

TEST REPORT

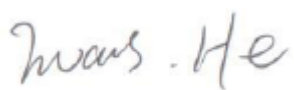
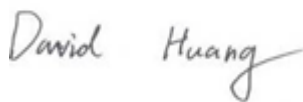
Applicant	Shenzhen Great Power Innovation And Technology Enterprise Co.,Ltd
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Manufacturer or Supplier	Shenzhen Great Power Innovation And Technology Enterprise Co.,Ltd
Address	No. 331, No. 335, Guiyue Road, Dafu Community, Guanlan Street, Longhua District, Shenzhen, China
Product	Sharp Sleep Sound Alarm Clock
Brand Name	SHARP
Model	SPC276
Additional Model & Model Difference	SPC276CBAMZ, SPC276BFAMZ
Date of tests	Oct. 26, 2020~ Nov. 10, 2020

the tests have been carried out according to the requirements of the following standards:

☒ **FCC Part 15, Subpart C, Section 15.247**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Evans He Project Engineer / EMC Department	Approved by David Huang Assistant Manager / EMC Department
	 Date: Nov. 11, 2020

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF2010WSZ0079	Original release	Nov. 11, 2020

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit.
15.247(a)(1)(iii)	Number of Hopping Frequency Used	PASS	Meet the requirement of limit.
15.247(a)(1)(iii)	Dwell Time on Each Channel	PASS	Meet the requirement of limit.
15.247(a)(1)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	PASS	Meet the requirement of limit.
15.247(b)	Conducted Output Power	PASS	Meet the requirement of limit.
15.247(d)& 15.209	Transmitter Radiated Emission	PASS	Meet the requirement of limit.
15.247(d)	Out of band Emission Measurement	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.70dB
Radiated emissions	9KHz ~ 30MHz	2.16dB
	30MHz ~ 1GMHz	3.74dB
	1GHz ~ 18GHz	4.66dB
	18GHz ~ 40GHz	4.67dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Sharp Sleep Sound Alarm Clock
MODEL NO.	SPC276
ADDITIONAL MODEL	SPC276CBAMZ, SPC276BFAMZ
FCC ID	ZY9-SPC276
POWER SUPPLY	DC 3V(1.5V*AAA*2) from battery or DC 5V from Adapter
MODULATION TECHNOLOGY	FHSS
MODULATION TYPE	GFSK, $\pi/4$ -DQPSK, 8 DPSK
OPERATING FREQUENCY	2402MHz~2480MHz
NUMBER OF CHANNEL	79
PEAK OUTPUT POWER	5.916mW (Max. Measured)
ANTENNA TYPE	PCB Antenna, 0dBi Gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	DC Line: Unshielded, Non-Detachable 1.56m

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 2010WSZ0079) for detailed product photo.
4. Additional models (see about table) are identical with the test model SPC276 except the color of the appearance, trade name and model name for trading purpose.
5. The EUT was powered by the following adapter:

Adapter	
BRAND:	N/A
MODEL:	TPKB00500120-A0
INPUT:	AC 100-240V, 50/60Hz 200mA
OUTPUT:	DC 5V, 1.2A
DC LINE:	Unshielded, 1.56m

3.2 DESCRIPTION OF TEST MODES

79 channels are provided to this EUT:

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	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		

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photograph of the test configuration for reference.

3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports

The worst case was found when positioned on X axis for radiated emission.

Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	√	√	DC 5V from Adapter

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	39	FHSS	GFSK	DH5

For the test results, only the worst case was shown in test report.

RADIATED EMISSION TEST (ABOVE 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	0, 39, 78	FHSS	GFSK	DH5
	0 to 78	0, 39, 78	FHSS	8DPSK	3DH5

POWER LINE CONDUCTED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	Hopping	FHSS	GFSK	DH5

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	PACKET TYPE
-	0 to 78	0, 39, 78	FHSS	GFSK	DH5
	0 to 78	0, 39, 78	FHSS	8DPSK	3DH5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE<1G	25deg. C, 55%RH	DC 5V from Adapter	Aaron Liang
RE≥1G	25deg. C, 55%RH	DC 5V from Adapter	Aaron Liang
PLC	25deg. C, 55%RH	DC 5V from Adapter	Aaron Liang
APCM	25deg. C, 60%RH	DC 5V from Adapter	Aaron Liang

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. Section 15.247

KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit without any other necessary accessory or support units.

4 TEST TYPES AND RESULTS

4.1. CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1.The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCS30	8471241027	Mar. 24, 20	Mar. 24, 21
Artificial Mains Network	SCHWARZBECK	8127	8127713	Mar. 24, 20	Mar. 24, 21
ISN	Com-Power	ISN T800	34373	Mar. 24, 20	Mar. 24, 21
Test software	EZ-EMC	ICP-03A1	N/A	N/A	N/A

NOTE:

1. The test was performed in shielded room 553.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

4.1.3 TEST PROCEDURES

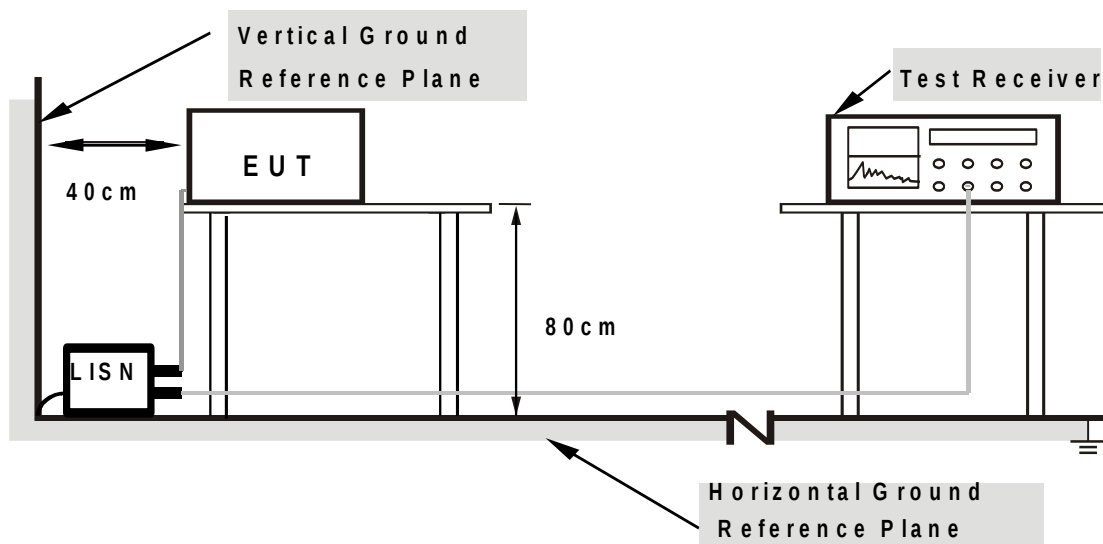
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN .

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80
from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

- Turned on the power and connected of all equipment.
- EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA:

PHASE	Line	6dB BANDWIDTH	9kHz
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NO.	P/L	FREQUENCY (MHZ)	READING (DBUV)	DETECTOR	CORRECTED (DB}	RESULT (DBUV)	LIMIT (DBUV)	MARGIN (DB)
1	L1	0.3060	27.55	QP	10.17	37.72	60.08	-22.36
2	L1	0.3060	17.66	AVG	10.17	27.83	50.08	-22.25
3	L1	0.3762	31.24	QP	10.17	41.41	58.36	-16.95
4	L1	0.3762	17.40	AVG	10.17	27.57	48.36	-20.79
5	L1	0.6999	21.83	QP	10.18	32.01	56.00	-23.99
6	L1	0.6999	10.63	AVG	10.18	20.81	46.00	-25.19
7	L1	1.1562	21.97	QP	10.20	32.17	56.00	-23.83
8	L1	1.1562	12.38	AVG	10.20	22.58	46.00	-23.42
9	L1	2.5680	20.50	QP	10.24	30.74	56.00	-25.26
10	L1	2.5680	9.17	AVG	10.24	19.41	46.00	-26.59
11	L1	6.7791	14.65	QP	10.38	25.03	60.00	-34.97
12	L1	6.7791	5.88	AVG	10.38	16.26	50.00	-33.74

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

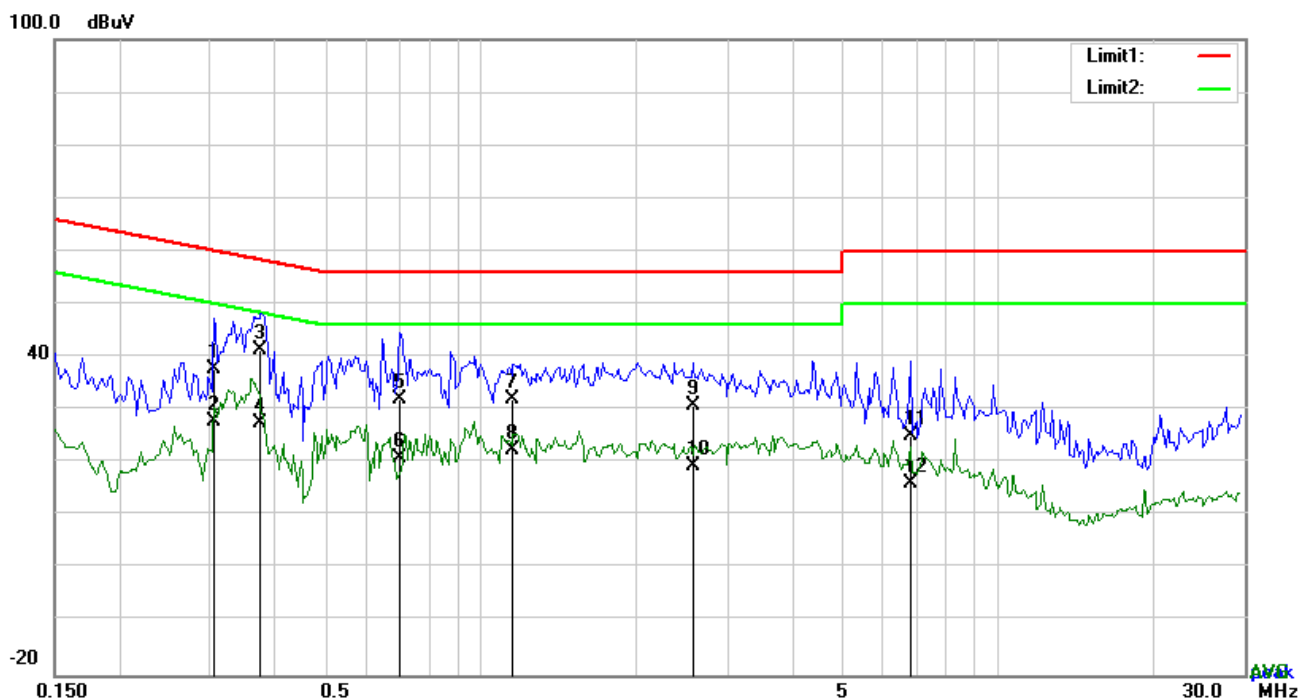
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

3. The emission levels of other frequencies were very low against the limit.

4. Margin value = Emission level - Limit value

5. Correction factor = Insertion loss + Cable loss

6. Emission Level = Correction Factor + Reading Value.





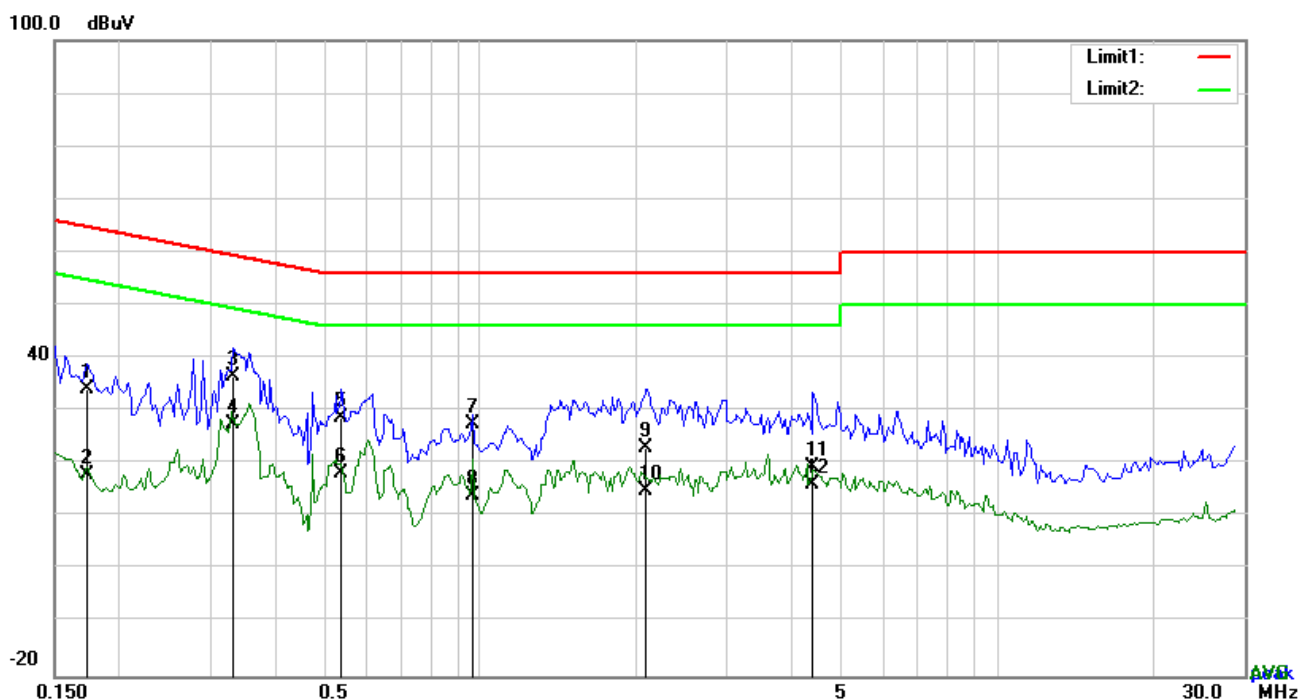
**BUREAU
VERITAS**

Test Report No.: RF2010WSZ0079

PHASE	Neutral	6dB BANDWIDTH	9kHz
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NO.	P/L	FREQUENCY (MHZ)	READING (DBUV)	DETECTOR	CORRECTED (DB)	RESULT (DBUV)	LIMIT (DBUV)	MARGIN (DB)
1	N	0.1734	23.95	QP	10.15	34.10	64.80	-30.70
2	N	0.1734	7.83	AVG	10.15	17.98	54.80	-36.82
3	N	0.3333	26.28	QP	10.16	36.44	59.37	-22.93
4	N	0.3333	17.39	AVG	10.16	27.55	49.37	-21.82
5	N	0.5400	18.48	QP	10.18	28.66	56.00	-27.34
6	N	0.5400	7.97	AVG	10.18	18.15	46.00	-27.85
7	N	0.9651	17.18	QP	10.23	27.41	56.00	-28.59
8	N	0.9651	3.79	AVG	10.23	14.02	46.00	-31.98
9	N	2.0961	12.89	QP	10.28	23.17	56.00	-32.83
10	N	2.0961	4.57	AVG	10.28	14.85	46.00	-31.15
11	N	4.4001	9.10	QP	10.39	19.49	56.00	-36.51
12	N	4.4001	5.71	AVG	10.39	16.10	46.00	-29.90

- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



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4.2. RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a). Other emissions shall be at least 20dB below the highest level of the desired power.

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESL6	1300.5001K06 -100262-eQ	Mar. 24, 20	Mar. 24, 21
Bilog Antenna	Sunol Sciences	JB6	A110712	Jul. 21, 20	Jul. 21, 21
Active Antenna	CMO-POWER	AL-130	121031	Jun. 30, 20	Jun. 30, 21
Signal Amplifier	HP	8447E	443008	Mar. 24, 20	Mar. 24, 21
Signal and Spectrum Analyzer	R&S	FSV40	101094	Mar. 19, 20	Mar. 19, 21
MXA signal analyzer	Agilent	N9020A	MY49100060	Mar. 24, 20	Mar. 24, 21
Horn Antenna	COM-POWER	AH-118	71259	Apr. 17, 20	Apr. 17, 21
Horn Antenna	COM-POWER	AH-118	71283	Jul. 21, 20	Jul. 21, 21
SHF-EHF Horn	Schwarzbeck	BBHA9170	BBHA9170147	May 10, 20	May 10, 21
SHF-EHF Horn	Schwarzbeck	BBHA9170	BBHA9170242	May 10, 20	May 10, 21
AMPLIFIER	EM Electornic Corporation	EM01G26G	60613	Mar. 24, 20	Mar. 24, 21
Pre-amplifier	Rohde&Schwarz	SCU40	100437	Oct. 17, 20	Oct. 16, 21
3m Semi-anechoic Chamber	SAEMC	9m*6m*6m	N/A	Oct. 18,18	Oct. 17, 21
Test Software	EZ-EMC	ICP-03A1	N/A	N/A	N/A

NOTE:

1. The test was performed in 966 Chamber.
2. The calibration interval of the above test instruments is 12 months (except 3m Semi-anechoic Chamber). And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 535293.

4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 1.5 meters(above 1GHz) and 0.8 meters(below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- g. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

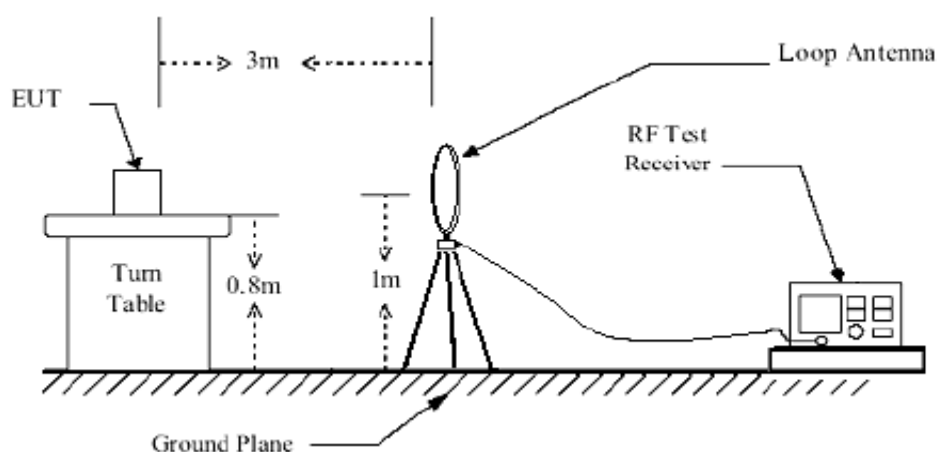
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

4.2.4 DEVIATION FROM TEST STANDARD

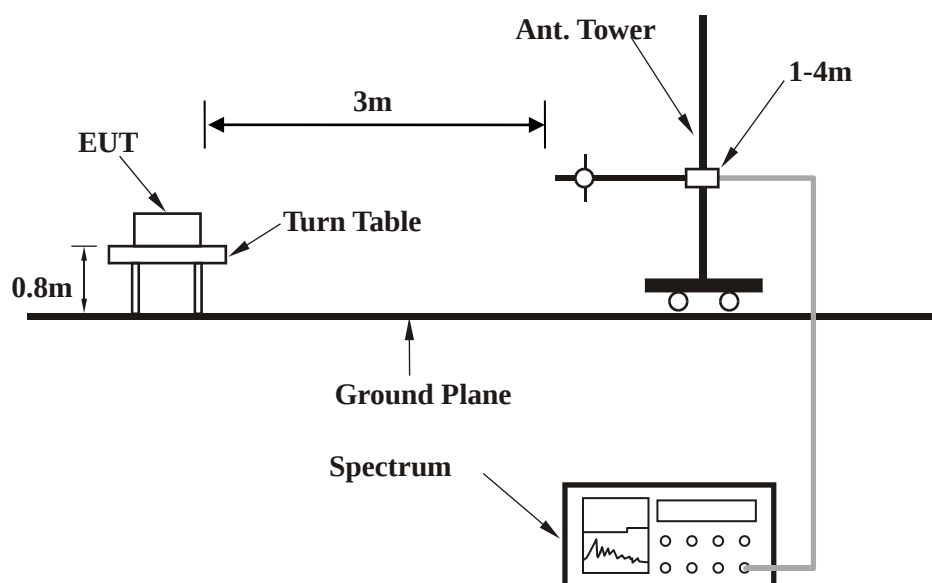
No deviation.

4.2.5 TEST SETUP

Below 30MHz test setup

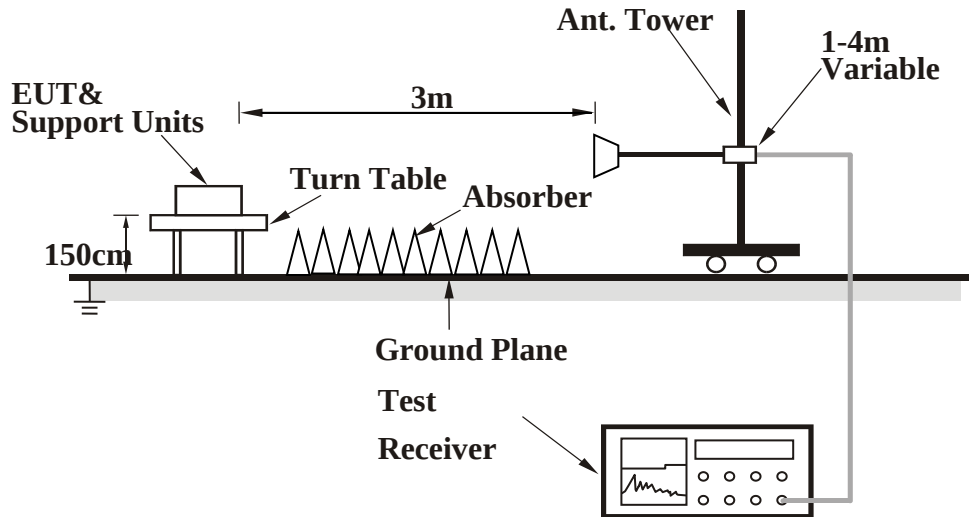


Below 1GHz test setup



Note: For the actual test configuration, please refer to the attached file (Test Setup Photo).

Above 1GHz test setup



Note: For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.



4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

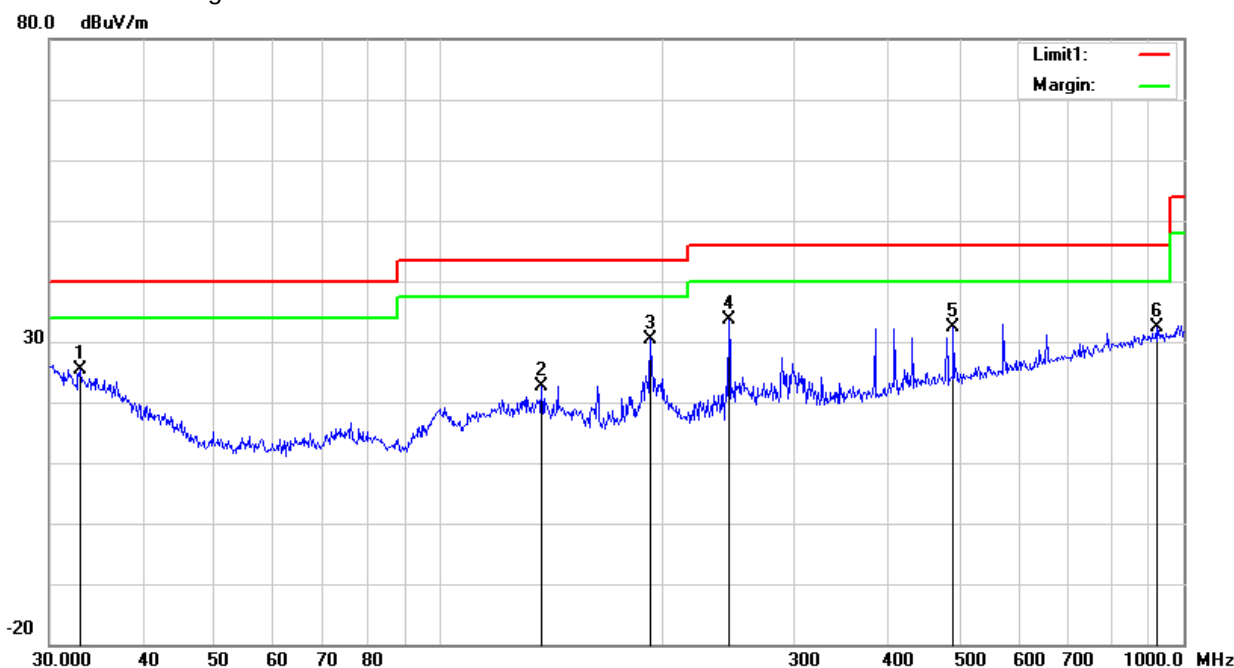
GFSK

CHANNEL	Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 m										
No.	Frequency (MHz)	Reading (dBuV/m)	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	32.9791	27.30	19.11	21.62	0.64	25.43	40.00	-14.57	147	60
2	137.4202	30.20	13.05	21.68	1.17	22.74	43.50	-20.76	170	166
3	192.4186	38.52	12.34	21.79	1.36	30.43	43.50	-13.07	136	45
4	245.0900	42.60	11.28	21.89	1.55	33.54	46.00	-12.46	158	129
5	490.7447	34.68	17.59	22.02	2.10	32.35	46.00	-13.65	158	338
6	919.2866	28.41	22.52	21.50	2.92	32.35	46.00	-13.65	140	301

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value

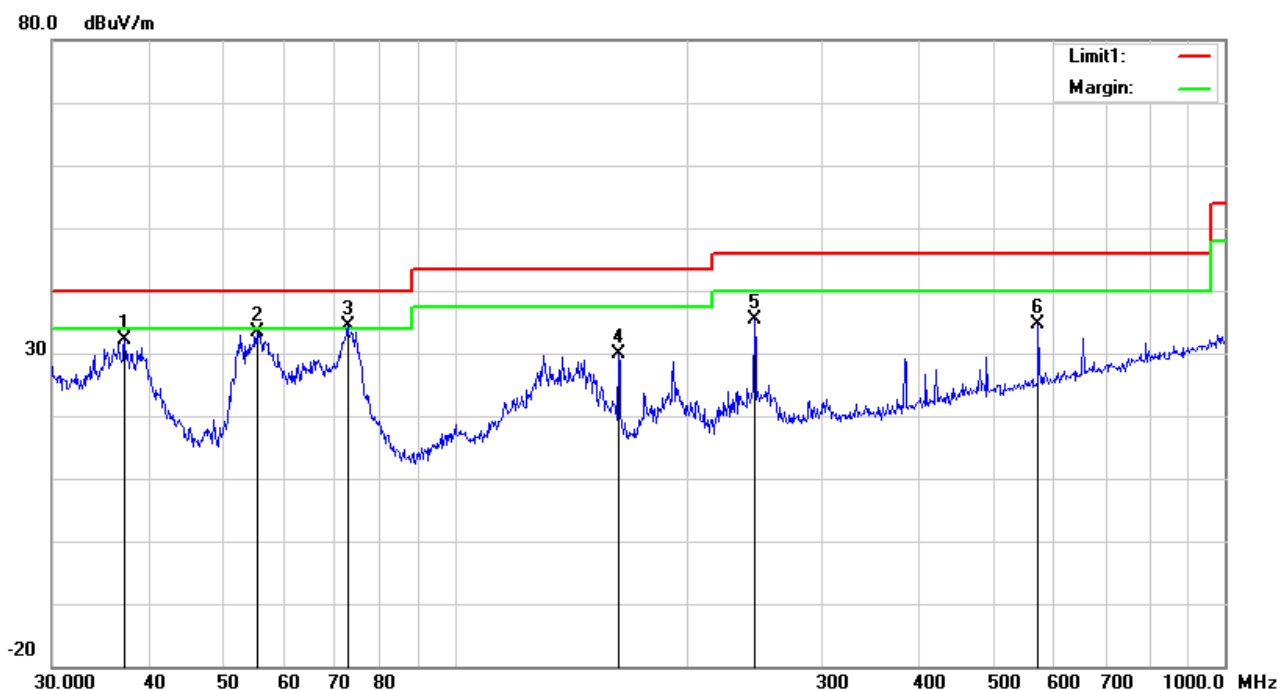


CHANNEL	Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 m										
No.	Frequency (MHz)	Reading (dBuV/m)	Ant_F (dB/m)	PA_G (dB)	Cab_L (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)
1	37.2855	37.02	16.10	21.62	0.66	32.16	40.00	-7.84	137	331
2	55.4147	47.01	7.32	21.62	0.77	33.48	40.00	-6.52	166	232
3	72.5917	47.23	7.80	21.62	0.88	34.29	40.00	-5.71	144	98
4	163.1818	38.40	12.02	21.73	1.26	29.95	43.50	-13.55	132	106
5	245.0900	44.53	11.28	21.89	1.55	35.47	46.00	-10.53	169	279
6	572.6144	35.87	18.46	22.04	2.26	34.55	46.00	-11.45	158	212

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value





ABOVE 1GHz DATA

BT_GFSK

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2354.84	42.74 PK	74	-31.26	186	345	54.12	-11.38
2	2354.84	20.24 AV	54	-33.76	186	345	31.62	-11.38
3	*2402	72.62 PK			136	154	84	-11.38
4	*2402	50.12 AV			136	154	61.5	-11.38
5	4804	50.25 PK	74	-23.75	208	270	56.32	-6.07
6	4804	27.75 AV	54	-26.25	208	270	33.82	-6.07
7	7206	52.59 PK	74	-21.41	127	275	52.3	0.29
8	7206	30.09 AV	54	-23.91	127	275	29.8	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2369.66	42.55 PK	74	-31.45	203	114	53.93	-11.38
2	2369.66	20.05 AV	54	-33.95	203	114	31.43	-11.38
3	*2402	74.92 PK			239	342	86.3	-11.38
4	*2402	52.42 AV			239	342	63.8	-11.38
5	4804	48.76 PK	74	-25.24	118	154	54.83	-6.07
6	4804	26.26 AV	54	-27.74	118	154	32.33	-6.07
7	7206	53 PK	74	-21	164	300	52.71	0.29
8	7206	30.5 AV	54	-23.5	164	300	30.21	0.29

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441	73.23 PK			219	149	84.61	-11.38
2	*2441	50.73 AV			219	149	62.11	-11.38
3	4882	53.51 PK	74	-20.49	100	196	59.58	-6.07
4	4882	31.01 AV	54	-22.99	100	196	37.08	-6.07
5	7323	52.54 PK	74	-21.46	201	91	52.25	0.29
6	7323	30.04 AV	54	-23.96	201	91	29.75	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441	73.5 PK			129	192	84.88	-11.38
2	*2441	51 AV			129	192	62.38	-11.38
3	4882	49.13 PK	74	-24.87	144	1	55.2	-6.07
4	4882	26.63 AV	54	-27.37	144	1	32.7	-6.07
5	7323	53.38 PK	74	-20.62	197	193	53.09	0.29
6	7323	30.88 AV	54	-23.12	197	193	30.59	0.29

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 78	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2489.8	45.06 PK	74	-28.94	154	254	56.44	-11.38
2	2489.8	22.56 AV	54	-31.44	154	254	33.94	-11.38
3	*2480	71.92 PK			209	107	83.3	-11.38
4	*2480	49.42 AV			209	107	60.8	-11.38
5	4960	50.01 PK	74	-23.99	101	187	56.08	-6.07
6	4960	27.51 AV	54	-26.49	101	187	33.58	-6.07
7	7440	53.46 PK	74	-20.54	141	77	53.17	0.29
8	7440	30.96 AV	54	-23.04	141	77	30.67	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2495.2	46.97 PK	74	-27.03	186	7	58.35	-11.38
2	2495.2	24.47 AV	54	-29.53	186	7	35.85	-11.38
3	*2480	70.84 PK			158	339	82.22	-11.38
4	*2480	48.34 AV			158	339	59.72	-11.38
5	4960	47.55 PK	74	-26.45	125	285	53.62	-6.07
6	4960	25.05 AV	54	-28.95	125	285	31.12	-6.07
7	7440	52.77 PK	74	-21.23	228	252	52.48	0.29
8	7440	30.27 AV	54	-23.73	228	252	29.98	0.29

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

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CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2384.29	42.75 PK	74	-31.25	101	9	54.13	-11.38
2	2384.29	20.25 AV	54	-33.75	101	9	31.63	-11.38
3	*2402	73.71 PK			136	247	85.09	-11.38
4	*2402	51.21 AV			136	247	62.59	-11.38
5	4804	52.1 PK	74	-21.9	246	192	58.17	-6.07
6	4804	29.6 AV	54	-24.4	246	192	35.67	-6.07
7	7206	53.56 PK	74	-20.44	213	77	53.27	0.29
8	7206	31.06 AV	54	-22.94	213	77	30.77	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2331.85	42.49 PK	74	-31.51	198	41	53.87	-11.38
2	2331.85	19.99 AV	54	-34.01	198	41	31.37	-11.38
3	*2402	75.86 PK			118	154	87.24	-11.38
4	*2402	53.36 AV			118	154	64.74	-11.38
5	4804	48.36 PK	74	-25.64	248	263	54.43	-6.07
6	4804	25.86 AV	54	-28.14	248	263	31.93	-6.07
7	7206	52.8 PK	74	-21.2	142	126	52.51	0.29
8	7206	30.3 AV	54	-23.7	142	126	30.01	0.29

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441	75.51 PK			117	24	86.89	-11.38
2	*2441	53.01 AV			117	24	64.39	-11.38
3	4882	54.37 PK	74	-19.63	199	163	60.44	-6.07
4	4882	31.87 AV	54	-22.13	199	163	37.94	-6.07
5	7323	52.4 PK	74	-21.6	150	27	52.11	0.29
6	7323	29.9 AV	54	-24.1	150	27	29.61	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2441	75.56 PK			118	232	86.94	-11.38
2	*2441	53.06 AV			118	232	64.44	-11.38
3	4882	48.94 PK	74	-25.06	242	152	55.01	-6.07
4	4882	26.44 AV	54	-27.56	242	152	32.51	-6.07
5	7323	52.45 PK	74	-21.55	189	271	52.16	0.29
6	7323	29.95 AV	54	-24.05	189	271	29.66	0.29

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 78	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2492.4	45.16 PK	74	-28.84	177	190	56.54	-11.38
2	2492.4	22.66 AV	54	-31.34	177	190	34.04	-11.38
3	*2480	73.32 PK			148	314	84.7	-11.38
4	*2480	50.82 AV			148	314	62.2	-11.38
5	4960	50.15 PK	74	-23.85	143	358	56.22	-6.07
6	4960	27.65 AV	54	-26.35	143	358	33.72	-6.07
7	7440	53.01 PK	74	-20.99	210	359	52.72	0.29
8	7440	30.51 AV	54	-23.49	210	359	30.22	0.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2496.45	46.39 PK	74	-27.61	181	62	57.77	-11.38
2	2496.45	23.89 AV	54	-30.11	181	62	35.27	-11.38
3	*2480	71.71 PK			213	33	83.09	-11.38
4	*2480	49.21 AV			213	33	60.59	-11.38
5	4960	48.69 PK	74	-25.31	216	199	54.76	-6.07
6	4960	26.19 AV	54	-27.81	216	199	32.26	-6.07
7	7440	52.28 PK	74	-21.72	167	122	51.99	0.29
8	7440	29.78 AV	54	-24.22	167	122	29.49	0.29

REMARKS:

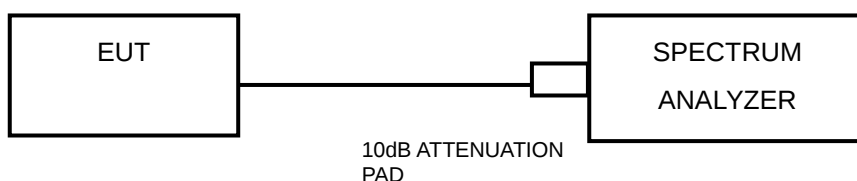
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) – Amplifier Gain(dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.

4.3 NUMBER OF HOPPING FREQUENCY USED

4.3.1 LIMIT OF HOPPING FREQUENCY USED

At least 15 channels frequencies, and should be equally spaced.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Wireless Connectivity Tester	R&S	CMW270	1201.0002K75	Dec. 28, 19	Dec. 27, 20
MXA VEXTOR SIGNAL	Agilent	n5182a	MY50140530	Mar. 24, 20	Mar. 24, 21
MXA signal analyzer	Agilent	n9020a	MY49100060	Mar. 24, 20	Mar. 24, 21
RF Control Unit	Tonscend	JS0806-2	188060112	Mar. 24, 20	Mar. 24, 21
Signal Generation	Agilent	E4421B	US40051152	Dec. 18, 19	Dec. 17, 20
DC Power Supply	Agilent	E3640A	MY40004013	Mar. 30, 20	Mar. 30, 21
Programmable Temperature & Humidity Chamber	Hongjin	HYC-TH-225 DH	DG-180746	Mar. 24, 20	Mar. 24, 21
Test System	Tonscend	JS 1120-3	N/A	N/A	N/A
Power Splitter	Weinschel	1580-1	TL177	Mar. 27, 20	Mar. 27, 21

NOTE:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GREGT/CHINA and NIM/CHINA.

4.3.4 TEST PROCEDURES

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- c. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
- d. Set the SA on View mode and then plot the result on SA screen.
- e. Repeat above procedures until all frequencies measured were completed.

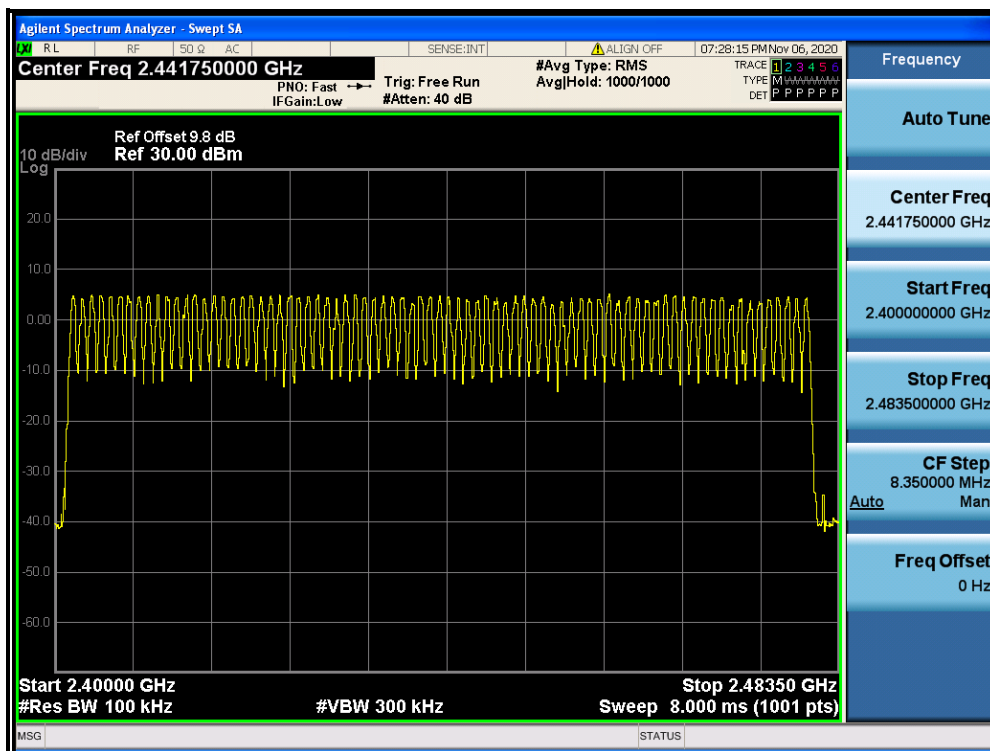
4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

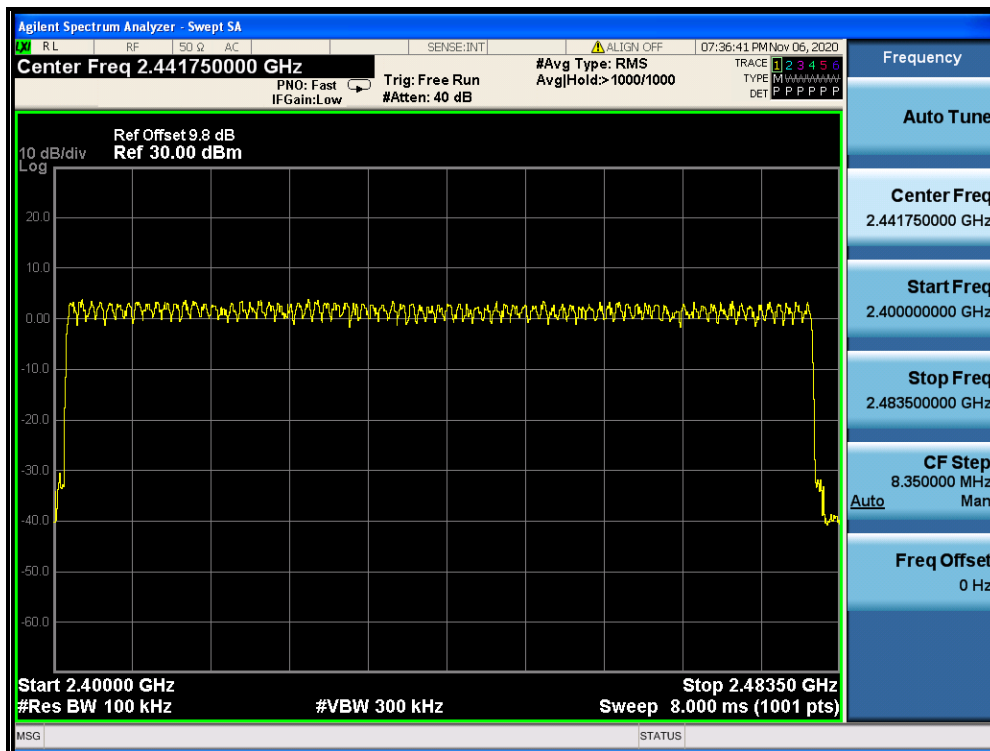
4.3.6 TEST RESULTS

There are 79 hopping frequencies in the hopping mode. Please refer to next two pages for the test result. On the plots, it shows that the hopping frequencies are equally spaced.

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8DPSK

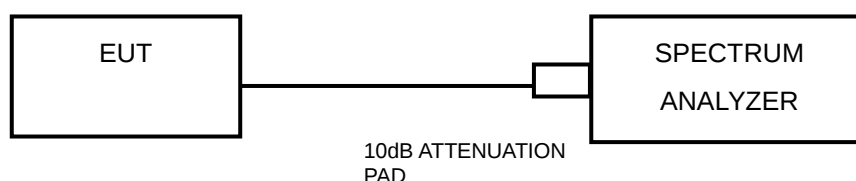


4.4 DWELL TIME ON EACH CHANNEL

4.4.1 LIMIT OF DWELL TIME USED

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.

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

- a. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
- c. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
- d. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
- e. Repeat above procedures until all different time-slot modes have been completed.

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 TEST RESULTS

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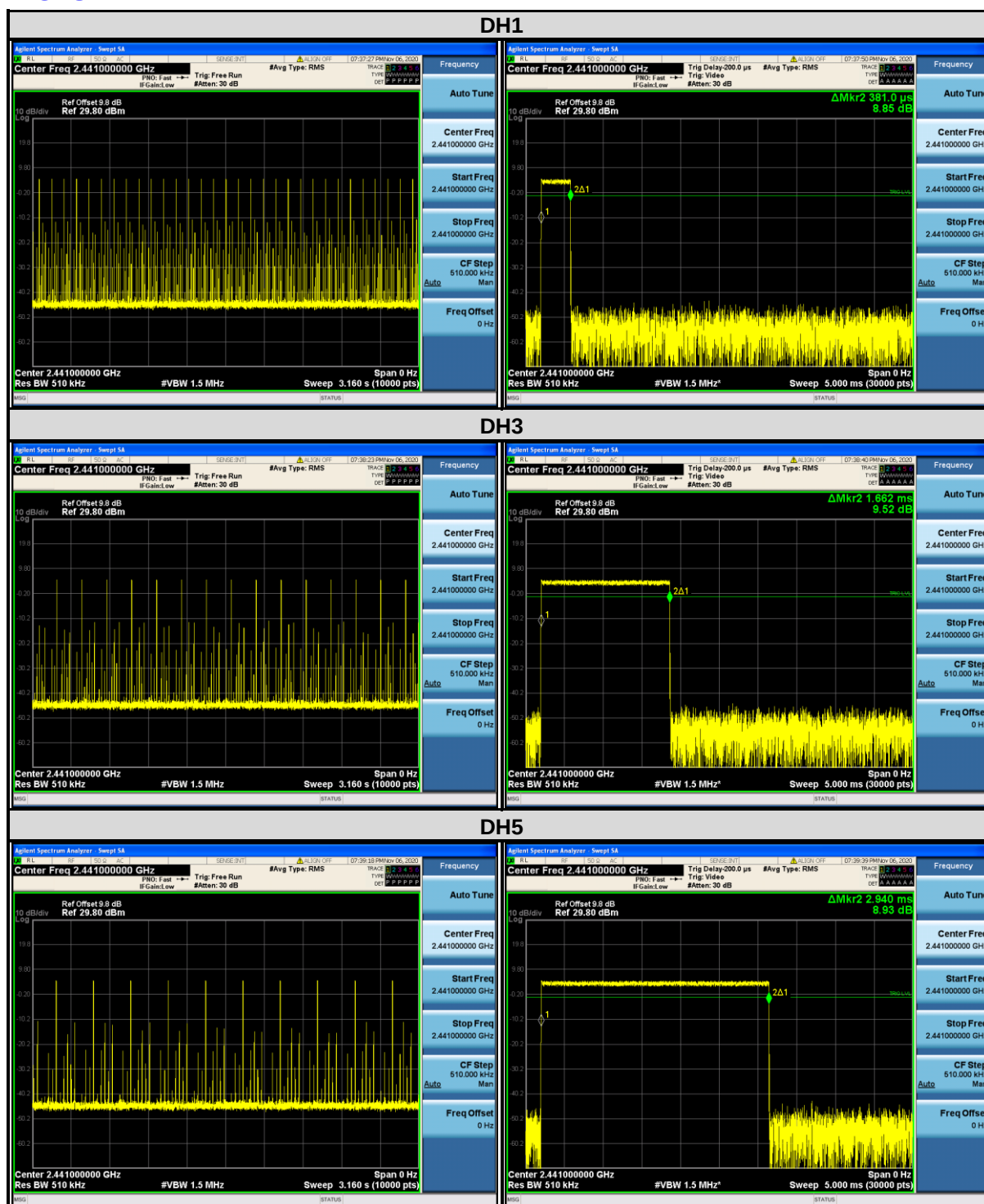
Mode	Number of Hopping Channel	Number of transmission in a period(channel number*0.4 sec)				Length of transmission time (msec)	Result (msec)	Limit (msec)	PASS / FAIL
		period (sec)	sweep time (sec)	times in a sweep	times in a period				
DH1	79	31.6	3.16	31	310	0.381	118.11	400	PASS
DH3	79	31.6	3.16	15	150	1.662	249.3	400	PASS
DH5	79	31.6	3.16	10	100	2.94	294	400	PASS

8DPSK

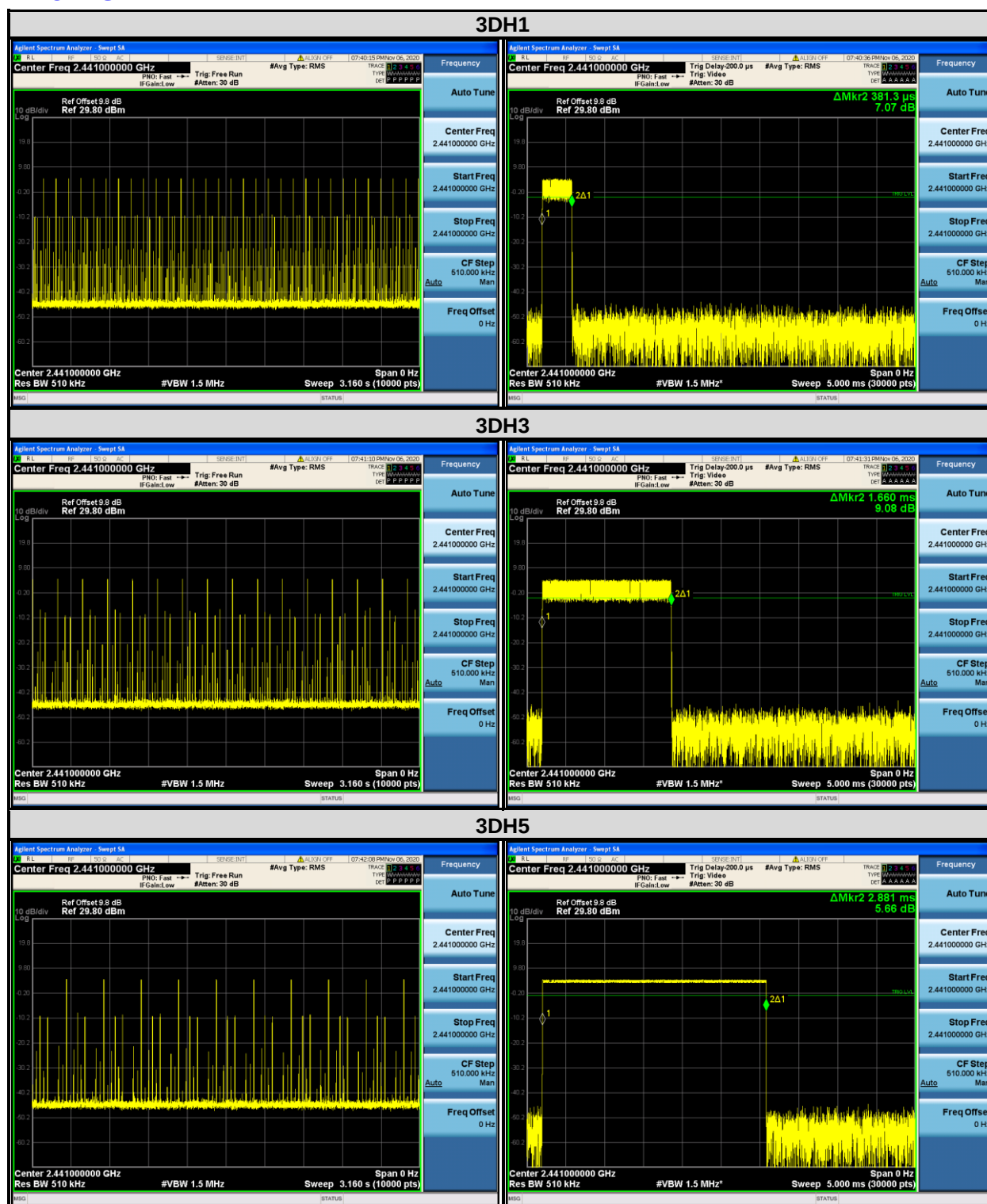
Mode	Number of Hopping Channel	Number of transmission in a period(channel number*0.4 sec)				Length of transmission time (msec)	Result (msec)	Limit (msec)	PASS / FAIL
		period (sec)	sweep time (sec)	times in a sweep	times in a period				
3DH1	79	31.6	3.16	31	310	0.381	118.11	400	PASS
3DH3	79	31.6	3.16	16	160	1.66	265.6	400	PASS
3DH5	79	31.6	3.16	10	100	2.881	288.1	400	PASS

NOTE: Test plots of the transmitting time slot are shown on next page.

GFSK



8DPSK

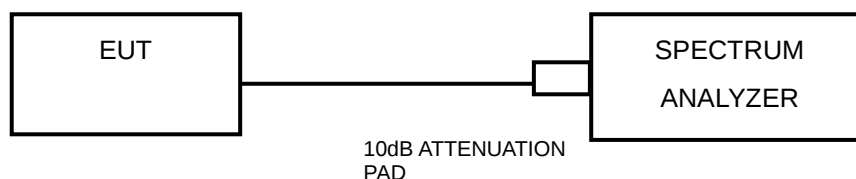


4.5 CHANNEL BANDWIDTH

4.5.1 LIMITS OF CHANNEL BANDWIDTH

For frequency hopping system operating in the 2400-2483.5MHz, If the 20dB bandwidth of hopping channel is greater than 25kHz, two-thirds 20dB bandwidth of hopping channel shall be a minimum limit for the hopping channel separation.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- Repeat above procedures until all frequencies measured were complete.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.5.7 TEST RESULTS

GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
0	2402	0.954
39	2441	0.957
78	2480	0.954

CH 0



CH 39



CH 78



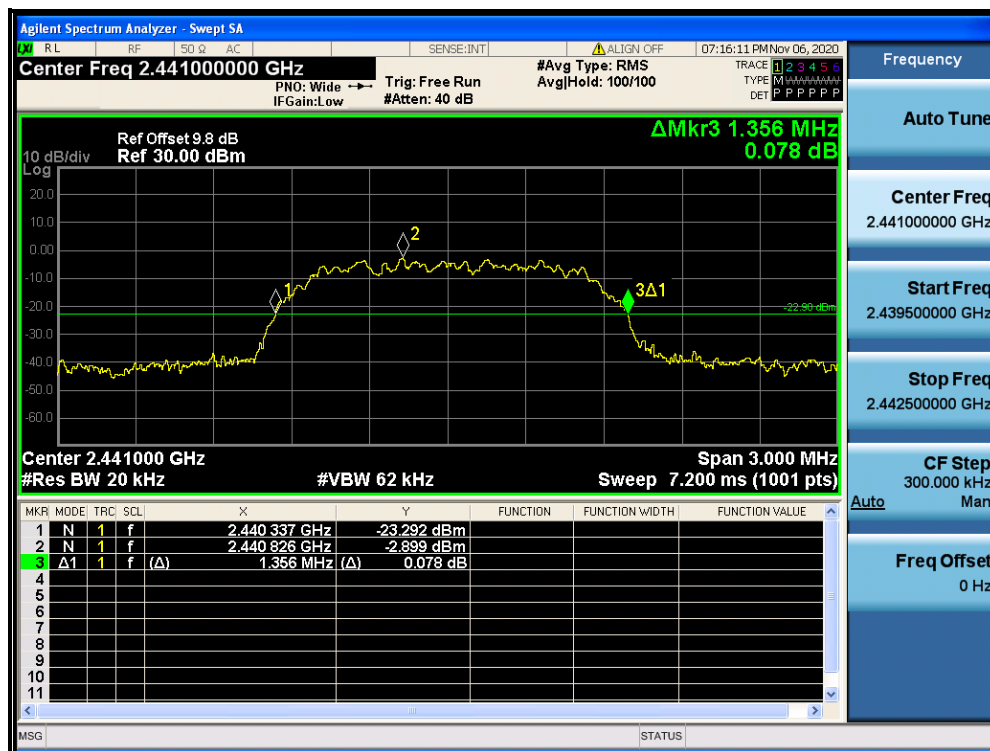
8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (MHz)
0	2402	1.353
39	2441	1.356
78	2480	1.356

CH 0



CH 39



CH 78

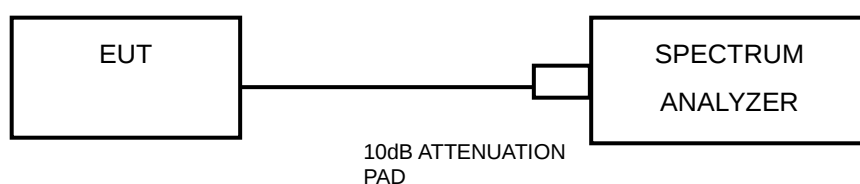


4.6 HOPPING CHANNEL SEPARATION

4.6.1 LIMIT OF HOPPING CHANNEL SEPARATION

At least 25kHz or two-third of 20dB hopping channel bandwidth (whichever is greater).

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

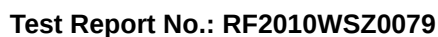
Refer to section 4.3.3 to get information of above instrument.

4.6.4 TEST PROCEDURES

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function. And then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

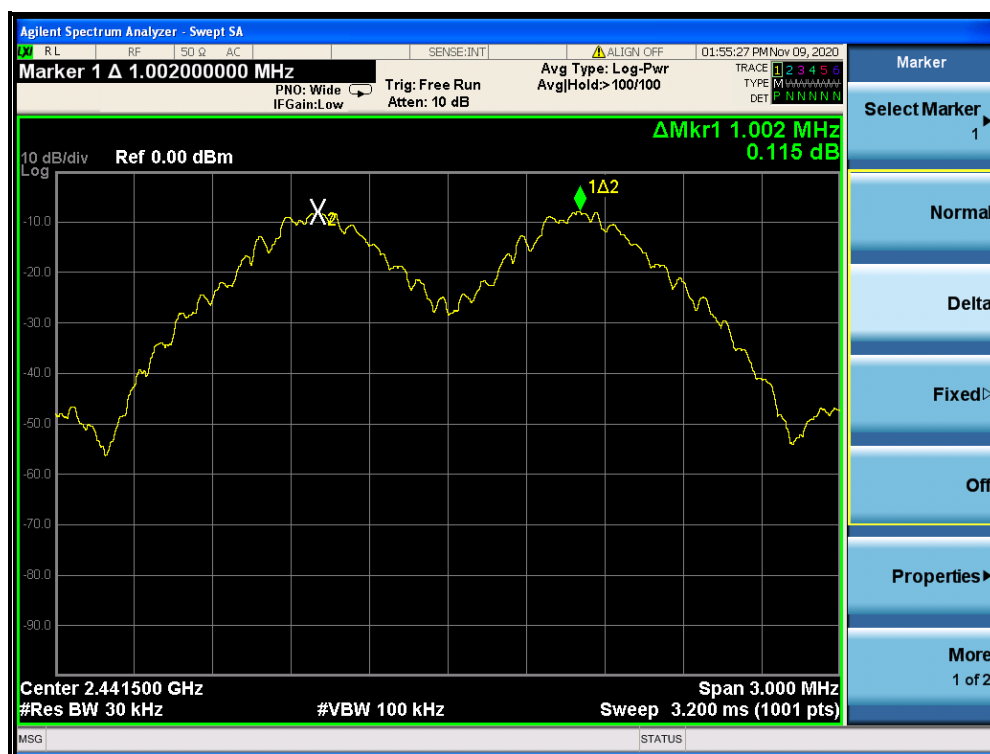


GFSK

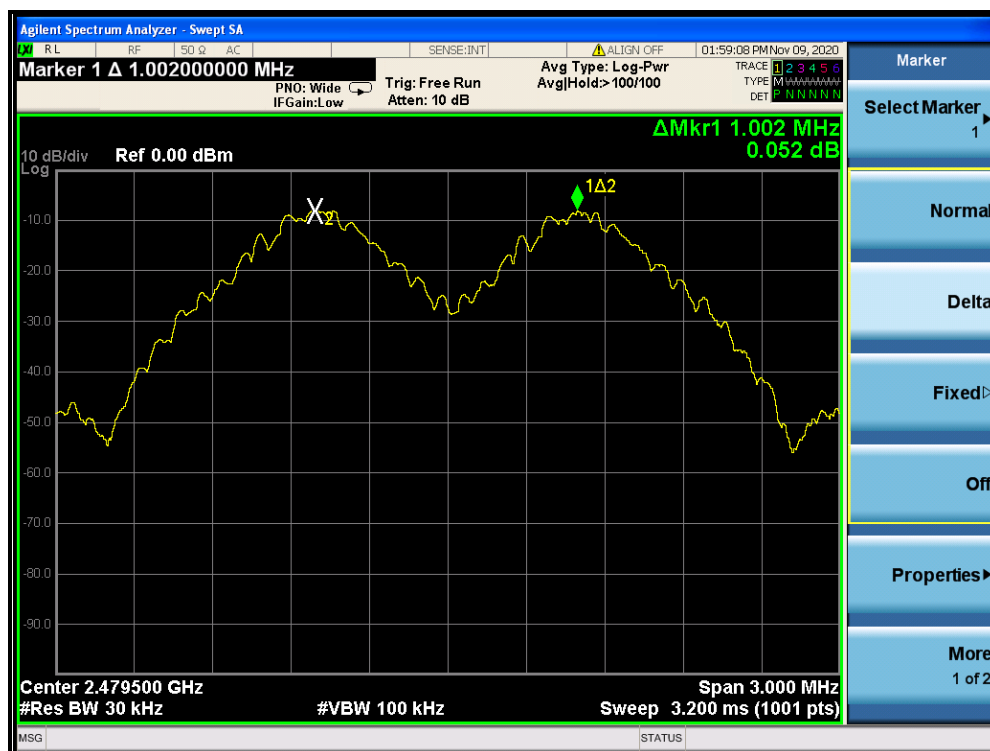
CHANNEL	FREQUENCY (MHz)	ADJACENT CHANNEL SEPARATION (MHz)	20dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	1.002	0.954	0.954	PASS
39	2441	1.002	0.957	0.957	PASS
78	2480	1.002	0.954	0.954	PASS

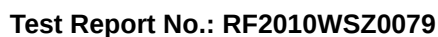


CH 39



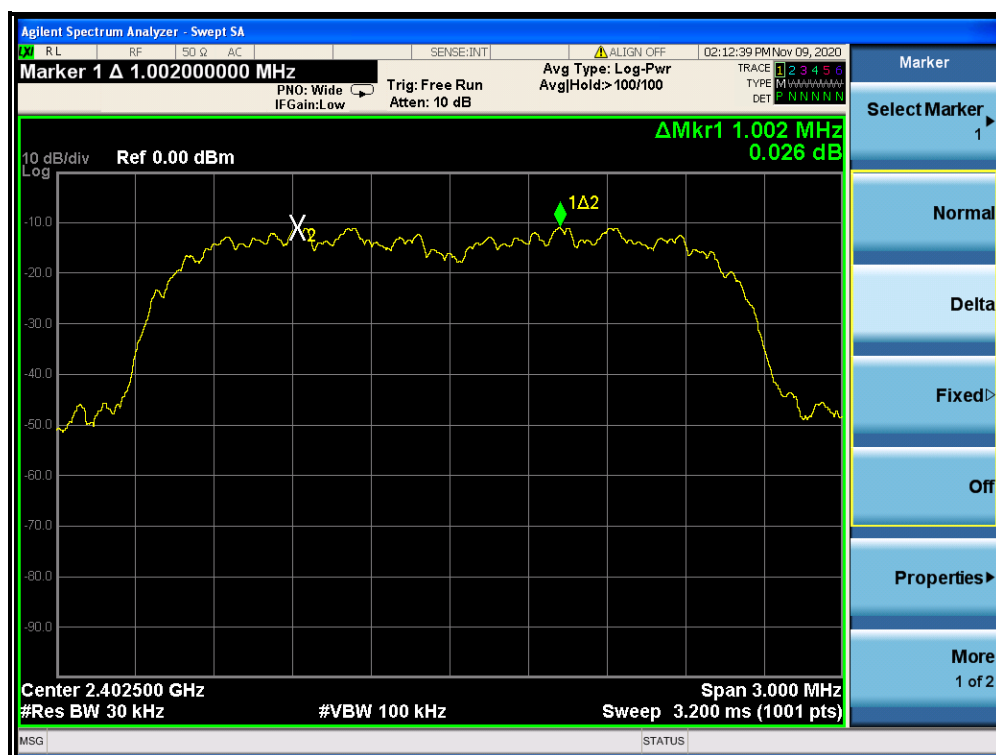
CH 78



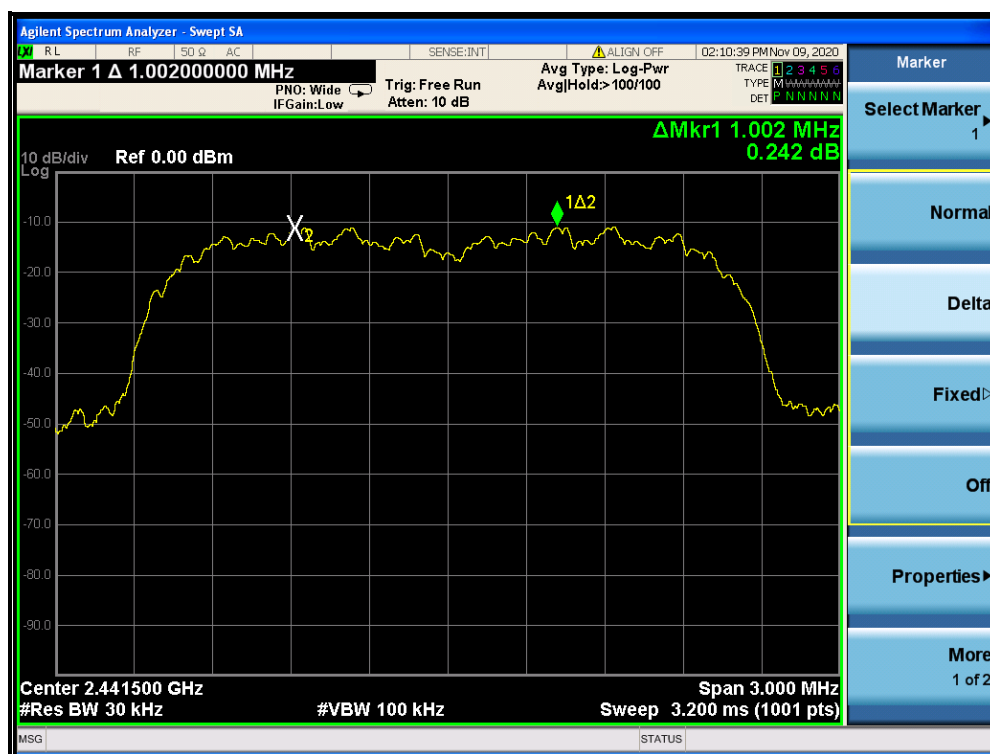


CHANNEL	FREQUENCY (MHz)	ADJACENT CHANNEL SEPARATION (MHz)	20dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	1.002	1.353	0.9	PASS
39	2441	1.002	1.356	0.9	PASS
78	2480	1.002	1.356	0.9	PASS

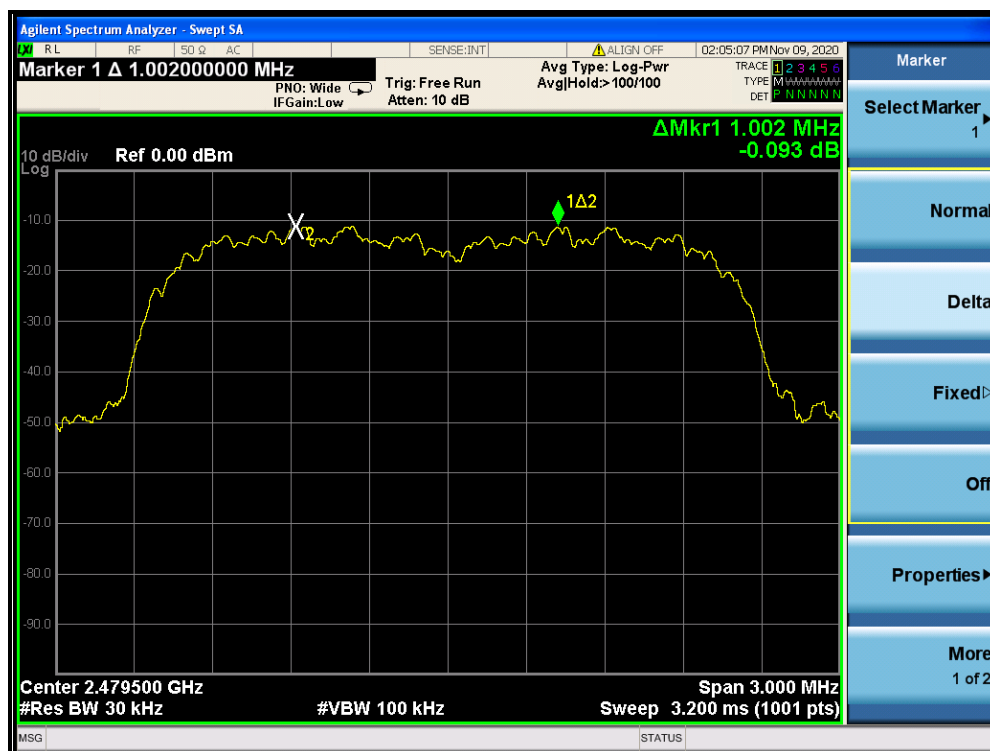
CH 0



CH 39



CH 78

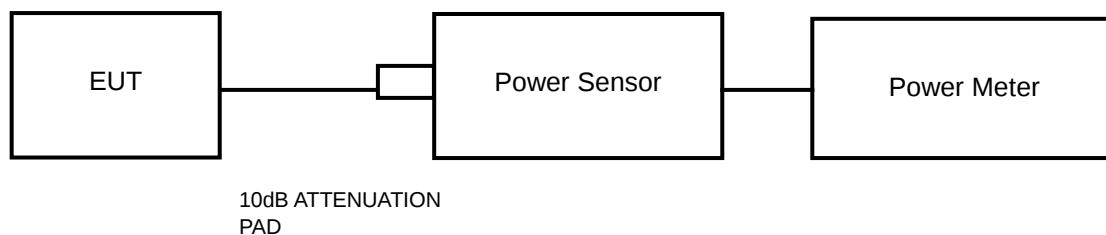


4.7 CONDUCTED OUTPUT POWER

4.7.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 125mW.

4.7.2 TEST SETUP



4.7.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.7.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A peak power meter was used to read the response of the peak power sensor. Record the peak power level.

4.7.5 DEVIATION FROM TEST STANDARD

No deviation.

4.7.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 TEST RESULTS

MAXIMUM PEAK OUTPUT POWER

GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (mW)	PASS/FAIL
0	2402	5.72	3.733	1000	PASS
39	2441	5.54	3.581	1000	PASS
78	2480	5.44	3.499	1000	PASS

8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT (mW)	PASS/FAIL
0	2402	7.72	5.916	125	PASS
39	2441	7.56	5.702	125	PASS
78	2480	7.44	5.546	125	PASS

AVERAGE OUTPUT POWER(FOR REFERENCE)

GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)
0	2402	4.78	3.006
39	2441	4.70	2.951
78	2480	4.48	2.805

8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)
0	2402	4.70	2.951
39	2441	4.61	2.891
78	2480	4.37	2.735

4.8 OUT OF BAND EMISSION MEASUREMENT

4.8.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100KHz RBW).

4.8.2 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.8.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. of Spectrum Analyzer was set RBW to 100 kHz and VBW to 300 kHz with suitable frequency span including 100 MHz bandwidth from band edge. Detector = PEAK and Trace mode = Max Hold. The band edges was measured and recorded.

4.8.4 DEVIATION FROM TEST STANDARD

No deviation.

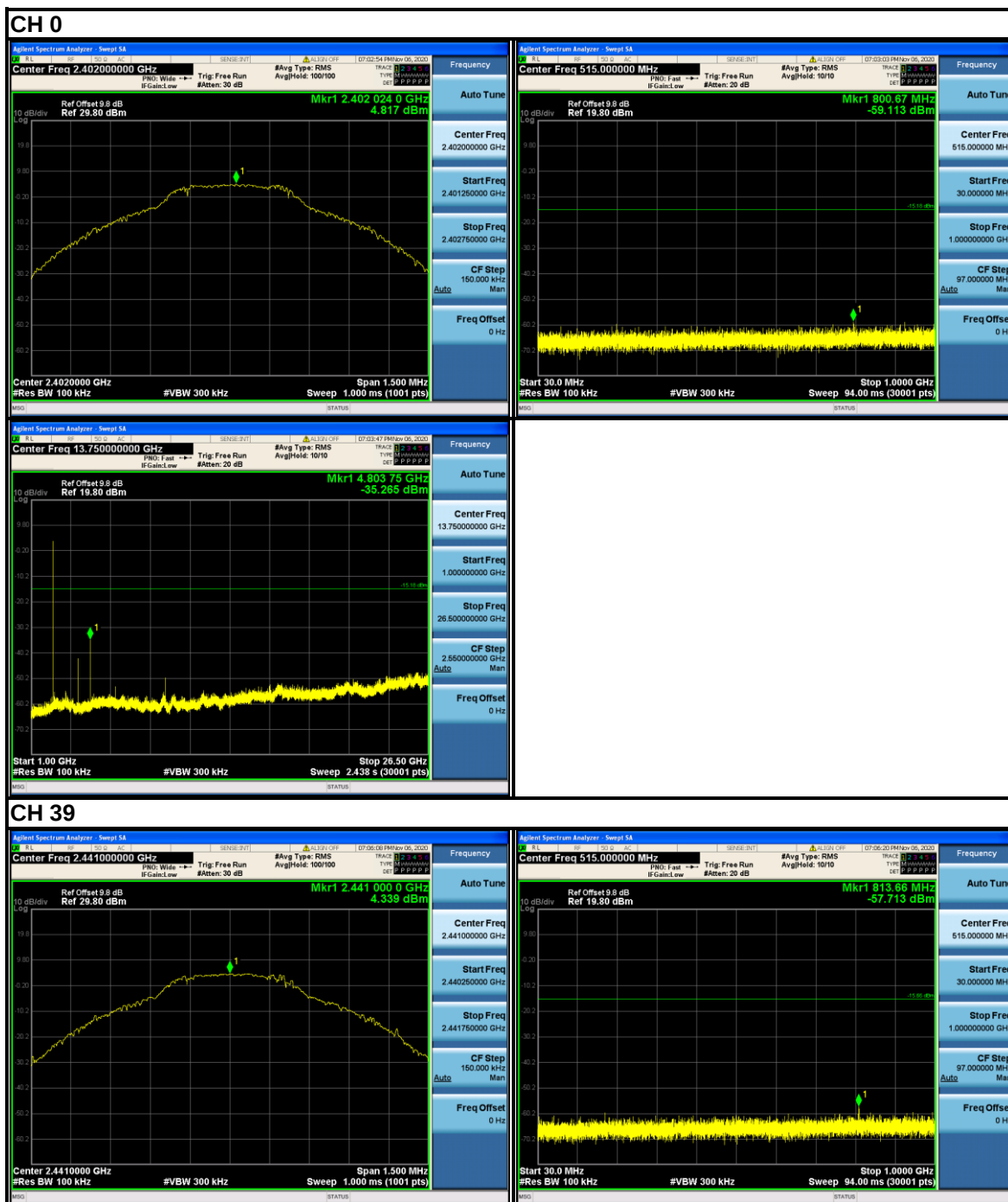
4.8.5 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.8.6 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

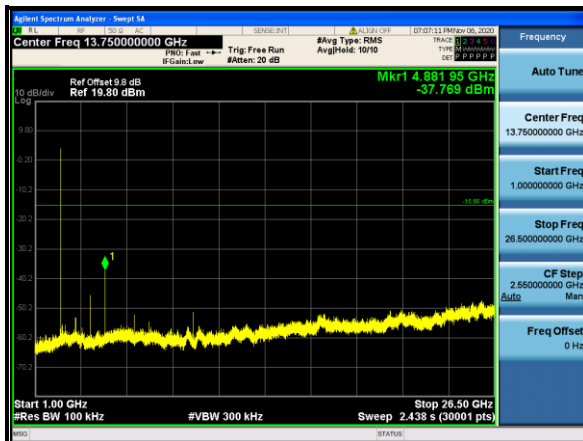
GFSK



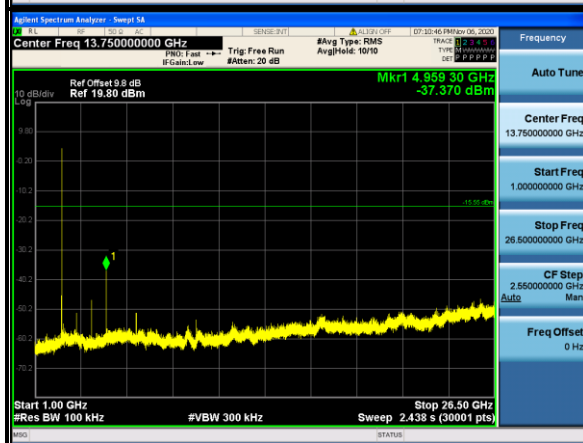
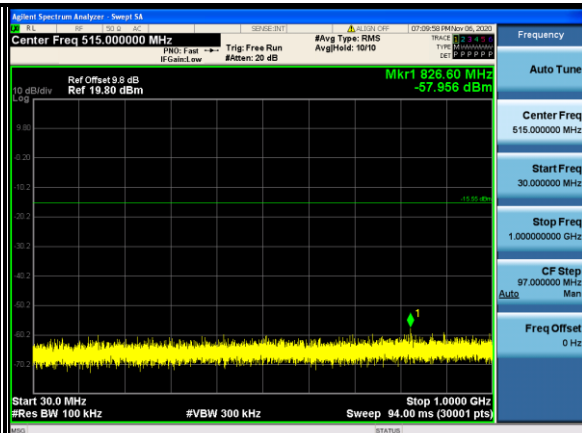


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CH 78

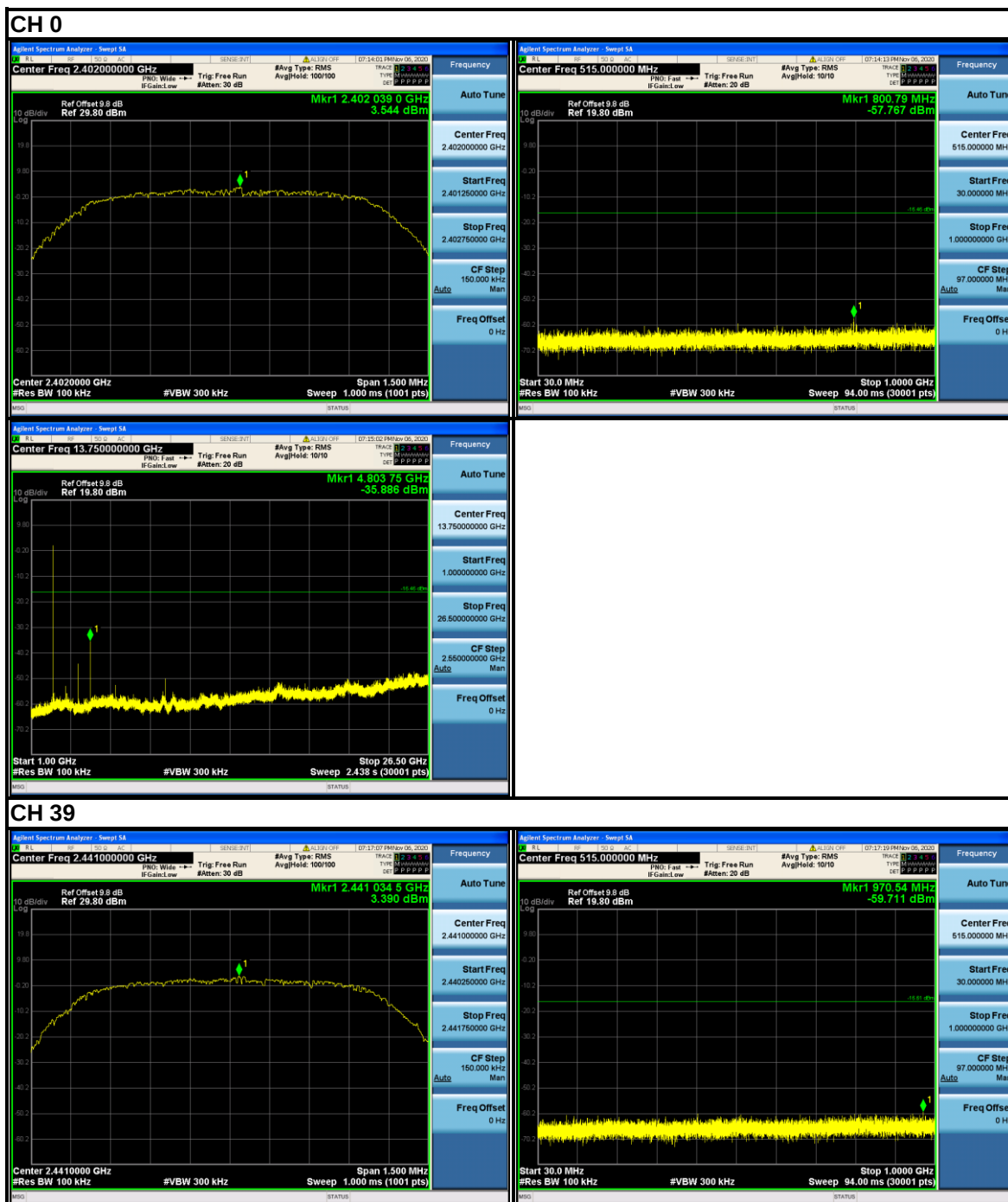


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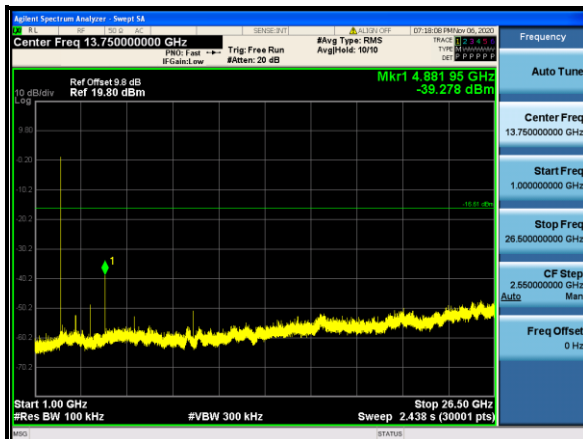
8DPSK



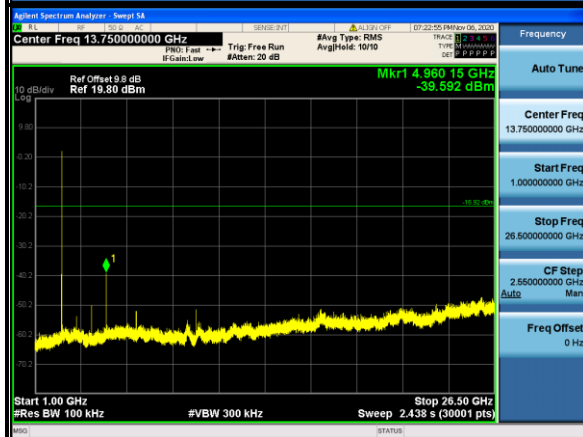
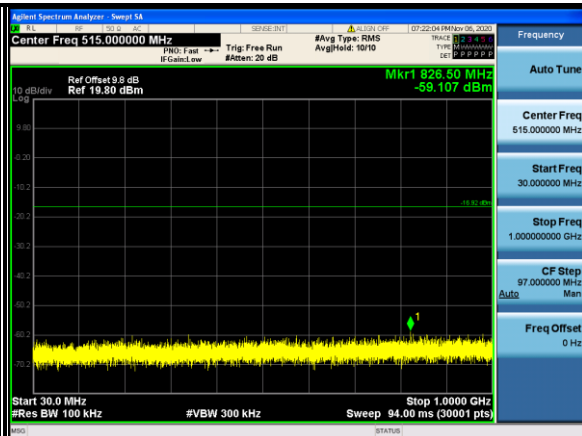


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CH 78

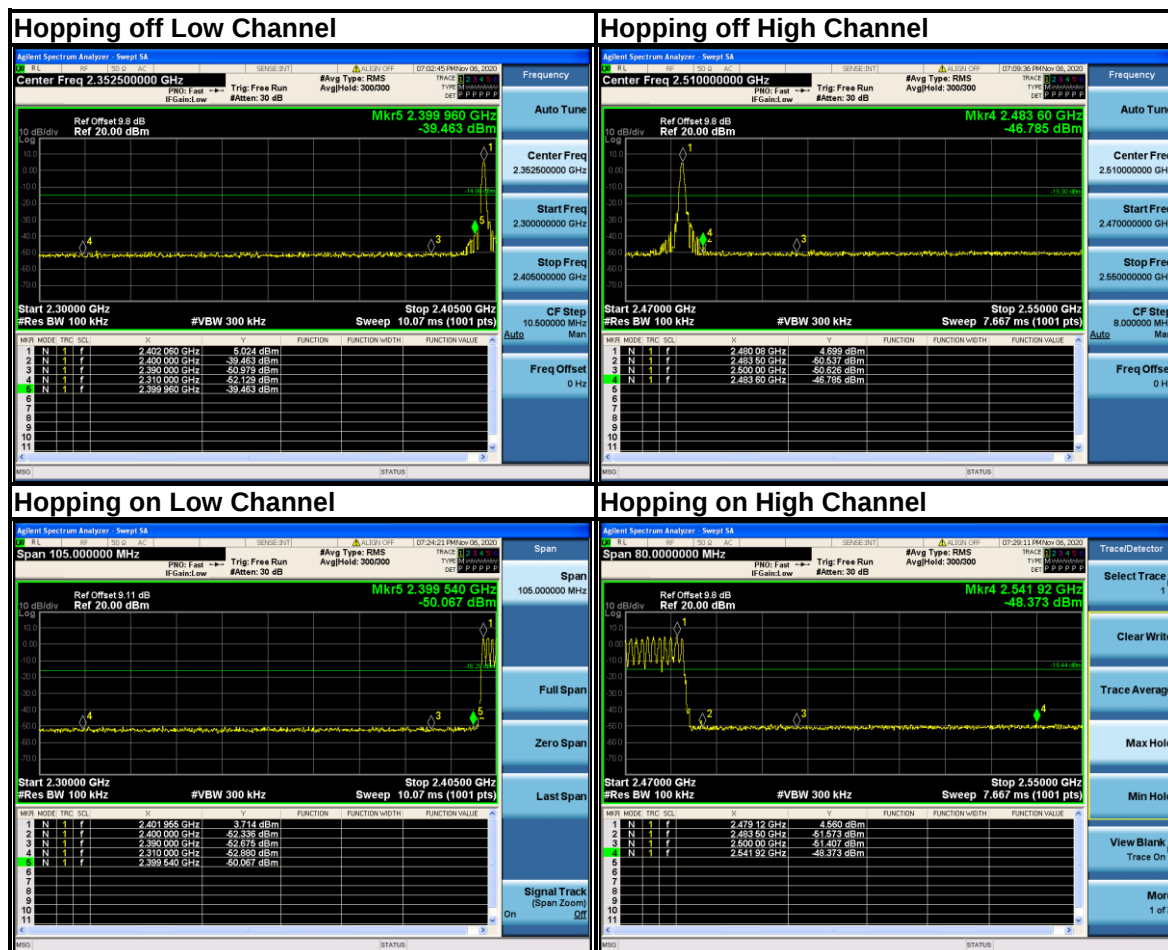


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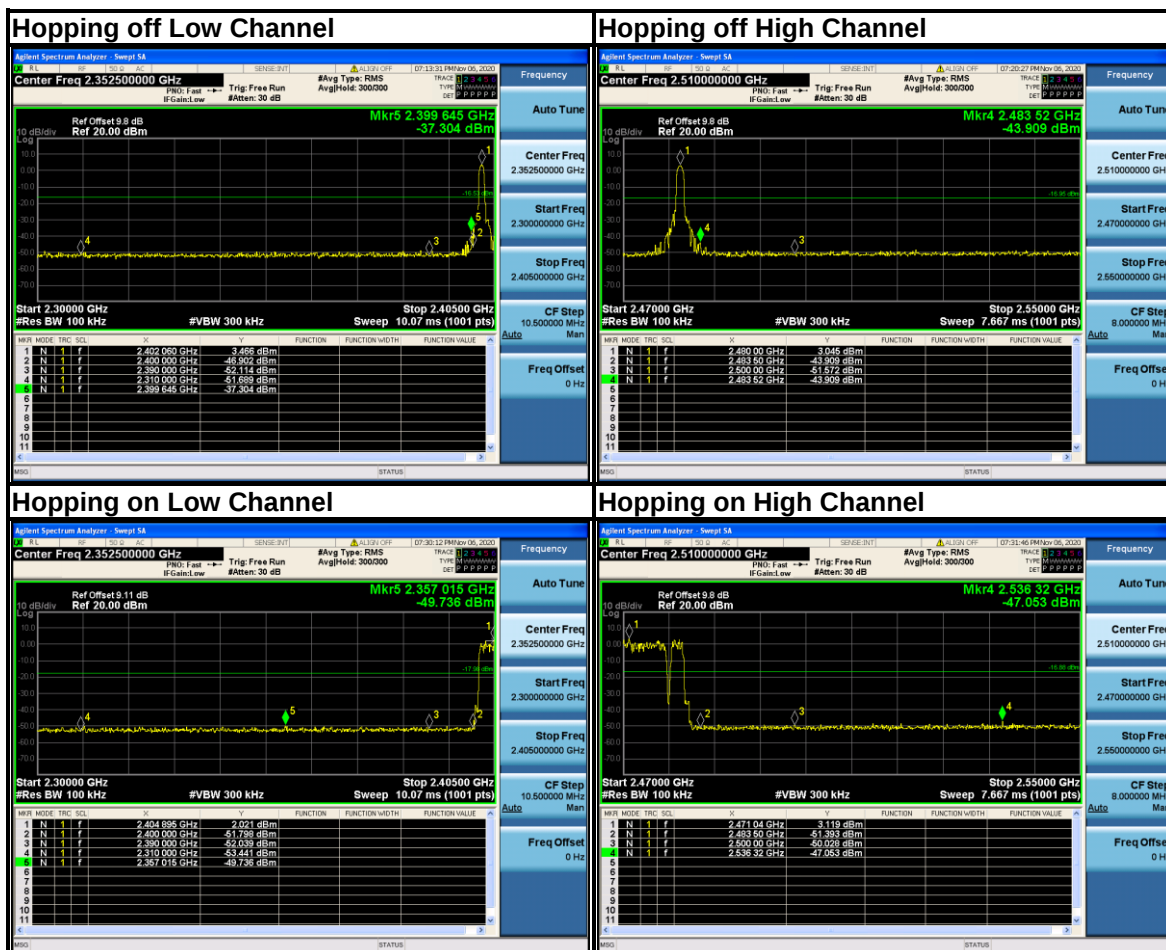
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GFSK



8DPSK



5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---