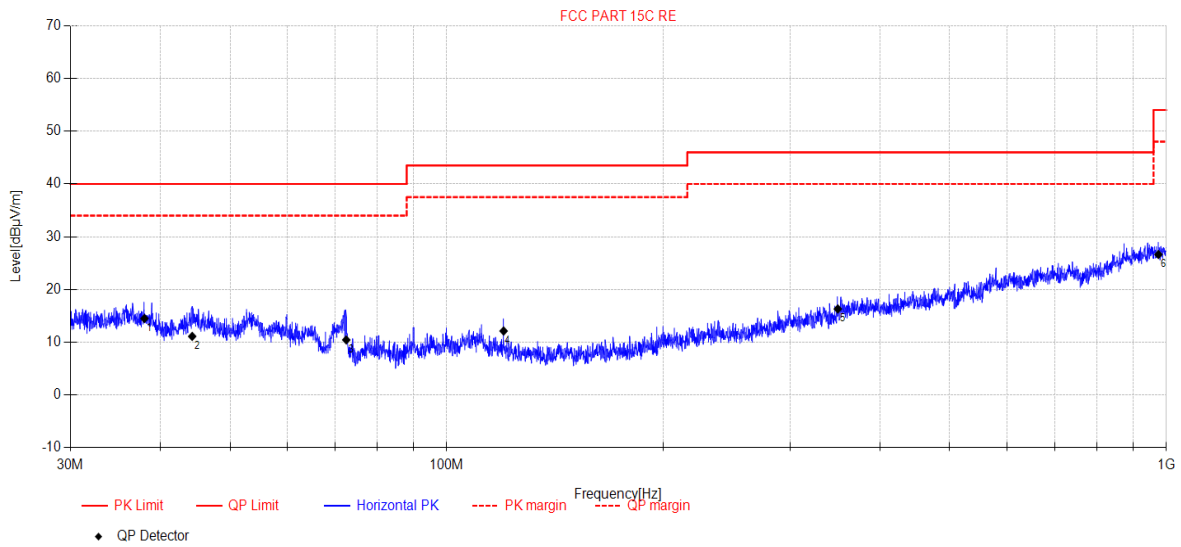


## Radiated Emission test (below 1 GHz) TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222046\_H  
**Memo:** Left Side Sample Number: S23120513-01



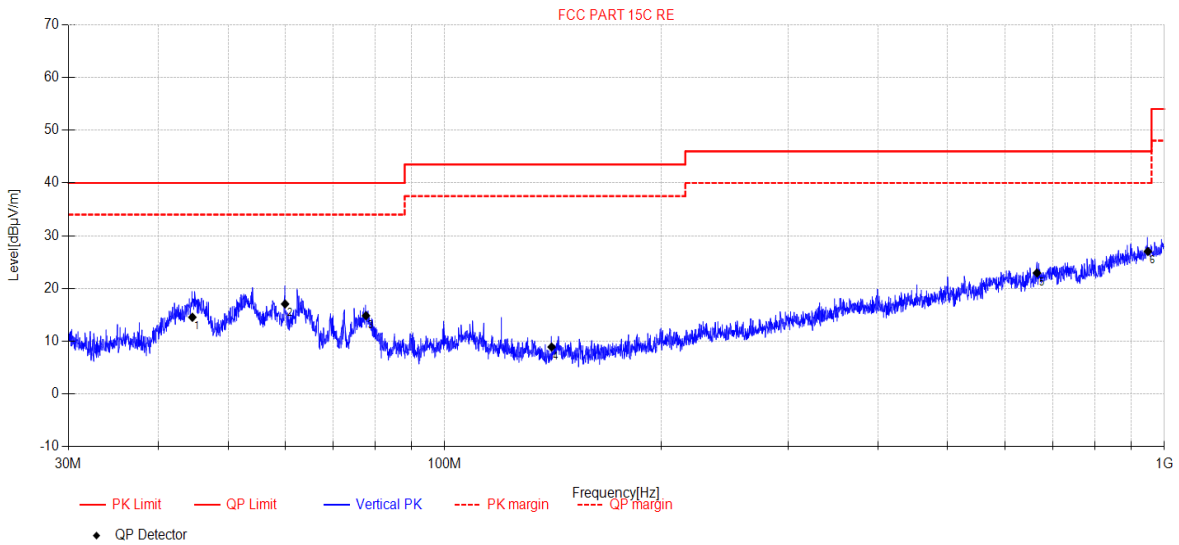
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	38.02	29.41	11.40	4.57	-30.88	14.50	40.00	25.50	QP	Horizontal
2	44.30	24.18	13.06	4.66	-30.79	11.11	40.00	28.89	QP	Horizontal
3	72.53	26.81	9.39	4.80	-30.55	10.45	40.00	29.55	QP	Horizontal
4	119.99	27.8	10.00	5.17	-30.84	12.13	43.50	31.37	QP	Horizontal
5	349.57	25.61	14.48	6.42	-30.20	16.31	46.00	29.69	QP	Horizontal
6	975.07	24.25	22.10	8.60	-28.32	26.63	54.00	27.37	QP	Horizontal

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222106\_V  
**Memo:** Left Side Sample Number: S23120513-01



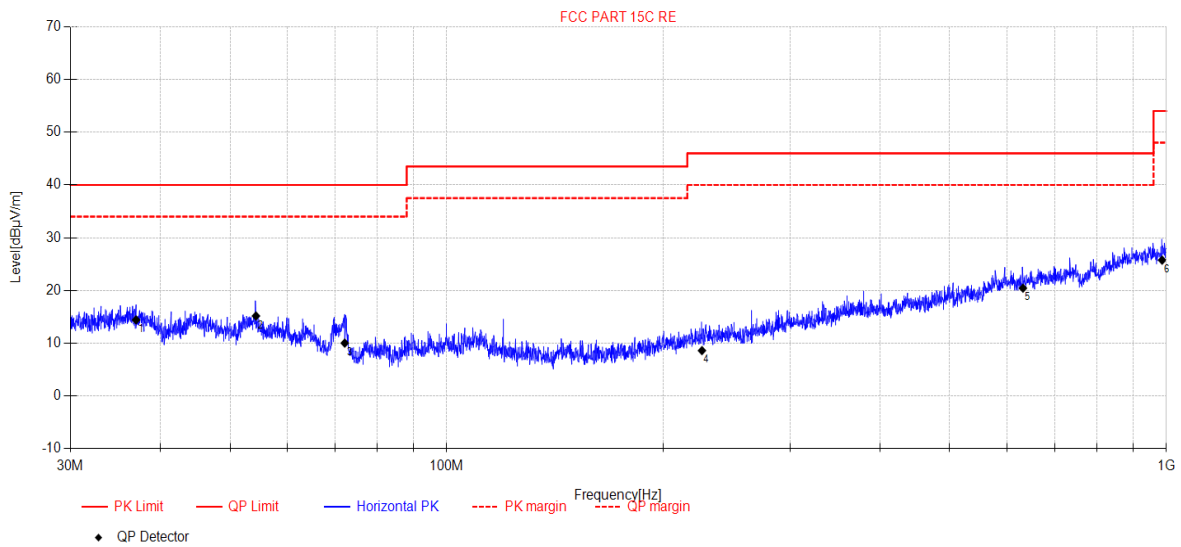
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	44.61	27.55	13.12	4.66	-30.78	14.55	40.00	25.45	QP	Vertical
2	60.02	30.14	12.79	4.76	-30.63	17.06	40.00	22.94	QP	Vertical
3	77.74	32.5	8.05	4.81	-30.52	14.84	40.00	25.16	QP	Vertical
4	140.79	26.42	8.00	5.27	-30.78	8.91	43.50	34.59	QP	Vertical
5	665.39	25.75	19.48	7.61	-29.90	22.94	46.00	23.06	QP	Vertical
6	948.77	24.66	22.41	8.51	-28.56	27.02	46.00	18.98	QP	Vertical

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222157\_H  
**Memo:** Left Side Sample Number: S23120513-01



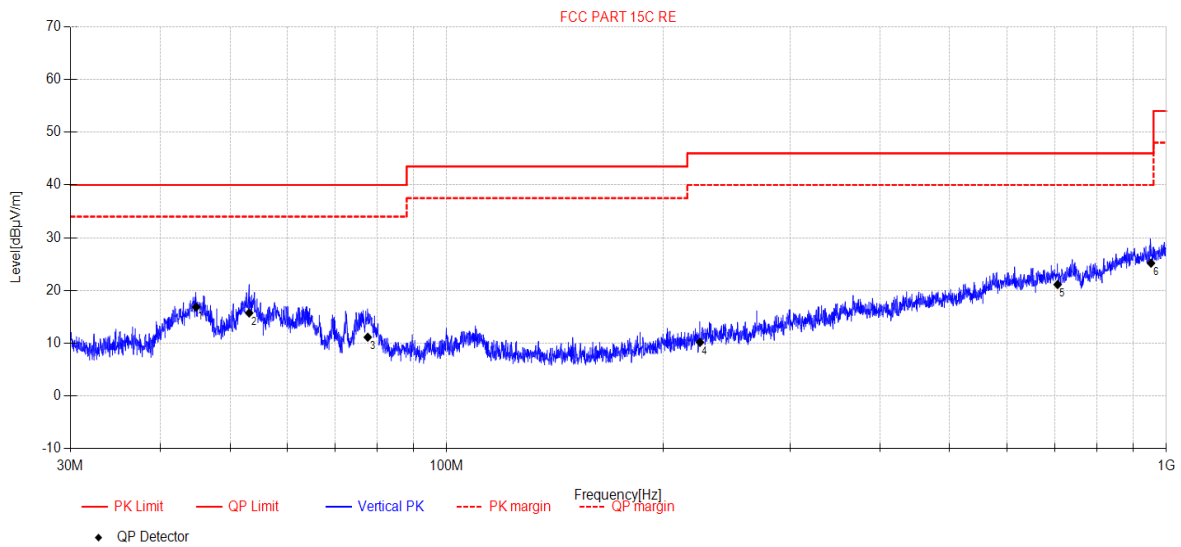
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	37.02	29.06	11.69	4.56	-30.89	14.42	40.00	25.58	QP	Horizontal
2	54.33	28.67	12.43	4.74	-30.67	15.17	40.00	24.83	QP	Horizontal
3	72.17	26.25	9.53	4.80	-30.55	10.03	40.00	29.97	QP	Horizontal
4	226.33	21.86	11.43	5.84	-30.52	8.61	46.00	37.39	QP	Horizontal
5	632.19	24.38	18.49	7.47	-29.90	20.44	46.00	25.56	QP	Horizontal
6	986.77	23.36	21.97	8.64	-28.22	25.75	54.00	28.25	QP	Horizontal

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222217\_V  
**Memo:** Left Side Sample Number: S23120513-01



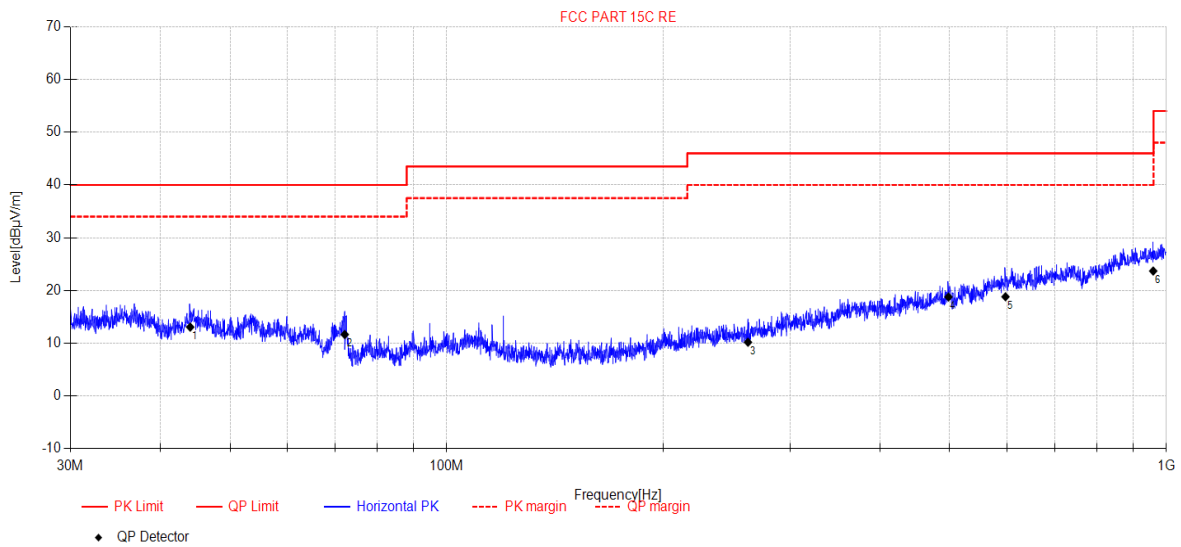
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	44.87	29.8	13.17	4.66	-30.78	16.85	40.00	23.15	QP	Vertical
2	53.16	28.29	13.39	4.74	-30.68	15.74	40.00	24.26	QP	Vertical
3	77.69	28.81	8.04	4.81	-30.52	11.14	40.00	28.86	QP	Vertical
4	224.90	23.59	11.29	5.83	-30.53	10.18	46.00	35.82	QP	Vertical
5	706.25	23.74	19.52	7.77	-29.90	21.13	46.00	24.87	QP	Vertical
6	952.10	22.95	22.24	8.52	-28.53	25.18	46.00	20.82	QP	Vertical

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222505\_H  
**Memo:** Right Side Sample Number: S23120513-01



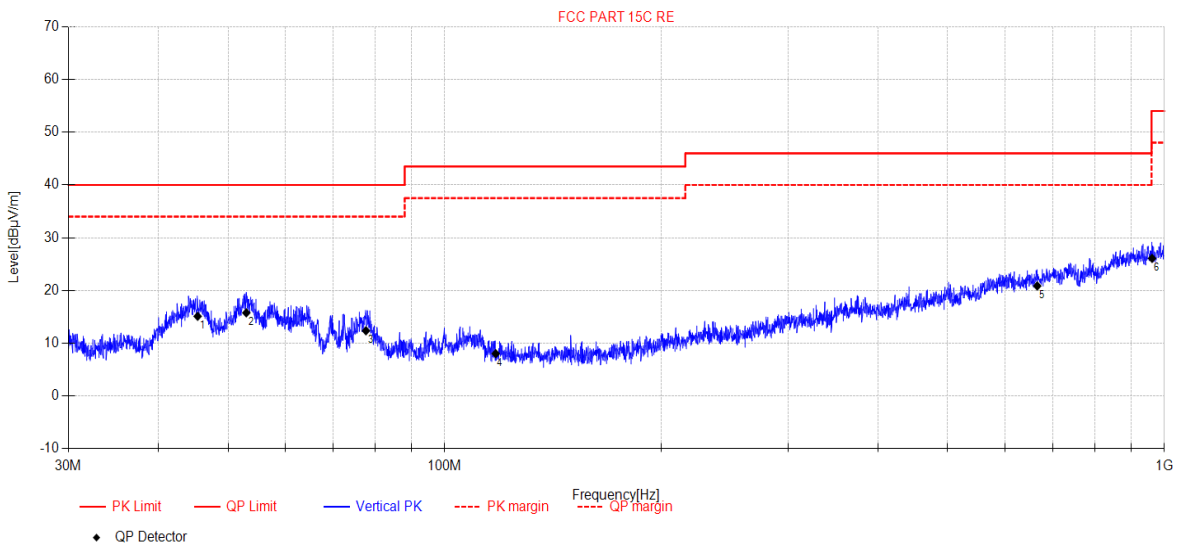
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	44.02	26.2	13.00	4.65	-30.79	13.06	40.00	26.94	QP	Horizontal
2	72.17	27.88	9.53	4.80	-30.55	11.66	40.00	28.34	QP	Horizontal
3	262.23	23.02	11.59	5.99	-30.41	10.19	46.00	35.81	QP	Horizontal
4	498.10	24.83	16.91	6.93	-29.90	18.77	46.00	27.23	QP	Horizontal
5	597.70	22.37	19.02	7.32	-29.90	18.81	46.00	27.19	QP	Horizontal
6	958.80	21.55	22.06	8.55	-28.47	23.69	46.00	22.31	QP	Horizontal

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222525\_V  
**Memo:** Right Side Sample Number: S23120513-01



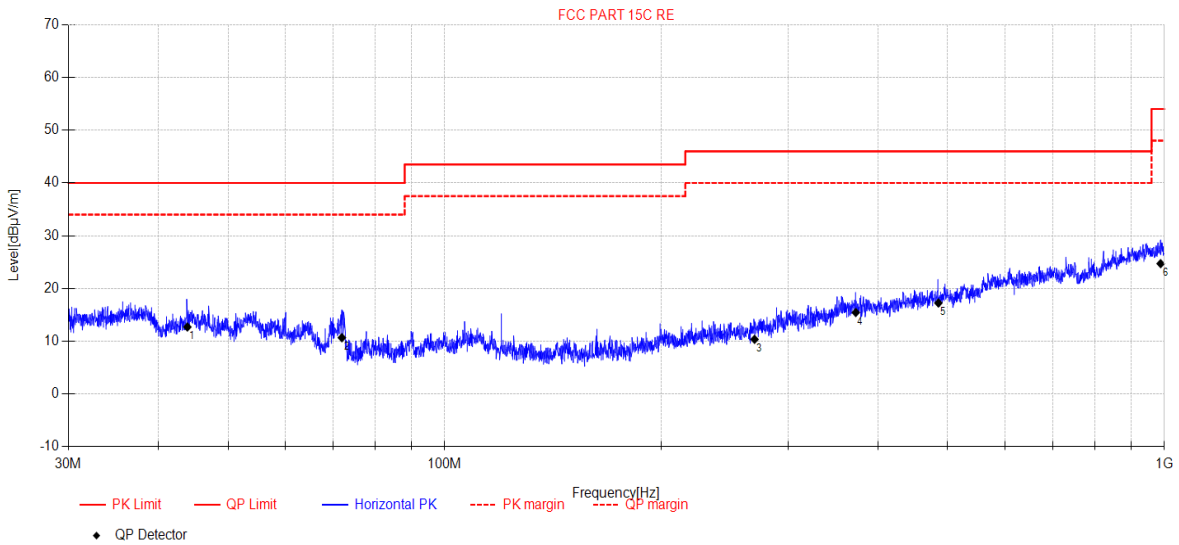
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	45.37	28.34	12.87	4.67	-30.77	15.11	40.00	24.89	QP	Vertical
2	53.01	28.13	13.58	4.74	-30.68	15.77	40.00	24.23	QP	Vertical
3	77.74	30.03	8.05	4.81	-30.52	12.37	40.00	27.63	QP	Vertical
4	117.74	24.16	9.56	5.16	-30.85	8.03	43.50	35.47	QP	Vertical
5	665.86	23.68	19.47	7.61	-29.90	20.86	46.00	25.14	QP	Vertical
6	961.50	23.86	22.11	8.56	-28.45	26.08	54.00	27.92	QP	Vertical

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222625\_H  
**Memo:** Right Side Sample Number: S23120513-01



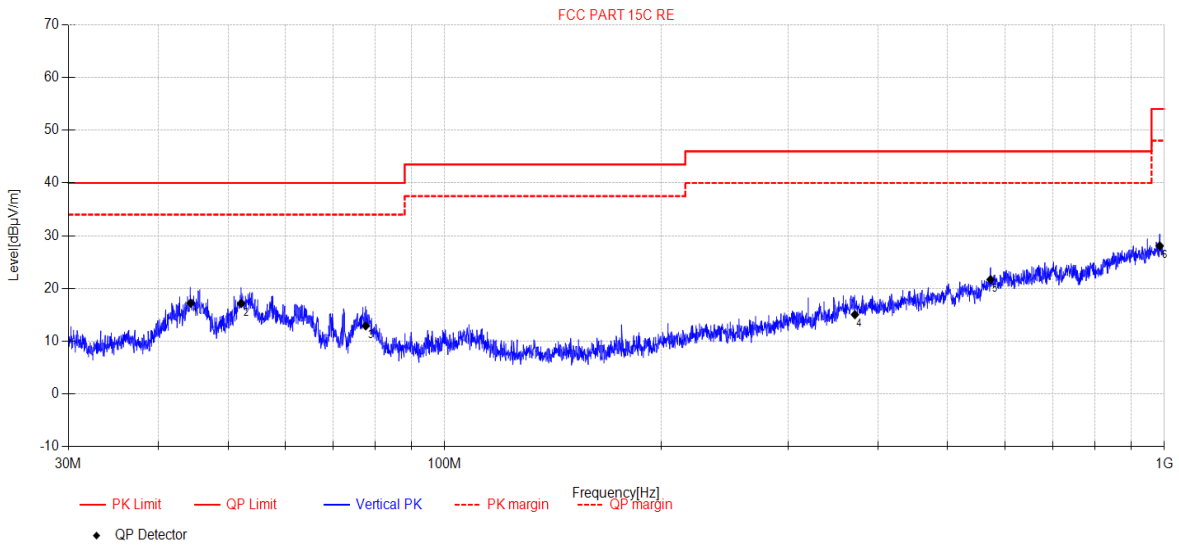
Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	43.90	25.86	12.98	4.65	-30.79	12.70	40.00	27.30	QP	Horizontal
2	71.97	26.82	9.60	4.80	-30.55	10.67	40.00	29.33	QP	Horizontal
3	269.50	22.31	12.42	6.02	-30.39	10.36	46.00	35.64	QP	Horizontal
4	372.60	23.46	15.59	6.55	-30.15	15.45	46.00	30.55	QP	Horizontal
5	485.34	23.8	16.48	6.90	-29.93	17.25	46.00	28.75	QP	Horizontal
6	988.15	22.24	22.03	8.65	-28.21	24.71	54.00	29.29	QP	Horizontal

**Note:**

1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M Tx mode **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC BELOW 1G\20231208-222645\_V  
**Memo:** Right Side Sample Number: S23120513-01



Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	AMP [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	44.37	30.26	13.07	4.66	-30.78	17.21	40.00	22.79	QP	Vertical
2	52.17	30.09	13.02	4.74	-30.69	17.16	40.00	22.84	QP	Vertical
3	77.69	30.59	8.04	4.81	-30.52	12.92	40.00	27.08	QP	Vertical
4	371.56	22.99	15.68	6.54	-30.16	15.05	46.00	30.95	QP	Vertical
5	573.48	26	18.37	7.22	-29.90	21.69	46.00	24.31	QP	Vertical
6	985.38	25.74	21.92	8.64	-28.23	28.07	54.00	25.93	QP	Vertical

**Note:**

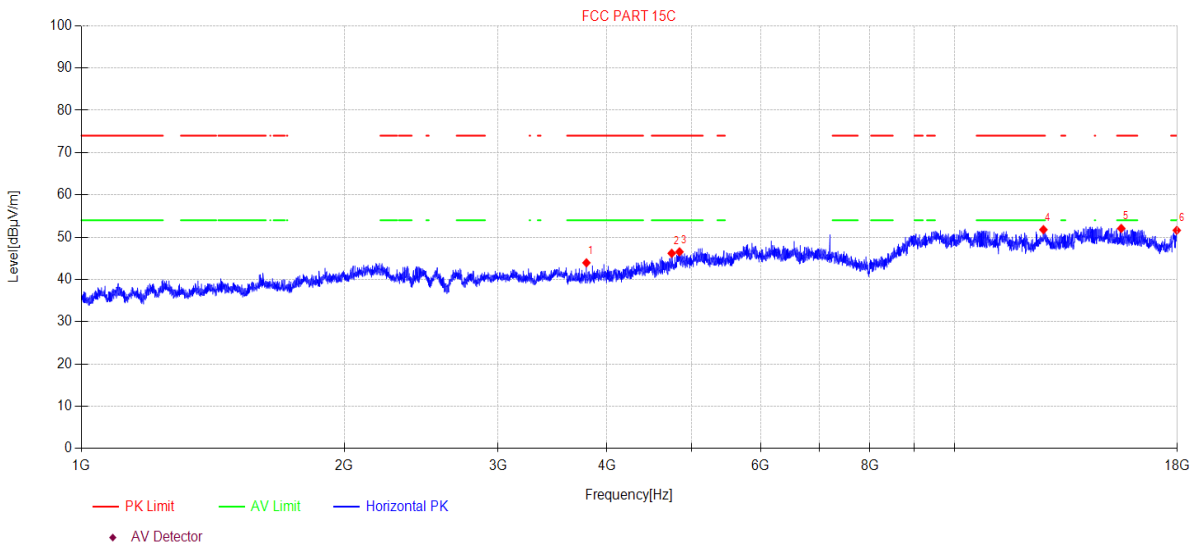
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



## Radiated Emission test (above 1 GHz) TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\19  
**Memo:** Left Side Sample Number: S23120513-01

### Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3788.76	47.80	30.66	5.80	-40.32	43.94	74.00	30.06	PK	Horizontal
2	4744.03	46.71	32.29	7.35	-40.17	46.18	74.00	27.82	PK	Horizontal
3	4842.38	45.52	33.60	7.55	-40.14	46.53	74.00	27.47	PK	Horizontal
4	12644.26	41.55	39.49	10.54	-39.81	51.77	74.00	22.23	PK	Horizontal
5	15524.19	38.66	38.75	13.72	-39.07	52.06	74.00	21.94	PK	Horizontal
6	17974.01	38.59	42.27	13.10	-42.34	51.62	74.00	22.38	PK	Horizontal

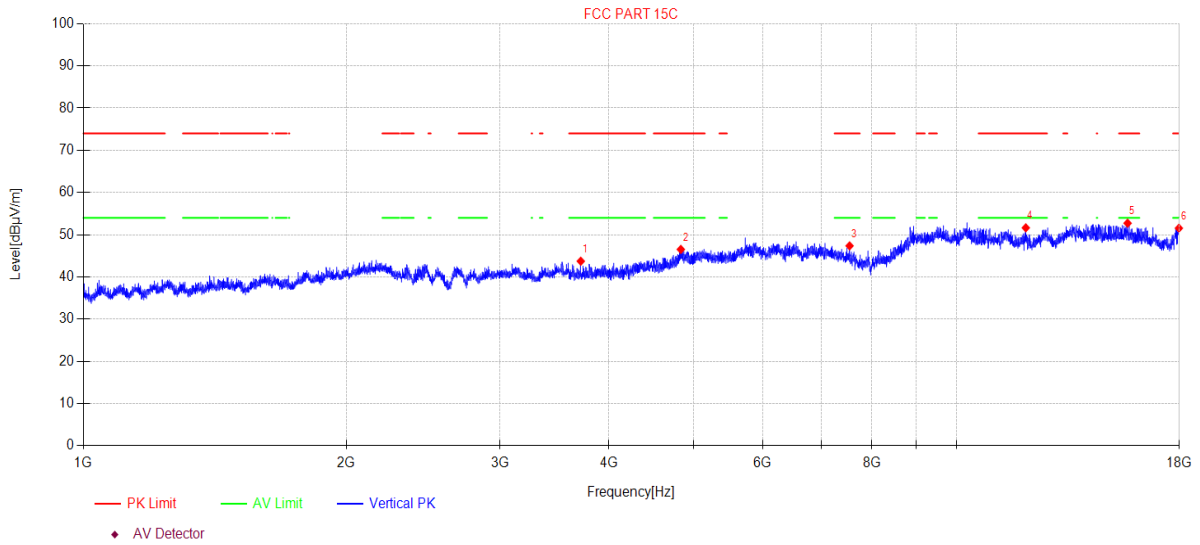
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\20  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3712.88	47.78	30.43	5.79	-40.27	43.73	74.00	30.27	PK	Vertical
2	4833.99	45.75	33.38	7.53	-40.14	46.52	74.00	27.48	PK	Vertical
3	7543.95	45.37	36.41	7.65	-42.06	47.37	74.00	26.63	PK	Vertical
4	12006.78	41.45	39.21	10.54	-39.56	51.64	74.00	22.36	PK	Vertical
5	15704.70	38.88	38.49	14.54	-39.18	52.73	74.00	21.27	PK	Vertical
6	17979.20	38.49	42.30	13.11	-42.35	51.55	74.00	22.45	PK	Vertical

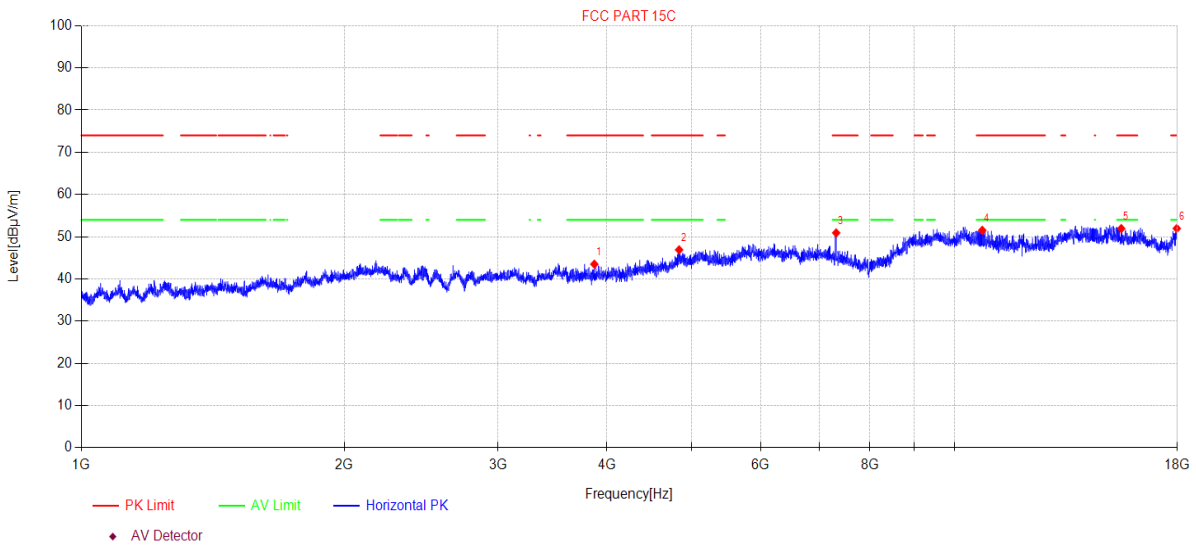
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\21  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3868.43	47.03	31.01	5.82	-40.37	43.49	74.00	30.51	PK	Horizontal
2	4838.19	46.00	33.49	7.54	-40.14	46.89	74.00	27.11	PK	Horizontal
3	7320.58	47.93	36.86	7.63	-41.50	50.92	74.00	23.08	PK	Horizontal
4	10761.09	41.64	39.40	9.48	-39.00	51.52	74.00	22.48	PK	Horizontal
5	15524.19	38.53	38.75	13.72	-39.07	51.93	74.00	22.07	PK	Horizontal
6	17974.01	38.93	42.27	13.10	-42.34	51.96	74.00	22.04	PK	Horizontal

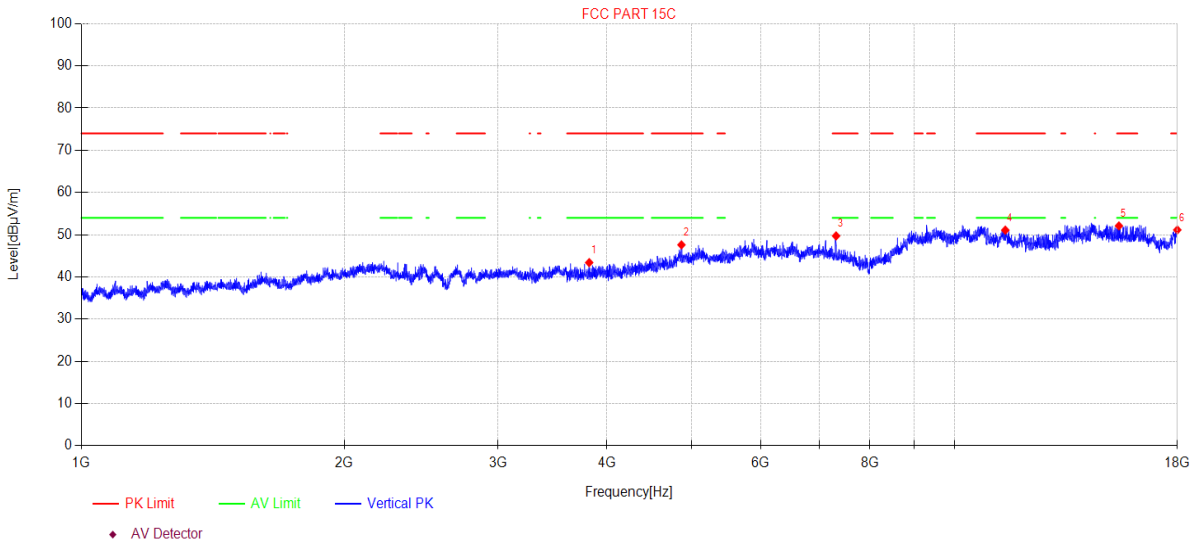
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\22  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3816.24	47.17	30.76	5.81	-40.34	43.40	74.00	30.60	PK	Vertical
2	4867.64	46.61	33.52	7.60	-40.13	47.60	74.00	26.40	PK	Vertical
3	7318.46	46.72	36.86	7.63	-41.50	49.71	74.00	24.29	PK	Vertical
4	11434.43	41.07	39.27	10.04	-39.29	51.09	74.00	22.91	PK	Vertical
5	15430.26	38.87	38.94	13.30	-39.02	52.09	74.00	21.91	PK	Vertical
6	18000.00	38.01	42.40	13.13	-42.40	51.14	74.00	22.86	PK	Vertical

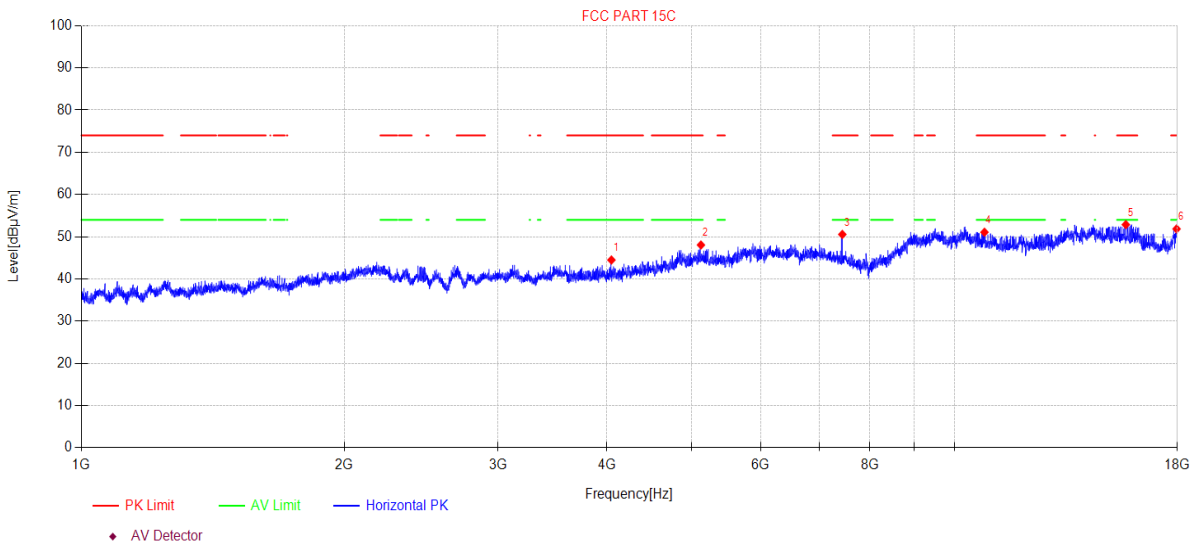
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\23  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4046.83	47.99	30.99	5.94	-40.43	44.49	74.00	29.51	PK	Horizontal
2	5124.60	46.66	33.40	8.05	-40.06	48.05	74.00	25.95	PK	Horizontal
3	7440.02	48.09	36.62	7.64	-41.80	50.55	74.00	23.45	PK	Horizontal
4	10823.47	41.19	39.38	9.52	-39.02	51.07	74.00	22.93	PK	Horizontal
5	15713.78	39.01	38.47	14.58	-39.19	52.87	74.00	21.13	PK	Horizontal
6	17963.62	38.86	42.22	13.09	-42.32	51.85	74.00	22.15	PK	Horizontal

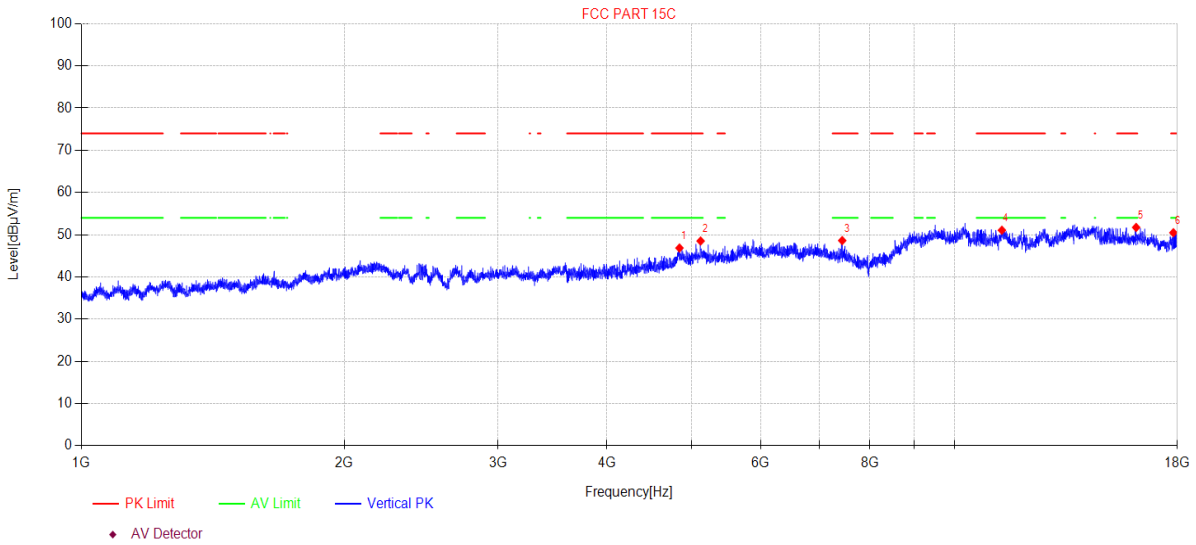
**Note:**

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHZ **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\24  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4842.38	45.85	33.60	7.55	-40.14	46.86	74.00	27.14	PK	Vertical
2	5120.16	47.14	33.40	8.04	-40.06	48.52	74.00	25.48	PK	Vertical
3	7437.87	46.15	36.62	7.64	-41.79	48.62	74.00	25.38	PK	Vertical
4	11332.44	41.14	39.23	9.95	-39.25	51.07	74.00	22.93	PK	Vertical
5	16146.52	38.07	37.85	15.30	-39.48	51.74	74.00	22.26	PK	Vertical
6	17813.69	38.60	40.95	12.91	-41.98	50.48	74.00	23.52	PK	Vertical

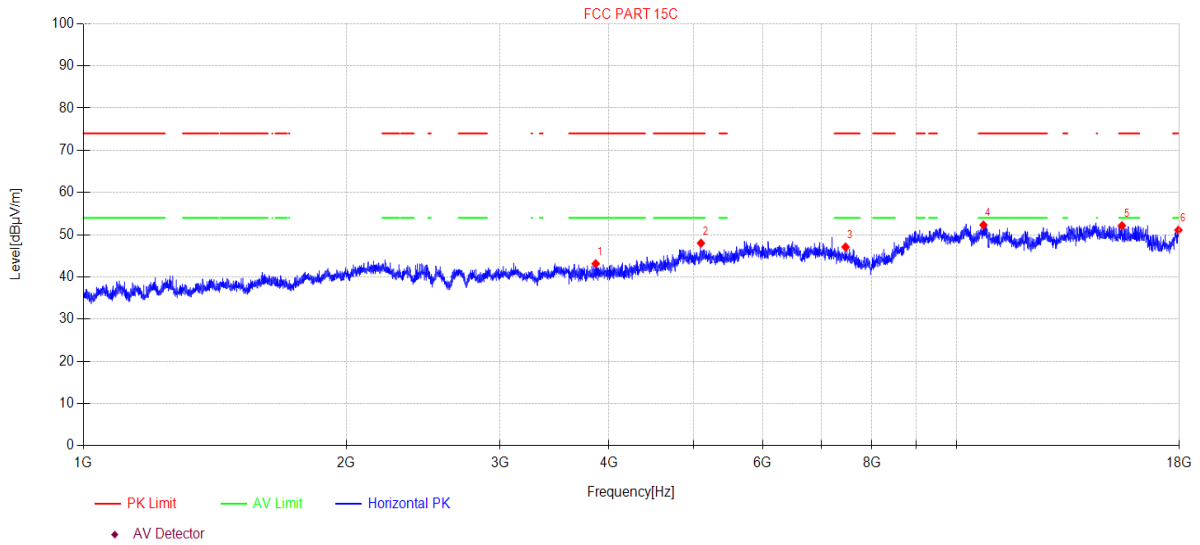
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\25  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3861.72	46.72	30.97	5.82	-40.37	43.14	74.00	30.86	PK	Horizontal
2	5098.01	46.65	33.40	8.01	-40.07	47.99	74.00	26.01	PK	Horizontal
3	7463.71	44.74	36.57	7.64	-41.86	47.09	74.00	26.91	PK	Horizontal
4	10739.34	42.44	39.40	9.46	-38.99	52.31	74.00	21.69	PK	Horizontal
5	15470.44	38.84	38.86	13.48	-39.04	52.14	74.00	21.86	PK	Horizontal
6	17958.43	38.14	42.19	13.08	-42.31	51.10	74.00	22.90	PK	Horizontal

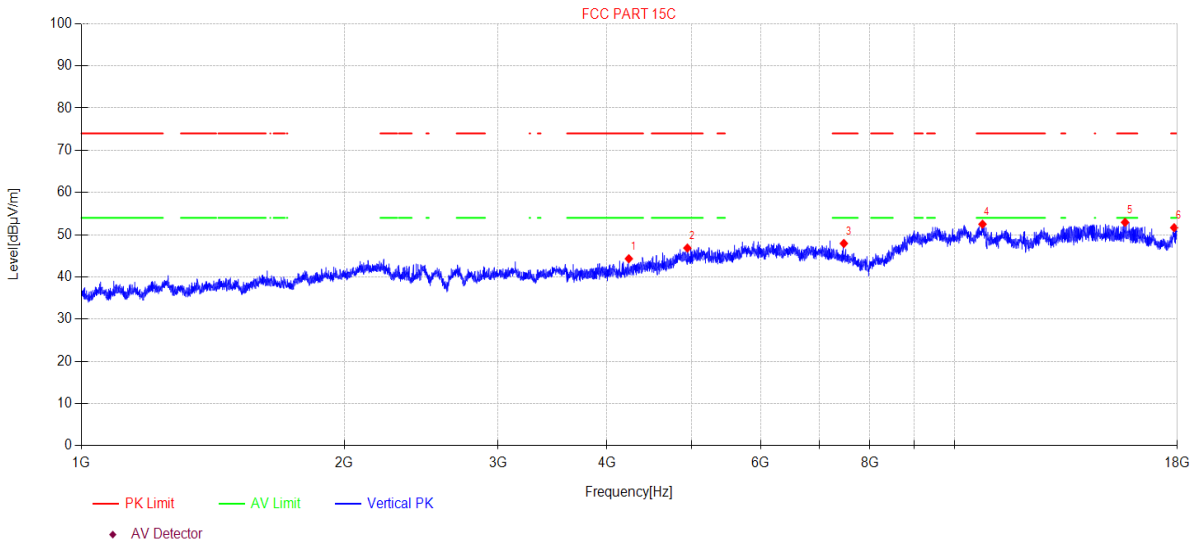
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\26  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4237.13	47.00	31.35	6.33	-40.36	44.32	74.00	29.68	PK	Vertical
2	4944.20	46.10	33.09	7.76	-40.10	46.85	74.00	27.15	PK	Vertical
3	7470.18	45.61	36.56	7.64	-41.88	47.93	74.00	26.07	PK	Vertical
4	10767.31	42.61	39.40	9.48	-39.00	52.49	74.00	21.51	PK	Vertical
5	15682.02	39.15	38.52	14.44	-39.17	52.94	74.00	21.06	PK	Vertical
6	17849.77	39.43	41.35	12.95	-42.06	51.67	74.00	22.33	PK	Vertical

**Note:**

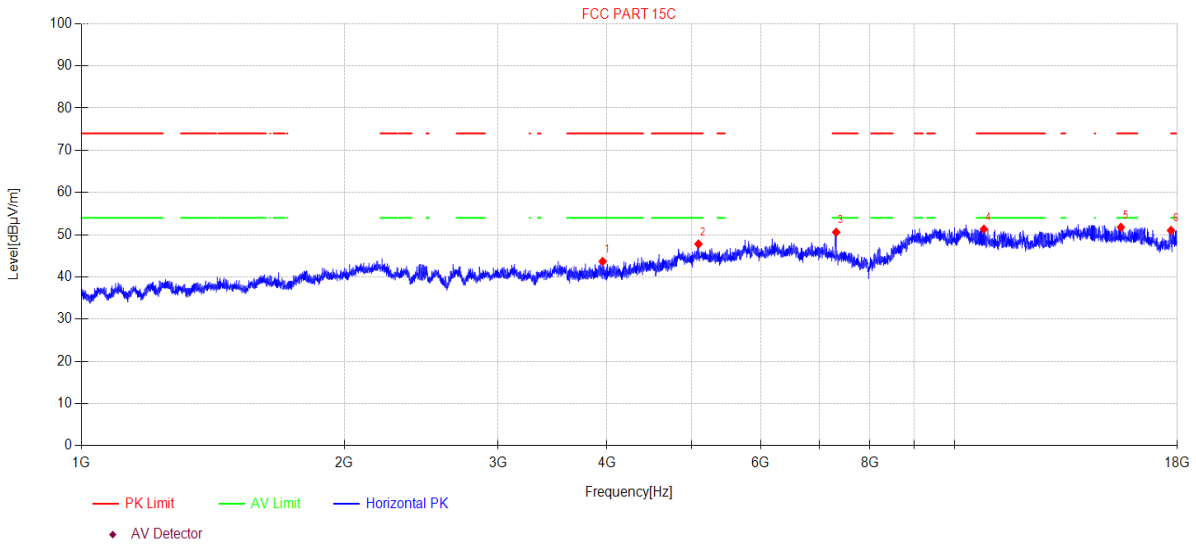
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\27  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3954.33	47.19	31.08	5.84	-40.42	43.69	74.00	30.31	PK	Horizontal
2	5090.65	46.49	33.38	8.00	-40.07	47.80	74.00	26.20	PK	Horizontal
3	7320.58	47.59	36.86	7.63	-41.50	50.58	74.00	23.42	PK	Horizontal
4	10807.84	41.44	39.39	9.51	-39.02	51.32	74.00	22.68	PK	Horizontal
5	15510.74	38.41	38.78	13.66	-39.07	51.78	74.00	22.22	PK	Horizontal
6	17700.79	39.58	40.40	12.77	-41.73	51.02	74.00	22.98	PK	Horizontal

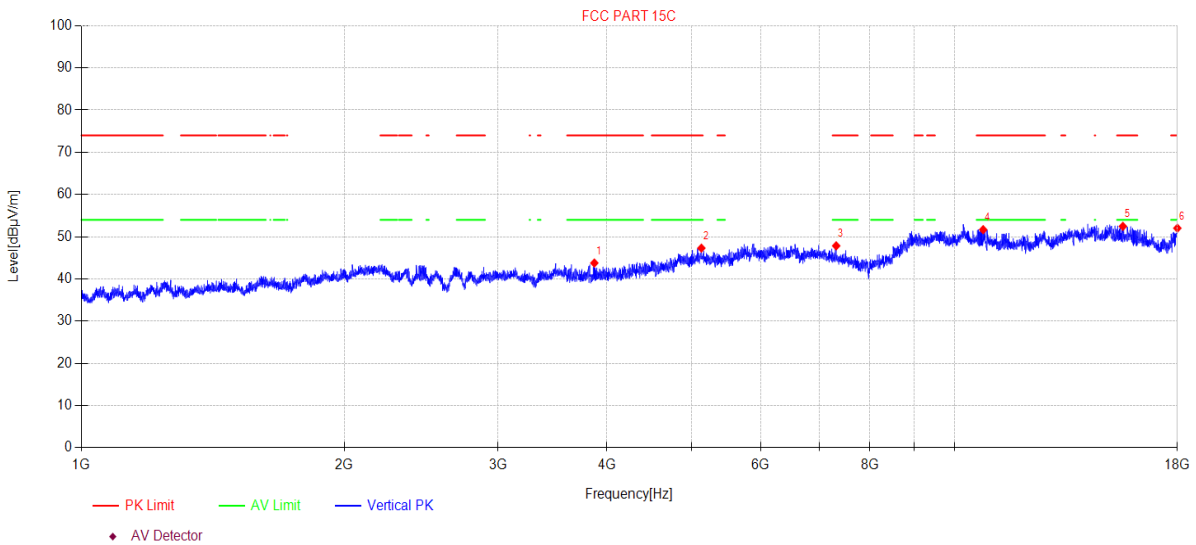
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\28  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3868.43	47.31	31.01	5.82	-40.37	43.77	74.00	30.23	PK	Vertical
2	5130.53	45.90	33.40	8.06	-40.06	47.30	74.00	26.70	PK	Vertical
3	7320.58	44.85	36.86	7.63	-41.50	47.84	74.00	26.16	PK	Vertical
4	10786.00	41.78	39.40	9.50	-39.01	51.67	74.00	22.33	PK	Vertical
5	15591.64	38.92	38.62	14.03	-39.11	52.46	74.00	21.54	PK	Vertical
6	18000.00	38.90	42.40	13.13	-42.40	52.03	74.00	21.97	PK	Vertical

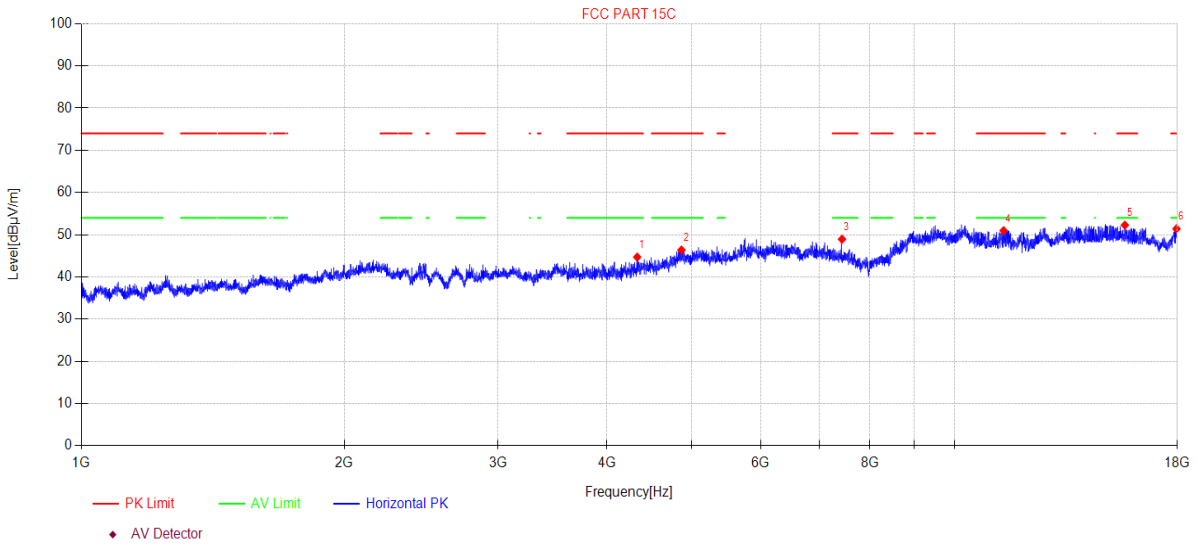
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\29  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4331.22	46.91	31.60	6.52	-40.33	44.70	74.00	29.30	PK	Horizontal
2	4867.64	45.39	33.52	7.60	-40.13	46.38	74.00	27.62	PK	Horizontal
3	7433.57	46.45	36.63	7.64	-41.78	48.94	74.00	25.06	PK	Horizontal
4	11384.97	40.97	39.28	9.99	-39.27	50.97	74.00	23.03	PK	Horizontal
5	15672.96	38.50	38.53	14.40	-39.16	52.27	74.00	21.73	PK	Horizontal
6	17958.43	38.44	42.19	13.08	-42.31	51.40	74.00	22.60	PK	Horizontal

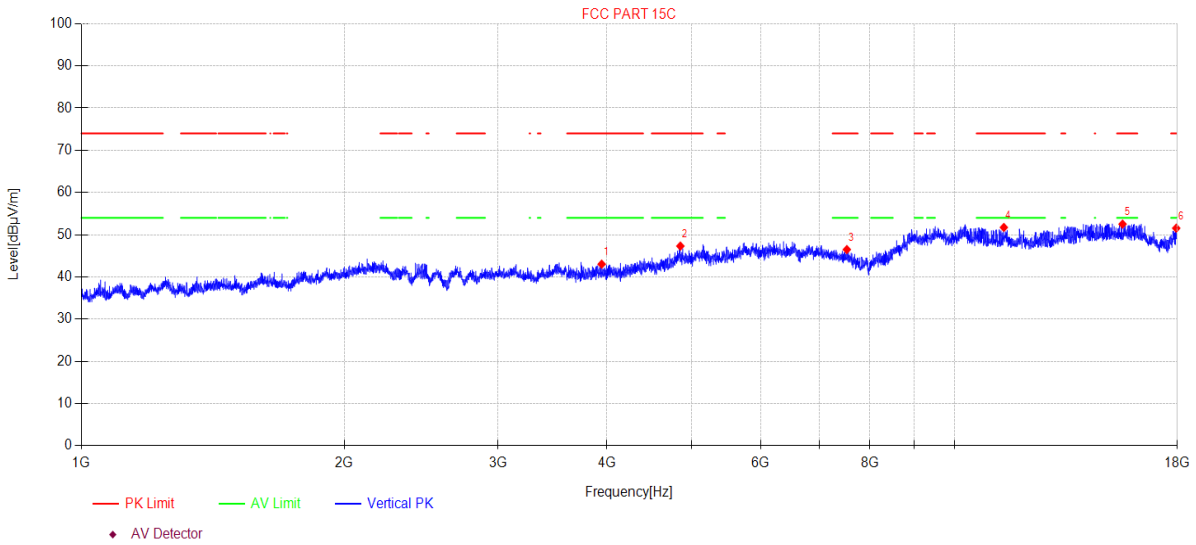
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\30  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3944.06	46.50	31.11	5.84	-40.42	43.03	74.00	30.97	PK	Vertical
2	4853.59	46.13	33.74	7.57	-40.13	47.31	74.00	26.69	PK	Vertical
3	7528.70	44.42	36.44	7.65	-42.02	46.49	74.00	27.51	PK	Vertical
4	11391.55	41.72	39.29	10.00	-39.27	51.74	74.00	22.26	PK	Vertical
5	15578.12	39.02	38.64	13.97	-39.11	52.52	74.00	21.48	PK	Vertical
6	17948.05	38.62	42.14	13.07	-42.28	51.55	74.00	22.45	PK	Vertical

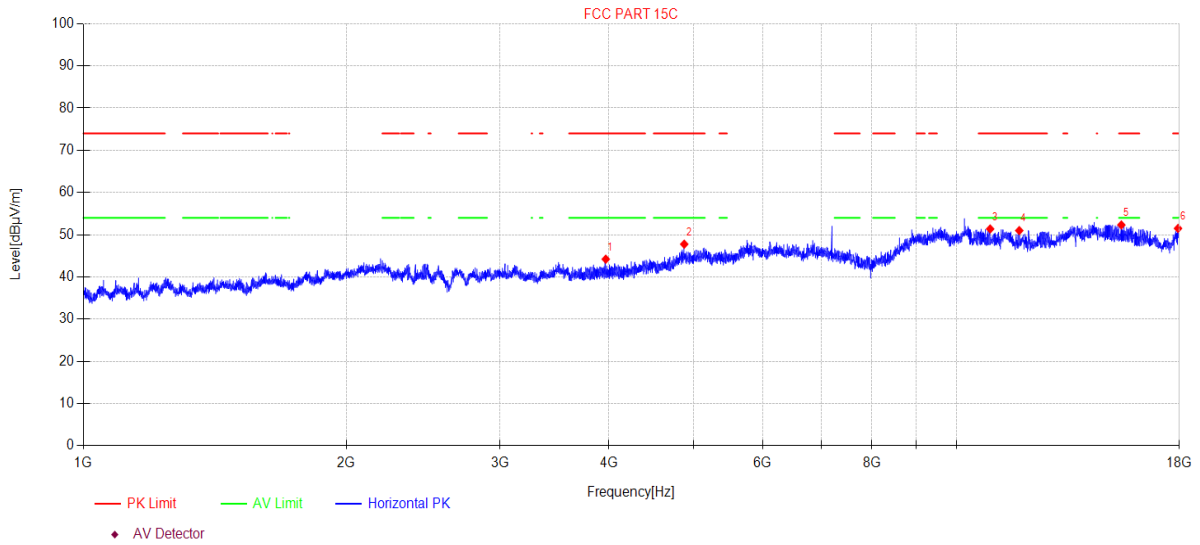
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\57  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3965.78	47.76	31.04	5.84	-40.43	44.21	74.00	29.79	PK	Horizontal
2	4877.50	46.91	33.36	7.62	-40.13	47.76	74.00	26.24	PK	Horizontal
3	10930.35	41.53	39.30	9.60	-39.06	51.37	74.00	22.63	PK	Horizontal
4	11800.37	41.19	38.90	10.36	-39.47	50.98	74.00	23.02	PK	Horizontal
5	15448.11	39.07	38.90	13.38	-39.03	52.32	74.00	21.68	PK	Horizontal
6	17937.68	38.61	42.09	13.06	-42.26	51.50	74.00	22.50	PK	Horizontal

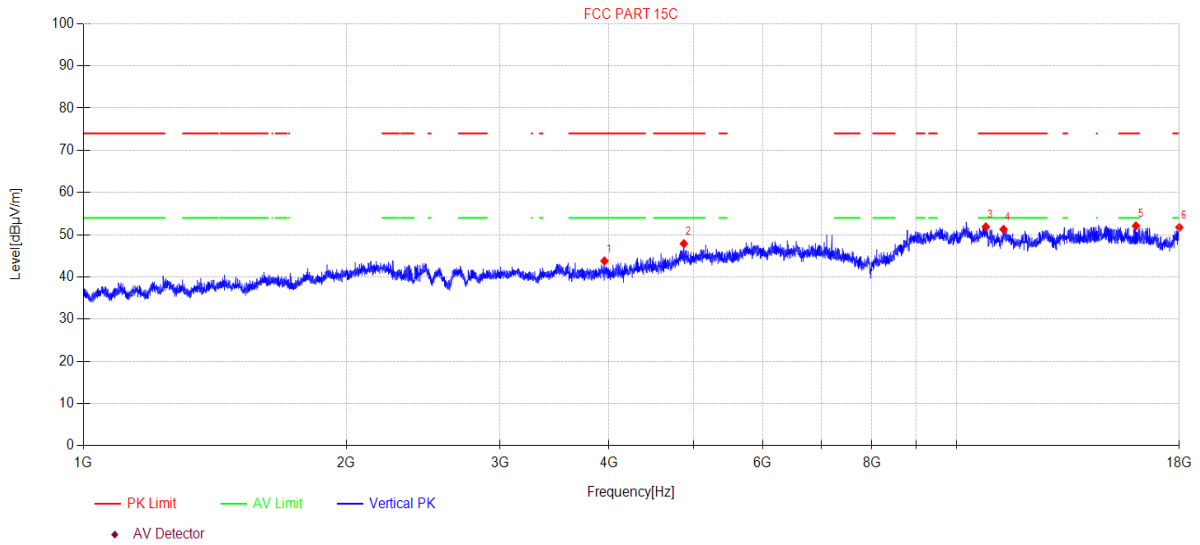
**Note:**

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\58  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3952.05	47.27	31.09	5.84	-40.42	43.78	74.00	30.22	PK	Vertical
2	4873.27	46.97	33.43	7.61	-40.13	47.88	74.00	26.12	PK	Vertical
3	10804.72	41.97	39.40	9.51	-39.02	51.86	74.00	22.14	PK	Vertical
4	11322.62	41.36	39.22	9.94	-39.24	51.28	74.00	22.72	PK	Vertical
5	16053.46	37.87	37.95	15.67	-39.40	52.09	74.00	21.91	PK	Vertical
6	18000.00	38.62	42.40	13.13	-42.40	51.75	74.00	22.25	PK	Vertical

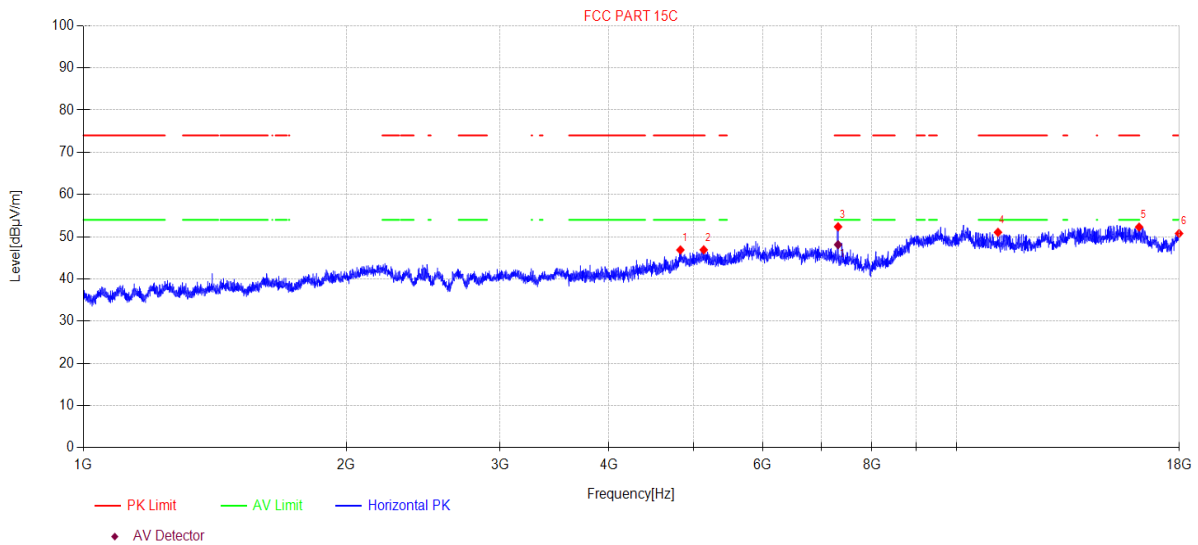
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\59  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4828.41	46.25	33.24	7.52	-40.14	46.87	74.00	27.13	PK	Horizontal
2	5134.98	45.50	33.40	8.06	-40.06	46.90	74.00	27.10	PK	Horizontal
3	7318.46	49.37	36.86	7.63	-41.50	52.36	74.00	21.64	PK	Horizontal
4	11156.95	41.18	39.24	9.79	-39.16	51.05	74.00	22.95	PK	Horizontal
5	16188.57	38.85	37.81	15.14	-39.51	52.29	74.00	21.71	PK	Horizontal
6	17989.60	37.68	42.35	13.12	-42.38	50.77	74.00	23.23	PK	Horizontal

Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	7318.46	45.13	36.86	7.63	-41.50	48.12	54.00	5.88	AV	Horizontal

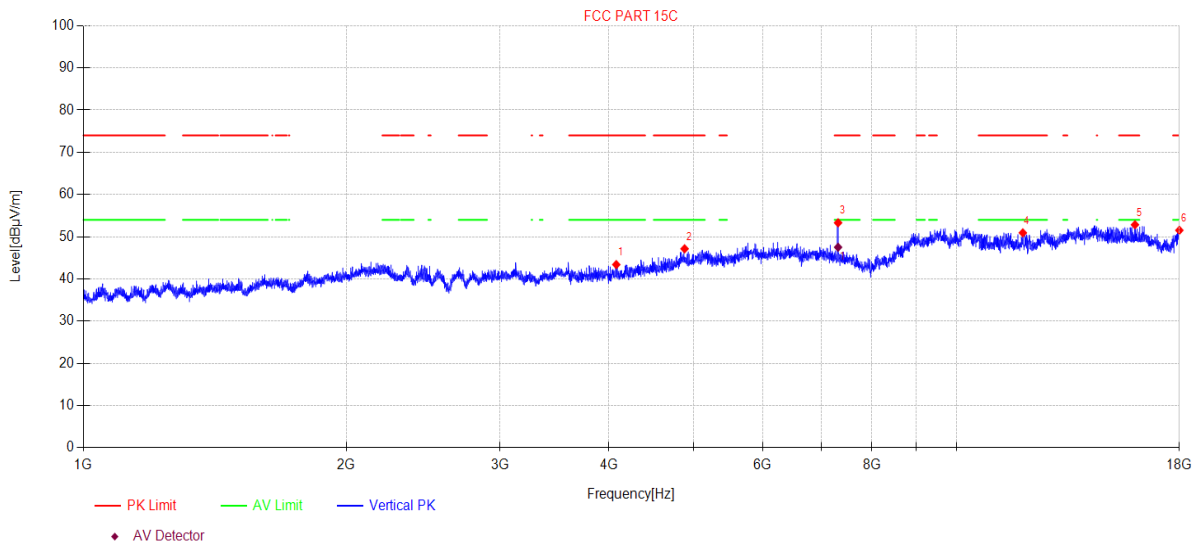
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\60  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4077.35	46.76	31.05	6.01	-40.42	43.40	74.00	30.60	PK	Vertical
2	4881.73	46.34	33.29	7.63	-40.12	47.14	74.00	26.86	PK	Vertical
3	7318.46	50.31	36.86	7.63	-41.50	53.30	74.00	20.70	PK	Vertical
4	11913.45	41.04	38.94	10.46	-39.52	50.92	74.00	23.08	PK	Vertical
5	16011.76	38.39	37.99	15.83	-39.37	52.84	74.00	21.16	PK	Vertical
6	18000.00	38.39	42.40	13.13	-42.40	51.52	74.00	22.48	PK	Vertical

Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	7318.46	44.52	36.86	7.63	-41.50	47.51	54.00	6.49	AV	Vertical

**Note:**

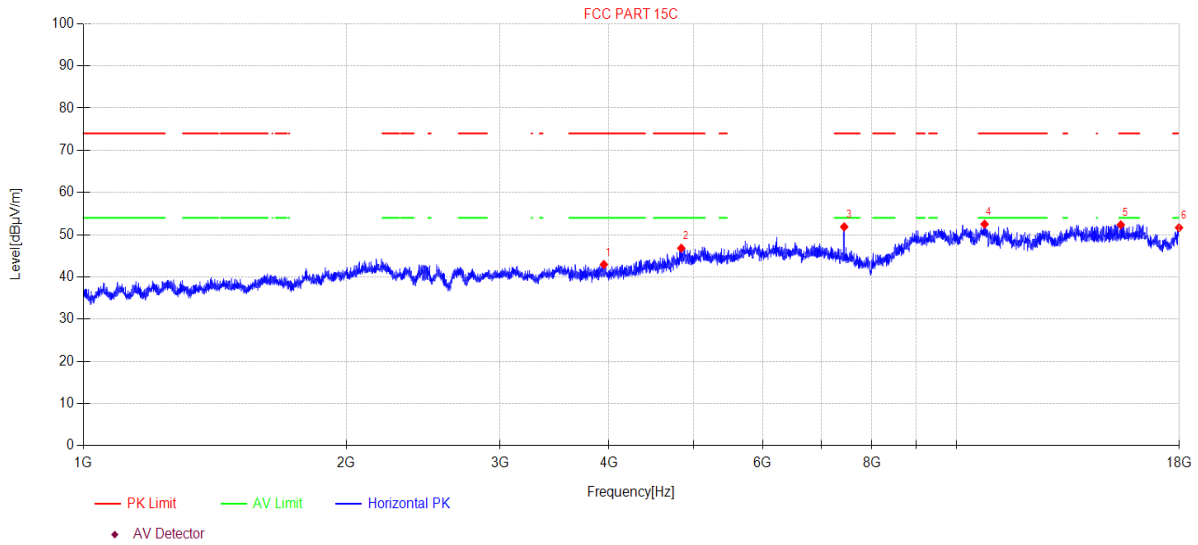
- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHZ **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\61  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3946.34	46.41	31.11	5.84	-40.42	42.94	74.00	31.06	PK	Horizontal
2	4839.59	45.86	33.53	7.55	-40.14	46.80	74.00	27.20	PK	Horizontal
3	7437.87	49.39	36.62	7.64	-41.79	51.86	74.00	22.14	PK	Horizontal
4	10770.43	42.62	39.40	9.49	-39.01	52.50	74.00	21.50	PK	Horizontal
5	15425.80	39.15	38.95	13.28	-39.02	52.36	74.00	21.64	PK	Horizontal
6	17984.40	38.61	42.32	13.11	-42.37	51.67	74.00	22.33	PK	Horizontal

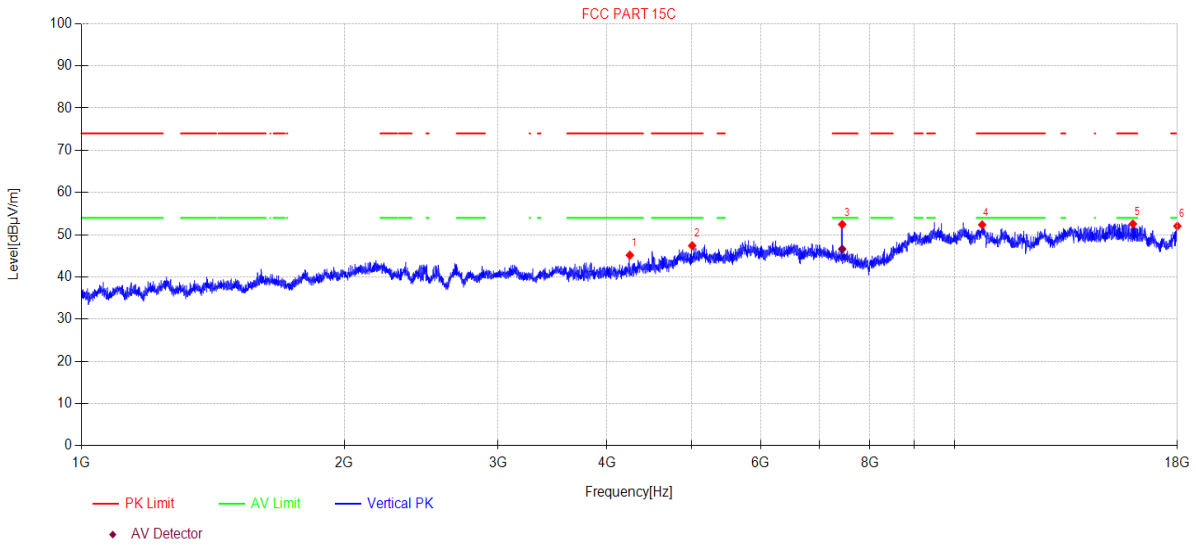
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\62  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4248.16	47.77	31.39	6.35	-40.36	45.15	74.00	28.85	PK	Vertical
2	5007.48	46.39	33.21	7.88	-40.08	47.40	74.00	26.60	PK	Vertical
3	7437.87	49.97	36.62	7.64	-41.79	52.44	74.00	21.56	PK	Vertical
4	10757.98	42.48	39.40	9.48	-39.00	52.36	74.00	21.64	PK	Vertical
5	16011.76	38.11	37.99	15.83	-39.37	52.56	74.00	21.44	PK	Vertical
6	18000.00	38.92	42.40	13.13	-42.40	52.05	74.00	21.95	PK	Vertical

Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	7437.87	44.13	36.62	7.64	-41.79	46.60	54.00	7.40	AV	Vertical

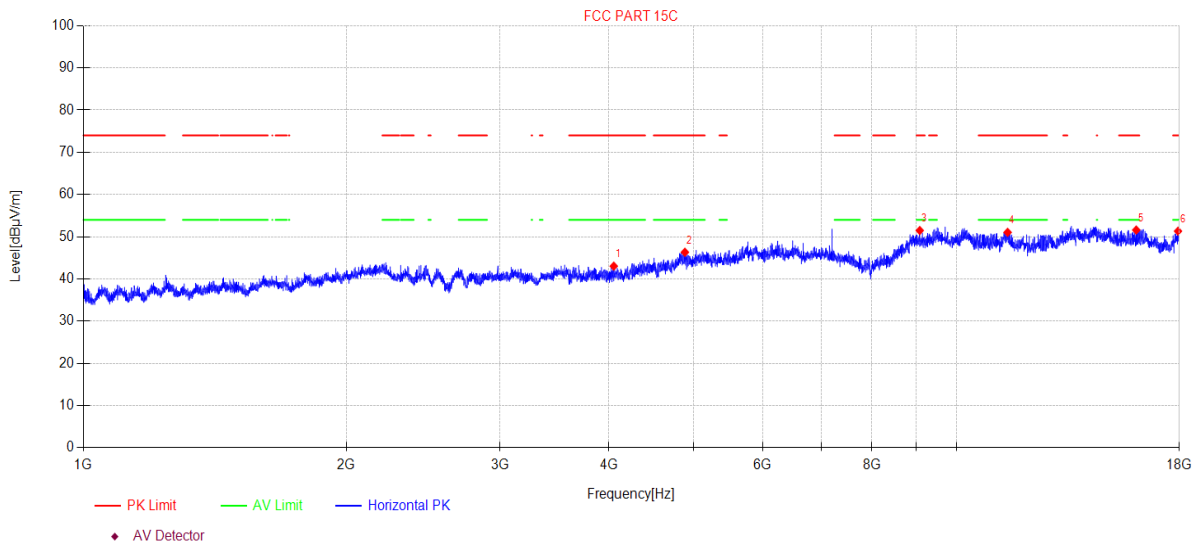
**Note:**

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\63  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4050.34	46.51	31.00	5.95	-40.43	43.03	74.00	30.97	PK	Horizontal
2	4885.96	45.58	33.22	7.64	-40.12	46.32	74.00	27.68	PK	Horizontal
3	9076.70	43.06	38.45	8.75	-38.78	51.48	74.00	22.52	PK	Horizontal
4	11444.35	41.02	39.26	10.05	-39.30	51.03	74.00	22.97	PK	Horizontal
5	16067.39	37.46	37.93	15.61	-39.41	51.59	74.00	22.41	PK	Horizontal
6	17937.68	38.43	42.09	13.06	-42.26	51.32	74.00	22.68	PK	Horizontal

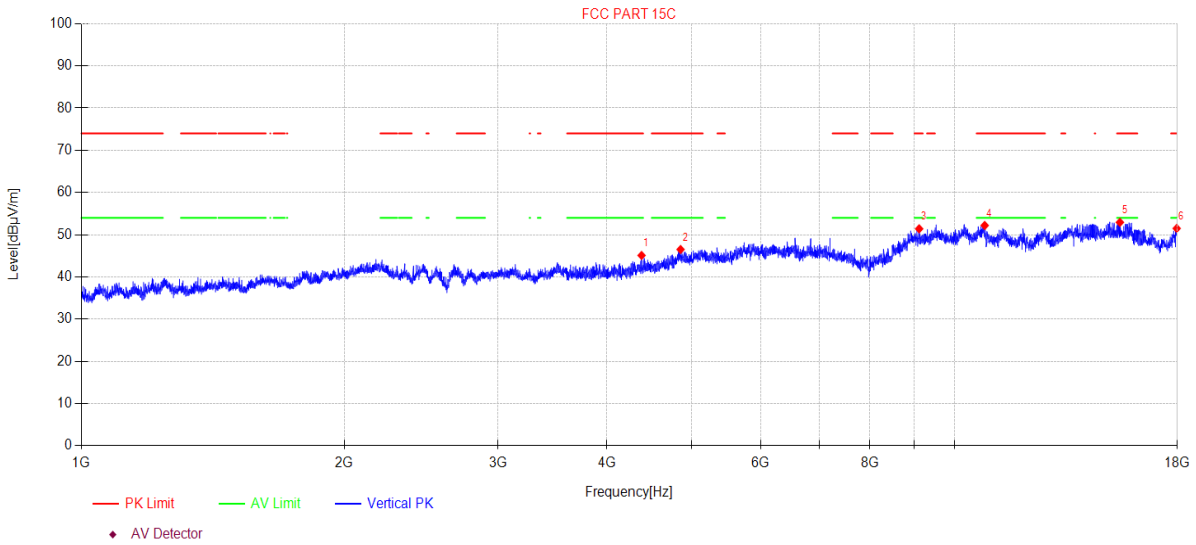
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\64  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4381.58	47.12	31.66	6.62	-40.31	45.09	74.00	28.91	PK	Vertical
2	4856.40	45.36	33.70	7.58	-40.13	46.51	74.00	27.49	PK	Vertical
3	9110.87	42.93	38.50	8.75	-38.78	51.40	74.00	22.60	PK	Vertical
4	10829.73	42.33	39.37	9.53	-39.03	52.20	74.00	21.80	PK	Vertical
5	15470.44	39.63	38.86	13.48	-39.04	52.93	74.00	21.07	PK	Vertical
6	17968.81	38.50	42.24	13.09	-42.33	51.50	74.00	22.50	PK	Vertical

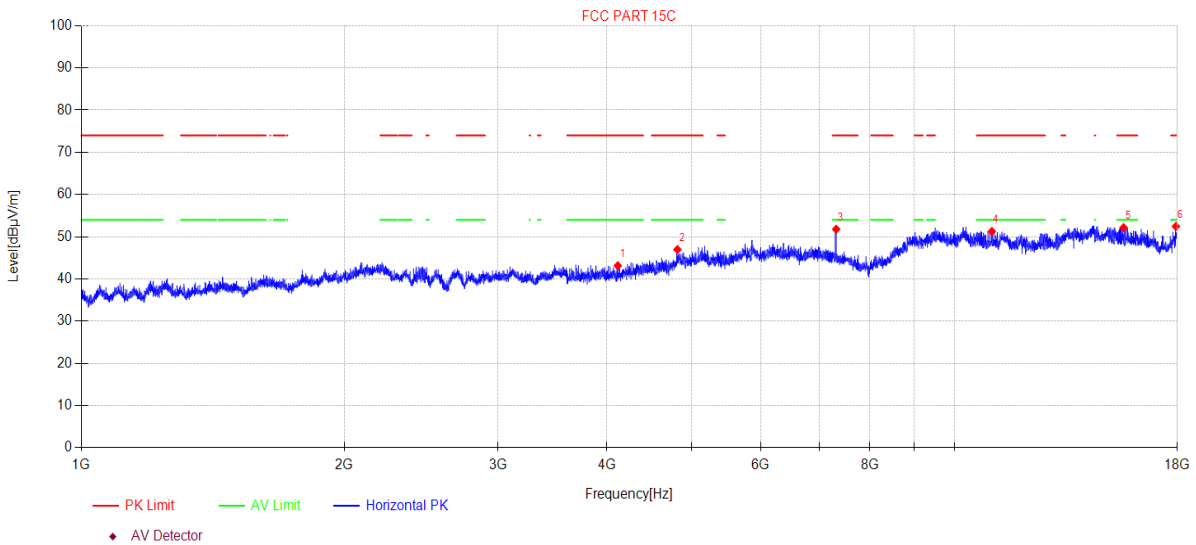
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\65  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4115.23	46.34	31.13	6.08	-40.41	43.14	74.00	30.86	PK	Horizontal
2	4815.87	46.70	32.91	7.50	-40.15	46.96	74.00	27.04	PK	Horizontal
3	7320.58	48.78	36.86	7.63	-41.50	51.77	74.00	22.23	PK	Horizontal
4	11038.29	41.39	39.30	9.68	-39.11	51.26	74.00	22.74	PK	Horizontal
5	15618.70	38.56	38.58	14.15	-39.13	52.16	74.00	21.84	PK	Horizontal
6	17932.50	39.58	42.06	13.05	-42.25	52.44	74.00	21.56	PK	Horizontal

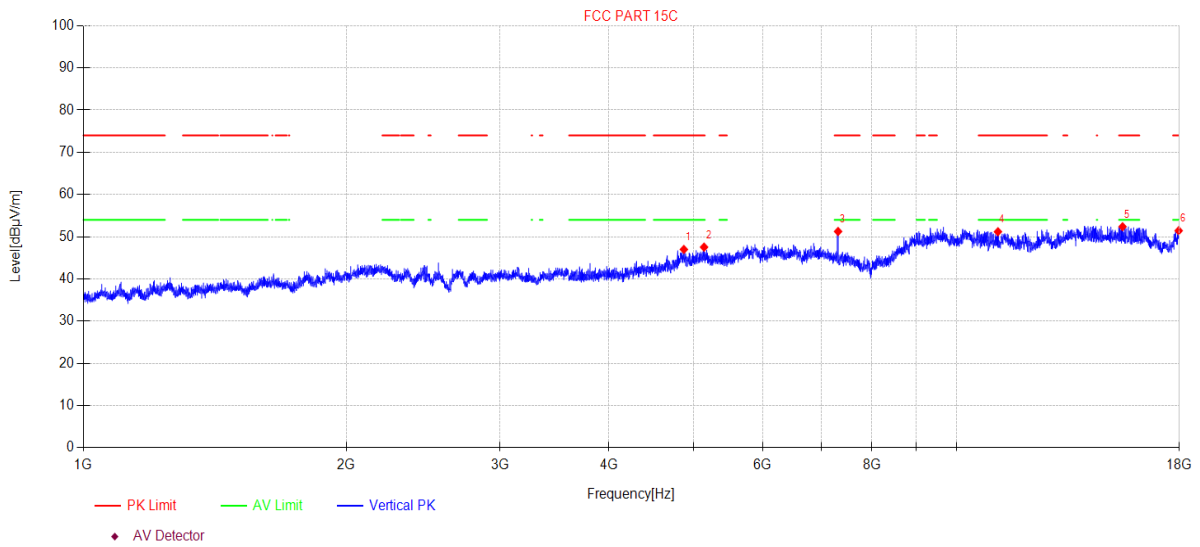
**Note:**

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2440MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\66  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4873.27	46.08	33.43	7.61	-40.13	46.99	74.00	27.01	PK	Vertical
2	5139.43	46.13	33.40	8.07	-40.06	47.54	74.00	26.46	PK	Vertical
3	7318.46	48.26	36.86	7.63	-41.50	51.25	74.00	22.75	PK	Vertical
4	11156.95	41.32	39.24	9.79	-39.16	51.19	74.00	22.81	PK	Vertical
5	15497.29	39.03	38.81	13.60	-39.06	52.38	74.00	21.62	PK	Vertical
6	17968.81	38.43	42.24	13.09	-42.33	51.43	74.00	22.57	PK	Vertical

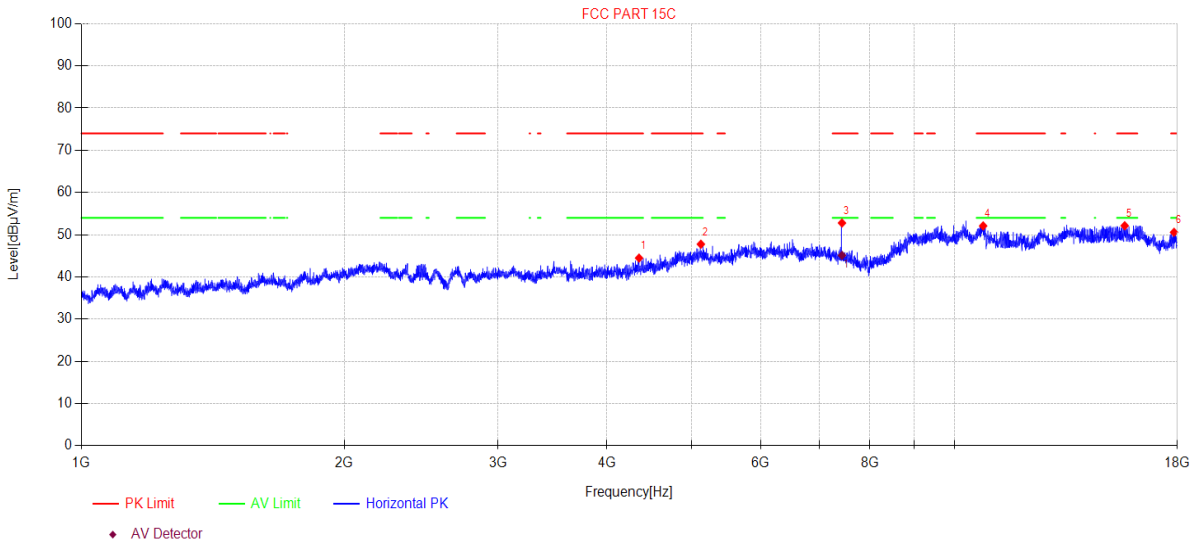
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\67  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4352.56	46.63	31.61	6.56	-40.32	44.48	74.00	29.52	PK	Horizontal
2	5123.12	46.38	33.40	8.04	-40.06	47.76	74.00	26.24	PK	Horizontal
3	7433.57	50.29	36.63	7.64	-41.78	52.78	74.00	21.22	PK	Horizontal
4	10786.00	42.20	39.40	9.50	-39.01	52.09	74.00	21.91	PK	Horizontal
5	15668.43	38.38	38.53	14.38	-39.16	52.13	74.00	21.87	PK	Horizontal
6	17844.61	38.40	41.29	12.94	-42.05	50.58	74.00	23.42	PK	Horizontal

Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	7433.57	42.63	36.63	7.64	-41.78	45.12	54.00	8.88	AV	Horizontal

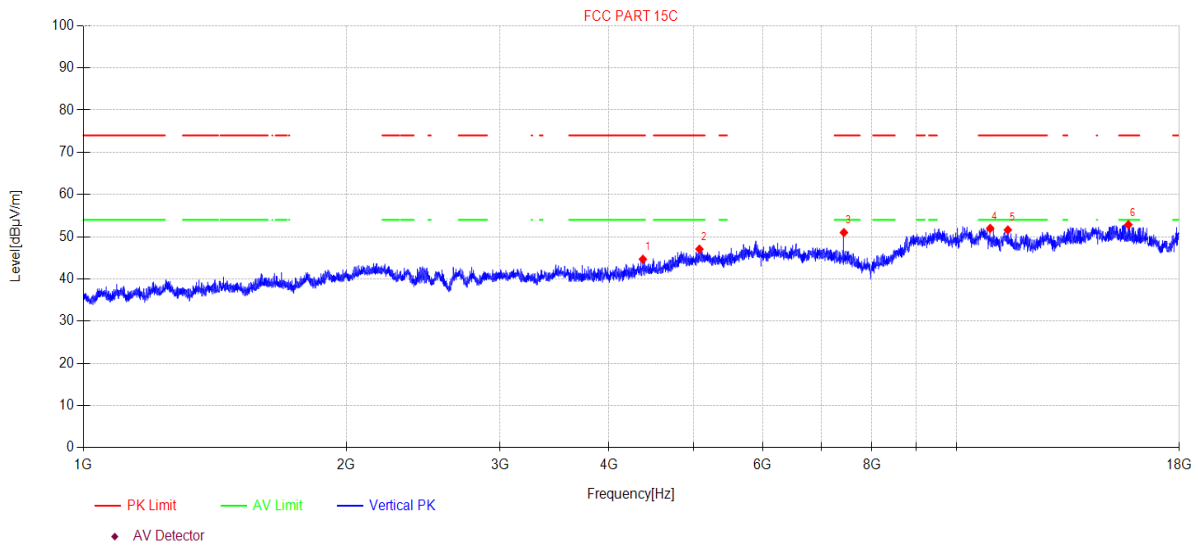
**Note:**

- Level = Reading + Cable loss + Antenna Factor + AMP
- If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\68  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4373.99	46.72	31.65	6.61	-40.31	44.67	74.00	29.33	PK	Vertical
2	5077.43	45.81	33.35	7.98	-40.07	47.07	74.00	26.93	PK	Vertical
3	7431.42	48.50	36.64	7.64	-41.78	51.00	74.00	23.00	PK	Vertical
4	10930.35	42.15	39.30	9.60	-39.06	51.99	74.00	22.01	PK	Vertical
5	11450.96	41.61	39.25	10.05	-39.30	51.61	74.00	22.39	PK	Vertical
6	15736.50	38.93	38.43	14.69	-39.20	52.85	74.00	21.15	PK	Vertical

**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

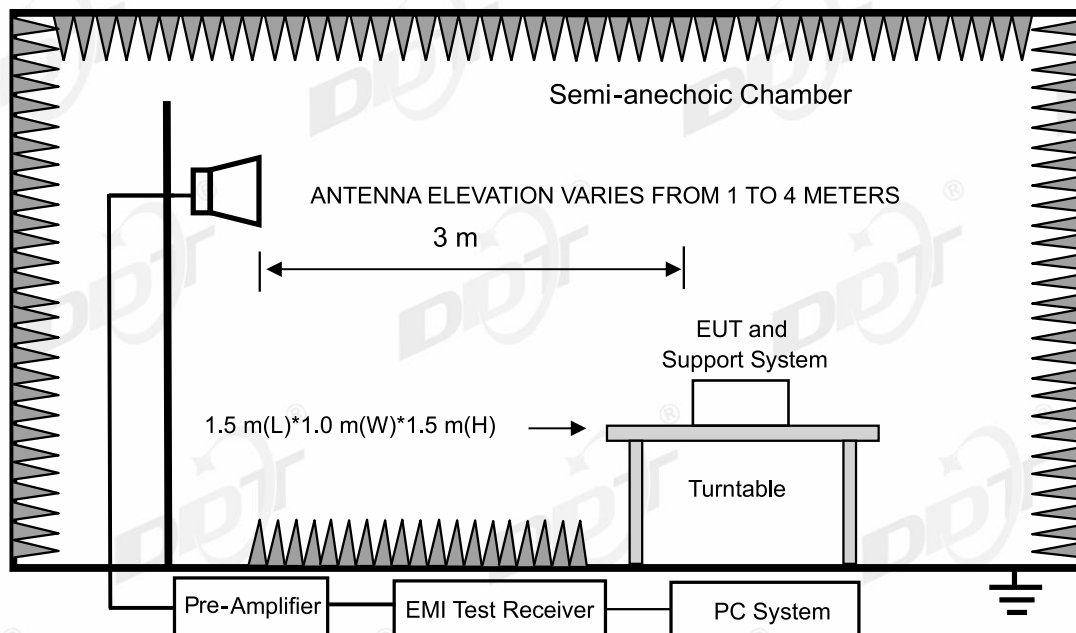


## 11. Emissions in Restricted Frequency Bands

### 11.1. Test equipment

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑Radiation 3#Chamber				
EMI TEST RECEIVER	R&S	ESU26	100472	2024/04/22
Double Ridged Horn Antenna	Schwarzbeck	BBHA 9120 D	02468	2024/09/17
Pre-amplifier	COM-POWER	PAM-118A	18040084	2024/07/14
RF Cable	Yuhu	JCTB810-NJ-NJ-9M+ ZT26S-SMAJ-SMAJ-1M	21123964	2024/04/22
Test Software	Tonscend	JS32-RE	V 5.0.0.1	N/A

### 11.2. Block diagram of test setup



### 11.3. Limit

All restriction band should comply with 15.209, other emission should be at least 20 dB below the fundamental.

### 11.4. Test procedure

Same with Radiated Emission except change investigated frequency range from 2310 MHz to 2410 MHz and 2475 MHz to 2500 MHz.

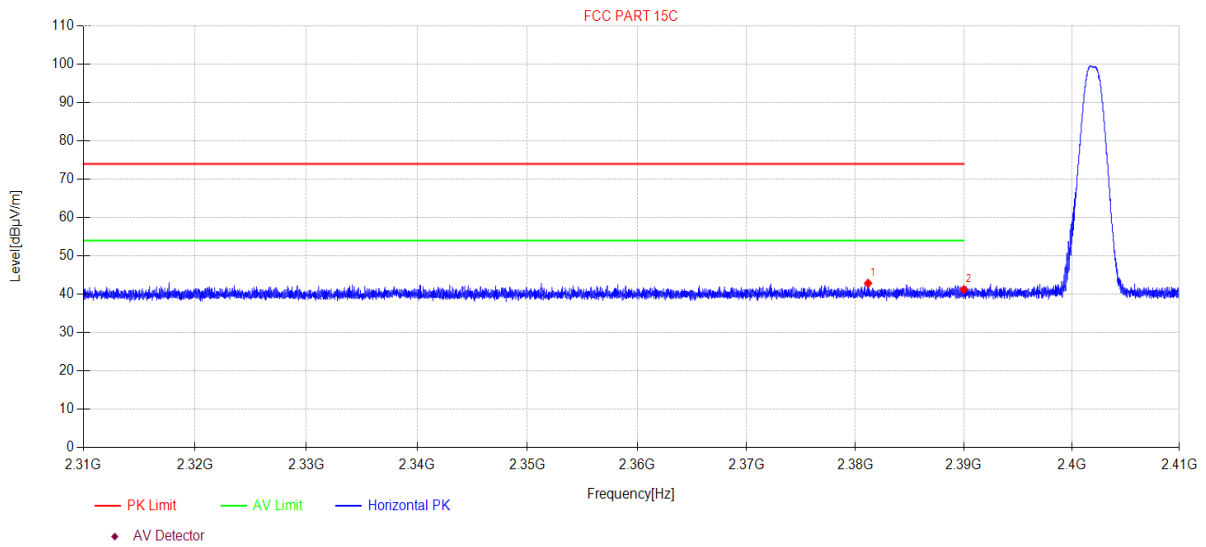
### 11.5. Test result

Pass. (See below detailed test result)

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\31  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2381.17	49.89	27.22	3.86	-38.09	42.88	74.00	31.12	PK	Horizontal
2	2390.00	48.23	27.26	3.87	-38.11	41.25	74.00	32.75	PK	Horizontal

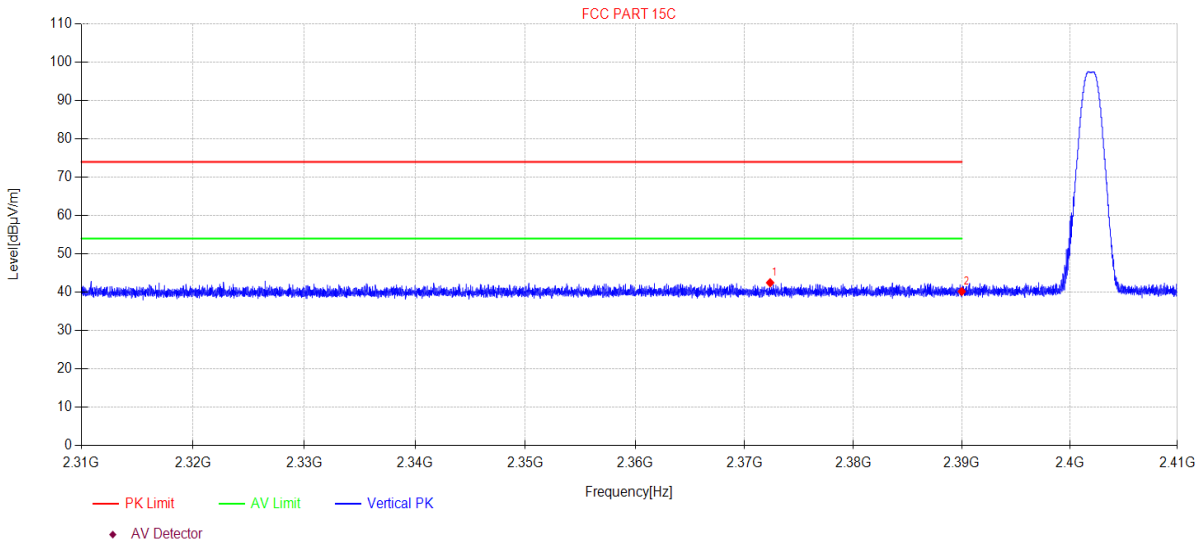
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\32  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2372.35	49.51	27.19	3.85	-38.06	42.49	74.00	31.51	PK	Vertical
2	2390.00	47.20	27.26	3.87	-38.11	40.22	74.00	33.78	PK	Vertical

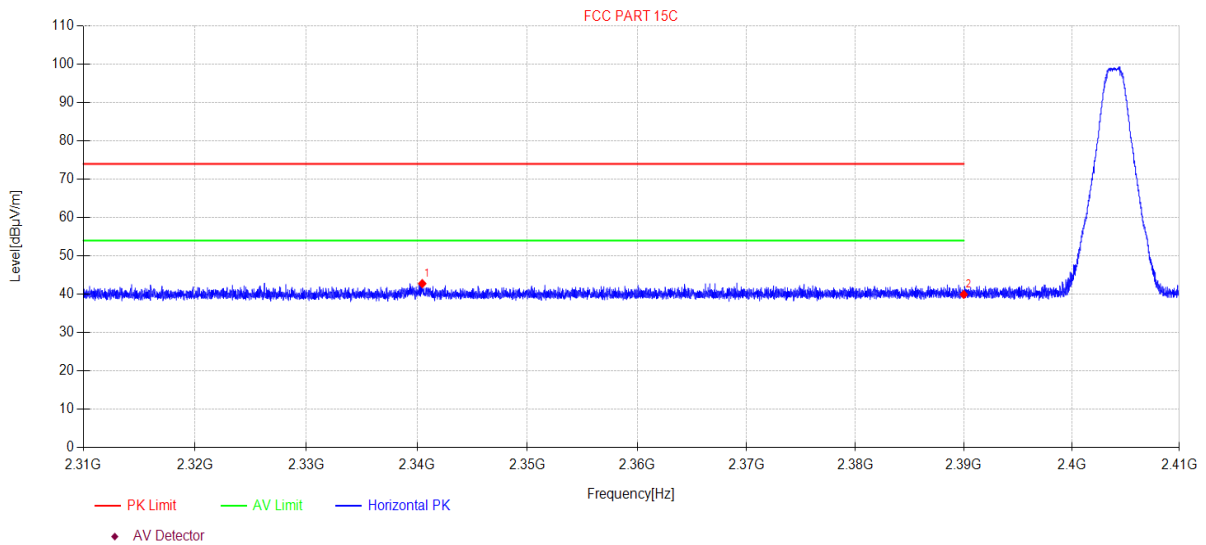
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\33  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2340.47	49.88	27.04	3.83	-37.97	42.78	74.00	31.22	PK	Horizontal
2	2390.00	46.93	27.26	3.87	-38.11	39.95	74.00	34.05	PK	Horizontal

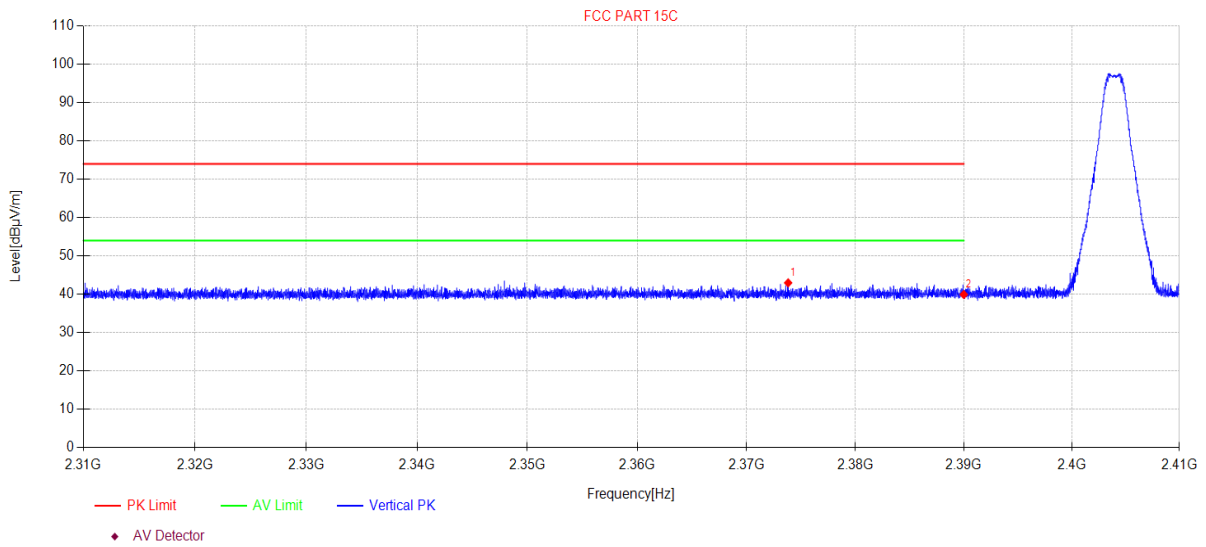
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\34  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2373.82	50.00	27.20	3.85	-38.07	42.98	74.00	31.02	PK	Vertical
2	2390.00	46.92	27.26	3.87	-38.11	39.94	74.00	34.06	PK	Vertical

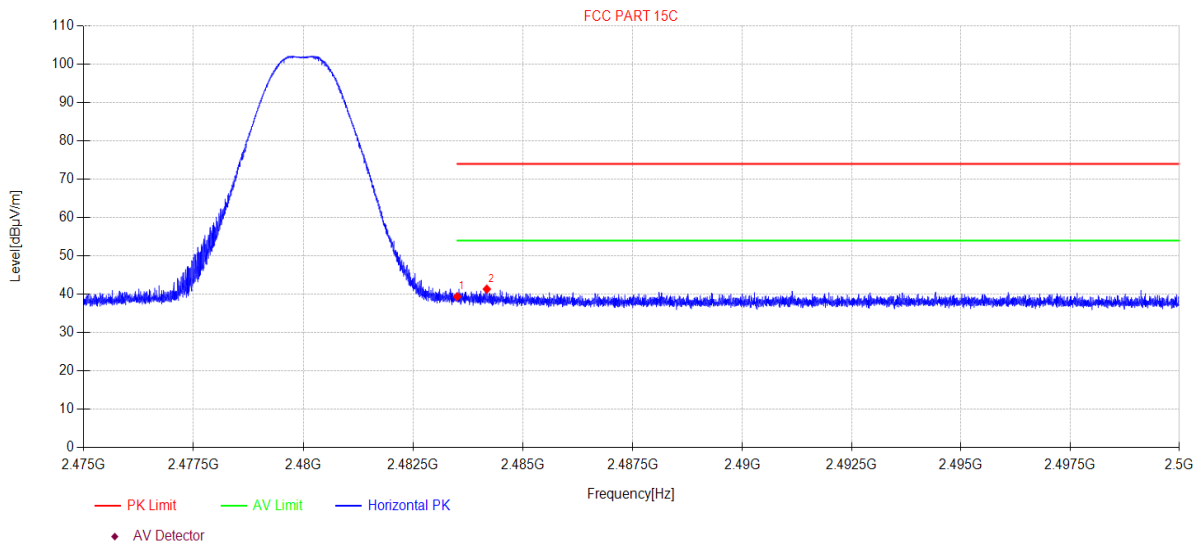
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\35  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	46.32	27.53	3.94	-38.38	39.41	74.00	34.59	PK	Horizontal
2	2484.18	48.25	27.54	3.94	-38.38	41.35	74.00	32.65	PK	Horizontal

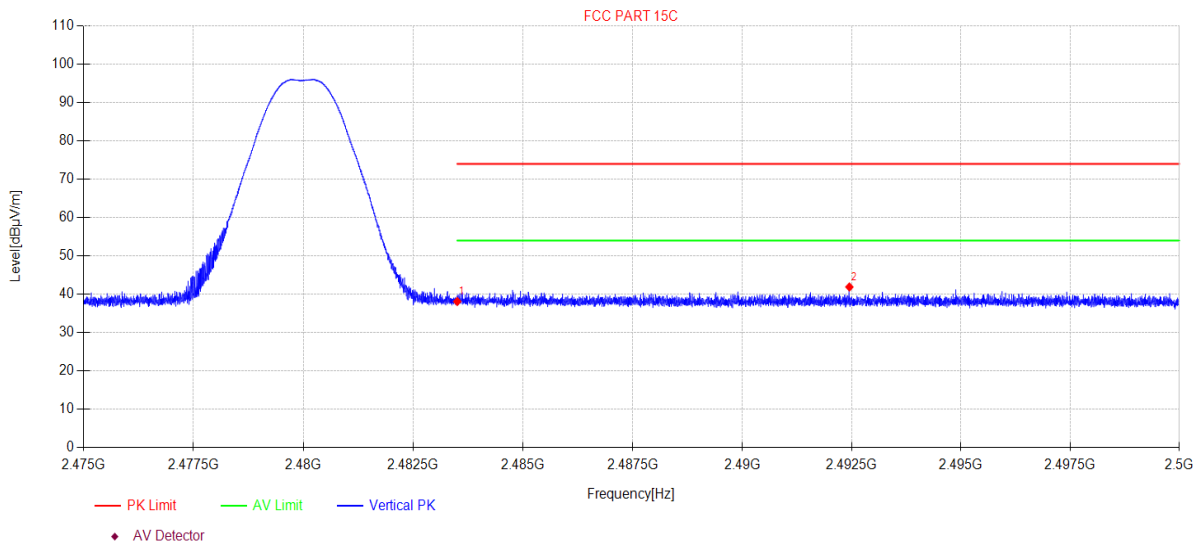
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\36  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	45.03	27.53	3.94	-38.38	38.12	74.00	35.88	PK	Vertical
2	2492.45	48.79	27.57	3.94	-38.40	41.90	74.00	32.10	PK	Vertical

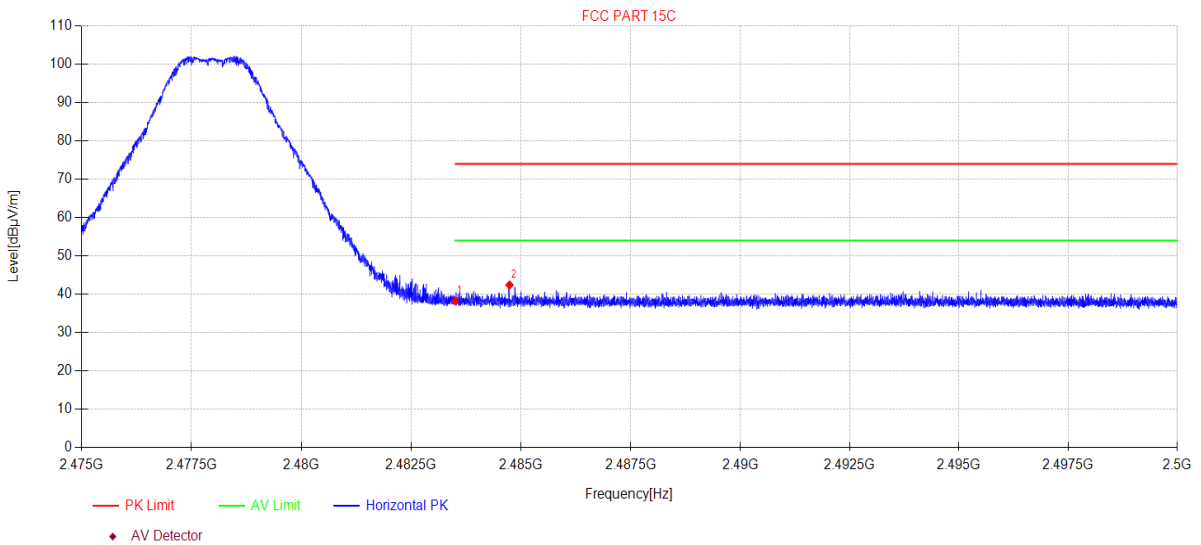
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\37  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	45.19	27.53	3.94	-38.38	38.28	74.00	35.72	PK	Horizontal
2	2484.74	49.32	27.54	3.94	-38.38	42.42	74.00	31.58	PK	Horizontal

**Note:**

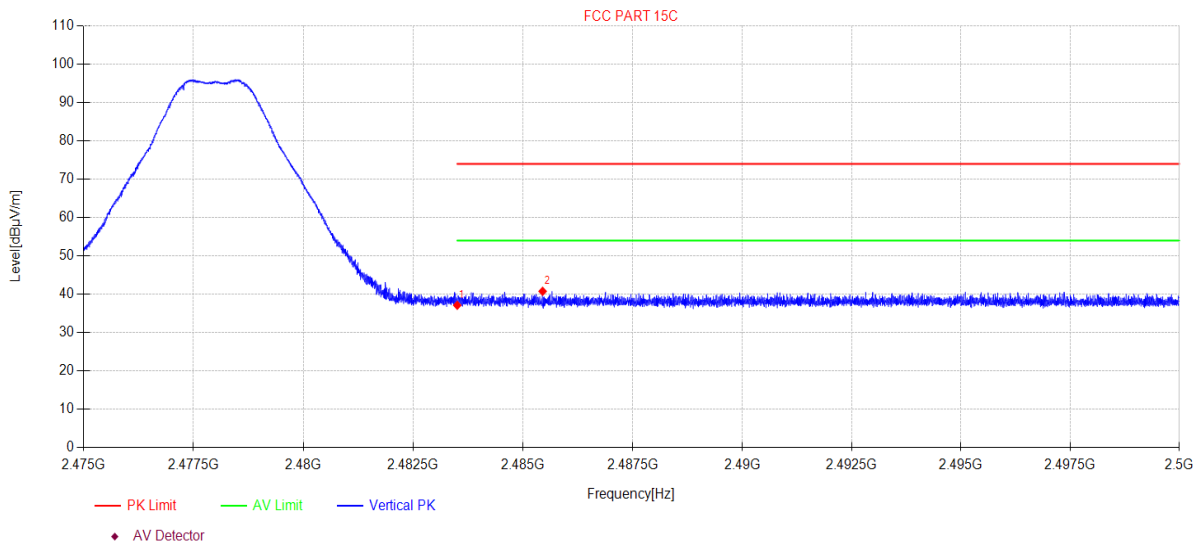
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\38  
**Memo:** Left Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	44.05	27.53	3.94	-38.38	37.14	74.00	36.86	PK	Vertical
2	2485.45	47.68	27.54	3.94	-38.38	40.78	74.00	33.22	PK	Vertical

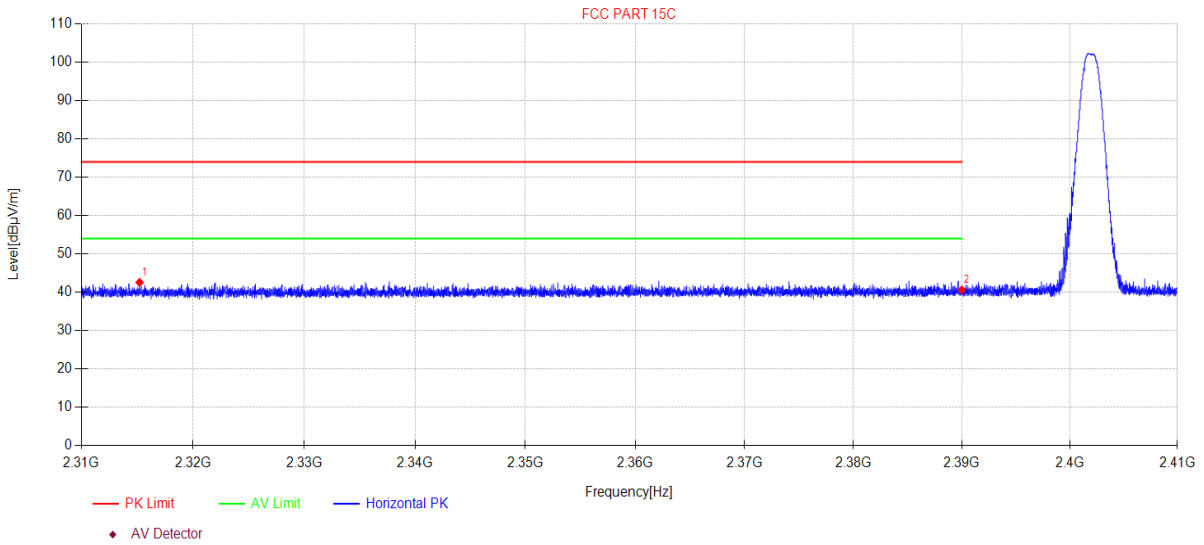
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\69  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2315.21	49.79	26.89	3.81	-37.90	42.59	74.00	31.41	PK	Horizontal
2	2390.00	47.60	27.26	3.87	-38.11	40.62	74.00	33.38	PK	Horizontal

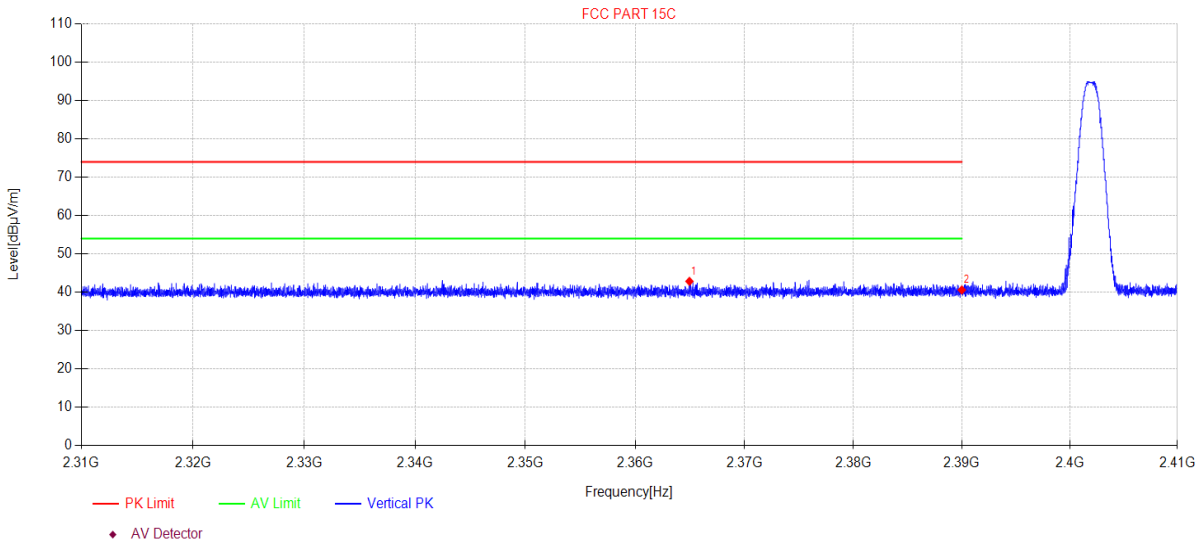
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2402MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\70  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2364.96	49.88	27.16	3.85	-38.04	42.85	74.00	31.15	PK	Vertical
2	2390.00	47.58	27.26	3.87	-38.11	40.60	74.00	33.40	PK	Vertical

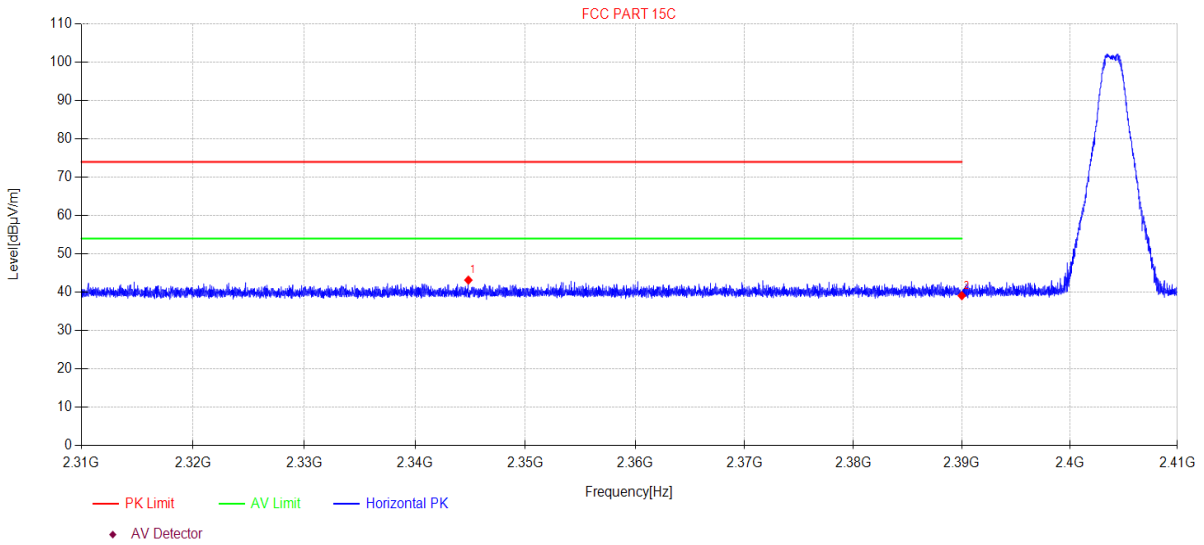
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\71  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2344.83	50.26	27.07	3.83	-37.99	43.17	74.00	30.83	PK	Horizontal
2	2390.00	46.11	27.26	3.87	-38.11	39.13	74.00	34.87	PK	Horizontal

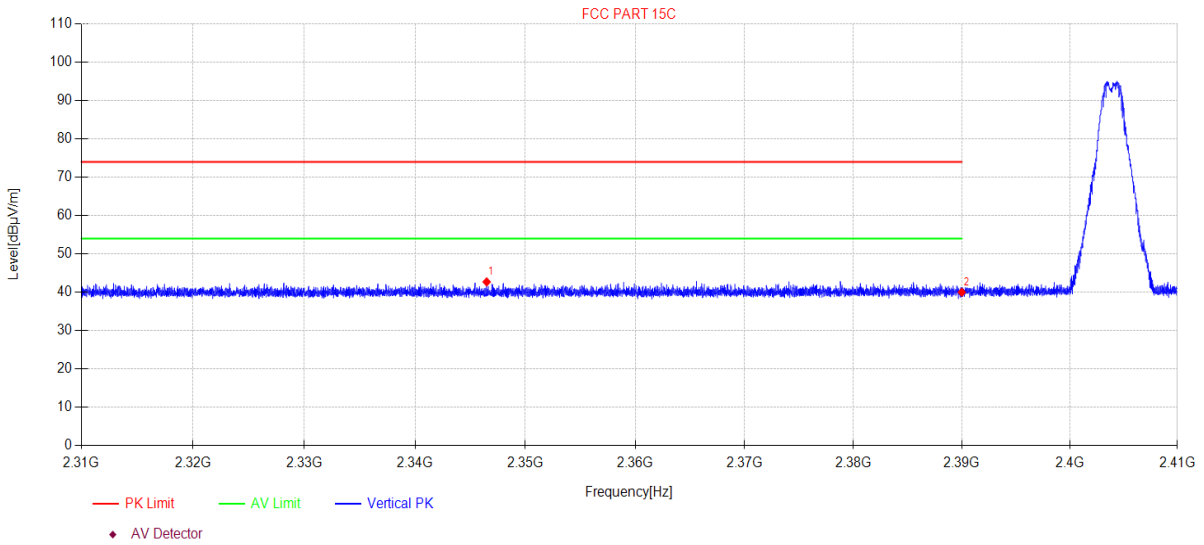
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2404MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\72  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2346.49	49.79	27.08	3.83	-37.99	42.71	74.00	31.29	PK	Vertical
2	2390.00	46.99	27.26	3.87	-38.11	40.01	74.00	33.99	PK	Vertical

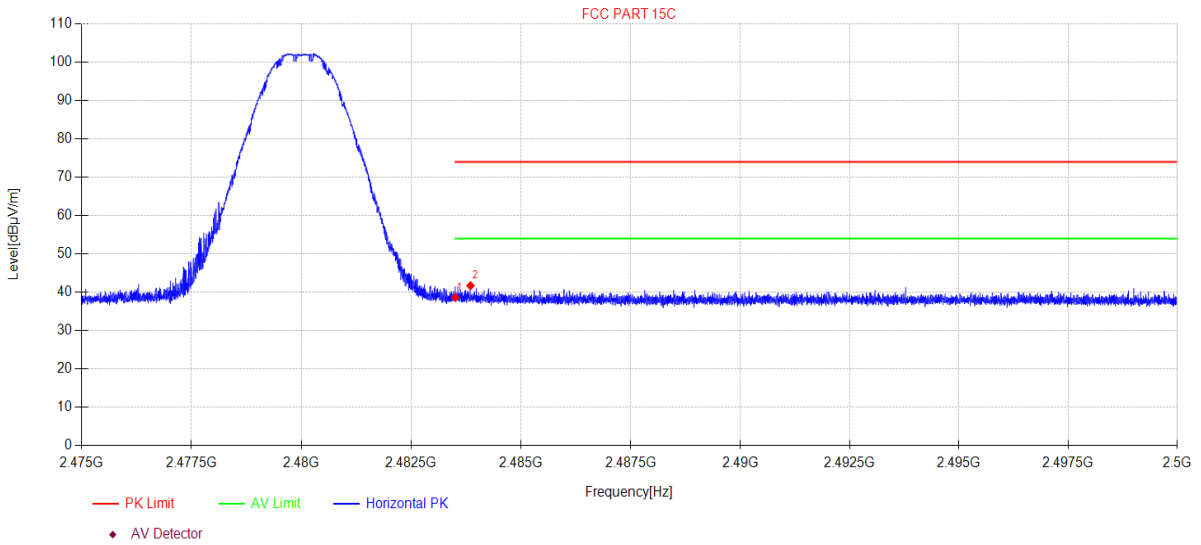
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\75  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	45.56	27.53	3.94	-38.38	38.65	74.00	35.35	PK	Horizontal
2	2483.85	48.62	27.54	3.94	-38.38	41.72	74.00	32.28	PK	Horizontal

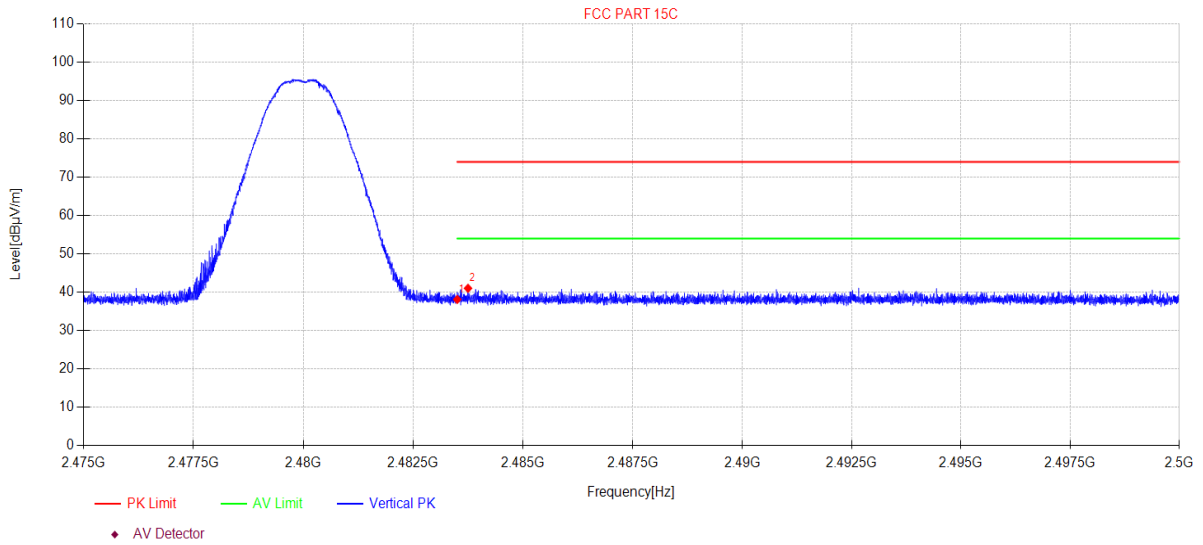
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 1M TX 2480MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\76  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	45.04	27.53	3.94	-38.38	38.13	74.00	35.87	PK	Vertical
2	2483.75	47.95	27.53	3.94	-38.38	41.04	74.00	32.96	PK	Vertical

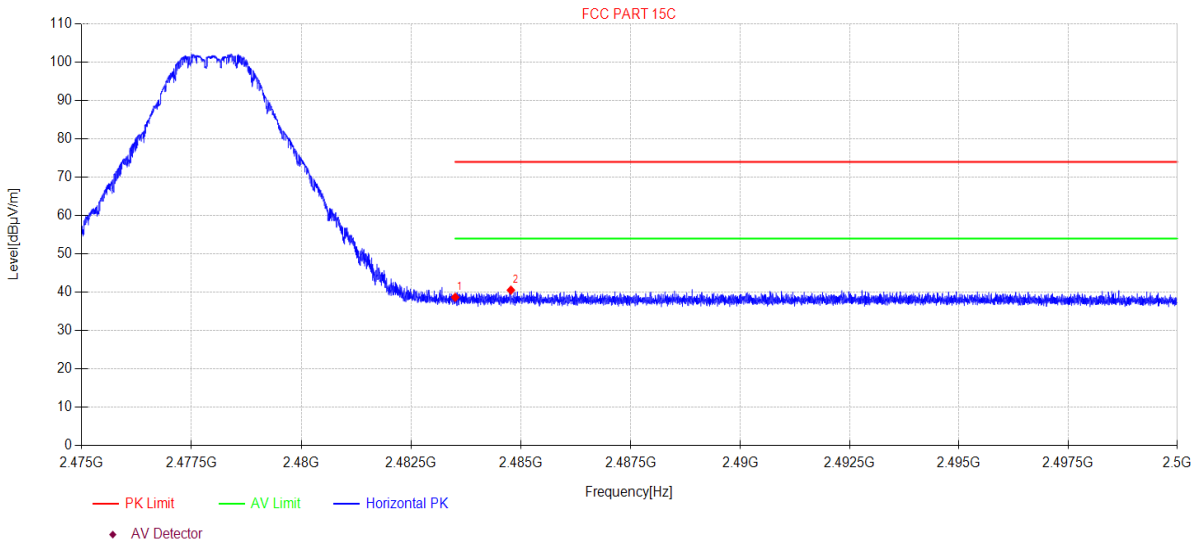
**Note:**

1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\73  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	45.60	27.53	3.94	-38.38	38.69	74.00	35.31	PK	Horizontal
2	2484.77	47.46	27.54	3.94	-38.38	40.56	74.00	33.44	PK	Horizontal

**Note:**

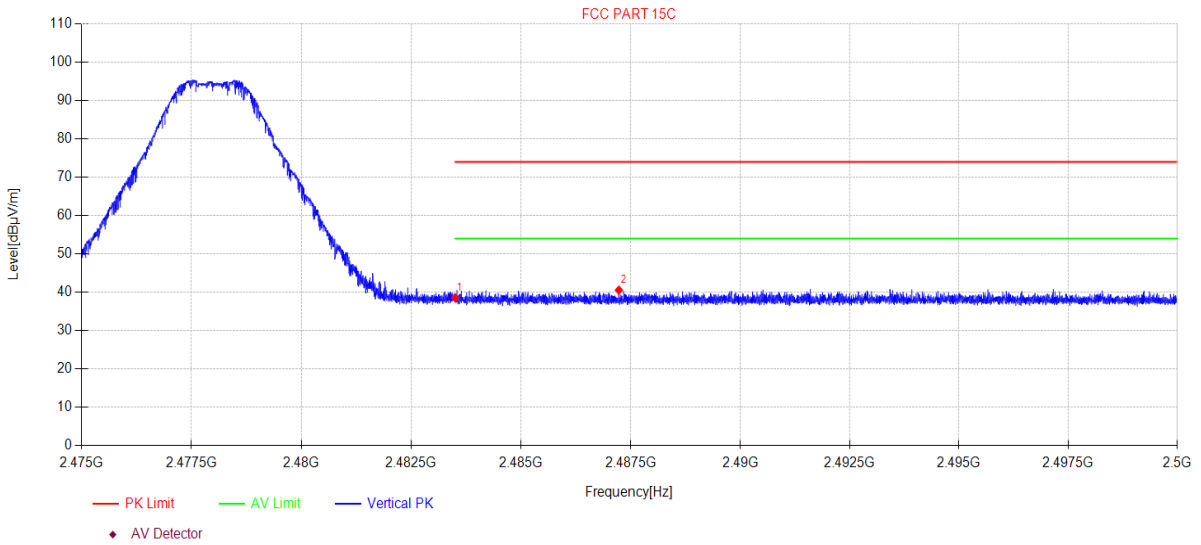
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.



# TR-4-E-009 Radiated Emission Test Result

**Test Date:** 2023-12-08 **Tested By:** Bairong  
**EUT:** LIBRATONE AIR H BLUETOOTH EARPHONES **Model Number:** LTW612  
**Test Mode:** BLE 2M TX 2478MHz **Power Supply:** DC 5V  
**Condition:** Temp:24.7°C;Humi:53.0% **Test Site:** DDT 3# Chamber  
**File Path:** d:\ts\2023 report data\Q23120513-4E LTW612\FCC ABOVE 1G\74  
**Memo:** Right Side Sample Number: S23120513-01

## Test Graph



Data List										
N O.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	2483.50	45.48	27.53	3.94	-38.38	38.57	74.00	35.43	PK	Vertical
2	2487.23	47.47	27.55	3.94	-38.39	40.57	74.00	33.43	PK	Vertical

**Note:**

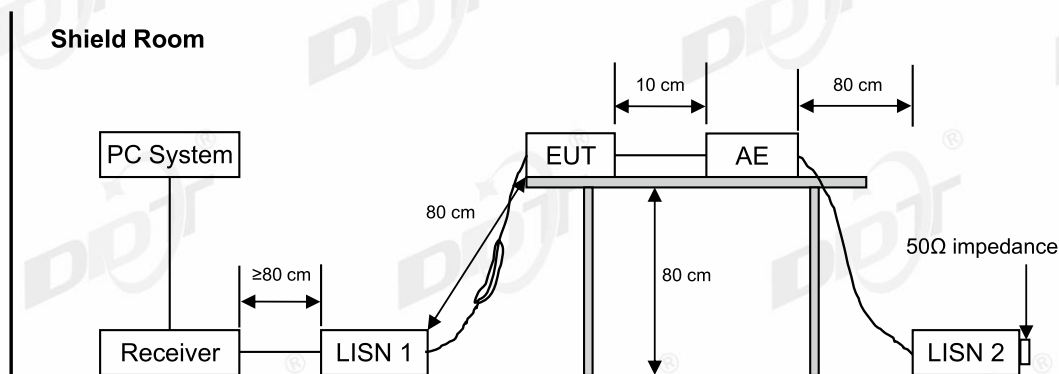
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

## 12. Power Line Conducted Emission

### 12.1. Test equipment

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑Power Line Conducted Emissions Test 2#				
Test Receiver	R&S	ESCI	101032	2024/04/22
LISN 1	R&S	ENV216	101170	2024/07/11
LISN 2	R&S	ENV216	101209	2024/07/11
Pulse Limiter	R&S	KH43101	431011801568-12#	2024/05/04
CE Cable 2	HUBSER	RG214-5	N/A	2024/04/26
Test software	Audix	E3	V 6.11111b	N/A

### 12.2. Block diagram of test setup



### 12.3. Power line conducted emission limits

Frequency	Quasi-Peak Level dB( $\mu$ V)	Average Level dB( $\mu$ V)
150 kHz ~ 500 kHz	66 ~ 56*	56 ~ 46*
500 kHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note 1: \* Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

### 12.4. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80 cm above the ground plane.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver

connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

## 12.5. Test result

### Pass. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

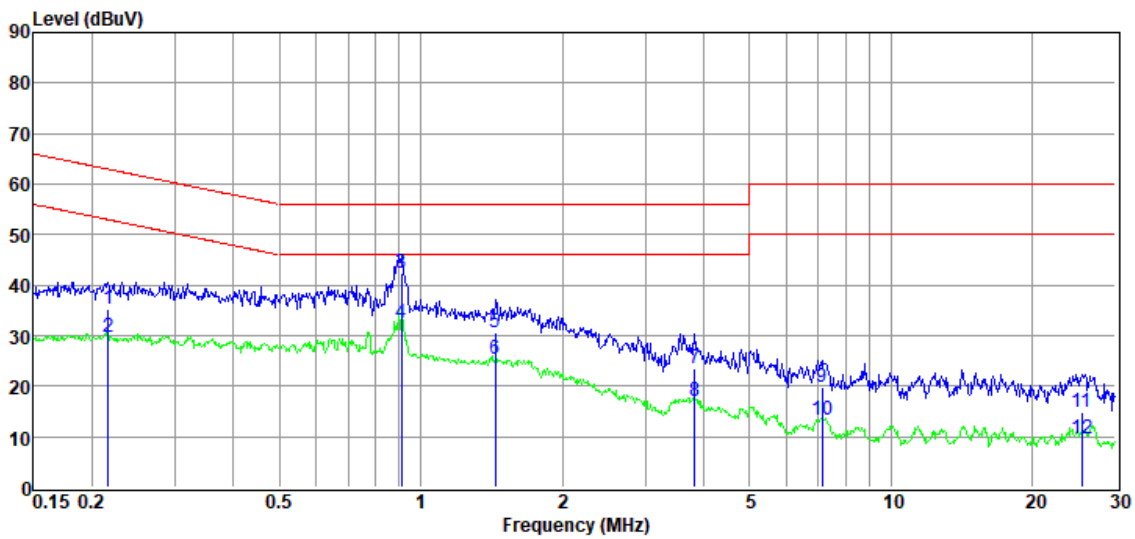
Note2: “-----” means Peak detection; “-----” means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worse case.

# TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 5# Shield Room D:\2023 report data\Q23120513-2\FCC CE.EM6  
**Test Date** : 2023-12-12 **Tested By** : Bairong  
**EUT** : LIBRATONE AIR H BLUETOOTH **Model Number** : LTW612  
           : EARPHONES **Test Mode** : BLE 1M TX mode  
**Power Supply** : AC 120V/60Hz **LISN** : 2023 ENV216 3#/NEUTRAL  
**Condition** : Temp:26.5°C,Humi:52.8%  
**Memo** : Sample Number:S23120513-01

Data: 6



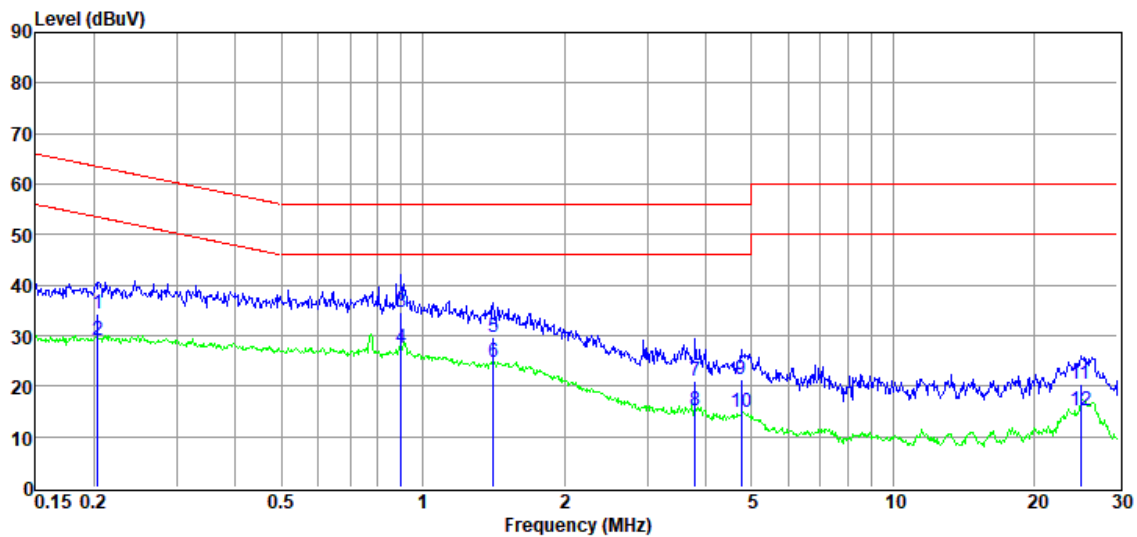
Item (Mark)	Freq. (MHz)	Read Level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBUV)	Limit Line (dBUV)	Over Limit (dB)	Detector	Phase
1	0.22	14.96	9.91	0.20	10.14	35.21	62.96	-27.75	QP	NEUTRAL
2	0.22	9.55	9.91	0.20	10.14	29.80	52.96	-23.16	Average	NEUTRAL
3	0.91	22.03	10.03	0.32	9.90	42.28	56.00	-13.72	QP	NEUTRAL
4	0.91	12.33	10.03	0.32	9.90	32.58	46.00	-13.42	Average	NEUTRAL
5	1.44	10.69	9.93	0.35	9.80	30.77	56.00	-25.23	QP	NEUTRAL
6	1.44	5.23	9.93	0.35	9.80	25.31	46.00	-20.69	Average	NEUTRAL
7	3.82	3.65	9.51	0.36	9.91	23.43	56.00	-32.57	QP	NEUTRAL
8	3.82	-2.90	9.51	0.36	9.91	16.88	46.00	-29.12	Average	NEUTRAL
9	7.14	-0.50	9.81	0.37	10.08	19.76	60.00	-40.24	QP	NEUTRAL
10	7.14	-7.05	9.81	0.37	10.08	13.21	50.00	-36.79	Average	NEUTRAL
11	25.46	-5.39	9.91	0.41	10.03	14.96	60.00	-45.04	QP	NEUTRAL
12	25.46	-10.69	9.91	0.41	10.03	9.66	50.00	-40.34	Average	NEUTRAL

- Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

## TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 5# Shield Room **D:\2023 report data\Q23120513-2\FCC CE.EM6**  
**Test Date** : 2023-12-12 **Tested By** : Bairong  
**EUT** : LIBRATONE AIR H BLUETOOTH **Model Number** : LTW612  
           : EARPHONES **Test Mode** : BLE 1M TX mode  
**Power Supply** : AC 120V/60Hz **LISN** : 2023 ENV216 3#/LINE  
**Condition** : Temp:26.5°C,Humi:52.8%  
**Memo** : Sample Number:S23120513-01

Data: 8



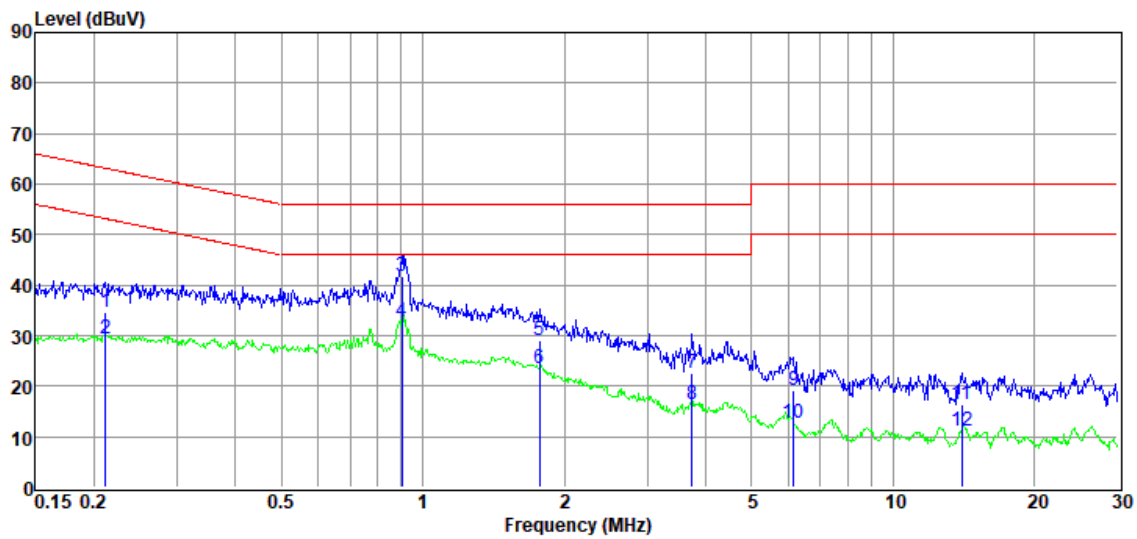
Item (Mark)	Freq. (MHz)	Read Level (dB $\mu$ V)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dB $\mu$ V)	Limit Line (dB $\mu$ V)	Over Limit (dB)	Detector	Phase
1	0.20	14.21	9.85	0.19	10.15	34.40	63.45	-29.05	QP	LINE
2	0.20	8.80	9.85	0.19	10.15	28.99	53.45	-24.46	Average	LINE
3	0.90	14.78	9.68	0.32	9.91	34.69	56.00	-21.31	QP	LINE
4	0.90	7.64	9.68	0.32	9.91	27.55	46.00	-18.45	Average	LINE
5	1.41	10.20	9.46	0.35	9.81	29.82	56.00	-26.18	QP	LINE
6	1.41	5.09	9.46	0.35	9.81	24.71	46.00	-21.29	Average	LINE
7	3.80	1.12	9.75	0.36	9.91	21.14	56.00	-34.86	QP	LINE
8	3.80	-5.00	9.75	0.36	9.91	15.02	46.00	-30.98	Average	LINE
9	4.75	1.01	9.83	0.37	9.98	21.19	56.00	-34.81	QP	LINE
10	4.75	-5.28	9.83	0.37	9.98	14.90	46.00	-31.10	Average	LINE
11	25.06	-0.09	10.11	0.41	10.05	20.48	60.00	-39.52	QP	LINE
12	25.06	-5.40	10.11	0.41	10.05	15.17	50.00	-34.83	Average	LINE

- Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

# TR-4-E-010 Conducted Emission Test Result

**Test Site** : DDT 5# Shield Room D:\2023 report data\Q23120513-2\FCC CE.EM6  
**Test Date** : 2023-12-12 **Tested By** : Bairong  
**EUT** : LIBRATONE AIR H BLUETOOTH **Model Number** : LTW612  
           : EARPHONES **Test Mode** : BLE 2M TX mode  
**Power Supply** : AC 120V/60Hz **LISN** : 2023 ENV216 3#/NEUTRAL  
**Condition** : Temp:26.5°C,Humi:52.8%  
**Memo** : Sample Number:S23120513-01

Data: 10



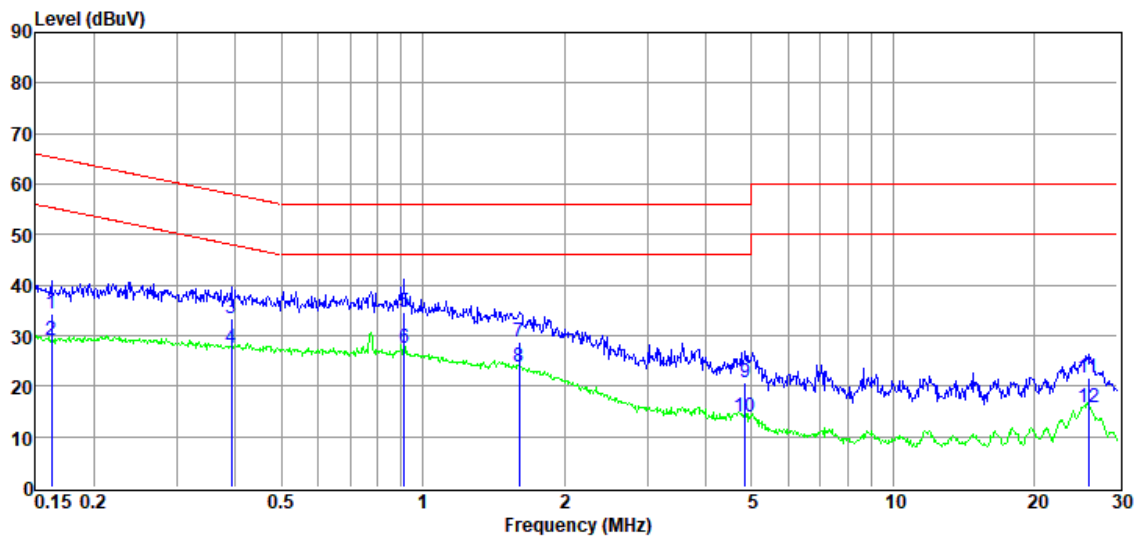
Item (Mark)	Freq. (MHz)	Read Level (dBUV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBUV)	Limit Line (dBUV)	Over Limit (dB)	Detector	Phase
1	0.21	14.40	9.92	0.20	10.14	34.66	63.14	-28.48	QP	NEUTRAL
2	0.21	9.25	9.92	0.20	10.14	29.51	53.14	-23.63	Average	NEUTRAL
3	0.90	21.43	10.05	0.32	9.90	41.70	56.00	-14.30	QP	NEUTRAL
4	0.90	12.40	10.05	0.32	9.90	32.67	46.00	-13.33	Average	NEUTRAL
5	1.77	8.86	10.01	0.35	9.76	28.98	56.00	-27.02	QP	NEUTRAL
6	1.77	3.23	10.01	0.35	9.76	23.35	46.00	-22.65	Average	NEUTRAL
7	3.74	2.67	9.52	0.36	9.91	22.46	56.00	-33.54	QP	NEUTRAL
8	3.74	-3.36	9.52	0.36	9.91	16.43	46.00	-29.57	Average	NEUTRAL
9	6.15	-1.12	9.89	0.37	10.04	19.18	60.00	-40.82	QP	NEUTRAL
10	6.15	-7.76	9.89	0.37	10.04	12.54	50.00	-37.46	Average	NEUTRAL
11	13.99	-3.95	9.90	0.39	10.12	16.46	60.00	-43.54	QP	NEUTRAL
12	13.99	-9.23	9.90	0.39	10.12	11.18	50.00	-38.82	Average	NEUTRAL

Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

# TR-4-E-010 Conducted Emission Test Result

<b>Test Site</b>	: DDT 5# Shield Room	<b>D:\2023 report data\Q23120513-2\FCC CE.EM6</b>
<b>Test Date</b>	: 2023-12-13	<b>Tested By</b> : Bairong
<b>EUT</b>	: LIBRATONE AIR H BLUETOOTH : EARPHONES	<b>Model Number</b> : LTW612
<b>Power Supply</b>	: AC 120V/60Hz	<b>Test Mode</b> : BLE 2M TX mode
<b>Condition</b>	: Temp:26.5°C,Humi:52.8%	<b>LISN</b> : 2023 ENV216 3#/LINE
<b>Memo</b>	: Sample Number:S23120513-01	

Data: 12



Item (Mark)	Freq. (MHz)	Read Level (dBμV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBμV)	Limit Line (dBμV)	Over Limit (dB)	Detector	Phase
1	0.16	14.34	9.65	0.19	10.15	34.33	65.34	-31.01	QP	LINE
2	0.16	9.09	9.65	0.19	10.15	29.08	55.34	-26.26	Average	LINE
3	0.39	12.98	9.96	0.25	10.08	33.27	58.03	-24.76	QP	LINE
4	0.39	7.37	9.96	0.25	10.08	27.66	48.03	-20.37	Average	LINE
5	0.91	14.73	9.68	0.32	9.90	34.63	56.00	-21.37	QP	LINE
6	0.91	7.63	9.68	0.32	9.90	27.53	46.00	-18.47	Average	LINE
7	1.60	9.05	9.56	0.35	9.78	28.74	56.00	-27.26	QP	LINE
8	1.60	4.05	9.56	0.35	9.78	23.74	46.00	-22.26	Average	LINE
9	4.85	0.63	9.83	0.37	9.98	20.81	56.00	-35.19	QP	LINE
10	4.85	-6.12	9.83	0.37	9.98	14.06	46.00	-31.94	Average	LINE
11	26.00	1.14	10.16	0.41	10.02	21.73	60.00	-38.27	QP	LINE
12	26.00	-4.78	10.16	0.41	10.02	15.81	50.00	-34.19	Average	LINE

- Note: 1. Result Level = Read Level + LISN Factor + Pulse Limiter Factor + Cable loss.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

## 13. Antenna Requirements

### 13.1. Limit

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 13.2. Result

The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.



## 15. Photos of the EUT

Please refer to appendix I.

**END OF REPORT**