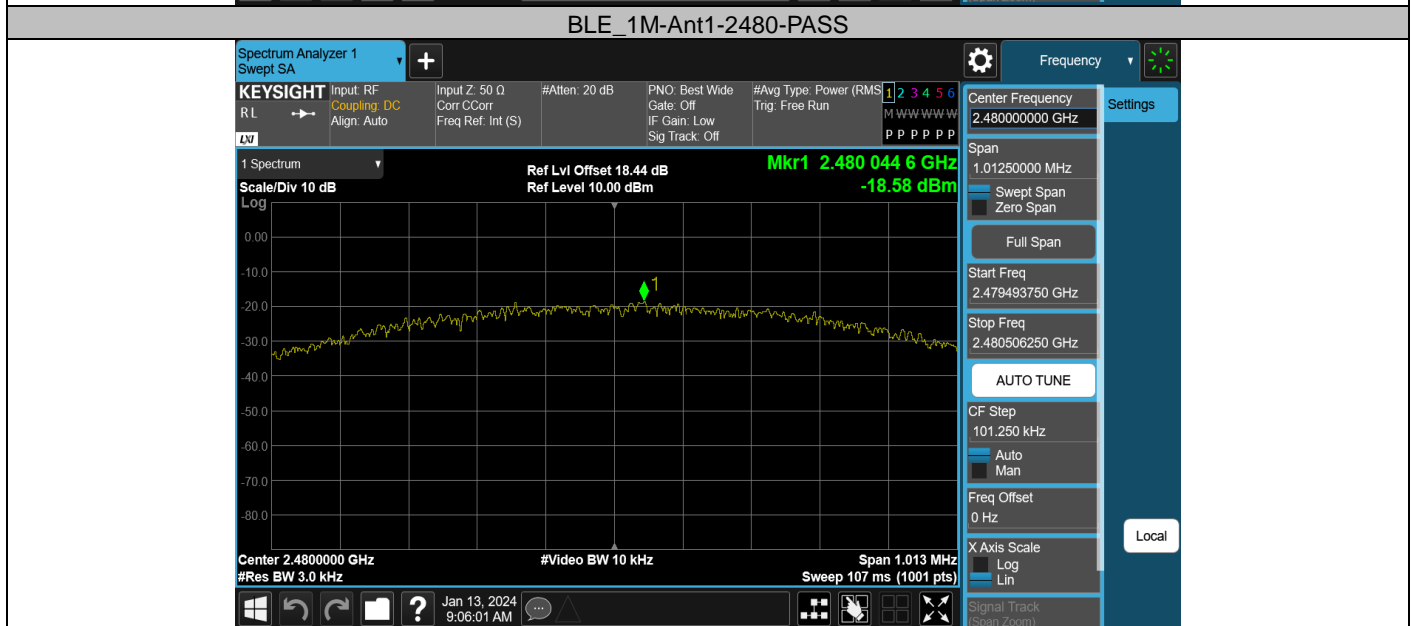
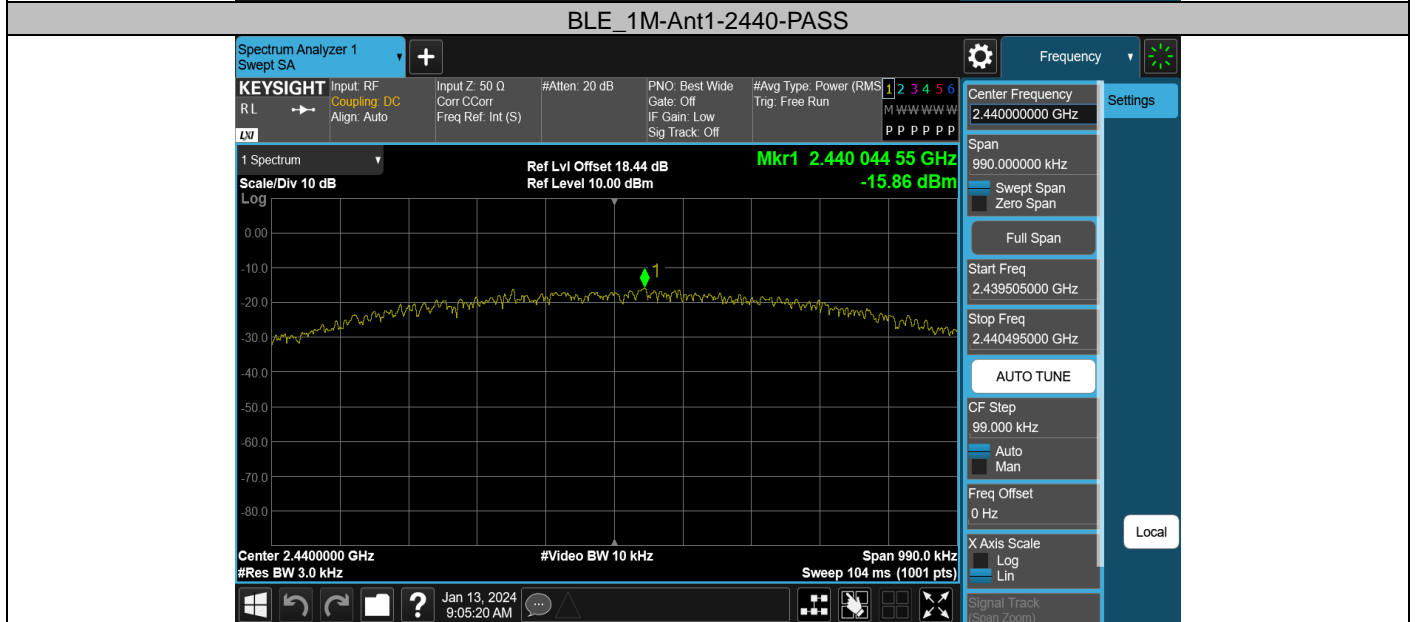
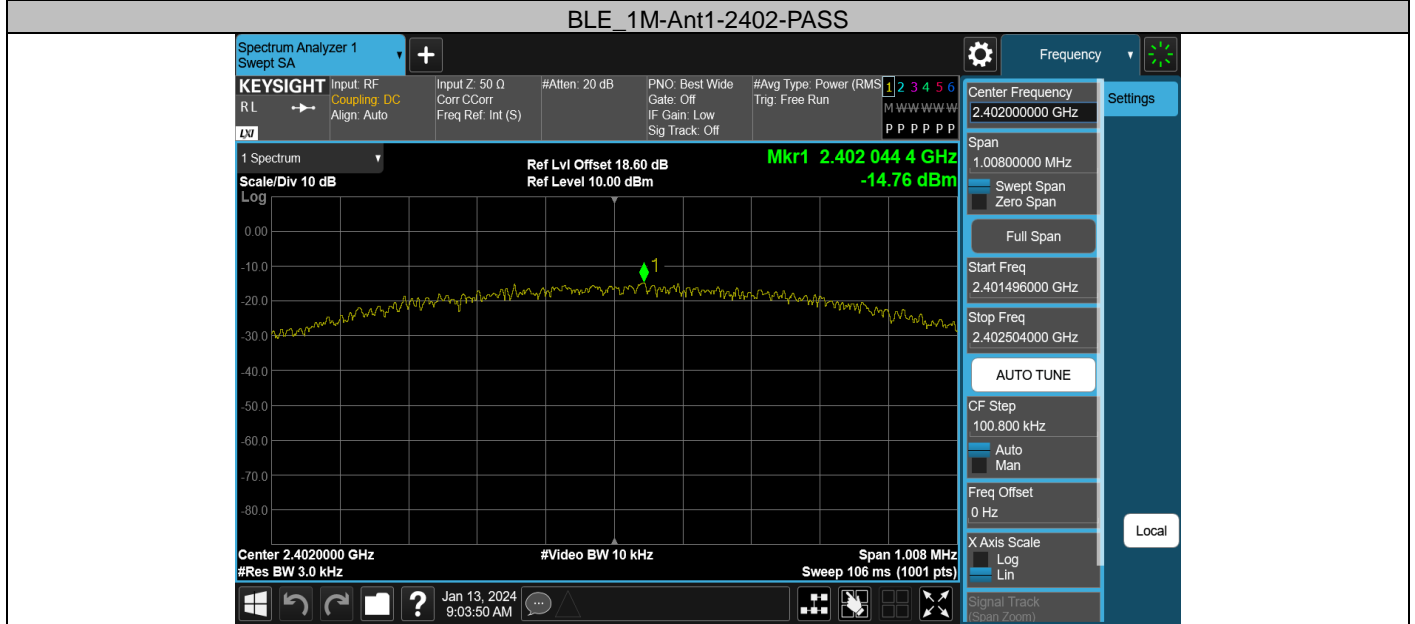


## Right earbud

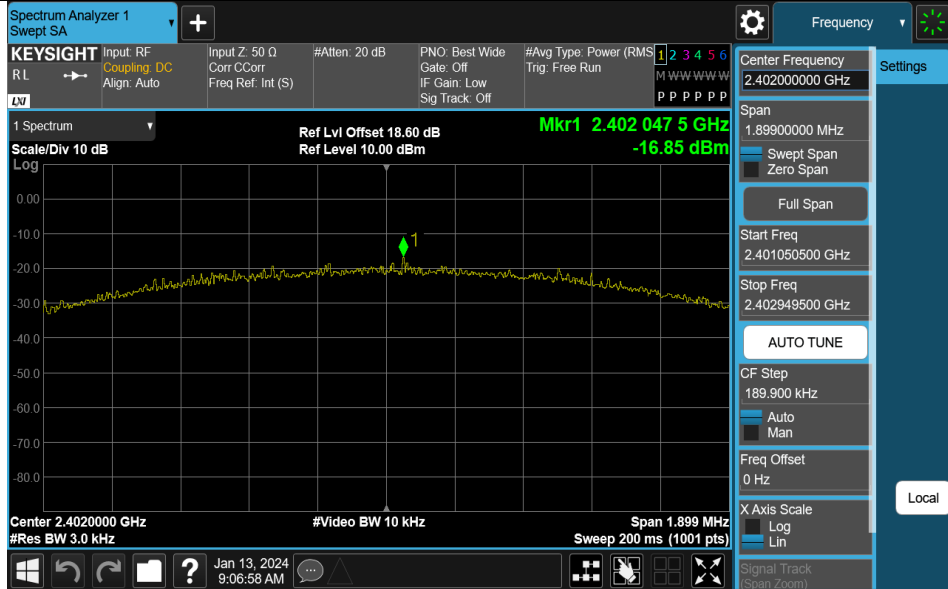
## Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-14.76	≤8.00	PASS
BLE_1M	Ant1	2440	-15.86	≤8.00	PASS
BLE_1M	Ant1	2480	-18.58	≤8.00	PASS
BLE_2M	Ant1	2402	-16.85	≤8.00	PASS
BLE_2M	Ant1	2440	-18.14	≤8.00	PASS
BLE_2M	Ant1	2480	-20.72	≤8.00	PASS

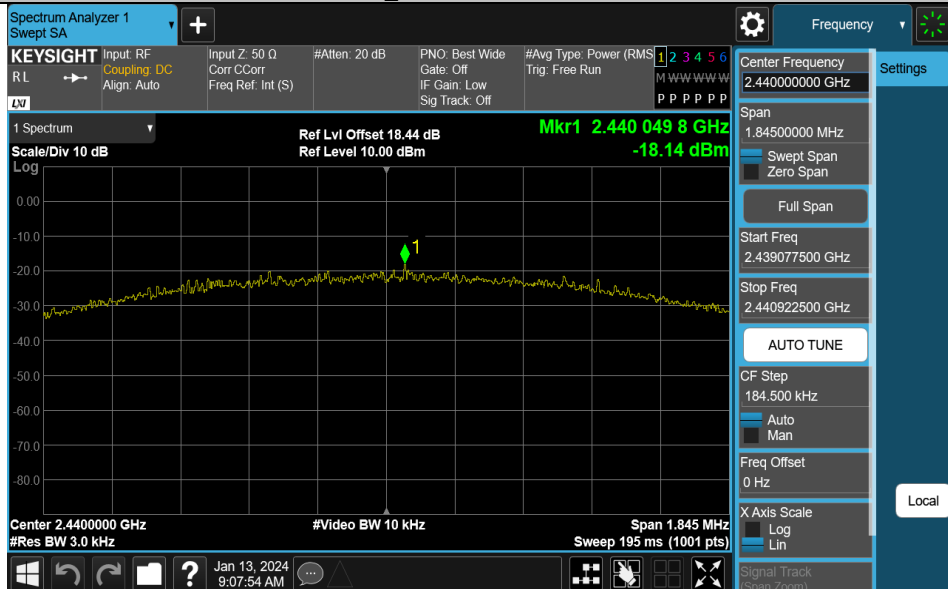
### Test Graphs



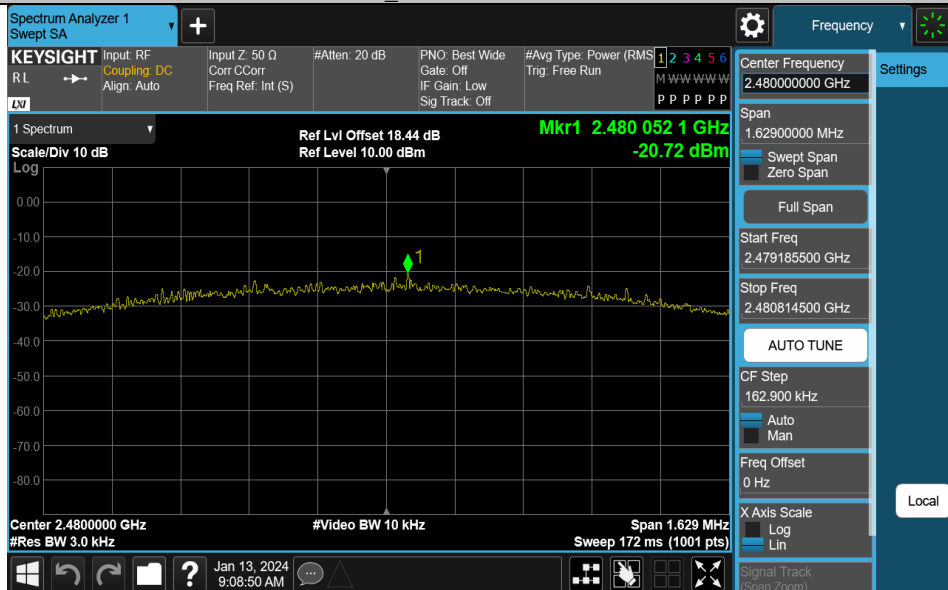
### BLE\_2M-Ant1-2402-PASS



### BLE\_2M-Ant1-2440-PASS



### BLE\_2M-Ant1-2480-PASS



## Appendix D: Reference level measurement

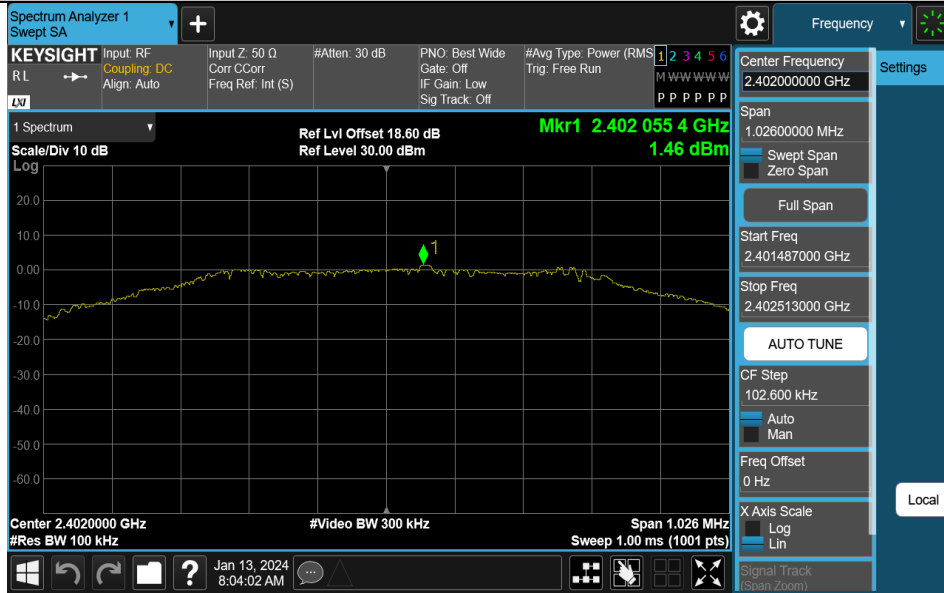
Left earbud

Test Result

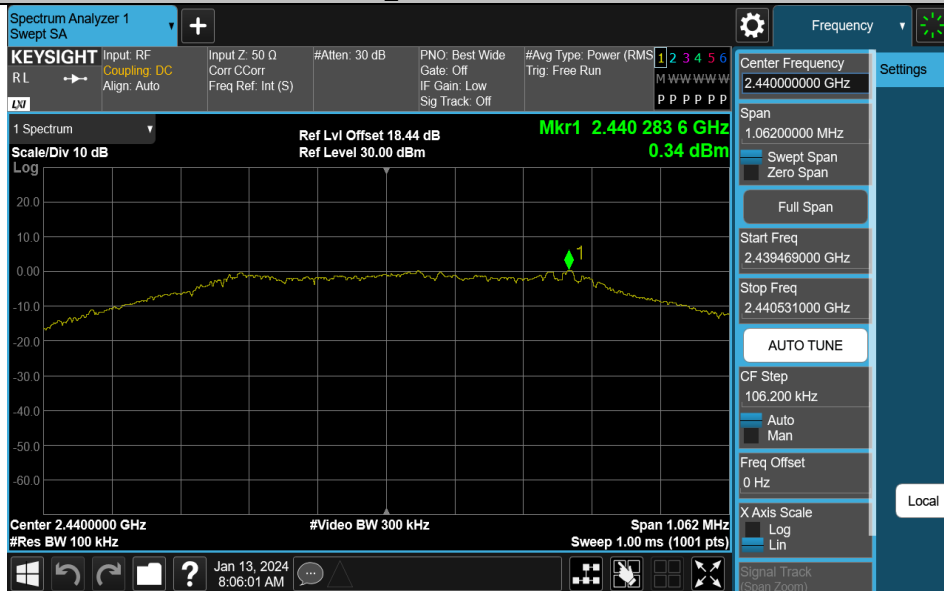
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.06	1.46
BLE_1M	Ant1	2440	2440.28	0.34
BLE_1M	Ant1	2480	2480.27	-2.46
BLE_2M	Ant1	2402	2402.56	-0.25
BLE_2M	Ant1	2440	2440.06	0.39
BLE_2M	Ant1	2480	2480.05	-2.44

## Test Graphs

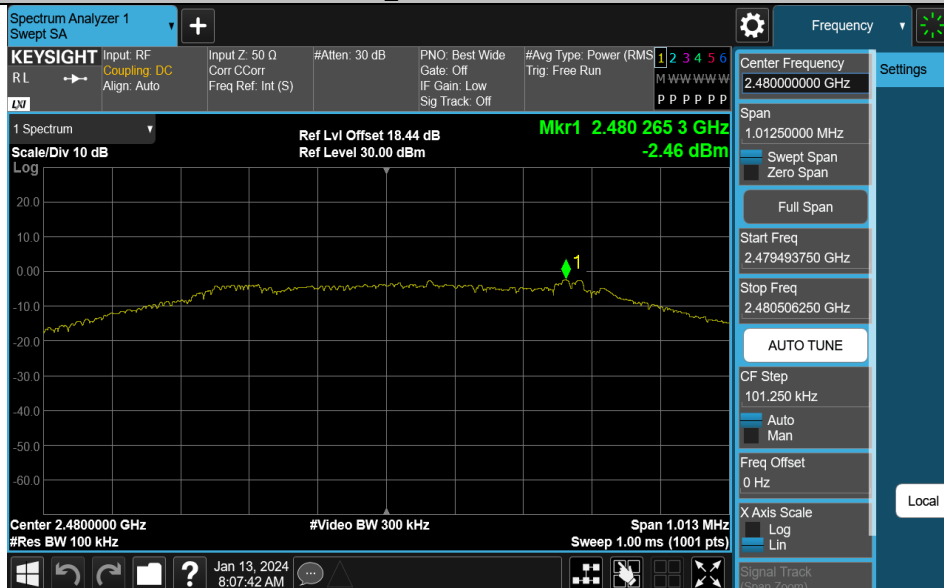
## BLE\_1M-Ant1-2402-PASS



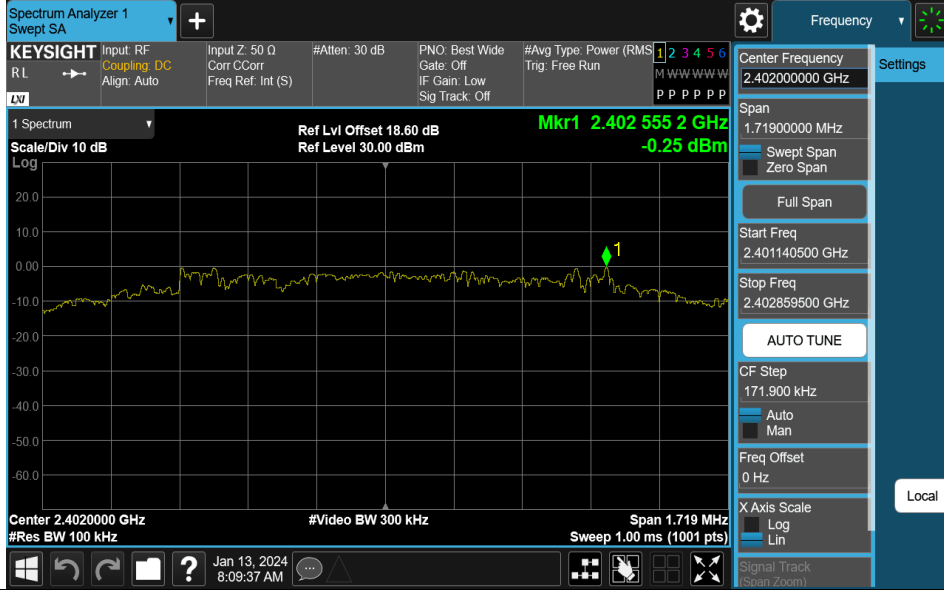
## BLE\_1M-Ant1-2440-PASS



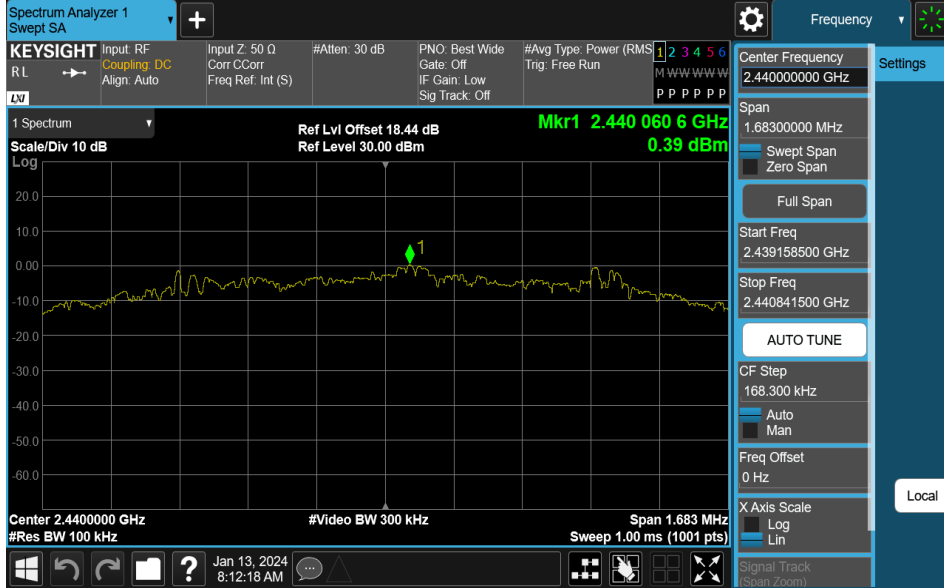
## BLE\_1M-Ant1-2480-PASS



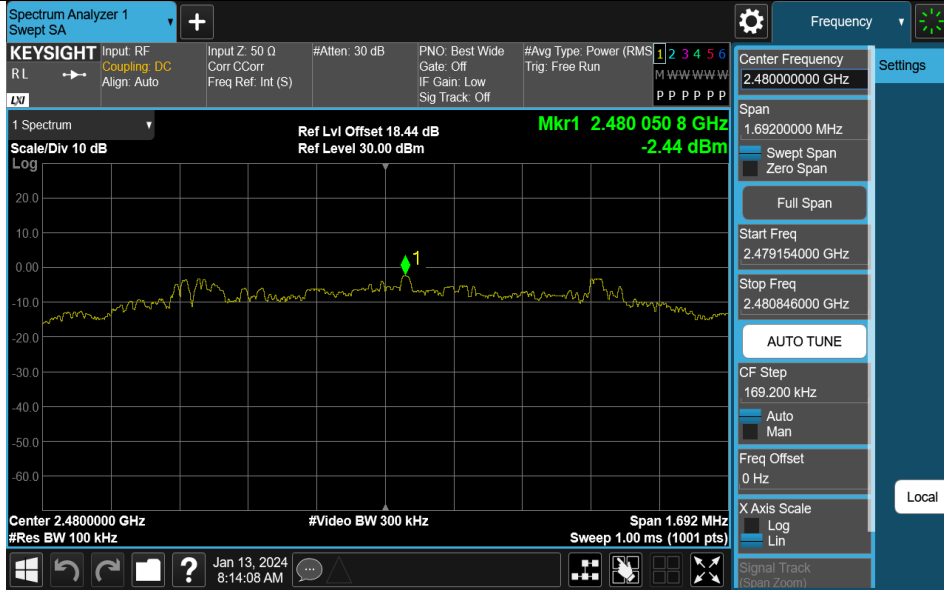
### BLE\_2M-Ant1-2402-PASS



### BLE\_2M-Ant1-2440-PASS



### BLE\_2M-Ant1-2480-PASS



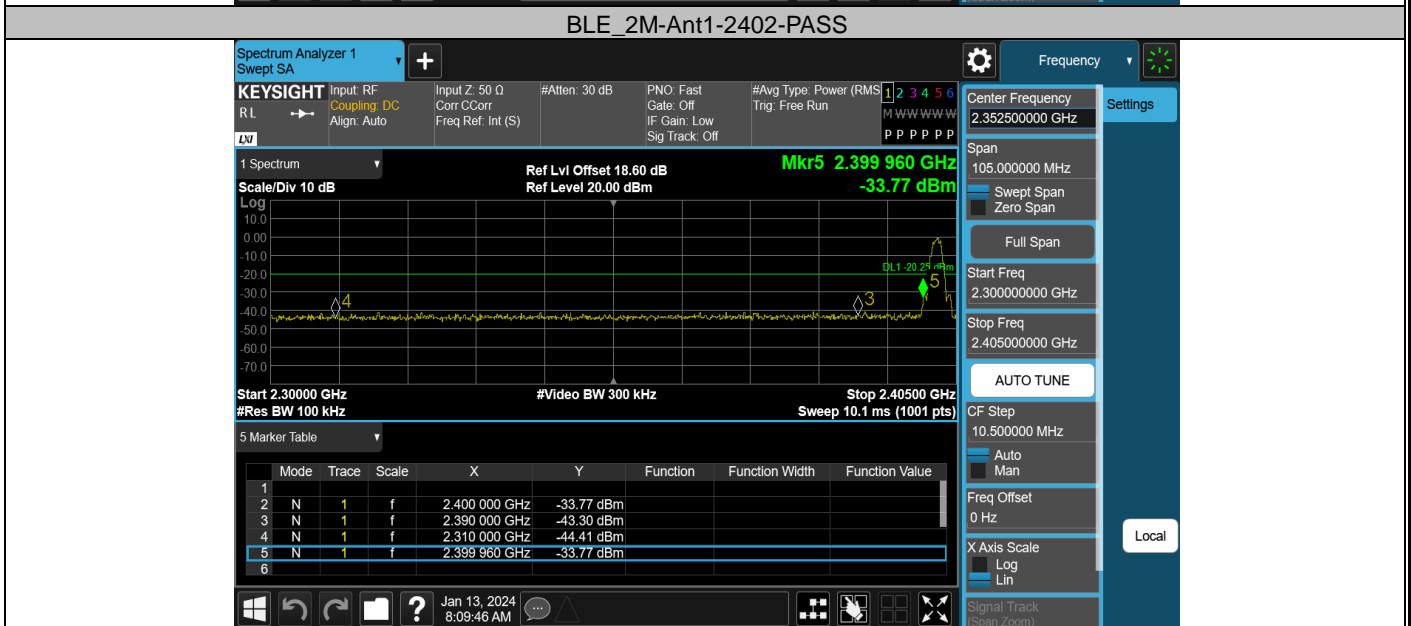
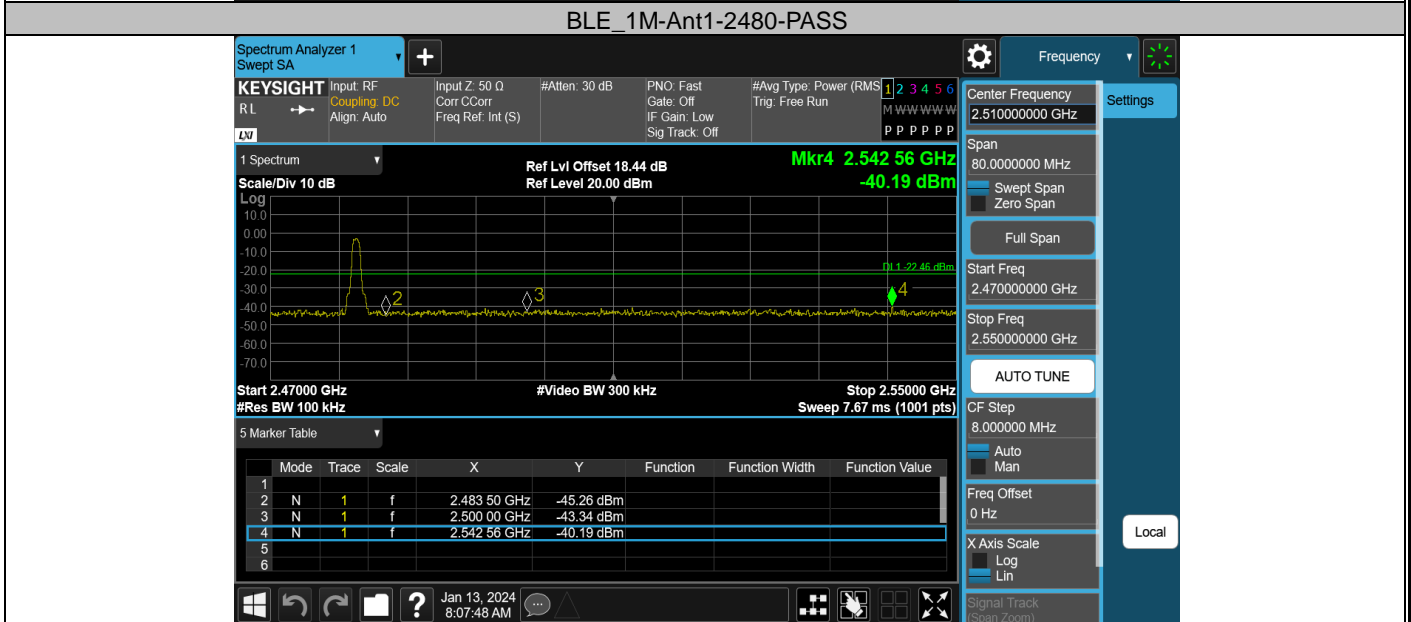
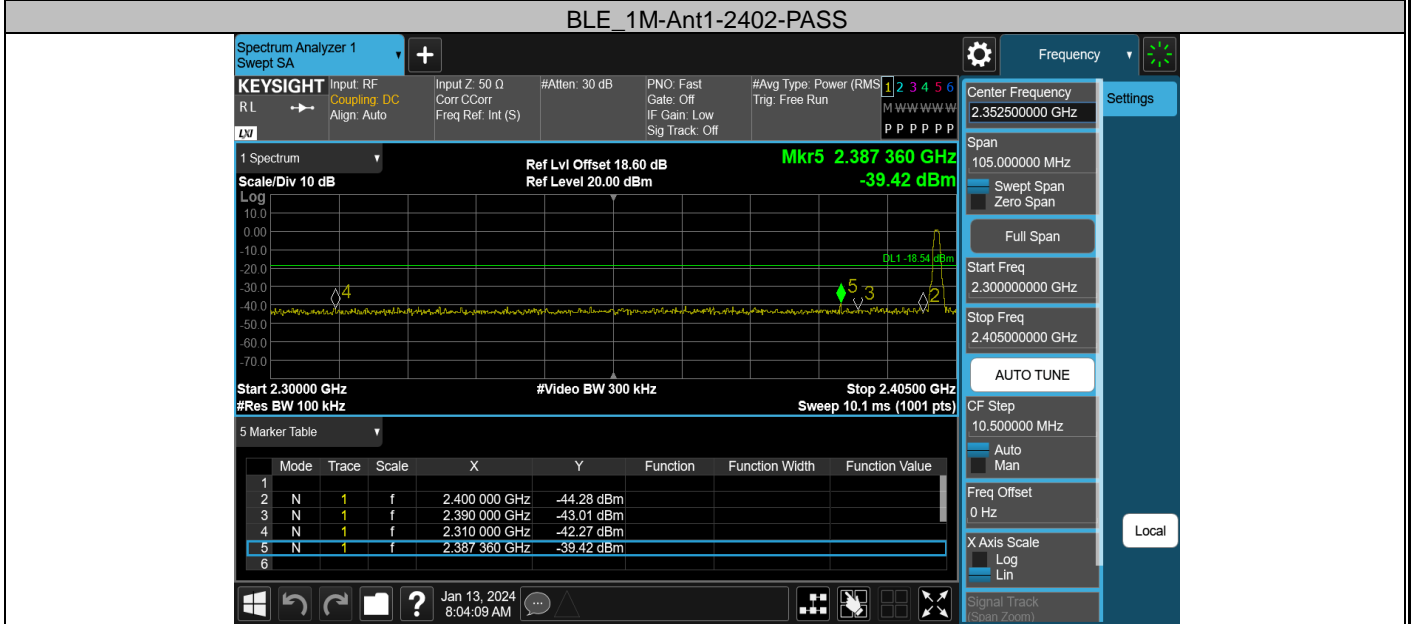
## Appendix E: Band edge measurements

Left earbud

Test Result

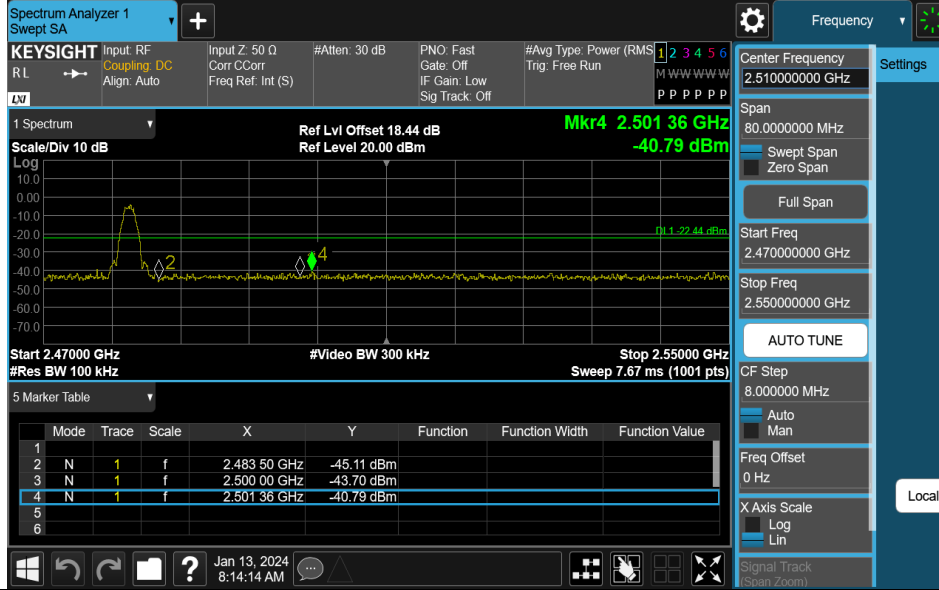
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.46	-39.42	$\leq -18.54$	PASS
BLE_1M	Ant1	High	2480	-2.46	-40.19	$\leq -22.46$	PASS
BLE_2M	Ant1	Low	2402	-0.25	-33.77	$\leq -20.25$	PASS
BLE_2M	Ant1	High	2480	-2.44	-40.79	$\leq -22.44$	PASS

### Test Graphs





BLE\_2M-Ant1-2480-PASS

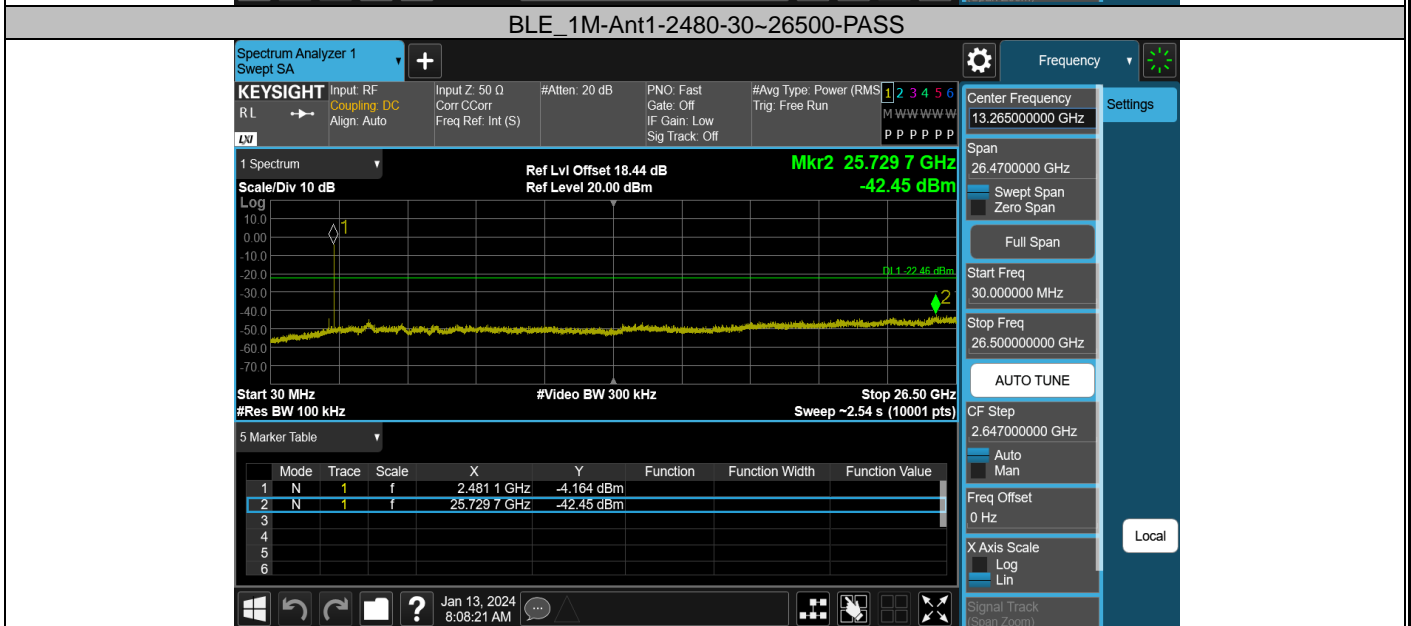
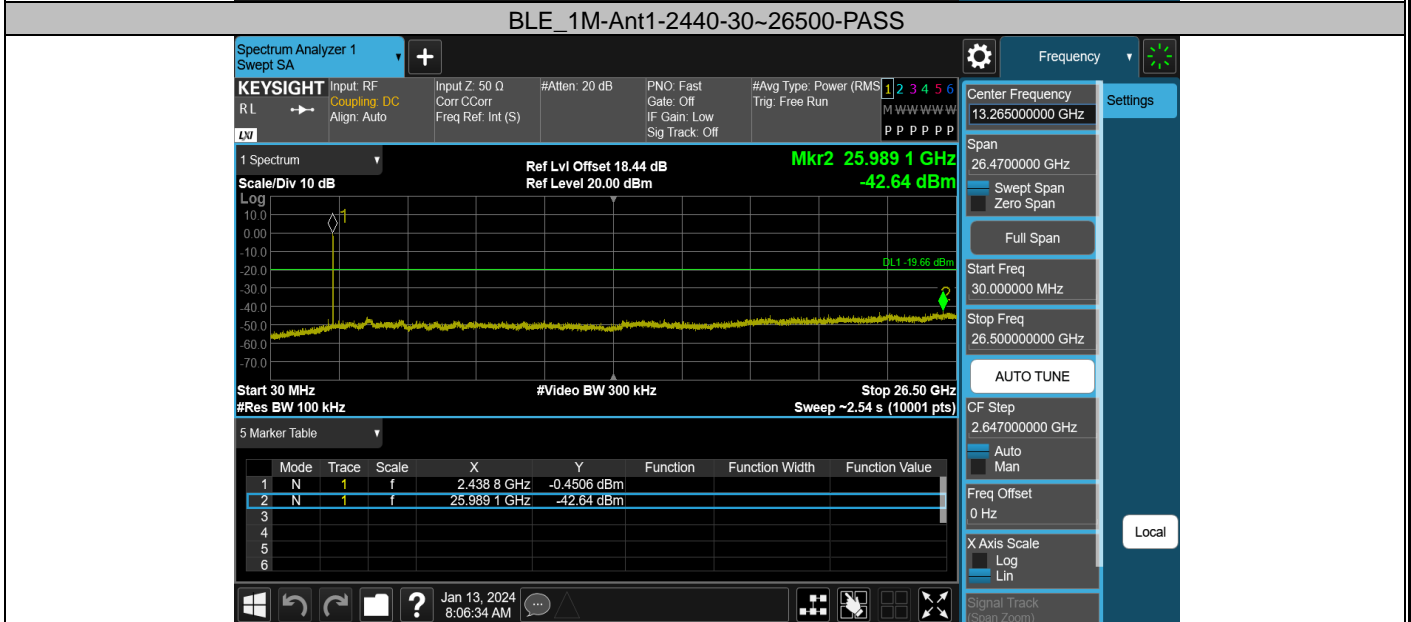
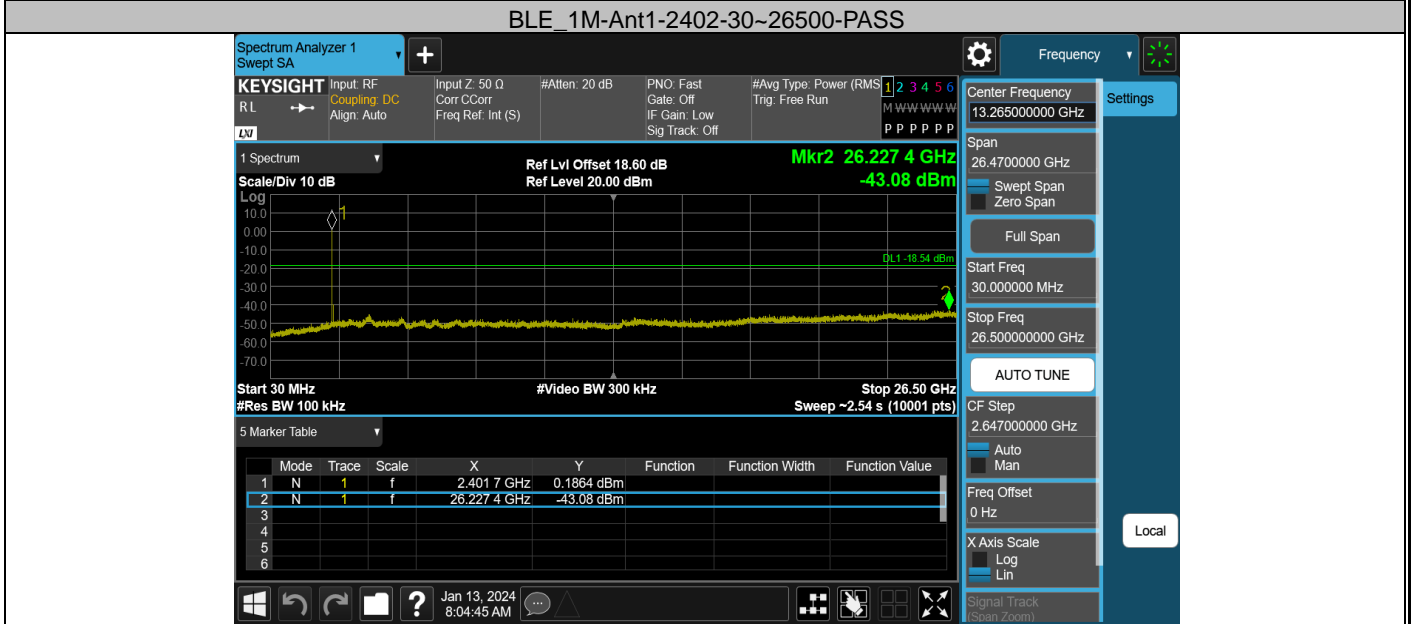


## Appendix F: Conducted Spurious Emission

Left earbud  
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~26500	1.46	-43.08	≤-18.54	PASS
BLE_1M	Ant1	2440	30~26500	0.34	-42.64	≤-19.66	PASS
BLE_1M	Ant1	2480	30~26500	-2.46	-42.45	≤-22.46	PASS
BLE_2M	Ant1	2402	30~26500	-0.25	-41.19	≤-20.25	PASS
BLE_2M	Ant1	2440	30~26500	0.39	-42.03	≤-19.61	PASS
BLE_2M	Ant1	2480	30~26500	-2.44	-43.04	≤-22.44	PASS

### Test Graphs



BLE\_2M-Ant1-2402-30~26500-PASS

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF Coupling: DC Align: Auto Input Z: 50 Ω Corr C: Corr Freq Ref: Int (S) #Atten: 20 dB PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Trig: Free Run

Center Frequency: 13.265000000 GHz

Span: 26.4700000 GHz

Start Freq: 30.000000 MHz

Stop Freq: 26.500000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 18.60 dB

Ref Level 20.00 dBm

Mkr2 25.705 9 GHz -41.19 dBm

DL1 -20.25 dBm

Start 30 MHz #Res BW 100 kHz #Video BW 300 kHz Stop 26.50 GHz Sweep ~2.54 s (10001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.401 7 GHz	-2.089 dBm		
2	N	1	f	25.705 9 GHz	-41.19 dBm		
3							
4							
5							
6							

Jan 13, 2024 8:10:21 AM

BLE\_2M-Ant1-2440-30~26500-PASS

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF Coupling: DC Align: Auto Input Z: 50 Ω Corr C: Corr Freq Ref: Int (S) #Atten: 20 dB PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Trig: Free Run

Center Frequency: 13.265000000 GHz

Span: 26.4700000 GHz

Start Freq: 30.000000 MHz

Stop Freq: 26.500000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 18.44 dB

Ref Level 20.00 dBm

Mkr2 25.864 7 GHz -42.03 dBm

DL1 -19.61 dBm

Start 30 MHz #Res BW 100 kHz #Video BW 300 kHz Stop 26.50 GHz Sweep ~2.54 s (10001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.438 8 GHz	-3.035 dBm		
2	N	1	f	25.864 7 GHz	-42.03 dBm		
3							
4							
5							
6							

Jan 13, 2024 8:12:55 AM

BLE\_2M-Ant1-2480-30~26500-PASS

Spectrum Analyzer 1 Swept SA

KEYSIGHT Input RF Coupling: DC Align: Auto Input Z: 50 Ω Corr C: Corr Freq Ref: Int (S) #Atten: 20 dB PNO: Fast Gate: Off IF Gain: Low Sig Track: Off #Avg Type: Power (RMS) Trig: Free Run

Center Frequency: 13.265000000 GHz

Span: 26.4700000 GHz

Start Freq: 30.000000 MHz

Stop Freq: 26.500000000 GHz

Scale/Div 10 dB

Ref Lvl Offset 18.44 dB

Ref Level 20.00 dBm

Mkr2 26.171 8 GHz -43.04 dBm

DL1 -22.44 dBm

Start 30 MHz #Res BW 100 kHz #Video BW 300 kHz Stop 26.50 GHz Sweep ~2.54 s (10001 pts)

Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.481 1 GHz	-6.014 dBm		
2	N	1	f	26.171 8 GHz	-43.04 dBm		
3							
4							
5							
6							

Jan 13, 2024 8:14:48 AM

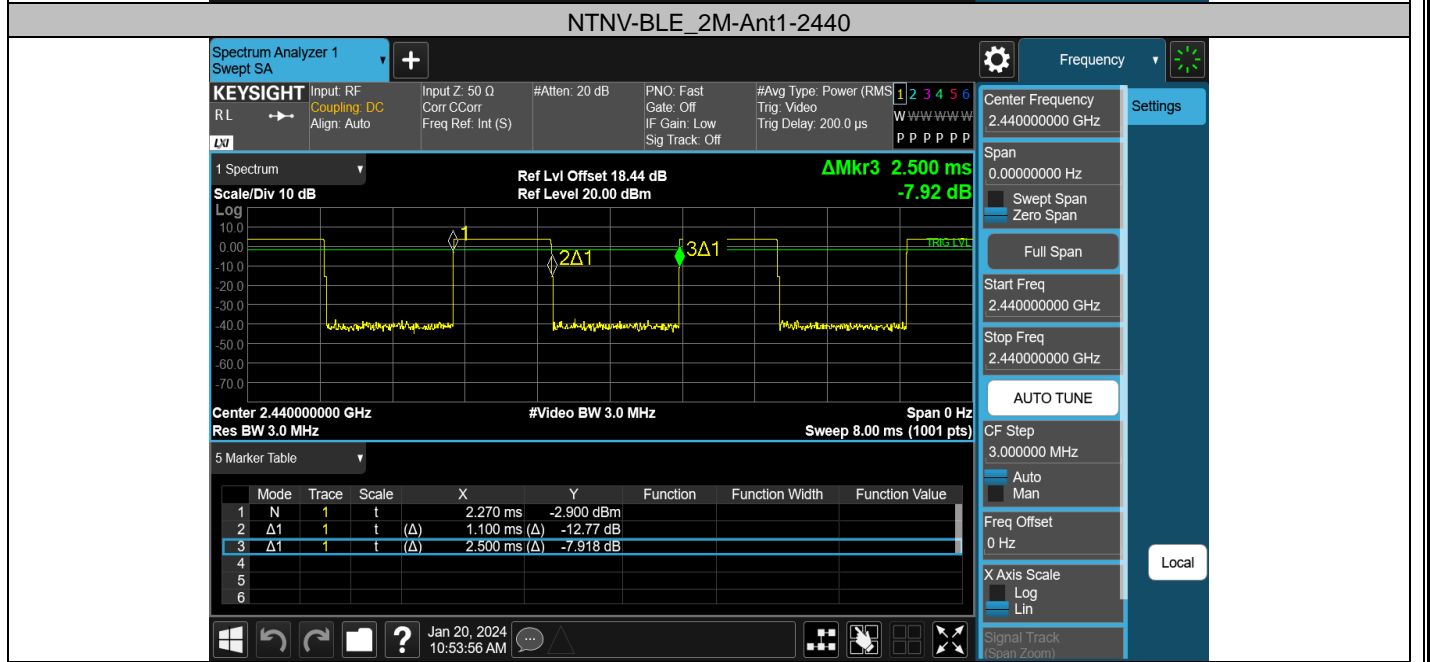
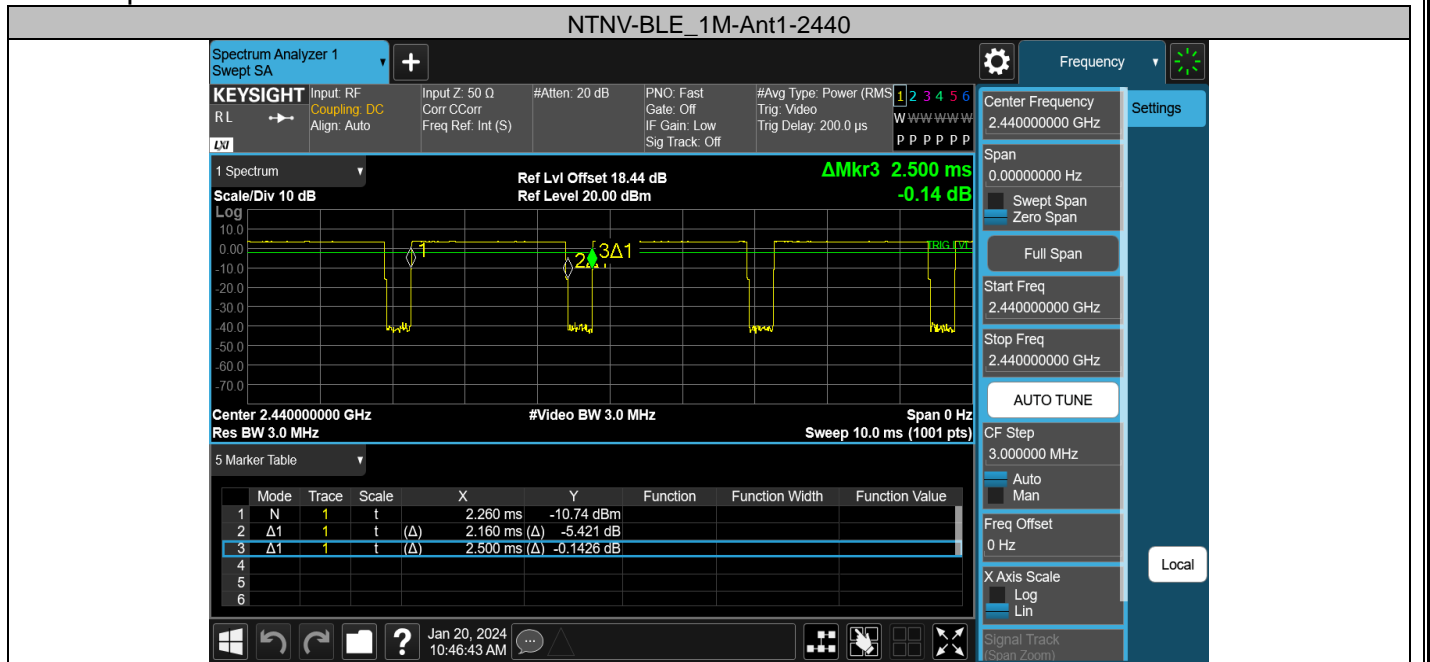
## Appendix G: Duty Cycle

Left earbud

Test Result

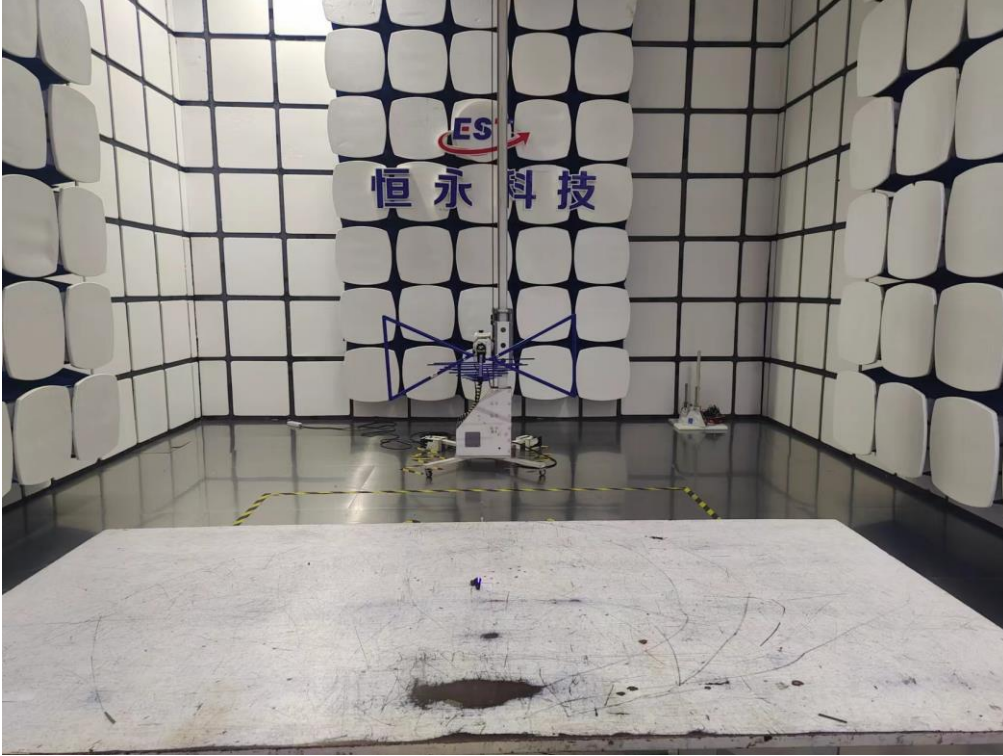
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2440	2.16	2.50	86.40	0.63
BLE_2M	Ant1	2440	1.10	2.50	44.00	3.57

### Test Graphs



## 11. TEST SETUP PHOTO

Radiated Test (Below 1GHz)



Radiated Test (Above 1GHz)





## 12. EUT PHOTO

External Photos  
M/N: TW970





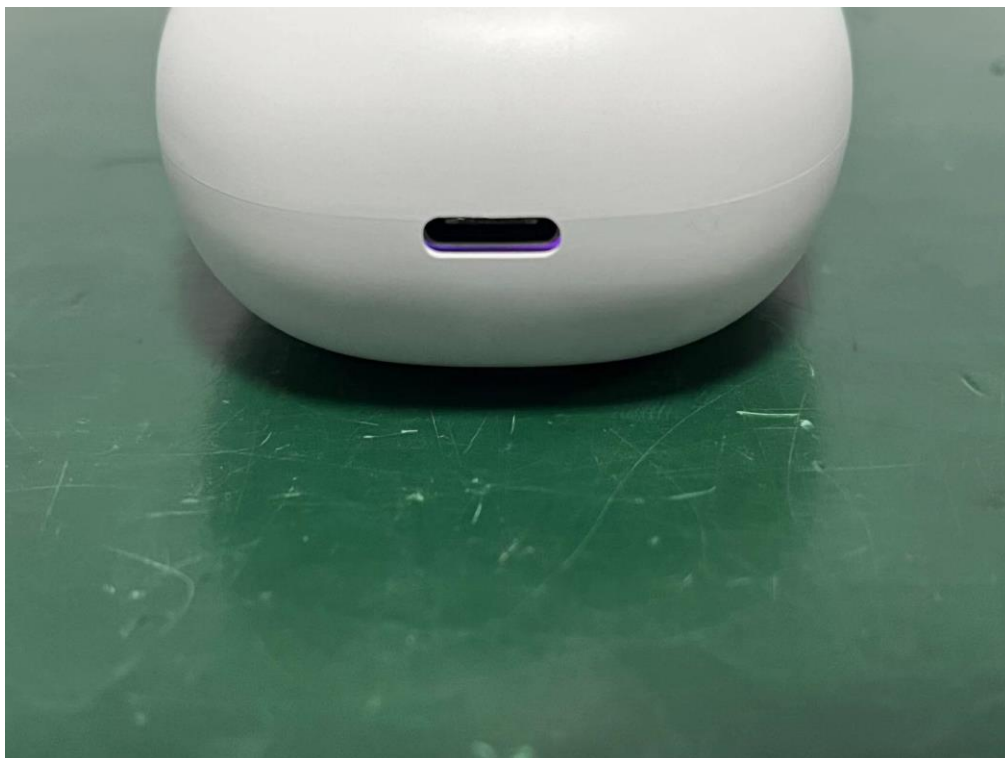
**External Photos**  
M/N: TW970



**External Photos**  
M/N: TW970



**External Photos**  
M/N: TW970





**External Photos**  
M/N: TW970



**External Photos**  
M/N: TW970



**External Photos**  
M/N: TW970





**External Photos**  
M/N: TW970

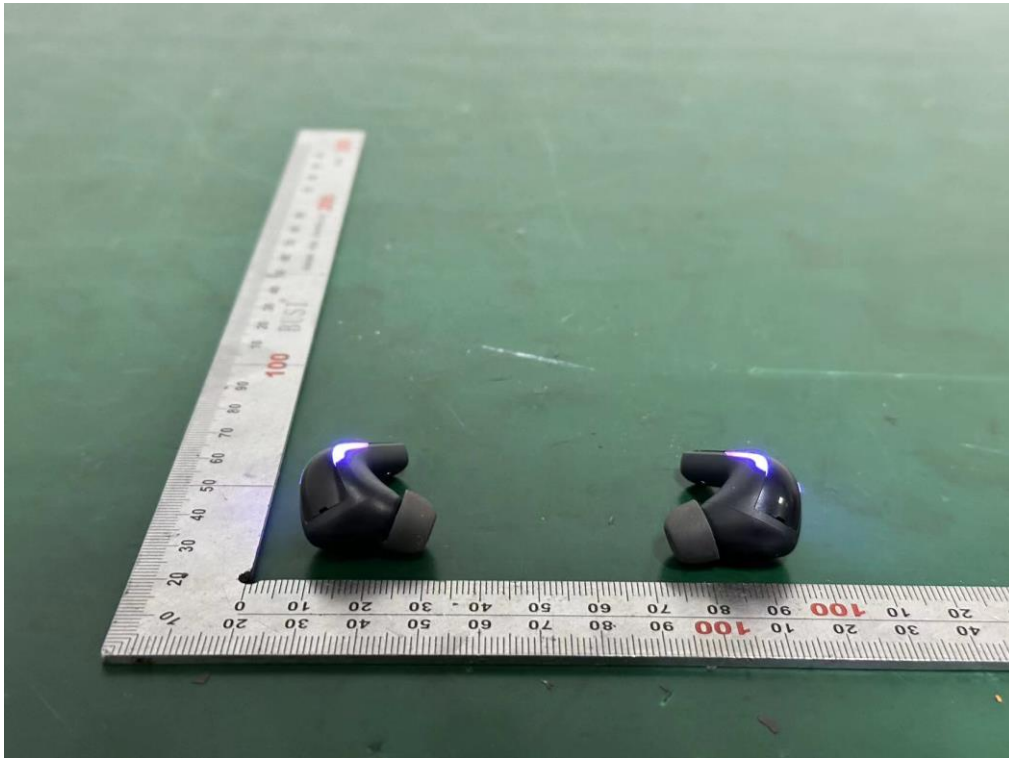


**External Photos**  
M/N: TW970





**External Photos**  
M/N: TW970



**External Photos**  
M/N: TW970

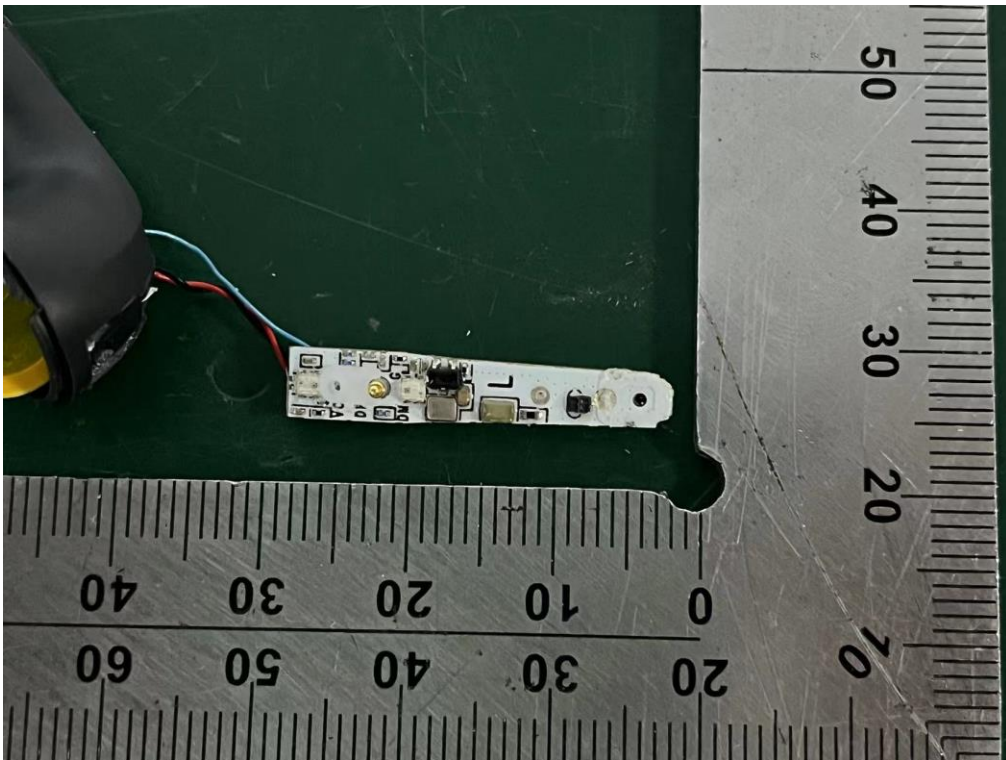
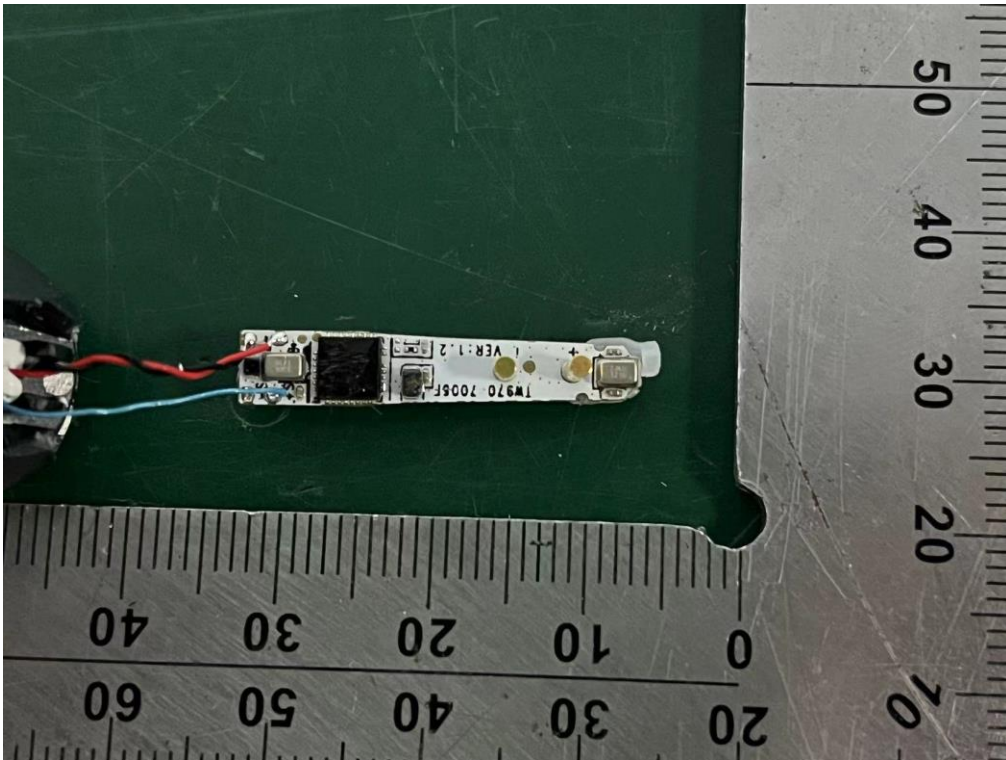


**Internal Photos**  
M/N: TW970

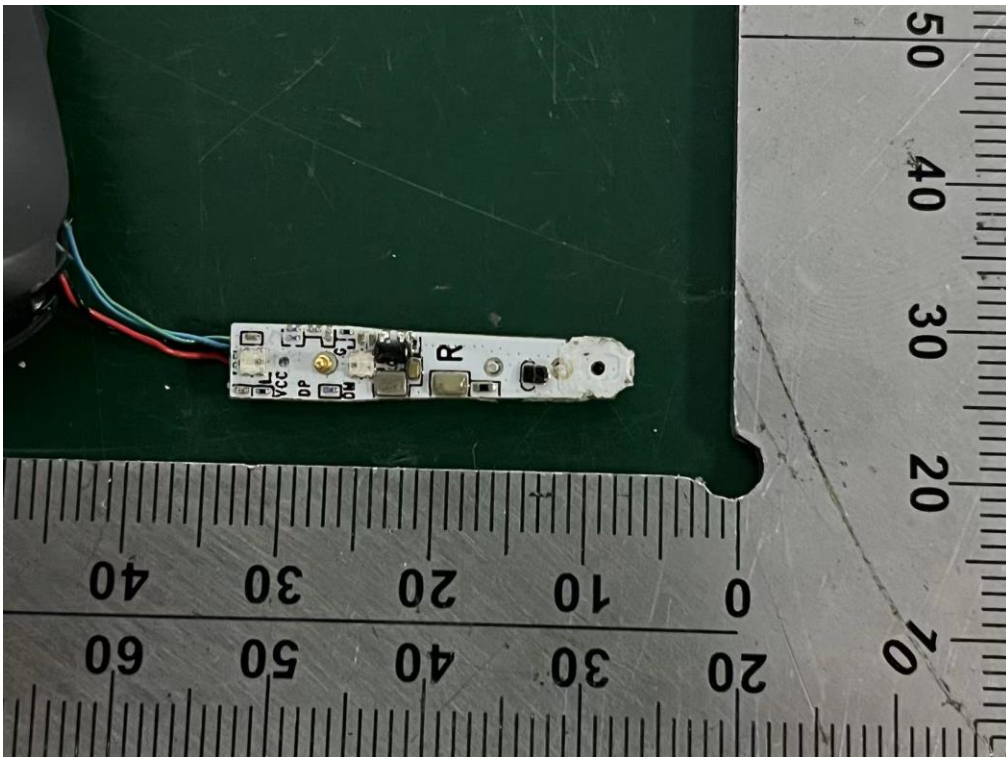
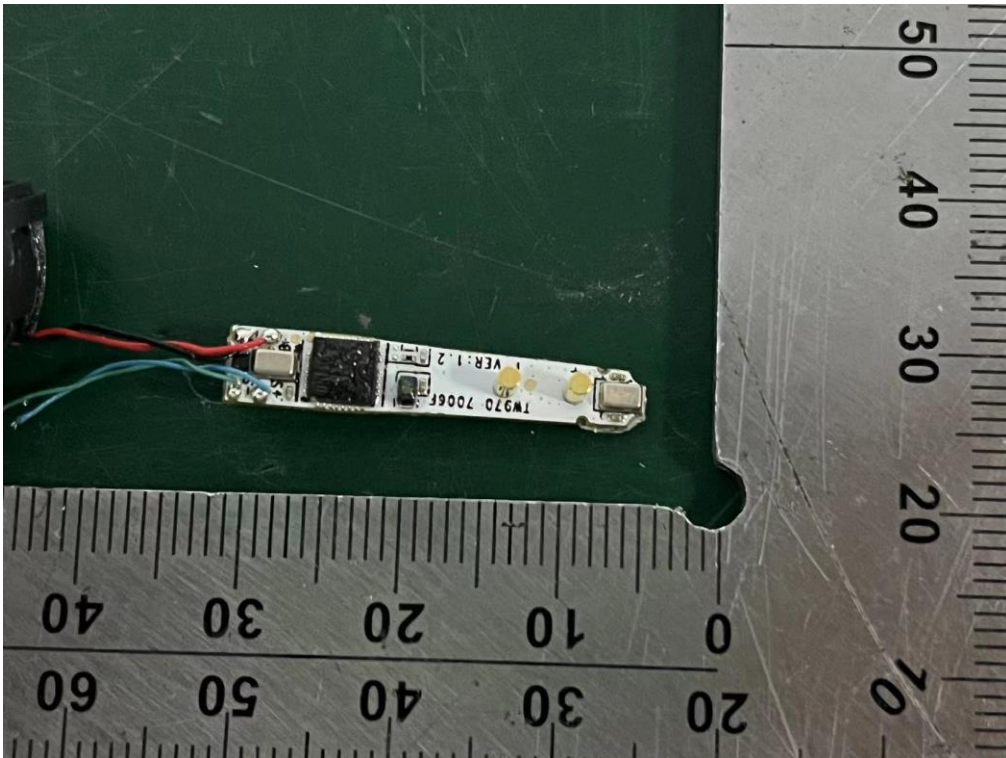




**Internal Photos**  
M/N: TW970



**Internal Photos**  
M/N: TW970

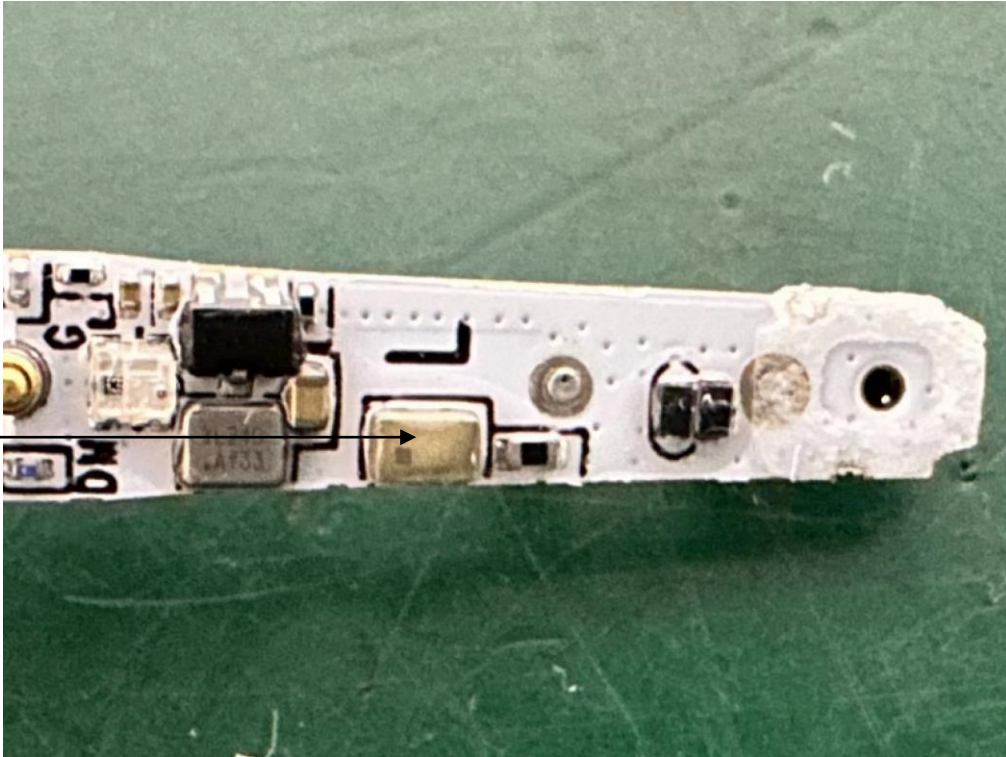




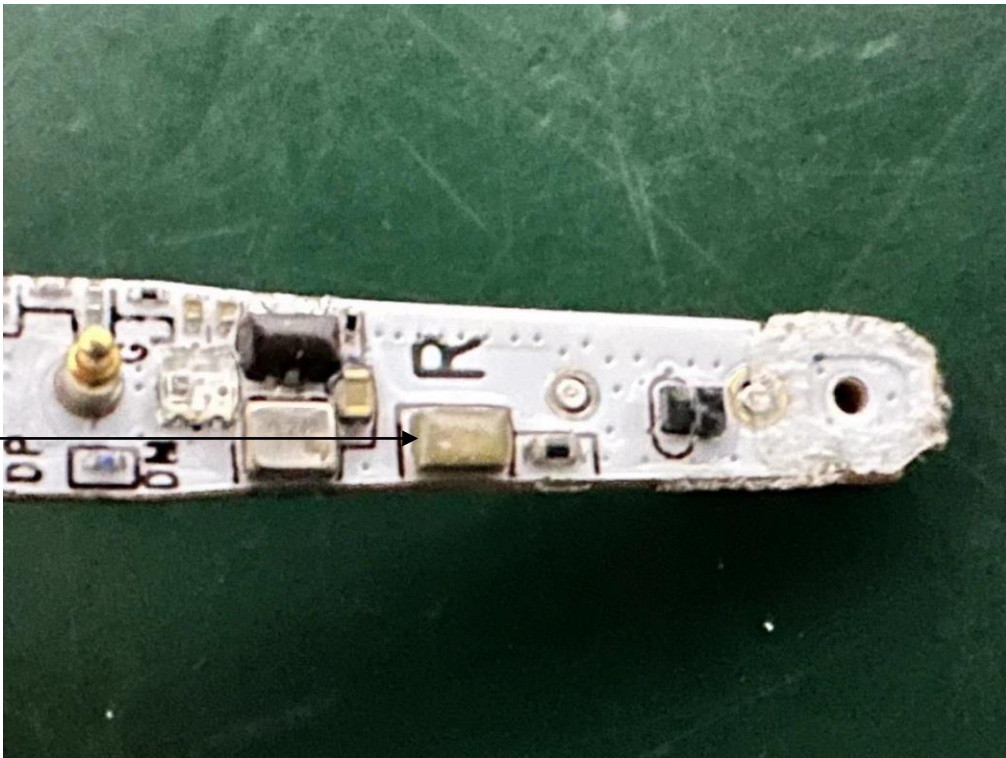
**Internal Photos**

M/N: TW970

Antenna



Antenna



**End of Test Report**