

FCC PART 74 TEST REPORT

FCC ID:I4S-EM100

Product : IN EAR MONITOR Stereo Transmitter

Trade Name : N/A

Model Name : EM-100

Serial Model : N/A

Report No. : ISOT15080132E

Prepared for

Peavey Electronics Corporation

5022 Hartley Peavey Drive, Meridian, Mississippi, United States 39305

Prepared by

Shenzhen ISOTek Standards Technical Services Co.,Ltd.

13/F, HuaFengRui Building, XinHu Rd., XiXiang, Bao'an
District,Shenzhen,China

Tel.: +86-755- 23087278 Fax.: +86-755-23087178

[Http://www.ISOTek.com.cn](http://www.ISOTek.com.cn)

TEST RESULT CERTIFICATION**Applicant's name** Peavey Electronics Corporation

Address 5022 Hartley Peavey Drive, Meridian, Mississippi, United States 39305

Manufacture's Name... Shenzhen Uniwisdom Technologies Co., Ltd.

Address Bldg.91-94 3rd Industrial Zone, Lisonglang, GongmingTown, Bao'an District, Shenzhen, P.R.China

Product description

Product name IN EAR MONITOR Stereo Transmitter

Model and/or type EM-100
reference

Serial Model N/A

Standards FCC Part 74 Subpart H, section 74.861 (2014-10)

Test procedure TIA/EIA-603C:2004

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

This report shall not be reproduced except in full, without the written approval of ISOKEK, this document may be altered or revised by ISOKEK, personnel only, and shall be noted in the revision of the document.

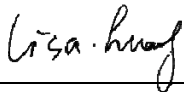
Date of Test

Date (s) of performance of tests: 26 Aug. 2015 ~24 Dec. 2015

Date of Issue.....: 24 Dec. 2015

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

Compiled by:



Lisa Huang/ Project Engineer

Approved by:



Richard Chen/ Manager

※ ※ Revision History ※ ※

REV.	REPORT NO.	Page Revised	ISSUED DATE	Contents
Original	ISOT15080132E	N/A	20 Sept. 2015	N/A
01	ISOT15080132E	P17,P20~P24	24 Dec. 2015	Update the RADIATED EMISSION MEASUREMENT.
02	ISOT15080132E	P16,P17,P52,P53	30 Dec. 2015	Update the CONDUCTED EMISSION MEASUREMENT and test photo.

Table of Contents	Page
1 . SUMMARY OF TEST RESULTS	6
1.1 TEST FACILITY	7
1.2 MEASUREMENT UNCERTAINTY	7
2 . GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	10
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	12
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	13
3 . EMC EMISSION TEST	14
3.1 CONDUCTED EMISSION MEASUREMENT	14
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	14
3.1.2 TEST PROCEDURE	15
3.1.3 DEVIATION FROM TEST STANDARD	15
3.1.4 TEST SETUP	15
3.1.5 EUT OPERATING CONDITIONS	15
3.1.6 TEST RESULTS	16
3.2 RADIATED EMISSION MEASUREMENT	18
3.2.1 TEST REQUIREMENT:	18
TEST METHOD:	18
3.2.2 DEVIATION FROM TEST STANDARD	18
3.2.3 TEST SETUP	19
3.2.4 EUT OPERATING CONDITIONS	20
3.2.5 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	21
3.2.6 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	22
3.2.7 TEST RESULTS (ABOVE 1000 MHZ)	23
4 . RF OUTPUT POWER	24
4.1 APPLIED PROCEDURES / LIMIT	24
4.1.1 TEST PROCEDURE	24
4.1.2 TEST SETUP	24
4.1.3 EUT OPERATION CONDITIONS	24
4.1.4 TEST RESULTS	25
5 . MODULATION CHARACTERISTICS	29
5.1 APPLIED PROCEDURES / LIMIT	29
5.1.1 TEST PROCEDURE	29
TEST SETUP	29

Table of Contents	Page
5.1.2 EUT OPERATION CONDITIONS	29
5.1.3 TEST RESULTS	30
6 . OCCUPIED BANDWIDTH OF EMISSION	33
6.1 APPLIED PROCEDURES / LIMIT	33
6.1.1 TEST PROCEDURE	33
6.1.2 DEVIATION FROM STANDARD	33
6.1.3 TEST SETUP	33
6.1.4 EUT OPERATION CONDITIONS	33
6.1.5 TEST RESULTS	34
7 . SPURIOUS EMISSIONS AT ANTENNA TERMINALS	38
7.1 TEST PROCEDURE	38
7.2 EUT OPERATION CONDITIONS	38
7.3 TEST RESULTS	39
8 . FREQUENCY STABILITY	46
8.1 STANDARD REQUIREMENT	46
8.2 TEST CONFIGURATION	46
8.3 TEST PROCEDURE	46
8.4 TEST RESULT	47
9 . EUT TEST PHOTO	50

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC CFR47 Part 74			
Standard Section	Test Item	Judgment	Remark
74.861(e)(1)(ii)	RF Output Power	PASS	
2.1047(a) RSS-210 section 4.1	Modulation Characteristics	PASS	
2.1049(c)(1)	Occupied Bandwidth	PASS	
2.1053 & 74.861(e)(6)	Radiated Emissions	PASS	
2.1051	Spurious emissions at antenna terminals	PASS	
2.1055(a)(1)	Frequencies Stability	PASS	

NOTE:

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

(2) FCC 15.207 does not apply to Licensed Transmitters subject to Part 74.

1.1 TEST FACILITY

Shenzhen ISOTek Standards Technical Services Co.,Ltd.

Add.: 13/F, HuaFengRui Building, XinHu Rd., XiXiang, Bao'an District,Shenzhen,China

FCC Registration No.: 918037; IC Registration Number:20400-1

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 Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	IN EAR MONITOR Stereo Transmitter	
Trade Name	N/A	
Model Name	EM-100	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a IN EAR MONITOR Stereo Transmitter	
	Operation Frequency:	565.05~589.8 MHz
	Modulation Type:	FM
	Number Of Channel	100 CH
	Antenna Designation:	Please see Note 2.
	Antenna Gain (dBi)	1.5dBi
Channel List	Please refer to the Note 2.	
Power Source	AC120 V	
Adapter	Input: 120-240V AC, 1.5A 50/60Hz Output: 12V $\overline{\text{---}}$, 1.0A	
Battery	N/A	
Connecting I/O Port(s)	Please refer to the User's Manual	
Product Hardware Version	REV:02	
Product Software Version	REV:01	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	monopole Antenna	N/A	1.5	Antenna

3. Frequency list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH001	565.050	CH036	573.800	CH071	582.550
CH002	565.300	CH037	574.050	CH072	582.800
CH003	565.550	CH038	574.300	CH073	583.050
CH004	565.800	CH039	574.550	CH074	583.300
CH005	566.050	CH040	574.800	CH075	583.550
CH006	566.300	CH041	575.050	CH076	583.800
CH007	566.550	CH042	575.300	CH077	584.050
CH008	566.800	CH043	575.550	CH078	584.300
CH009	567.050	CH044	575.800	CH079	584.550
CH010	567.300	CH045	576.050	CH080	584.800
CH011	567.550	CH046	576.300	CH081	585.050
CH012	567.800	CH047	576.550	CH082	585.300
CH013	568.050	CH048	576.800	CH083	585.550
CH014	568.300	CH049	577.050	CH084	585.800
CH015	568.550	CH050	577.300	CH085	586.050
CH016	568.800	CH051	577.550	CH086	586.300
CH017	569.050	CH052	577.800	CH087	586.550
CH018	569.300	CH053	578.050	CH088	586.800
CH019	569.550	CH054	578.300	CH089	587.050
CH020	569.800	CH055	578.550	CH090	587.300
CH021	570.050	CH056	578.800	CH091	587.550
CH022	570.300	CH057	579.050	CH092	587.800
CH023	570.550	CH058	579.300	CH093	588.050
CH024	570.800	CH059	579.550	CH094	588.300
CH025	571.050	CH060	579.800	CH095	588.550
CH026	571.300	CH061	580.050	CH096	588.800
CH027	571.550	CH062	580.300	CH097	589.050
CH028	571.800	CH063	580.550	CH098	589.300
CH029	572.050	CH064	580.800	CH099	589.550
CH030	572.300	CH065	581.050	CH100	589.800
CH031	572.550	CH066	581.300	--	--
CH032	572.800	CH067	581.550	--	--
CH033	573.050	CH068	581.800	--	--
CH034	573.300	CH069	582.050	--	--
CH035	573.550	CH070	582.300	--	--

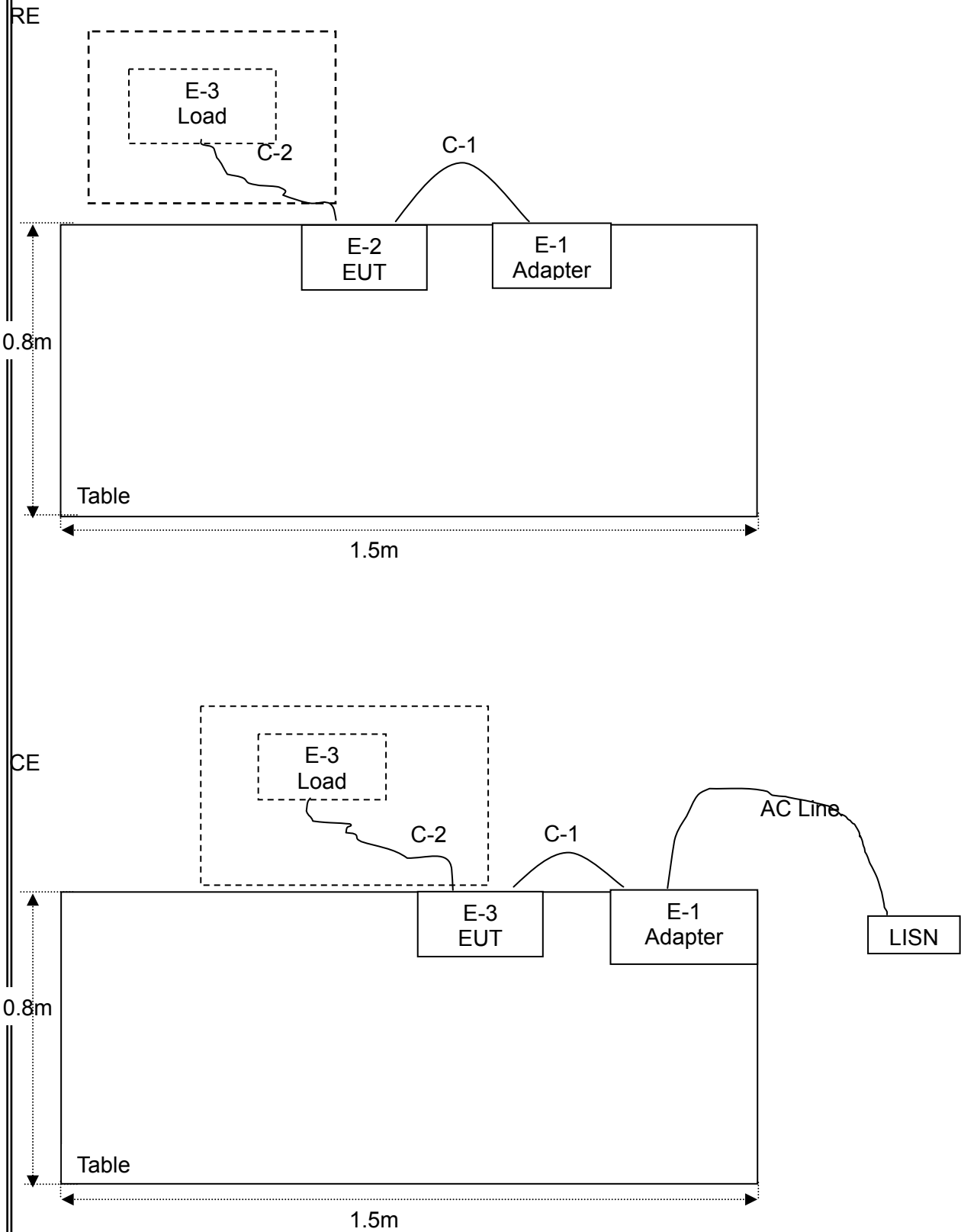
2.2 DESCRIPTION OF TEST MODES

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.

For Conducted Emission	
Test Mode	Description
Mode 1	keeping tx mode

For Radiated Emission&other conducted test	
Test Mode	Description
Mode 1	CH 1
Mode 2	CH 50
Mode 3	CH 100

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



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	Brand	Model/Type No.	Series No.	Note
E-1	IN EAR MONITOR Stereo Transmitter	N/A	EM-100	N/A	EUT
E-2	Adapter	N/A	SW12-12001000-W		
E-3	Load	N/A	N/A		

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.75m	
C-2	NO	NO	1.0m	

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 & other conducted test equipment**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4446A	US44300451	2015.07.06	2016.07.05	1 year
2	EMI Test Receiver	R&S	ESCI	101165	2015.07.06	2016.07.05	1 year
3	RF Communication Tester	HP	HP8920A	3438A05201	2015.05.04	2016.05.03	1 year
4	Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2015.07.06	2016.07.05	1 year
5	Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-439	2015.07.06	2016.07.05	1 year
6	Horn Antenna	Schwarzbeck	BBHA 9170	9170-182	2015.07.06	2016.07.05	1 year
7	Horn Antenna	Schwarzbeck	BBHA 9170	9170-181	2015.07.06	2016.07.05	1 year
8	SIGNAL GENERATOR	AGILENT	E4438C	878743	2015.05.04	2016.05.03	1 year
9	Amplifier	Schwarzbeck	BBV9743	9743-019	2015.07.06	2016.07.05	1 year
10	Test Cable Below 1GHz	ATM	R-01	3564	2015.07.06	2016.07.05	1 year
11	Test Cable Above 1GHz	ATM	R-02	3565	2015.07.06	2016.07.05	1 year
	Test Cable	ATM	R-03	5623	2014.07.06	2015.07.05	1 year
12	Horn Antenna	Sunol Sciences	DRH-118	A052604	2015.07.06	2016.07.05	1 year
13	Horn Antenna	Sunol Sciences	DRH-118	A052605	2015.07.06	2016.07.05	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

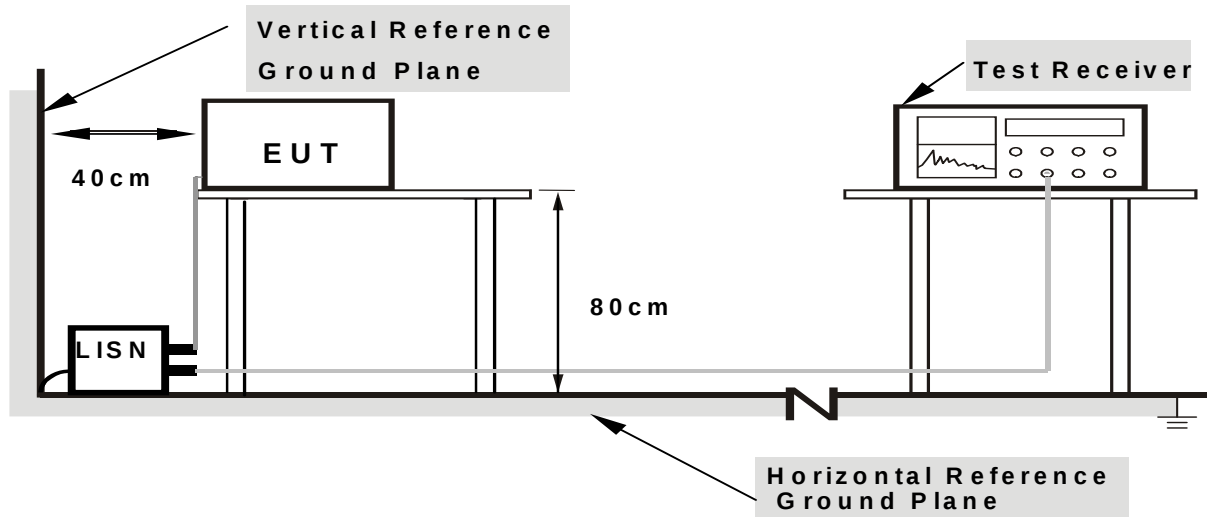
3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 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

3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

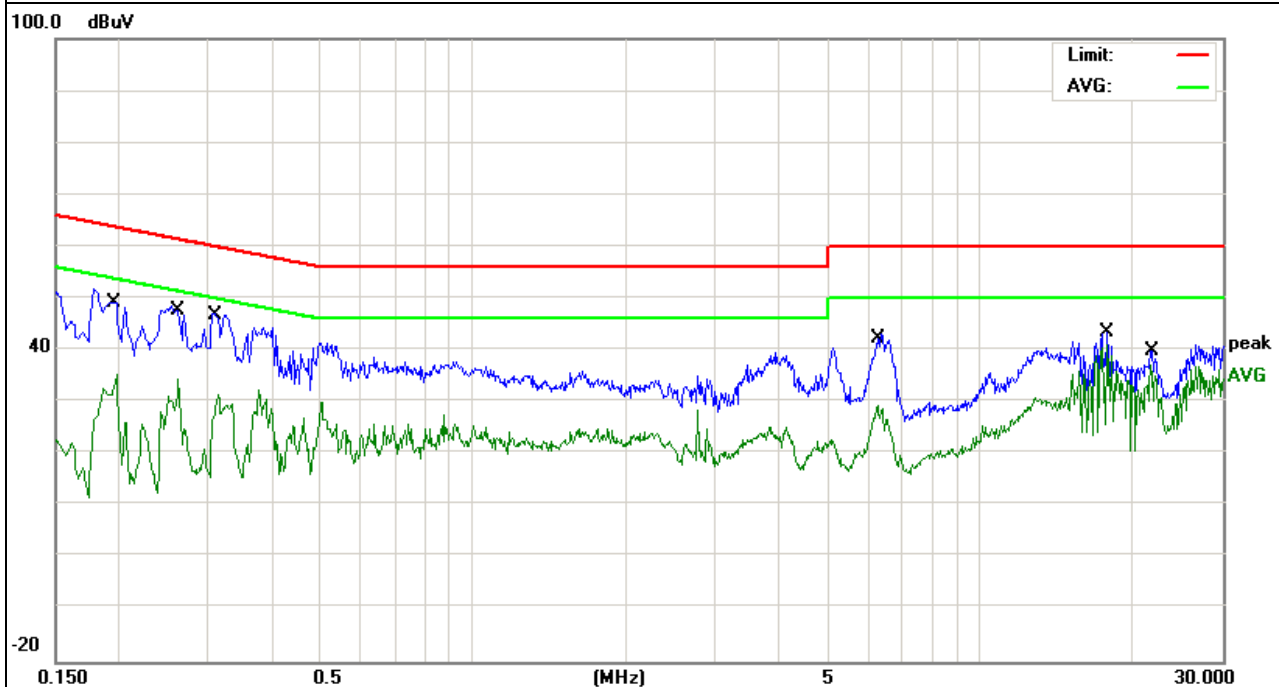
3.1.6 TEST RESULTS

EUT :	IN EAR MONITOR Stereo Transmitter	Model Name. :	EM-100
Temperature :	26 °C	Relative Humidity :	56%
Pressure :	Mode 1	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Date :	2015-09-10

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1980	39.72	9.51	49.23	63.69	-14.46	QP
0.1980	25.81	9.51	35.32	53.69	-18.37	AVG
0.2620	38.90	9.51	48.41	61.36	-12.95	QP
0.2620	24.91	9.51	34.42	51.36	-16.94	AVG
0.3140	37.64	9.51	47.15	59.86	-12.71	QP
0.3140	22.07	9.51	31.58	49.86	-18.28	AVG
6.2659	33.41	9.64	43.05	60.00	-16.95	QP
6.2659	19.56	9.64	29.20	50.00	-20.80	AVG
17.7819	33.33	10.02	43.35	60.00	-16.65	QP
17.7819	30.98	10.02	41.00	50.00	-9.00	AVG
21.6700	29.63	10.21	39.84	60.00	-20.16	QP
21.6700	26.80	10.21	37.01	50.00	-12.99	AVG
0.1980	39.72	9.51	49.23	63.69	-14.46	QP
0.1980	25.81	9.51	35.32	53.69	-18.37	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

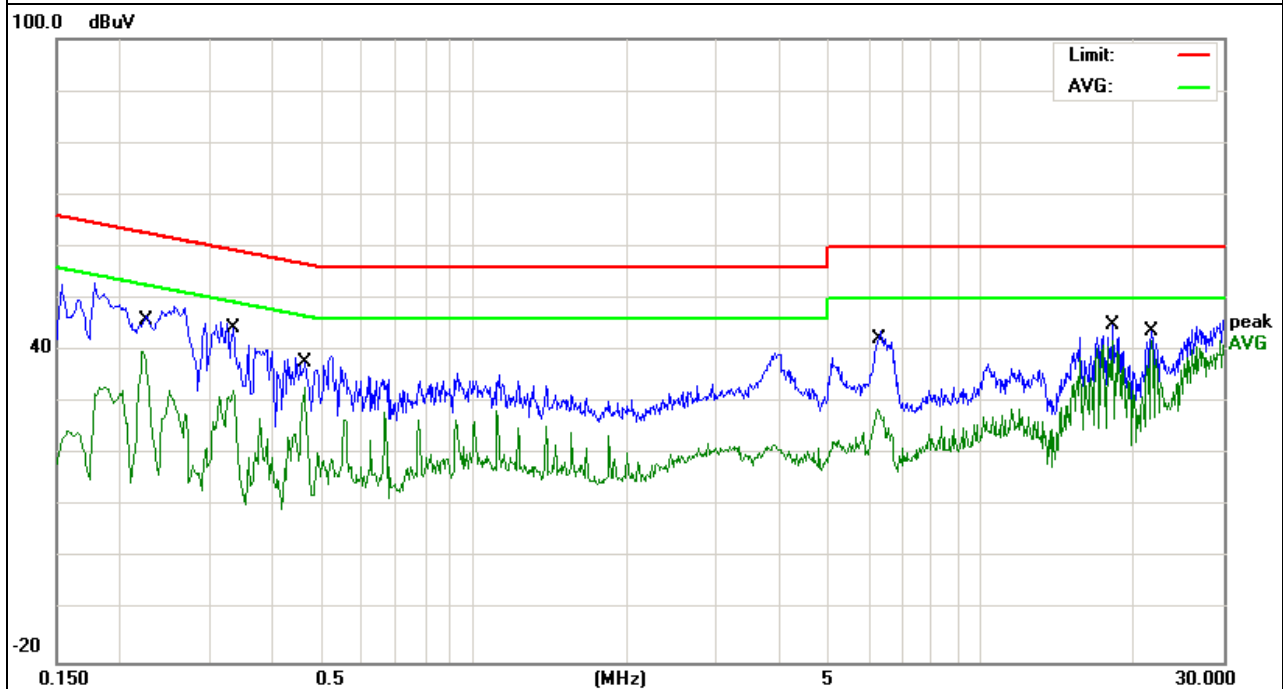


EUT :	IN EAR MONITOR Stereo Transmitter	Model Name. :	EM-100
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2015-09-10
Test Mode :	Mode 1	Phase :	N
Test Voltage :	AC 120V/60Hz		

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.2220	37.16	9.49	46.65	62.74	-16.09	QP
0.2220	30.37	9.49	39.86	52.74	-12.88	AVG
0.3339	36.09	9.50	45.59	59.35	-13.76	QP
0.3339	22.86	9.50	32.36	49.35	-16.99	AVG
0.4620	29.05	9.51	38.56	56.66	-18.10	QP
0.4620	23.47	9.51	32.98	46.66	-13.68	AVG
6.2419	34.10	9.64	43.74	60.00	-16.26	QP
6.2419	18.96	9.64	28.60	50.00	-21.40	AVG
18.2219	34.76	10.13	44.89	60.00	-15.11	QP
18.2219	31.69	10.13	41.82	50.00	-8.18	AVG
21.6700	33.60	10.26	43.86	60.00	-16.14	QP
21.6700	31.58	10.26	41.84	50.00	-8.16	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 TEST REQUIREMENT: FCC CFR47 Part 2 Section 2.1053

TEST METHOD: Based on TIA/EIA-603-D-2010

According to FCC §74.861 (e) (6) (iii):

According to Part 74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

- (i) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.
- (ii) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.
- (iii) on any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least $43 + 10 \log$ (output power in watts)dB.

Test Procedure

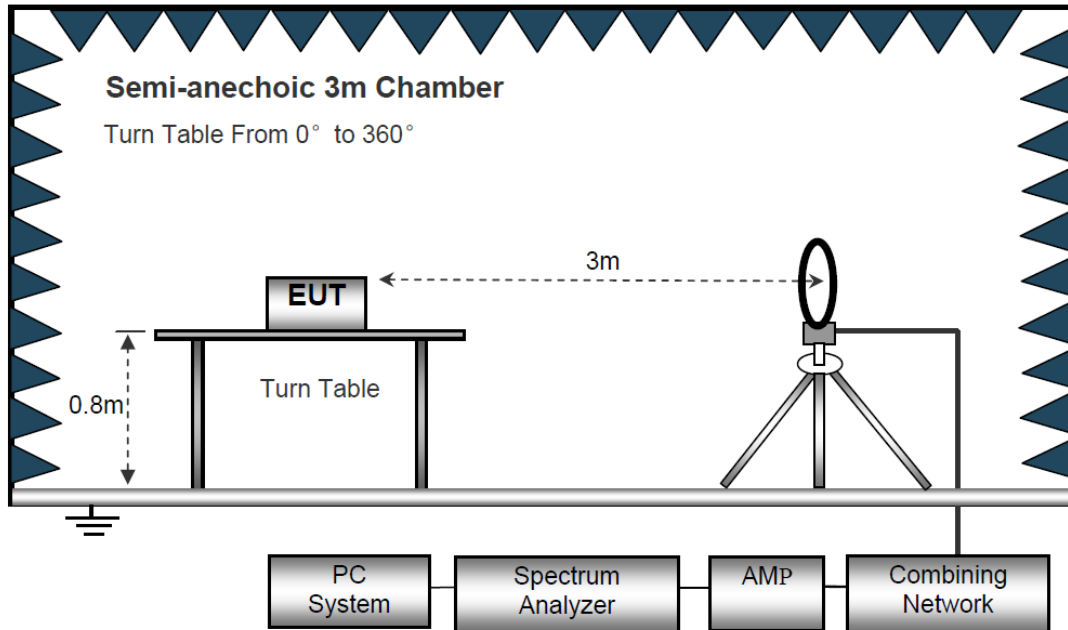
Details to see ANSI/TIA-603-D 2010 section 2.2.12.

3.2.2 DEVIATION FROM TEST STANDARD

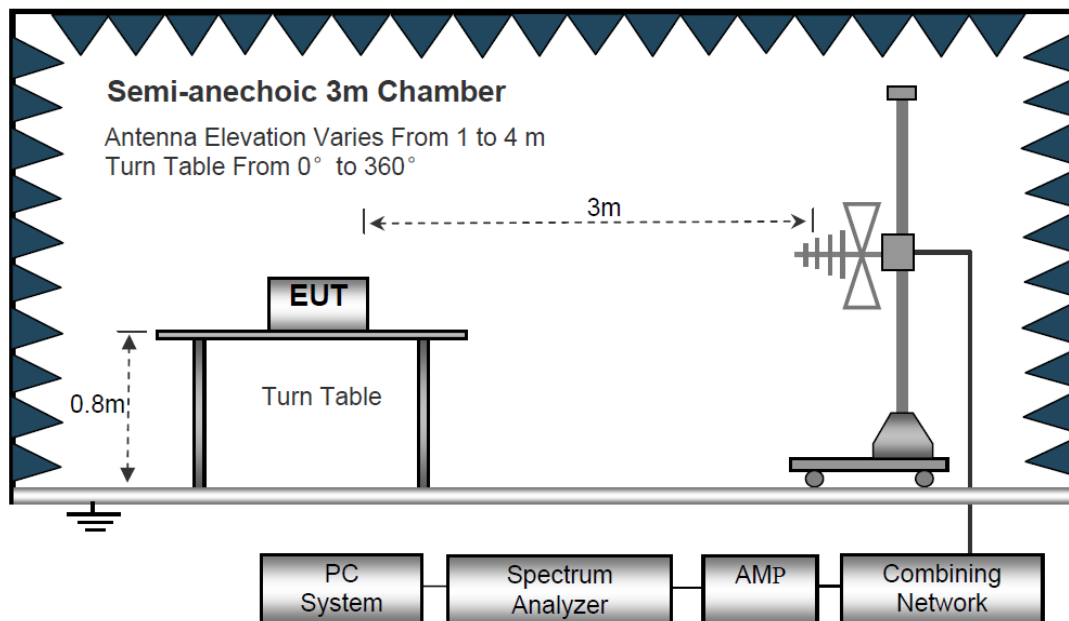
No deviation

3.2.3 TEST SETUP

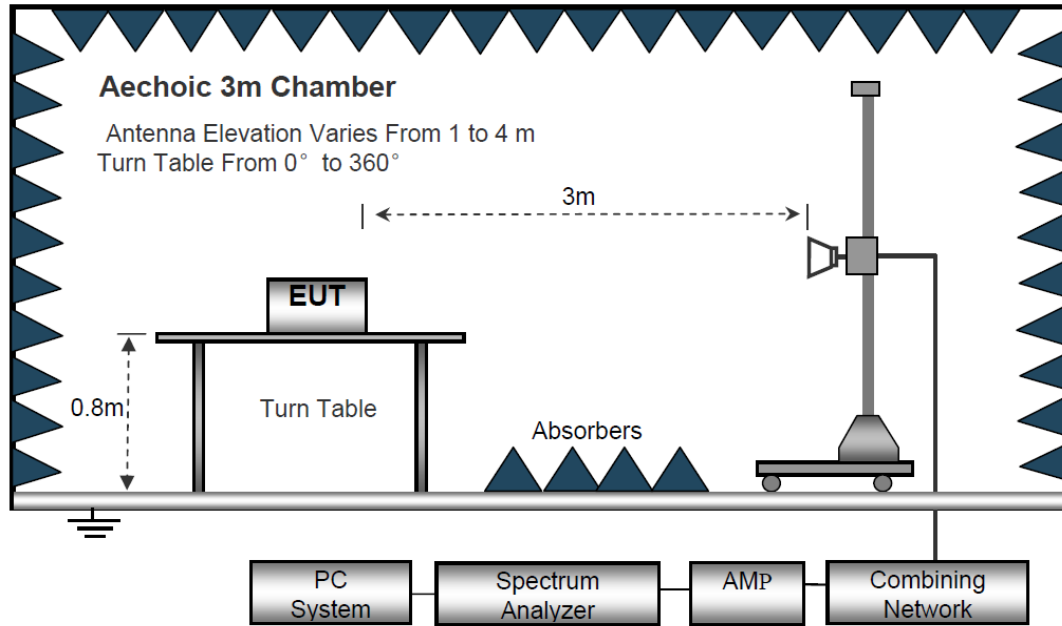
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



(C) Radiated Emission Test-Up Frequency Above 1GHz

**3.2.4 EUT OPERATING CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

EUT:	IN EAR MONITOR Stereo Transmitter	Model Name. :	EM-100
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})(\text{dB})$;

Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.6 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT :	IN EAR MONITOR Stereo Transmitter	Model Name :	EM-100
Temperature :	20 °C	Relative Humidity :	48%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBm)	(dBm)	(dB)	
CH 1							
V	54.1614	-58.22	19.79	-38.43	-13	-25.43	peak
V	164.3413	-61.38	23.01	-38.37	-13	-25.37	peak
V	232.1940	-51.09	18.38	-32.71	-13	-19.71	peak
V	472.4167	-55.84	24.06	-31.78	-13	-18.78	peak
V	795.8552	-67.71	31.47	-36.24	-13	-23.24	peak
H	244.2658	-57.72	24.02	-33.7	-13	-20.7	peak
H	421.1574	-66.92	29.09	-37.83	-13	-24.83	peak
H	709.1133	-68.72	33.73	-34.99	-13	-21.99	peak
H	84.1434	-59.31	19.82	-39.49	-13	-26.49	peak
H	931.1661	-71.31	39.54	-31.77	-13	-18.77	peak
CH 50							
V	117.1411	-60.89	22.88	-38.01	-13	-25.01	peak
V	166.6982	-59.23	24.95	-34.28	-13	-21.28	peak
V	244.7641	-60.11	22.99	-37.12	-13	-24.12	peak
V	412.7273	-61.33	29.84	-31.49	-13	-18.49	peak
V	705.7207	-70.32	35.18	-35.14	-13	-22.14	peak
H	62.1243	-60.48	26.93	-33.55	-13	-20.55	peak
H	94.7023	-60.16	19.21	-40.95	-13	-27.95	peak
H	163.7147	-59.52	24.96	-34.56	-13	-21.56	peak
H	257.5407	-59.13	23.69	-35.44	-13	-22.44	peak
H	376.3158	-60.89	28.43	-32.46	-13	-19.46	peak
H	474.7997	-64.53	31.38	-33.15	-13	-20.15	peak
CH 100							
V	120.0093	-59.69	21.59	-38.1	-13	-25.1	peak
V	272.1564	-60.72	18.43	-42.29	-13	-29.29	peak
V	367.4942	-67.75	27.28	-40.47	-13	-27.47	peak
V	419.6415	-70.52	24.11	-46.41	-13	-33.41	peak
V	585.4771	-71.89	34.68	-37.21	-13	-24.21	peak
H	82.01754	-63.72	27.23	-36.49	-13	-23.49	peak
H	334.1471	-70.37	32.32	-38.05	-13	-25.05	peak
H	437.6687	-77.43	36.94	-40.49	-13	-27.49	peak
H	586.2946	-71.62	29.14	-42.48	-13	-29.48	peak
H	726.8159	-75.21	33.78	-41.43	-13	-28.43	peak
Remark: Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit							

EUT :	IN EAR MONITOR Stereo Transmitter	Model Name :	EM-100
Temperature :	20 °C	Relative Humidity :	48%
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
CH 1							
V	1130.142	-42.71	-3.22	-45.93	-13	-32.93	peak
V	1695.156	-41.71	-2.44	-44.15	-13	-31.15	peak
V	2260.222	-43.33	1.27	-42.06	-13	-29.06	peak
H	1130.134	-41.31	-3.29	-44.6	-13	-31.6	peak
H	1695.156	-37.55	-2.67	-40.22	-13	-27.22	peak
H	2260.239	-41.15	1.24	-39.91	-13	-26.91	peak
CH 50							
V	1154.639	-47.64	-3.33	-50.97	-13	-37.97	peak
V	1731.965	-45.23	1.08	-44.15	-13	-31.15	peak
V	2309.287	-48.03	1.09	-46.94	-13	-33.94	peak
H	1154.659	-47.09	-2.86	-49.95	-13	-36.95	peak
H	1731.946	-44.52	0.81	-43.71	-13	-30.71	peak
H	2309.245	-46.98	0.81	-46.17	-13	-33.17	peak
CH 100							
V	1179.631	-40.62	-2.63	-43.25	-13	-30.25	peak
V	1769.425	-42.97	0.79	-42.18	-13	-29.18	peak
V	2359.232	-45.75	1.16	-44.59	-13	-31.59	peak
H	1179.626	-43.49	-2.27	-45.76	-13	-32.76	peak
H	1769.453	-43.72	0.86	-42.86	-13	-29.86	peak
H	2359.232	-46.93	0.86	-46.07	-13	-33.07	peak
Remark: Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit							

4. RF OUTPUT POWER

4.1 APPLIED PROCEDURES / LIMIT

Test requirement: FCC CFR47 Part 74 Section 74.861(e)(1)(ii),

Test method: Based on TIA/EIA-603-D-2010

Limit: According to Part 74.861(e)(1)(ii), the output power shall not exceed 250mW (23.98 dBm).

4.1.1 TEST PROCEDURE

The maximum peak output power was measured with a spectrum analyzer connected to the antenna terminal (conducted measurement) while EUT was operating in normal situation.

4.1.2 TEST SETUP



4.1.3 EUT OPERATION CONDITIONS

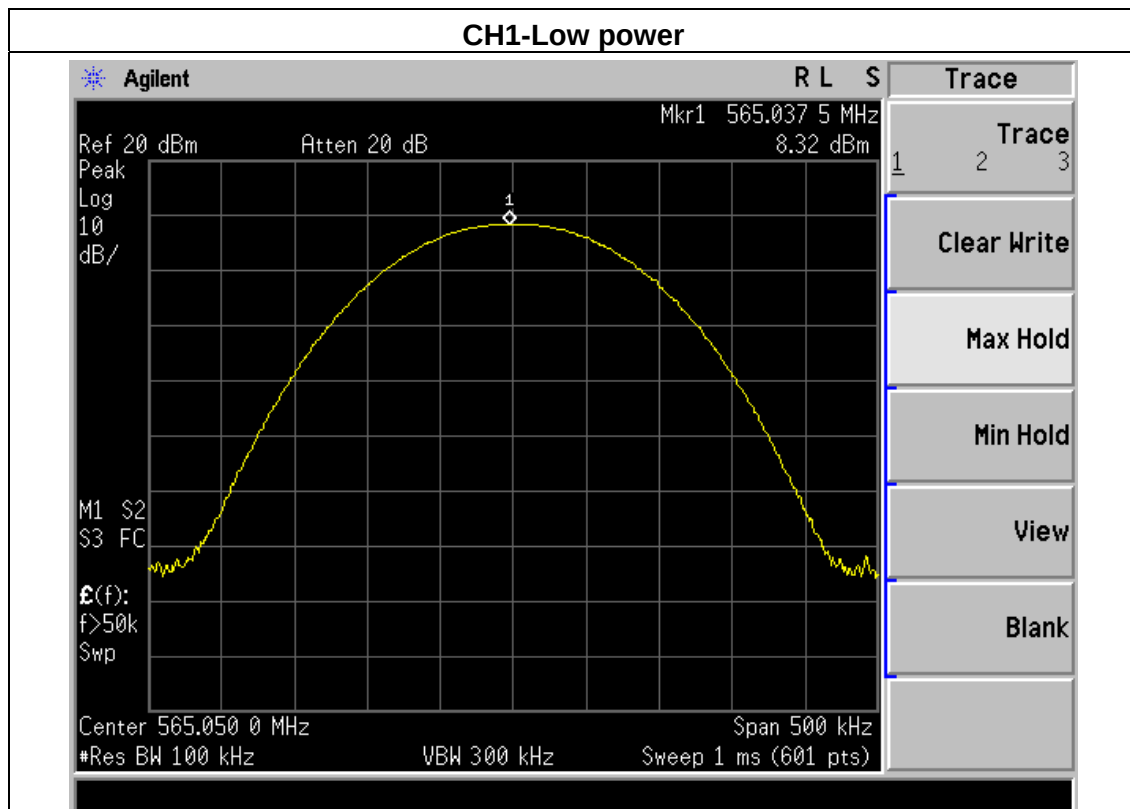
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.4 TEST RESULTS

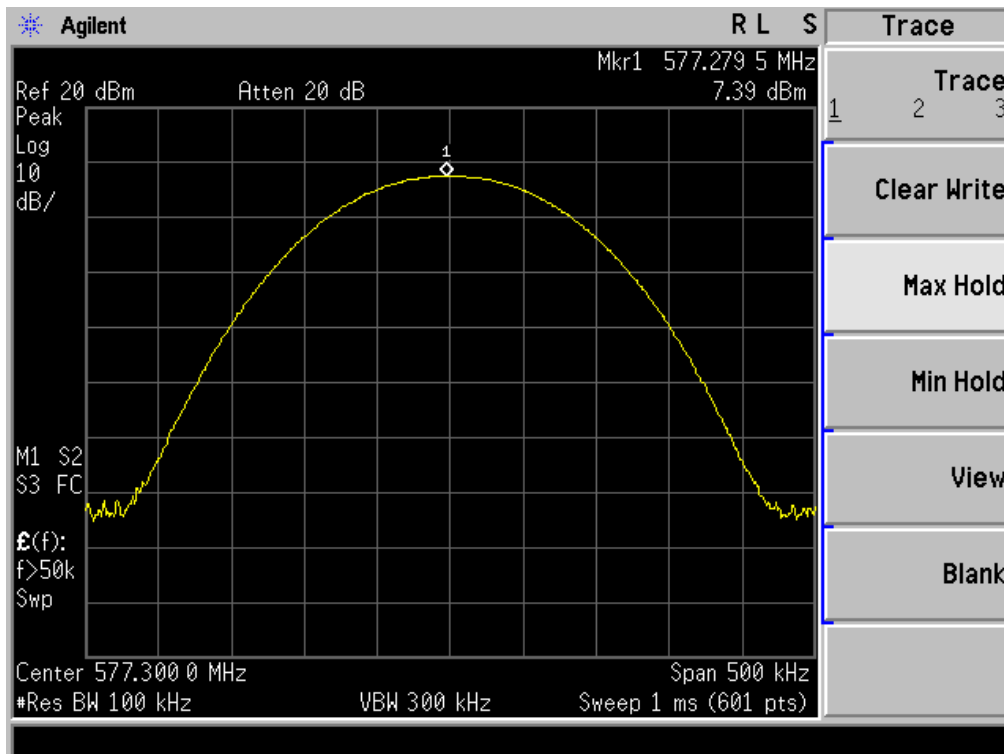
EUT :	IN EAR MONITOR Stereo Transmitter	Model Name :	EM-100
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1015 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode		

Test Channel	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
Low Power			
CH 1	565.050	8.32	23.98
CH 50	577.300	7.39	23.98
CH 100	589.800	7.99	23.98
High Power			
CH 1	565.050	16.95	23.98
CH 50	577.300	17.17	23.98
CH 100	589.800	17.25	23.98

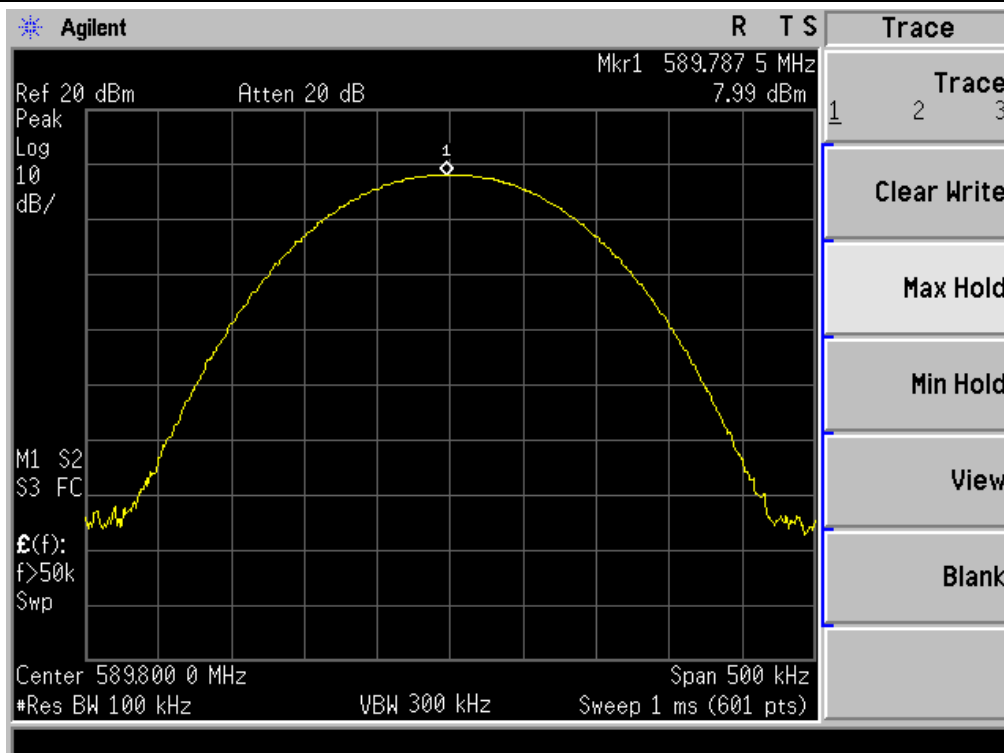
CH1-Low power



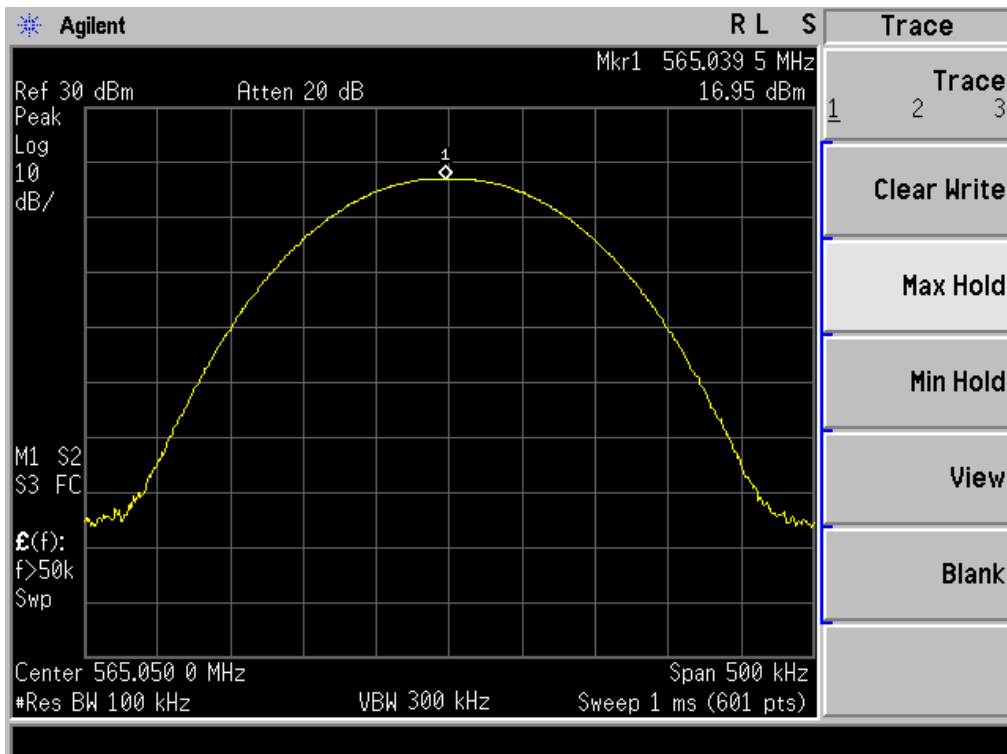
CH 50-Low power



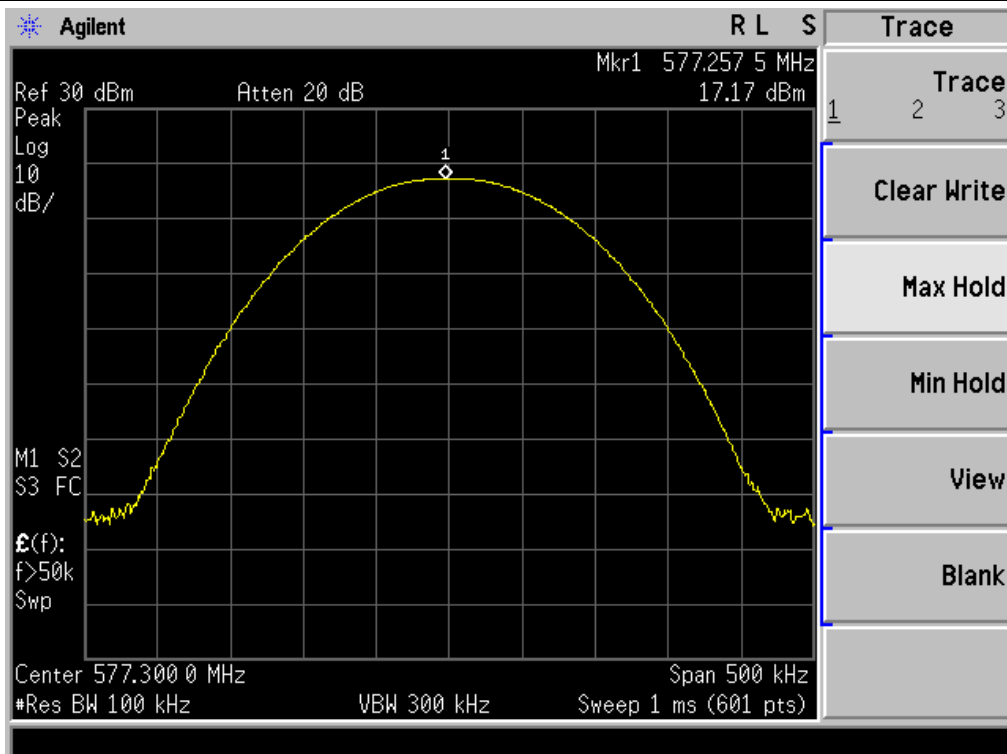
CH 100-Low power

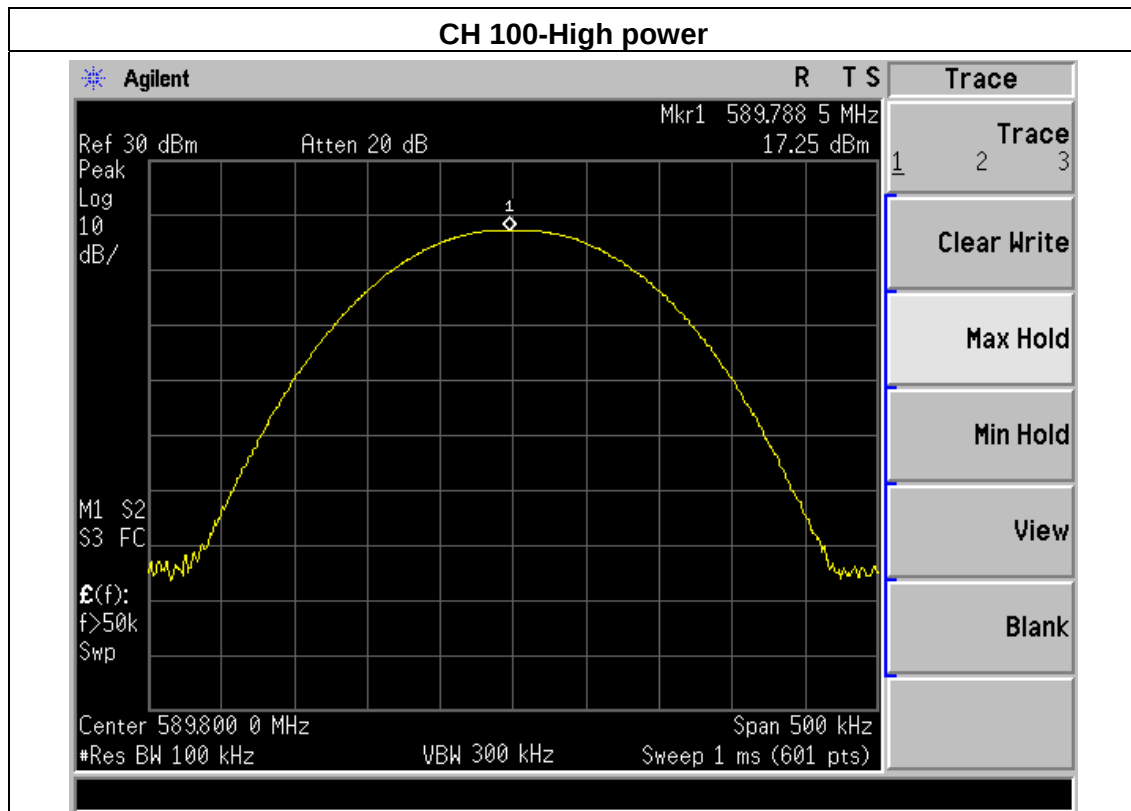


CH1-High power



CH 50-High power





5. MODULATION CHARACTERISTICS

5.1 APPLIED PROCEDURES / LIMIT

Test requirement: FCC CFR47 Part 2 Section 2.1047(a)

Test method: Based on TIA/EIA-603-D-2010

Requirement: According to Part 2.1047(a), for Voice Modulated Communication Equipment, the frequency response of the audio modulating circuit over a range of 100Hz to 5000Hz shall be measured.

According to §74.861(e)(3), any form of modulation may be used. A maximum deviation of ± 75 kHz is permitted when frequency modulation is employed.

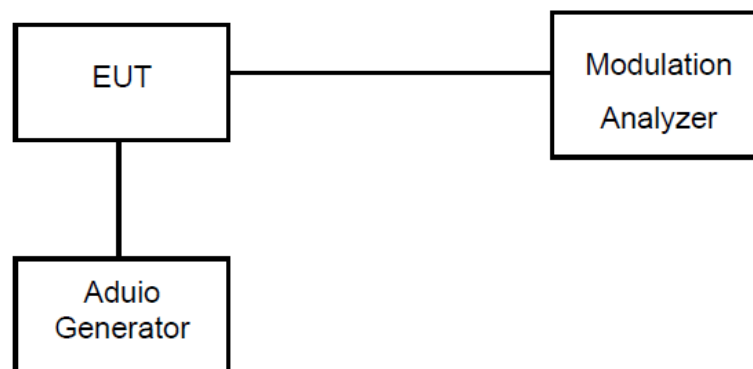
5.1.1 TEST PROCEDURE

(a) Test Configuration

(b) Position the EUT as shown in figure 1, adjust the audio input frequency to 100 Hz and the input level from 0V to maximum permitted input voltage with recording each carrier frequency deviation responding to respective input level.

(C) Repeat step (b) with changing the input frequency for 100, 500, 1000, 2500 and 5000Hz in sequence.

TEST SETUP



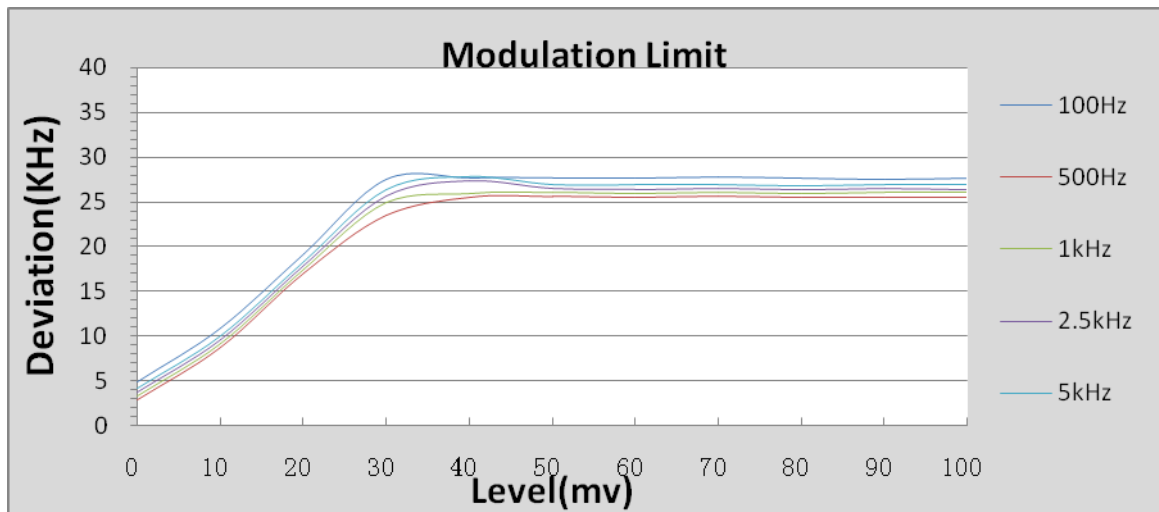
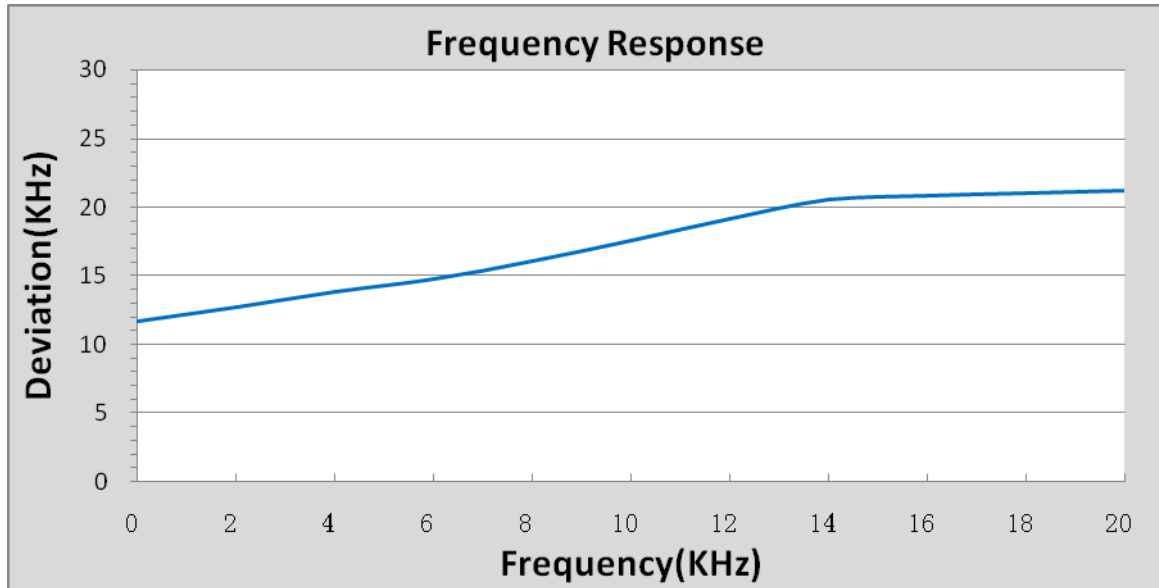
5.1.2 EUT OPERATION CONDITIONS

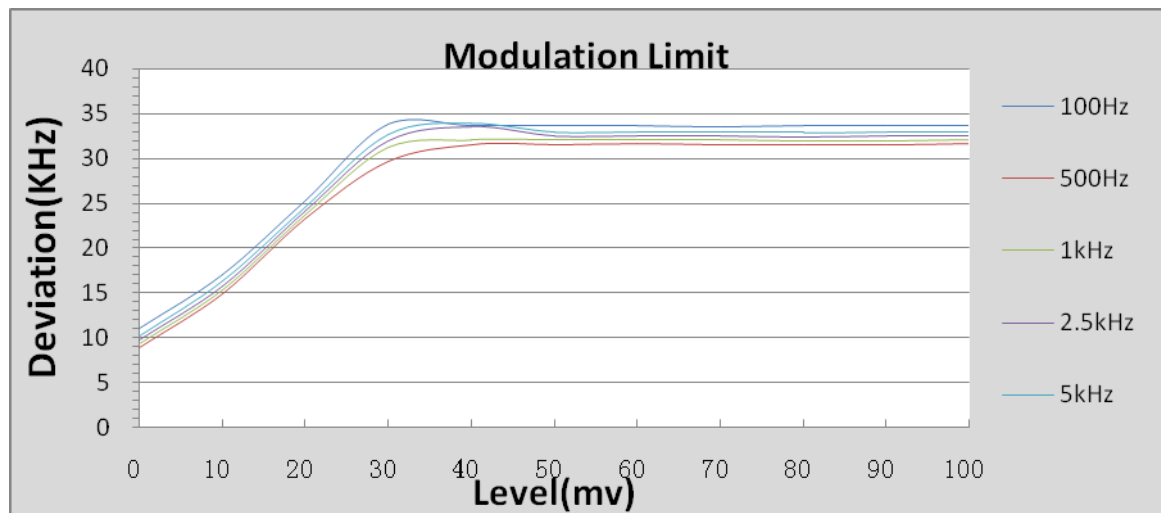
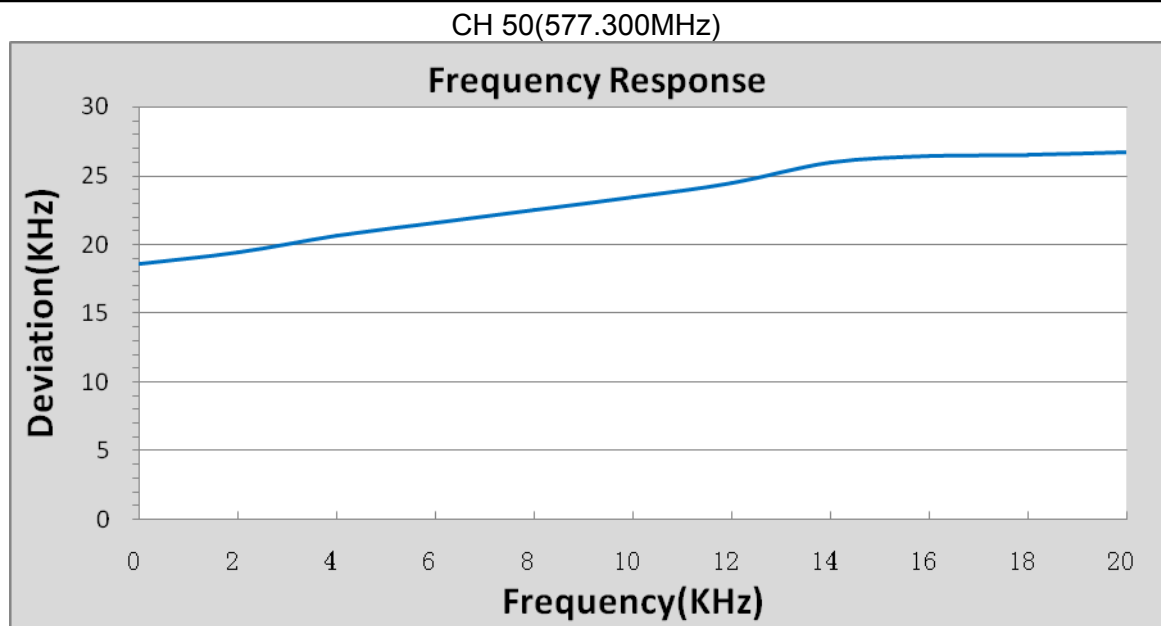
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.3 TEST RESULTS

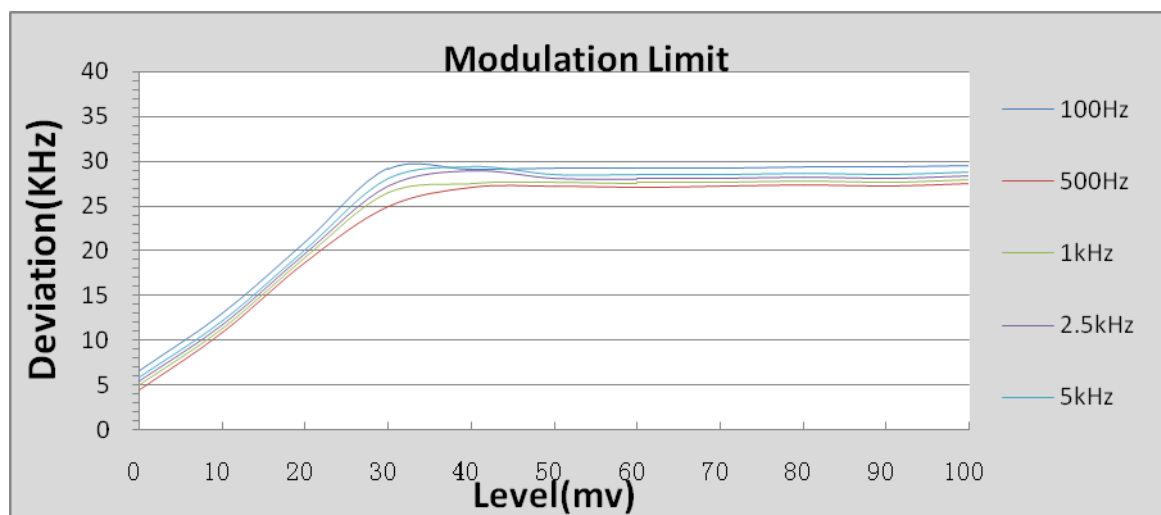
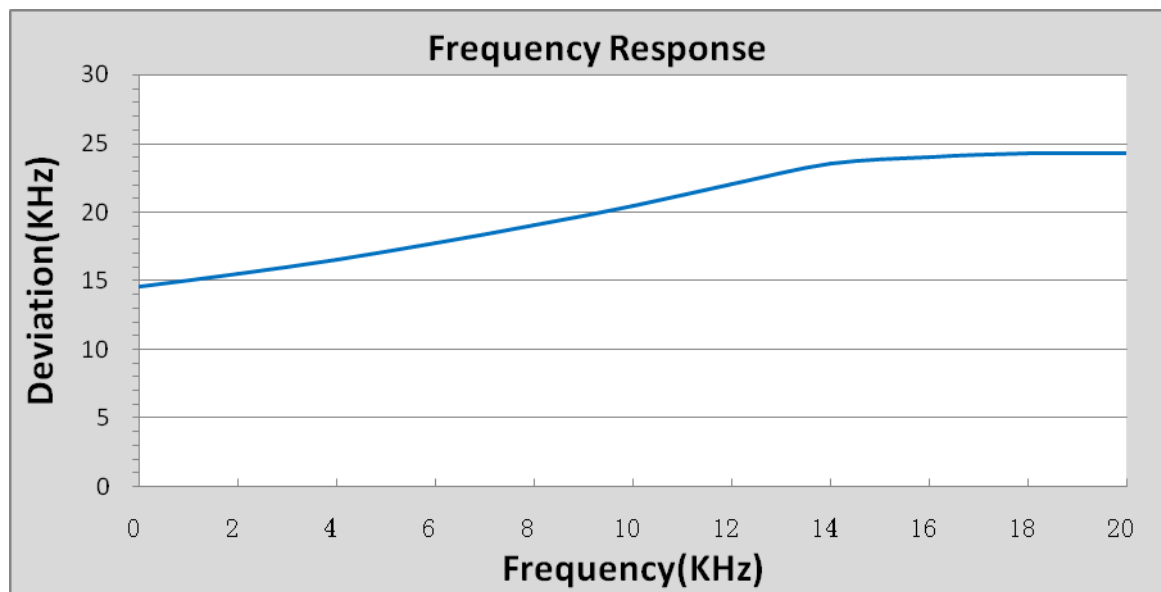
EUT :	IN EAR MONITOR Stereo Transmitter	Model Name :	EM-100
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode		

CH 1(565.050MHz)





CH 100(589.800MHz)



6. OCCUPIED BANDWIDTH OF EMISSION

6.1 APPLIED PROCEDURES / LIMIT

Test requirement: FCC CFR47 Part 2 Section 2.1049©(1)

Test method: Based on TIA/EIA-603-D-2010

Limit: According to FCC 74.861 (e)(5), the frequency emission bandwidth shall not exceed 200 kHz.

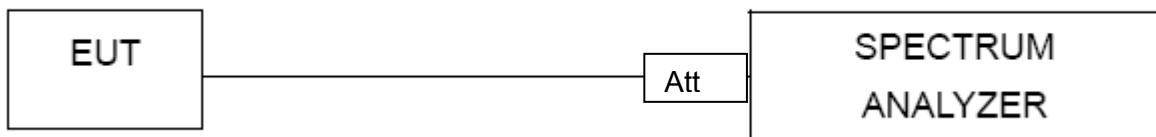
6.1.1 TEST PROCEDURE

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 set it to any one convenient frequency within its operating range.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

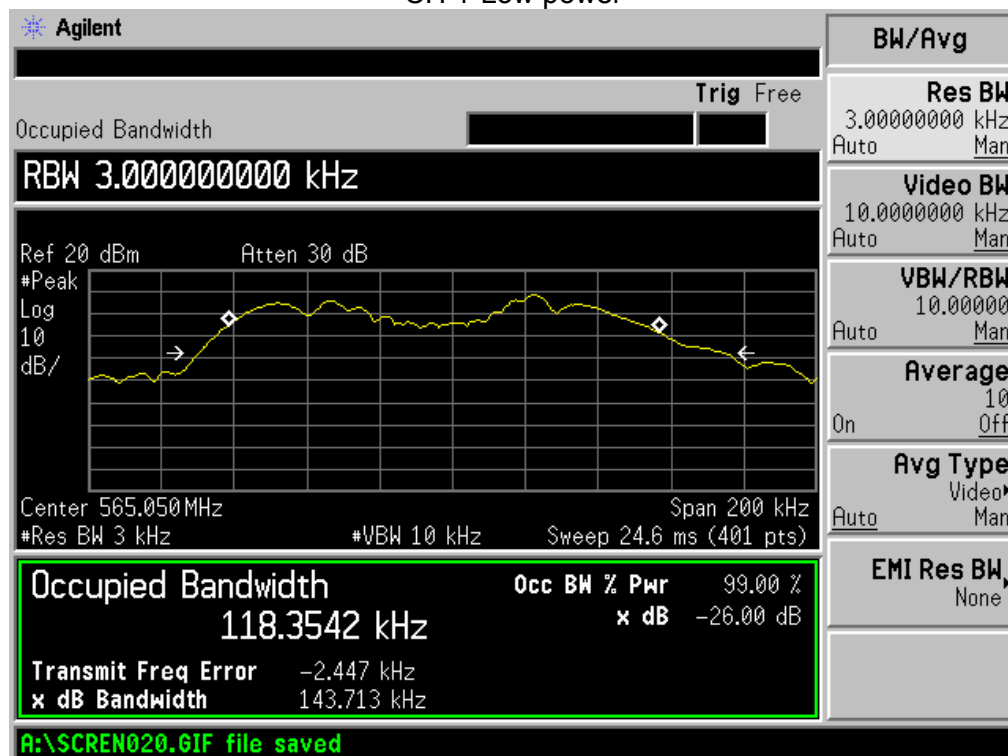
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

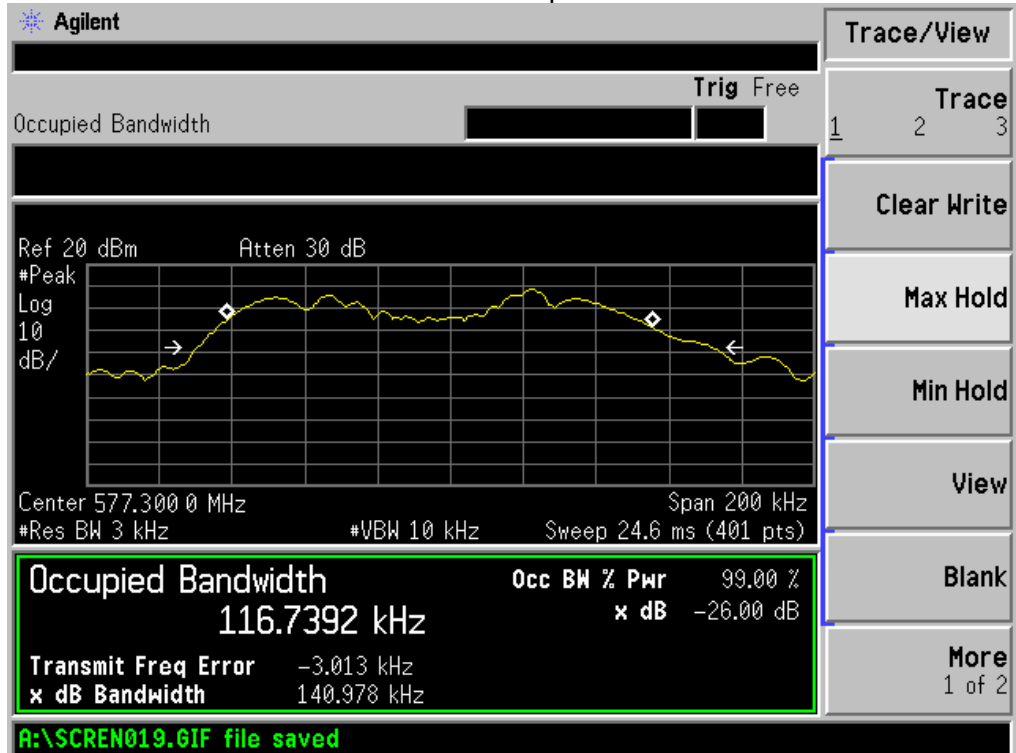
EUT :	IN EAR MONITOR Stereo Transmitter	Model Name :	EM-100
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode		

Frequency MHz	99% Bandwidth (kHz)	Limit (kHz)	Result
Low Power			
565.050	118.3542	200	PASS
577.300	116.7392	200	PASS
589.800	119.8108	200	PASS
High Power			
565.050	118.3182	200	PASS
577.300	116.3262	200	PASS
589.800	119.8605	200	PASS

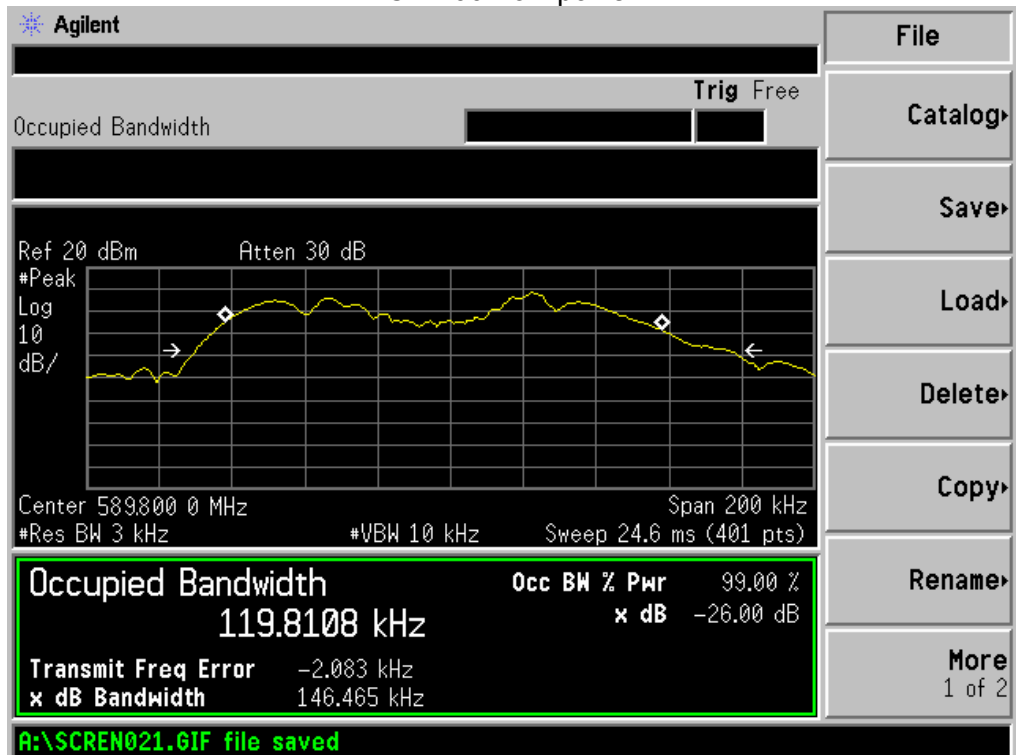
CH 1-Low power



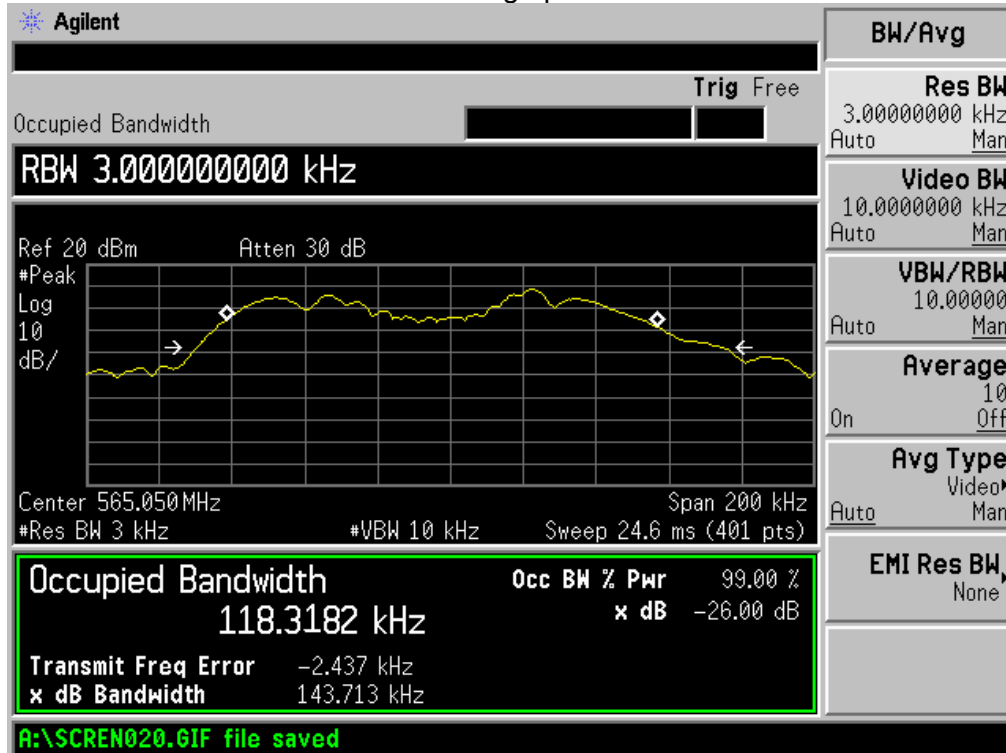
CH 50-Low power



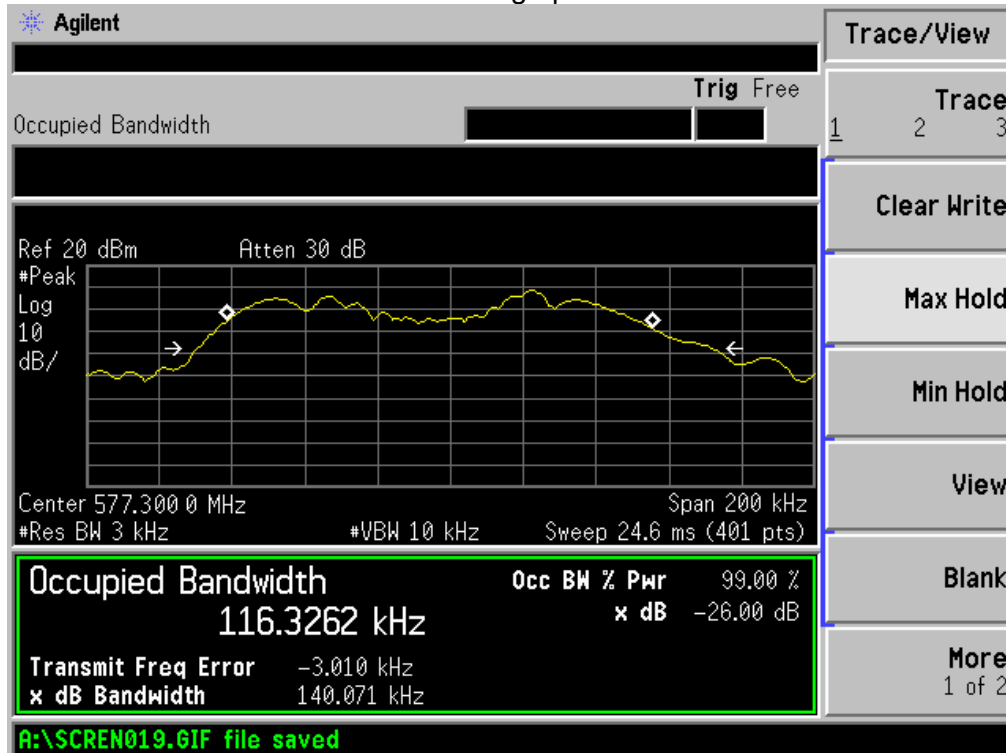
CH 100-Low power

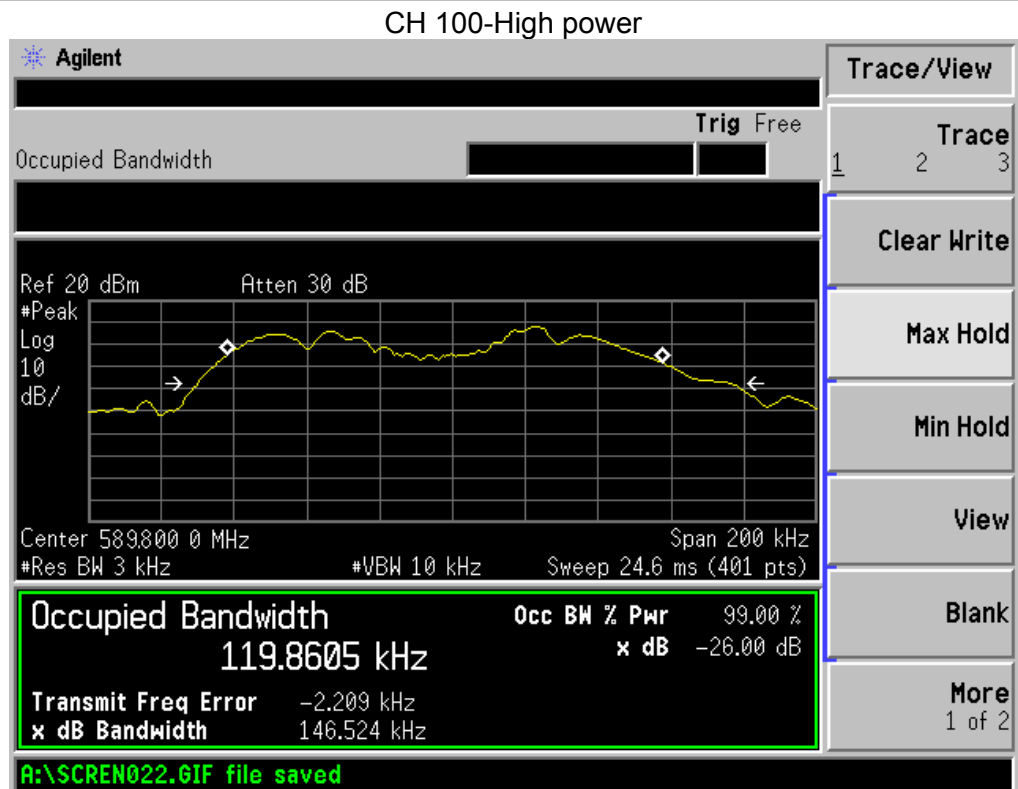


CH 1-High power



CH 50-High power





7. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test requirement: FCC CFR47 Part 2 Section 2.1053

Test method: Based on TIA/EIA-603-D-2010

Limit: According to Part 74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(i) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.

(ii) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.

(iii) on any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least $43 + 10 \log$ (output power in watts)dB.

7.1 TEST PROCEDURE

1. Turn on the EUT and connect its antenna terminal to measurement instrument 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.
2. Set the SA on Max-Hold Mode, and then keep the EUT in transmitting mode. Record all the signals from each channel until each one has been recorded.
3. Set the SA on View mode and then plot the result on SA screen.
4. Repeat above procedures until all frequencies measured were complete.

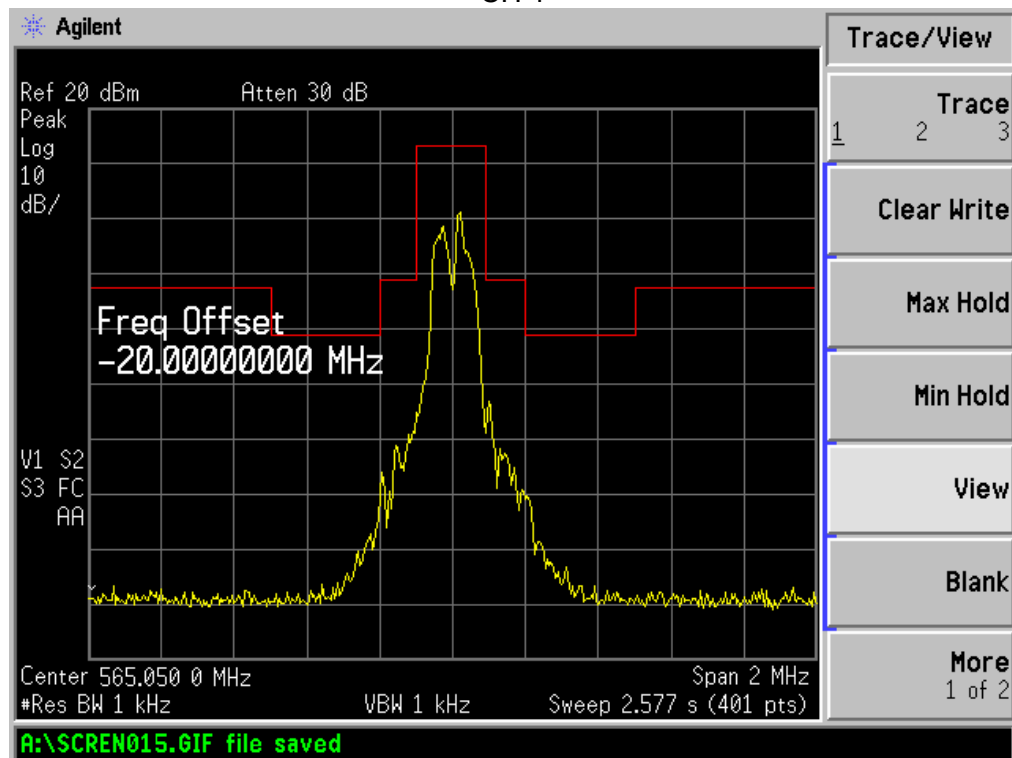
7.2 EUT OPERATION CONDITIONS

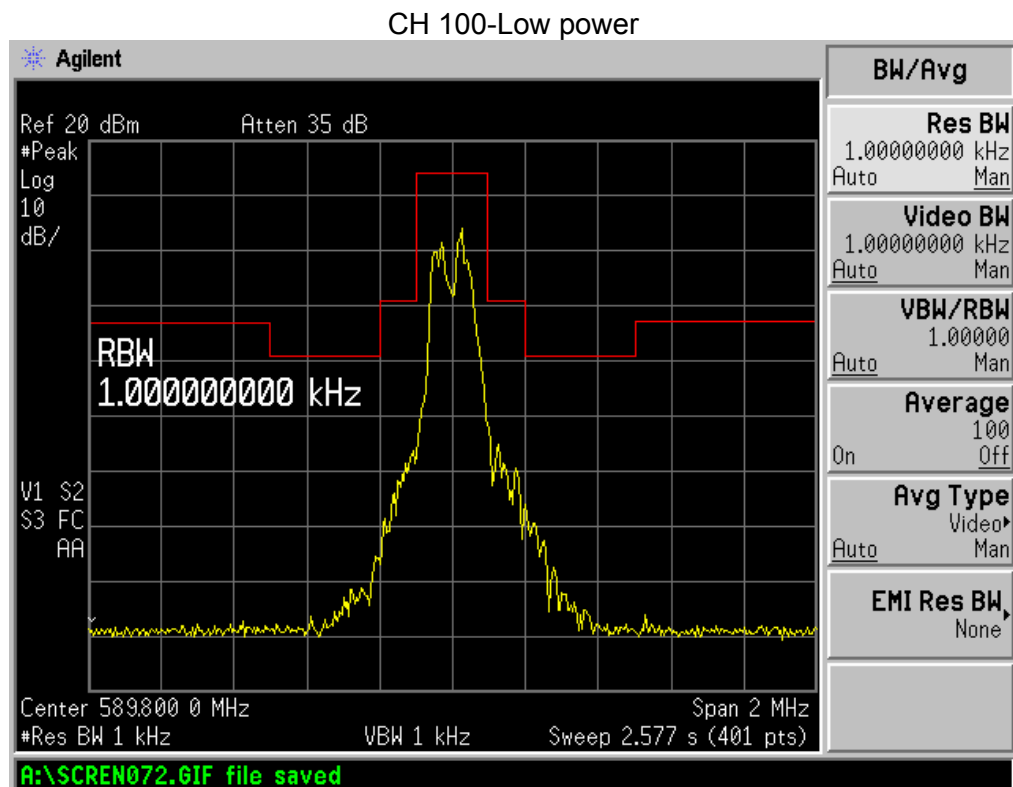
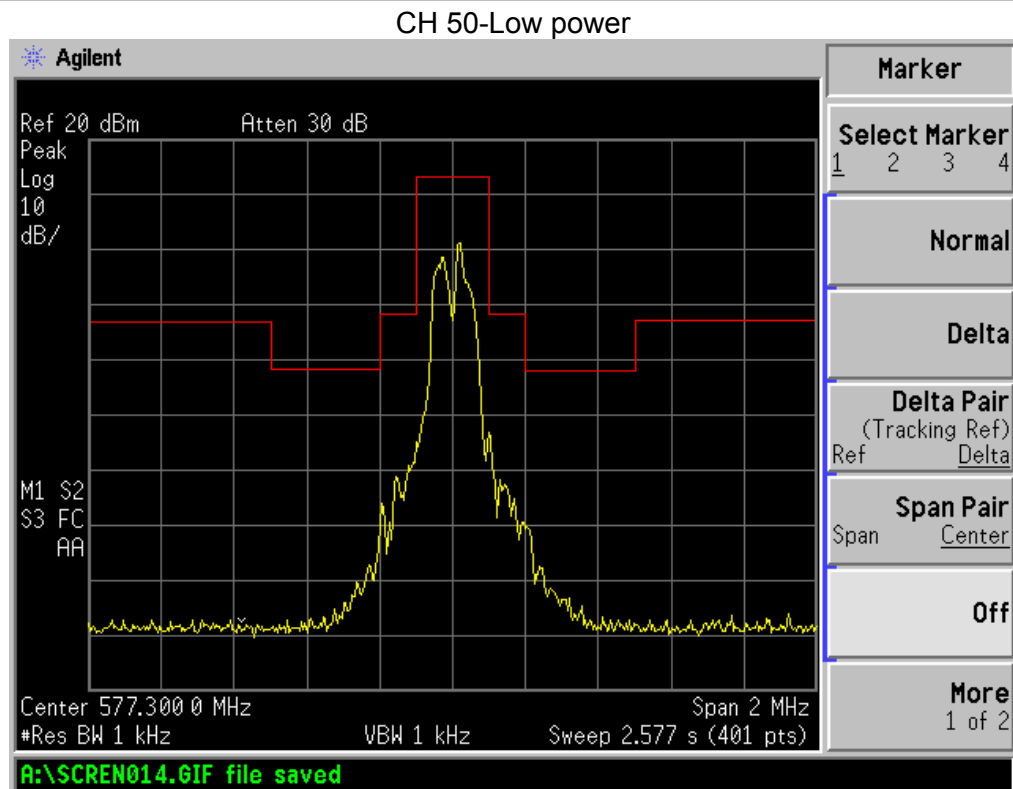
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.3 TEST RESULTS

EUT :	IN EAR MONITOR Stereo Transmitter	Model Name :	EM-100
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	AC 120V/60Hz

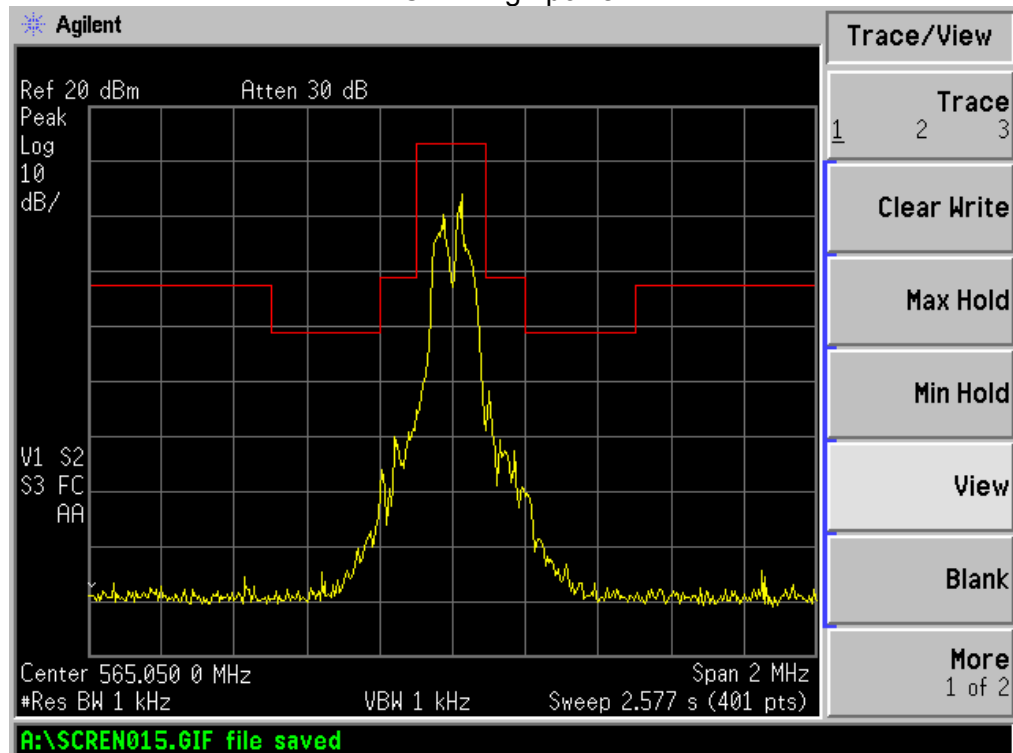
Emission Mask-Low power
CH 1



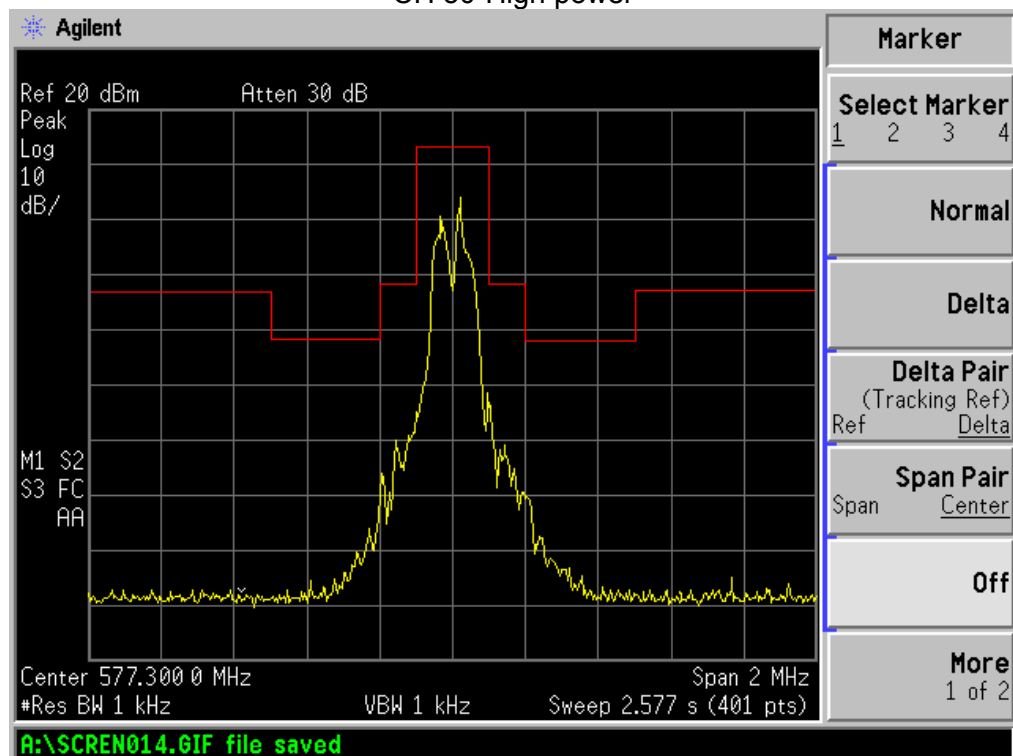


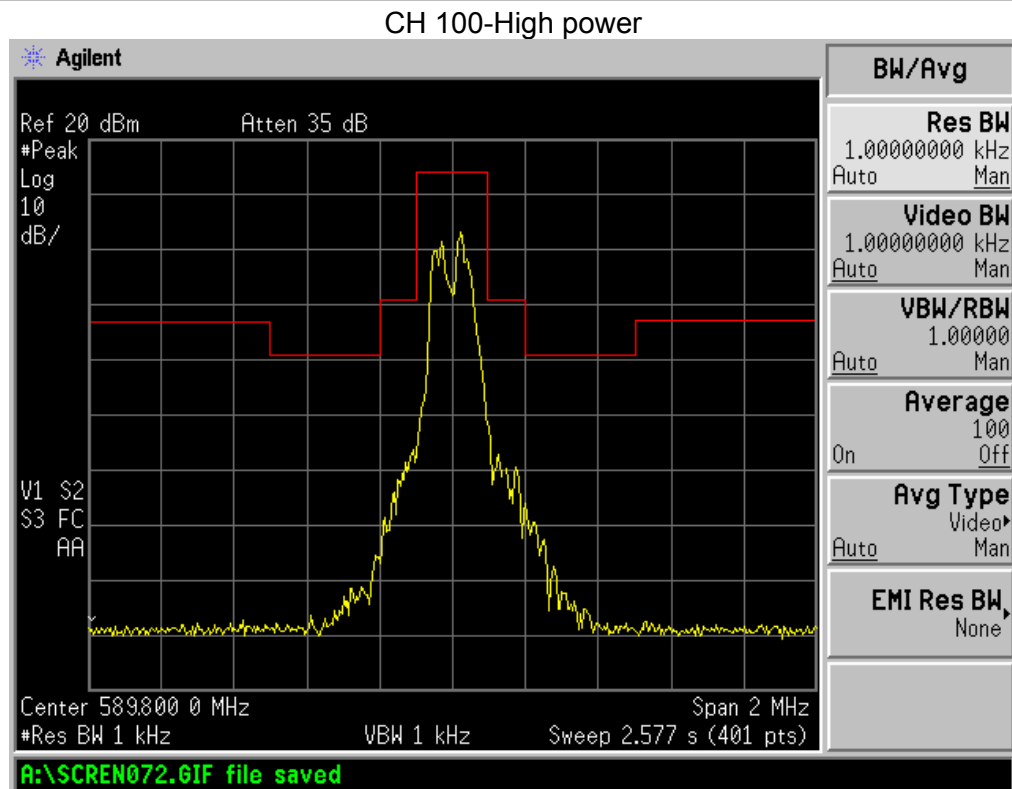
Emission Mask-High power

CH 1-High power

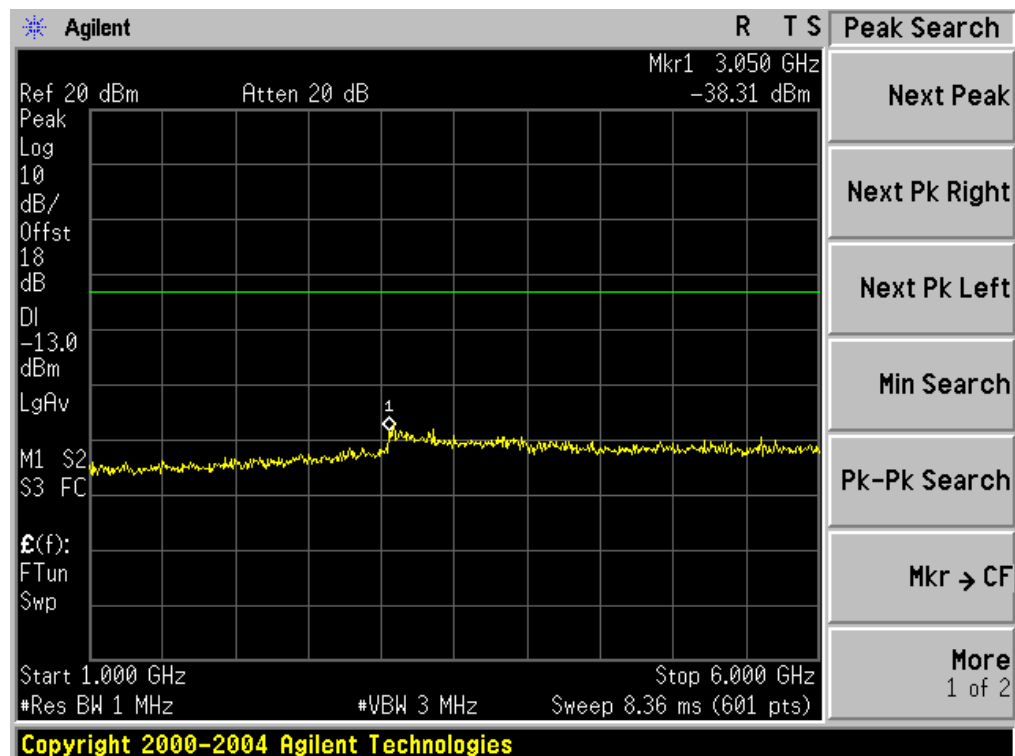
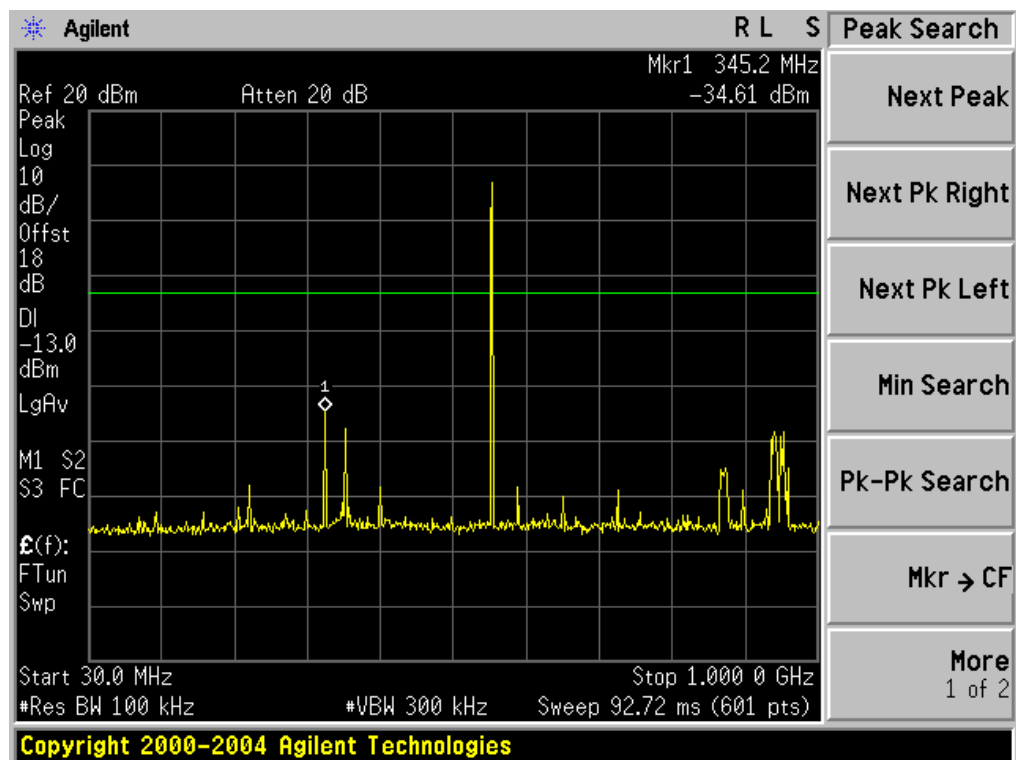


CH 50-High power

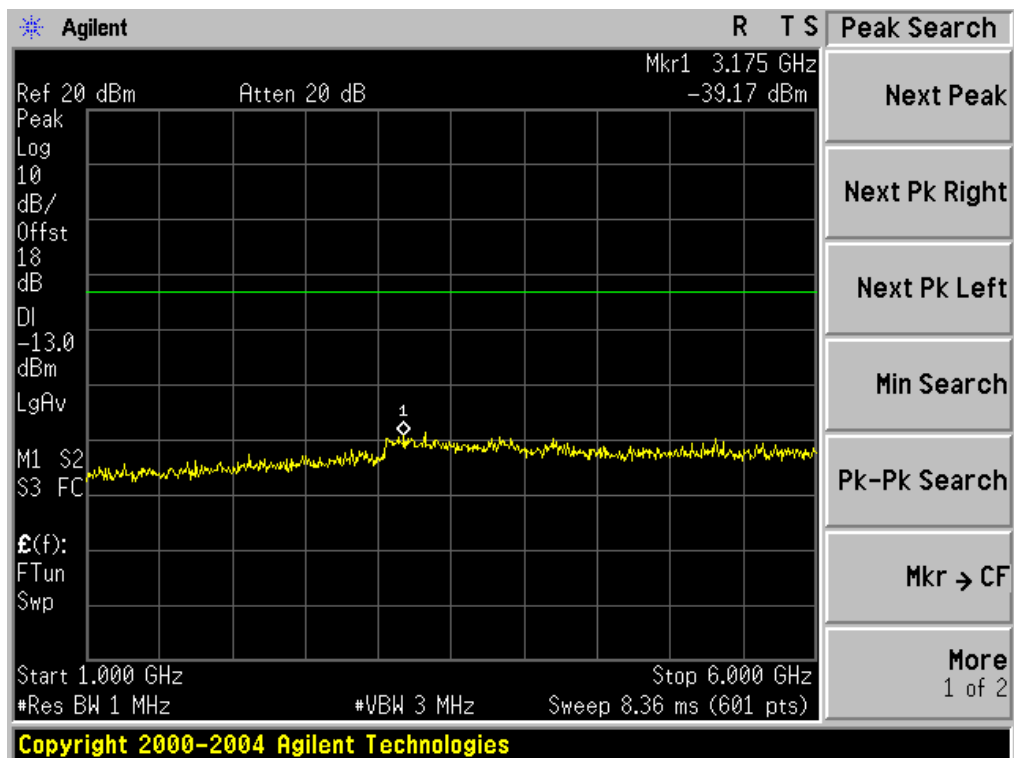
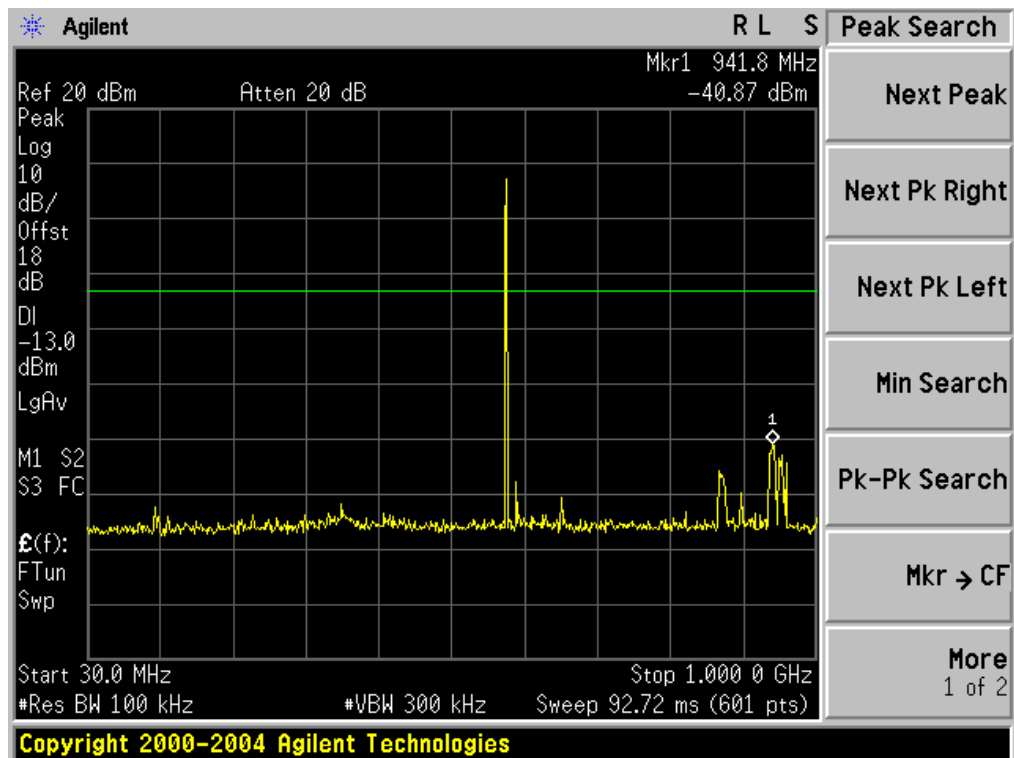


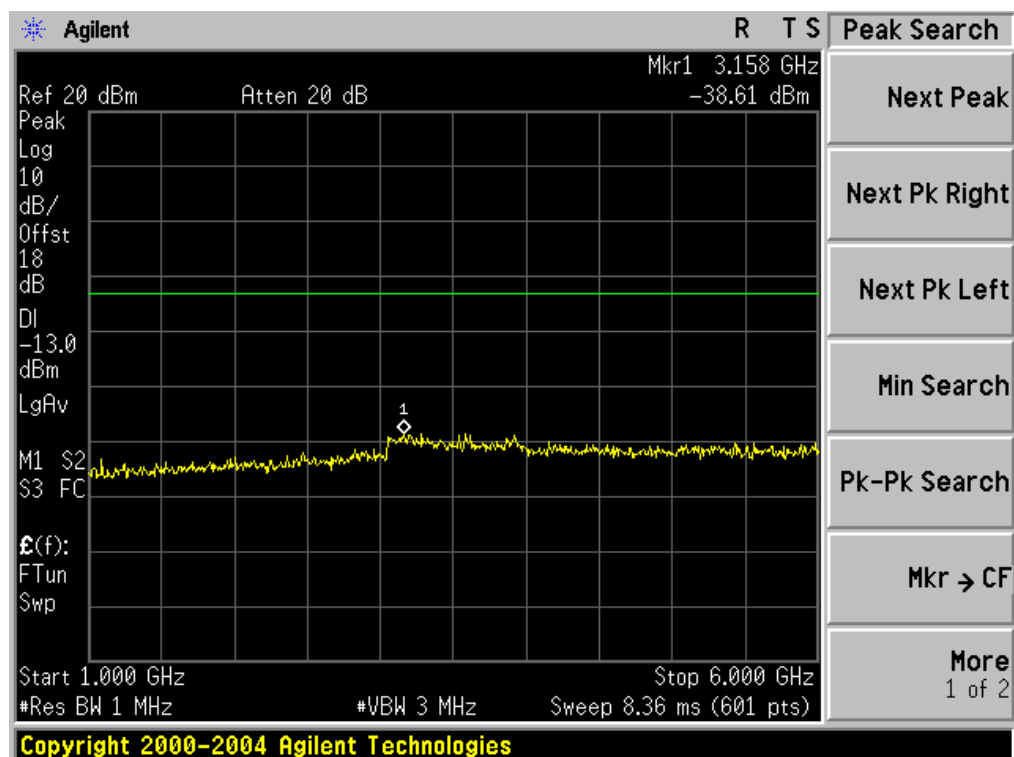
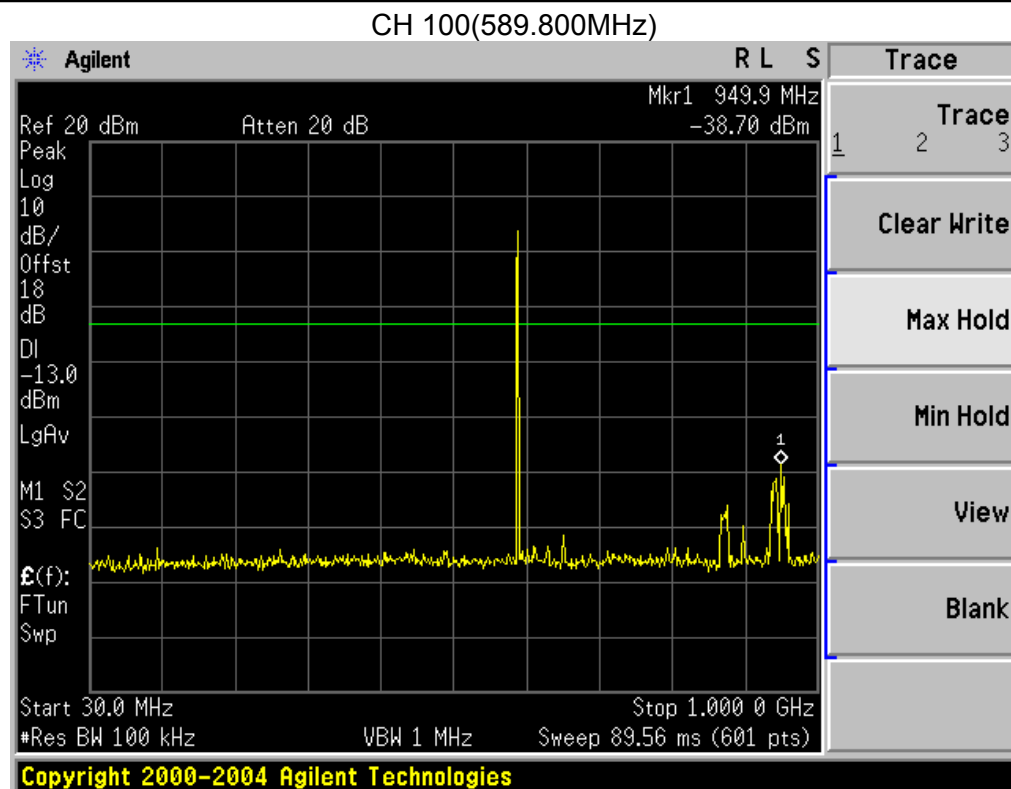


CH 1(565.050MHz)



CH 50(577.300MHz)





8. FREQUENCY STABILITY

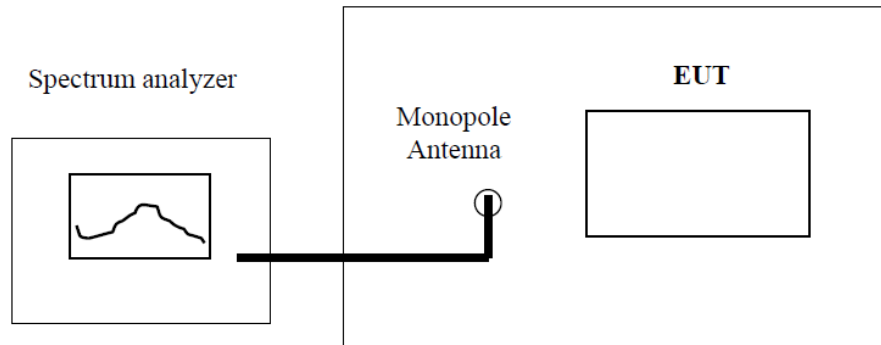
8.1 STANDARD REQUIREMENT

Test requirement: FCC CFR47 Part 2 Section 2.1055(a)(a)

Test method: Based on TIA/EIA-603-D-2010

Limit: According to FCC 74.86(e)(4), the frequency tolerance of the transmitter shall be 0.005 percent.

8.2 TEST CONFIGURATION



8.3 TEST PROCEDURE

A) Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at an environmental chamber whose temperature is set to 20 °C. Install new batteries in the EUT.
2. Set SA center frequency to the EUT operation frequency. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

B) Frequency stability versus environmental temperature

1. Setup the configuration per figure 1 for frequencies measured at an environmental chamber, Install new batteries in the EUT.
2. Turn on EUT and set SA center frequency to the EUT operation frequency, then set SA RBW to 30kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. Set the temperature of chamber to 50°C. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measurement frequencies.

8.4 TEST RESULT

CH 1(565.050MHz)

a) Frequency stability versus input voltage

Power Supply	Reference Frequency (MHz)	Environment Temperature (°C)	Frequency Measured	Frequency Tolerance (%)
AC 102V	565.050	20	565.046	0.00066
AC 138V	565.050	20	565.054	0.00079

b) Frequency stability versus environmental temperature

Environment Temperature(°C)	Power Supply	Frequency Deviation measured with time Elapse(30 minutes)	
		MHz	%
50	AC 120V/60Hz	565.052	0.00040
40	AC 120V/60Hz	565.047	0.00047
30	AC 120V/60Hz	565.048	0.00033
20	AC 120V/60Hz	565.049	0.00017
10	AC 120V/60Hz	565.051	0.00026
0	AC 120V/60Hz	565.047	0.00057
-10	AC 120V/60Hz	565.050	0.00003
-20	AC 120V/60Hz	565.052	0.00031
-30	AC 120V/60Hz	565.044	0.00099

CH 50(577.300MHz)

a) Frequency stability versus input voltage

Power Supply	Reference Frequency (MHz)	Environment Temperature (°C)	Frequency Measured	Frequency Tolerance (%)
AC 102V	577.300	20	577.297	0.00045
AC 138V	577.300	20	577.298	0.00041

b) Frequency stability versus environmental temperature

Environment Temperature(°C)	Power Supply	Frequency Deviation measured with time Elapse(30 minutes)	
		MHz	%
50	AC 120V/60Hz	577.301	0.00012
40	AC 120V/60Hz	577.295	0.00081
30	AC 120V/60Hz	577.306	0.00102
20	AC 120V/60Hz	577.295	0.00085
10	AC 120V/60Hz	577.303	0.00058
0	AC 120V/60Hz	577.303	0.00053
-10	AC 120V/60Hz	577.295	0.00090
-20	AC 120V/60Hz	577.298	0.00029
-30	AC 120V/60Hz	577.299	0.00019

CH 100(589.800MHz)

a) Frequency stability versus input voltage

Power Supply	Reference Frequency (MHz)	Environment Temperature (°C)	Frequency Measured	Frequency Tolerance (%)
AC 102V	589.800	20	589.797	0.00045
AC 138V	589.800	20	589.796	0.00064

b) Frequency stability versus environmental temperature

Environment Temperature(°C)	Power Supply	Frequency Deviation measured with time Elapse(30 minutes)	
		MHz	%
50	AC 120V/60Hz	589.796	0.00069
40	AC 120V/60Hz	589.802	0.00030
30	AC 120V/60Hz	589.806	0.00096
20	AC 120V/60Hz	589.799	0.00012
10	AC 120V/60Hz	589.806	0.00098
0	AC 120V/60Hz	589.803	0.00055
-10	AC 120V/60Hz	589.803	0.00046
-20	AC 120V/60Hz	589.797	0.00059
-30	AC 120V/60Hz	589.796	0.00064

9. EUT TEST PHOTO

Radiated Measurement Photos

