Test Report No.: FC120424N003

TEST REPORT

To:	Sun-Mate Corporation H.K. Ltd.
Address:	Room 1606 Futura Plaza 111 How Ming Street, Kwun Tong, Kln, Hong Kong

Manufacturer or Supplier	MEILI ELECTRONIC FACTORY DA LANG DONG GUAN
Address	SHUI PING MANGENMENT AREA, DA LANG TOWN, DONG GUAN CITY, GUANG DONG, CHINA
Product:	Walkie talkie
Brand Name:	N/A
Model:	5370
Date of tests:	April. 24, 2012~ April. 27, 2012

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

☒ **FCC Part 15, Subpart C (Section 15.235**)

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

Prepared by Glyn He Project Engineer / EMC Department	Approved by Sam Tung Manager / EMC Department
Glyn	
	Date: April.27, 2012

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Apr. 27, 2012

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.235)			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
§15.203	Antenna Requirement	PASS	Compliant
§15.207 (a)	Conducted Emission	N/A	N/A
§15.209 §15.235(a)	Radiated Emission	PASS	Compliant
§15.235(b)	Measured Bandwidth	PASS	Compliant

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	2.44dB
Radiated emissions	30MHz ~ 200MHz	3.19dB
	200MHz ~1000MHz	3.21dB
	1GHz ~ 18GHz	2.26dB
	18GHz ~ 40GHz	1.94dB

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	Walkie talkie
MODEL NO.	5370
ADDITIONAL MODEL & MODEL DIFFERENCE:	N/A
FCC ID	T96SUN-5370
NOMINAL VOLTAGE	DC 9V By Battery
MODULATION TYPE	FM
OPERATING FREQUENCY	49.86MHz
NUMBER OF CHANNEL	1
ANTENNA TYPE	Integral External Antenna,
I/O PORTS	N/A
DATA CABLE SUPPLIED	N/A

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. The EUT was powered by the following adapters:

ADAPTER	
BRAND:	N/A
MODEL:	N/A
INPUT:	N/A
OUTPUT:	N/A
DC LINE:	N/A

3.2 DESCRIPTION OF TEST MODES

The EUT was tested under the following modes' the final worst mode were marked in boldface and recorded in this report.

FREQUENCY	TEST MODES
49.86MHz	Transmitting

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 (15.235)
ANSI C63.4-2003
ANSI C63.10-2009

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 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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A				

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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

According to §15.235(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission [Peak] [μV/m]	Field Strength of Fundamental Emission [Average] [μV/m]
49.82 – 49.90	100,000 (100 dBμV/m)	10,000 (80 dBμV/m)

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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY46180622	May 02, 12	May 01, 13
Test Receiver ROHDE & SCHWARZ	ESVD	847398/003	May 25,11	May 25,12
Bilog Antenna TESEQ	CBL 6111D	27089	Jul 24,11	Jul 24,12
10m Semi-anechoic Chamber ETS-LINDGREN	21.4m*12.1m*8.8m	NSEMC006	Mar 24,12	Mar 23,13
RF Cable IMRO	IMRO-400	10m Cable 1#10m	May 16,12	May 15,13
RF Cable IMRO	IMRO-400	10m Cable 2#3m	May 16,12	May 15,13
Signal Amplifier EMCI	EMC330	980095	Nov 07,11	Nov 07,12
Spectrum Analyzer HP	8593E	3448U00806	May 25,11	May 25,12
RF Cable DRAKA	M06/25-RG102	10m Cable 2#	May 16,12	May 15,13
Test software	ADT_Radiated_V7.6.15	N/A	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.

2. The test was performed in Dongguan Chamber 10m.

4.1.3 TEST PROCEDURES

The basic test procedure was in accordance with ANSI C63.4 (section 12).

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters Semi-anechoic chamber room. 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. The height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. 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 new battery. The turntable was rotated to maximize the emission level.

g. 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.

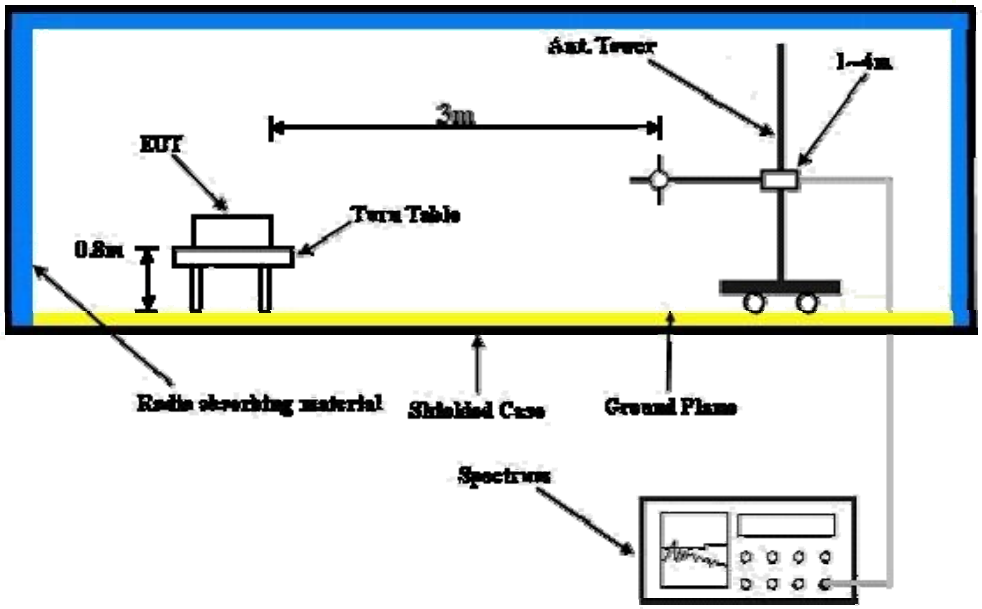
NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
3. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
4. Margin value = Emission level – Limit value.
5. Fundamental AV value =PK Emission +duty cycle.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

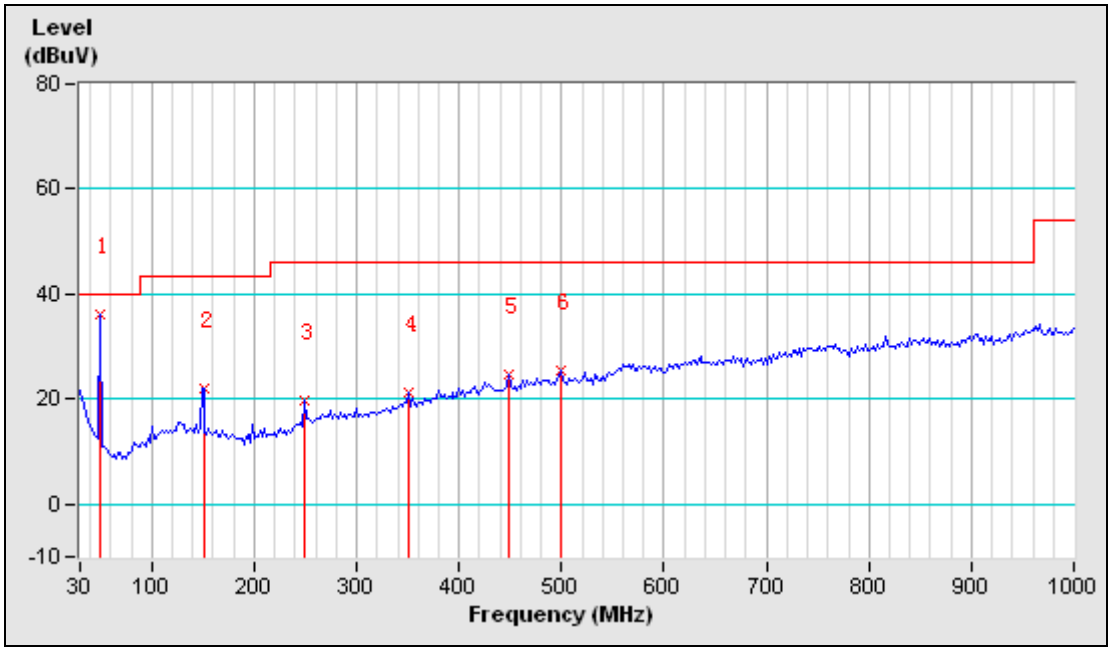
4.1.6 EUT OPERATING CONDITIONS

a. Turn on the EUT by a 9V battery,
b. 1 KHz audio signal from the audio generator output port to the MIC. Of the EUT
c. Enable EUT under transmission condition continuously at specific channel frequency.

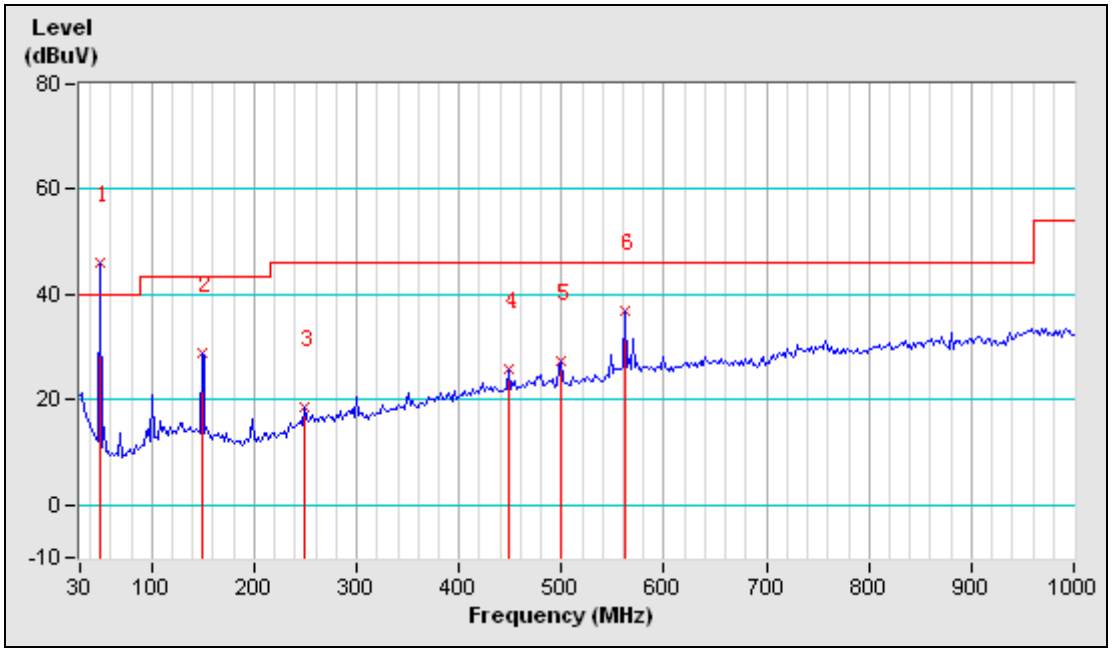
4.1.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA: Transmitting

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	*49.86(PK)	10.48	27.96	38.44	100	-61.56	300	36
	*49.86(AV)	10.48	26.68	37.16	80	-42.84	300	54
2	150.28(PK)	12.68	9.33	22.01	43.5	-21.49	360	150
3	249.22(PK)	14.48	5.29	19.77	46	-26.23	346	135
4	350.1(PK)	17.49	3.65	21.15	46	-24.85	375	220
5	449.04(PK)	20.89	3.86	24.76	46	-21.24	216	250
6	499.48(PK)	21.99	3.51	25.5	46	-20.5	350	122



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	*49.86(PK)	10.48	38.76	49.24	100	-50.76	150	44
	*49.86(AV)	10.48	37.23	47.71	80	-32.29	150	235
2	148.34(PK)	12.8	16.21	29.01	43.5	-14.49	150	63
3	249.22(PK)	14.48	4.19	18.67	46	-27.33	150	22
4	449.04(PK)	20.89	5.09	25.99	46	-20.01	100	11
5	499.48(PK)	21.99	5.33	27.32	46	-18.68	100	112
6	**561.56(PK)**	**24.69**	**12.14**	**36.83**	**46**	**-9.17**	**100**	**219**



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).

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

4. Margin value = Emission level – Limit value.

5. " * ": Fundamental frequency.

4.2 BANDWIDTH MEASUREMENT

4.2.1 LIMITS OF BANDWIDTH MEASUREMENT

The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in Section 15.209.

FREQUENCY (MHz)	Limits [MHz]
49.86	within 49.81~49.91

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E7405A	MY45118807	May 25,11	May 25,12

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA

2. The test was performed in Dongguan Chamber RF

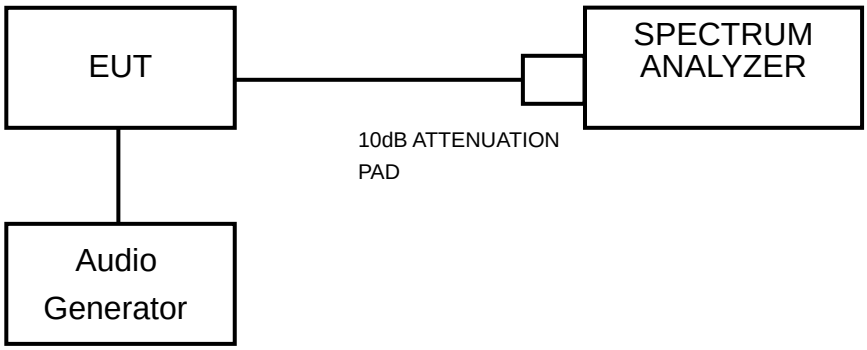
4.2.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 1kHz RBW. The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



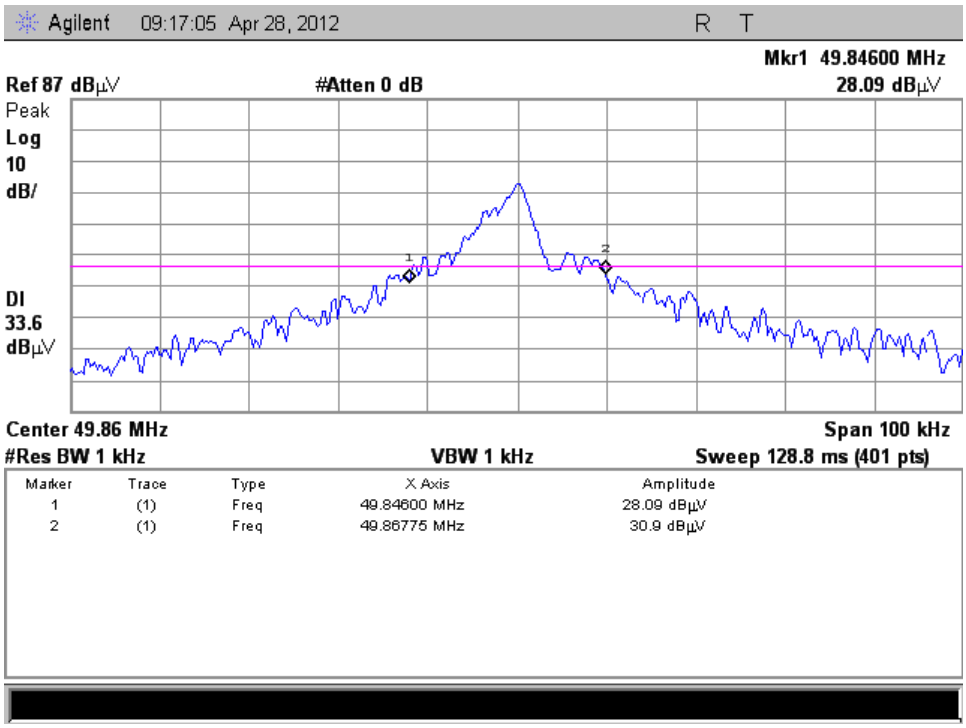
4.2.6 EUT OPERATING CONDITIONS

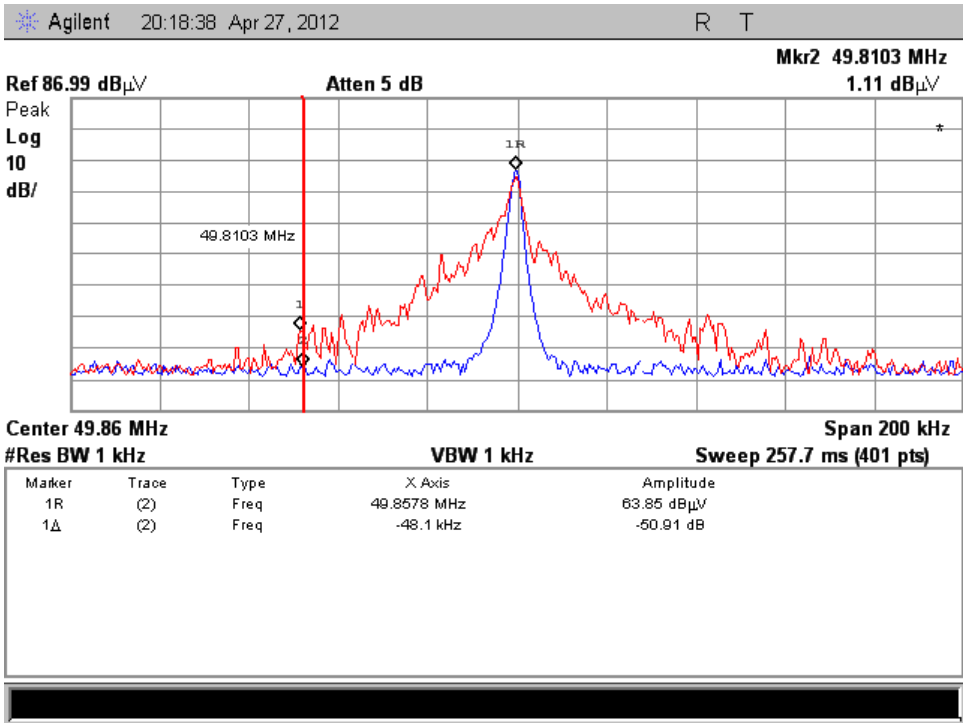
a. Turn on the EUT by a 9V battery.
b. 1KHz audio signal from the audio generator output port to the MIC. Of the EUT
c. With the EUT's antenna attached, which was connected to the spectrum analyzer set to the EUT's operation frequencies.

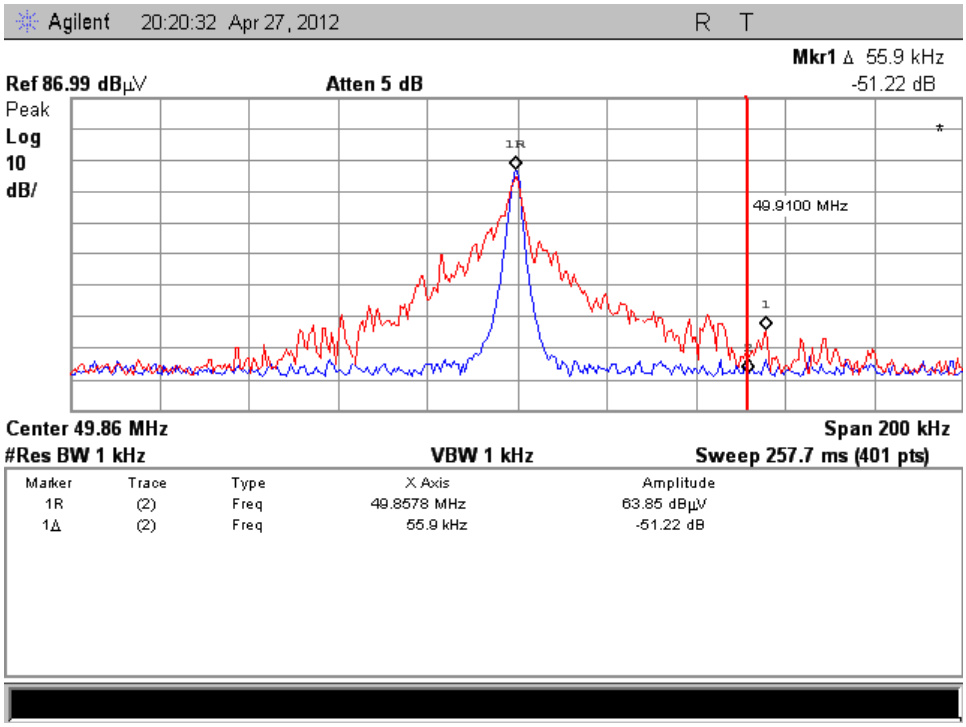
4.2.7 TEST RESULTS

Lower & Upper Test Frequency Point (MHz)	Test Frequency (MHz)	P/F
Lower	49.84600	PASS
Upper	49.86775	PASS

Test Data:




Agilent 20:18:38 Apr 27, 2012
R T
Mkr2 49.8103 MHz
Ref 86.99 dBµV
Atten 5 dB
1.11 dBµV
Peak
Log
10
dB/
1R
49.8103 MHz
Center 49.86 MHz
Span 200 kHz
#Res BW 1 kHz
VBW 1 kHz
Sweep 257.7 ms (401 pts)
Marker Trace Type X Axis Amplitude
1R (2) Freq 49.8578 MHz 63.85 dBµV
1Δ (2) Freq -48.1 kHz -50.91 dB


Agilent 20:20:32 Apr 27, 2012
R T
Mkr1 Δ 55.9 kHz
Ref 86.99 dBµV
Atten 5 dB
-51.22 dB
Peak
Log
10
dB/
1R
49.9100 MHz
Center 49.86 MHz
Span 200 kHz
#Res BW 1 kHz
VBW 1 kHz
Sweep 257.7 ms (401 pts)
Marker Trace Type X Axis Amplitude
1R (2) Freq 49.8578 MHz 63.85 dBµV
1Δ (2) Freq 55.9 kHz -51.22 dB

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.

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