FCC Test Report

Report No.: AGC10091010SZ02F2C

FCC ID	:	YTKH-BOX
PRODUCT DESIGNATION	:	Wireless Telehealth Hub
BRAND NAME	:	Boston Life Labs
TEST MODEL	:	H-Box
CLIENT	:	Boston Life Labs LLC
DATE OF ISSUE	:	Nov.06, 2010
STANDARD(S)	:	FCC Part 15 Rules

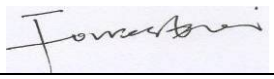
Attestation of ***G***lobal ***C***ompliance Co., Ltd.

VERIFICATION OF COMPLIANCE

Applicant	Boston Life Labs LLC.
	Cambridge Innovation Center,One Broadway 14th, Cambridge,MA 02142,USA
Manufacturer	Boston Life Labs LLC.(Shenzhen)
	2106C,block C,Tin Lee Central Square,Nanshan District,Shenzhen City.
Product Designation	Wireless Telehealth Hub
Brand Name	Boston Life Labs
Test Model	H-Box
FCC ID	YTKH-Box
Report Number	AGC10091010SZ02F2C
Date of Test	Oct.26, 2010 to Oct.29, 2010

WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.247.

Checked By: 

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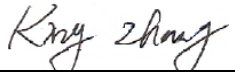
Authorized By 

King Zhang Nov.06, 2010

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a **wireless Telehealth Hub** designed as an “Communication Device”. It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
Rated Output Power	1.12 dBm
Modulation	GFSK
Number of channels	79
Antenna Designation	Integrated Antenna
Antenna Gain	0.8dBi
Power Supply	DC3.7V by battery(battery charged by adapter,adapter input AC120V)

1.2 TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	:	:
	77	2479 MHZ
	78	2480 MHZ

1.3 RECEIVER INPUT BANDWIDTH AND BEHAVIOUR FOR REPEATED SINGLE OR MULTIPLE PACKETS

The input bandwidth of the receiver is 1MHZ,In every connection one Bluetooth device is the master and the other one is slave.The master determines the hopping sequence.The slave follows this sequence.Both devices shift between RX and TX time slot according to the clock of the master.Additionally the type of connection(e.g. single of multislot packet) is set up at the beginning of the connection.The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection.Also the slave of the connection will use these settings.
Repeating of a packet has no influence on the hopping sequence.The hopping sequence generated by the master of the connection will be followed in any case.That means,a repeated packet will not be send on the same frequency,it is send on the next frequency of the hopping sequence.

1.4 EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE

Example of a 79 hopping sequence in data mode:
40,21,44,23,42,53,46,55,48,33,52,35,50,65,54,67
56,37,60,39,58,69,62,71,64,25,68,27,66,57,70,59
72,29,76,31,74,61,78,63,01,41,05,43,03,73,07,75
09,45,13,47,11,77,15,00,64,49,66,53,68,02,70,06
01,51,03,55,05,04

1.5 EQUALLY AVERAGE USE OF FREQUENCIES IN DATA MODE AND BEHAVIOUR FOR SHORT TRANSMISSIONS

The generation of the hopping sequence in connection mode depends essentially on two input values:
1 LAP/UAP of the master of the connection
2 Internal master clock
The LAP(lower address part) are the 24 LSB's of the 48 BD_ADDRESS.The BD_ADDRESS is an unambiguous number of every Bluetooth unit.The UAP(upper address part) are the 24MSB's of the 48BD_ADDRESS
The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and Is never turned off.For synchronisation with other units only offset are used.It has no relation to the time Of the day.Its resolution is at least half the RX/TX slot length of 312.5us.The clock has a cycle of about One day(23h30).In most case it is implemented as 28 bit counter.For the deriving of the hopping sequence the entire.
LAP(24 bits),4LSB's(4bits)(Input 1) and the 27MSB's of the clock(Input 2) are used.With this input values different mathematical procedures(permutations,additions,XOR-operations)are performed to generate te Sequence.This will be done at the beginning of every new transmission.
Regarding short transmissions the Bluetooth system has the following behaviour:
The first connection between the two devices is established,a hopping sequence was generated.For Transmitting the wanted data the complete hopping sequence was not used.The connection ended.
The second connection will be established.A new hopping sequence is generated.Due to the fact the Bluetooth clock has a different value,because the period between the two transmission is longer(and it Cannot be shorter)than the minimum resolution of the clock(312.5us).The hopping sequence will always Differ from the first one.

1.6 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: YTKH-BOX** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

1.7 TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.8 TEST FACILITY

All measurement facilities used to collect the measurement data are located at
Attestation of Global Compliance Co., Ltd.
1F., No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen
The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.
FCC register No.: 259865

1.9 SPECIAL ACCESSORIES

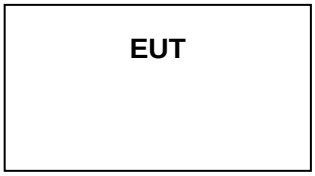
Not available for this EUT intended for grant.

1.10 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. SYSTEM TEST CONFIGURATION

2.1 CONFIGURATION OF TESTED SYSTEM



2.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID
1	Wireless Telehealth Hub	Boston Life Labs LLC.	H-Box	YTKH-BOX

3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.207	Conduction Emission	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Maximum Output Power	Compliant
§15.247	20 dB Bandwidth	Compliant
§15.247	Band Edges	Compliant
§15.247	Spurious Emission	Compliant
§15.247	Frequency Separation	Compliant
§15.247	Number of Hopping Frequency	Compliant
§15.247	Time of Occupancy	Compliant

4. DESCRIPTION OF TEST MODES

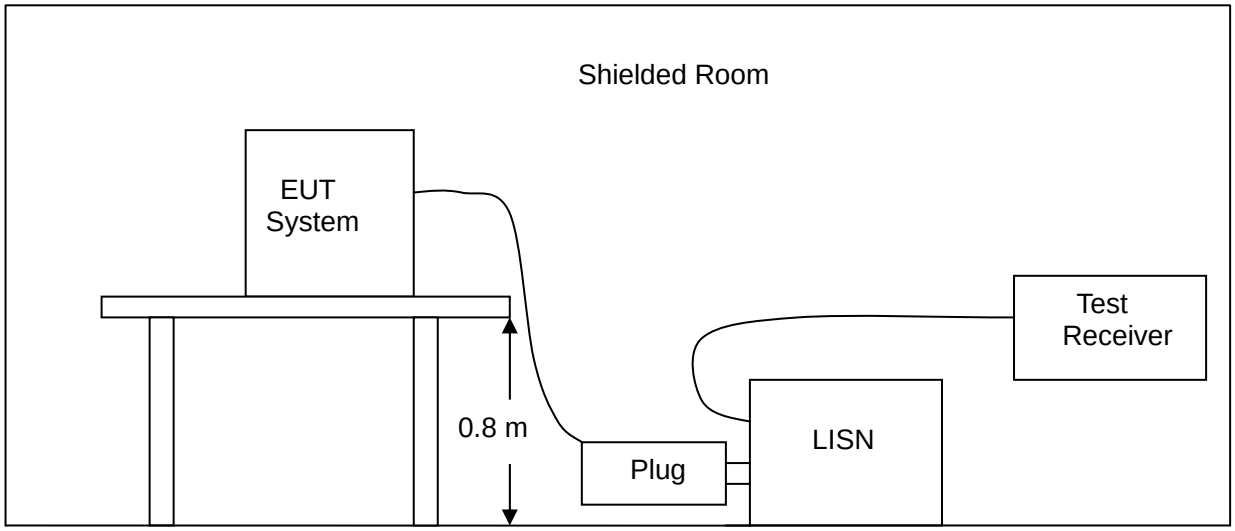
1. The EUT has been set to operate continuously on the lowest,middle and highest operation frequency individually.
2. The EUT stays in continuous transmitting mode on the operation frequency being set.

5. CONDUCTION EMISSIONS

5.1 MEASUREMENT PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4.
2. Support equipment, if needed, was placed as per ANSI C63.4.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4. The EUT received AC120V through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. Following is charging mode test data and It is the worst.

5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



5.3 MEASUREMENT EQUIPMENT USED

Conducted Emission Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Cal. Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	N/A	06/29/2010
LISN 1	Rohde & Schwarz	ESH3-Z5	N/A	06/29/2010
50Ω Coaxial Switch	Anritsu	MP59B	M20531	06/29/2010

5.4 LIMITS AND MEASUREMENT RESULT

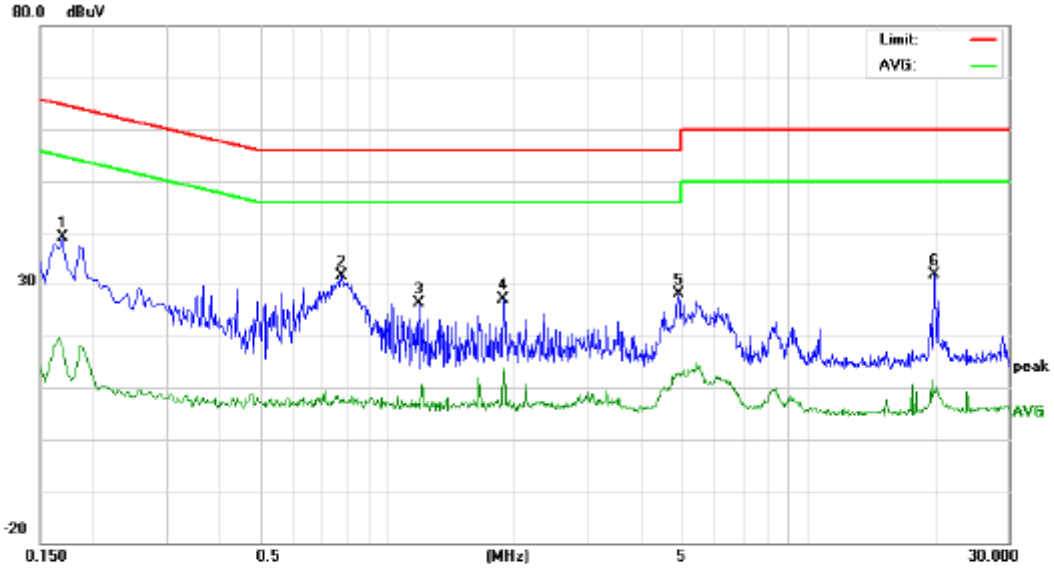
LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

1**Note: 1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

TEST RESULT OF LINE –L CONDUCTED EMISSION TEST

Conducted Emission Measurement



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Wireless Thelehealth Hub
M/N: HBox
Mode: Bluetooth
Note:

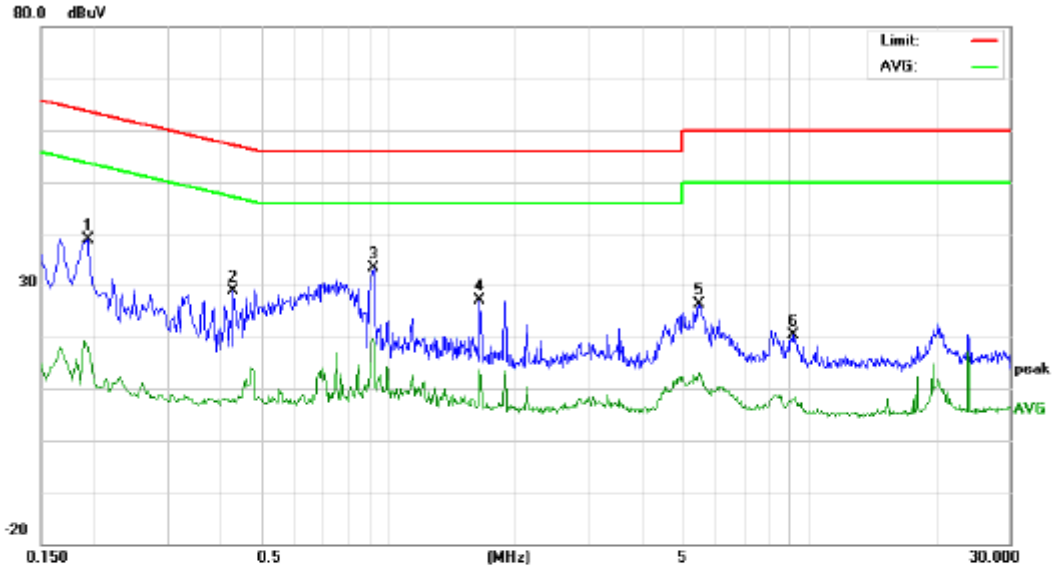
Phase: L1
Power:

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1700	28.91		7.61	10.18	39.09		17.79	64.96	54.96	-25.87	-37.17	P	
2	0.7820	21.22		-2.90	10.29	31.51		7.39	56.00	46.00	-24.49	-38.61	P	
3	1.1940	16.09		-3.63	10.37	26.46		6.74	56.00	46.00	-29.54	-39.26	P	
4	1.8940	16.94		2.39	10.25	27.19		12.64	56.00	46.00	-28.81	-33.36	P	
5	4.9340	17.92		2.48	10.24	28.16		12.72	56.00	46.00	-27.84	-33.28	P	
6	20.0140	21.66		-0.70	10.11	31.77		9.41	60.00	50.00	-28.23	-40.59	P	

TEST RESULT OF LINE –N CONDUCTED EMISSION TEST

Conducted Emission Measurement



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Wireless Telehealth Hub
M/N: H-BOX
Mode: Bluetooth
Note:

Phase: N
Power:

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1940	28.65	20.00	4.69	10.21	38.86	30.21	14.90	63.86	53.86	-33.65	-38.96	P	
2	0.4300	18.42		-2.28	10.35	28.77		8.07	57.25	47.25	-28.48	-39.18	P	
3	0.9260	22.99		8.69	10.40	33.39		19.09	56.00	46.00	-22.61	-26.91	P	
4	1.6620	16.88		3.34	10.33	27.21		13.67	56.00	46.00	-28.79	-32.33	P	
5	5.4860	16.11		2.80	10.25	26.36		13.05	60.00	50.00	-33.64	-36.95	P	
6	9.1899	10.11		-2.12	10.27	20.38		8.15	60.00	50.00	-39.62	-41.85	P	

6. MAXIMUM OUTPUT POWER

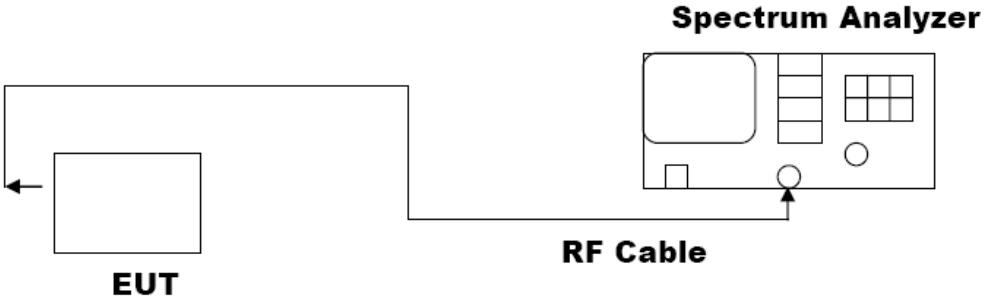
6.1 MEASUREMENT PROCEDURE

CONDUCTED METHOD
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Set SPA Centre Frequency = Operation Frequency, RBW= 3 MHz,
   VBW= 3 MHz.
5. Set SPA Trace 1 Max hold, then View.

RADIATED METHOD
According to ANSI C63.4:2003

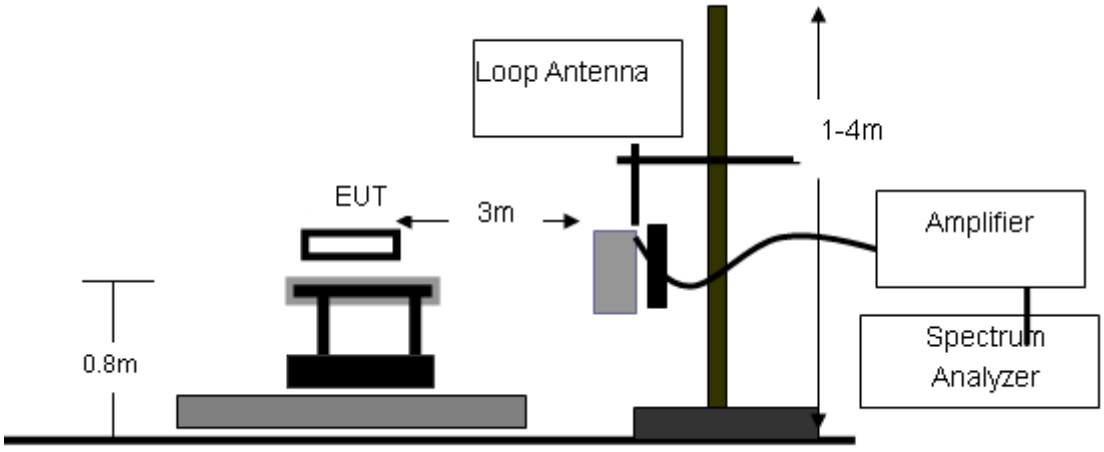
6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

CONDUCTED METHOD

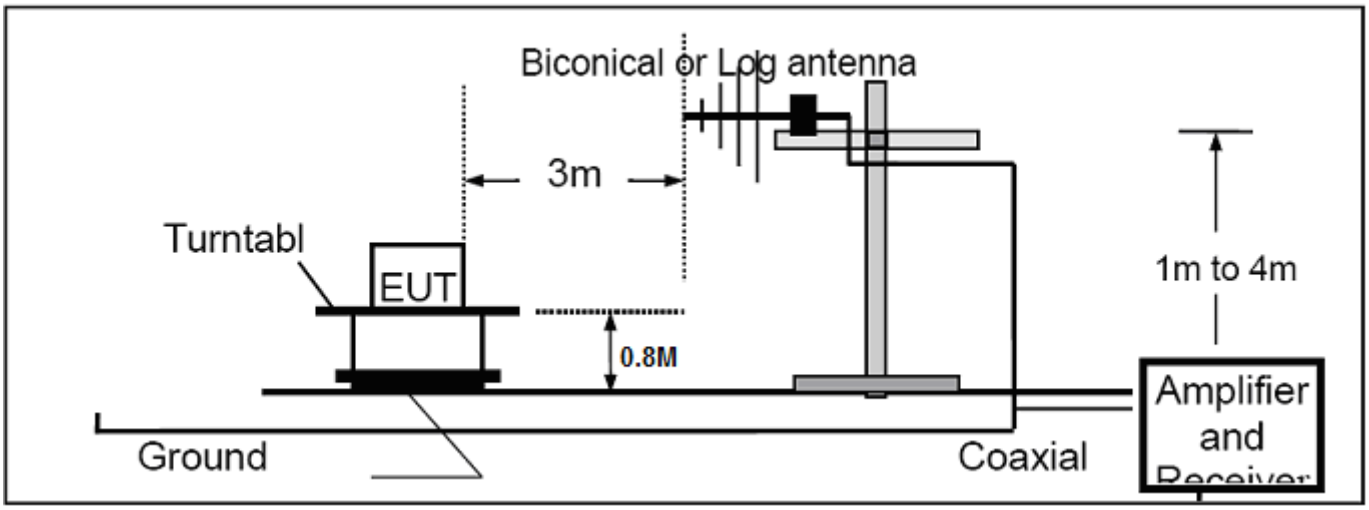


RADIATED EMISSION TEST SETUP

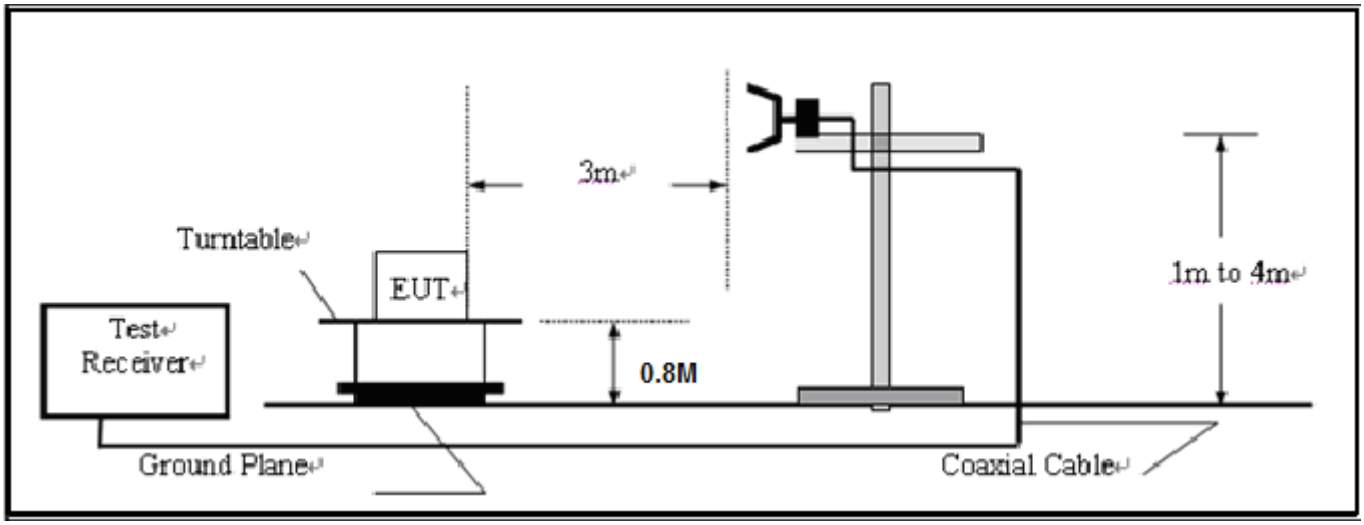
RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED MISSION TEST SETUP 30MHz-1000MHz

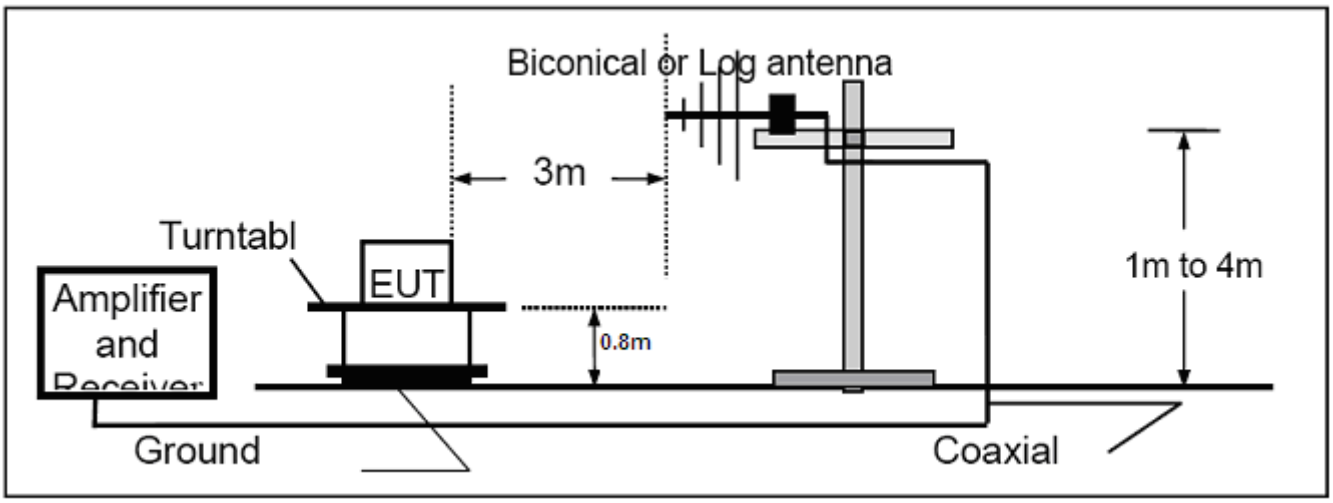


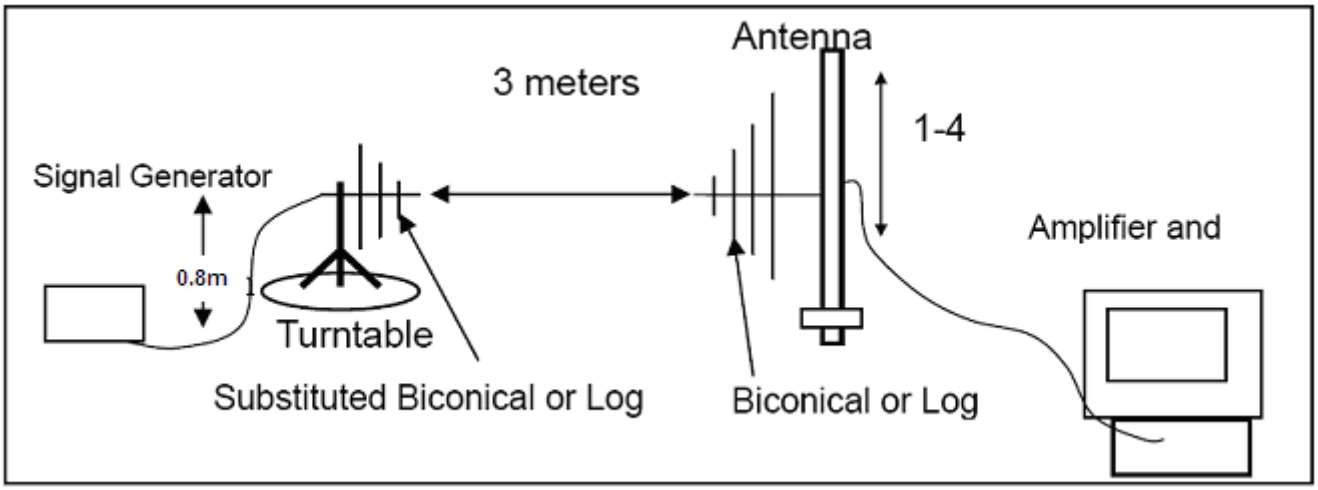
RADIATED MISSION TEST SETUP ABOVE 1000MHz



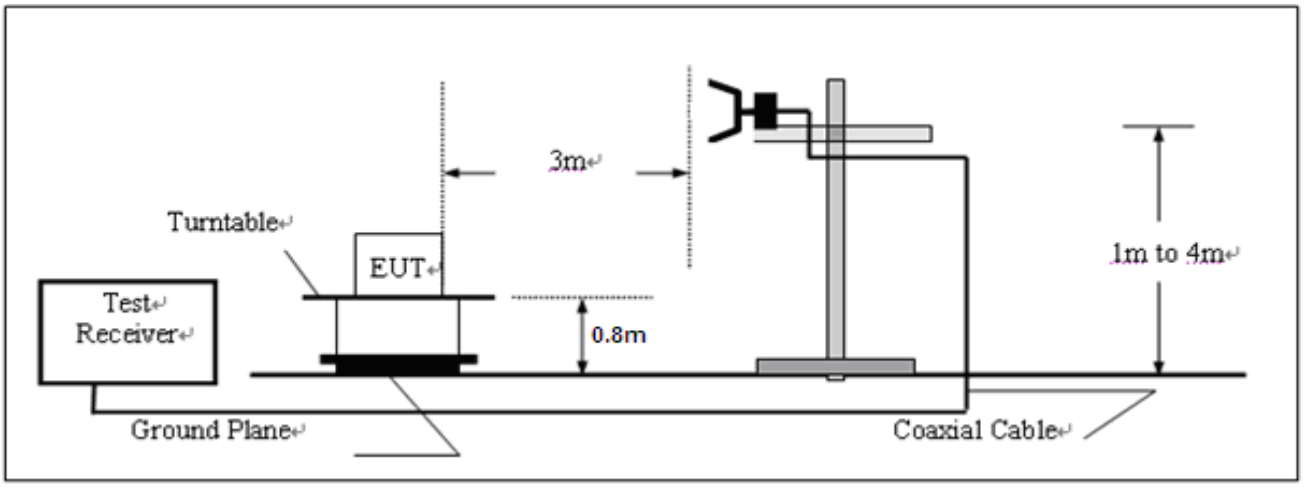
EIRP TEST SETUP

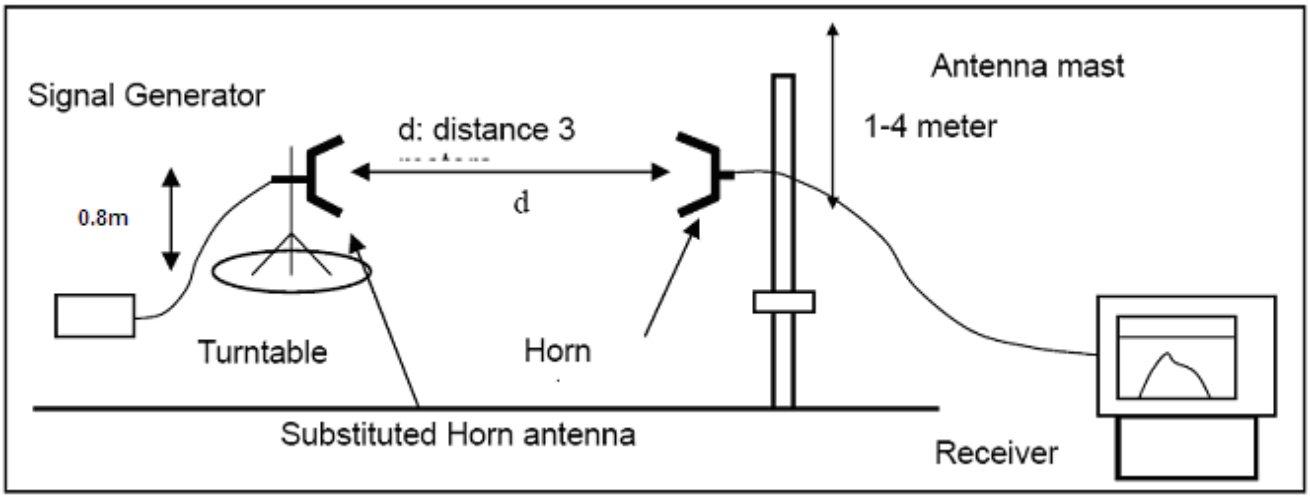
TEST SETUP BELOW 1GHZ





TEST SETUP ABOVE 1GHZ





6.3 MEASUREMENT EQUIPMENT USED

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	06/29/2010	06/28/2011
Amplifier	EM	EM30180	0607030	06/29/2010	06/28/2011
Horn Antenna	EM	EM-AH-10180	N/A	06/29/2010	06/28/2011
EMI Test Receiver	Rohde & Schwarz	ESCI	N/A	06/29/2010	06/28/2011
Amplifier	EM	EM30180	N/A	06/29/2010	06/28/2011
Bilogical Antenna	A.H. Systems Inc.	SAS-521-4	N/A	06/29/2010	06/28/2011
Loop Antenna	Daze	ZN30900N	SEL0097	06/29/2010	06/28/2011
Isolation Transformer	LETEAC	LTBK	--	06/08/2010	06/07/2011

6.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT				
Applicable Limits	Frequency	Measurement Result		
		EIRP (dBm)	Conducted (dBm)	Criteria
30 dBm	2.402GHz	1.02	-0.25	PASS
30 dBm	2.441GHz	1.12	-0.20	PASS
30 dBm	2.480GHz	1.04	-0.30	PASS

7. 20 DB BANDWIDTH

7.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz,
   VBW= 100 KHz.
4. Set SPA Trace 1 Max hold, then View.

7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The Same as described in Section 6.2

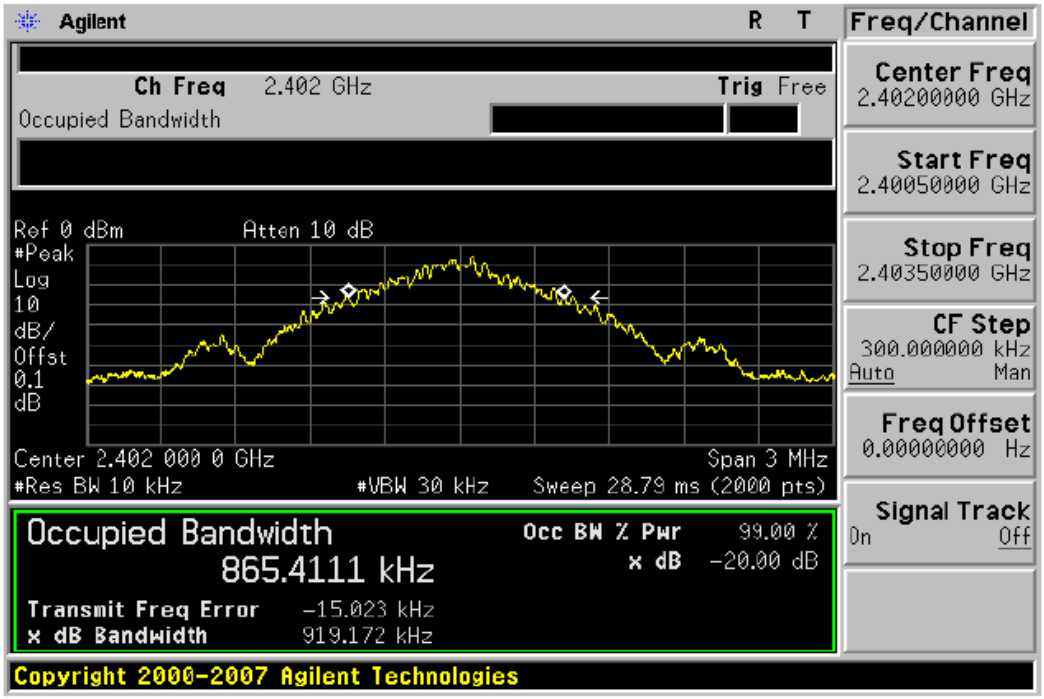
7.3 MEASUREMENT EQUIPMENT USED

The same as described in Section 6.3

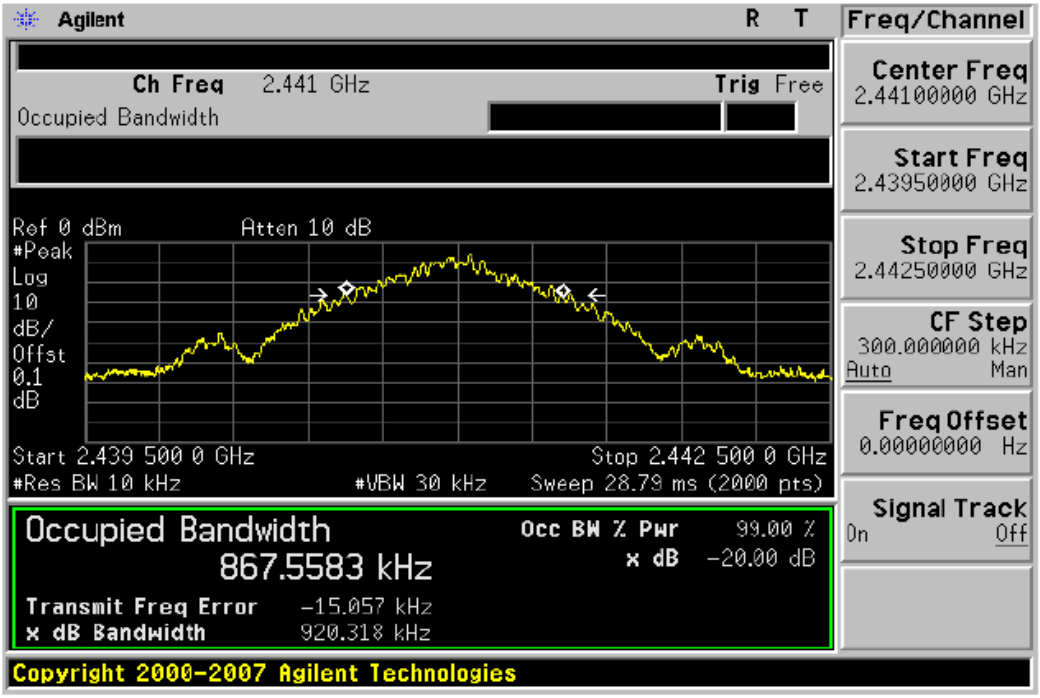
7.4 LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
--	Bottom Channel	0.919	PASS
	Middle Channel	0.920	PASS
	Top Channel	0.920	PASS

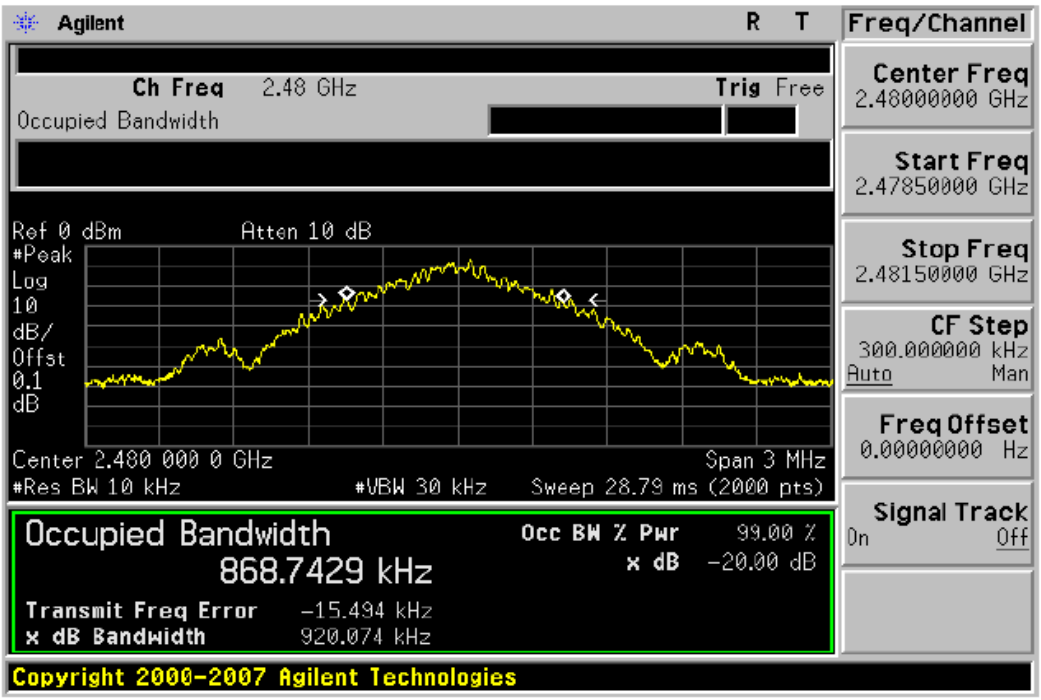
TEST PLOT OF BANDWIDTH FOR BOTTOM CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR TOP CHANNEL

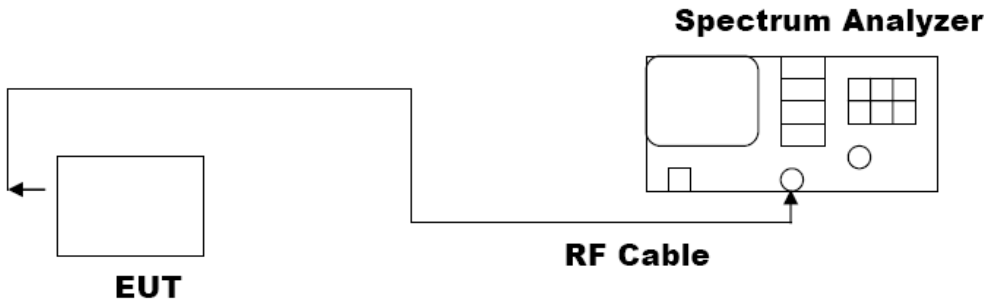


8. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY (N/A)

8.1 MEASUREMENT PROCEDURE

(1). The EUT was placed on a turn table which is 0.8m above ground plane.
(2). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
(3), Set the EUT Work on the top, the middle and the bottom operation frequency individually.
(4). Set SPA Centre Frequency = Operation Frequency, RBW= 3 KHz,
VBW= 10 KHz., Sweep time= Auto
(5). Set SPA Trace 1 Max hold, then View.

8.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



8.3 MEASUREMENT EQUIPMENT USED

SHIELDING ROOM					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4440A	N/A	06/29/2010	06/28/2011

8.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (dBm/3KHz)		Criteria
8 dBm / 3KHz	Bottom Channel	--	--
	Middle Channel	--	--
	Top Channel	--	--

9. OUT OF BAND EMISSION

9.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW= 100 KHz.
4. Set SPA Trace 1 Max hold, then View.

9.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The Same as described in section 6.2

1. Conducted test setup
2. Radiated Emission test Setup below 1GHz and Above 1GHz

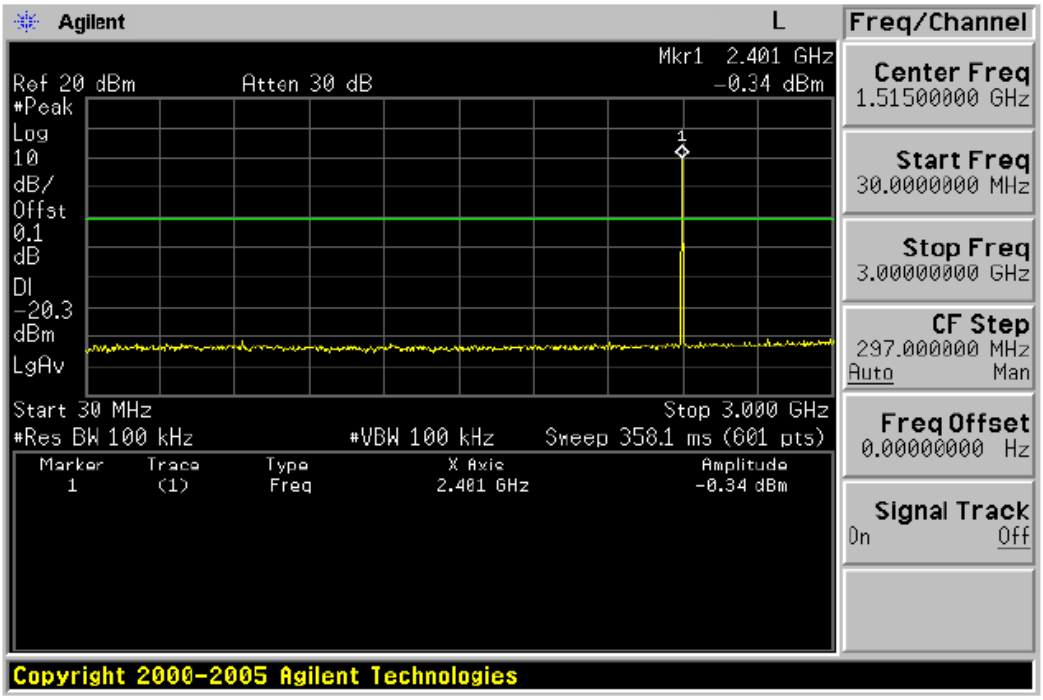
9.3 MEASUREMENT EQUIPMENT USED

The Same as described in section 6.3

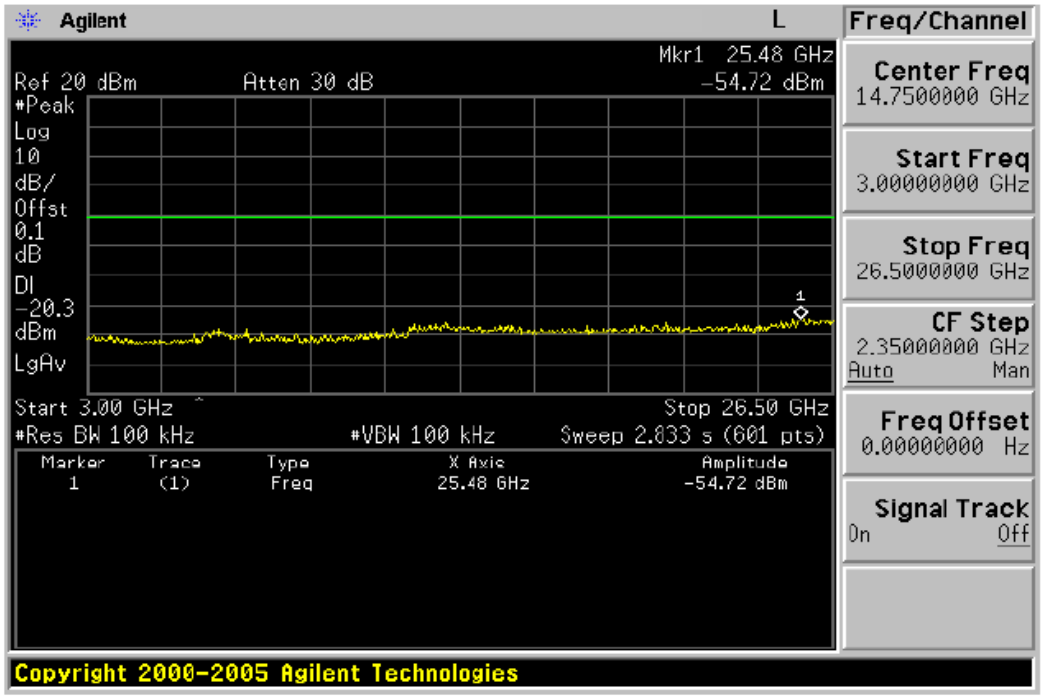
9.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS
In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))	At least -20dBc than the limit Specified on the TOP Channel	PASS

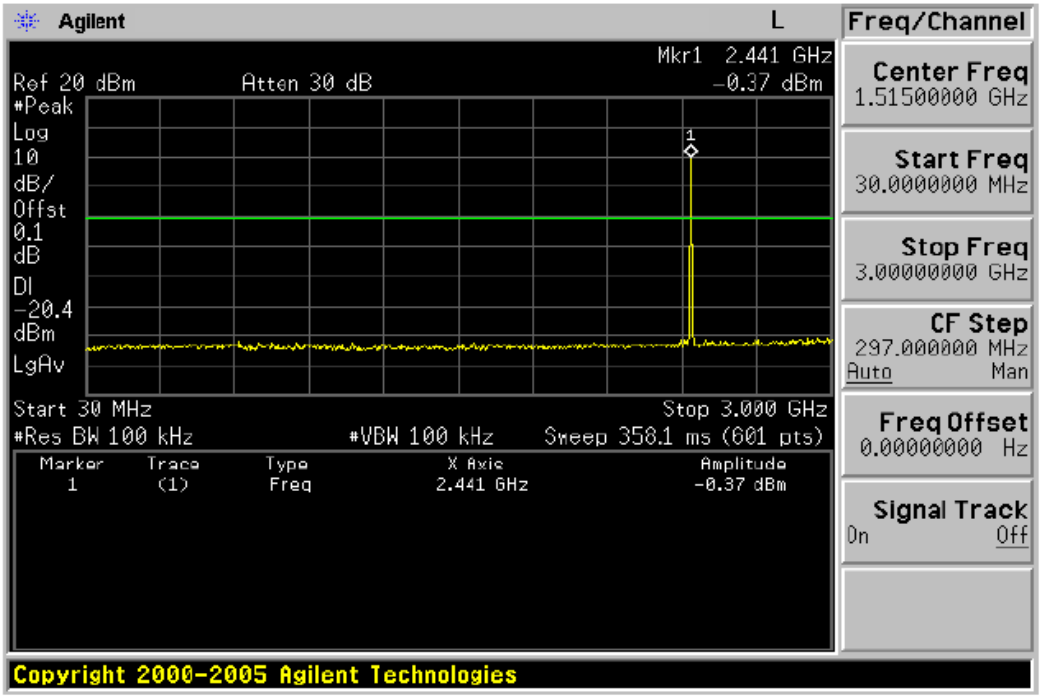
TEST PLOT OF OUT OF BAND EMISSIONS FOR BOTTOM CHANNEL - 1



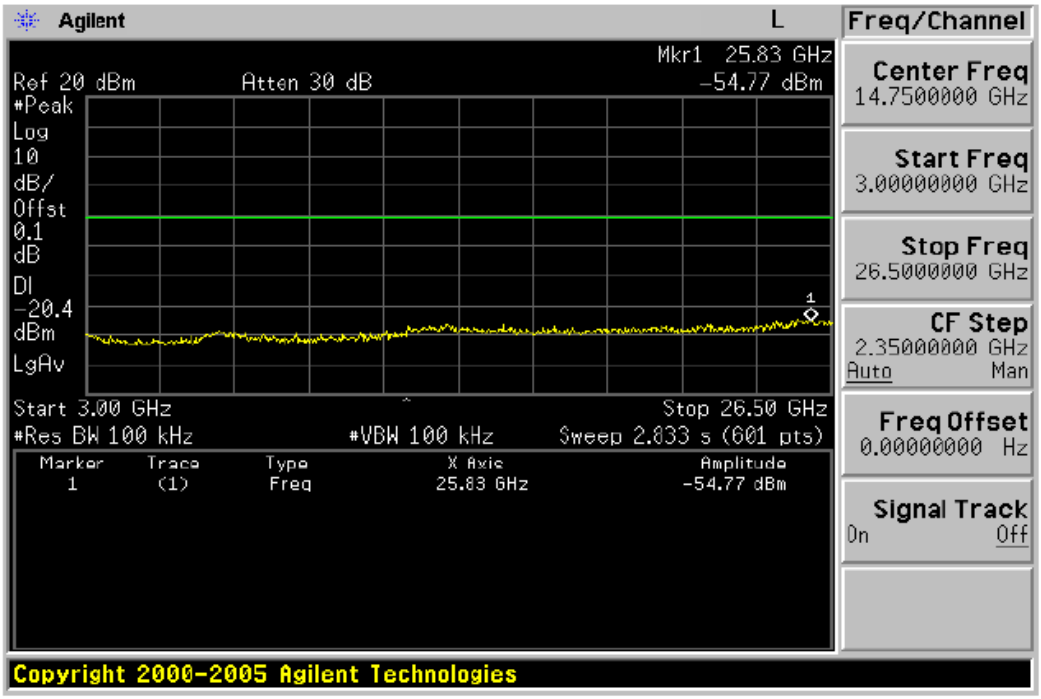
TEST PLOT OF OUT OF BAND EMISSIONS FOR BOTTOM CHANNEL – 2



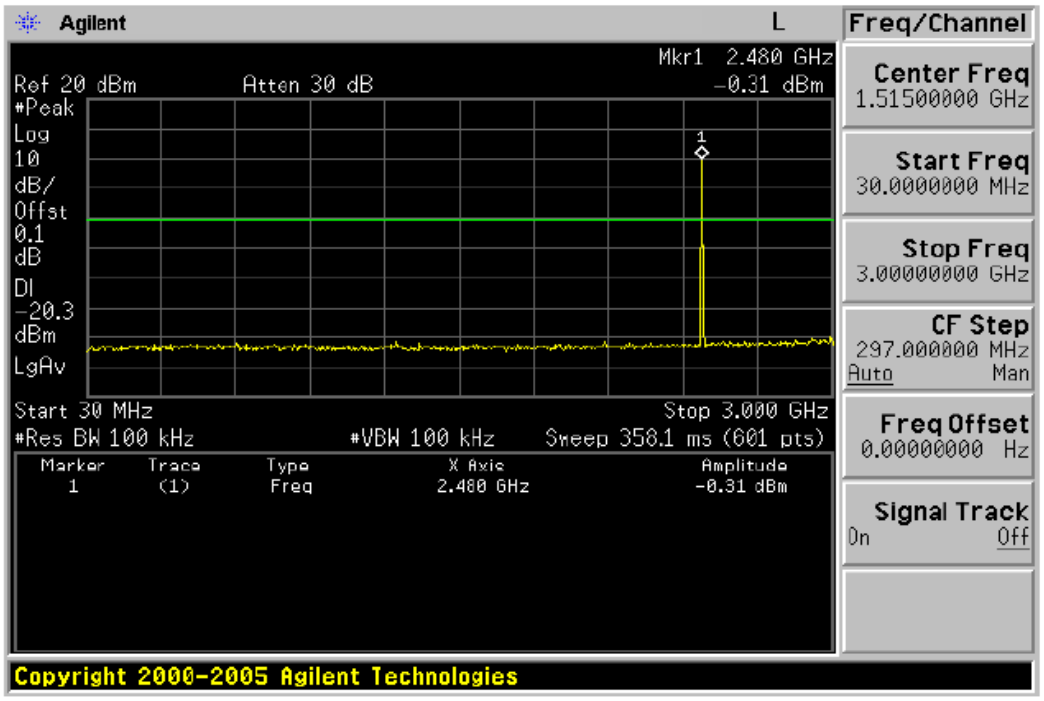
TEST PLOT OF OUT OF BAND EMISSIONS FOR MIDDLE CHANNEL – 1



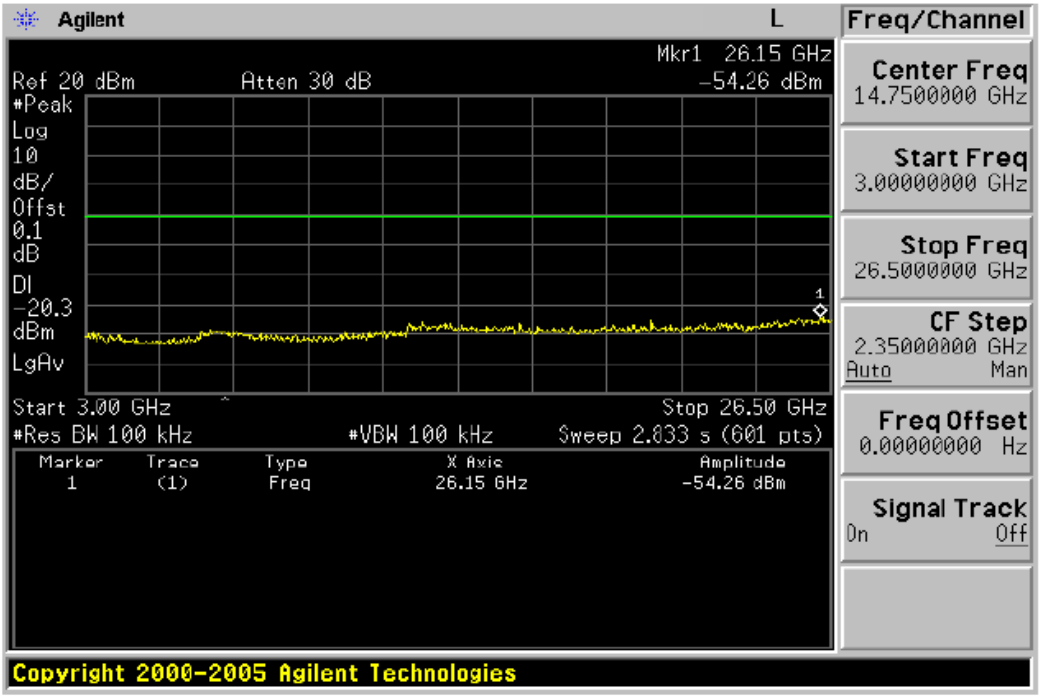
TEST PLOT OF OUT OF BAND EMISSIONS FOR MIDDLE CHANNEL – 2



TEST PLOT OF OUT OF BAND EMISSIONS FOR TOP CHANNEL – 1



TEST PLOT OF OUT OF BAND EMISSIONS FOR TOP CHANNEL – 2



RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequency to 30MHz.

RADIATED EMISSION BELOW 1GHZ

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2402MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
33.57	H	Peak	13.44	18.86	32.3	40	-7.7
119.48	H	Peak	10.15	17.94	28.09	43.5	-15.41
181.42	H	Peak	10.34	18.57	28.91	43.5	-14.59
416.38	H	Peak	4.07	21.23	25.3	46	-20.7
728.4	H	Peak	2.12	26.24	28.36	46	-17.64
956.35	H	Peak	1.69	30.39	32.08	46	-13.92
63.35	V	Peak	20.18	8.56	28.74	40	-11.26
74.15	V	Peak	19.47	9.13	28.6	40	-11.4
123.48	V	Peak	19.16	16.44	32.47	43.5	-11.03
170.65	V	Peak	11.62	19.84	31.46	43.5	-12.04
684.75	V	Peak	0.94	26.14	27.08	46	-18.92
940.18	V	Peak	1.06	30.29	31.35	46	-14.65

EUT	Wireless Telehealth Hub	Model Name	H-Box
	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2441MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	H	Peak	--	--	--	--	--
--	H	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2480MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	H	Peak	--	--	--	--	--
--	H	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	BT2402/2441/2480MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	H	Peak	--	--	--	--	--
--	H	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--
--	V	Peak	--	--	--	--	--

Note: ”--“means the mode at least have 20dB margin.

RADIATED EMISSION ABOVE 1GHZ

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2402MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
1323	H	51.03	--	-10.44	40.59	--	74	54	-13.41
1563	H	49.88	--	-10.41	39.47	--	74	54	-14.53
1923	H	47.74	--	-9.23	38.51	--	74	54	-15.49
2546	H	43.38	--	-8.27	35.11	--	74	54	-18.89
--	H	--	--	--	--	--	--	--	--
1340	V	52.38	--	-10.17	42.21	--	74	54	-11.79
1753	V	53.45	--	-10.21	43.24	--	74	54	-10.76
2137	V	48.73	--	-9.84	38.89	--	74	54	-15.11
2655	V	46.28	--	-8.94	37.34	--	74	54	-16.66
--	V	--	--	--	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2441MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
--	H	--	--	--	--	--	--	--	--
--	H	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2480MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
--	H	--	--	--	--	--	--	--	--
--	H	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	BT2402/2441/2480MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
--	H	--	--	--	--	--	--	--	--
--	H	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--
--	V	--	--	--	--	--	--	--	--

Note: This Handheld EUT was tested in 3 orthogonal positions and the worst-case data was presented.
Note:"--"means the mode at least have 20dB margin.

10 BAND EDGE EMISSION

10.1 MEASUREMENT PROCEDURE

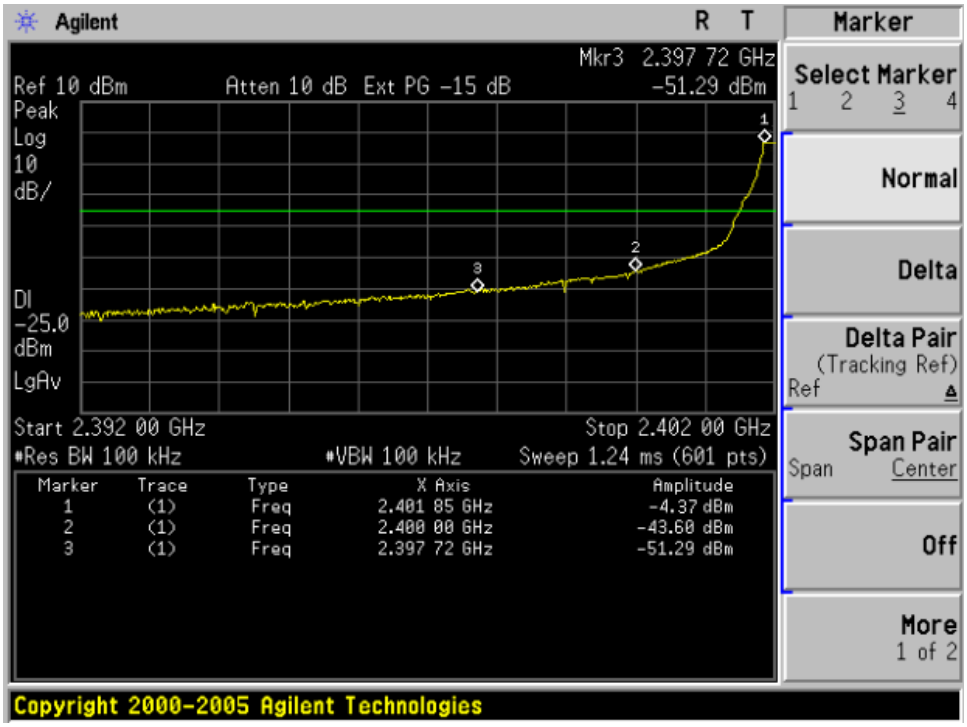
1, Set the EUT Work on the top, the bottom operation frequency individually.
2. Set SPA Start or Stop Frequency = Operation Frequency, RBW= 100 KHz, VBW= 100KHz.
3. The band edges was measured and receorded.

10.2 TEST SET-UP

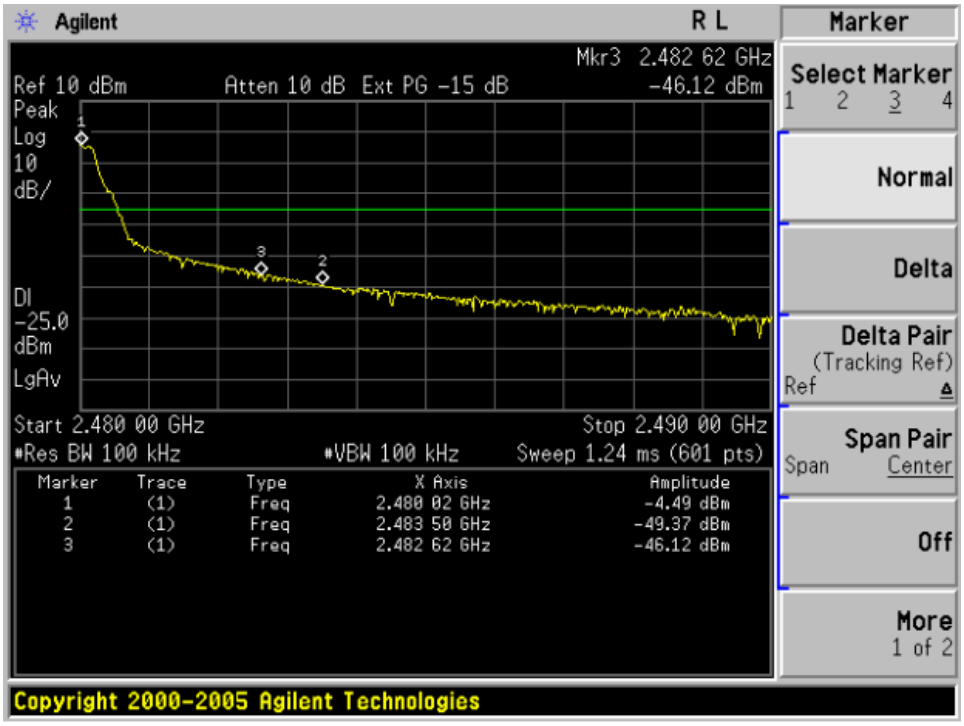
The Same as described in section 6.2

10.3 TEST RESULT

TEST PLOT OF BAND ELDG FOR BOTTOM CHANNEL



TEST PLOT OF BAND ELDG FOR TOP CHANNEL



EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2402MHZ	Modulation	GFSK

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
2388.47	H	42.53	33.28	1.33	43.86	34.61	74	54	-19.39
--	H	--	--	--	--	--	--	--	--
2388.56	V	42.17	30.58	1.47	41.64	32.05	74	54	-21.95
--	V	--	--	--	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	BT2480MHZ	Modulation	GFSK

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
2483.66	H	42.18	32.58	1.39	43.57	33.97	74	54	-20.03
--	H	--	--	--	--	--	--	--	--
2483.66	V	44.1	35.6	1.39	45.49	36.99	74	54	-17.01
--	V	--	--	--	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	DC3.7
Test Mode	BT2402/2480MHZ	Modulation	GFSK

Freq. (MHZ)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Result		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin
					Peak (dBuV/m)	AV (dBuV/m)			
2483.66	H	42.18	32.58	1.39	43.57	33.97	74	54	-20.03
--	H	--	--	--	--	--	--	--	--
2483.66	V	44.1	35.6	1.39	45.49	36.99	74	54	-17.01
--	V	--	--	--	--	--	--	--	--

Note: “--“means other frequencies at least have 20dB margin.
The other modulation modes comply with standard requirement and at least have 20dB margin.

11 NUMBER OF HOPPING FREQUENCY

11.1 MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer Start = 2.4GHz Stop = 2.4835GHz
4. Set the Spectrum Analyzer as RBW = 300KHZ,VBW = 820KHz

11.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2
1. Conducted Method.

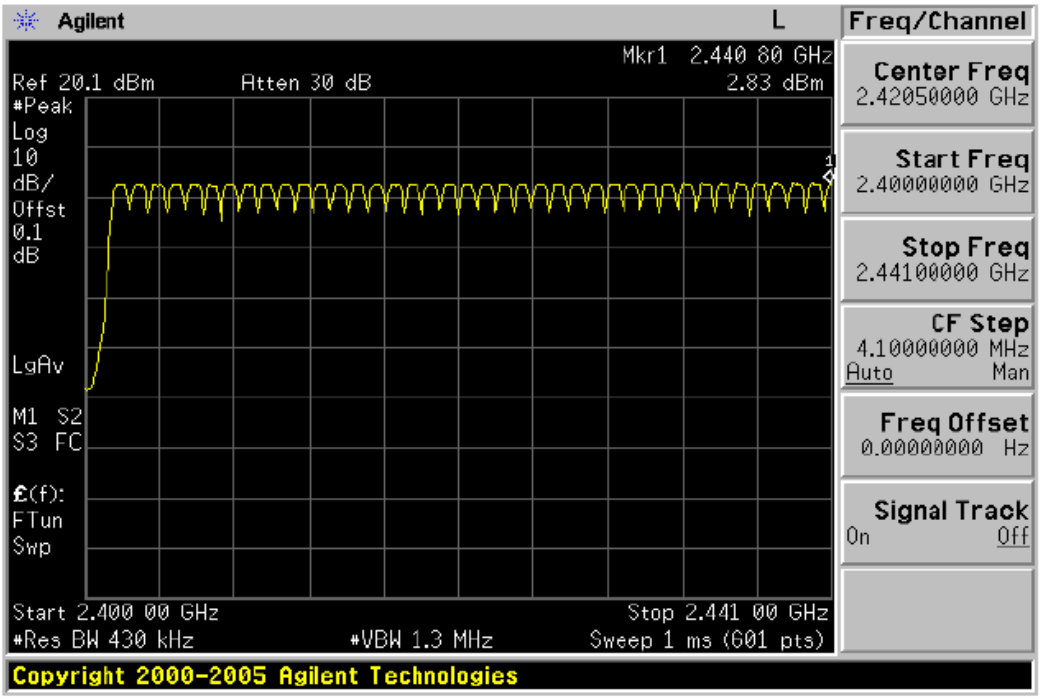
11.3 MEASUREMENT EQUIPMENT USED

The Same as described in section 6.3

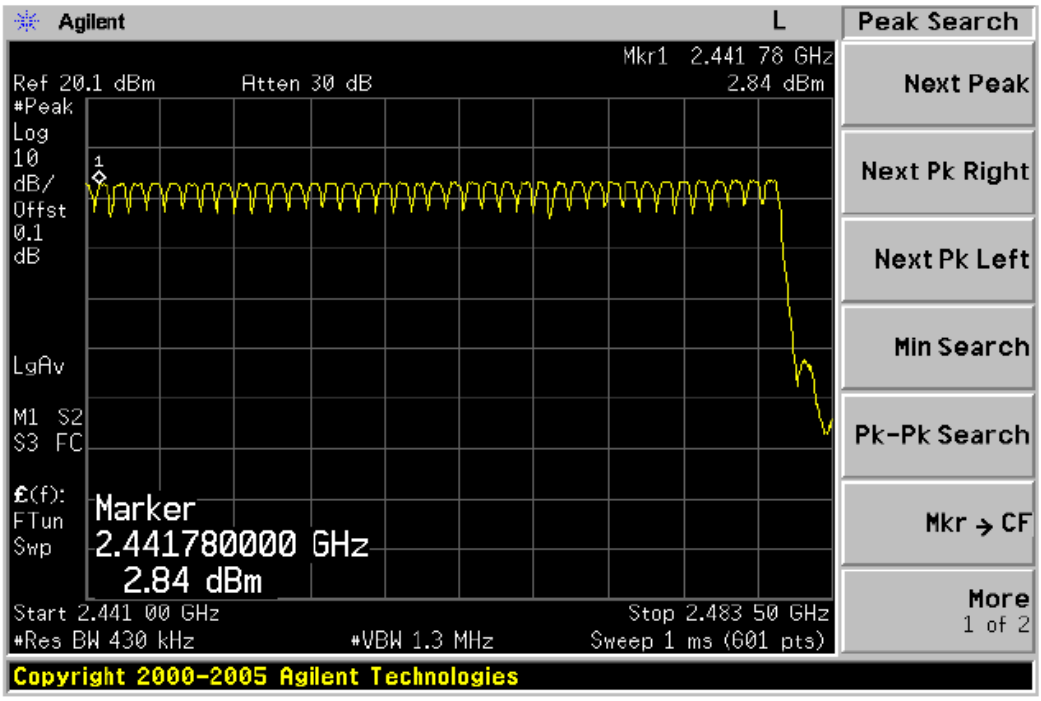
11.4 LIMITS AND MEASUREMENT RESULT

TOTAL NO. OF HOPPING CHANNEL	LIMIT (NO. OF CH)	MEASUREMENT (NO. OF CH)	RESULT
	>=15	79	PASS

TEST PLOT FOR NO. OF TOTAL CHANNELS -1



TEST PLOT FOR NO. OF TOTAL CHANNELS -2



12 TIME OF OCCUPANCY (DWELL TIME)

12.1 MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
3. Set center frequency of spectrum analyzer = Operating frequency
4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0 Hz,

12.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2
Conducted Method

12.3 MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

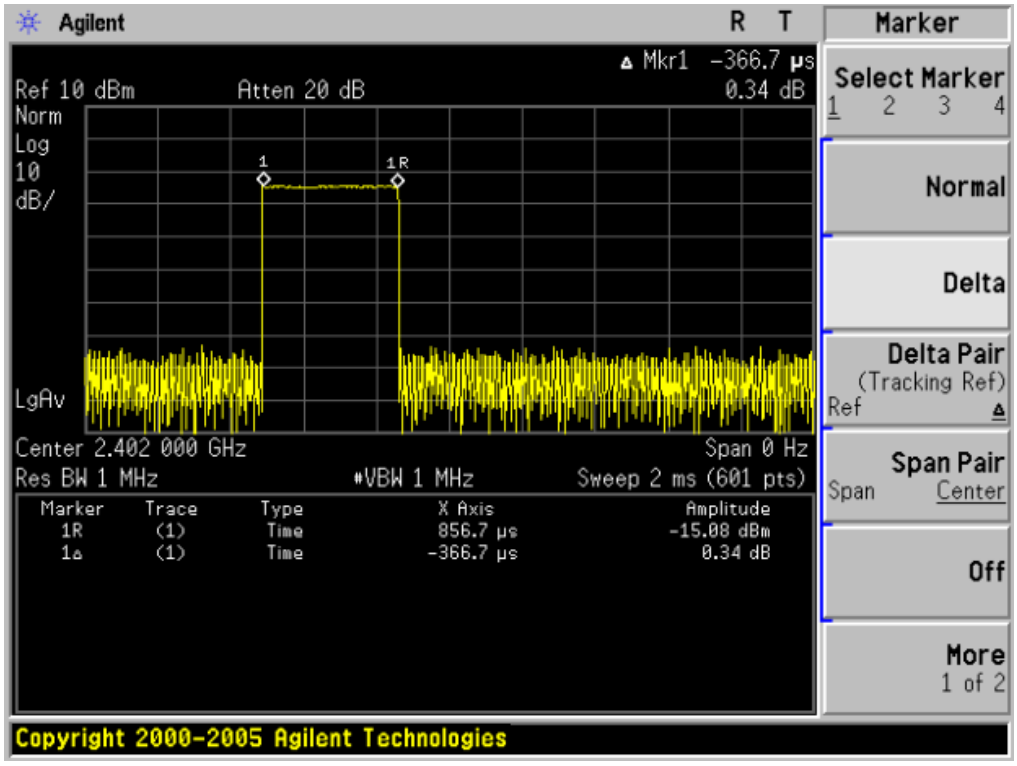
12.4 LIMITS AND MEASUREMENT RESULT

The dwell time = Time Slot Length * Hop Rate / Number of Hopping Channels * 0.4 * 79
L-CH:
DH1 Time Slot = 0.370 (ms) * (1600/(2*79))*31.6 = 117.34 (ms)
DH3 Time Slot = 1.627(ms) * (1600/(4*79))*31.6 = 259.20(ms)
DH5 Time Slot = 2.860 (ms) * (1600/(6*79))*31.6 = 307.20 (ms)

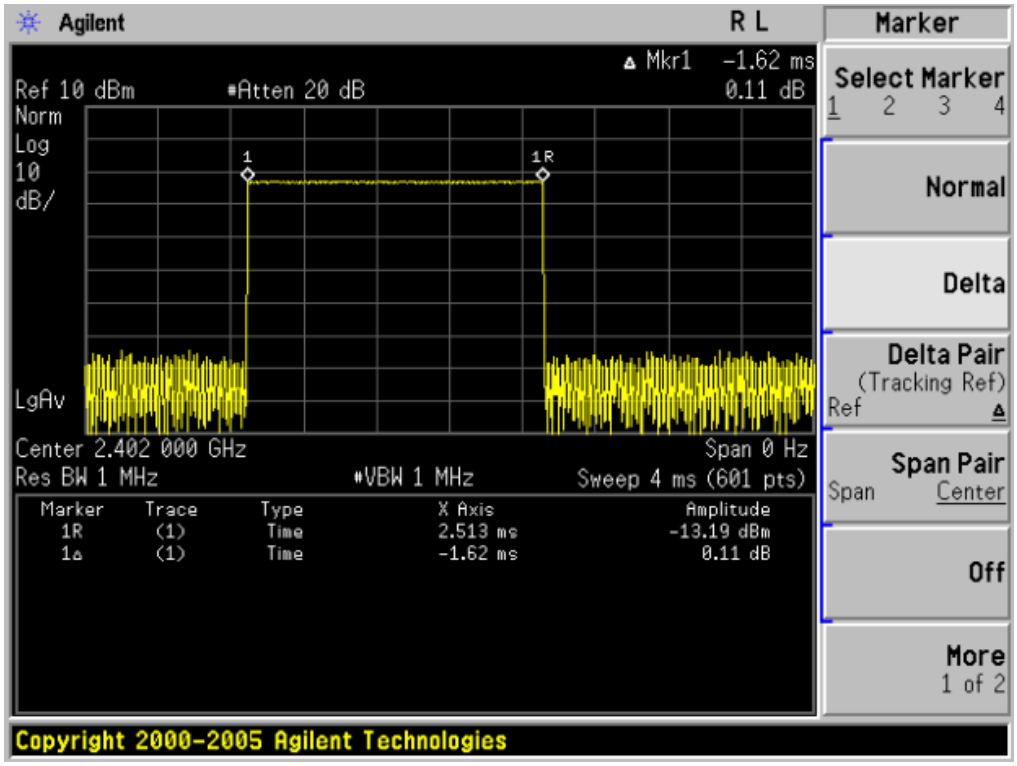
M-CH:
DH1 Time Slot = 0.373 (ms) * (1600/(2*79))*31.6 = 119.46 (ms)
DH3 Time Slot = 1.620 (ms) * (1600/(4*79))*31.6 = 260.32 (ms)
DH5 Time Slot = 2.860 (ms) * (1600/(6*79))*31.6 = 306.13 (ms)

H-CH:
DH1 Time Slot = 0.370(ms) * (1600/(2*79))*31.6 = 118.40 (ms)
DH3 Time Slot = 1.627 (ms) * (1600/(4*79))*31.6 = 260.32 (ms)
DH5 Time Slot = 2.850(ms) * (1600/(6*79))*31.6 = 305.07 (ms)

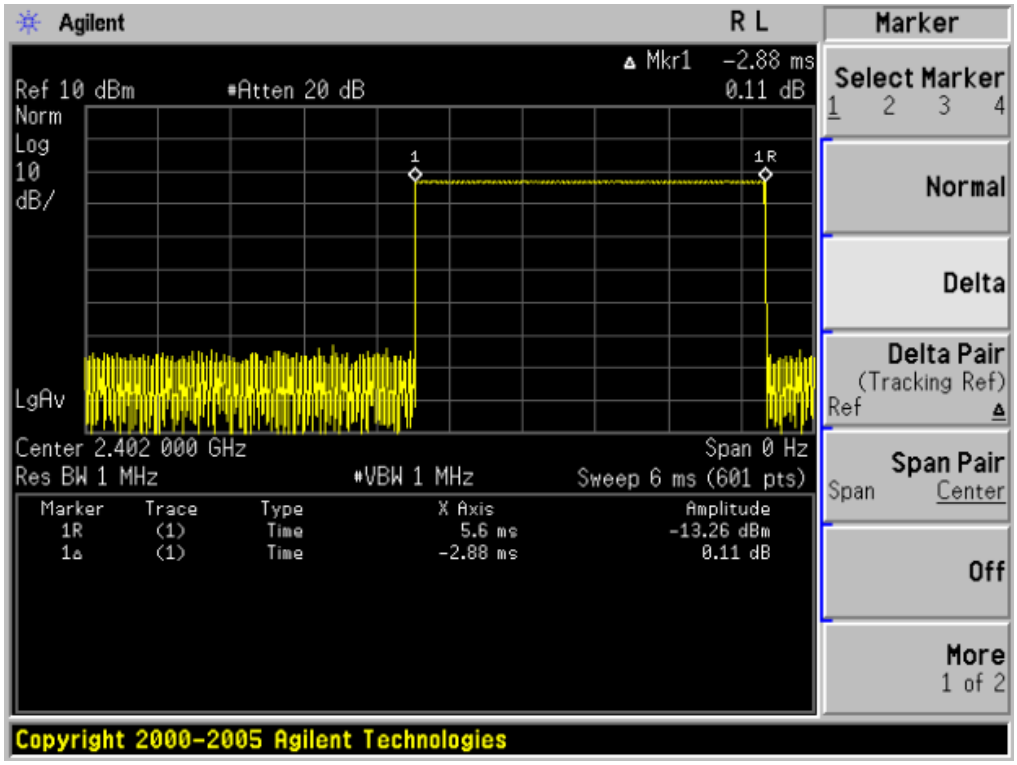
TEST PLOT DH1 MODE BOTTOM CHANNEL



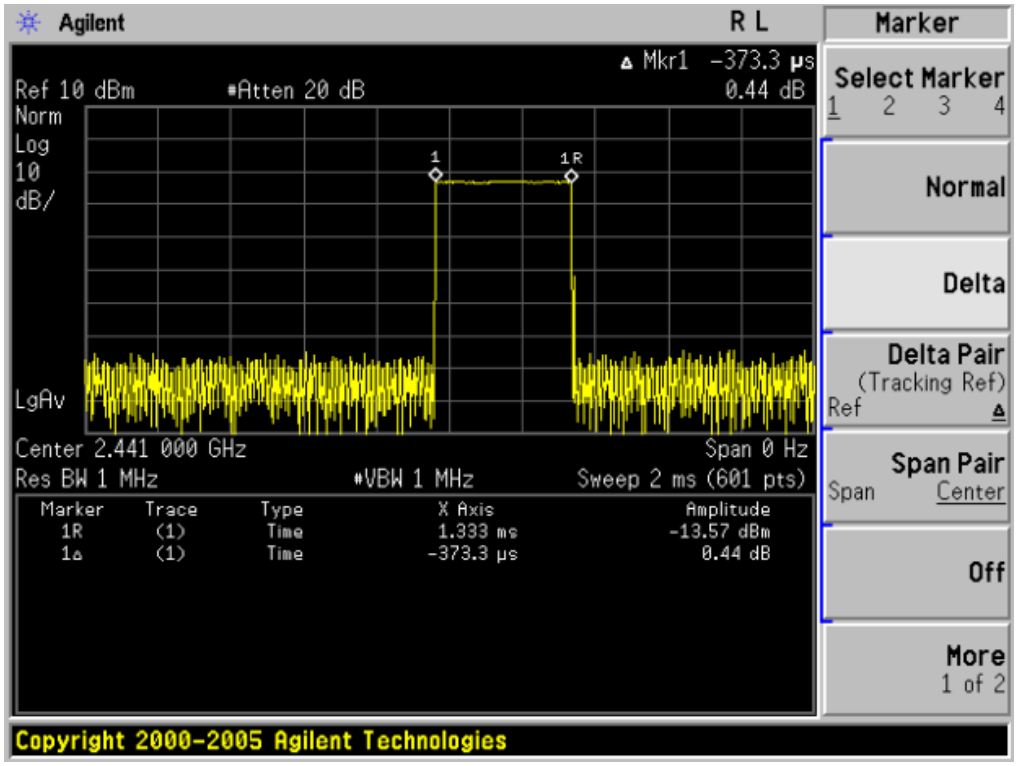
TEST PLOT DH3 MODE BOTTOM CHANNEL



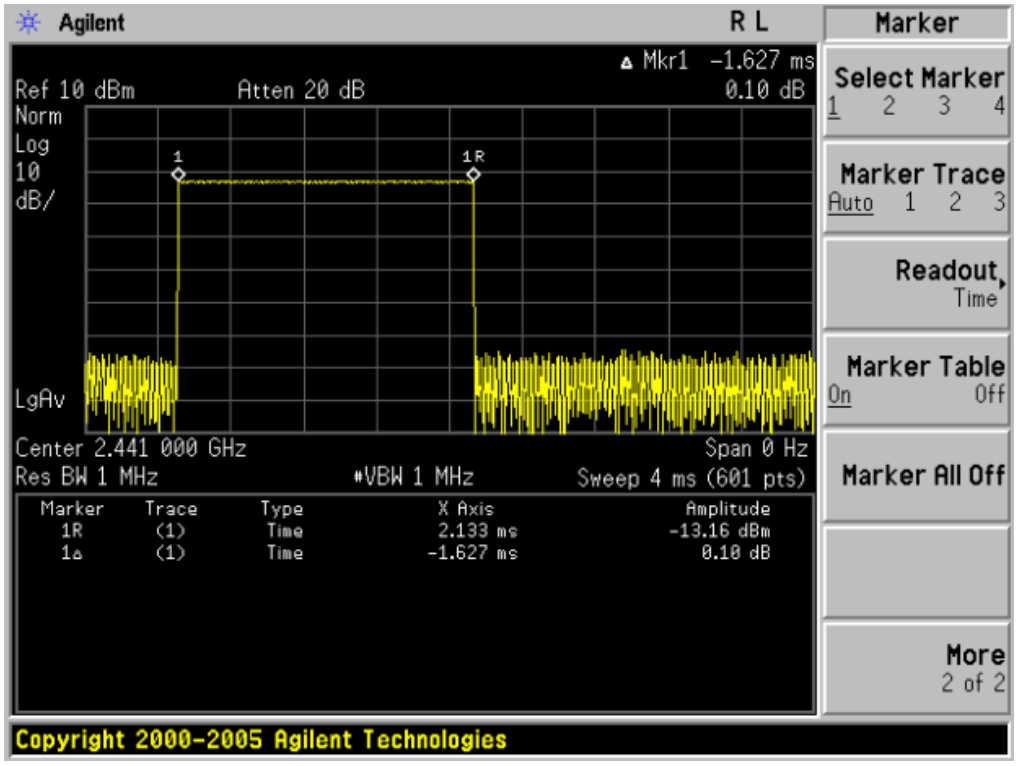
TEST PLOT DH5 MODE BOTTOM CHANNEL



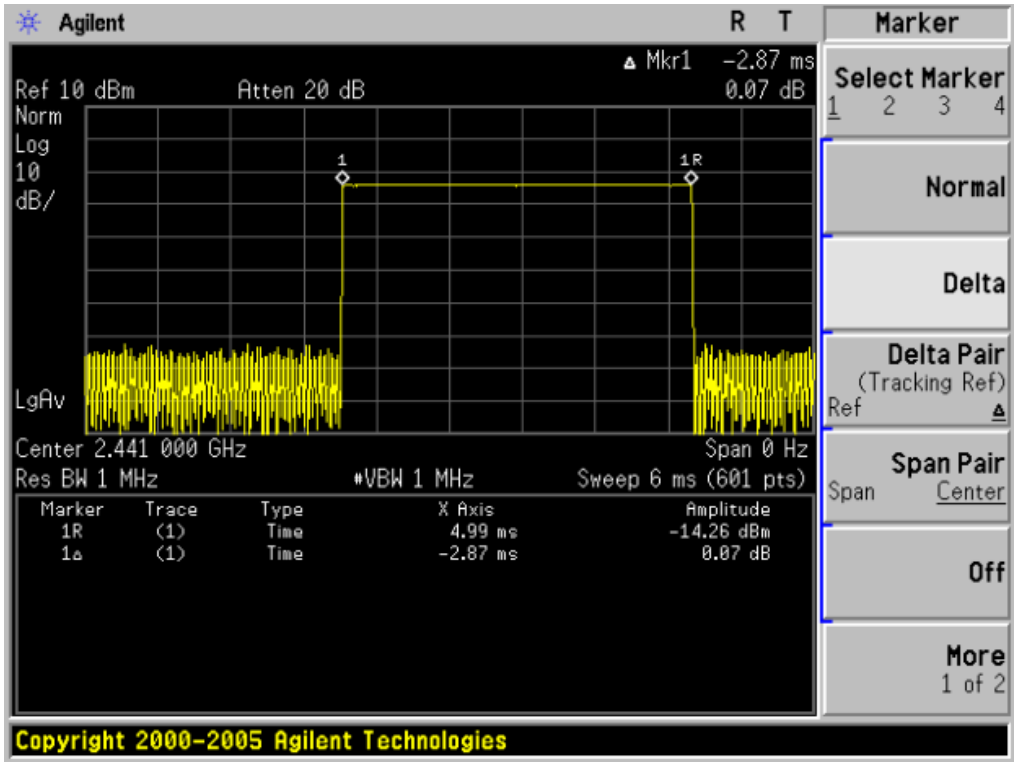
TEST PLOT DH1 MODE MIDDLE CHANNEL



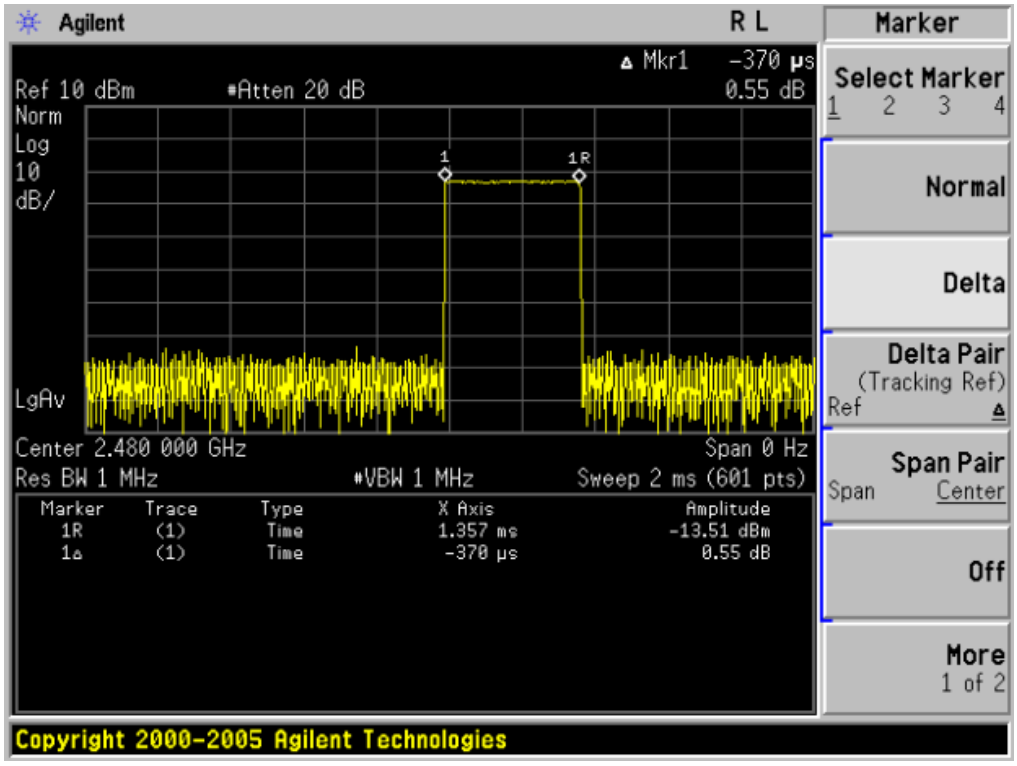
TEST PLOT DH3 MODE MIDDLE CHANNEL



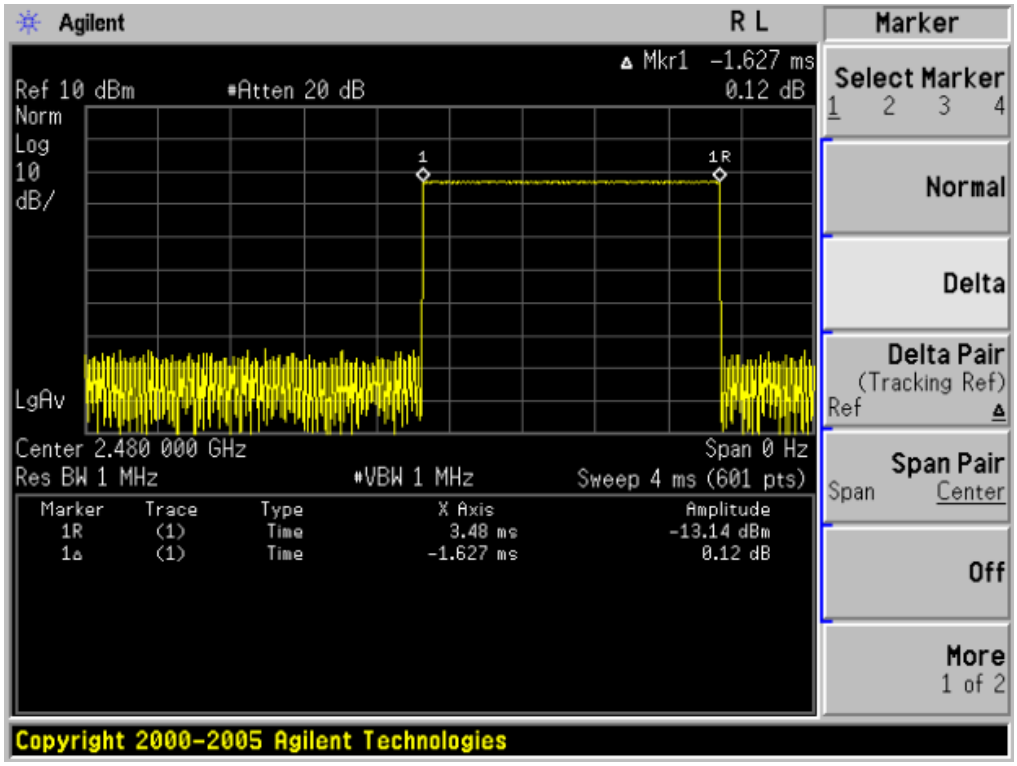
TEST PLOT DH5 MODE MIDDLE CHANNEL



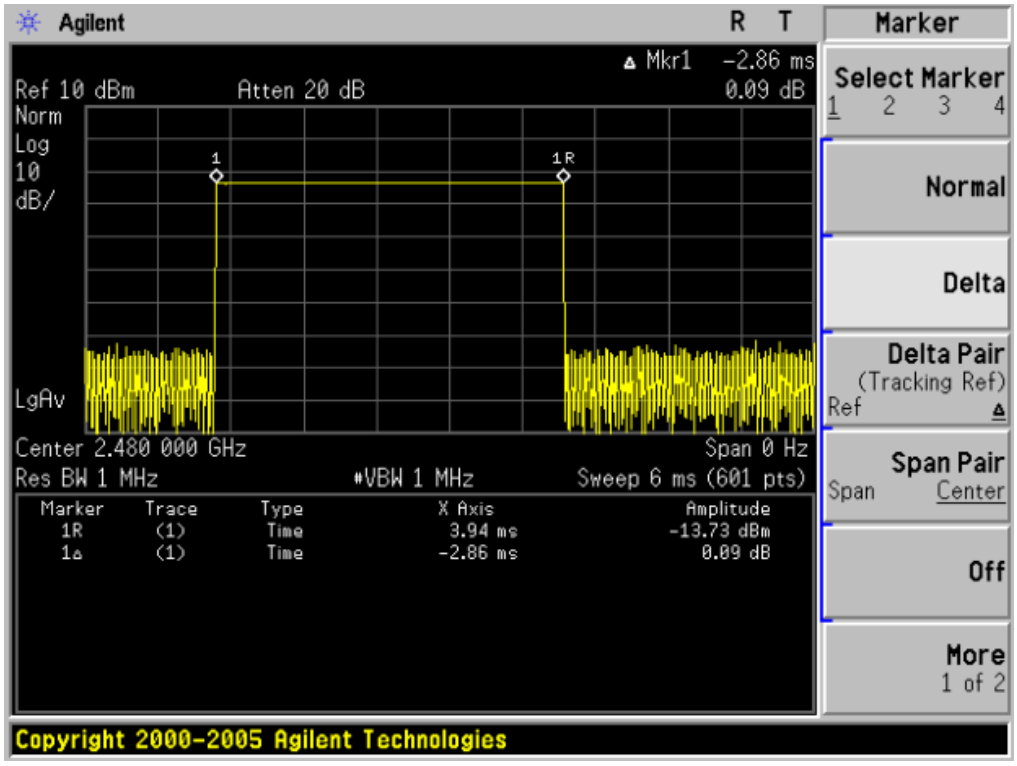
TEST PLOT DH1 MODE TOP CHANNEL



TEST PLOT DH3 MODE TOP CHANNEL



TEST PLOT DH5 MODE TOP CHANNEL



13. FREQUENCY SEPARATION

13.1 MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
3. Set center frequency of spectrum analyzer = Middele of Operating frequency
4. Set the spectrum analyzer as RBW, VBW=100KHz, Span = 5 MHz,

13.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

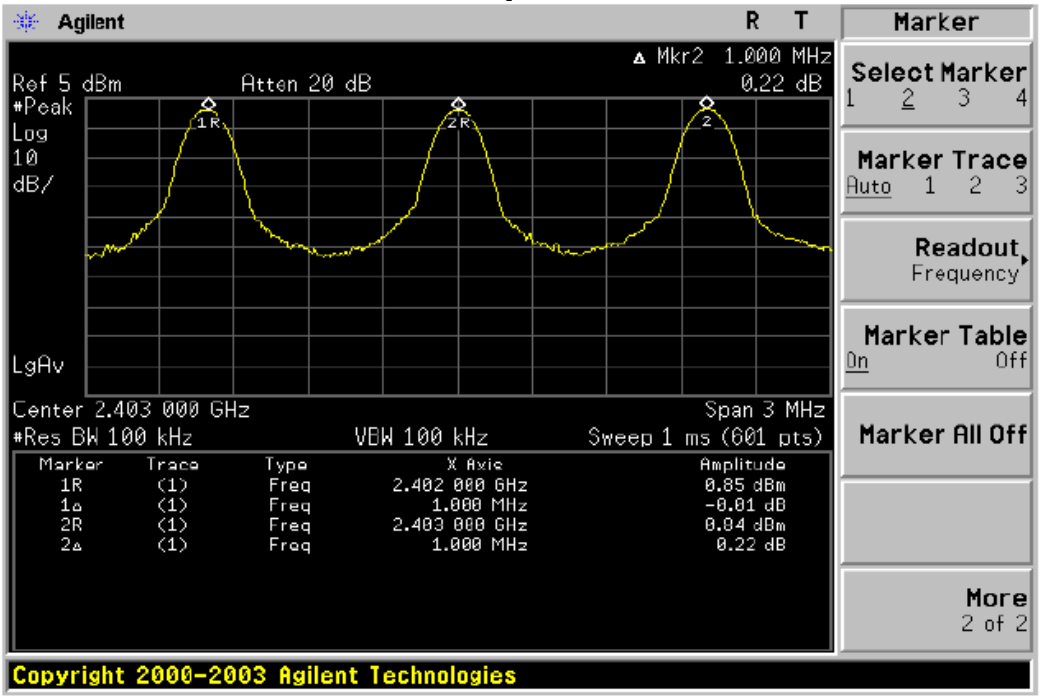
13.3 MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

13.4 LIMITS AND MEASUREMENT RESULT

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	KHz	KHz	Pass
CH01-CH02	1000	>=25 KHz or 2/3 20 dB BW	

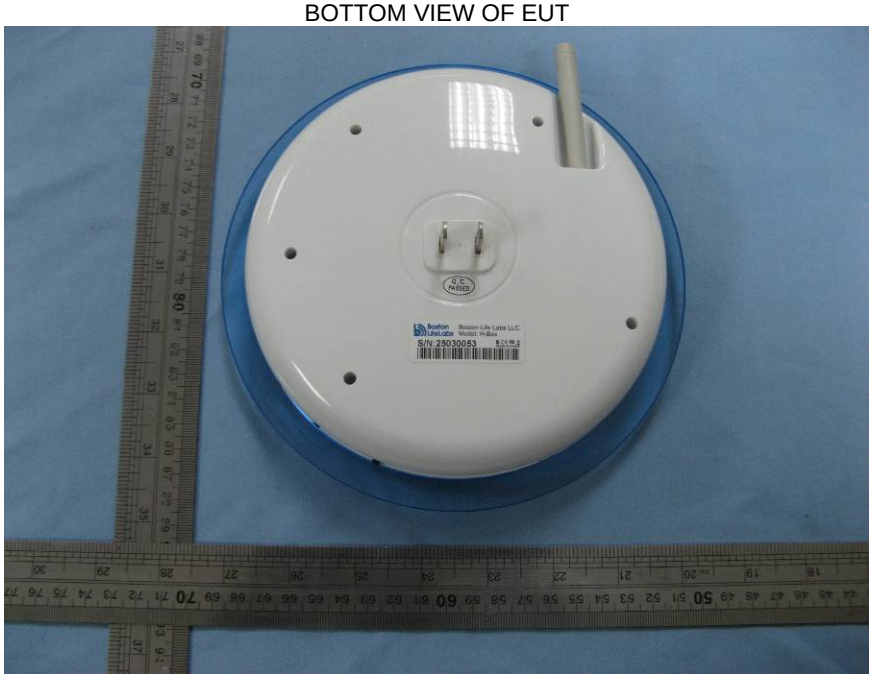
TEST PLOT FOR FREQUENCY SEPARATION -1



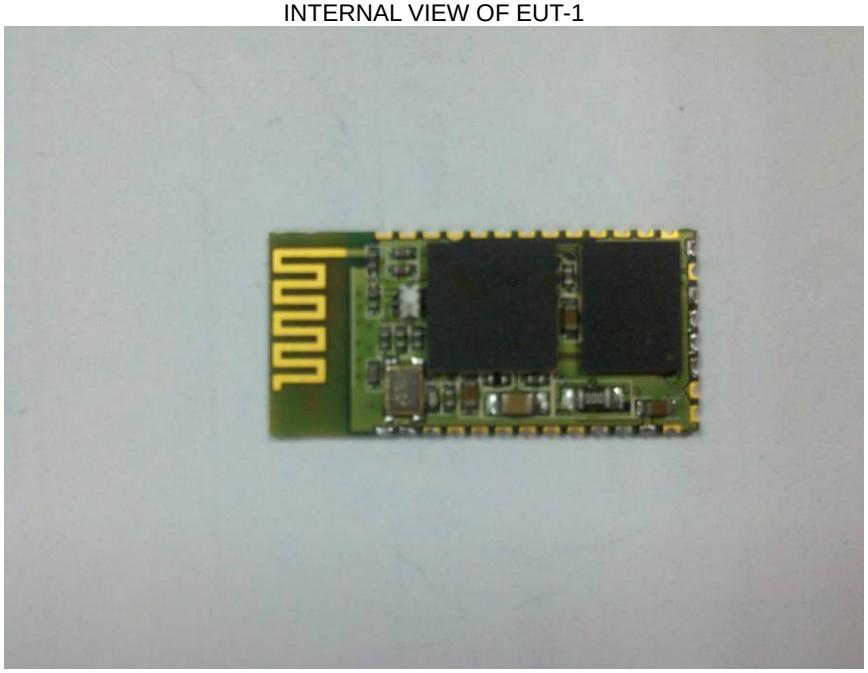
APPENDIX I
PHOTOGRAPHS OF THE EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT



INTERNAL VIEW OF EUT-1



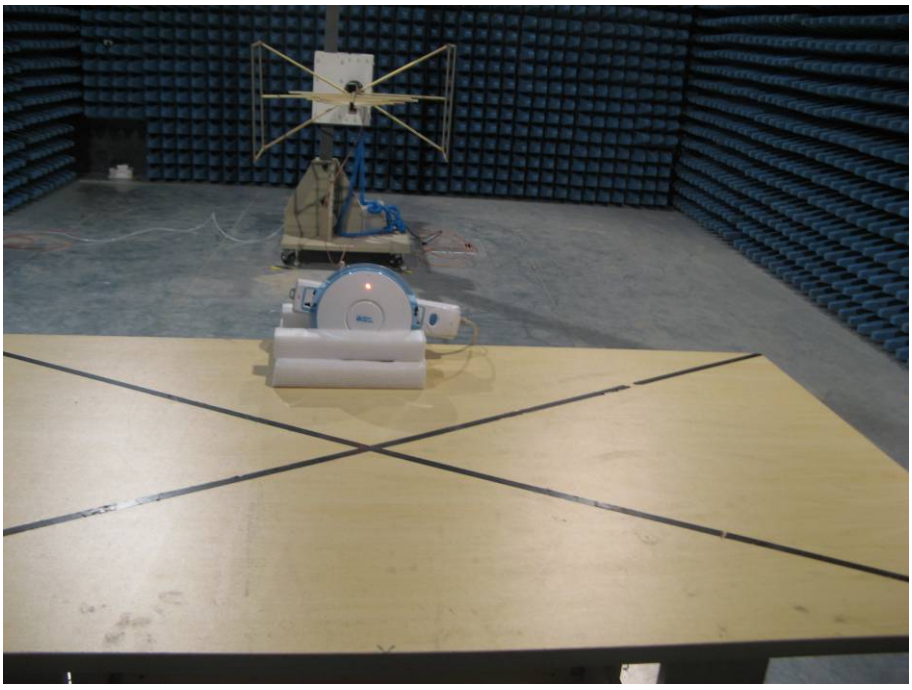
INTERNAL VIEW OF EUT-2

PPENDIX II

PHOTOGRAPHS OF THE TEST SETUP

CONDUCTED EMISSION TEST SETUP

RADIATED EMISSION TEST SETUP



----END OF REPORT----