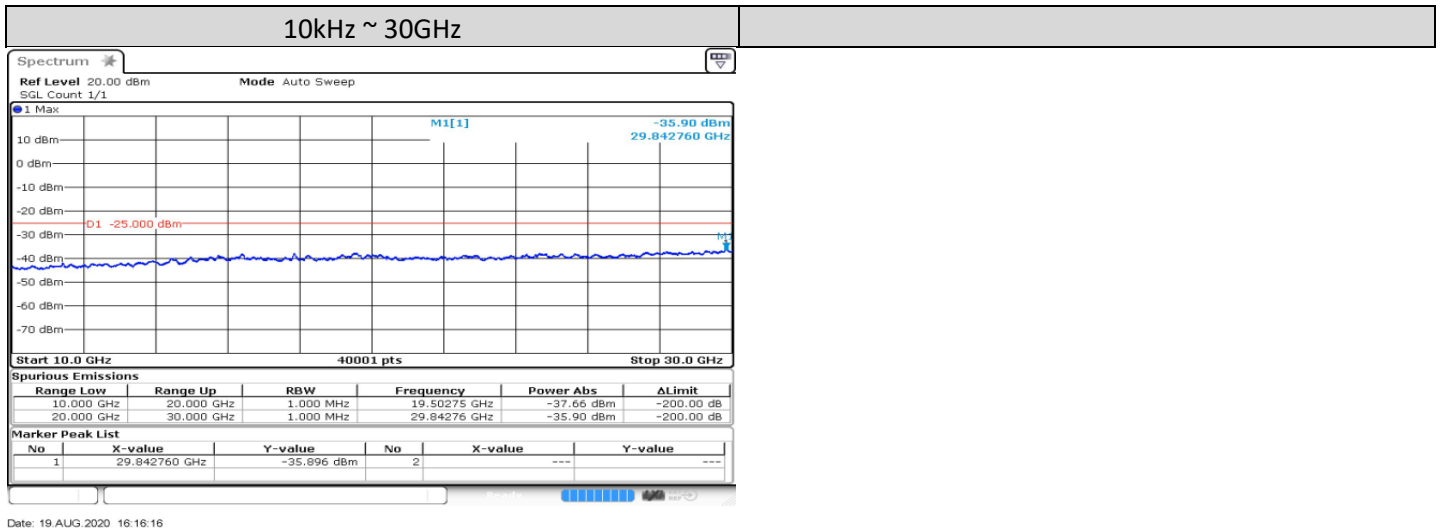
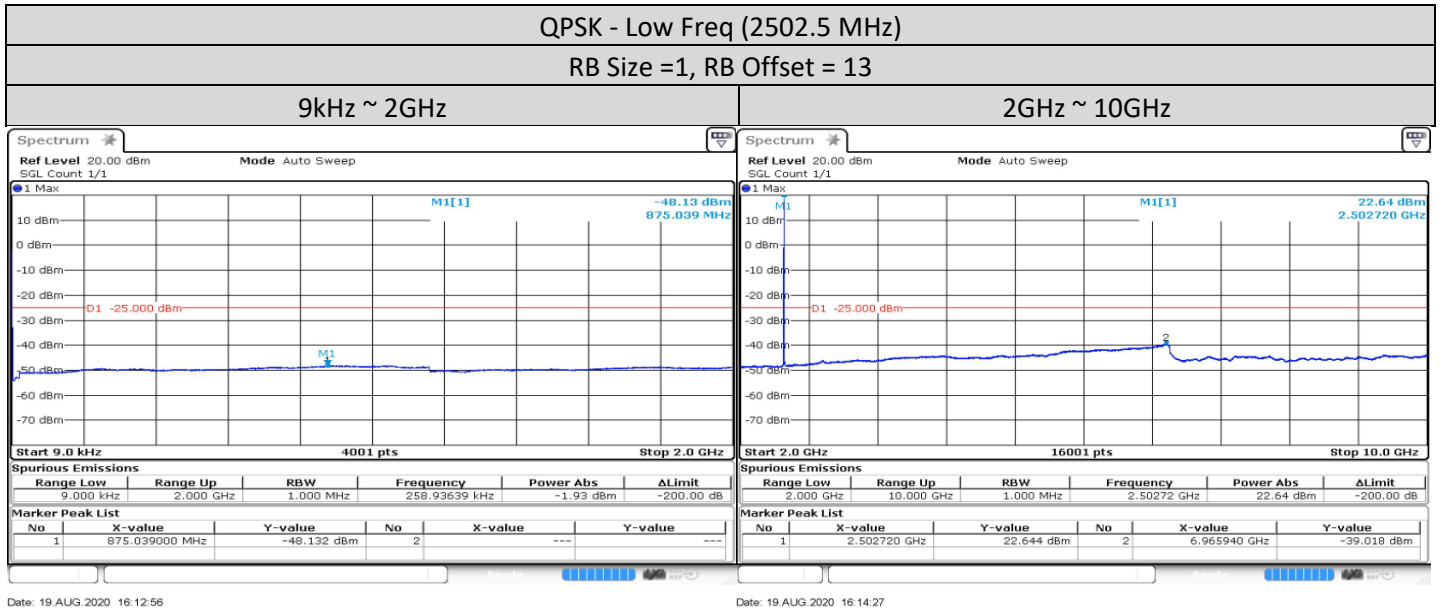


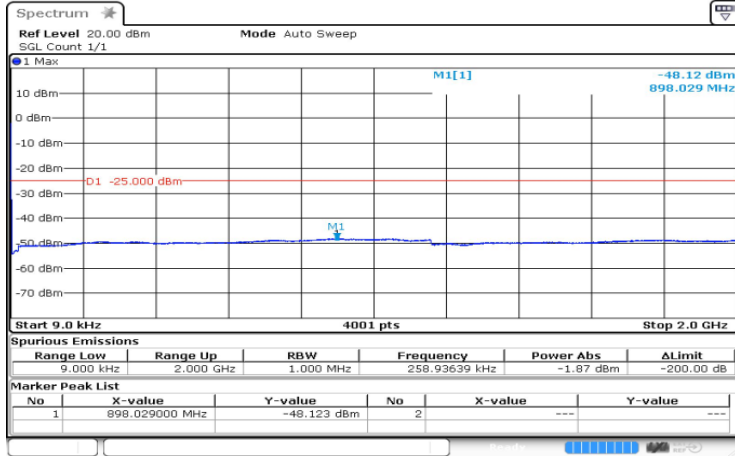
1.11.3. Conducted Spurious Emissions – LTE Band 7 (2500-2570MHz)

5MHz



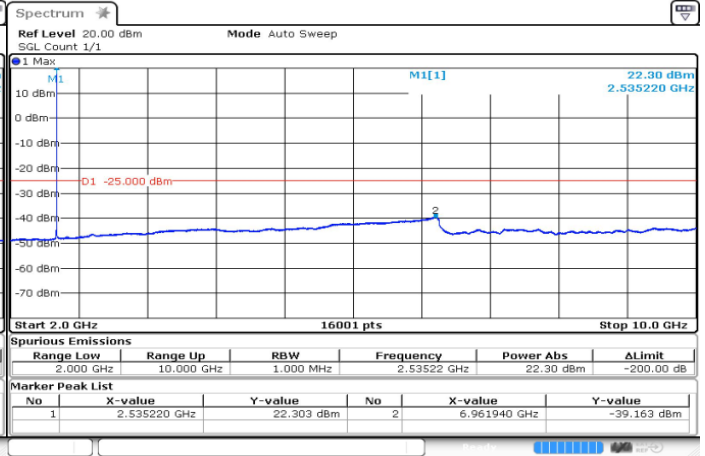
QPSK - Mid Freq (2535 MHz)
RB Size =1, RB Offset = 13

9kHz ~ 2GHz



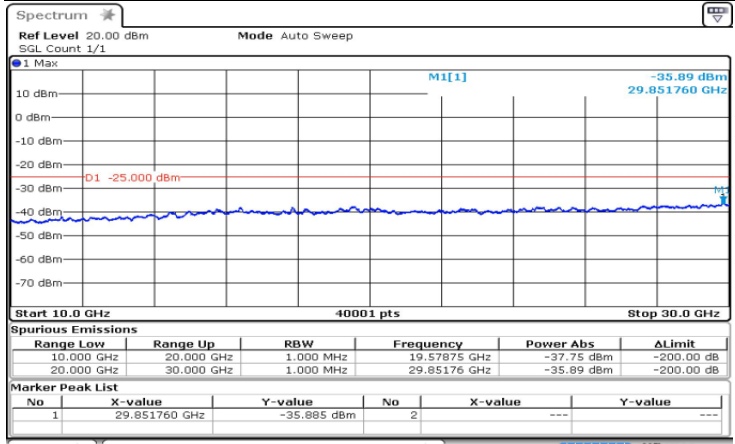
Date: 19.AUG.2020 16:49:48

2GHz ~ 10GHz



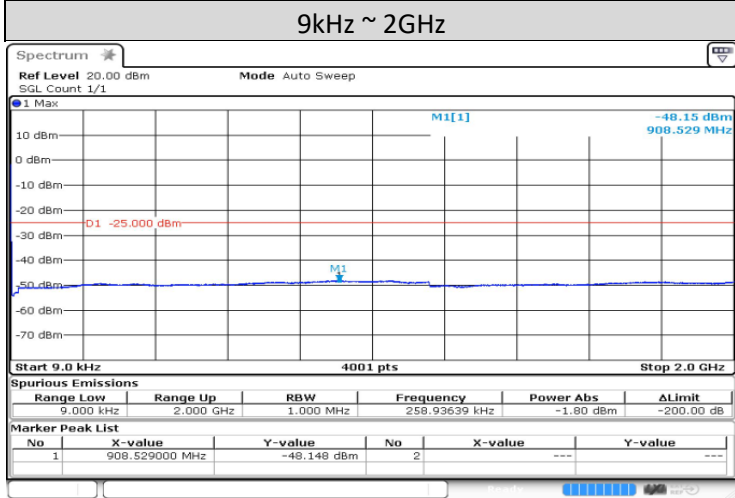
Date: 19.AUG.2020 16:51:17

10kHz ~ 30GHz

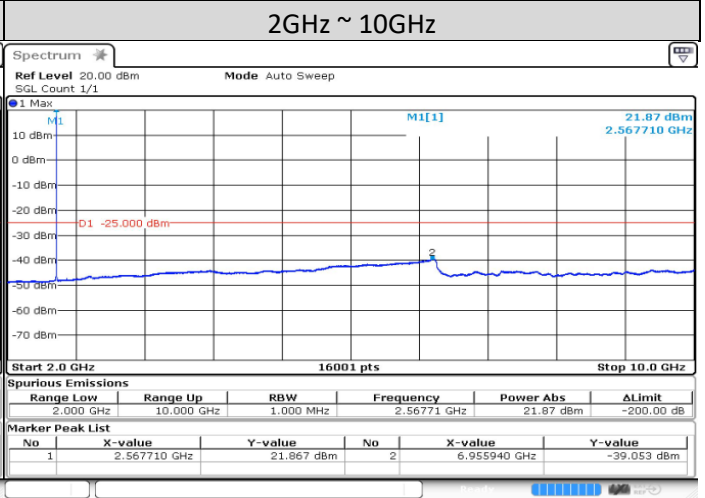


Date: 19.AUG.2020 16:53:10

QPSK - High Freq (2567.5 MHz)
RB Size =1, RB Offset = 13

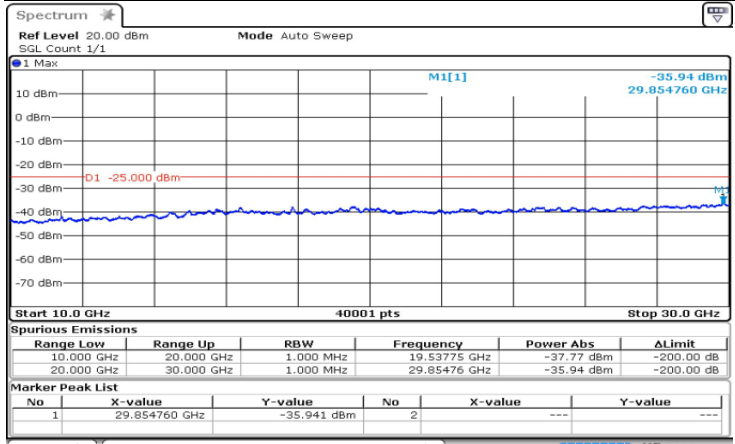


Date: 19.AUG.2020 17:26:58



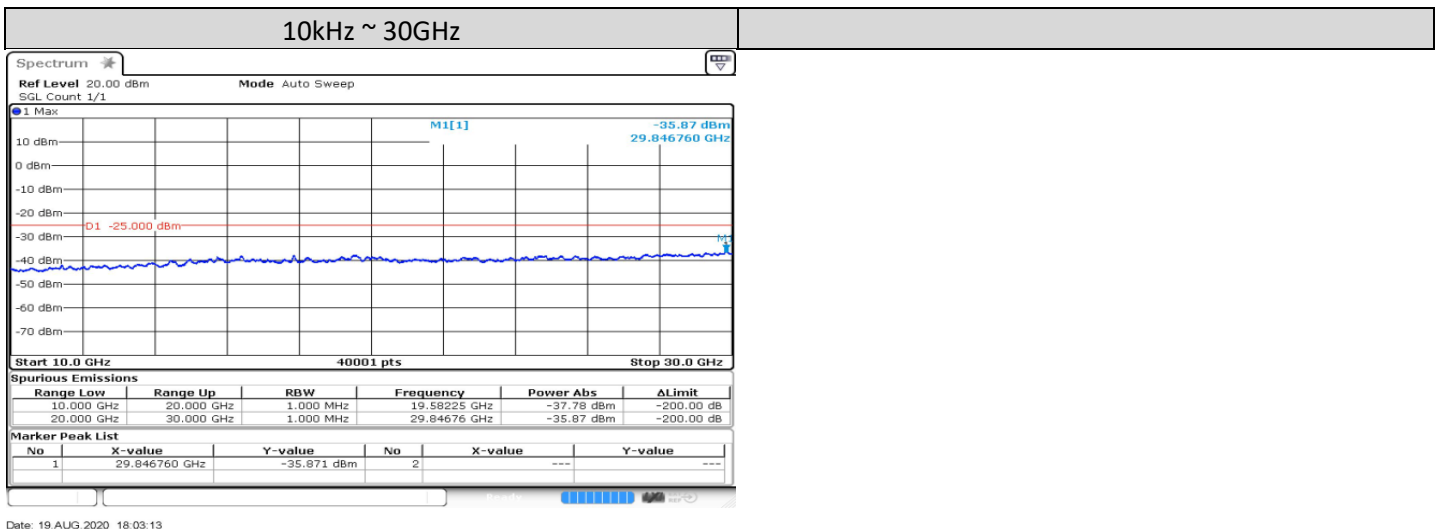
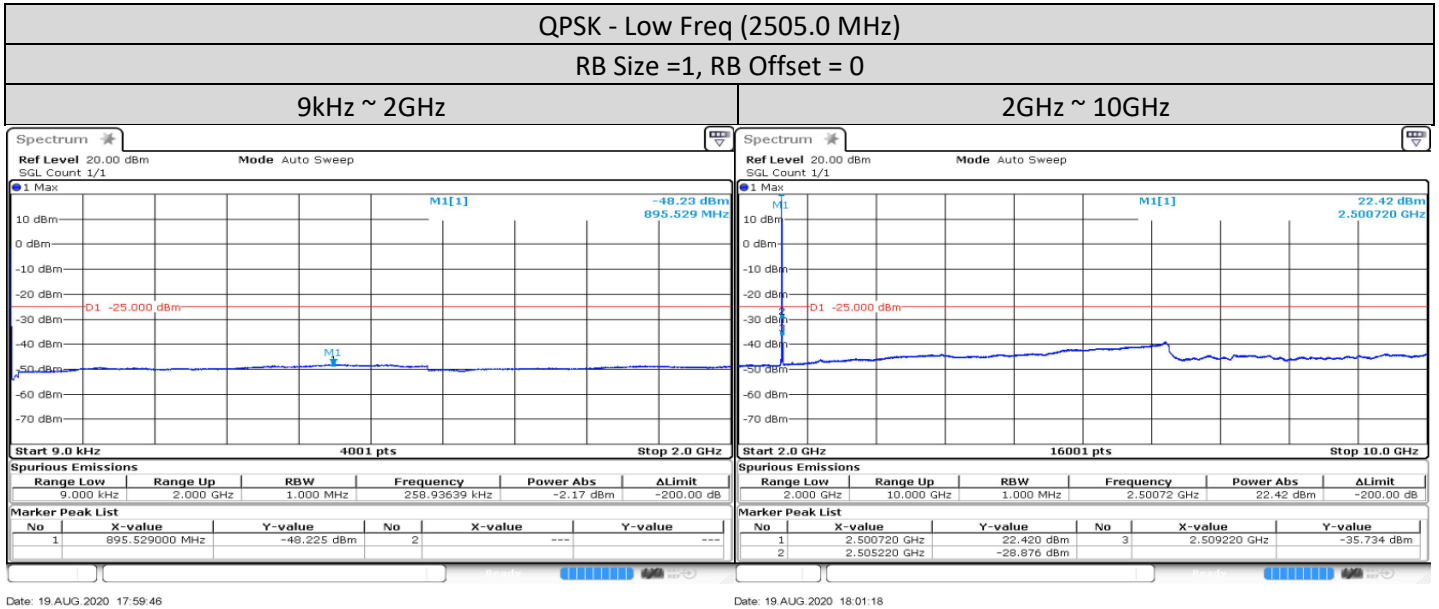
Date: 19.AUG.2020 17:28:30

10kHz ~ 30GHz



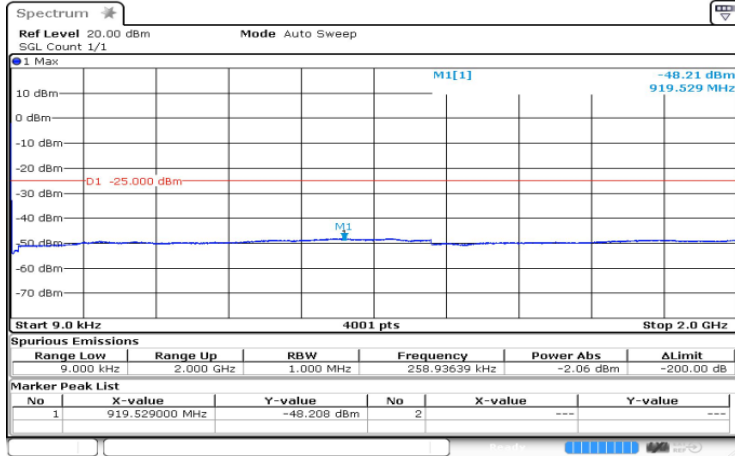
Date: 19.AUG.2020 17:30:25

10MHz



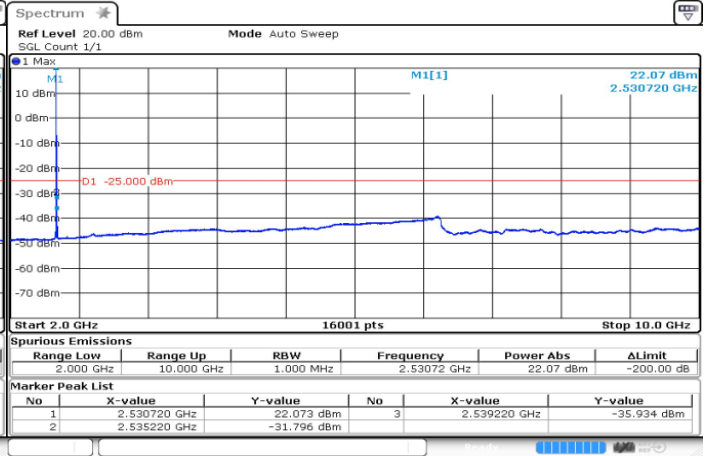
QPSK - Mid Freq (2535 MHz)
RB Size =1, RB Offset = 0

9kHz ~ 2GHz



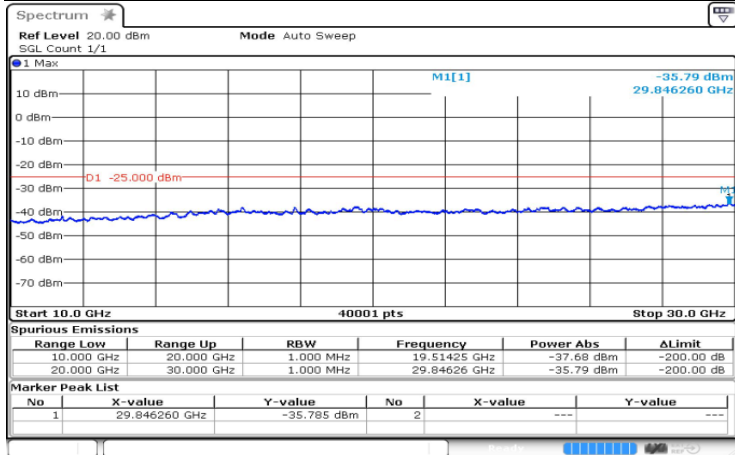
Date: 19.AUG.2020 18:37:17

2GHz ~ 10GHz



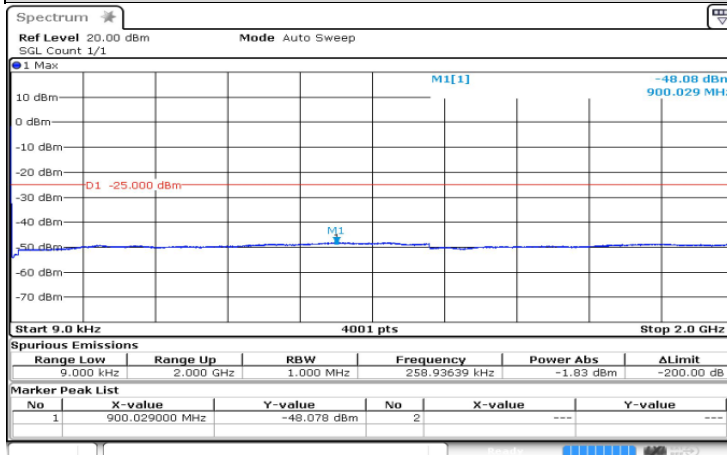
Date: 19.AUG.2020 18:38:49

10kHz ~ 30GHz

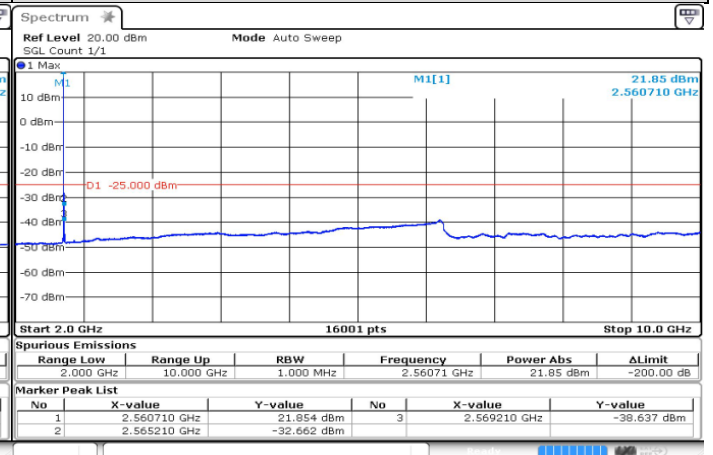


Date: 19.AUG.2020 18:40:47

QPSK - High Freq (2565.0 MHz)
RB Size =1, RB Offset = 0

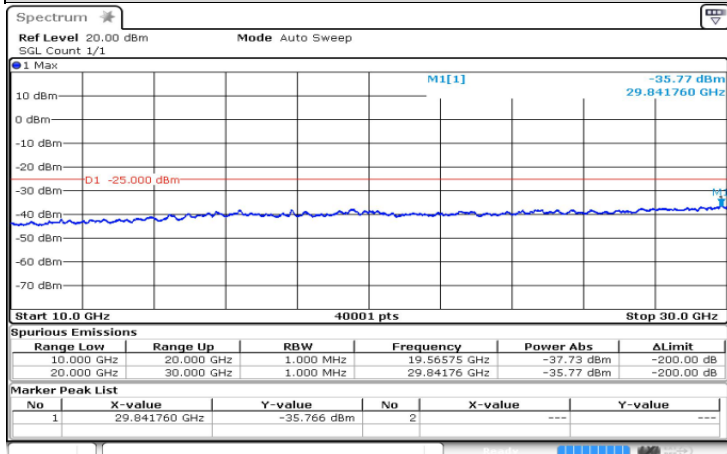


Date: 19.AUG.2020 19:14:37



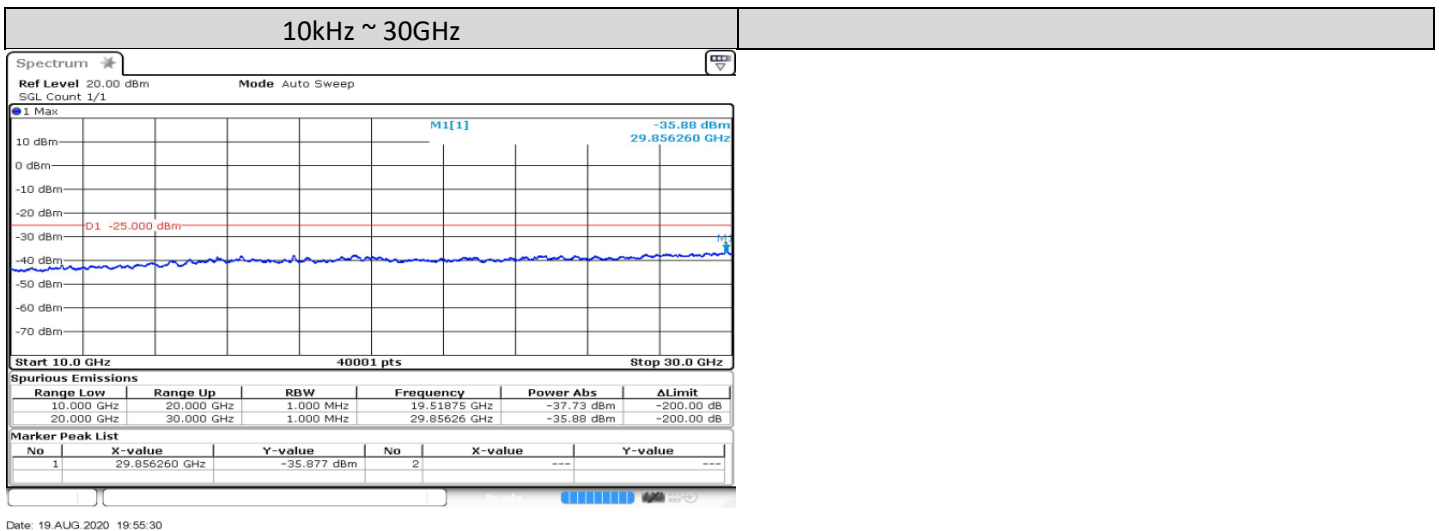
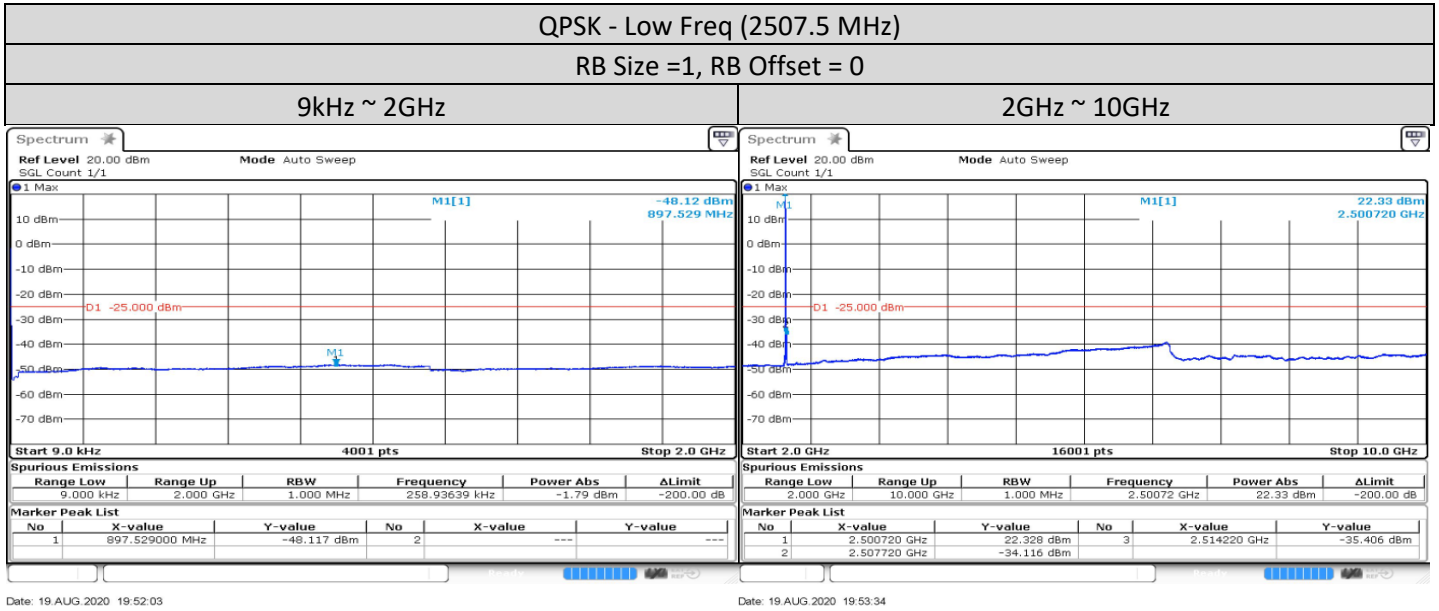
Date: 19.AUG.2020 19:16:06

10kHz ~ 30GHz

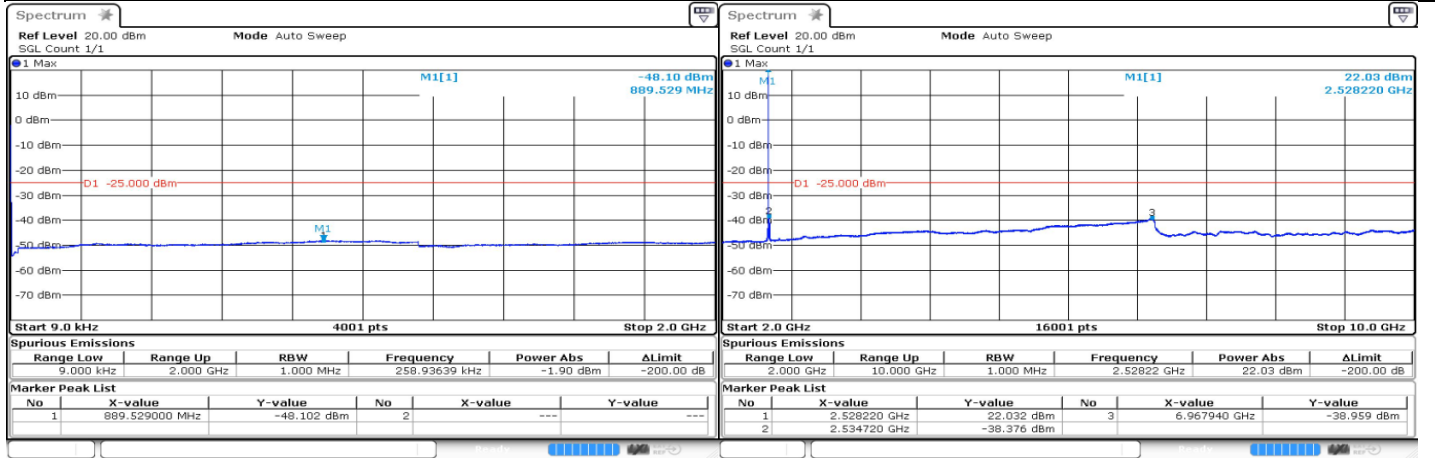


Date: 19.AUG.2020 19:18:02

15MHz



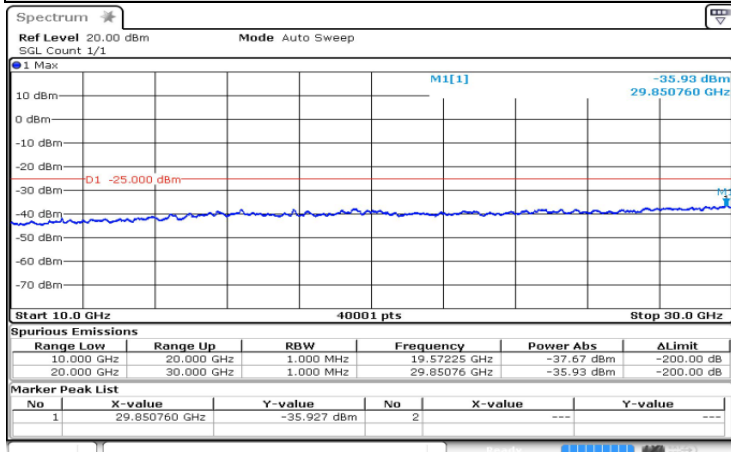
QPSK - Mid Freq (2535 MHz)
RB Size =1, RB Offset = 0



Date: 19.AUG.2020 20:30:00

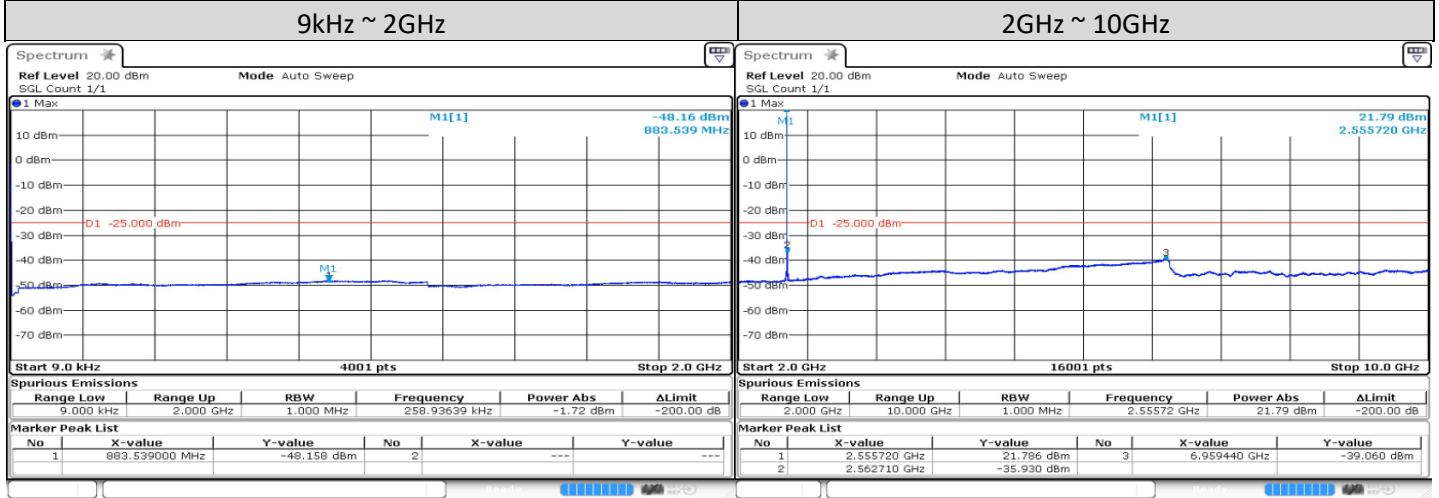
Date: 19.AUG.2020 20:31:33

10kHz ~ 30GHz



Date: 19.AUG.2020 20:33:31

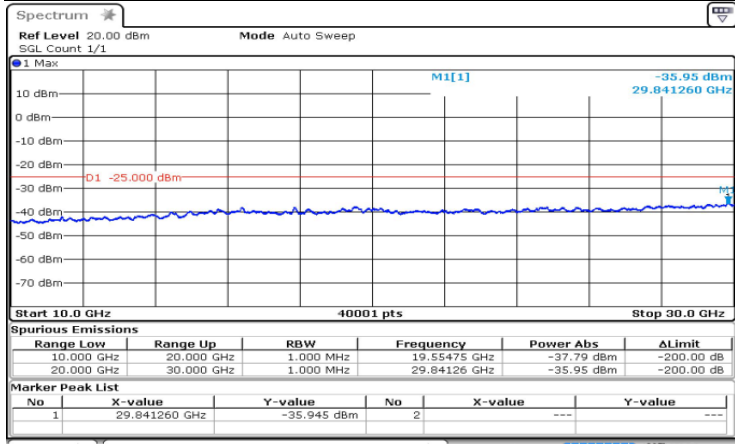
QPSK - High Freq (2562.5 MHz)
RB Size =1, RB Offset = 0



Date: 19.AUG.2020 21:07:56

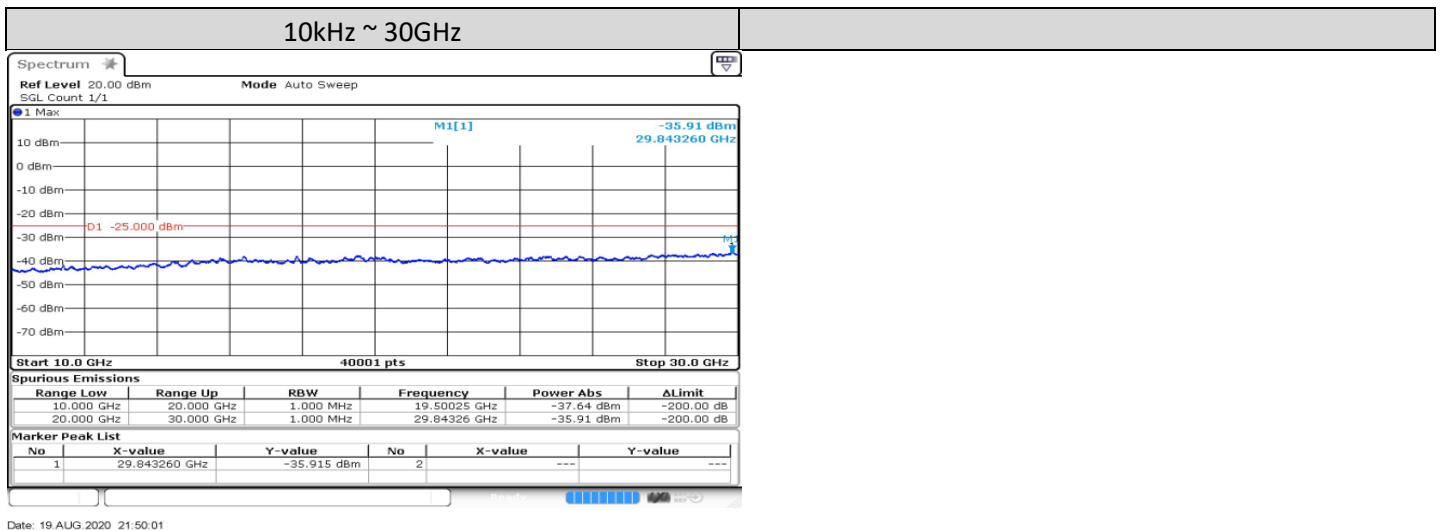
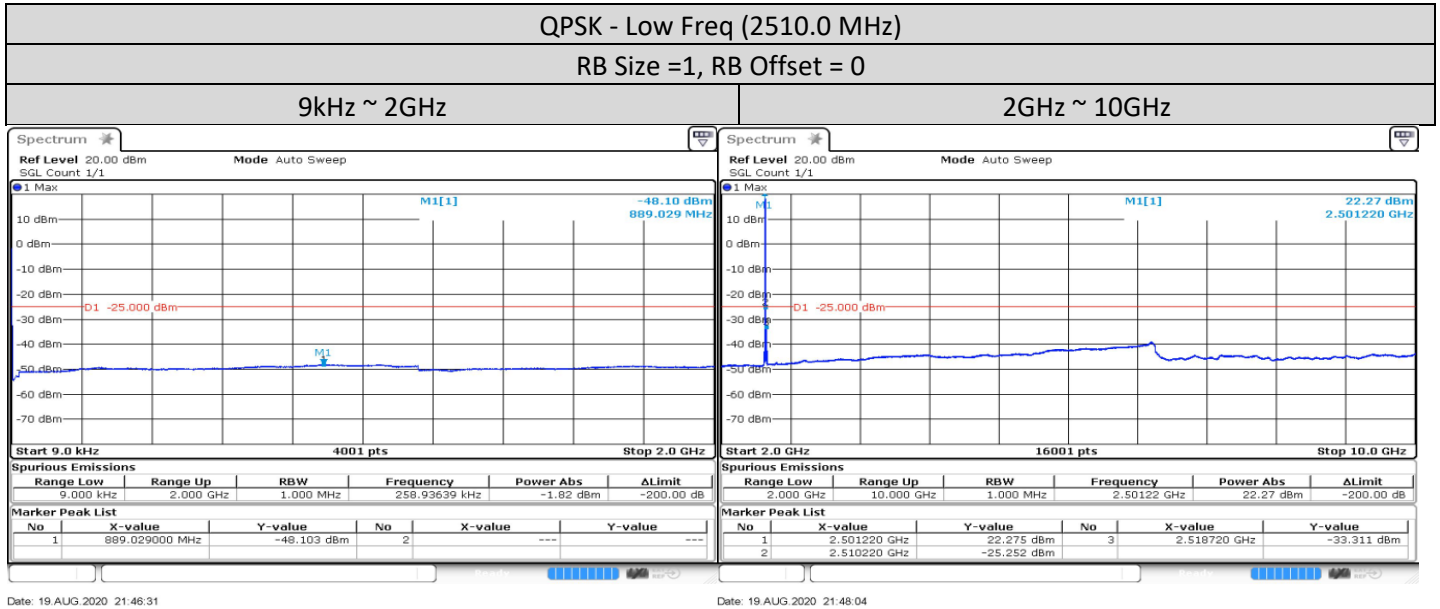
Date: 19.AUG.2020 21:09:29

10kHz ~ 30GHz

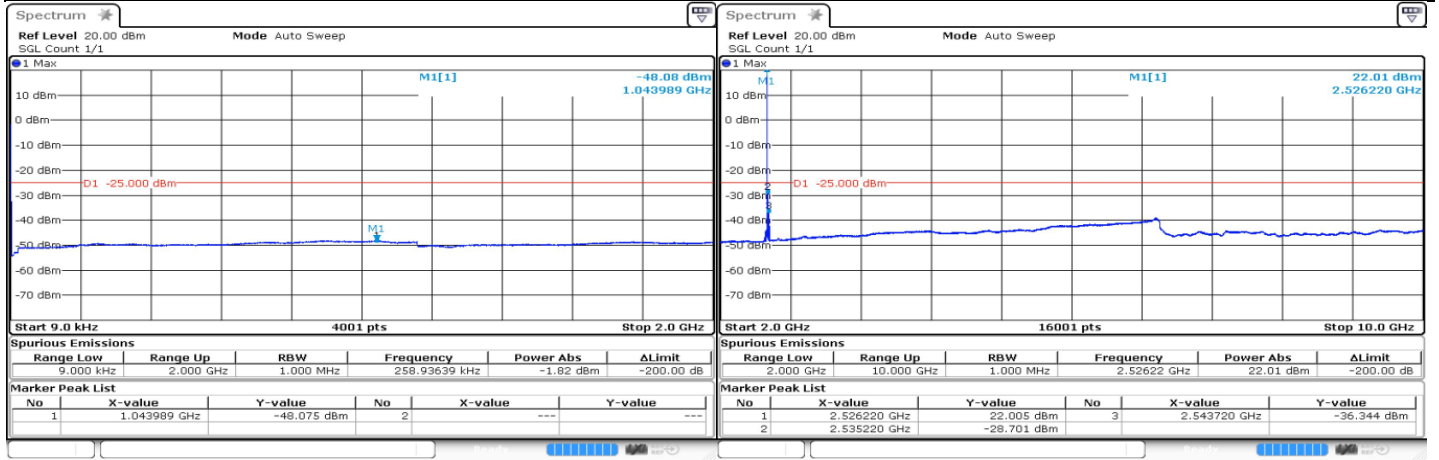


Date: 19.AUG.2020 21:11:28

20MHz



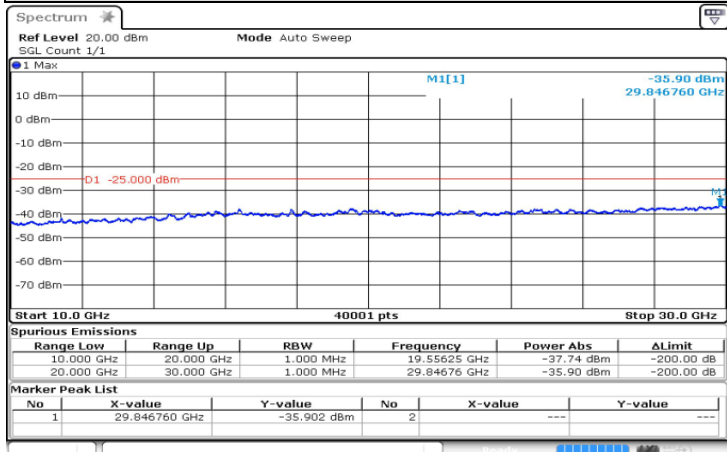
QPSK - Mid Freq (2535 MHz)
RB Size =1, RB Offset = 0



Date: 19.AUG.2020 22:25:10

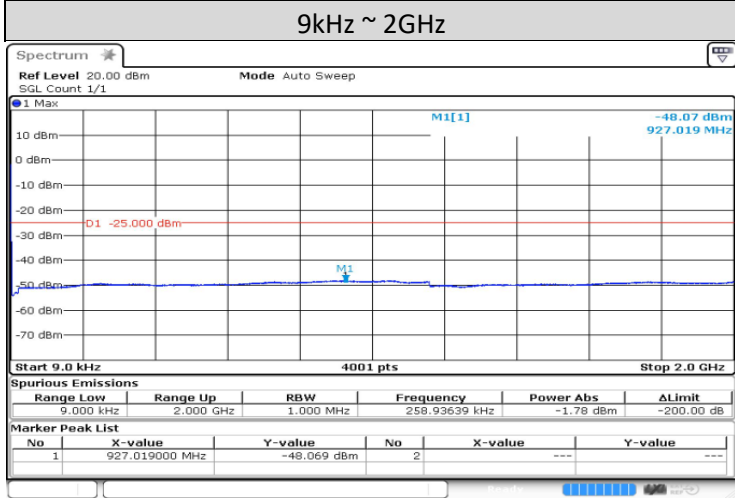
Date: 19.AUG.2020 22:26:42

10kHz ~ 30GHz

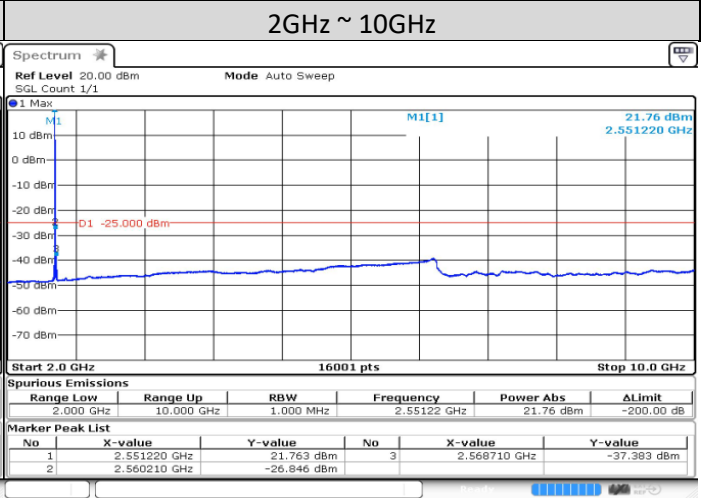


Date: 19.AUG.2020 22:28:39

QPSK - High Freq (2560.0 MHz)
 RB Size =1, RB Offset = 0

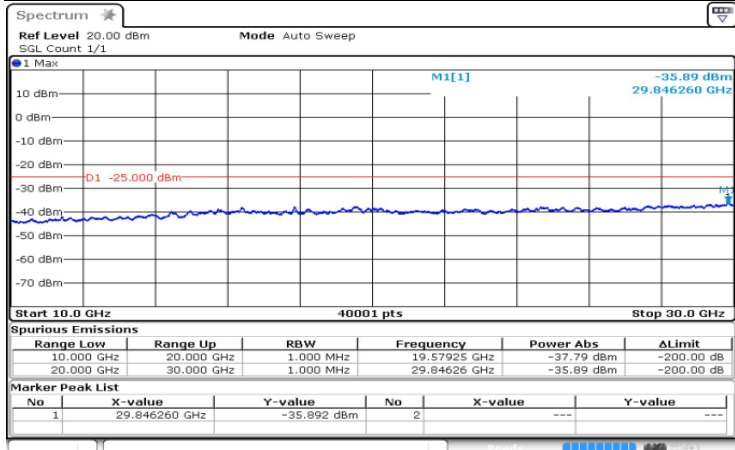


Date: 19.AUG.2020 23:03:38



Date: 19.AUG.2020 23:05:34

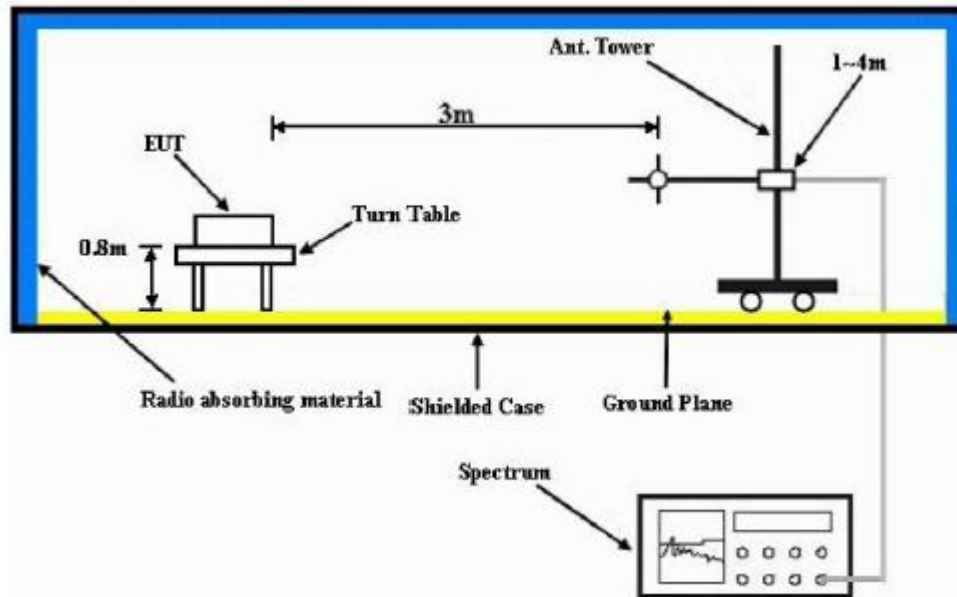
10kHz ~ 30GHz



Date: 19.AUG.2020 23:07:31

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

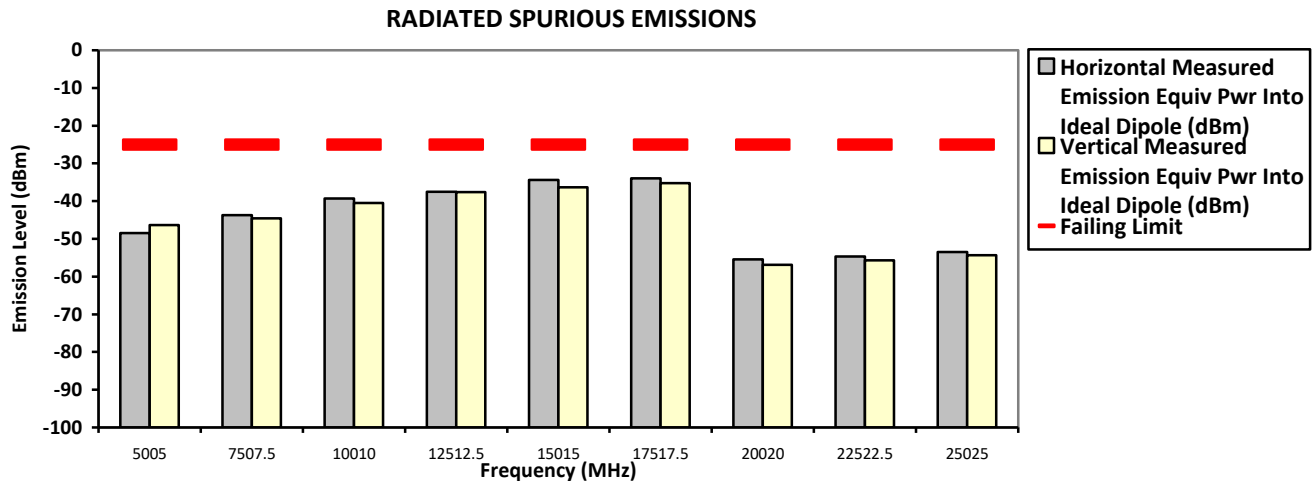
For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

1.12.3. Radiated Spurious Emission – LTE Band 7 (2500-2570MHz)

SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN S/N: 734TWP0308 SR:18058-EMC-00051
 Battery Part No: PMNN4804A Accy Part No: AN000348A01
 Test Mode: TX LTE (Band 7) X-Plane
 2502.50000 MHz (Low) Bandwidth 5MHz 0.252 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
5005.0000	-25.0000	-48.5046 **	-46.3218 **
7507.5000	-25.0000	-43.7122 **	-44.5724 **
10010.0000	-25.0000	-39.3260 **	-40.4619 **
12512.5000	-25.0000	-37.5117 **	-37.5896 **
15015.0000	-25.0000	-34.3934 **	-36.3275 **
17517.5000	-25.0000	-33.9784 **	-35.1908 **
20020.0000	-25.0000	-55.4686 **	-56.8790 **
22522.5000	-25.0000	-54.6728 **	-55.6852 **
25025.0000	-25.0000	-53.4403 **	-54.3460 **



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&Qawiman Sat, Aug 29, 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

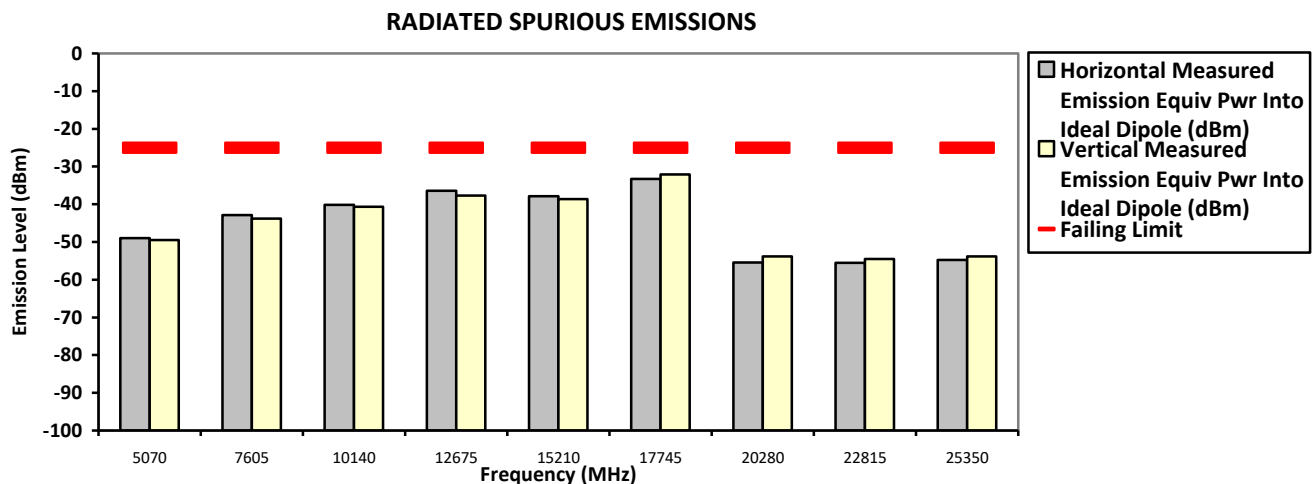
System MU: 4.03 dB

Remarks: Passed Results Marginal Results Failed Results

SAC Transmitter Radiated Emission:

Model Number: **AAH90ZDU9RH1AN** S/N: **734TWP0308** SR: **18058-EMC-00051**
 Battery Part No: **PMNN4804A** Accy Part No: **AN000348A01**
 Test Mode: **TX LTE (Band 7) X-Plane**
 2535.000000 MHz (Mid) Bandwidth **10MHz** 0.252 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)
5070.0000	-25.0000	-48.9654 **	-49.4527 **
7605.0000	-25.0000	-42.8970 **	-43.7978 **
10140.0000	-25.0000	-40.1321 **	-40.7009 **
12675.0000	-25.0000	-36.4058 **	-37.6921 **
15210.0000	-25.0000	-37.8695 **	-38.6520 **
17745.0000	-25.0000	-33.3006 **	-32.0796 **
20280.0000	-25.0000	-55.4579 **	-53.8064 **
22815.0000	-25.0000	-55.5300 **	-54.4844 **
25350.0000	-25.0000	-54.7381 **	-53.8392 **



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&Qawiman Sat, Aug 29, 2020

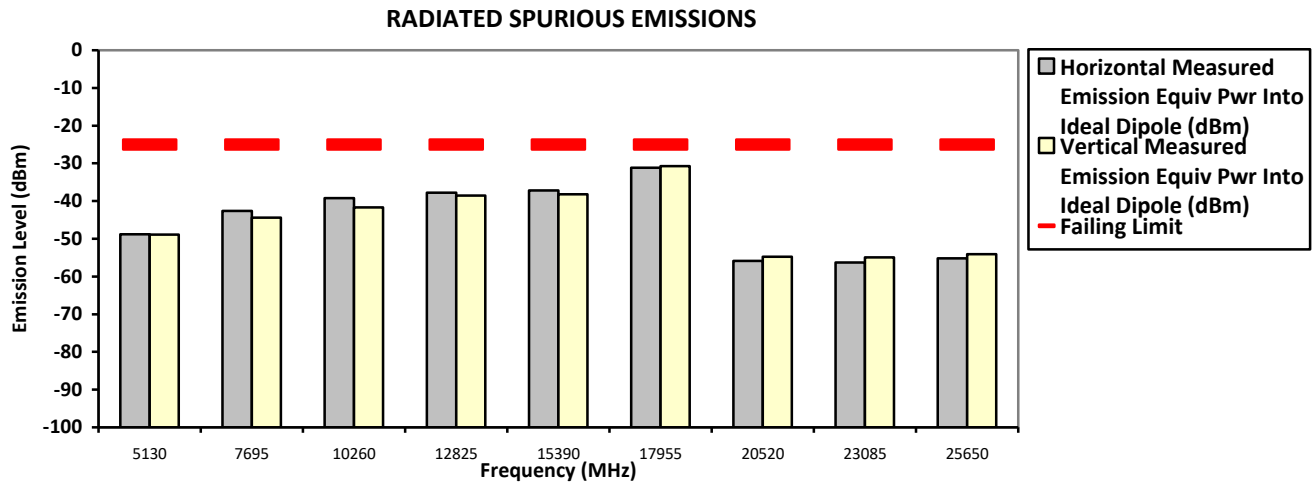
Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
 *Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported
 Temp(Deg): 23.5 Hum(%RH): 69.5

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-00051**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 7) X-Plane
2565.000000 MHz (High) **Bandwidth 10MHz** **0.252 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)
5130.0000	-25.0000	-48.8308 **	-48.8725 **
7695.0000	-25.0000	-42.5781 **	-44.4286 **
10260.0000	-25.0000	-39.2087 **	-41.6658 **
12825.0000	-25.0000	-37.7901 **	-38.5168 **
15390.0000	-25.0000	-37.1606 **	-38.2219 **
17955.0000	-25.0000	-31.1428 **	-30.6915 **
20520.0000	-25.0000	-55.8745 **	-54.7789 **
23085.0000	-25.0000	-56.3105 **	-54.9368 **
25650.0000	-25.0000	-55.2009 **	-54.0570 **



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&Qawiman Sat, Aug 29, 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

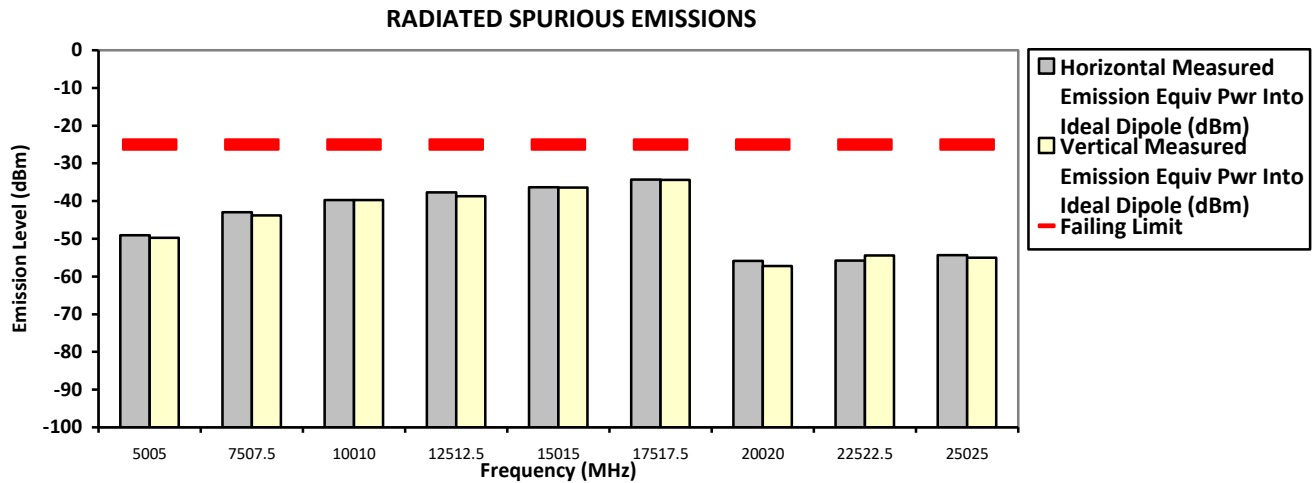
System MU: 4.03 dB

Remarks:

Passed Results	Marginal Results	Failed Results
----------------	------------------	----------------

SAC Transmitter Radiated Emission:
Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00051**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 7) Y-Plane
2502.50000 MHz (Low) **Bandwidth 5MHz** **0.252 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)
5005.0000	-25.0000	-49.0876 **	-49.7645 **
7507.5000	-25.0000	-42.9554 **	-43.7759 **
10010.0000	-25.0000	-39.7211 **	-39.7451 **
12512.5000	-25.0000	-37.6868 **	-38.7356 **
15015.0000	-25.0000	-36.3272 **	-36.4597 **
17517.5000	-25.0000	-34.2557 **	-34.4012 **
20020.0000	-25.0000	-55.8596 **	-57.1851 **
22522.5000	-25.0000	-55.8013 **	-54.4431 **
25025.0000	-25.0000	-54.3667 **	-55.0473 **



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&Qawiman Sat, Aug 29, 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

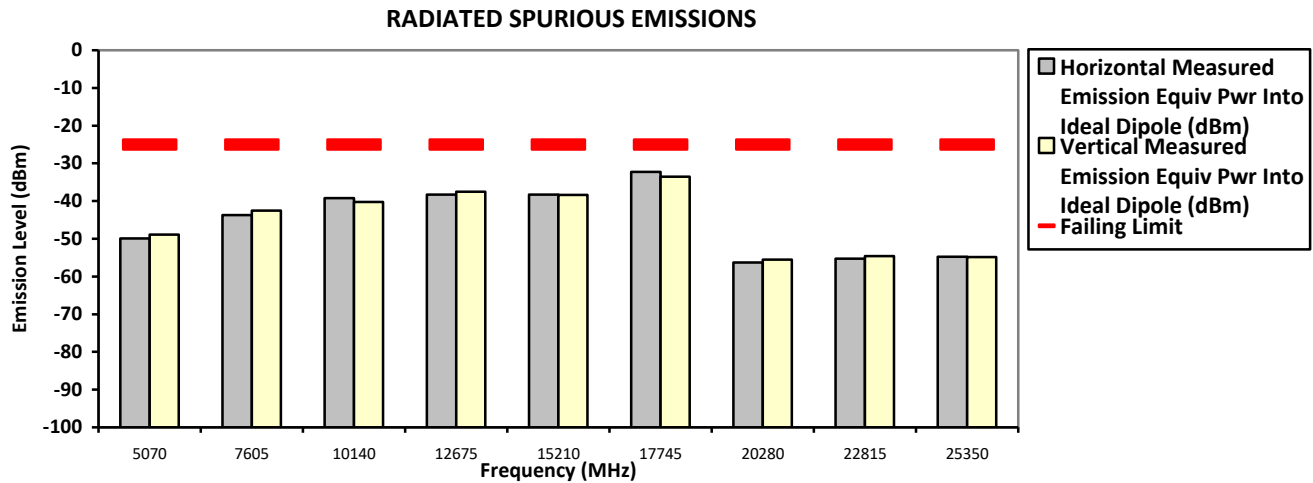
System MU: 4.03 dB

Remarks:

Passed Results	Marginal Results	Failed Results
----------------	------------------	----------------

SAC Transmitter Radiated Emission:
Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00051**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 7) Y-Plane
2535.000000 MHz (Mid) **Bandwidth 10MHz** **0.252 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)
5070.0000	-25.0000	-49.8920 **	-48.8702 **
7605.0000	-25.0000	-43.7259 **	-42.5252 **
10140.0000	-25.0000	-39.1855 **	-40.2177 **
12675.0000	-25.0000	-38.3163 **	-37.4986 **
15210.0000	-25.0000	-38.3071 **	-38.3700 **
17745.0000	-25.0000	-32.2346 **	-33.5200 **
20280.0000	-25.0000	-56.2928 **	-55.5307 **
22815.0000	-25.0000	-55.2395 **	-54.5417 **
25350.0000	-25.0000	-54.7372 **	-54.8456 **



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&Qawiman Sat, Aug 29, 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

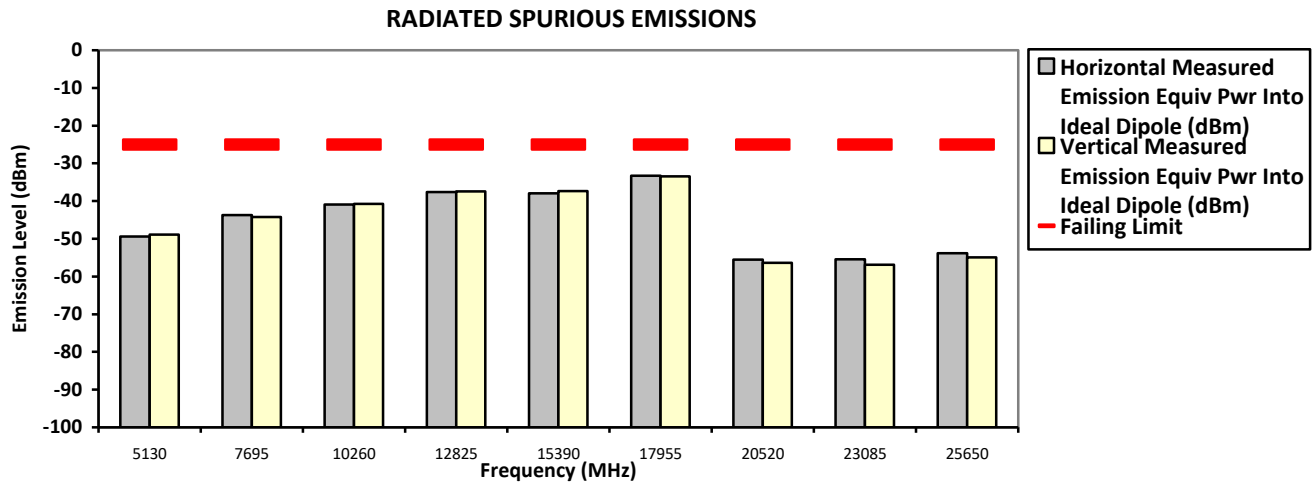
System MU: 4.03 dB

Remarks:

Passed Results	Marginal Results	Failed Results
----------------	------------------	----------------

SAC Transmitter Radiated Emission:
Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00051**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 7) Y-Plane
2565.000000 MHz (High) **Bandwidth 10MHz** **0.252 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)
5130.0000	-25.0000	-49.4383 **	-48.8936 **
7695.0000	-25.0000	-43.7590 **	-44.2323 **
10260.0000	-25.0000	-40.9175 **	-40.7765 **
12825.0000	-25.0000	-37.6278 **	-37.4513 **
15390.0000	-25.0000	-37.9141 **	-37.3915 **
17955.0000	-25.0000	-33.2587 **	-33.4779 **
20520.0000	-25.0000	-55.4797 **	-56.3306 **
23085.0000	-25.0000	-55.4648 **	-56.8548 **
25650.0000	-25.0000	-53.8418 **	-54.9619 **



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&Qawiman Sat, Aug 29, 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-00051

Battery Part No: PMNN4804A

Accy Part No: AN000348A01

Test Mode: TX LTE (Band 7) Z-Plane

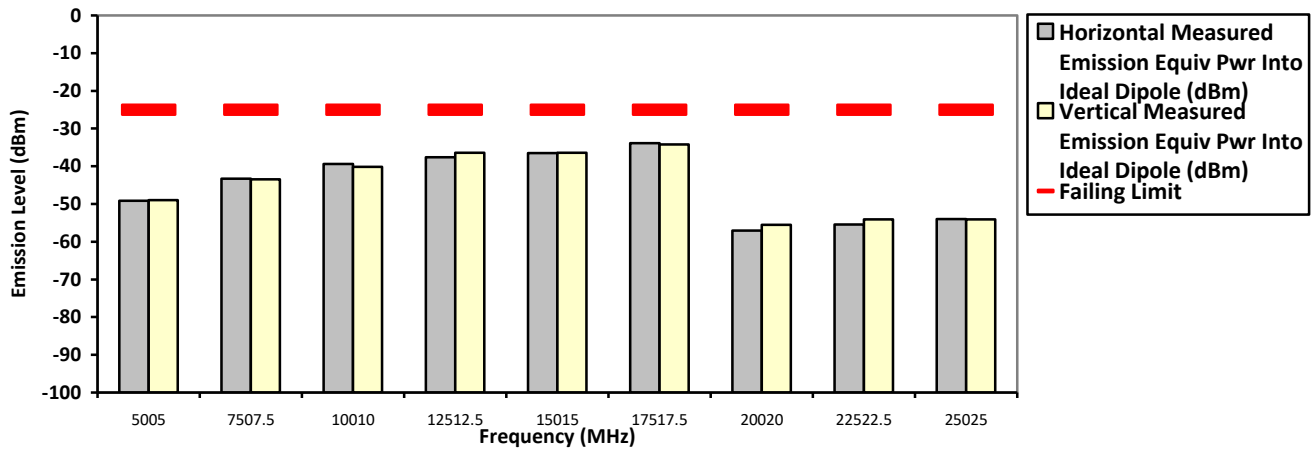
2502.50000 MHz (Low)

Bandwidth 5MHz

0.252 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)
5005.0000	-25.0000	-49.1482 **	-48.9860 **
7507.5000	-25.0000	-43.3093 **	-43.4392 **
10010.0000	-25.0000	-39.4130 **	-40.1684 **
12512.5000	-25.0000	-37.6279 **	-36.3922 **
15015.0000	-25.0000	-36.5000 **	-36.3784 **
17517.5000	-25.0000	-33.9004 **	-34.2172 **
20020.0000	-25.0000	-57.0679 **	-55.4997 **
22522.5000	-25.0000	-55.4158 **	-54.0956 **
25025.0000	-25.0000	-53.9614 **	-54.0450 **

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&Qawiman

Sat, Aug 29, 2020

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

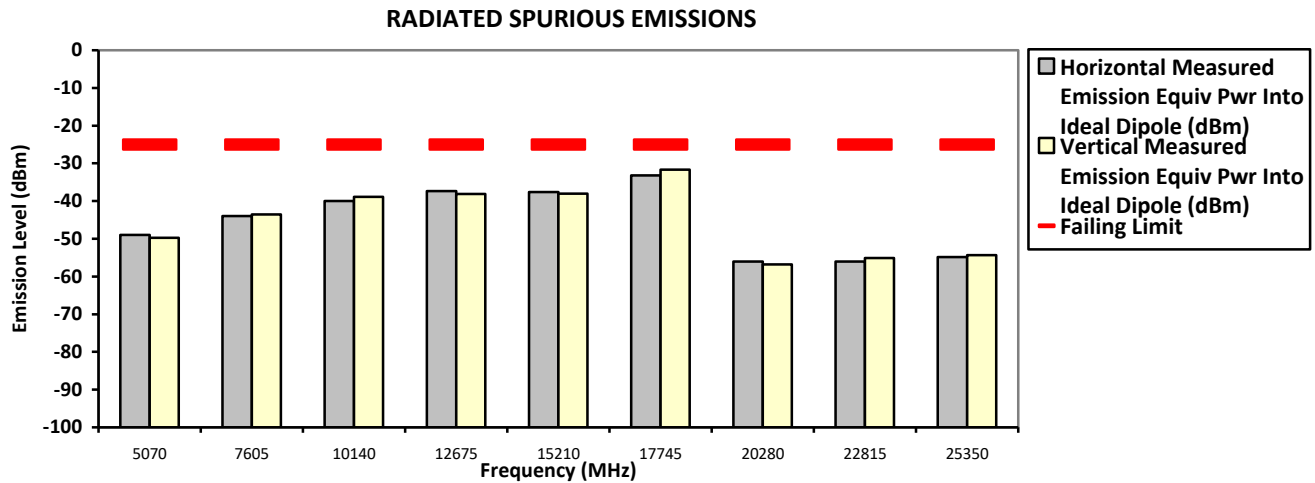
*Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported
 Temp(Deg): 23.5 Hum(%RH): 69.5

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-00051**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 7) Z-Plane
2535.000000 MHz (Mid) **Bandwidth 10MHz** **0.252 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)
5070.0000	-25.0000	-48.9965 **	-49.7428 **
7605.0000	-25.0000	-43.9400 **	-43.5464 **
10140.0000	-25.0000	-39.9523 **	-38.8732 **
12675.0000	-25.0000	-37.3434 **	-38.1304 **
15210.0000	-25.0000	-37.5993 **	-38.0468 **
17745.0000	-25.0000	-33.1813 **	-31.7006 **
20280.0000	-25.0000	-56.0023 **	-56.8171 **
22815.0000	-25.0000	-55.9974 **	-55.1309 **
25350.0000	-25.0000	-54.8198 **	-54.3509 **



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&Qawiman Sat, Aug 29, 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

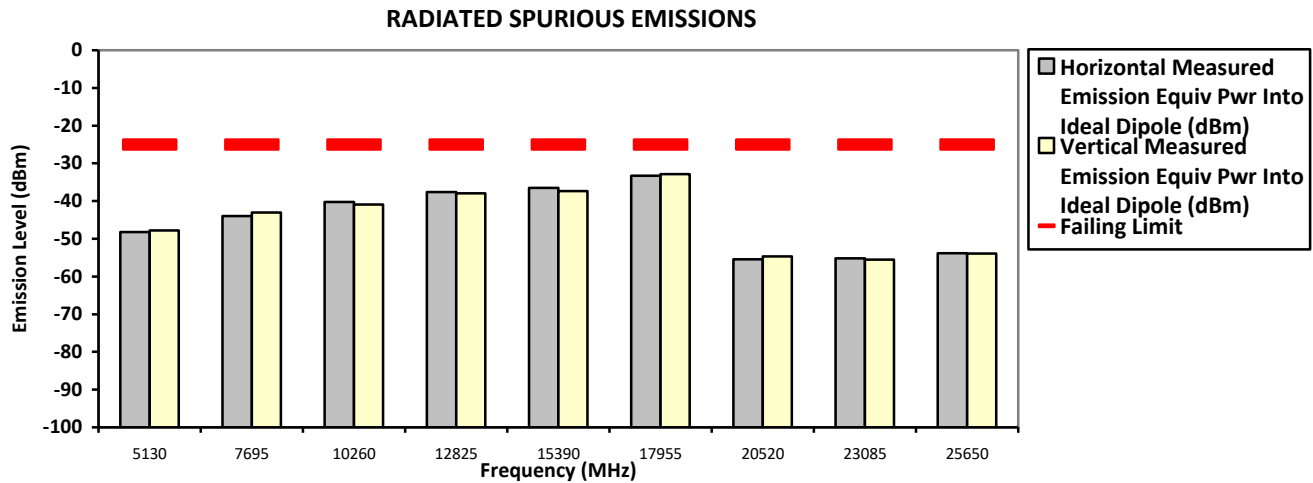
System MU: 4.03 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:
Model Number: AAH90ZDU9RH1AN **S/N: 734TWP0308** **SR:18058-EMC-00051**
Battery Part No: PMNN4804A **Accy Part No: AN000348A01**
Test Mode: TX LTE (Band 7) Z-Plane
2565.000000 MHz (High) **Bandwidth 10MHz** **0.252 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)
5130.0000	-25.0000	-48.2225 **	-47.8300 **
7695.0000	-25.0000	-43.9443 **	-43.0011 **
10260.0000	-25.0000	-40.2700 **	-40.9322 **
12825.0000	-25.0000	-37.6166 **	-37.9721 **
15390.0000	-25.0000	-36.4626 **	-37.3680 **
17955.0000	-25.0000	-33.2735 **	-32.8492 **
20520.0000	-25.0000	-55.4490 **	-54.6670 **
23085.0000	-25.0000	-55.1754 **	-55.5022 **
25650.0000	-25.0000	-53.8046 **	-53.8682 **



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&Qawiman Sat, Aug 29, 2020

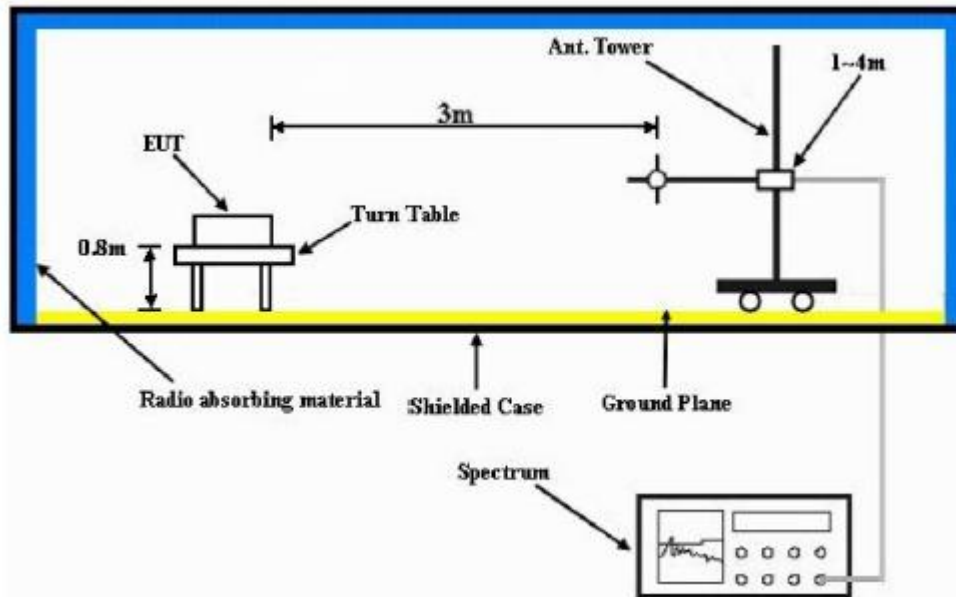
Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
 *Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported
 Temp(Deg): 23.5 Hum(%RH): 69.5

System MU: 4.03 dB

Remarks: Passed Results Marginal Results Failed Results

1.13. Equivalent Isotropically Radiated Power (EIRP)

1.13.1. 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 RMS.
- 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) $EIRP = \text{“Read Value”} + \text{Measured substitution value.}$

1.13.2. Test Limit

FCC: Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

ISED: For mobile subscriber equipment, the e.i.r.p. shall not exceed 2 watts.

1.13.3. Equivalent Isotropically Radiated Power (EIRP) - LTE Band 7 (2500-2570MHz)

Not Performed.

--End of Test Report--