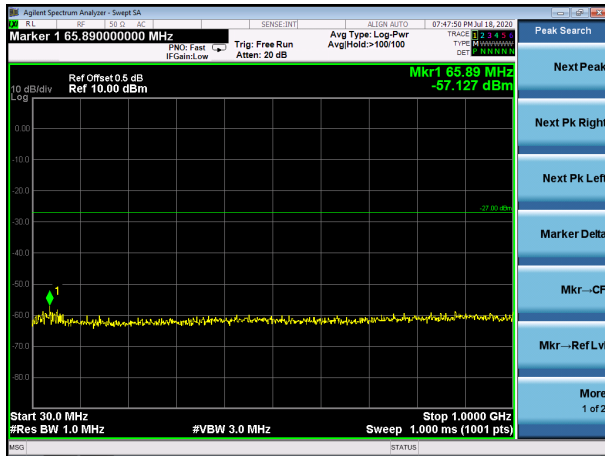
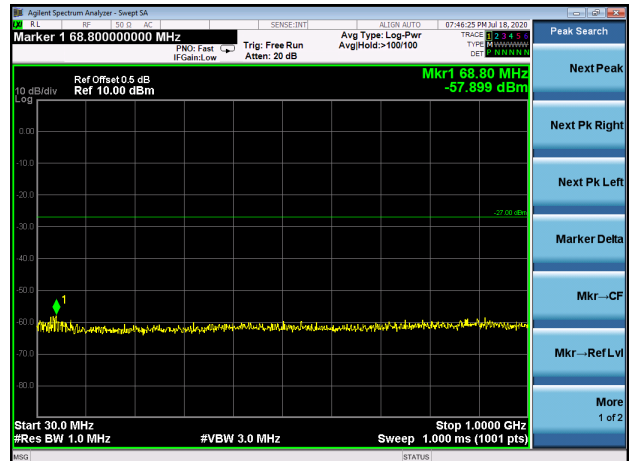


Test Plot

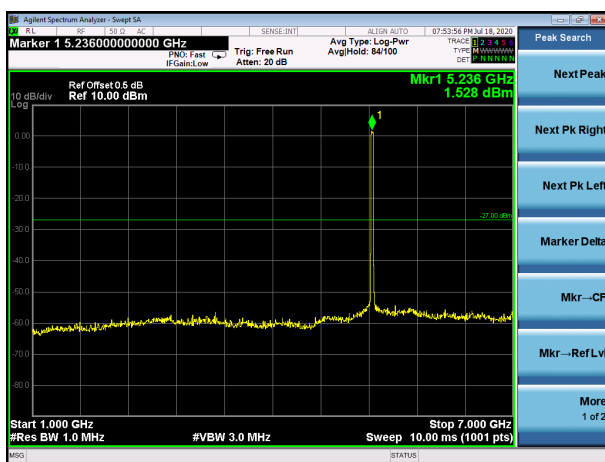
802.11ac20 on channel 48



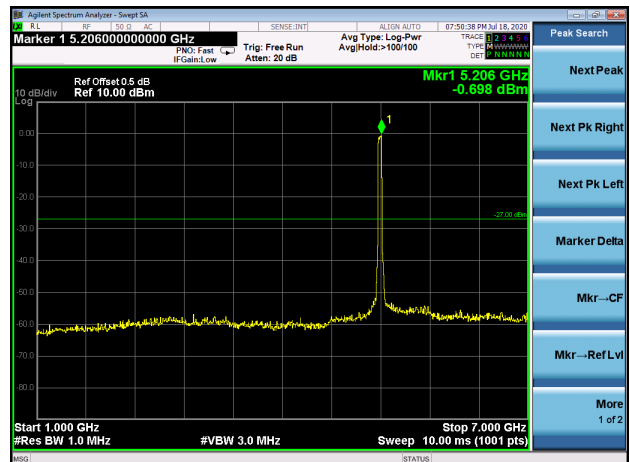
802.11ac40 on channel 38



802.11ac20 on channel 48



802.11ac40 on channel 38



802.11ac20 on channel 48

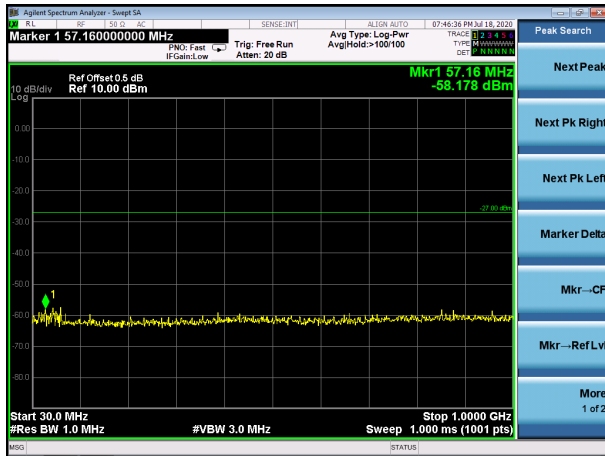


802.11ac40 on channel 38

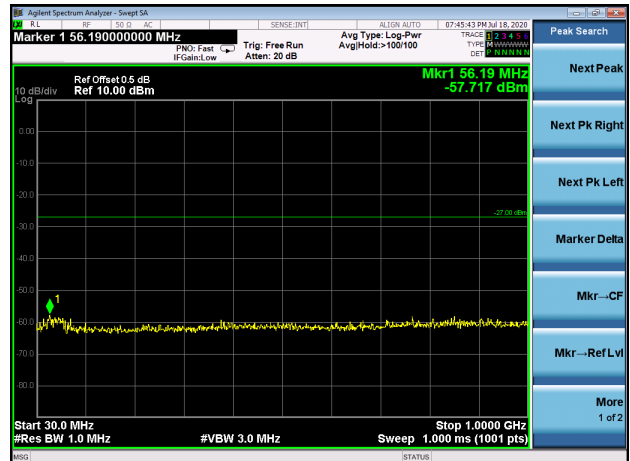


Test Plot

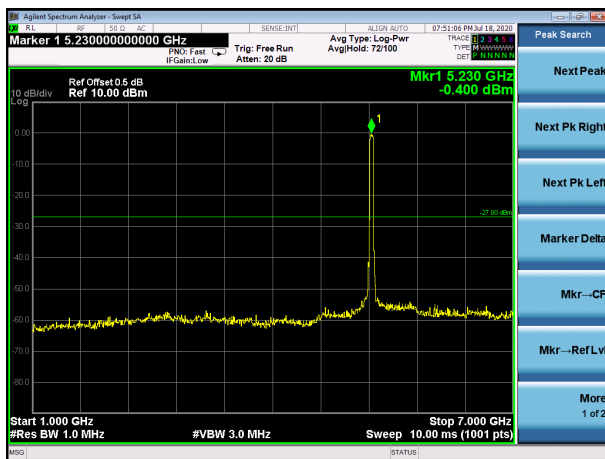
802.11ac40 on channel 46



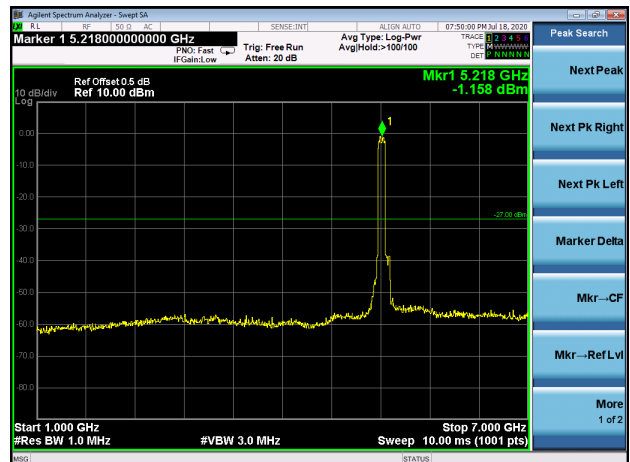
802.11ac80 on channel 42



802.11 ac40 on channel 46



802.11 ac80 on channel 42



802.11 ac40 on channel 46



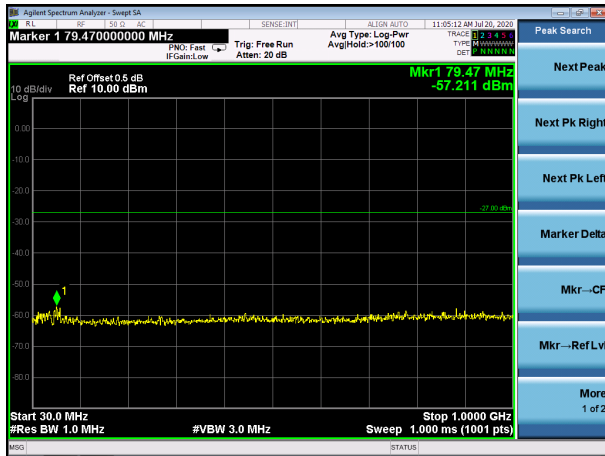
802.11 ac80 on channel 42



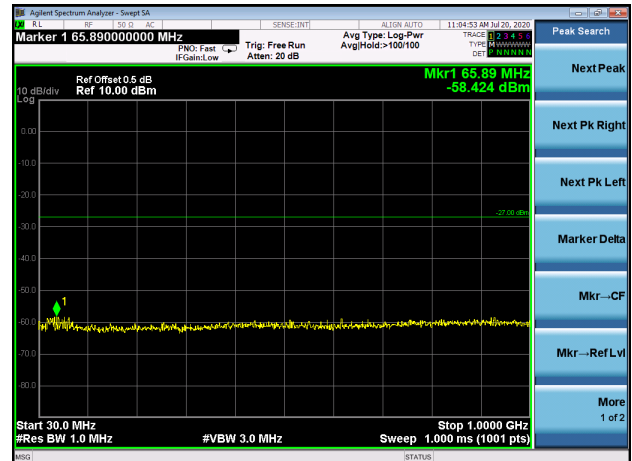
5.8G

Test Plot

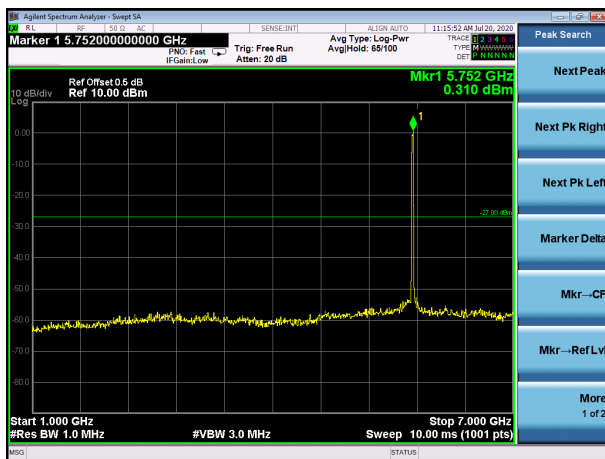
802.11a on channel 149



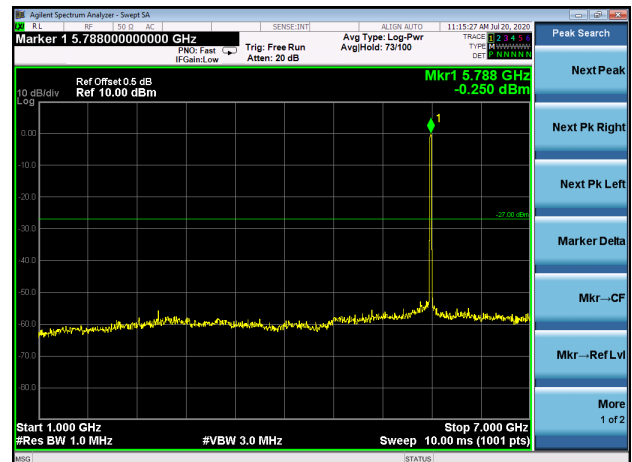
802.11a on channel 157



802.11a on channel 149



802.11a on channel 157



802.11a on channel 149

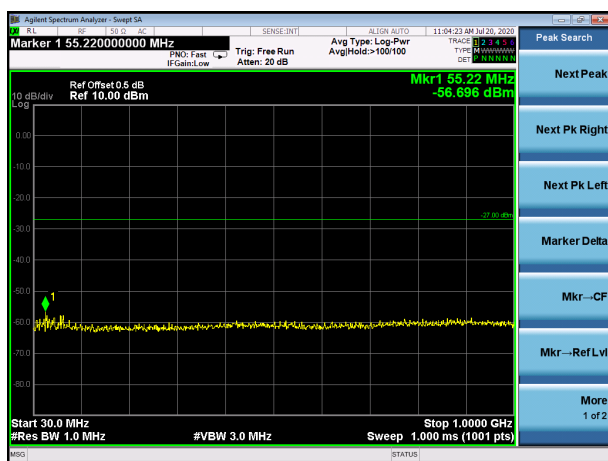


802.11a on channel 157

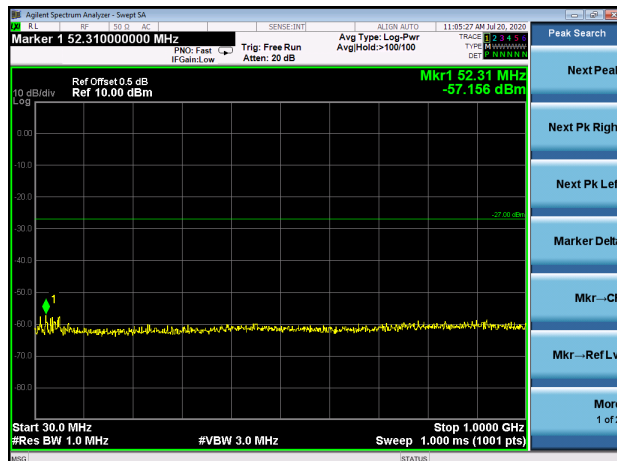


Test Plot

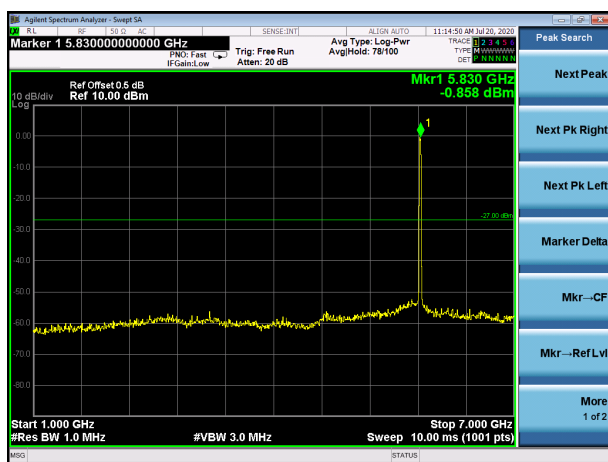
802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165

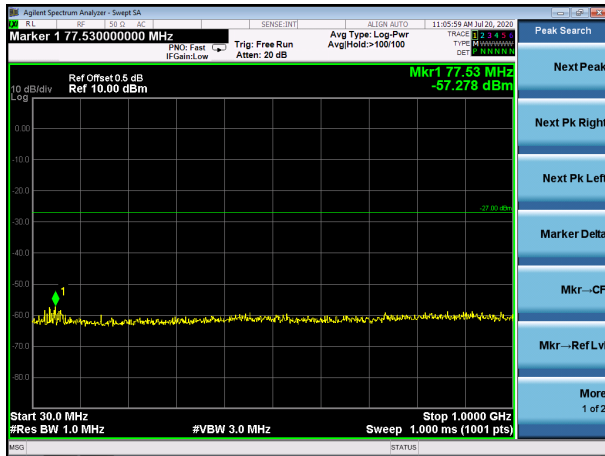


802.11n20 on channel 149

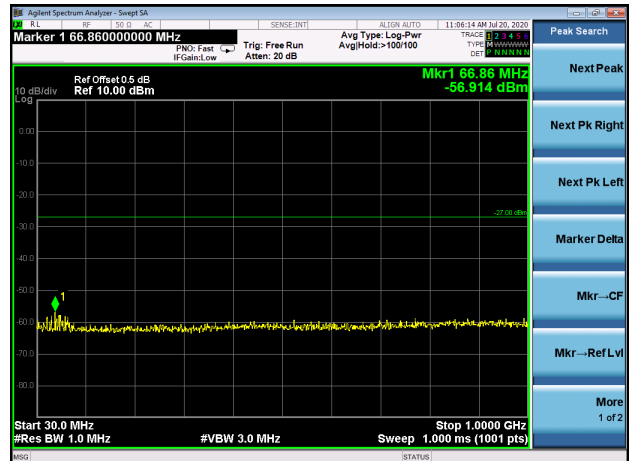


Test Plot

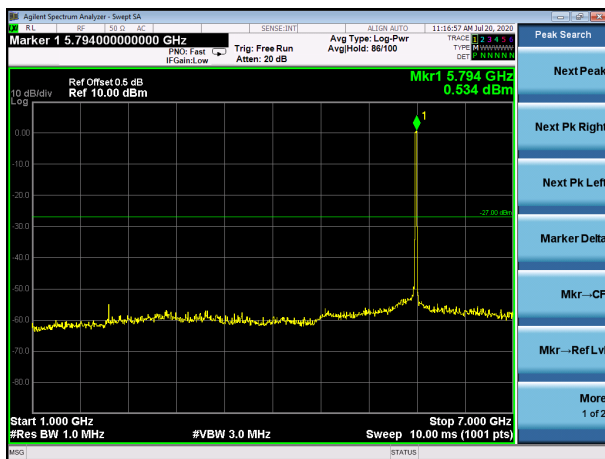
802.11n20 on channel 157



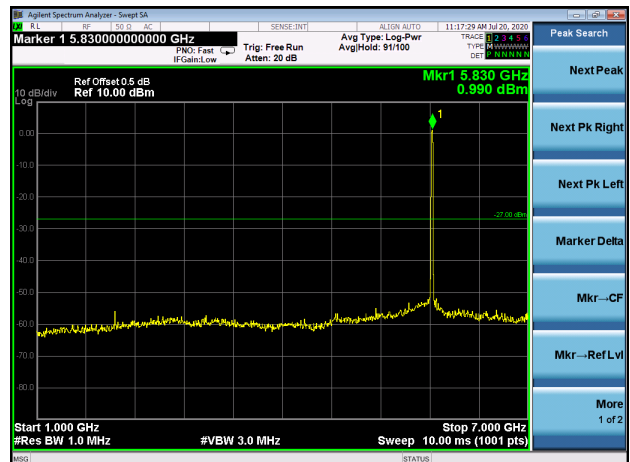
802.11n20 on channel 165



802.11n20 on channel 157



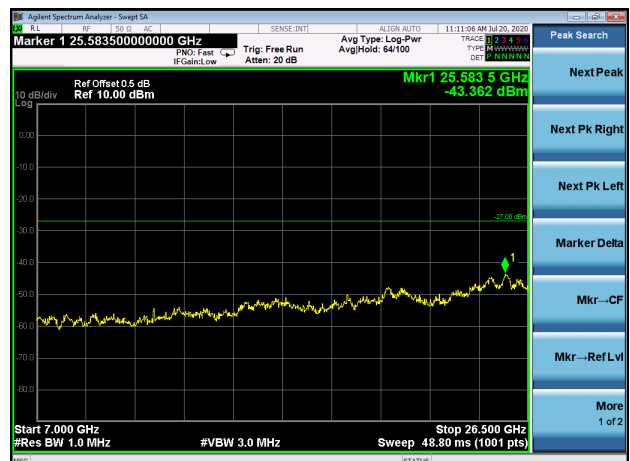
802.11n20 on channel 165



802.11n20 on channel 157

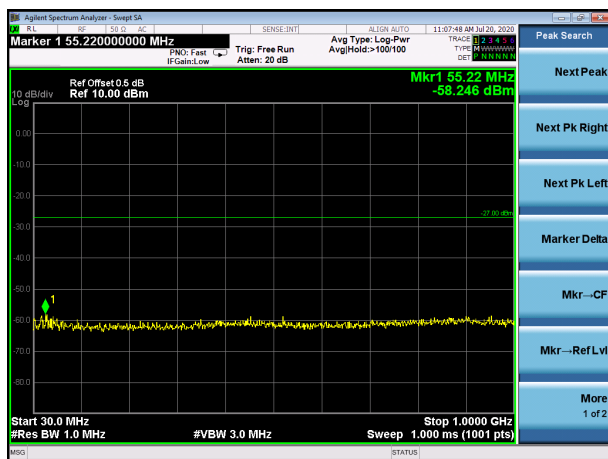


802.11n20 on channel 165

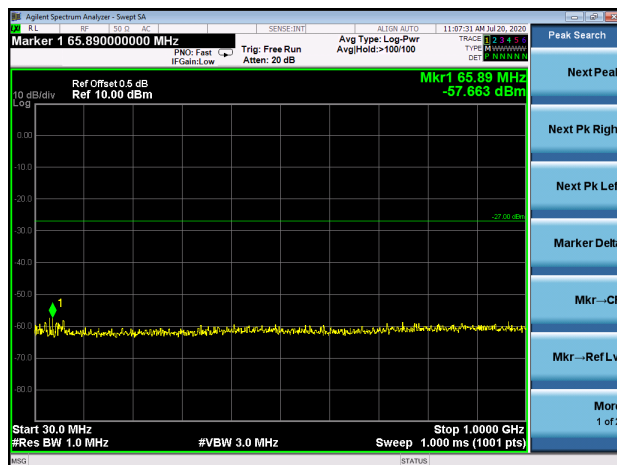


Test Plot

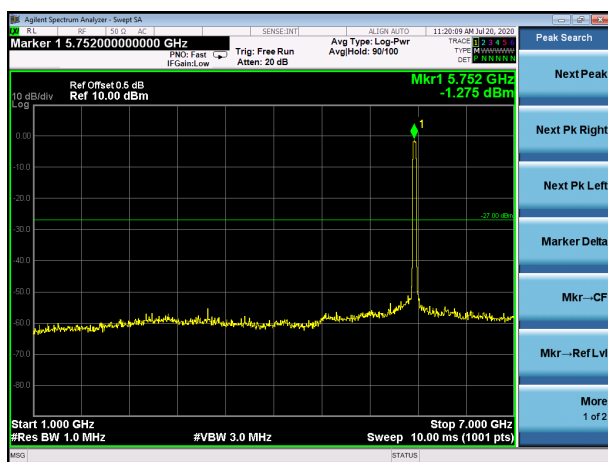
802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151

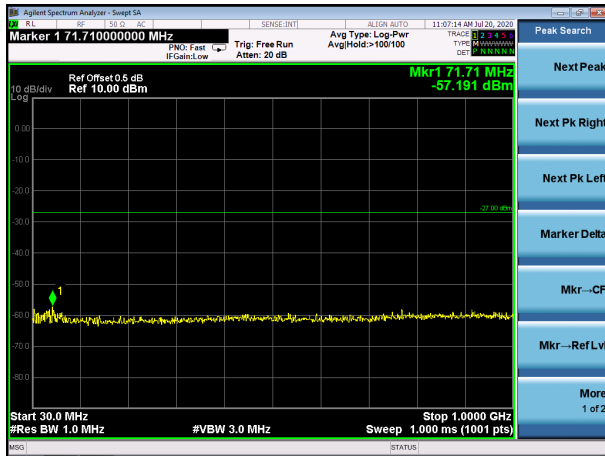


802.11n40 on channel 159

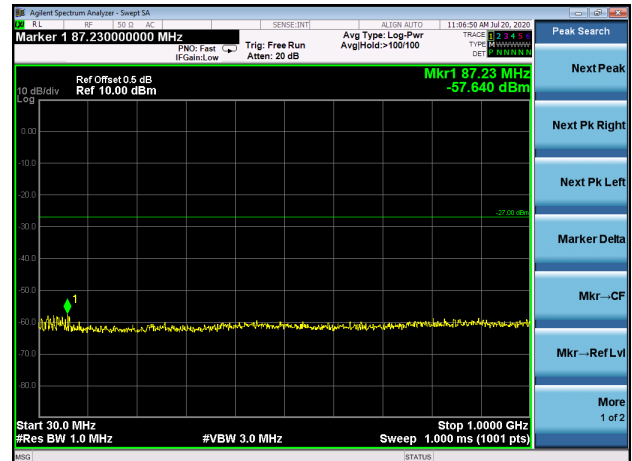


Test Plot

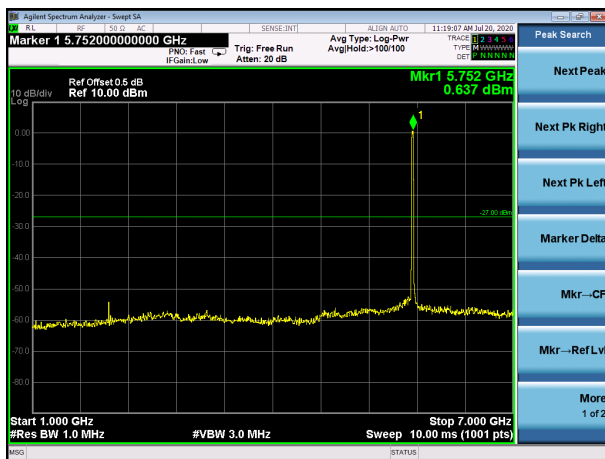
802.11ac20 on channel 149



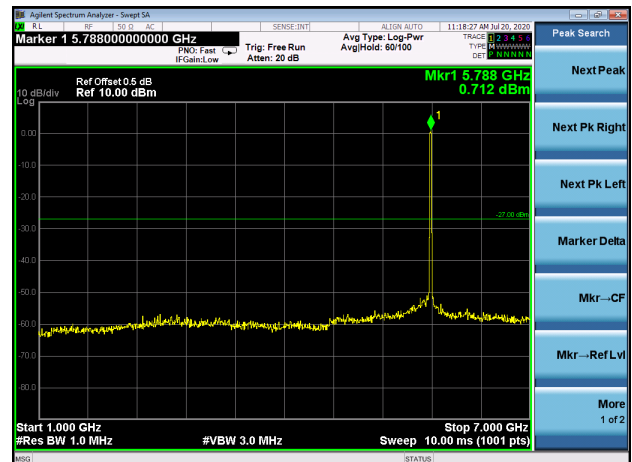
802.11ac20 on channel 157



802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149

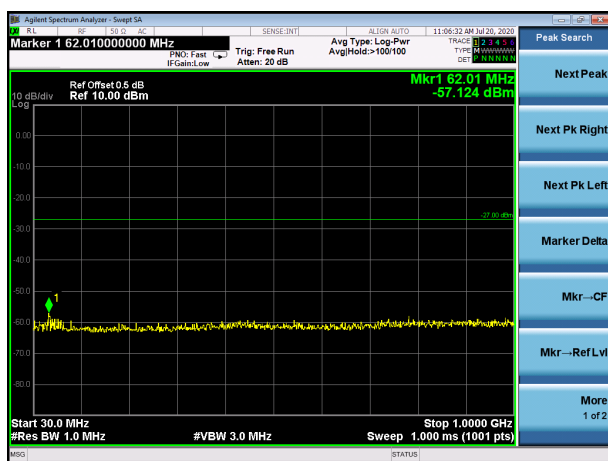


802.11ac20 on channel 157

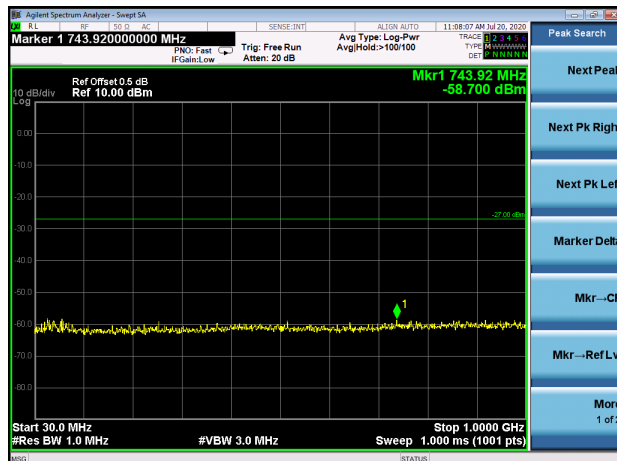


Test Plot

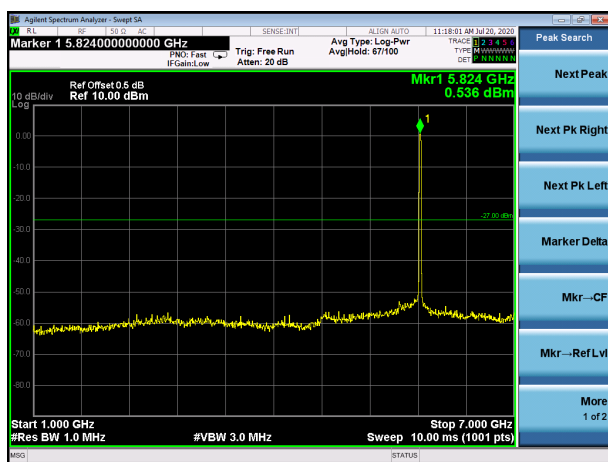
802.11ac20 on channel 165



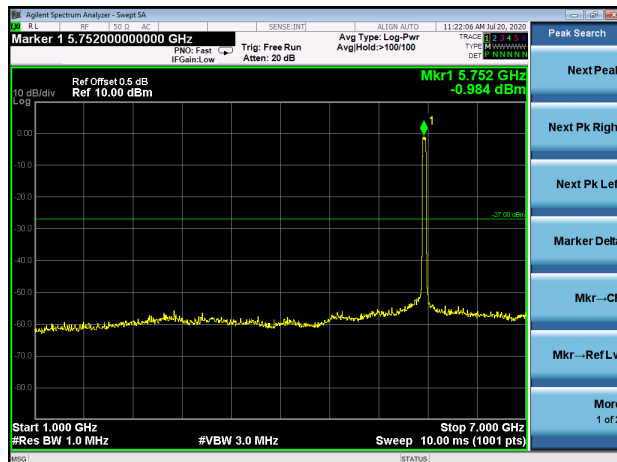
802.11ac40 on channel 151



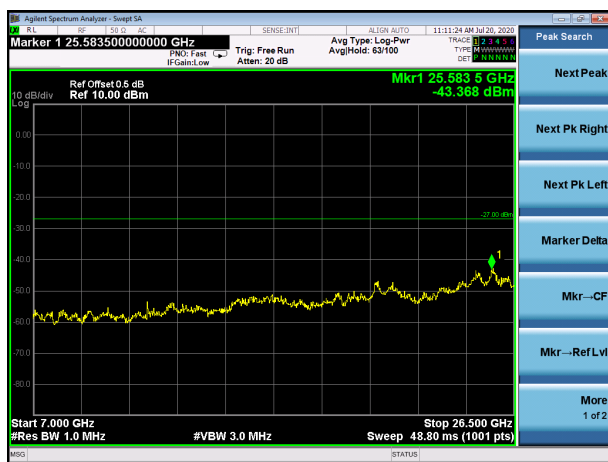
802.11ac20 on channel 165



802.11ac40 on channel 151



802.11ac20 on channel 165

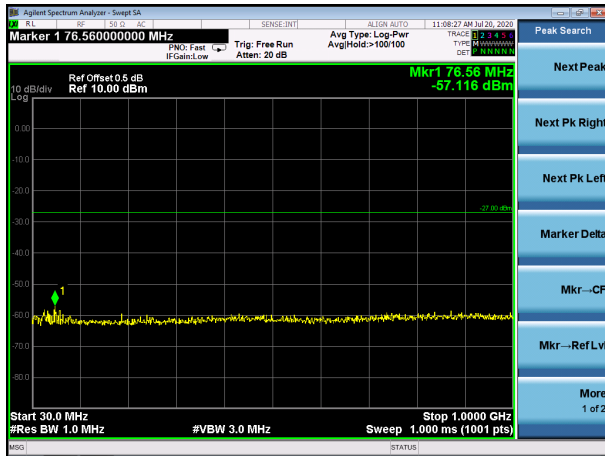


802.11ac40 on channel 151

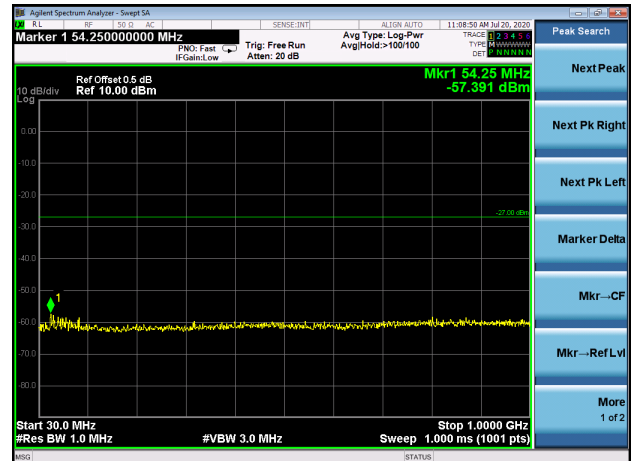


Test Plot

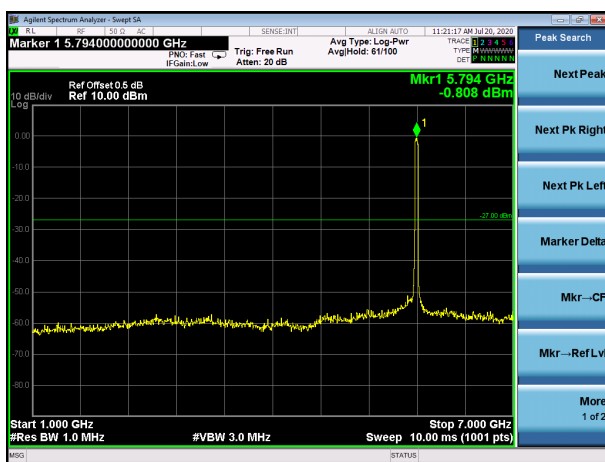
802.11ac40 on channel 159



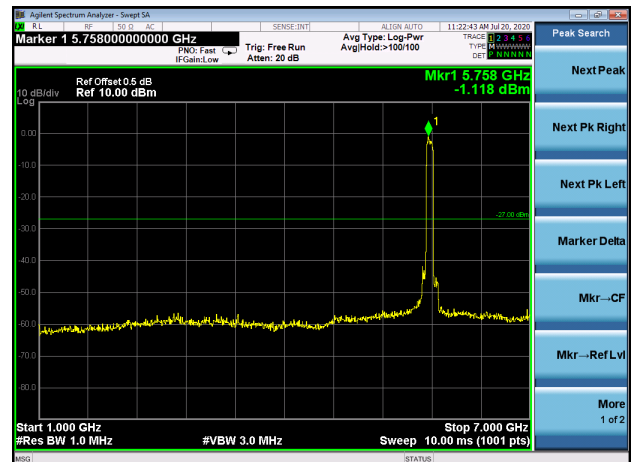
802.11ac80 on channel 155



802.11 ac40 on channel 159



802.11 ac80 on channel 155



802.11 ac40 on channel 159



802.11 ac80 on channel 155



9. Frequency Stability Measurement

9.1 LIMIT

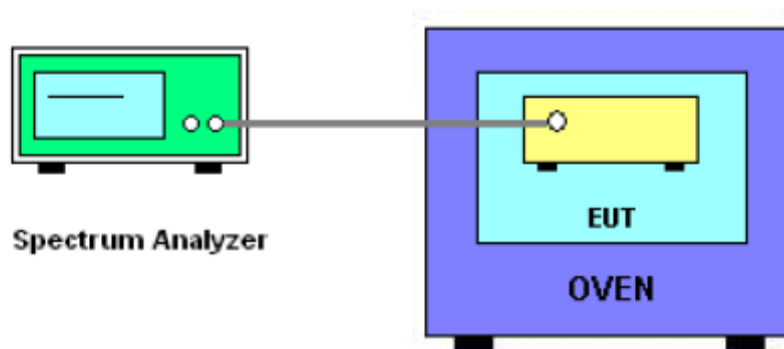
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

9.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the limit is less than ± 20 ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$.

9.3 TEST SETUP LAYOUT



9.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously un-modulation transmitting mode.

9.5 TEST RESULTS

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V
Test Mode :	TX Frequency Band I (5180-5240MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.0	5180.0535	5180	0.0535	10.3282
		V max (V)	138.0	5180.0365	5180	0.0365	7.0463
		V min (V)	102.0	5180.0285	5180	0.0285	5.5019
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5180.0053	5180	0.0053	1.0232
		T (°C)	-10	5180.0107	5180	0.0107	2.0656
		T (°C)	0	5180.0323	5180	0.0323	6.2355
		T (°C)	10	5180.0386	5180	0.0386	7.4517
		T (°C)	20	5180.0293	5180	0.0293	5.6564
		T (°C)	30	5180.0217	5180	0.0217	4.1892
		T (°C)	40	5180.0123	5180	0.0123	2.3745
		T (°C)	50	5180.0097	5180	0.0097	1.8726
		T (°C)	60	5180.0413	5180	0.0413	7.9730
		T (°C)	70	5180.0696	5180	0.0696	13.4363
Limits				5150-5250MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.0	5200.0125	5200	0.0125	2.4038
		V max (V)	138.0	5200.0136	5200	0.0136	2.6154
		V min (V)	102.0	5200.0345	5200	0.0345	6.6346
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5200.0633	5200	0.0633	12.1731
		T (°C)	-10	5200.0527	5200	0.0527	10.1346
		T (°C)	0	5200.0433	5200	0.0433	8.3269
		T (°C)	10	5200.0925	5200	0.0925	17.7885
		T (°C)	20	5200.0637	5200	0.0637	12.2500
		T (°C)	30	5200.0123	5200	0.0123	2.3654
		T (°C)	40	5200.0735	5200	0.0735	14.1346
		T (°C)	50	5200.0413	5200	0.0413	7.9423
		T (°C)	60	5200.0327	5200	0.0327	6.2885
		T (°C)	70	5200.0425	5200	0.0425	8.1731
Limits				5150-5250MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.0	5240.0235	5240	0.0235	4.4847
		V max (V)	138.0	5240.0146	5240	0.0146	2.7863
		V min (V)	102.0	5240.0245	5240	0.0245	4.6756
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5240.0094	5240	0.0094	1.7939
		T (°C)	-10	5240.0036	5240	0.0036	0.6870
		T (°C)	0	5240.0145	5240	0.0145	2.7672
		T (°C)	10	5240.0856	5240	0.0856	16.3359
		T (°C)	20	5240.0113	5240	0.0113	2.1565
		T (°C)	30	5240.0127	5240	0.0127	2.4237
		T (°C)	40	5240.0063	5240	0.0063	1.2023
		T (°C)	50	5240.0076	5240	0.0076	1.4504
		T (°C)	60	5240.0056	5240	0.0056	1.0687
		T (°C)	70	5240.0105	5240	0.0105	2.0038
Limits				5150-5250MHz			
Result				Complies			

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V
Test Mode :	TX Frequency(5745-5825MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.0	5745.0118	5745	0.0118	2.0540
		V max (V)	138.0	5745.0230	5745	0.0230	4.0035
		V min (V)	102.0	5745.0125	5745	0.0125	2.1758
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5745.01069	5745	0.01069	1.8601
		T (°C)	-10	5745.00329	5745	0.00329	0.5729
		T (°C)	0	5745.01068	5745	0.01068	1.8587
		T (°C)	10	5745.00242	5745	0.00242	0.4209
		T (°C)	20	5745.00103	5745	0.00103	0.1785
		T (°C)	30	5745.00897	5745	0.00897	1.5621
		T (°C)	40	5745.00073	5745	0.00073	0.1275
		T (°C)	50	5745.00440	5745	0.00440	0.7666
		T (°C)	60	5745.00707	5745	0.00707	1.2308
		T (°C)	70	5745.00595	5745	0.00595	1.0363
Limits				5725-5850MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.0	5785.0365	5785	0.0365	6.3094
		V max (V)	138.0	5785.0143	5785	0.0143	2.4719
		V min (V)	102.0	5785.0247	5785	0.0247	4.2697
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5785.00920	5785	0.00920	1.5903
		T (°C)	-10	5785.00651	5785	0.00651	1.1254
		T (°C)	0	5785.00934	5785	0.00934	1.6154
		T (°C)	10	5785.01355	5785	0.01355	2.3415
		T (°C)	20	5785.00879	5785	0.00879	1.5203
		T (°C)	30	5785.00857	5785	0.00857	1.4814
		T (°C)	40	5785.00281	5785	0.00281	0.4860
		T (°C)	50	5785.00294	5785	0.00294	0.5075
		T (°C)	60	5785.00671	5785	0.00671	1.1603
		T (°C)	70	5785.00408	5785	0.00408	0.7045
Limits				5725-5850MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	120.0	5825.0235	5825	0.0235	4.0343
		V max (V)	138.0	5825.0233	5825	0.0233	4.0000
		V min (V)	102.0	5825.0265	5825	0.0265	4.5494
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	120V/60Hz	T (°C)	-20	5825.00379	5825	0.00379	0.6514
		T (°C)	-10	5825.00724	5825	0.00724	1.2426
		T (°C)	0	5825.00893	5825	0.00893	1.5337
		T (°C)	10	5825.00541	5825	0.00541	0.9282
		T (°C)	20	5825.01247	5825	0.01247	2.1404
		T (°C)	30	5825.00530	5825	0.00530	0.9099
		T (°C)	40	5825.00178	5825	0.00178	0.3052
		T (°C)	50	5825.00598	5825	0.00598	1.0270
		T (°C)	60	5825.00764	5825	0.00764	1.3111
		T (°C)	70	5825.00308	5825	0.00308	0.5289
Limits				5725-5850MHz			
Result				Complies			

10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

10.2 EUT ANTENNA

The EUT antenna is Internal Antenna (antenna gain:2dBi). It comply with the standard requirement.

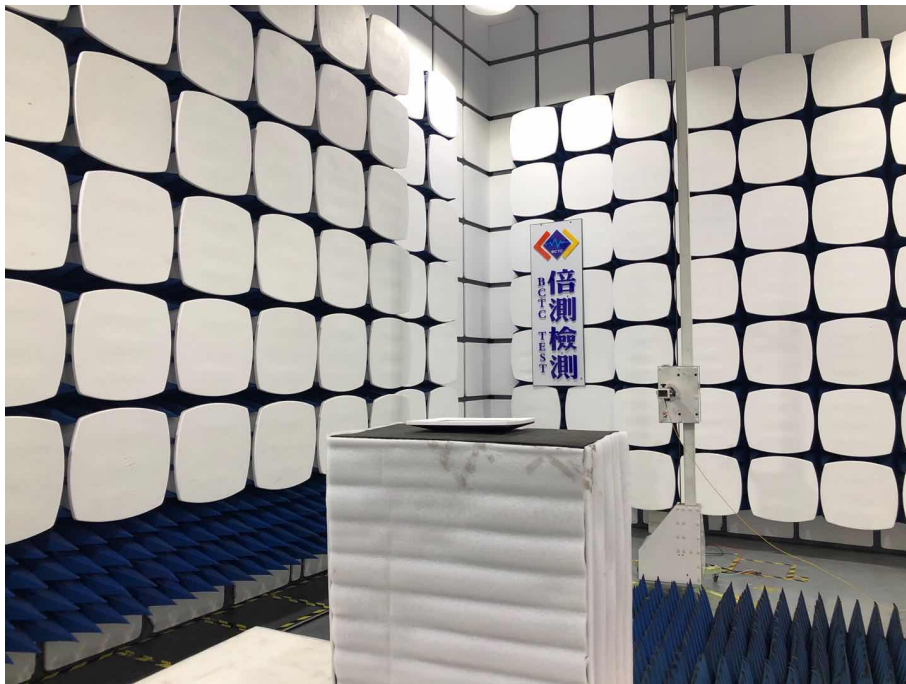
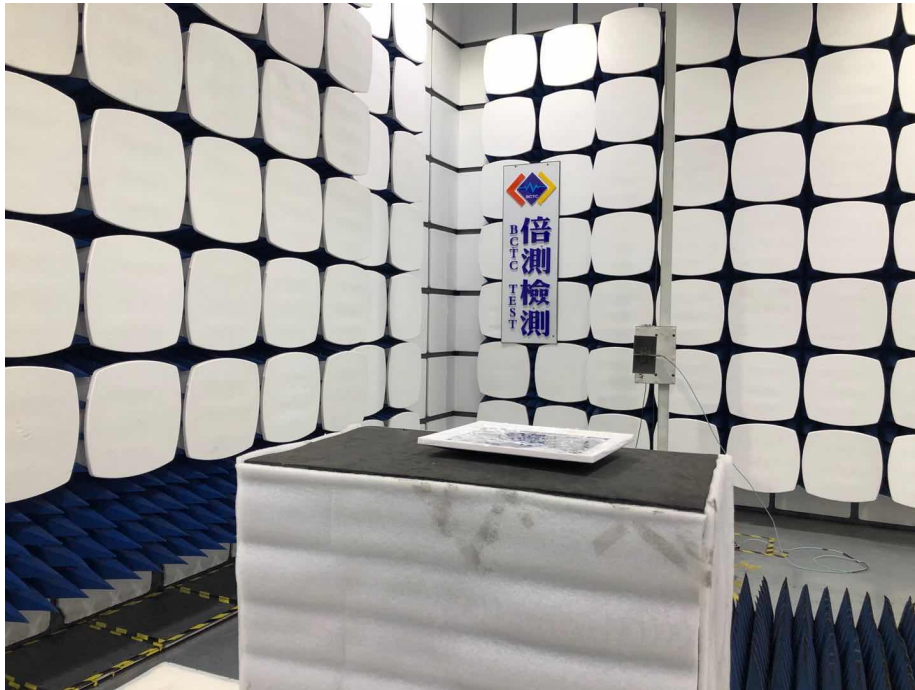
11. EUT TEST PHOTO

Conducted Measurement Photos



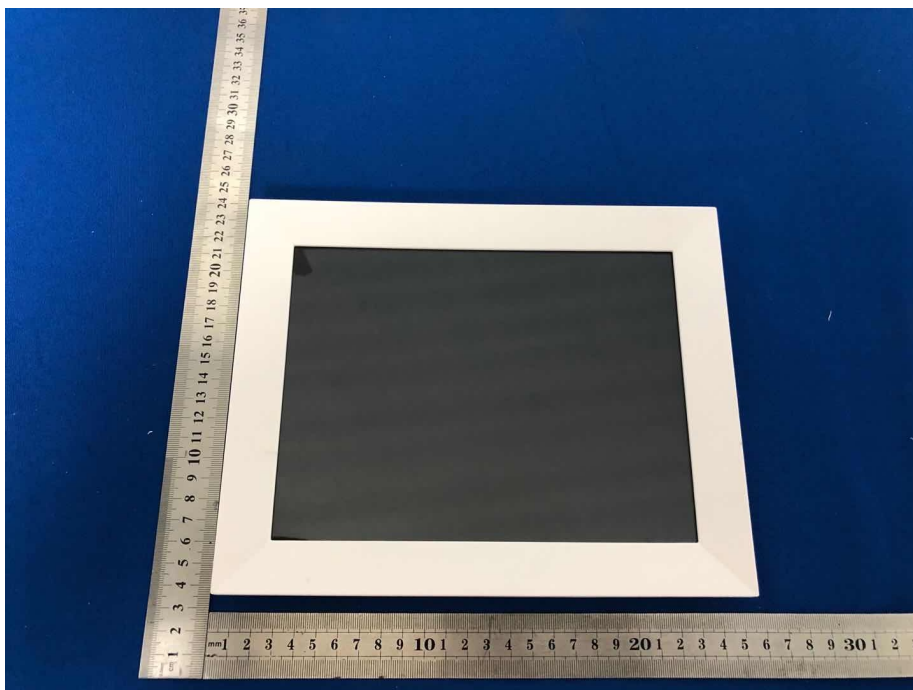
Radiated Measurement Photos



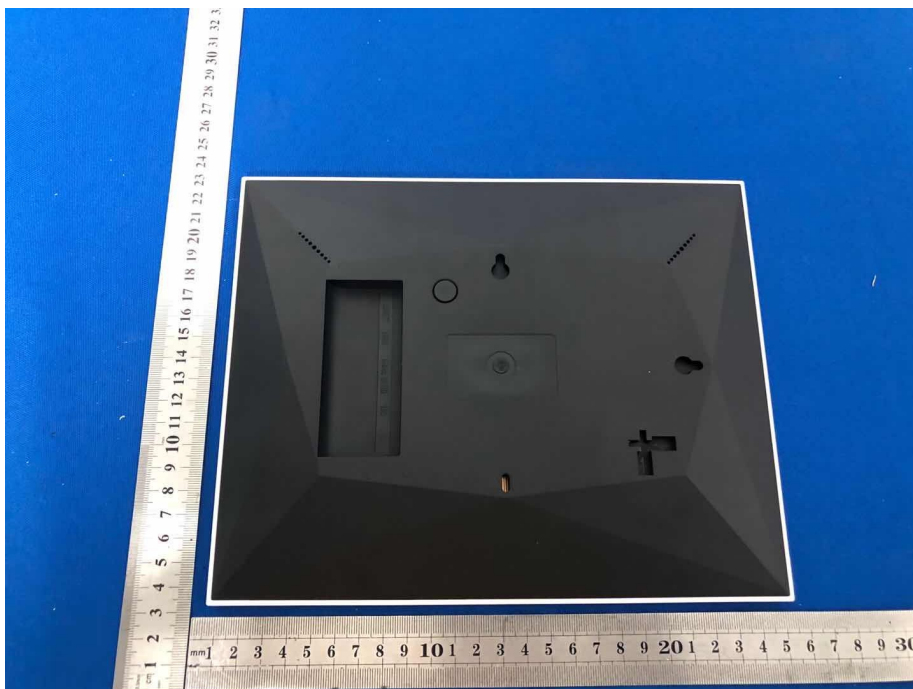


12. EUT PHOTO

EUT Photo 1



EUT Photo 2



***** END OF REPORT *****

