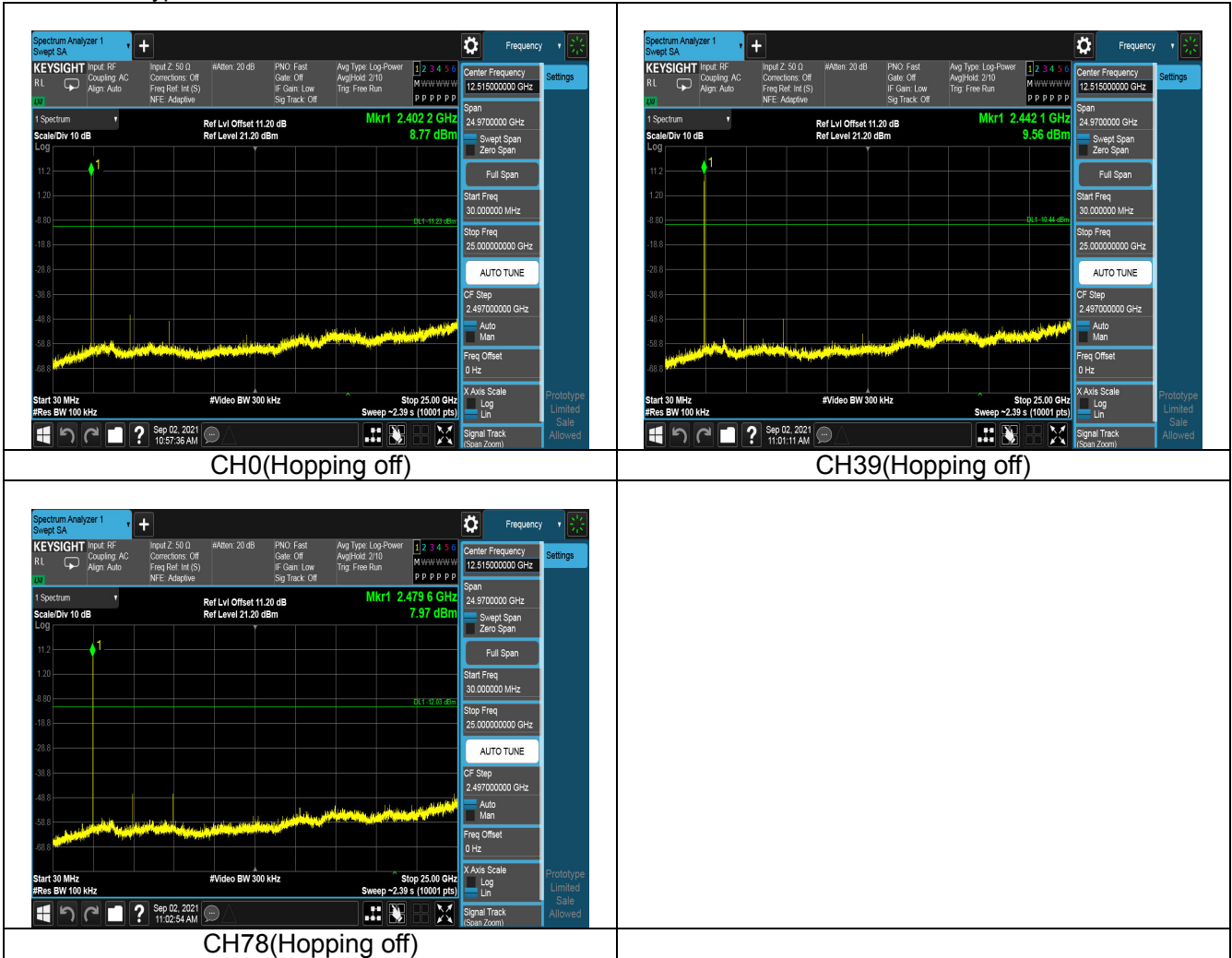
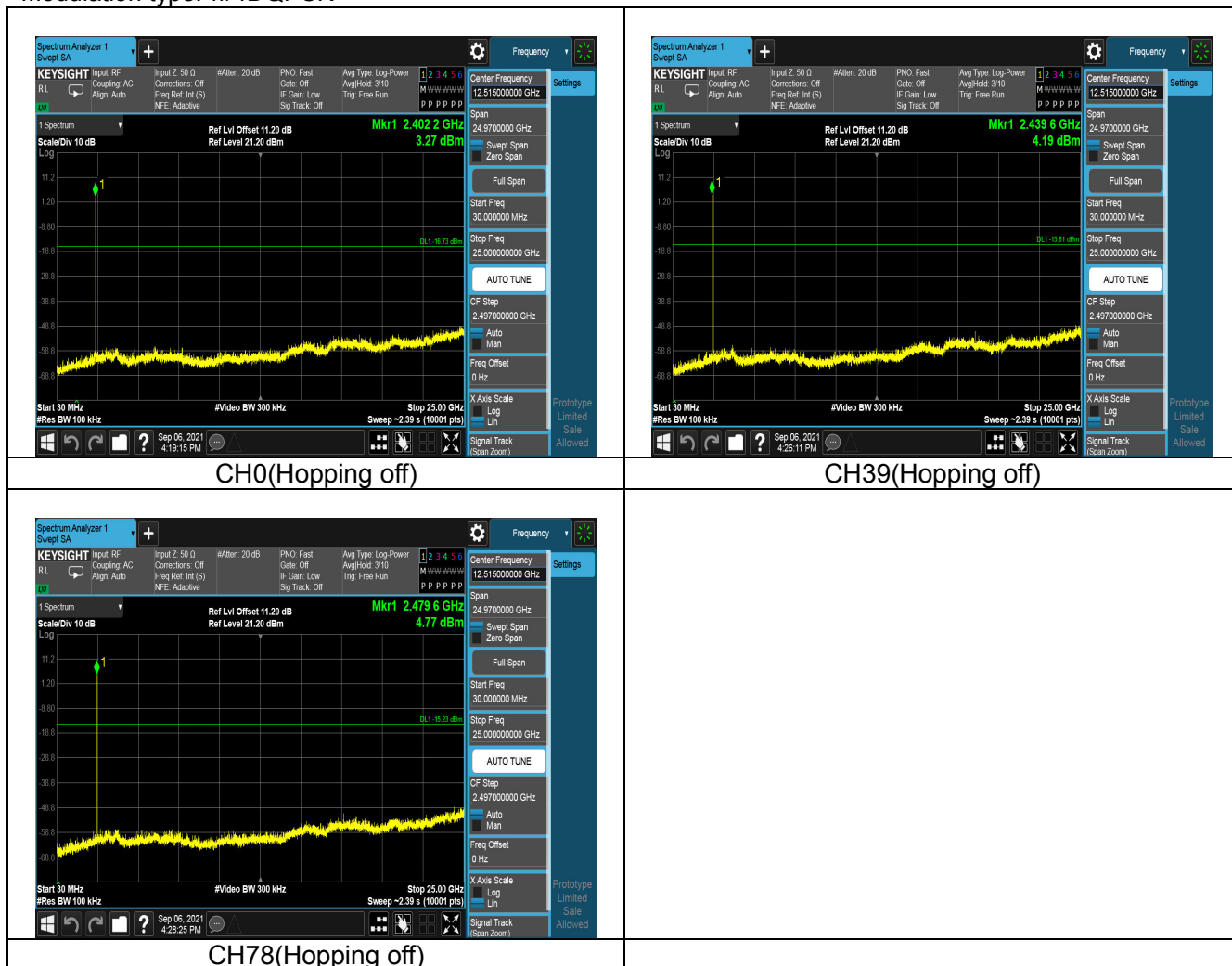


6 Conducted Out of band emission measurement

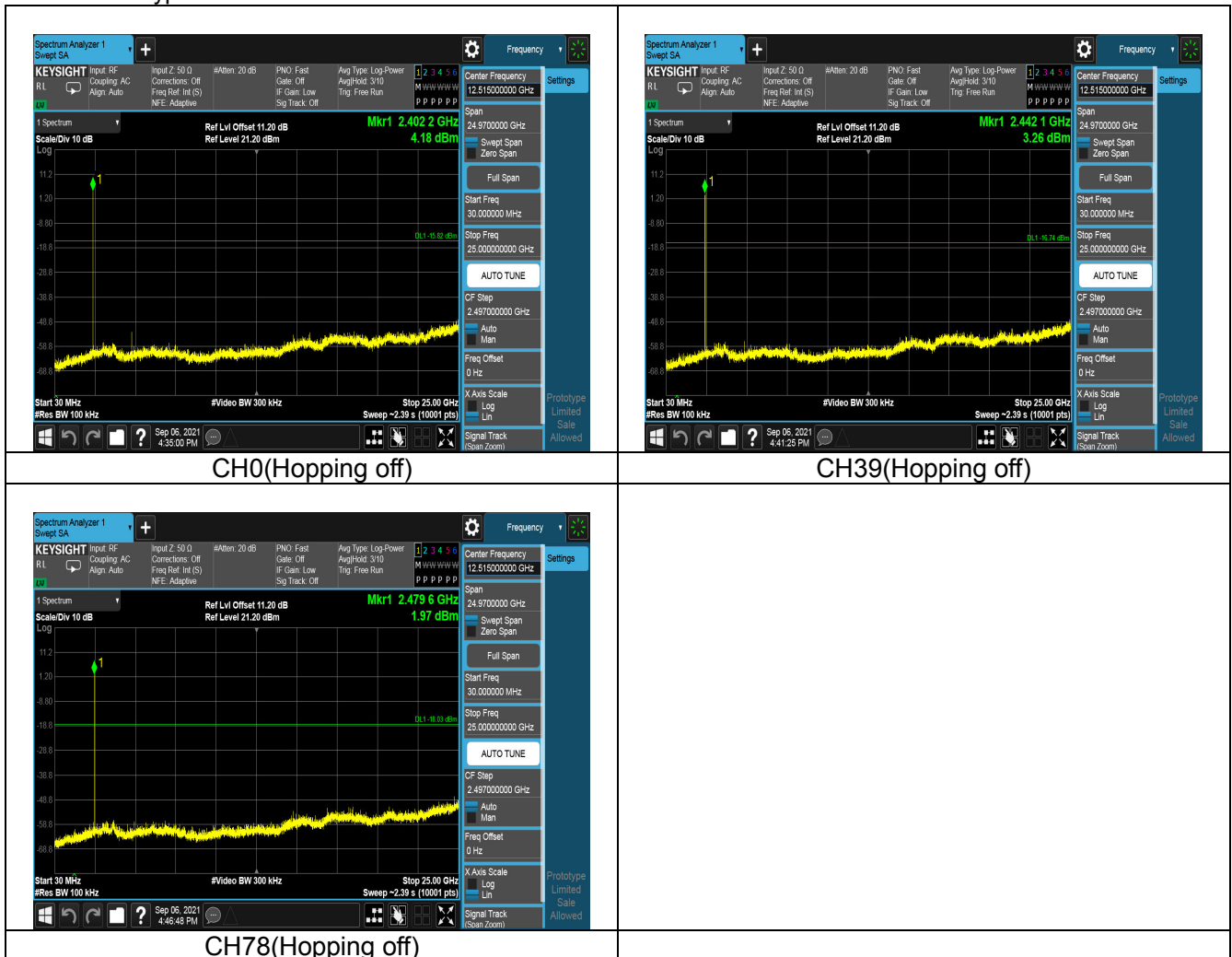
Modulation type:GFSK



Modulation type: $\pi/4$ DQPSK

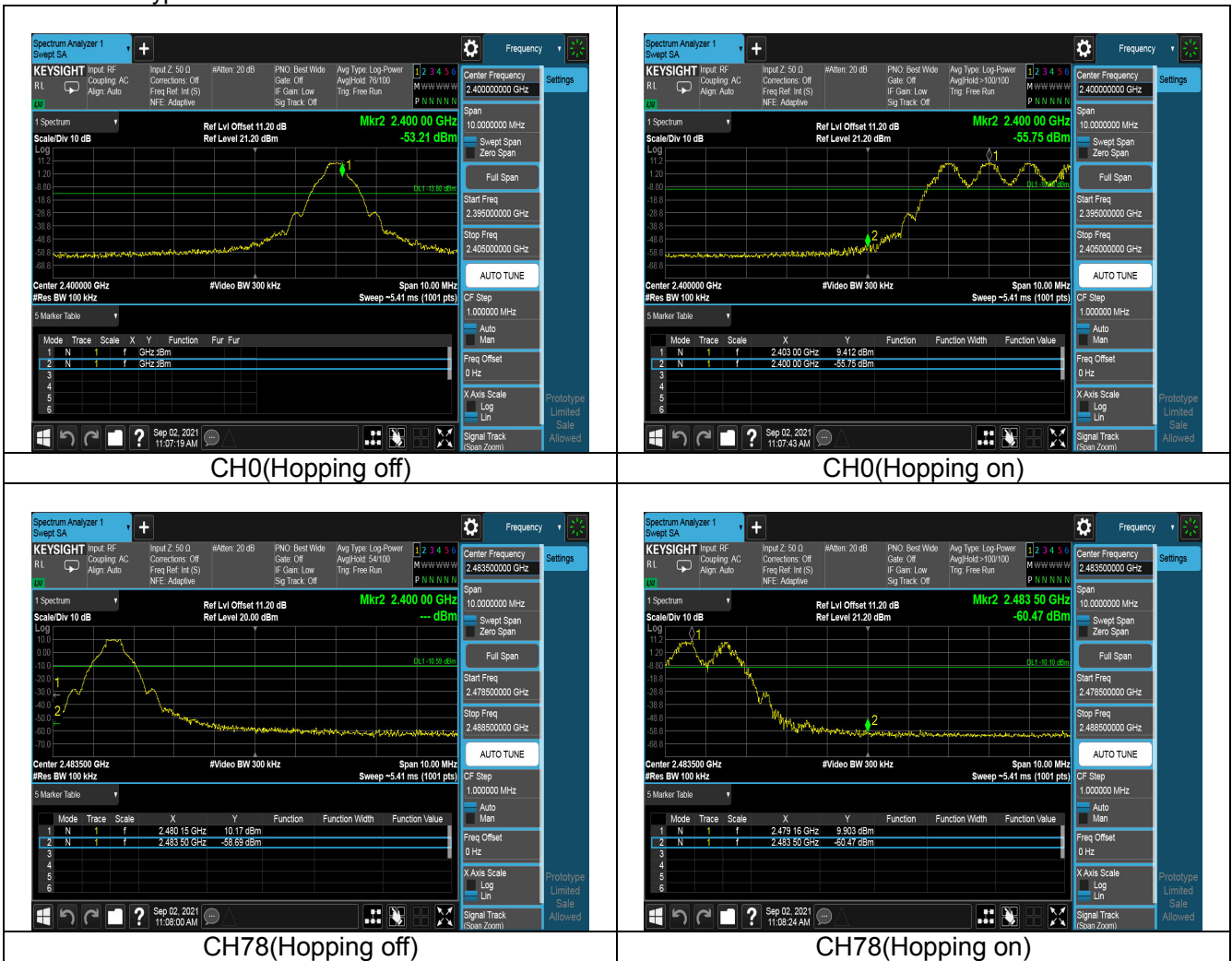


Modulation type: 8DPSK



7 Band Edge measurement

Modulation type:GFSK



Modulation type: $\pi/4$ DQPSK



CH0(Hopping off)



CH0(Hopping on)

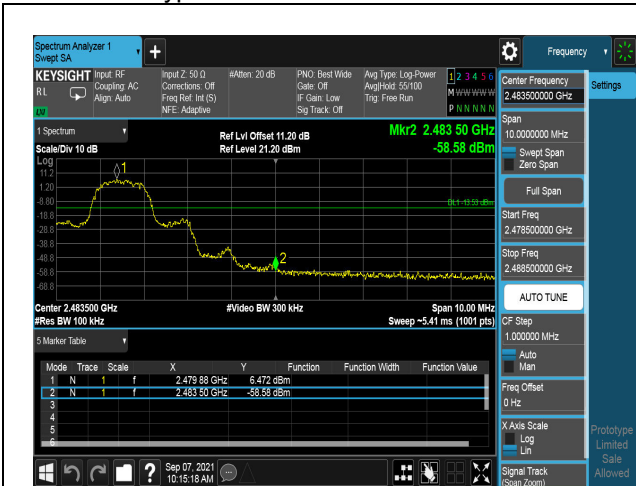


CH78(Hopping off)



CH78(Hopping on)

Modulation type: 8DPSK



CH78(Hopping off)



CH78(Hopping on)



CH0(Hopping off)



CH0(Hopping on)

APPENDIX B – TEST DATA OF RADIATED EMISSION

Radiated Emission Band Edge

The worst case attitude: The EUT lay down.

The measurement results are obtained as described below:

Measure Level = Reading Level + cable loss + antenna factor

In this report, the Low channel of the Left headphone has been test for the worst case.

Sample calculation: $(97.02\text{dB}\mu\text{V/m}) = (63.02\text{dB}\mu\text{V}) + (8.90\text{ dB}) + (25.10\text{ dB/m})$, the corresponding frequency is 2402MHz.

For Right side headphone:

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Vertical

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	97.02	63.02	N/A	N/A	8.90	25.10
2	2390	42.65	8.65	-31.35	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Horizontal

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	94.99	60.99	N/A	N/A	8.90	25.10
2	2390	40.84	6.84	-33.16	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Vertical

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	94.93	60.93	N/A	N/A	8.90	25.10
2	2390	34.17	0.17	-19.83	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
Polarity: Horizontal
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	92.59	58.59	N/A	N/A	8.90	25.10
2	2390	32.82	-1.18	-21.18	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
Polarity: Vertical
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	96.37	62.37	N/A	N/A	8.90	25.10
2	2483.5	43.37	9.37	-30.63	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
Polarity: Horizontal
Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	94.40	60.40	N/A	N/A	8.90	25.10
2	2483.5	41.70	7.70	-32.30	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
Polarity: Vertical
Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	95.80	61.80	N/A	N/A	8.90	25.10
2	2483.5	34.67	0.67	-19.33	54.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: GFSK

Polarity: Horizontal

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	93.05	59.05	N/A	N/A	8.90	25.10
2	2483.5	33.54	-0.46	-20.46	54.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: $\pi/4$ DQPSK

Polarity: Vertical

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	97.14	63.14	N/A	N/A	8.90	25.10
2	2390	43.91	9.91	-30.09	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: $\pi/4$ DQPSK

Polarity: Horizontal

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	95.01	61.01	N/A	N/A	8.90	25.10
2	2390	42.57	8.57	-31.43	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: $\pi/4$ DQPSK

Polarity: Vertical

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	95.74	61.74	N/A	N/A	8.90	25.10
2	2390	33.57	-0.43	-20.43	54.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: $\pi/4$ DQPSK

Polarity: Horizontal

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	93.57	59.57	N/A	N/A	8.90	25.10
2	2390	31.84	-2.16	-22.16	54.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: $\pi/4$ DQPSK

Polarity: Vertical

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	95.57	61.57	N/A	N/A	8.90	25.10
2	2483.5	43.48	9.48	-30.52	74.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: $\pi/4$ DQPSK

Polarity: Horizontal

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	93.19	59.19	N/A	N/A	8.90	25.10
2	2483.5	42.32	8.32	-31.68	74.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: $\pi/4$ DQPSK

Polarity: Vertical

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	93.73	59.73	N/A	N/A	8.90	25.10
2	2483.5	34.19	0.19	-19.81	54.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: $\pi/4$ DQPSK

Polarity: Horizontal

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	91.17	57.17	N/A	N/A	8.90	25.10
2	2483.5	33.47	-0.53	-20.53	54.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: 8DPSK

Polarity: Vertical

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	95.38	61.38	N/A	N/A	8.90	25.10
2	2390	43.22	9.22	-30.78	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: 8DPSK

Polarity: Horizontal

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	93.02	59.02	N/A	N/A	8.90	25.10
2	2390	41.66	7.66	-32.34	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: 8DPSK

Polarity: Vertical

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	93.45	59.45	N/A	N/A	8.90	25.10
2	2390	34.16	0.16	-19.84	54.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: 8DPSK

Polarity: Horizontal

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	90.66	56.66	N/A	N/A	8.90	25.10
2	2390	33.75	-0.25	-20.25	54.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: 8DPSK

Polarity: Vertical

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	94.51	60.51	N/A	N/A	8.90	25.10
2	2483.5	42.30	8.30	-31.70	74.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: 8DPSK

Polarity: Horizontal

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	92.28	58.28	N/A	N/A	8.90	25.10
2	2483.5	41.14	7.14	-32.86	74.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: 8DPSK

Polarity: Vertical

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	93.61	59.61	N/A	N/A	8.90	25.10
2	2483.5	33.16	-0.84	-20.84	54.00	8.90	25.10

Carrier frequency (MHz): 2480

Channel No.:78

Test Mode: 8DPSK

Polarity: Horizontal

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2480	90.72	56.72	N/A	N/A	8.90	25.10
2	2483.5	32.80	-1.20	-21.20	54.00	8.90	25.10

For Left side headphone:

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Vertical

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	97.45	63.45	N/A	N/A	8.90	25.10
2	2390	43.98	9.98	-30.02	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Horizontal

Detector: Peak

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	94.90	60.90	N/A	N/A	8.90	25.10
2	2390	42.26	8.26	-31.74	74.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK

Polarity: Vertical

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	95.75	61.75	N/A	N/A	8.90	25.10
2	2390	33.78	-0.22	-20.22	54.00	8.90	25.10

Carrier frequency (MHz): 2402

Channel No.:0

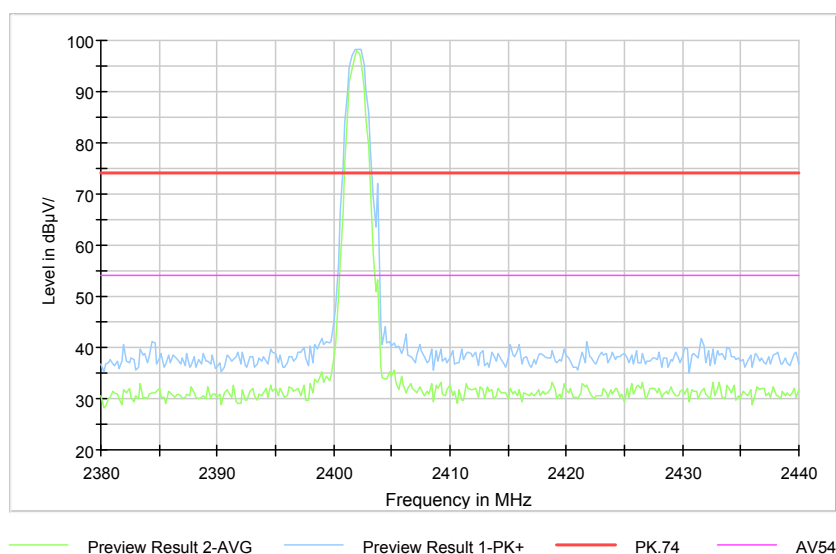
Test Mode: GFSK

Polarity: Horizontal

Detector: Average

No	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	cable loss (dB)	antenna factor (dB/m)
1	2402	93.09	59.09	N/A	N/A	8.90	25.10
2	2390	32.02	-1.98	-21.98	54.00	8.90	25.10

Full Spectrum



Comment

Radiated Emission Band Edge for 2402MHz

Sample Calculations

Determining Spurious Emissions Levels

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

Sample calculation: $(21.54 \text{ dB}\mu\text{V/m}) = (43.34\text{dB}\mu\text{V}) + (-21.8\text{dB/m})$, the corresponding frequency is 168.002500MHz.

The worst case attitude: The mobile lay down.

For right side headphone:

For GFSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.54	-21.8	43.34	Vertical	43.50
407.989000	25.24	-12.9	38.14	Vertical	46.00
552.017000	22.85	-9.6	32.45	Vertical	46.00
600.000500	25.19	-8.1	33.29	Vertical	46.00
792.003500	24.95	-5.3	30.25	Vertical	46.00
839.978500	22.01	-4.4	26.41	Vertical	46.00

For $\pi/4$ DQPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	20.98	-21.8	42.78	Vertical	43.50
311.999000	22.93	-15.7	38.63	Vertical	46.00
407.989000	25.47	-12.9	38.37	Vertical	46.00
456.004000	23.83	-12.0	35.83	Vertical	46.00
599.992000	25.49	-8.1	33.59	Vertical	46.00
792.012000	24.71	-5.3	30.01	Vertical	46.00

For 8DPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.16	-21.8	42.96	Vertical	43.50
311.999000	22.99	-15.7	38.69	Vertical	46.00
407.989000	25.56	-12.9	38.46	Vertical	46.00
599.992000	25.59	-8.1	33.69	Vertical	46.00
792.003500	25.06	-5.3	30.36	Vertical	46.00
936.008500	22.40	-2.8	25.20	Vertical	46.00

For GFSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.10	-21.8	42.90	Vertical	43.50
407.989000	25.49	-12.9	38.39	Vertical	46.00
455.995500	23.85	-12.0	35.85	Vertical	46.00
599.992000	25.54	-8.1	33.64	Vertical	46.00
792.003500	25.07	-5.3	30.37	Vertical	46.00
936.000000	22.57	-2.8	25.37	Vertical	46.00

For $\pi/4$ DQPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.11	-21.8	42.91	Vertical	43.50
311.999000	23.04	-15.7	38.74	Vertical	46.00
360.014000	22.67	-14.1	36.77	Vertical	46.00
407.989000	25.53	-12.9	38.43	Vertical	46.00
599.992000	25.60	-8.1	33.70	Vertical	46.00
792.012000	24.89	-5.3	30.19	Vertical	46.00

For 8DPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.11	-21.8	42.91	Vertical	43.50
407.989000	25.52	-12.9	38.42	Vertical	46.00
455.995500	23.90	-12.0	35.90	Vertical	46.00
600.000500	25.62	-8.1	33.72	Vertical	46.00
792.012000	24.91	-5.3	30.21	Vertical	46.00
839.978500	22.19	-4.4	26.59	Vertical	46.00

For GFSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.15	-21.8	42.95	Vertical	43.50
311.999000	23.06	-15.7	38.76	Vertical	46.00
407.989000	25.53	-12.9	38.43	Vertical	46.00
600.000500	25.59	-8.1	33.69	Vertical	46.00
792.003500	25.19	-5.3	30.49	Vertical	46.00
936.008500	22.47	-2.8	25.27	Vertical	46.00

For $\pi/4$ DQPSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.05	-21.8	42.85	Vertical	43.50
311.999000	23.06	-15.7	38.76	Vertical	46.00
407.989000	25.53	-12.9	38.43	Vertical	46.00
600.000500	25.58	-8.1	33.68	Vertical	46.00
792.012000	24.93	-5.3	30.23	Vertical	46.00
936.000000	22.65	-2.8	25.45	Vertical	46.00

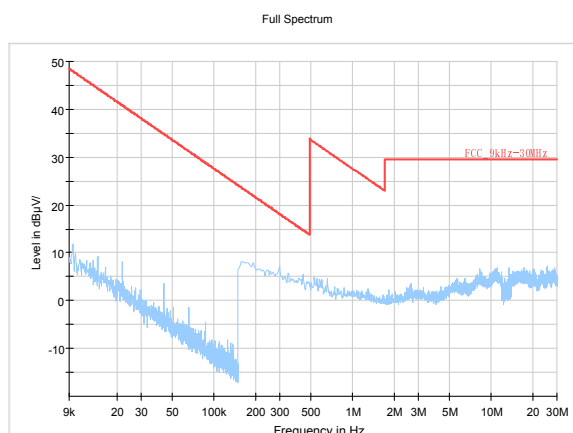
For 8DPSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB/m)	Pmea (dBuV)	Polarity	Limit (dBuV/m)
168.002500	21.09	-21.8	42.89	Vertical	43.50
407.989000	25.53	-12.9	38.43	Vertical	46.00
456.004000	23.77	-12.0	35.77	Vertical	46.00
600.000500	25.61	-8.1	33.71	Vertical	46.00
792.003500	25.21	-5.3	30.51	Vertical	46.00
839.978500	22.24	-4.4	26.64	Vertical	46.00

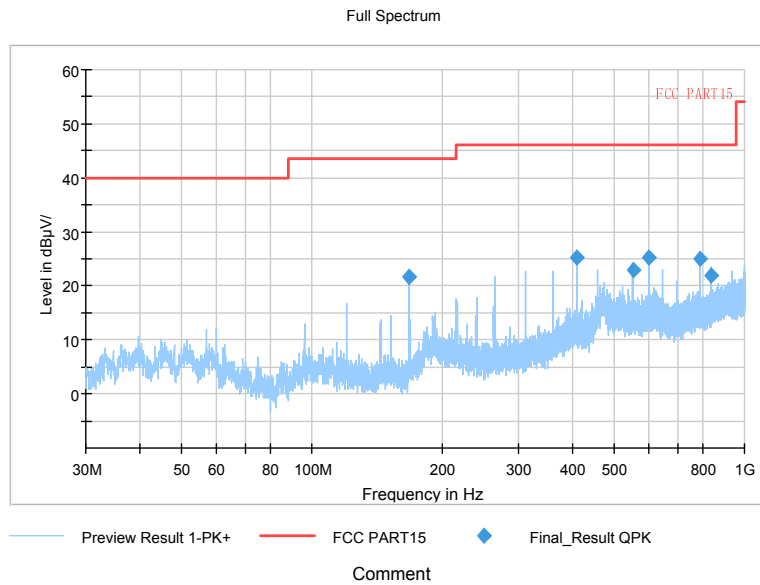
For Left side headphone:

For GFSK
Channel No.:0

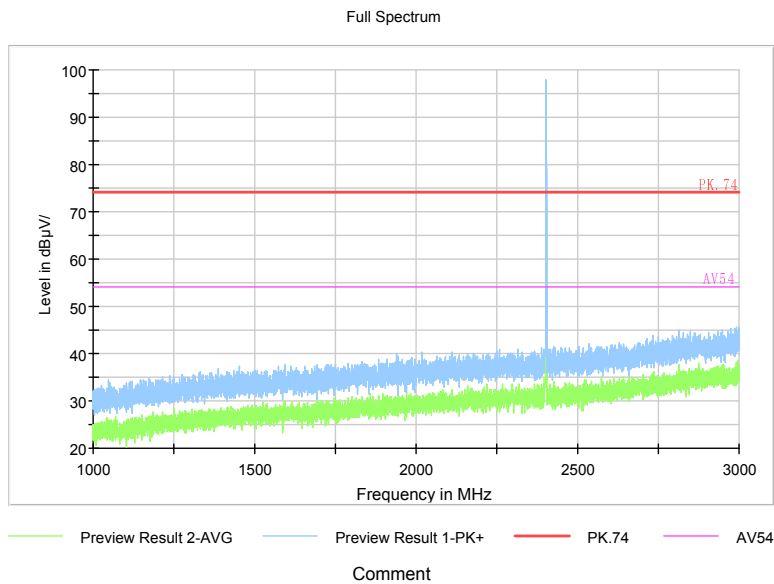
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168.002500	21.35	-21.8	43.15	Vertical	43.50
311.999000	23.07	-15.7	38.77	Vertical	46.00
360.014000	22.72	-14.1	36.82	Vertical	46.00
407.989000	25.53	-12.9	38.43	Vertical	46.00
600.000500	25.59	-8.1	33.69	Vertical	46.00
792.012000	24.95	-5.3	30.25	Vertical	46.00



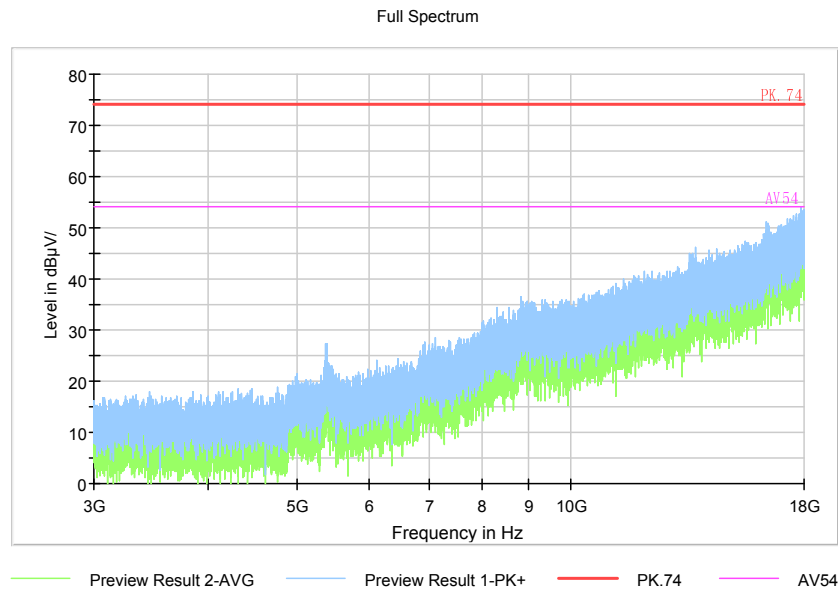
Carrier frequency (MHz): 2402
Channel No.:0



Frequency Range: 30MHz-1000MHz
Detector: QP mode
Modulation type: GFSK

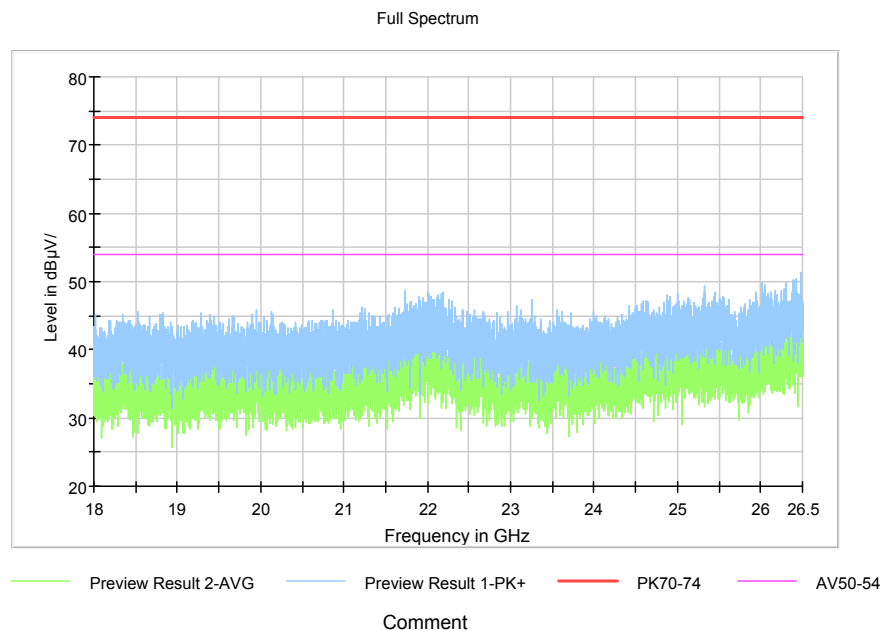


Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK



Comment

Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



Comment

Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: GFSK