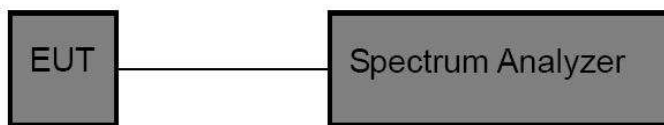


10 Carrier Frequency Separation Test

10.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	>25KHz or >two-thirds of the 20 dB bandwidth

10.2 Test Setup



10.3 Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer settings:

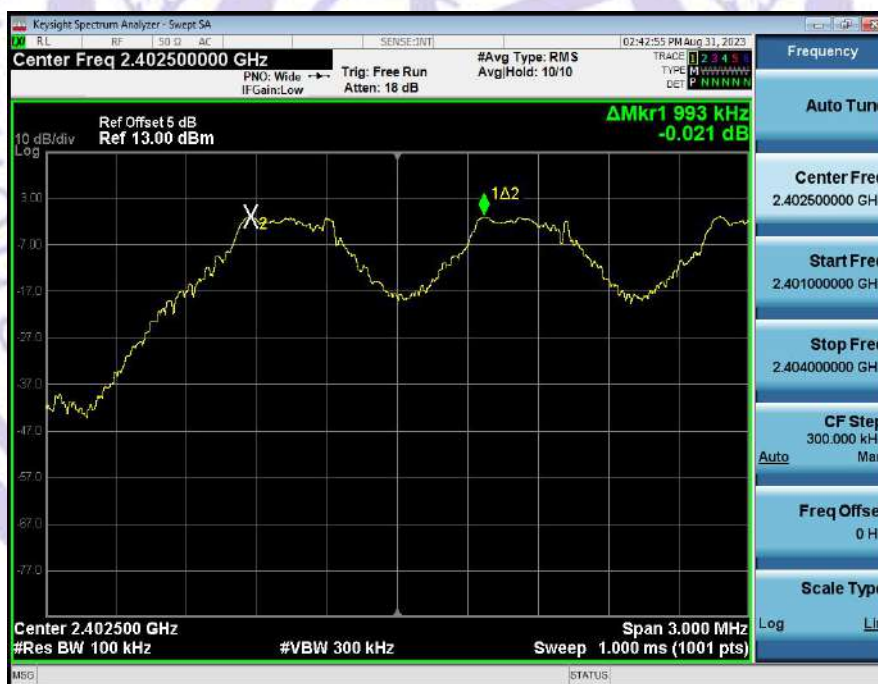
1. Span= Wide enough to capture the peaks of two adjacent channels
2. Set the RBW = 100 kHz.
3. Set the VBW = 300 kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

10.4 Test Data

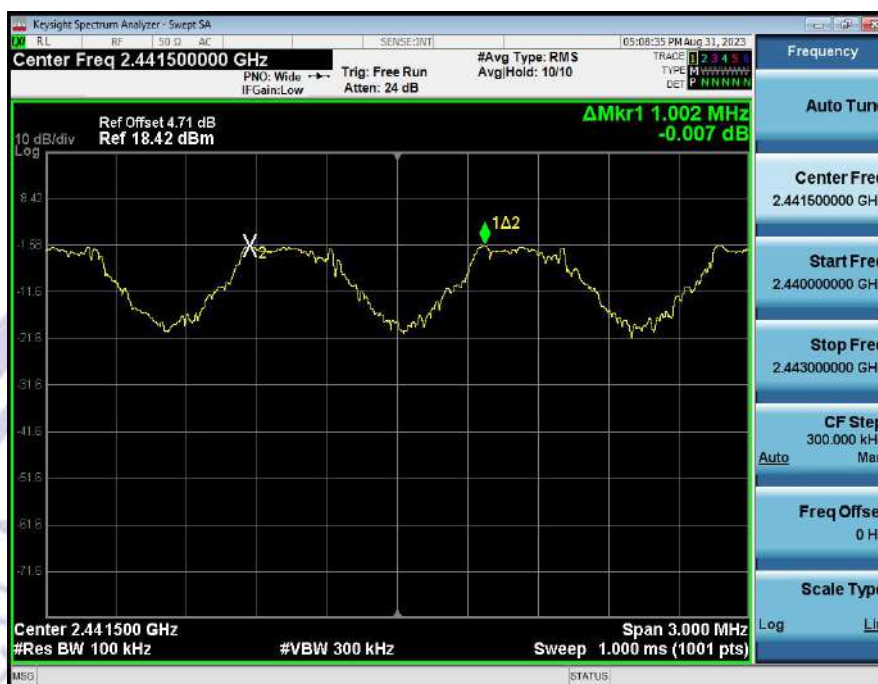
Left earphone

Modulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low	0.996	0.874	PASS
GFSK	Middle	1.002	0.920	PASS
GFSK	High	0.996	0.927	PASS
$\pi/4$ -DQPSK	Low	1.005	0.848	PASS
$\pi/4$ -DQPSK	Middle	0.999	0.850	PASS
$\pi/4$ -DQPSK	High	1.002	0.849	PASS
8-DPSK	Low	1.002	0.817	PASS
8-DPSK	Middle	0.993	0.817	PASS
8-DPSK	High	0.999	0.837	PASS

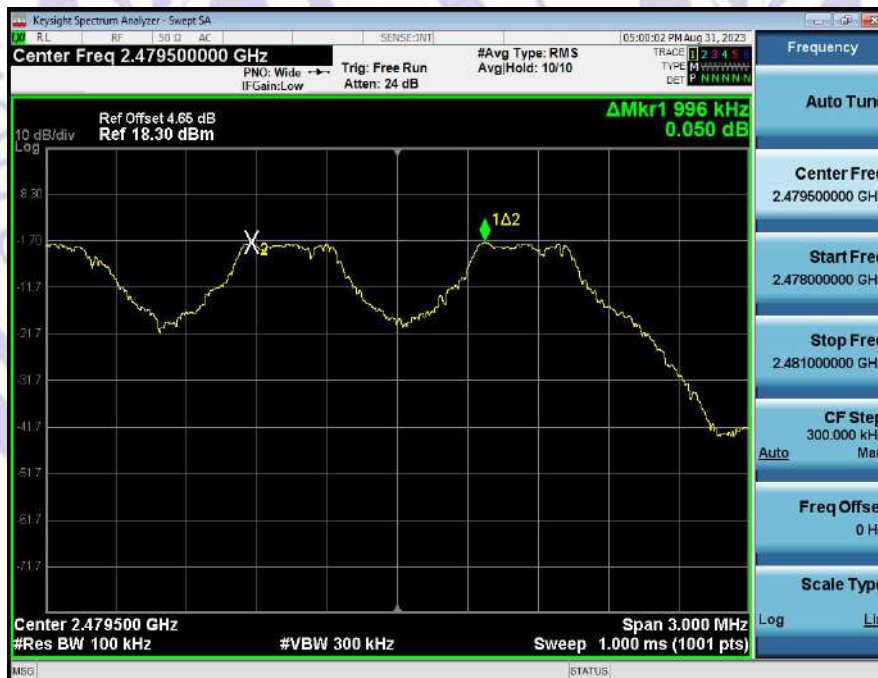
GFSK Low Channel



GFSK Middle Channel



GFSK High Channel



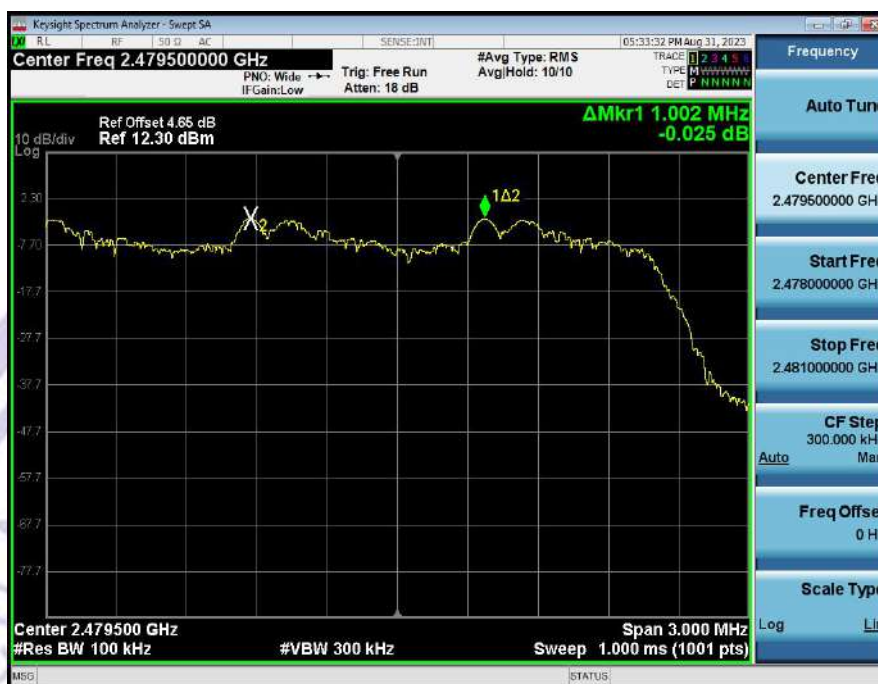
$\pi/4$ -DQPSK Low Channel



$\pi/4$ -DQPSK Middle Channel



$\pi/4$ -DQPSK High Channel



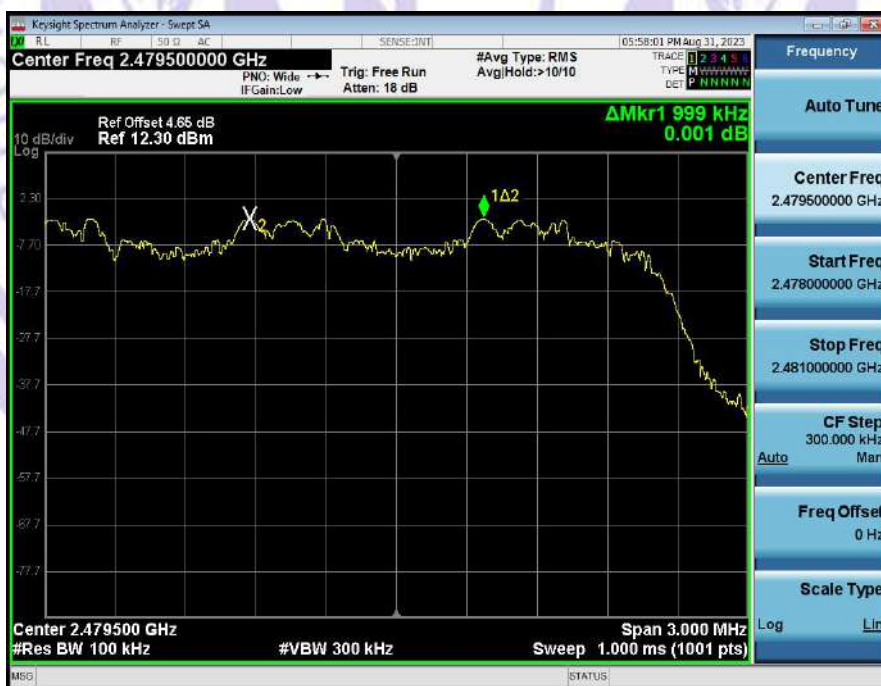
8-DPSK Low Channel



8-DPSK Middle Channel



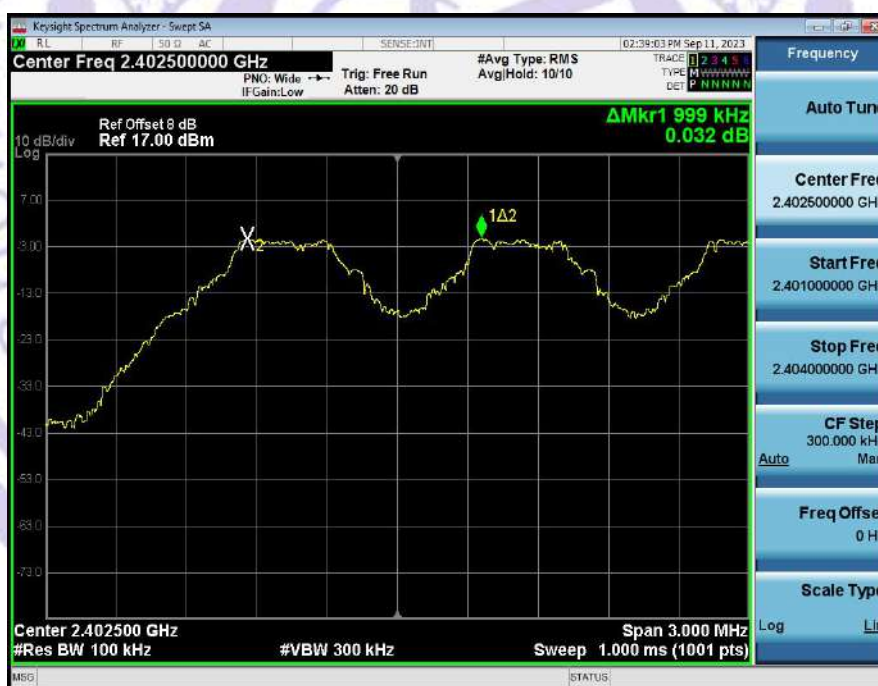
8-DPSK High Channel



Right earphone

Modulation	Test Channel	Separation (MHz)	Limit(MHz)	Result
GFSK	Low	0.999	0.8724	PASS
GFSK	Middle	0.996	0.8703	PASS
GFSK	High	0.996	0.8702	PASS
$\pi/4$ -DQPSK	Low	1.002	0.866	PASS
$\pi/4$ -DQPSK	Middle	1.002	0.864	PASS
$\pi/4$ -DQPSK	High	0.999	0.861	PASS
8-DPSK	Low	1.005	0.842	PASS
8-DPSK	Middle	1.002	0.841	PASS
8-DPSK	High	0.993	0.845	PASS

GFSK Low Channel



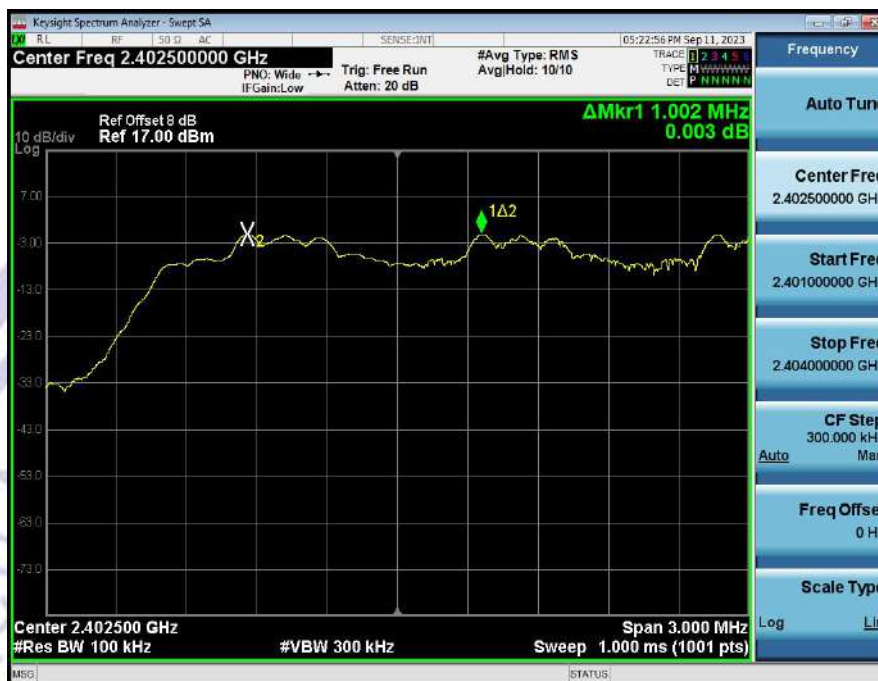
GFSK Middle Channel



GFSK High Channel



$\pi/4$ -DQPSK Low Channel



$\pi/4$ -DQPSK Middle Channel



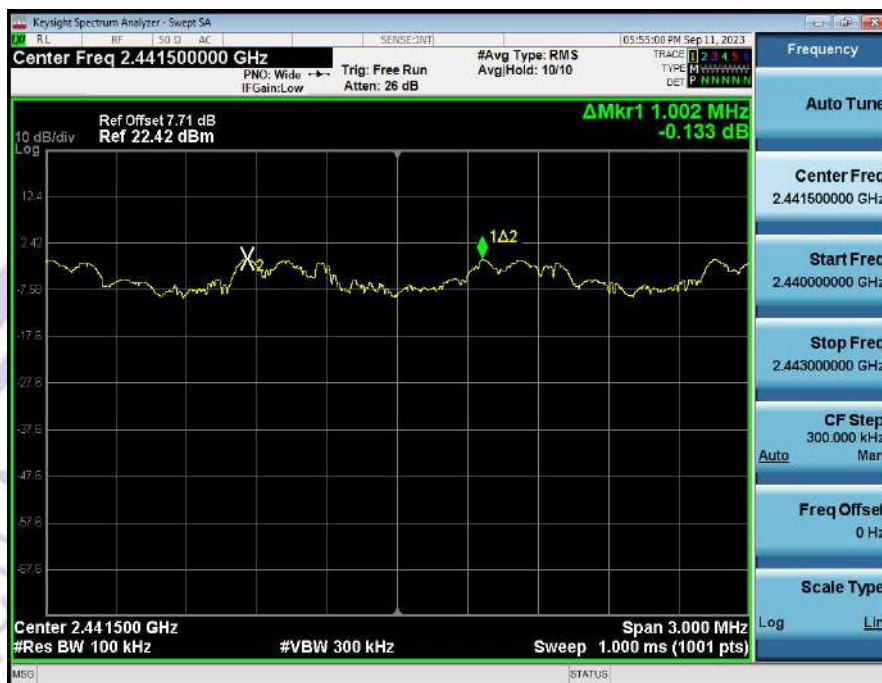
$\pi/4$ -DQPSK High Channel



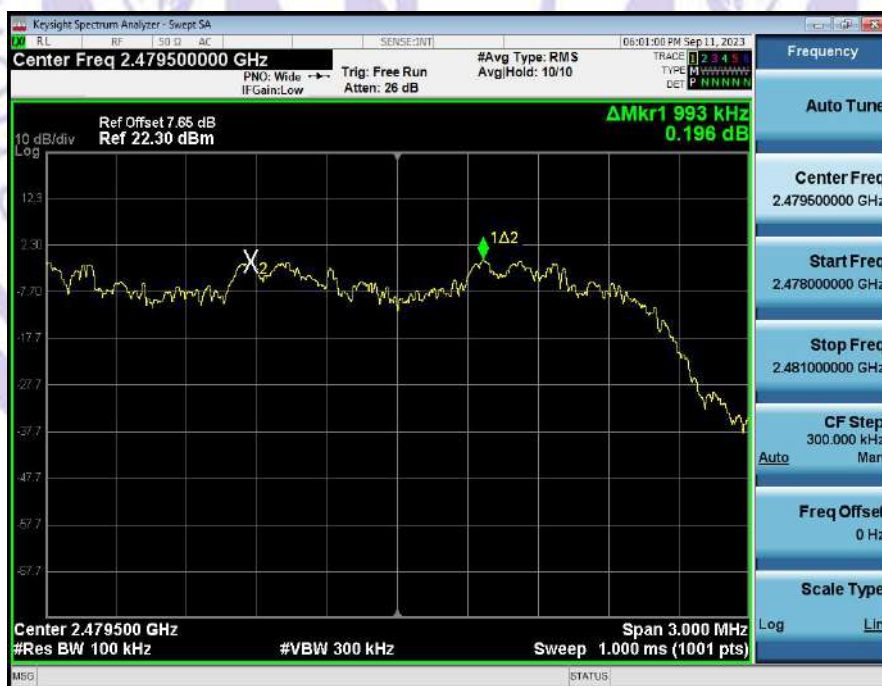
8-DPSK Low Channel



8-DPSK Middle Channel



8-DPSK High Channel

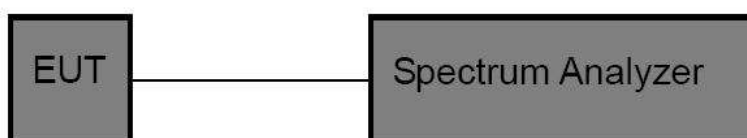


11 Number of Hopping Channel Test

11.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	>15 channels

11.2 Test Setup



11.3 Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer setting:

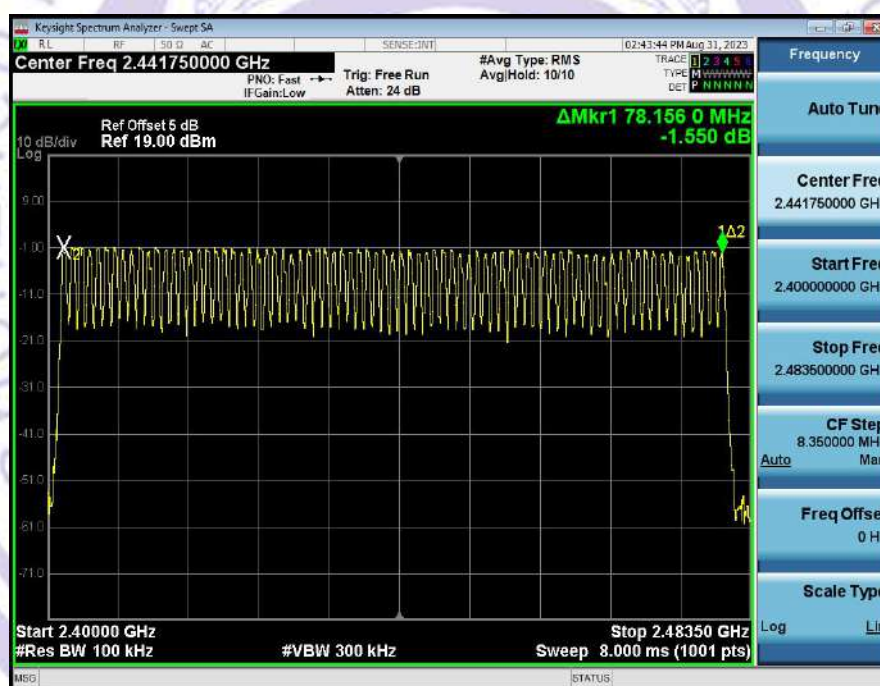
1. Span= the frequency band of operation
2. Set the RBW = 100kHz.
3. Set the VBW = 300kHz.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

11.4 Test Data

Left earphone

Mode	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
			ANT1	Limit	
GFSK	HOPP	DH1	79	>=15	Pass
PI/4DQPSK	HOPP	2DH1	79	>=15	Pass
8DPSK	HOPP	3DH1	79	>=15	Pass

GFSK



$\pi/4$ -DQPSK



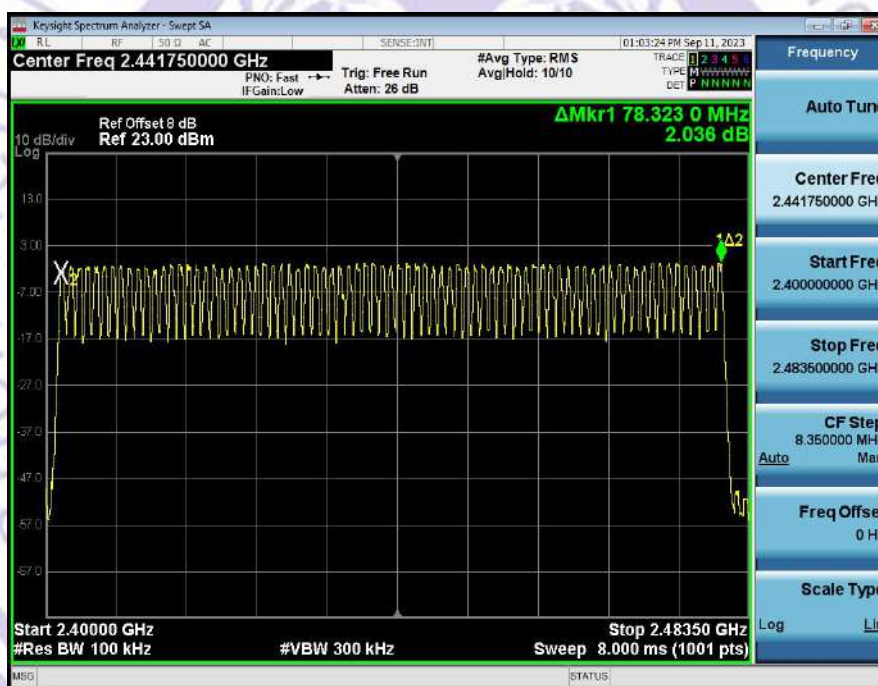
8-DPSK



Right earphone

Mode	Frequency (MHz)	Packet Type	Num of Hopping Frequencies		Verdict
			ANT1	Limit	
GFSK	HOPP	DH1	79	>=15	Pass
PI/4DQPSK	HOPP	2DH1	79	>=15	Pass
8DPSK	HOPP	3DH1	79	>=15	Pass

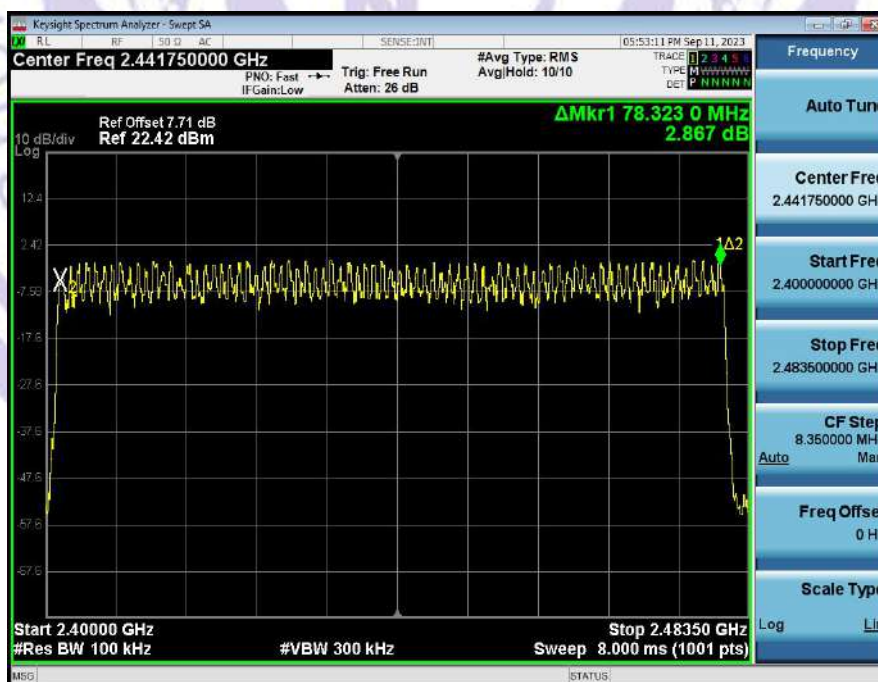
GFSK



$\pi/4$ -DQPSK



8-DPSK

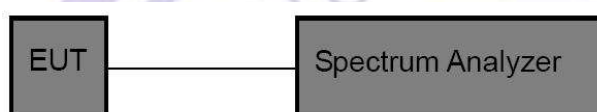


12 Dwell Time Test

12.1 Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	0.4 sec

12.2 Test Setup



12.3 Test Procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

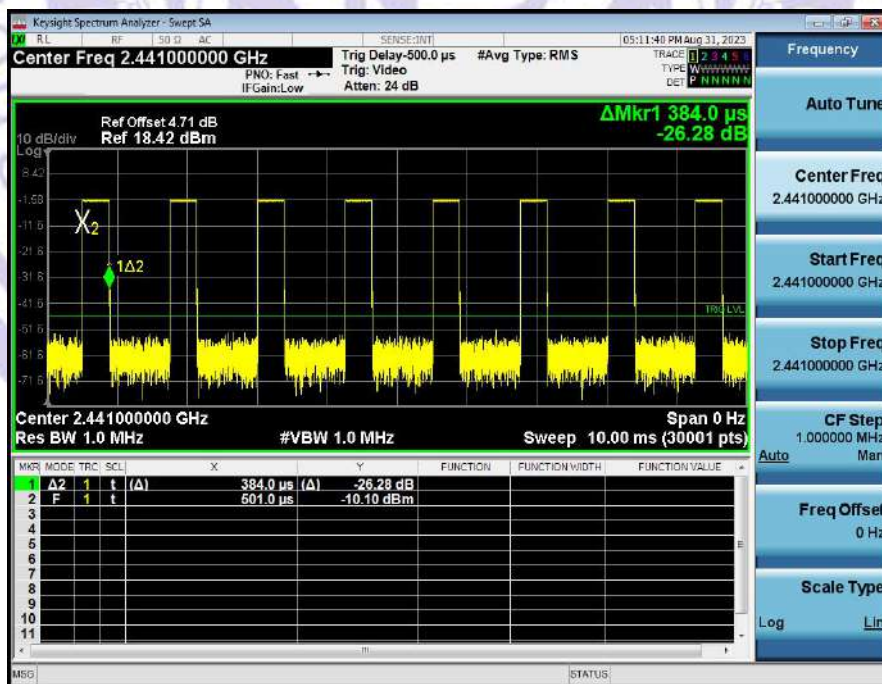
1. Span= zero span, centered on a hopping channel
2. Set the RBW = 1 MHz.
3. Set the VBW = 1 MHz.
4. Sweep time = as necessary to capture the entire dwell time per hopping channel.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

12.4 Test Data

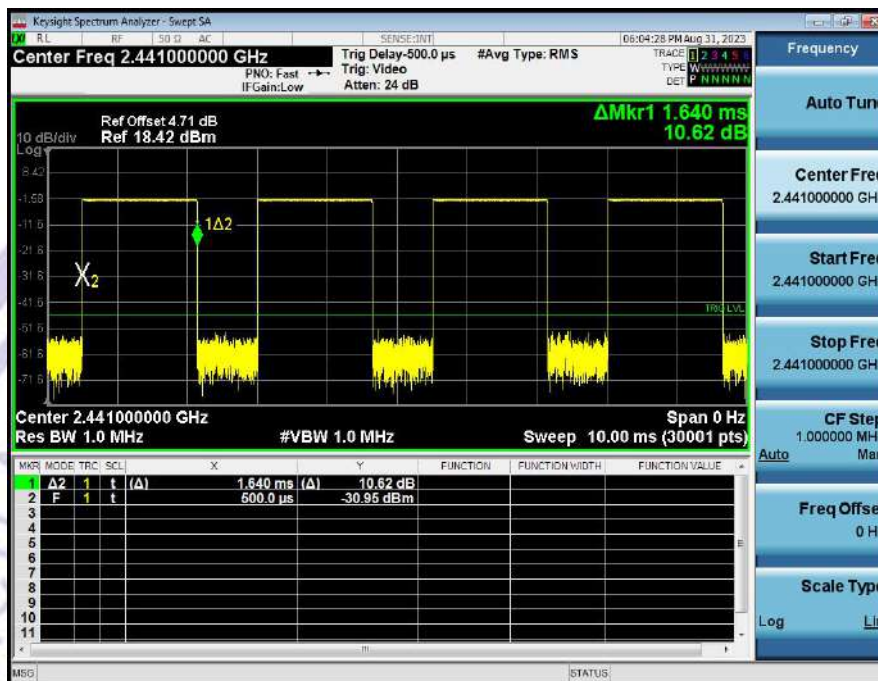
Left earphone

Package Type	Pulse width (ms)	Time slot length(ms)	Dwell time (ms)	Limit (s)	Remark
DH1	0.384	time slot length *1600/2 /79 * 31.6	122.88	0.4	Pass
DH3	1.640	time slot length *1600/4 /79 * 31.6	262.40	0.4	Pass
DH5	2.888	time slot length *1600/6 /79 * 31.6	308.05	0.4	Pass
2DH1	0.378	time slot length *1600/2 /79 * 31.6	120.96	0.4	Pass
2DH3	1.634	time slot length *1600/4 /79 * 31.6	261.44	0.4	Pass
2DH5	2.882	time slot length *1600/6 /79 * 31.6	307.41	0.4	Pass
3DH1	0.378	time slot length *1600/2 /79 * 31.6	120.96	0.4	Pass
3DH3	1.634	time slot length *1600/4 /79 * 31.6	261.44	0.4	Pass
3DH5	2.882	time slot length *1600/6 /79 * 31.6	307.41	0.4	Pass

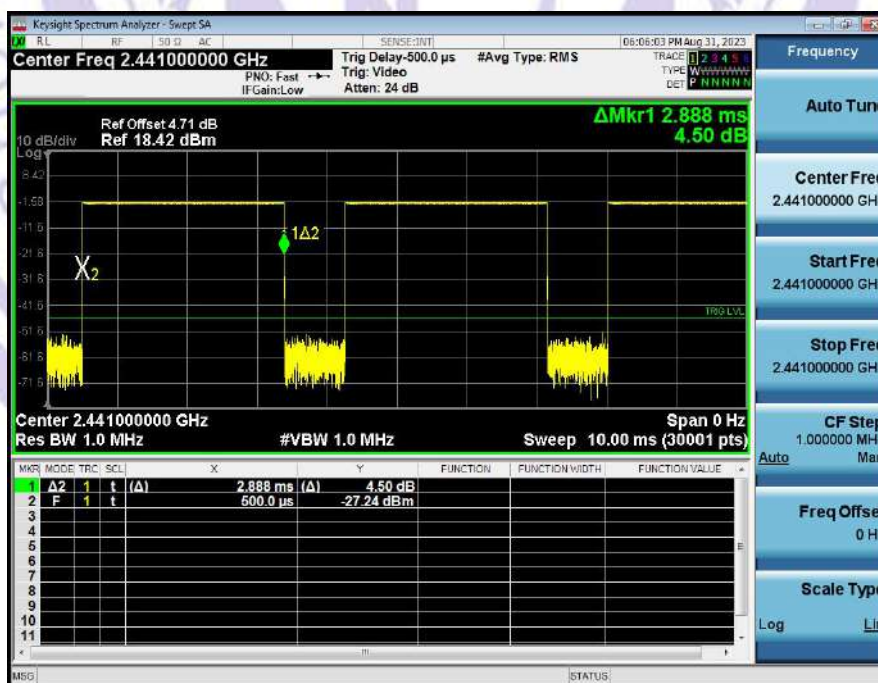
Test Plots DH1 2441MHz



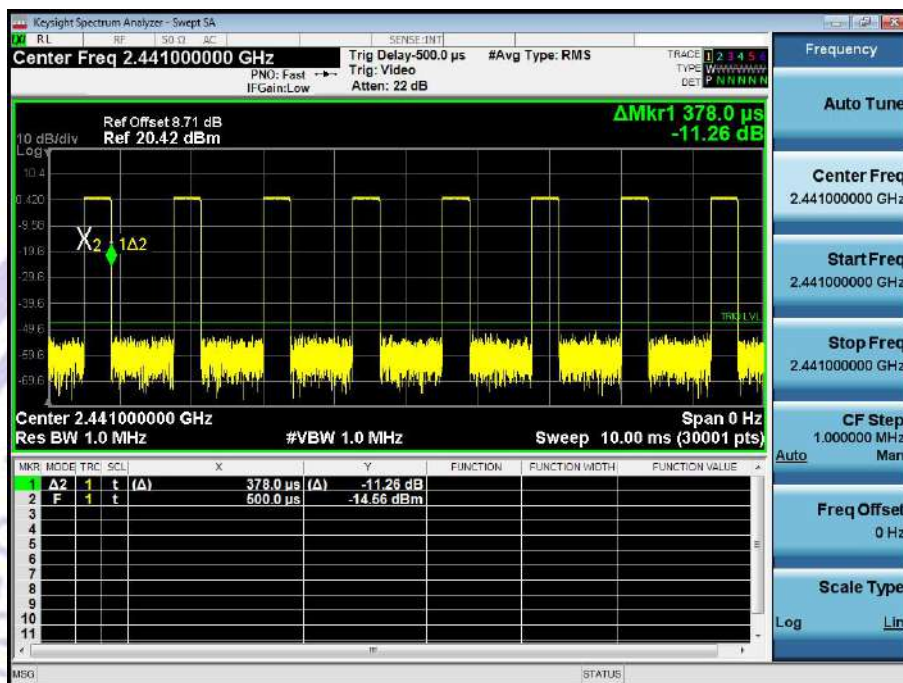
DH3 2441MHz



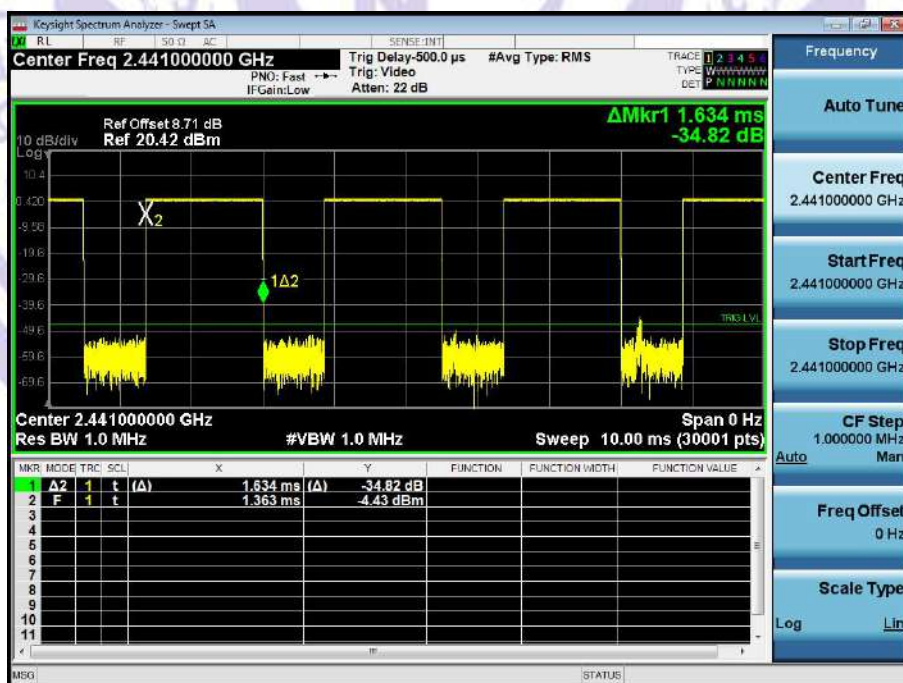
DH5 2441MHz



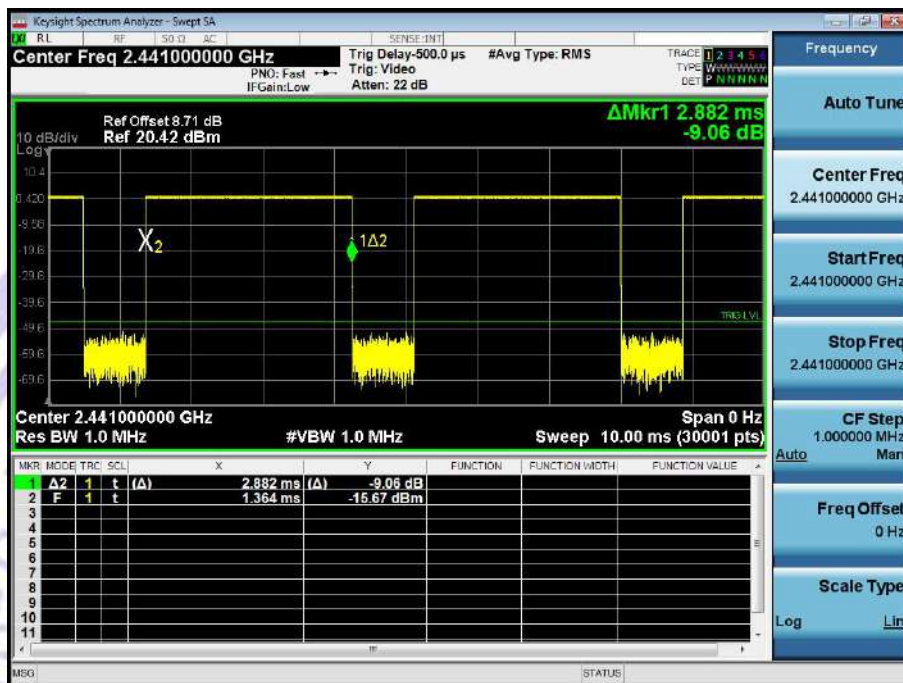
2DH1 2441MHz



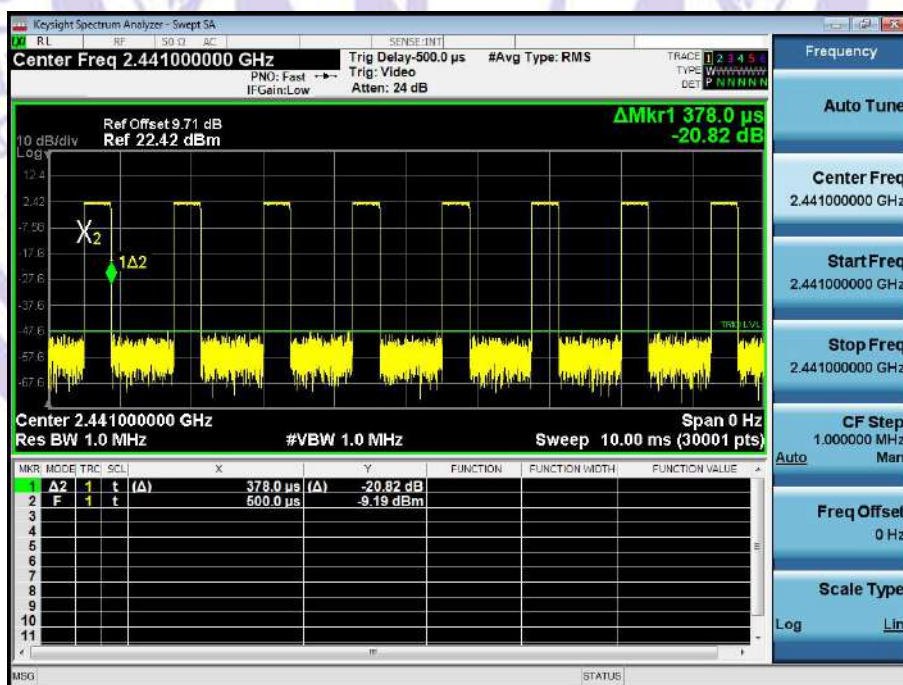
2DH3 2441MHz



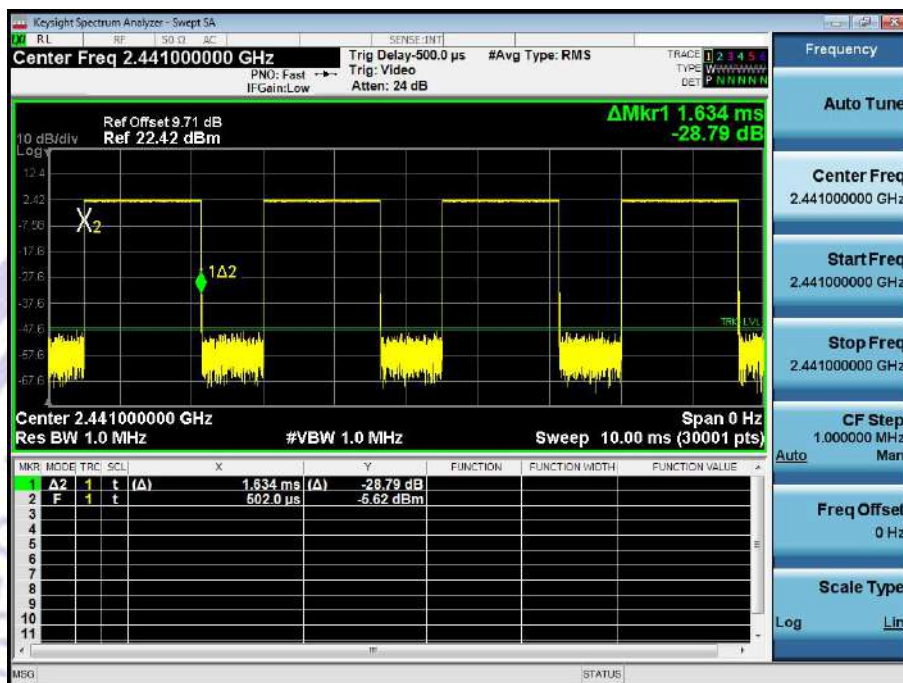
2DH5 2441MHz



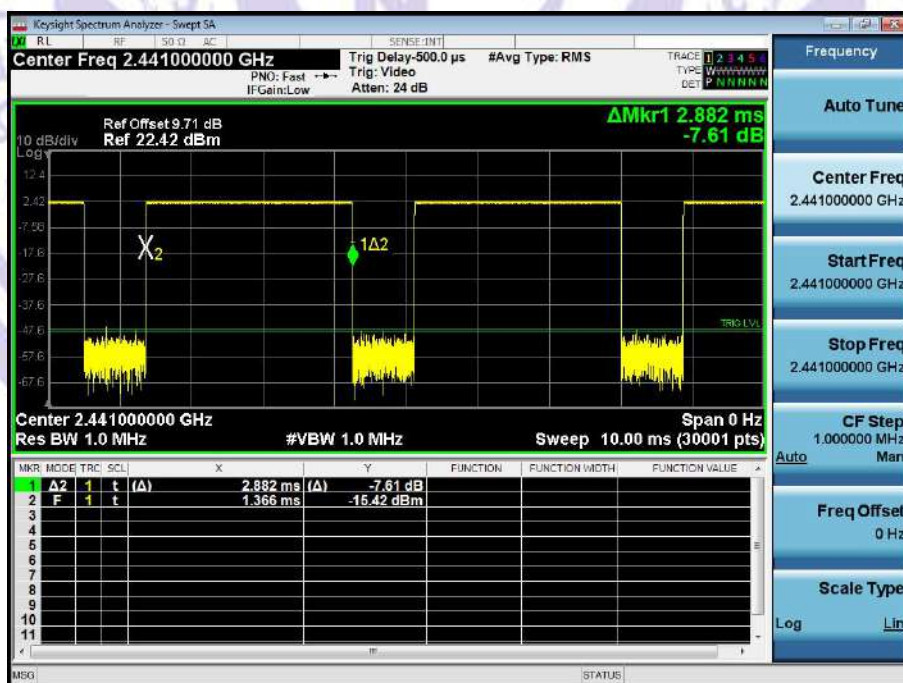
3DH1 2441MHz



3DH3 2441MHz



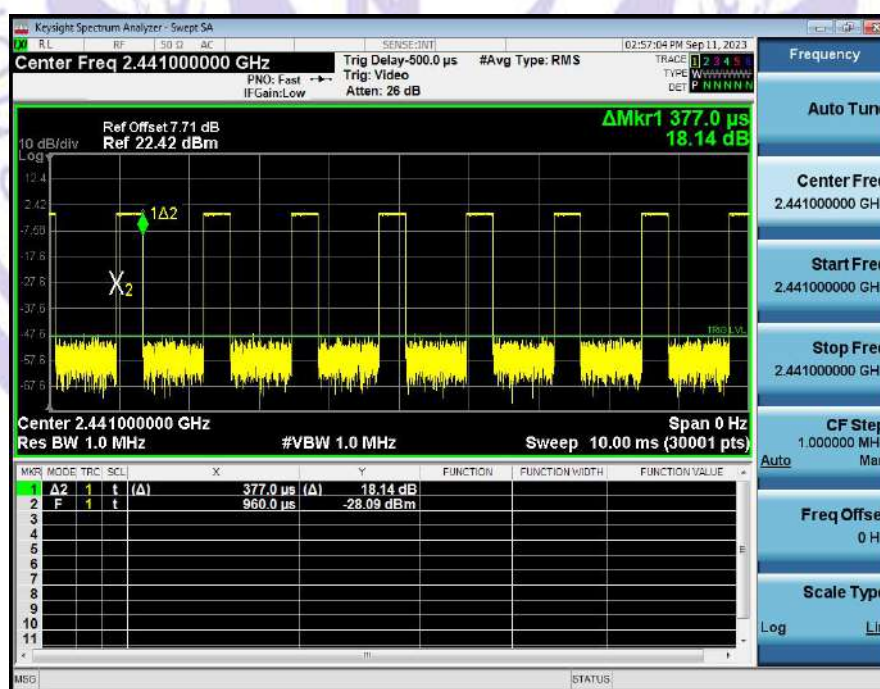
3DH5 2441MHz



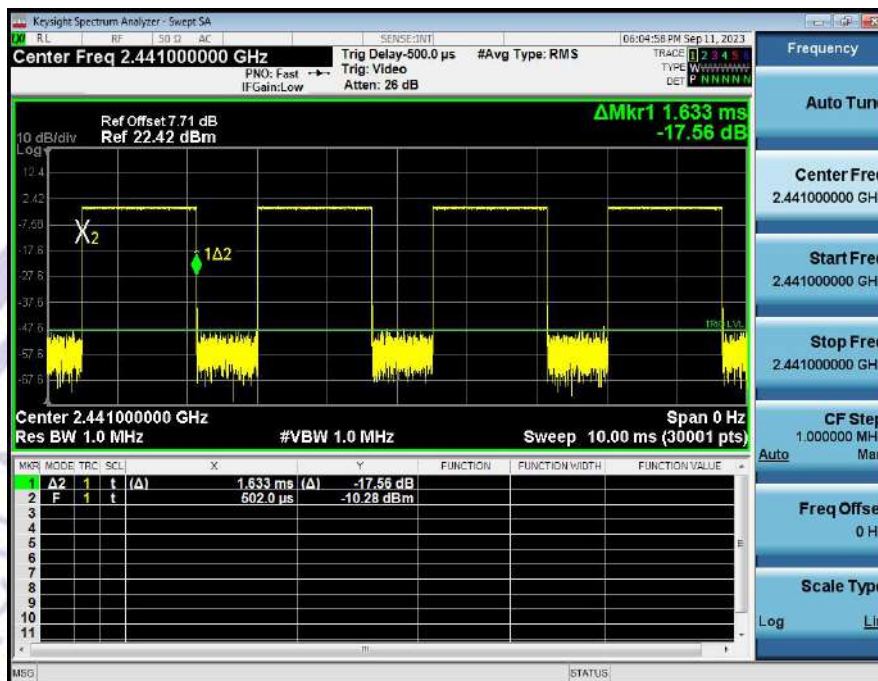
Left earphone

Package Type	Pulse width (ms)	Time slot length(ms)	Dwell time (ms)	Limit (s)	Remark
DH1	0.377	time slot length *1600/2 /79 * 31.6	120.64	0.4	Pass
DH3	1.633	time slot length *1600/4 /79 * 31.6	261.28	0.4	Pass
DH5	2.881	time slot length *1600/6 /79 * 31.6	307.31	0.4	Pass
2DH1	0.387	time slot length *1600/2 /79 * 31.6	123.84	0.4	Pass
2DH3	1.639	time slot length *1600/4 /79 * 31.6	262.24	0.4	Pass
2DH5	2.887	time slot length *1600/6 /79 * 31.6	307.95	0.4	Pass
3DH1	0.388	time slot length *1600/2 /79 * 31.6	124.16	0.4	Pass
3DH3	1.638	time slot length *1600/4 /79 * 31.6	262.08	0.4	Pass
3DH5	2.889	time slot length *1600/6 /79 * 31.6	308.16	0.4	Pass

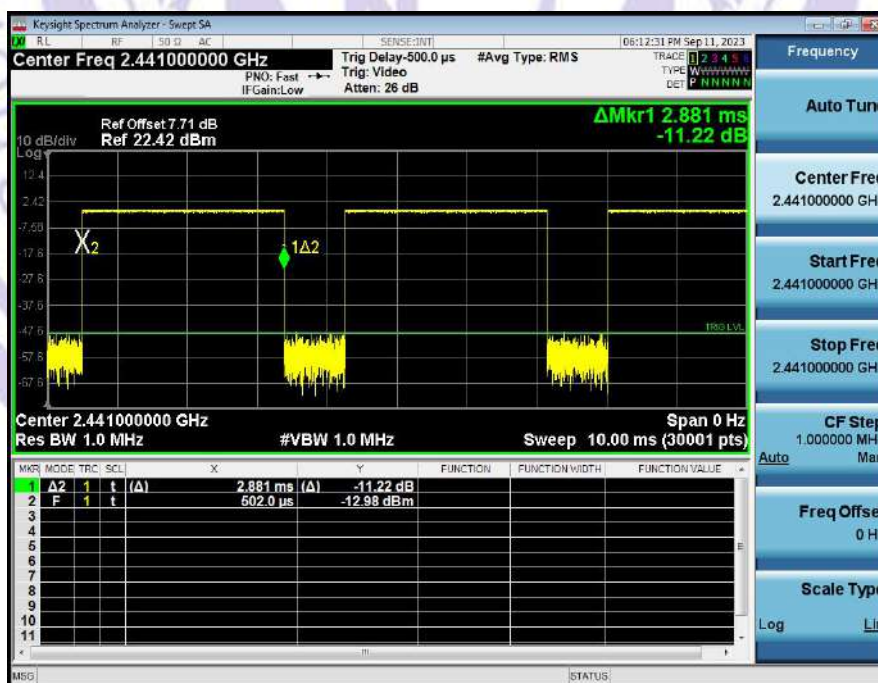
Test Plots DH1 2441MHz



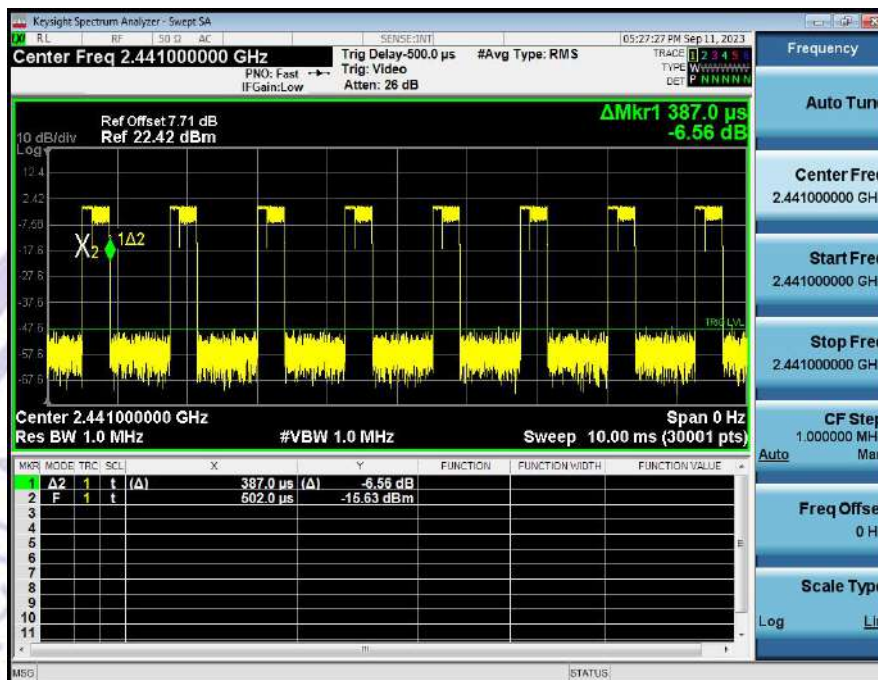
DH3 2441MHz



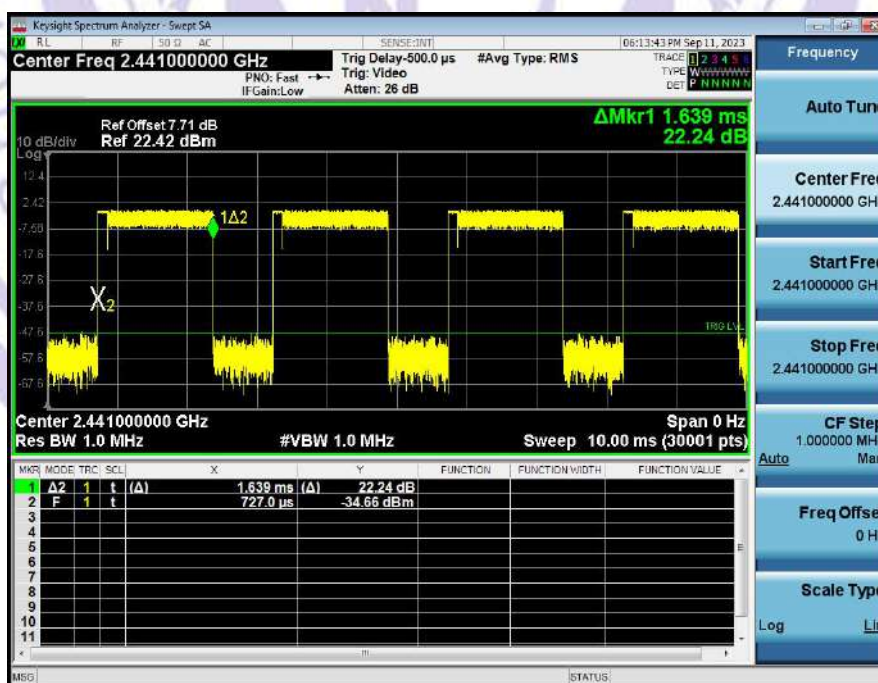
DH5 2441MHz



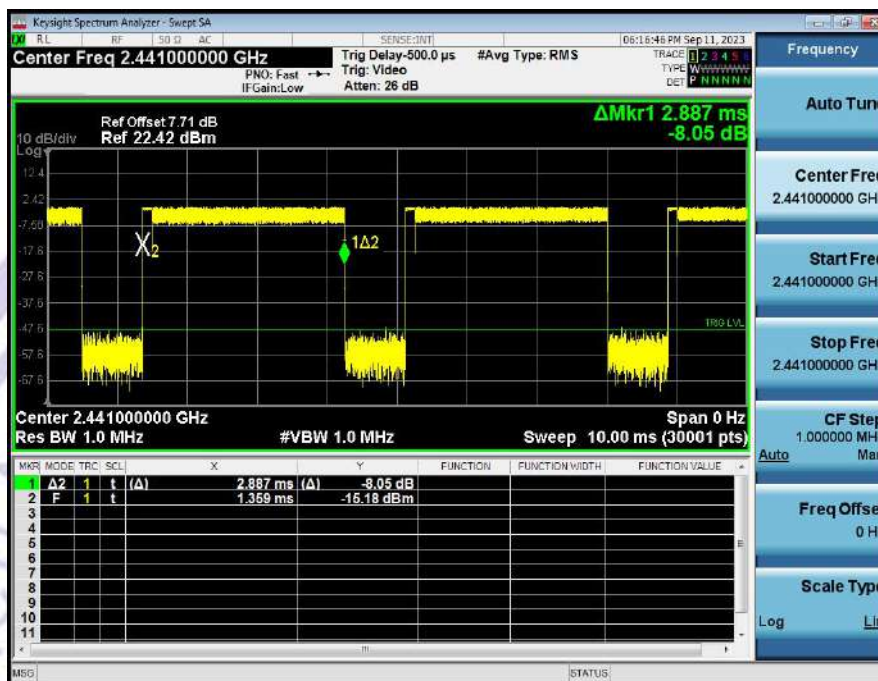
2DH1 2441MHz



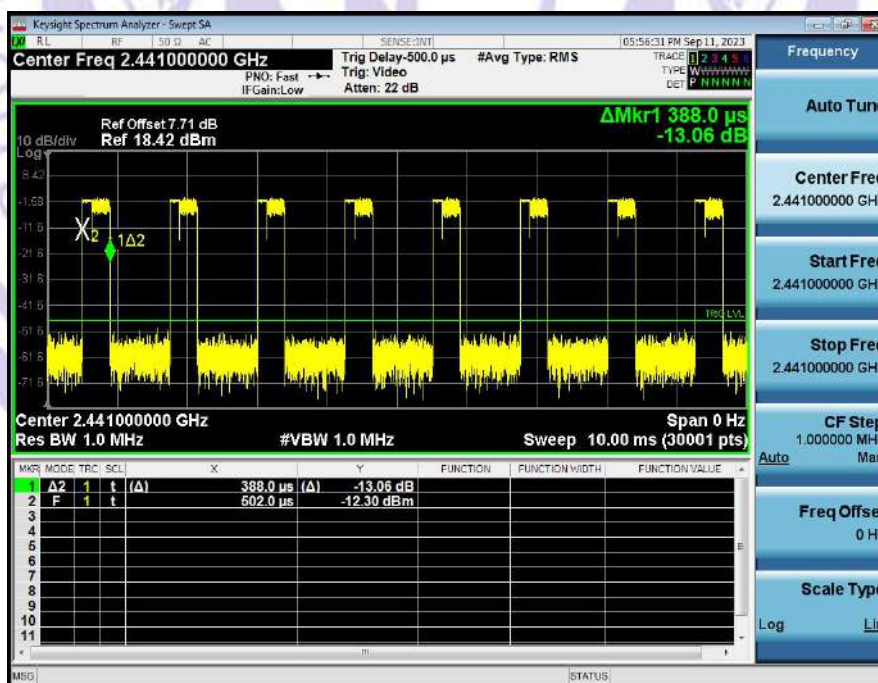
2DH3 2441MHz



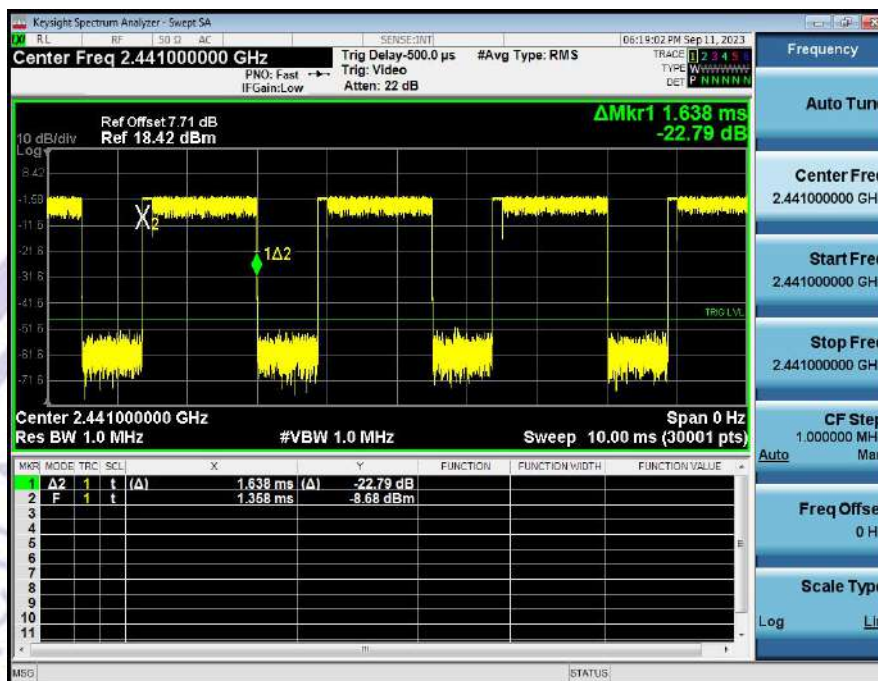
2DH5 2441MHz



3DH1 2441MHz



3DH3 2441MHz



3DH5 2441MHz

