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FCC ID: OJFDHRU-G2-7

# Appendix -

# Test Data and Result for report GZCR231100125402

(A)

(For copied data from original report GZCR210300001302)



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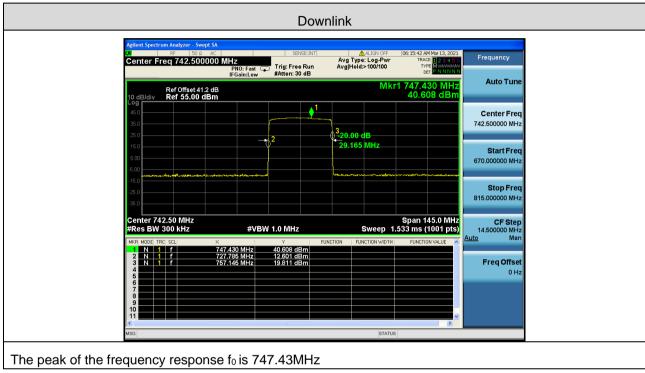
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#### 1 Lower & Upper 700MHz (only for downlink: 728-757MHz)

### 1.1 Out-of-band rejection





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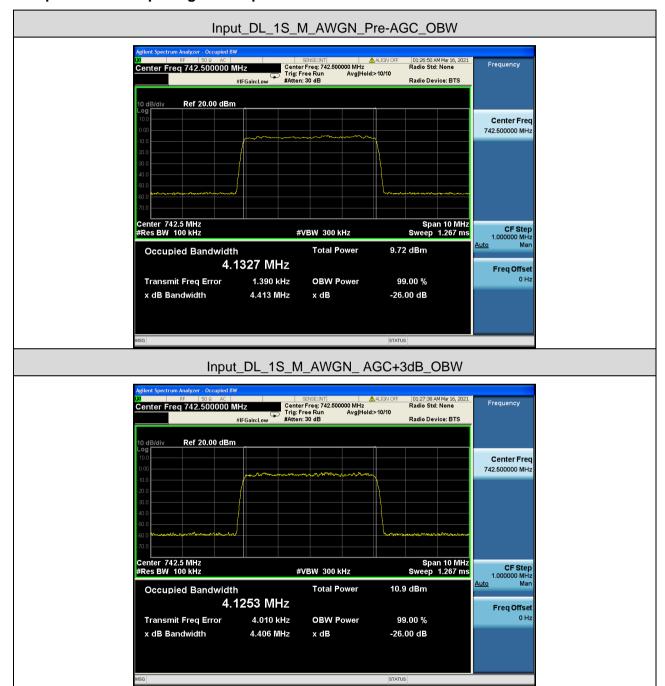
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#### 1.2 Input-versus-output signal comparison





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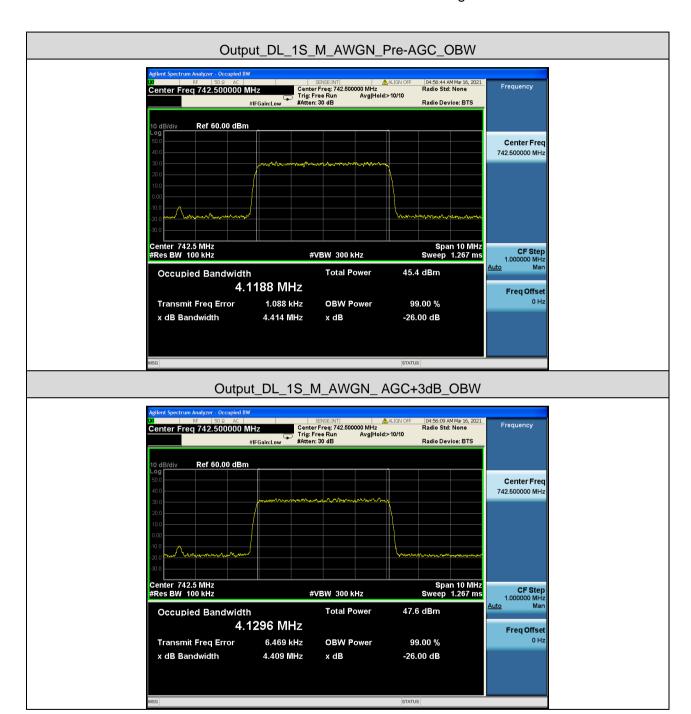
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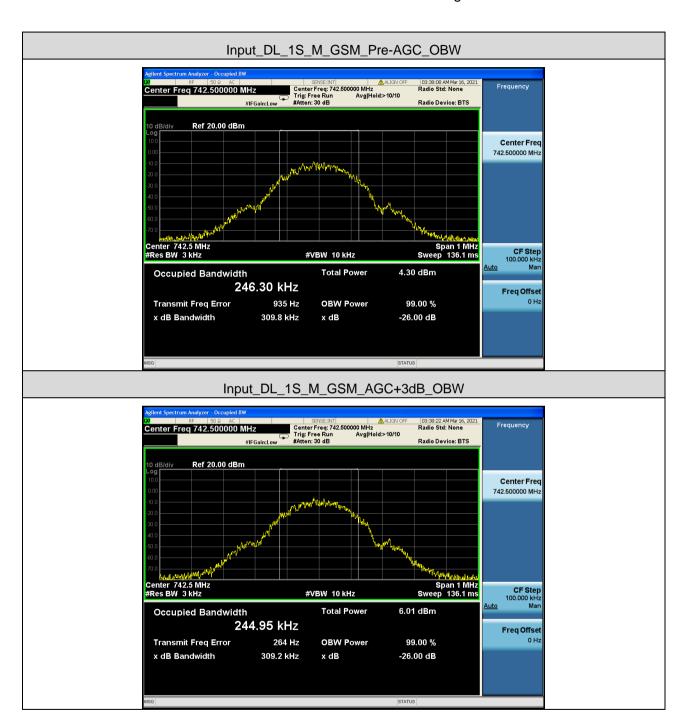
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#### Output\_DL\_1S\_M\_GSM\_AGC+3dB\_OBW



#### Remark:

Compare the spectral plot of the input signal to the output signal affirm that they are similar (in passband and roll off characteristic features and relative spectral locations). The test result complies with the requirement.



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#### 1.3 Mean output power and amplifier/booster gain

Test Conf.	Test Freq. f <sub>0</sub> (MHz)	Signal Level	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Verdict
DL_1S_AWGN	747.43	Pre-AGC	0.13	43.34	43.21	PASS
		AGC+3dB	3.33	43.31	/	PASS
		Pre-AGC	-0.21	43.16	43.37	PASS
DL_1S_GSM	747.43	AGC+3dB	2.79	43.21	/	PASS

#### Remark:

According to the declaration from the applicant, the single antenna gain should not exceed 12.5dBi, the Directional gain = G<sub>ANT</sub> + 10 log (N<sub>ANT</sub>) dBi = 12.5dBi+10log (2) dBi= 15.5dBi.

ERP= EIRP-2.15dB.

The total maximum ERP for the EUT is (43.34dBm+43.34dBm) +15.5dBi-2.15dB=59.70dBm (933.25W) which don't exceed the required ERP limit (1000W/MHz).

#### 1.4 Out-of-band/out-of-block (including intermodulation) emissions and spurious emissions

Note:

The tested max conducted power for single antenna port is 43.34dBm, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB, the limit corresponds to an absolute limit of −13 dBm.

P=43.34dBm= 21.58W.

So the limit =

Here.

P(dBm)- [43 + 10 log (21.58W)] = -13dBm

The EUT supports 2x2 MIMO and the emissions were measured at one of output port, so the limit line was set to -16.01dBm in following test plots in order to determine the test result conveniently.

The spurious emissions from 9kHz to 30MHz was very low and 20dB below the limit, therefore, the data was not recorded in the report.



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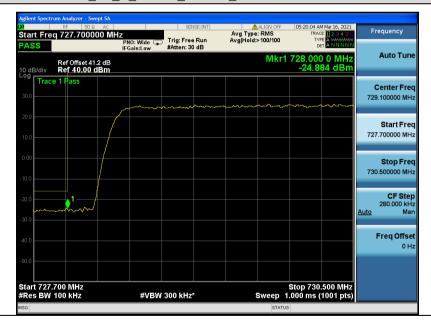


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#### DL 1S B AWGN Pre-AGC Out-of-band emission



#### DL\_1S\_B\_AWGN\_AGC+3\_Out-of-band emission





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### DL 1S T AWGN Pre-AGC Out-of-band emission Avg Type: RMS Avg|Hold:>100/100 Start Freq 754.500000 MHz Auto Tun Mkr1 757.000 0 MHz -21.325 dBm Ref Offset 41.2 dB Ref 40.00 dBm Center Free



#### DL\_1S\_T\_AWGN\_AGC+3\_Out-of-band emission





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# DL 2S B AWGN Pre-AGC Out-of-band emission Start Freq 727.700000 MHz Avg Type: RMS Avg|Hold:>100/100 Auto Tun 28.000 0 MHz -18.883 dBm Ref Offset 41.2 dB Ref 40.00 dBm Center Free 731.600000 MH Start Fred 727.700000 MH Stop Free 735.500000 MH CF Step 780.000 kHz Man Freq Offset Start 727.700 MHz #Res BW 100 kHz Stop 735.500 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz\* DL\_2S\_B\_AWGN\_AGC+3\_Out-of-band emission Start Freq 727.700000 MHz PNO: Wide Figain Low #Atten: 30 dB Avg Type: RMS Avg|Hold>100/100 Auto Tune Ref Offset 41.2 dB Ref 40.00 dBm Center Freq 727.700000 MHz Stop Freq 735.500000 MH CF Step 780.000 kHz



Start 727.700 MHz #Res BW 100 kHz

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Stop 735.500 MHz Sweep 1.000 ms (1001 pts)

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**#VBW** 300 kHz\*

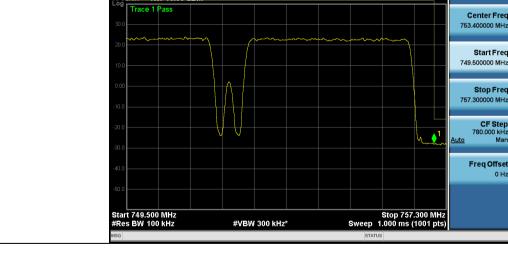
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# DL 2S T AWGN Pre-AGC Out-of-band emission Avg Type: RMS Avg|Hold:>100/100 Start Freq 749.500000 MHz Auto Tun 57.000 0 MHz -26.024 dBm Ref Offset 41.2 dB Ref 40.00 dBm Center Free 753.400000 MH Start Fred 749.500000 MH Stop Free 757.300000 MH CF Step 780.000 kHz Man Frea Offset Start 749.500 MHz #Res BW 100 kHz Stop 757.300 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz\* DL\_2S\_T\_AWGN\_AGC+3\_Out-of-band emission Start Freq 749.500000 MHz PNO: Wide IFGain:Low Trig: Free Run Atten: 10 dB Avg Type: RMS Avg|Hold>100/100 Auto Tune Ref Offset 41.2 dB Ref 40.00 dBm Start Freq 749.500000 MHz





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#### DL 1S B GSM Pre-AGC Out-of-band emission



#### DL\_1S\_B\_GSM\_AGC+3\_Out-of-band emission





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#### DL 1S T GSM Pre-AGC Out-of-band emission



#### DL\_1S\_T\_GSM\_AGC+3\_Out-of-band emission





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#### DL 2S B GSM Pre-AGC Out-of-band emission



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#### DL 2S T GSM Pre-AGC Out-of-band emission



#### DL\_2S\_T\_GSM\_AGC+3\_Out-of-band emission





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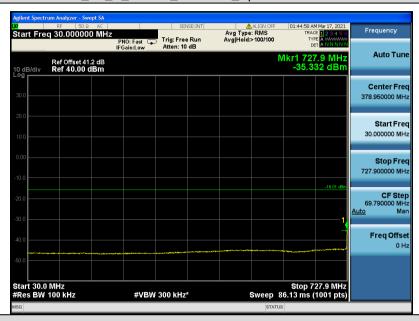
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#### DL 1S B AWGN Pre-AGC Spurious emission 1



#### DL\_1S\_B\_AWGN\_Pre-AGC\_Spurious emission 2





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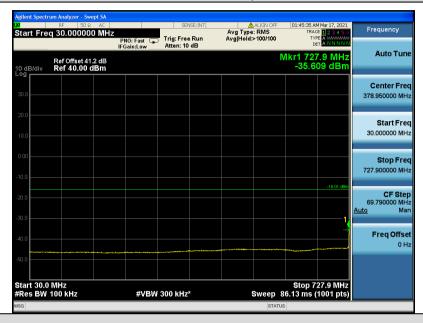
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#### DL 1S M AWGN Pre-AGC Spurious emission 1



#### DL\_1S\_M\_AWGN\_Pre-AGC\_Spurious emission 2





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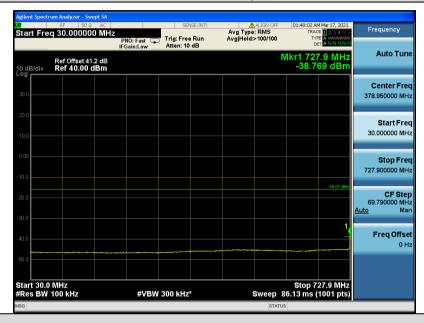
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#### DL 1S T AWGN Pre-AGC Spurious emission 1



#### DL\_1S\_T\_AWGN\_Pre-AGC\_Spurious emission 2





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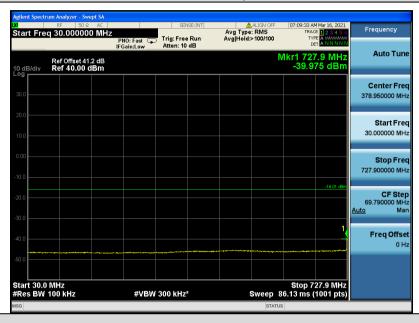
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#### DL 1S B GSM Pre-AGC Spurious emission 1



#### DL\_1S\_B\_GSM\_Pre-AGC\_Spurious emission 2





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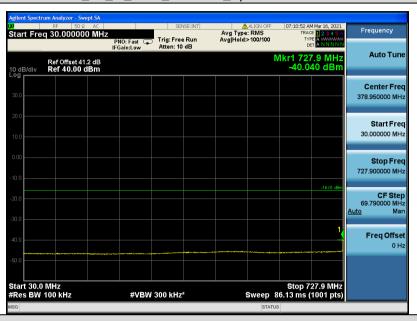
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#### DL 1S M GSM Pre-AGC Spurious emission 1



#### DL\_1S\_M\_GSM\_Pre-AGC\_Spurious emission 2





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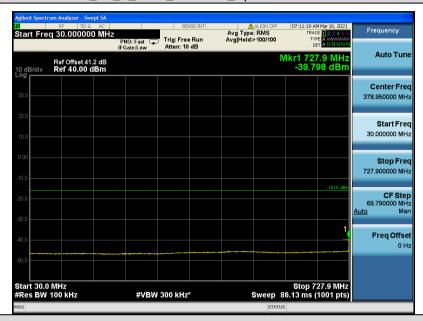
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#### DL 1S T GSM Pre-AGC Spurious emission 1



#### DL\_1S\_T\_GSM\_Pre-AGC\_Spurious emission 2





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#### 1.5 Frequency Stability

Note:

- 1. At 10 °C intervals of temperatures between -30 °C and +50 °C at the manufacturer's rated supply voltage, here the rated supply voltage is AC 110V.
- 2. At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage, then the -15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.
- 3. The frequency stabilities can be maintained within the authorized bands of operation. Meet the requirement.
- 4. Frequency stability has been tested using an AWGN test signal and a GSM-TDMA test signal, only the worst-case was recorded in this report.

Frequency stability vs temperature					
Temperature (°C)	Test Conf.	Test data (MHz)	Tolerance (ppm)	Verdict	
50		742.501592	0.04	PASS	
40		742.502217	0.88	PASS	
30		742.501684	0.16	PASS	
20		742.501563	Reference	PASS	
10	DL_1S_M_AWGN	742.501453	-0.15	PASS	
0		742.501813	0.34	PASS	
-10		742.501603	0.05	PASS	
-20	_	742.501723	0.22	PASS	
-30		742.501921	0.48	PASS	

Frequency stability vs voltage					
Voltage (V)	Test Conf.	Test data (MHz)	Tolerance (ppm)	Verdict	
AC 93.5		742.501452	-0.15	PASS	
AC 110	DL_1S_M_AWGN	742.501563	Reference	PASS	
AC 126.5		742.501238	-0.44	PASS	



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#### 1.6 Radiated spurious emissions

Note:

1. The tested max conducted power for single antenna port is 43.34dBm, the 2x2 MIMO total power is 43.34dBm+43.34dBm= 43.16W.

The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB, the limit corresponds to an absolute limit of -13 dBm.

Here.

P=43.16W.

So the limit =

P(dBm)- [43 + 10 log (43.16W)] = -13dBm

- 2. The radiated test performed at bottom / middle / top channel, the data with more than 20db margin, therefore, only the worst-case middle channel test data was recorded in the report.
- 3. The disturbance from 9kHz to 30MHz was very low and 20dB below the limit, therefore, the data was not recorded in the report.



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#### DL 1S M AWGN Horizontal 30MHz~1GHz Level (dBm) 20 10 13DBM -10 -30 -50 -70 -90 -110 -120<sup>1</sup>30 50 100 200 1000 500 Frequency (MHz) Read Correction Limit 0ver Freq Pol/Phase Level Factor Level Line Limit MHz dBm dB dBm dBm dB 35.13 -78.35 2.85 -75.50 -12.99 -62.51 HORIZONTAL 113.32 -67.45 -8.75 -76.20 -12.99 -63.21 HORIZONTAL 2 3 177.51 -67.79 -6.05 -73.84 -12.99 -60.85 HORIZONTAL 4 297.22 -67.10 -3.07 -70.17 -12.99 -57.18 HORIZONTAL 463.97 -72.92 0.31 -72.61 -12.99 -59.62 HORIZONTAL 836.24 -78.05 7.17 -70.88 -12.99 -57.89 HORIZONTAL



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#### DL 1S M AWGN Horizontal above 1GHz 20 Level (dBm) 10 13DBM -10 -30 2 6 -50 -70 -90 -110 -120<mark>1000</mark> 18000 5000 10000 1500 2000 Frequency (MHz) Read Correction Limit 0ver Freq line Pol/Phase Level Factor Level Limit dBm MHz dB dBm dBm dB 1477.28 -46.25 4.70 -41.55 -12.99 -28.56 HORIZONTAL 2252.85 -56.78 9.44 -47.34 -12.99 -34.35 HORIZONTAL 2 2.23 -60.24 -12.99 -47.25 3 3196.09 -62.47 HORIZONTAL -63.16 7.81 -55.35 -12.99 -42.36 4707.89 HORIZONTAL 5567.14 -63.46 13.68 -49.78 -12.99 -36.79 HORIZONTAL 7829.86 -64.13 14.12 -50.01 -12.99 -37.02 HORIZONTAL



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#### DL 1S M AWGN Vertical 30MHz~1GHz 20 Level (dBm) 10 13DBM -10 -30 -50 3 5 -70 -90 -110 -120<sup>1</sup>30 50 100 200 1000 500 Frequency (MHz) Read Correction Limit 0ver Pol/Phase Freq Limit Level Factor Level Line dBm MHz dB dBm dBm dB 55.41 -69.76 -3.97 -73.73 -12.99 -60.74 VERTICAL 99.88 -66.20 -5.14 -71.34 -12.99 -58.35 2 VERTICAL 3 166.65 -65.58 -3.94 -69.52 -12.99 -56.53 VERTICAL 4 282.99 -62.13 -2.70 -64.83 -12.99 -51.84 VERTICAL 460.73 -70.32 1.67 -68.65 -12.99 -55.66 VERTICAL 866.09 -78.98 8.24 -70.74 -12.99 -57.75 VERTICAL



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#### DL 1S M AWGN Vertical above 1GHz 20 Level (dBm) 10 13DBM -10 -30 2 -50 5 -70 -90 -110 -120<mark>1000</mark> 18000 5000 10000 1500 2000 Frequency (MHz) Read Correction Limit 0ver Freq line Limit Pol/Phase Level Factor Level dBm dB MHz dB dBm dBm 1263.80 -60.47 4.20 -56.27 -12.99 -43.28 VERTICAL 5.70 -37.59 -12.99 -24.60 1746.90 -43.29 2 VERTICAL 3 2233.40 -55.72 9.47 -46.25 -12.99 -33.26 VERTICAL -62.47 2.62 -59.85 -12.99 -46.86 3205.35 VERTICAL 4508.14 -63.17 6.02 -57.15 -12.99 -44.16 VERTICAL 6036.42 -64.18 19.49 -44.69 -12.99 -31.70 VERTICAL



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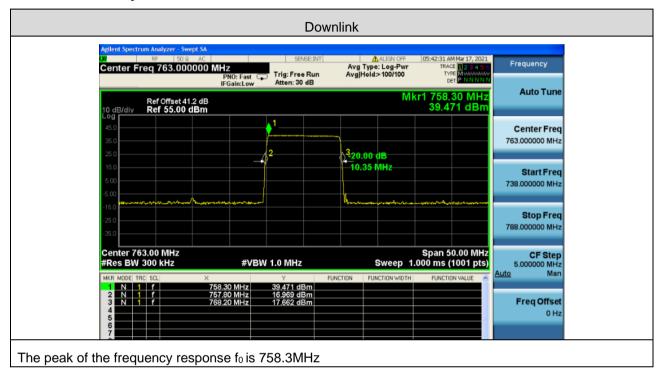
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#### 2 FirstNet (only for downlink: 758-768MHz)

#### 2.1 Out-of-band rejection





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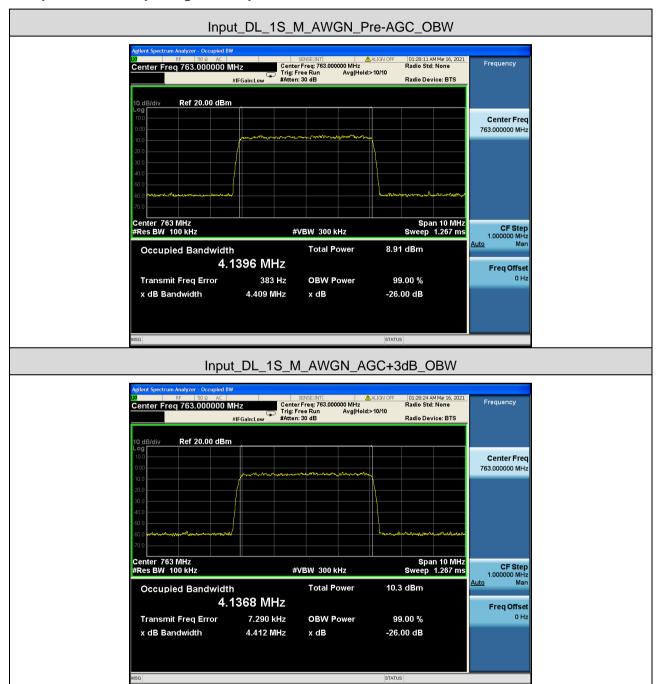
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#### 2.2 Input-versus-output signal comparison





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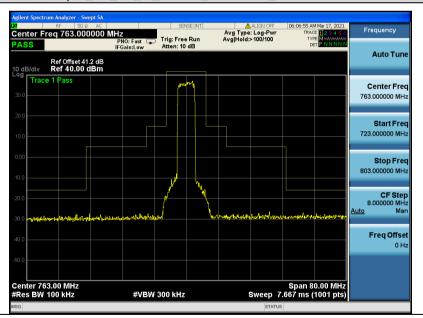


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### Input DL 1S M AWGN Pre-AGC Emission Mask Center Freq 763.000000 MHz Avg Type: Log-Pwr Avg|Hold:>100/100 Auto Tun Ref Offset 41.2 dB Ref 40.00 dBm Center Free 763.000000 MH Start Fred 723.000000 MH



#### Input\_DL\_1S\_M\_AWGN\_AGC+3dB\_Emission Mask





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Stop Free 803.000000 MH

CF Step 8.000000 MH: Mar

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#### Output DL 1S M AWGN Pre-AGC OBW SENSE:INT AALIGN C Center Freq: 763.000000 MHz Trig: Free Run Avg|Hold>10/10 #Atten: 30 dB Center Freg 763.000000 MHz Ref 60.00 dBm Center Free 763.000000 MH Span 10 MHz Sweep 1.267 ms Center 763 MHz #Res BW 100 kHz CF Step 1.000000 MH: Mar #VBW 300 kHz Occupied Bandwidth Total Power 47.4 dBm 4.1298 MHz Frea Offset Transmit Freq Error 8.494 kHz **OBW Power** 99.00 % x dB Bandwidth 4.409 MHz x dB -26.00 dB Output\_DL\_1S\_M\_AWGN\_AGC+3dB\_OBW SENSE:INT AALIGN C Center Freq: 763.000000 MHz Trig: Free Run Avg|Hold:>10/10 #Atten: 30 dB 05:46:35 AM Mar 17, 2021 Radio Std: None Radio Device: BTS Ref 60.00 dBm Center Freq CF Step 1.000000 MHz Man #VBW 300 kHz Occupied Bandwidth Total Power 47.2 dBm 4.1342 MHz Transmit Freq Error -96 Hz **OBW Power** 99.00 % x dB Bandwidth 4.416 MHz -26.00 dB



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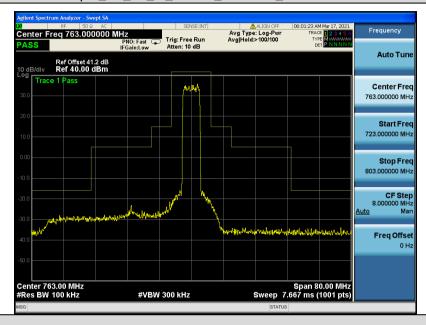
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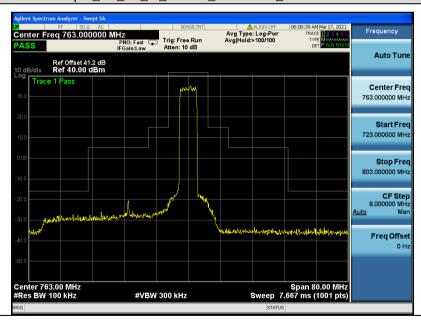


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#### Output DL 1S M AWGN Pre-AGC Emission Mask



#### Output\_DL\_1S\_M\_AWGN\_AGC+3dB\_Emission Mask



#### Remark:

Compare the spectral plot of the input signal to the output signal affirm that they are similar (in passband and roll off characteristic features and relative spectral locations). The test result complies with the requirement.



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#### 2.3 Input/output power and amplifier/booster gain

Test Conf.	Test Freq. fo (MHz)	Signal Level	Input Power (dBm)	Output Power (dBm)	Gain (dB)	Verdict
		Pre-AGC	0.00	43.09	43.09	PASS
DL_1S_AWGN	758.3	AGC+3dB	3.00	43.16	/	PASS

#### Remark:

According to the declaration from the applicant, the single antenna gain should not exceed 12.5dBi, the Directional gain = G<sub>ANT</sub> + 10 log (N<sub>ANT</sub>) dBi = 12.5dBi+10log (2) dBi= 15.5dBi.

ERP= EIRP-2.15dB

The total maximum ERP for the EUT is (43.16dBm+43.16dBm) +15.5dBi-2.15dB=59.52dBm (895.36W) which don't exceed the required ERP limit (1000W).

#### 2.4 Noise Figure

Test Conf.	Noise Figure (dB)	Limit (dB)	Verdict
DL_1S_B_AWGN	8.34	9	PASS
DL_1S_M_AWGN	8.61	9	PASS
DL_1S_T_AWGN	8.73	9	PASS



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#### 2.5 Out-of-band/out-of-block (including intermodulation) emissions and spurious emissions

Note: 1. 90.543(c) Out-of-band emission limit.

the power of any emission must be reduced below the mean output power (P) by at least

43 + 10log (P) dB, Here,

P=43.16dBm= 20.7W

So the limit = P(dBm)- [43 + 10 log (20.7W)] =-13dBm

The EUT supports 2x2 MIMO and the emissions were measured at one of output port, so the limit line was set to -16.01dBm in following test plots in order to determine the test result conveniently.

2. 90.543e (1) limit:

On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

Here, P=43.16dBm= 20.7W

So the limit = P(dBm)- [76 + 10 log (20.7W)] =-46dBm

The EUT supports 2x2 MIMO and the emissions were measured at one of output port, so the limit line was set to -49.01dBm in following test plots in order to determine the test result conveniently.

3. 90.543 (e)(3) limit:

On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB

Here, P=43.16dBm= 20.7W

So the limit =

P(dBm)- [43 + 10 log (20.7W)] = -13dBm

The EUT supports 2x2 MIMO and the emissions were measured at one of output port, so the limit line was set to -16.01dBm in following test plots in order to determine the test result conveniently.

The spurious emissions from 9kHz to 30MHz was very low and 20dB below the limit, therefore, the data was not recorded in the report.



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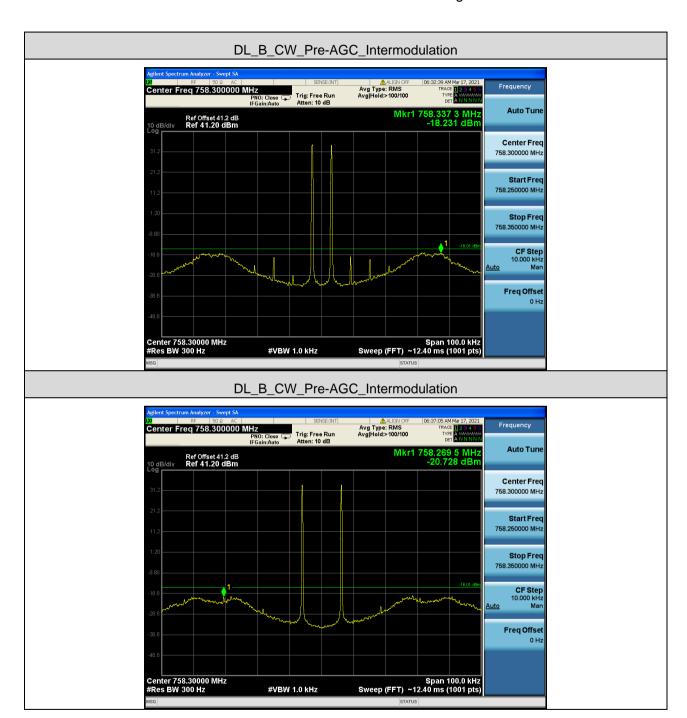
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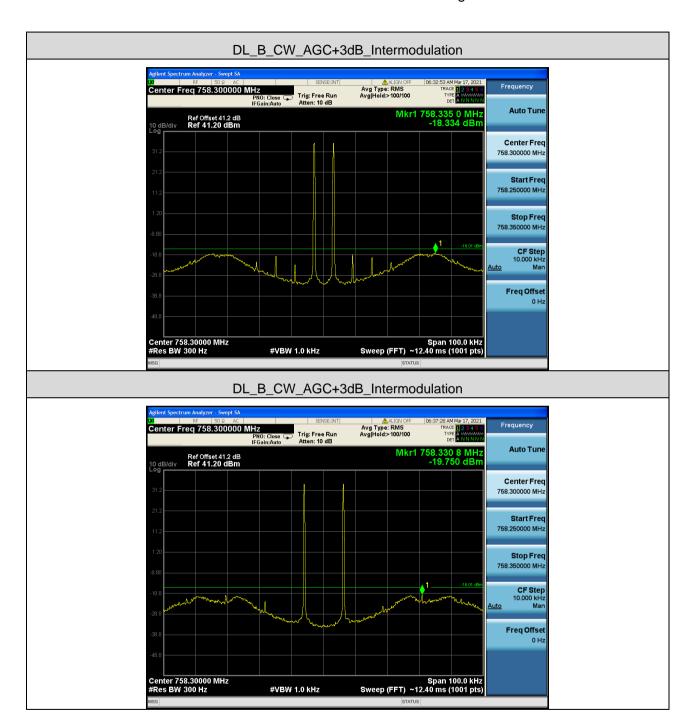
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## DL 1S B AWGN Pre-AGC Spurious emission 1



## DL\_1S\_B\_AWGN\_Pre-AGC\_Spurious emission 2





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## DL 1S B AWGN Pre-AGC Spurious emission 3



## DL\_1S\_B\_AWGN\_Pre-AGC\_Spurious emission 4





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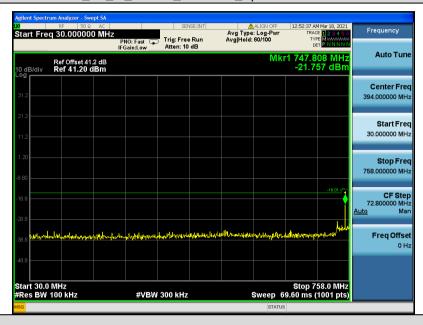
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## DL 1S M AWGN Pre-AGC Spurious emission 1



### DL\_1S\_M\_AWGN\_Pre-AGC\_Spurious emission 2





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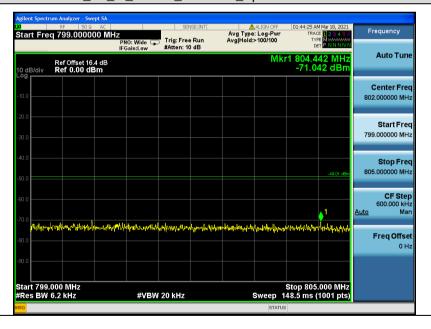


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## DL 1S M AWGN Pre-AGC Spurious emission 3



### DL\_1S\_M\_AWGN\_Pre-AGC\_Spurious emission 4





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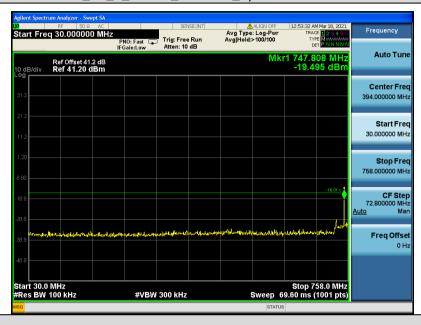
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## DL 1S T AWGN Pre-AGC Spurious emission 1



## DL\_1S\_T\_AWGN\_Pre-AGC\_Spurious emission 2





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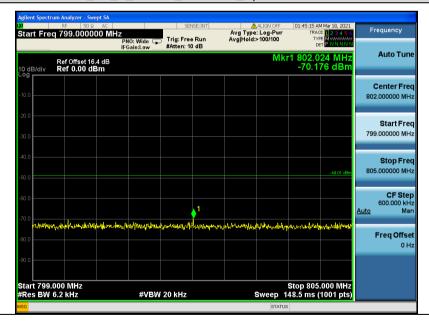


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## DL 1S T AWGN Pre-AGC Spurious emission 3



### DL\_1S\_T\_AWGN\_Pre-AGC\_Spurious emission 4





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## 2.6 Frequency Stability

Note:

- 1. At 10 °C intervals of temperatures between -30 °C and +50 °C at the manufacturer's rated supply voltage, here the rated supply voltage is AC 110V.
- 2. At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage, then the −15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.
- 3. The frequency stabilities can be maintained within the authorized bands of operation. Meet the requirement.

Frequency stability vs temperature						
Temperature (°C)	Test Conf.	Test data (MHz)	Tolerance (ppm)	Verdict		
50		763.000293	0.06	PASS		
40		763.000532	0.37	PASS		
30		763.000393	0.19	PASS		
20		763.000246	Reference	PASS		
10	DL_1S_M_AWGN	763.000132	-0.15	PASS		
0		763.000445	0.26	PASS		
-10		763.000345	0.13	PASS		
-20		763.000545	0.39	PASS		
-30		763.000493	0.32	PASS		

Frequency stability vs voltage					
Voltage (V)	Test Conf.	Test data (MHz)	Tolerance (ppm)	Verdict	
AC 93.5V		763.000383	0.18	PASS	
AC 110V	DL_1S_M_AWGN	763.000246	Reference	PASS	
AC 126.5V		763.000335	0.12	PASS	



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### 2.7 Noise/emission at antenna terminal

Note:

Good engineering practice must be used regarding the radiation of intermodulation products and noise. Thus, the ERP of intermodulation products should not exceed the level -30dBm in 10kHz measurement bandwidth and the ERP of noise within the passband should not exceed the level -43dBm in 10kHz measurement bandwidth and the ERP of noise on spectrum more than 1MHz outside of the passband should not exceed the level -70dBm in 10kHz measurement bandwidth. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary to eliminate the interference. Detailed setting was declared by manufacturer and stated in the user manual.

Below test plots were only for recorded the case without engineering practice for refence.



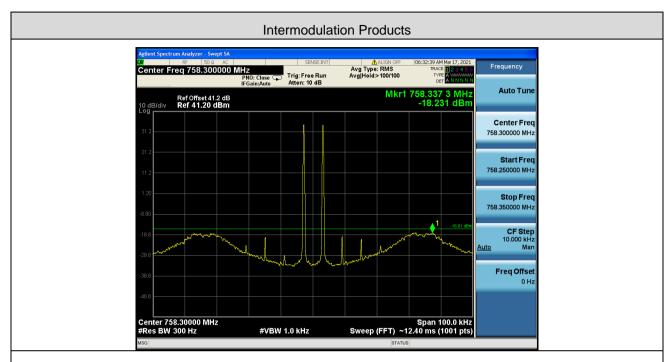
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### Remark:

According to the declaration from the applicant, the single antenna gain should not exceed 12.5dBi, the Directional gain = G(ANT) + 10 log (NANT) dBi = 12.5dBi+10log (2) dBi= 15.5dBi.

ERP= EIRP-2.15dB

The conducted max intermodulation product is -18.231dBm/300Hz = -3dBm/10kHz, the conducted intermodulation product for 2X2 MIMO is 0dBm/10kHz, ERP of intermodulation products is 0dBm+15.5dBi-2.15dB=13.35dBm/10kHz.

Applicant must use good engineering practice to make sure that the ERP of intermodulation products should not exceed the level -30dBm in 10kHz measurement bandwidth.



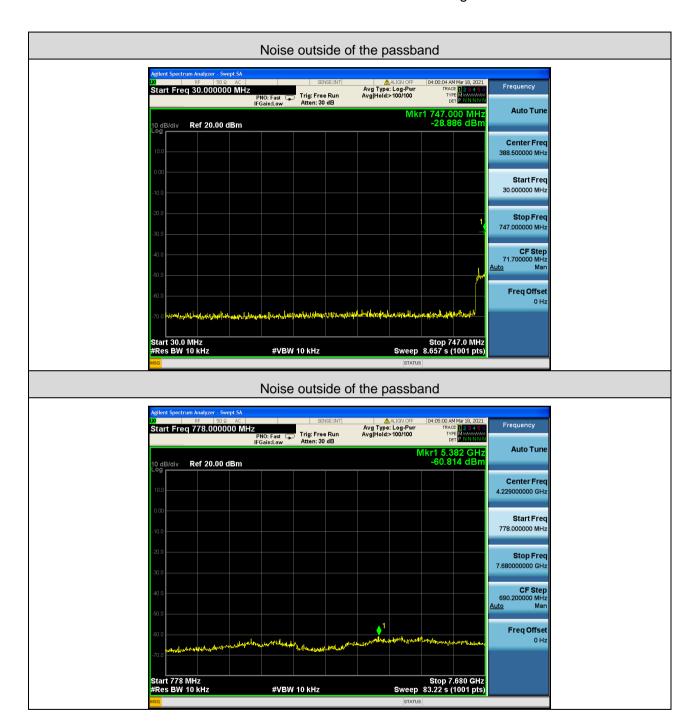
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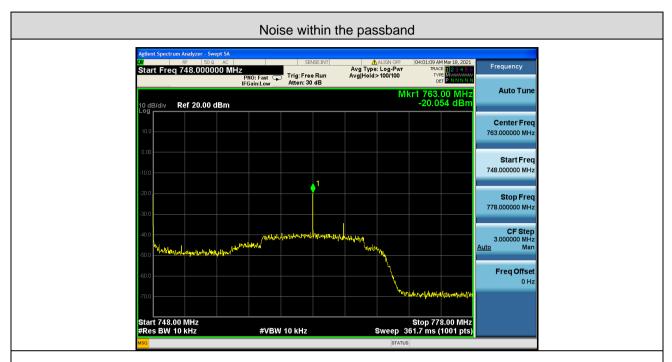
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### Remark:

According to the declaration from the applicant, the single antenna gain should not exceed 12.5dBi, the Directional gain = G(ANT) + 10 log (NANT) dBi = 12.5dBi+10log (2) dBi= 15.5dBi.

ERP= EIRP-2.15dB

The conducted max. noise on spectrum more than 1 MHz outside of the passband is -28.886dBm/10kHz. the conducted max. noise on spectrum more than 1 MHz outside of the passband for 2X2 MIMO is -25.88dBm/10kHz, ERP of noise on spectrum more than 1 MHz outside of the passband is -25.88dBm+15.5dBi-2.15dB=-12.53dBm/10kHz.

The conducted max. noise within the passband is -20.054dBm, the conducted max. noise within the passband for 2X2 MIMO is -17.21dBm/10kHz, ERP of noise within the passband is -17.21dBm+15.5dBi-2.15dB=-3.9dBm/10kHz.

Applicant must use good engineering practice to make sure that the ERP of noise within the passband should not exceed the level -43dBm in 10kHz measurement bandwidth and the ERP of noise on spectrum more than 1 MHz outside of the passband should not exceed the level -70dBm in 10 kHz measurement bandwidth.



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### 2.8 Radiated spurious emissions

Note: 1. 47 CFR Part 90.219(e)(3)

> Spurious emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.

The tested max conducted power for single antenna port is 43.16dBm. the 2x2 MIMO total power is 43.16dBm+43.16dBm= 41.4W.

The any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

Here,

P=41.4W

So the limit =

P(dBm)- [43 + 10 log (41.4W)] = -13dBm

2. 47 CFR Part 90.543(f)

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (i.e. -40dBm) equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW (i.e. -50dBm) EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

- 3. The radiated test performed at bottom / middle / top channel, the data with more than 20db margin, therefore, only the worst-case middle channel test data was recorded in the report.
- 4. The disturbance from 9kHz to 30MHz was very low and 20dB below the limit, therefore, the data was not recorded in the report.



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#### DL 1S M AWGN Horizontal 30MHz~1GHz Level (dBm) 20 10 13DBM -10 -30 -50 4 -70 -90 -110 -120<sup>1</sup>30 50 200 100 500 1000 Frequency (MHz) Read Correction Limit 0ver Freq Pol/Phase Level Factor Level Line Limit MHz dBm dB dBm dBm dB 34.76 -77.78 2.89 -74.89 -12.99 -61.90 HORIZONTAL 2 100.58 -69.46 -9.60 -79.06 -12.99 -66.07 HORIZONTAL 3 162.04 -58.07 -6.39 -64.46 -12.99 -51.47 HORIZONTAL 4 274.19 -60.88 -2.75 -63.63 -12.99 -50.64 HORIZONTAL 511.84 -73.93 0.43 -73.50 -12.99 -60.51 HORIZONTAL 906.48 -78.98 9.04 -69.94 -12.99 -56.95 HORIZONTAL



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#### DL 1S M AWGN Horizontal above 1GHz 20 Level (dBm) 10 13DBM -10 -30 2 3 6 -50 -70 -90 -110 -120 1000 18000 5000 10000 1500 2000 Frequency (MHz) Read Correction Limit 0ver Freq line Pol/Phase Level Factor Level Limit dBm MHz dB dBm dBm dB 1078.05 -59.95 1.62 -58.33 -12.99 -45.34 HORIZONTAL 4.70 -42.15 -12.99 -29.16 1473.01 -46.85 2 HORTZONTAL 3 2252.85 -52.80 9.44 -43.36 -12.99 -30.37 HORIZONTAL -63.95 3.16 -60.79 -12.99 -47.80 4 3834.44 HORIZONTAL 5224.15 -64.59 12.41 -52.18 -12.99 -39.19 HORIZONTAL -64.59 15.83 -48.76 -12.99 -35.77 7497.65 HORIZONTAL



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#### DL 1S M AWGN Vertical 30MHz~1GHz 20 Level (dBm) 10 13DBM -10 -30 -50 1 6 -70 -90 -110 -120<sup>1</sup>30 50 200 1000 100 500 Frequency (MHz) Read Correction Limit 0ver Freq Limit Pol/Phase Level Factor Level Line dBm dB MHz dB dBm dBm 56.99 -66.31 -3.09 -69.40 -12.99 -56.41 VERTICAL 2 101.29 -63.45 -5.08 -68.53 -12.99 -55.54 VERTICAL 3 166.65 -65.58 -3.94 -69.52 -12.99 -56.53 VERTICAL 4 318.82 -70.77 -2.55 -73.32 -12.99 -60.33 VERTICAL 519.06 -75.38 1.16 -74.22 -12.99 -61.23 VERTICAL 758.04 -79.14 6.55 -72.59 -12.99 -59.60 VERTICAL



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#### DL 1S M AWGN Vertical above 1GHz 20 Level (dBm) 10 13DBM -10 -30 2 6 5 -50 -70 -90 -110 -120<mark>1000</mark> 18000 5000 10000 1500 2000 Frequency (MHz) Read Correction Limit 0ver Freq line Limit Pol/Phase Level Factor Level dBm MHz dB dBm dBm dB 1260.15 -60.46 4.11 -56.35 -12.99 -43.36 VERTICAL 1736.83 -44.64 5.68 -38.96 -12.99 -25.97 2 VERTICAL 3 2239.86 -59.56 9.49 -50.07 -12.99 -37.08 VERTICAL -63.06 4.31 -58.75 -12.99 -45.76 3526.13 VERTICAL -64.84 14.36 -50.48 -12.99 -37.49 5535.05 VERTICAL -65.10 16.69 -48.41 -12.99 -35.42 7829.86 VERTICAL



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#### DL 1S M AWGN Horizontal 1559MHz~1610MHz 20 Level (dBm) 10 -10 -30 -50DBM -50 2 -70 -90 -110 -120 1559 1610 Frequency (MHz) Read Correction Limit 0ver Pol/Phase line Limit Level Factor Level Freq dBm MHz dB dBm dBm dB 1 1563.62 -69.58 5.07 -64.51 -49.99 -14.52 HORIZONTAL 1571.95 2 -70.81 5.10 -65.71 -49.99 -15.72 HORIZONTAL 3 1580.78 -69.59 5.14 -64.45 -49.99 -14.46 HORIZONTAL 4 1591.04 -67.71 5.20 -62.51 -49.99 -12.52 HORIZONTAL 5 1600.34 -69.32 5.24 -64.08 -49.99 -14.09 HORIZONTAL 1607.77 -68.59 5.28 -63.31 -49.99 -13.32 HORIZONTAL



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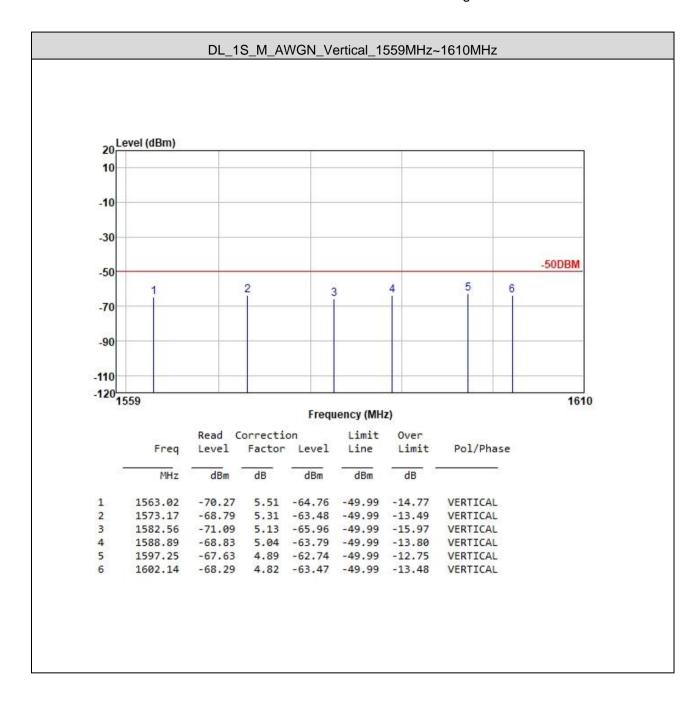
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### -- End of Appendix--



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