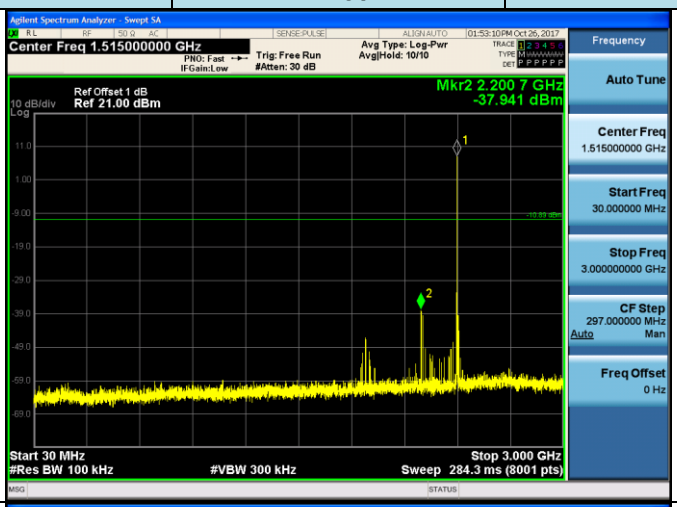
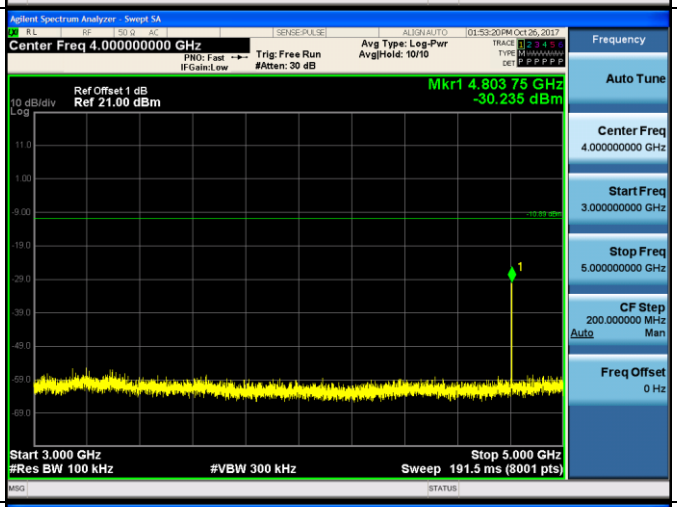
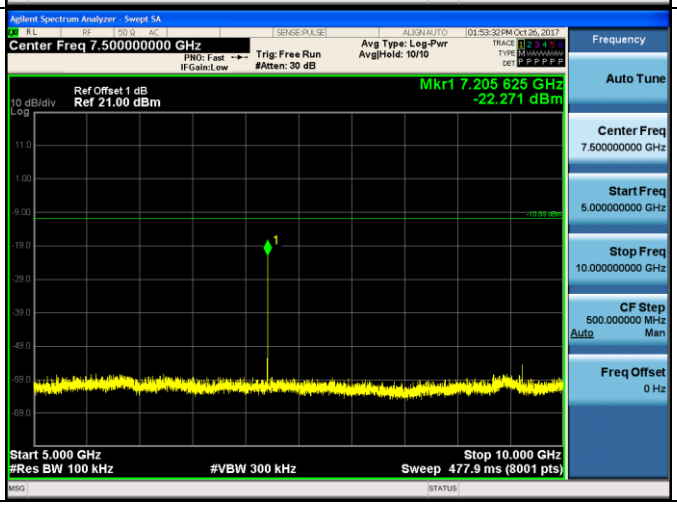
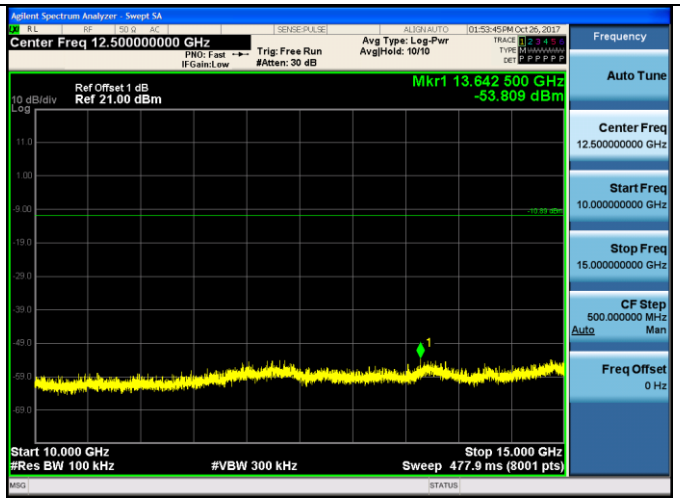
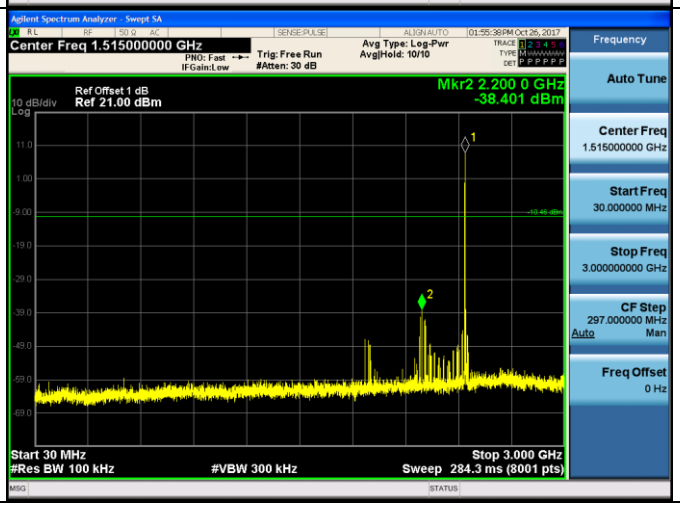
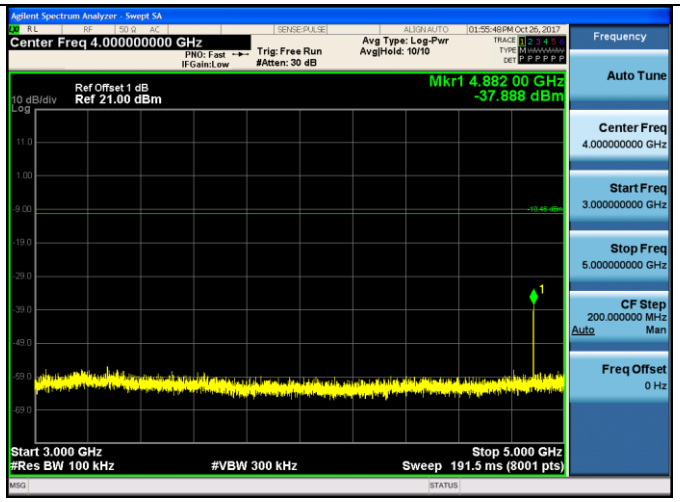
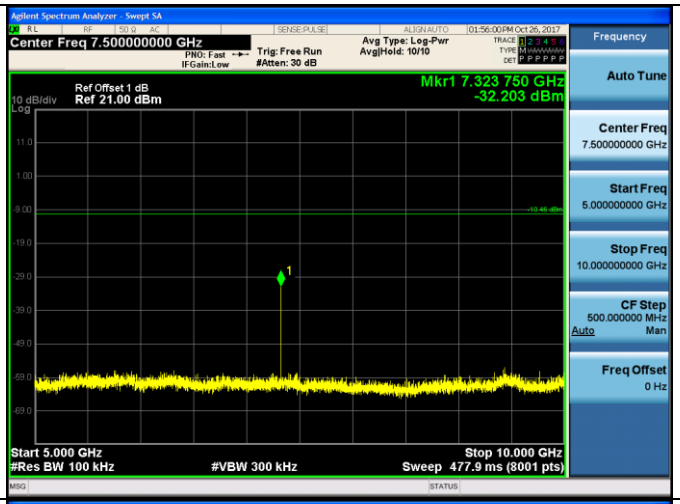
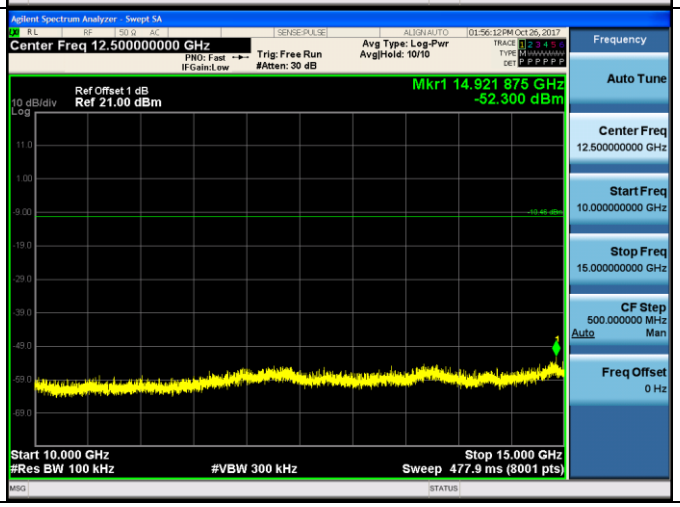
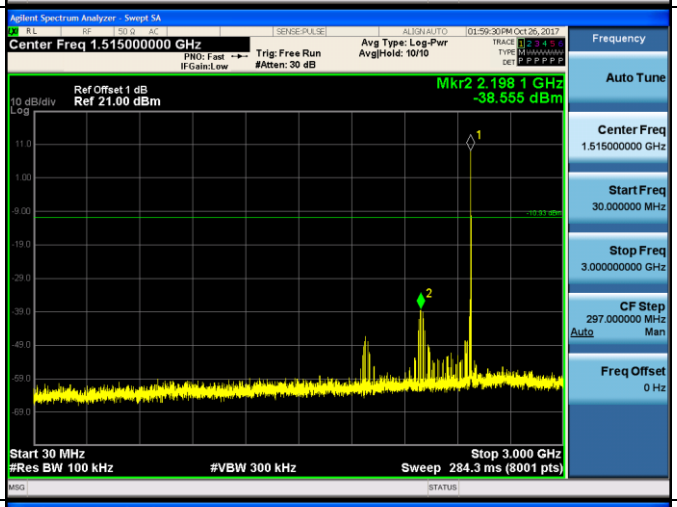
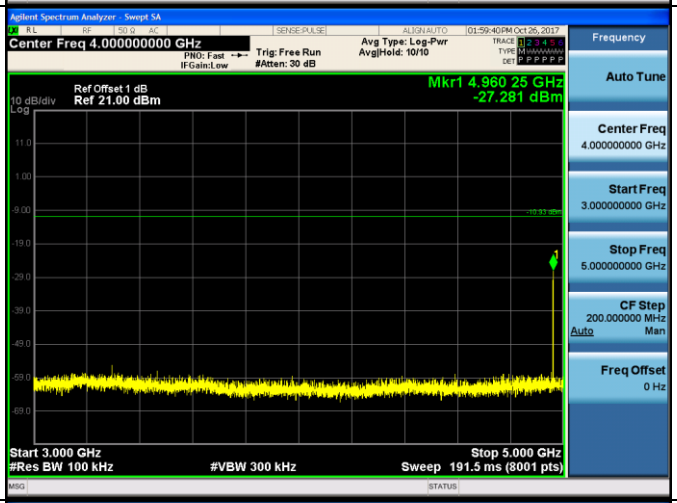
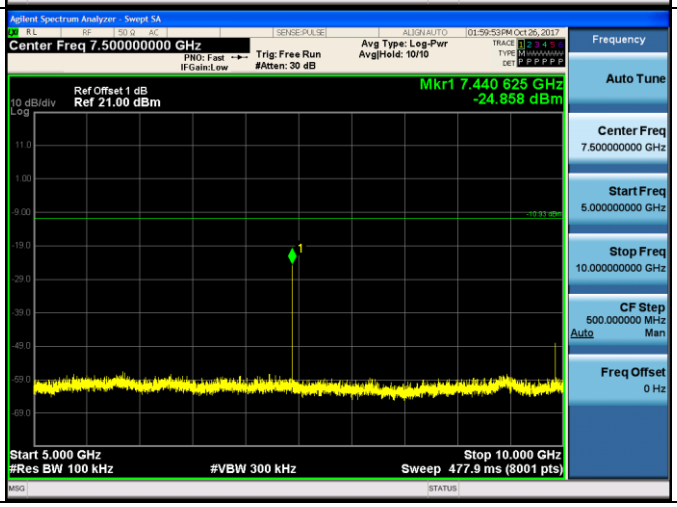
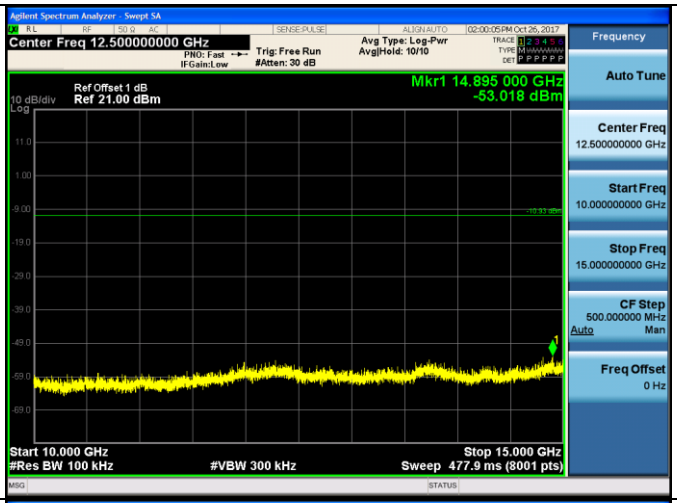
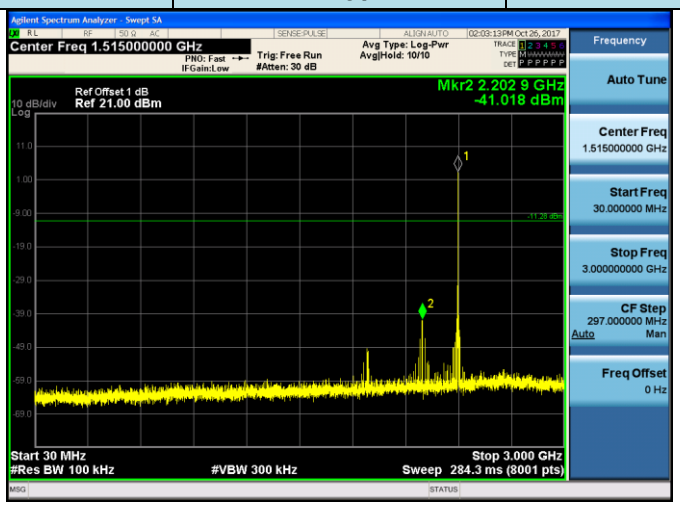
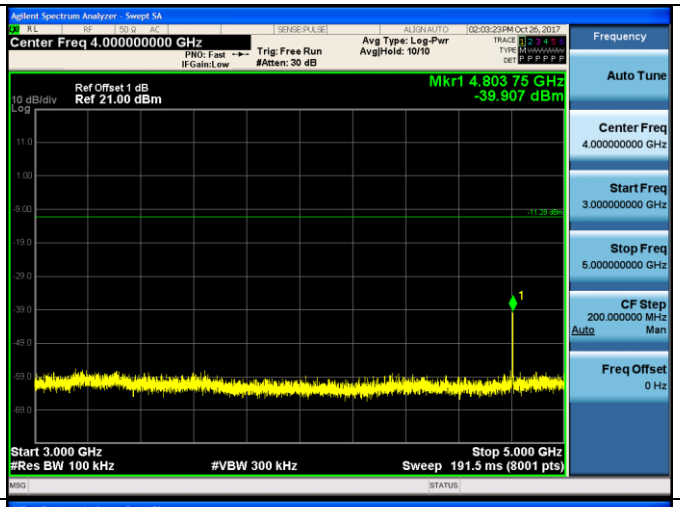
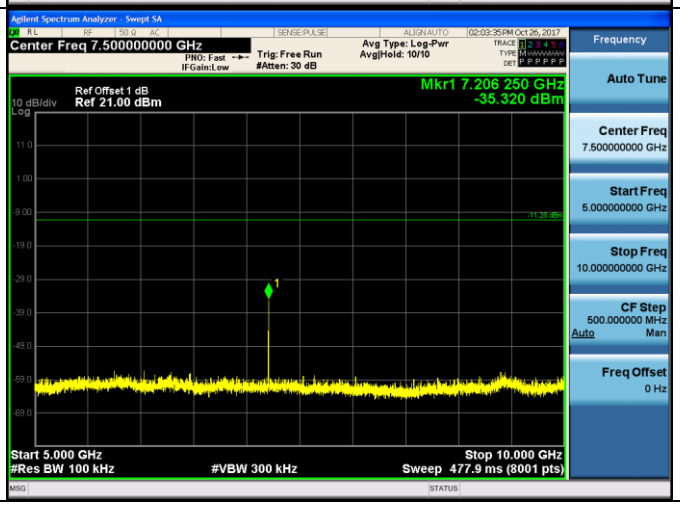
Test Item:	SE	Modulation type:	GFSK
CH00 30MHz~3GHz		
CH00 3GHz~5GHz		
CH00 5GHz~10GHz		

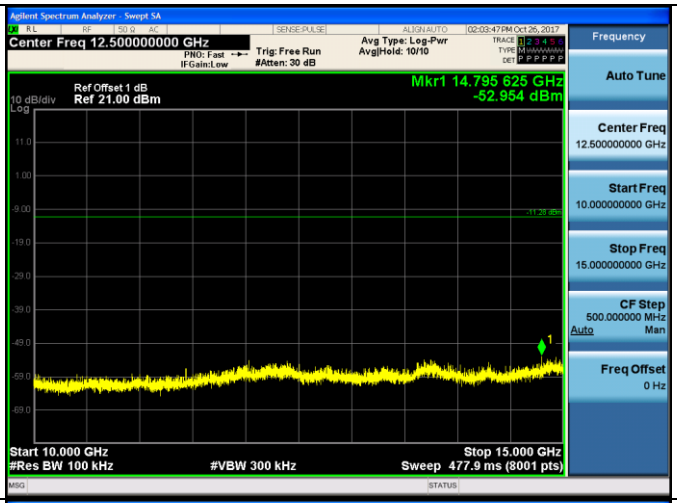
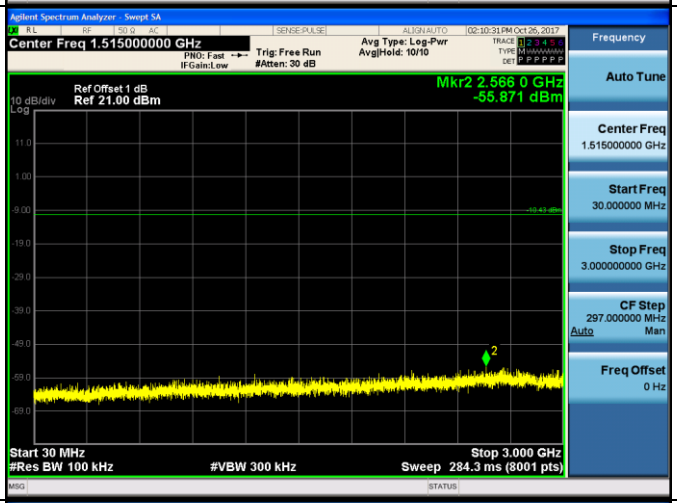
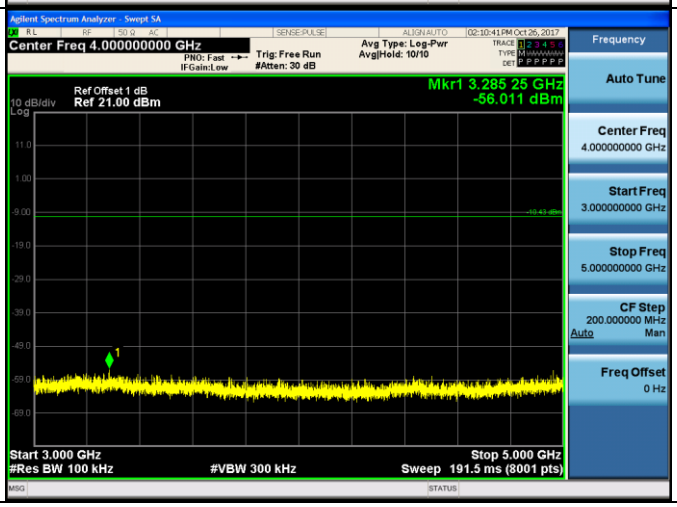
CH00 10GHz~15GHz			
CH00 15GHz~25GHz			
CH39 30MHz~3GHz			

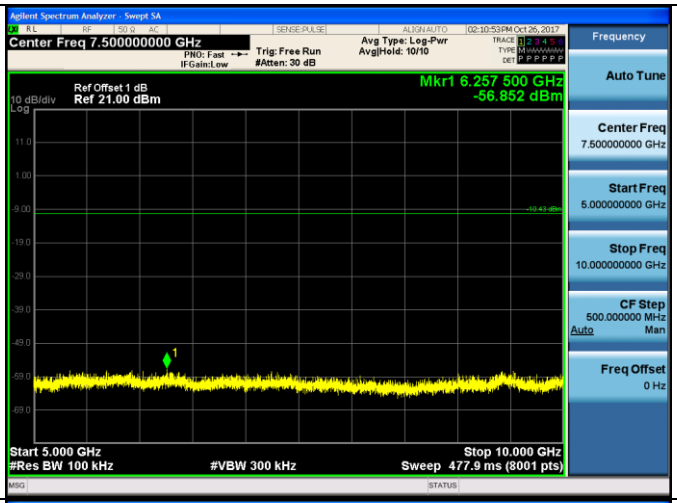
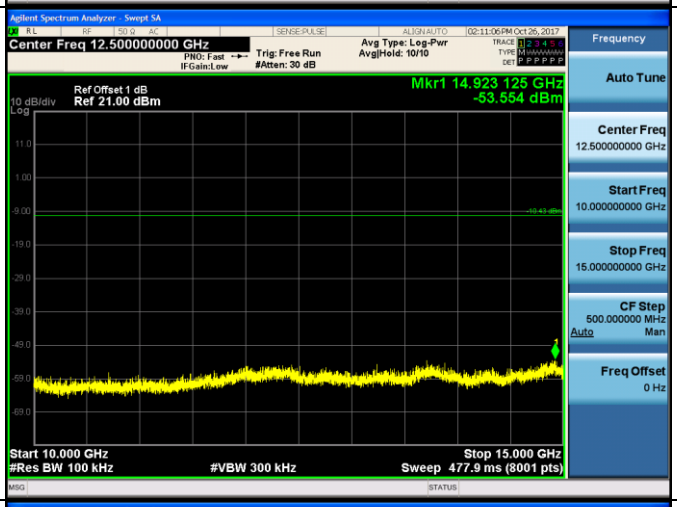
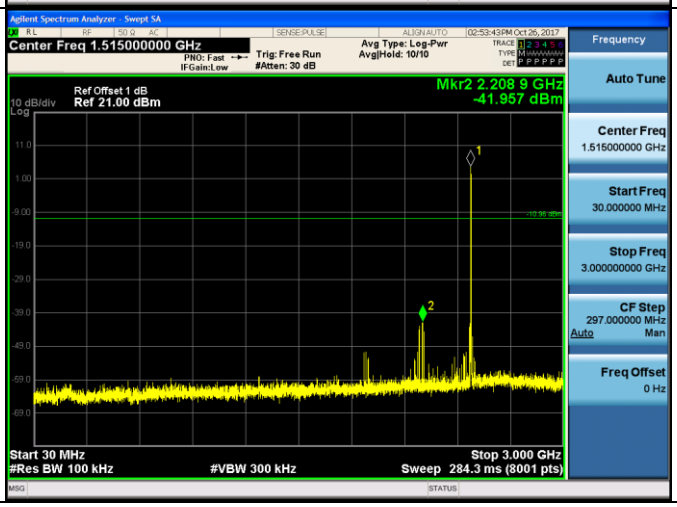
CH39 3GHz~5GHz			
CH39 5GHz~10GHz			
CH39 10GHz~15GHz			

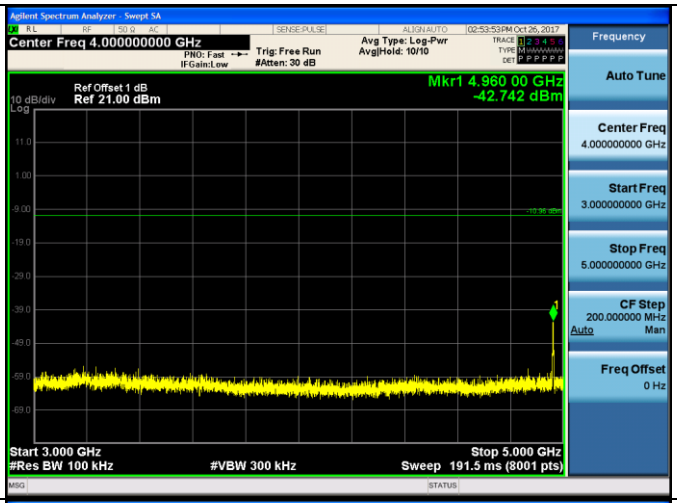
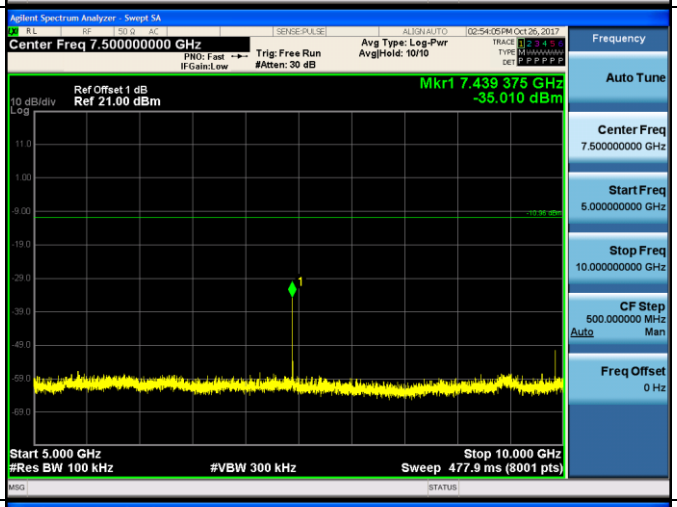
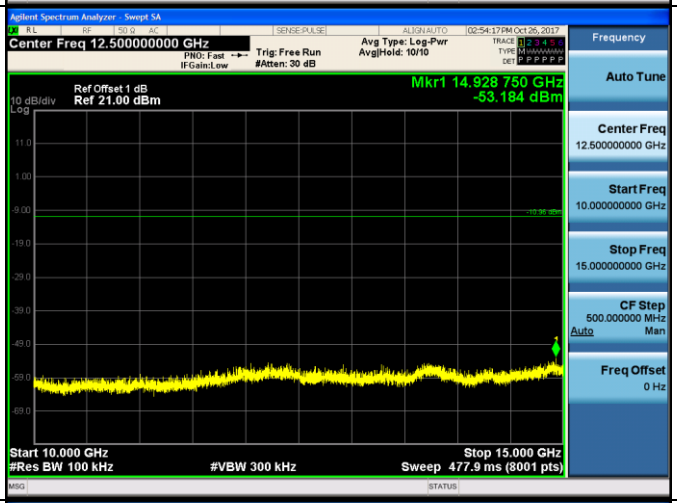
CH39 15GHz~25GHz			
CH78 30MHz~3GHz			
CH78 3GHz~5GHz			
CH78 5GHz~10GHz			

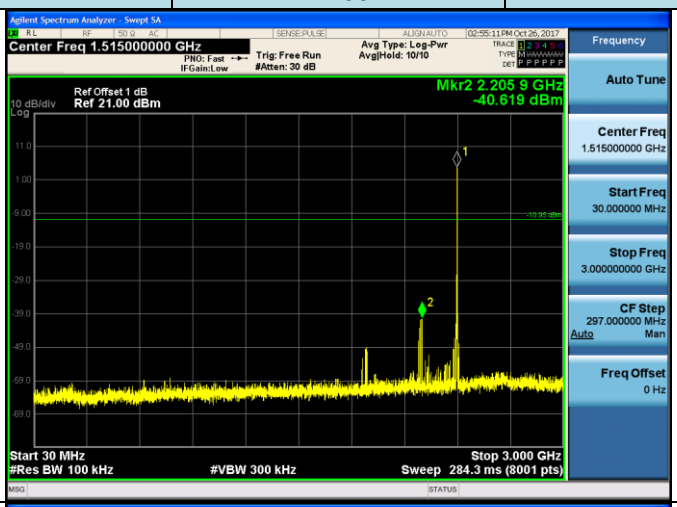
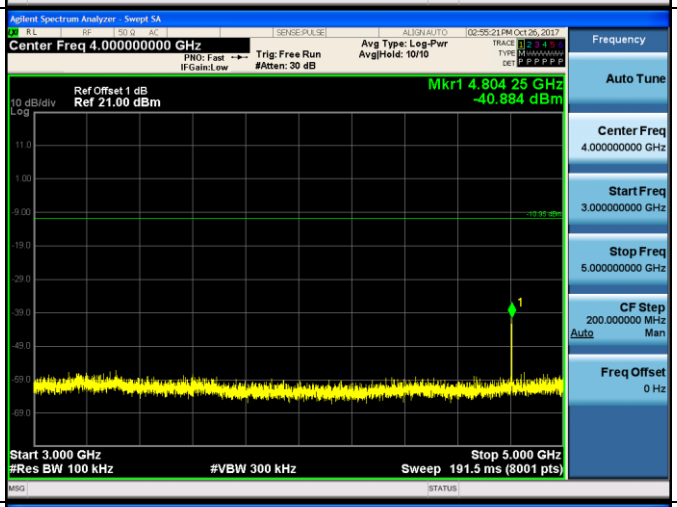
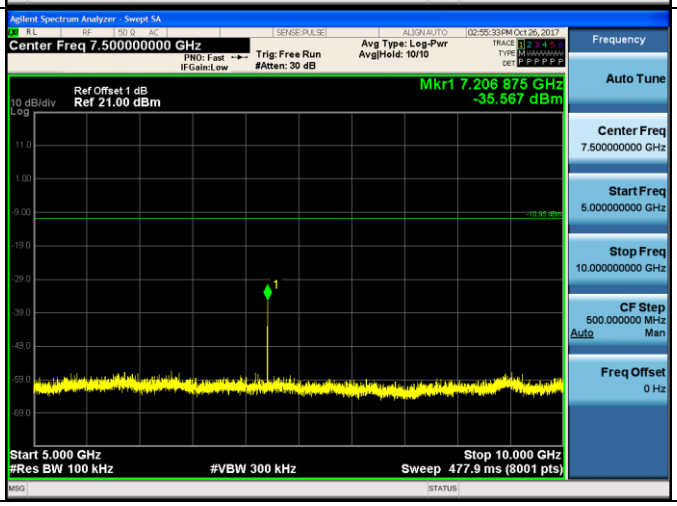
CH78 10GHz~15GHz			
CH78 15GHz~25GHz			

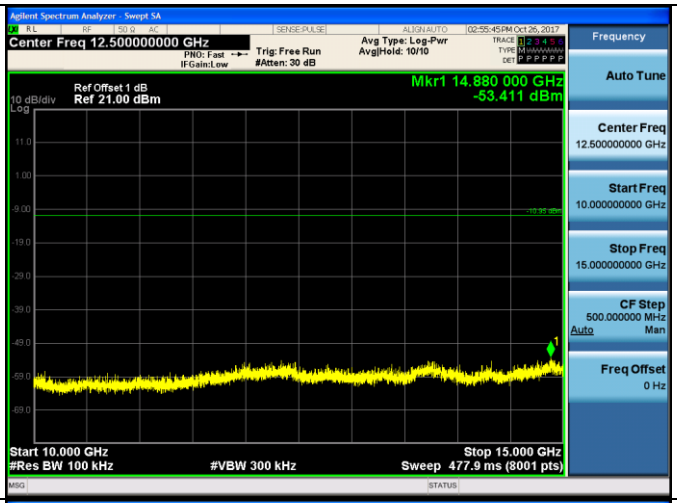
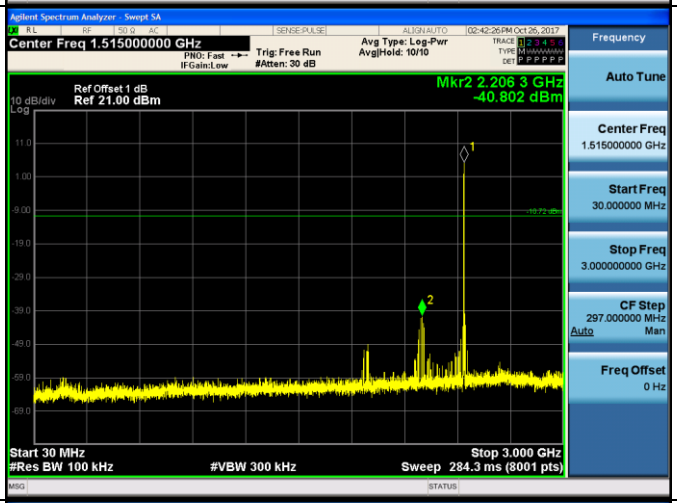
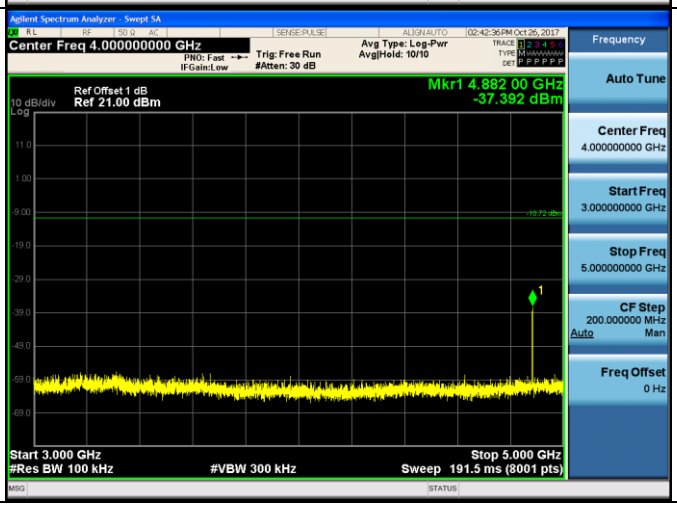
Test Item:	SE	Modulation type:	π/4DQPSK
CH00 30MHz~3GHz			
CH00 3GHz~5GHz			
CH00 5GHz~10GHz			

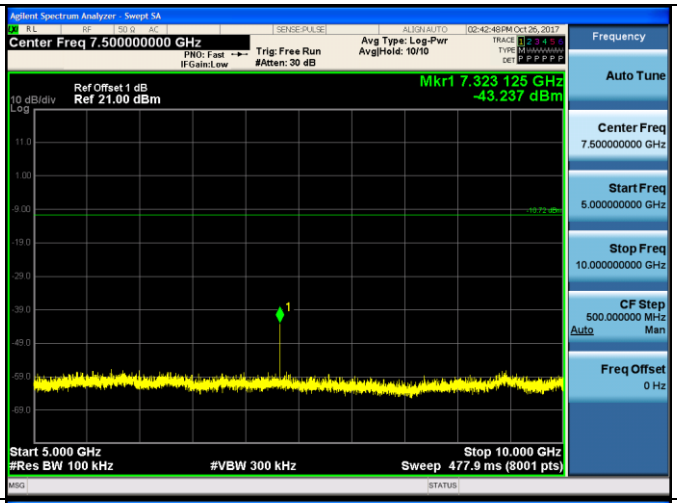
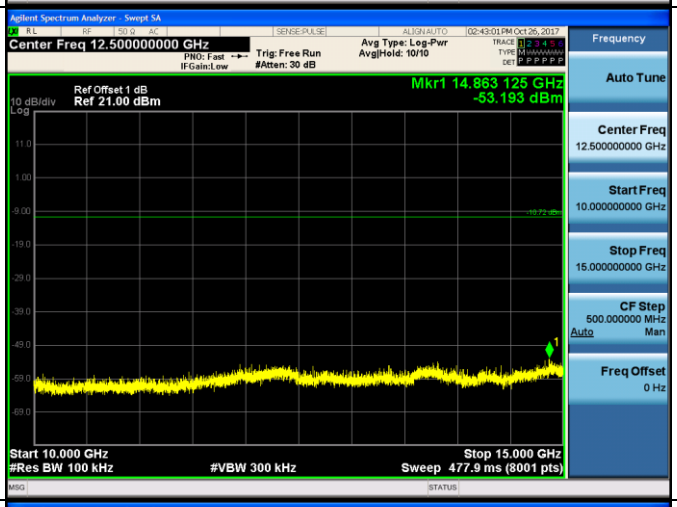
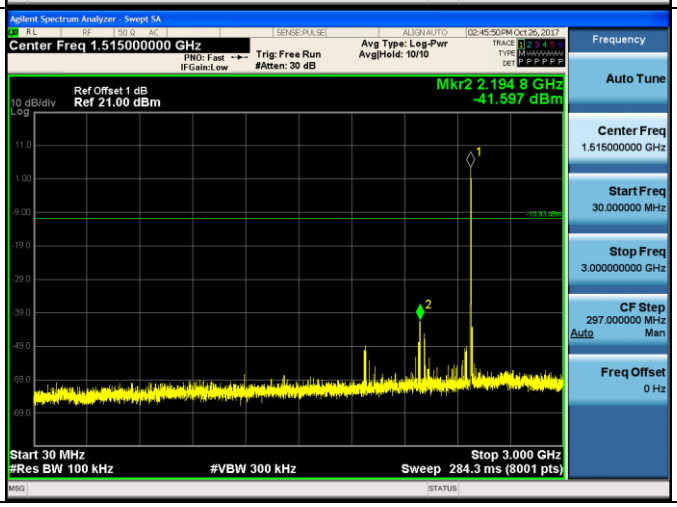
CH00 10GHz~15GHz			
CH00 15GHz~25GHz			
CH39 30MHz~3GHz			
CH39 3GHz~5GHz			

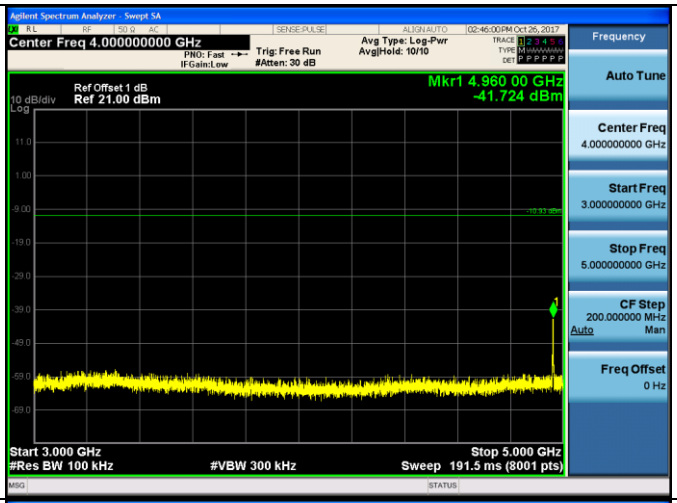
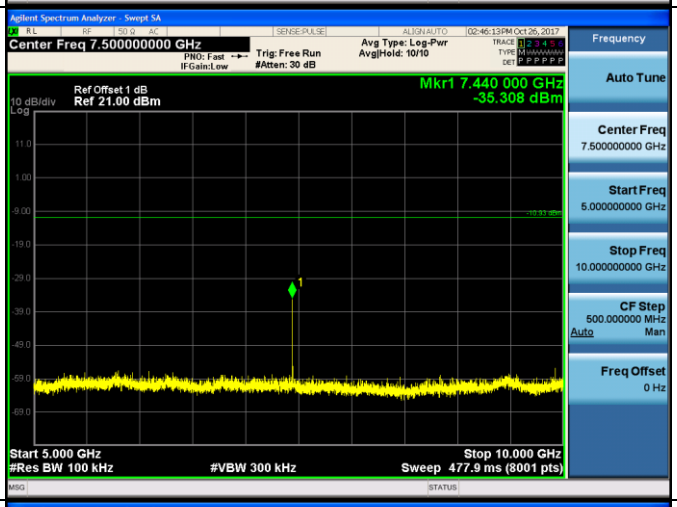
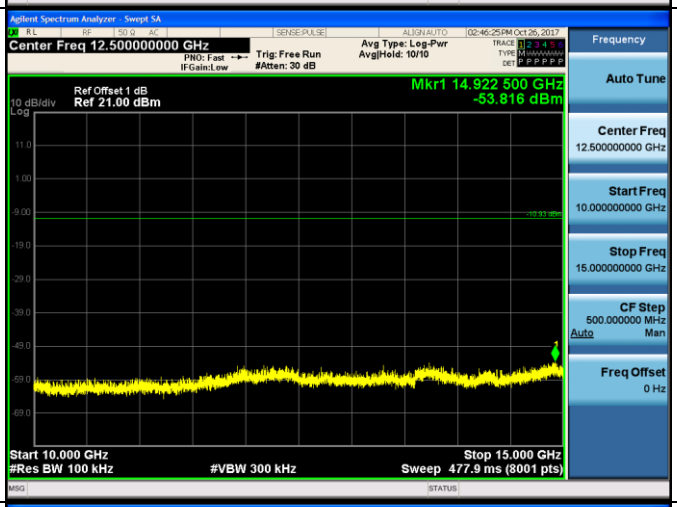
CH39 5GHz~10GHz			
CH39 10GHz~15GHz			
CH39 15GHz~25GHz			
CH78 30MHz~3GHz			

CH78 3GHz~5GHz			
CH78 5GHz~10GHz			
CH78 10GHz~15GHz			
CH78 15GHz~25GHz			

Test Item:	SE	Modulation type:	8DPSK
CH00 30MHz~3GHz		
CH00 3GHz~5GHz		
CH00 5GHz~10GHz		

CH00 10GHz~15GHz			
CH00 15GHz~25GHz			
CH39 30MHz~3GHz			
CH39 3GHz~5GHz			

CH39 5GHz~10GHz			
CH39 10GHz~15GHz			
CH39 15GHz~25GHz			
CH78 30MHz~3GHz			

CH78 3GHz~5GHz			
CH78 5GHz~10GHz			
CH78 10GHz~15GHz			
CH78 15GHz~25GHz			

5.11. Spurious Emissions (radiated)

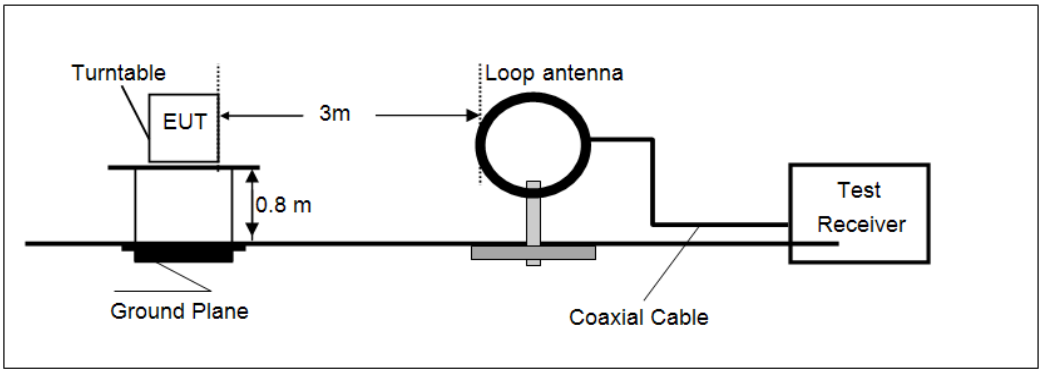
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

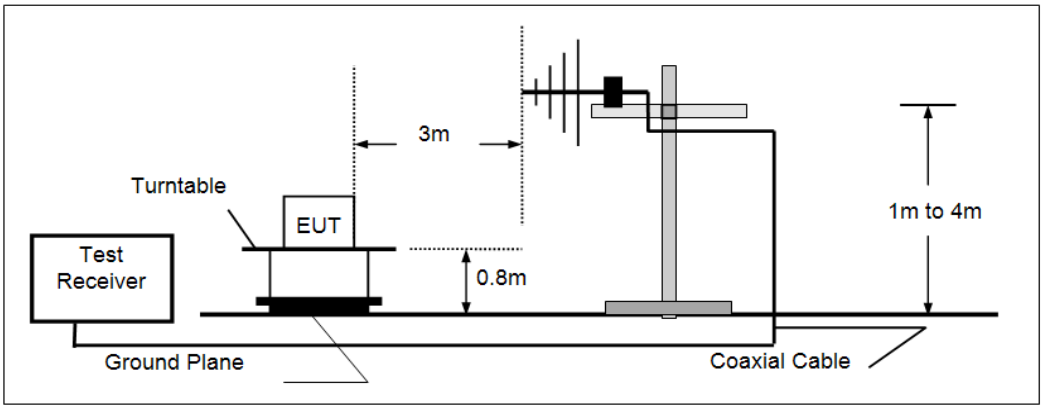
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

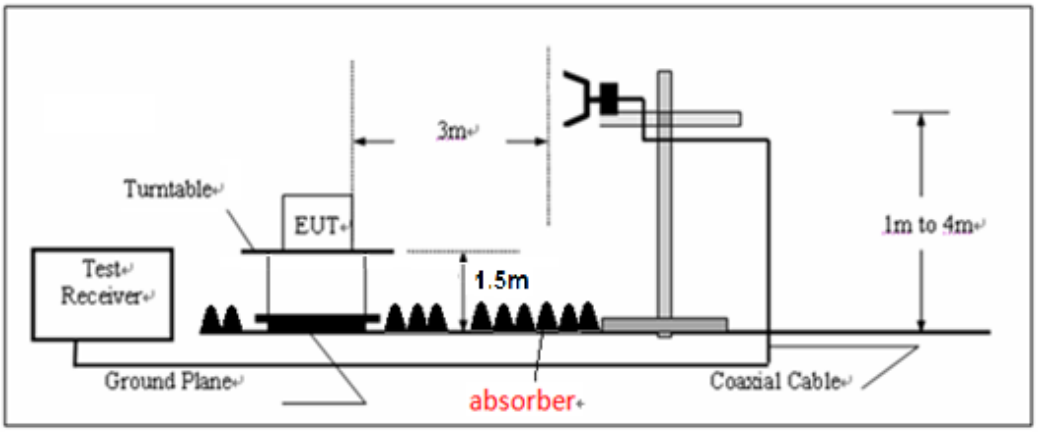
- 9KHz ~30MHz



- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
2. The EUT is placed on a turn table which is 0.8/1.5 meter above ground plane. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold; *If the emission level of the EUT measured by the peak detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, theemission measurement will be repeated using the quasi-peak detector and reported.*
   (3) Above 1GHz, RBW=1MHz, VBW=3MHz Peak detector for Peak value
   RBW=1MHz, VBW=10Hz Peak detector for Average value.

Remark: “floor-standing equipment” Where possible, the antenna(s) of the EUT shall be located at a height of 1.5 m above the floor, and the intentional radiator circuitry shall be located within the system at a height of at least 0.8 m above the floor.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

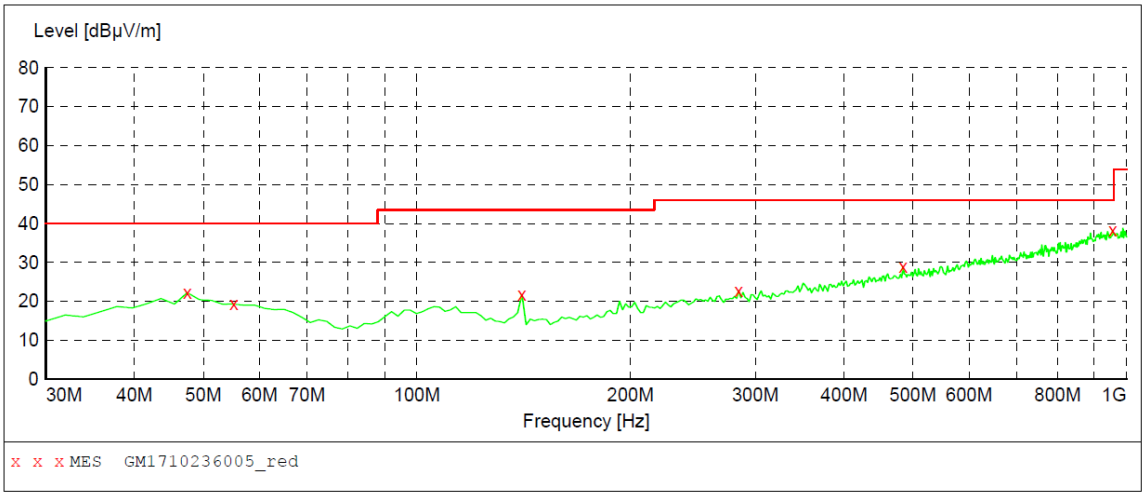
1) Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2) “”, means this data is the too weak instrument of signal is unable to test.*
3) The emission levels of other frequencies are very lower than the limit and not show in test report.
4) *Have pre-scan all modulation mode, found the GFSK modulation which it was worst case, so only the worst case’s data on the test report.*

➢ **9kHz ~ 30MHz**

The EUT was pre-scanned the frequency band (9KHz~30MHz), found the radiated level lower than the limit, so don’t show on the report.

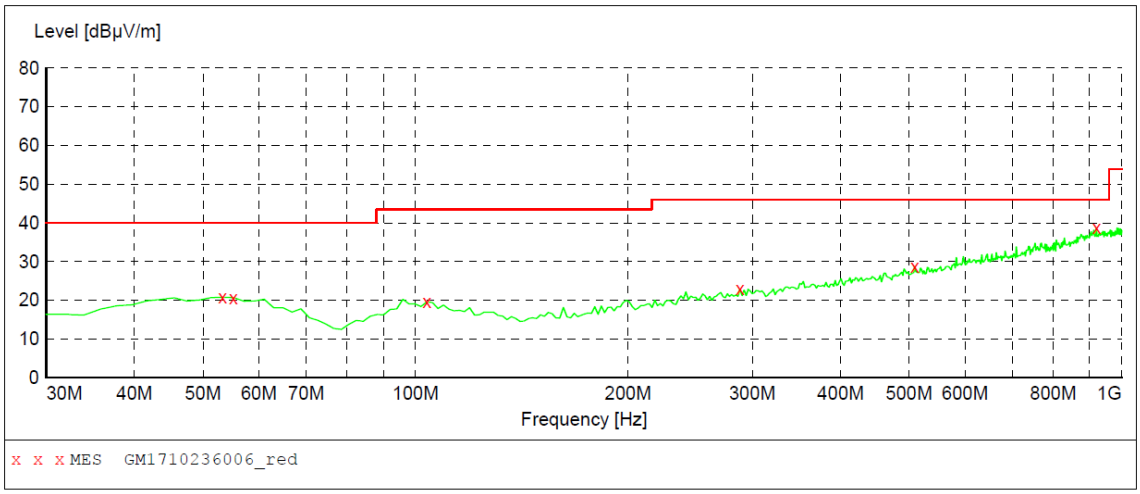
➢ **30MHz ~ 1GHz**

Polarization:	Vertical



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	22.20	-8.8	40.0	17.8	QP	100.0	203.00	VERTICAL
55.220000	19.30	-9.2	40.0	20.7	QP	100.0	192.00	VERTICAL
140.580000	21.80	-13.8	43.5	21.7	QP	100.0	29.00	VERTICAL
284.140000	22.70	-7.6	46.0	23.3	QP	100.0	302.00	VERTICAL
483.960000	29.00	-2.4	46.0	17.0	QP	100.0	341.00	VERTICAL
955.380000	38.20	7.3	46.0	7.8	QP	100.0	0.00	VERTICAL

Polarization:	Horizontal



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	20.80	-9.0	40.0	19.2	QP	300.0	359.00	HORIZONTAL
55.220000	20.70	-9.2	40.0	19.3	QP	100.0	3.00	HORIZONTAL
103.720000	19.60	-10.5	43.5	23.9	QP	100.0	76.00	HORIZONTAL
288.020000	22.90	-7.5	46.0	23.1	QP	100.0	198.00	HORIZONTAL
509.180000	28.80	-1.5	46.0	17.2	QP	100.0	287.00	HORIZONTAL
920.460000	38.70	7.0	46.0	7.3	QP	300.0	247.00	HORIZONTAL

➢ **Above 1GHz**

CH00									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
7209.02	37.63	36.21	11.87	35.07	50.64	54.00	-3.36	Horizontal	Average
1238.41	51.33	26.26	4.73	36.55	45.77	74.00	-28.23	Horizontal	Peak
2212.68	51.21	27.58	6.46	37.38	47.87	74.00	-26.13	Horizontal	
4809.50	39.80	31.58	9.55	36.93	44.00	74.00	-30.00	Horizontal	
7209.02	58.65	36.21	11.87	35.07	71.66	74.00	-2.34	Horizontal	
7209.02	38.93	36.21	11.87	35.07	51.94	54.00	-2.06	Vertical	Average
1597.40	41.47	24.92	5.56	36.72	35.23	74.00	-38.77	Vertical	Peak
3003.17	41.62	28.61	7.48	38.23	39.48	74.00	-34.52	Vertical	
4809.50	44.66	31.58	9.55	36.93	48.86	74.00	-25.14	Vertical	
7209.02	58.37	36.21	11.87	35.07	71.38	74.00	-2.62	Vertical	

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

CH39									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
7338.62	35.26	36.30	12.01	34.90	48.67	54.00	-5.33	Horizontal	Average
2201.45	48.10	27.51	6.44	37.34	44.71	74.00	-29.29	Horizontal	Peak
2987.92	42.69	28.59	7.47	38.24	40.51	74.00	-33.49	Horizontal	
4883.52	37.67	31.43	9.59	36.73	41.96	74.00	-32.04	Horizontal	
7338.62	57.30	36.30	12.01	34.90	70.71	74.00	-3.29	Horizontal	
7319.96	38.56	36.30	11.99	34.92	51.93	54.00	-2.07	Vertical	Average
1904.12	43.83	25.34	6.12	37.22	38.07	74.00	-35.93	Vertical	Peak
2207.06	47.17	27.54	6.45	37.36	43.80	74.00	-30.20	Vertical	
4524.47	34.14	30.75	9.34	37.35	36.88	74.00	-37.12	Vertical	
7319.96	59.06	36.30	11.99	34.92	72.43	74.00	-1.57	Vertical	

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

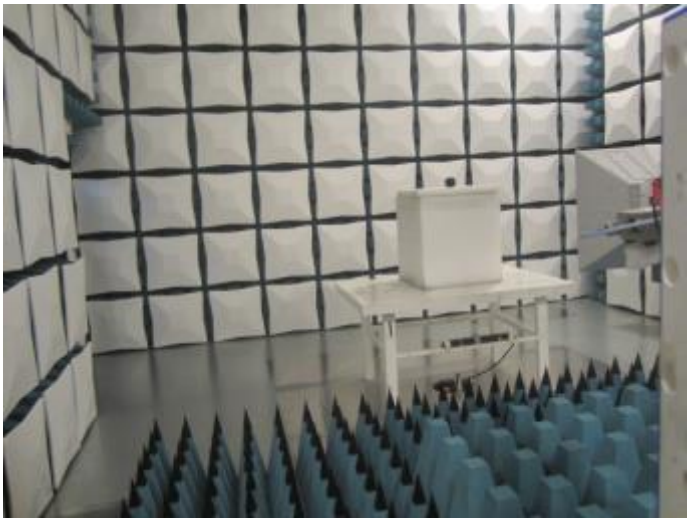
CH78									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin Limit (dB)	Polarization	Test value
7451.57	38.15	36.20	12.24	34.86	51.73	54.00	-2.27	Horizontal	Average
2201.45	48.62	27.51	6.44	37.34	45.23	74.00	-28.77	Horizontal	Peak
2995.54	44.56	28.60	7.48	38.23	42.41	74.00	-31.59	Horizontal	
4958.68	49.59	31.46	9.64	36.52	54.17	74.00	-19.83	Horizontal	
7451.57	57.14	36.20	12.24	34.86	70.72	74.00	-3.28	Horizontal	
7451.57	38.40	36.20	12.24	34.86	51.98	54.00	-2.02	Vertical	Average
2212.68	51.77	27.58	6.46	37.38	48.43	74.00	-25.57	Vertical	Peak
3738.13	36.63	29.42	8.43	38.24	36.24	74.00	-37.76	Vertical	
4958.68	45.55	31.46	9.64	36.52	50.13	74.00	-23.87	Vertical	
7451.57	54.73	36.20	12.24	34.86	68.31	74.00	-5.69	Vertical	

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

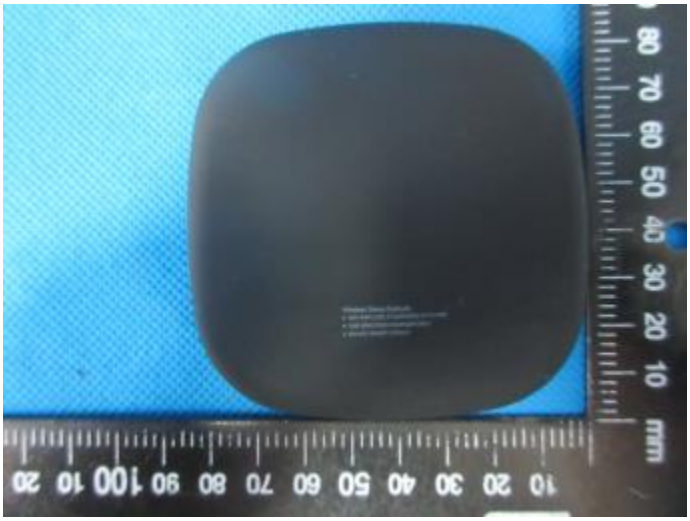
6. Test Setup Photos of the EUT

Radiated Emissions



7. External and Internal Photos of the EUT

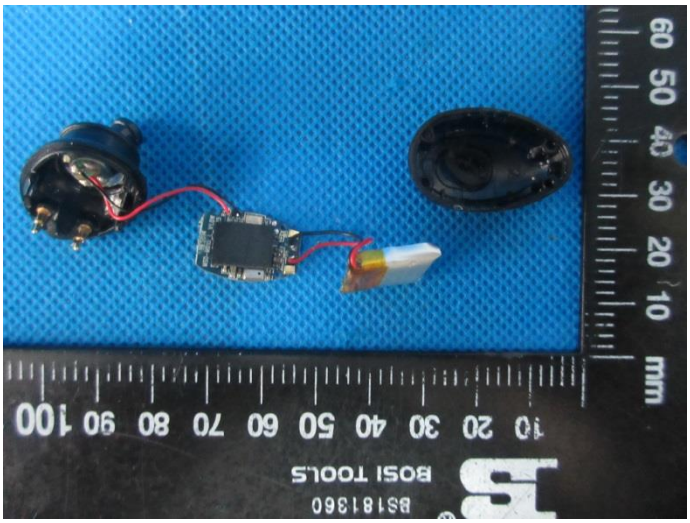
External Photos of the EUT

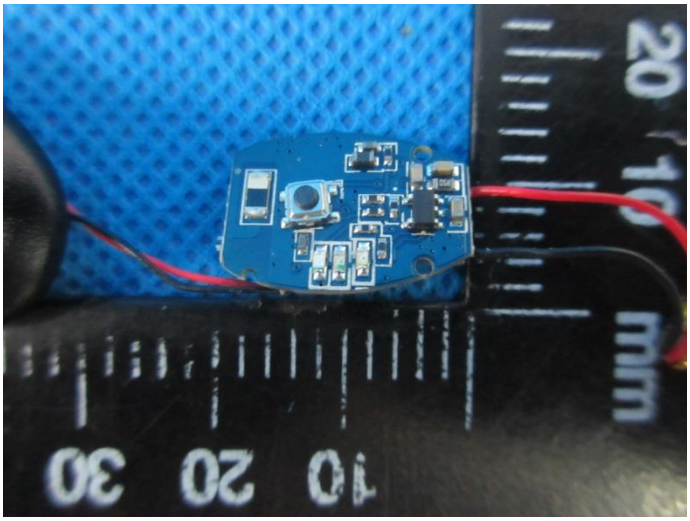


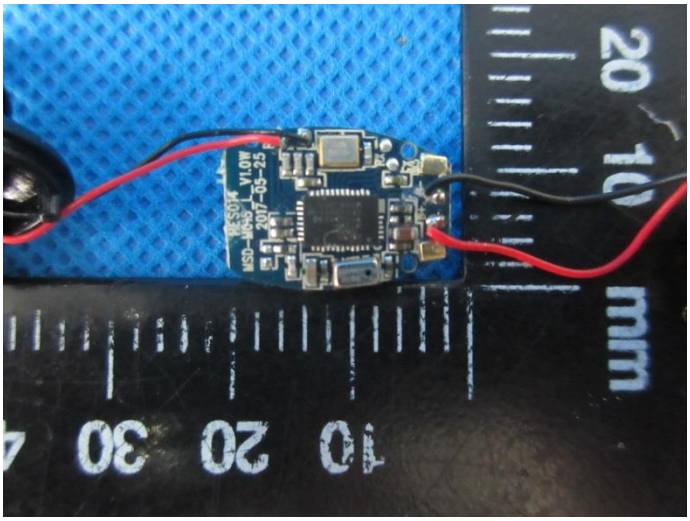
mm
10 20 30 40 50 60 70 80 90

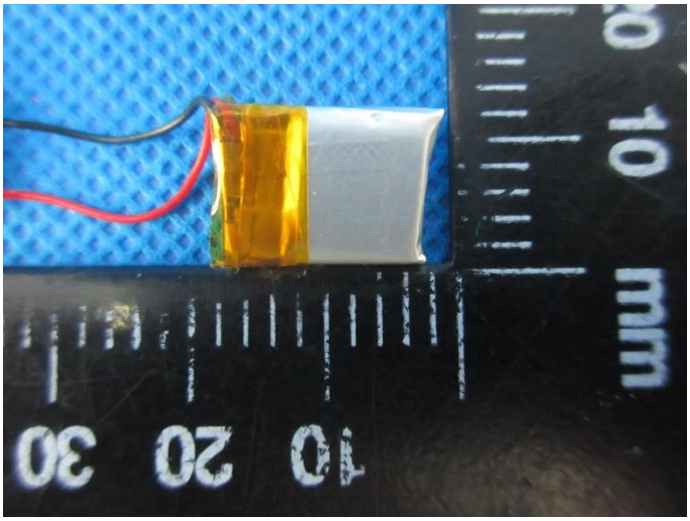
Internal Photos of the EUT

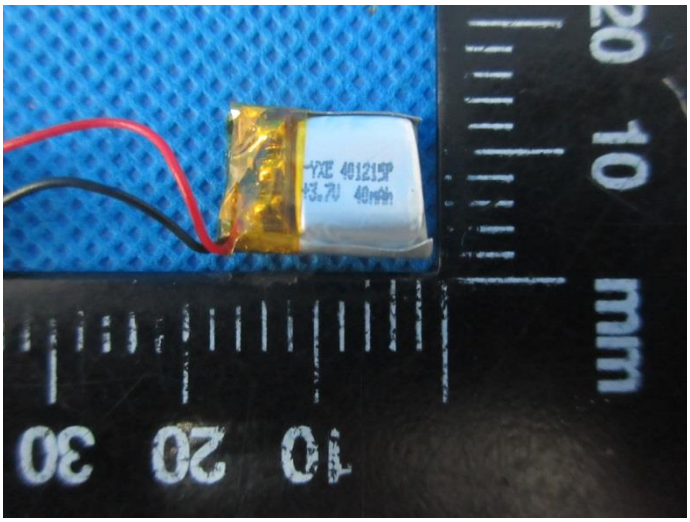
Right earphone:

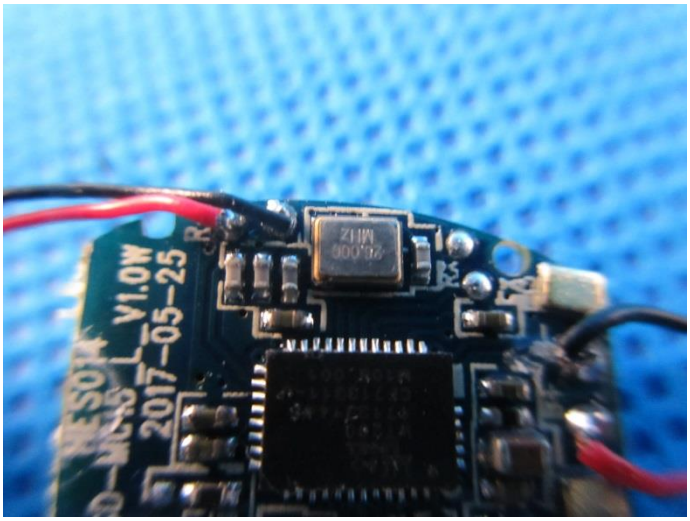


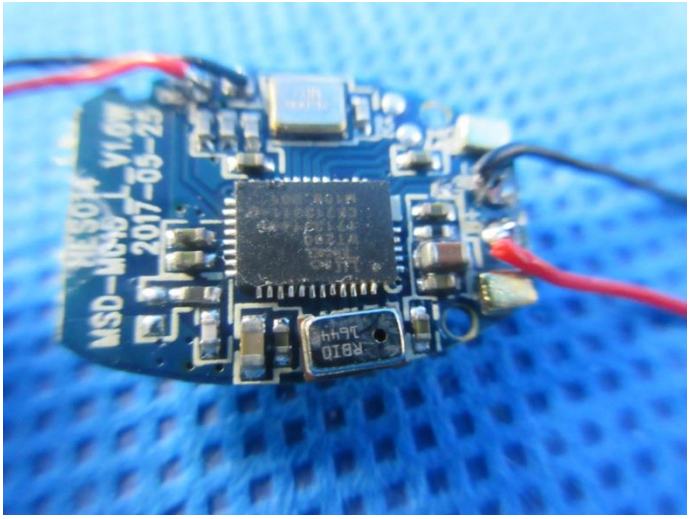




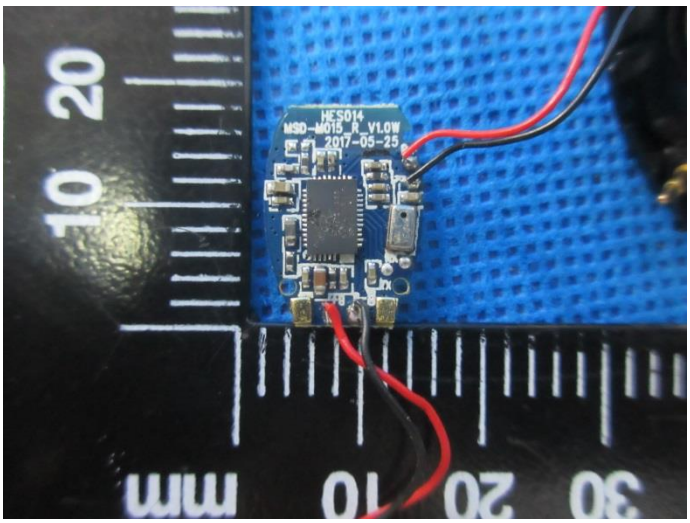

mm
10
20
30

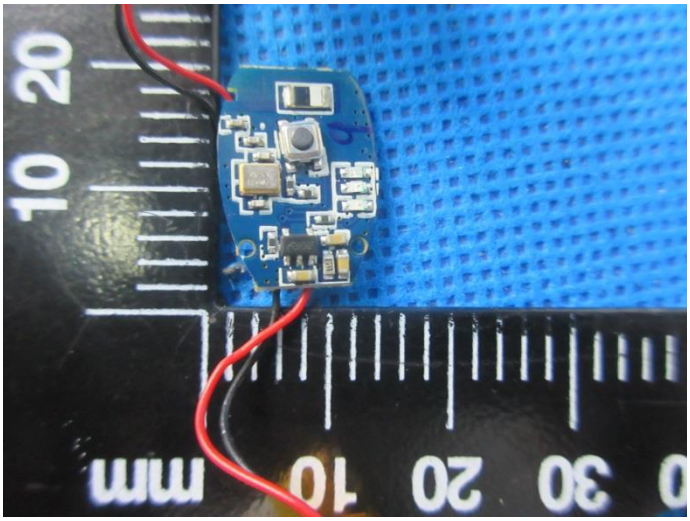

mm
10
20
30

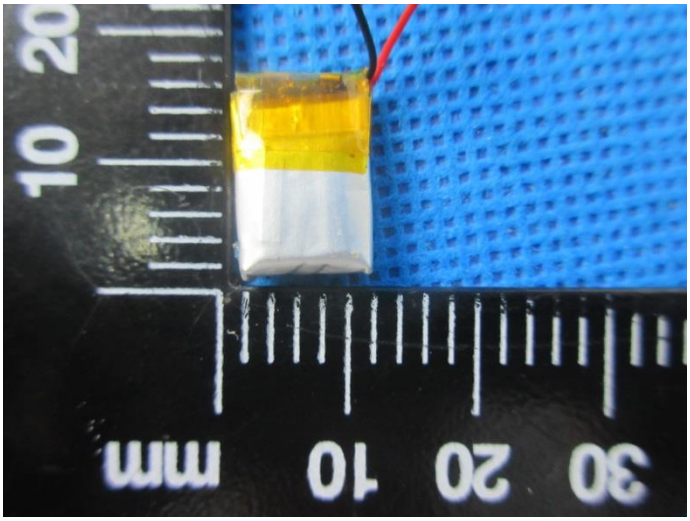

V1.0W
2017-05-25

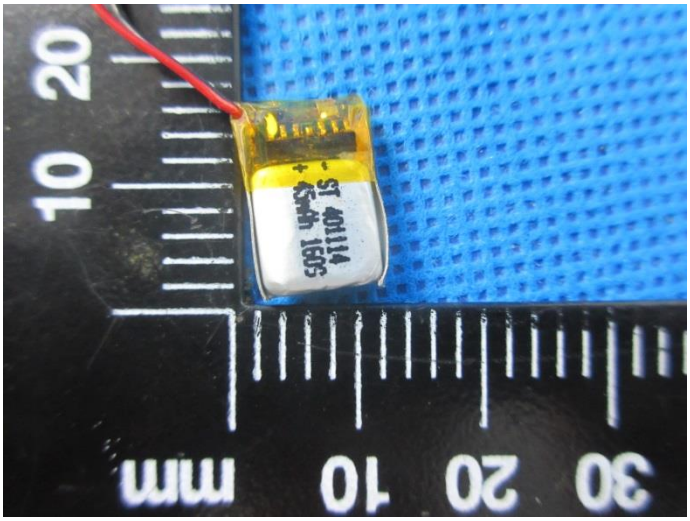


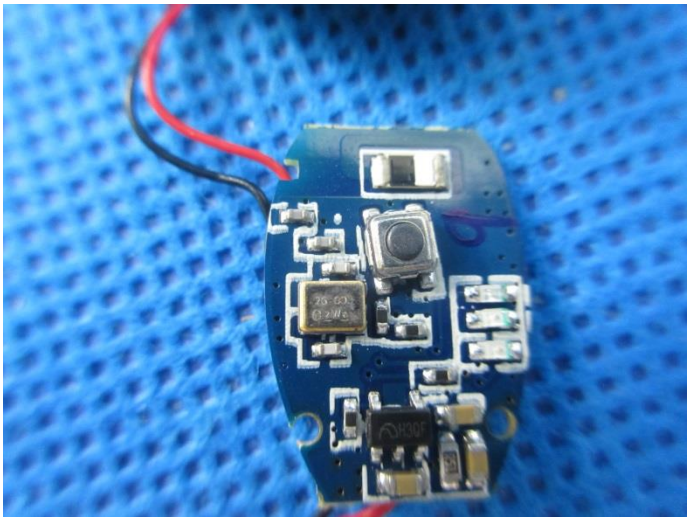
Left earphone:

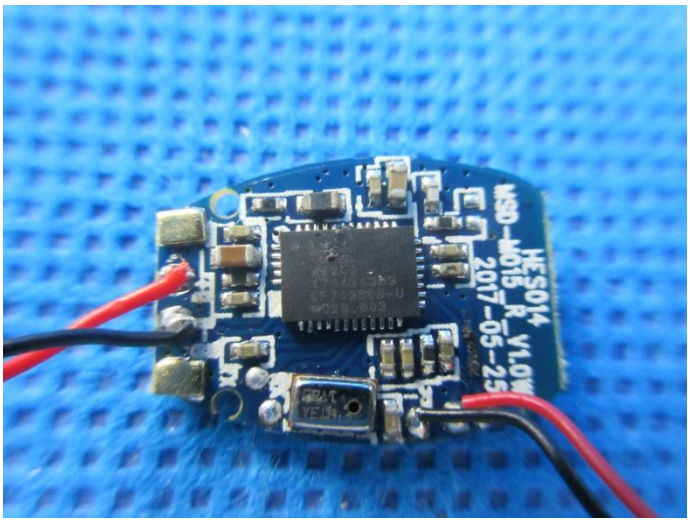







ST 401114
45mAh 1605





----------End of Report----------