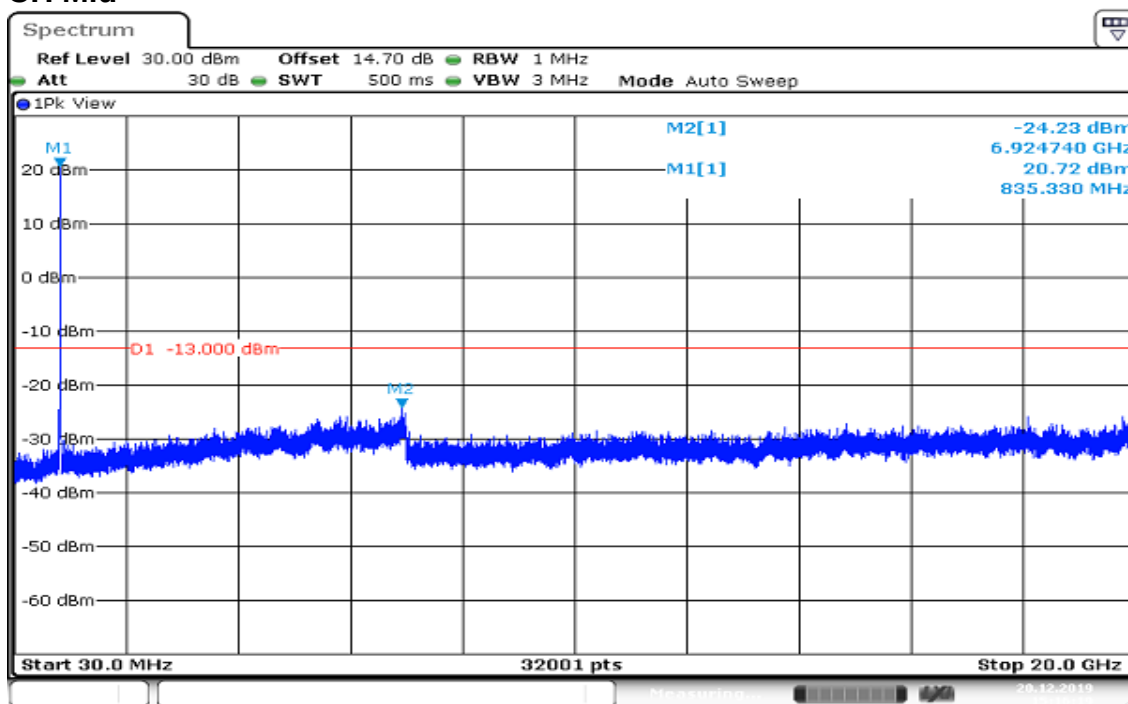
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CH High



Date: 20.DEC.2019 15:22:37

Report No.: T191120D05-RP11

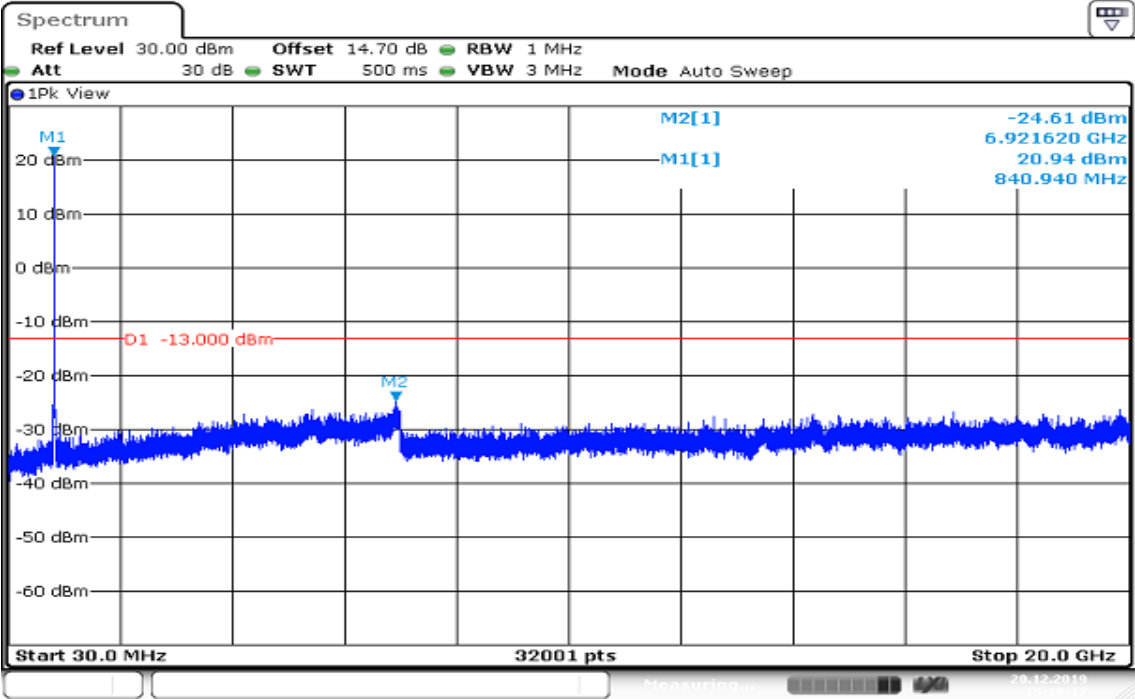
CHANNEL BANDWIDTH: 15MHz / 16QAM
CH Low**CH Mid**



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CH High



Date: 20.DEC.2019 15:19:18

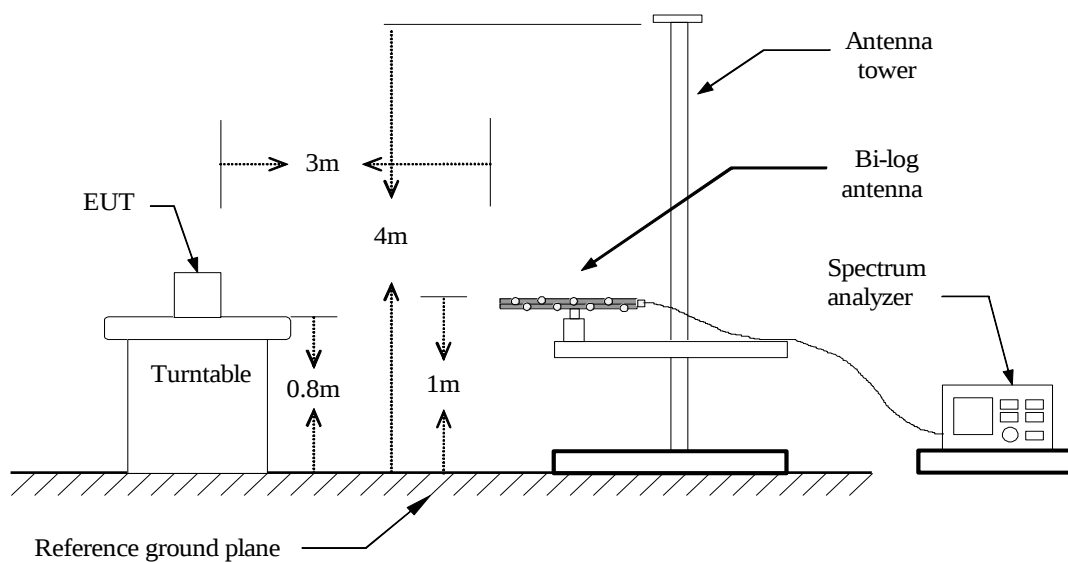
8.7 SPURIOUS RADIATION MEASUREMENT

LIMIT

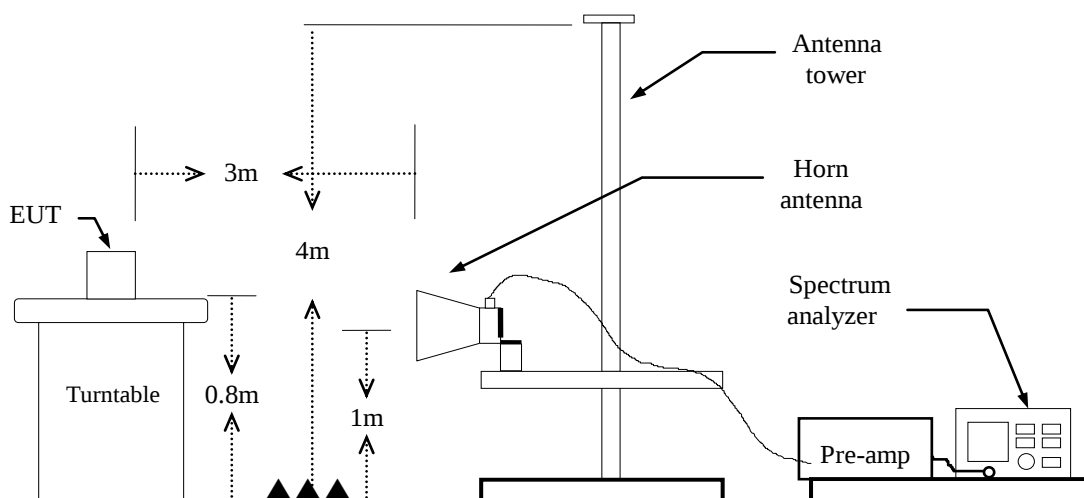
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

Test Configuration

Below 1 GHz

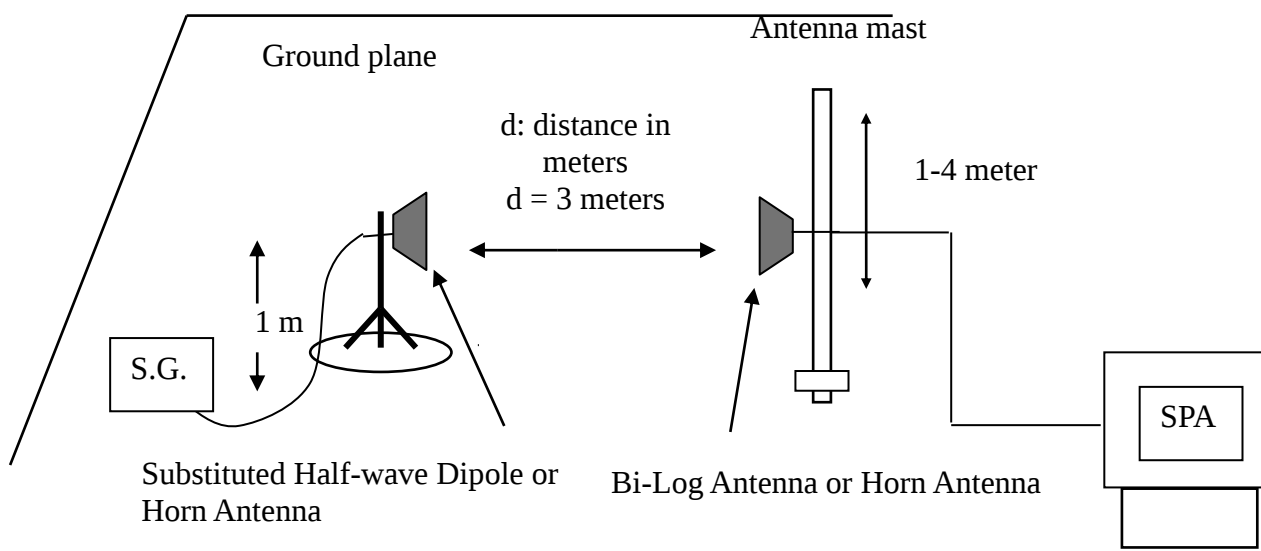


Above 1 GHz



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Substituted Method Test Set-up



TEST PROCEDURE

1. According to KDB 971168 D01 Power Meas License Digital Systems and TIA-603-E Section 2.2.12.
2. The EUT was placed on a turntable
 - (1) Below 1G : 0.8m
 - (2) Above 1G : 0.8m
 - (3) EUT set 3m from the receiving antenna
 - (4) The table was rotated 360 degrees of the highest spurious emission to determine the position.
3. Set the spectrum analyzer , RBW=1MHz, VBW=3MHz.
4. A horn antenna was driven by a signal generator.
5. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)} - 2.15$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

TEST RESULTS

Refer to the attached tabular data sheets.

Remark: Above 1GHz

Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.



Report No.: T191120D05-RP11

Test Results**LTE Band 26 / BW: 15MHz / QPSK / RB =1, RB Offset = 0****Operation Mode:** Tx / Low CH**Test Date:**

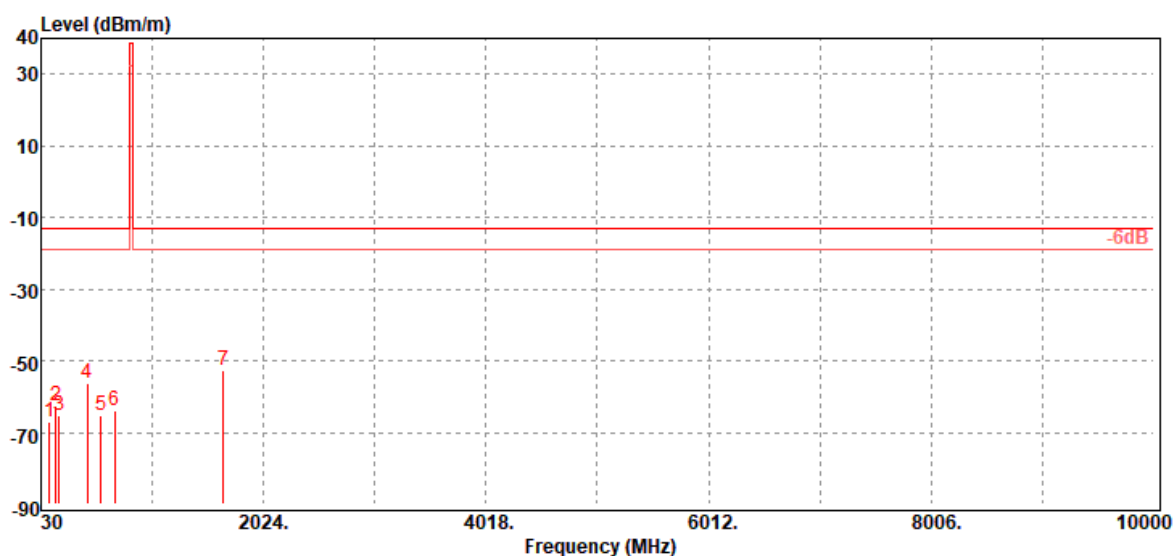
January 8, 2020

Temperature: 18.6°C**Tested by:**

Jerry Chang

Humidity: 59% RH**Polarity:**

Ver.



Freq. (MHz)	ERP/EIRP (dBm)	SG Output Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
105.66	-66.99	-56.78	-9.37	-0.84	-13.00	-53.99	V
160.95	-62.79	-55.64	-6.11	-1.04	-13.00	-49.79	V
190.05	-65.09	-59.96	-4.00	-1.13	-13.00	-52.09	V
444.19	-56.15	-52.3	-2.10	-1.75	-13.00	-43.15	V
566.41	-65.07	-61.68	-1.40	-1.99	-13.00	-52.07	V
689.60	-63.77	-60.17	-1.39	-2.21	-13.00	-50.77	V
1663.00	-52.57	-58.78	9.78	-3.57	-13.00	-39.57	V



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Operation Mode: Tx / Low CH

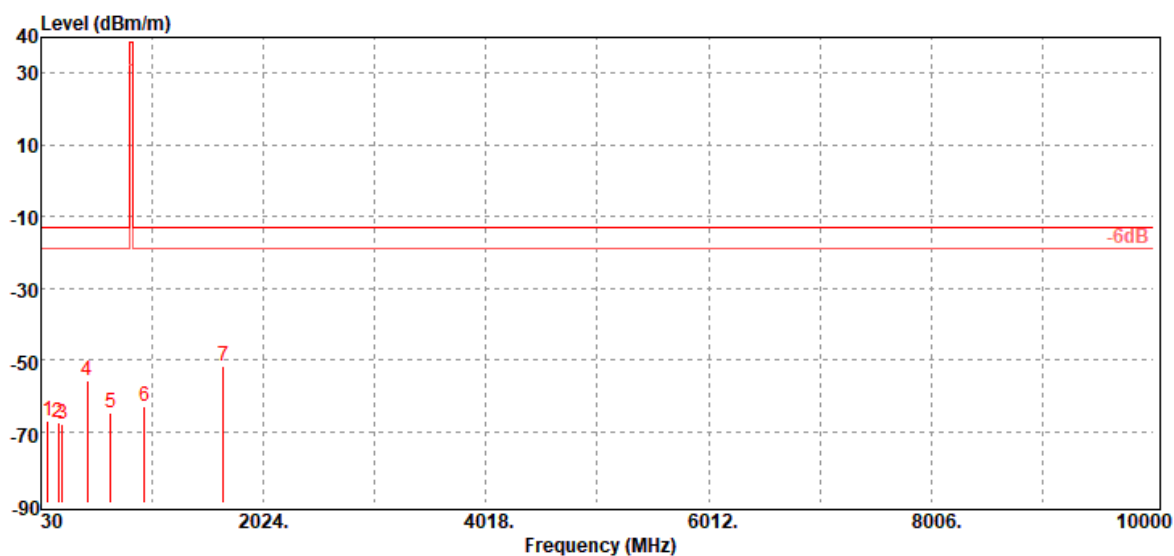
Test Date: January 8, 2020

Temperature: 18.6°C

Tested by: Jerry Chang

Humidity: 59% RH

Polarity: Hor.



Freq. (MHz)	ERP/EIRP (dBm)	SG Output Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
93.05	-66.86	-58.87	-7.20	-0.79	-13.00	-53.86	H
188.11	-67.43	-62.4	-3.90	-1.13	-13.00	-54.43	H
222.06	-68.12	-64.94	-1.96	-1.22	-13.00	-55.12	H
442.25	-55.94	-52.1	-2.10	-1.74	-13.00	-42.94	H
650.80	-64.94	-61.11	-1.68	-2.15	-13.00	-51.94	H
956.35	-62.96	-59.11	-1.23	-2.62	-13.00	-49.96	H
1663.00	-51.98	-58.19	9.78	-3.57	-13.00	-38.98	H



Report No.: T191120D05-RP11

Operation Mode: Tx / Mid CH

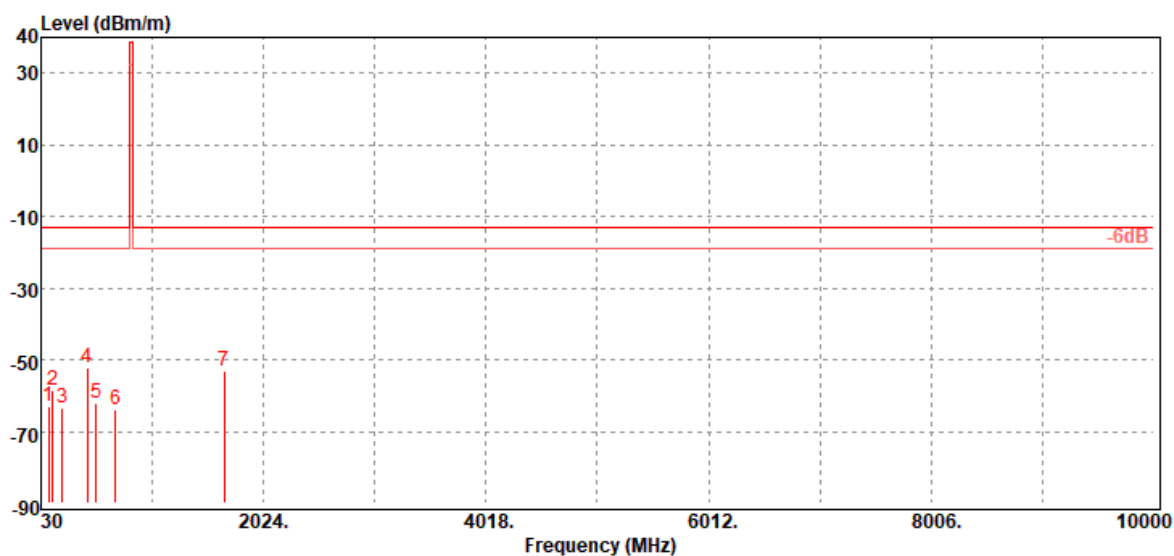
Test Date: January 8, 2020

Temperature: 18.6°C

Tested by: Jerry Chang

Humidity: 59% RH

Polarity: Ver.



Freq. (MHz)	ERP/EIRP (dBm)	SG Output Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
97.90	-62.98	-54.28	-7.89	-0.81	-13.00	-49.98	V
133.79	-58.57	-48.1	-9.52	-0.95	-13.00	-45.57	V
224.00	-63.52	-60.37	-1.92	-1.23	-13.00	-50.52	V
447.10	-52.14	-48.29	-2.10	-1.75	-13.00	-39.14	V
526.64	-61.90	-58.68	-1.30	-1.92	-13.00	-48.90	V
699.30	-63.90	-60.27	-1.40	-2.23	-13.00	-50.90	V
1673.00	-53.32	-59.58	9.84	-3.58	-13.00	-40.32	V



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Operation Mode: Tx / Mid CH

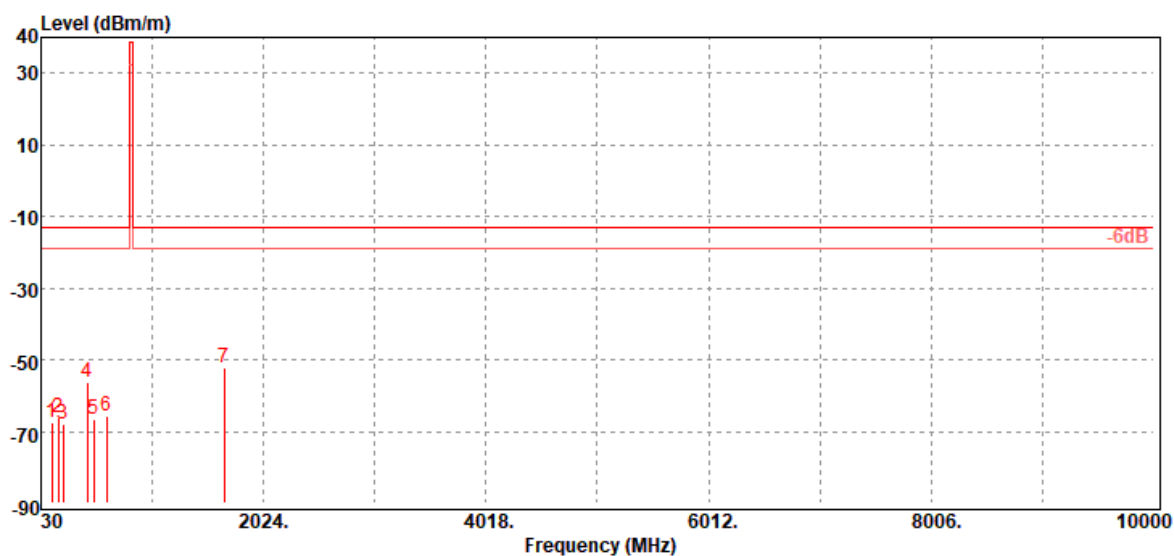
Test Date: January 8, 2020

Temperature: 18.6°C

Tested by: Jerry Chang

Humidity: 59% RH

Polarity: Hor.



Freq. (MHz)	ERP/EIRP (dBm)	SG Output Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
124.09	-67.56	-56.15	-10.50	-0.91	-13.00	-54.56	H
188.11	-66.29	-61.26	-3.90	-1.13	-13.00	-53.29	H
225.94	-68.08	-64.91	-1.94	-1.23	-13.00	-55.08	H
445.16	-56.16	-52.31	-2.10	-1.75	-13.00	-43.16	H
500.45	-66.52	-62.66	-1.99	-1.87	-13.00	-53.52	H
618.79	-65.53	-62.05	-1.38	-2.10	-13.00	-52.53	H
1673.00	-52.42	-58.68	9.84	-3.58	-13.00	-39.42	H



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Operation Mode: Tx / High CH

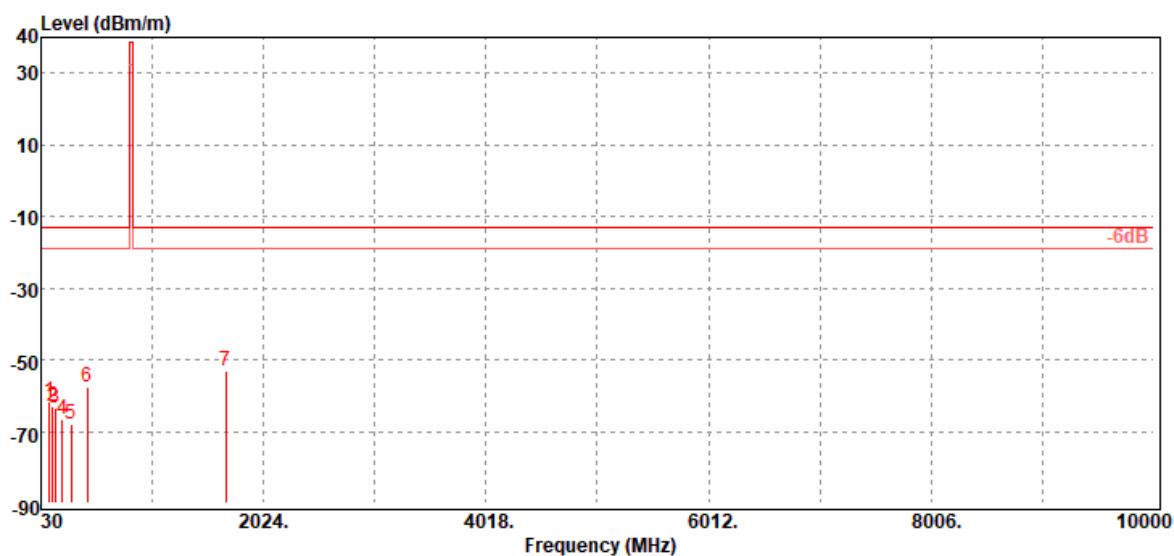
Test Date: January 8, 2020

Temperature: 18.6°C

Tested by: Jerry Chang

Humidity: 59% RH

Polarity: Ver.



Freq. (MHz)	ERP/EIRP (dBm)	SG Output Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
105.66	-61.58	-51.37	-9.37	-0.84	-13.00	-48.58	V
133.79	-63.23	-52.76	-9.52	-0.95	-13.00	-50.23	V
153.19	-63.37	-55.63	-6.72	-1.02	-13.00	-50.37	V
222.06	-66.45	-63.27	-1.96	-1.22	-13.00	-53.45	V
299.66	-67.78	-64.34	-2.01	-1.43	-13.00	-54.78	V
447.10	-57.65	-53.8	-2.10	-1.75	-13.00	-44.65	V
1683.00	-53.20	-59.51	9.90	-3.59	-13.00	-40.20	V



Report No.: T191120D05-RP11

Operation Mode: Tx / High CH

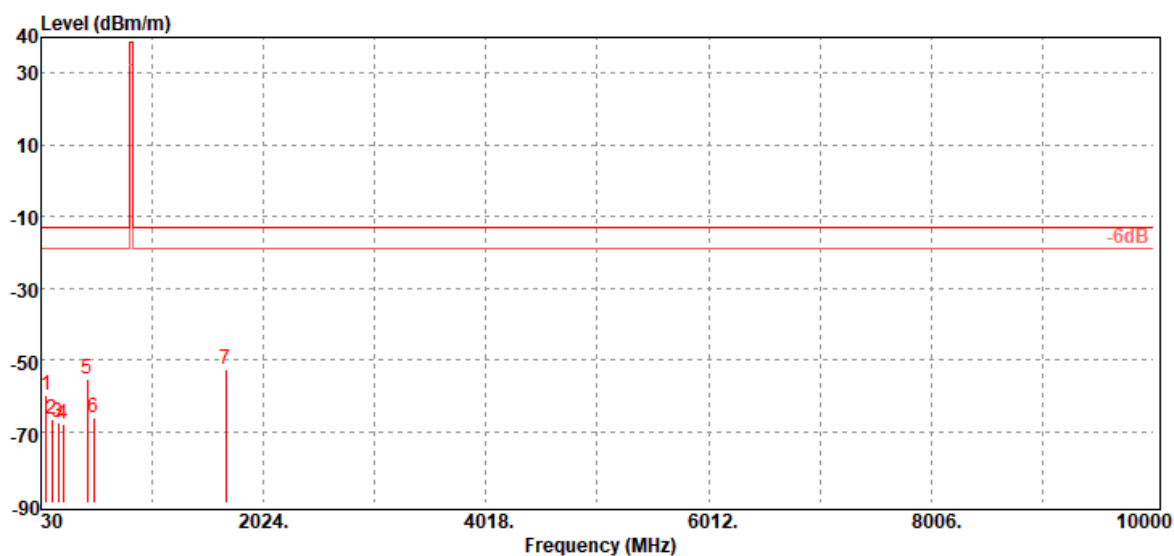
Test Date: January 8, 2020

Temperature: 18.6°C

Tested by: Jerry Chang

Humidity: 59% RH

Polarity: Hor.



Freq. (MHz)	ERP/EIRP (dBm)	SG Output Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Limit (dBm)	Margin (dB)	Antenna Polarization (V/H)
73.65	-60.08	-50.28	-9.10	-0.70	-13.00	-47.08	H
124.09	-66.74	-55.33	-10.50	-0.91	-13.00	-53.74	H
188.11	-67.50	-62.47	-3.90	-1.13	-13.00	-54.50	H
225.94	-68.09	-64.92	-1.94	-1.23	-13.00	-55.09	H
447.10	-55.55	-51.7	-2.10	-1.75	-13.00	-42.55	H
500.45	-66.01	-62.15	-1.99	-1.87	-13.00	-53.01	H
1683.00	-52.72	-59.03	9.90	-3.59	-13.00	-39.72	H

- End of Test Report -