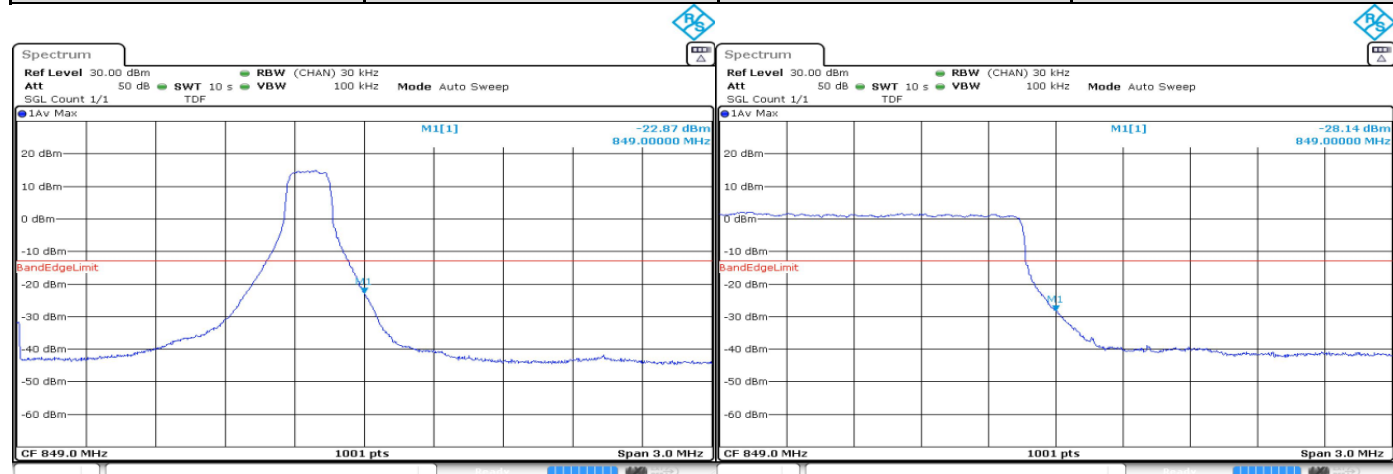
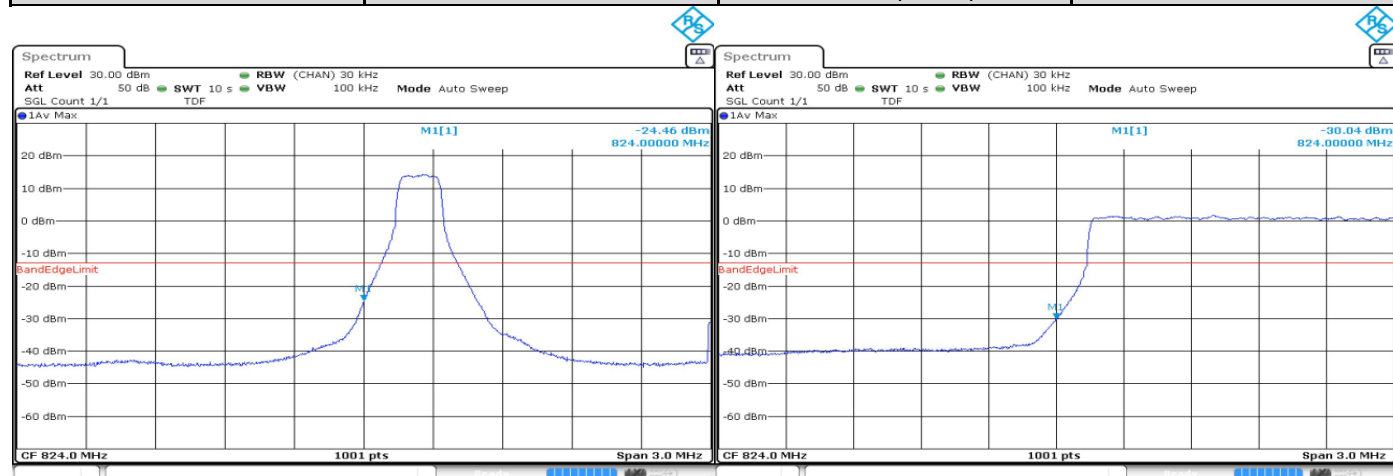


Band 5, 3MHz QPSK, High CH 20635			
RB = 1	Offset = X-1	RB = X (100%)	Offset = 0



Band 5, 3MHz 16-QAM, Low CH 20415			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



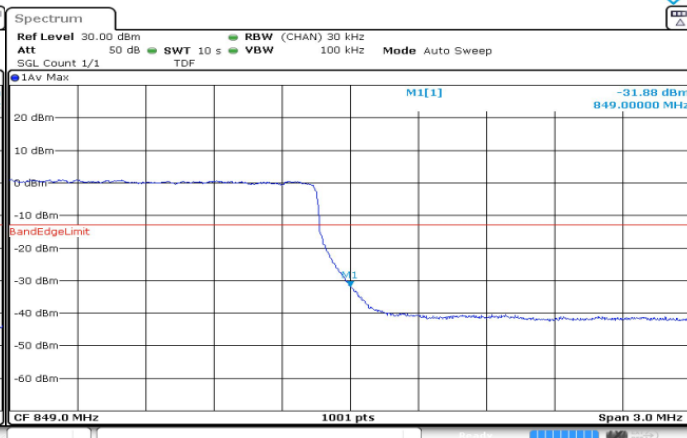
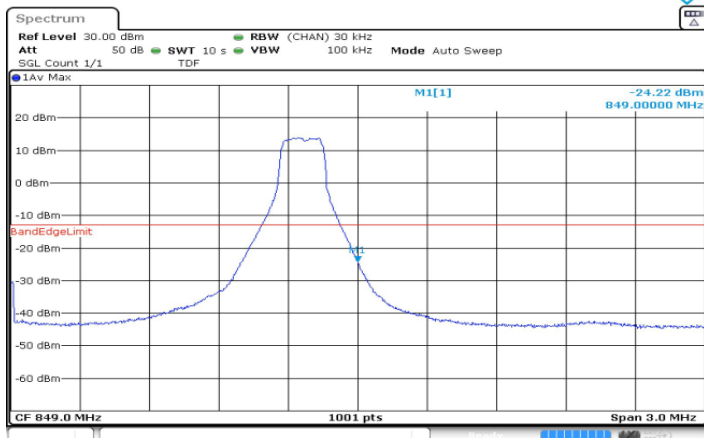
Band 5, 3MHz 16-QAM, High CH 20635

RB = 1

Offset = X-1

RB = X (100%)

Offset = 0



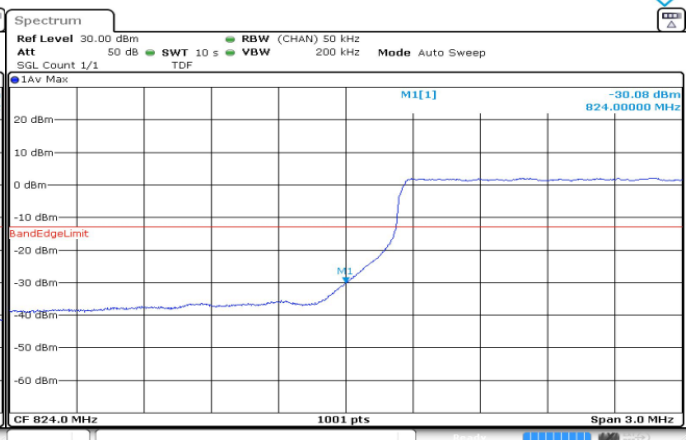
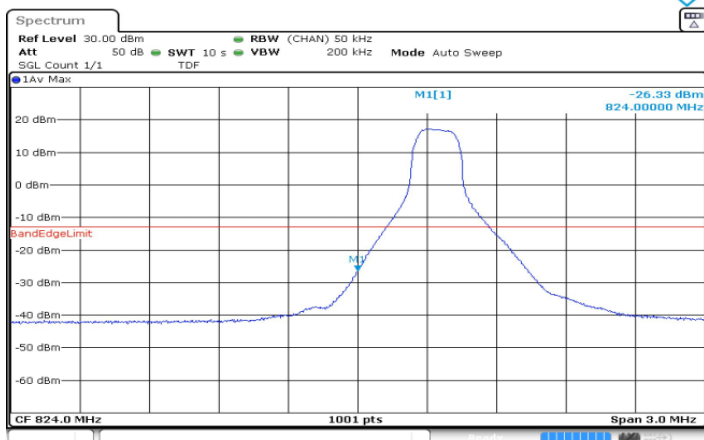
Band 5, 5MHz QPSK, Low CH 20425

RB = 1

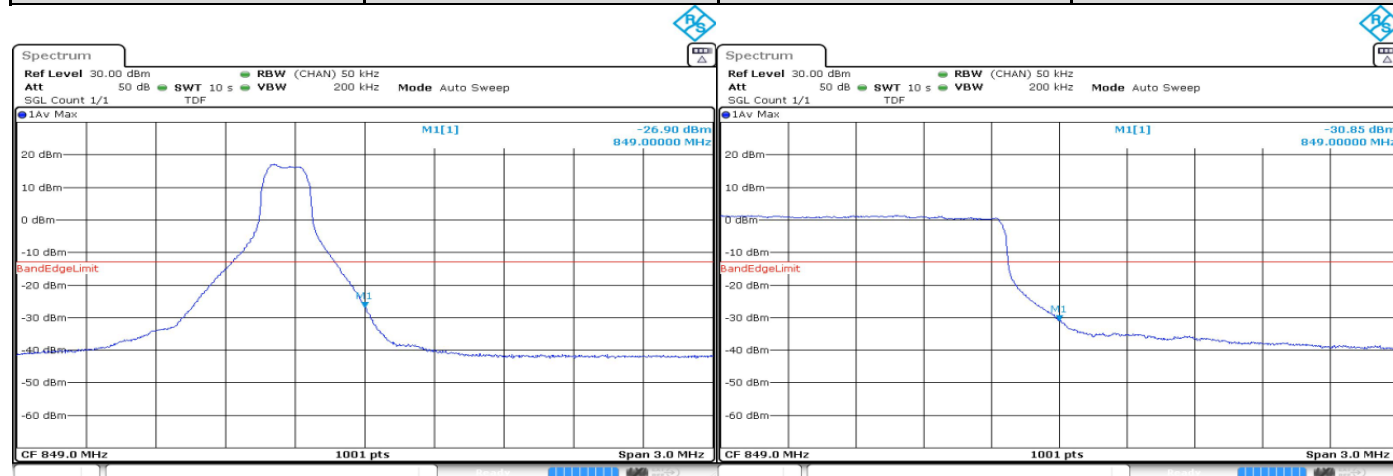
Offset = 0

RB = X (100%)

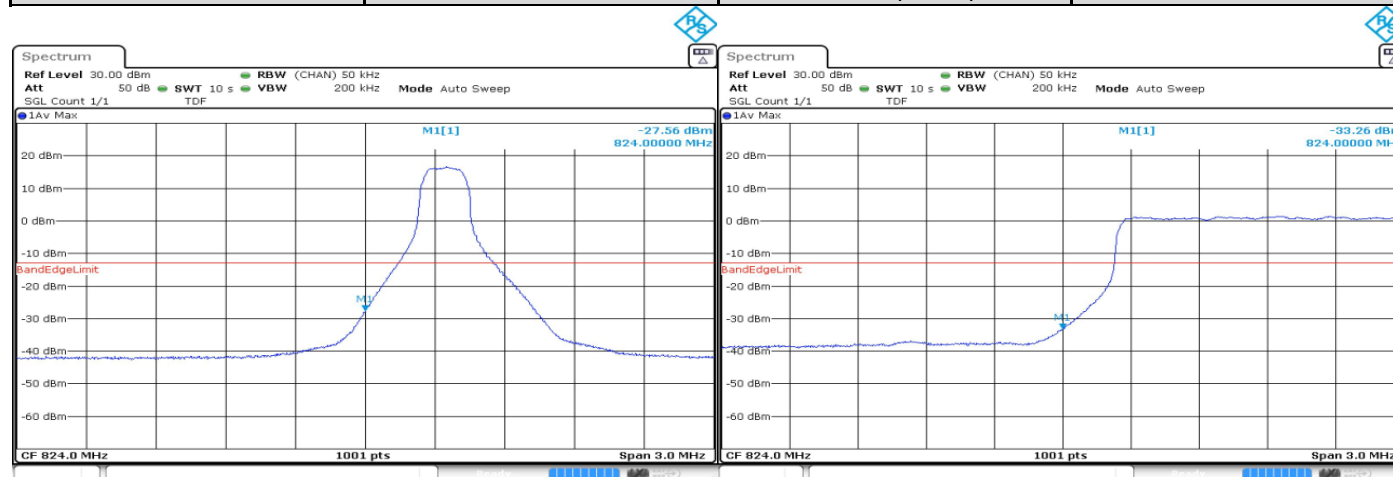
Offset = 0



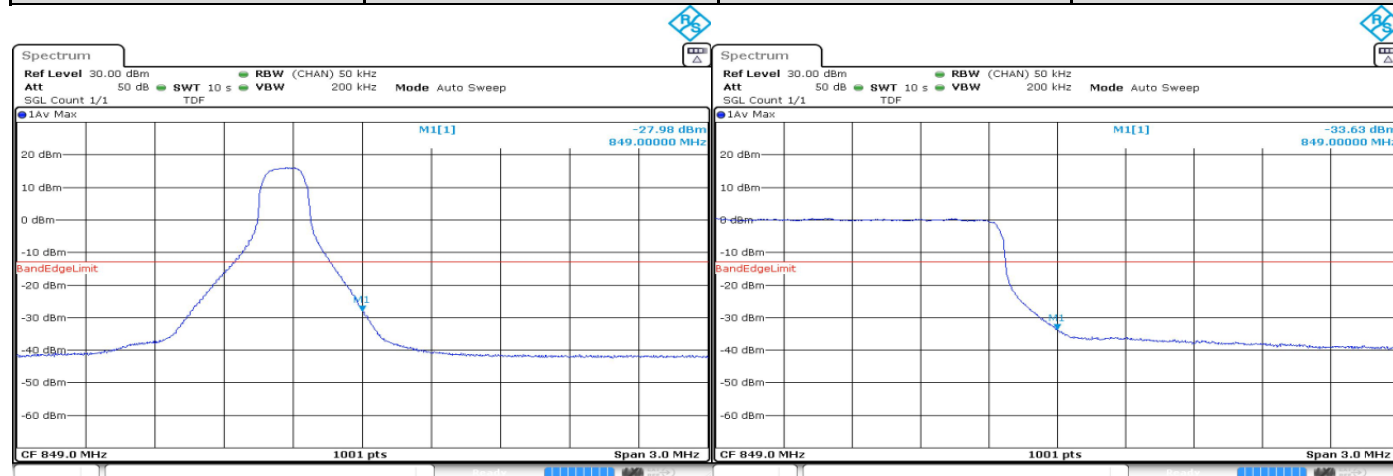
Band 5, 5MHz QPSK, High CH 20625			
RB = 1	Offset = X-1	RB = X (100%)	Offset = 0



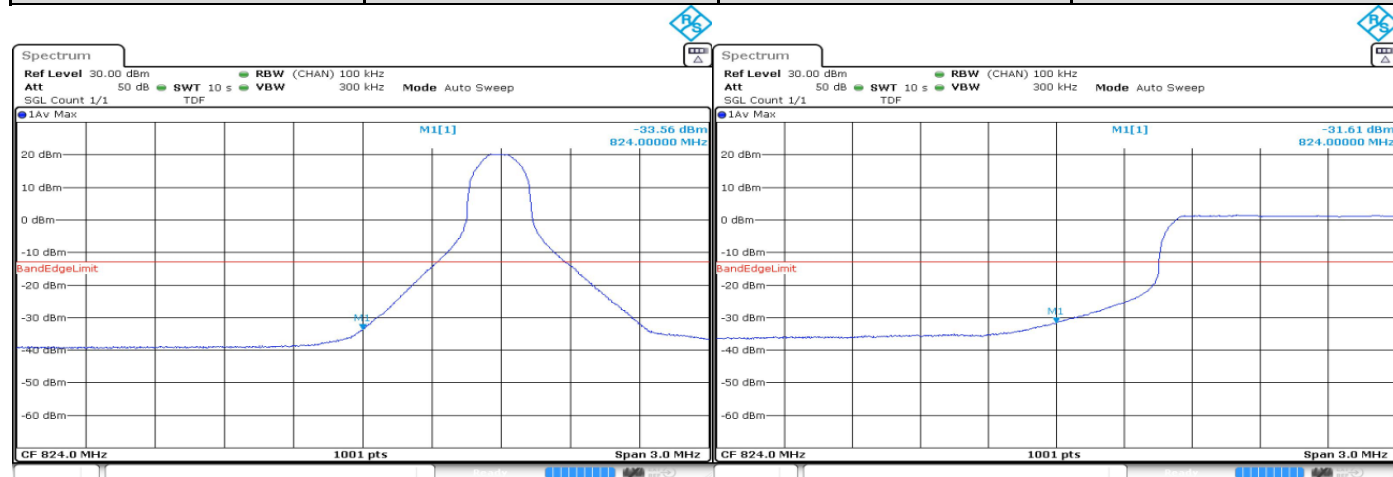
Band 5, 5MHz 16-QAM, Low CH 20425			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



Band 5, 5MHz 16-QAM, High CH 20625			
RB = 1	Offset = X-1	RB = X (100%)	Offset = 0



Band 5, 10MHz QPSK, Low CH 20450			
RB = 1	Offset = 0	RB = X (100%)	Offset = 0



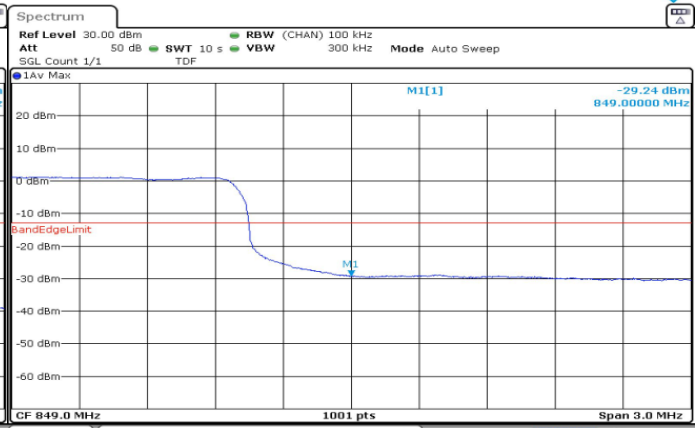
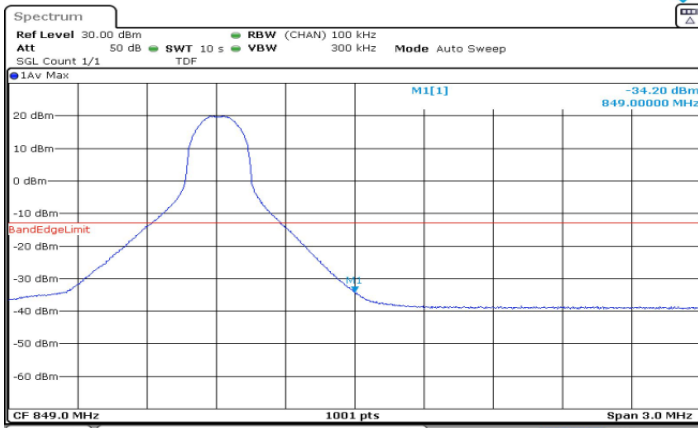
Band 5, 10MHz QPSK, High CH 20600

RB = 1

Offset = X-1

RB = X (100%)

Offset = 0



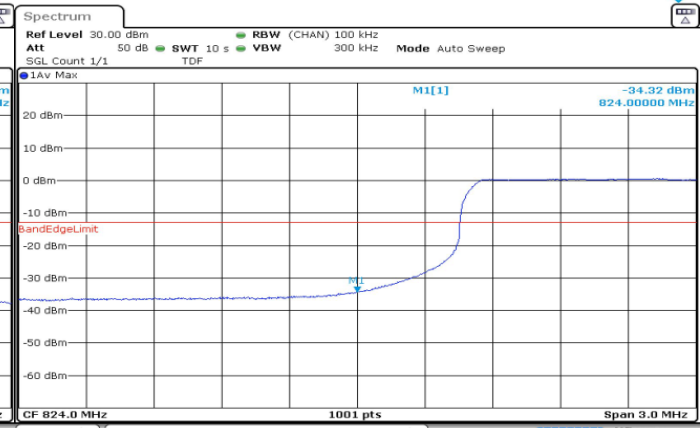
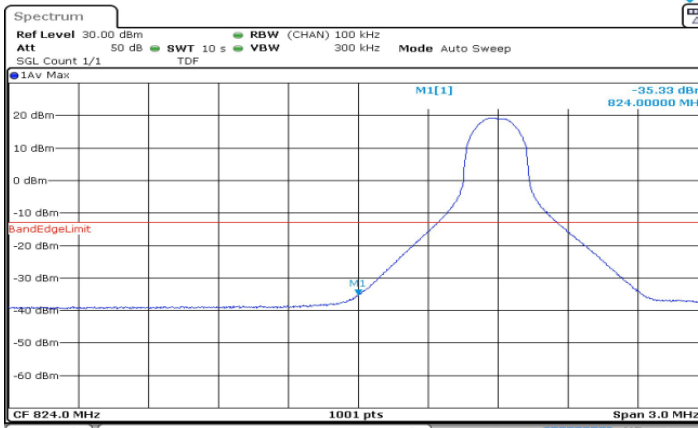
Band 5, 10MHz 16-QAM, Low CH 20450

RB = 1

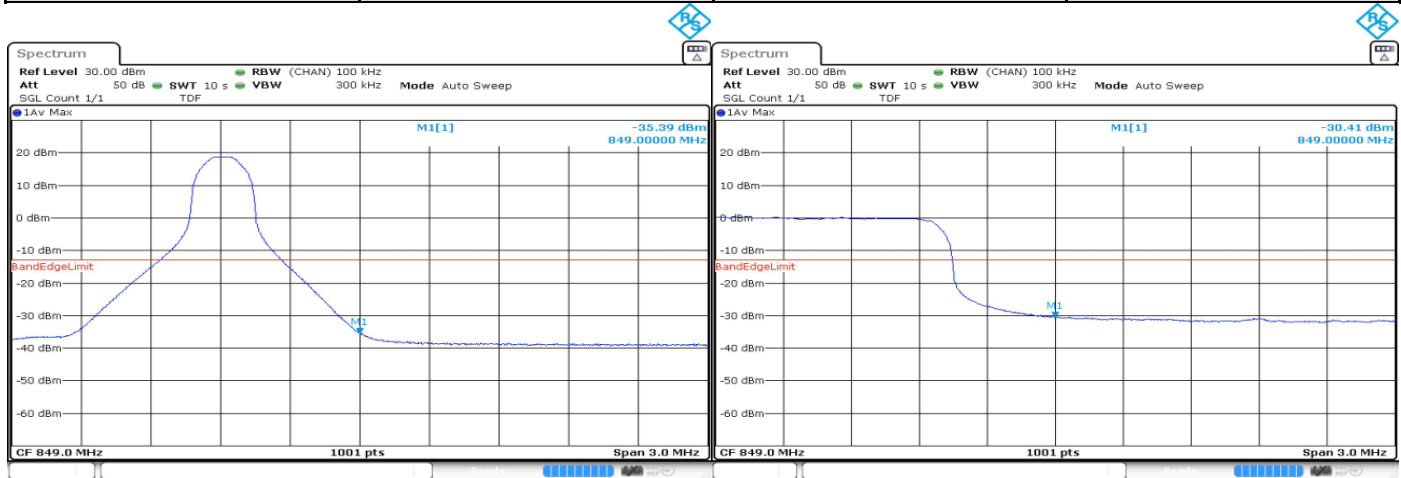
Offset = 0

RB = X (100%)

Offset = 0

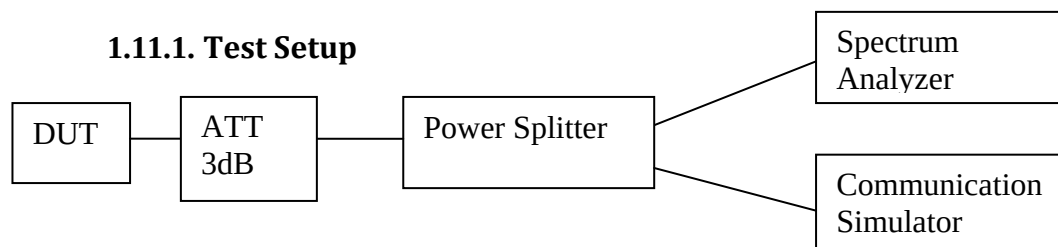


Band 5, 10MHz 16-QAM, High CH 20600			
RB = 1	Offset = X-1	RB = X (100%)	Offset = 0



1.11. Conducted Spurious Emission

1.11.1. Test Setup



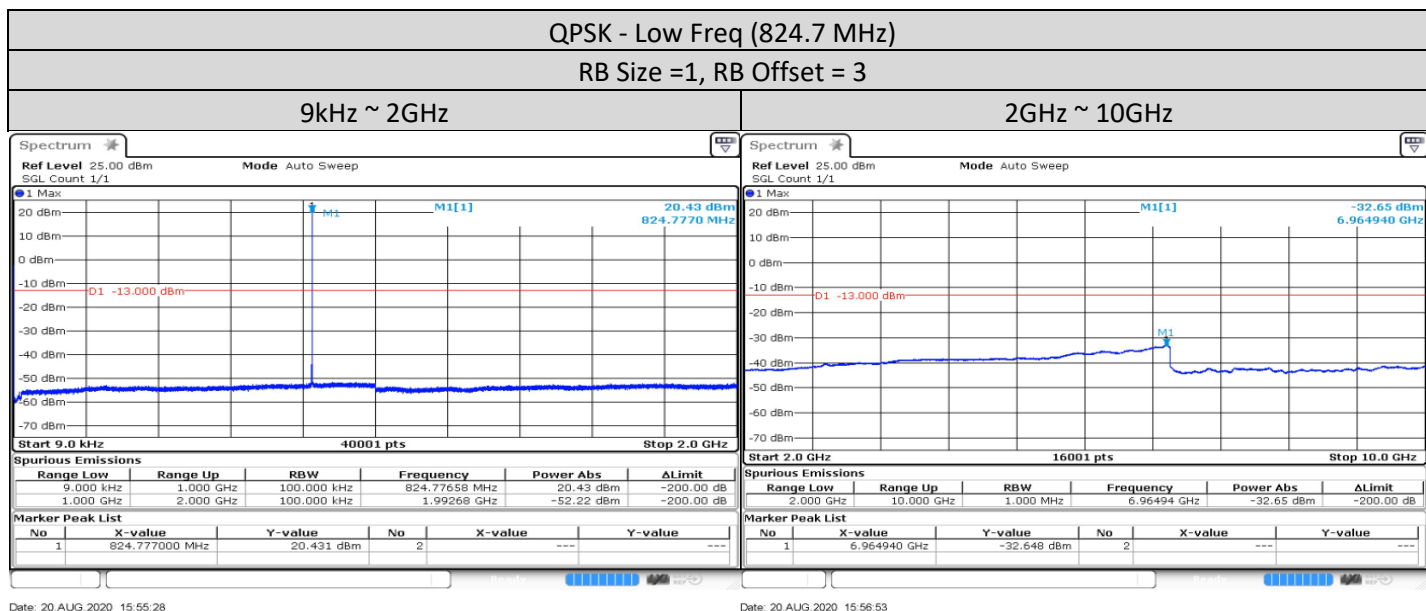
- 1) The DUT transmitter output port was connected to communication simulator with above setup.
- 2) Path loss for the measurement included.
- 3) Set DUT to transmit maximum power through communication simulator.
- 4) Spectrum Analyzer setting, RBW = 100 kHz or greater, VBW = 3*RBW.
- 5) The spurious emission of lowest, middle and highest channels with the highest RF powers were measured.
- 6) Record the maximum trace plot into the test report.

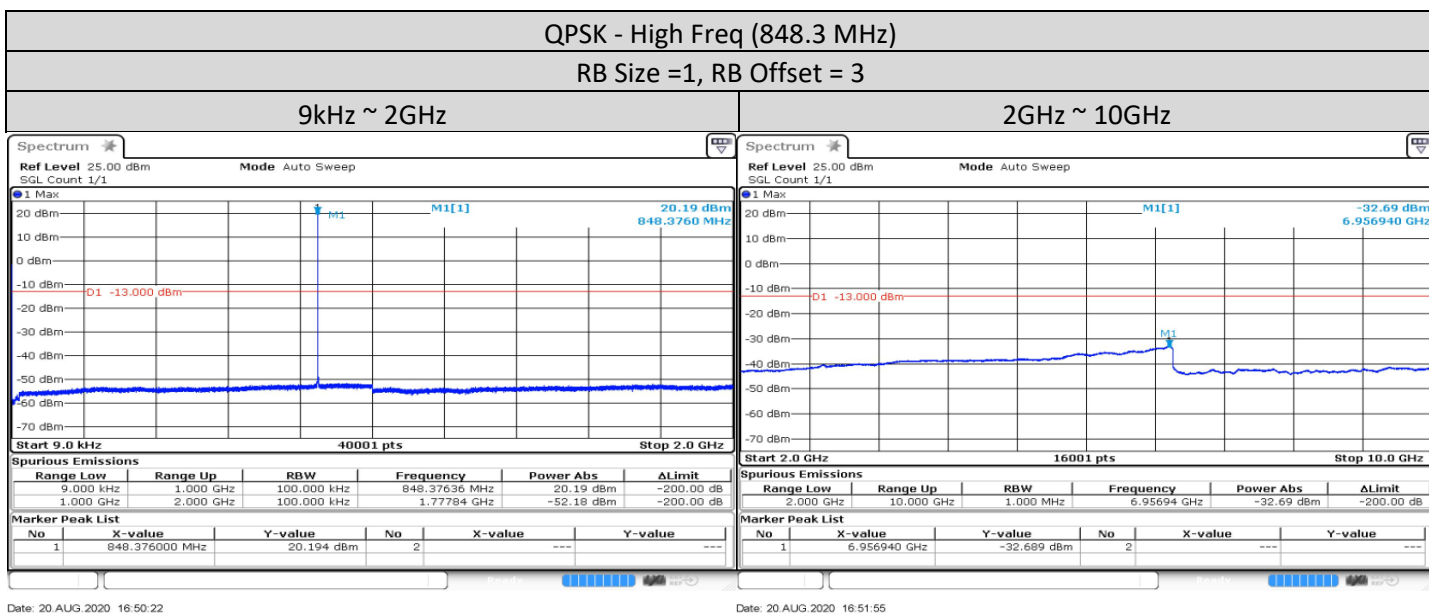
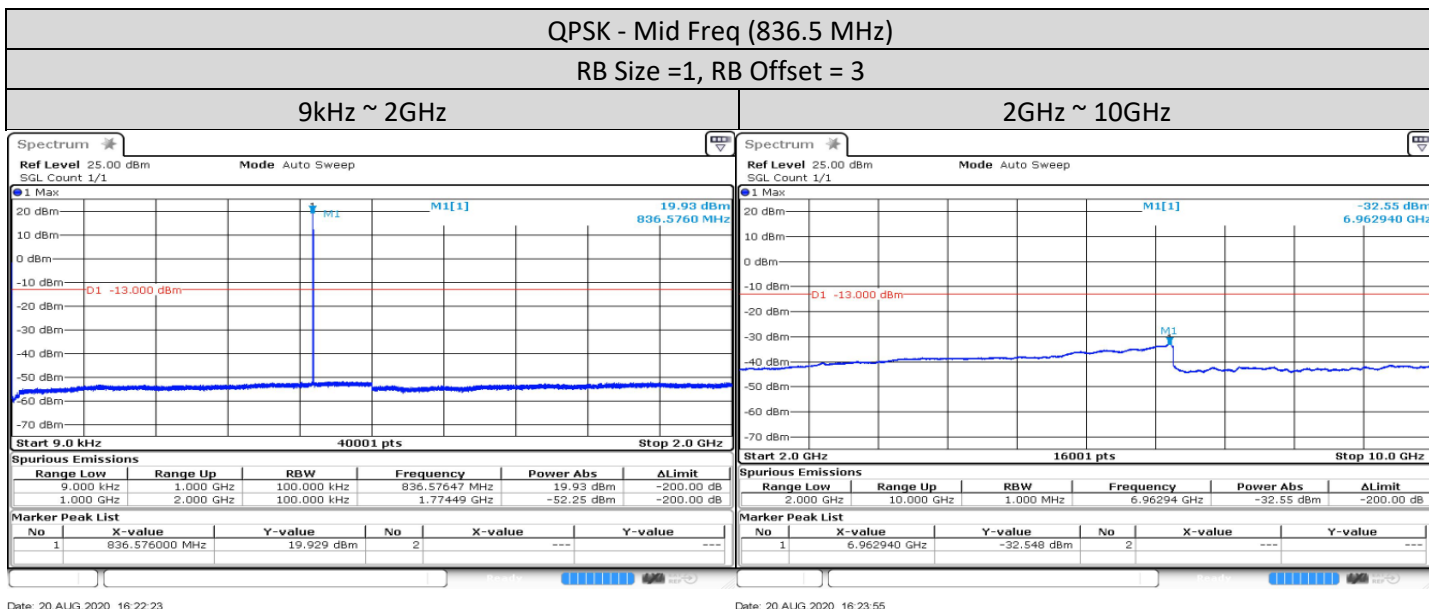
1.11.2. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

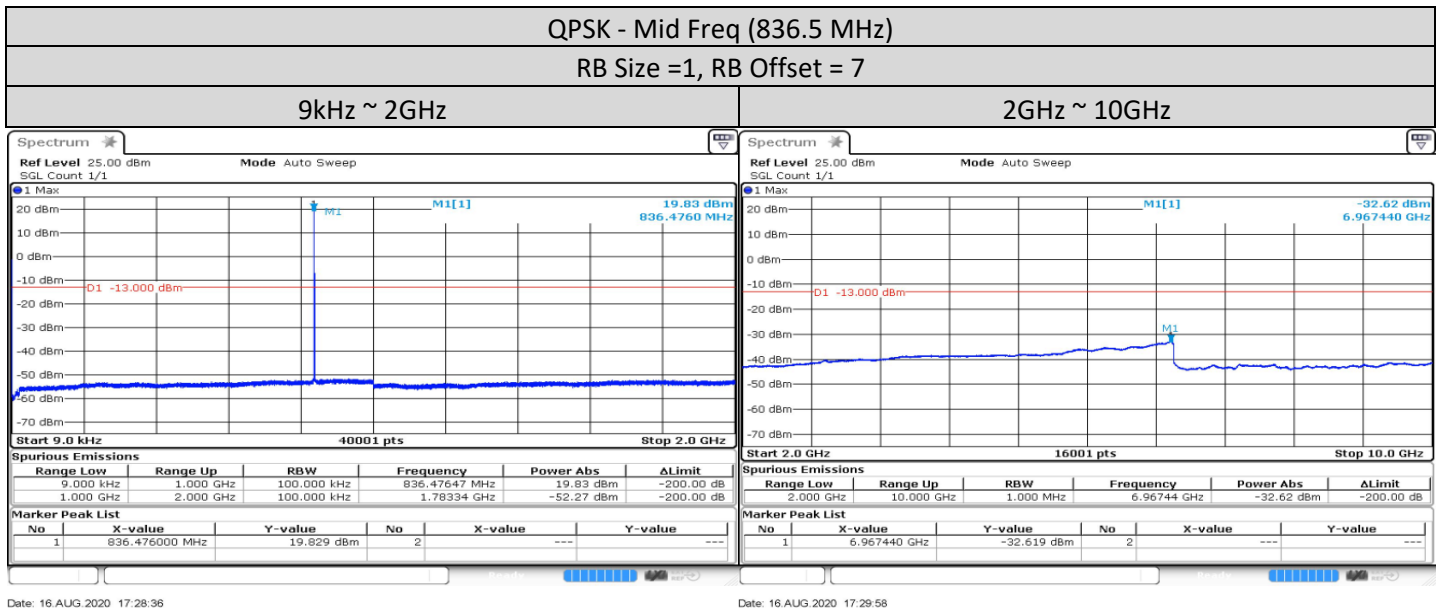
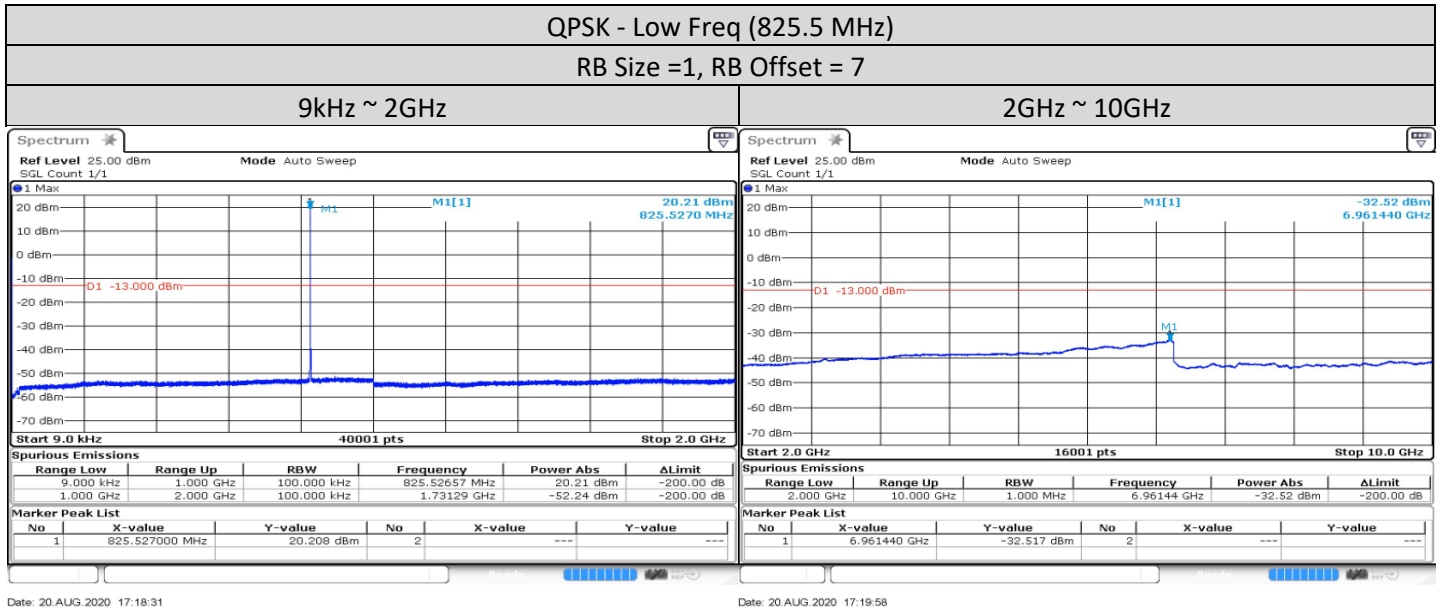
1.11.3. Conducted Spurious Emission - LTE Band 5 (824-849MHz)

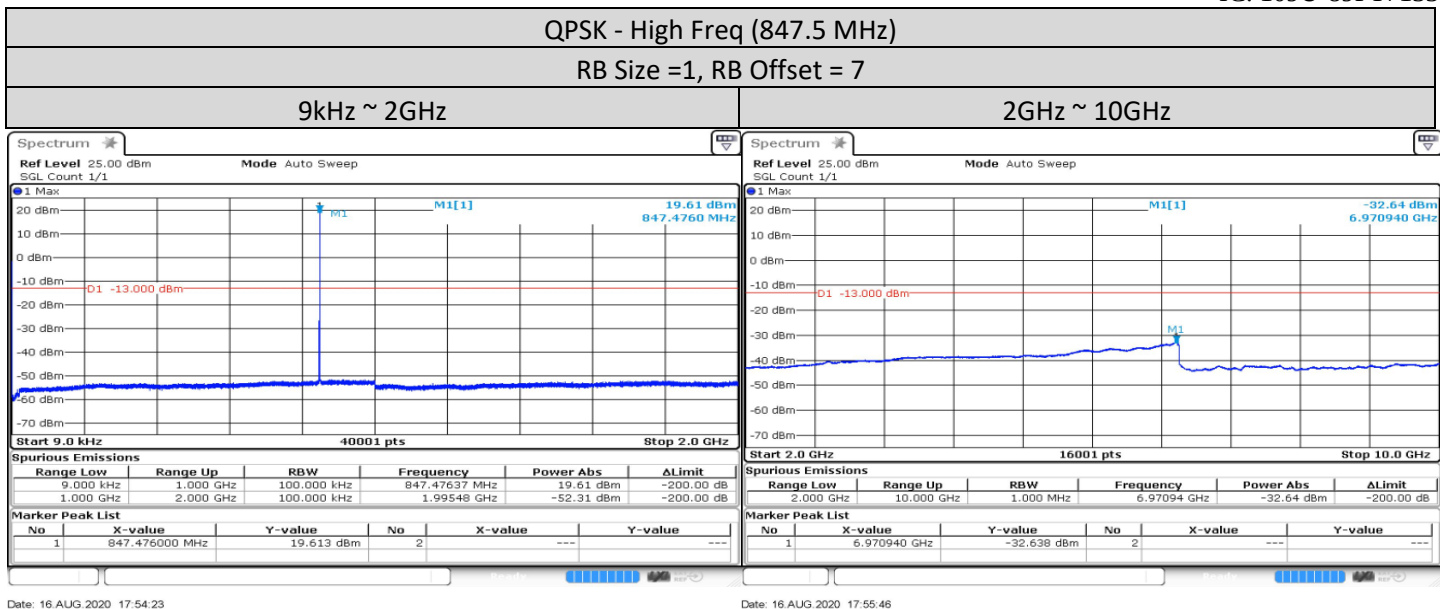
1.4MHz



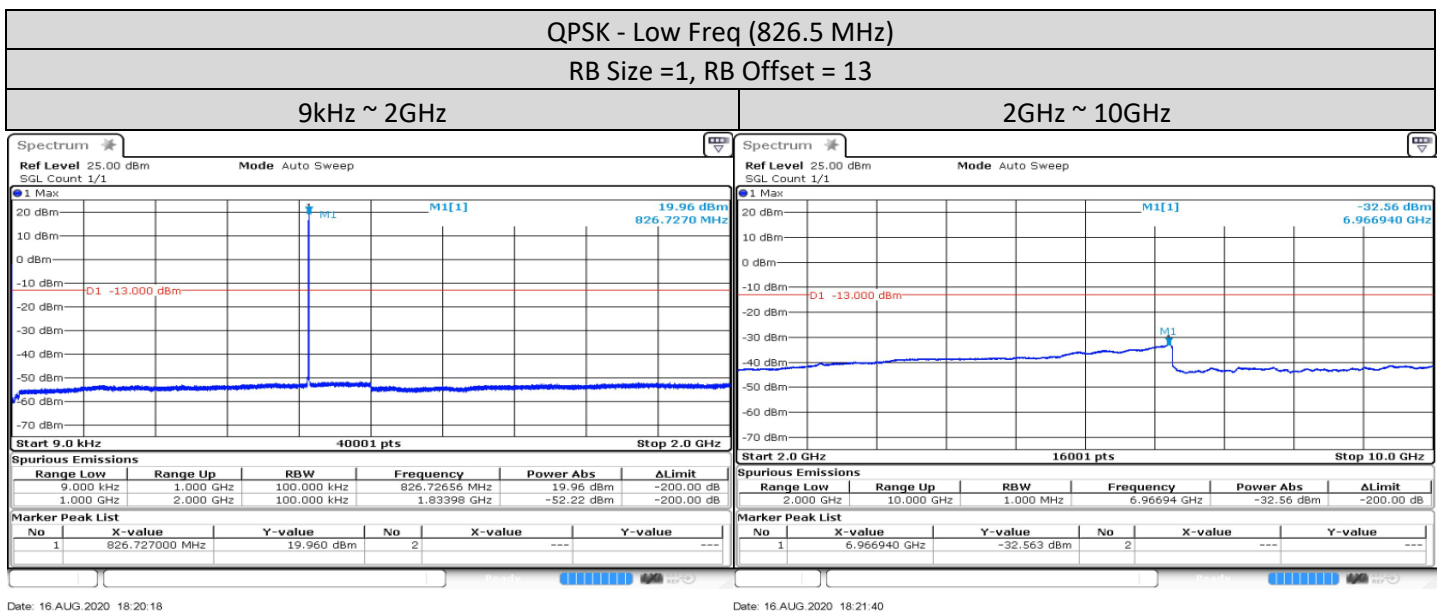


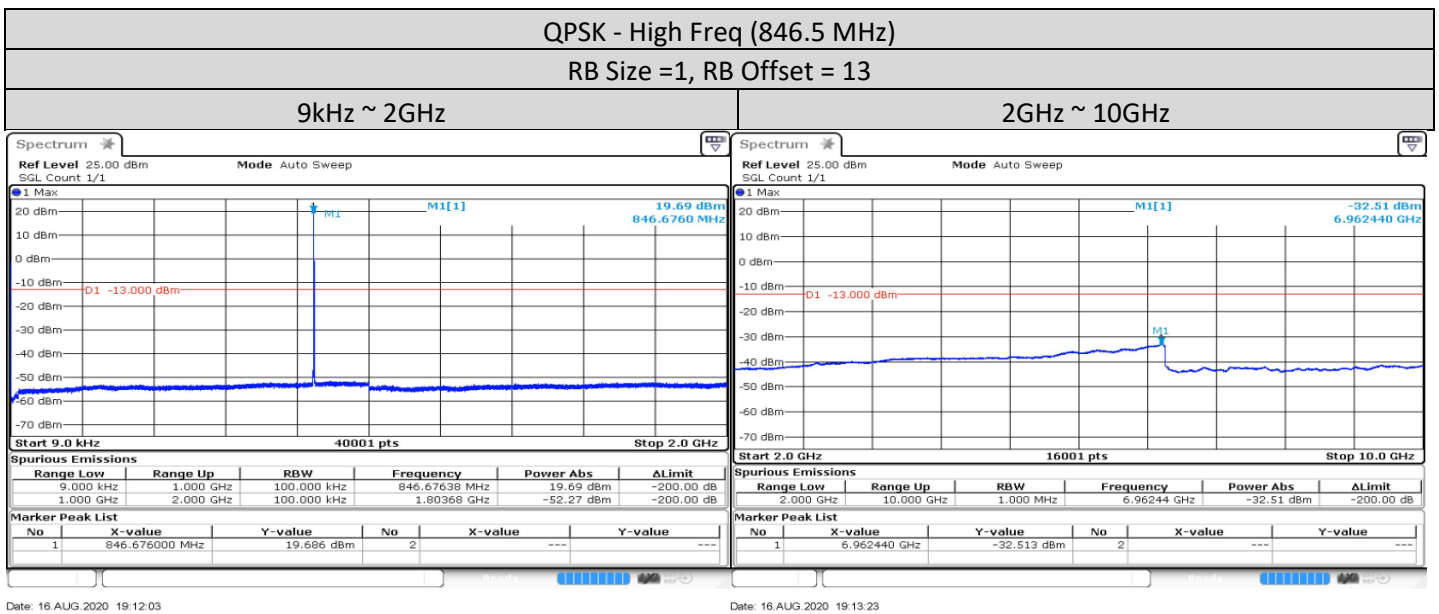
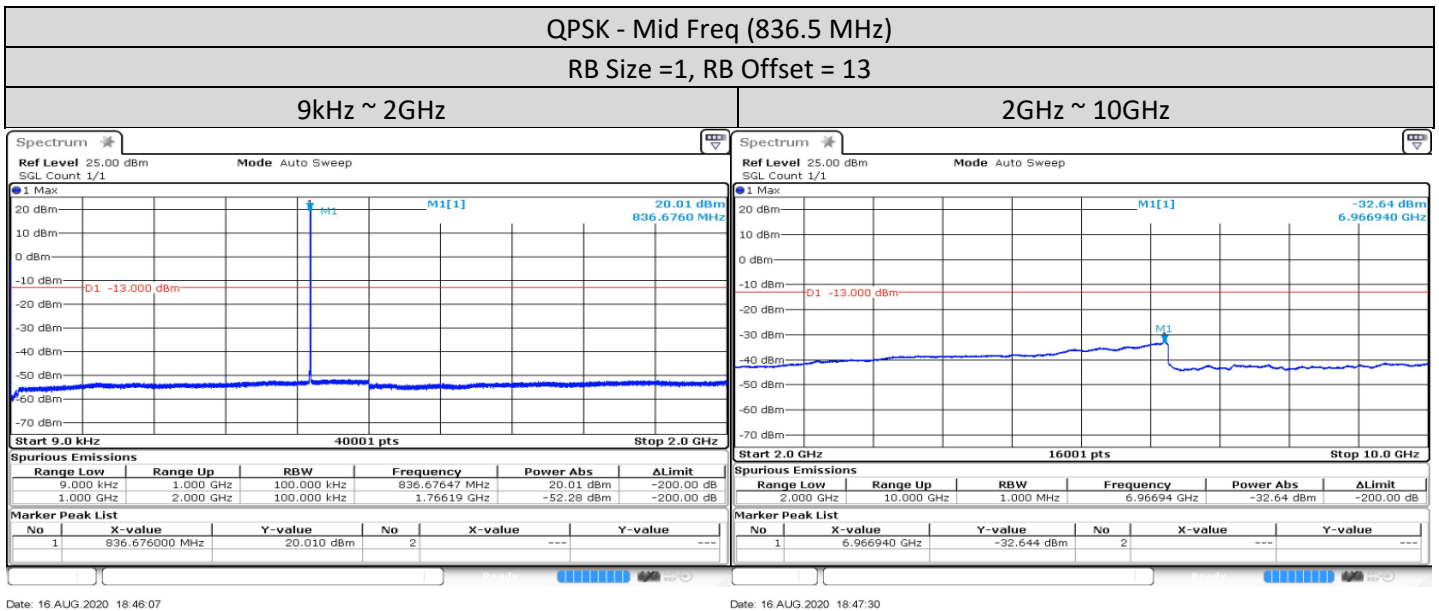
3MHz



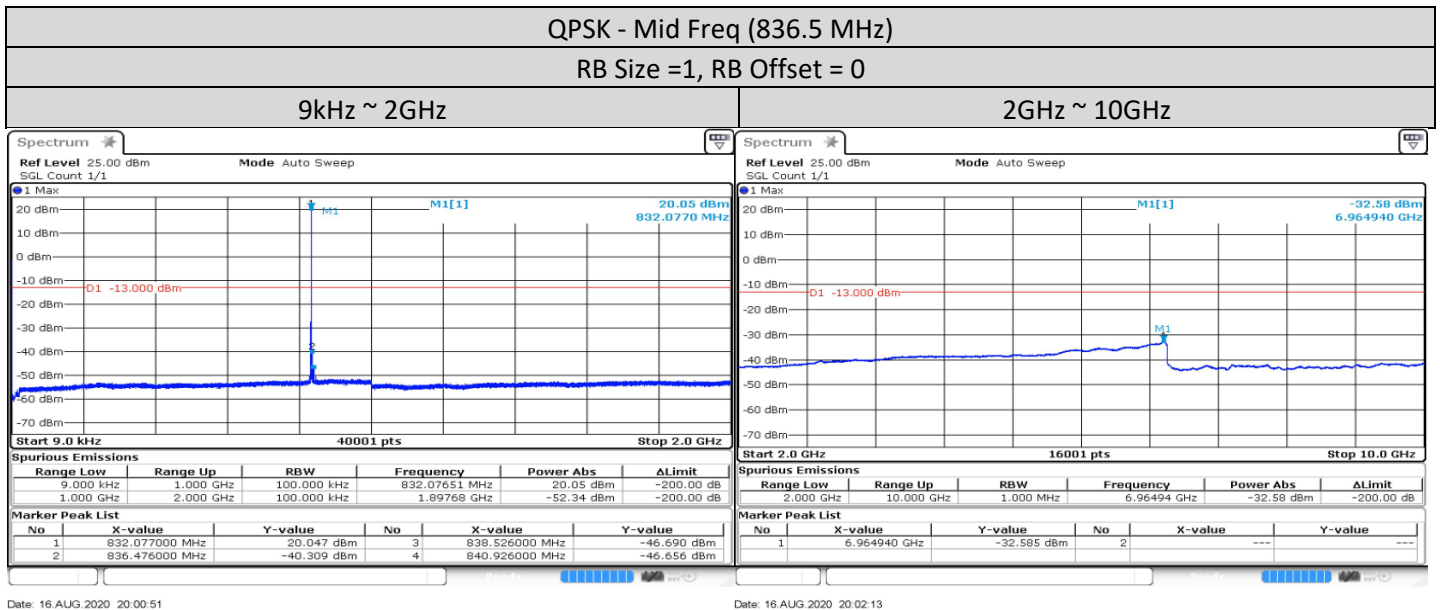
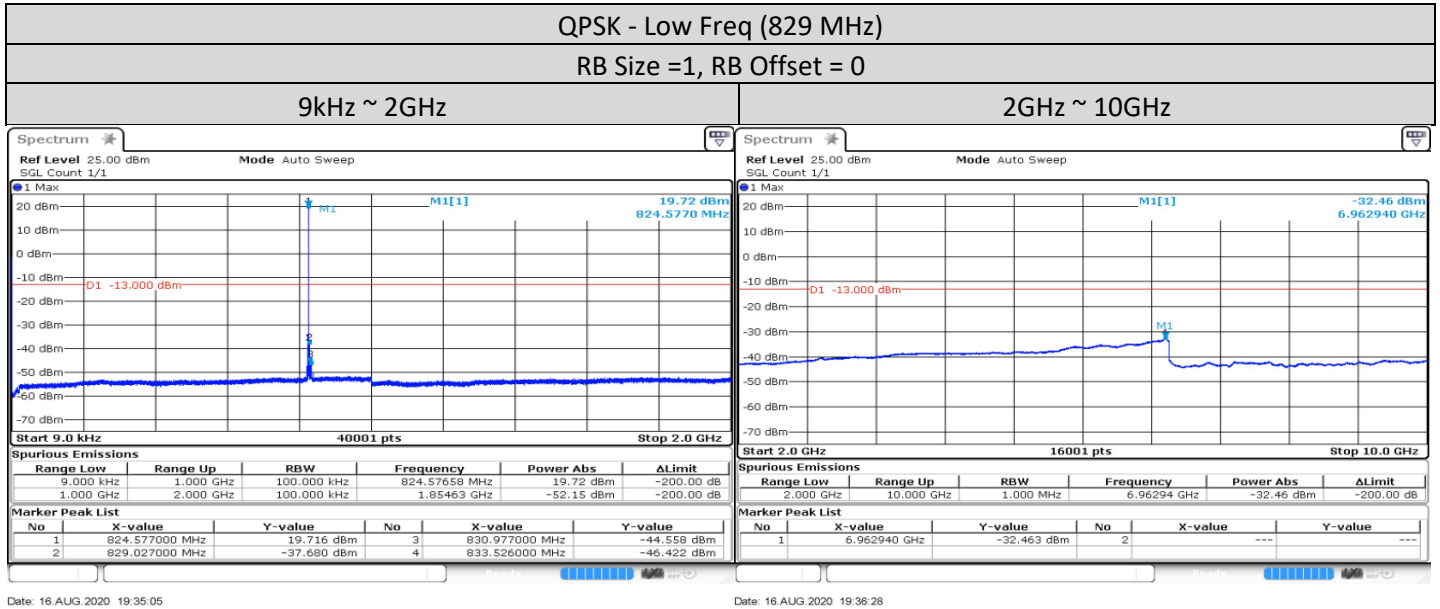


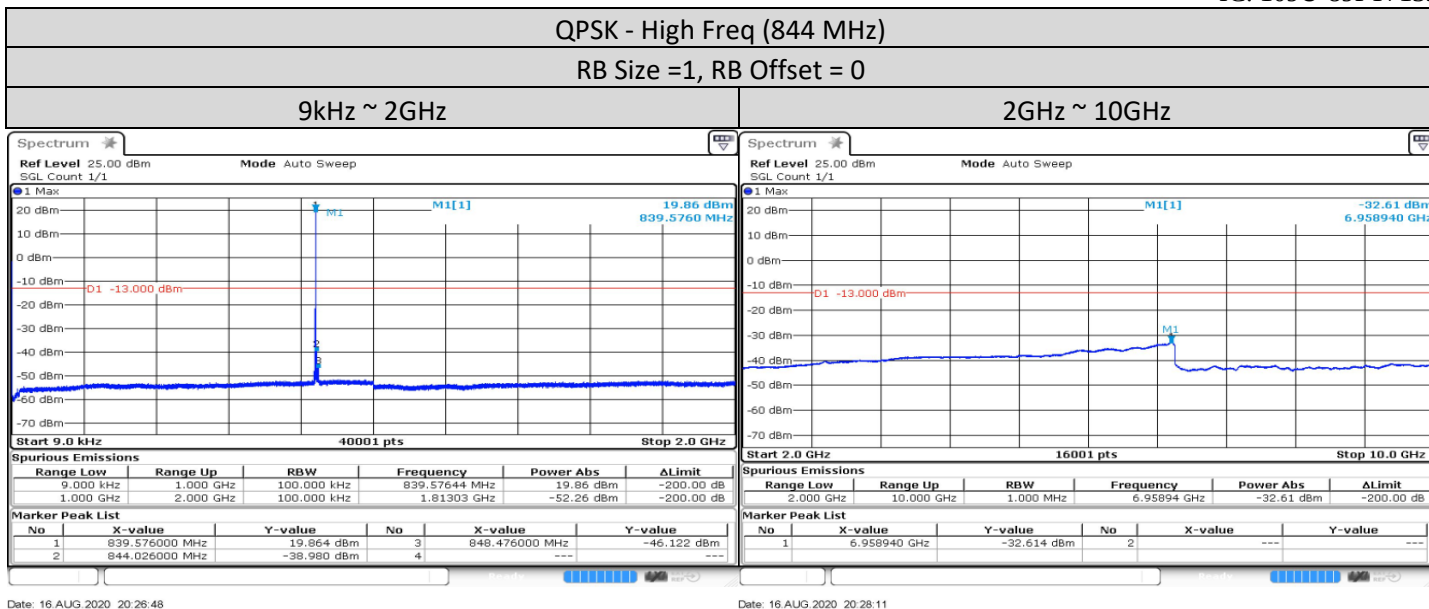
5MHz





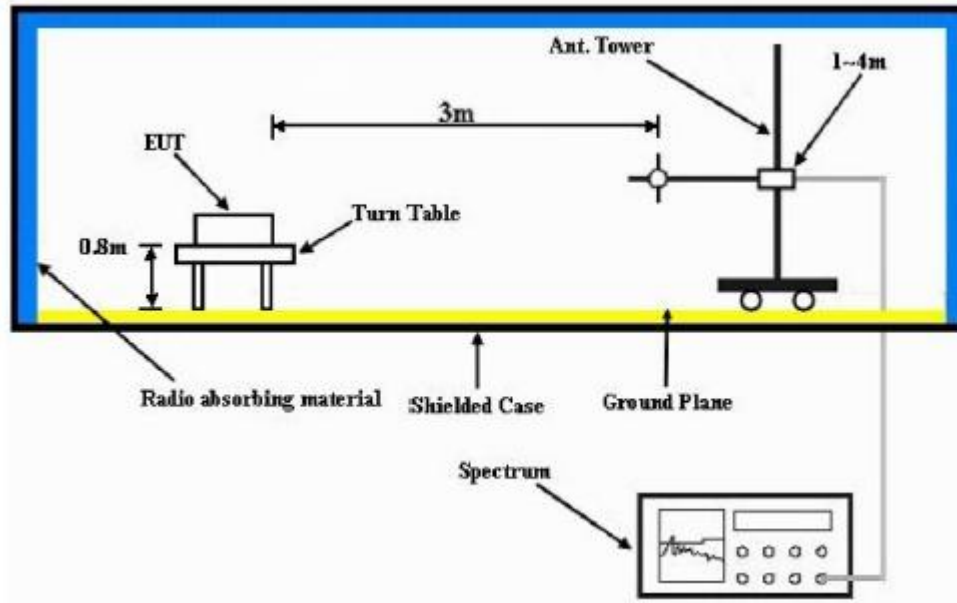
10MHz





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.

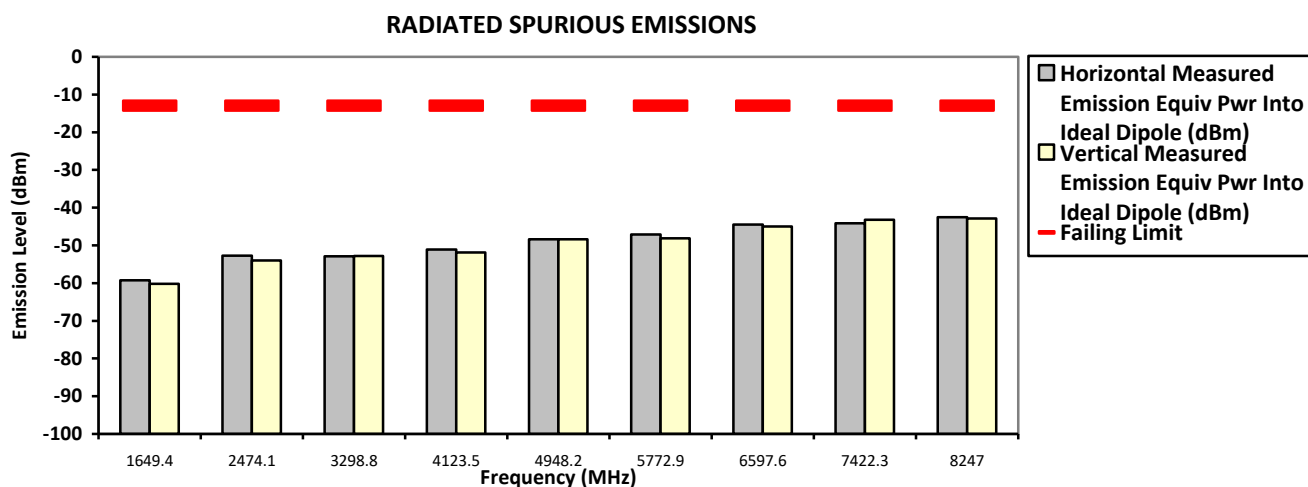
1.12.2. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

1.12.3. Radiated Spurious Emission – LTE Band 5 (824-849MHz)

SAC Transmitter Radiated Emission:
 Model Number: AAH90ZDU9RH1AN S/N: 734TWP0308 SR:18058-EMC-00050
 Battery Part No: PMNN4804A Accy Part No: AN000348A01
 Test Mode: TX LTE (Band 5) X-Plane
 824.700000 MHz (Low) Bandwidth 1.4MHz 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)
1649.4000	-13.0000	-59.2691 **	-60.2126 **
2474.1000	-13.0000	-52.7449 **	-53.9548 **
3298.8000	-13.0000	-52.8943 **	-52.8252 **
4123.5000	-13.0000	-51.1407 **	-51.8941 **
4948.2000	-13.0000	-48.3818 **	-48.4014 **
5772.9000	-13.0000	-47.1414 **	-48.1300 **
6597.6000	-13.0000	-44.4523 **	-44.9615 **
7422.3000	-13.0000	-44.1044 **	-43.1753 **
8247.0000	-13.0000	-42.5705 **	-42.8529 **



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

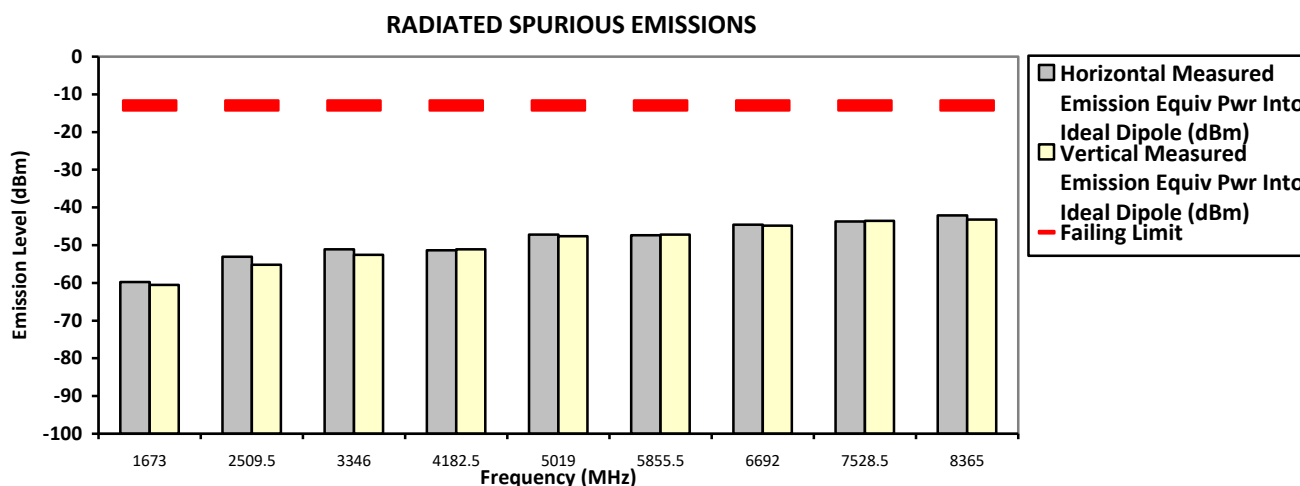
Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N:** 734TWP0308 **SR:**18058-EMC-00050
Battery Part No: PMNN4804A **Accy Part No:** AN000348A01
Test Mode: TX LTE (Band 5) X-Plane
836.500000 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)
1673.0000	-13.0000	-59.7976 **	-60.4897 **
2509.5000	-13.0000	-53.0588 **	-55.1809 **
3346.0000	-13.0000	-51.0732 **	-52.5130 **
4182.5000	-13.0000	-51.3613 **	-51.1118 **
5019.0000	-13.0000	-47.2177 **	-47.6275 **
5855.5000	-13.0000	-47.3794 **	-47.2111 **
6692.0000	-13.0000	-44.5939 **	-44.8287 **
7528.5000	-13.0000	-43.7132 **	-43.5063 **
8365.0000	-13.0000	-42.1029 **	-43.2349 **



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

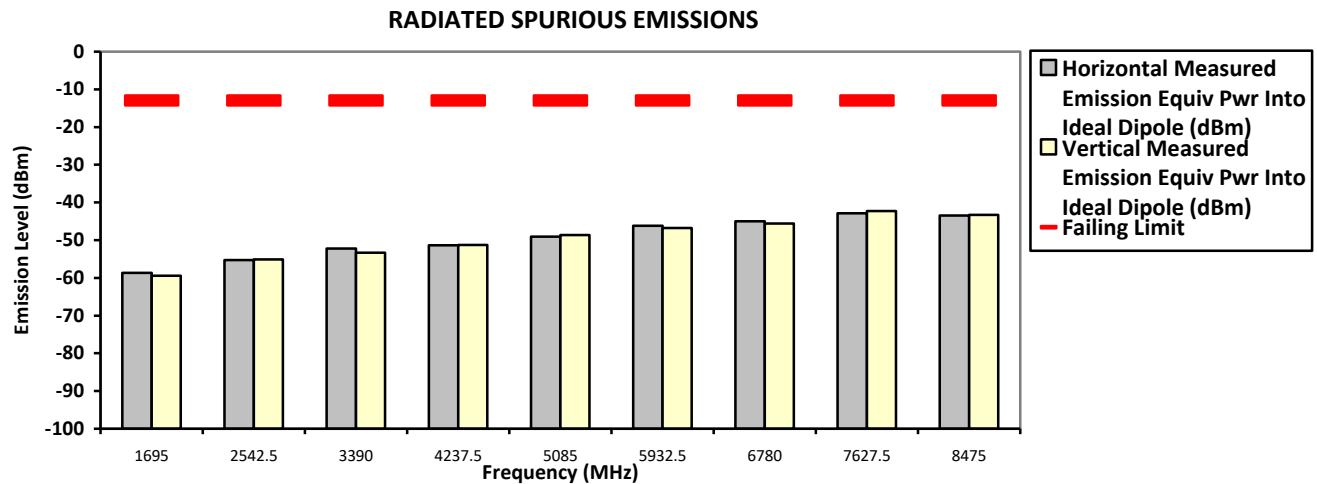
Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N:** 734TWP0308 **SR:**18058-EMC-00050
Battery Part No: PMNN4804A **Accy Part No:** AN000348A01
Test Mode: TX LTE (Band 5) X-Plane
847.500000 MHz (High) **Bandwidth 3MHz** **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)
1695.0000	-13.0000	-58.6970 **	-59.3963 **
2542.5000	-13.0000	-55.2676 **	-55.0749 **
3390.0000	-13.0000	-52.2101 **	-53.3268 **
4237.5000	-13.0000	-51.3860 **	-51.2756 **
5085.0000	-13.0000	-49.0347 **	-48.6409 **
5932.5000	-13.0000	-46.1596 **	-46.7591 **
6780.0000	-13.0000	-45.0183 **	-45.5440 **
7627.5000	-13.0000	-42.8597 **	-42.3026 **
8475.0000	-13.0000	-43.4254 **	-43.2767 **



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

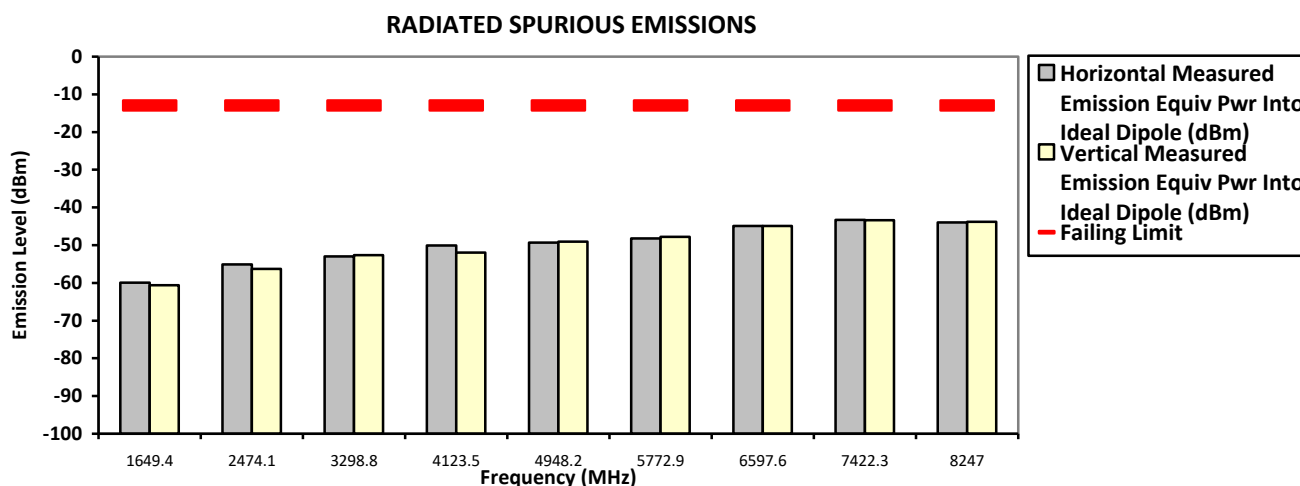
Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N:** 734TWP0308 **SR:**18058-EMC-00050
Battery Part No: PMNN4804A **Accy Part No:** AN000348A01
Test Mode: TX LTE (Band 5) Y-Plane
824.700000 MHz (Low) **Bandwidth 1.4MHz** **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)
1649.4000	-13.0000	-59.9187 **	-60.5741 **
2474.1000	-13.0000	-55.0538 **	-56.2687 **
3298.8000	-13.0000	-52.9897 **	-52.6037 **
4123.5000	-13.0000	-50.1109 **	-51.9413 **
4948.2000	-13.0000	-49.3549 **	-49.0384 **
5772.9000	-13.0000	-48.1947 **	-47.8269 **
6597.6000	-13.0000	-44.9232 **	-44.8951 **
7422.3000	-13.0000	-43.2809 **	-43.4002 **
8247.0000	-13.0000	-43.9852 **	-43.8308 **



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

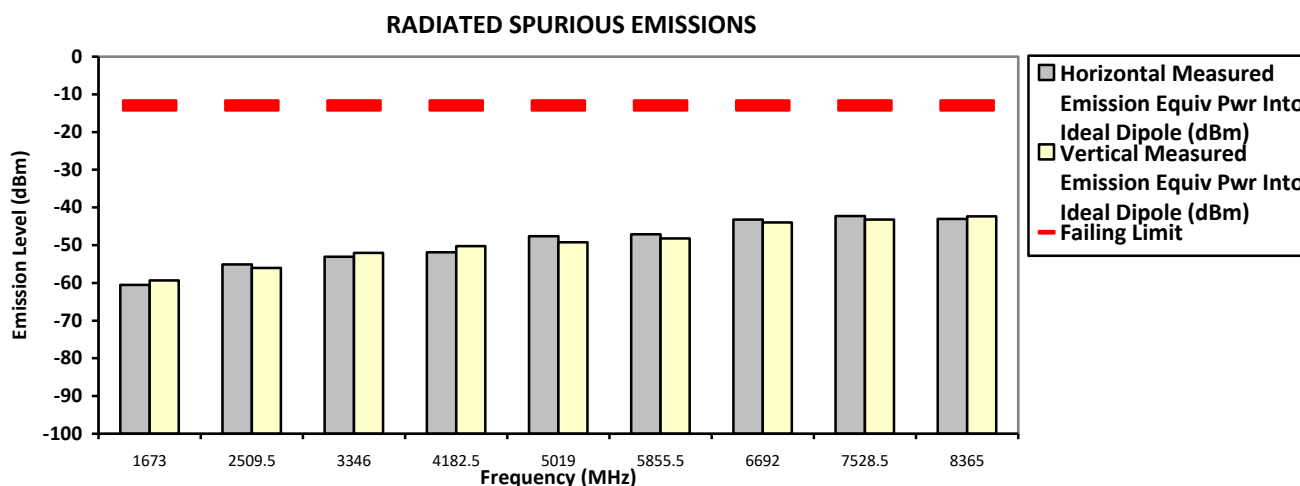
Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N:** 734TWP0308 **SR:**18058-EMC-00050
Battery Part No: PMNN4804A **Accy Part No:** AN000348A01
Test Mode: TX LTE (Band 5) Y-Plane
836.500000 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)
1673.0000	-13.0000	-60.5258 **	-59.2989 **
2509.5000	-13.0000	-55.1320 **	-56.0455 **
3346.0000	-13.0000	-53.0324 **	-52.0717 **
4182.5000	-13.0000	-51.8927 **	-50.2248 **
5019.0000	-13.0000	-47.6103 **	-49.2736 **
5855.5000	-13.0000	-47.1521 **	-48.2458 **
6692.0000	-13.0000	-43.2404 **	-43.9551 **
7528.5000	-13.0000	-42.3159 **	-43.2243 **
8365.0000	-13.0000	-43.0643 **	-42.3871 **



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

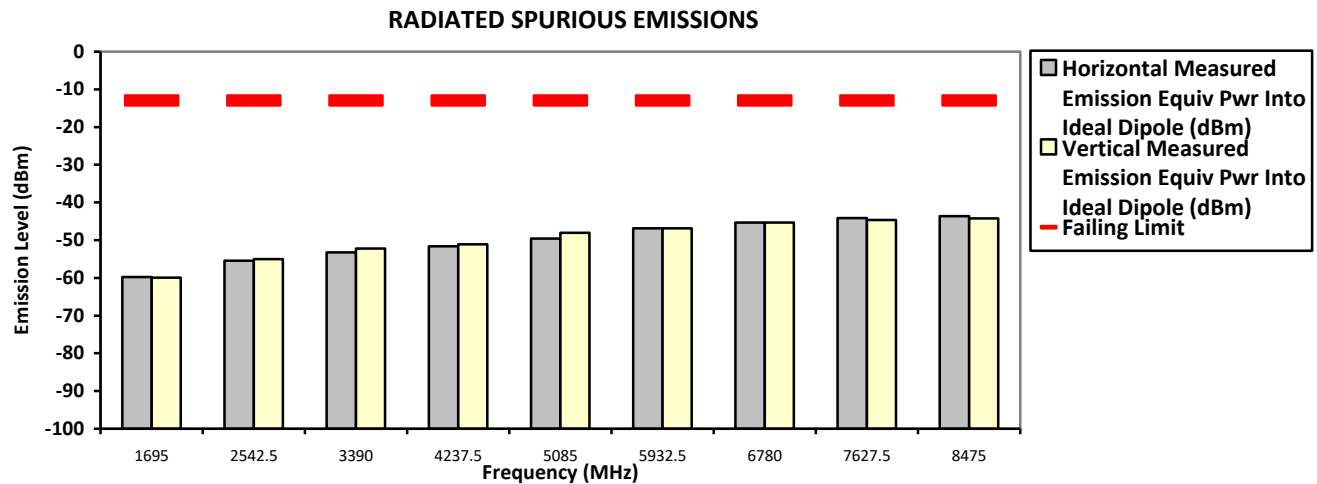
System MU: 4.03 dB

Remarks: Passed Results Marginal Results Failed Results

SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N:** 734TWP0308 **SR:**18058-EMC-00050
Battery Part No: PMNN4804A **Accy Part No:** AN000348A01
Test Mode: TX LTE (Band 5) Y-Plane
847.500000 MHz (High) **Bandwidth 3MHz** **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)
1695.0000	-13.0000	-59.7228 **	-59.9457 **
2542.5000	-13.0000	-55.4401 **	-55.0239 **
3390.0000	-13.0000	-53.2646 **	-52.2202 **
4237.5000	-13.0000	-51.6448 **	-51.0988 **
5085.0000	-13.0000	-49.5566 **	-48.0615 **
5932.5000	-13.0000	-46.8276 **	-46.8503 **
6780.0000	-13.0000	-45.2953 **	-45.3643 **
7627.5000	-13.0000	-44.1534 **	-44.6477 **
8475.0000	-13.0000	-43.6574 **	-44.2159 **



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

Model Number: AAH90ZDU9RH1AN
 Battery Part No: PMNN4804A

SAC Transmitter Radiated Emission:
 S/N: 734TWP0308
 Accy Part No: AN000348A01
 Test Mode: TX LTE (Band 5) Z-Plane
 Bandwidth 1.4MHz

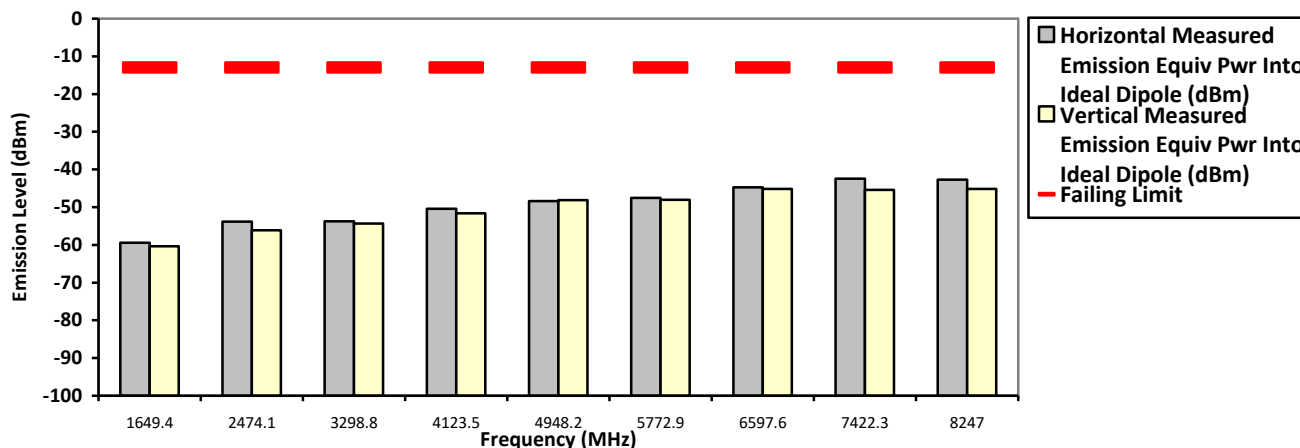
SR:18058-EMC-00050

824.700000 MHz (Low)

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)
1649.4000	-13.0000	-59.4605 **	-60.3379 **
2474.1000	-13.0000	-53.8403 **	-56.1297 **
3298.8000	-13.0000	-53.7681 **	-54.3450 **
4123.5000	-13.0000	-50.4262 **	-51.5883 **
4948.2000	-13.0000	-48.3561 **	-48.1460 **
5772.9000	-13.0000	-47.5190 **	-48.0545 **
6597.6000	-13.0000	-44.7162 **	-45.2003 **
7422.3000	-13.0000	-42.4573 **	-45.4161 **
8247.0000	-13.0000	-42.6624 **	-45.1770 **

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

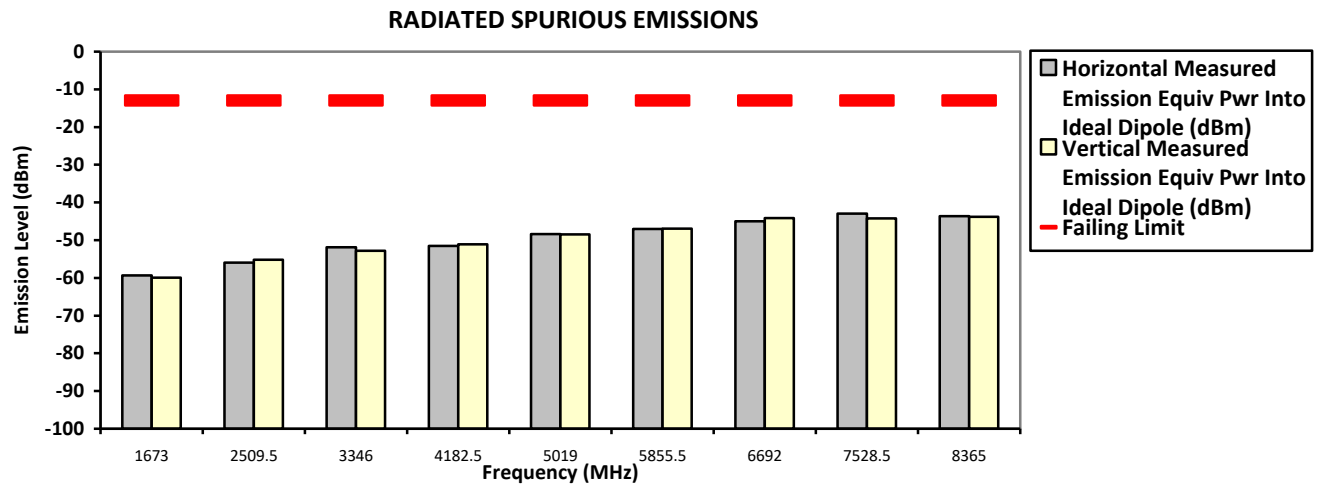
Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH90ZDU9RH1AN **S/N:** 734TWP0308 **SR:**18058-EMC-00050
Battery Part No: PMNN4804A **Accy Part No:** AN000348A01
Test Mode: TX LTE (Band 5) Z-Plane
836.500000 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)
1673.0000	-13.0000	-59.3265 **	-59.9232 **
2509.5000	-13.0000	-55.9333 **	-55.1667 **
3346.0000	-13.0000	-51.8436 **	-52.8072 **
4182.5000	-13.0000	-51.5675 **	-51.0785 **
5019.0000	-13.0000	-48.4108 **	-48.4942 **
5855.5000	-13.0000	-47.0323 **	-46.9494 **
6692.0000	-13.0000	-44.9825 **	-44.1213 **
7528.5000	-13.0000	-42.9687 **	-44.2533 **
8365.0000	-13.0000	-43.6601 **	-43.8354 **



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

Model Number: AAH90ZDU9RH1AN
 Battery Part No: PMNN4804A

SAC Transmitter Radiated Emission:
 S/N: 734TWP0308
 Accy Part No: AN000348A01
 Test Mode: TX LTE (Band 5) Z-Plane
 Bandwidth 3MHz

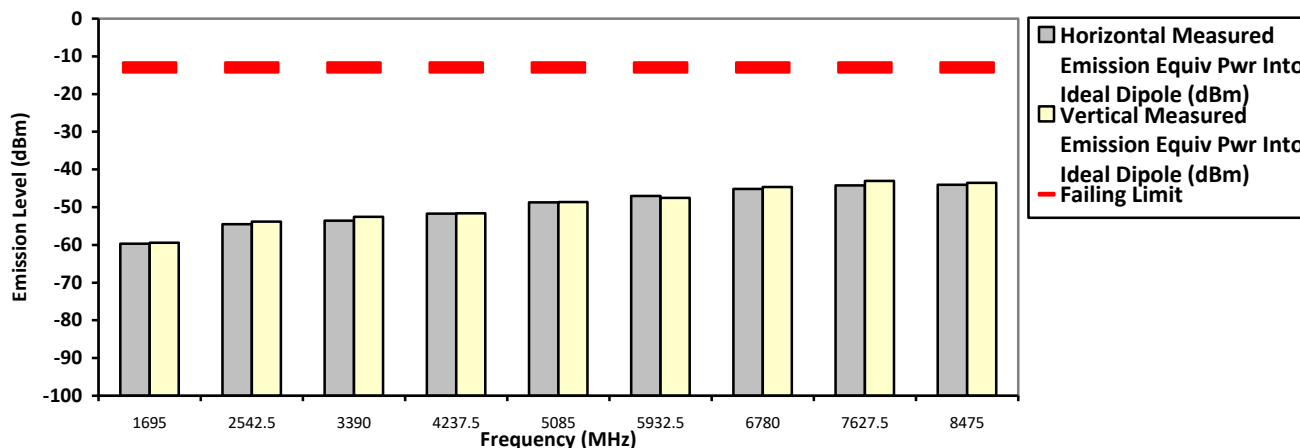
SR:18058-EMC-00050

847.500000 MHz (High)

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)
1695.0000	-13.0000	-59.6578 **	-59.4099 **
2542.5000	-13.0000	-54.5399 **	-53.7783 **
3390.0000	-13.0000	-53.6007 **	-52.5149 **
4237.5000	-13.0000	-51.7370 **	-51.5800 **
5085.0000	-13.0000	-48.7601 **	-48.6735 **
5932.5000	-13.0000	-47.0065 **	-47.5555 **
6780.0000	-13.0000	-45.1556 **	-44.6297 **
7627.5000	-13.0000	-44.1989 **	-43.0247 **
8475.0000	-13.0000	-44.0730 **	-43.5692 **

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

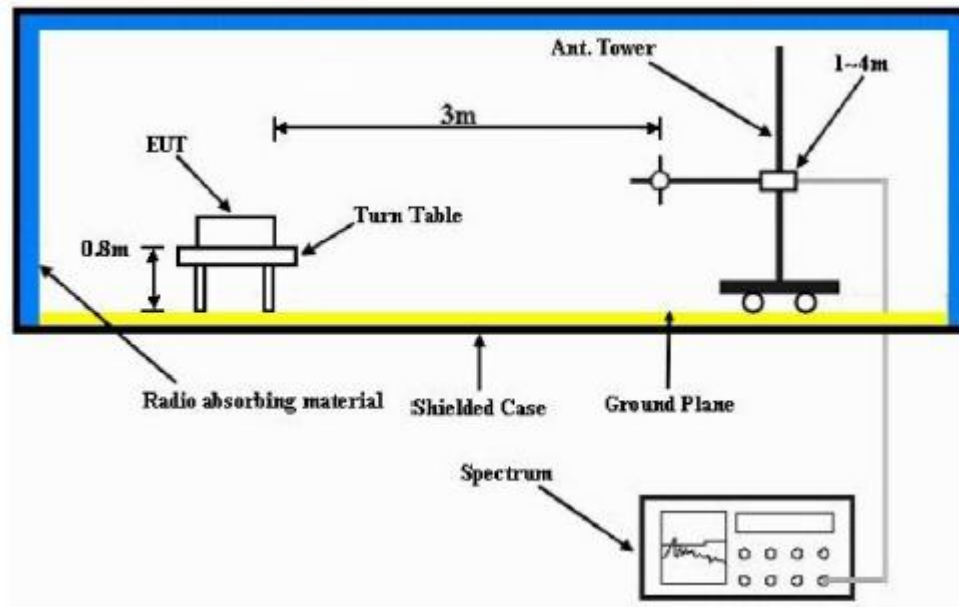
System MU: 4.03 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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1.13. Effective Radiated Power (ERP)

1.13.1. Test Setup



- 1) The spectrum setting for Effective Radiated Power (ERP) is RBW = 100 kHz, VBW = 300 kHz. 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) $ERP = \text{“Read Value”} + \text{Measured substitution value.}$

1.13.2. Test Limit

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw). Power is given in terms of effective radiated power (ERP).

1.13.3. Effective Radiated Power (ERP) - LTE Band 5 (824-849MHz)

Not Performed.

--End of Test Report--