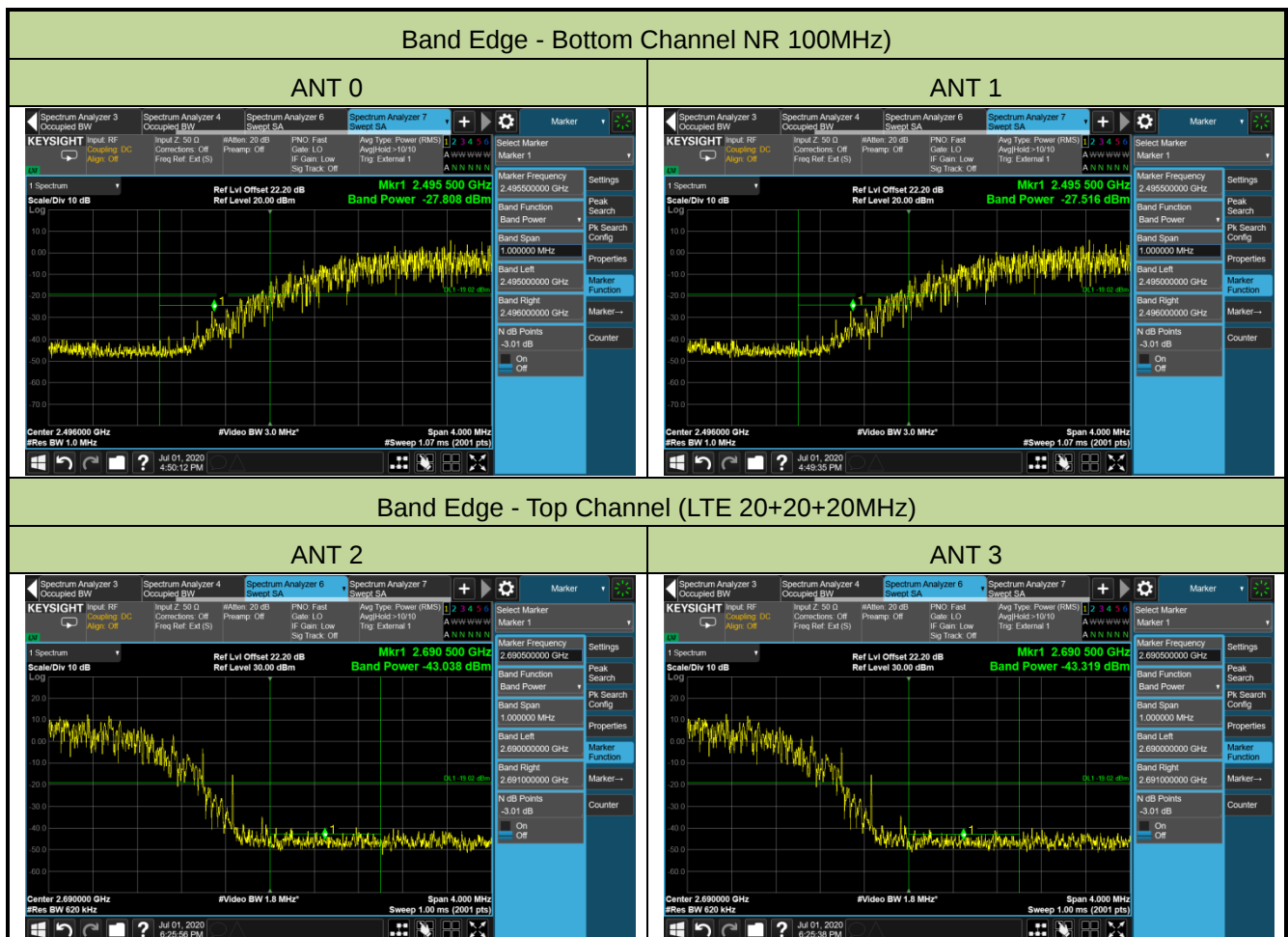


Product	AirScale Indoor Radio ASiR 5G-pRRH	Test Engineer	Kevin Ker
Test Site	SR2	Test Date	2020/07/01
Test Configuration	5G NR 100MHz + LTE 20 + 20 + 20MHz		
Test Channel	Bottom Channel: 5G NR 2546.01MHz, LTE 2606 + 2626 + 2646MHz Middle Channel: 5G NR 2563.02MHz, LTE 2623 + 2643 + 2663MHz Top Channel: 5G NR 2580MHz, LTE 2640 + 2660 + 2680MHz		

Frequency (MHz)	Channel Bandwidth (MHz)	Max Band Edge (dBm)				Limit (dBm)	Result
		Ant 0	Ant 1	Ant 2	Ant 3		
QPSK							
Bottom	100	-27.81	-27.52	-	-	≤ -16.01	Pass
Top	20+20+20	-	-	-43.04	-43.32	≤ -16.01	Pass



5.6. Conducted Spurious Emissions

5.6.1. Test Limit

In the FCC 24.238, on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) at least $43 + 10 \cdot \log(P)$ dB, the emission limit equal to -13dBm.

Note: This device can be implement MIMO function, so the limit os spurious emissions needs to be reduced $10 \cdot \log(\text{Numbers}_{\text{Ant}})$ according to FCC KDB 662911 D01 guidance.

The limit is adjusted to $-13\text{dBm} - 10 \cdot \log(4) = -19.02\text{dBm}$

5.6.2. Test Procedure Used

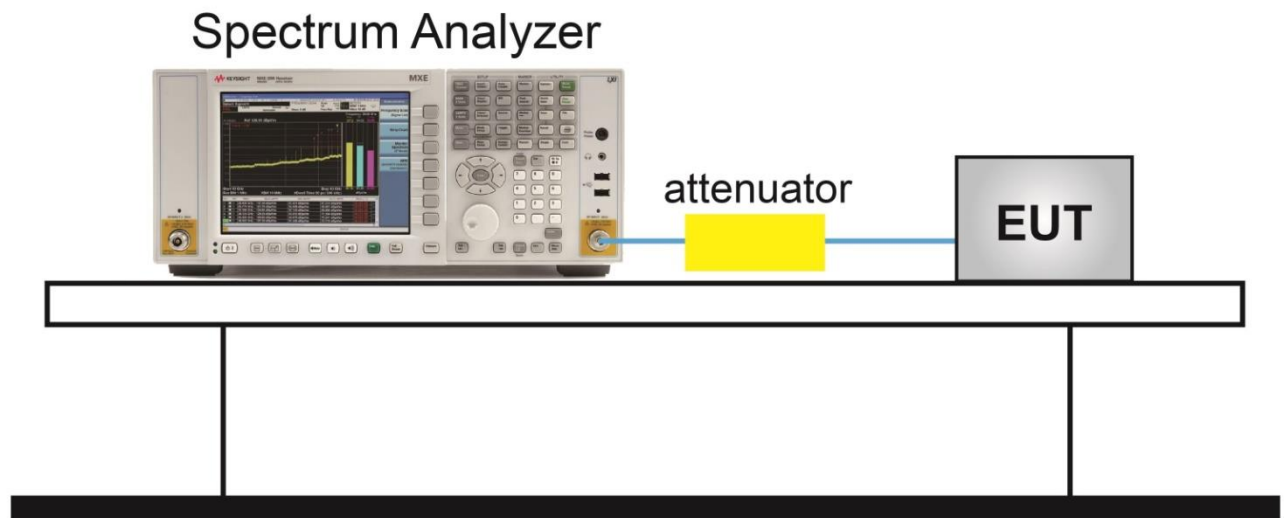
KDB 971168 D01v03r01 - Section 6

ANSI C63.26-2015 - Section 6.4.4.2

5.6.3. Test Setting

1. Set the analyzer frequency to low or high channel.
2. RBW = 100kHz or 1MHz
3. VBW $\geq 3 \cdot \text{RBW}$
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to "free run."
7. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

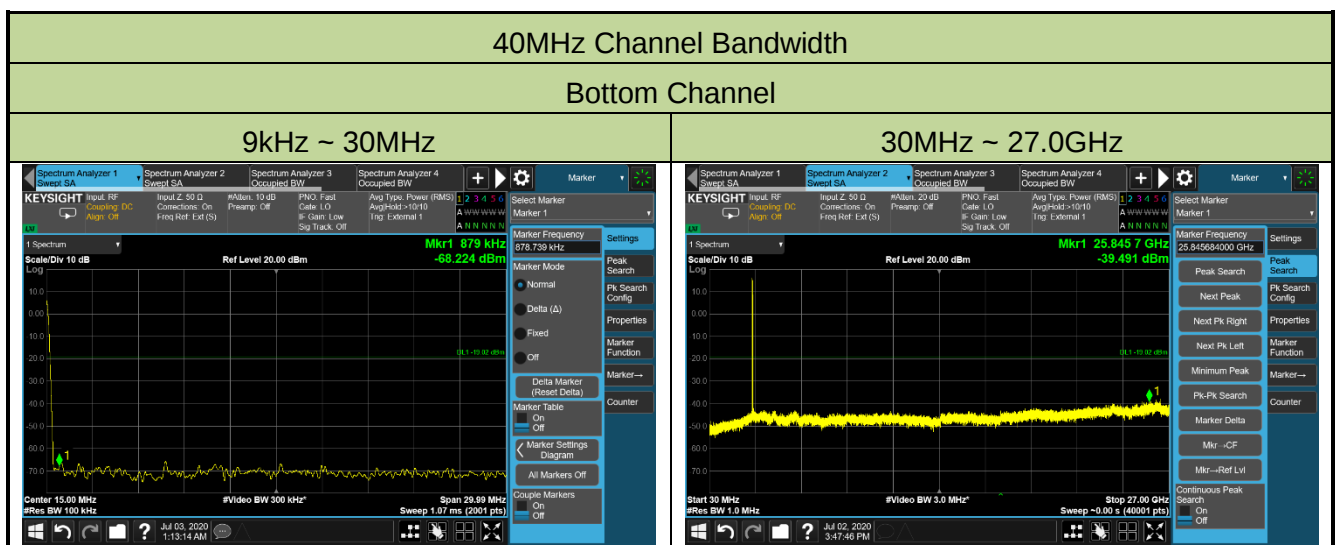
5.6.4. Test Setup



5.6.5. Test Result

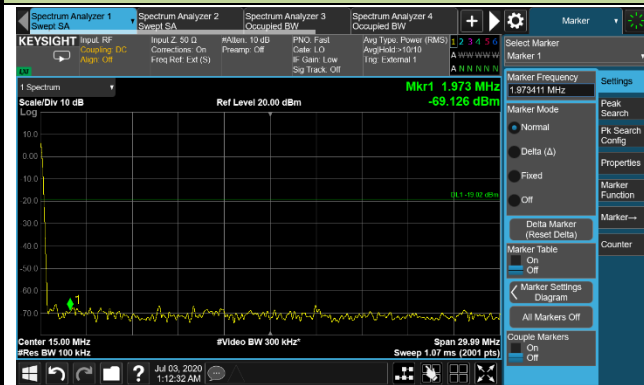
Product	AirScale Indoor Radio ASiR 5G-pRRH	Test Engineer	Kevin Ker
Test Site	SR2	Test Date	2020/07/02
Test Configuration	5G NR 40MHz		
Test Channel	Bottom Channel: 2616.01MHz; Middle Channel: 2592.99MHz Top Channel: 2670.00MHz		

Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
2516.01	40	0.009 ~ 30	-68.22	≤ -19.02	Pass
		30 ~ 27000	-39.49	≤ -19.02	Pass
2592.99	40	0.009 ~ 30	-69.13	≤ -19.02	Pass
		30 ~ 27000	-39.56	≤ -19.02	Pass
2670.00	40	0.009 ~ 30	-71.99	≤ -19.02	Pass
		30 ~ 27000	-39.47	≤ -19.02	Pass



Middle Channel

9kHz ~ 30MHz

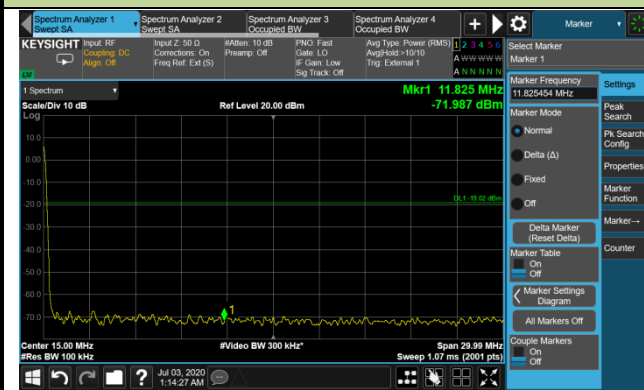


30MHz ~ 27.0GHz

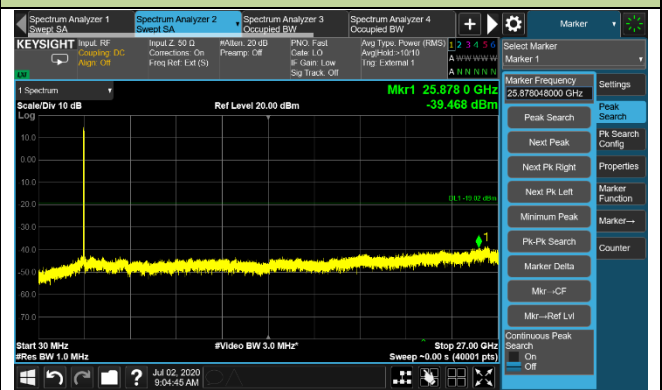


Top Channel

9kHz ~ 30MHz



30MHz ~ 27.0GHz



5.7. Radiated Spurious Emissions Measurements

5.7.1. Test Limit

Out of band emissions: 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. The emission limit equal to -13dBm.

$E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8$; where D is the measurement distance in meters. The emission limit equal to 82.3dB μ V/m.

5.7.2. Test Procedure Used

KDB 971168 D01v03r01 - Section 5.8 & 7

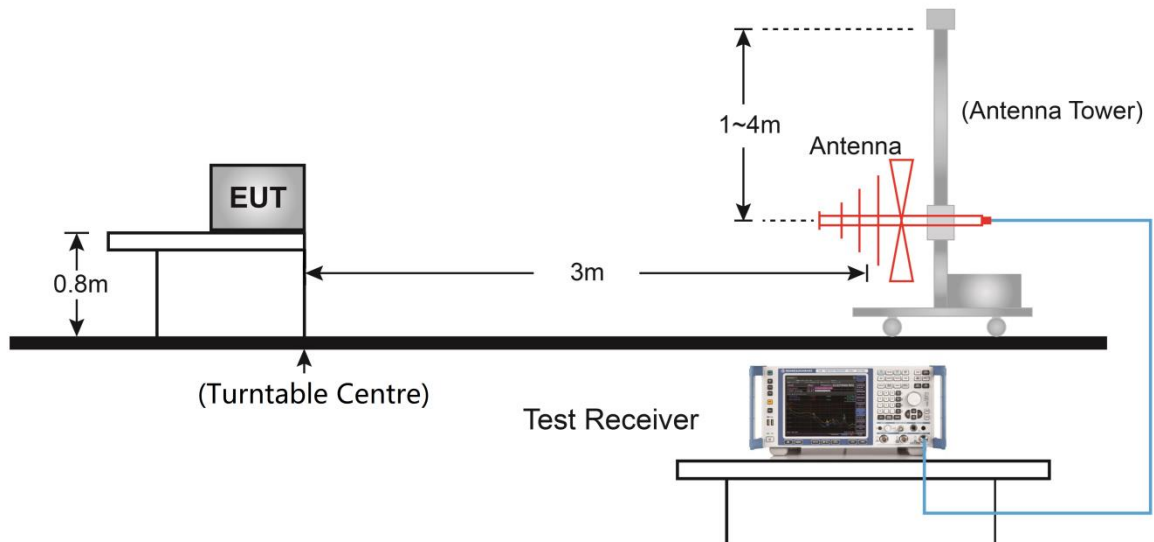
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.7.3. Test Setting

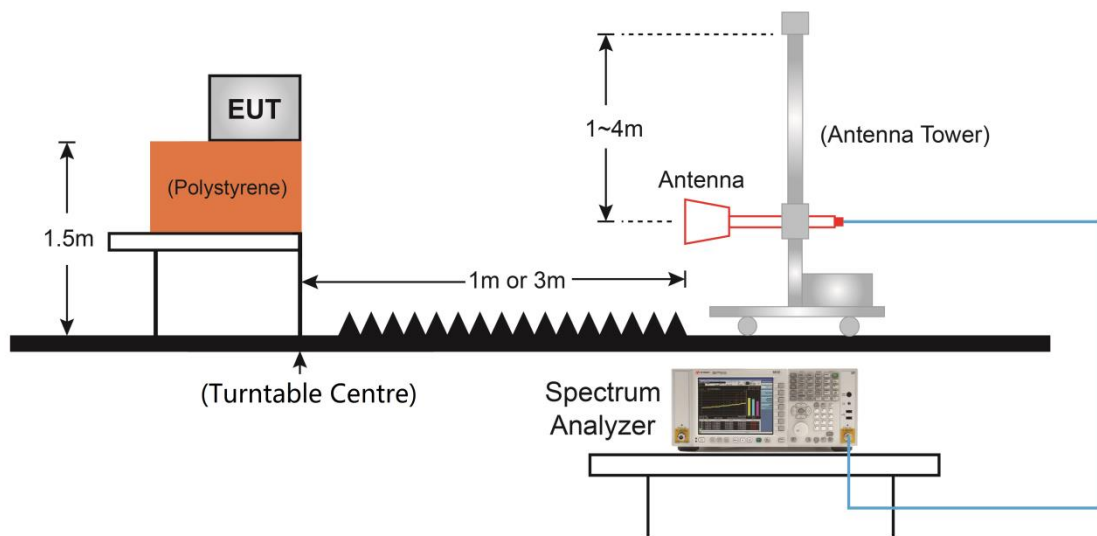
1. RBW = 100kHz or 1MHz
2. VBW $\geq 3 \times$ RBW
3. Sweep time $\geq 10 \times$ (number of points in sweep) $\times$ (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

5.7.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.7.5. Test Result

Product	AirScale Indoor Radio ASiR 5G-pRRH	Test Engineer	Kevin Ker
Test Site	SR2	Test Date	2020/08/14
Test Configuration	5G NR 40MHz		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Bottom Channel							
128.94	16.64	16.09	32.73	82.20	-49.47	Peak	Horizontal
156.59	16.03	16.00	32.03	82.20	-50.17	Peak	Horizontal
131.85	14.36	15.88	30.24	82.20	-51.96	Peak	Vertical
167.26	12.57	16.29	28.86	82.20	-53.34	Peak	Vertical
3822.00	41.30	0.27	41.57	82.20	-40.63	Peak	Horizontal
5615.50	38.71	4.65	43.36	82.20	-38.84	Peak	Horizontal
4034.50	40.65	1.00	41.65	82.20	-40.55	Peak	Vertical
6380.50	38.11	7.57	45.68	82.20	-36.52	Peak	Vertical
Middle Channel							
122.15	16.91	16.74	33.65	82.20	-48.55	Peak	Horizontal
154.16	15.55	15.92	31.47	82.20	-50.73	Peak	Horizontal
159.50	14.80	16.10	30.90	82.20	-51.30	Peak	Vertical
365.62	4.95	23.66	28.61	82.20	-53.59	Peak	Vertical
4119.50	39.76	1.28	41.04	82.20	-41.16	Peak	Horizontal
6712.00	36.42	9.03	45.45	82.20	-36.75	Peak	Horizontal
5165.00	38.92	3.92	42.84	82.20	-39.36	Peak	Vertical
8004.00	35.84	12.53	48.37	82.20	-33.83	Peak	Vertical
Top Channel							
123.61	16.83	16.60	33.43	82.20	-48.77	Peak	Horizontal
157.56	15.92	16.03	31.95	82.20	-50.25	Peak	Horizontal
123.61	14.67	16.60	31.27	82.20	-50.93	Peak	Vertical
228.85	10.01	19.77	29.78	82.20	-52.42	Peak	Vertical
4901.50	39.25	3.51	42.76	82.20	-39.44	Peak	Horizontal
7953.00	35.92	12.45	48.37	82.20	-33.83	Peak	Horizontal
4927.00	39.57	3.57	43.14	82.20	-39.06	Peak	Vertical
8097.50	37.17	12.52	49.69	82.20	-32.51	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

6. CONCLUSION

The data collected relate only the item(s) tested and show that the unit is compliance with FCC Rules.

The End