



FCC Test Report

Report No: FCS202310275W02

Issued for

Applicant:	Shenzhen Simr Technology Co., Ltd.
Address:	Room 801, Zhida Building,Wuhe,Bantian Street, Longgang District, Shenzhen, Guangdong,China
Product Name:	Car MP3 FM Transmitter
Brand Name:	N/A
Model Name:	E01
Series Model:	W1,W2,W3,W5,W6,W7,W8,W9,W10,W11,W12,W13,W15,W16,W17,W18,W19,W20,E02,E03,E05,E06,E07,E08,E09,E10,E11,E12,E13,E15,E16,E17,E18,E19,E20,E21,E22,E23,E25,E26,E27,E28,E29,E30,E31,E32
FCC ID:	2BDHR-SMR01
Issued By: Flux Compliance Service Laboratory Add: Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan Tel: 769-27280901 Fax:769-27280901 http://www.fcs-lab.com	

TEST REPORT CERTIFICATION

Applicant's name.....: Shenzhen Simr Technology Co., Ltd.
Address.....: Room 801, Zhida Building, Wuhe, Bantian Street, Longgang District, Shenzhen, Guangdong, China
Manufacture's Name.....: Shenzhen Simr Technology Co., Ltd.
Address.....: Room 801, Zhida Building, Wuhe, Bantian Street, Longgang District, Shenzhen, Guangdong, China

Product description

Product Name.....: Car MP3 FM Transmitter
Brand Name.....: N/A
Model Name.....: E01
Series Model.....: W1, W2, W3, W5, W6, W7, W8, W9, W10, W11, W12, W13, W15, W16, W17, W18, W19, W20, E02, E03, E05, E06, E07, E08, E09, E10, E11, E12, E13, E15, E16, E17, E18, E19, E20, E21, E22, E23, E25, E26, E27, E28, E29, E30, E31, E32

Test Standards.....: FCC Part15.239

Test procedure.....: ANSI C63.10: 2013, ANSI C63.4: 2014

This device described above has been tested by FCS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date (s) of performance of tests.....: Oct 24, 2023 ~ Nov 28, 2023

Date of Issue.....: Nov 28, 2023

Test Result.....: **Pass**

Tested by

: *Scott Shen*

(Scott Shen)

Reviewed by

: *Duke Qian*

(Duke Qian)

Approved by

: *Jack Wang*

(Jack Wang)



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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 15.239			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	--
15.209 15.239(b) (c)	Radiated Emission	PASS	--
15.239(b)	field strength emission	PASS	--
15.203	Antenna Requirement	PASS	--
15.239(a)	20dB Bandwidth	PASS	--

NOTE: (1)" N/A" denotes test is not applicable in this Test Report

(2) All tests are according to ANSI C63.4-2014 and ANSI C63.10-2013

1.1 TEST FACTORY

Company Name:	Flux Compliance Service Laboratory
Address:	Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan
Telephone:	+86-769-27280901
Fax:	+86-769-27280901
Laboray Accreditations	
FCC Test Firm Registration Number: 514908 CNAS Number: L15566 Designation number: CN0127 A2LA accreditation number: 5545.01 ISED Number: 25801	

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95 %**.

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	$\pm 2.88\text{dB}$
2	Conducted Emission (150KHz-30MHz)	$\pm 2.67\text{dB}$
3	RF power,conducted	$\pm 0.71\text{dB}$
4	Spurious emissions,conducted	$\pm 0.63\text{dB}$
5	All emissions,radiated (9KHz-30MHz)	$\pm 3.02\text{dB}$
6	All emissions,radiated (30MHz-200MHz)	$\pm 3.80\text{dB}$
7	All emissions,radiated (200MHz-1000MHz)	$\pm 3.97\text{dB}$
8	Occupied bandwidth	$\pm 0.3 \text{ dB}$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	Car MP3 FM Transmitter								
Trade Name	N/A								
Model Name	E01								
Serial Model	W1,W2,W3,W5,W6,W7,W8,W9,W10,W11,W12,W13,W15,W16,W17,W18,W19,W20,E02,E03,E05,E06,E07,E08,E09,E10,E11,E12,E13,E15,E16,E17,E18,E19,E20,E21,E22,E23,E25,E26,E27,E28,E29,E30,E31,E32								
Model Difference	We (Shenzhen Simr Technology Co., Ltd.) hereby state that all the models are electrical identical including the same software parameter and hardware design (i.e., circuit design, PCB Layout, RF module/circuit, antenna type(s) and antenna location, components on PCB, etc.), same mechanical structure and design (including product enclosure, materials, etc.), the only difference is the model name and appearance color.								
Product Description	The EUT is a Car MP3 FM Transmitter <table> <tr> <td>Operation Frequency:</td><td>88.1MHz ~107.9MHz</td></tr> <tr> <td>Modulation Type:</td><td>FM</td></tr> <tr> <td>Antenna Designation:</td><td>Please see Note 3.</td></tr> <tr> <td>Antenna Gain (dBi)</td><td>-0.68dBi</td></tr> </table>	Operation Frequency:	88.1MHz ~107.9MHz	Modulation Type:	FM	Antenna Designation:	Please see Note 3.	Antenna Gain (dBi)	-0.68dBi
Operation Frequency:	88.1MHz ~107.9MHz								
Modulation Type:	FM								
Antenna Designation:	Please see Note 3.								
Antenna Gain (dBi)	-0.68dBi								
Adapter	DC 12V-24V								
Battery	N/A								
Hardware version number	V1.0								
Software version number	V1.0								
Connecting I/O Port(s)	Please refer to the User's Manual								

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- Table for filed Antenna

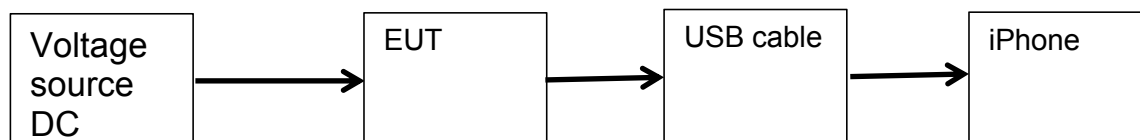
Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	NA	VGBX	Spring antenna	N/A	-0.68	FM Antenna



Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	88.1	2	88.2	3	88.3
~					
100	98	101	98.1	102	98.2
~					
197	107.7	198	107.8	199	107.9

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.



Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Pretest Mode	Description
Mode 1	TX Mode(Low channel)
Mode 2	TX Mode(Middle channel)
Mode 3	TX Mode(High channel)

2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
1	Voltage source	ZHAOXIN	RXN-605D-II	N/A	Test use
2	Phone	Apple	iPhoe 13	N/A	Test use
3	Phone	Apple	iPhoe 13	N/A	Test use
4	USB cable	Xiaomi	6A Type-C 40cm	N/A	Test use

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1)The support equipment was authorized by Declaration of Confirmation.

(2)For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
EMI Test Receiver	R&S	ESW	101535	2023.08.29	2024.08.28
Bilog Antenna	TESEQ	CBL6111D	34678	2023.08.29	2024.08.28
Horn Antenna	Schwarzbeck	BBHA 9120D (1201)	9120D-1343	2023.08.29	2024.08.28
Passive Loop (9K--30MHz)	ZHNAN	ZN3090C	16035	2023.08.29	2024.08.28
Pre-mpifier (0.1M-3GHz)	EM	EM330	60538	2023.08.29	2024.08.28
PreAmplifier	Agilent	8449B	60538	2023.08.29	2024.08.28
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2023.08.29	2024.08.28
Semi-anechoic chamber	Changling	966	N/A	2023.08.29	2024.08.28

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2023.08.29	2024.08.28
LISN	R&S	ENV216	101242	2023.08.29	2024.08.28
conduction Cable	EM	C01	N/A	2023.08.29	2024.08.28
Temperature & Humidity	Mieo	HH660	N/A	2023.08.29	2024.08.28
Signal Analyzer	Agilent	N9020A	MY49100060	2023.08.29	2024.08.28

3. RADIATED EMISSION MEASUREMENT

3.1 RADIATED EMISSION LIMITS

RADIATED EMISSION LIMITS (FCC 15.209)

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micovolts/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:

- Field Strength (dBuV/m) = $20 \times \log[\text{Field Strength } (\mu\text{V/m})]$.
- In the emission tables above, the tighter limit applies at the Band edge.

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2 TEST PROCEDURE

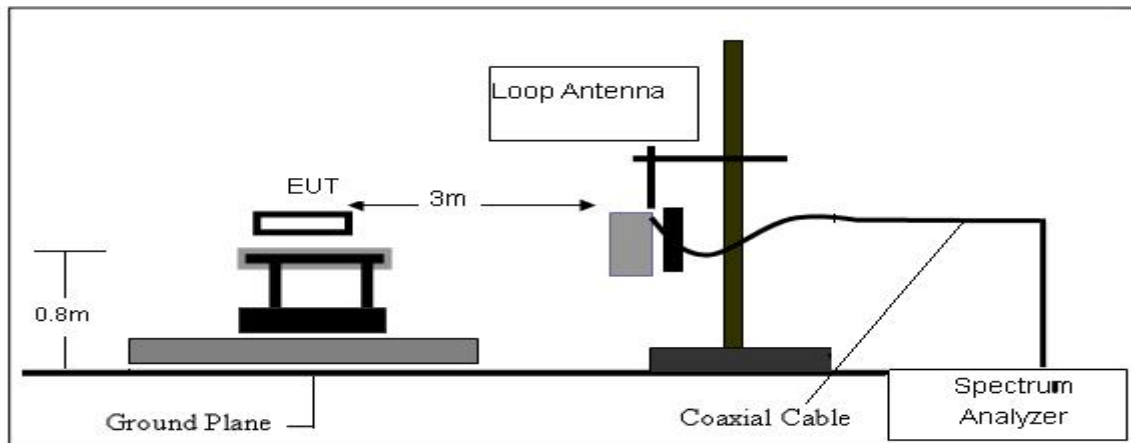
- The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower. For the test Antenna
- In the frequency range of 9KHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

NOTE:

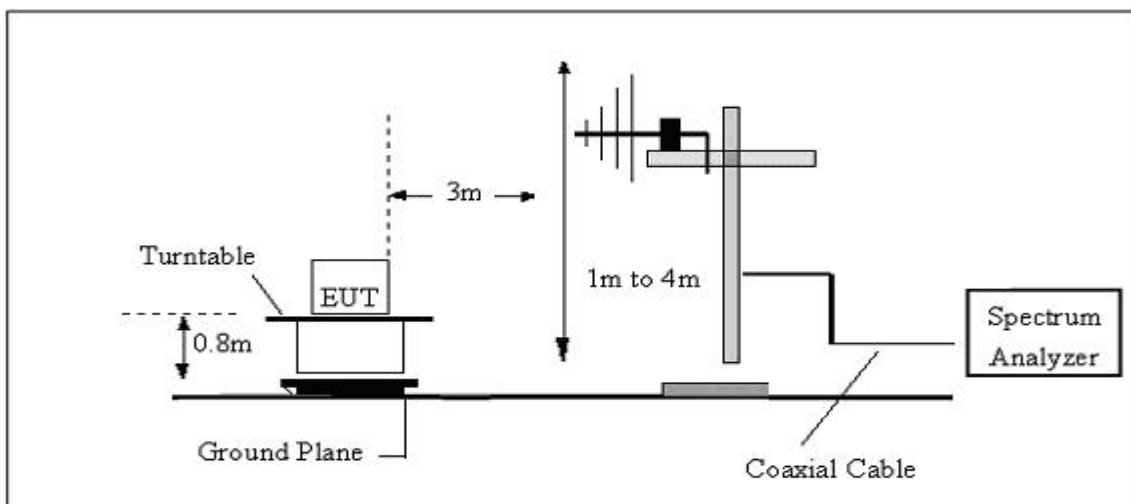
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3 TEST SETUP

(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



3.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$

3.6 TEST RESULTS

(Radiated Emission<30MHz (9KHz-30MHz, H-field))

Temperature:	20 °C	Relative Humidity:	48%
Test Voltage:	DC 12V	Polarization:	--
Test Mode:	Mode 1		

Freq.	Reading	Correct factor	Limit	Margin	State
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dB)	P/F
0.1898	60.13	11.97	102.04	-29.94	PASS
0.7867	35.18	11.90	69.69	-22.61	PASS
2.4584	32.25	11.25	69.54	-26.04	PASS
3.5330	30.18	11.18	69.54	-28.18	PASS
13.4432	40.19	11.05	69.54	-18.30	PASS

Temperature:	20 °C	Relative Humidity:	48%
Test Voltage:	DC 12V	Polarization:	--
Test Mode:	Mode 2		

Freq.	Reading	Correct factor	Limit	Margin	State
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dB)	P/F
0.1500	60.13	12.02	104.08	-31.93	PASS
0.5480	45.18	11.76	73.28	-16.34	PASS
3.6126	32.25	11.21	69.54	-26.08	PASS
10.8164	34.18	11.18	69.54	-24.18	PASS
13.5120	38.19	11.20	69.54	-20.15	PASS

Remark:

- Margin = Result (Result =Reading + Factor)-Limit
- The detection mode is QP

Temperature:	20 °C	Relative Humidity:	48%
Test Voltage:	DC 12V	Polarization:	--
Test Mode:	Mode 3		

Freq.	Reading	Correct factor	Limit	Margin	State
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dB)	P/F
0.2694	70.13	11.75	99.00	-17.12	PASS
1.0256	45.18	11.95	67.38	-10.25	PASS
2.0206	33.25	11.25	69.54	-25.04	PASS
7.3538	46.18	11.39	69.54	-11.97	PASS
12.8860	43.26	11.18	69.54	-15.10	PASS

Remark:

3. Margin = Result (Result = Reading + Factor) – Limit

4. The detection mode is QP

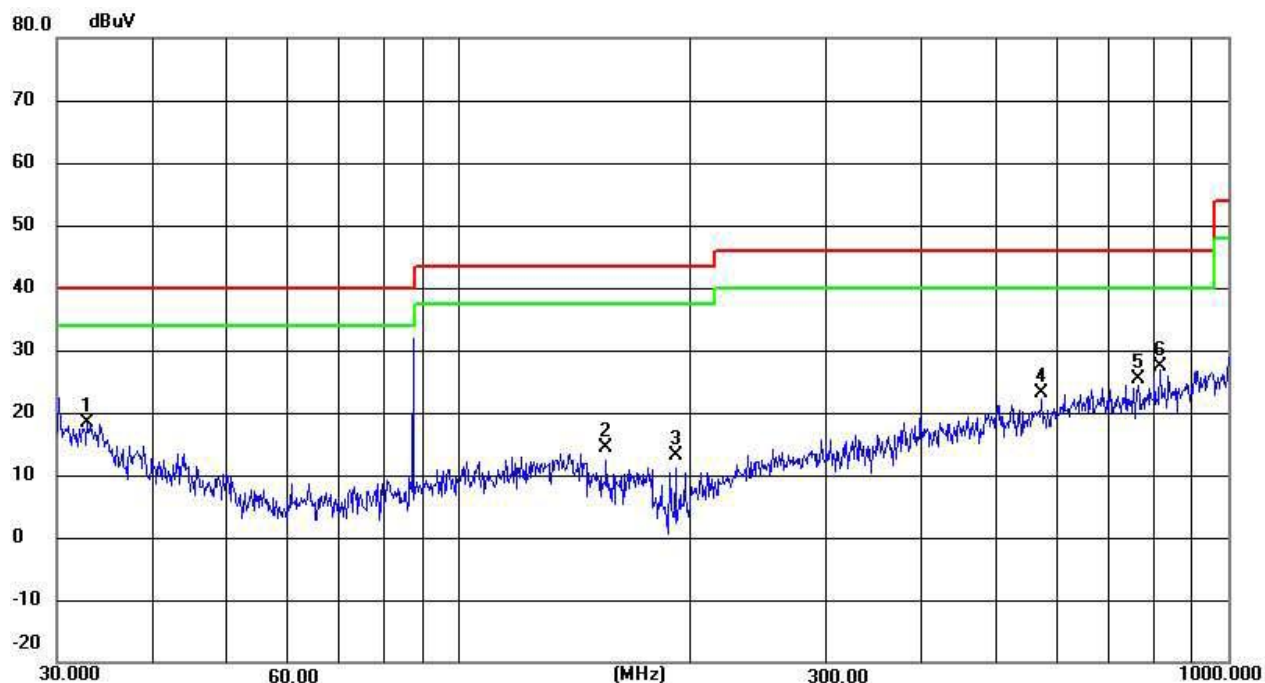
Between 30-1000MHz

Temperature:	26 °C	Relative Humidity:	54%
Test Voltage:	DC 12V	Phase:	Horizontal
Test Mode:	Mode 1		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
32.8637	27.38	-9.10	18.28	40.00	-21.72	QP
155.3644	46.39	-32.12	14.27	43.50	-29.23	QP
191.0738	45.15	-32.06	13.09	43.50	-30.41	QP
572.6144	54.19	-31.18	23.01	46.00	-22.99	QP
763.3757	56.34	-30.86	25.48	46.00	-20.52	QP
815.9678	58.15	-30.78	27.37	46.00	-18.63	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit

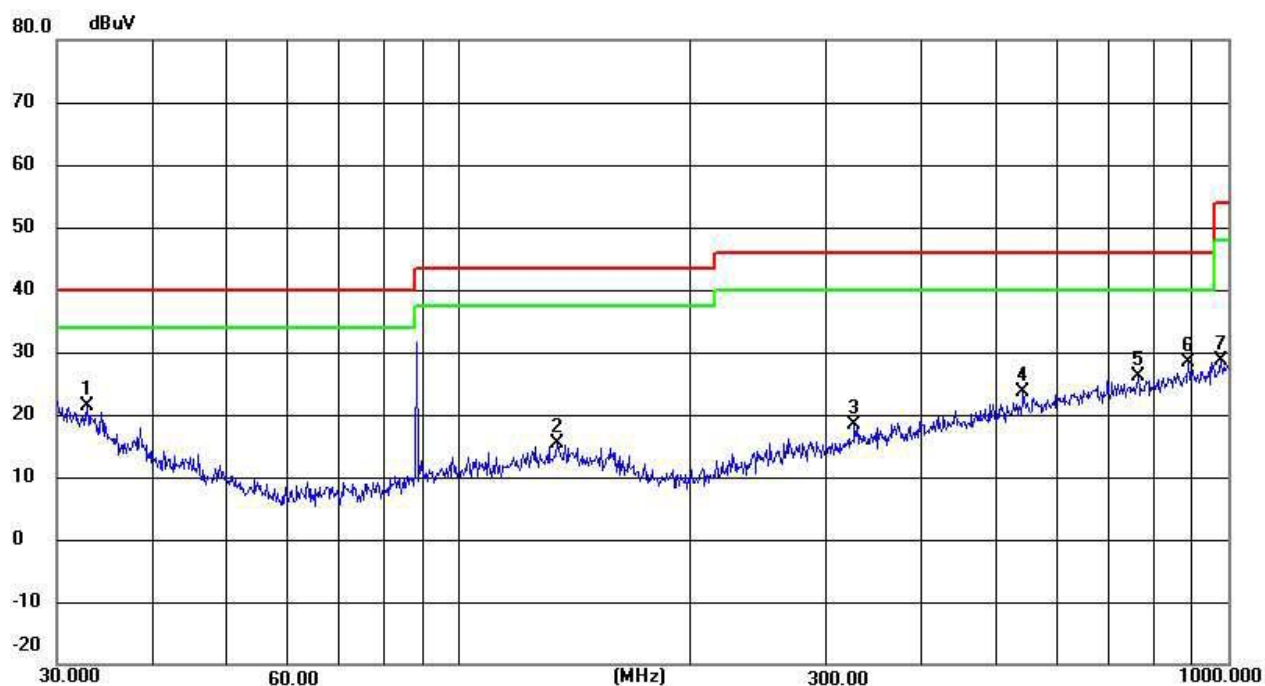


Temperature:	26 °C	Relative Humidity:	54%
Test Voltage:	DC 12V	Phase:	Vertical
Test Mode:	Mode 1		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
32.8637	30.47	-9.10	21.37	40.00	-18.63	QP
134.0882	47.55	-32.15	15.40	43.50	-28.10	QP
326.7395	50.13	-31.82	18.31	46.00	-27.69	QP
541.3725	54.82	-31.23	23.59	46.00	-22.41	QP
763.3757	57.00	-30.86	26.14	46.00	-19.86	QP
887.6099	59.15	-30.71	28.44	46.00	-17.56	QP
979.1804	59.32	-30.62	28.70	54.00	-25.30	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit

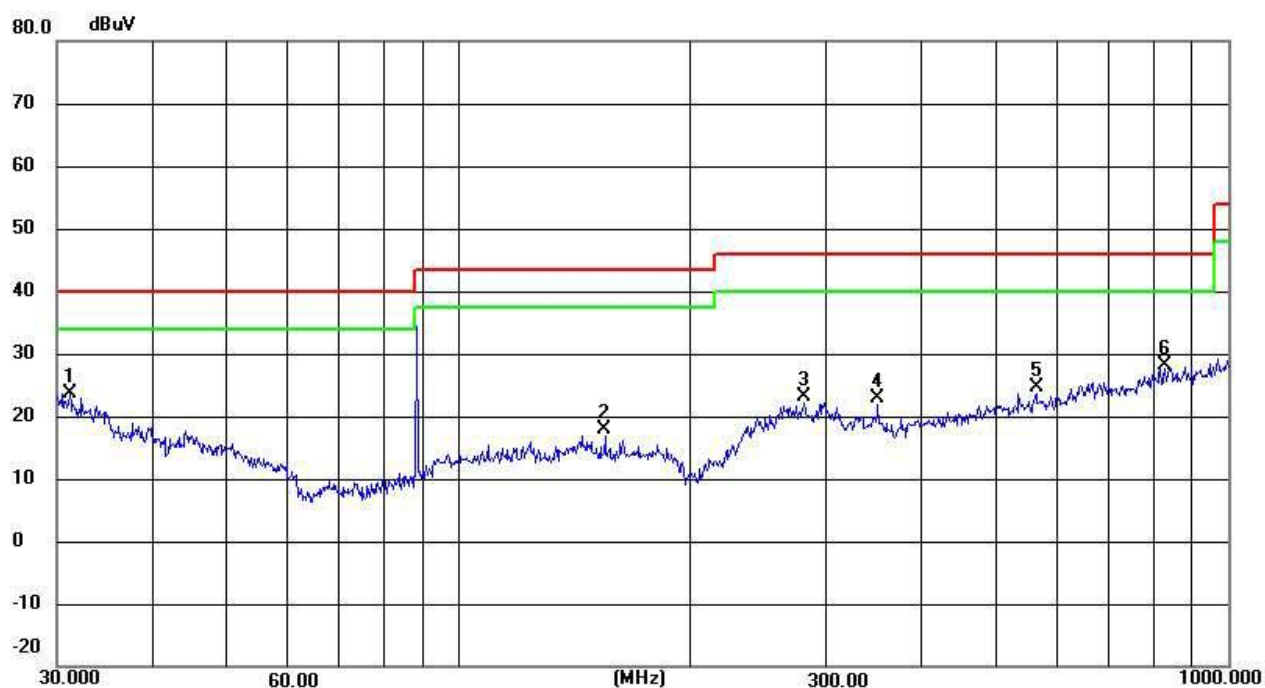


Temperature:	26 °C	Relative Humidity:	54%
Test Voltage:	DC 12V	Phase:	Horizontal
Test Mode:	Mode 2		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
31.1798	31.49	-7.97	23.52	40.00	-16.48	QP
154.8204	49.91	-32.12	17.79	43.50	-25.71	QP
281.0075	55.02	-31.93	23.09	46.00	-22.91	QP
350.4768	54.67	-31.75	22.92	46.00	-23.08	QP
562.6624	55.82	-31.20	24.62	46.00	-21.38	QP
827.4934	59.02	-30.77	28.25	46.00	-17.75	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit

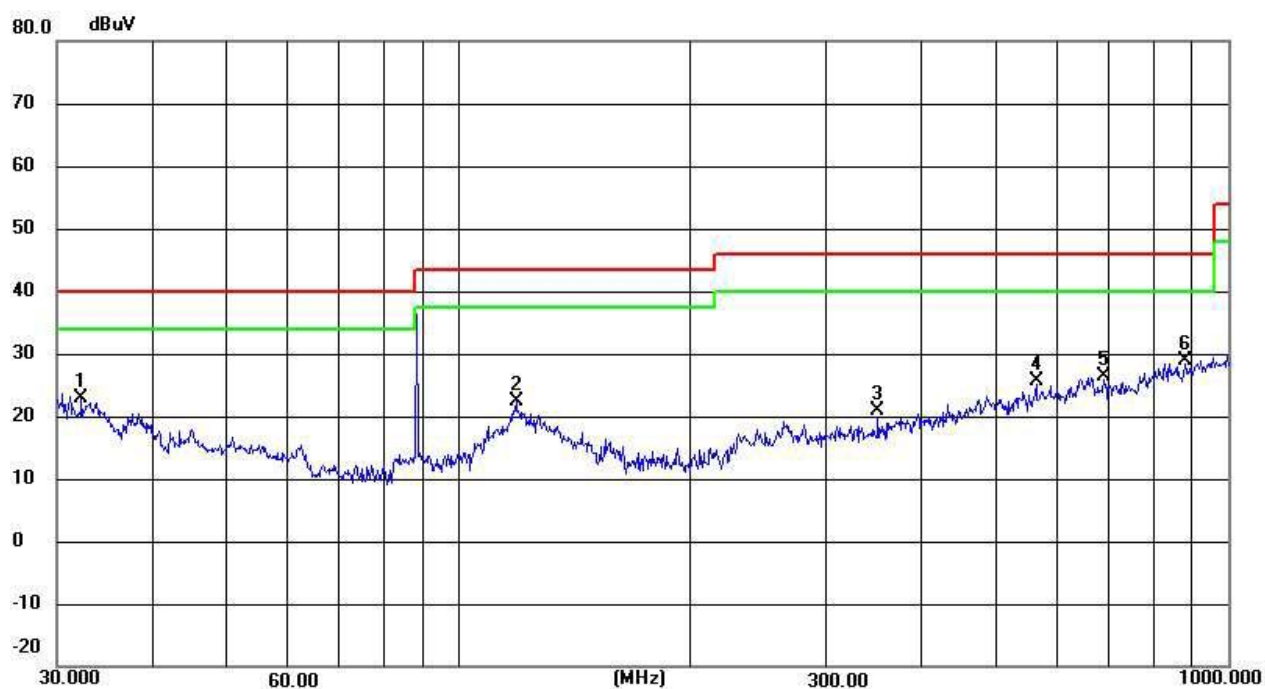


Temperature:	26 °C	Relative Humidity:	54%
Test Voltage:	DC 12V	Phase:	Vertical
Test Mode:	Mode 2		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
32.2925	31.71	-8.72	22.99	40.00	-17.01	QP
118.6014	54.43	-32.17	22.26	43.50	-21.24	QP
350.4768	52.67	-31.75	20.92	46.00	-25.08	QP
562.6624	56.82	-31.20	25.62	46.00	-20.38	QP
689.5644	57.41	-30.98	26.43	46.00	-19.57	QP
878.3214	59.63	-30.72	28.91	46.00	-17.09	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit

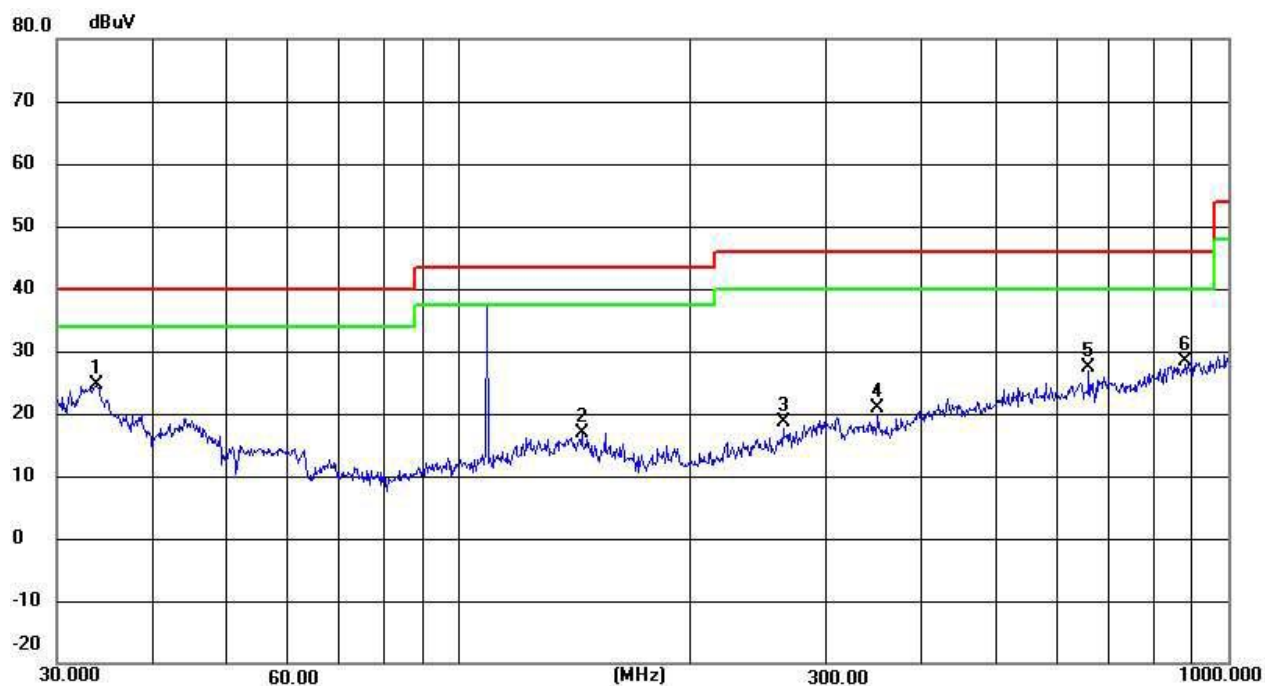


Temperature:	26 °C	Relative Humidity:	54%
Test Voltage:	DC 12V	Phase:	Horizontal
Test Mode:	Mode 3		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
33.7986	34.30	-9.74	24.56	40.00	-15.44	QP
144.3348	49.02	-32.13	16.89	43.50	-26.61	QP
263.8190	50.63	-31.95	18.68	46.00	-27.32	QP
350.4768	52.67	-31.75	20.92	46.00	-25.08	QP
658.8362	58.32	-31.04	27.28	46.00	-18.72	QP
878.3214	59.13	-30.72	28.41	46.00	-17.59	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit

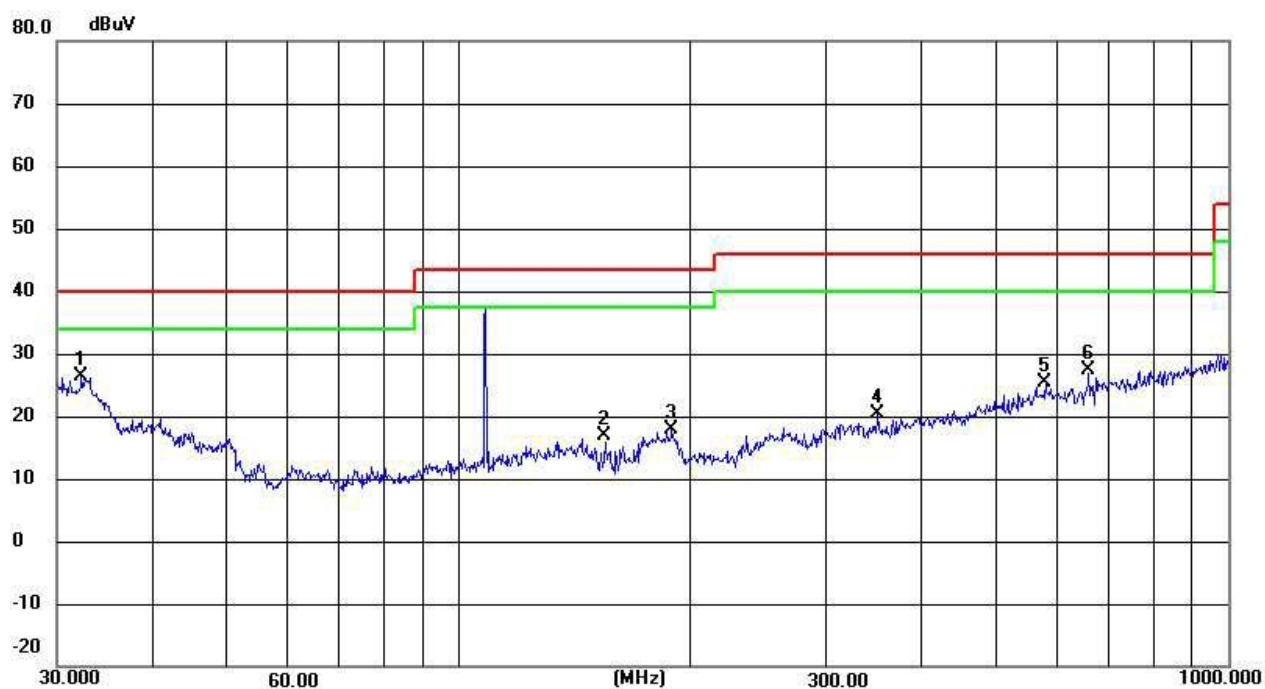


Temperature:	26 °C	Relative Humidity:	54%
Test Voltage:	DC 12V	Phase:	Vertical
Test Mode:	Mode 3		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
32.2925	35.21	-8.72	26.49	40.00	-13.51	QP
154.8204	48.91	-32.12	16.79	43.50	-26.71	QP
189.0743	50.06	-32.07	17.99	43.50	-25.51	QP
350.4768	52.17	-31.75	20.42	46.00	-25.58	QP
578.6699	56.57	-31.17	25.40	46.00	-20.60	QP
658.8362	58.32	-31.04	27.28	46.00	-18.72	QP

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit



Restricted bands around fundamental frequency(Radiated)

Horizontal

Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
88.00	41.03	-16.68	24.35	40	-15.65	QP
108.00	40.11	-15.24	24.87	43.5	-18.63	QP
Remark:Factor=Antenna Factor + Cable Loss + Pre-amplifier						

Vertical

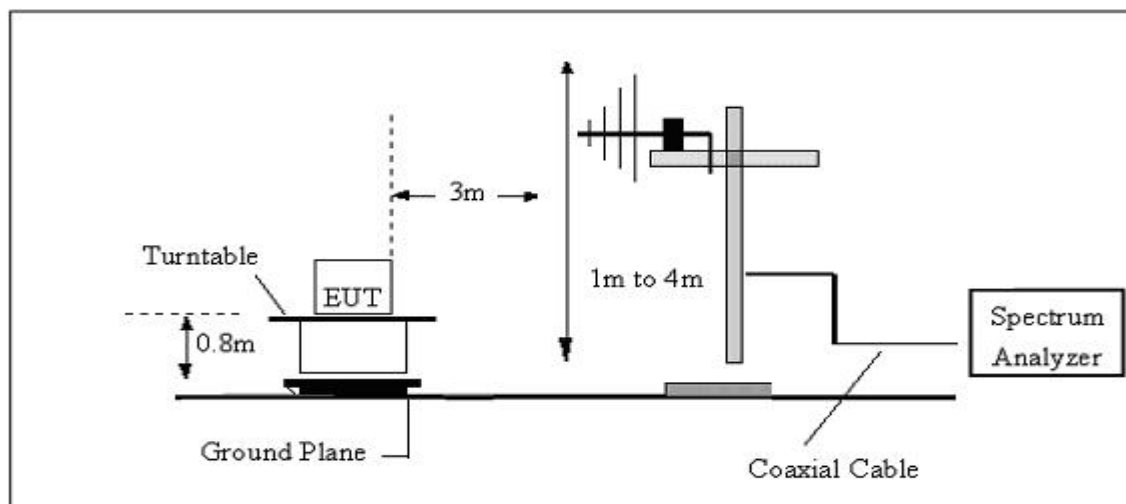
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
88.00	38.25	-16.68	21.57	40	-18.43	QP
108.00	39.27	-15.24	24.03	43.5	-19.47	QP
Remark:Factor=Antenna Factor + Cable Loss + Pre-amplifier						

4. FIELD STRENGTH EMISSION

4.1 REQUIREMENT

The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

4.2 TEST SETUP



4.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

4.4 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	50%
Test Voltage:	DC 12V	Test Mode:	TX Mode

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
88.10	78.82	8.45	1.10	36.62	51.75	68.00	-16.25	Horizontal
88.10	77.29	8.45	1.10	36.62	50.22	68.00	-17.78	Vertical
98.10	76.57	8.99	1.18	36.71	50.03	68.00	-17.97	Horizontal
98.10	78.48	8.99	1.18	36.71	51.94	68.00	-16.06	Vertical
107.90	77.60	9.76	1.26	36.78	51.84	68.00	-16.16	Horizontal
107.90	77.50	9.76	1.26	36.78	51.74	68.00	-16.26	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
88.10	60.42	8.45	1.10	36.62	33.35	48.00	-14.65	Horizontal
88.10	60.07	8.45	1.10	36.62	33.00	48.00	-15.00	Vertical
98.10	59.73	8.99	1.18	36.71	33.19	48.00	-14.81	Horizontal
98.10	61.31	8.99	1.18	36.71	34.77	48.00	-13.23	Vertical
107.90	60.13	9.76	1.26	36.78	34.37	48.00	-13.63	Horizontal
107.90	61.08	9.76	1.26	36.78	35.32	48.00	-12.68	Vertical

Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

5. 20DB BANDWIDTH

5.1 APPLIED PROCEDURES / LIMIT

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

5.2 TEST PROCEDURE

1. Set RBW = 10kHz.
2. Set the video Mobile Phonewidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. 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 6 dB relative to the maximum level measured in the fundamental emission.

5.3 TEST SETUP



5.4 EUT OPERATION CONDITIONS

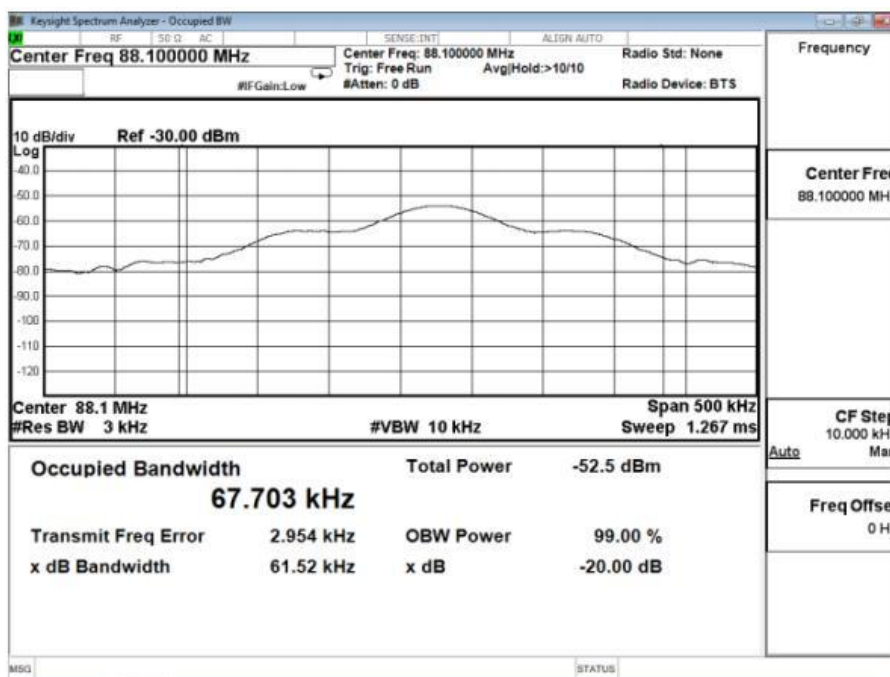
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.5 TEST RESULTS

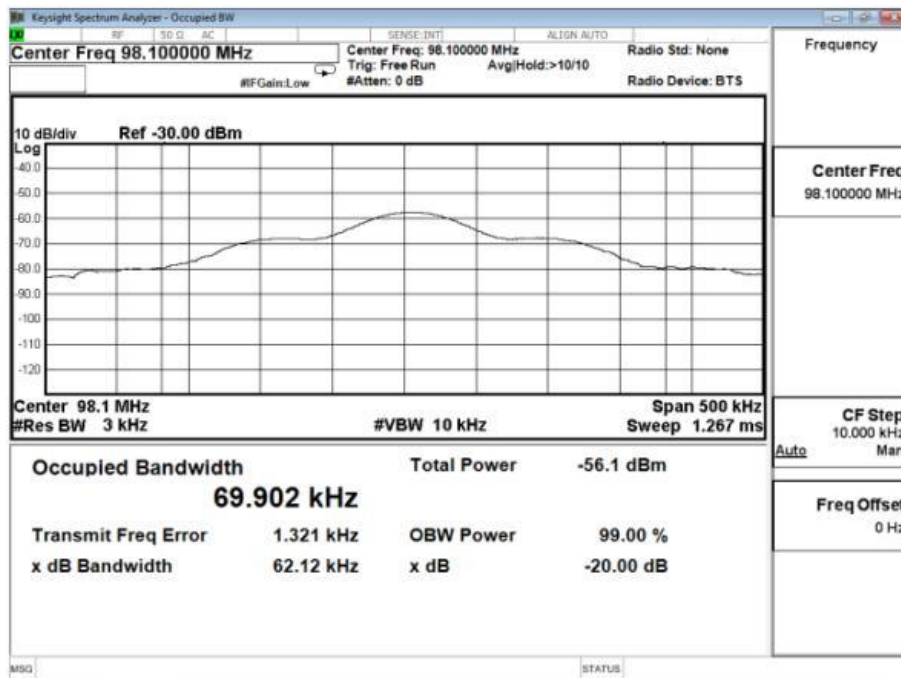
Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 12V	Test Mode:	TX Mode

Centre Frequency	Measurement	
	20dB Bandwidth (KHz)	Frequency Range (MHz)
88.10	61.52	200
98.10	62.12	200
107.90	62.92	200

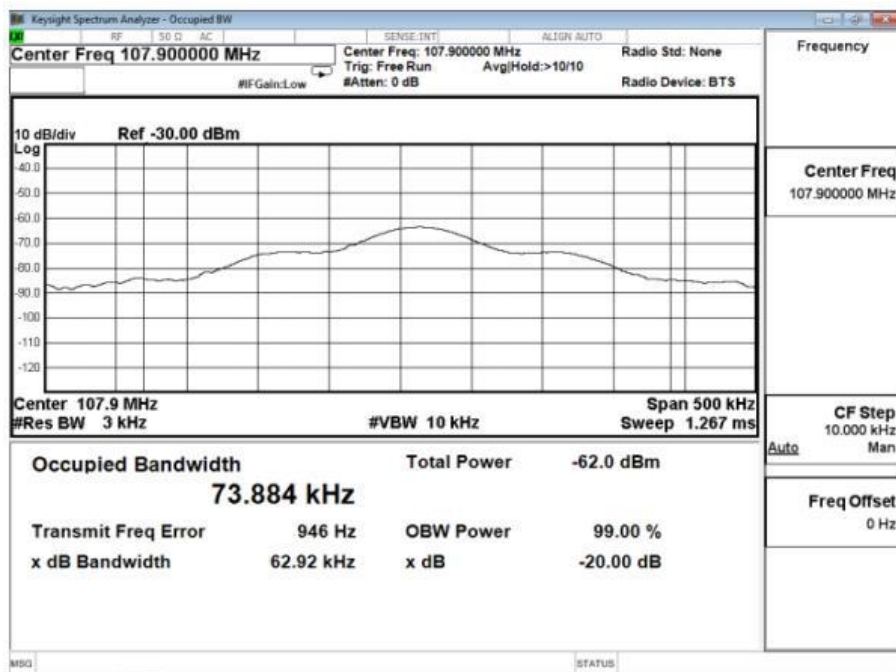
Low channel



Mid channel



High channel



6. ANTENNA REQUIREMENT

6.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

6.2 EUT ANTENNA

The EUT antenna is Spring antenna. It comply with the standard requirement.

*****END OF THE REPORT*****