

	j) Replace the normal operating EUT for the EUT with the test mode. k) Set the oscilloscope time base for a minimum 120 seconds with an AUTO Trigger and a single sweep. l) Start the Oscilloscope and a manually force the booster into oscillation. m) When the sweep is complete place cursors between the first two oscillation detections and save the plot for inclusion in the test report. The time between restarts must match the manufacturer's timing for the test mode and there can be no more than 5 restarts. n) Repeat steps 7.11.12 to 7.11.13 for all operational uplink and downlink bands. Note: In lieu of an oscilloscope and RF detector, a spectrum analyzer set for 0 span, can be used to enhance sensitivity, with a center frequency set equal to the center of the operational band for broadband oscillation or a discrete frequency of oscillation. RBW shall be at least 1 MHz with VBW $\geq$ 3 times RBW using a peak detector.
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6.11.1E.U.T. Operation:

Operating Environment:	
Temperature:	-30 °C and +50
Humidity:	46.3 %
Atmospheric Pressure:	1010 mbar

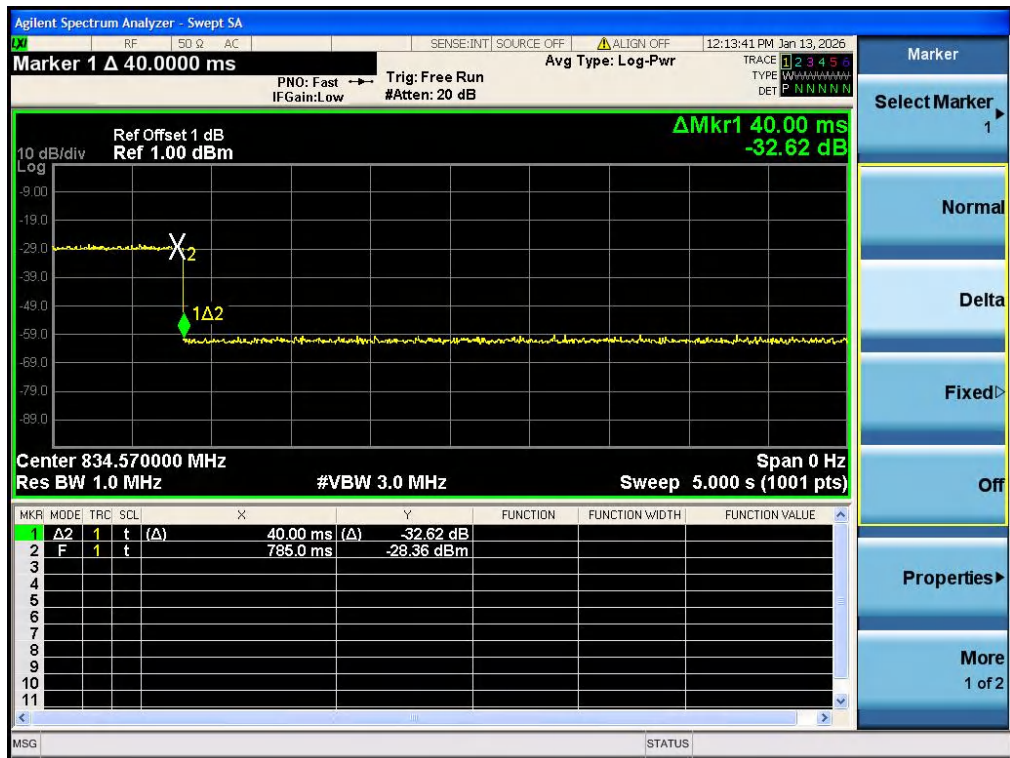
6.11.2Test Data:

Test results of detection time				
Operation Bands		Detection Time(s)	Limit(s)	Result
Uplink	Cellular	0.040	0.300	PASS
	AWS-1	0.040	0.300	PASS
	Low A-E Blocks	0.030	0.300	PASS
	700 MHz Upper C Block	0.035	0.300	PASS
	Broadband PCS	0.040	0.300	PASS
Downlink	Cellular	0.045	0.300	PASS
	AWS-1	0.035	0.300	PASS
	Low A-E Blocks	0.040	0.300	PASS
	700 MHz Upper C Block	0.035	0.300	PASS
	Broadband PCS	0.030	0.300	PASS

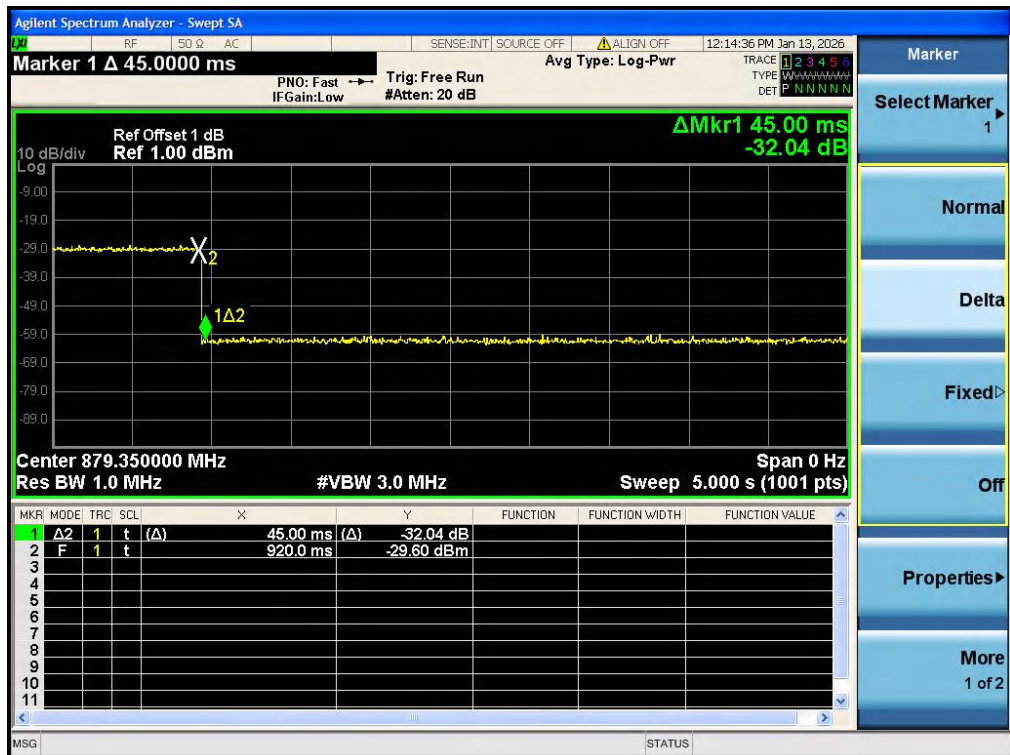
Test results of detection time						
Operation Bands		Restarting Time(s)	Limit(s)	Restarting Counts	Limit	Result
Uplink	Cellular	65.6	60	3	5	PASS
	AWS-1	67.3	60	3	5	PASS
	Low A-E Blocks	60.8	60	2	5	PASS
	700 MHz Upper C Block	78.0	60	2	5	PASS
	Broadband PCS	71.4	60	2	5	PASS
Downlink	Cellular	60.1	60	2	5	PASS
	AWS-1	64.1	60	2	5	PASS
	Low A-E Blocks	71.4	60	2	5	PASS
	700 MHz Upper C Block	64.2	60	2	5	PASS
	Broadband PCS	88.8	60	2	5	PASS

Test Test Plots of detection time

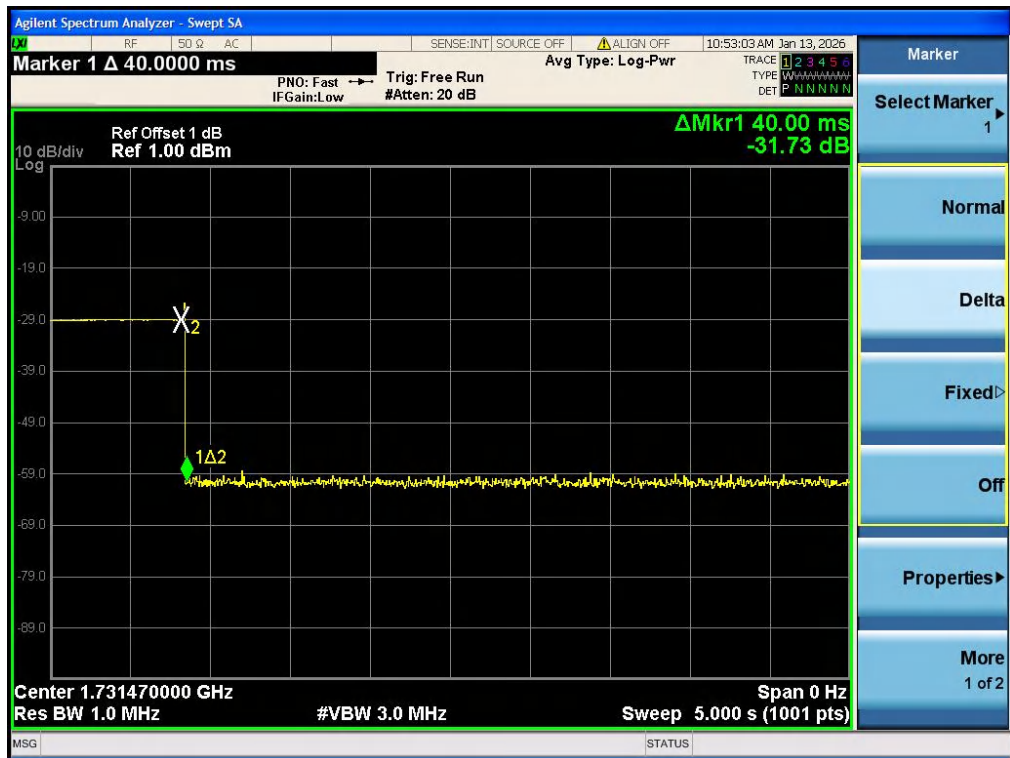
Cellular UL



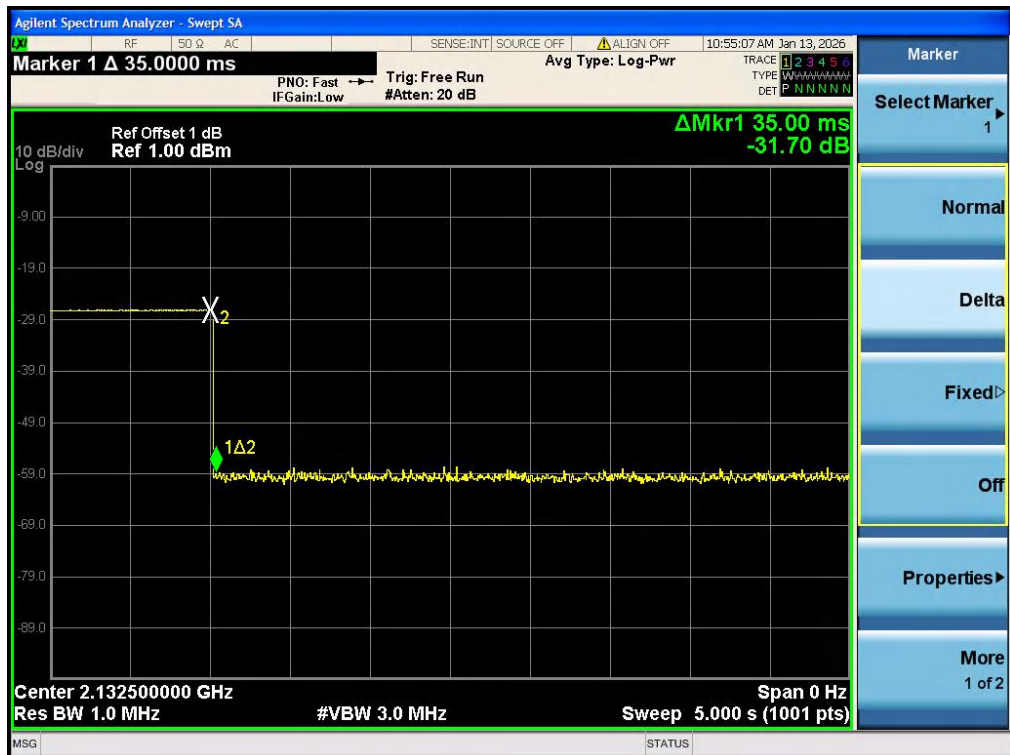
Cellular DL



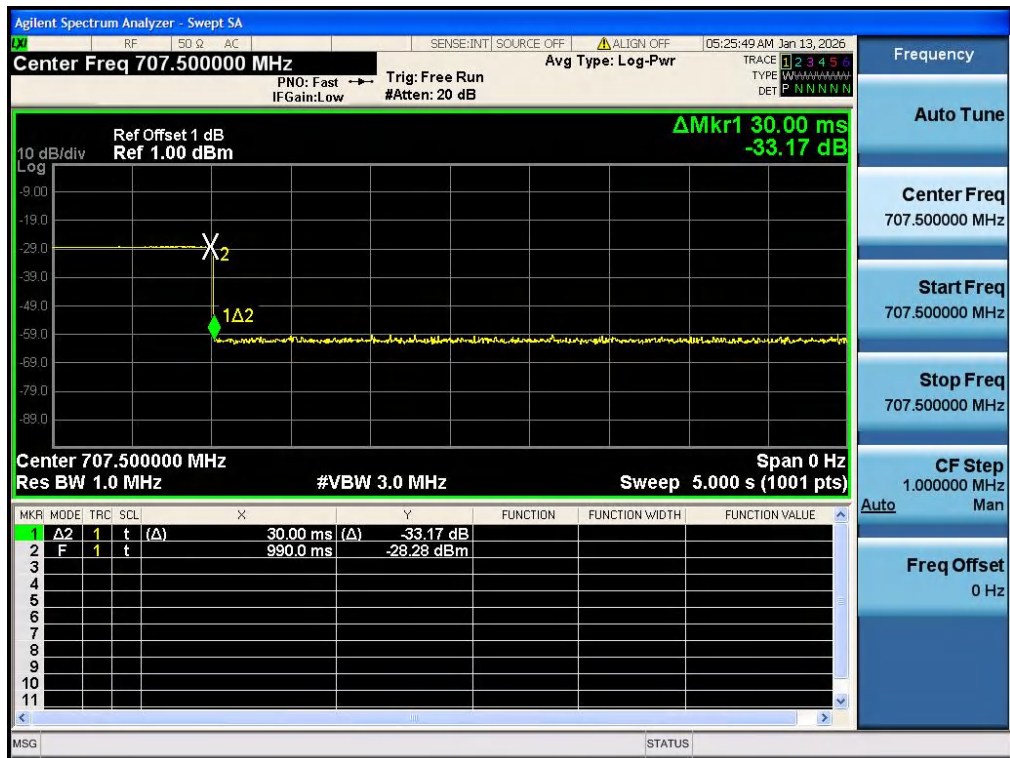
AWS-1 UL



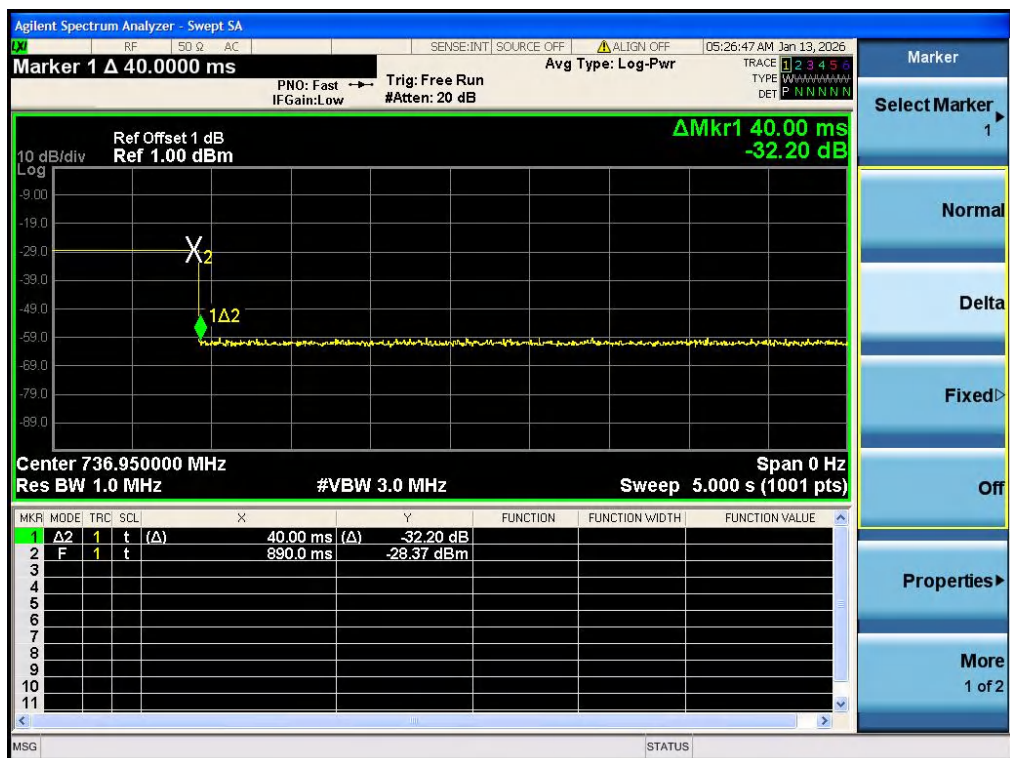
AWS-1 DL

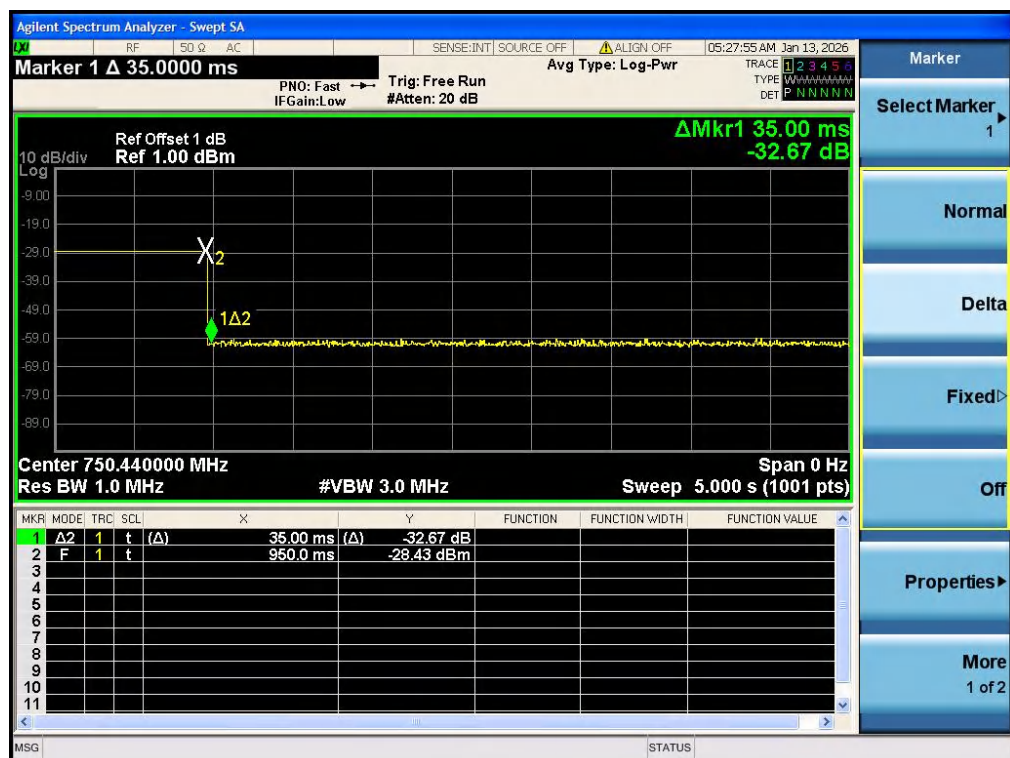
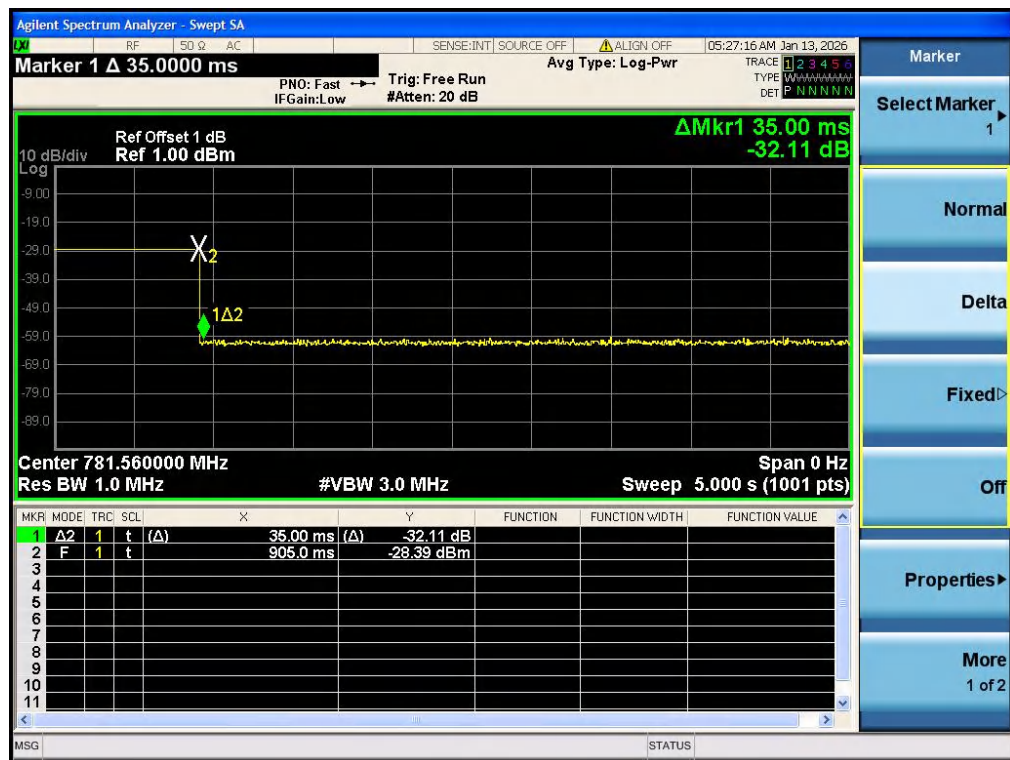


Low A-E Blocks UL

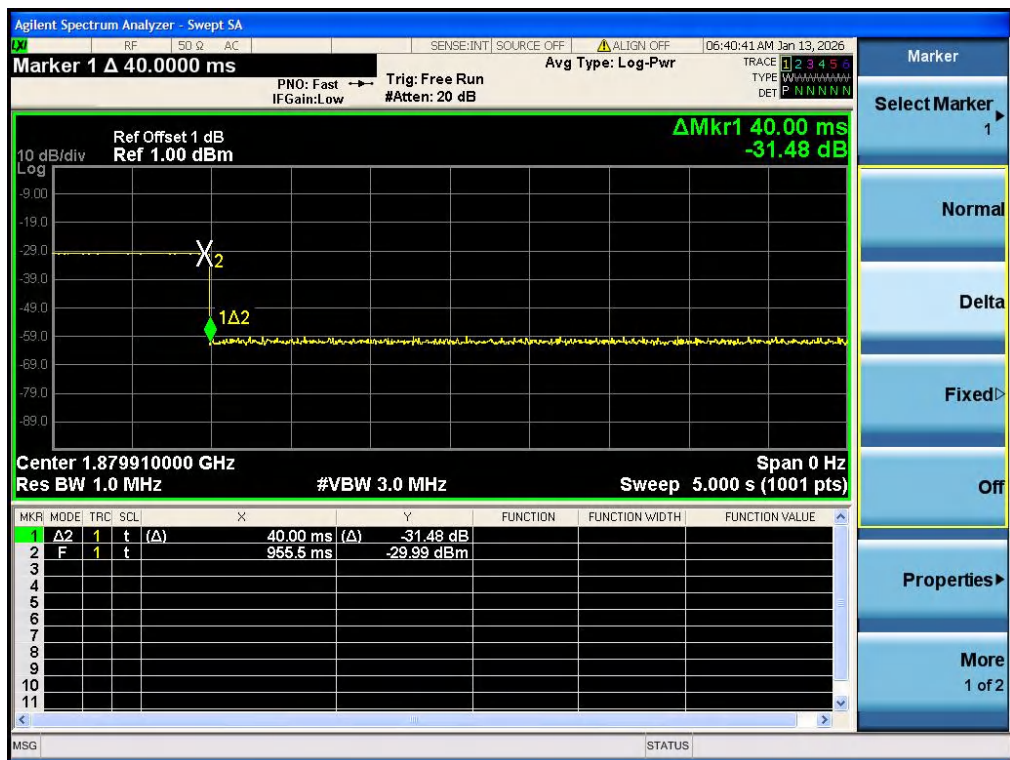


Low A-E Blocks DL





Broadband PCS UL

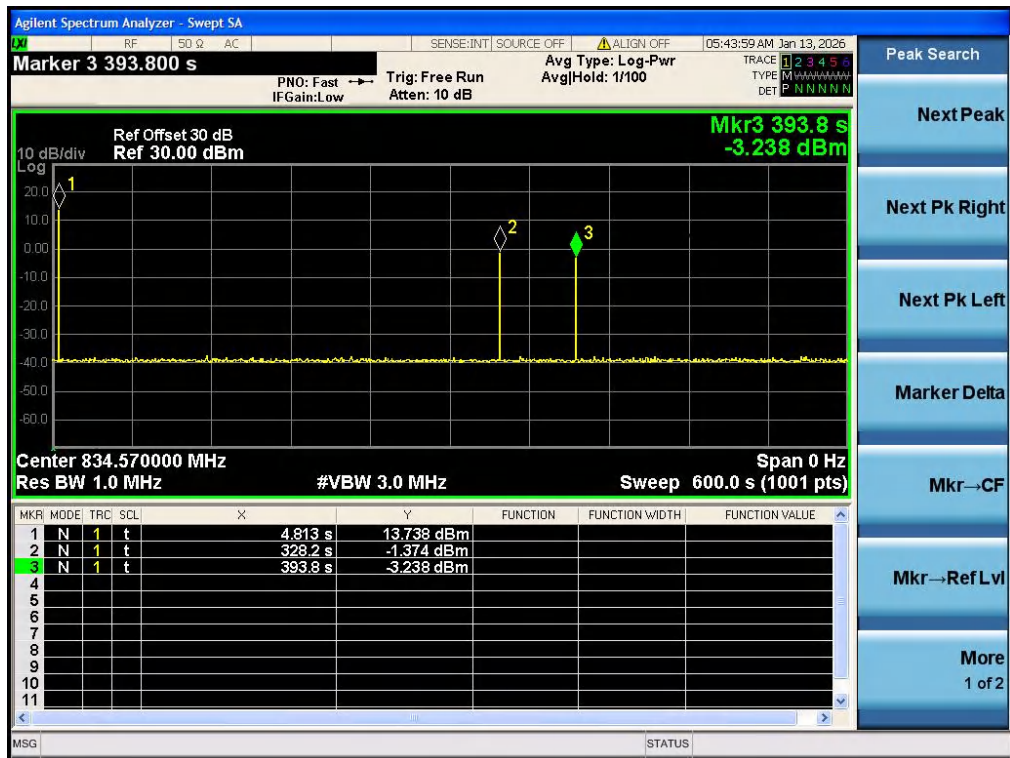


Broadband PCS DL

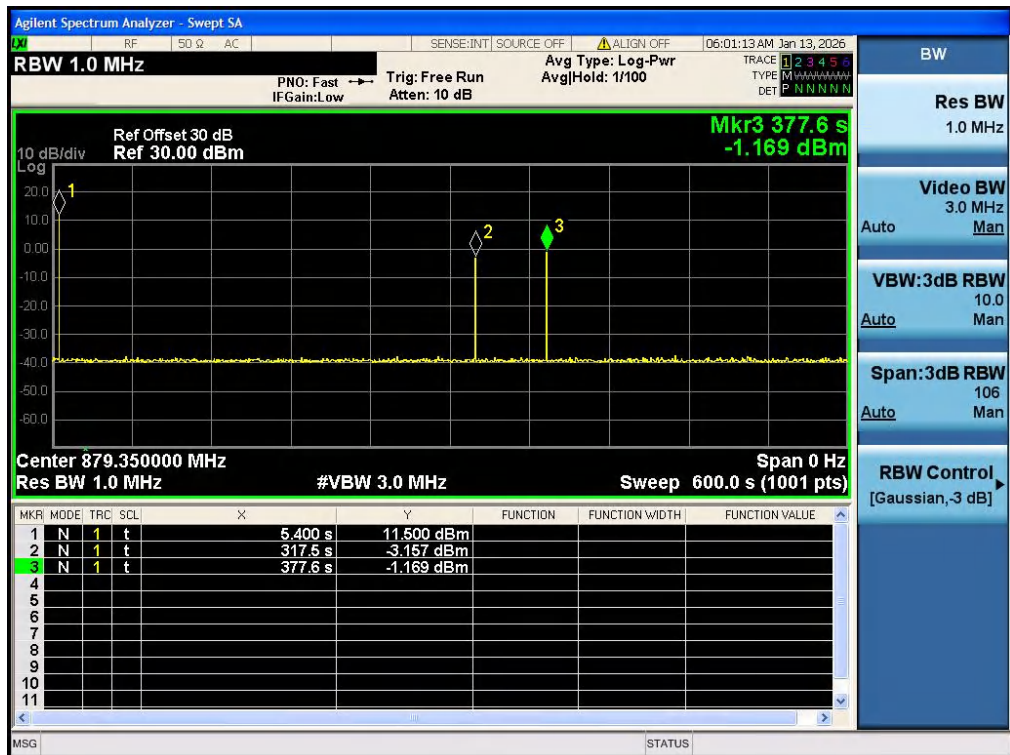


Test Test Plots of restarting time

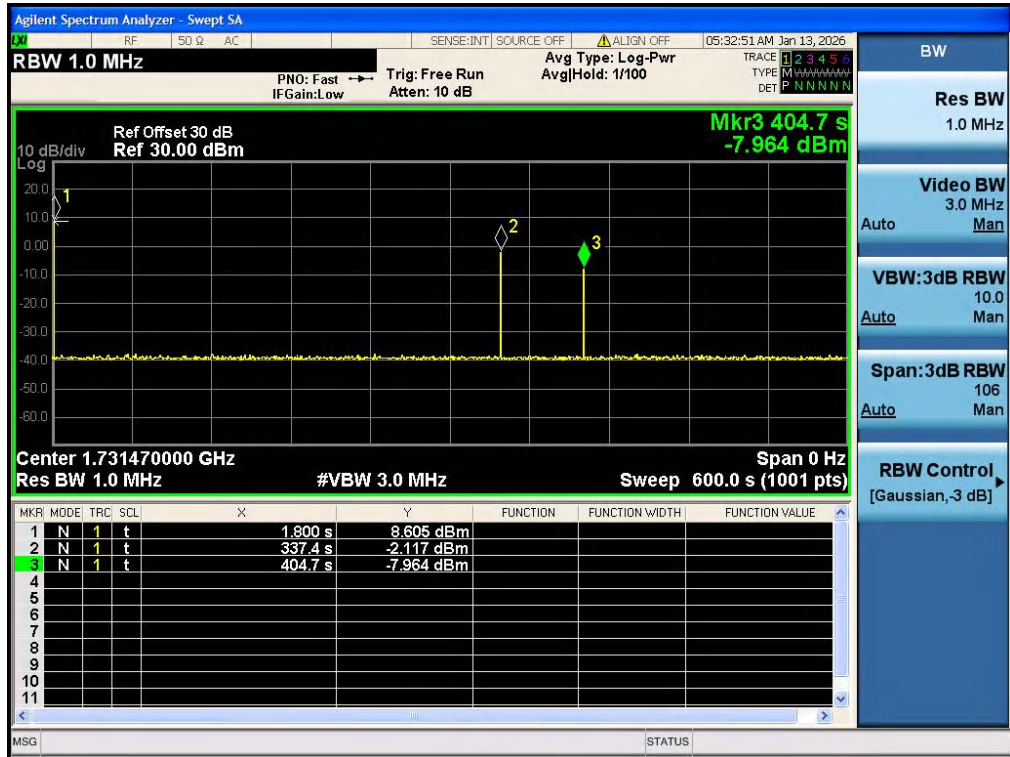
Cellular UL



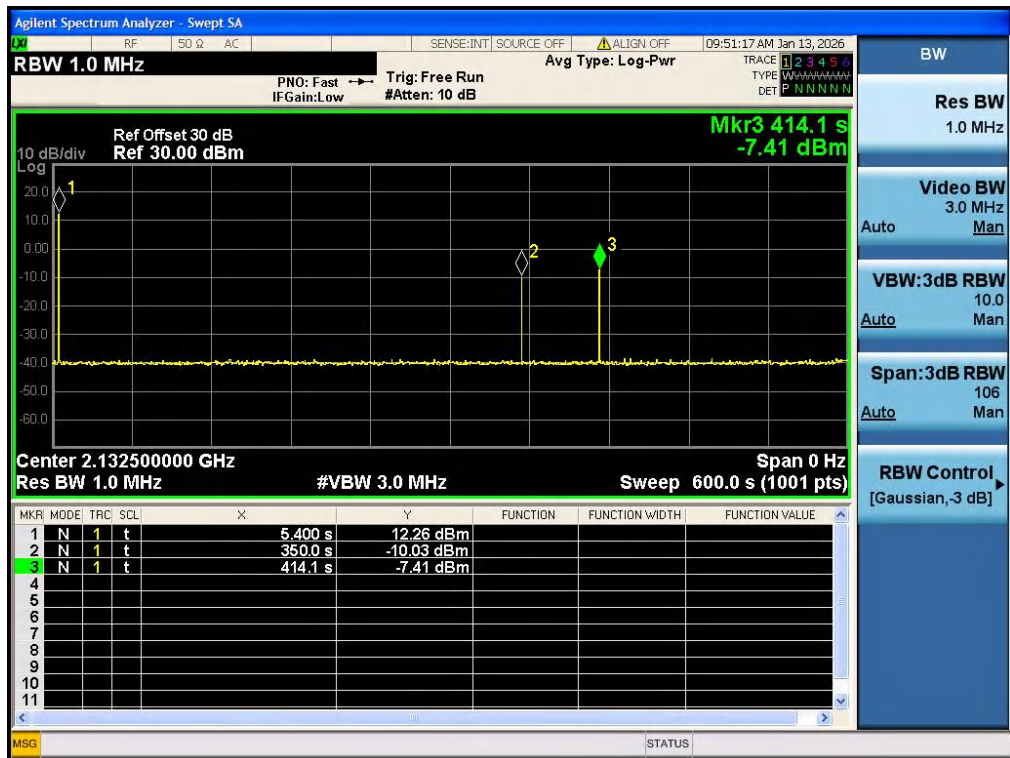
Cellular DL



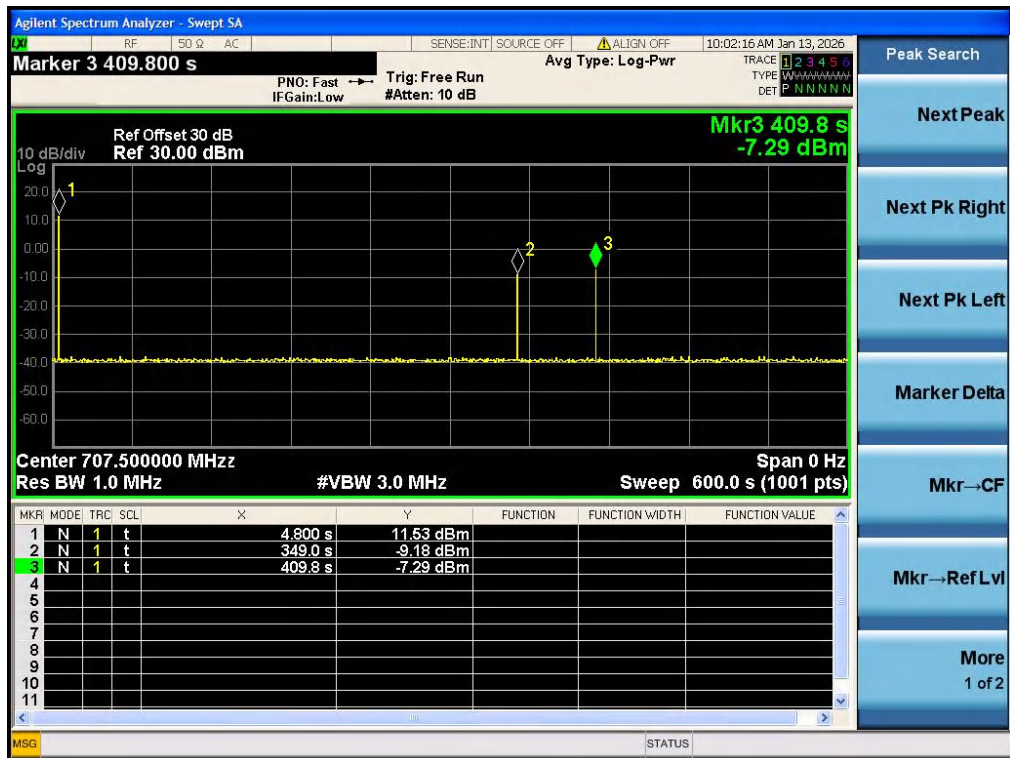
AWS-1 UL



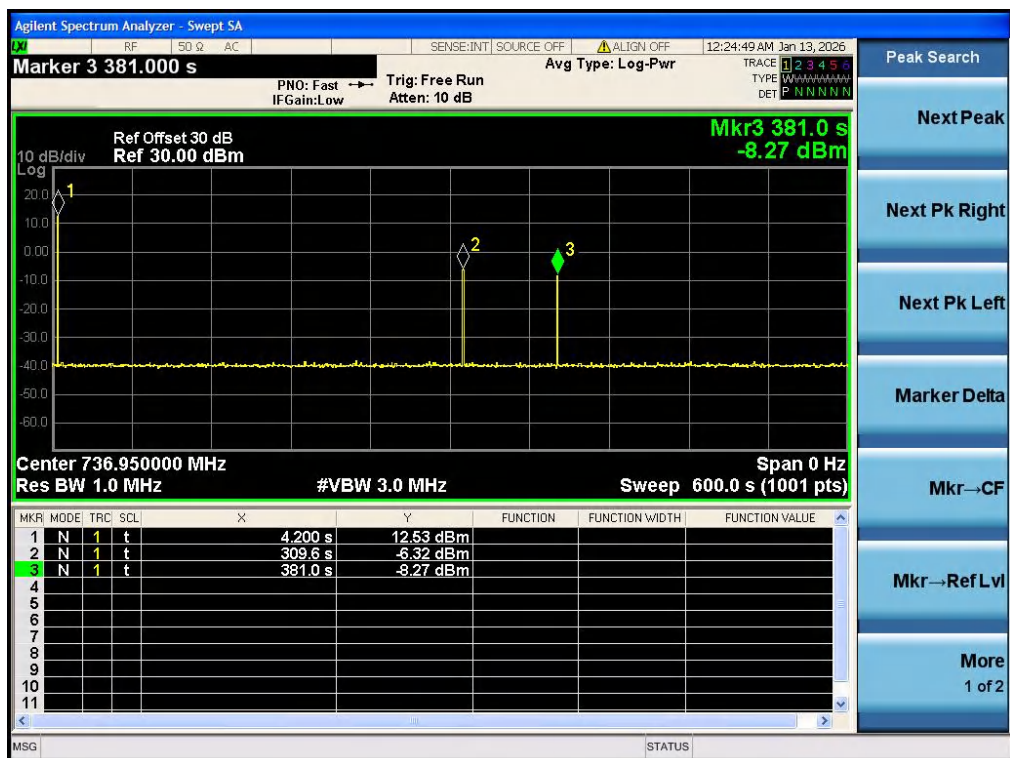
AWS-1 DL



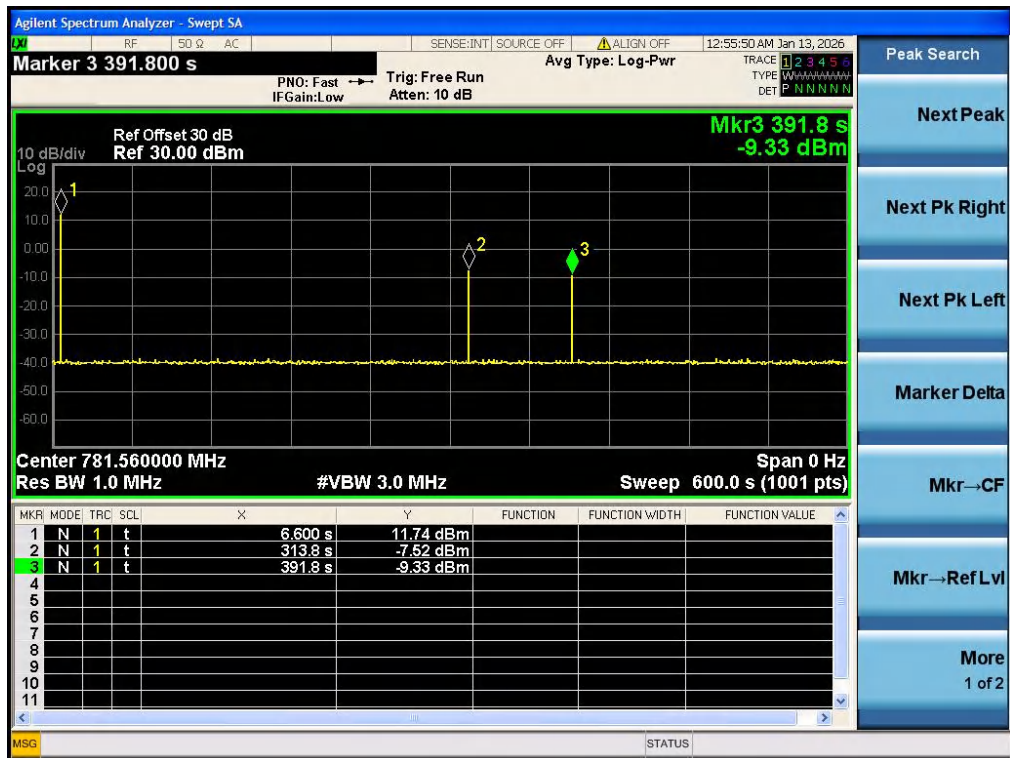
Low A-E Blocks UL



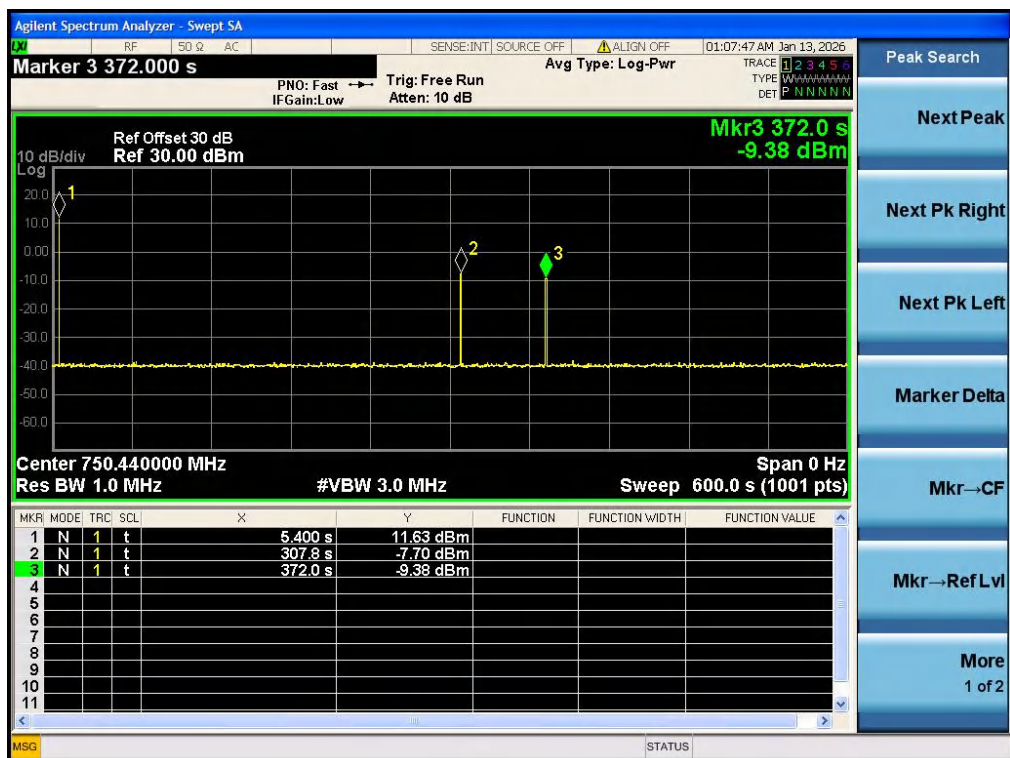
Low A-E Blocks DL



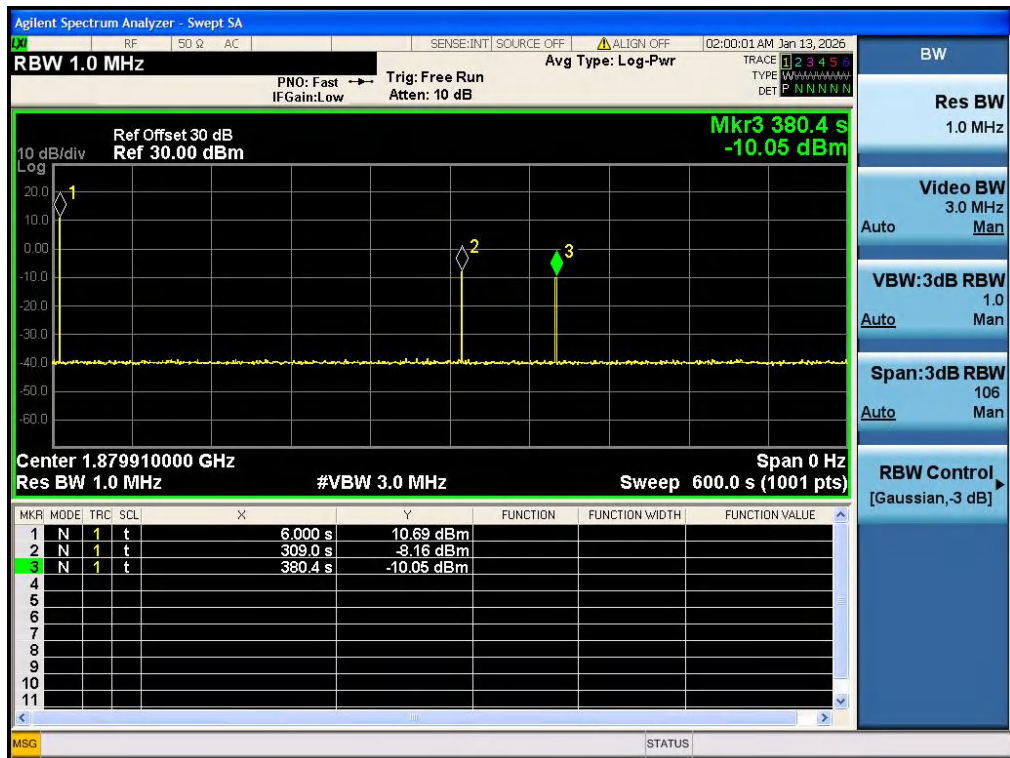
700 MHz Upper C Block UL



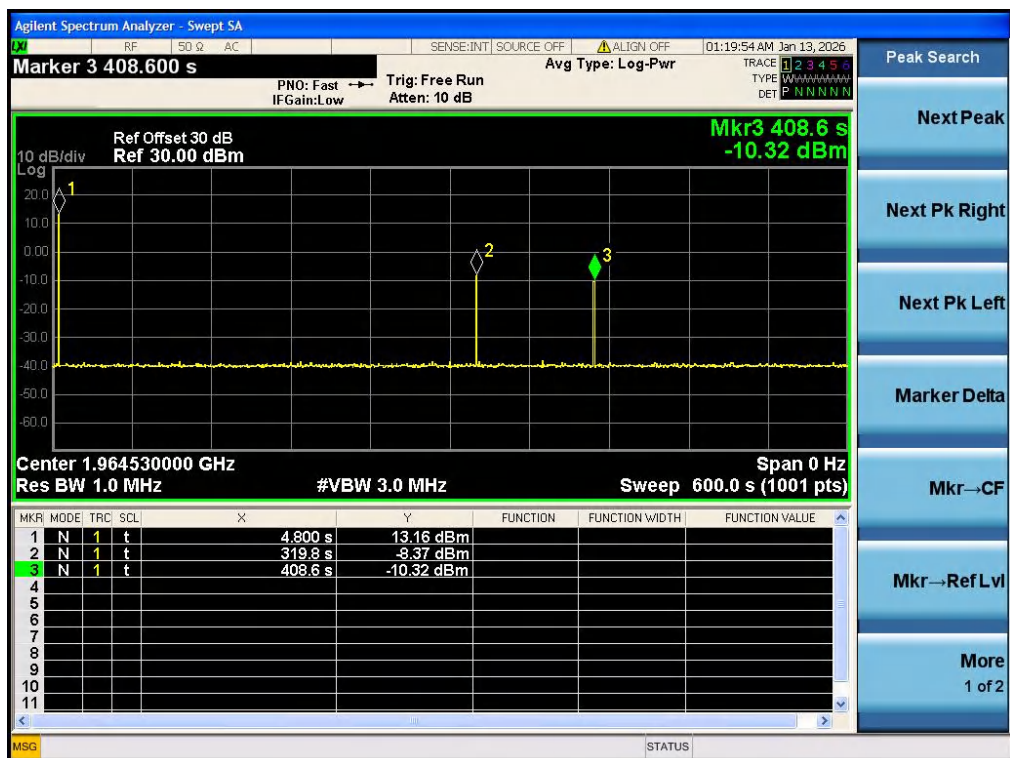
700 MHz Upper C Block DL



Broadband PCS UL



Broadband PCS DL



Cellular	Uplink(824-849MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	825.42	-57.25	848.79	-65.86	8.61	<12	PASS
+4	825.42	-58.17	848.79	-66.44	8.27	<12	PASS
+3	825.42	-59.84	848.79	-67.18	7.34	<12	PASS
+2	825.42	-60.04	848.79	-68.26	8.22	<12	PASS
+1	825.42	-61.21	848.79	-69.38	8.17	<12	PASS
+0	825.42	-62.36	848.79	-70.24	7.88	<12	PASS
-1	825.42	-63.21	848.79	-71.86	8.65	<12	PASS
-2	825.42	-64.34	848.79	-72.17	7.83	<12	PASS
-3	EUT Shutdown						

Cellular	Downlink(869-894MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	870.93	-57.47	893.17	-66.25	8.78	<12	PASS
+4	870.93	-58.24	893.17	-66.18	7.94	<12	PASS
+3	870.93	-59.04	893.17	-67.29	8.25	<12	PASS
+2	870.93	-60.96	893.17	-68.02	7.06	<12	PASS
+1	870.93	-61.35	893.17	-69.75	8.4	<12	PASS
+0	870.93	-62.28	893.17	-70.93	8.65	<12	PASS
-1	870.93	-63.14	893.17	-70.04	6.9	<12	PASS
-2	EUT Shutdown						

Broadband PCS	Uplink(1850-1915MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	1884.78	-58.38	1914.83	-67.78	9.4	<12	PASS
+4	1884.78	-59.27	1914.83	-68.07	8.8	<12	PASS
+3	1884.78	-60.75	1914.83	-69.17	8.42	<12	PASS
+2	1884.78	-61.36	1914.83	-70.86	9.5	<12	PASS
+1	1884.78	-62.29	1914.83	-71.31	9.02	<12	PASS
+0	1884.78	-62.75	1914.83	-72.17	9.42	<12	PASS
-1	1884.78	-63.34	1914.83	-73.28	9.94	<12	PASS
-2	1884.78	-64.85	1914.83	-73.86	9.01	<12	PASS
-3	EUT Shutdown						

Broadband PCS	Downlink(1930-1995MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	1935.56	-57.86	1953.86	-65.75	7.89	<12	PASS
+4	1935.56	-58.14	1953.86	-66.48	8.34	<12	PASS
+3	1935.56	-59.96	1953.86	-67.24	7.28	<12	PASS
+2	1935.56	-60.75	1953.86	-68.31	7.56	<12	PASS
+1	1935.56	-61.35	1953.86	-69.47	8.12	<12	PASS
+0	1935.56	-62.51	1953.86	-70.17	7.66	<12	PASS
-1	1935.56	-63.23	1953.86	-70.28	7.05	<12	PASS
-2	EUT Shutdown						

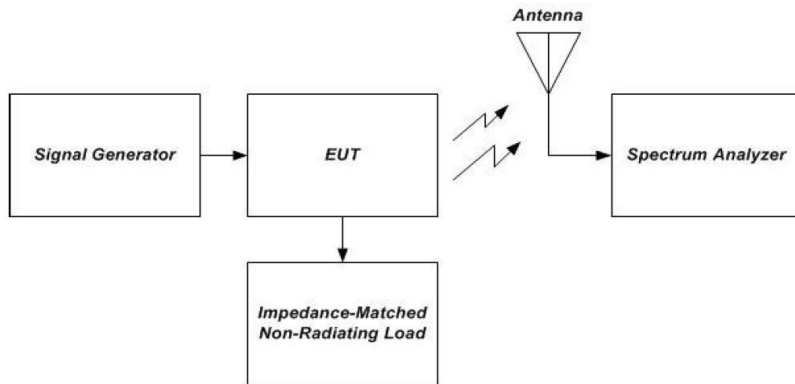
AWS-1	Uplink(1710-1755MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	1732.93	-59.86	1754.91	-68.36	8.5	<12	PASS
+4	1732.93	-58.18	1754.91	-68.74	10.56	<12	PASS
+3	1732.93	-60.38	1754.91	-70.05	9.67	<12	PASS
+2	1732.93	-61.71	1754.91	-69.27	7.56	<12	PASS
+1	1732.93	-62.28	1754.91	-70.33	8.05	<12	PASS
+0	1732.93	-63.19	1754.91	-71.15	7.96	<12	PASS
-1	1732.93	-64.53	1754.91	-72.17	7.64	<12	PASS
-2	1732.93	-65.27	1754.91	-73.05	7.78	<12	PASS
-3	EUT Shutdown						

AWS-1	Downlink(2110-2155MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	2112.25	-58.47	2154.83	-68.26	9.79	<12	PASS
+4	2112.25	-59.32	2154.83	-68.26	8.94	<12	PASS
+3	2112.25	-60.01	2154.83	-67.01	7	<12	PASS
+2	2112.25	-60.47	2154.83	-68.36	7.89	<12	PASS
+1	2112.25	-61.29	2154.83	-70.75	9.46	<12	PASS
+0	2112.25	-61.04	2154.83	-70.18	9.14	<12	PASS
-1	2112.25	-62.38	2154.83	-71.52	9.14	<12	PASS
-2	EUT Shutdown						

Low A-E Blocks	Downlink(729-746MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	730.24	-60.05	745.85	-66.47	6.42	<12	PASS
+4	730.24	-61.17	745.85	-67.01	5.84	<12	PASS
+3	730.24	-62.29	745.85	-68.63	6.34	<12	PASS
+2	730.24	-63.05	745.85	-68.17	5.12	<12	PASS
+1	730.24	-64.36	745.85	-69.28	4.92	<12	PASS
+0	730.24	-64.47	745.85	-69.43	4.96	<12	PASS
-1	730.24	-65.25	745.85	-70.01	4.76	<12	PASS
-2	730.24	-65.01	745.85	-71.39	6.38	<12	PASS
-3	EUT Shutdown						

700 MHz Upper C Block	Downlink(746-756MHz)						
Signal Type	AWGN						
Isolation	Peak Oscillations		Minimal Level		Difference	Limit	Result
	Freq.	Level	Freq.	Level			
dB	MHz	dBm	MHz	dBm	dB	dB	PASS
+5	746.86	-59.02	755.76	-66.83	7.81	<12	PASS
+4	746.86	-60.34	755.76	-68.14	7.8	<12	PASS
+3	746.86	-60.24	755.76	-68.02	7.78	<12	PASS
+2	746.86	-61.43	755.76	-67.14	5.71	<12	PASS
+1	746.86	-62.47	755.76	-68.83	6.36	<12	PASS
+0	746.86	-63.29	755.76	-69.25	5.96	<12	PASS
-1	746.86	-63.43	755.76	-70.43	7	<12	PASS
-2	746.86	-63.51	755.76	-70.34	6.83	<12	PASS
-3	EUT Shutdown						

6.12 Radiated Spurious Emissions

Test Requirement:	This procedure is intended to satisfy the requirements specified in §2.1053. The applicable limits are those specified for mobile emissions in the rule part applicable to the band of operation (see Annex A).
Test setup:	 Figure 10 – Radiated spurious emissions test and instrumentation setup
Procedure:	- Place the EUT on an OATS or Anechoic chamber turntable 3m from the receiving antenna. - Connect the EUT to the test equipment as shown in Figure 9 beginning with the uplink output - Set the signal generator for the center frequency of the operational band under test with the power level set at PIN from section 7.2 with CW signal. - Measure the radiated spurious emissions from the EUT from lowest to the highest frequencies as specified in §2.1057. Maximize the radiated emissions by utilizing the procedures described in C63.4. - Capture the peak emissions plots using a peak detector with max-Hold for inclusion in the test report. Tabular data is acceptable in lieu of spectrum analyzer plots. - Repeat steps 7.12.3 to 7.12.5 for all operational bands.

6.12.1E.U.T. Operation:

Operating Environment:	
Temperature:	–30 °C and +50
Humidity:	46.3 %
Atmospheric Pressure:	1010 mbar

6.12.2Test Data:

Frequency [MHz]	Antenna polarity [H/V]	Level [dBm]	Limit [dBm]	Margin [dB]
Cellular Uplink				
861.6	V	-37.71	-13.00	24.71
861.6	H	-39.00		26.00
1768.0	V	-38.04		25.04
1768.0	H	-39.35		26.35
-	-	-	-	-
Cellular Downlink				
880.2	V	-48.49	-13.00	35.49
880.2	H	-48.68		35.68
1726.0	V	-48.63		35.63
1726.0	H	-48.90		35.90
-	-	-	-	-

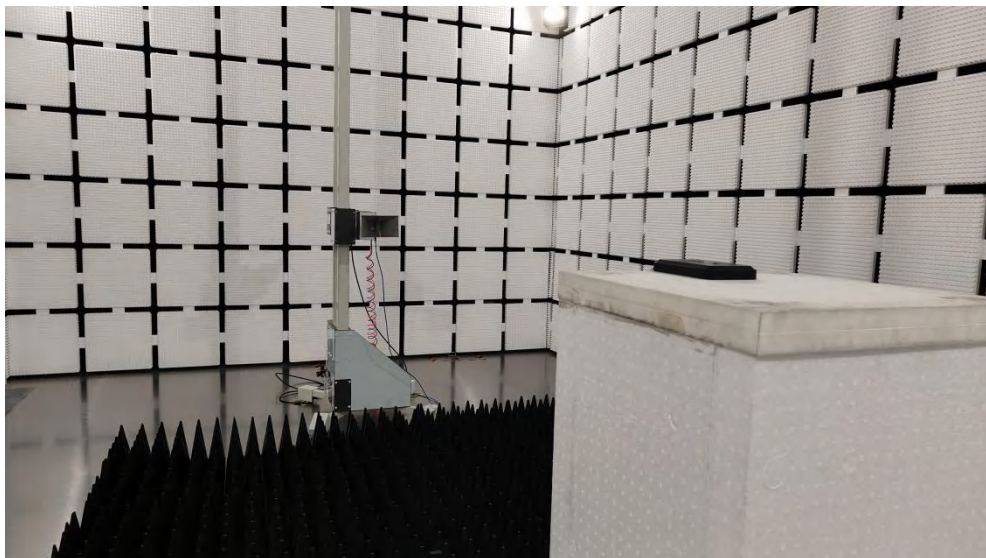
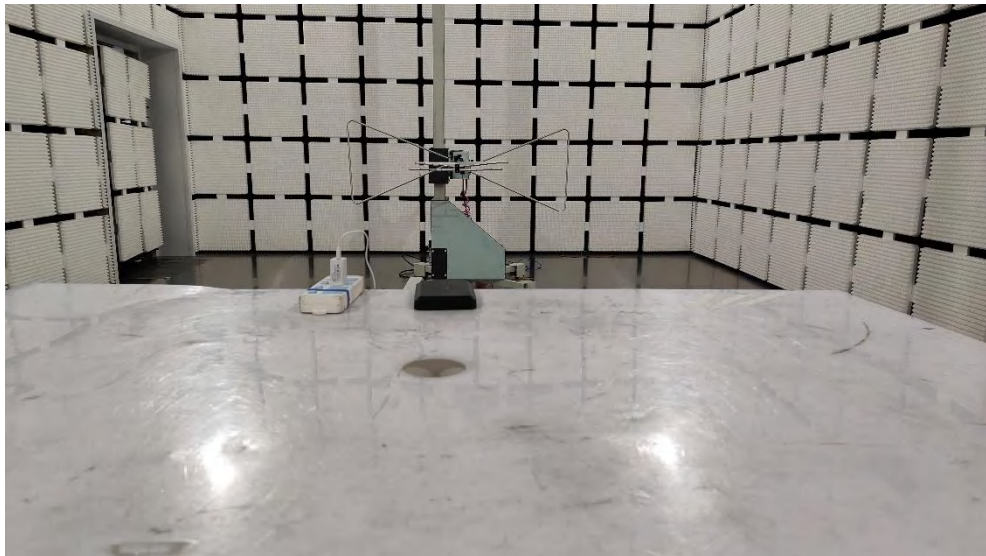
Frequency [MHz]	Antenna polarity [H/V]	Level [dBm]	Limit [dBm]	Margin [dB]
Broadband PCS Uplink				
948.2	V	-37.83	-13.00	24.83
948.2	H	-40.41		27.41
3771.0	V	-38.93		25.93
3771.0	H	-36.37		23.37
-	-	-	-	-
Broadband PCS Downlink				
979.3	V	-48.23	-13.00	35.23
979.3	H	-48.79		35.79
3975.5	V	-50.54		37.54
3975.5	H	-50.14		37.14

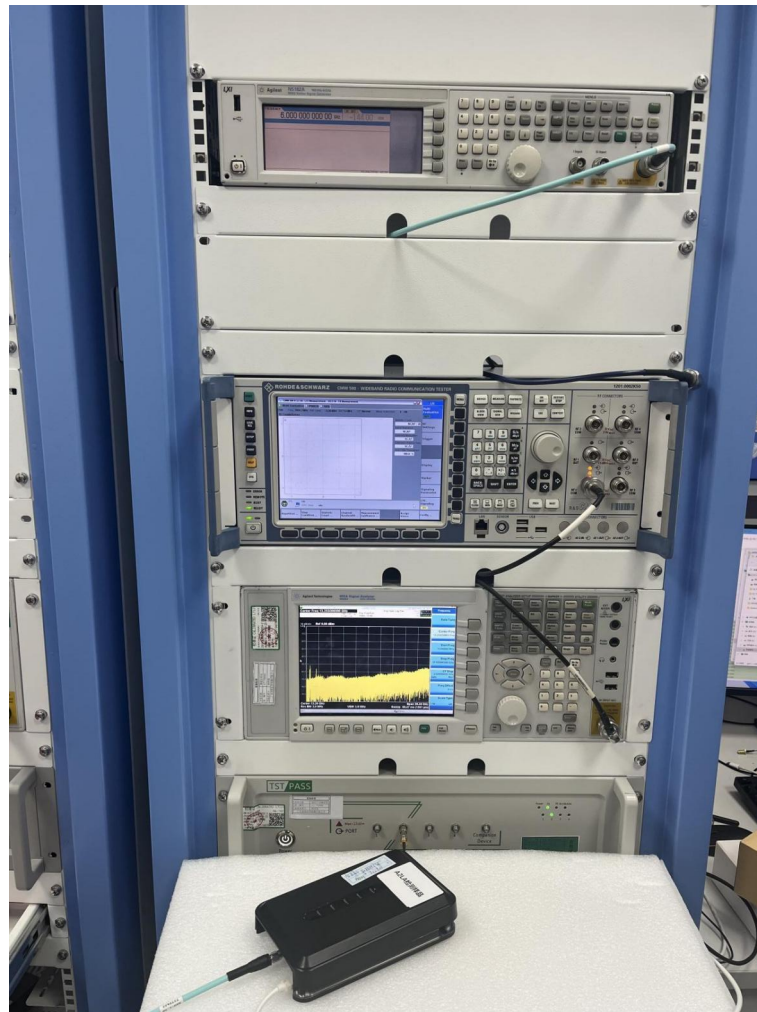
Frequency [MHz]	Antenna polarity [H/V]	Level [dBm]	Limit [dBm]	Margin [dB]
AWS-1 Uplink				
860.7	V	-45.27	-13.00	32.27
860.7	H	-42.38		29.38
2547.3	V	-41.52		28.52
2547.3	H	-43.11		30.11
-	-	-	-	-
AWS-1 Downlink				
926.7	V	-48.75	-13.00	35.75
926.7	H	-50.47		37.47
3885.6	V	-48.46		35.46
3885.6	H	-50.19		37.19
-	-	-	-	-

Frequency [MHz]	Antenna polarity [H/V]	Level [dBm]	Limit [dBm]	Margin [dB]
Low A-E Blocks Uplink				
978.3	V	-39.31	-13.00	26.31
978.3	H	-40.98		27.98
1687.7	V	-40.34		27.34
1687.7	H	-39.24		26.24
-	-	-	-	-
Low A-E Blocks Downlink				
974.1	V	-50.22	-13.00	37.22
974.1	H	-48.47		35.47
1878.7	V	-48.41		35.41
1878.7	H	-51.34		38.34
-	-	-	-	-

Frequency [MHz]	Antenna polarity [H/V]	Level [dBm]	Limit [dBm]	Margin [dB]
700 MHz Upper C Block Uplink				
968.1	V	-44.81	-13.00	31.81
968.1	H	-42.57		29.57
1886.4	V	-43.25		30.25
1886.4	H	-41.25		28.25
-	-	-	-	-
700 MHz Upper C Block Downlink				
947.1	V	-47.53	-13.00	34.53
947.1	H	-48.30		35.30
1885.2	V	-48.22		35.22
1885.2	H	-49.47		36.47
-	-	-	-	-

7. TEST SETUP PHOTOGRAPHS OF EUT





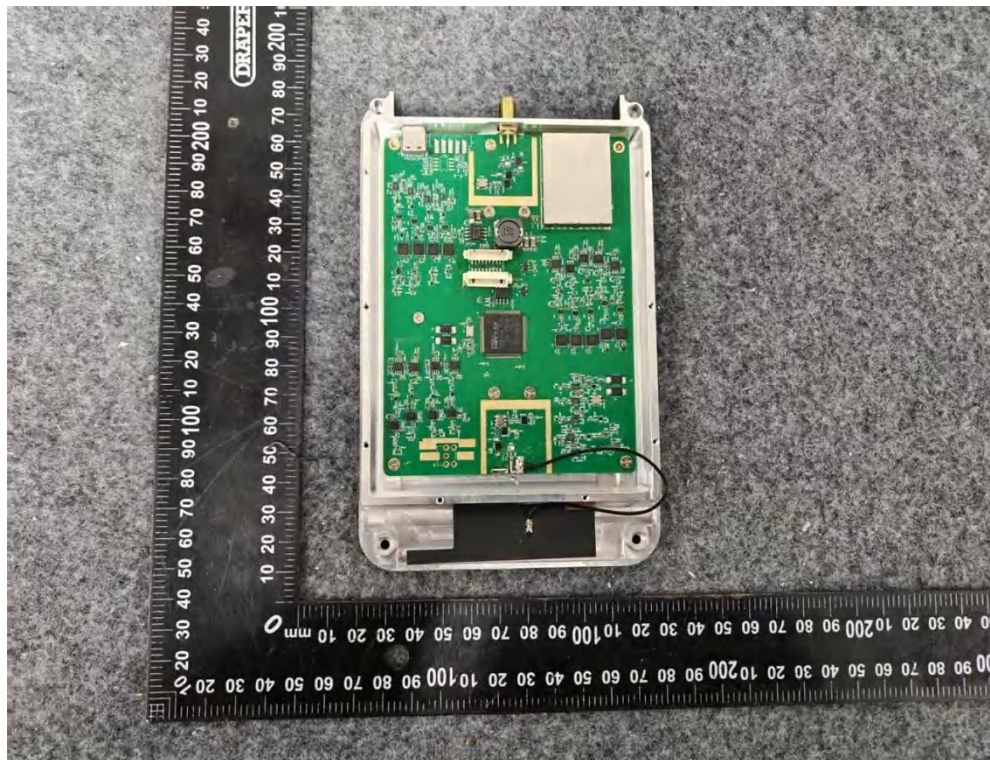
8 EUT PHOTO

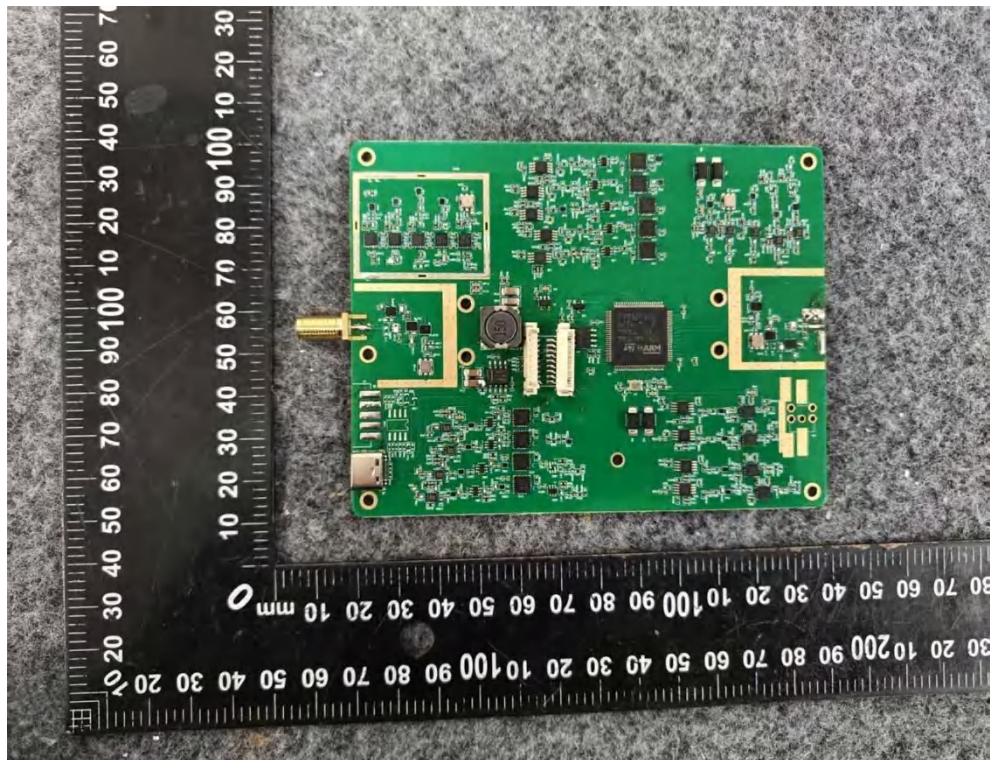
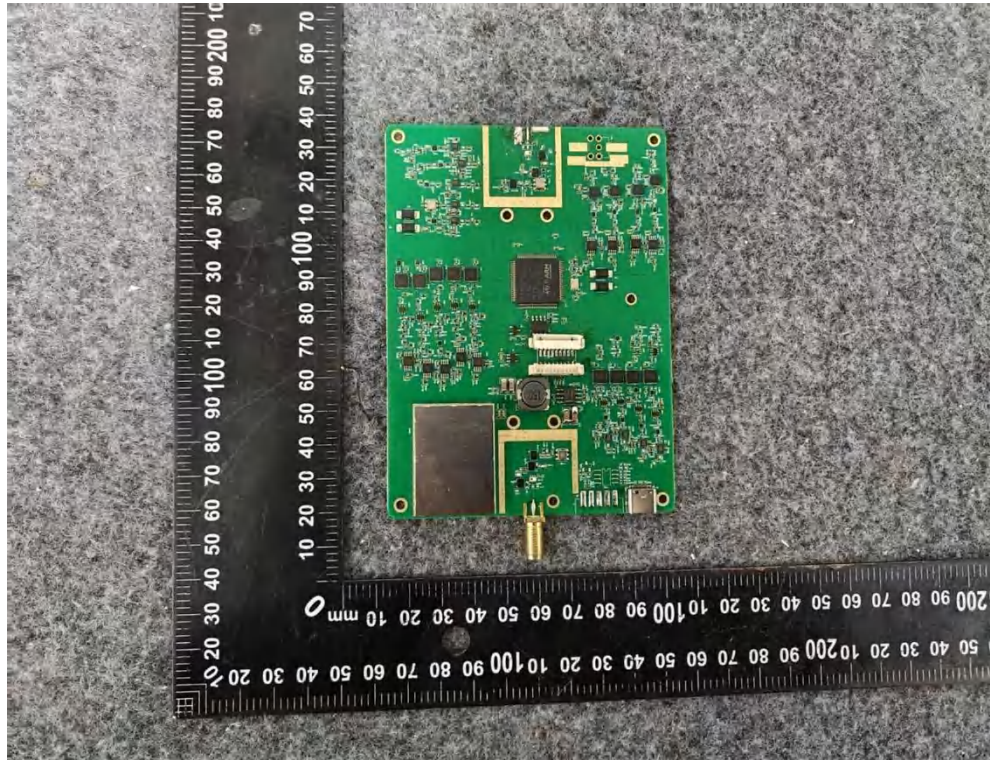


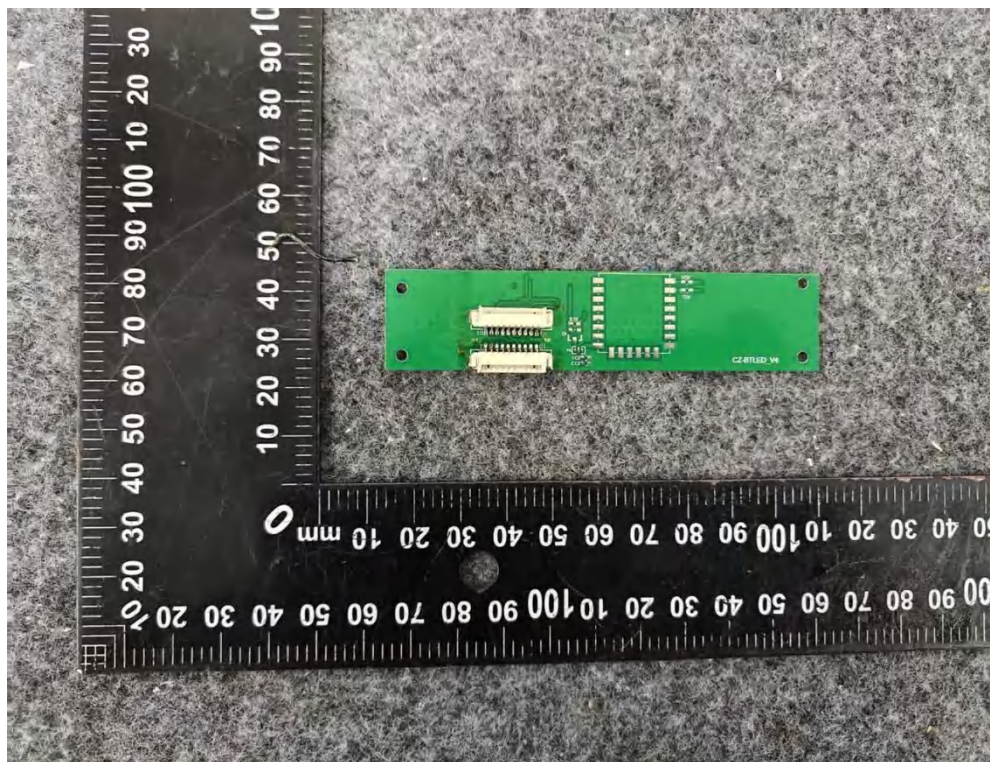
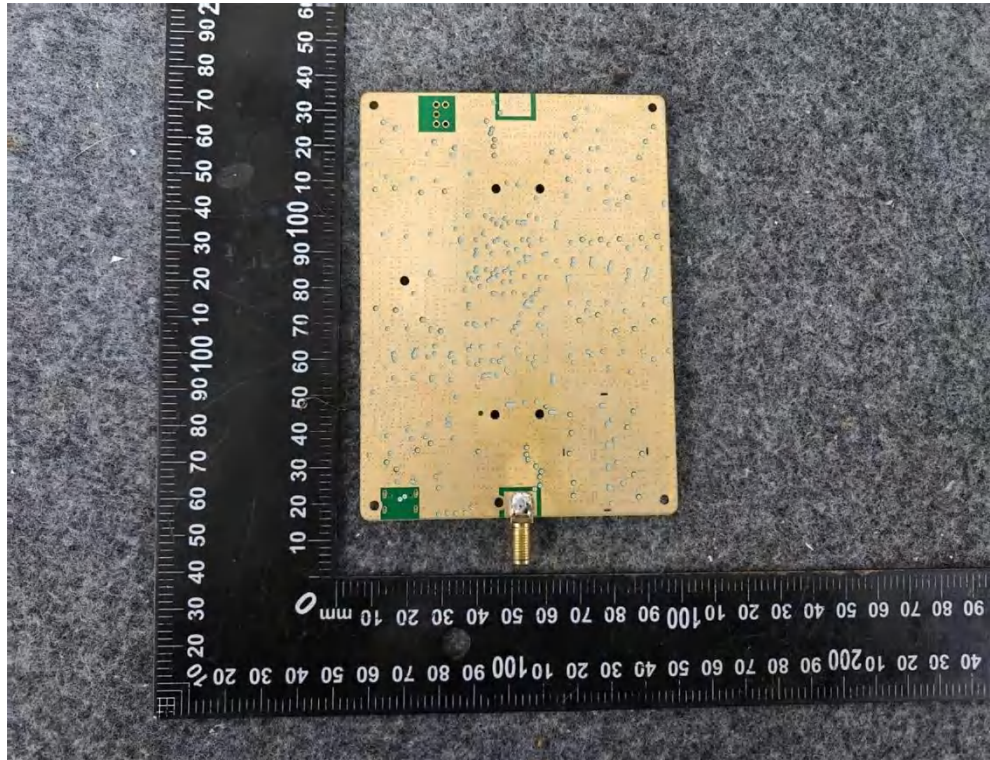


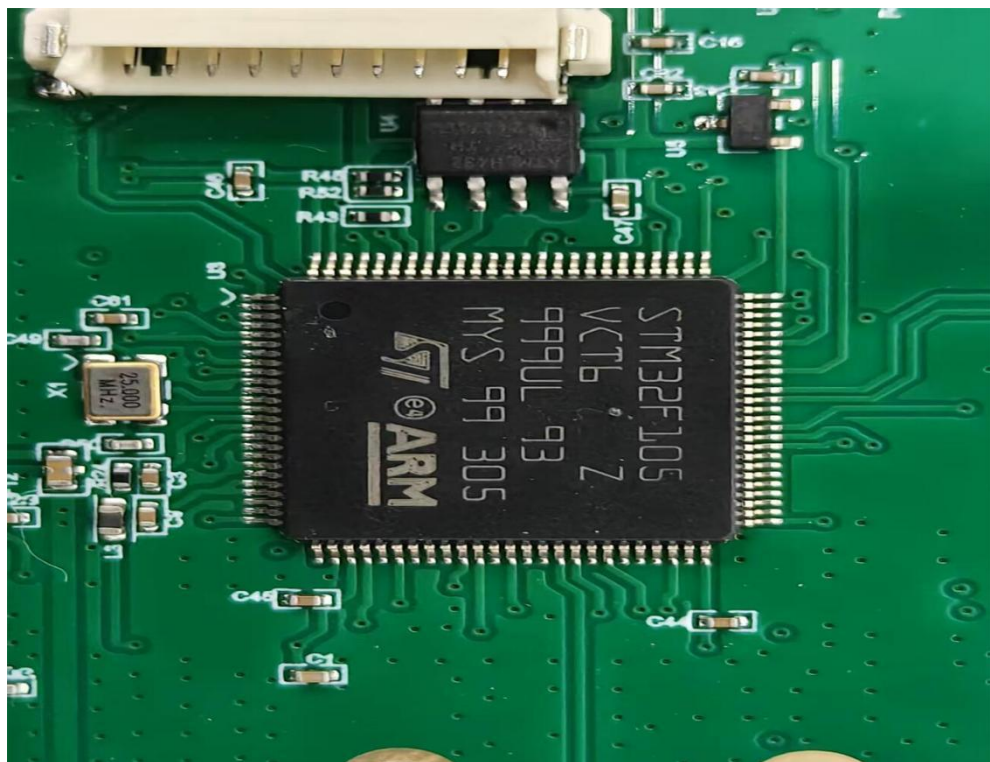
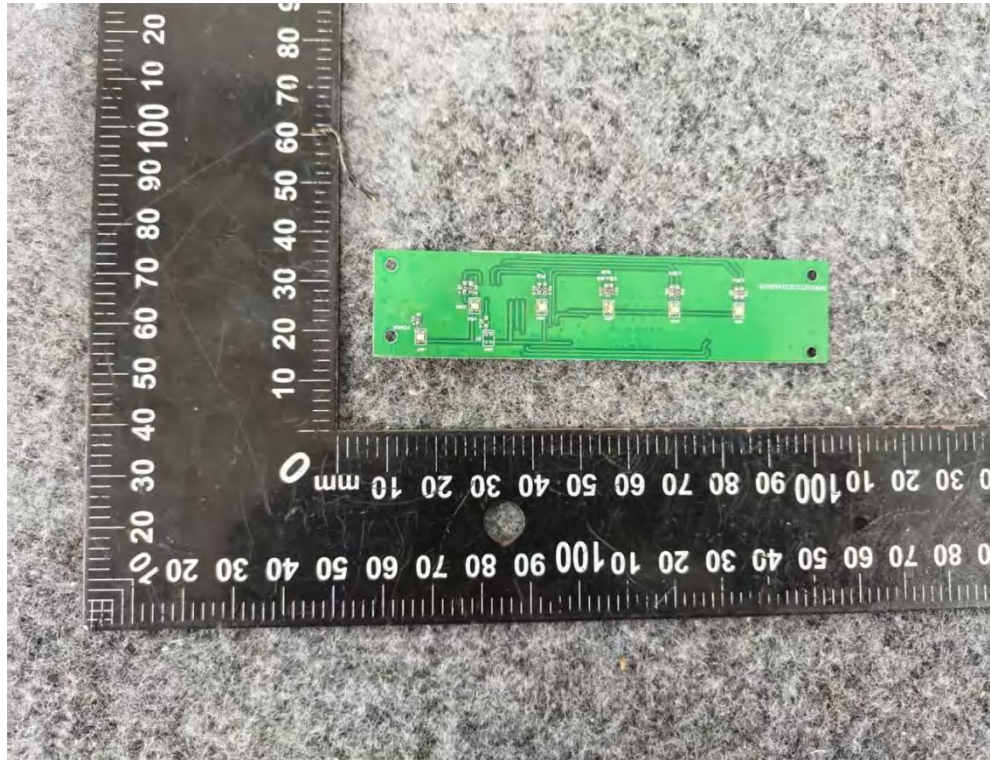












-- END OF REPORT --