

ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR LOW-POWER, NON-LICENSED TRANSMITTER

Test Report No. : OT-216-RWD-075
Reception No. : 2104002293
Applicant : Audio-Technica Corporation
Address : 2-46-1 Nishi-naruse, Machida, Tokyo, 194-8666, Japan
Manufacturer : Audio-Technica Corporation
Address : 2-46-1 Nishi-naruse, Machida, Tokyo, 194-8666, Japan
Type of Equipment : STEREO TRANSMITTER
FCC ID. : JFZT3205DF2
Model Name : ATW-T3205DF2
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 46 pages (including this page)
Date of Incoming : May 14, 2021
Date of issue : June 25, 2021

SUMMARY

The equipment complies with the regulation; *FCC PART 15 SUBPART C Section 15.236*

This test report only contains the result of a single test of the sample supplied for the examination.

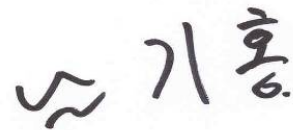
It is not a generally valid assessment of the features of the respective products of the mass-production.



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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-216-RWD-075	June 25, 2021	Initial Release	All

1. VERIFICATION OF COMPLIANCE

Applicant : Audio-Technica Corporation
 Address : 2-46-1 Nishi-naruse, Machida, Tokyo, 194-8666, Japan
 Contact Person : Fumio Kamimura / General Manager
 Telephone No. : +86-571-86697197
 FCC ID : JFZT3205DF2
 Model Name : ATW-T3205DF2
 Brand Name :  **audio-technica**
 Serial Number : N/A
 Date : June 25, 2021

EQUIPMENT CLASS	DWM- Part 15 Wireless Microphone
E.U.T. DESCRIPTION	STEREO TRANSMITTER
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2020
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART C Section 15.236 KDB 206256 D01 Wireless Microphones v02 ETSI EN 300 422-1 V1.4.2(2011-08)
Modifications on the Equipment to Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. TEST SUMMARY

2.1 Test items and results

SECTION	TEST ITEMS	RESULTS
15.236(f)(2)	Occupied Bandwidth	Met the Limit / PASS
15.236(f)(3)	Frequency Tolerance	Met the Limit / PASS
15.236(d)(1)	RF Output Power	Met the Limit / PASS
15.236(g)	Necessary Bandwidth	Met the Limit / PASS
15.236(g)	Radiated Spurious Emission	Met the Limit / PASS
15.207(a)	AC Conducted Emissions 150kHz - 30MHz	Met the Limit / PASS
15.207(a)	Conducted Limits	Met the Limit / PASS

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in FCC PART 15 SUBPART C Section 15.247.

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2020. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-20122/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

3. GENERAL INFORMATION

3.1 Product Description

The Audio-Technica Corporation, Model ATW-T3205DF2 (referred to as the EUT in this report) is a STEREO TRANSMITTER. The product specification described herein was obtained from product data sheet or user’s manual.

DEVICE TYPE	STEREO TRANSMITTER	
TEMPERATURE RANGE	0 °C ~ 45 °C	
OPERATING FREQUENCY	470.125 MHz ~ 607.875 MHz	
MODULATION TYPE	FM	
NUMBER OF CHANNEL	5 511 Channel	
RF OUTPUT POWER	50 mW Mode	15.448 dBm
	10 mW Mode	11.118 dBm
ANTENNA TYPE	Whip Antenna	
ANTENNA GAIN	1.298 dBi	
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	32 MHz	

3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

4. EUT MODIFICATIONS

-. None

5. SYSTEM TEST CONFIGURATION

5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	Audio-Technica Corporation	T3205 MAIN	N/A
Sub Board	Audio-Technica Corporation	R3210 DP ASSY	N/A
LCD	N/A	N/A	N/A

5.2 Peripheral equipment

-. None

5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set at 470.125 MHz, 539.000 MHz, and 607.875 MHz to get a maximum emission levels from the EUT. The EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XY” axis, but the worst data was recorded in this report.

-. Channel List (FM)

Low Frequency[MHz]	High Frequency[HMz]	Channel Spacing[MHz]	Channel Count[EA]
470.125	607.875	0.025	5 511

5.4 Configuration of Test System

Line Conducted Test: The EUT was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2020 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 meter Semi Anechoic Chamber.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.

5.5 Antenna Requirement

For intentional device, according to section 15.203, For intentional device, according to section 15.203, This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236.

Antenna Construction:

The antenna of the EUT is a Whip Antenna on the main board in the EUT.

6. PRELIMINARY TEST

6.1 AC Power line Conducted Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

6.2 General Radiated Emissions Tests

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Transmitting Mode	X

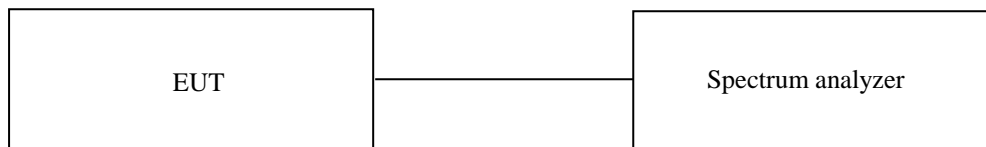
7. MINIMUM 26 dB BANDWIDTH

7.1 Operating environment

Temperature : 23 °C
 Relative humidity : 45 % R.H.

7.2 Test Setting

1. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
2. Set RBW \geq 1% to 5% of the OBW
3. VBW = Approximately three times RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize



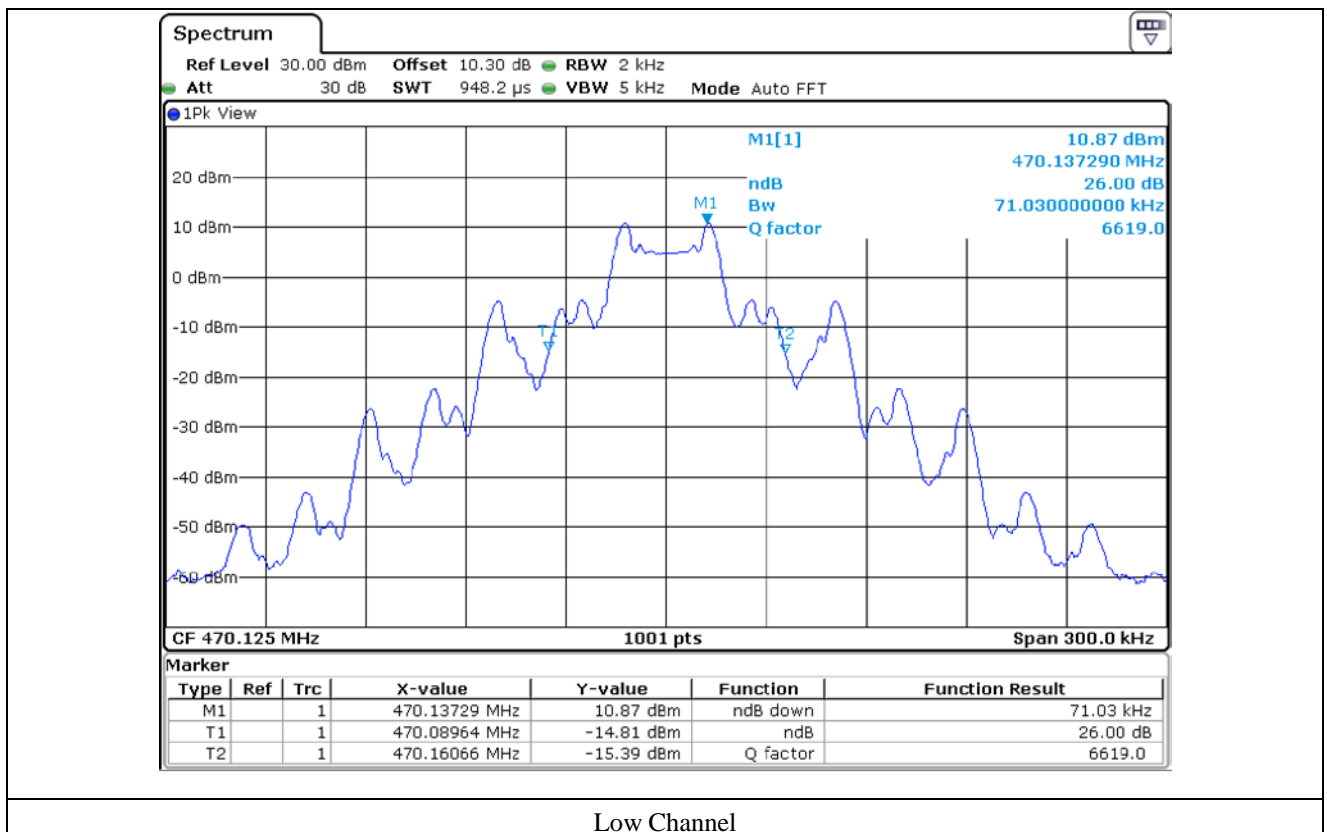
7.3 Test Date

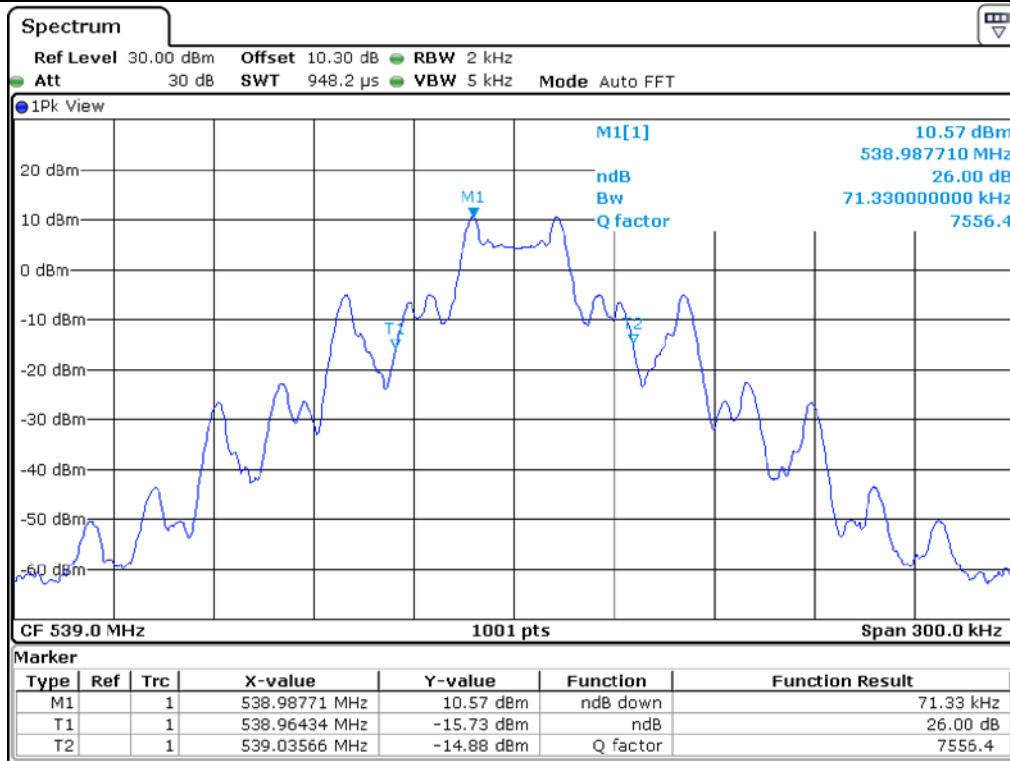
May 14, 2021 ~ May 31, 2021

7.4 Test data for 50 mW

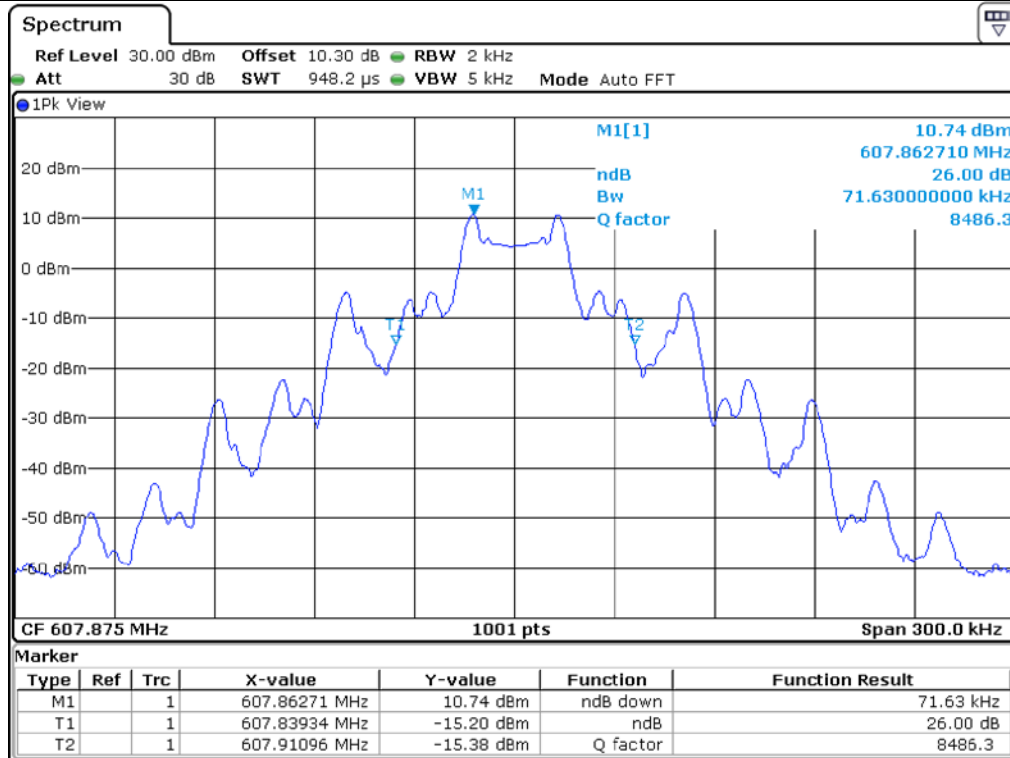
CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (kHz)	LIMIT (kHz)	MARGIN (kHz)
Low	470.125	71.03	200.00	128.97
Middle	539.000	71.33	200.00	128.67
High	607.875	71.63	200.00	128.37

Remark. Margin = Measured Value - Limit





Middle Channel

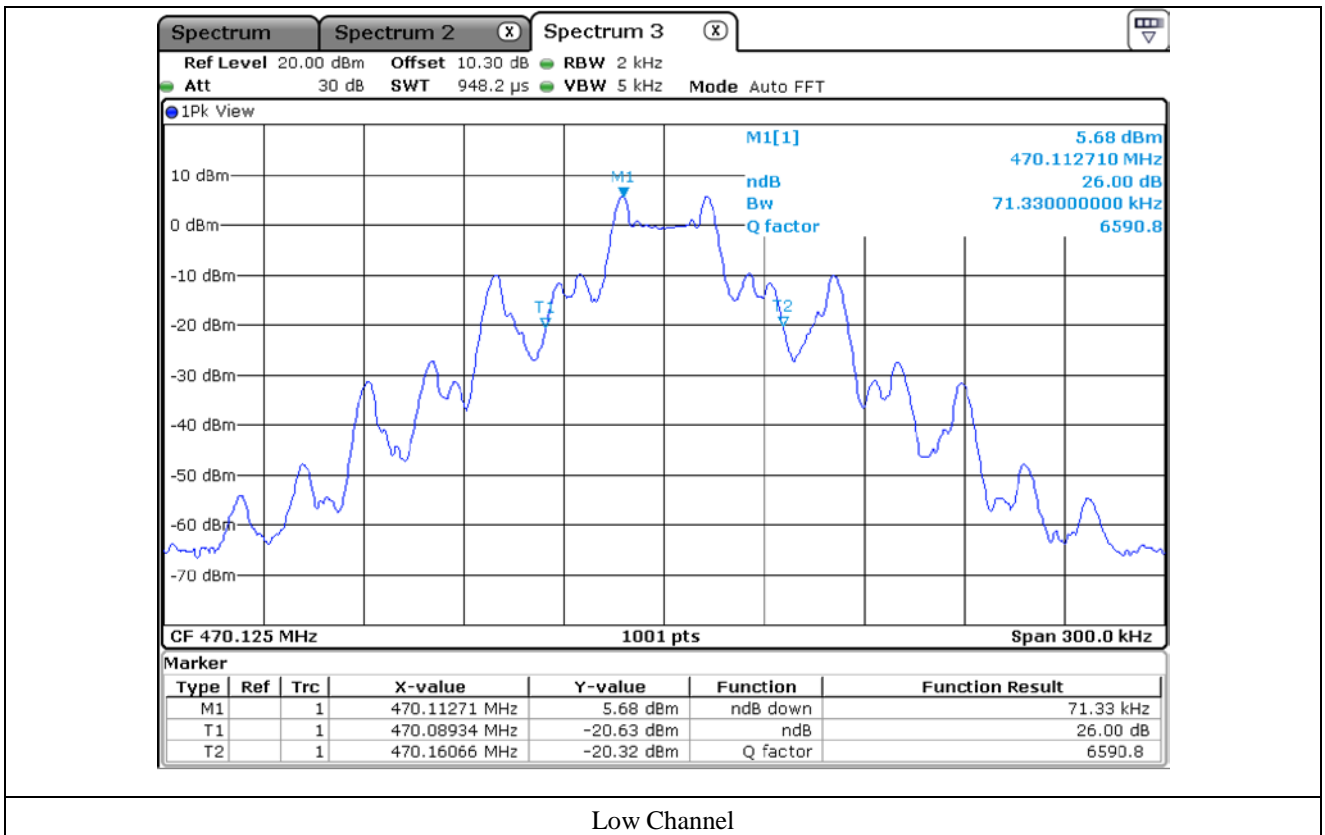


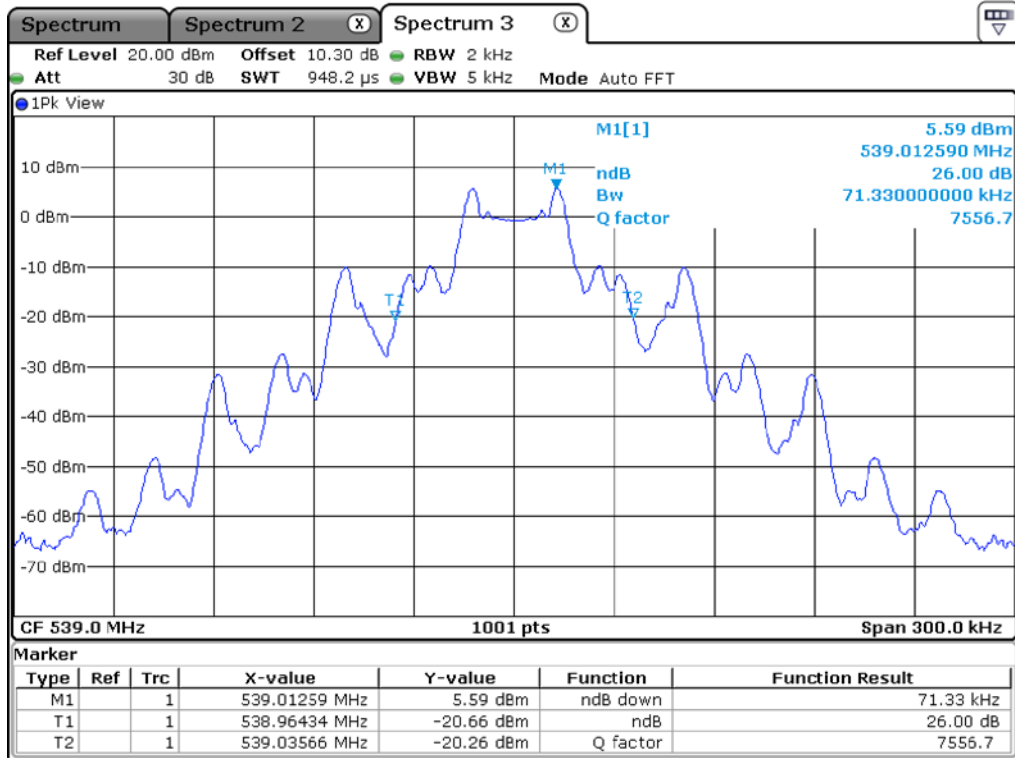
High Channel

7.5 Test data for 10 mW

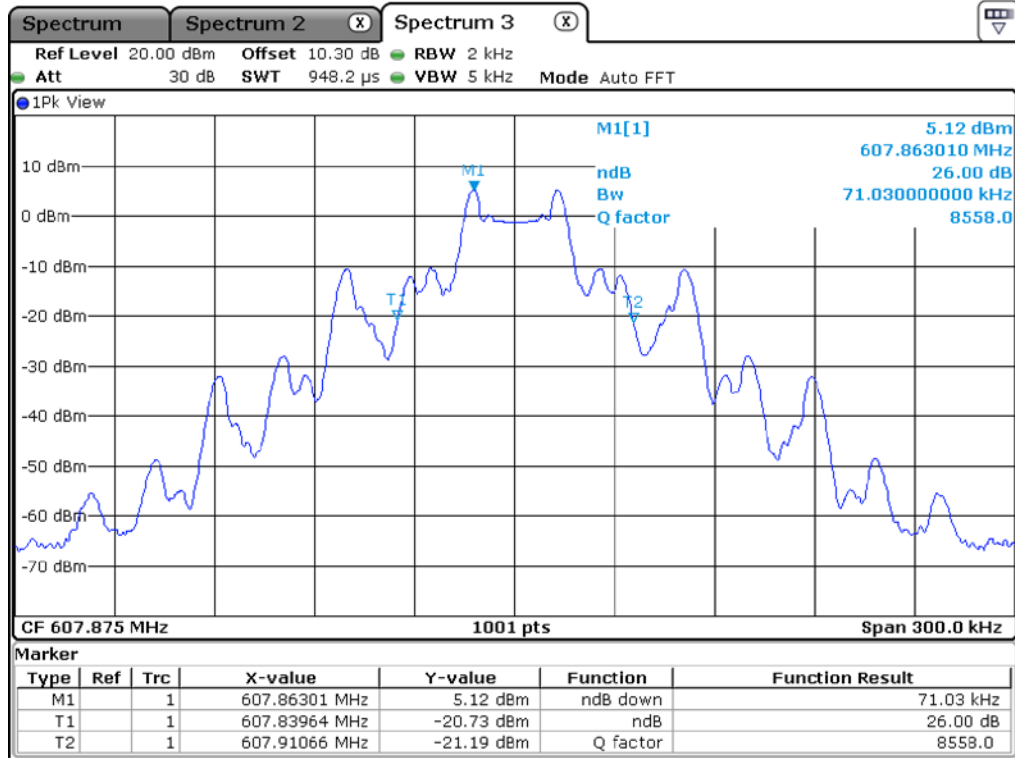
CHANNEL	FREQUENCY(MHz)	MEASURED VALUE (kHz)	LIMIT (kHz)	MARGIN (kHz)
Low	470.125	71.33	200.00	128.67
Middle	539.000	71.33	200.00	128.67
High	607.875	71.03	200.00	128.97

Remark. Margin = Measured Value - Limit





Middle Channel



High Channel

7.6 Test Limit

The operating bandwidth shall not exceed 200 kHz.

8. MAXIMUM PEAK OUTPUT POWER

8.1 Operating environment

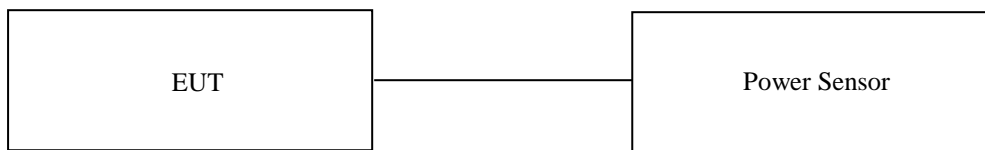
Temperature : 23 °C
Relative humidity : 45 % R.H.

8.2 Test Setting

The output of the EUT was connected to an RF average power meter through fixed attenuation.

The EUT was set to transmit on the low, middle, and high frequencies in each power level.

Measure the average power of the transmitter.



8.3 Test Date

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8.4 Test data for 50 mW

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	Power Meter Level (dBm)	Antenna Gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
LOW	470.125	14.15	1.298	15.448	17.000	1.552
MIDDLE	539.000	14.14	1.298	15.438	17.000	1.562
HIGH	607.875	14.13	1.298	15.428	17.000	1.572

Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

8.5 Test data for 10 mW

-. Test Result : Pass

CHANNEL	FREQUENCY (MHz)	Power Meter Level (dBm)	Antenna Gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
LOW	470.125	9.82	1.298	11.118	17.000	5.882
MIDDLE	539.000	9.81	1.298	11.108	17.000	5.892
HIGH	607.875	9.45	1.298	10.748	17.000	6.252

Remark. Margin = Limit – Measured Value (=Receiver Reading + Cable Loss)

8.6 Test Limit

In the bands allocated and assigned for broadcast television and in the 600 MHz service band: 50 mW EIRP.

9. Field Strength of Spurious Emissions

9.1 Operating environment

Temperature : 23 °C
 Relative humidity : 45 % R.H.

9.2 Test Setting

Frequency	RBW
25 ~ 30 MHz	9 kHz
30 ~ 1000 MHz	100 kHz
1000 ~ 6000 MHz	1 MHz

Emissions shall be investigated up to the 10th harmonic of the fundamental.

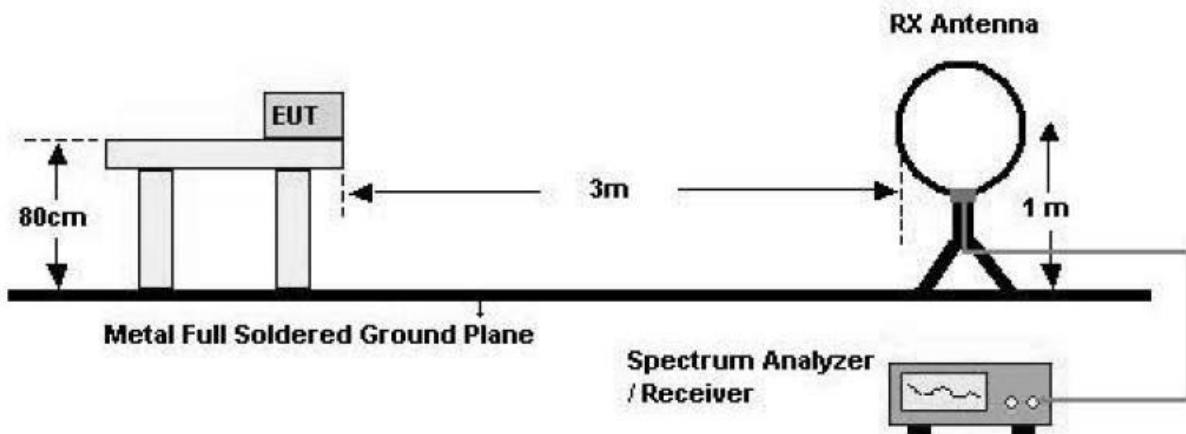
All the emissions shall be demonstrated using a QP detector below 1 GHz and a RMS Average detector above 1 GHz.

All significant broadband and narrowband signals found in the preliminary sweeps were measured using a peak detector at a test distance of 3 meters.

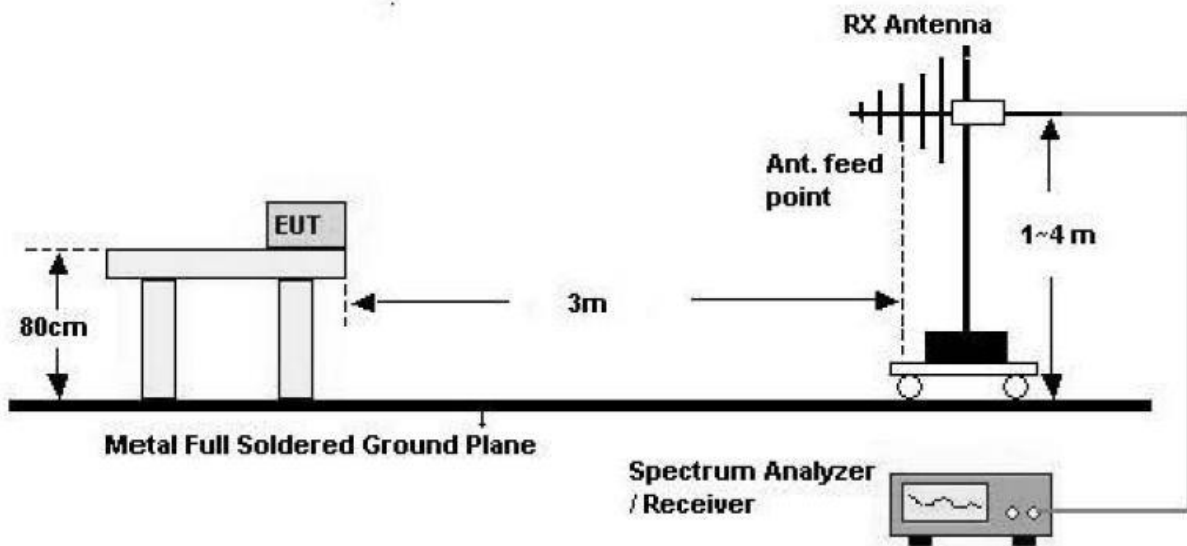
At each frequency at which a component is detected, the sample shall be rotated to obtain maximum response and the effective radiated power of that component determined by a substitution measurement.

- Test Configuration

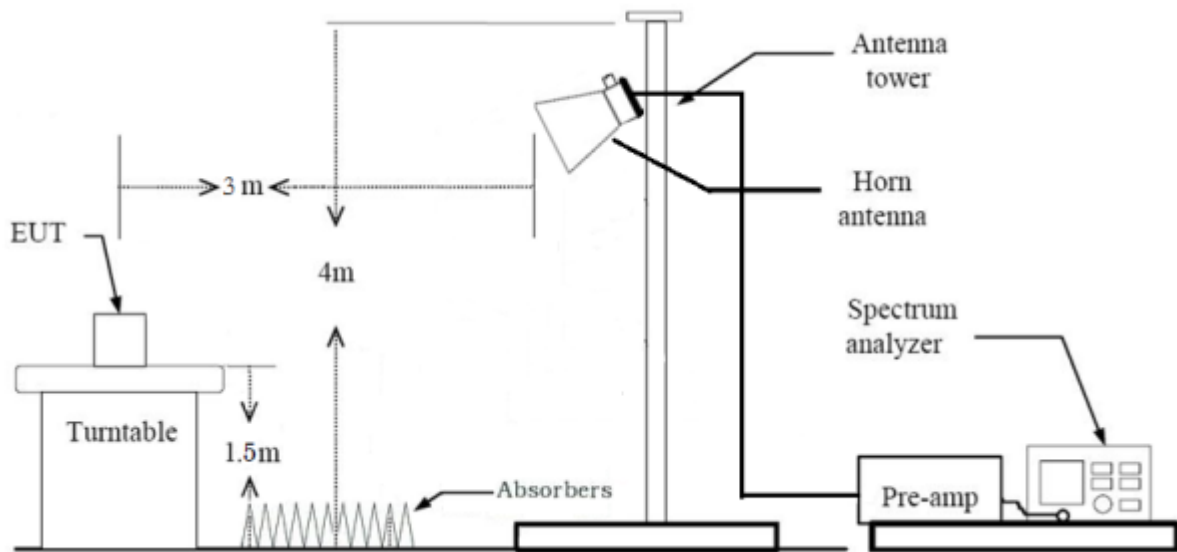
1. Below 30 MHz



2. 30 MHz - 1 GHz



3. Above 1 GHz



9.3 Test Procedure Used

ETSI EN 300 422-1 V1.4.2 clause 8.4.2.

9.4 Test Date

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9.5 Test data for 50 mW

Frequency Range (MHz)	Frequency (MHz)	Measurement (dBm)	Ant. Pol. (H/V)	Limit (dBm)	Margin (dB)
30 ~ 1 000	38.05	-64.45	H	-36.00	28.45
	46.83	-62.05	V	-36.00	26.05
	50.76	-60.80	V	-54.00	6.80
	69.48	-71.10	V	-54.00	17.10
	127.00	-67.90	V	-54.00	13.90
	187.48	-76.76	V	-54.00	22.76
	199.99	-73.46	V	-54.00	19.46
	312.56	-73.92	H	-36.00	37.92
	784.03	-59.24	H	-54.00	5.24
	875.02	-63.48	H	-36.00	27.48
	940.25	-49.31	H	-36.00	13.31
	1 000.00	-64.56	H	-36.00	28.56
1 000 ~ 7 000	1 196.00	-71.78	V	-30.00	41.78
	1 347.00	-69.45	V	-30.00	39.45
	1 492.00	-69.17	V	-30.00	39.17
	1 492.00	-69.17	V	-30.00	39.17
	2 170.00	-68.43	H	-30.00	38.43
	2 214.50	-67.78	H	-30.00	37.78
	3 169.50	-68.47	H	-30.00	38.47
	3 649.00	-66.81	H	-30.00	36.81
	4 654.50	-65.38	H	-30.00	35.38
	5 507.50	-64.33	H	-30.00	34.33
	6 422.00	-60.34	V	-30.00	30.34
	6 997.50	-59.25	V	-30.00	29.25

9.6 Test data for 10 mW

Frequency Range (MHz)	Frequency (MHz)	Measurement (dBm)	Ant. Pol. (H/V)	Limit (dBm)	Margin (dB)
30 ~ 1 000	37.86	-63.80	H	-36.00	27.80
	51.68	-60.80	V	-54.00	6.80
	95.67	-80.46	V	-54.00	26.46
	127.68	-66.49	V	-54.00	12.49
	199.99	-72.67	H	-54.00	18.67
	250.00	-77.69	H	-36.00	41.69
	312.56	-74.55	H	-36.00	38.55
	368.00	-75.80	H	-36.00	39.80
	470.14	-71.82	H	-54.00	17.82
	688.05	-68.34	V	-54.00	14.34
	783.98	-60.18	V	-54.00	6.18
	940.25	-60.30	V	-36.00	24.30
1 000 ~ 7 000	1 198.50	-70.79	H	-30.00	40.79
	1 375.00	-68.81	H	-30.00	38.81
	1 375.00	-68.81	V	-30.00	38.81
	1 491.50	-69.24	V	-30.00	39.24
	2 167.00	-68.22	V	-30.00	38.22
	2 213.00	-67.50	H	-30.00	37.50
	3 145.00	-67.87	V	-30.00	37.87
	3 773.00	-67.20	H	-30.00	37.20
	4 570.50	-64.75	H	-30.00	34.75
	5 707.00	-63.66	V	-30.00	33.66
	6 550.50	-60.82	H	-30.00	30.82
6 995.50	-59.91	V	-30.00	29.91	

9.7 Test Limit

State	Frequency		
	47 MHz to 74 MHz, 87.5 MHz to 137 MHz 174 MHz to 230 MHz, 470 MHz to 862 MHz	Other Frequencies below 1000 MHz	Frequencies above 1000 MHz
Operation	4 nW	250 nW	1 uW
Standby	2 nW	2 nW	1 MHz

According to FCC Part 15.236(g), emissions outside of this band shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2.

10. Frequency Stability

10.1 Operating environment

Temperature : 23 °C
 Relative humidity : 45 % R.H.

10.2 Test Setting

The EUT was programmed to transmit with an unmodulated carrier.

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external DC power supply and input rated voltage.

RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.

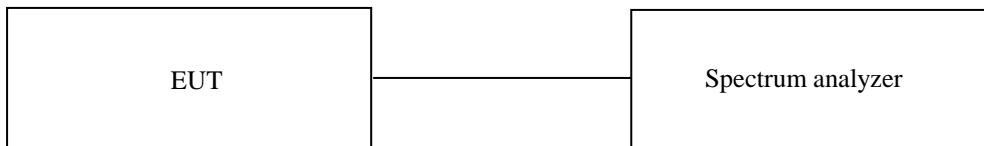
The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. While maintaining a constant temperature inside the environmental chamber, turn the EUT on and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.

Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.



10.3 Test Date

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10.4 Test data for Temperature Edition

Temperature(°C)	Nominal Frequency(MHz)	Measured Frequency(MHz)	Result(Hz)	PPM	Limit(PPM)
-20	470.125	470.125 037	37.00	0.08	50.00
	539.000	539.000 062	62.00	0.12	
	607.875	607.875 058	58.00	0.10	
-10	470.125	470.124 948	-52.00	-0.11	
	539.000	538.999 925	-75.00	-0.14	
	607.875	607.874 942	-58.00	-0.10	
0	470.125	470.124 931	-69.00	-0.15	
	539.000	538.999 956	-44.00	-0.08	
	607.875	607.874 935	-65.00	-0.11	
10	470.125	470.124 942	-58.00	-0.12	
	539.000	538.999 942	-58.00	-0.11	
	607.875	607.874 927	-73.00	-0.12	
20	470.125	470.124 918	-82.00	-0.17	
	539.000	538.999 915	-85.00	-0.16	
	607.875	607.874 905	-95.00	-0.16	
30	470.125	470.124 885	-115.00	-0.24	
	539.000	538.999 834	-166.00	-0.31	
	607.875	607.874 853	-147.00	-0.24	
40	470.125	470.124 856	-144.00	-0.31	
	539.000	538.999 826	-174.00	-0.32	
	607.875	607.874 853	-147.00	-0.24	
50	470.125	470.124 965	-35.00	-0.07	
	539.000	538.999 954	-46.00	-0.09	
	607.875	607.874 926	-74.00	-0.12	

10.5 Test data for Voltage Edition

Voltage(%)	Nominal Frequency(MHz)	Measured Frequency(MHz)	Result(Hz)	PPM	Limit(PPM)
85	470.125	470.125 085	85.00	0.18	50.00
	539.000	539.000 072	72.00	0.13	
	607.875	607.875 077	77.00	0.13	
100	470.125	470.124 951	-49.00	-0.10	
	539.000	538.999 925	-75.00	-0.14	
	607.875	607.874 956	-44.00	-0.07	
115	470.125	470.124 912	-88.00	-0.19	
	539.000	538.999 937	-63.00	-0.12	
	607.875	607.874 934	-66.00	-0.11	

10.6 Test Limit

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.005\%$ of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

11. Necessary Bandwidth

11.1 Operating environment

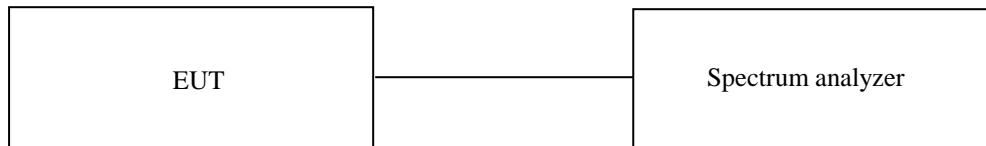
Temperature : 23 °C
 Relative humidity : 45 % R.H.

11.2 Test Setting

The EUT was powered up and the transmit frequency & power output of the EUT were selected.

The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.

Only lowest and highest channel is required, at an output power level of 1 mW and 10 mW.

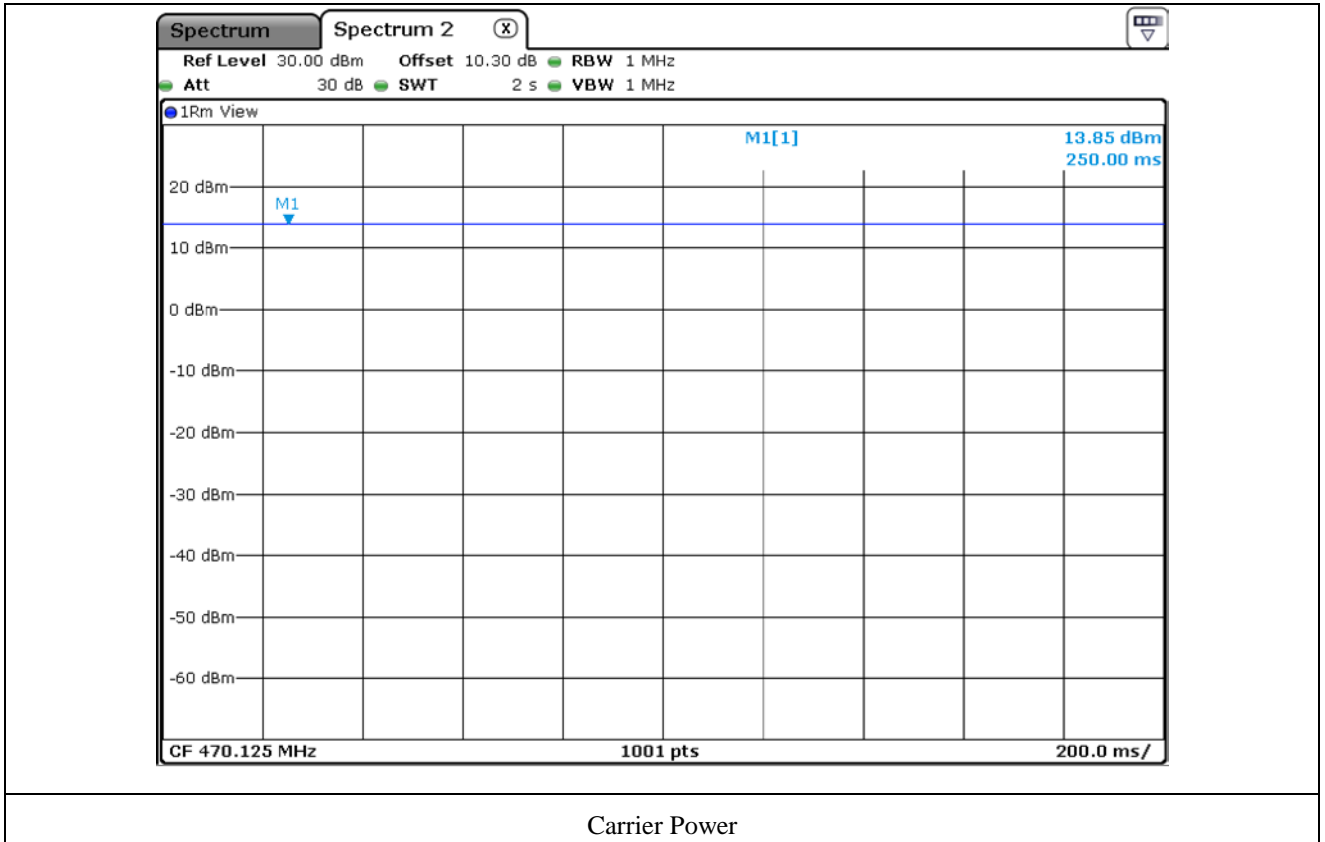


11.3 Test Date

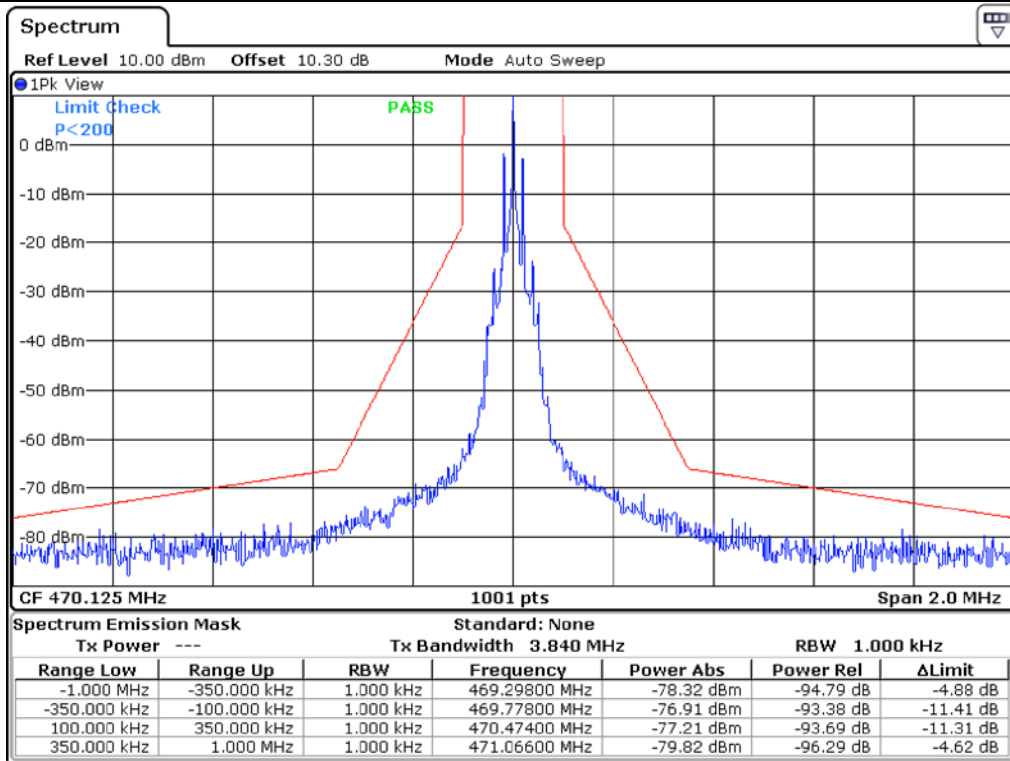
May 14, 2021 ~ May 31, 2021

11.4 Test data for 50 mW

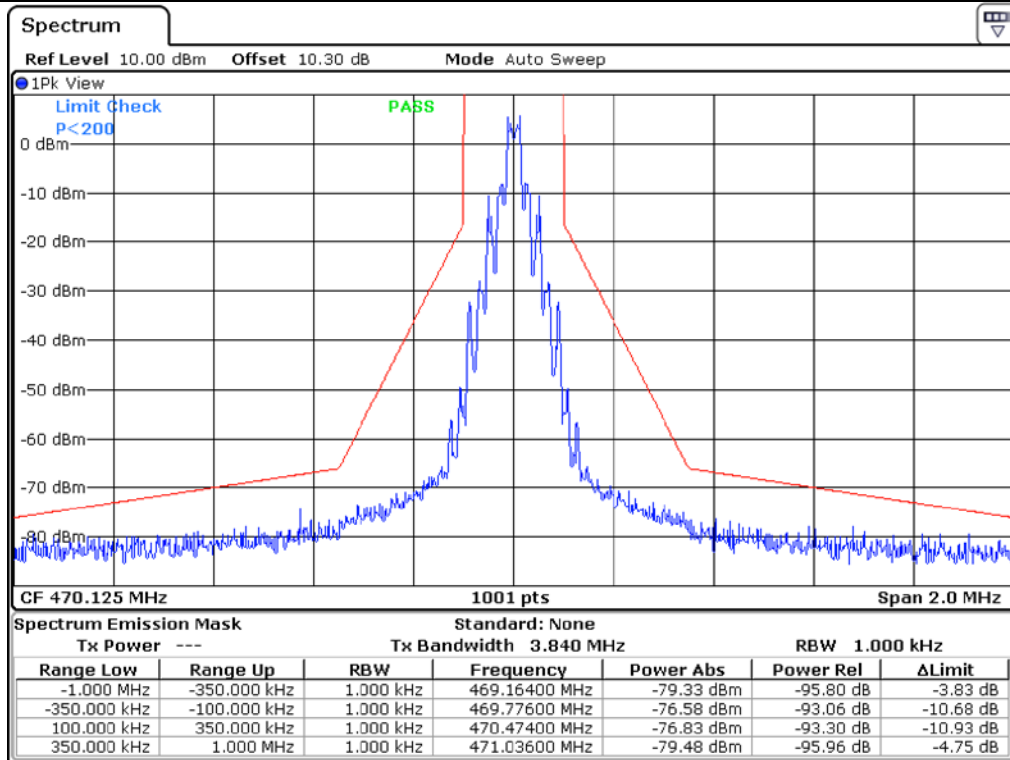
11.4.1 Test data for Low Channel



Carrier Power

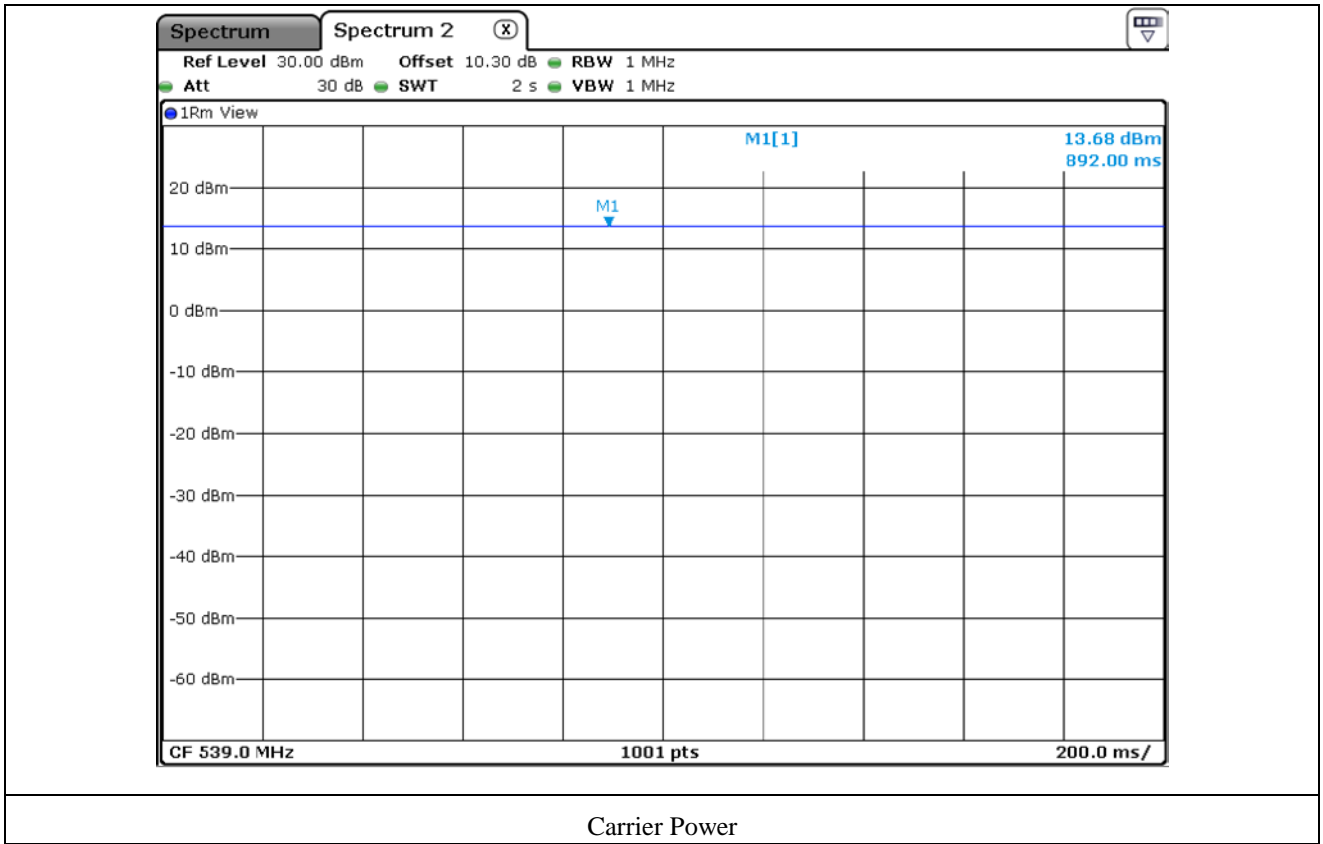


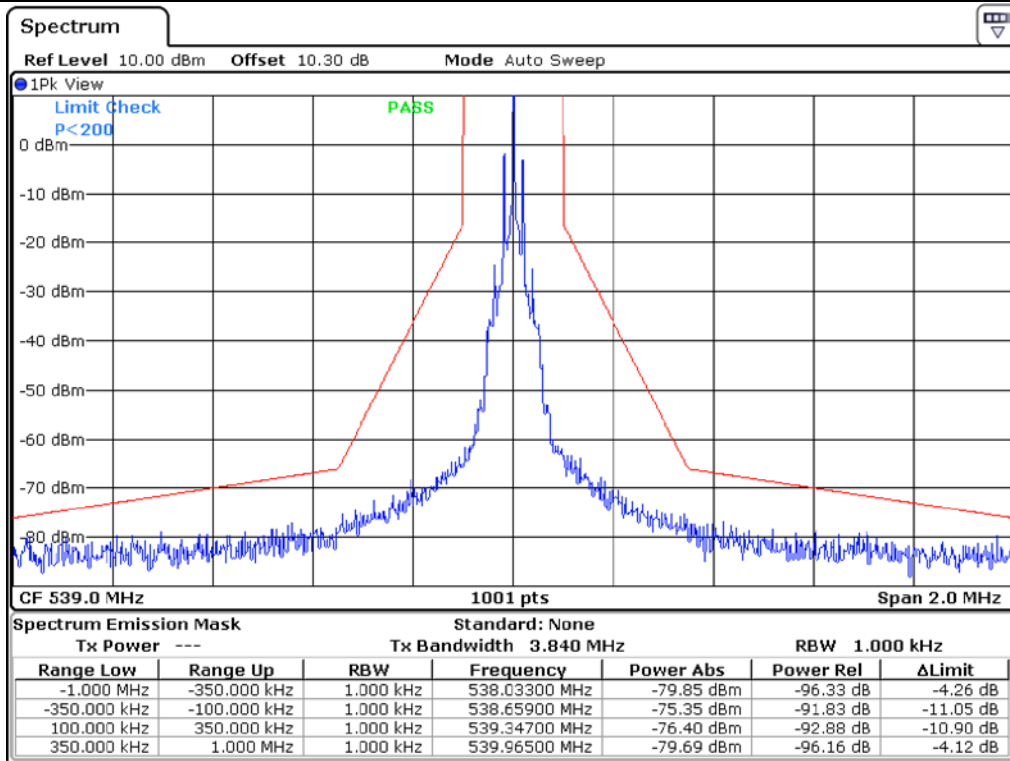
Measurement_Unmodulation



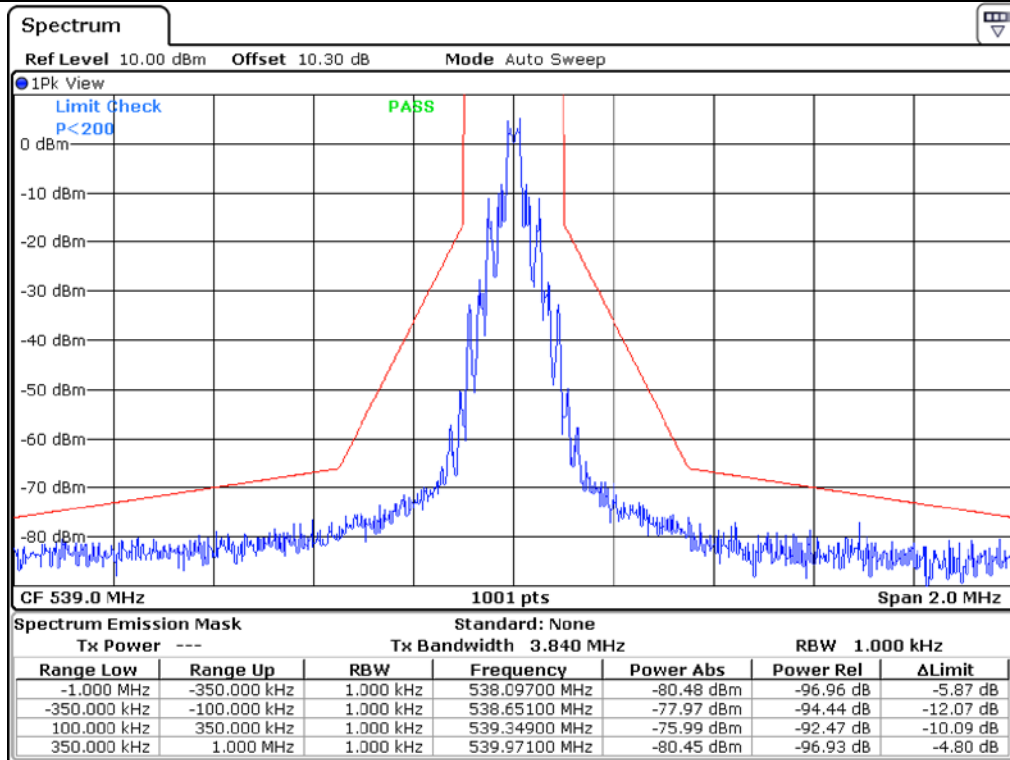
Measurement_modulation

11.4.2 Test data for Middle Channel



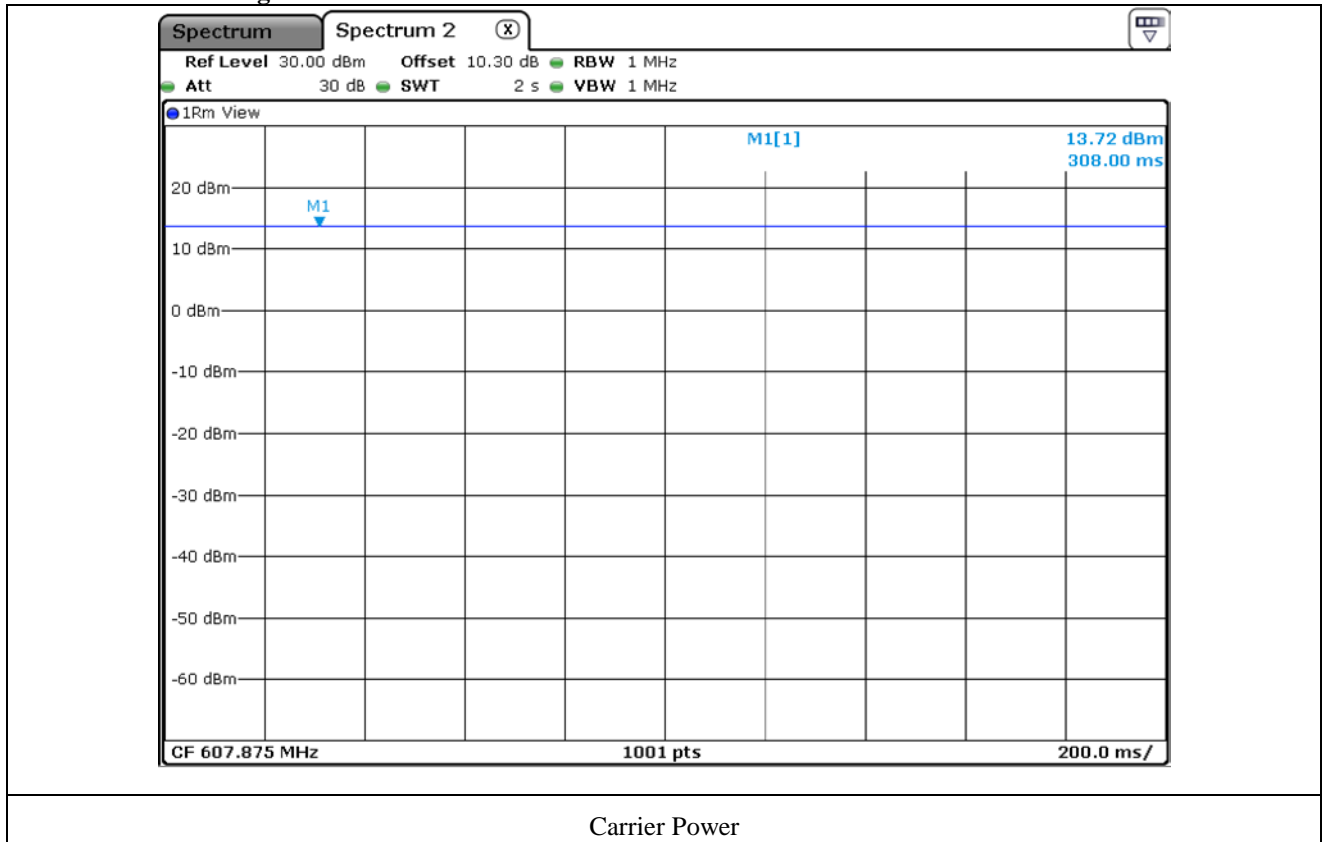


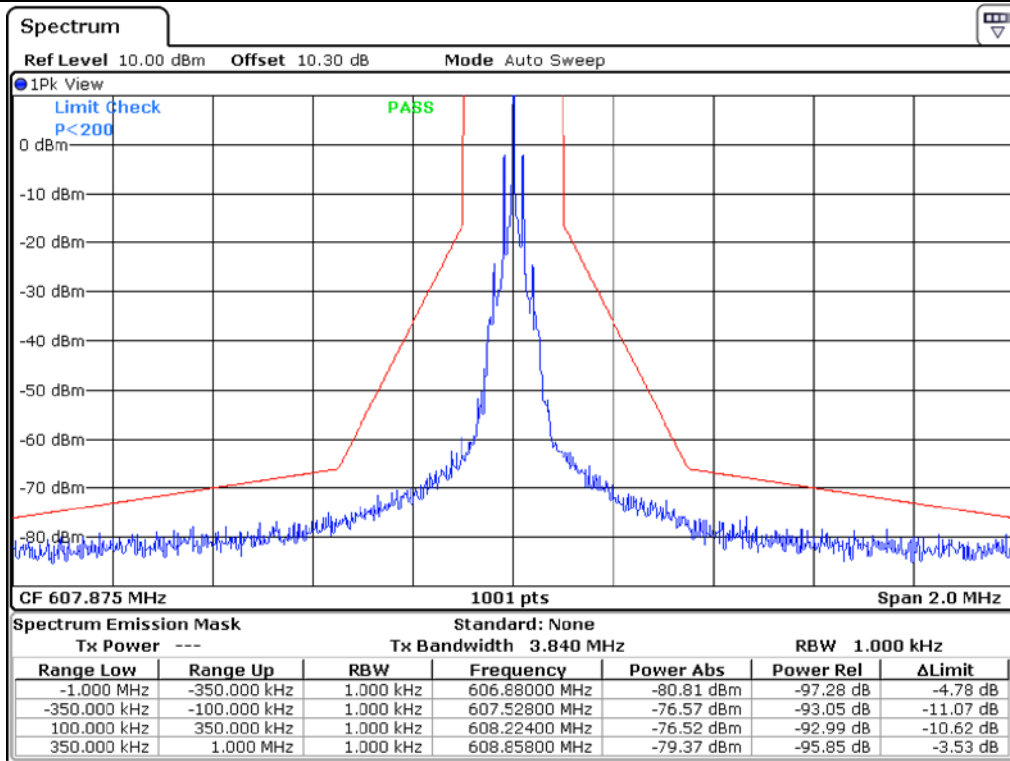
Measurement_Unmodulation



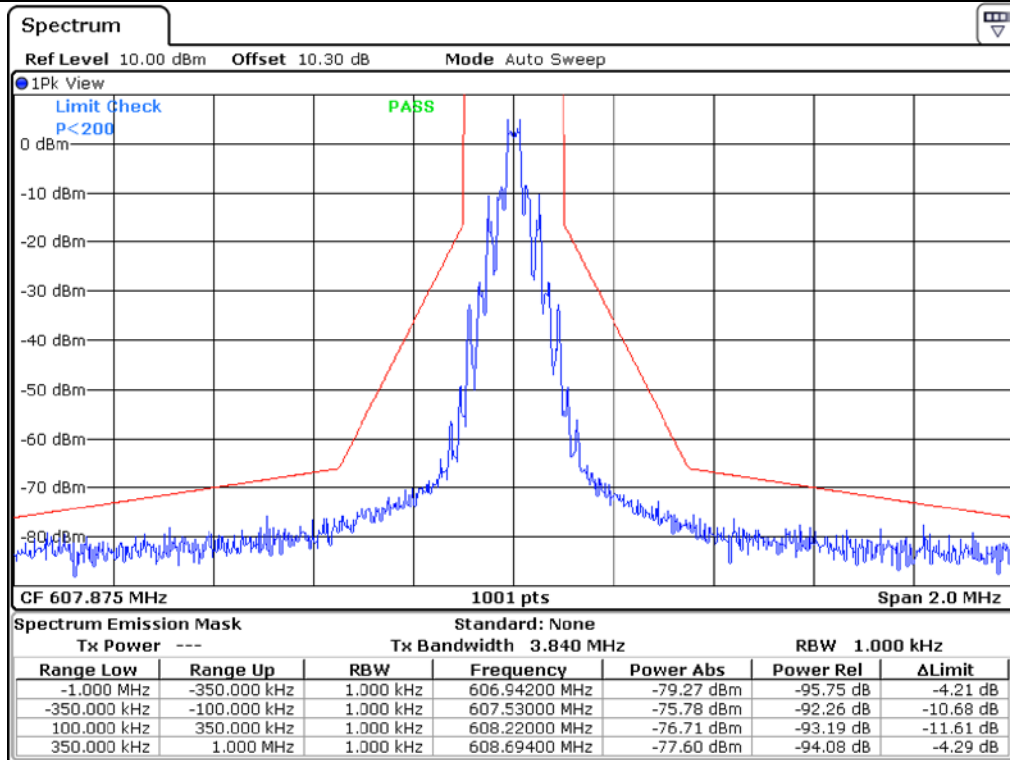
Measurement_modulation

11.4.3 Test data for High Channel





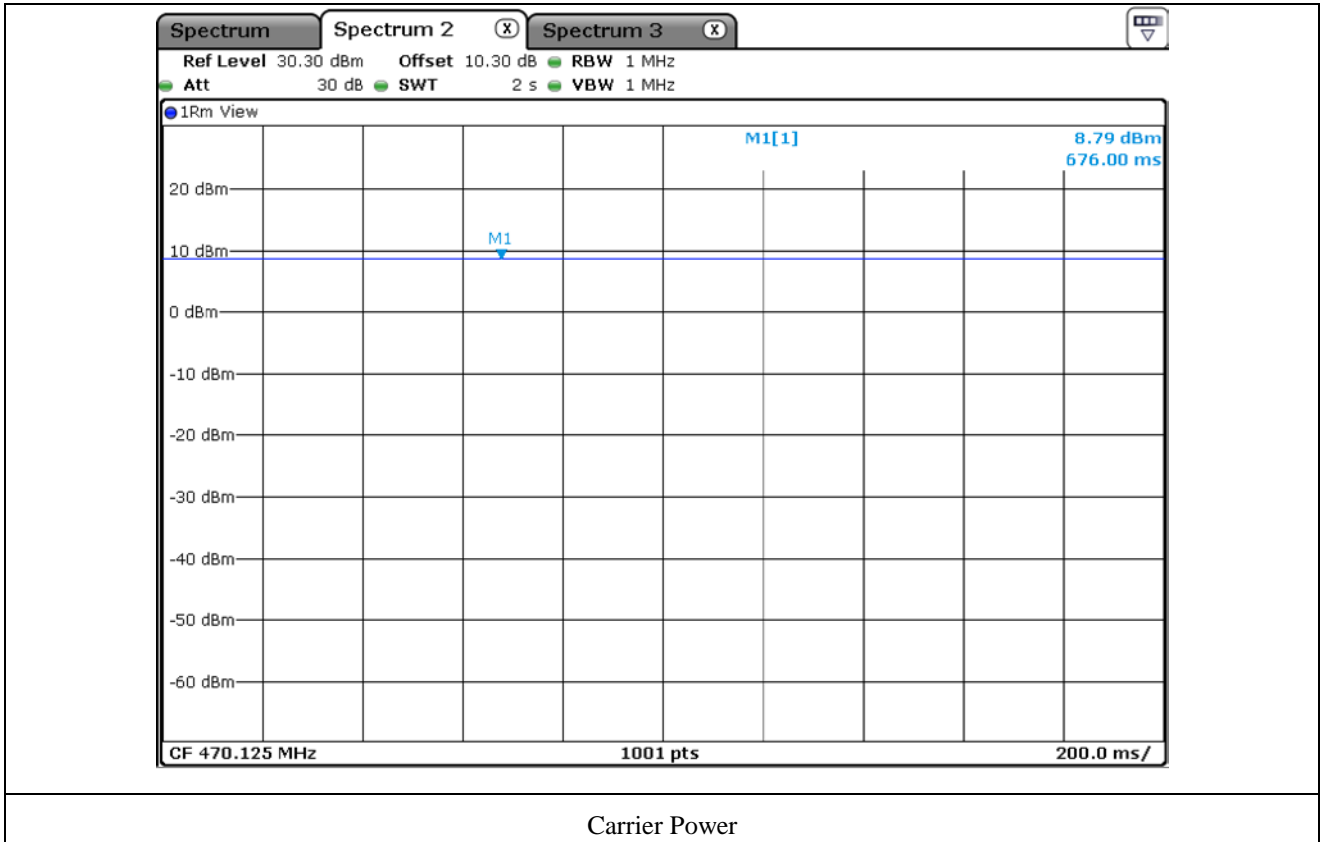
Measurement_Unmodulation

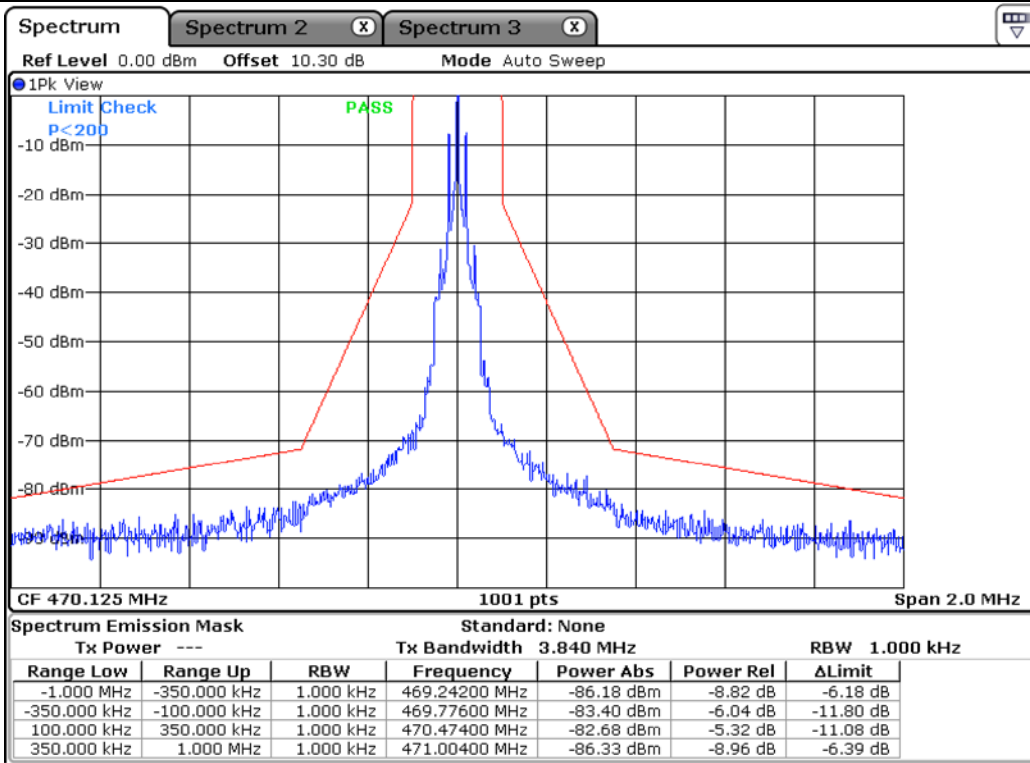


Measurement_modulation

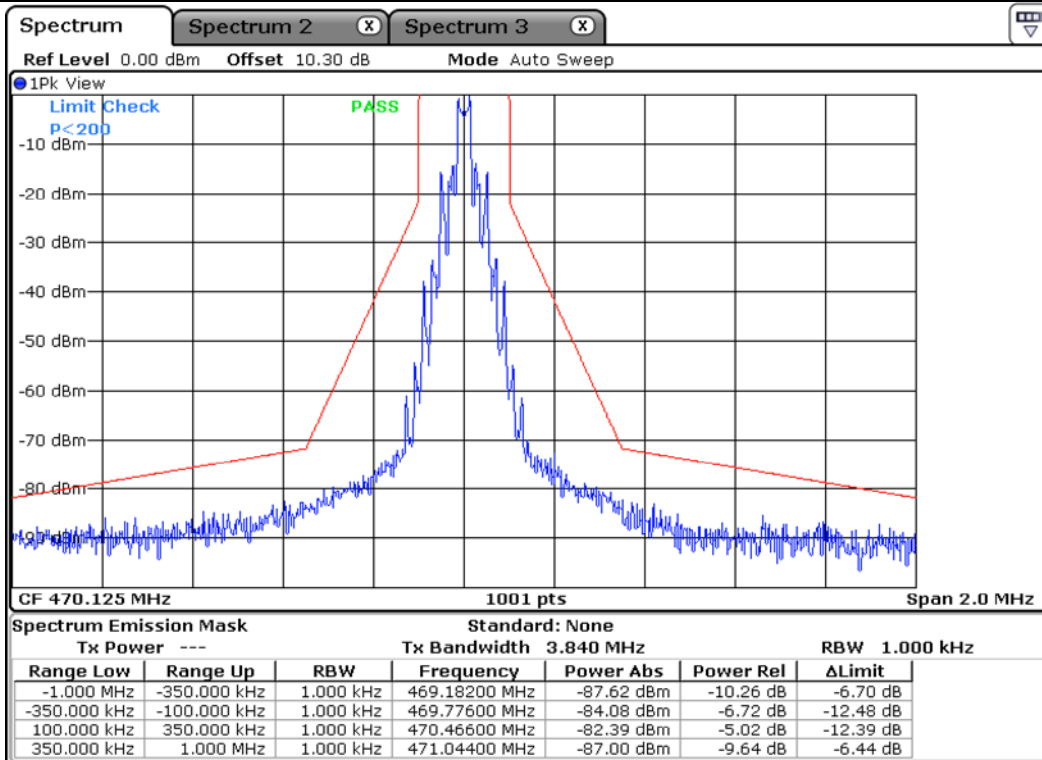
11.5 Test data for 10 mW

11.5.1 Test data for Low Channel



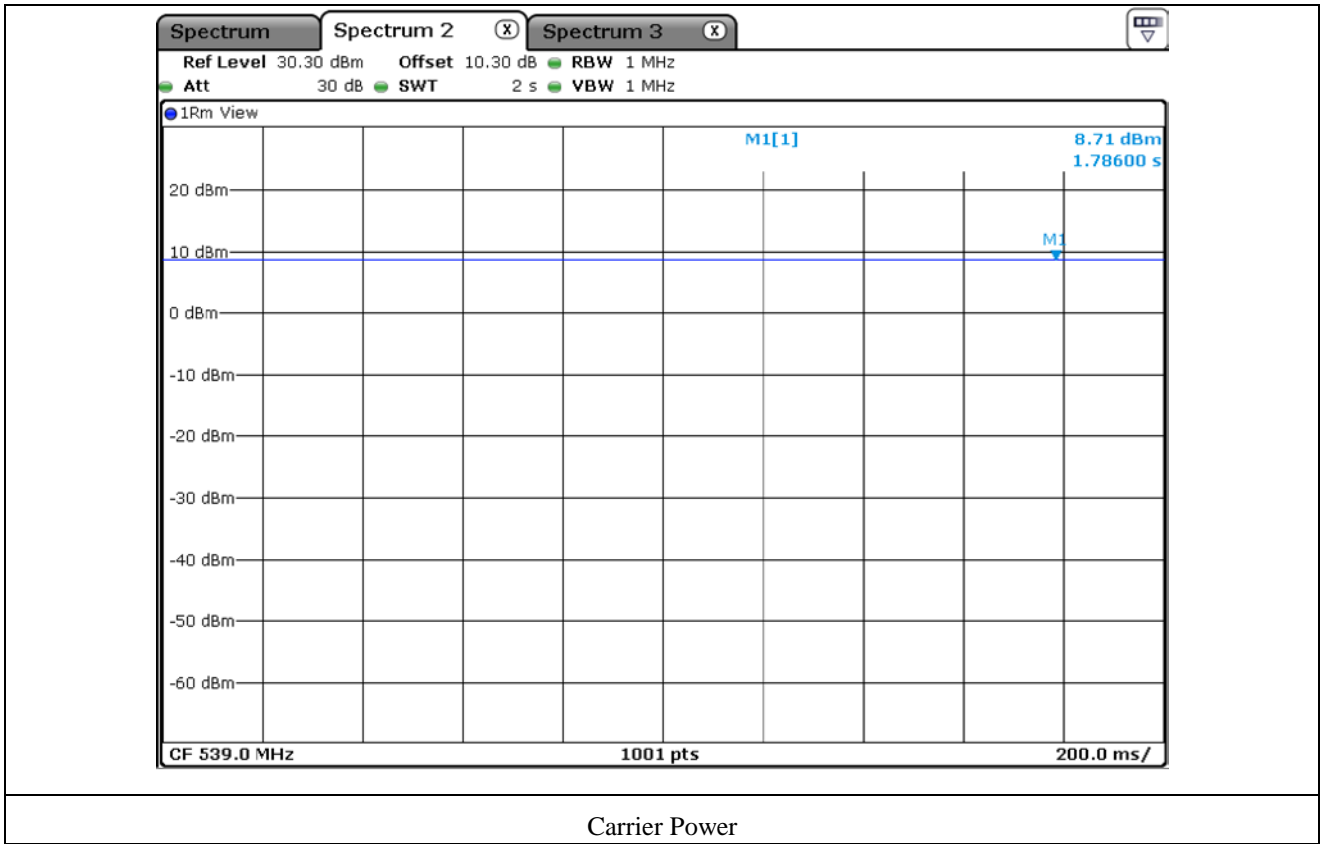


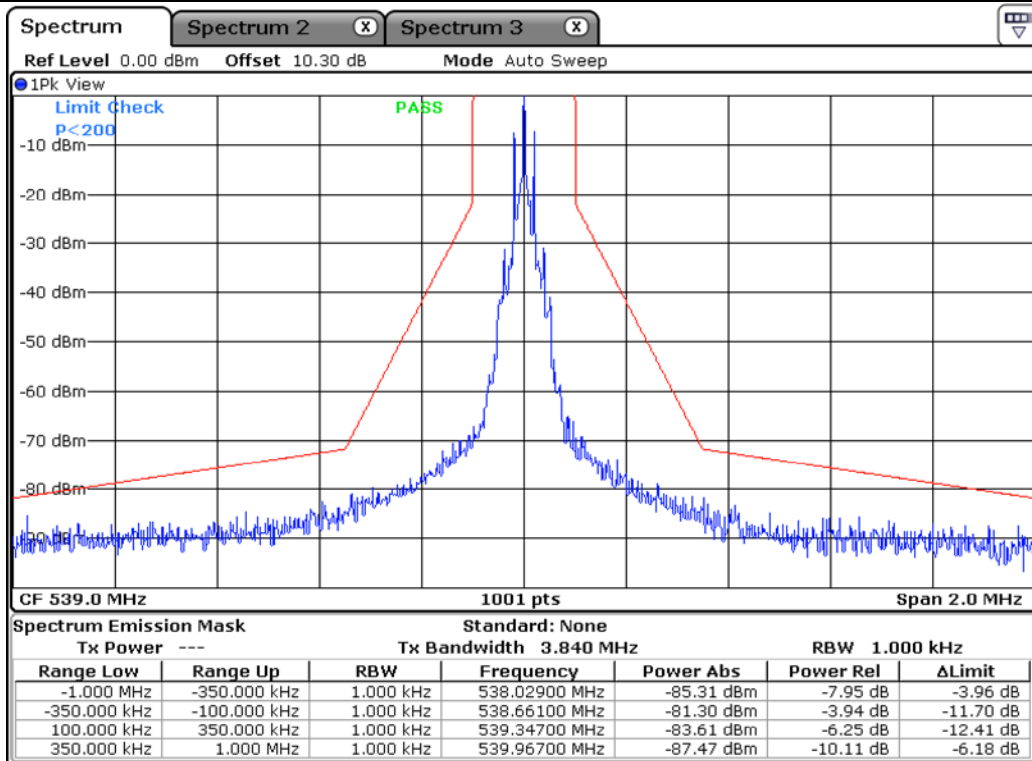
Measurement_Unmodulation



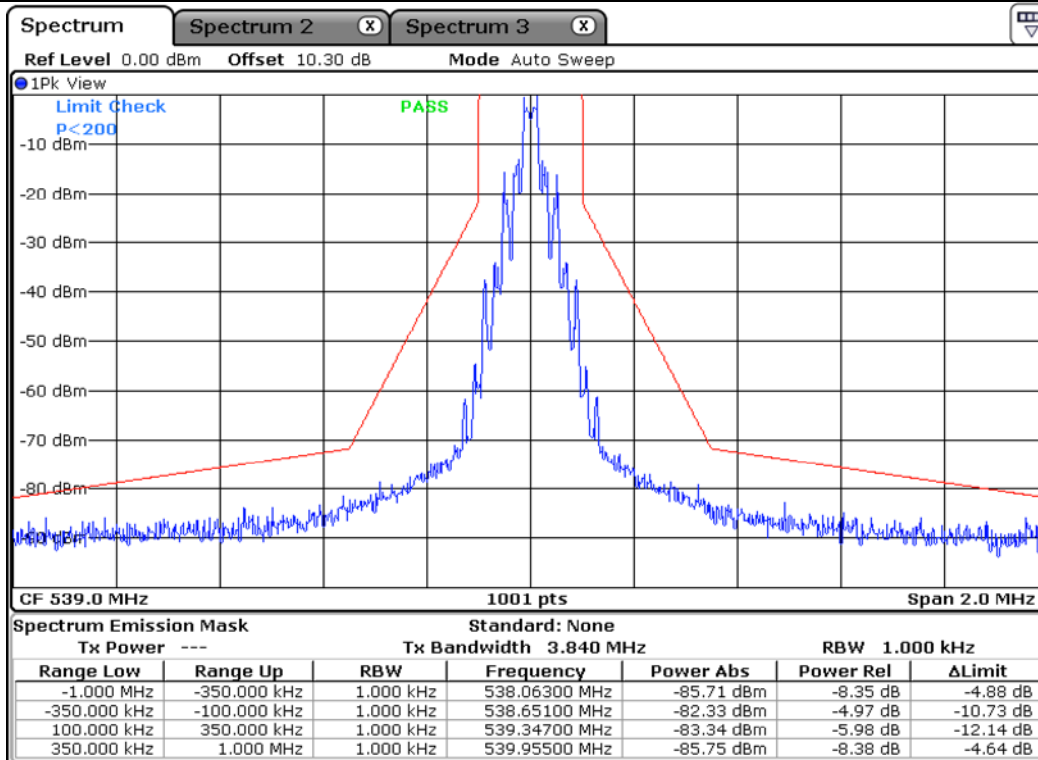
Measurement_modulation

11.5.2 Test data for Middle Channel



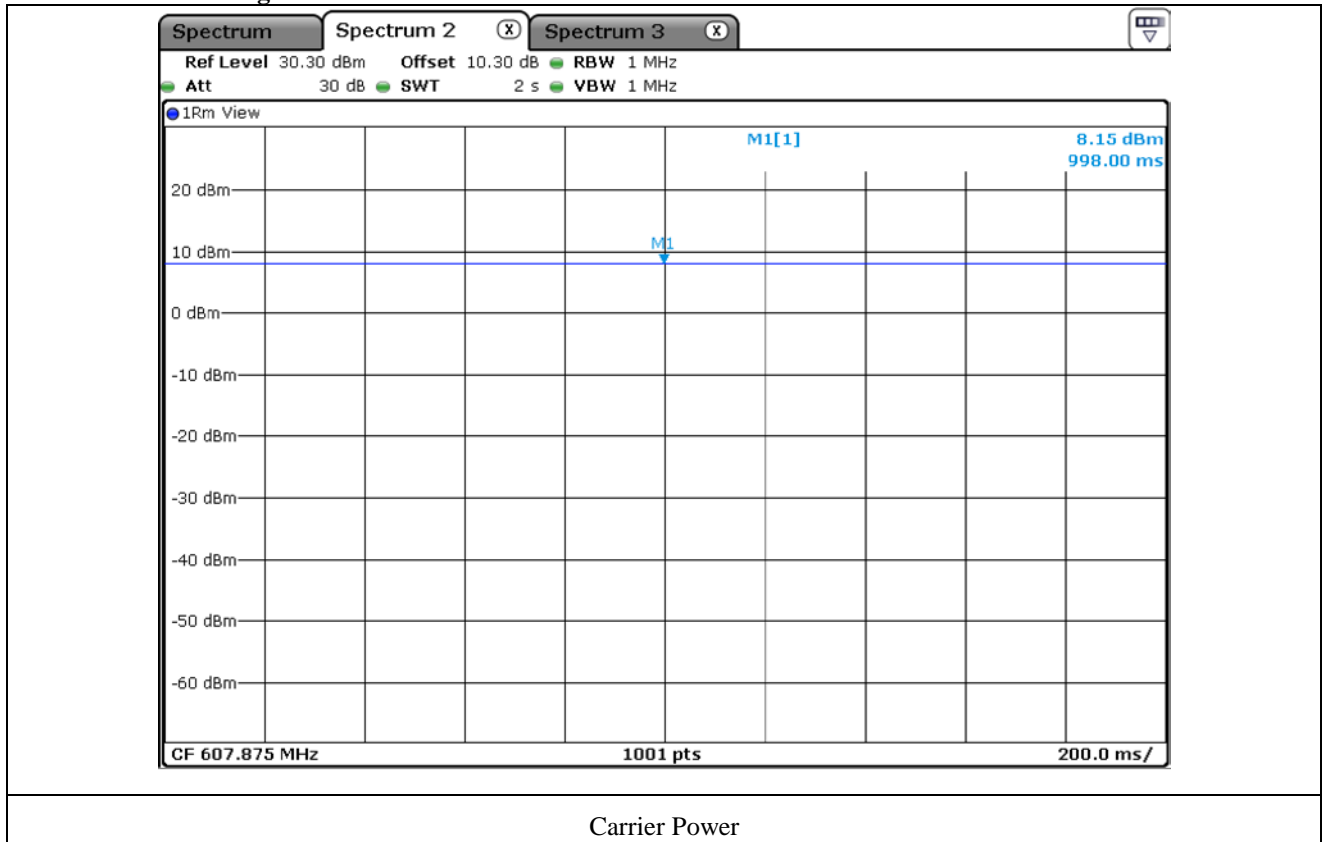


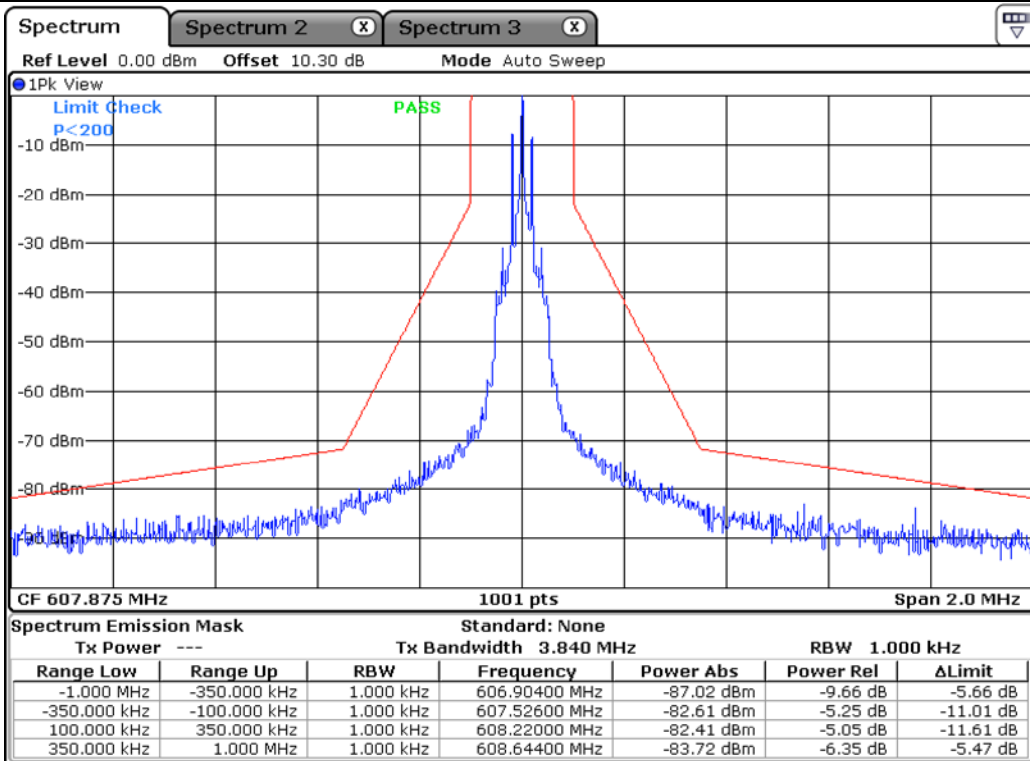
Measurement_Unmodulation



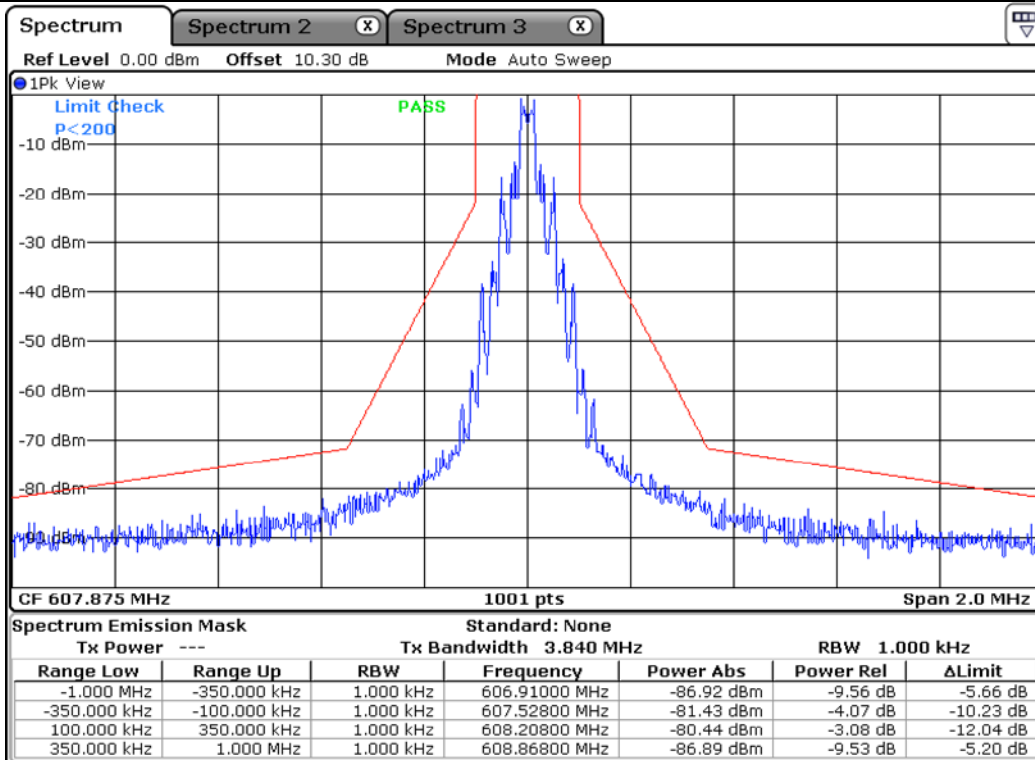
Measurement_modulation

11.5.3 Test data for High Channel



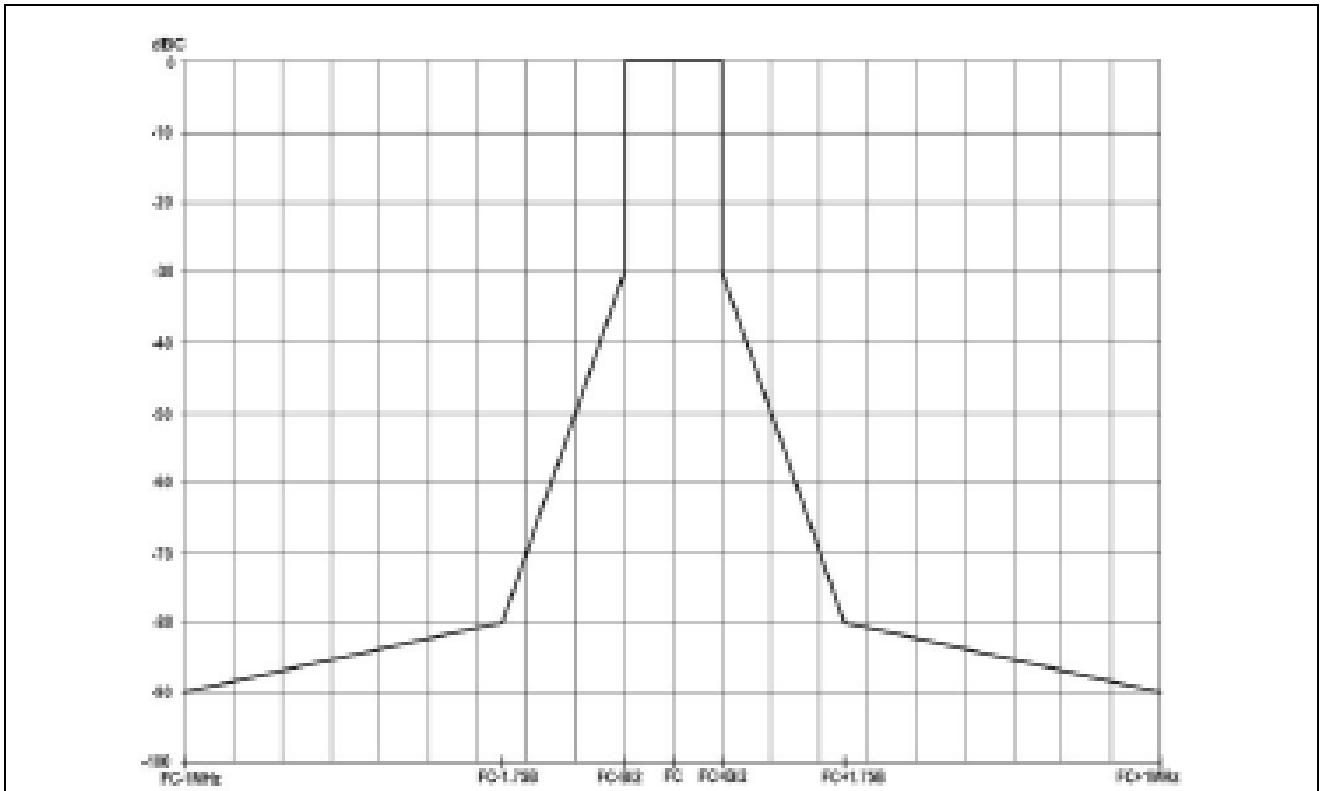


Measurement_Unmodulation



Measurement_modulation

11.6 Test Limit



According to EN 300 422-1 V1.4.2 clause 8.3.2.2, the transmitter output spectrum shall be within the mask defined as below figure.

12. CONDUCTED EMISSION TEST

12.1 Operating environment

Temperature : 23 °C
Relative humidity : 45 % R.H.

12.2 Test set-up

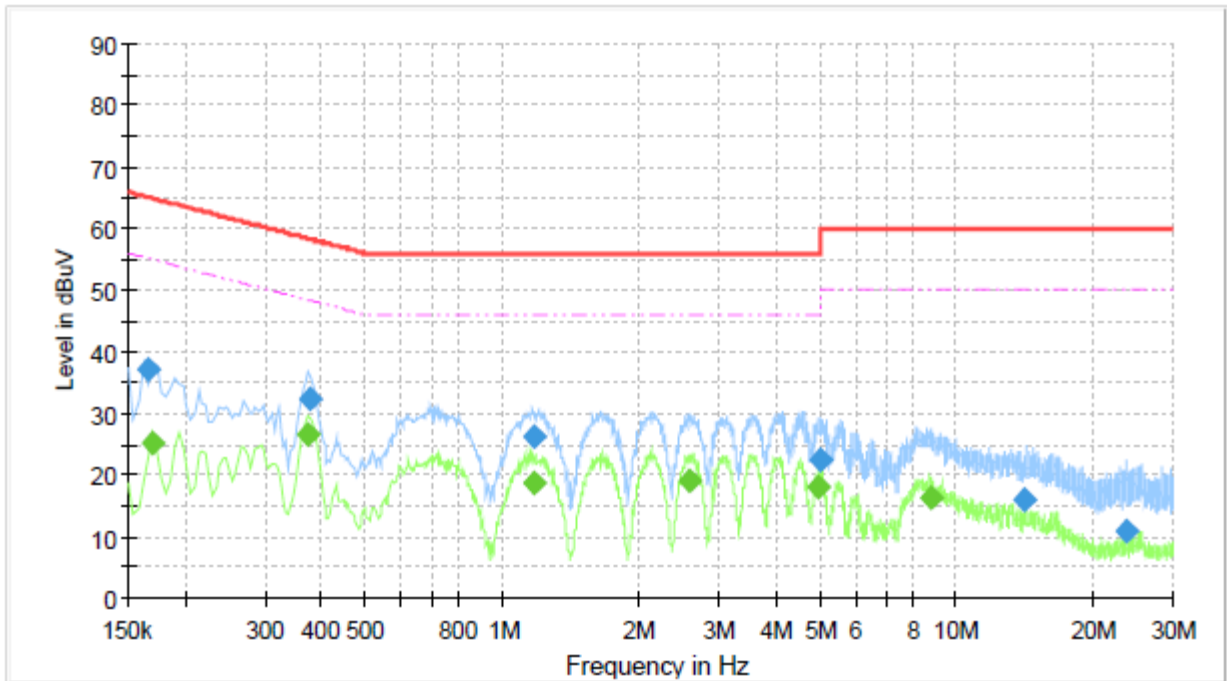
The EUT was placed on a wooden table, 0.8 m height above the floor. Power was fed to the EUT through a 50 Ω / 50 μ H + 5 Ω Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

12.3 Test Date

May 14, 2021 ~ May 31, 2021

12.4 Test data for 10 mW

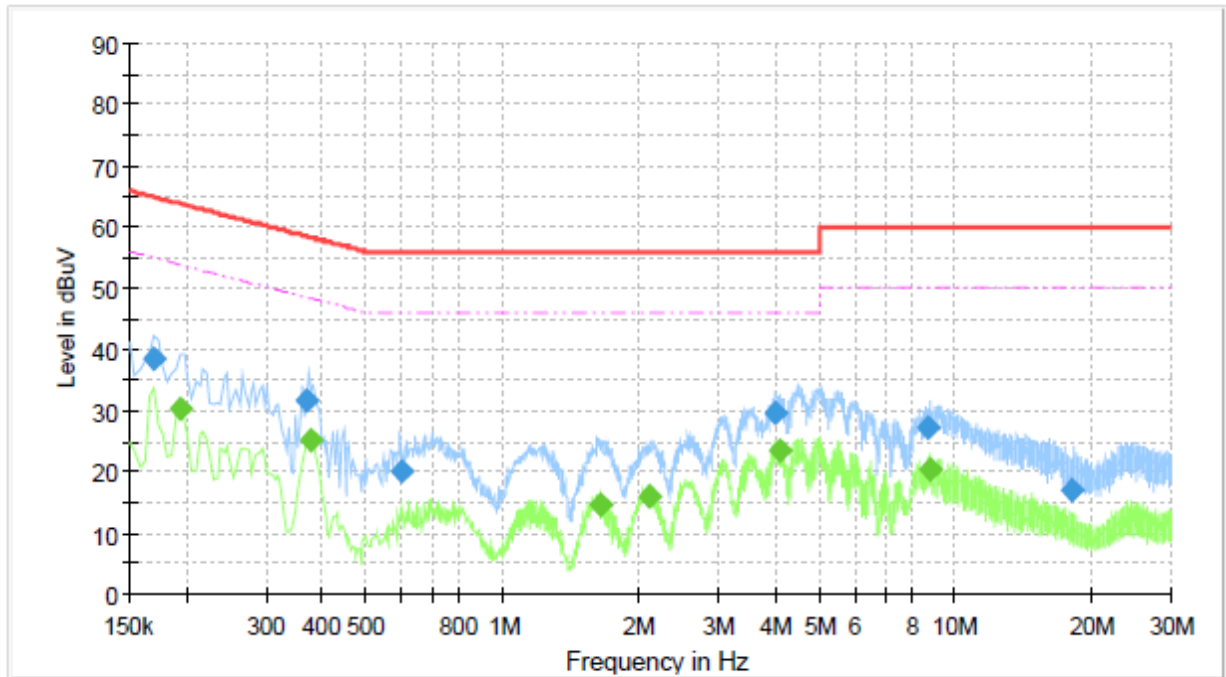
- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : LIVE LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.167	37.15	---	65.13	27.98	3000.0	9.0	L1	9.92
0.170	---	25.29	54.99	29.69	3000.0	9.0	L1	9.92
0.374	---	26.43	48.42	21.99	3000.0	9.0	L1	9.93
0.378	32.49	---	58.33	25.85	3000.0	9.0	L1	9.93
1.170	26.10	---	56.00	29.90	3000.0	9.0	L1	9.97
1.174	---	18.85	46.00	27.15	3000.0	9.0	L1	9.97
2.592	---	19.04	46.00	26.96	3000.0	9.0	L1	10.03
4.985	---	18.07	46.00	27.93	3000.0	9.0	L1	10.07
4.992	22.35	---	56.00	33.65	3000.0	9.0	L1	10.07
8.763	---	16.46	50.00	33.54	3000.0	9.0	L1	10.26
14.155	16.07	---	60.00	43.93	3000.0	9.0	L1	10.48
23.729	10.91	---	60.00	49.09	3000.0	9.0	L1	10.69

-. Tested Line : NEUTRAL LINE



Final Result

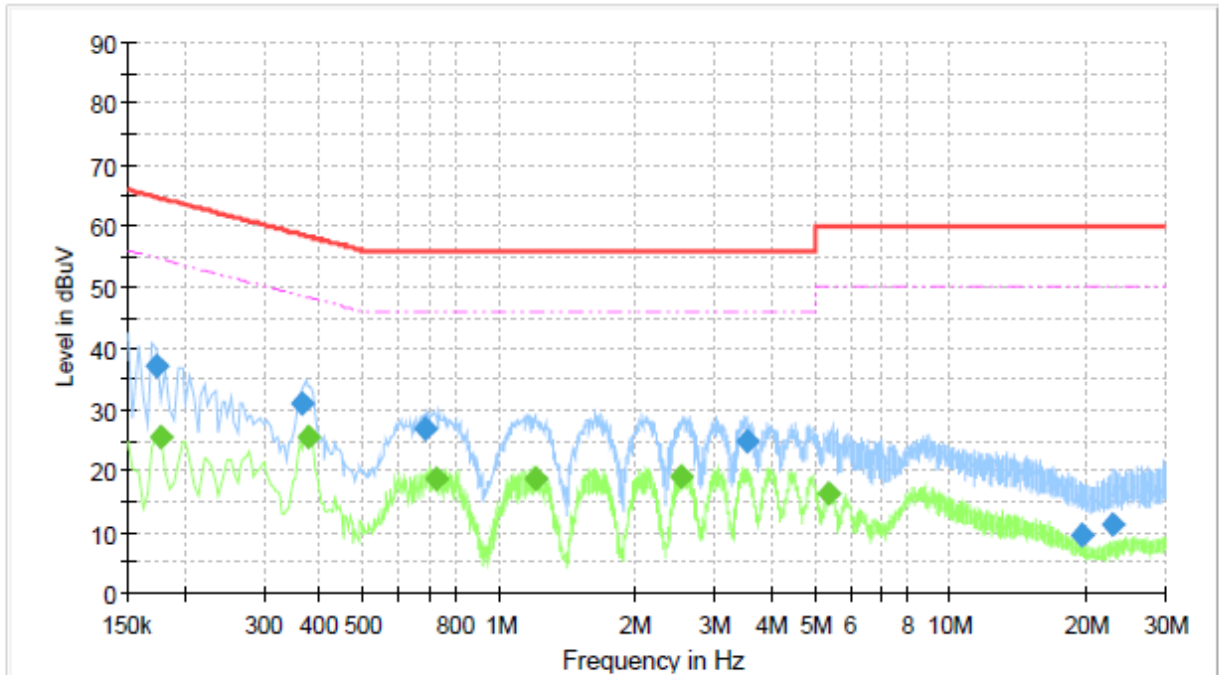
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.170	38.48	---	64.99	26.50	3000.0	9.0	N	9.94
0.194	---	30.37	53.89	23.52	3000.0	9.0	N	9.94
0.370	31.70	---	58.51	26.82	3000.0	9.0	N	9.93
0.378	---	25.36	48.33	22.97	3000.0	9.0	N	9.94
0.600	19.95	---	56.00	36.05	3000.0	9.0	N	9.96
1.642	---	14.72	46.00	31.28	3000.0	9.0	N	10.01
2.117	---	16.07	46.00	29.93	3000.0	9.0	N	10.03
4.010	29.51	---	56.00	26.49	3000.0	9.0	N	10.07
4.085	---	23.45	46.00	22.55	3000.0	9.0	N	10.07
8.714	27.26	---	60.00	32.74	3000.0	9.0	N	10.33
8.802	---	20.47	50.00	29.53	3000.0	9.0	N	10.34
18.068	17.04	---	60.00	42.96	3000.0	9.0	N	10.72

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

13.5 Test data for 50 mW

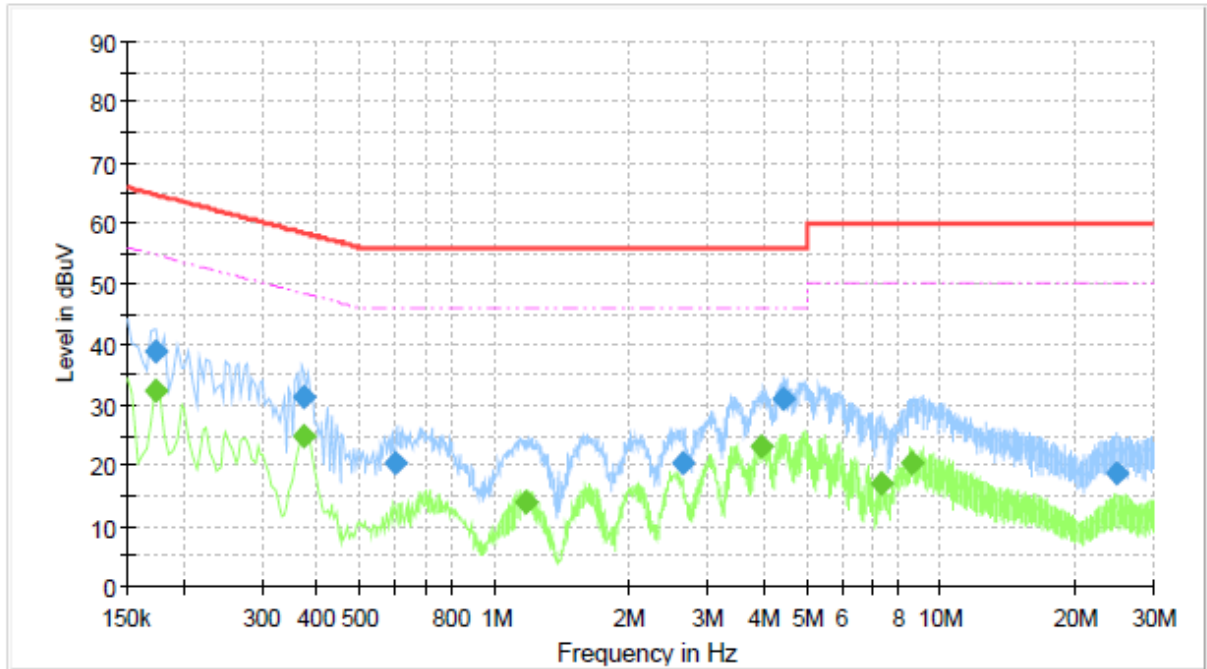
- Resolution bandwidth : 9 kHz
- Frequency range : 0.15 MHz ~ 30 MHz
- Tested Line : LIVE LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.174	37.01	---	64.79	27.79	3000.0	9.0	L1	9.92
0.178	---	25.50	54.60	29.11	3000.0	9.0	L1	9.92
0.366	30.87	---	58.60	27.73	3000.0	9.0	L1	9.93
0.379	---	25.55	48.31	22.76	3000.0	9.0	L1	9.93
0.687	26.91	---	56.00	29.09	3000.0	9.0	L1	9.95
0.723	---	18.68	46.00	27.32	3000.0	9.0	L1	9.96
1.198	---	18.62	46.00	27.38	3000.0	9.0	L1	9.97
2.532	---	19.01	46.00	26.99	3000.0	9.0	L1	10.03
3.523	24.81	---	56.00	31.19	3000.0	9.0	L1	10.04
5.384	---	16.53	50.00	33.47	3000.0	9.0	L1	10.09
19.639	9.58	---	60.00	50.42	3000.0	9.0	L1	10.63
22.881	11.17	---	60.00	48.83	3000.0	9.0	L1	10.68

-. Tested Line : NEUTRAL LINE



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.174	---	32.39	54.79	22.40	3000.0	9.0	N	9.94
0.174	38.83	---	64.79	25.96	3000.0	9.0	N	9.94
0.374	---	24.83	48.42	23.60	3000.0	9.0	N	9.93
0.375	31.38	---	58.40	27.03	3000.0	9.0	N	9.94
0.600	20.35	---	56.00	35.65	3000.0	9.0	N	9.96
1.174	---	13.82	46.00	32.18	3000.0	9.0	N	9.99
2.651	20.52	---	56.00	35.48	3000.0	9.0	N	10.04
3.959	---	23.18	46.00	22.82	3000.0	9.0	N	10.07
4.410	30.87	---	56.00	25.13	3000.0	9.0	N	10.08
7.341	---	16.98	50.00	33.02	3000.0	9.0	N	10.23
8.572	---	20.58	50.00	29.42	3000.0	9.0	N	10.32
24.865	18.78	---	60.00	41.22	3000.0	9.0	N	10.80

Remark: Margin (dB) = Limit – Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

12. LIST OF TEST EQUIPMENT

Model Number	Manufacturer	Description	Serial Number	Last Cal.(Interval)
FSV40-N	Rohde & Schwarz	Signal Analyzer	101546	Jun. 24, 2020 (1Y)
ESW	Rohde & Schwarz	EMI Test Receiver	101851	Mar. 22, 2021 (1Y)
310N	Sonoma Instrument	Pre-Amplifier	392756	Oct. 16, 2020 (1Y)
PAM-118A	COM-POWER	Pre-Amplifier	999999	Oct. 12, 2020 (1Y)
SCU18	Rohde & Schwarz	Signal Conditioning unit	102266	Jul. 15, 2020 (1Y)
DT3000-3t	Innco System	Turn Table	DT3000/093	N/A
MA-4000XPET	Innco System	Antenna Master	MA4000/509	N/A
VULB9163	Schwarzbeck	TRILOG Broadband Antenna	777	Apr. 08, 2020 (2Y)
BBHA 9120D	Schwarzbeck	Horn Antenna	9120D-1366	Jul. 23, 2020 (1Y)
BBHA9170	Schwarzbeck	Horn Antenna	BBHA9170178	Jan. 07, 2021 (1Y)
FMZB 1513	Schwarzbeck	Loop Antenna	1513-235	Mar. 24, 2020 (2Y)
NRP-Z81	ROHDE & SCHWARZ	Wide band sensor	101975	Feb. 09, 2021 (1Y)