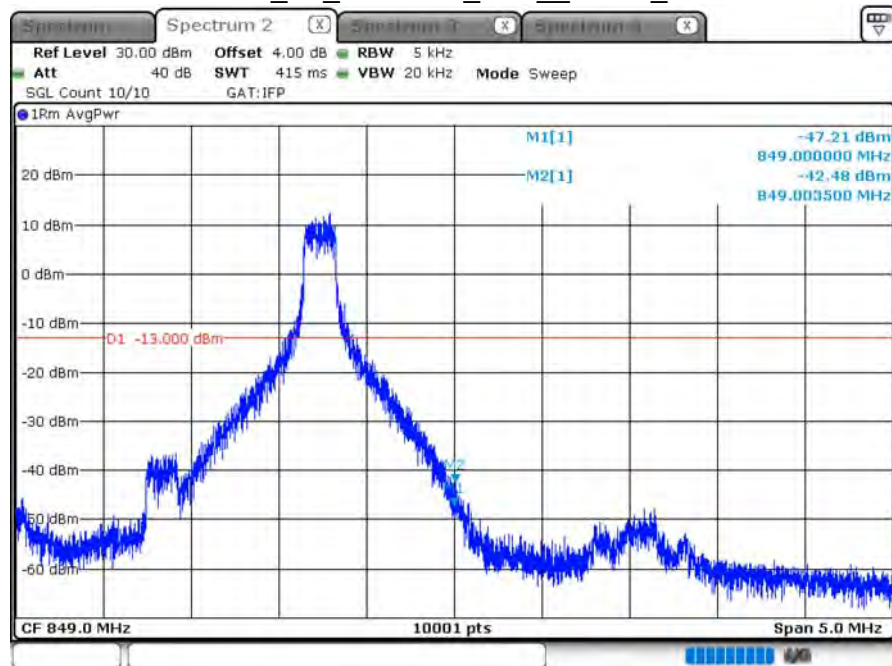
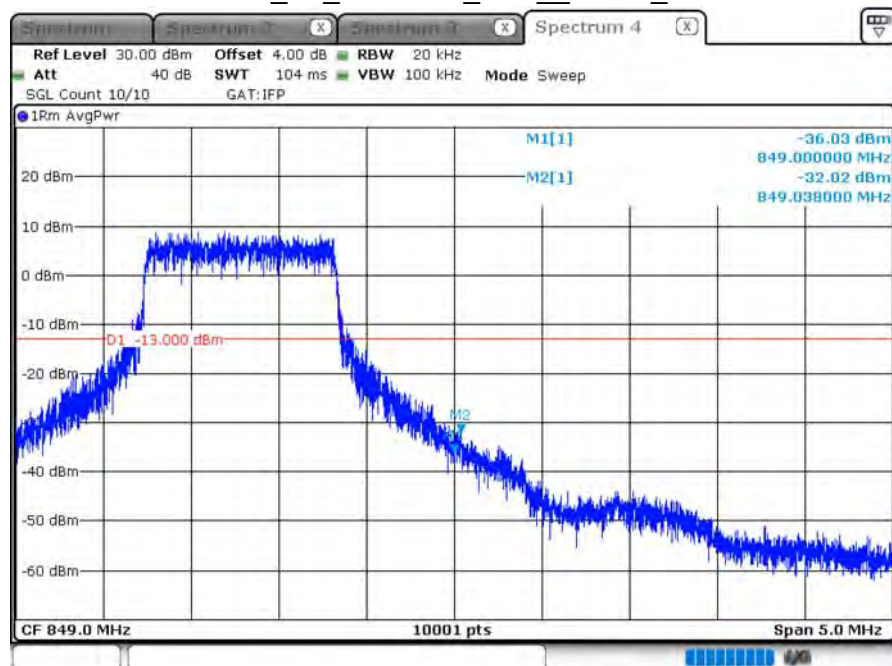


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Date: 12.JAN.2021 16:12:46

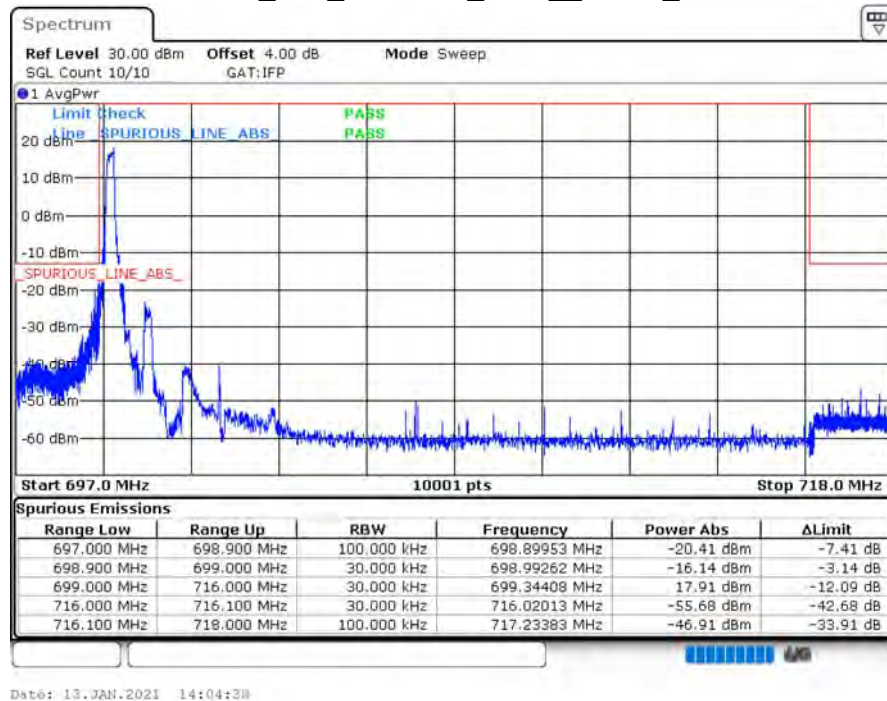
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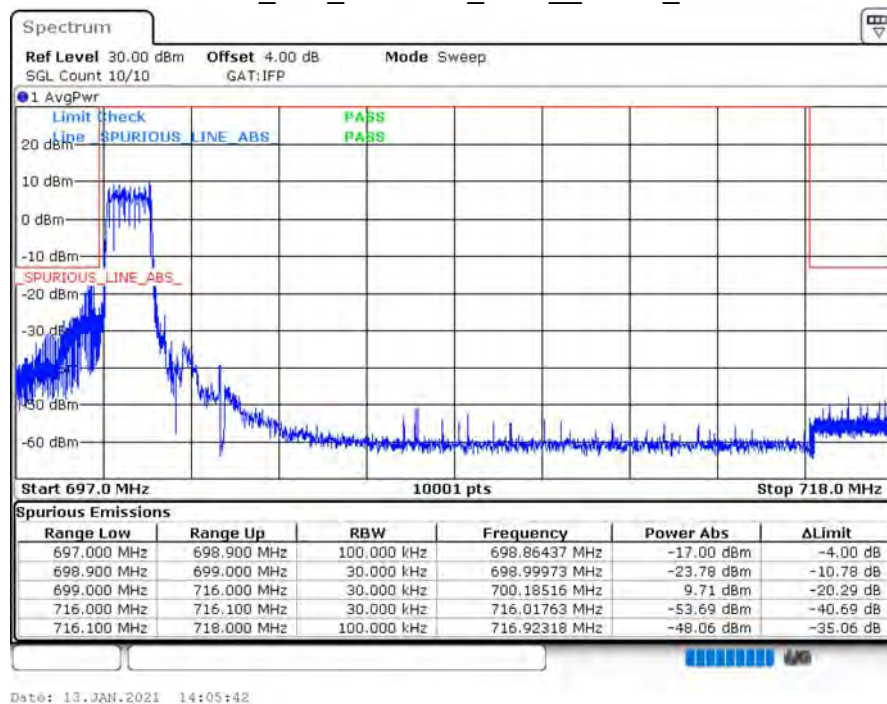
Date: 12.JAN.2021 16:11:45

Product	Connectivity Module		
Test Item	Spurious Emissions at Antenna Terminals		
Test Mode	Mode 4: Band12 Link		
Date of Test	2021/01/13	Test Site	SR12-H
Temperature (°C)	20	Humidity (%RH)	59

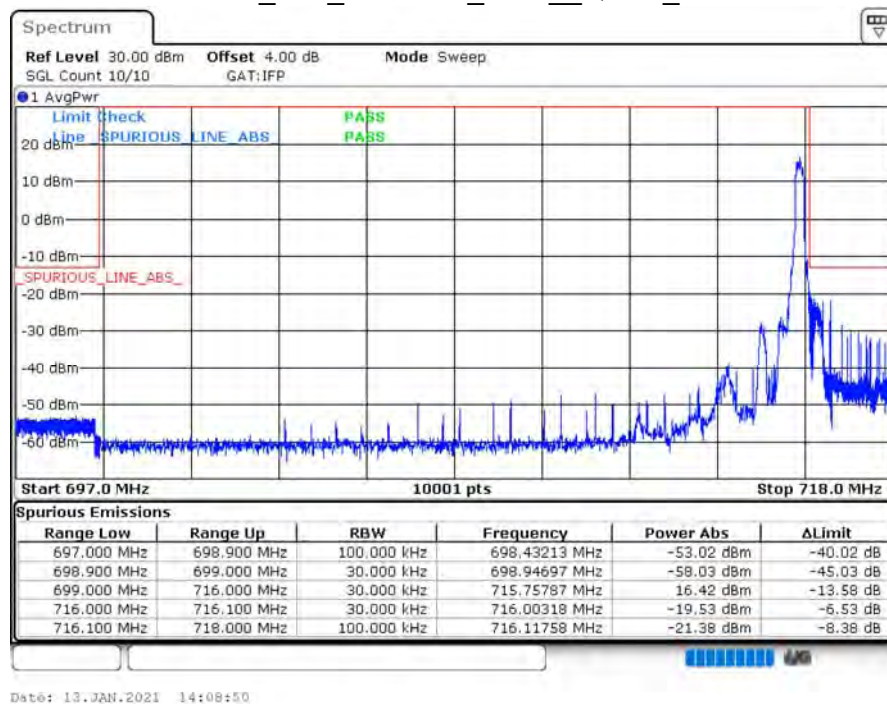
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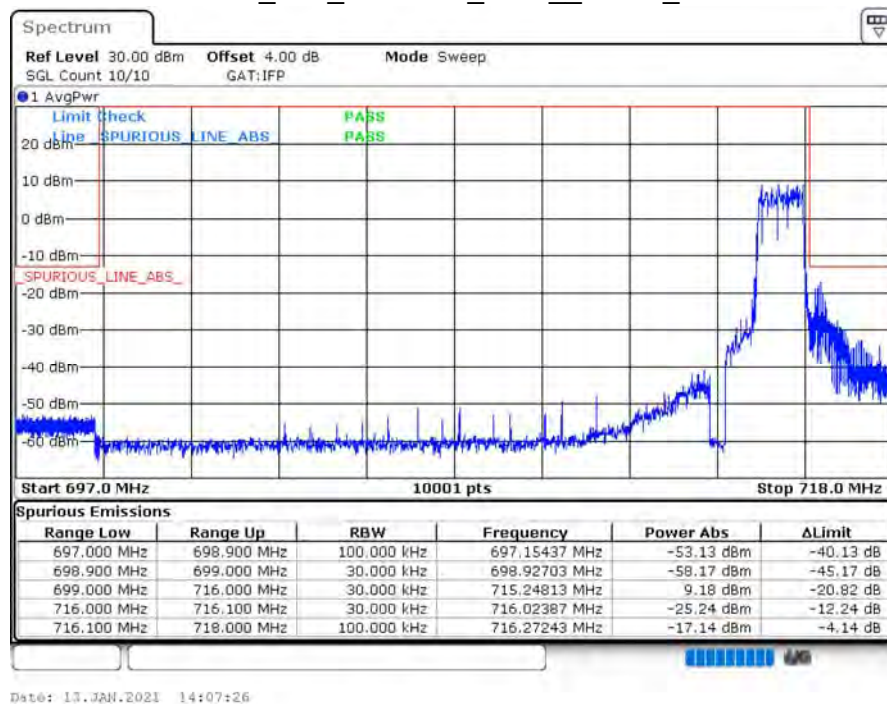
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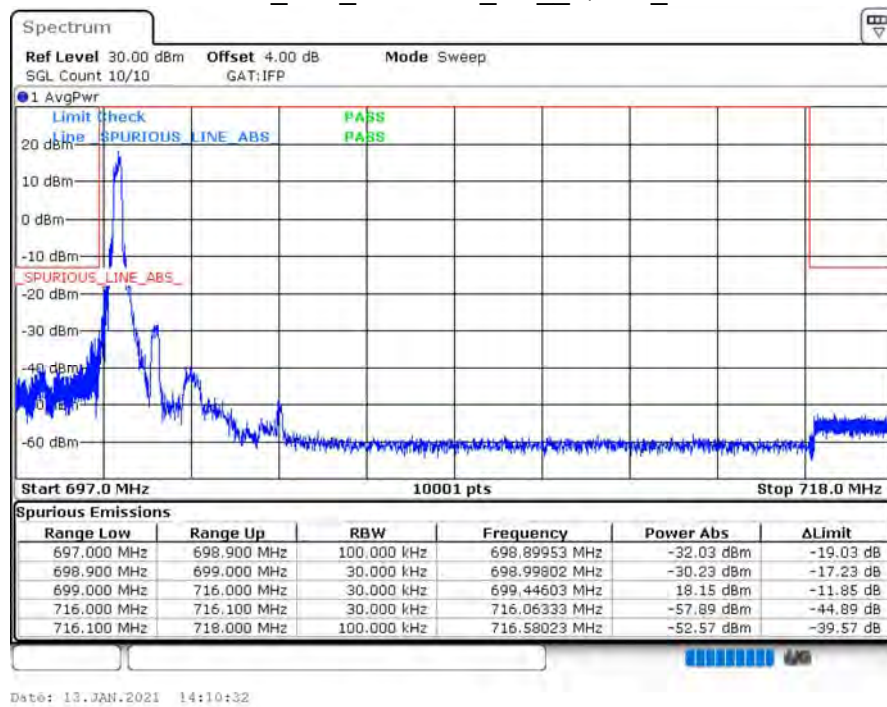
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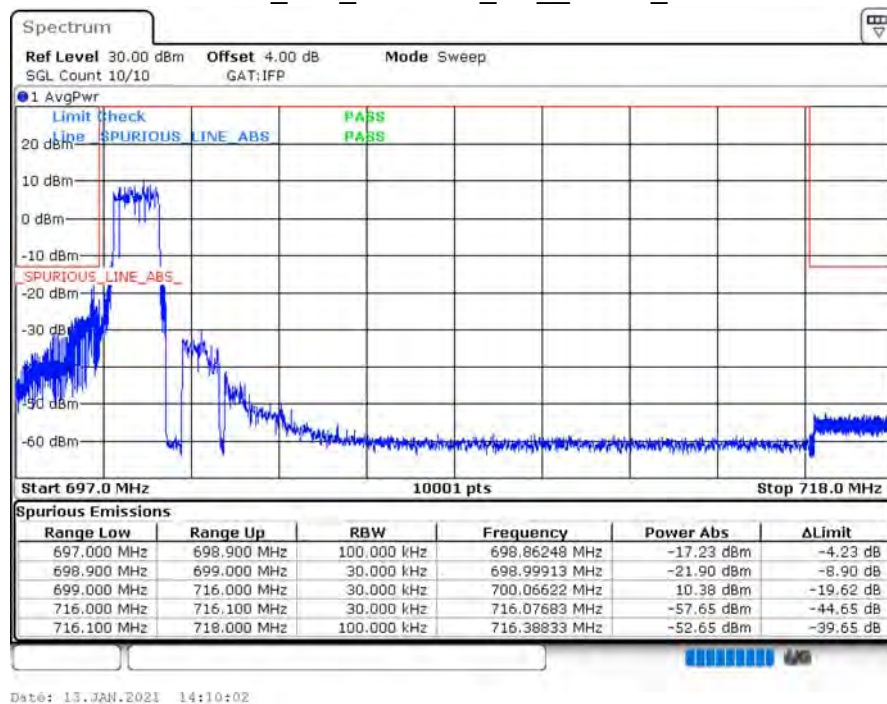
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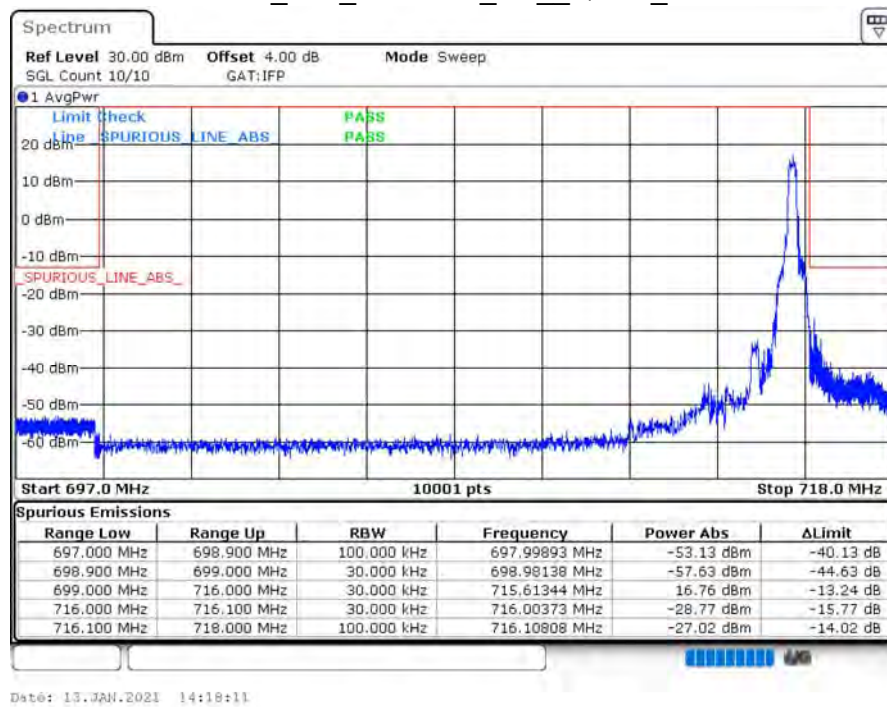
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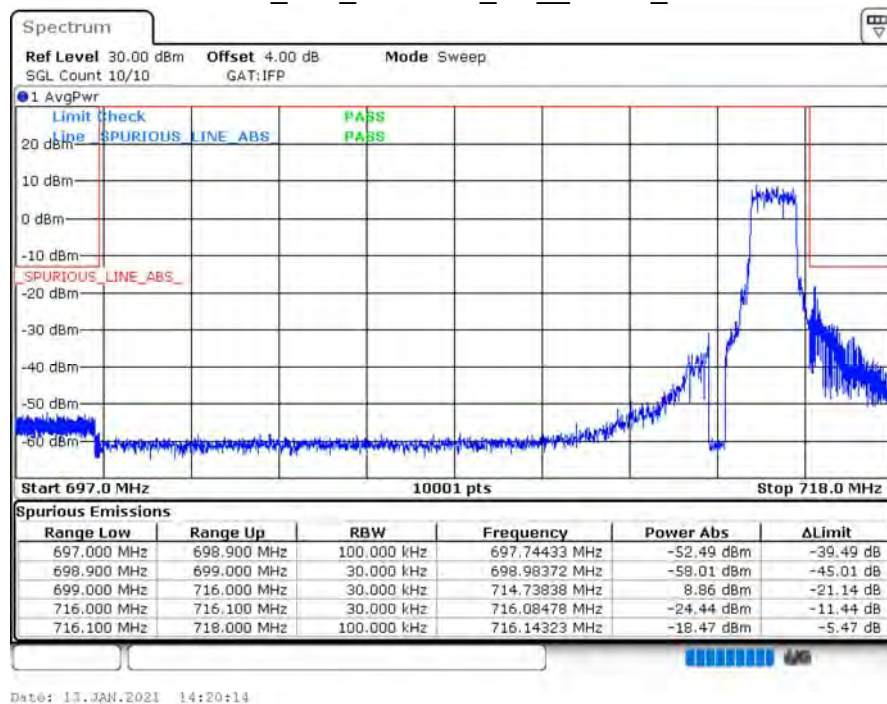
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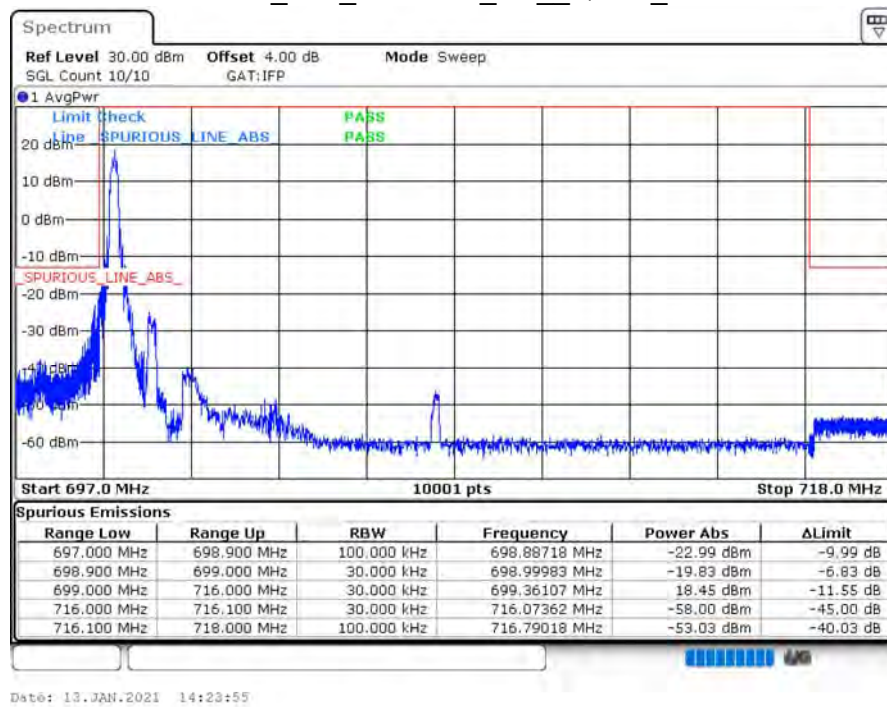
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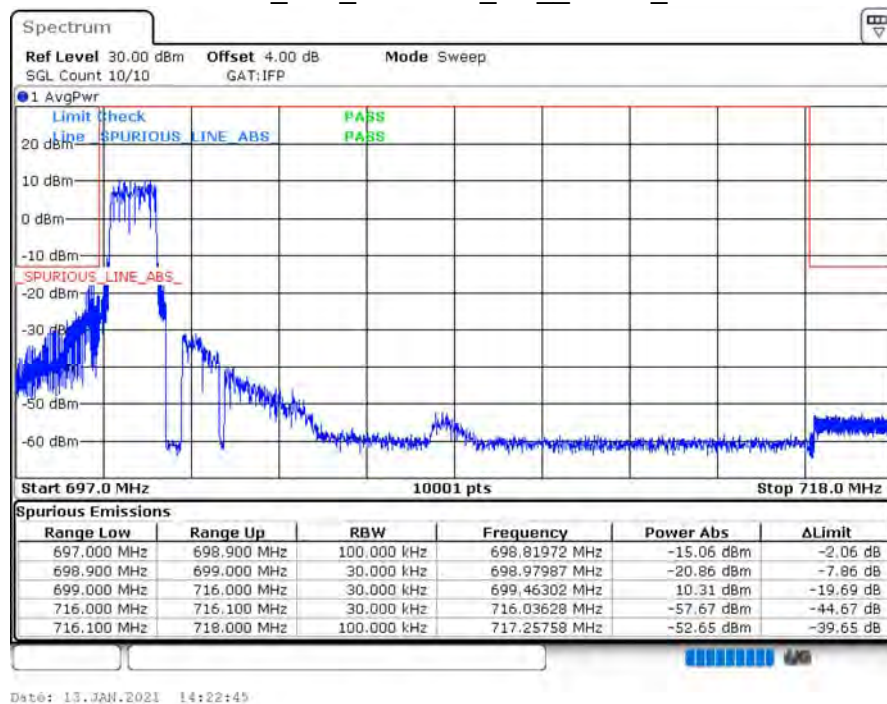
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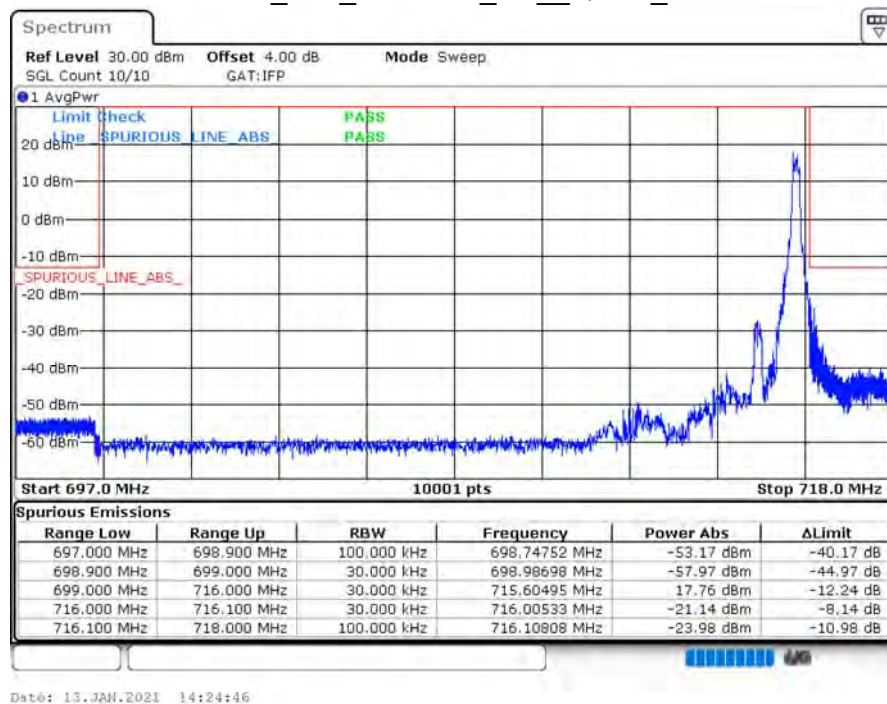
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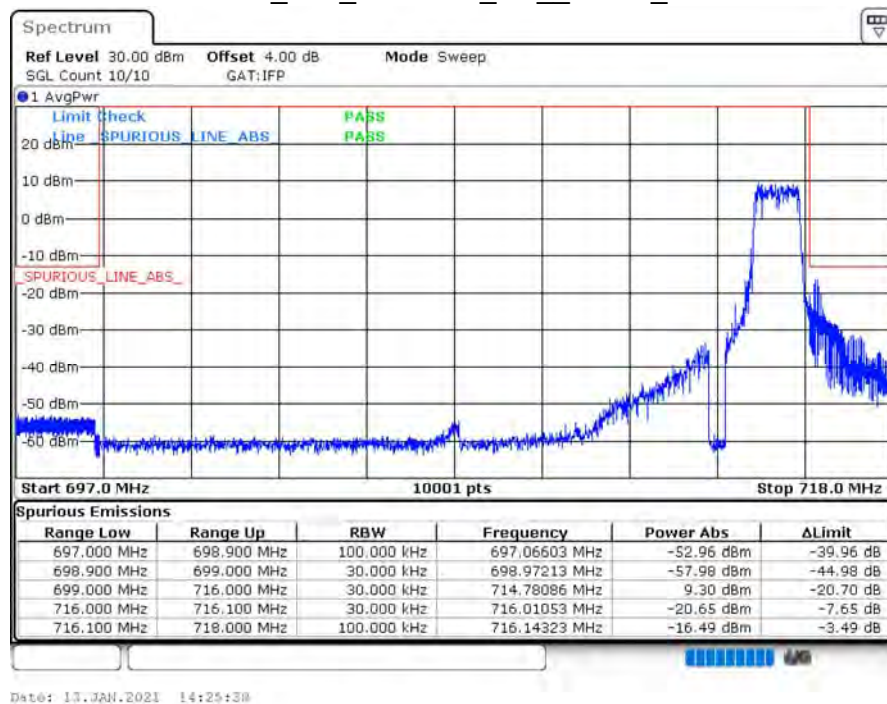
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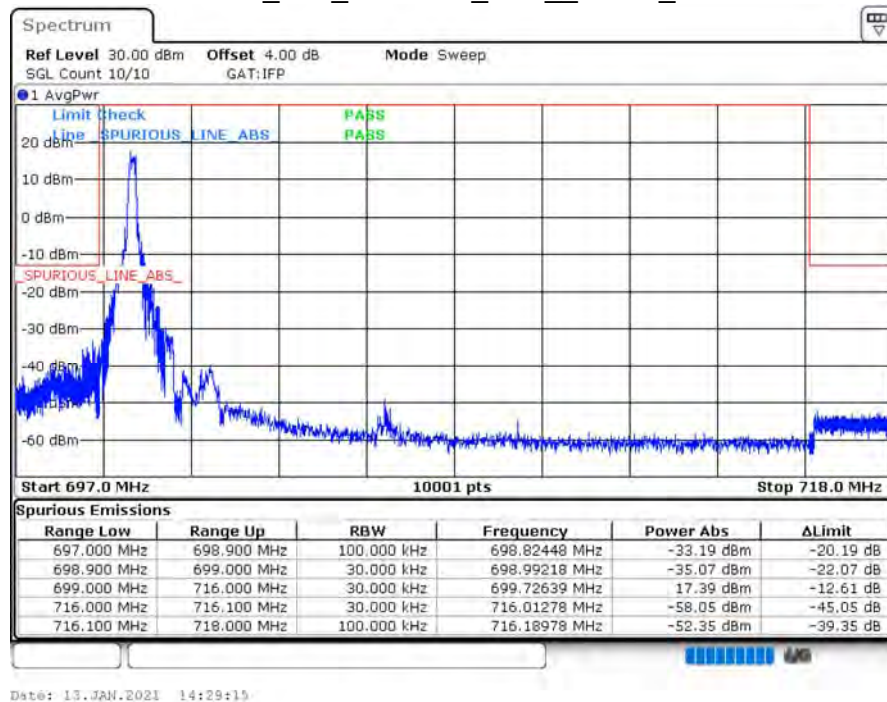
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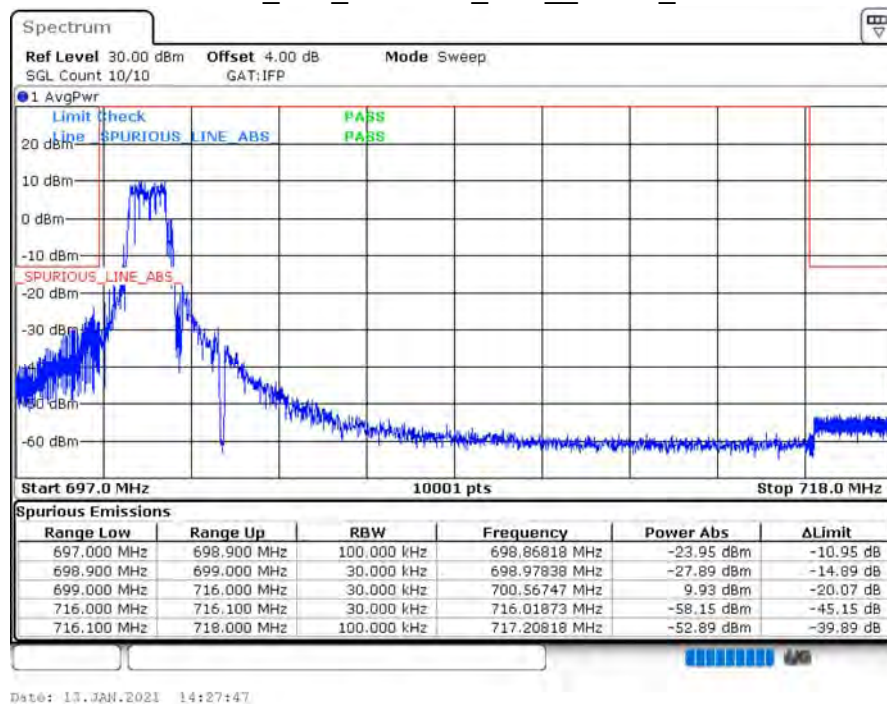
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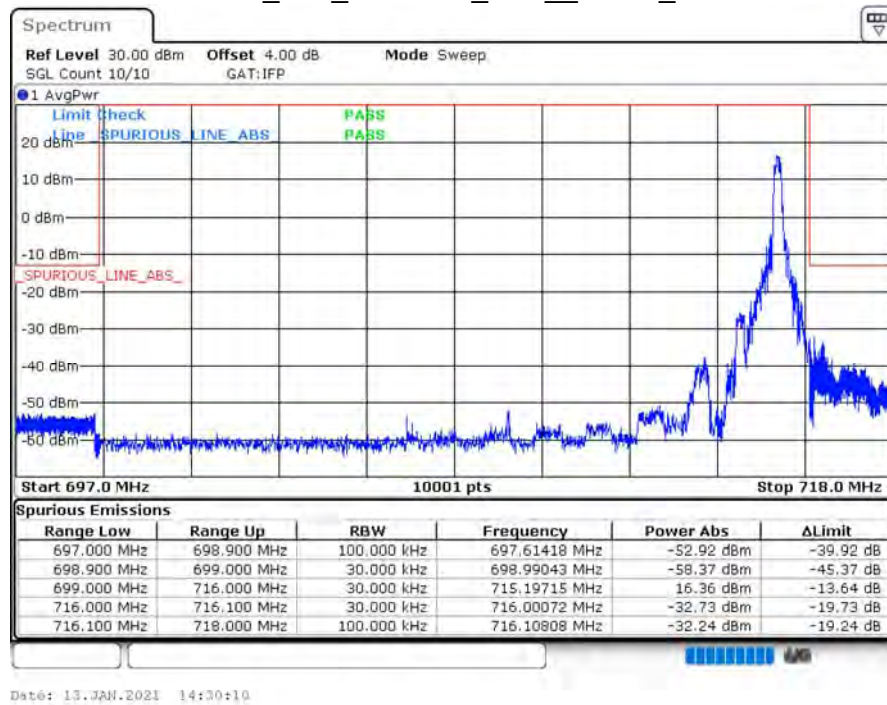
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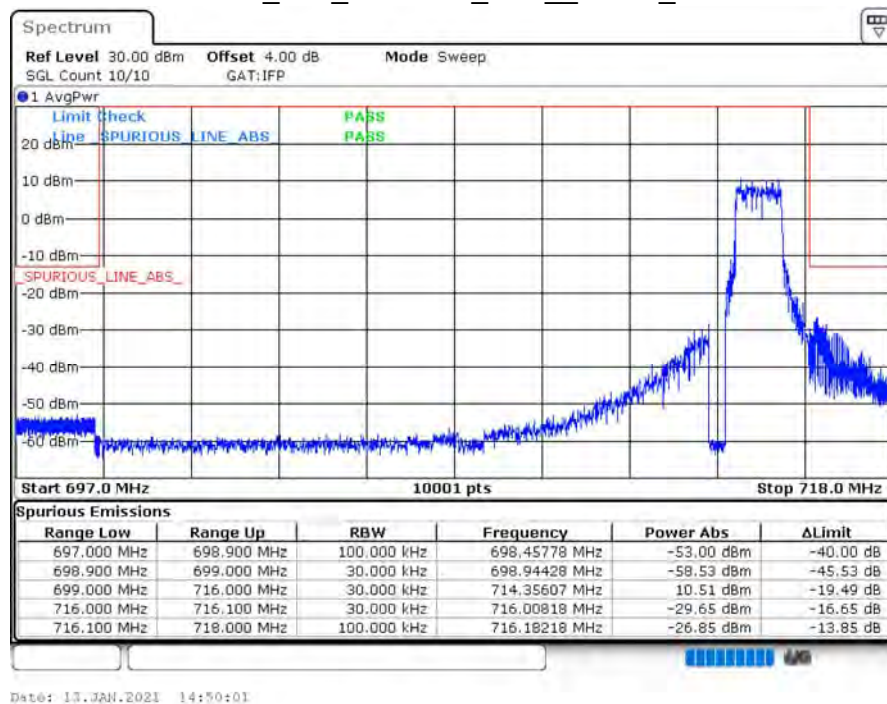
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CAT-M1_B12_CH23130_10M__QPSK_1RB5

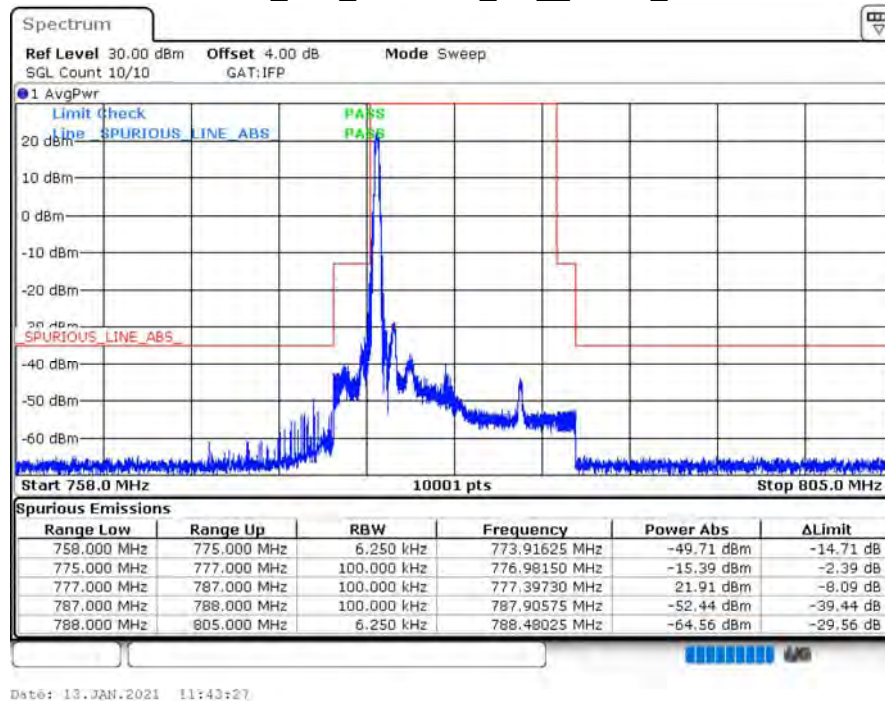


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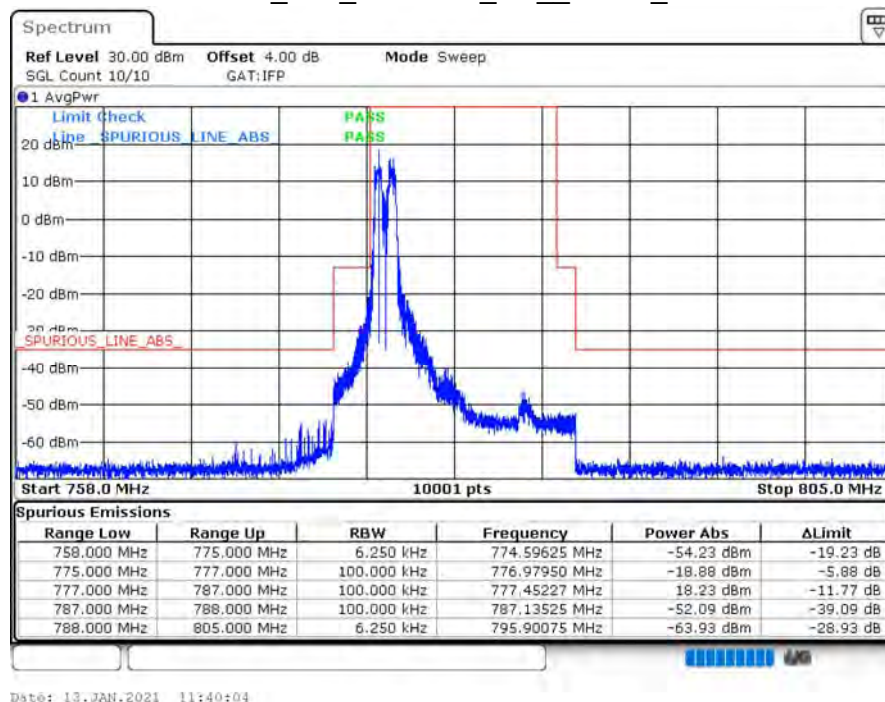


Product	Connectivity Module		
Test Item	Spurious Emissions at Antenna Terminals		
Test Mode	Mode 5: Band13 Link		
Date of Test	2021/01/13	Test Site	SR12-H
Temperature (°C)	20	Humidity (%RH)	59

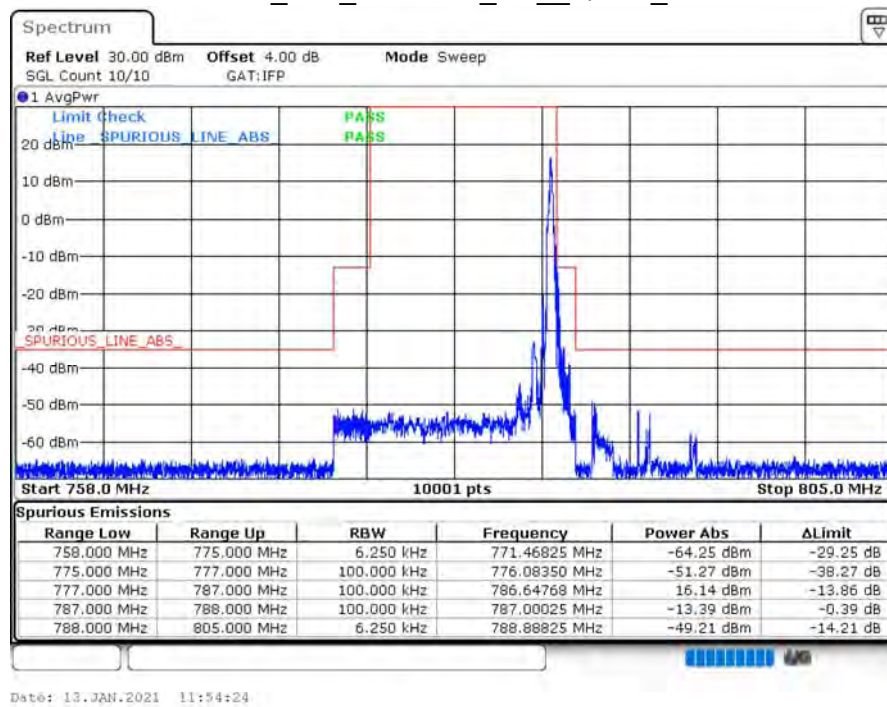
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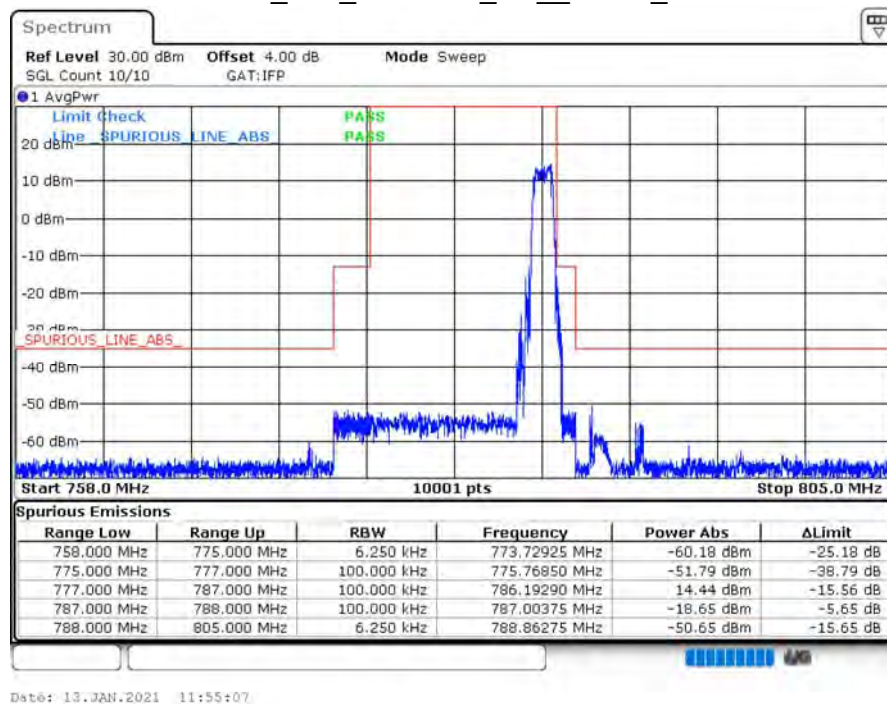
CAT-M1_B13_CH23205_5M_QPSK_6RB0



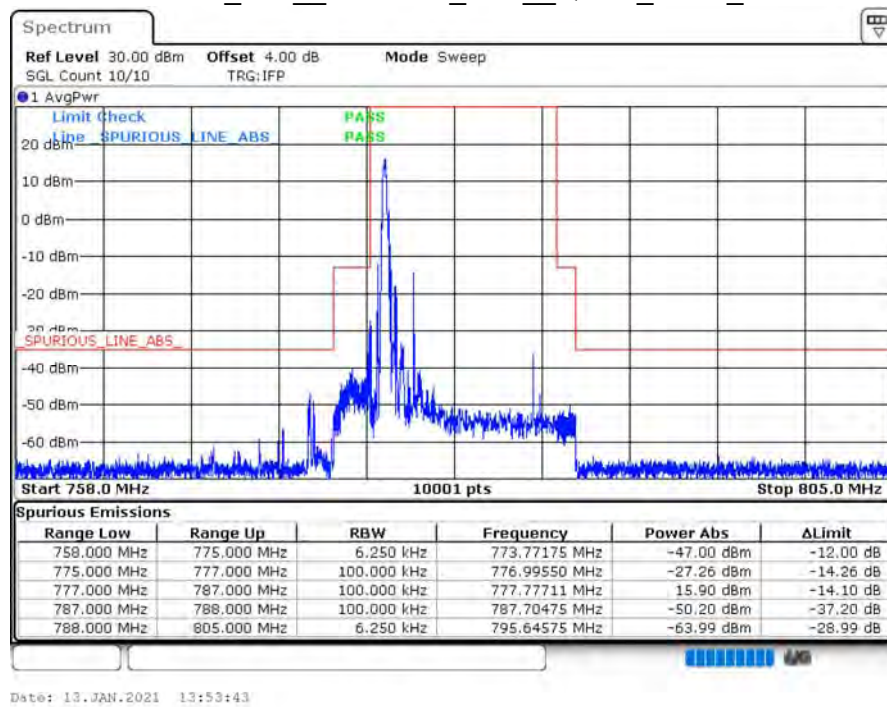
CAT-M1_B13_CH23255_5M__QPSK_1RB5



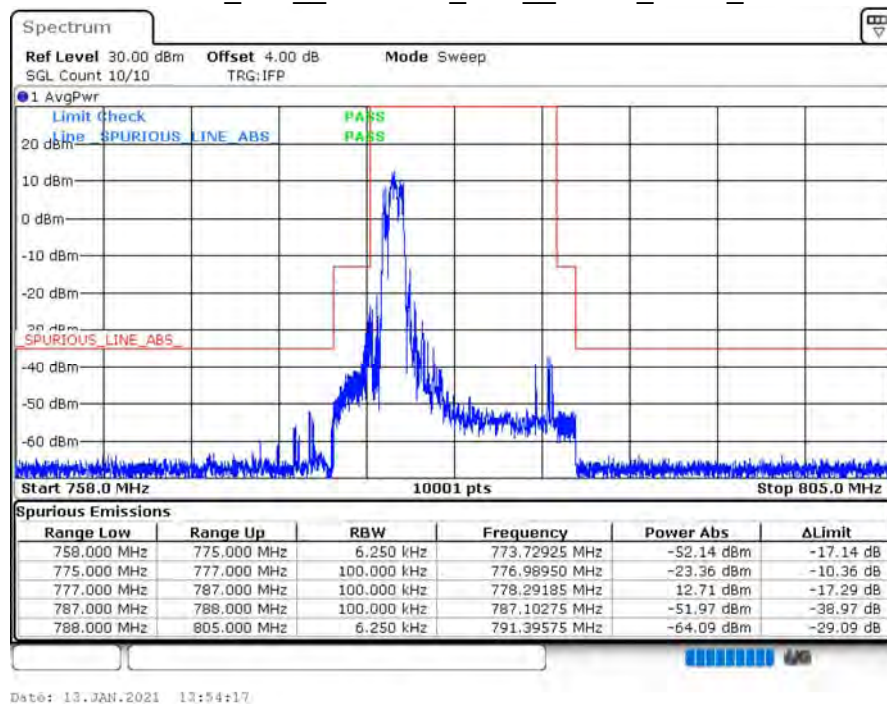
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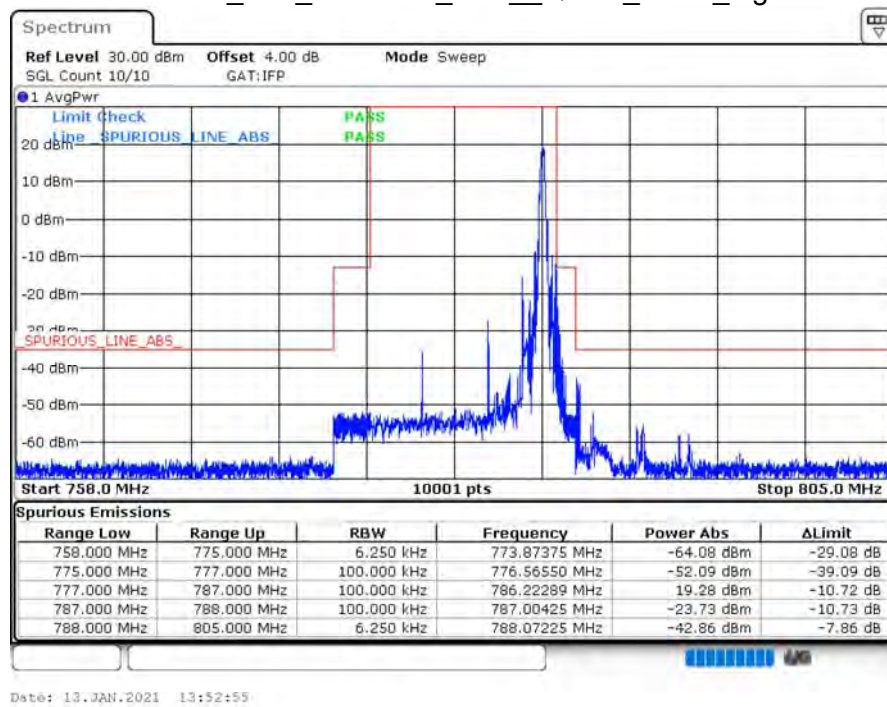
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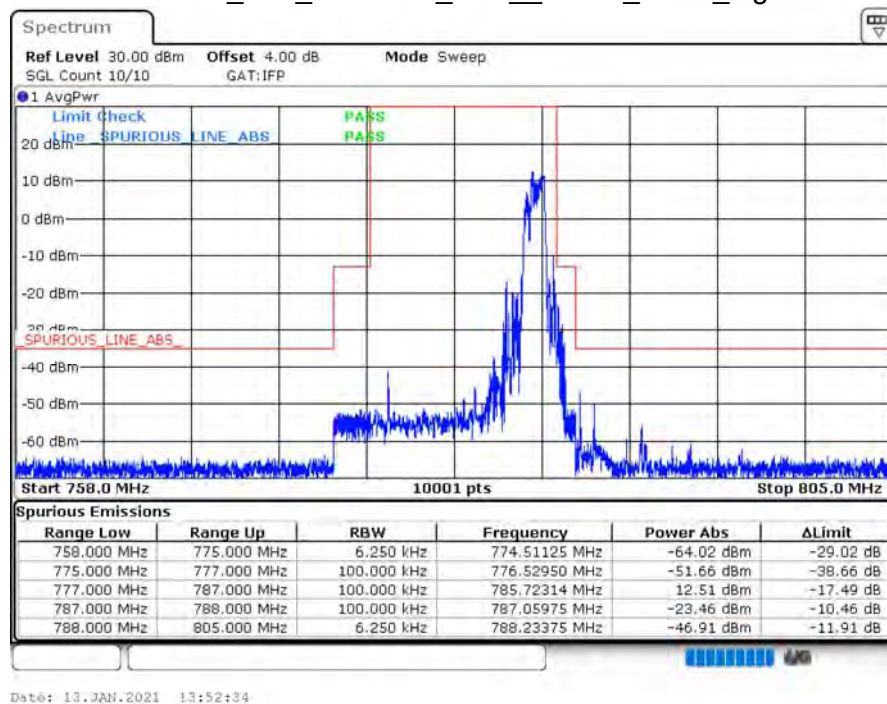
CAT-M1_B13__CH23230_10M__QPSK_6RB0_low



CAT-M1_B13_CH23230_10M__QPSK_1RB5_high

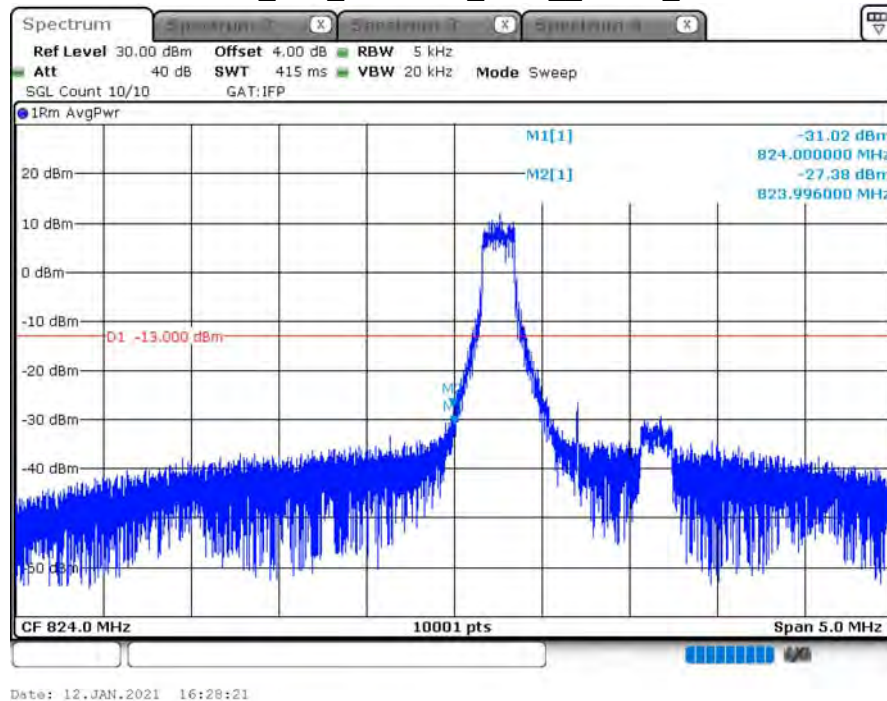


CAT-M1_B13_CH23230_10M__QPSK_6RB0_high

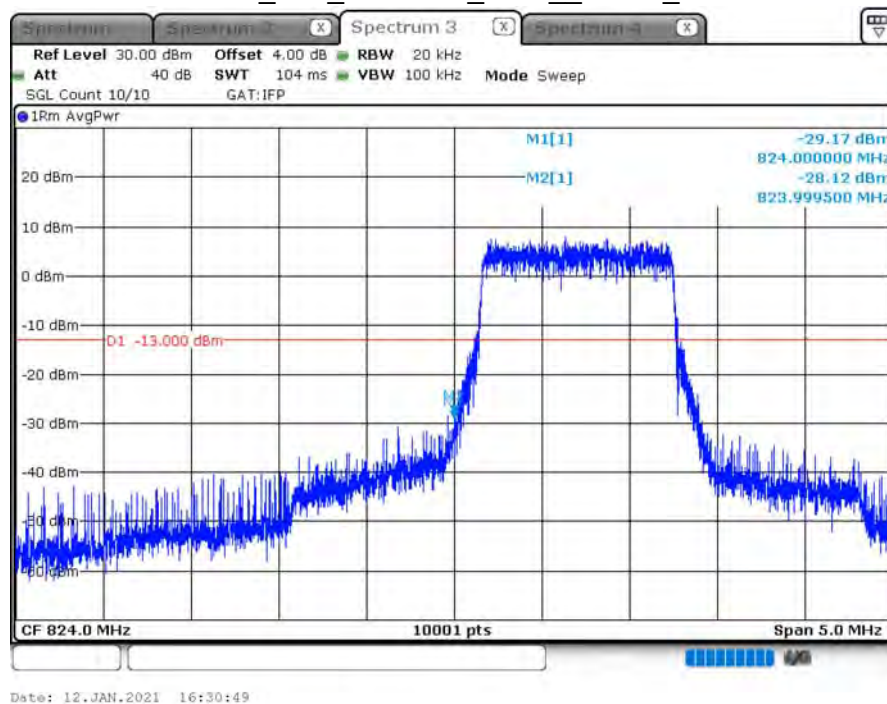


Product	Connectivity Module		
Test Item	Spurious Emissions at Antenna Terminals		
Test Mode	Mode 6: Band26_Part22 Link		
Date of Test	2021/01/12	Test Site	SR12-H
Temperature (°C)	18	Humidity (%RH)	58

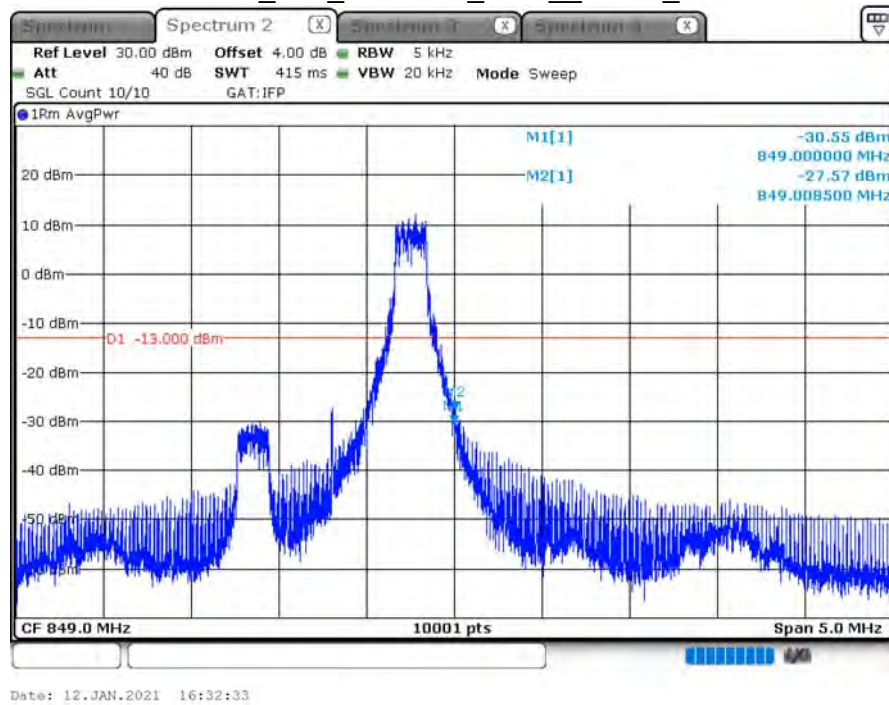
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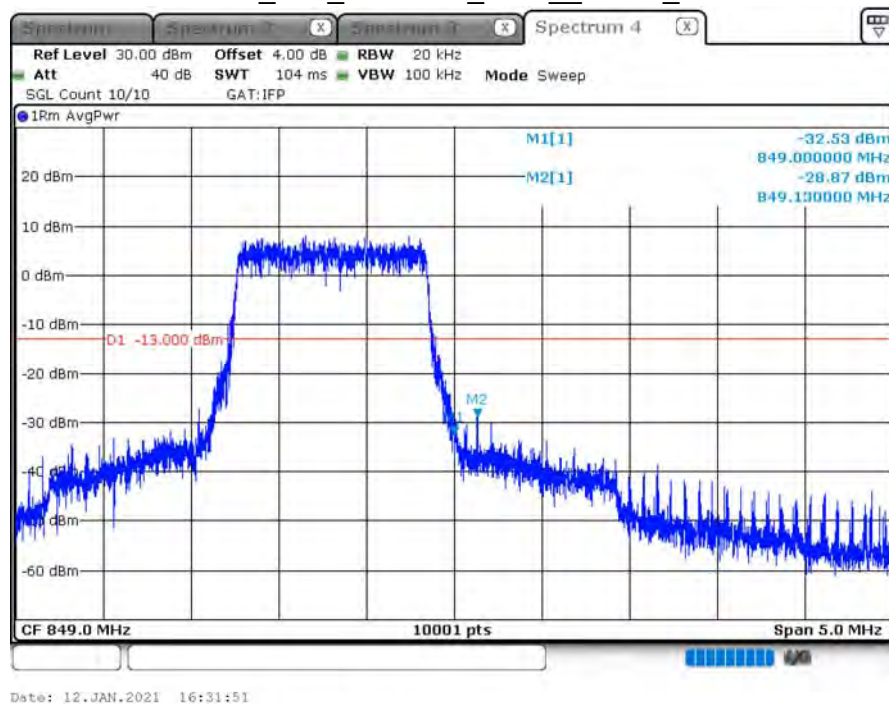
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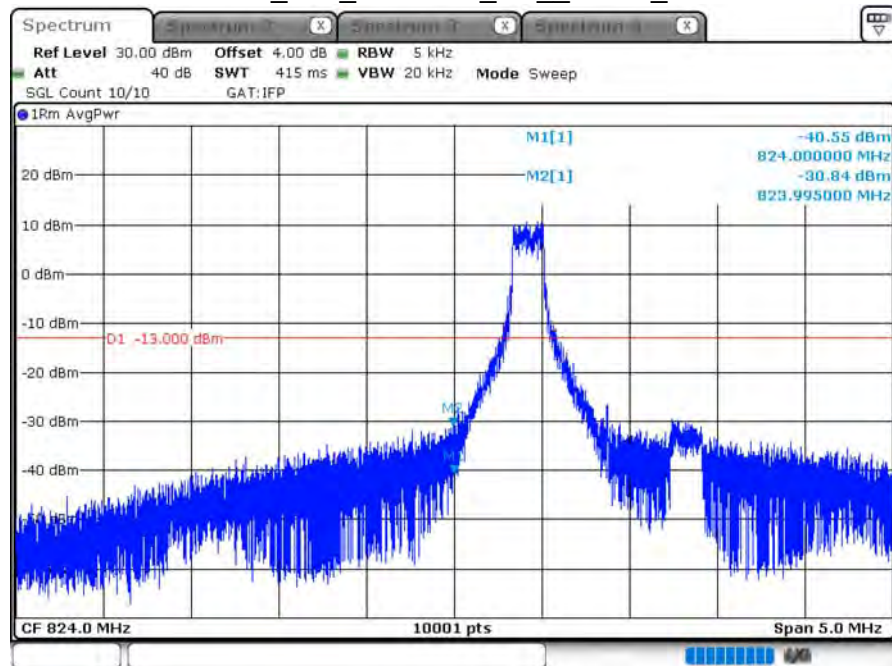
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CAT-M1_B26_CH27033_1.4M_QPSK_6RB0

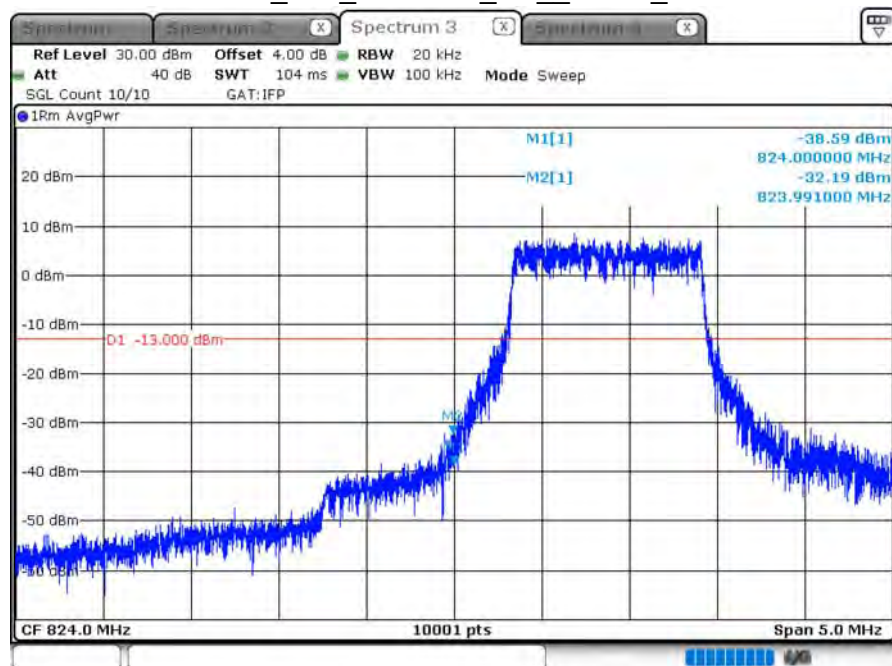


CAT-M1_B26_CH26805_3M__QPSK_1RB0



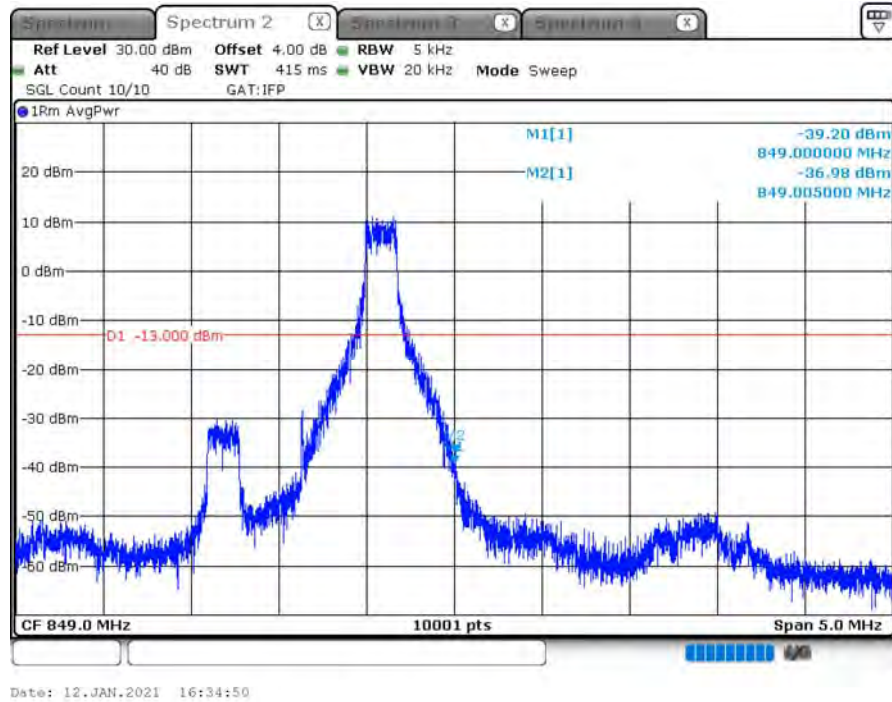
Date: 12.JAN.2021 16:41:06

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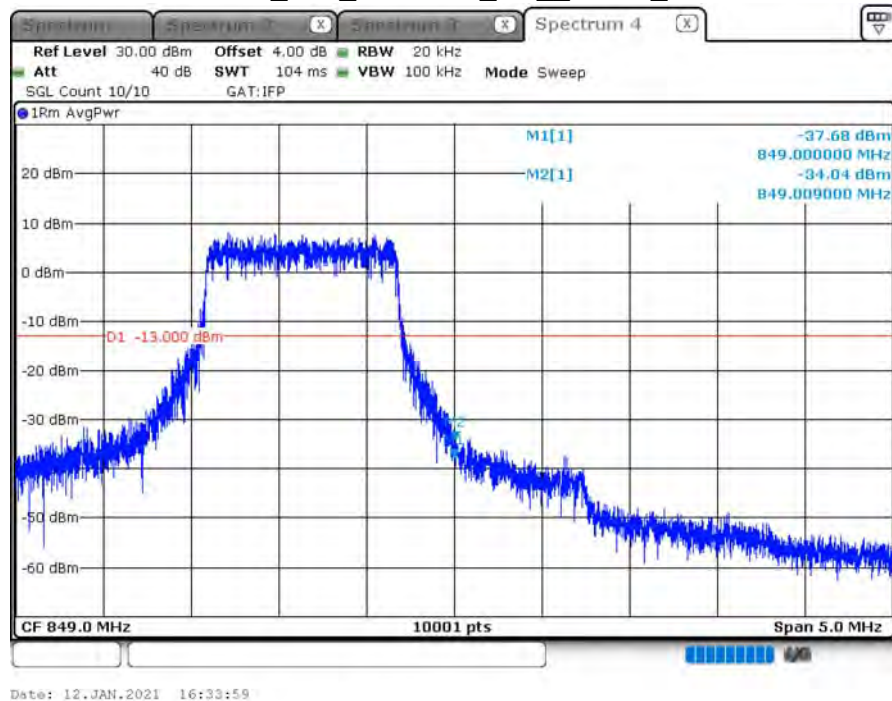


Date: 12.JAN.2021 16:41:50

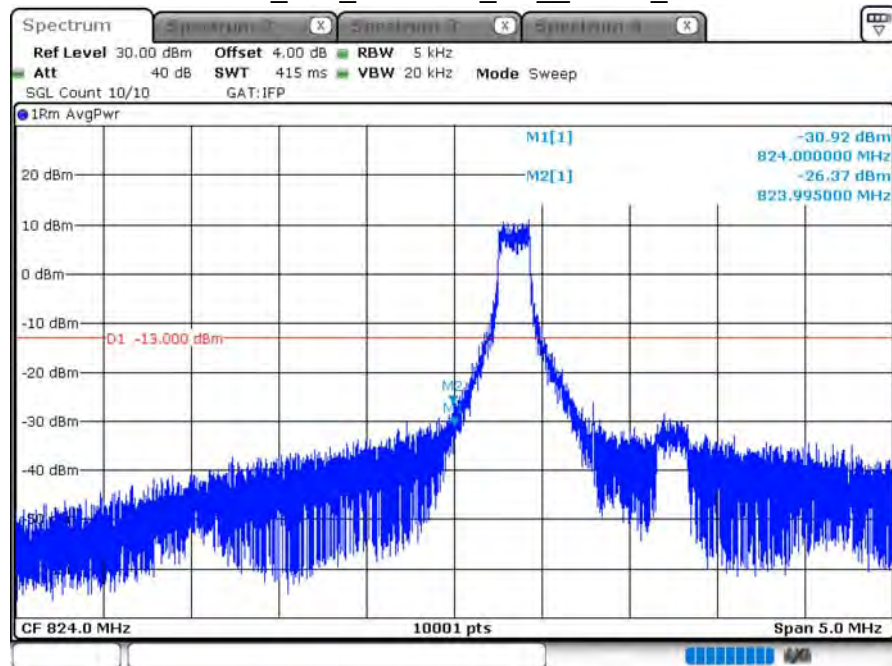
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CAT-M1_B26_CH27025_3M_QPSK_6RB0

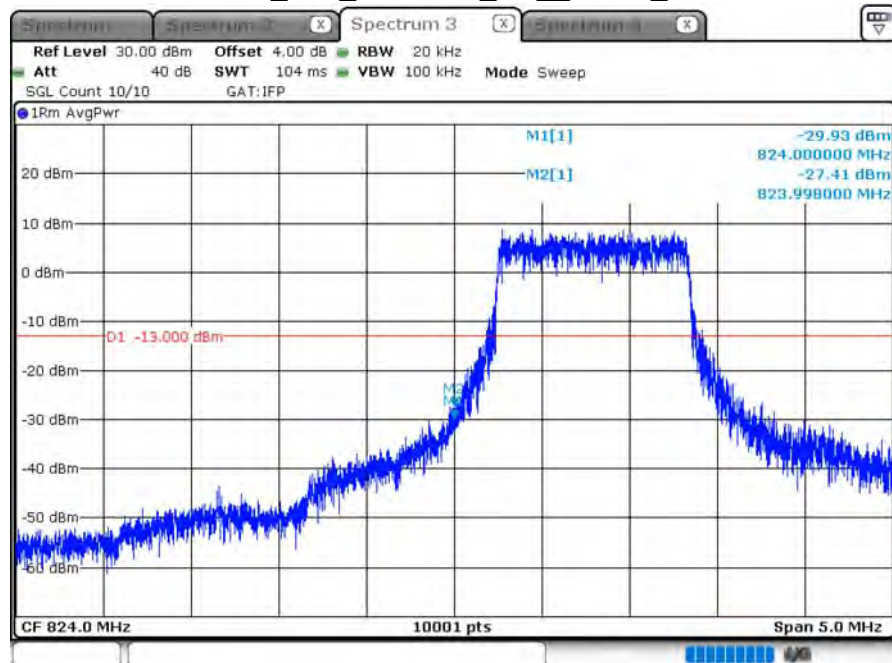


CAT-M1_B26_CH26815_5M_QPSK_1RB0



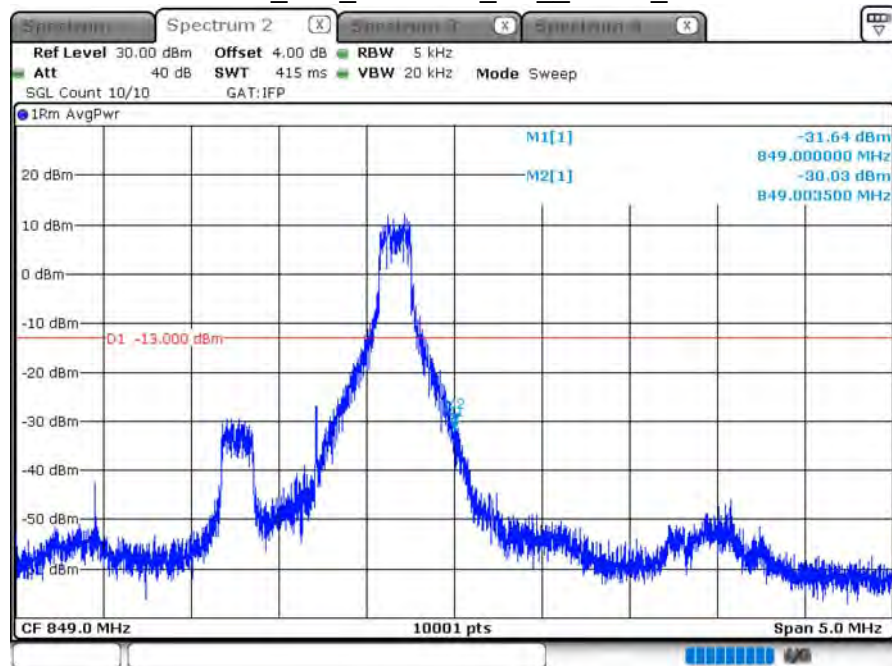
Date: 12.JAN.2021 16:45:19

CAT-M1_B26_CH26815_5M_QPSK_6RB0

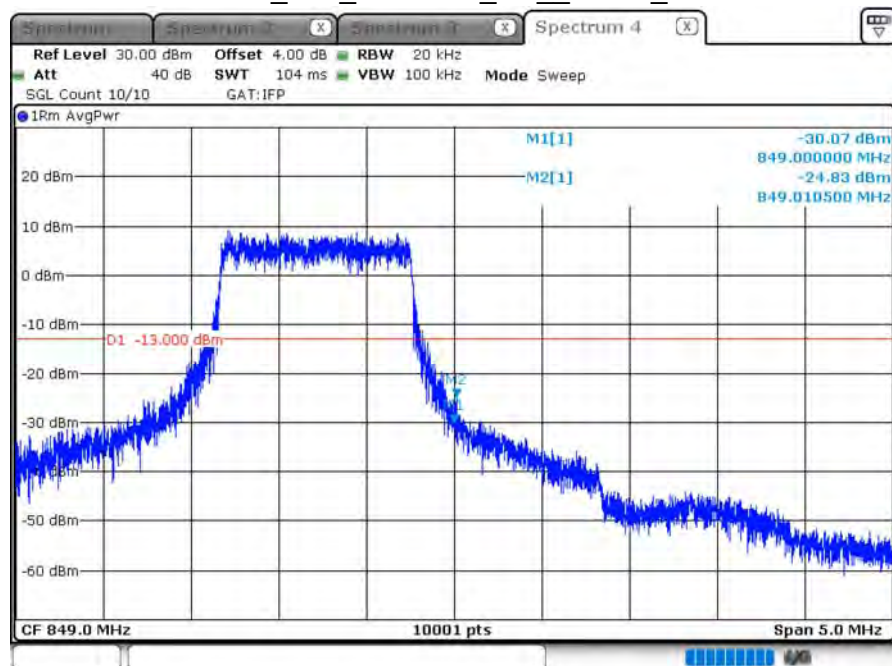


Date: 12.JAN.2021 16:43:38

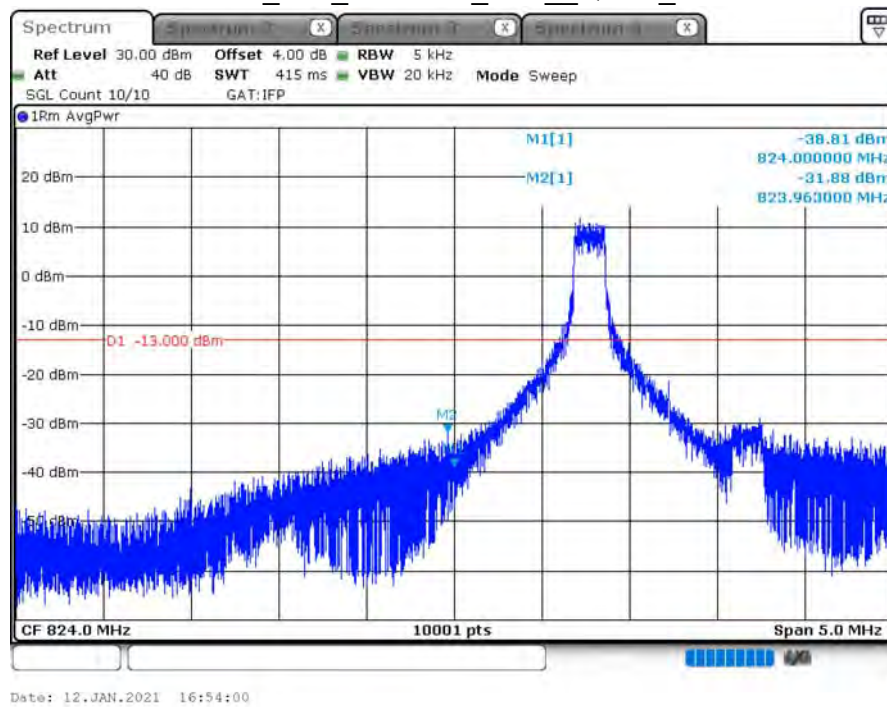
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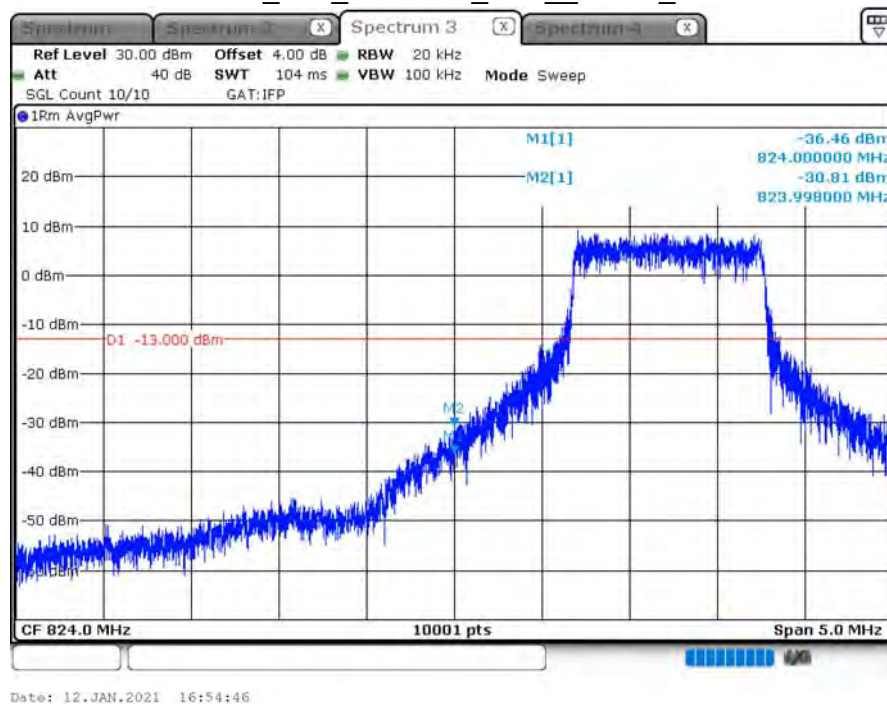
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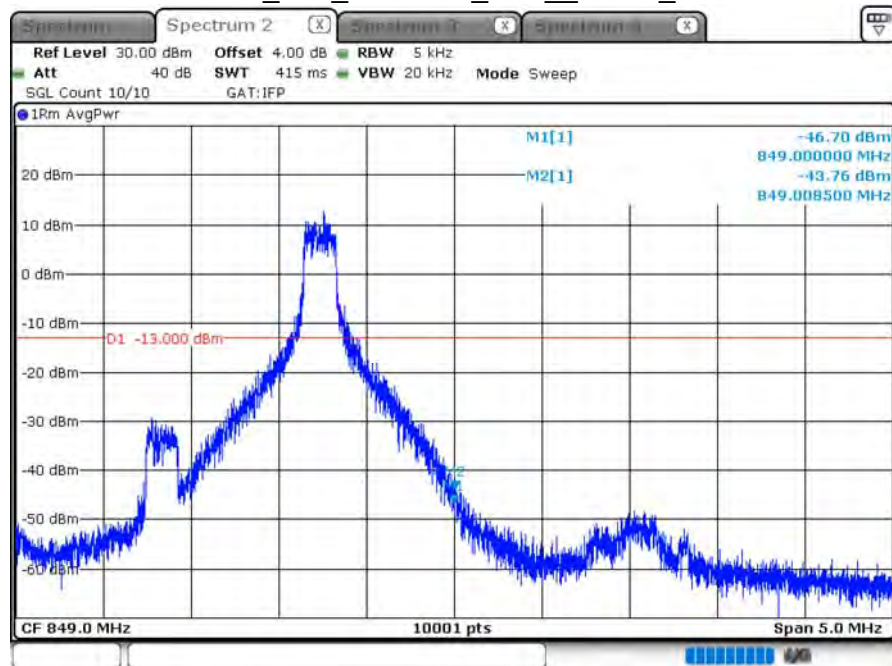
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CAT-M1_B26_CH26840_10M_QPSK_6RB0

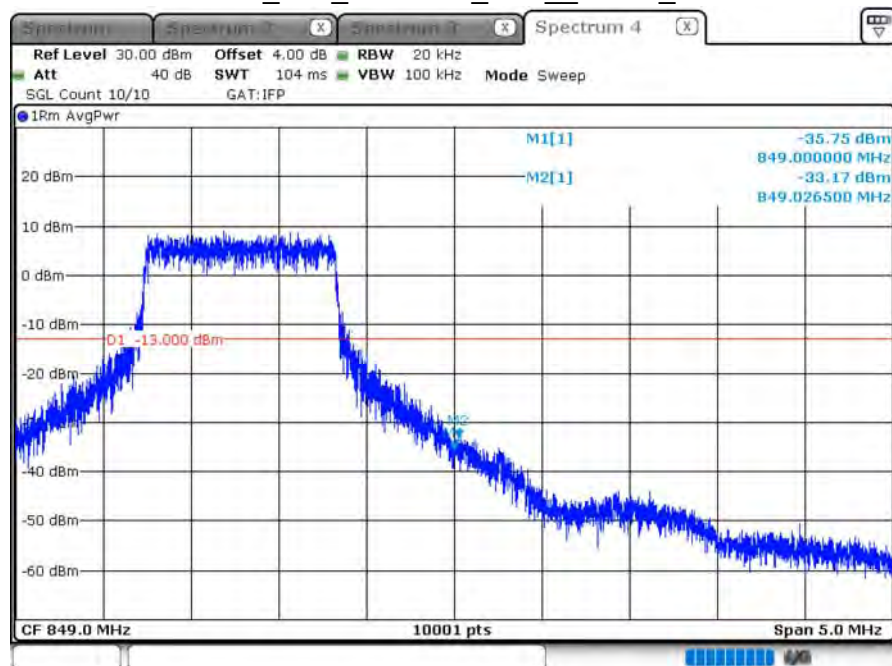


CAT-M1_B26_CH26990_10M_QPSK_1RB5



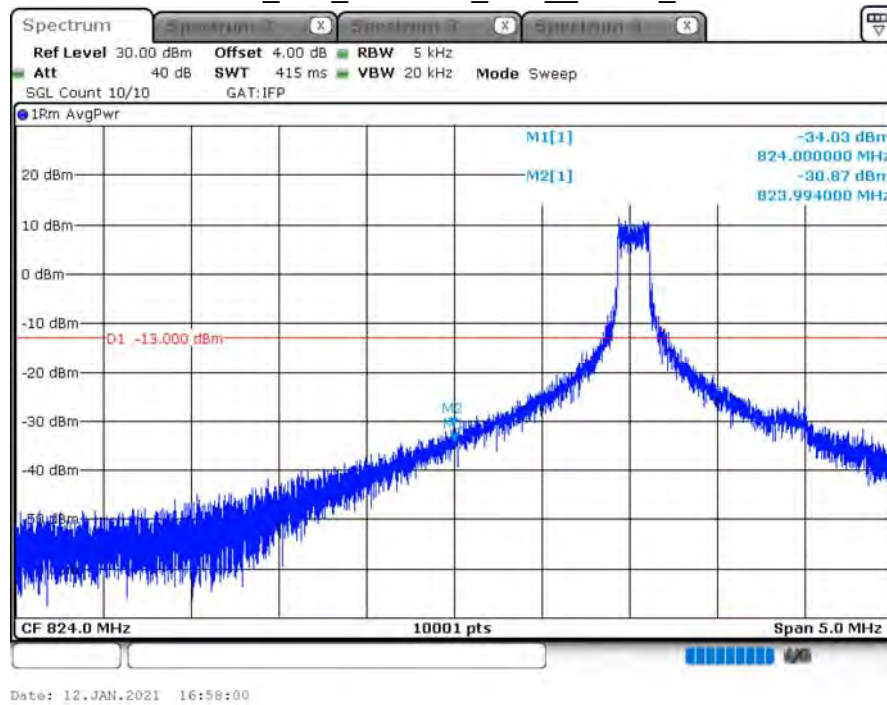
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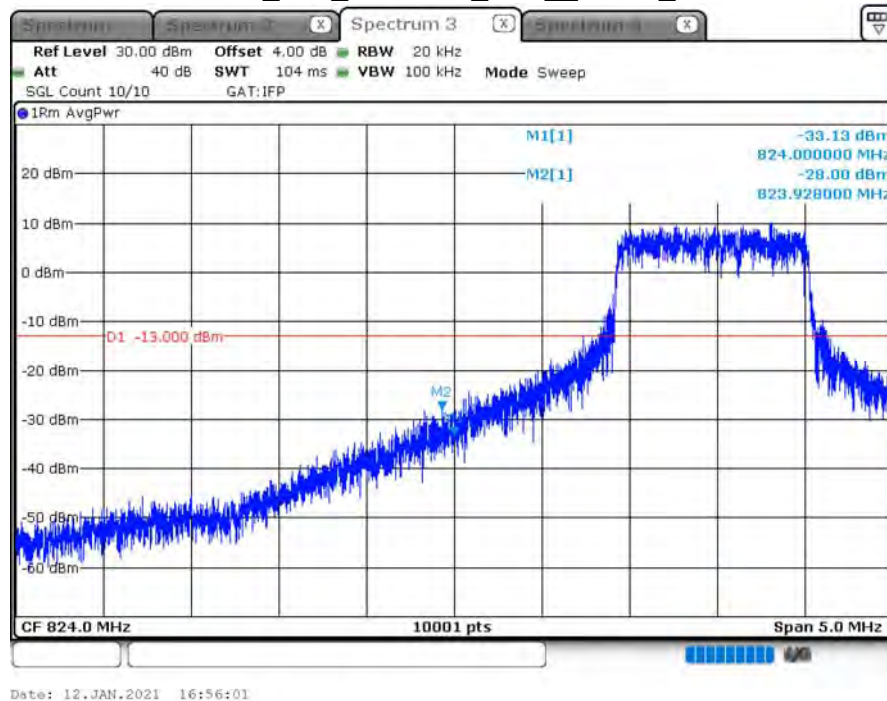


Date: 12.JAN.2021 16:51:05

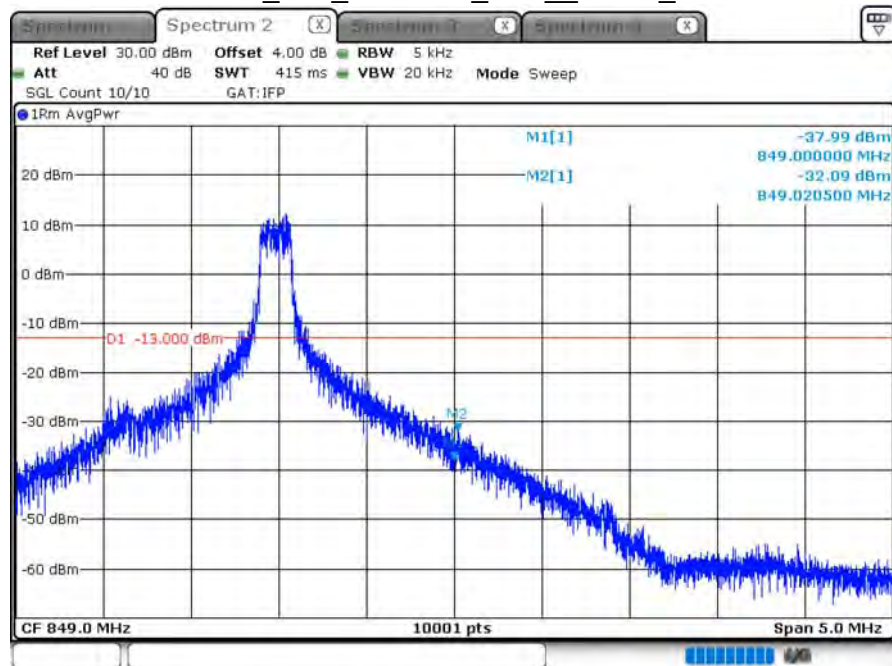
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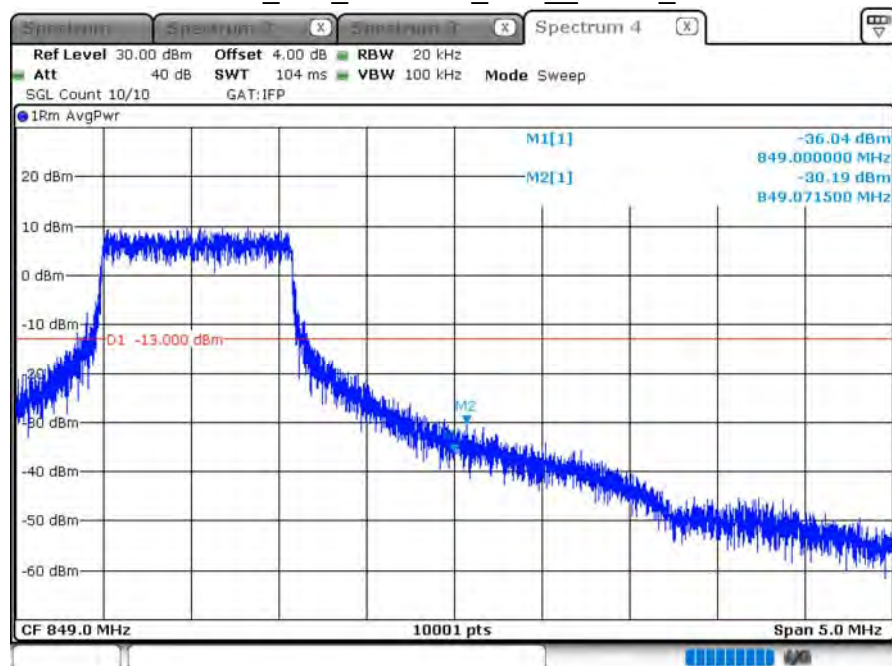
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CAT-M1_B26_CH26965_15M_QPSK_1RB5

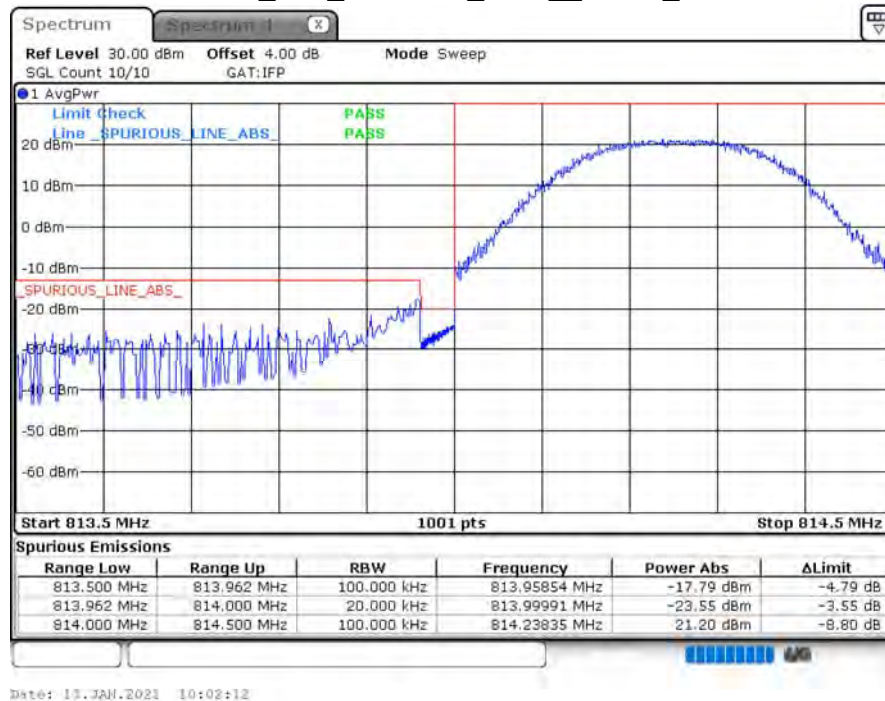


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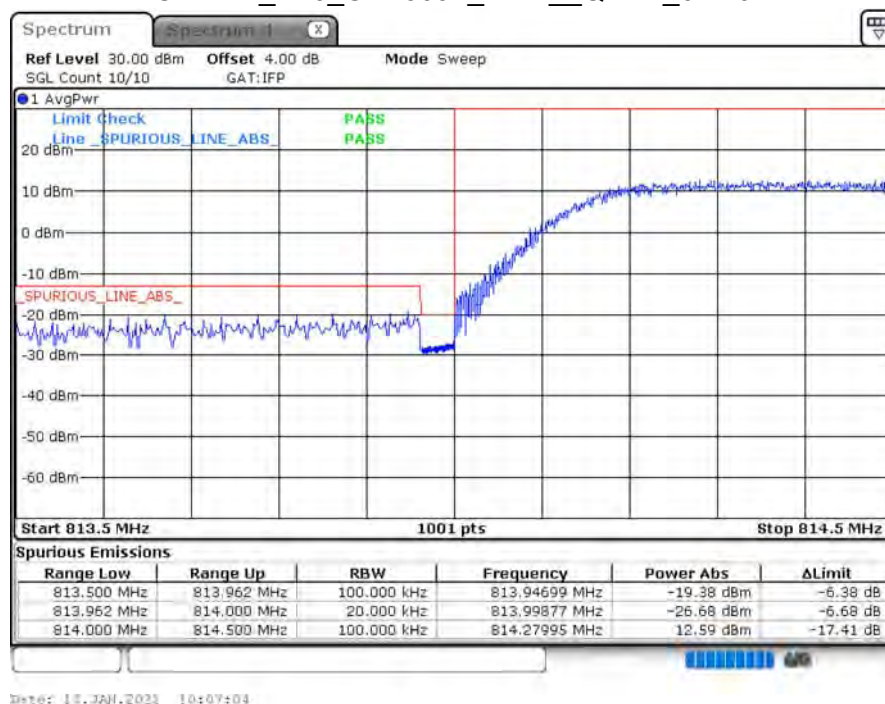


Product	Connectivity Module		
Test Item	Spurious Emissions at Antenna Terminals		
Test Mode	Mode 7: Band26_Part90 Link		
Date of Test	2021/01/13	Test Site	SR12-H
Temperature (°C)	20	Humidity (%RH)	59

CAT-M1_B26_CH26697_1.4M_QPSK_1RB0



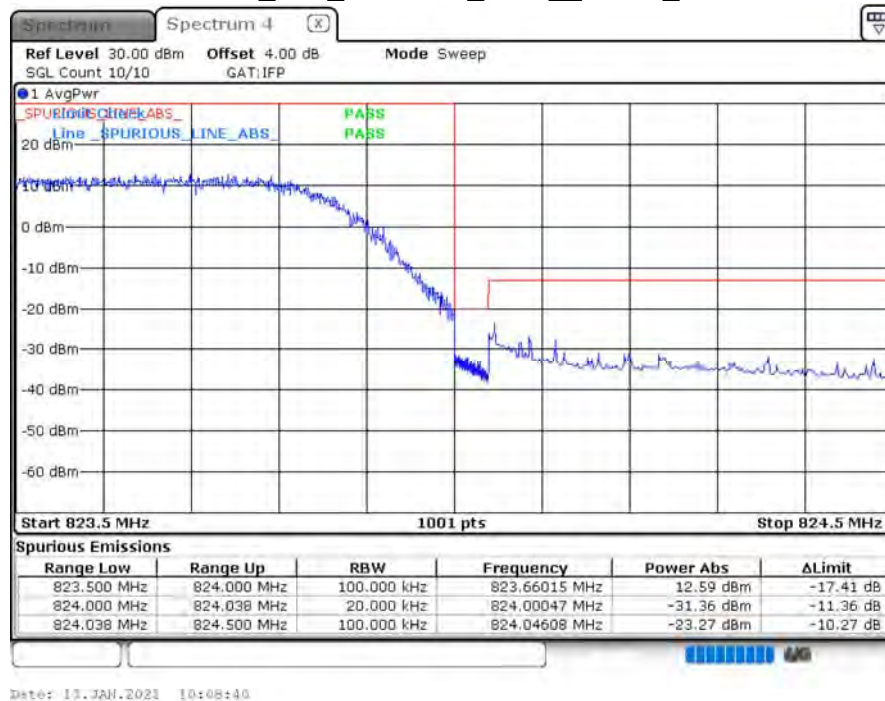
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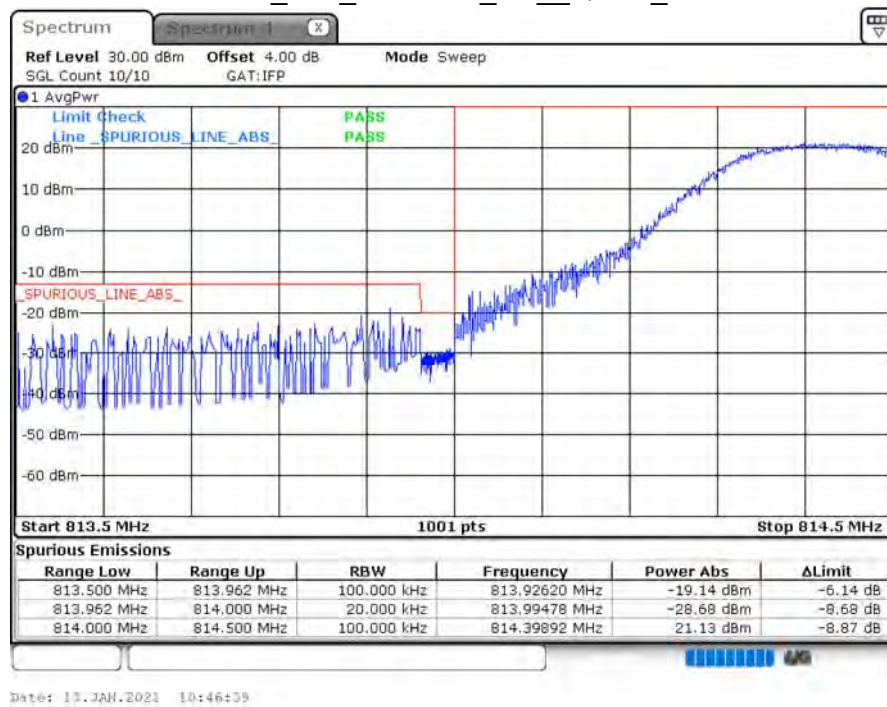
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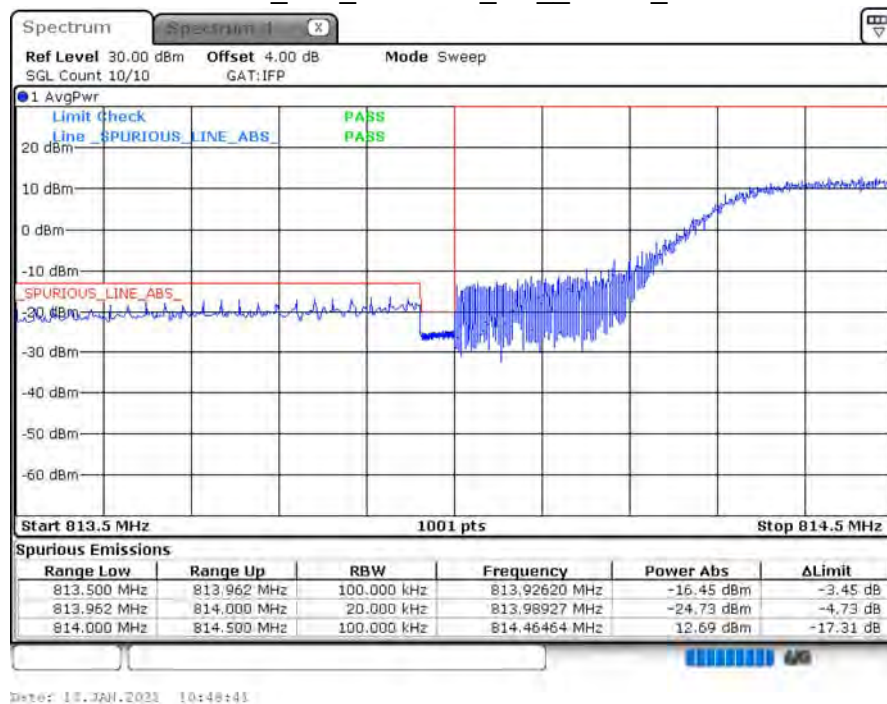
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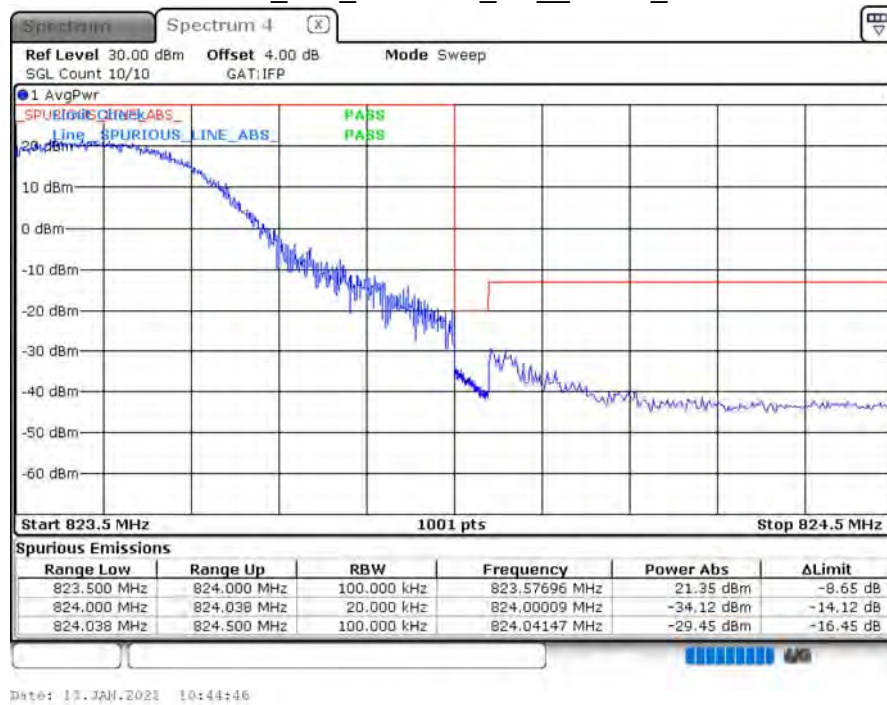
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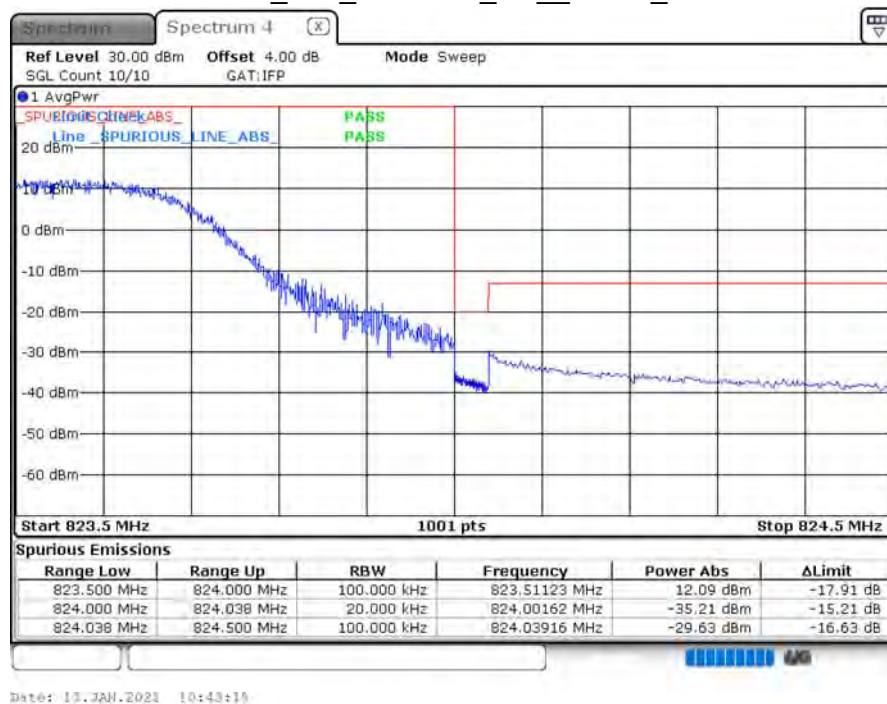
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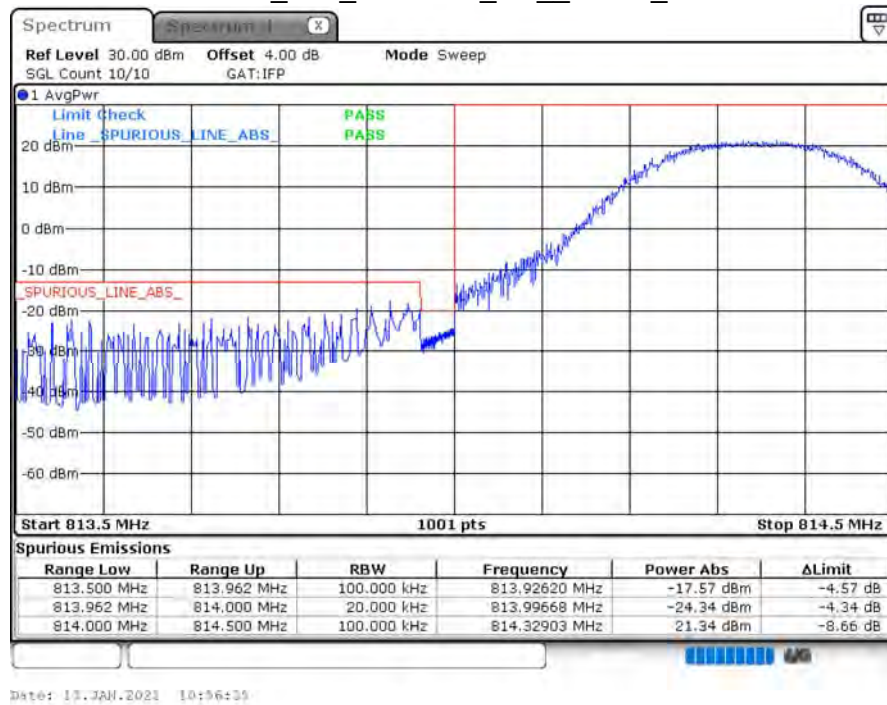
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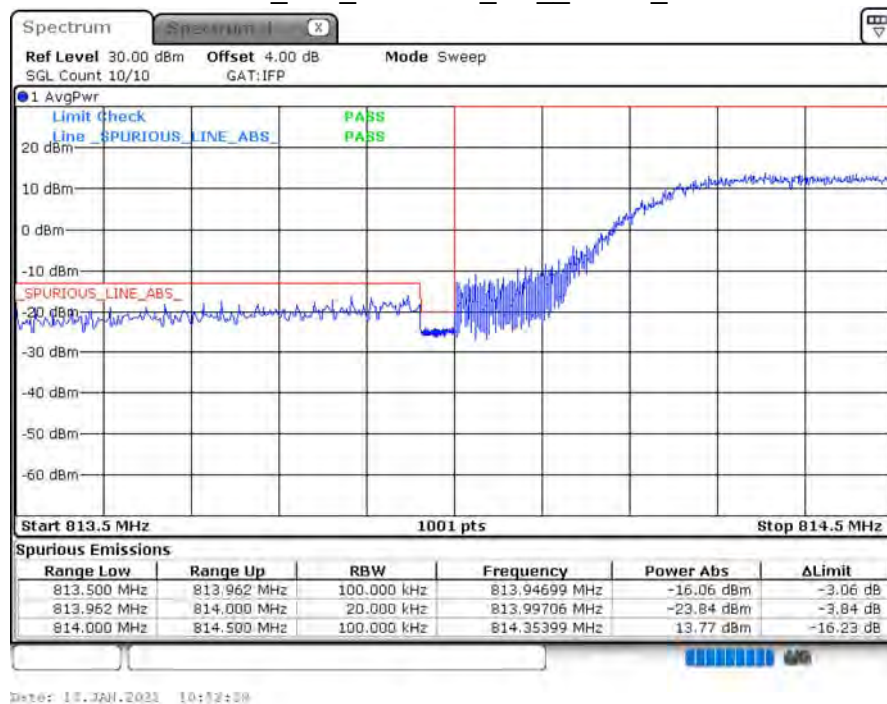
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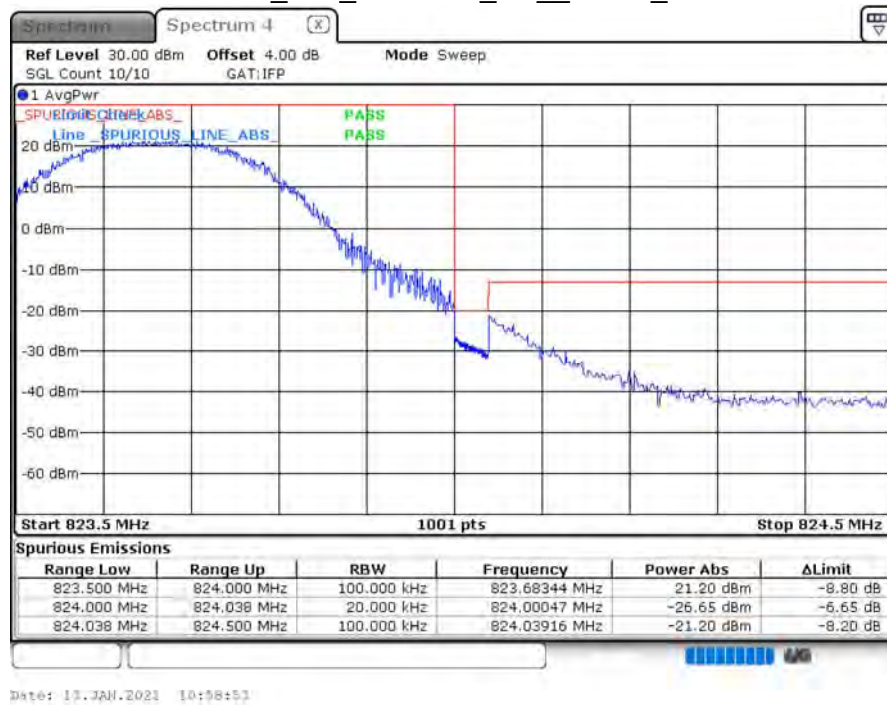
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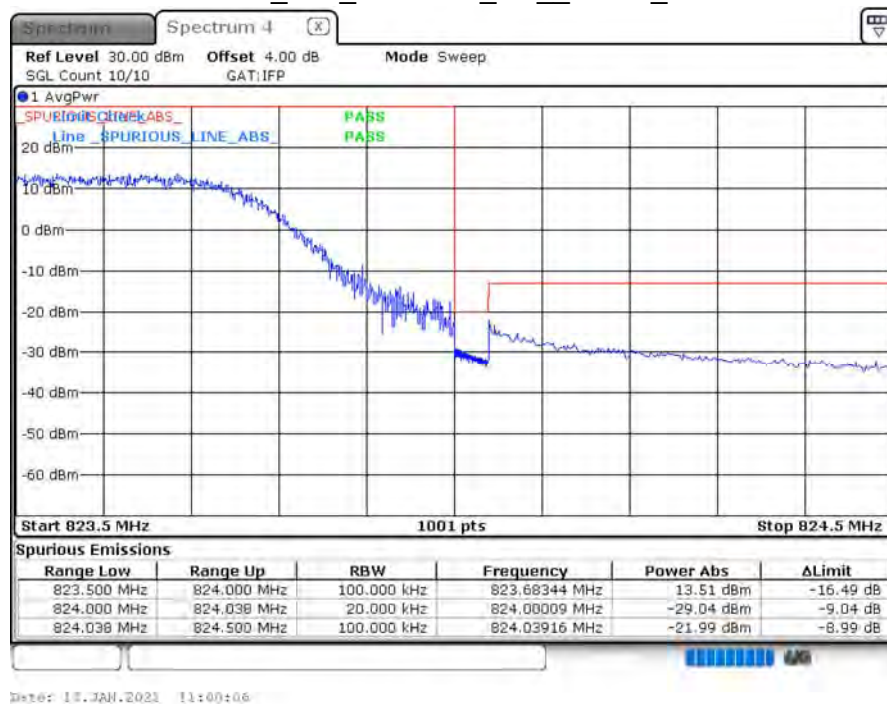
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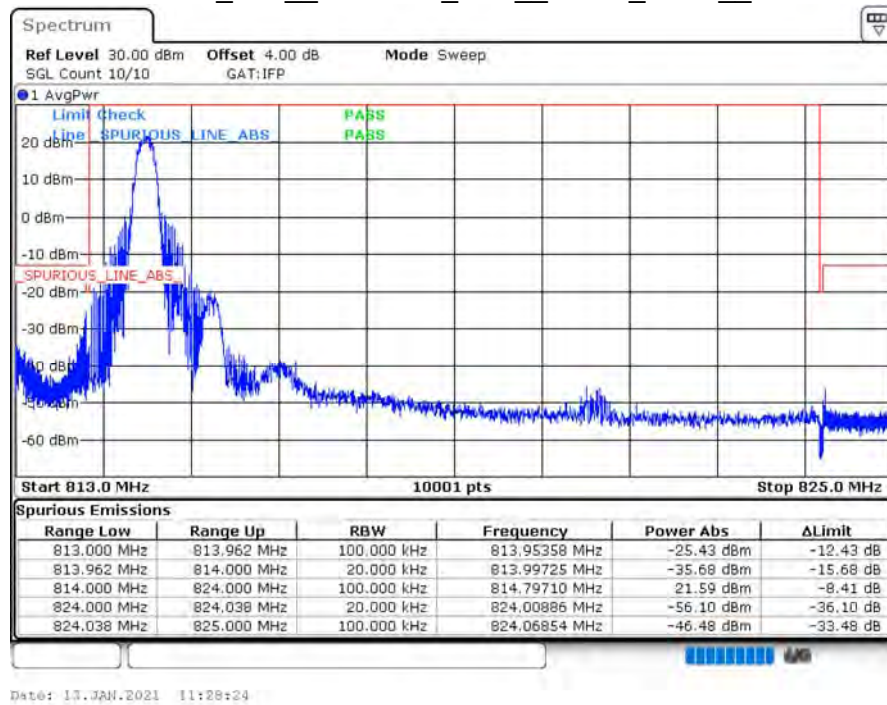
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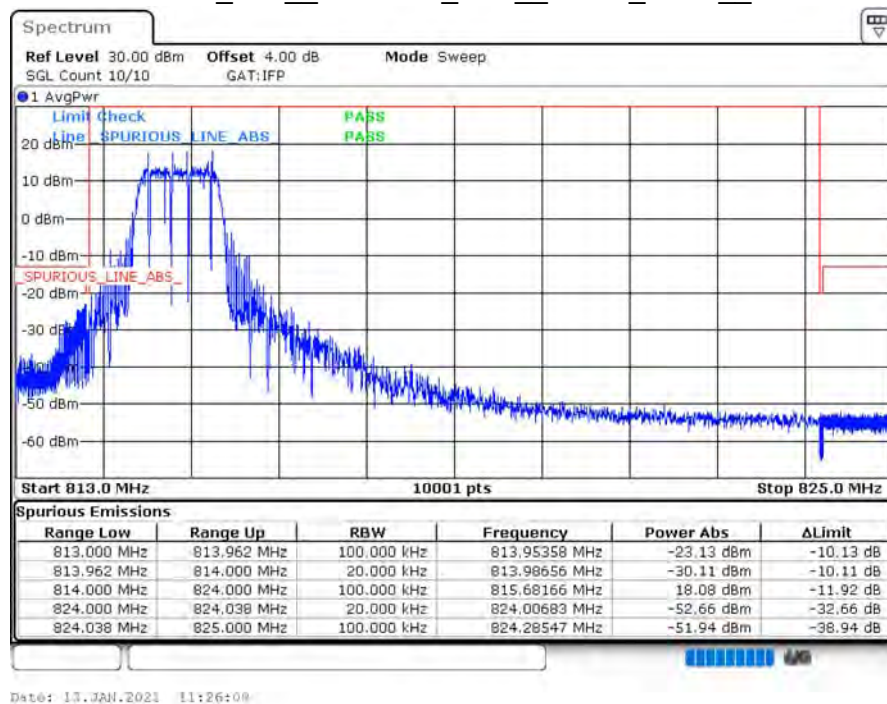
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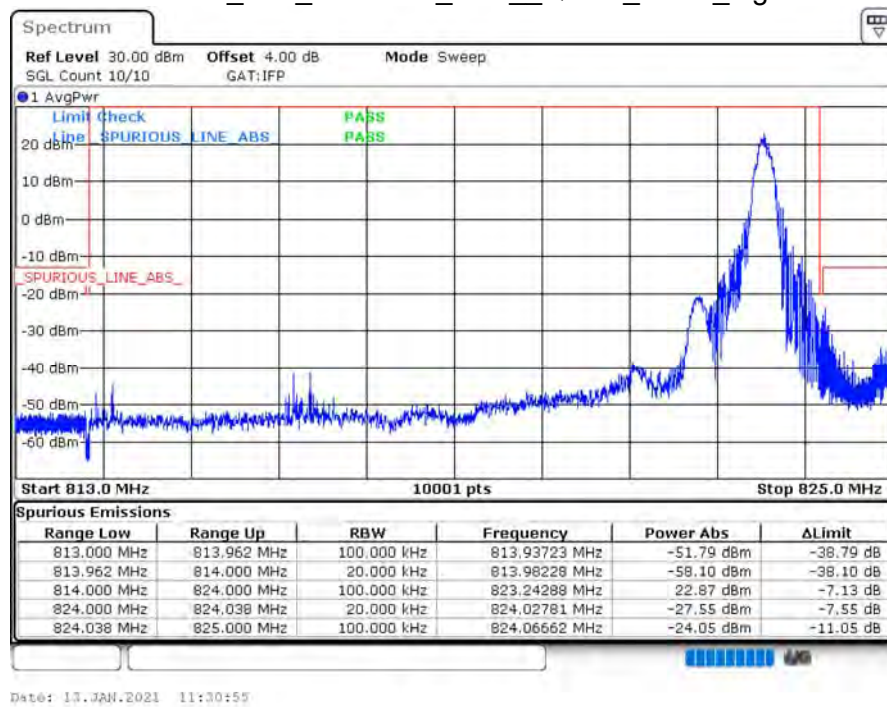
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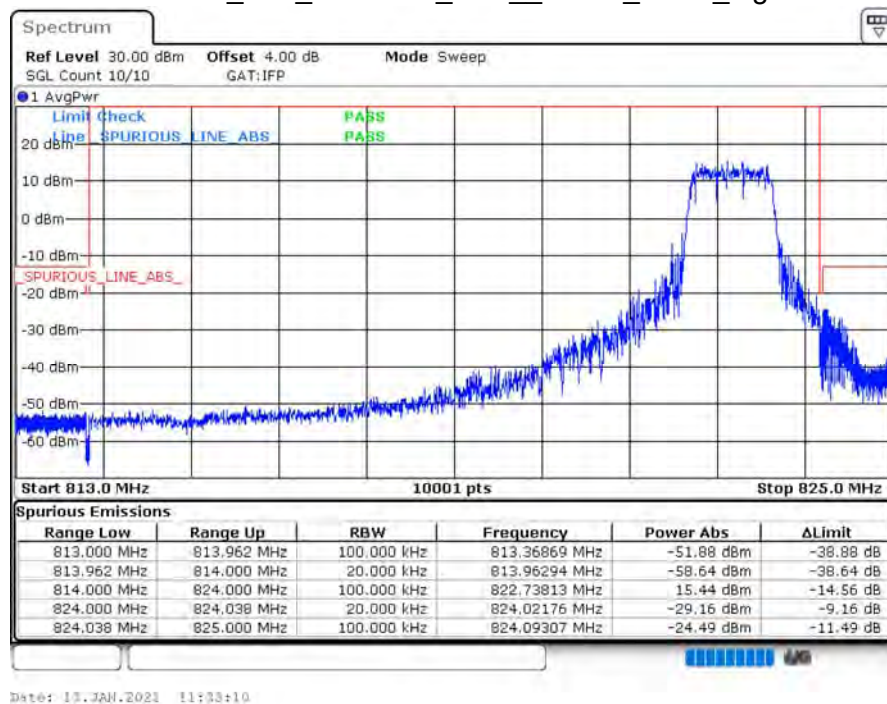
CAT-M1_B26_CH26740_10M_QPSK_6RB0_low



CAT-M1_B26_CH26740_10M__QPSK_1RB5_high

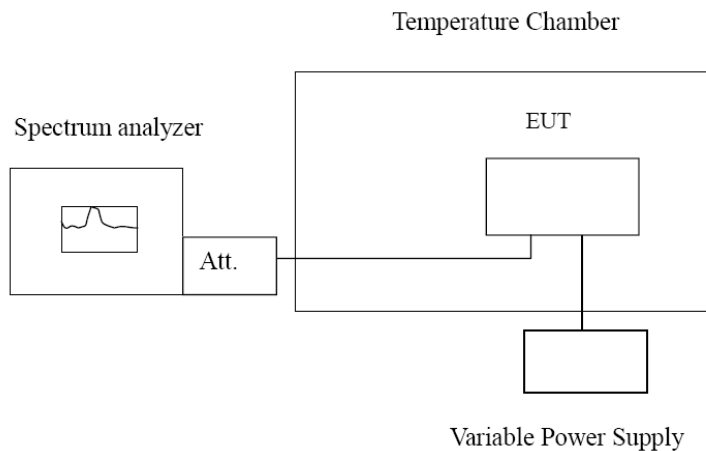


CAT-M1_B26_CH26740_10M__QPSK_6RB0_high



8. Frequency Stability

8.1. Test Setup



8.2. Test Procedure

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

8.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 9

ANSI C63.26: 2015 Sub-clause 5.6

8.4. Test Result

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 1: Band2 Link		
Date of Test	2021/01/20	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 2 1850.7MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.81	0.0015
48.0	3.12	0.0017
43.2	2.16	0.0012

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.18	0.0012
-10	1.97	0.0011
0	2.52	0.0014
10	2.75	0.0015
20	2.36	0.0013
30	3.26	0.0018
40	2.33	0.0013
50	3.16	0.0017
60	2.39	0.0013

LTE-Band 2 1909.3 MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.45	0.0018
48.0	3.41	0.0018
43.2	3.38	0.0018

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.71	0.0014
-10	3.06	0.0016
0	3.09	0.0016
10	2.34	0.0012
20	3.45	0.0018
30	2.68	0.0014
40	2.55	0.0013
50	3.35	0.0018
60	3.03	0.0016

LTE-Band 2 1851.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.02	0.0022
48.0	4.15	0.0022
43.2	4.61	0.0025

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.19	0.0023
-10	4.32	0.0023
0	3.80	0.0021
10	3.58	0.0019
20	4.43	0.0024
30	3.26	0.0018
40	3.34	0.0018
50	3.17	0.0017
60	4.07	0.0022

LTE-Band 2 1908.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.02	0.0016
48.0	3.41	0.0018
43.2	3.05	0.0016

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.08	0.0016
-10	3.19	0.0017
0	2.55	0.0013
10	3.09	0.0016
20	2.86	0.0015
30	3.25	0.0017
40	2.67	0.0014
50	3.42	0.0018
60	2.24	0.0012

LTE-Band 2 1852.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.42	0.0018
48.0	4.30	0.0023
43.2	3.49	0.0019

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.74	0.0026
-10	4.08	0.0022
0	4.16	0.0022
10	2.89	0.0016
20	3.32	0.0018
30	4.09	0.0022
40	3.92	0.0021
50	3.76	0.0020
60	3.74	0.0020

LTE-Band 2 1907.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.43	0.0018
48.0	4.87	0.0026
43.2	5.12	0.0027

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.62	0.0019
-10	4.62	0.0024
0	4.48	0.0023
10	4.27	0.0022
20	4.55	0.0024
30	5.07	0.0027
40	3.82	0.0020
50	3.80	0.0020
60	3.92	0.0021

LTE-Band 2 1855MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.19	0.0017
48.0	3.44	0.0019
43.2	3.39	0.0018

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.95	0.0016
-10	2.84	0.0015
0	3.54	0.0019
10	2.53	0.0014
20	2.03	0.0011
30	3.22	0.0017
40	3.83	0.0021
50	3.25	0.0018
60	2.88	0.0016

LTE-Band 2 1905MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.04	0.0016
48.0	3.58	0.0019
43.2	2.41	0.0013

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.90	0.0015
-10	2.68	0.0014
0	2.91	0.0015
10	1.97	0.0010
20	2.96	0.0016
30	3.33	0.0017
40	2.75	0.0014
50	2.80	0.0015
60	2.41	0.0013

LTE-Band 2 1857.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.80	0.0020
48.0	3.77	0.0020
43.2	2.83	0.0015

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.33	0.0018
-10	2.23	0.0012
0	3.43	0.0018
10	3.77	0.0020
20	4.04	0.0022
30	2.79	0.0015
40	2.72	0.0015
50	2.95	0.0016
60	2.68	0.0014

LTE-Band 2 1902.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.13	0.0016
48.0	4.32	0.0023
43.2	4.24	0.0022

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.51	0.0018
-10	3.82	0.0020
0	4.32	0.0023
10	3.93	0.0021
20	4.19	0.0022
30	2.98	0.0016
40	2.97	0.0016
50	4.18	0.0022
60	3.71	0.0020

LTE-Band 2 1860MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.88	0.0015
48.0	3.66	0.0020
43.2	3.13	0.0017

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.74	0.0020
-10	2.35	0.0013
0	3.92	0.0021
10	3.57	0.0019
20	2.42	0.0013
30	2.47	0.0013
40	3.08	0.0017
50	3.28	0.0018
60	4.32	0.0023

LTE-Band 2 1900MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.47	0.0018
48.0	4.07	0.0021
43.2	4.10	0.0022

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.54	0.0019
-10	4.02	0.0021
0	3.38	0.0018
10	3.11	0.0016
20	3.56	0.0019
30	4.03	0.0021
40	3.57	0.0019
50	4.22	0.0022
60	3.18	0.0017

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 2: Band4 Link		
Date of Test	2021/01/20	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 4 1710.7MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.52	0.0015
48.0	2.99	0.0017
43.2	2.30	0.0013

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.87	0.0017
-10	1.53	0.0009
0	2.89	0.0017
10	2.25	0.0013
20	3.34	0.0020
30	2.37	0.0014
40	3.43	0.0020
50	2.05	0.0012
60	1.93	0.0011

LTE-Band 4 1754.3MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.38	0.0014
48.0	3.23	0.0018
43.2	2.79	0.0016

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	1.99	0.0011
-10	3.58	0.0020
0	2.86	0.0016
10	2.40	0.0014
20	2.41	0.0014
30	2.74	0.0016
40	2.38	0.0014
50	2.88	0.0016
60	3.27	0.0019

LTE-Band 4 1711.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.84	0.0022
48.0	3.66	0.0021
43.2	3.47	0.0020

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.89	0.0017
-10	3.00	0.0018
0	2.64	0.0015
10	3.71	0.0022
20	3.67	0.0021
30	2.84	0.0017
40	1.97	0.0012
50	3.03	0.0018
60	2.70	0.0016

LTE-Band 4 1753.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.84	0.0022
48.0	3.71	0.0021
43.2	3.01	0.0017

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.28	0.0019
-10	3.12	0.0018
0	2.20	0.0013
10	2.73	0.0016
20	2.32	0.0013
30	2.67	0.0015
40	3.25	0.0019
50	4.27	0.0024
60	3.27	0.0019

LTE-Band 4 1712.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.84	0.0022
48.0	3.98	0.0023
43.2	3.53	0.0021

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.61	0.0021
-10	2.49	0.0015
0	4.20	0.0025
10	4.23	0.0025
20	3.75	0.0022
30	3.23	0.0019
40	3.21	0.0019
50	3.12	0.0018
60	3.26	0.0019

LTE-Band 4 1752.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.69	0.0015
48.0	3.45	0.0020
43.2	3.20	0.0018

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.82	0.0016
-10	2.72	0.0016
0	4.00	0.0023
10	2.84	0.0016
20	3.00	0.0017
30	2.92	0.0017
40	2.74	0.0016
50	2.72	0.0016
60	3.10	0.0018

LTE-Band 4 1715MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.20	0.0019
48.0	4.12	0.0024
43.2	3.55	0.0021

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.00	0.0023
-10	3.31	0.0019
0	2.77	0.0016
10	3.49	0.0020
20	3.83	0.0022
30	3.41	0.0020
40	4.14	0.0024
50	4.42	0.0026
60	3.88	0.0023

LTE-Band 4 1750MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.94	0.0017
48.0	3.76	0.0021
43.2	3.93	0.0022

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.94	0.0017
-10	3.48	0.0020
0	3.28	0.0019
10	3.64	0.0021
20	3.50	0.0020
30	3.28	0.0019
40	3.06	0.0017
50	4.04	0.0023
60	3.35	0.0019

LTE-Band 4 1717.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.08	0.0024
48.0	4.28	0.0025
43.2	4.31	0.0025

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.55	0.0021
-10	4.12	0.0024
0	2.95	0.0017
10	3.49	0.0020
20	4.18	0.0024
30	3.34	0.0019
40	4.14	0.0024
50	2.88	0.0017
60	4.37	0.0025

LTE-Band 4 1747.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.79	0.0022
48.0	3.51	0.0020
43.2	3.40	0.0019

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.97	0.0017
-10	3.19	0.0018
0	3.14	0.0018
10	3.17	0.0018
20	3.24	0.0019
30	2.84	0.0016
40	2.61	0.0015
50	4.25	0.0024
60	2.80	0.0016

LTE-Band 4 1720MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.02	0.0012
48.0	3.55	0.0021
43.2	3.48	0.0020

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.86	0.0017
-10	2.46	0.0014
0	3.92	0.0023
10	3.35	0.0019
20	2.85	0.0017
30	3.06	0.0018
40	3.01	0.0018
50	2.49	0.0014
60	2.39	0.0014

LTE-Band 4 1745MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.24	0.0024
48.0	4.35	0.0025
43.2	3.18	0.0018

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.58	0.0026
-10	4.24	0.0024
0	3.79	0.0022
10	4.96	0.0028
20	3.44	0.0020
30	3.42	0.0020
40	3.97	0.0023
50	3.22	0.0018
60	3.39	0.0019

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 3: Band5 Link		
Date of Test	2021/01/08	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 5 824.7MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.48	0.0042
48.0	4.02	0.0049
43.2	2.49	0.0030

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.42	0.0054
-10	3.93	0.0048
0	3.08	0.0037
10	4.41	0.0053
20	3.76	0.0046
30	3.37	0.0041
40	3.58	0.0043
50	3.11	0.0038
60	3.00	0.0036

LTE-Band 5 848.3MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.91	0.0046
48.0	3.56	0.0042
43.2	3.35	0.0039

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.66	0.0031
-10	3.46	0.0041
0	3.58	0.0042
10	3.24	0.0038
20	2.07	0.0024
30	3.53	0.0042
40	3.26	0.0038
50	2.10	0.0025
60	2.58	0.0030

LTE-Band 5 825.5MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.13	0.0026
48.0	3.36	0.0041
43.2	2.64	0.0032

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.44	0.0030
-10	1.95	0.0024
0	3.34	0.0040
10	3.19	0.0039
20	1.85	0.0022
30	1.71	0.0021
40	2.84	0.0034
50	2.49	0.0030
60	2.91	0.0035

LTE-Band 5 847.5MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.89	0.0046
48.0	4.25	0.0050
43.2	4.09	0.0048

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.30	0.0051
-10	4.97	0.0059
0	4.53	0.0053
10	3.41	0.0040
20	3.95	0.0047
30	3.15	0.0037
40	3.97	0.0047
50	3.43	0.0040
60	3.37	0.0040

LTE-Band 5 826.5MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.80	0.0046
48.0	4.26	0.0052
43.2	4.33	0.0052

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.13	0.0050
-10	3.45	0.0042
0	3.53	0.0043
10	3.33	0.0040
20	3.22	0.0039
30	4.43	0.0054
40	2.77	0.0034
50	4.39	0.0053
60	3.76	0.0045

LTE-Band 5 846.5MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.24	0.0050
48.0	5.20	0.0061
43.2	3.90	0.0046

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.56	0.0054
-10	5.27	0.0062
0	5.19	0.0061
10	5.11	0.0060
20	4.39	0.0052
30	4.29	0.0051
40	3.76	0.0044
50	4.99	0.0059
60	4.53	0.0054

LTE-Band 5 829MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.37	0.0041
48.0	3.94	0.0048
43.2	2.42	0.0029

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.28	0.0040
-10	3.81	0.0046
0	3.30	0.0040
10	2.92	0.0035
20	2.65	0.0032
30	3.96	0.0048
40	2.37	0.0029
50	3.20	0.0039
60	4.42	0.0053

LTE-Band 5 844MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.67	0.0043
48.0	4.33	0.0051
43.2	3.37	0.0040

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.63	0.0043
-10	3.06	0.0036
0	3.40	0.0040
10	4.75	0.0056
20	4.59	0.0054
30	3.24	0.0038
40	3.44	0.0041
50	3.97	0.0047
60	3.97	0.0047

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 4: Band12 Link		
Date of Test	2021/01/20	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 12 699.7MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.21	0.0046
48.0	2.89	0.0041
43.2	2.59	0.0037

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.38	0.0034
-10	2.70	0.0039
0	2.49	0.0036
10	2.10	0.0030
20	2.37	0.0034
30	2.81	0.0040
40	1.67	0.0024
50	3.03	0.0043
60	2.77	0.0040

LTE-Band 12 715.3MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.06	0.0043
48.0	3.34	0.0047
43.2	3.53	0.0049

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.82	0.0053
-10	1.91	0.0027
0	3.17	0.0044
10	3.87	0.0054
20	2.68	0.0037
30	2.99	0.0042
40	2.18	0.0030
50	3.00	0.0042
60	3.43	0.0048

LTE-Band 12 700.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.38	0.0034
48.0	3.28	0.0047
43.2	1.85	0.0026

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.72	0.0039
-10	1.98	0.0028
0	2.62	0.0037
10	2.71	0.0039
20	2.68	0.0038
30	2.50	0.0036
40	2.54	0.0036
50	3.02	0.0043
60	2.78	0.0040

LTE-Band 12 714.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.16	0.0044
48.0	4.20	0.0059
43.2	2.96	0.0041

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.98	0.0056
-10	3.42	0.0048
0	3.65	0.0051
10	2.95	0.0041
20	3.84	0.0054
30	3.86	0.0054
40	4.19	0.0059
50	3.79	0.0053
60	4.20	0.0059

LTE-Band 12 701.5MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.32	0.0033
48.0	3.47	0.0049
43.2	3.41	0.0049

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.58	0.0051
-10	2.49	0.0035
0	3.72	0.0053
10	3.18	0.0045
20	2.72	0.0039
30	2.84	0.0040
40	2.67	0.0038
50	1.90	0.0027
60	2.10	0.0030

LTE-Band 12 713.5MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	5.88	0.0082
48.0	5.27	0.0074
43.2	4.81	0.0067

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	5.02	0.0070
-10	4.97	0.0070
0	4.39	0.0062
10	5.16	0.0072
20	4.69	0.0066
30	4.39	0.0062
40	4.12	0.0058
50	3.74	0.0052
60	5.49	0.0077

LTE-Band 12 704MHz**Voltage**

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.37	0.0048
48.0	3.57	0.0051
43.2	3.50	0.0050

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.67	0.0038
-10	2.67	0.0038
0	2.80	0.0040
10	2.24	0.0032
20	2.86	0.0041
30	2.12	0.0030
40	3.24	0.0046
50	3.12	0.0044
60	4.13	0.0059

LTE-Band 12 711MHz

Voltage

Voltage (Vdc)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.38	0.0048
48.0	4.09	0.0058
43.2	3.60	0.0051

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.27	0.0046
-10	3.58	0.0050
0	3.64	0.0051
10	3.68	0.0052
20	4.13	0.0058
30	2.65	0.0037
40	3.87	0.0054
50	4.30	0.0060
60	3.66	0.0051

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 5: Band13 Link		
Date of Test	2021/01/20	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 13 779.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.40	0.0056
48.0	5.17	0.0066
43.2	5.49	0.0070

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	5.01	0.0064
-10	4.46	0.0057
0	4.85	0.0062
10	5.03	0.0065
20	5.36	0.0069
30	4.72	0.0061
40	4.92	0.0063
50	4.49	0.0058
60	4.60	0.0059

LTE-Band 13 784.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.08	0.0052
48.0	4.96	0.0063
43.2	4.48	0.0057

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.72	0.0060
-10	4.95	0.0063
0	4.63	0.0059
10	4.59	0.0059
20	4.66	0.0059
30	3.90	0.0050
40	3.78	0.0048
50	5.17	0.0066
60	4.32	0.0055

LTE-Band 13 782MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.34	0.0043
48.0	3.48	0.0045
43.2	3.61	0.0046

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.73	0.0035
-10	3.39	0.0043
0	3.51	0.0045
10	3.63	0.0046
20	2.38	0.0030
30	2.92	0.0037
40	2.69	0.0034
50	2.85	0.0036
60	2.54	0.0032

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 6: Band26_Part22 Link		
Date of Test	2021/01/20	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 26 824.7MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.69	0.0033
48.0	2.88	0.0035
43.2	3.05	0.0037

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.20	0.0027
-10	2.69	0.0033
0	2.69	0.0033
10	2.35	0.0028
20	1.95	0.0024
30	1.90	0.0023
40	2.18	0.0026
50	2.90	0.0035
60	2.85	0.0035

LTE-Band 26 848.3MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.56	0.0054
48.0	4.11	0.0048
43.2	3.58	0.0042

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.03	0.0048
-10	3.76	0.0044
0	3.57	0.0042
10	2.99	0.0035
20	4.17	0.0049
30	3.54	0.0042
40	3.85	0.0045
50	3.26	0.0038
60	3.59	0.0042

LTE-Band 26 825.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.23	0.0039
48.0	3.78	0.0046
43.2	2.90	0.0035

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.59	0.0043
-10	2.94	0.0036
0	3.25	0.0039
10	3.00	0.0036
20	3.23	0.0039
30	2.59	0.0031
40	3.27	0.0040
50	3.27	0.0040
60	3.55	0.0043

LTE-Band 26 847.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.70	0.0032
48.0	3.69	0.0044
43.2	3.39	0.0040

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.77	0.0033
-10	2.95	0.0035
0	2.72	0.0032
10	2.73	0.0032
20	3.68	0.0043
30	3.44	0.0041
40	3.20	0.0038
50	2.95	0.0035
60	3.09	0.0036

LTE-Band 26 826.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.86	0.0059
48.0	4.66	0.0056
43.2	4.23	0.0051

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	4.74	0.0057
-10	3.89	0.0047
0	4.93	0.0060
10	3.53	0.0043
20	4.88	0.0059
30	4.16	0.0050
40	4.44	0.0054
50	3.89	0.0047
60	3.86	0.0047

LTE-Band 26 846.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.89	0.0046
48.0	3.99	0.0047
43.2	3.61	0.0043

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.46	0.0041
-10	3.14	0.0037
0	3.24	0.0038
10	3.37	0.0040
20	3.34	0.0039
30	4.10	0.0048
40	2.94	0.0035
50	3.10	0.0037
60	3.23	0.0038

LTE-Band 26 829MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.05	0.0037
48.0	2.97	0.0036
43.2	3.05	0.0037

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.77	0.0033
-10	2.06	0.0025
0	2.03	0.0024
10	2.20	0.0027
20	2.97	0.0036
30	3.07	0.0037
40	1.93	0.0023
50	2.31	0.0028
60	1.78	0.0021

LTE-Band 26 844MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.63	0.0031
48.0	3.18	0.0038
43.2	3.06	0.0036

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.25	0.0039
-10	2.58	0.0031
0	2.28	0.0027
10	2.31	0.0027
20	1.92	0.0023
30	3.19	0.0038
40	2.39	0.0028
50	2.01	0.0024
60	2.98	0.0035

LTE-Band 26 831.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.32	0.0040
48.0	3.19	0.0038
43.2	2.25	0.0027

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.01	0.0024
-10	2.97	0.0036
0	2.63	0.0032
10	1.72	0.0021
20	1.99	0.0024
30	2.77	0.0033
40	2.69	0.0032
50	2.78	0.0033
60	2.78	0.0033

LTE-Band 26 841.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	5.46	0.0065
48.0	4.84	0.0058
43.2	4.54	0.0054

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	5.32	0.0064
-10	4.32	0.0052
0	4.51	0.0054
10	5.01	0.0060
20	4.69	0.0056
30	4.06	0.0049
40	3.28	0.0039
50	5.11	0.0061
60	4.82	0.0058

Product	Connectivity Module		
Test Item	Frequency Stability		
Test Mode	Mode 7: Band26_Part90 Link		
Date of Test	2021/01/20	Test Site	SR12-H
Temperature (°C)	23	Humidity (%RH)	61

LTE-Band 26 814.7MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.95	0.0036
48.0	3.65	0.0045
43.2	2.78	0.0034

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.41	0.0042
-10	3.09	0.0038
0	3.55	0.0044
10	3.20	0.0039
20	3.78	0.0046
30	2.73	0.0034
40	3.45	0.0042
50	3.08	0.0038
60	3.68	0.0045

LTE-Band 26 823.3MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.63	0.0044
48.0	4.13	0.0050
43.2	4.40	0.0053

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.56	0.0043
-10	2.98	0.0036
0	3.06	0.0037
10	2.92	0.0035
20	4.10	0.0050
30	3.92	0.0048
40	3.78	0.0046
50	3.46	0.0042
60	3.98	0.0048

LTE-Band 26 815.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.61	0.0057
48.0	5.02	0.0062
43.2	4.13	0.0051

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	5.27	0.0065
-10	4.02	0.0049
0	4.16	0.0051
10	5.08	0.0062
20	5.14	0.0063
30	5.09	0.0062
40	4.98	0.0061
50	4.50	0.0055
60	4.40	0.0054

LTE-Band 26 822.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	4.87	0.0059
48.0	4.96	0.0060
43.2	4.36	0.0053

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	5.07	0.0062
-10	4.95	0.0060
0	4.36	0.0053
10	5.22	0.0063
20	4.38	0.0053
30	5.19	0.0063
40	3.47	0.0042
50	4.67	0.0057
60	4.88	0.0059

LTE-Band 26 816.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	2.70	0.0033
48.0	3.69	0.0045
43.2	3.24	0.0040

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.06	0.0037
-10	3.10	0.0038
0	2.94	0.0036
10	3.42	0.0042
20	3.88	0.0048
30	3.44	0.0042
40	4.20	0.0051
50	3.53	0.0043
60	3.18	0.0039

LTE-Band 26 821.5MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.55	0.0043
48.0	3.78	0.0046
43.2	3.49	0.0042

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	2.82	0.0034
-10	3.54	0.0043
0	4.04	0.0049
10	3.60	0.0044
20	2.79	0.0034
30	3.51	0.0043
40	3.16	0.0038
50	3.44	0.0042
60	3.39	0.0041

LTE-Band 26 819MHz

Voltage

Voltage (VAC)	Frequency Error(Hz)	Frequency Error(ppm)
52.8	3.14	0.0038
48.0	4.53	0.0055
43.2	3.73	0.0046

Temperature

TEMPERATURE	Frequency Error(Hz)	Frequency Error (ppm)
-20	3.81	0.0047
-10	3.70	0.0045
0	4.13	0.0050
10	3.47	0.0042
20	4.60	0.0056
30	4.17	0.0051
40	4.71	0.0058
50	4.11	0.0050
60	3.91	0.0048