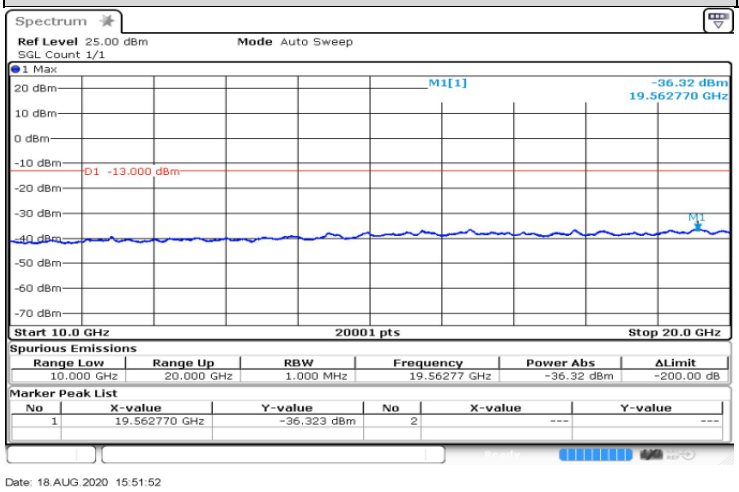
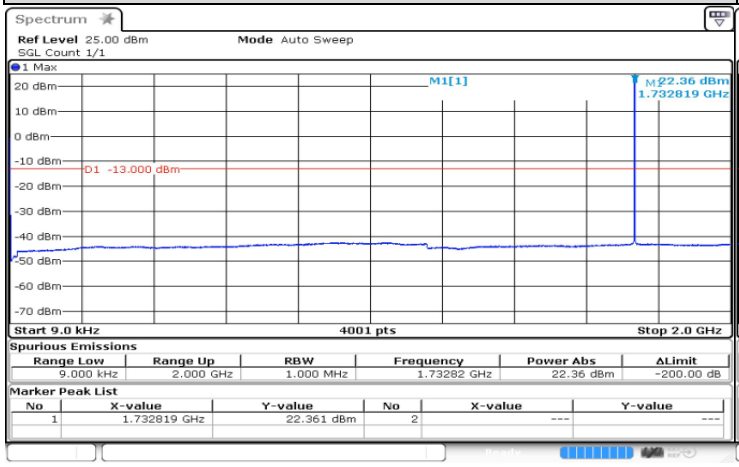
10kHz ~ 20GHz	

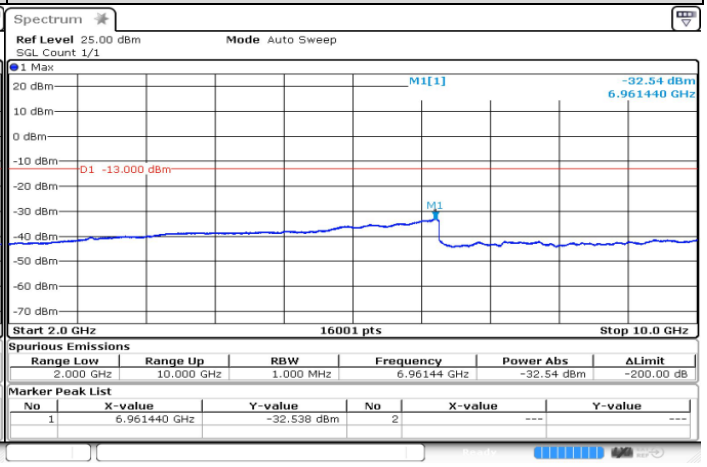


Date: 18.AUG.2020 15:51:52

QPSK - Mid Freq (1732.5 MHz)	
RB Size =1, RB Offset = 3	
9kHz ~ 2GHz	2GHz ~ 10GHz

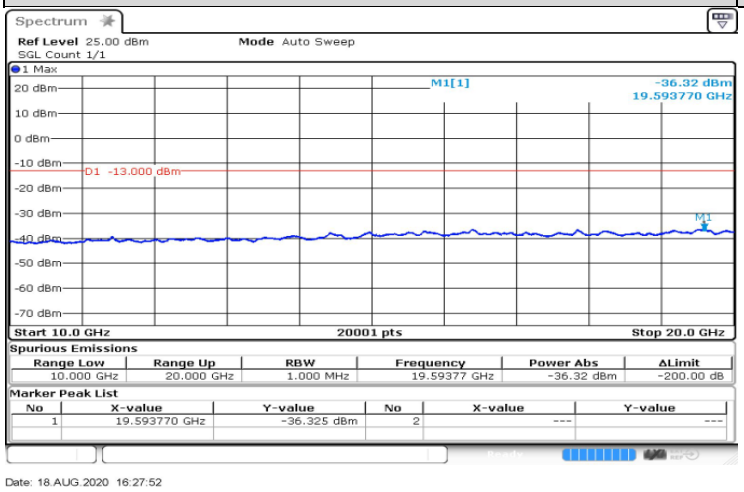


Date: 18.AUG.2020 16:24:29



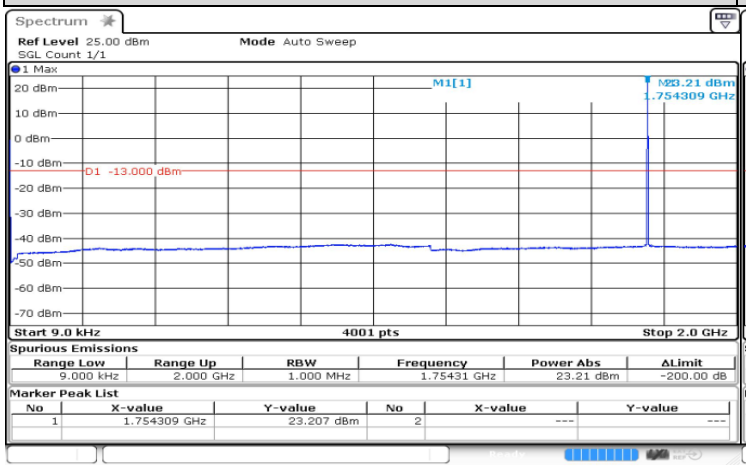
Date: 18.AUG.2020 16:26:13

10kHz ~ 20GHz	

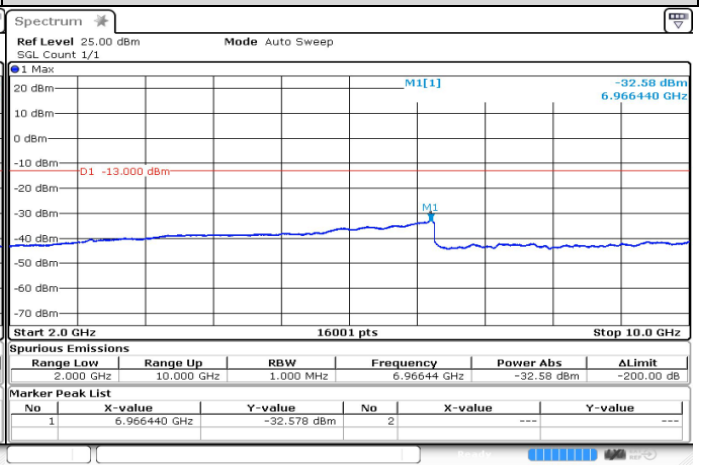


Date: 18.AUG.2020 16:27:52

QPSK - High Freq (1754.3 MHz)	
RB Size =1, RB Offset = 3	
9kHz ~ 2GHz	2GHz ~ 10GHz

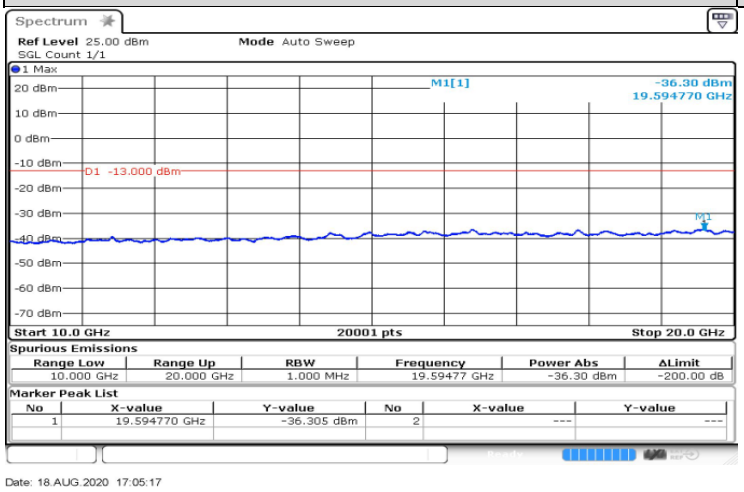


Date: 18.AUG.2020 17:01:58



Date: 18.AUG.2020 17:03:35

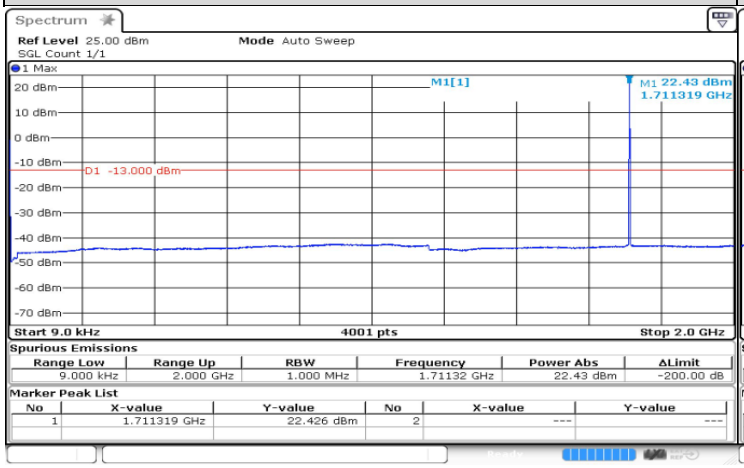
10kHz ~ 20GHz	



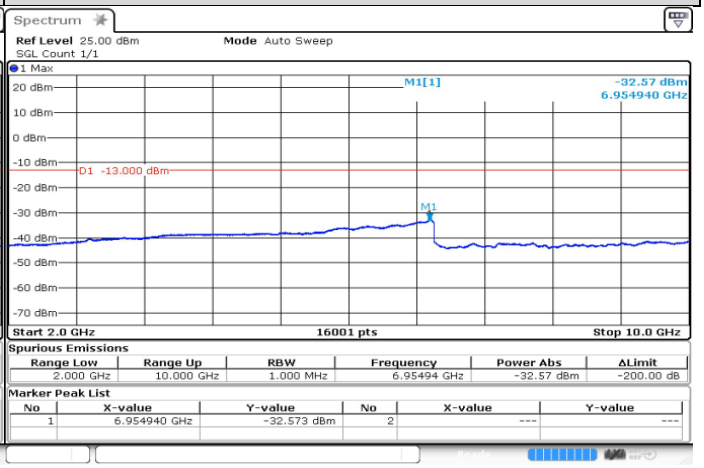
Date: 18.AUG.2020 17:05:17

3MHz

QPSK - Low Freq (1711.5 MHz)	
RB Size =1, RB Offset = 7	
9kHz ~ 2GHz	2GHz ~ 10GHz

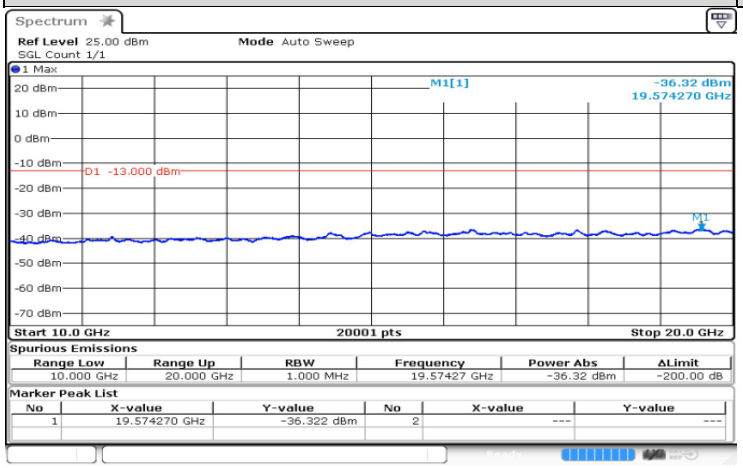


Date: 18.AUG.2020 17:40:16



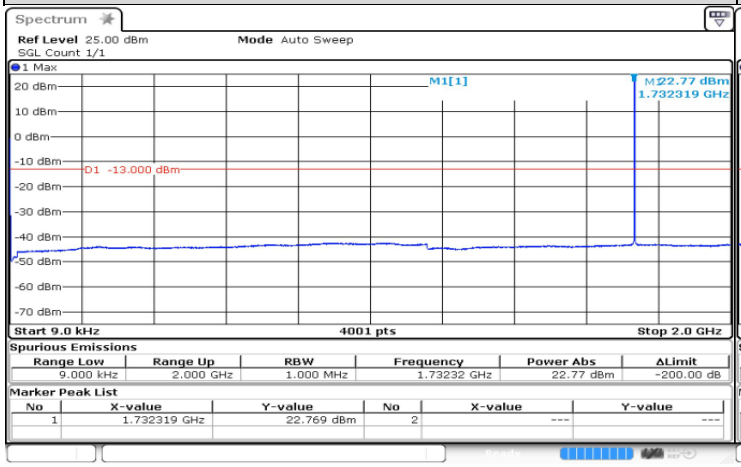
Date: 18.AUG.2020 17:41:54

10kHz ~ 20GHz	

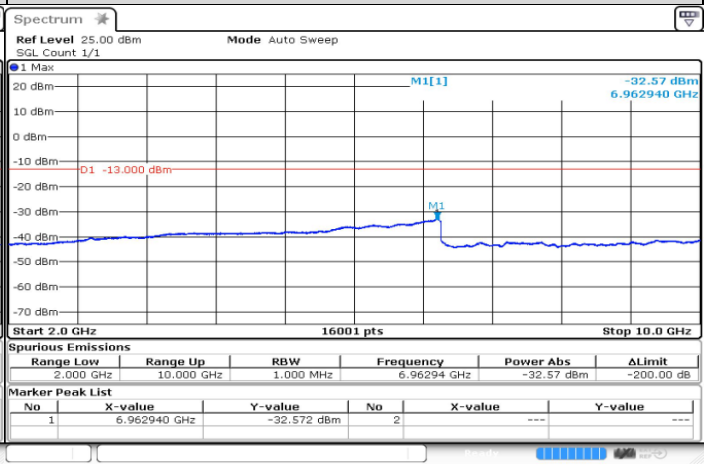


Date: 18.AUG.2020 17:43:35

QPSK - Mid Freq (1732.5 MHz)	
RB Size =1, RB Offset = 7	
9kHz ~ 2GHz	2GHz ~ 10GHz

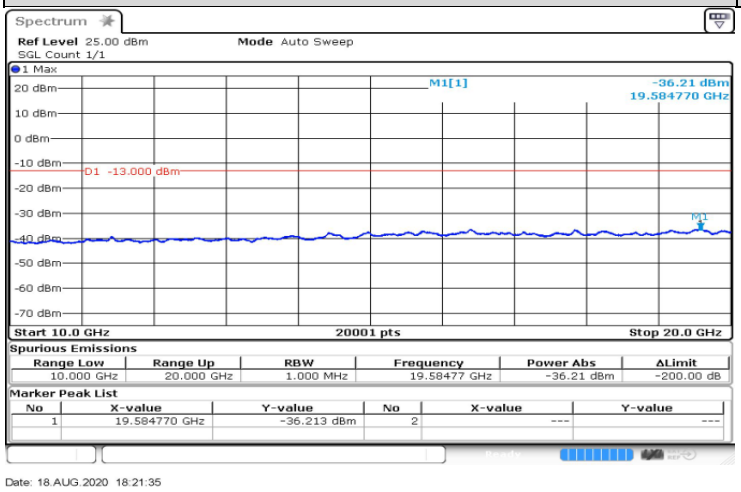


Date: 18.AUG.2020 18:18:15



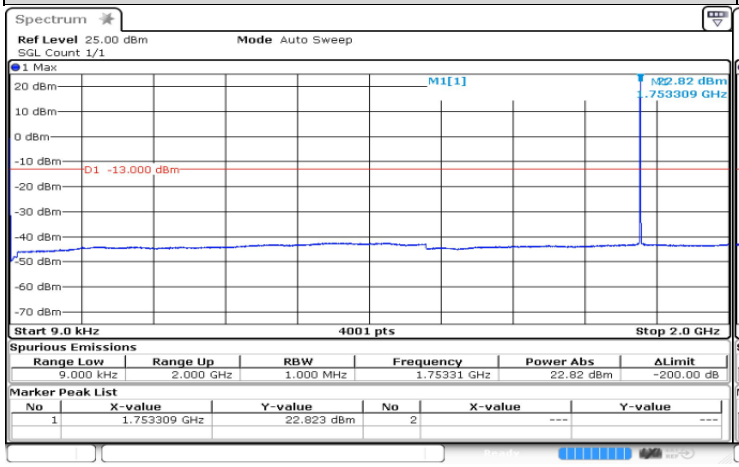
Date: 18.AUG.2020 18:19:54

10kHz ~ 20GHz	

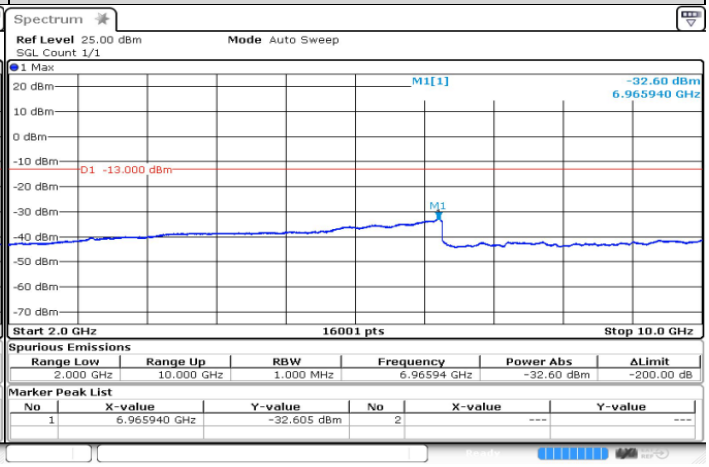


Date: 18.AUG.2020 18:21:35

QPSK - High Freq (1753.5 MHz)	
RB Size =1, RB Offset = 7	
9kHz ~ 2GHz	2GHz ~ 10GHz

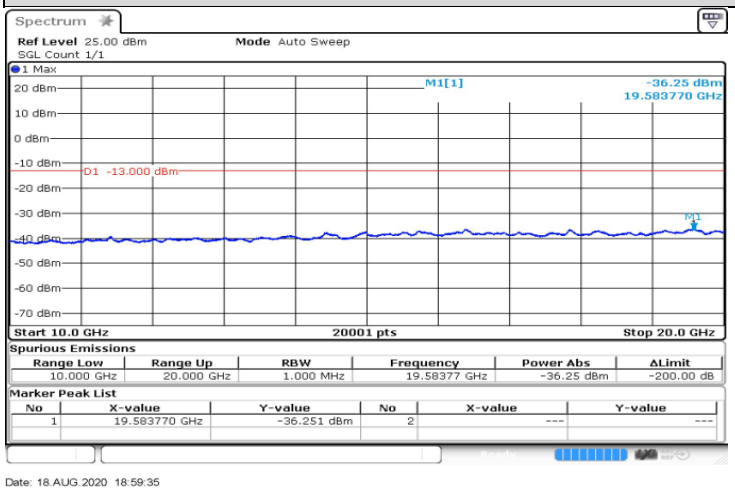


Date: 18.AUG.2020 18:56:16



Date: 18.AUG.2020 18:57:54

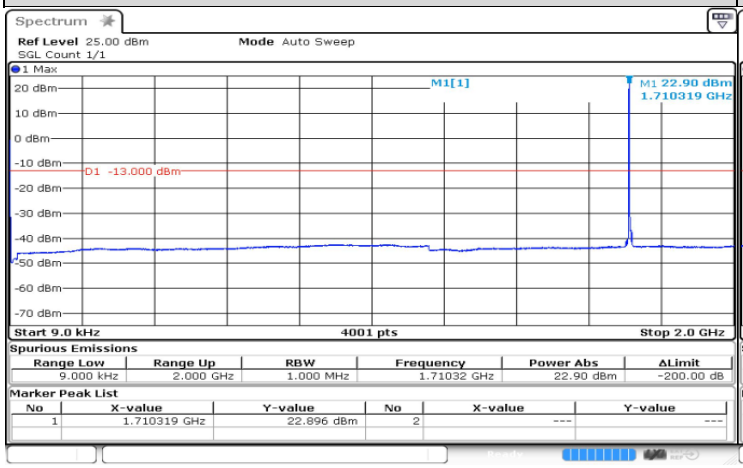
10kHz ~ 20GHz	



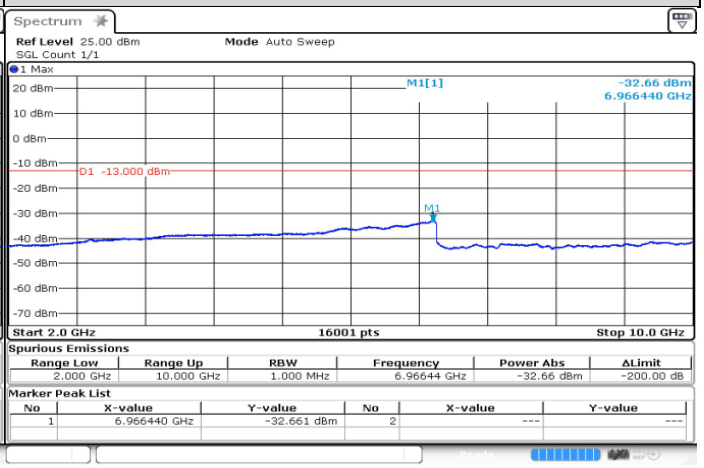
Date: 18.AUG.2020 18:59:35

5MHz

QPSK - Low Freq (1712.5 MHz)	
RB Size =1, RB Offset = 0	
9kHz ~ 2GHz	2GHz ~ 10GHz

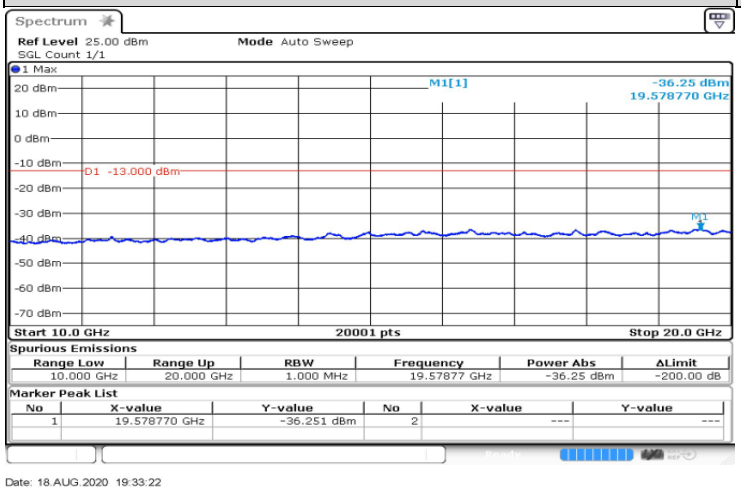


Date: 18.AUG.2020 19:30:06



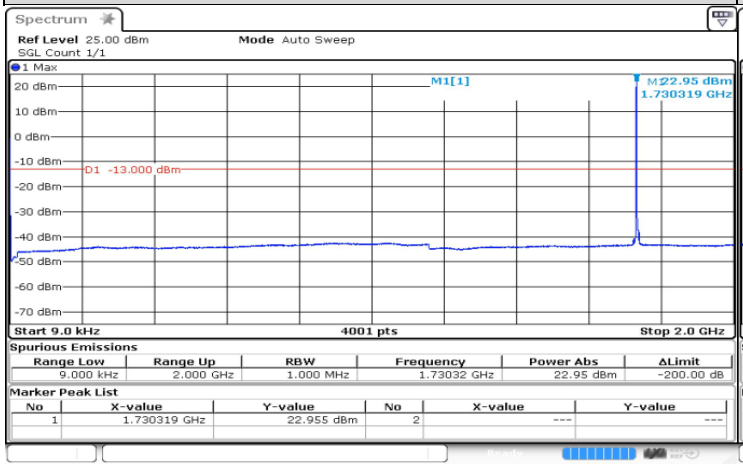
Date: 18.AUG.2020 19:31:40

10kHz ~ 20GHz	

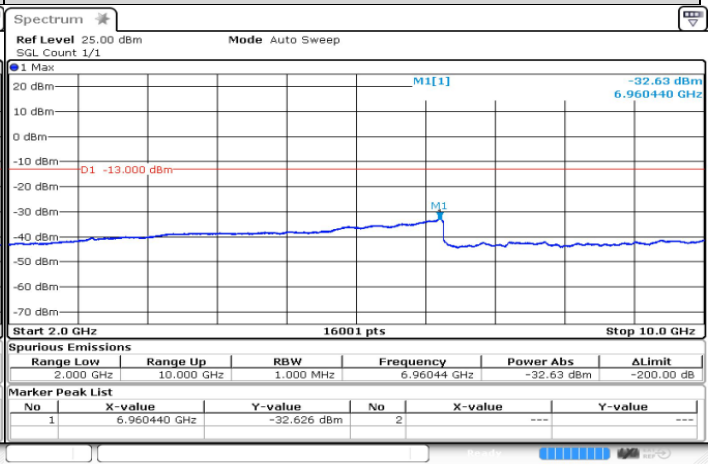


Date: 18.AUG.2020 19:33:22

QPSK - Mid Freq (1732.5 MHz)	
RB Size =1, RB Offset = 0	
9kHz ~ 2GHz	2GHz ~ 10GHz

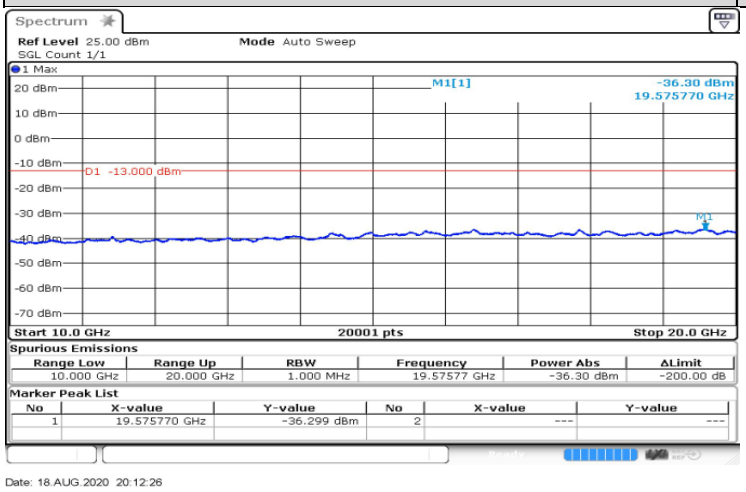


Date: 18.AUG.2020 20:08:34



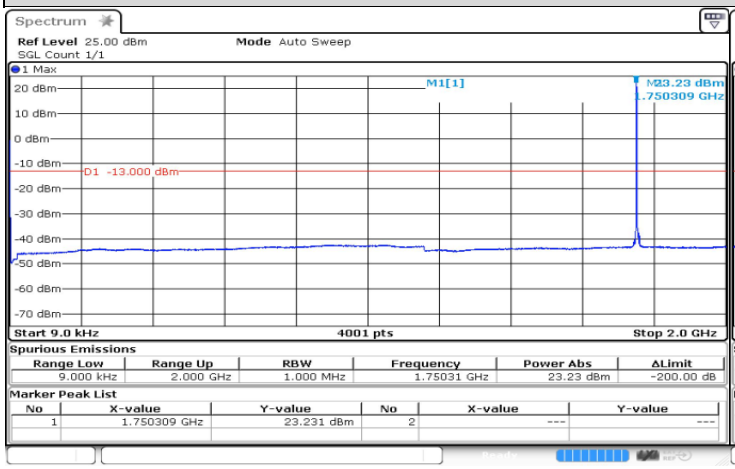
Date: 18.AUG.2020 20:10:45

10kHz ~ 20GHz	

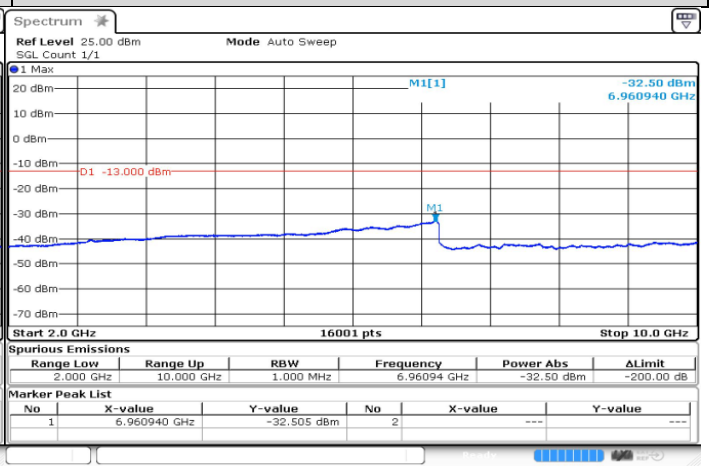


Date: 18.AUG.2020 20:12:26

QPSK - High Freq (1752.5 MHz)	
RB Size =1, RB Offset = 0	
9kHz ~ 2GHz	2GHz ~ 10GHz

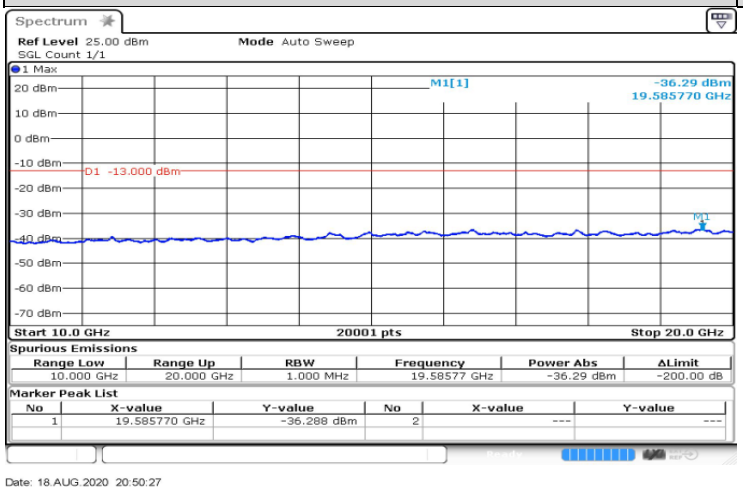


Date: 18.AUG.2020 20:47:07



Date: 18.AUG.2020 20:48:46

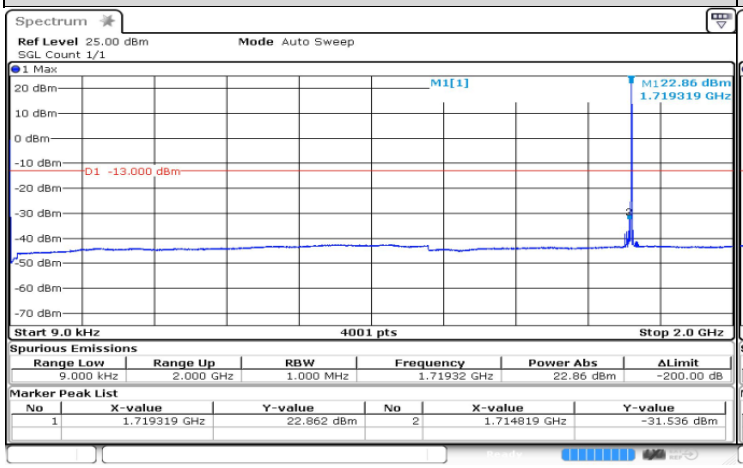
10kHz ~ 20GHz	



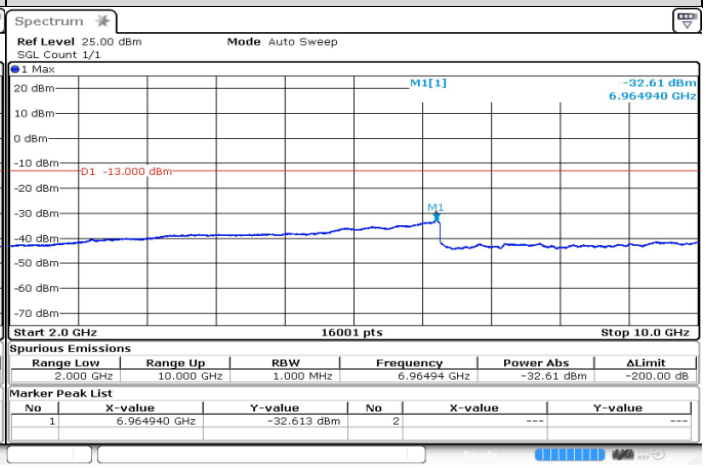
Date: 18.AUG.2020 20:50:27

10MHz

QPSK - Low Freq (1715.0 MHz)	
RB Size =1, RB Offset = 49	
9kHz ~ 2GHz	2GHz ~ 10GHz

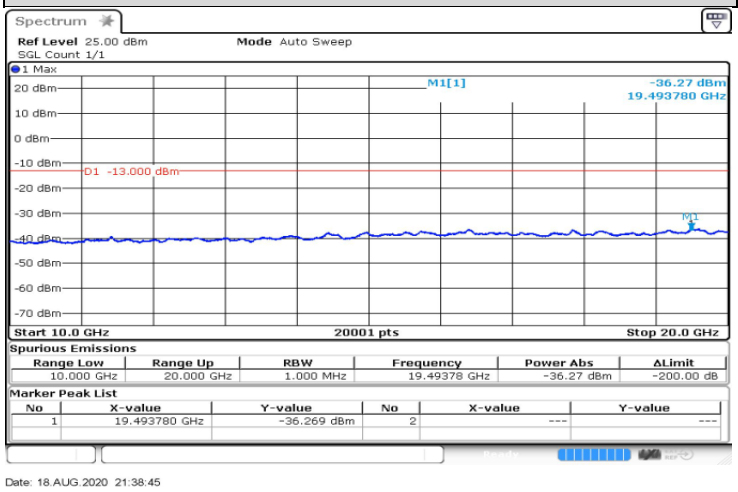


Date: 18.AUG.2020 21:35:29



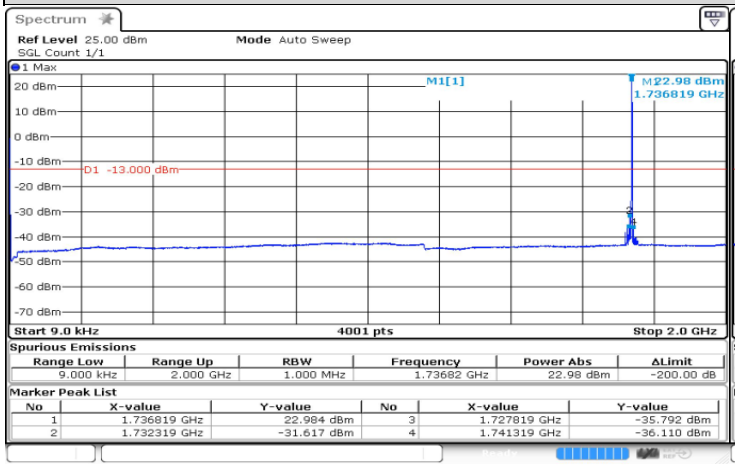
Date: 18.AUG.2020 21:37:04

10kHz ~ 20GHz	

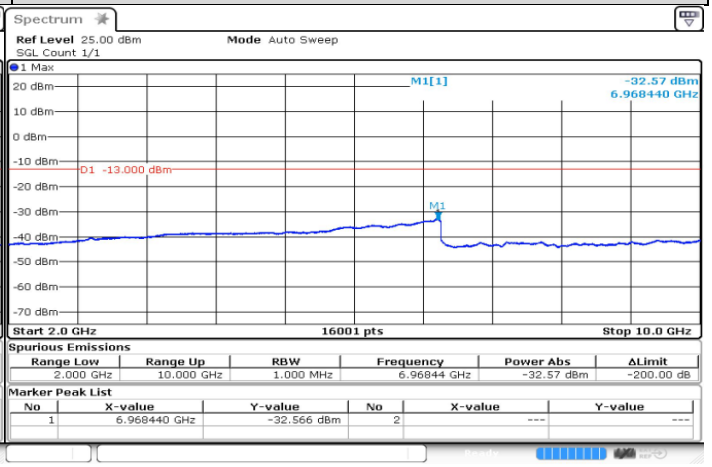


Date: 18.AUG.2020 21:38:45

QPSK - Mid Freq (1732.5 MHz)	
RB Size =1, RB Offset = 49	
9kHz ~ 2GHz	2GHz ~ 10GHz

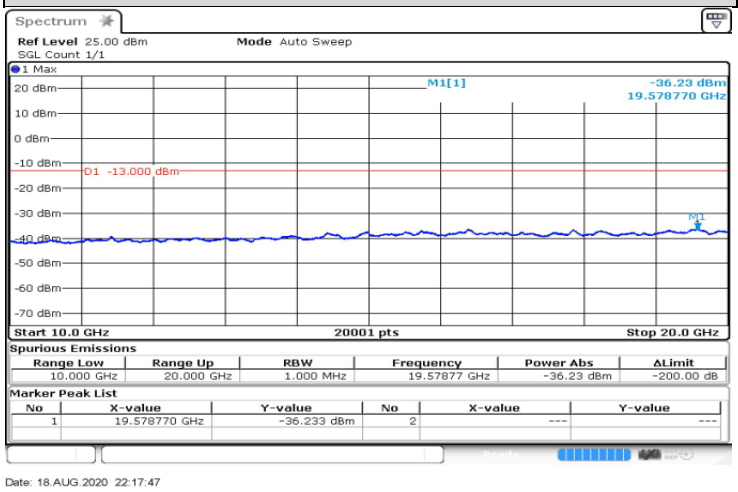


Date: 18.AUG.2020 22:14:31



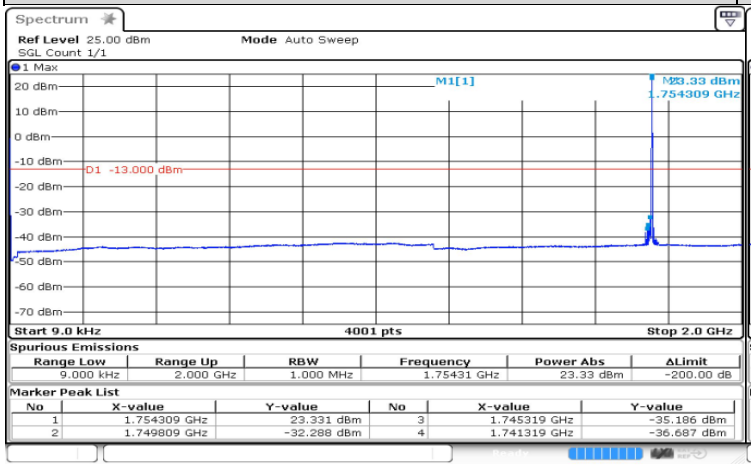
Date: 18.AUG.2020 22:16:09

10kHz ~ 20GHz	

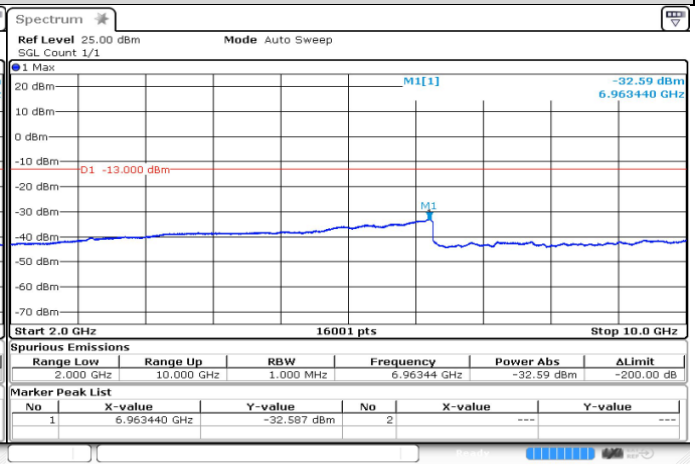


Date: 18.AUG.2020 22:17:47

QPSK - High Freq (1750.0 MHz)	
RB Size =1, RB Offset = 49	
9kHz ~ 2GHz	2GHz ~ 10GHz

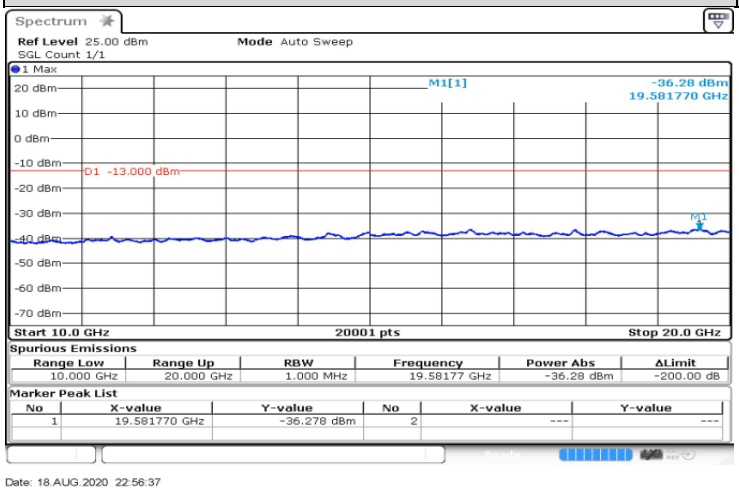


Date: 18.AUG.2020 22:53:17



Date: 18.AUG.2020 22:54:56

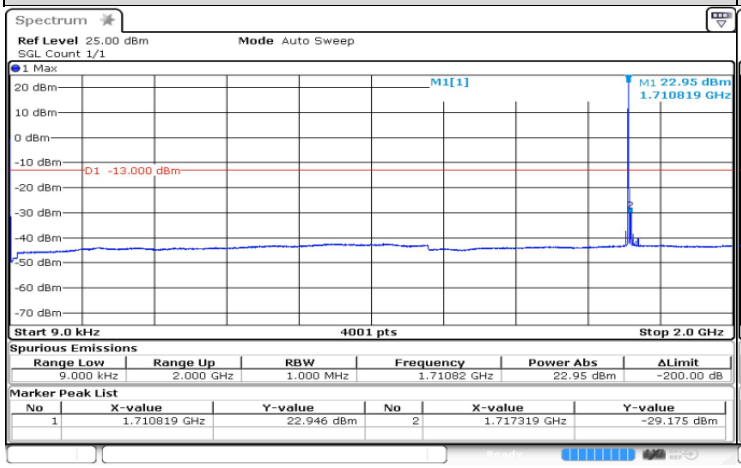
10kHz ~ 20GHz	



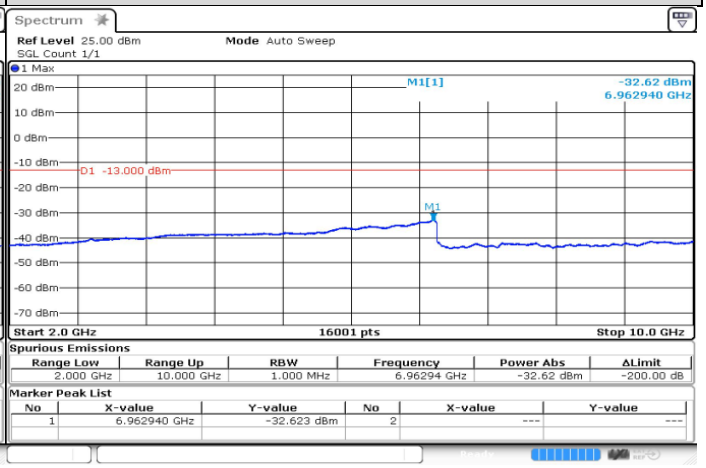
Date: 18.AUG.2020 22:56:37

15MHz

QPSK - Low Freq (1717.5 MHz)	
RB Size =1, RB Offset = 0	
9kHz ~ 2GHz	2GHz ~ 10GHz

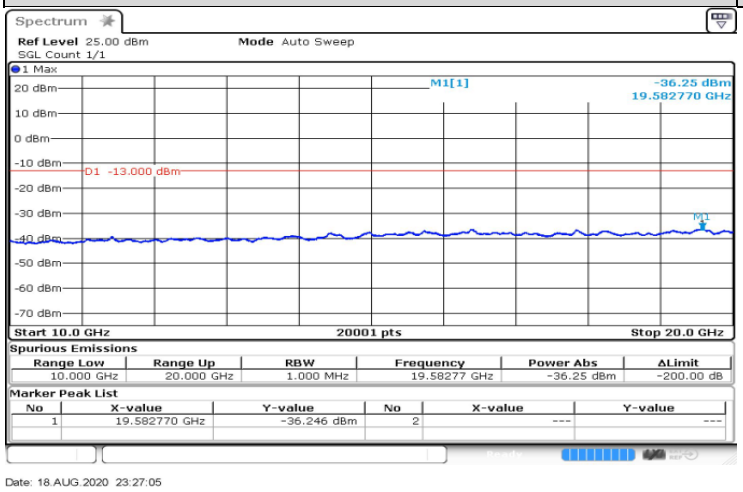


Date: 18.AUG.2020 23:23:52



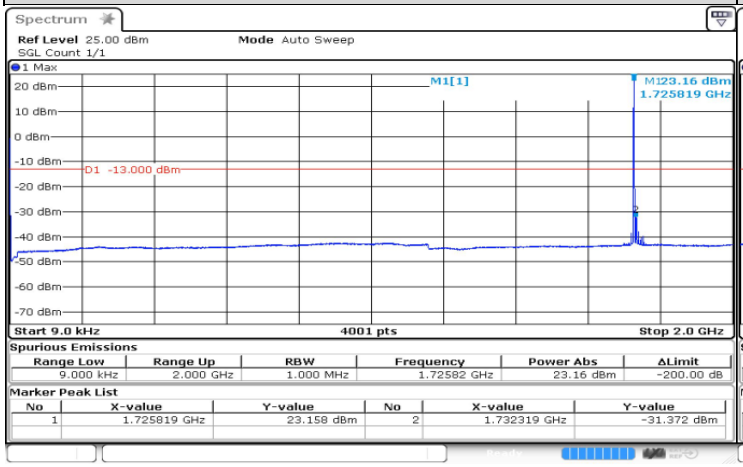
Date: 18.AUG.2020 23:25:29

10kHz ~ 20GHz	

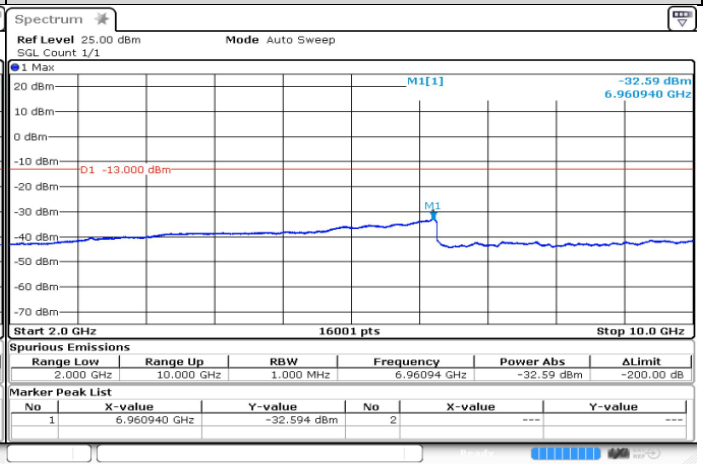


Date: 18.AUG.2020 23:27:05

QPSK - Mid Freq (1732.5 MHz)	
RB Size =1, RB Offset = 0	
9kHz ~ 2GHz	2GHz ~ 10GHz

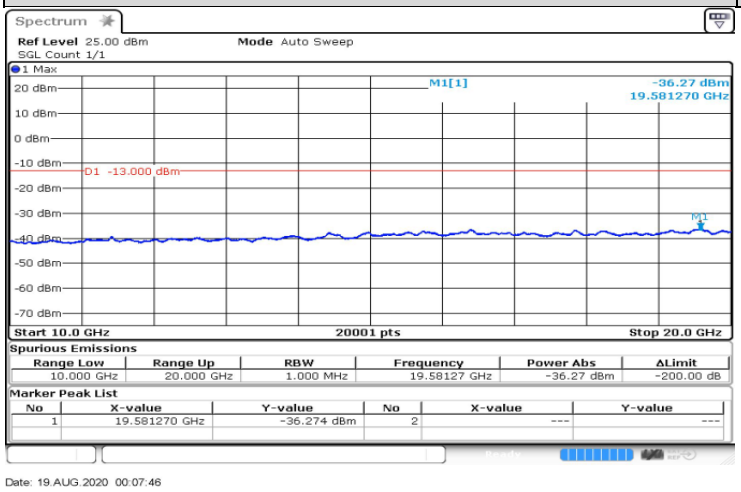


Date: 19.AUG.2020 00:03:24



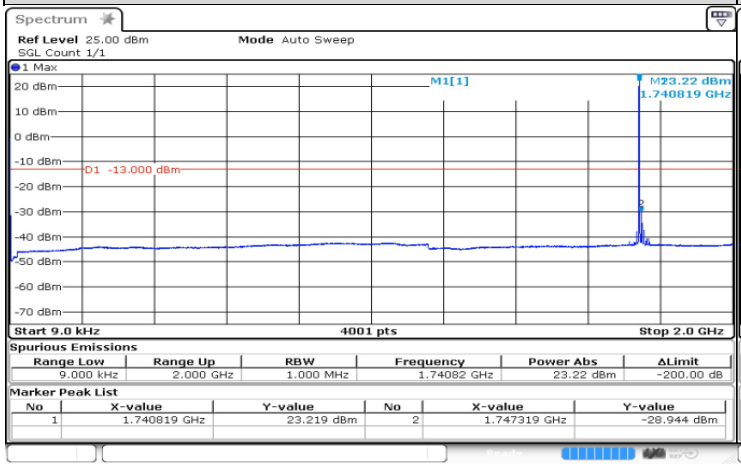
Date: 19.AUG.2020 00:04:58

10kHz ~ 20GHz	

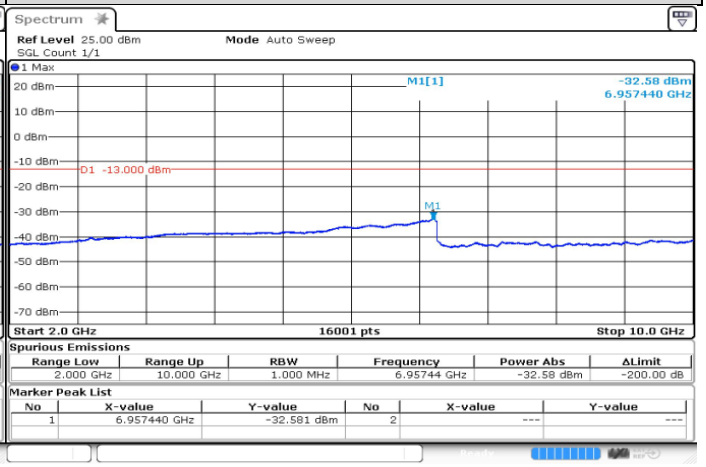


Date: 19.AUG.2020 00:07:46

QPSK - High Freq (1747.5 MHz)	
RB Size =1, RB Offset = 0	
9kHz ~ 2GHz	2GHz ~ 10GHz

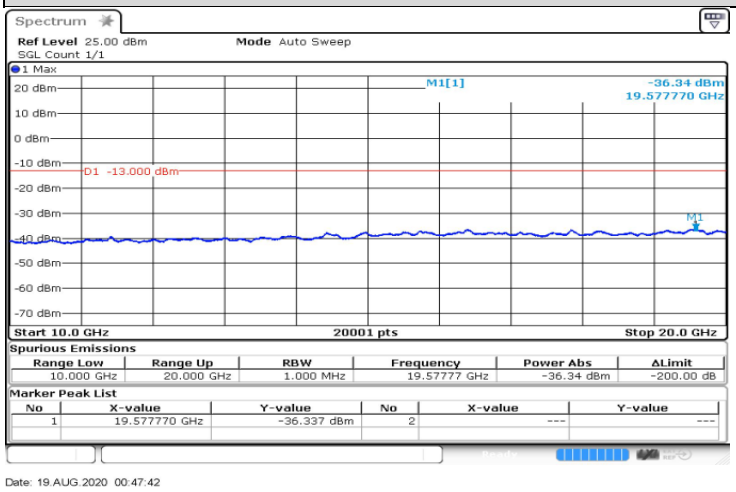


Date: 19.AUG.2020 00:44:28



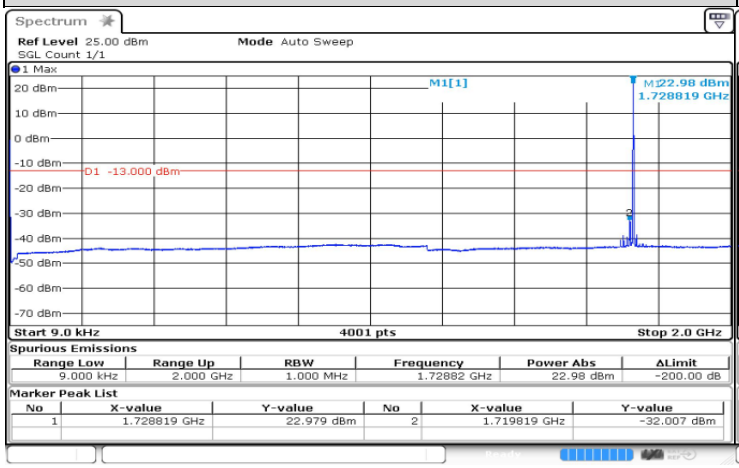
Date: 19.AUG.2020 00:46:03

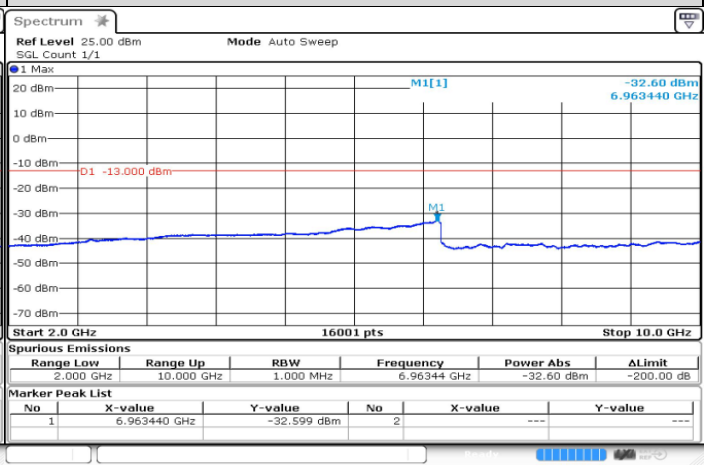
10kHz ~ 20GHz	



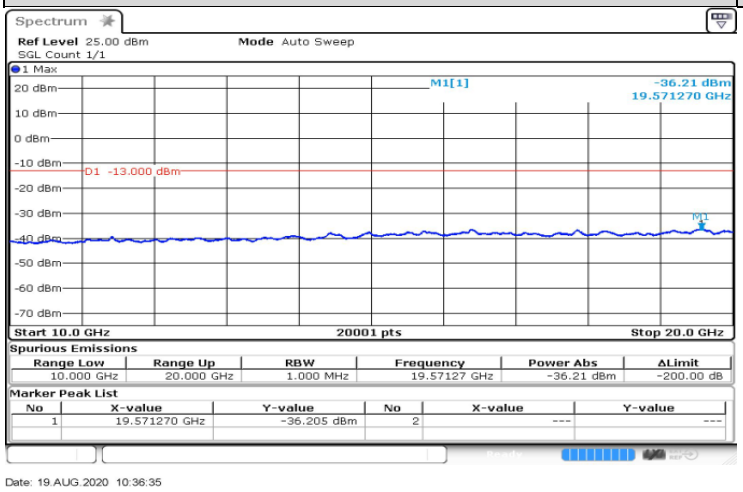
20MHz

QPSK - Low Freq (1720.0 MHz)	
RB Size =1, RB Offset = 99	
9kHz ~ 2GHz	2GHz ~ 10GHz



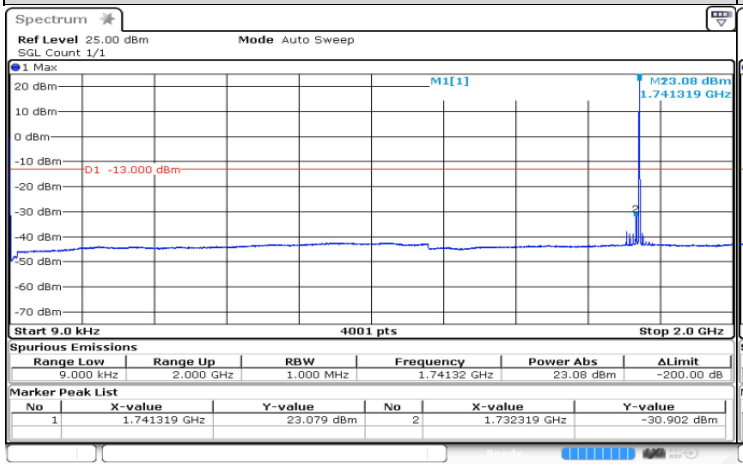


10kHz ~ 20GHz	

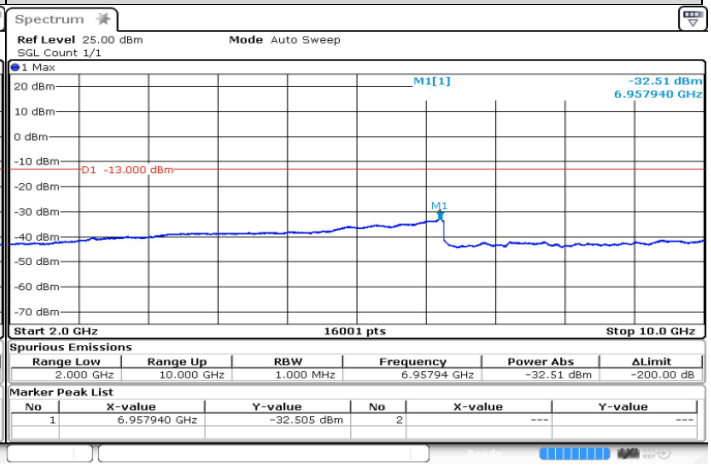


Date: 19.AUG.2020 10:36:35

QPSK - Mid Freq (1732.5 MHz)	
RB Size =1, RB Offset = 99	
9kHz ~ 2GHz	2GHz ~ 10GHz

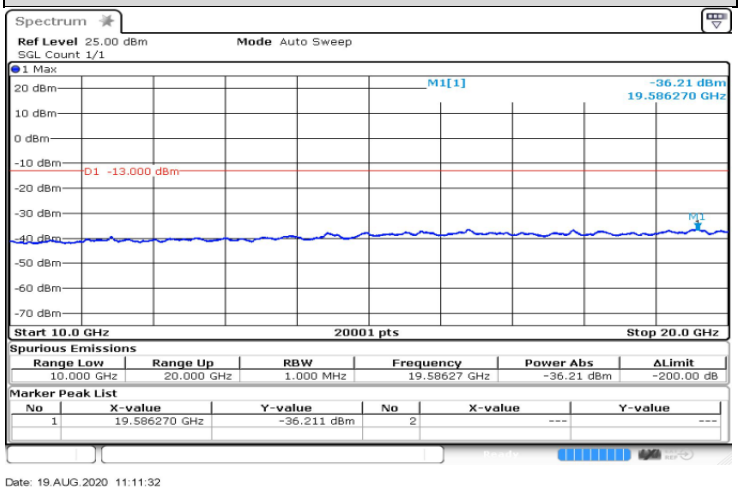


Date: 19.AUG.2020 11:08:31



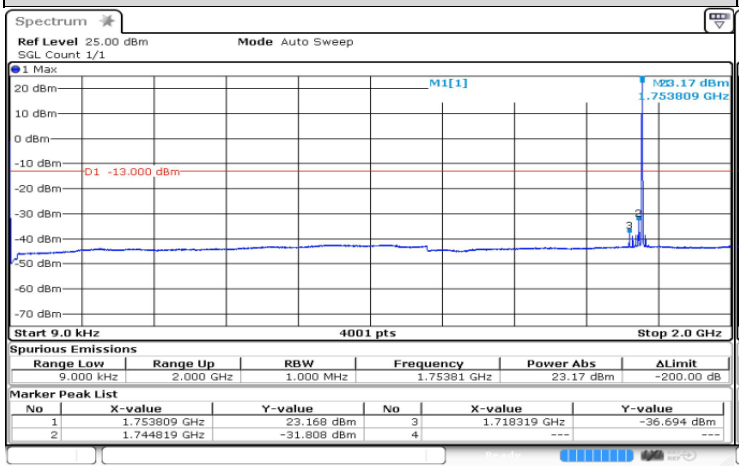
Date: 19.AUG.2020 11:09:59

10kHz ~ 20GHz	

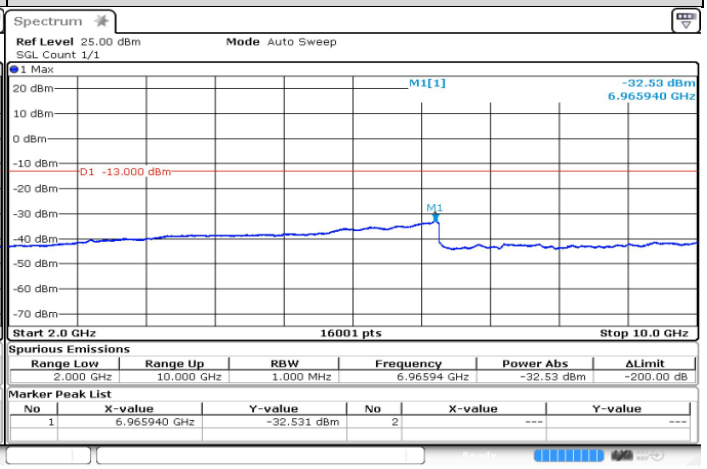


Date: 19.AUG.2020 11:11:32

QPSK - High Freq (17450.0 MHz)	
RB Size =1, RB Offset = 99	
9kHz ~ 2GHz	2GHz ~ 10GHz

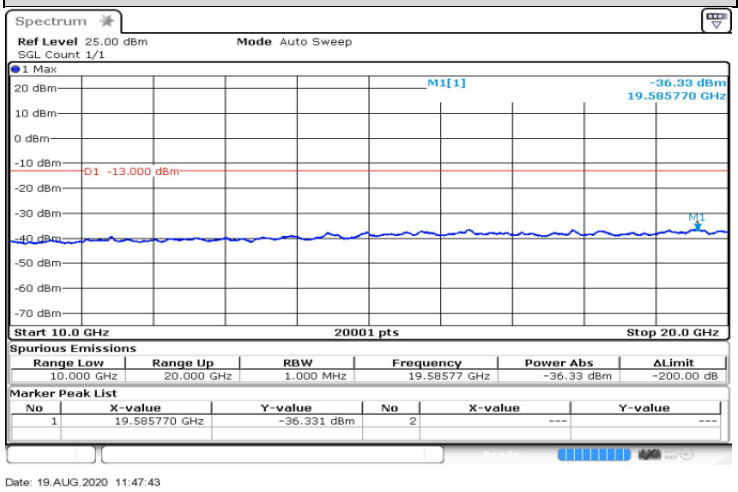


Date: 19.AUG.2020 11:44:28



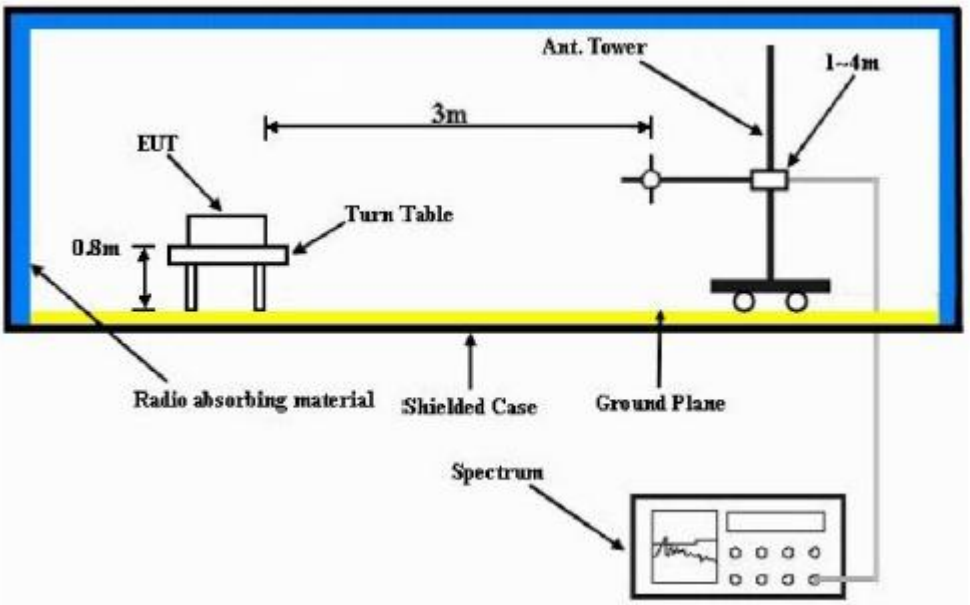
Date: 19.AUG.2020 11:46:04

10kHz ~ 20GHz	


Spectrum
Ref Level 25.00 dBm
Mode Auto Sweep
SGL Count 1/1
1 Max
M1[1]
-36.33 dBm
19.585770 GHz
20 dBm
10 dBm
0 dBm
-10 dBm
D1 -13.000 dBm
-20 dBm
-30 dBm
M1
-40 dBm
-50 dBm
-60 dBm
-70 dBm
Start 10.0 GHz
20001 pts
Stop 20.0 GHz
Spurious Emissions
Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit
10.000 GHz | 20.000 GHz | 1.000 MHz | 19.58577 GHz | -36.33 dBm | -200.00 dB
Marker Peak List
No | X-value | Y-value | No | X-value | Y-value
1 | 19.585770 GHz | -36.331 dBm | 2 | --- | ---
Date: 19.AUG.2020 11:47:43

1.12. Radiated Spurious Emission

1.12.1. Test Setup



1) The spectrum setting for scanning Radiated Emission below 1 GHz is RBW = 100 kHz, VBW = 300 kHz and above 1 GHz is RBW = 1MHz, VBW = 3MHz. Detector mode is positive peak.
2) In the semi-anechoic chamber, setup as illustrated above the EUT placed on the Turn Table at 0.8m height for below 1Ghz measurement and at 1.5m height for above 1GHz measurement, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
3) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
4) Final Radiated Spurious Emission = “Read Value” + Measured substitution value.

1.12.2. Test Limit

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

1.12.3. Radiated Spurious Emission – LTE Band 4 (1710-1755MHz)

SAC Transmitter Radiated Emission:

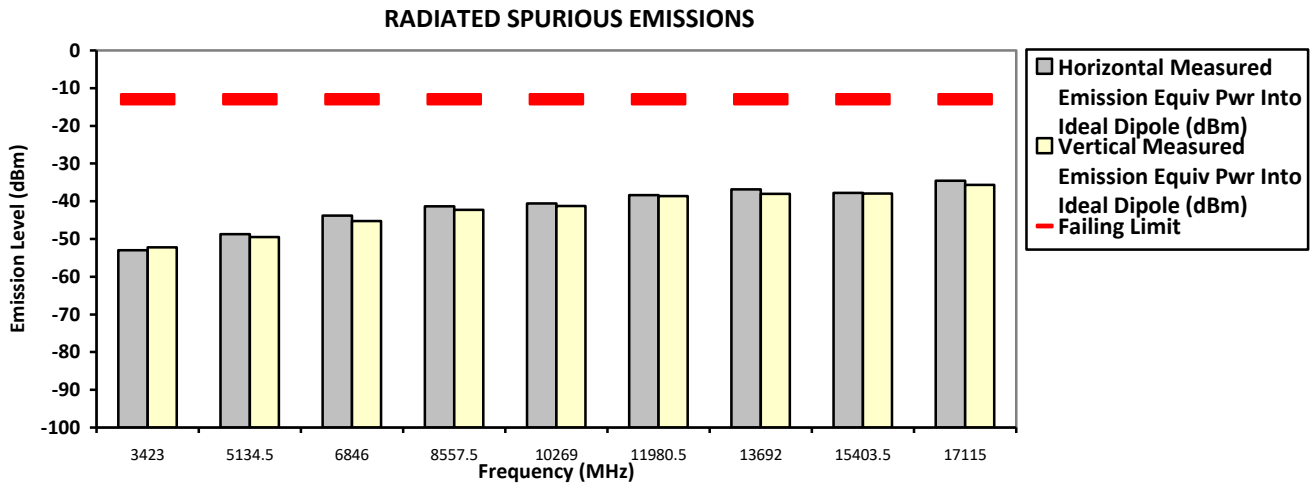
Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00049**

Battery Part No: PMNN4804A **Accy Part No: AN000348A01**

Test Mode: TX LTE (Band 4) X-Plane

1711.500000 MHz (Low) **Bandwidth 3MHz** **0.317 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
3423.0000	-13.0000	-52.9521 **	-52.2080 **
5134.5000	-13.0000	-48.7329 **	-49.4494 **
6846.0000	-13.0000	-43.8048 **	-45.2164 **
8557.5000	-13.0000	-41.3704 **	-42.2367 **
10269.0000	-13.0000	-40.5547 **	-41.2691 **
11980.5000	-13.0000	-38.3521 **	-38.6389 **
13692.0000	-13.0000	-36.8233 **	-37.9960 **
15403.5000	-13.0000	-37.7796 **	-37.9347 **
17115.0000	-13.0000	-34.5756 **	-35.6806 **



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Fendi **Wed, Aug 26, 2020**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 23.5 Hum(%RH): 69.5

System MU: 4.03 dB

Remarks: Passed Results | **Marginal Results** | **Failed Results**

SAC Transmitter Radiated Emission:

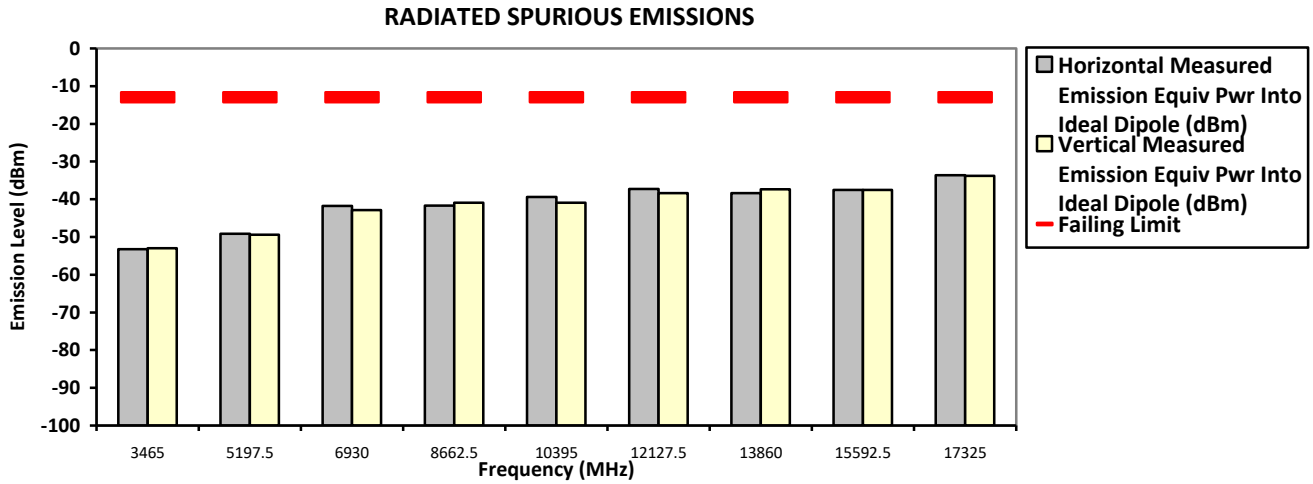
Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00049**

Battery Part No: PMNN4804A **Accy Part No: AN000348A01**

Test Mode: TX LTE (Band 4) X-Plane

1732.500000 MHz (Mid) **Bandwidth 15MHz** **0.317 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
3465.0000	-13.0000	-53.2638 **	-52.9887 **
5197.5000	-13.0000	-49.1542 **	-49.4041 **
6930.0000	-13.0000	-41.7308 **	-42.8991 **
8662.5000	-13.0000	-41.7185 **	-40.8865 **
10395.0000	-13.0000	-39.3698 **	-40.8889 **
12127.5000	-13.0000	-37.2368 **	-38.3517 **
13860.0000	-13.0000	-38.3929 **	-37.3294 **
15592.5000	-13.0000	-37.5452 **	-37.4978 **
17325.0000	-13.0000	-33.6307 **	-33.8238 **



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Fendi **Wed, Aug 26, 2020**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 23.5 Hum(%RH): 69.5

System MU: 4.03 dB

Remarks:

Passed Results	**Marginal Results**	**Failed Results**

SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00049**

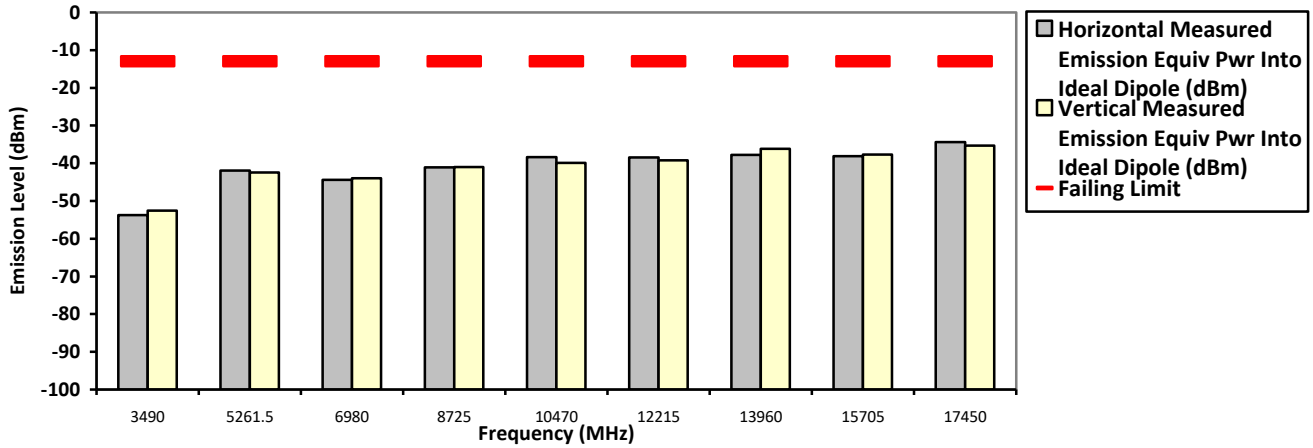
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**

Test Mode: TX LTE (Band 4) X-Plane

1745.000000 MHz (High) **Bandwidth 20MHz** **0.317 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
3490.0000	-13.0000	-53.7163 **	-52.5257 **
5261.5000	-13.0000	-41.9300 *	-42.4700 *
6980.0000	-13.0000	-44.4009 **	-43.9520 **
8725.0000	-13.0000	-41.0779 **	-40.9677 **
10470.0000	-13.0000	-38.3387 **	-39.8960 **
12215.0000	-13.0000	-38.4908 **	-39.2233 **
13960.0000	-13.0000	-37.8072 **	-36.1244 **
15705.0000	-13.0000	-38.1064 **	-37.6667 **
17450.0000	-13.0000	-34.3510 **	-35.3048 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Fendi **Wed, Aug 26, 2020**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 23.5 Hum(%RH): 69.5

System MU: 4.03 dB

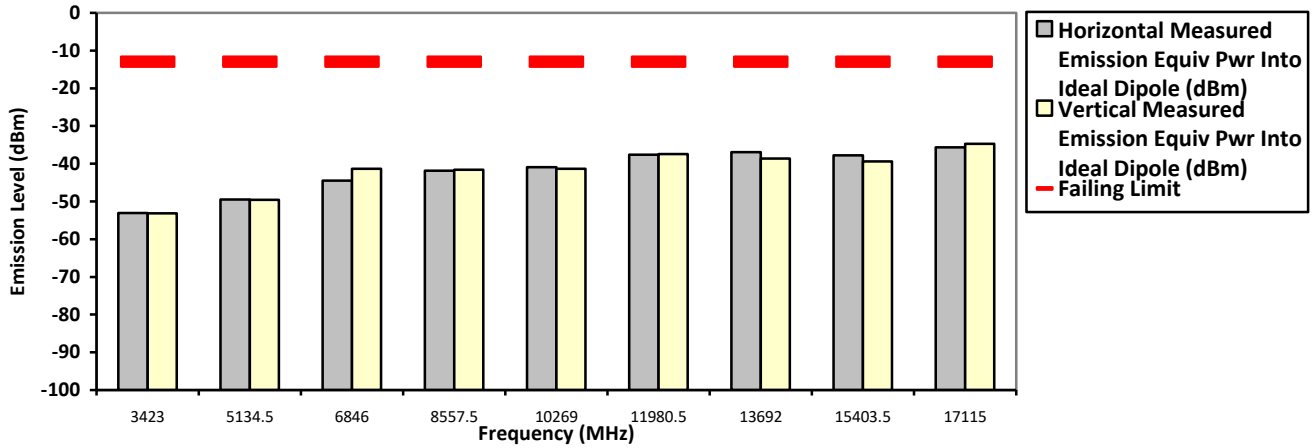
Remarks:

Passed Results	Marginal Results	Failed Results

Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00049**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 4) Y-Plane
1711.500000 MHz (Low) **Bandwidth 3MHz** **0.317 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
3423.0000	-13.0000	-53.0616 **	-53.1165 **
5134.5000	-13.0000	-49.5285 **	-49.5746 **
6846.0000	-13.0000	-44.4813 **	-41.3767 **
8557.5000	-13.0000	-41.8676 **	-41.6353 **
10269.0000	-13.0000	-40.9423 **	-41.3125 **
11980.5000	-13.0000	-37.5663 **	-37.4548 **
13692.0000	-13.0000	-36.9109 **	-38.5825 **
15403.5000	-13.0000	-37.8159 **	-39.4016 **
17115.0000	-13.0000	-35.6368 **	-34.6833 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.
Motorola Penang EMC Lab - Test Performed by: Nazrin&Fendi **Wed, Aug 26, 2020**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**
Temp(Deg): 23.5 Hum(%RH): 69.5

System MU: 4.03 dB

Remarks: Passed Results | **Marginal Results** | **Failed Results**

SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00049**

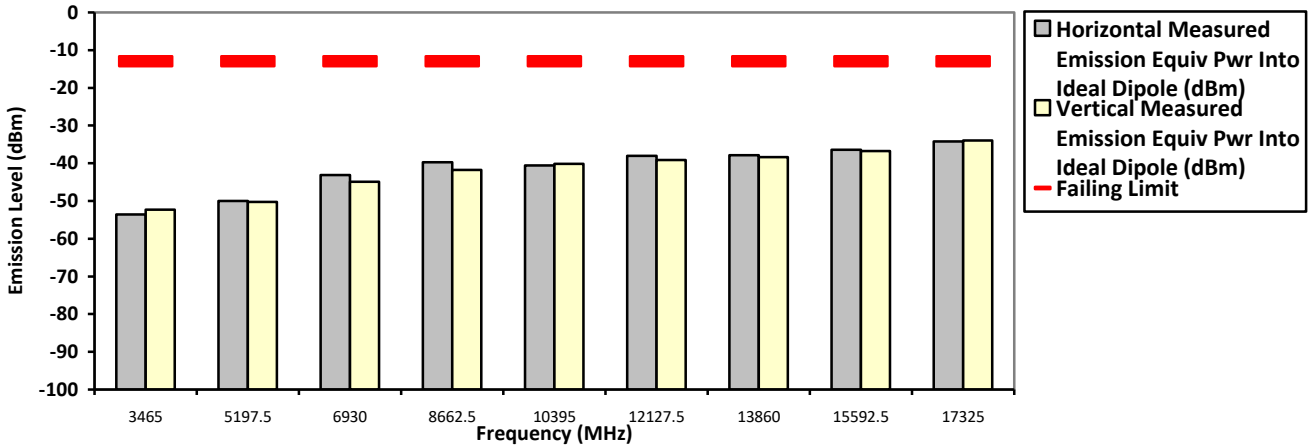
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**

Test Mode: TX LTE (Band 4) Y-Plane

1732.500000 MHz (Mid) **Bandwidth 15MHz** **0.317 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
3465.0000	-13.0000	-53.6017 **	-52.3032 **
5197.5000	-13.0000	-49.9589 **	-50.2187 **
6930.0000	-13.0000	-43.1441 **	-44.9265 **
8662.5000	-13.0000	-39.6942 **	-41.7977 **
10395.0000	-13.0000	-40.5735 **	-40.1707 **
12127.5000	-13.0000	-38.0622 **	-39.1291 **
13860.0000	-13.0000	-37.8746 **	-38.3778 **
15592.5000	-13.0000	-36.3806 **	-36.7479 **
17325.0000	-13.0000	-34.2269 **	-33.9254 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the ANSI C63.26-2015 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Fendi **Wed, Aug 26, 2020**

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.

***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported**

Temp(Deg): 23.5 Hum(%RH): 69.5

System MU: 4.03 dB

Remarks:

Passed Results	**Marginal Results**	**Failed Results**