



**FCC 47 CFR PART 15 SUBPART C
ISED RSS 247 ISSUE 2
CERTIFICATION TEST REPORT**

For

Massage Chair

MODEL NUMBER: NS-MGC600BK2

PROJECT NUMBER: 4789993507

REPORT NUMBER: 4789993507-1

FCC ID: 2A2JA-NSMGC600BK2

IC: 27853-600S

ISSUE DATE: Dec. 13, 2021

Prepared for

Zhejiang Haozhonghao Health Product Co., Ltd.

Prepared by

UL-CCIC COMPANY LIMITED

**No. 2, Chengwan Road, Suzhou Industrial Park, People's Republic of
China**

Tel: +86 512 6808 6400

Fax: +86 512 6808 4099

Website: www.ul.com

Form-ULID-008536-7 V1.0

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V0	12/13/2021	Initial Issue	



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Zhejiang Haozhonghao Health Product Co., Ltd.
Address: No.18 Xinglong Road, Furniture Garden Wanquan Industry Base, Pingyang, Wenzhou, Zhejiang, China

Manufacturer Information

Company Name: Zhejiang Haozhonghao Health Product Co., Ltd.
Address: No.18 Xinglong Road, Furniture Garden Wanquan Industry Base, Pingyang, Wenzhou, Zhejiang, China

Factory Information

Company Name: Zhejiang Haozhonghao Health Product Co., Ltd.
Address: No.18 Xinglong Road, Furniture Garden Wanquan Industry Base, Pingyang, Wenzhou, Zhejiang, China

EUT Description

Product Name: Massage Chair
Model Name: NS-MGC600BK2
Sample Number: 2936358
Date of Receipt Sample: Aug. 18, 2021
Date Tested: Aug. 18, 2021~ Dec.13, 2021

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS



Summary of Test Results			
Clause	Test Items	FCC/ISED Rules	Test Results
1	20dB Bandwidth And 99% Bandwidth	FCC 15.247 (a) (1) RSS-247 Clause 5.1 (a)	Complied
2	Peak Conducted Output Power	FCC 15.247 (b) (1) RSS-247 Clause 5.1 (b)	Complied
3	Carrier Hopping Channel Separation	FCC 15.247 (a) (1) RSS-247 Clause 5.1 (b)	Complied
4	Number of Hopping Frequency	15.247 (a) (1) III RSS-247 Clause 5.1 (d)	Complied
5	Time of Occupancy (Dwell Time)	15.247 (a) (1) III RSS-247 Clause 5.1 (d)	Complied
6	Conducted Bandedge	FCC 15.247 (d) RSS-247 Clause 5.5	Complied
7	Radiated Bandedge and Spurious	FCC 15.247 (d) FCC 15.209 FCC 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9 RSS-GEN Clause 8.10	Complied
8	Conducted Emission Test for AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	Complied
9	Antenna Requirement	FCC 15.203 RSS-GEN Clause 6.8	Complied
Remark: 1) The measurement result for the sample received is <Pass> according to < ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15C, ISED RSS-GEN Issue5, ISED RSS-247 Issue2> > when <Accuracy Method> decision rule is applied. 2) The EUT is power supply by the battery			

Prepared By:

Tom Tang

Tom Tang
Project Engineer

Reviewed By:

Leon Wu

Leon Wu
Senior Project Engineer

Authorized By:

Chris Zhong

Chris Zhong
Laboratory Leader



2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ISED RSS-GEN ISSUE5 and ISED RSS-247 ISSUE2.

3. FACILITIES AND ACCREDITATION

Test Location	UL-CCIC Company Limited, EMC&RF Lab
Address	No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122 ,China
Accreditation Certificate	<p>A2LA (Certificate No.: 4829.01) UL-CCIC COMPANY LIMITED has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1247) UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</p> <p>IC (IC Designation No.: 25056; CAB No.: CN0073) UL-CCIC COMPANY LIMITED has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.</p>

Note 1: All tests measurement facilities use to collect the measurement data are located at No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, People's Republic of China

Note 2: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OFS.

Note 3: The test anechoic chamber in UL-CCIC COMPANY LIMITED had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.1dB
Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	3.4dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	3.4dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	3.9dB (1GHz-18Gz)
	4.2dB (18GHz-26.5Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	



5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	Massage Chair	
Model No.:	NS-MGC600BK2	
Product Description (Bluetooth)	Operation Frequency	2402 MHz ~ 2480 MHz
	Modulation Type	Data Rate
	GFSK	1Mbps
	π/4-DQPSK	2Mbps
	8DPSK	3Mbps
Test software of EUT:	BT FCC Tools 2.00 (manufacturer declare)	
Antenna Type:	PCB antenna	
Antenna Gain:	0 dBi	
	Remark: This data is provided by customer and our lab isn't responsible for this data	



5.2. MAXIMUM OUTPUT POWER

Bluetooth Mode	Frequency(MHz)	Channel Number	Max Output Power (dBm)
GFSK	2402-2480	0-78[79]	-5.09
8DPSK	2402-2480	0-78[79]	-2.29

5.3. PACKET TYPE CONFIGURATION

Test Mode	Packet Type	Setting(Packet Length)
GFSK	DH1	27
	DH3	183
	DH5	339
π/4-DQPSK	2-DH1	54
	2-DH3	367
	2-DH5	679
8DPSK	3-DH1	83
	3-DH3	552
	3-DH5	1021



5.4. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2422	40	2442	60	2462
01	2403	21	2423	41	2443	61	2463
02	2404	22	2424	42	2444	62	2464
03	2405	23	2425	43	2445	63	2465
04	2406	24	2426	44	2446	64	2466
05	2407	25	2427	45	2447	65	2467
06	2408	26	2428	46	2448	66	2468
07	2409	27	2429	47	2449	67	2469
08	2410	28	2430	48	2450	68	2470
09	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

5.5. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel Number	Test Channel
GFSK	CH 00, CH 39, CH 78	Low, Middle, High
8DPSK	CH 00, CH 39, CH 78	Low, Middle, High

5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worst Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software		FCCTool		
Modulation Type	Transmit Antenna Number	Test Channel		
		CH 00	CH 39	CH 78
GFSK	1	3	3	3
8DPSK	1	3	3	3



5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2402-2480	PCB antenna	0

Test Mode	Transmit and Receive Mode	Description
GFSK	1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
8DPSK	1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.



5.8. WORST-CASE CONFIGURATIONS

Bluetooth Mode	Modulation Technology	Modulation Type	Data Rate (Mbps)
BR	FHSS	GFSK	1Mbit/s
EDR	FHSS	8DPSK	3Mbit/s

Note: Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

5.9. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Description
1	Laptop	ThinkPad	E550c	N/A
2	Fixed Frequency Board	N/A	N/A	Supply by Customer
3	USB Cable	N/A	N/A	Supply by UL Lab(100cm length)
4	Portable Power Source	XIAOMI Portable Power Source	PLM09ZM	Supply by UL Lab

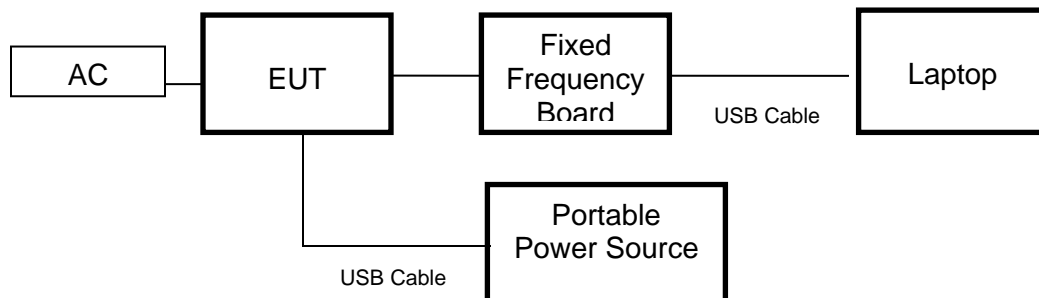
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

TEST SETUP

The EUT can work in an engineer mode with a software through a PC. Test Voltage is 120Vac 60Hz.

SETUP DIAGRAM FOR TESTS





5.10. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions (Instrument)							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	126700	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	126701	2020-12-05	2021-12-04	2022-12-03
Software							
Used	Description	Manufacturer	Name	Version			
<input checked="" type="checkbox"/>	Test Software for Conducted disturbance	R&S	EMC32	Ver. 9.25			
Radiated Emissions (Instrument)							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9010B	155727	2020-05-10	2021-05-09	2022-05-08
<input checked="" type="checkbox"/>	EMI test receiver	R&S	ESR26	126703	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Receiver Antenna (9kHz-30MHz)	Schwarzbeck	FMZB 1513	155456	2018-06-15	2021-06-03	2024-06-02
<input checked="" type="checkbox"/>	Receiver Antenna (30MHz-1GHz)	SunAR RF Motion	JB1	177821	N/A	2019-01-28	2022-01-27
<input checked="" type="checkbox"/>	Receiver Antenna (1GHz-18GHz)	R&S	HF907	126705	2018-01-29	2019-01-28	2022-01-27
<input checked="" type="checkbox"/>	Receiver Antenna (18GHz-26.5GHz)	Schwarzbeck	BBHA9170	126706	2018-01-06	2019-01-05	2022-01-04
<input checked="" type="checkbox"/>	Pre-amplification (To 18GHz)	Compliance Direction System Inc.	PAP-1G18-50	177825	2019-03-18	2020-12-05	2022-03-25
<input checked="" type="checkbox"/>	Pre-amplification (To 26.5GHz)	R&S	SCU-26D	135391	2020-12-05	2021-12-04	2022-12-03
<input checked="" type="checkbox"/>	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	1	2020-05-10	2021-05-09	2022-05-08
<input checked="" type="checkbox"/>	Highpass Filter	Wainwright	WHKX10-2700-3000-18000-40SS	2	2020-05-10	2021-05-09	2022-05-08
Software							
Used	Description	Manufacturer	Name	Version			
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance	Tonscend	TS+	Ver. 2.5			
Other instruments							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9010B	155368	2020-05-10	2021-05-09	2022-05-08
<input checked="" type="checkbox"/>	Power Meter	Keysight	U2021XA	155370	2020-05-10	2021-05-09	2022-05-08



6. ANTENNA PORT TEST RESULTS

6.1. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests
Relative Humidity	65%
Atmospheric Pressure:	1005hPa
Temp, Test Voltage	21.9 deg C, 120Vac 60Hz



6.2. ON TIME AND DUTY CYCLE

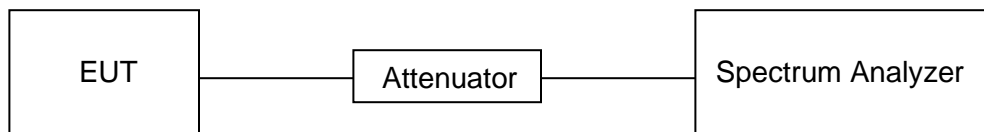
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

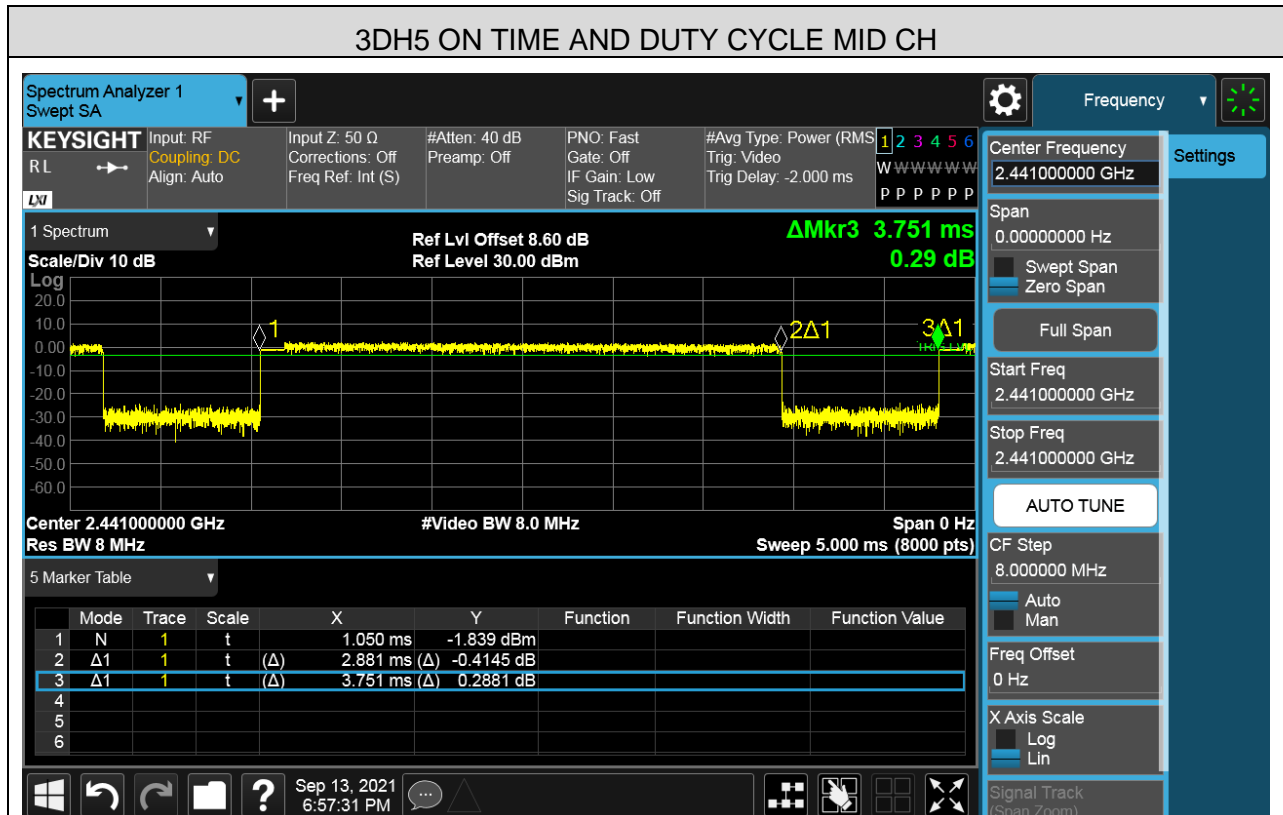
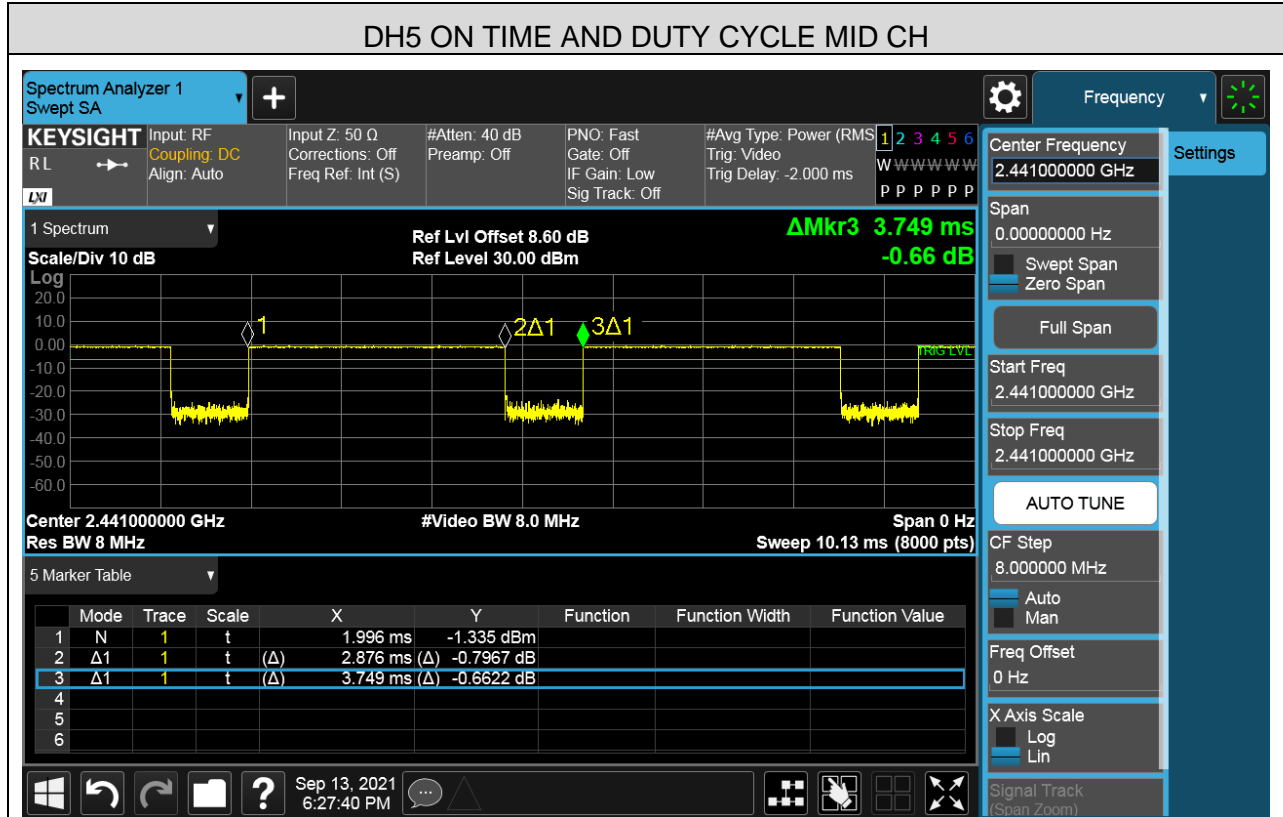
TEST SETUP



RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)	Final VBW(kHz)
GFSK	2.876	3.749	0.767	76.7	1.15	0.35	1
8DPSK	2.881	3.751	0.768	76.8	1.15	0.35	1

Note: Duty Cycle Correction Factor= $10\log(1/x)$.
Where: x is Duty Cycle (Linear)
Where: T is On Time (transmit duration)



6.3. 20 dB BANDWIDTH AND 99% BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
RSS-247 Clause 5.1 (a)	20dB Bandwidth	500KHz	2400-2483.5
RSS-Gen Clause 6.7	99% Bandwidth	N/A	2400-2483.5

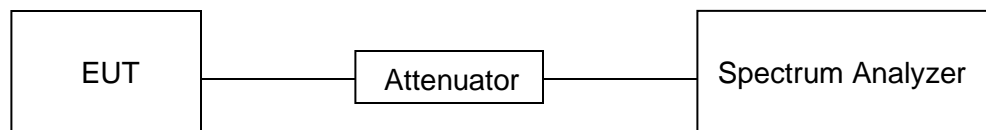
TEST PROCEDURE

Connect the UUT to the spectrum Analyzer and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 20dB Bandwidth: 1% of the 20 dB bandwidth For 99% Bandwidth: 1% to 5% of the occupied bandwidth
VBW	For 20dB Bandwidth: \geq RBW For 99% Bandwidth: approximately 3 \times RBW
Span	approximately 2 to 5 times the 20 dB bandwidth
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP





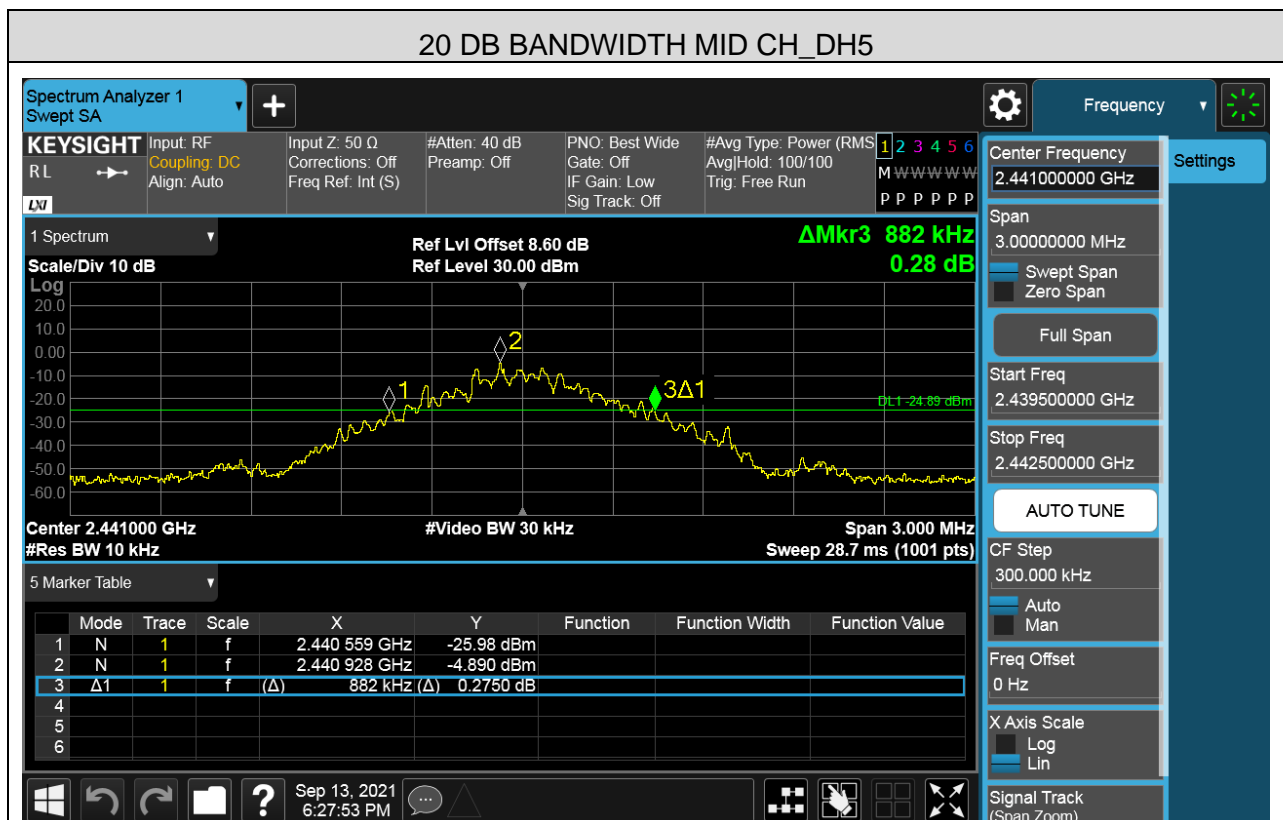
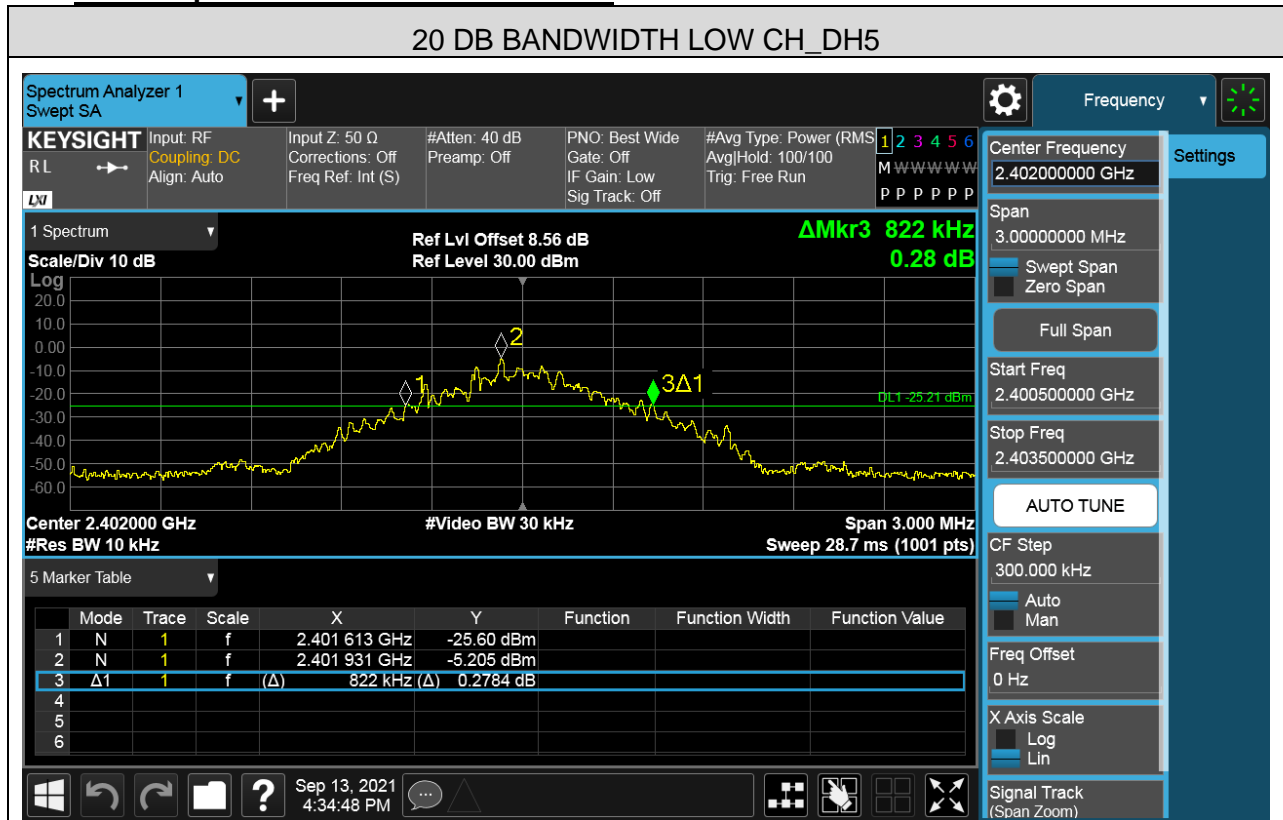
RESULTS TABLE

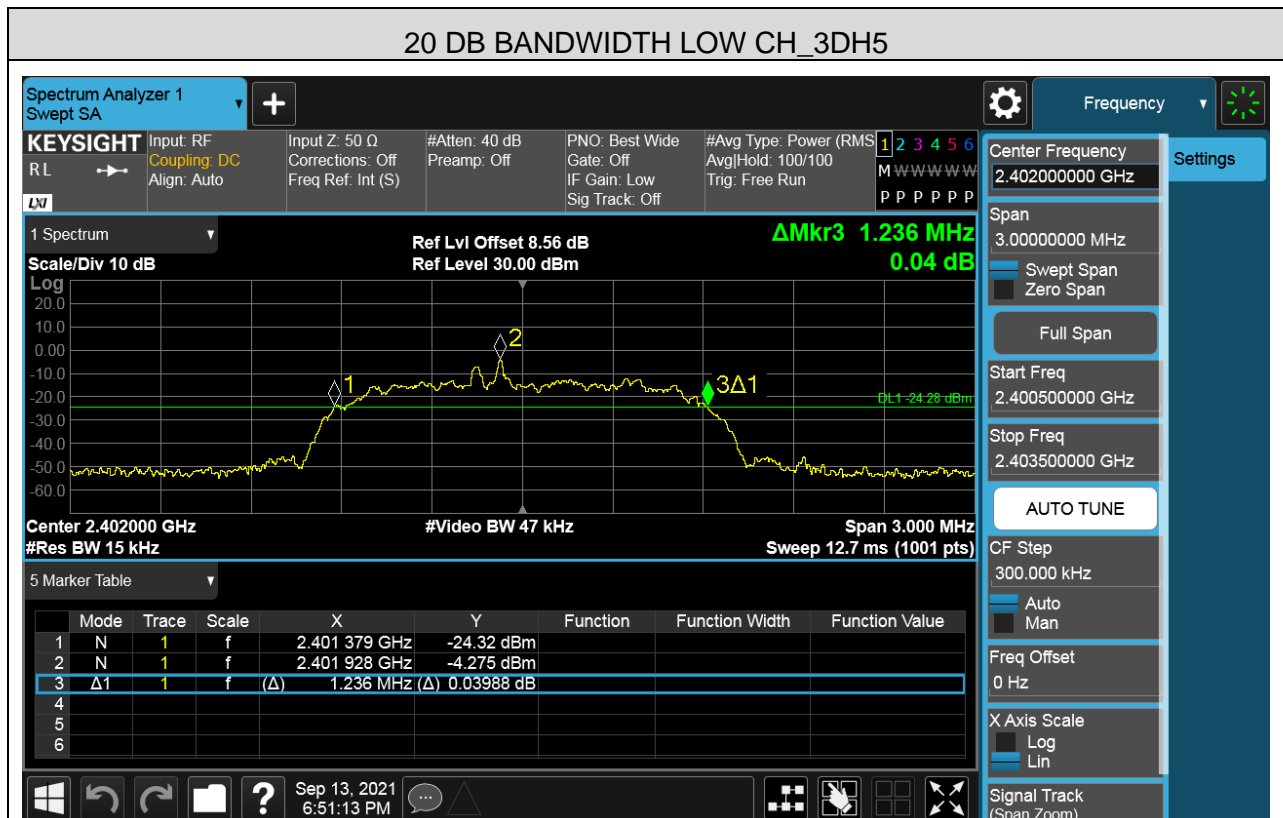
Test Mode	Test Channel	20dB Bandwidth (MHz)	Result
GFSK	LCH	0.822	Pass
	MCH	0.882	Pass
	HCH	0.822	Pass
8DPSK	LCH	1.236	Pass
	MCH	1.233	Pass
	HCH	1.236	Pass

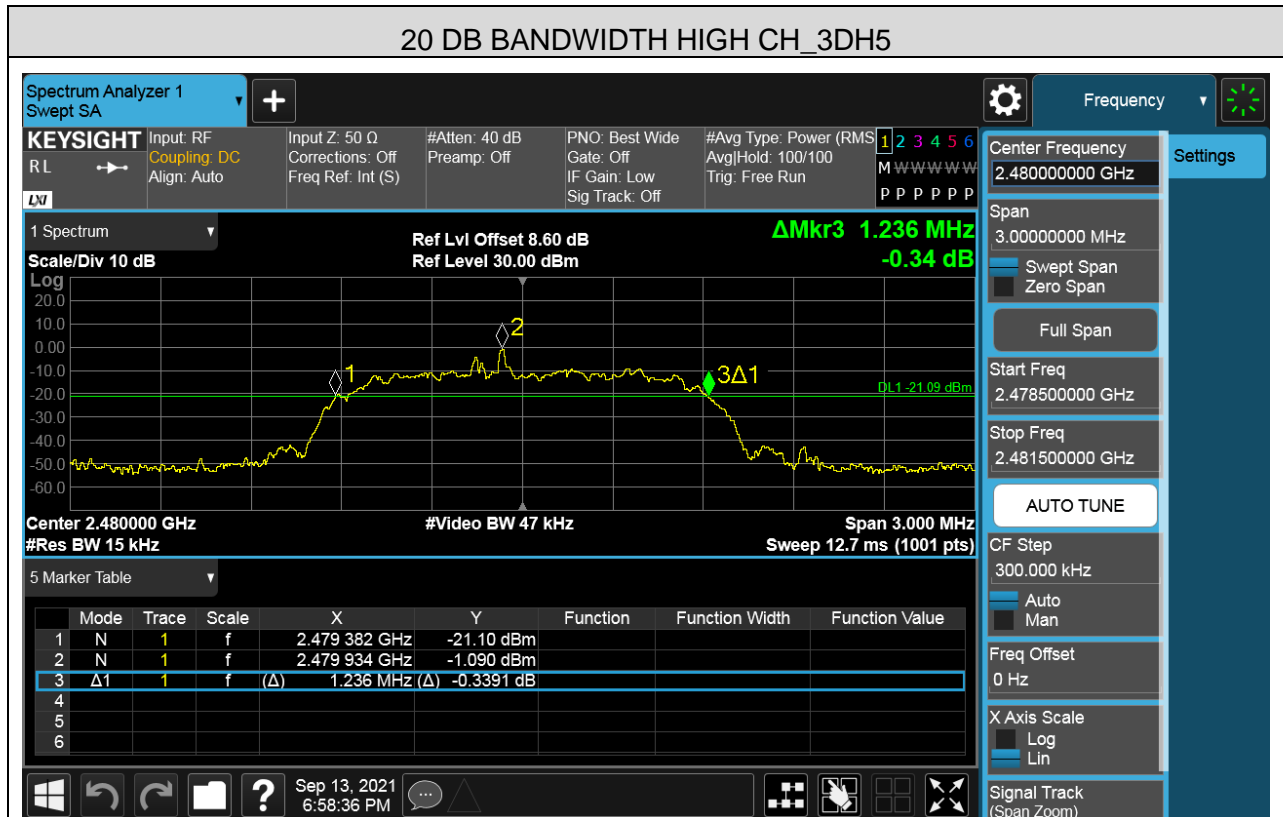
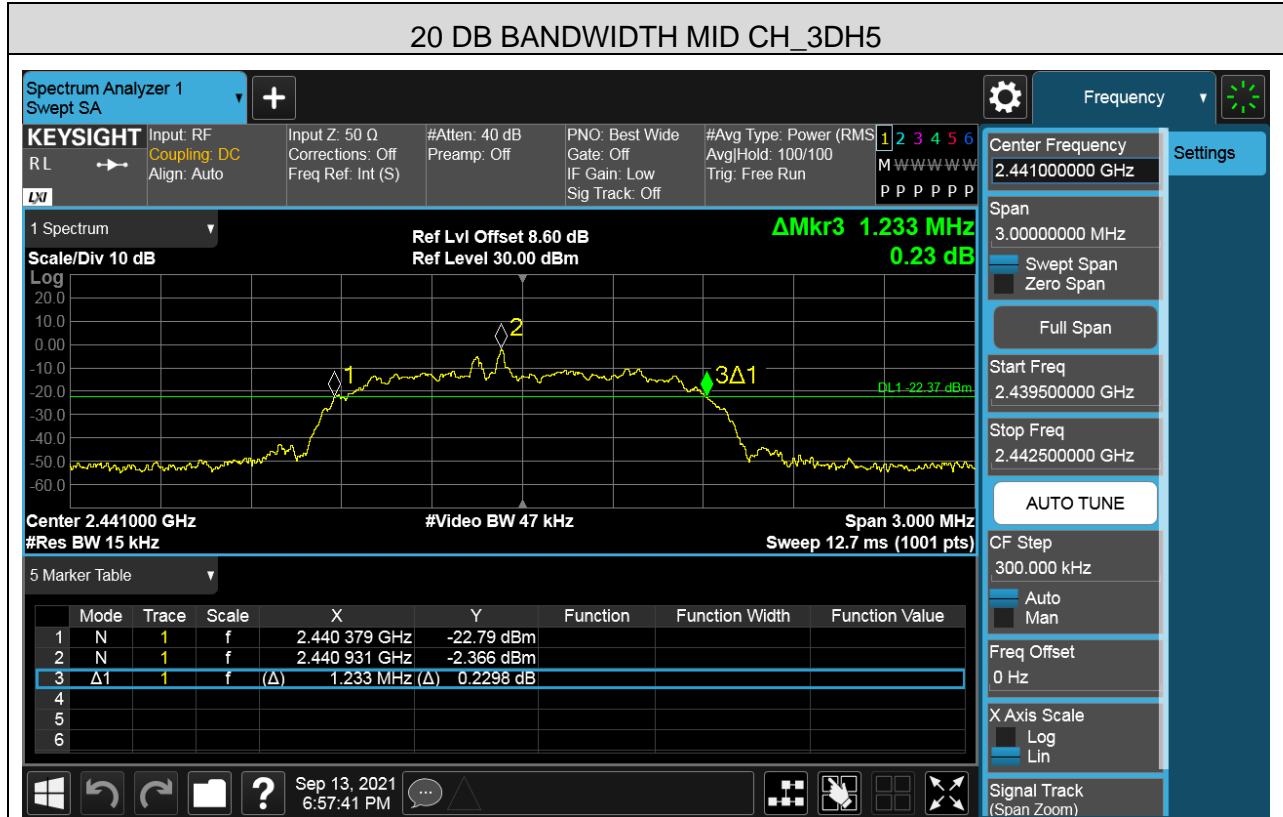
Test Mode	Test Channel	99% Bandwidth (MHz)	Result
GFSK	LCH	0.84175	Pass
	MCH	0.84128	Pass
	HCH	0.83573	Pass
8DPSK	LCH	1.1911	Pass
	MCH	1.1942	Pass
	HCH	1.1894	Pass



Test Graphs For 20dB Bandwidth Part:

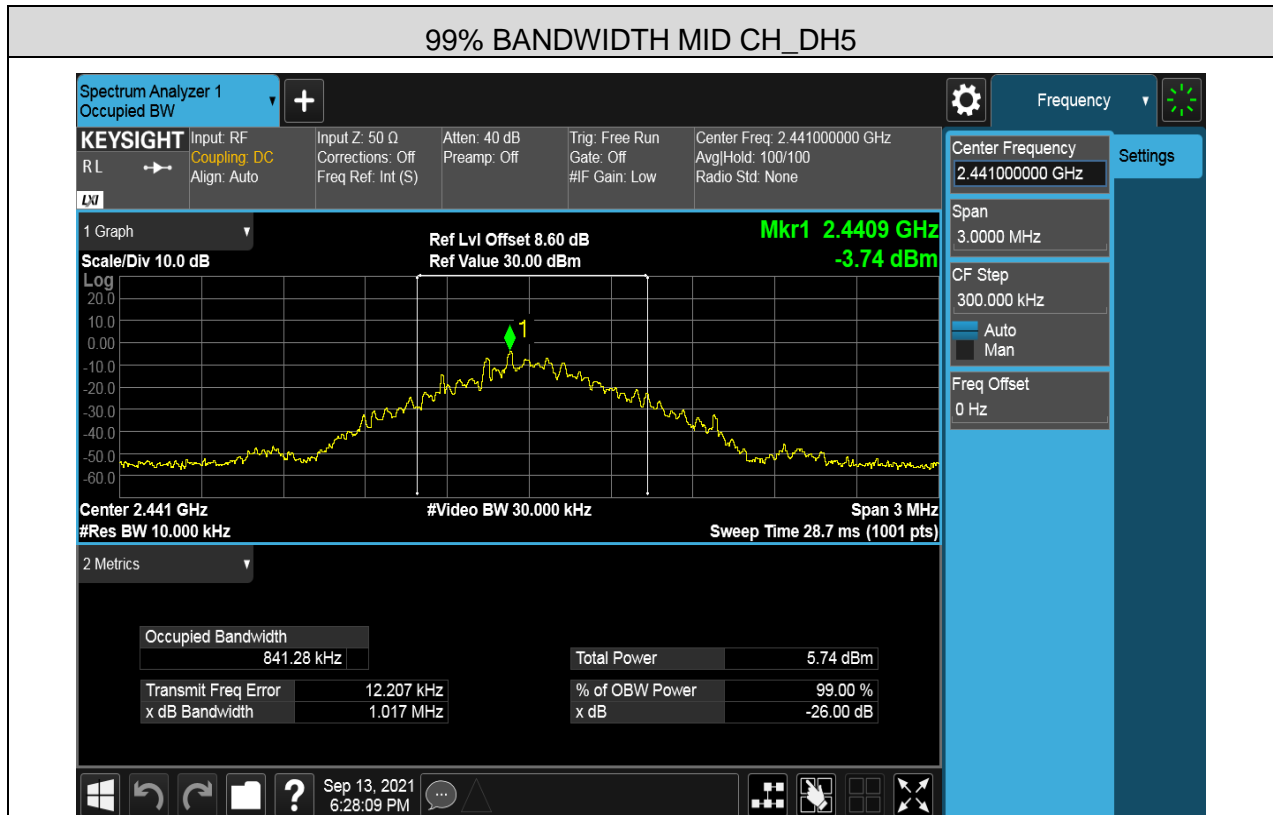
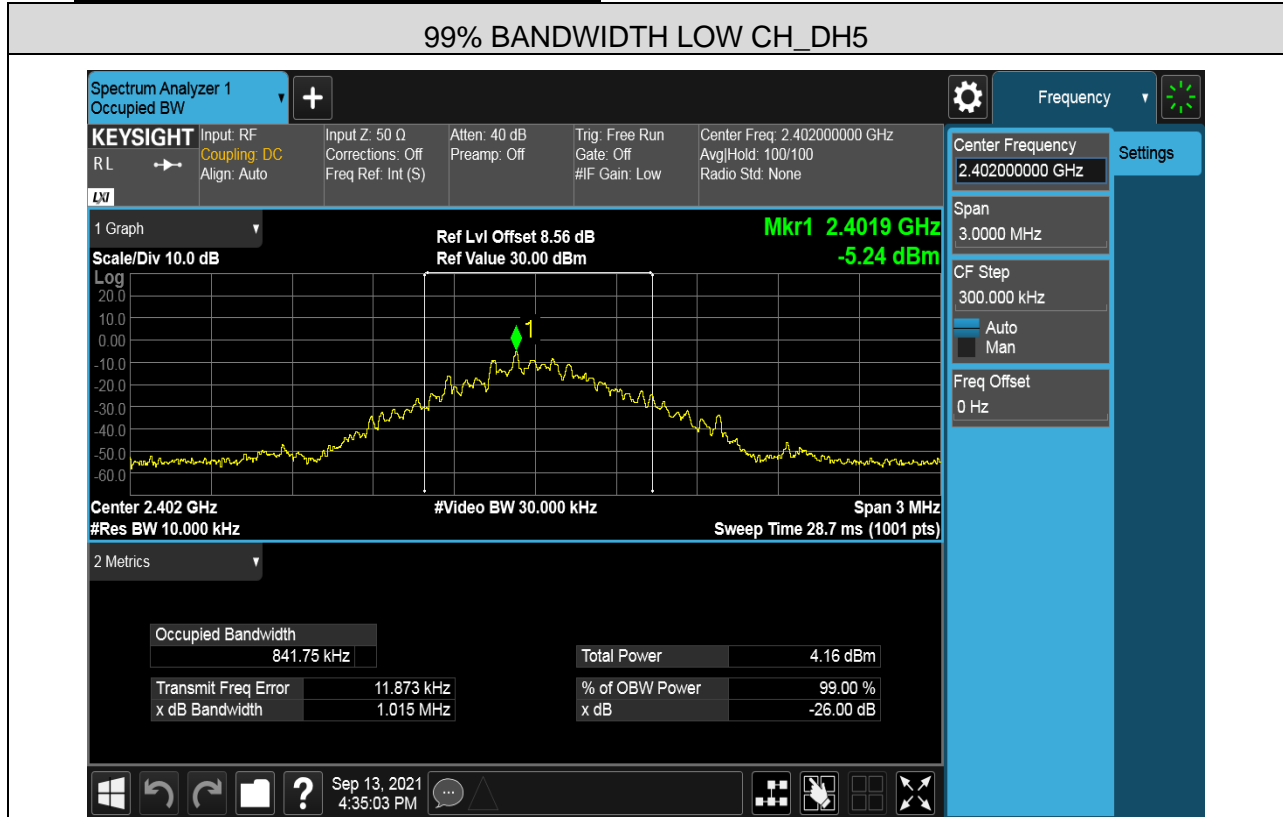


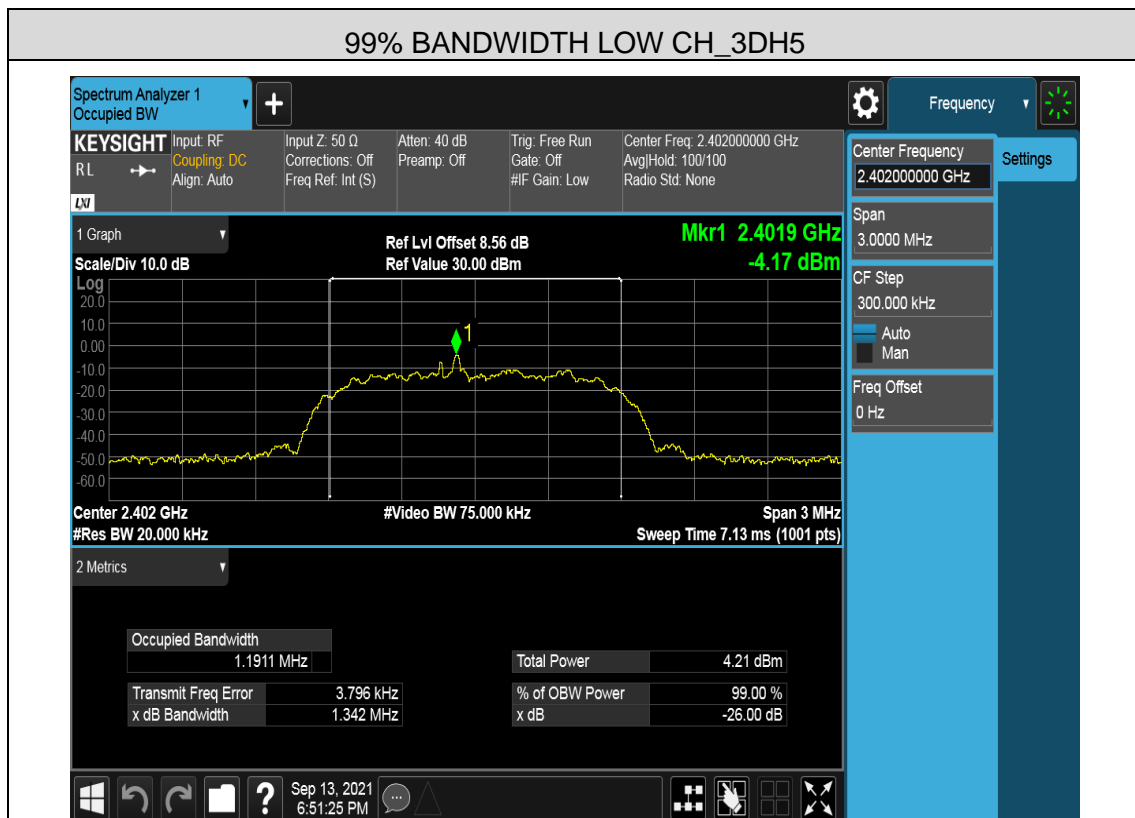


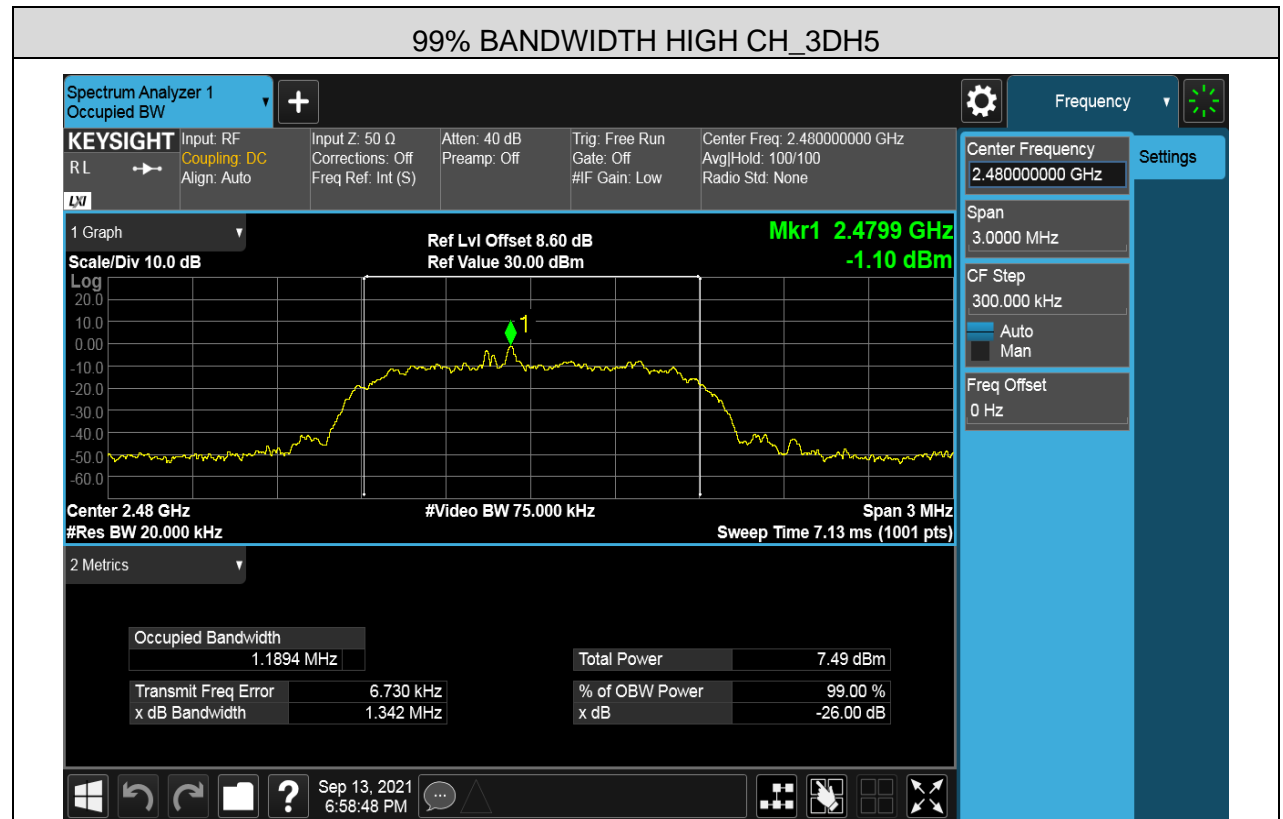
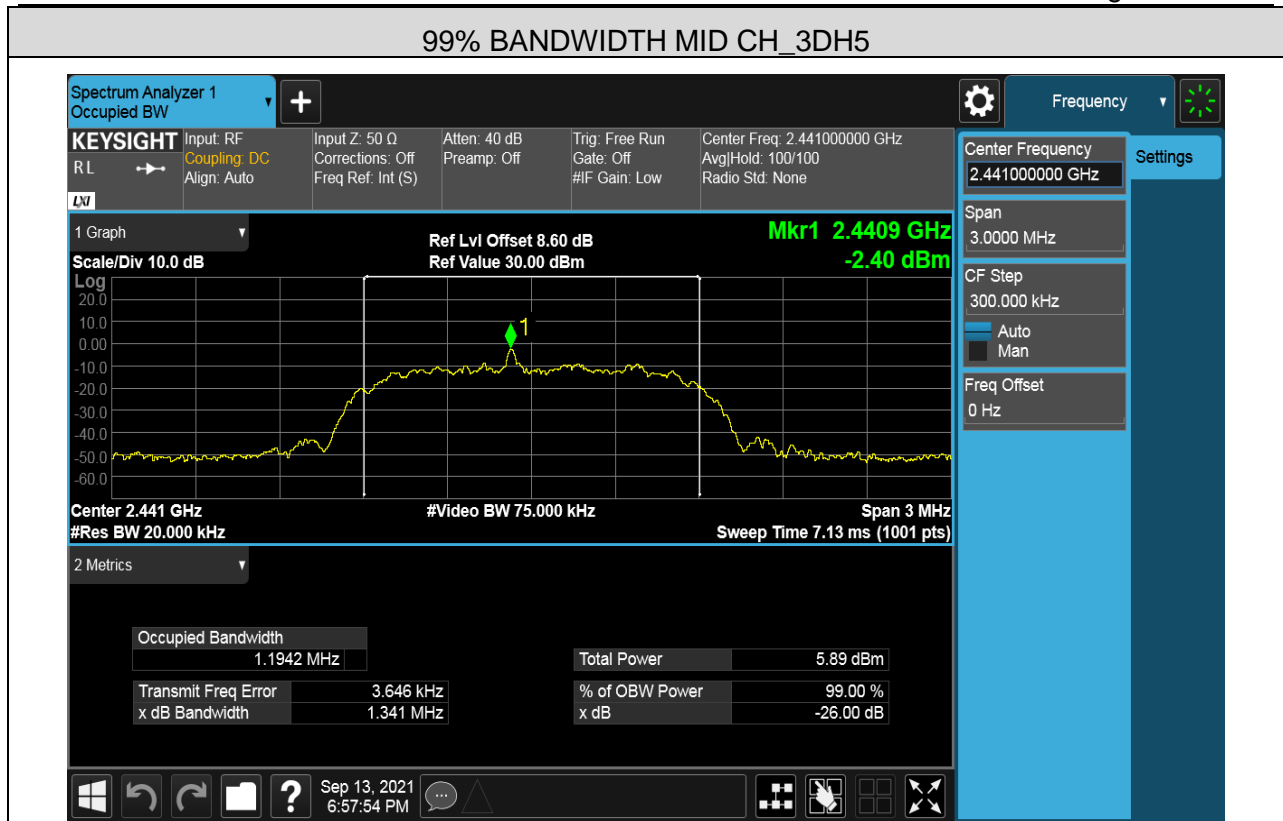




Test Graphs For 99% Bandwidth Part:







6.4. OUTPUT POWER

LIMITS

FCC Part15 (15.247) , Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247 (b) (1), RSS-247 Clause 5.4 (b)	Peak Conducted Output Power	Hopping channel carrier frequencies separated by a minimum of 25KHz or the 20dB bandwidth of the hopping channel: 1 watt or 30dBm; Hopping channel carrier frequencies that are separated by 25KHz or two-thirds of the 20 dB bandwidth of hopping channel: 125mW or 21dBm	2400-2483.5

TEST PROCEDURE

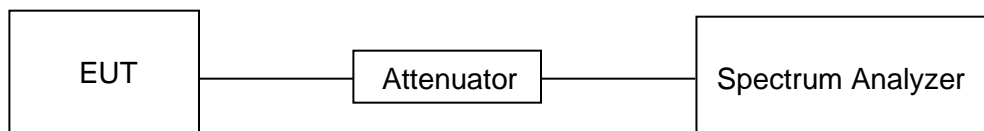
Disable the hopping function, connect the UUT to the spectrum Analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	≥ 20 dB bandwidth of the emission being measured
VBW	≥RBW
Span	Approximately five times the 20 dB bandwidth
Trace	Max hold
Sweep time	Auto couple

Allow trace to fully stabilize and use peak marker function to determine the peak amplitude level.

TEST SETUP

for peak power measurement:

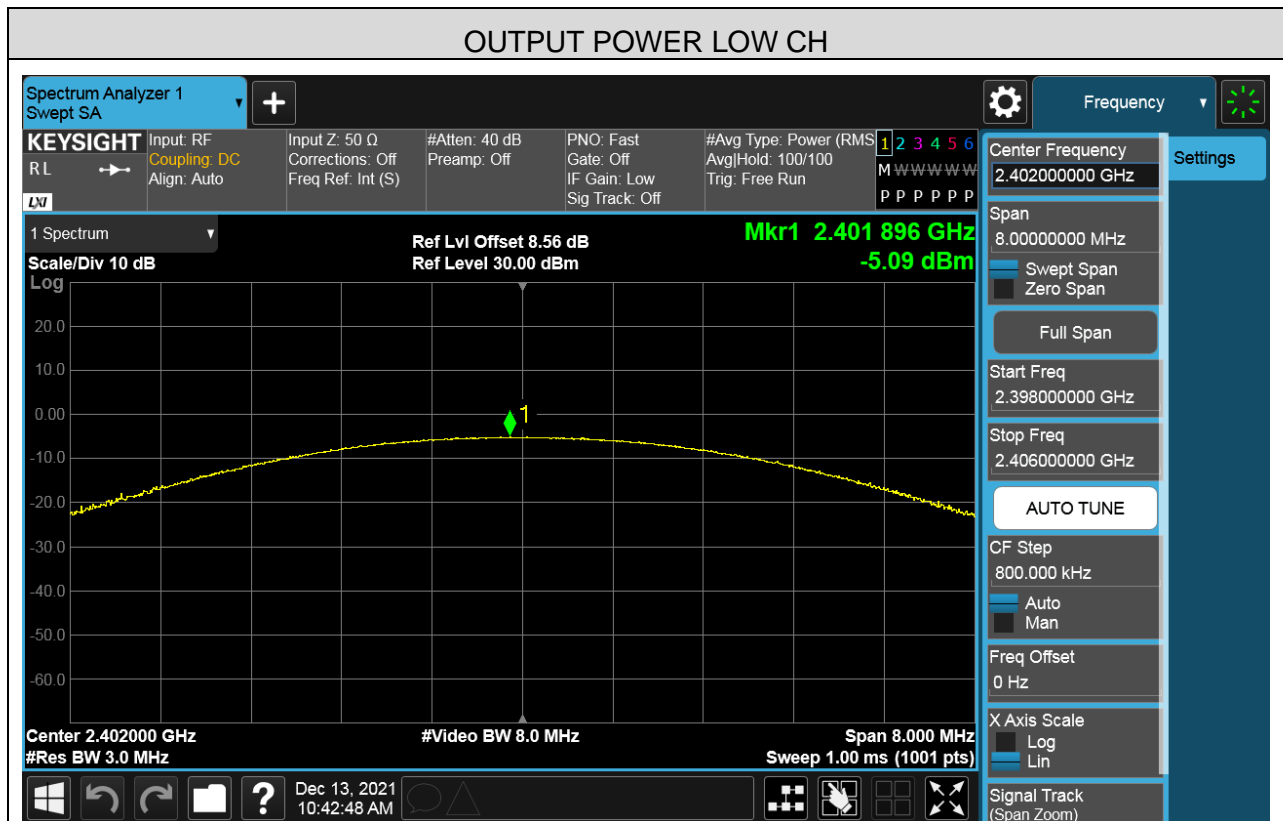


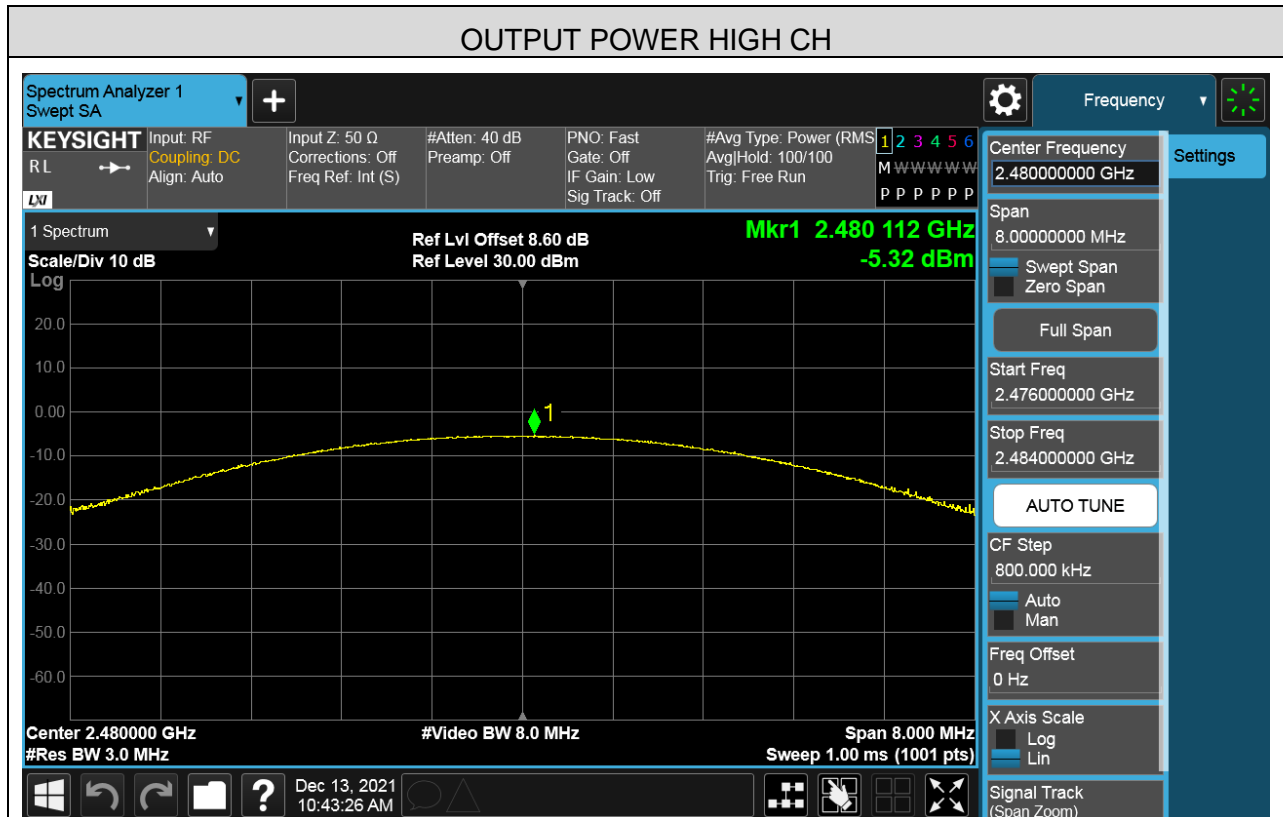
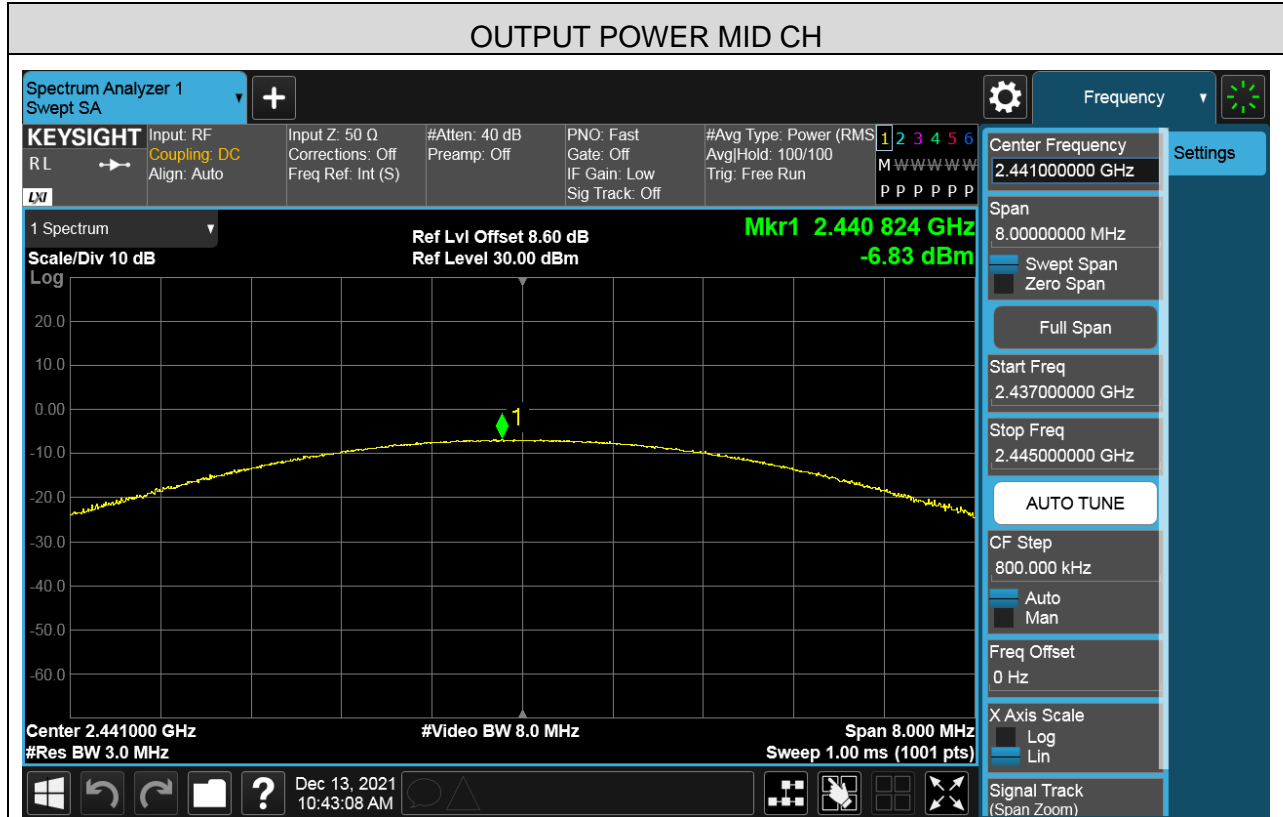


RESULTS

6.4.1. GFSK MODE

Channel	Frequency	Maximum Output Power	Result
	(MHz)	(dBm)	
Low	2402	-5.09	Pass
Middle	2441	-6.83	Pass
High	2480	-5.32	Pass

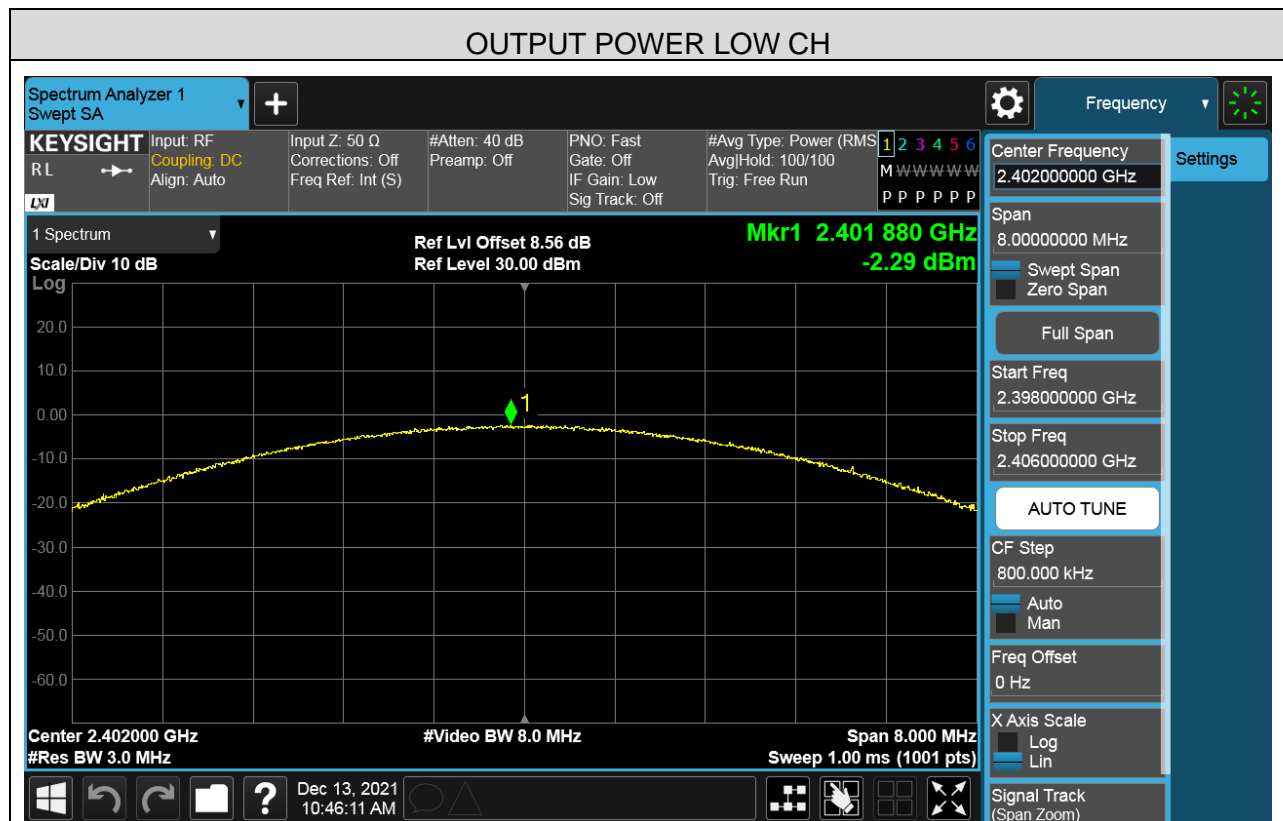


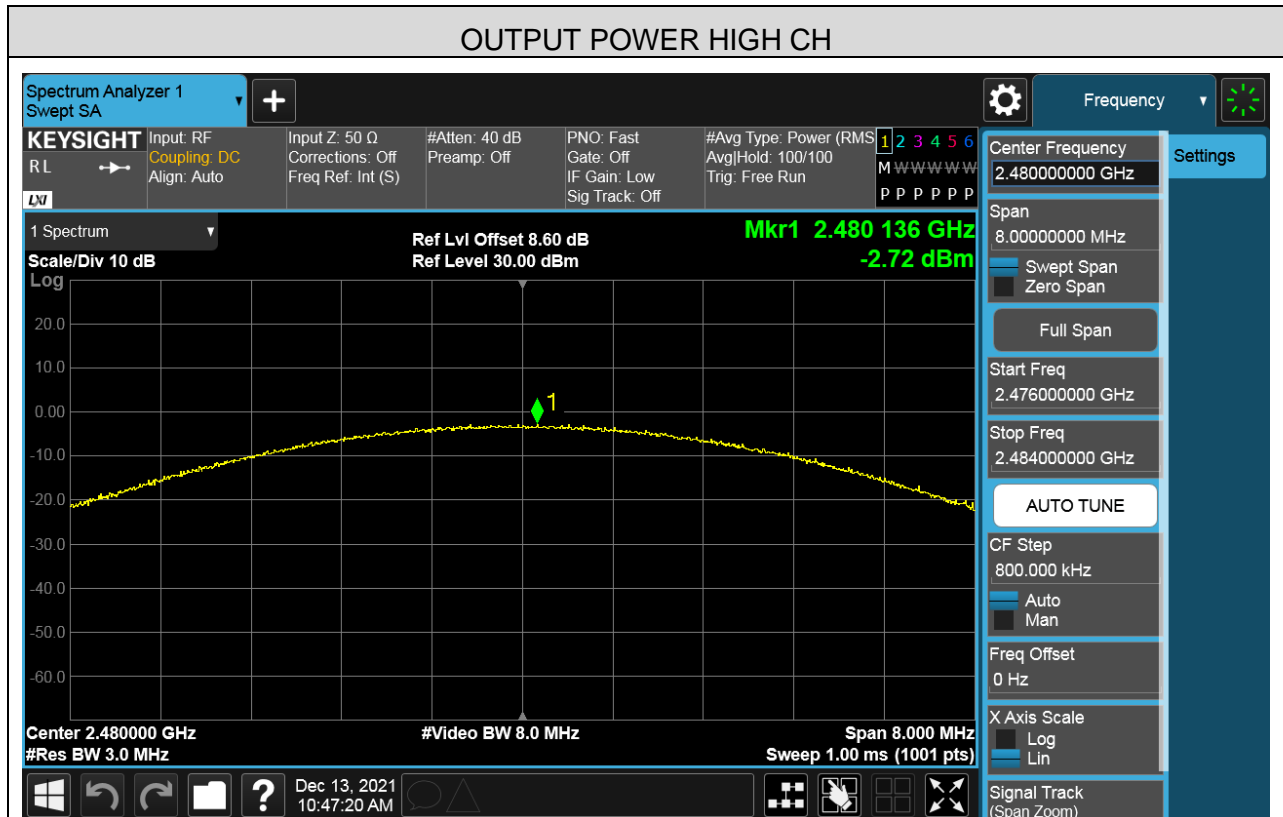
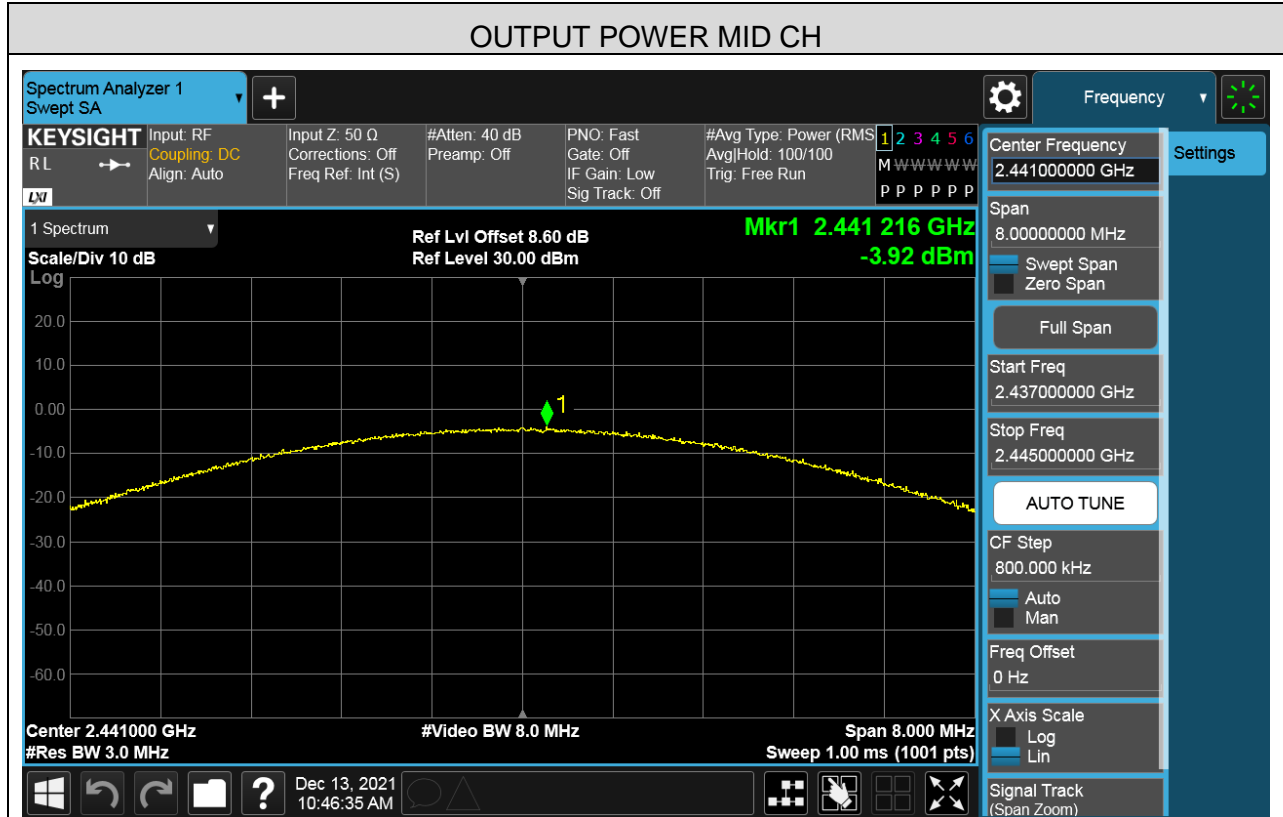




6.4.2. 8DPSK MODE

Channel	Frequency	Maximum PK Conducted Output Power	Result
	(MHz)	(dBm)	
Low	2402	-2.29	Pass
Middle	2441	-3.92	Pass
High	2480	-2.72	Pass





6.5. CARRIER HOPPING CHANNEL SEPARATION

LIMITS

FCC Part15 (15.247) , Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247 (a) (1), RSS-247 Clause 5.1 (b)	Carrier Hopping Channel Separation	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25KHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5MHz band may have hopping channel carrier frequencies that are separated by 25KHz or two-thirds of the 20 dB bandwidth of the hopping channel.	2400-2483.5

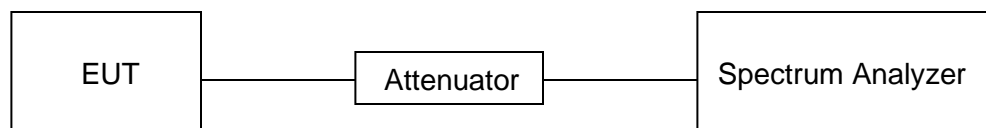
TEST PROCEDURE

Connect the UUT to the spectrum Analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Span	wide enough to capture the peaks of two adjacent channels
Detector	Peak
RBW	Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel
VBW	≥RBW
Trace	Max hold
Sweep time	Auto couple

Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

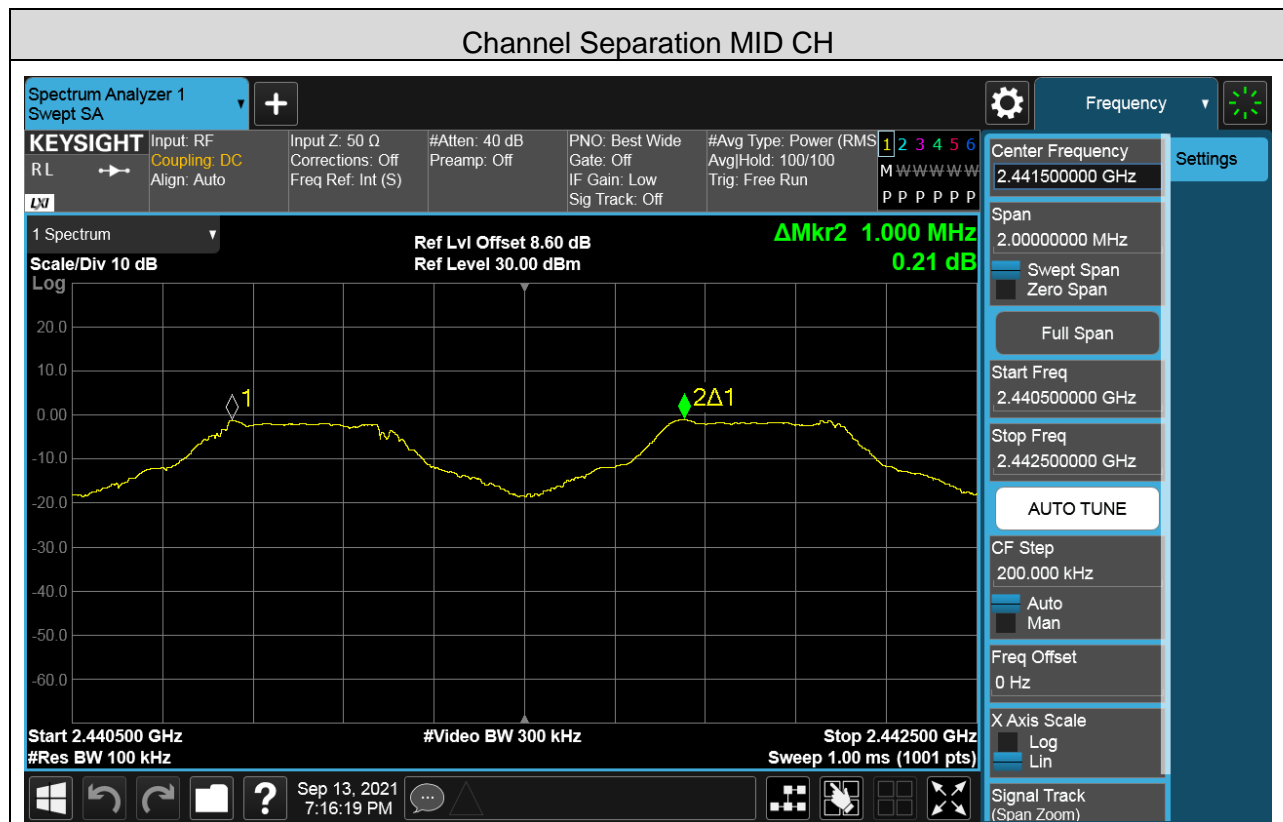
TEST SETUP



RESULTS

6.5.1. GFSK MODE

Channel	Carrier Hopping Channel Separation (MHz)	Result
Middle	1.000	PASS



Note: For 20 dB Bandwidth of The Hopping Channel, please refer to clause 6.3.

6.6. NUMBER OF HOPPING FREQUENCY

LIMITS

FCC Part15 (15.247) , Subpart C RSS-247 ISSUE 2		
Section	Test Item	Limit
15.247 (a) (1) III	Number of Hopping Frequency	at least 15 hopping channels
RSS-247 Clause 5.1 (d)	Number of Hopping Frequency	at least 15 hopping channels

TEST PROCEDURE

Connect the EUT to the spectrum Analyzer and use the following settings:

Detector	Peak
RBW	To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller
VBW	\geq RBW
Span	The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen
Trace	Max hold
Sweep time	Auto couple

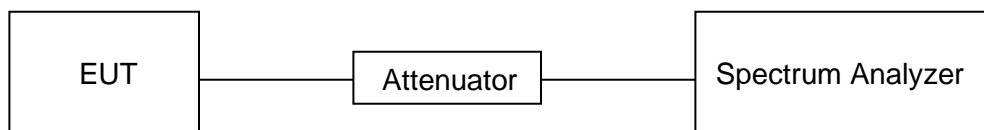
Set EUT to transmit maximum output power and switch on frequency hopping function. then set enough count time (larger than 5000 times) to get all the hopping frequency channel displayed on the screen of spectrum analyzer.

Count the quantity of peaks to get the number of hopping channels.

Normal Mode: 79 Channels observed.

AFH Mode: 20 Channels declared.

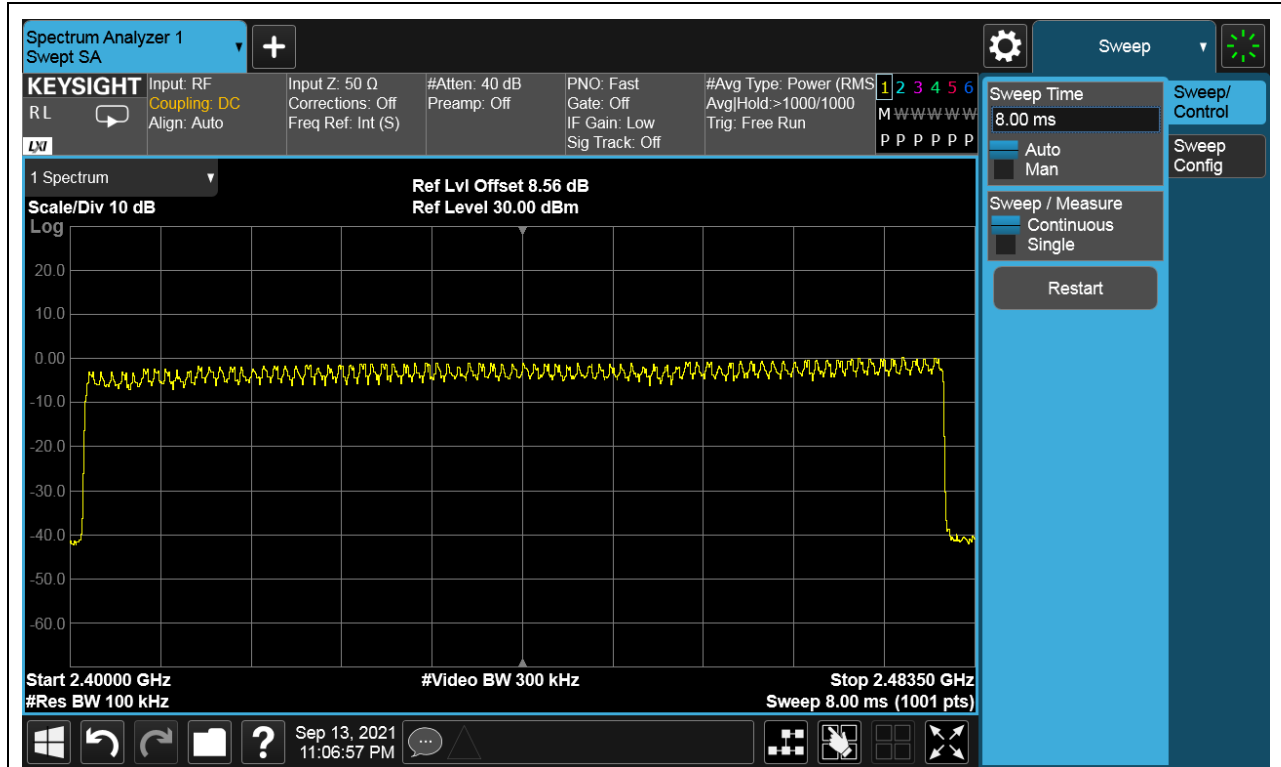
TEST SETUP





6.6.2. 8DPSK MODE

Hopping numbers	Limit	Results
79	>15	Pass



6.7. TIME OF OCCUPANCY (DWELL TIME)

LIMITS

FCC Part15 (15.247) , Subpart C		
Section	Test Item	Limit
15.247 (a) (1) III	Time of Occupancy (Dwell Time)	The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds, multiplied by the number of hopping channels employed.

TEST PROCEDURE

Connect the UUT to the spectrum Analyzer and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	1 MHz
VBW	≥RBW
Span	zero span
Trace	Max hold
Sweep time	As necessary to capture the entire dwell time per hopping channel

- The transmitter output (antenna port) was connected to the spectrum analyzer
- Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- Use a video trigger with the trigger level set to enable triggering only on full pulses.
- Sweep Time is more than once pulse time.
- Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- Measure the maximum time duration of one single pulse.
- Set the EUT for DH5, DH3 and DH1 packet transmitting.
- Measure the maximum time duration of one single pulse.
A Period Time = (channel number)*0.4

For Normal Mode (79 Channel):

DH1 Time Slot: Reading * (1600/2)*31.6/(channel number)

DH3 Time Slot: Reading * (1600/4)*31.6/(channel number)

DH5 Time Slot: Reading * (1600/6)*31.6/(channel number)

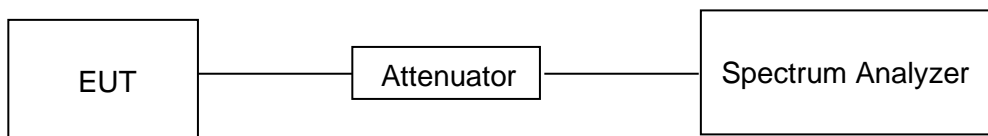
For AFH Mode (20 Channel):

DH1 Time Slot: Reading * (800/2)*8/(channel number)

DH3 Time Slot: Reading * (800/4)*8/(channel number)

DH5 Time Slot: Reading * (800/6)*8/(channel number)

TEST SETUP



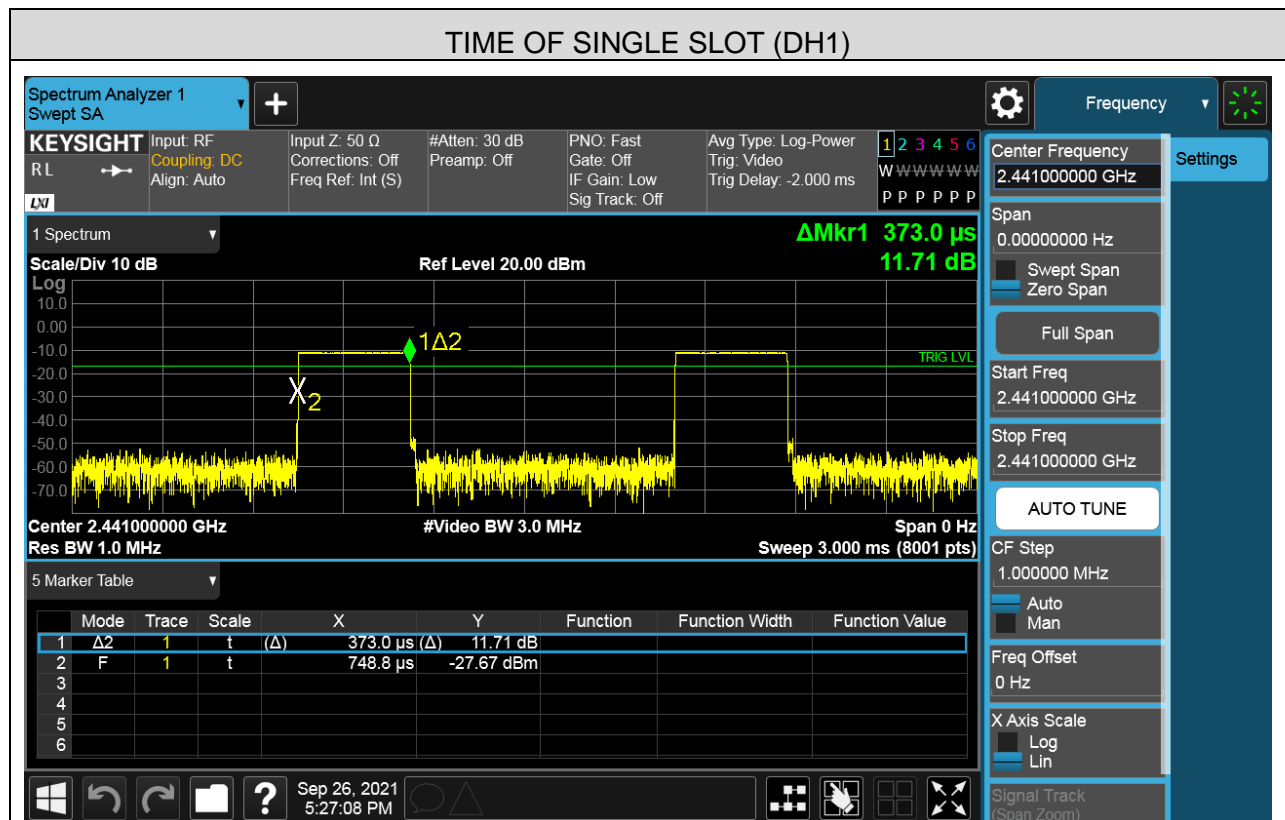


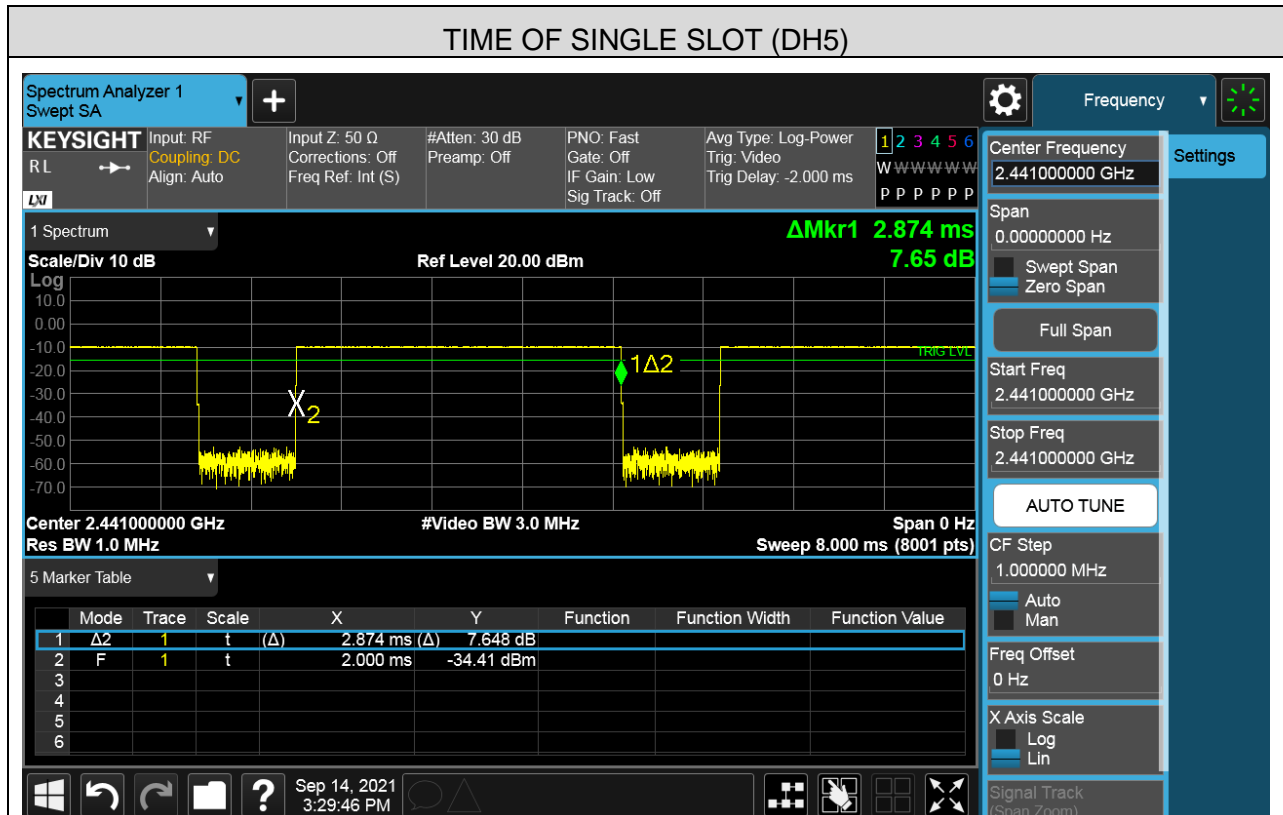
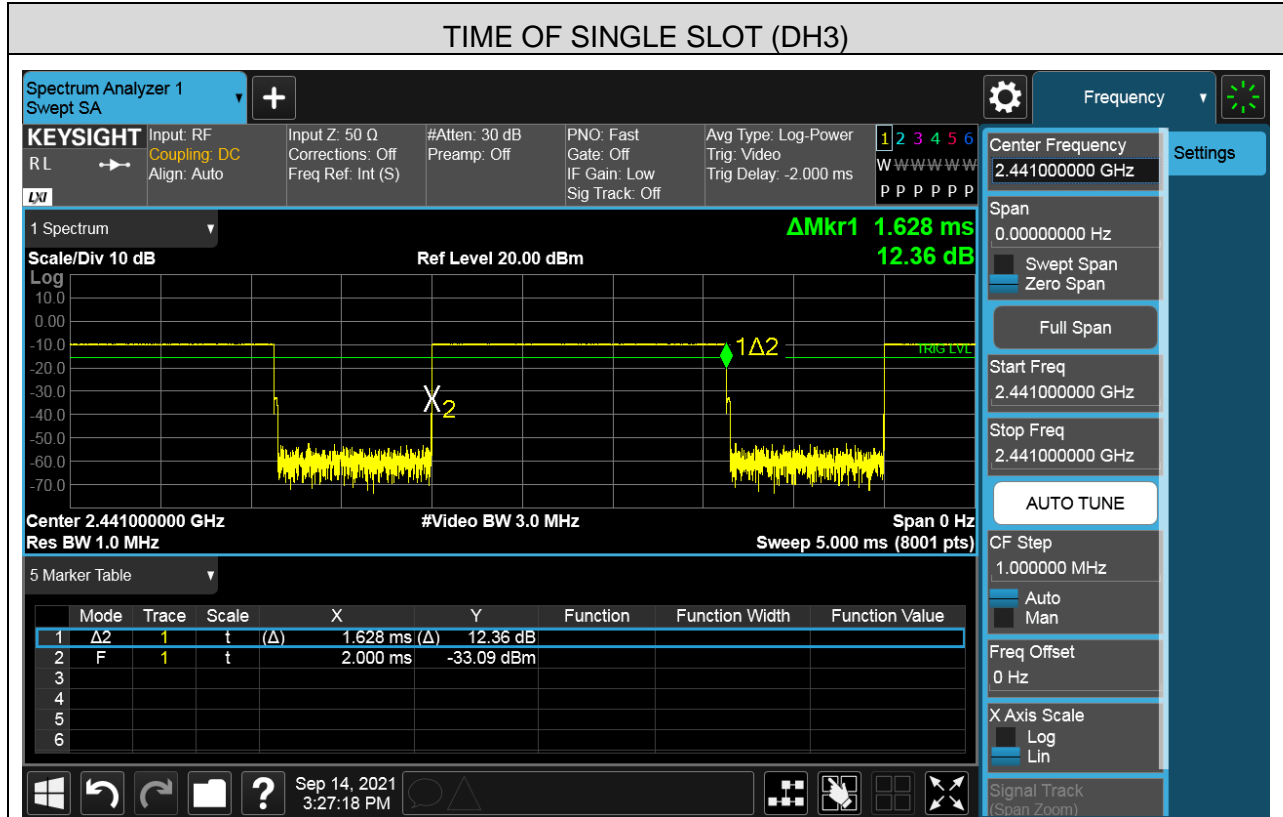
RESULTS

6.7.1. GFSK MODE

Normal Mode				
Packet	Channel	Burst Width [ms/hop/ch]	Dwell Time [s]	Results
DH1	MCH	0.373	0.119	PASS
DH3	MCH	1.628	0.260	PASS
DH5	MCH	2.874	0.307	PASS
AFH Mode				
DH1	MCH	0.373	0.060	PASS
DH3	MCH	1.628	0.130	PASS
DH5	MCH	2.874	0.154	PASS

Test Graph



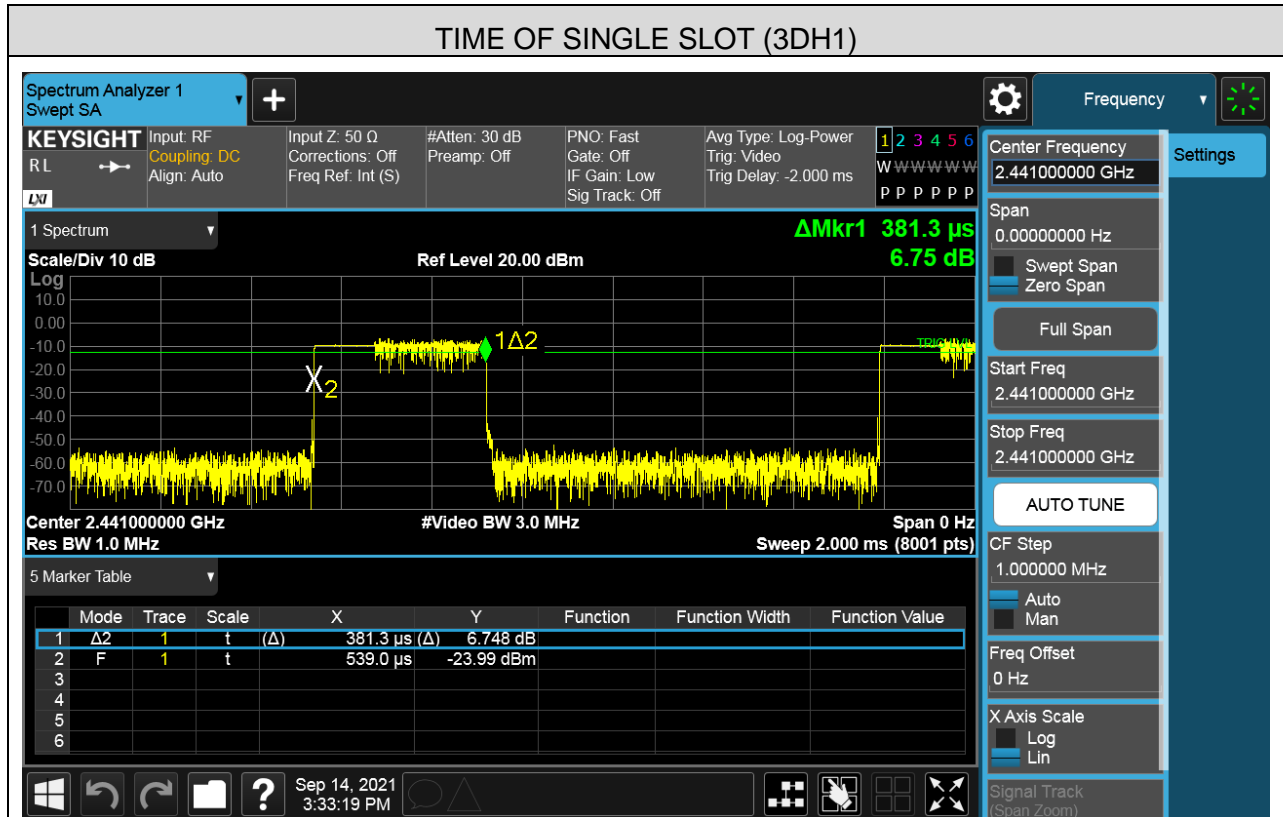


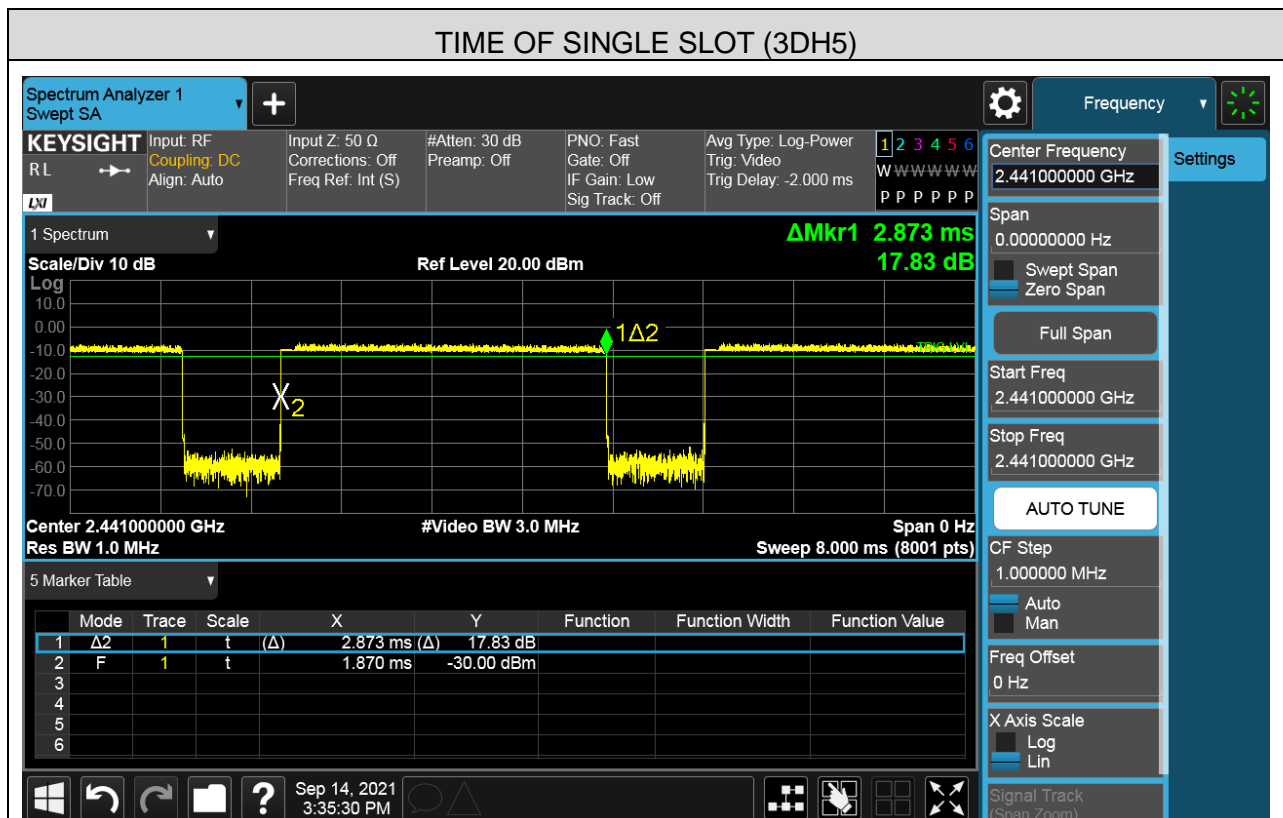
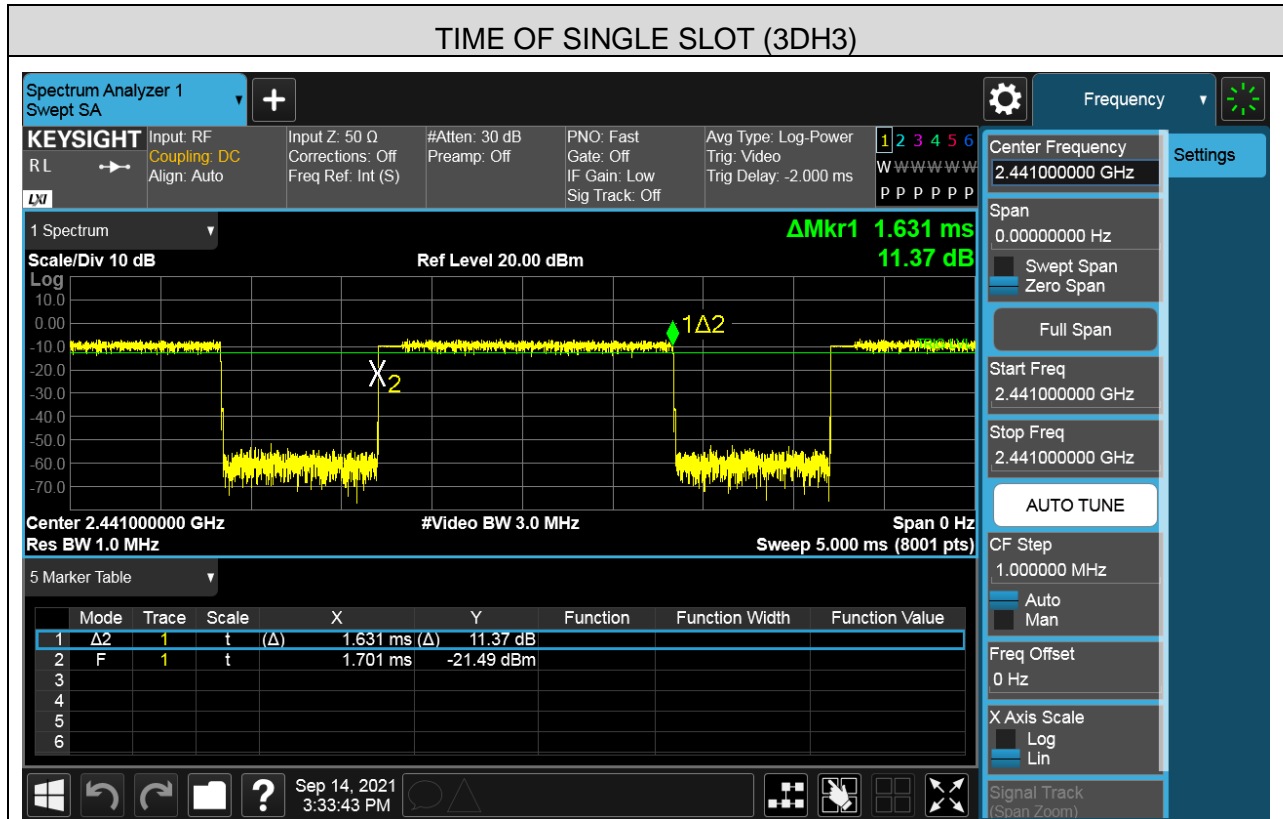


6.7.2. 8DPSK MODE

Normal Mode				
Packet	Channel	Burst Width [ms/hop/ch]	Dwell Time [s]	Results
3DH1	MCH	0.381	0.122	PASS
3DH3	MCH	1.631	0.260	PASS
3DH5	MCH	2.873	0.306	PASS
AFH Mode				
3DH1	MCH	0.381	0.061	PASS
3DH3	MCH	1.631	0.130	PASS
3DH5	MCH	2.873	0.153	PASS

Test Graph







6.8. CONDUCTED SPURIOUS EMISSION

LIMITS

FCC Part15 (15.247) , Subpart C RSS-247 ISSUE 2		
Section	Test Item	Limit
FCC §15.247 (d)	Conducted Spurious Emission	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power
RSS-247 5.5	Conducted Spurious Emission	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

For Band-edge use the following settings:

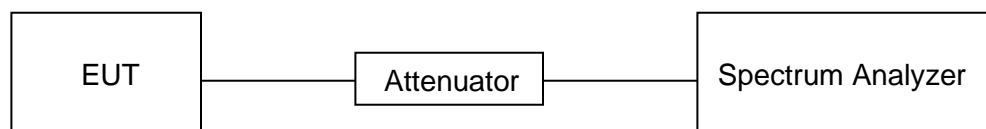
Detector	Peak
RBW	100 kHz
VBW	300 kHz
Span	Wide enough to capture the peak level of the emission operating on the channel closest to the band edge
Trace	Max hold
Sweep time	Couple

For Spurious Emission use the following settings:

Detector	Peak
RBW	100 kHz
VBW	300 kHz
Span	Wide enough to capture the peak level of the emission operating on the channel closest to the band edge
Trace	Max hold
Sweep time	Couple

Use the peak marker function to determine the maximum amplitude level.

TEST SETUP





6.8.1. GFSK MODE

Part I: CONDUCTED BANDEDGE

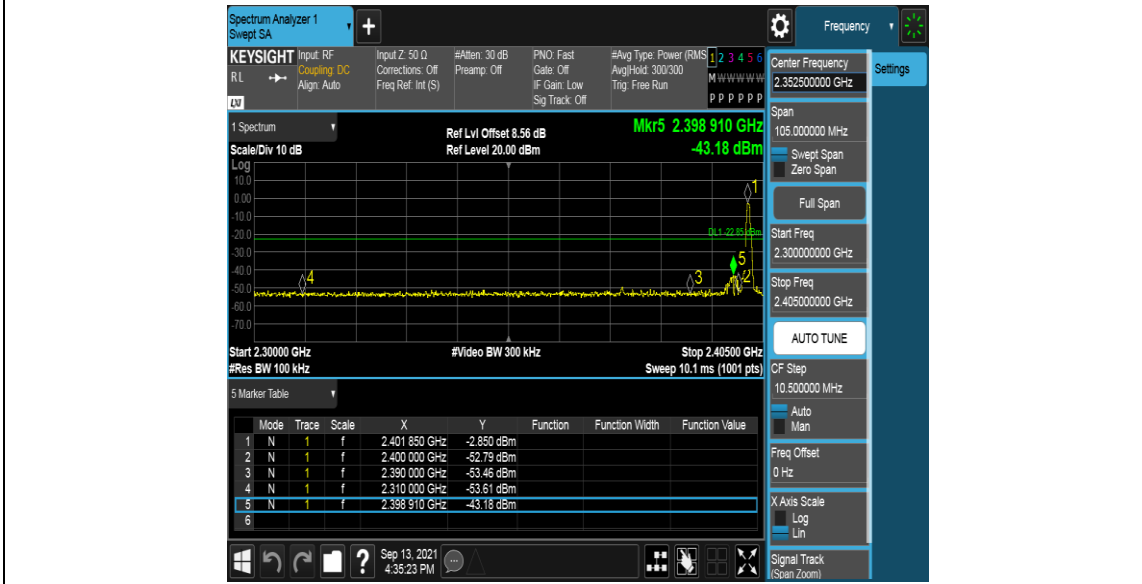
RESULTS TABLE

Test Mode	Test Channel	Test Results	Verdict
GFSK	LCH	Refer to the test Graphs	PASS
	HCH	Refer to the test Graphs	PASS

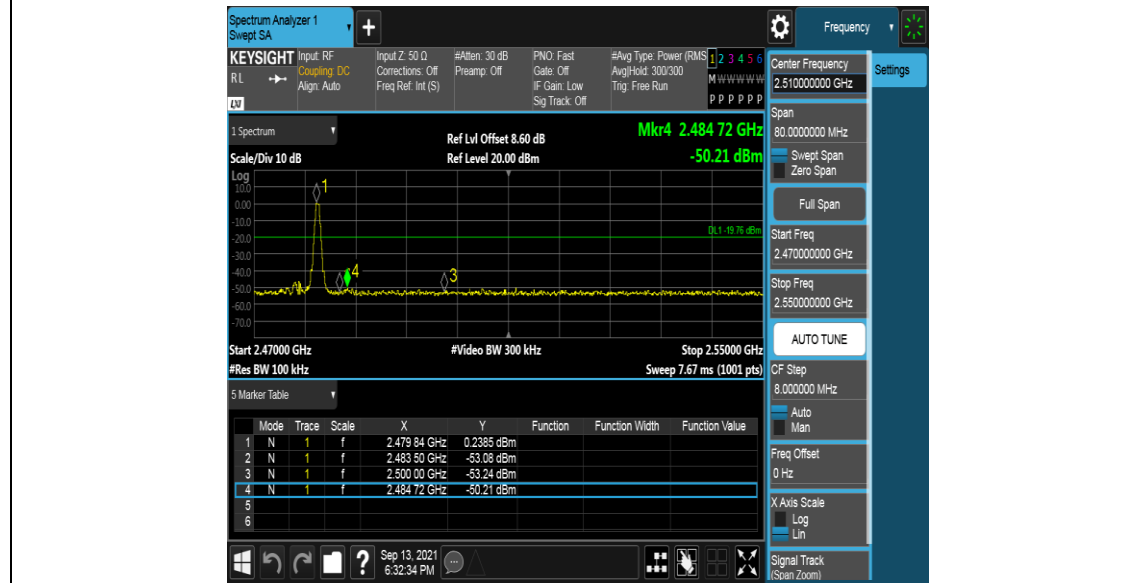


TEST GRAPHS

LOW CH BANDEDGE



HIGH CH BANDEDGE



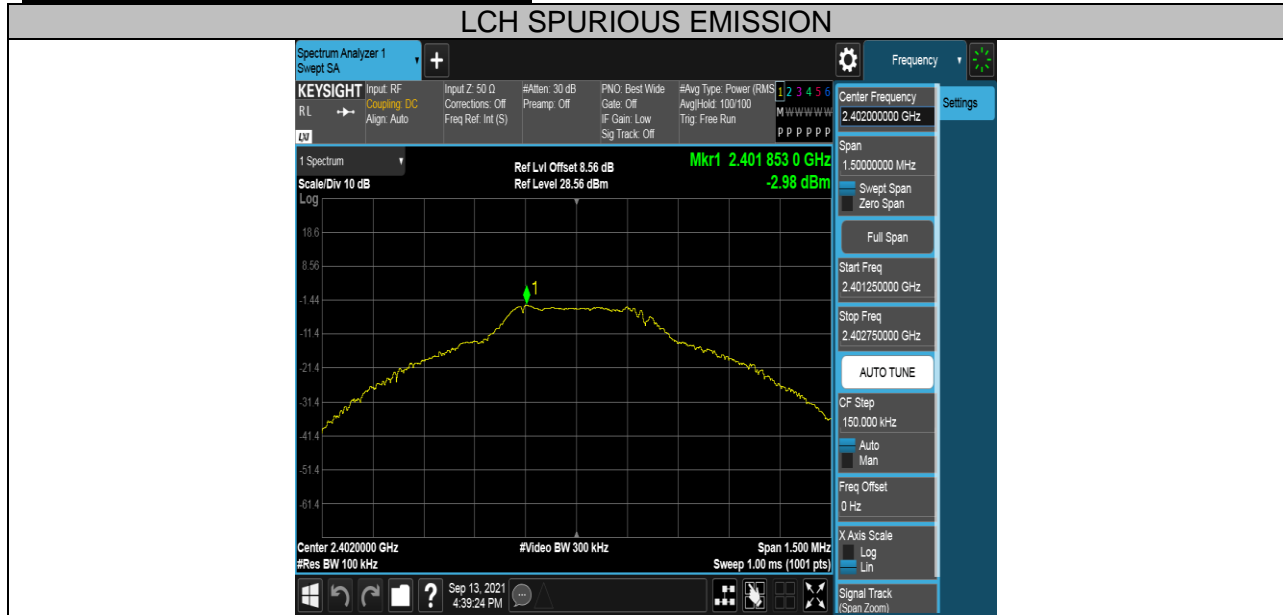


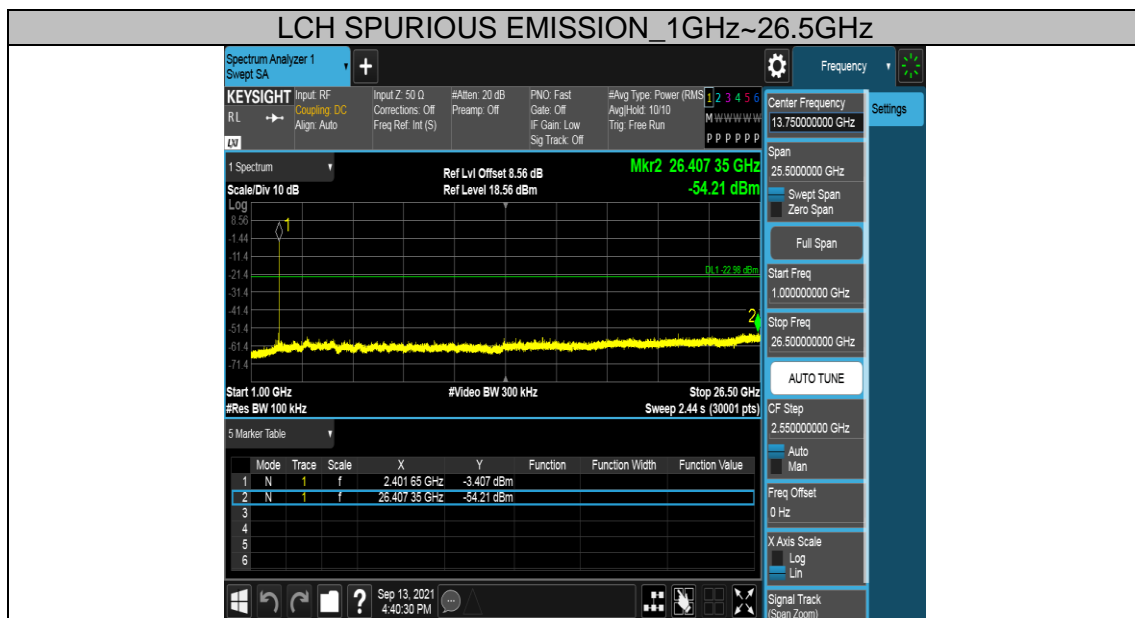
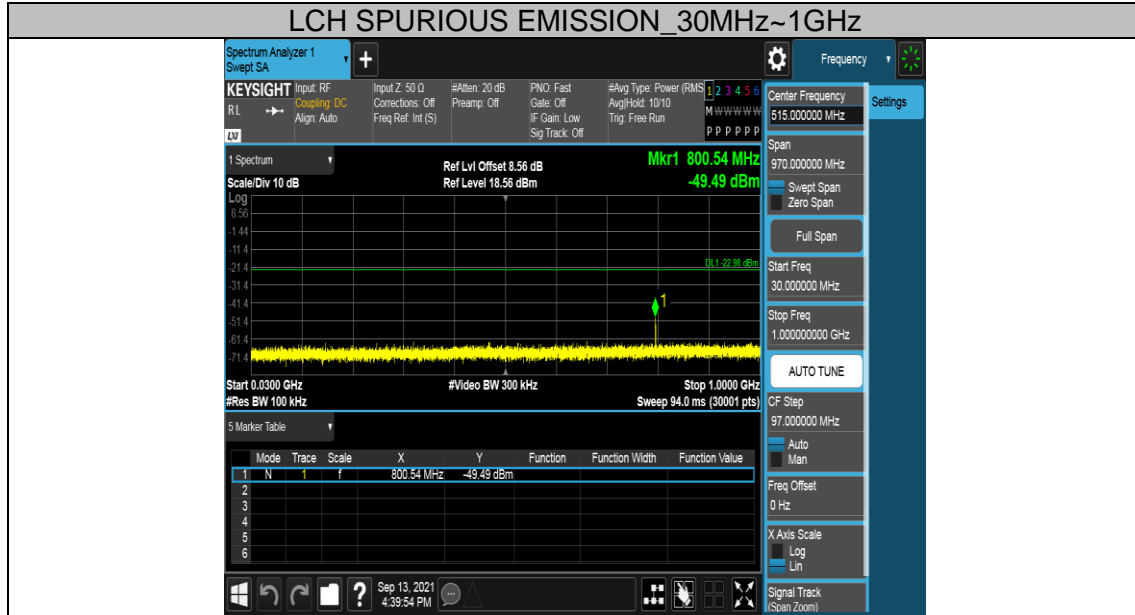
Part II: CONDUCTED SPURIOUS EMISSIONS

RESULTS TABLE

Test Mode	Channel	Pref(dBm)	Puw(dBm)	Verdict
GFSK	LCH	Refer to the test Graphs	<Limit	PASS
	MCH	Refer to the test Graphs	<Limit	PASS
	HCH	Refer to the test Graphs	<Limit	PASS

SPURIOUS EMISSIONS, LOW CHANNEL

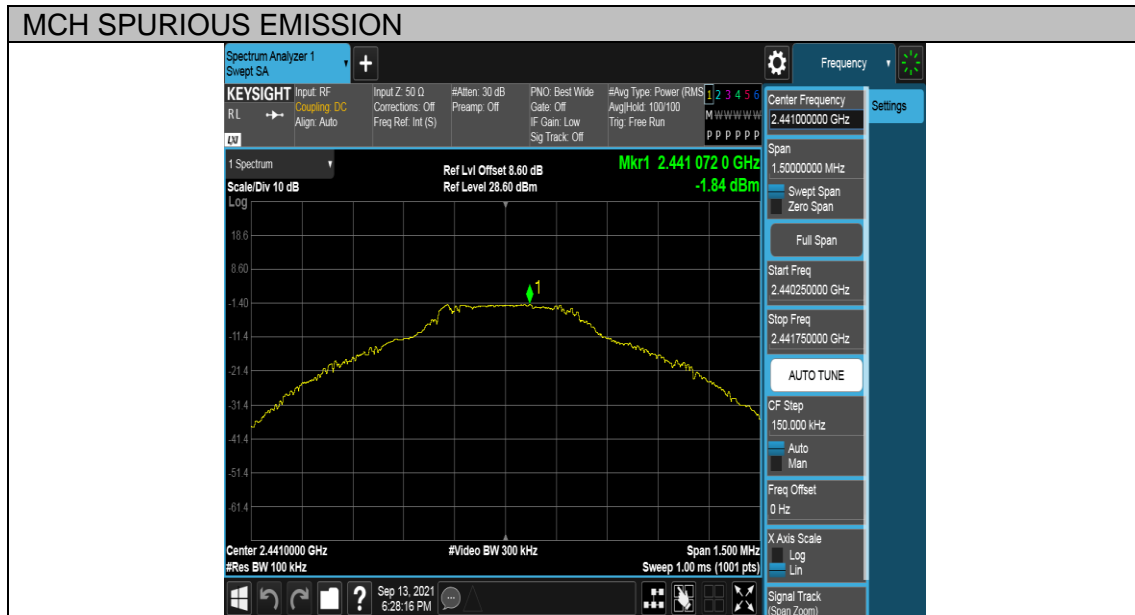


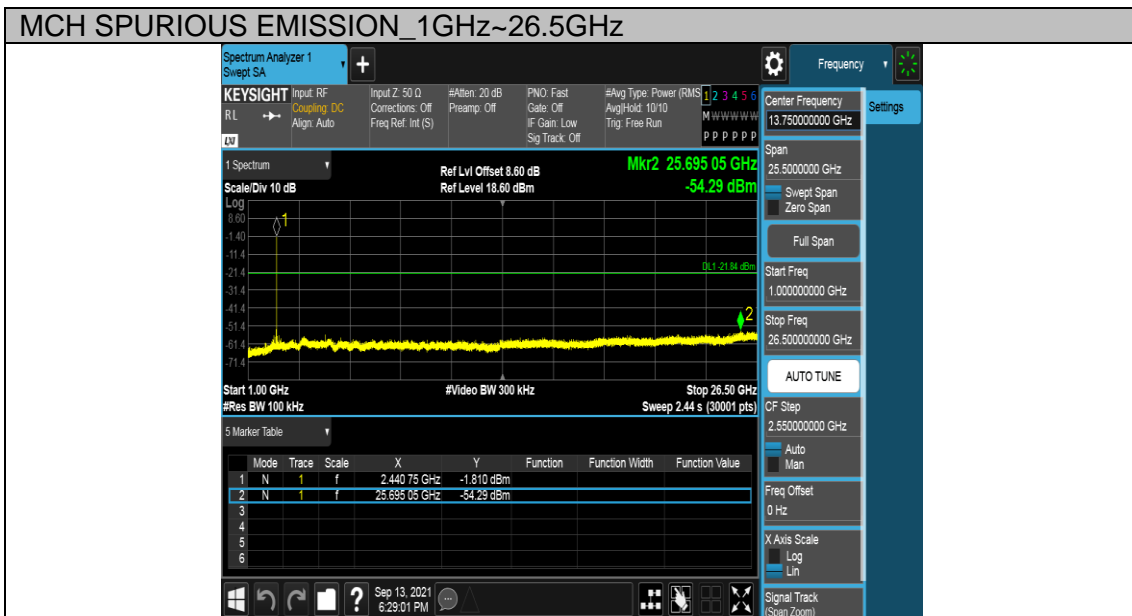
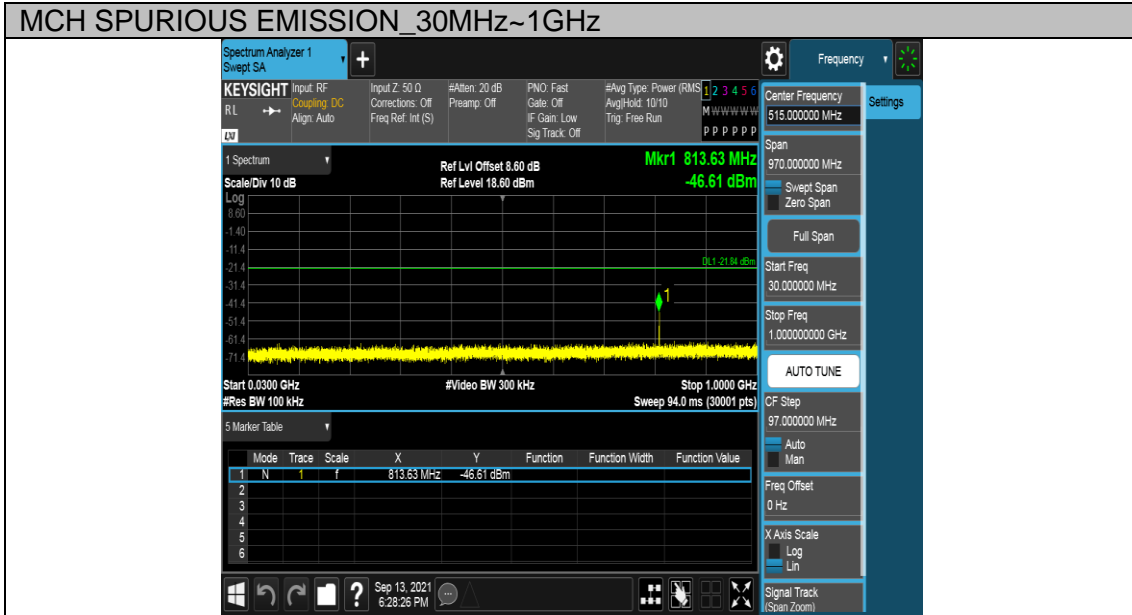


Note: The point 1 which exceeds the limit is 2.4G main carrier.



SPURIOUS EMISSIONS, MID CHANNEL

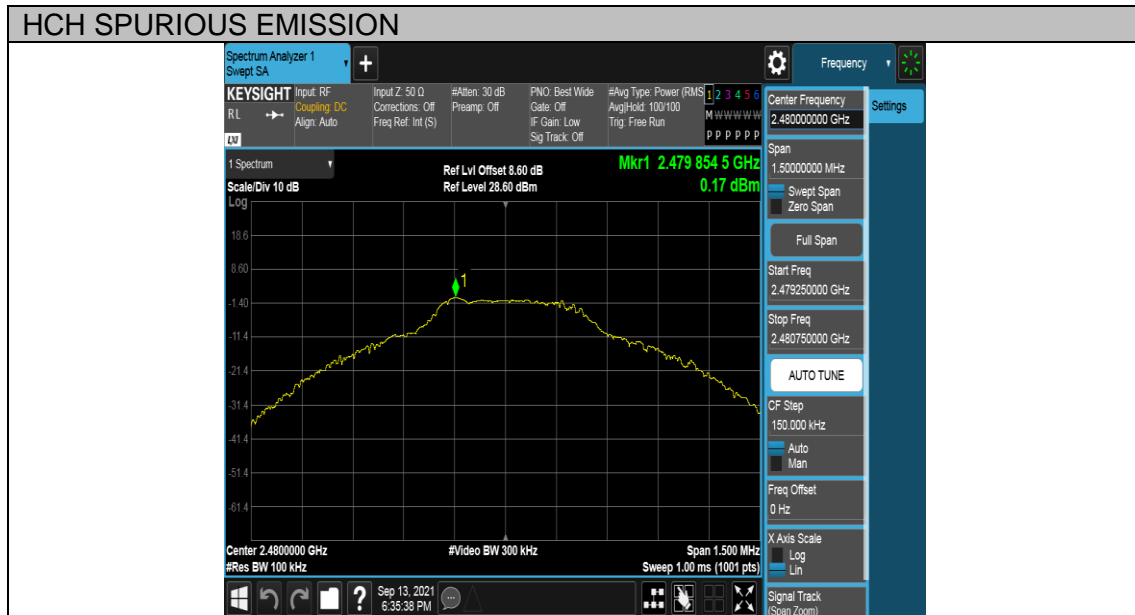


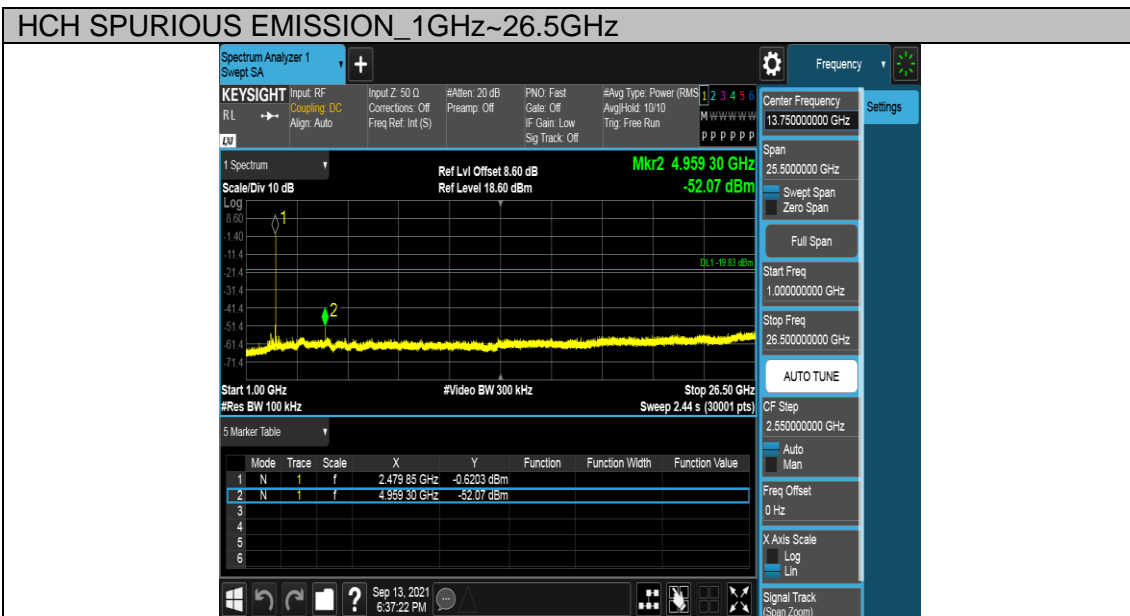
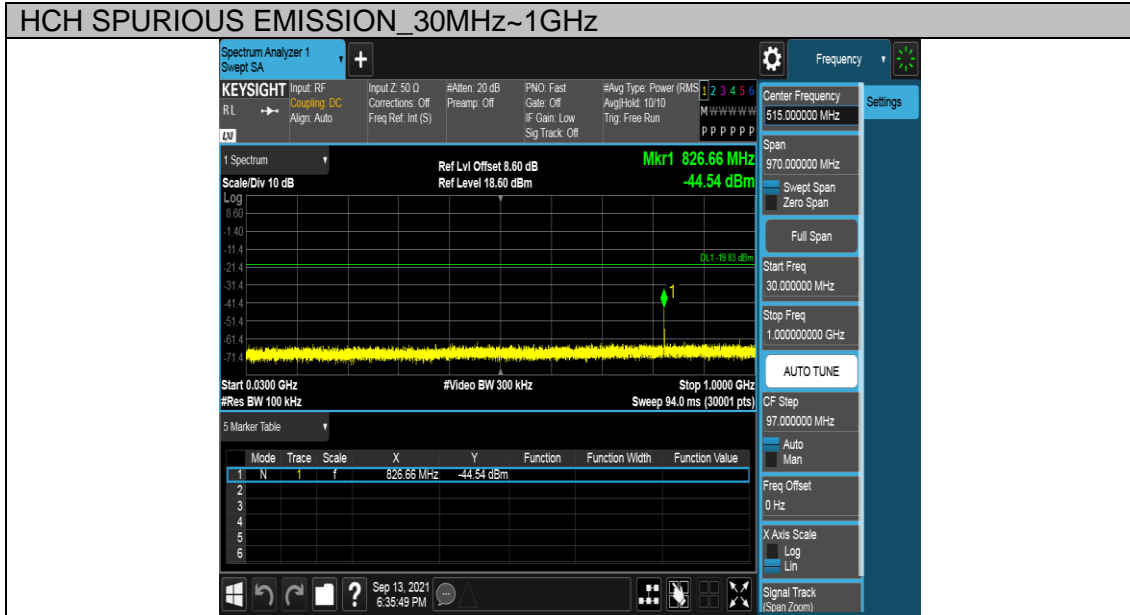


Note: The point 1 which exceeds the limit is 2.4G main carrier.



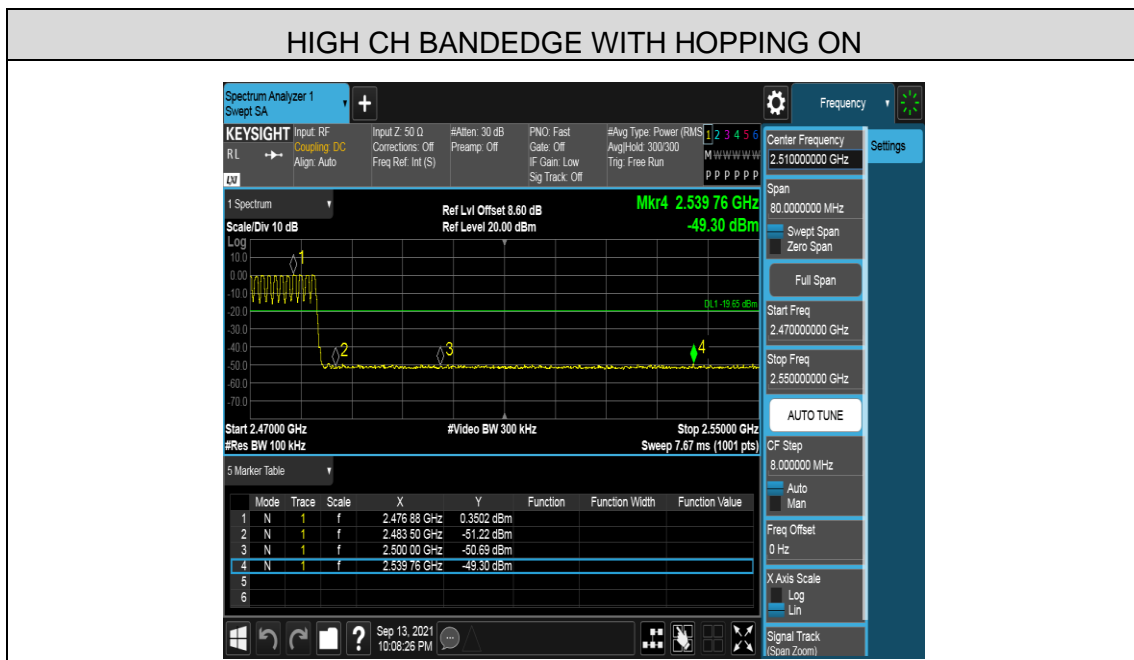
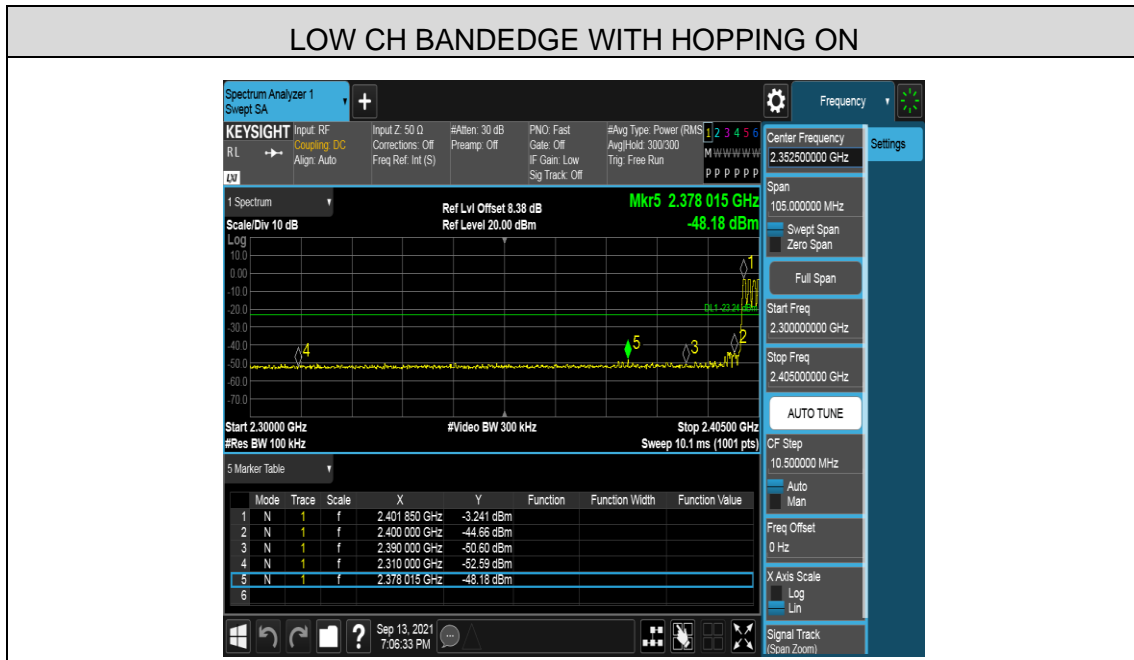
SPURIOUS EMISSIONS, HIGH CHANNEL





Note: The point 1 which exceeds the limit is 2.4G main carrier.

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON





6.8.2. 8DPSK MODE

Part I: CONDUCTED BANDEDGE

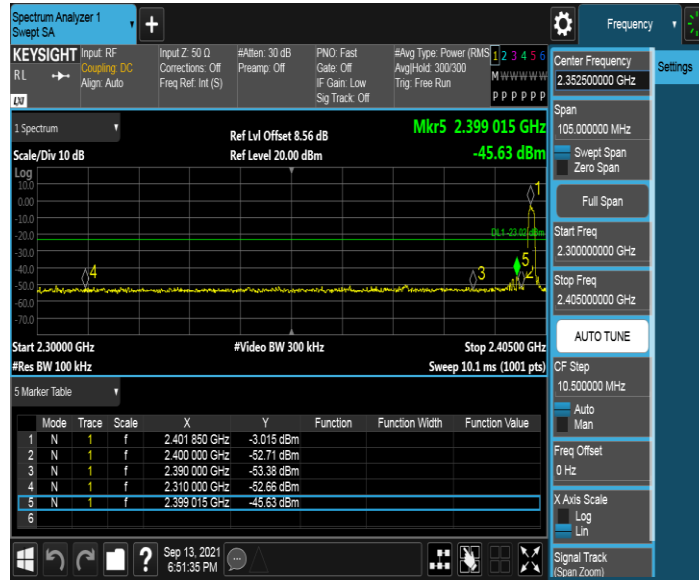
RESULTS TABLE

Test Mode	Test Channel	Test Results	Verdict
8DPSK	LCH	Refer to the test Graphs	PASS
	HCH	Refer to the test Graphs	PASS

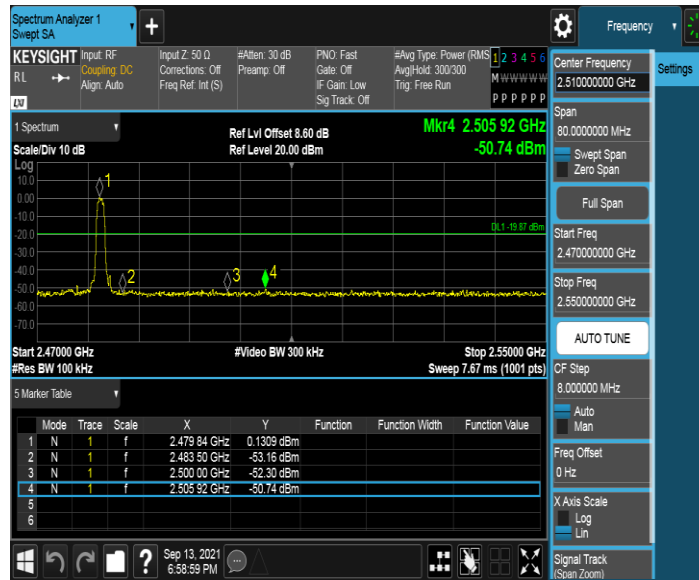


CONDUCTED BANDEDGE

LOW CH BANDEDGE



HIGH CH BANDEDGE

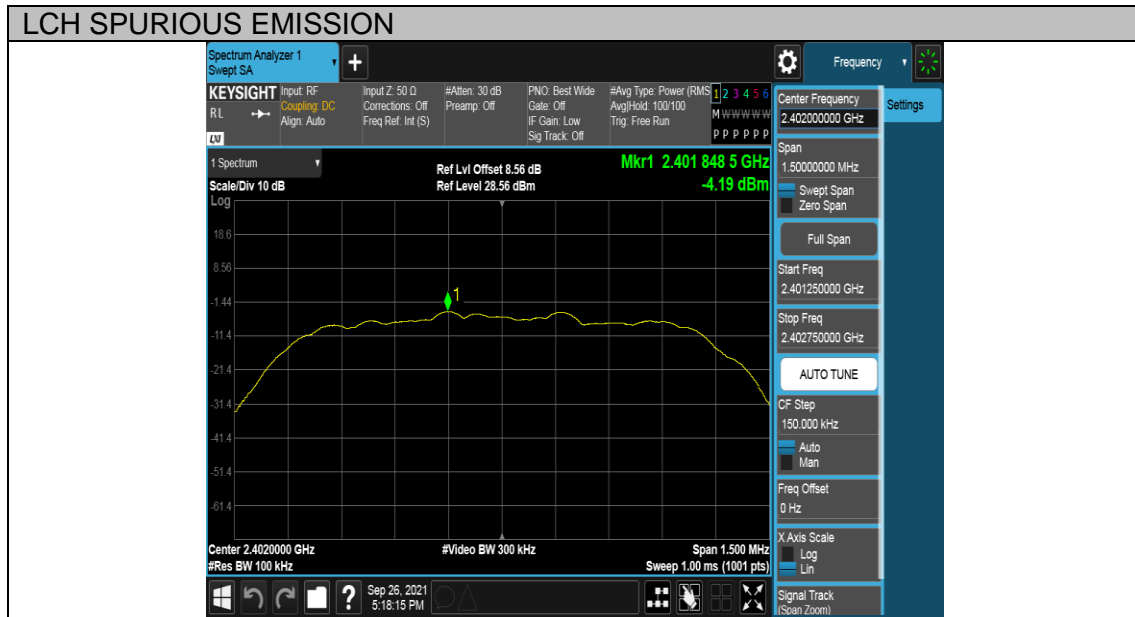


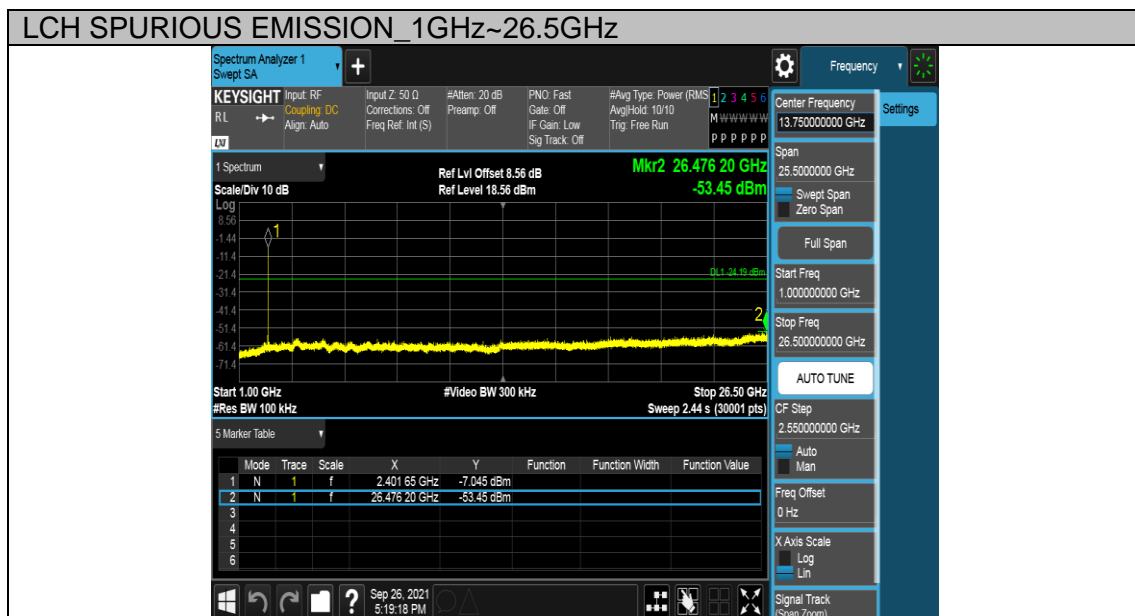
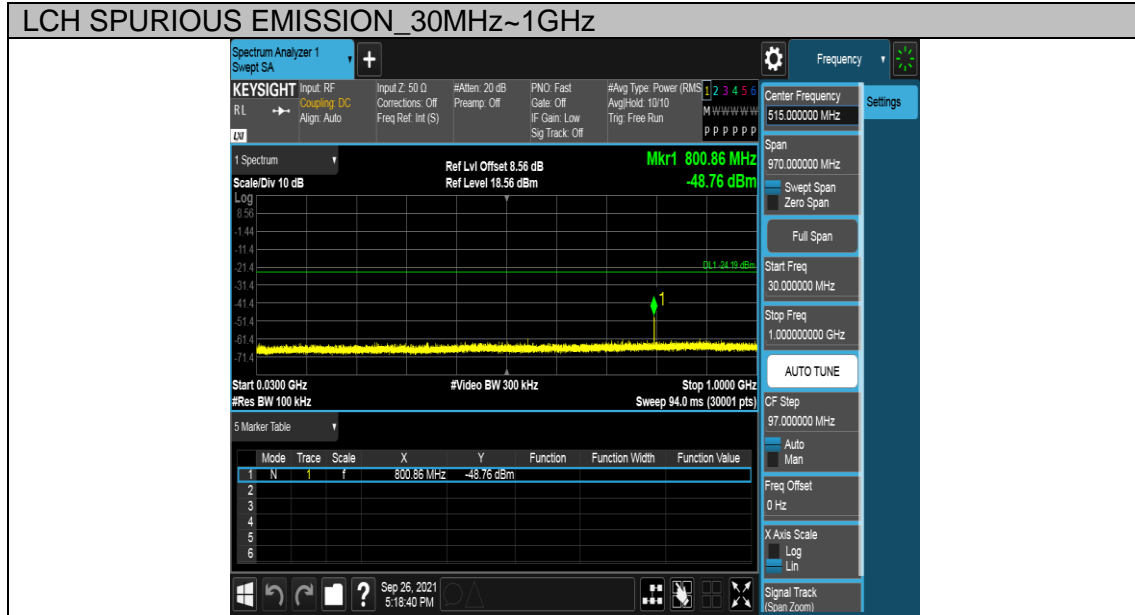


Part II: CONDUCTED SPURIOUS EMISSIONS

RESULTS TABLE

Test Mode	Channel	Pref(dBm)	Puw(dBm)	Verdict
8DPSK	LCH	Refer to the test Graphs	<Limit	PASS
	MCH	Refer to the test Graphs	<Limit	PASS
	HCH	Refer to the test Graphs	<Limit	PASS

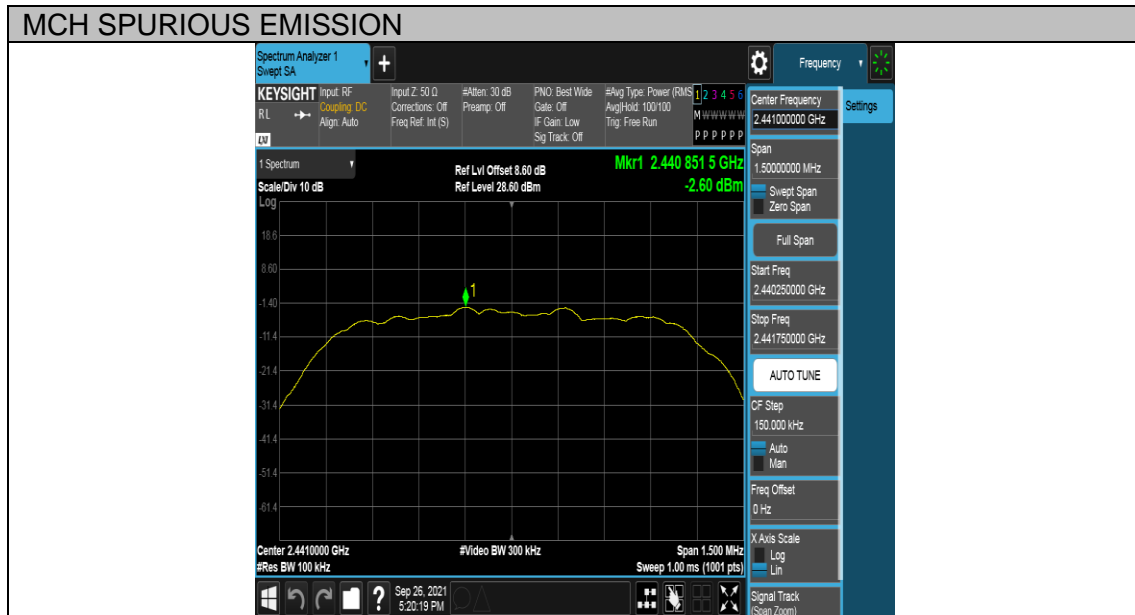


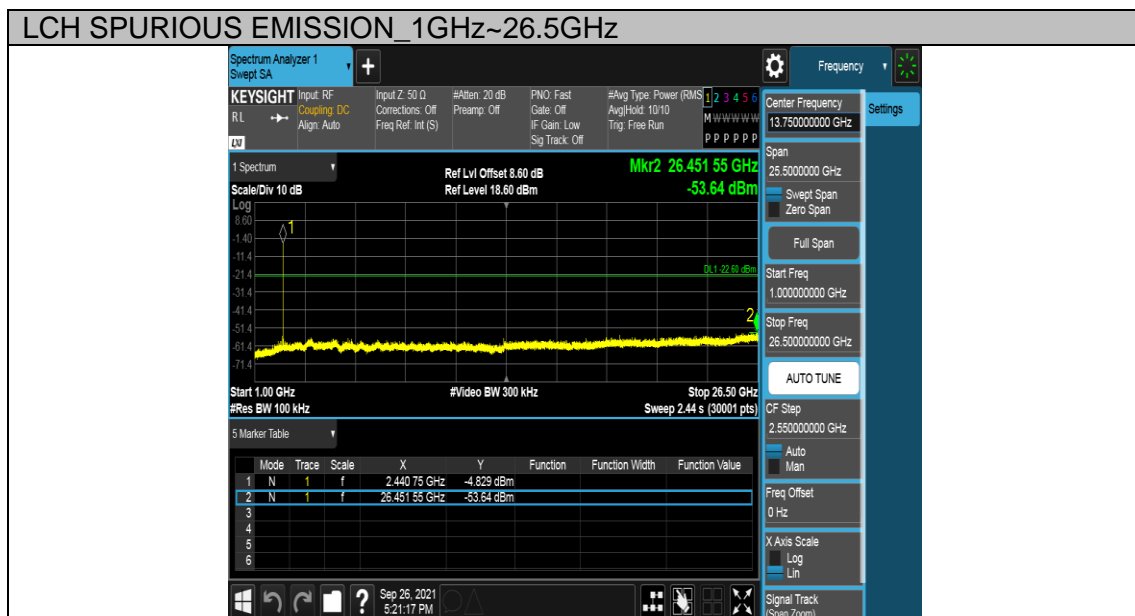
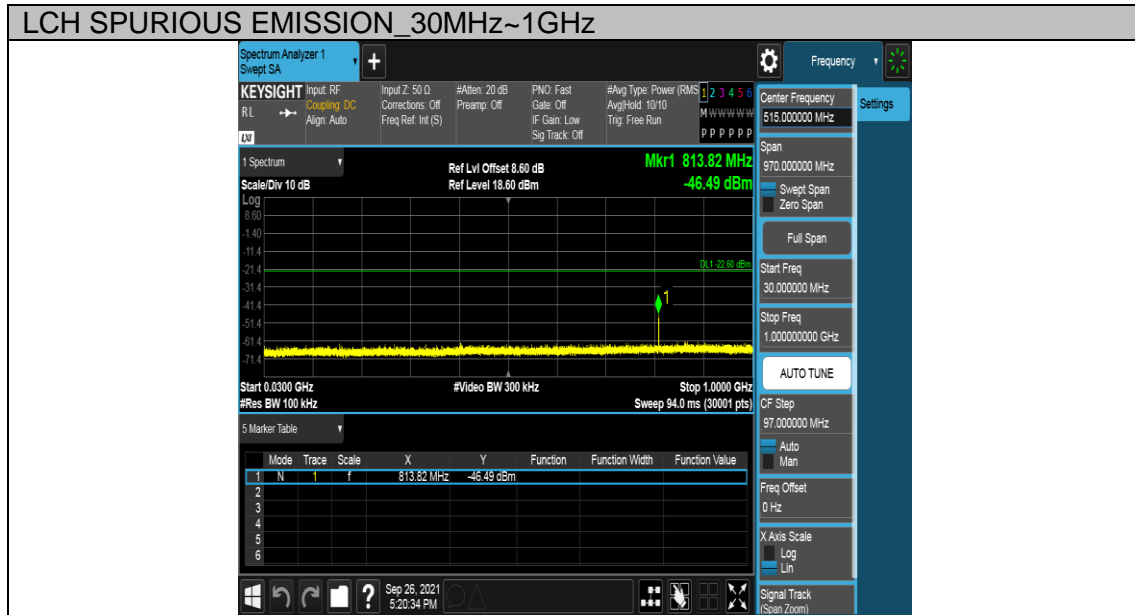


Note: The point 1 which exceeds the limit is 2.4G main carrier.



SPURIOUS EMISSIONS, MID CHANNEL





Note: The point 1 which exceeds the limit is 2.4G main carrier.



SPURIOUS EMISSIONS, HIGH CHANNEL

