FCC Part 15

TEST REPORT

For

Wireless Body Scale

Brand Name: Boston Life Labs

Model Name: BS 2.4

FCC ID: YTK-BS24

Report No.: AGC10091008SZ02-1F1

Date of Issue: Sep.24, 2010

Prepared For

Boston Life Labs LLC.

One Broadway 14th floor,MIT Campus,Cambridge,MA 02142

TEL: +1617 440 427

Prepared By

Attestation of Global Compliance Co., Ltd.

1F., No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen

TEL: +0086-755-2908 1966

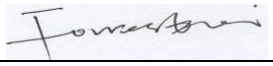
FAX: +0086-755-2600 8484

VERIFICATION OF COMPLIANCE

Applicant:	Boston Life Labs LLC.
Address	One Broadway 14th floor,MIT Campus,Cambridge,MA 02142
Product Description:	Wireless Body Scale
Brand Name:	Boston Life Labs
Model Number:	BS 2.4
FCC ID	YTK-BS24
Report Number:	AGC10091008SZ02-1F1
Date of Test:	Sep. 15, 2010 to Sep.21, 2010

WE HEREBY CERTIFY THAT:

The above equipment was tested by Shenzhen Attestation of Global Compliance Science & Technology 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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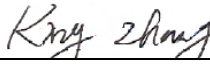
Authorized By 

King Zhang Sep.24, 2010

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1 GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a short range, lower power; Wireless Body Scale 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
Maximum Output Power	-0.76dBm
Modulation	GFSK
Number of channels	79
Antenna Designation	Integrated Antenna
Power Supply	DC 4.5V

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 BLUETOOTH PARAMETER

1. Frequency Range of a Bluetooth Device

The maximum frequency of the device is 2402MHz - 2480 MHz. This is according the Bluetooth Core Specification V 2.0

2. Co-Ordination of the Hopping Sequence in Data Mode to Avoid Simultaneous Occupancy by Multiple Transmitters

Bluetooth units, which want to communicate with other units, must be organized in a structure called piconet. This piconet consist of maximum 8 Bluetooth units. One unit is the master the other seven are the slaves. The master co-ordinates frequency occupation in this piconet for all units. As the master hop sequence is derived from it's BD address which is unique for every Bluetooth device, additional masters intending to establish new piconets will always use different hop sequences.

3. Example of a Hopping Sequence 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

4. Equally Average Use of Frequencies in Data Mode and 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) is 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 24 MSB's of the 48 BD-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 synchronization with other units, only the offsets are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5IJs. The clock has a cycle of about one day (23h30). In most case it is implemented as a 28-bit counter. For the deriving of the hopping sequence the entire LAP (24 bits), 4 LSB's (4 bits) (Input 1) and the 27 MSB's of the clock (Input 2) are used. With this input values different mathematical procedures (permutations, additions, XOR-operations) are performed to generate the sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions, the Bluetooth system has the following behavior:

The first connection between the two devices is established, a hopping sequence is generated. For transmitting the wanted data, the complete hopping sequence is not used and the connection ends. The second connection will be established. A new hopping sequence is generated. Due to the fact that 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 (312.5 ms). The hopping sequence will always differ from the first one.

5. Receiver Input Bandwidth, Synchronization and Repeated Single or Multiple Packets

The input bandwidth of the receiver is 1 MHz. In every connection, one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence (see section 5). 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 or multi-slot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing is according to the packet type of the connection. Also, the slave of the connection uses 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.

6. Dwell Time in Data Mode

The dwell time of 0.3797s within a 30 seconds period in data mode is independent from the packet type (packet length). The calculation for a 30 seconds period is as follows:

*Dwell time = time slot length * hop rate / number of hopping channels *30s*

Example for a DH1 packet (with a maximum length of one time slot) Dwell time = 625 IJs * 1600 1/s /79 * 30s = 0.3797s (in a 30s period)

For multi-slot packet the hopping is reduced according to the length of the packet.

Example for a DH5 packet (with a maximum length of five time slots)

Dwell time = 5 * 625 ms * 1600 * 1/5 *1/s / 79 * 30s = 0.3797s (in a 30s period)

This is according the Bluetooth Core Specification V 2.0 for all Bluetooth devices.

Therefore, all Bluetooth devices comply with the FCC dwell time requirement in the GSM mode. This was checked during the Bluetooth Qualification tests. The Dwell time in hybrid mode is measured and stated in the test report.

7. Channel Separation in Hybrid Mode

The nominal channel spacing of the Bluetooth system is 1 MHz independent of the operating mode. The maximum “initial carrier frequency tolerance” which is allowed for Bluetooth is fcenter = 75 kHz.

This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/07-E) for three frequencies (2402MHz, 2441MHz, 2480 MHz).

8. Derivation and Examples for a Hopping Sequence in Hybrid Mode

For the generation of the inquiry and page hop sequences the same procedures as described for the data mode are used (see section 5), but this time with different input vectors:

• For the inquiry hop sequence, a predefined fixed address is always used. This result in the same 32 frequencies used by all devices doing an inquiry but every time with a different start frequency and phase in this sequence.

• For the page hop sequence, the device address of the paged unit is used as the input vector. This results in the use of a subset of 32 frequencies, which is specific for that initial state of the connection establishment between the two units. A page to different devices would result in a different subset of 32 frequencies.

So it is ensured that also in hybrid mode, the frequency is used equally on average.

Example of a hopping sequence in inquiry mode:

48, 50, 09, 13, 52, 54, 41, 45, 56, 58, 11, 15, 60, 62, 43, 47,00, 02, 64, 68, 04, 06, 17, 21,08, 10, 66,70, 12, 14,19, 23

Example of a hopping sequence in paging mode:

08, 57, 68, 70, 51, 02, 42, 40, 04, 61, 44, 46, 63, 14, 50, 48, 16, 65, 52, 54, 67, 18, 58, 56, 20, 53, 60, 62, 55, 06, 66, 64

9. Receiver Input Bandwidth and Synchronization in Hybrid Mode

The receiver input bandwidth is the same as in the GSM mode (1 MHz). When two Bluetooth devices establish contact for the first time, one device sends an inquiry access code and the other device is scanning for this inquiry access code. If two devices have been connected previously and want to start a new transmission, a similar procedure takes place. The only difference is, instead of the inquiry access code, a special access code, derived from the BD-ADDRESS of the paged device will be, will be sent by the master of this connection. Due to the fact that both units have been connected before (in the inquiry procedure) the paging unit has timing and frequency information about the page scan of the paged unit. For this reason the time to establish the connection is reduced.

10. Spread Rate I Data Rate of the Direct Sequence Signal

The spread rate / data rate in inquiry and paging mode can be defined via the access code. The access code is the only criterion for the system to check if there is a valid transmission or not. If you regard the presence of a valid access code as one bit of information, and compare it with the length of the access code of 68 bits, the spread rate / data rate will be 68/1.

1.4 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for YTK-BS24 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

1.5 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.

1.6 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

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors and quasi-peak detectors are used to perform radiated measurements.

1.7 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

1.8 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	--	--	--	--

3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.207	Conduction Emission	N/A
§15.247	Maximum Output Power	Compliant
§15.247	20 dB Bandwidth	Compliant
§15.247	Band Edges	Compliant
§15.209& 15.247	Out of band 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

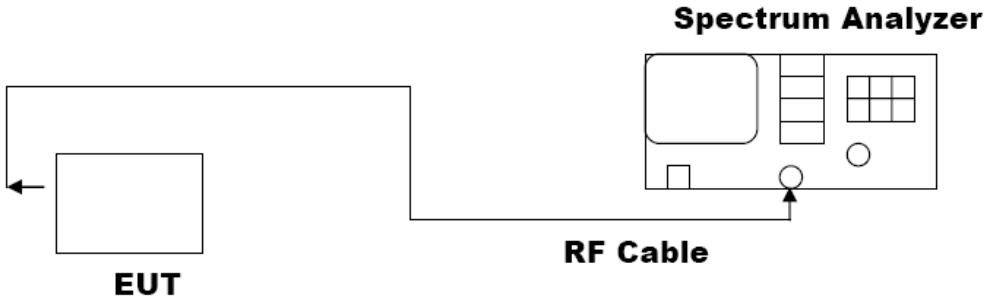
1. The EUT has been set to operate continuously on the lowest, the middle and the highest operation frequency individually.
2. The EUT stays in continuous transmitting mode on the operation frequency being set.

5. MAXIMUM OUTPUT POWER

5.1 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= 1 MHz,
   VBW= 1 MHz.
5. Set SPA Trace 1 Max hold, then View.

5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



5.3 MEASUREMENT EQUIPMENT USED

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSEM30	849720/019	05/29/2010	05/29/2011
Amplifier	H.P.	8449B	3008A00277	05/29/2010	05/29/2011
Horn Antenna	Sunol Sciences	DRH-118	A052604	05/29/2010	05/29/2011
Horn Antenna	A.H. Systems Inc.	SAS-574	--	05/29/2010	05/29/2011
Antenna	A.H.	SAS-521-4	N/A	06/29/2010	06/28/2011
Loop Antenna	Daze	ZN30900N	SEL0097	06/29/2010	06/28/2011
EMI Test Receiver	Rohde & Schwarz	ESCI	100028	05/29/2010	05/29/2011
Amplifier	H.P.	HP8447E	1937A01046	05/29/2010	05/29/2011

5.4 LIMITS AND MEASUREMENT RESULT

Channel	Frequency (MHZ)	Reading (dBm)	Factor (dB)	Output Power (dBm)	Limit (dBm)	Result
Low	2402	-1.26	0.5	-0.76	30	Pass
Middle	2441	-1.34	0.5	-0.84	30	Pass
High	2480	-1.43	0.5	-0.93	30	Pass

6 20 DB BANDWIDTH

6.1 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.

6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The Same as described in Section 5.2

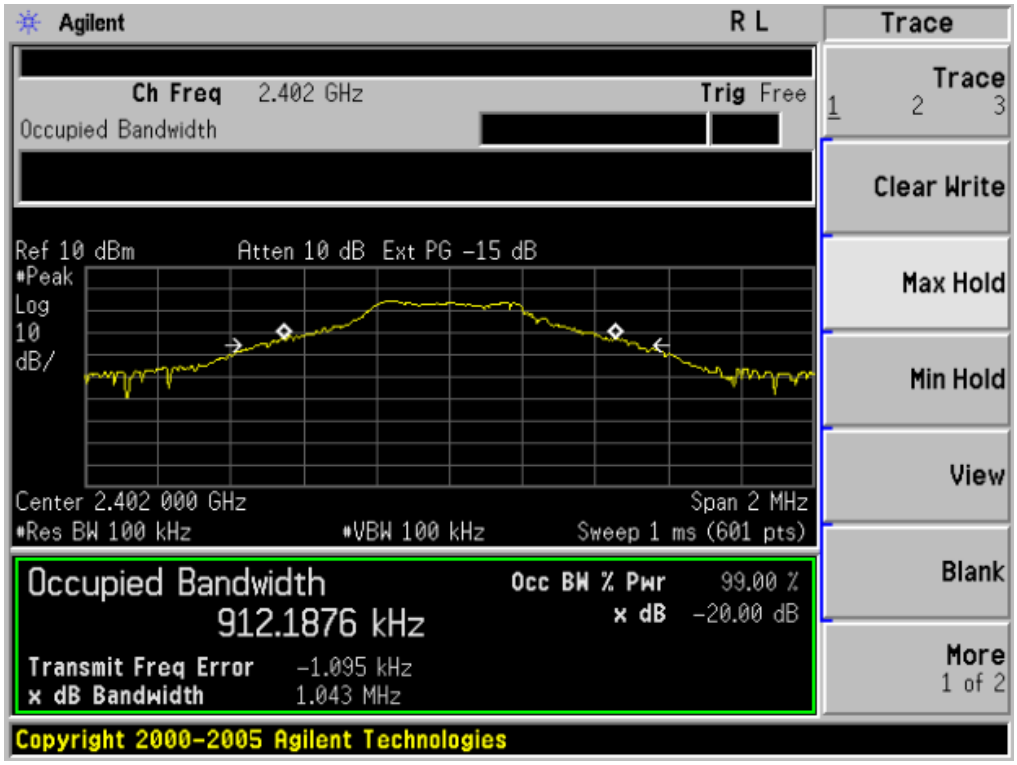
6.3 MEASUREMENT EQUIPMENT USED:

The same as described in Section 5.3

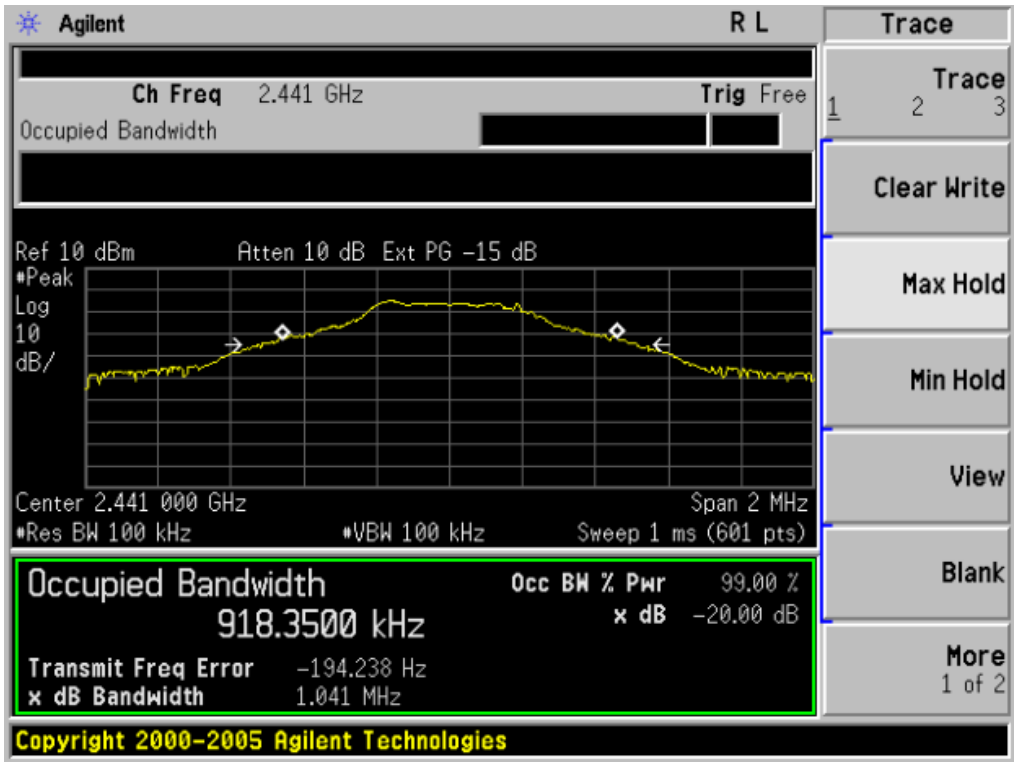
6.4 LIMITS AND MEASUREMENT RESULTS:

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
--	Low Channel	1.043	PASS
	Middle Channel	1.041	PASS
	High Channel	1.054	PASS

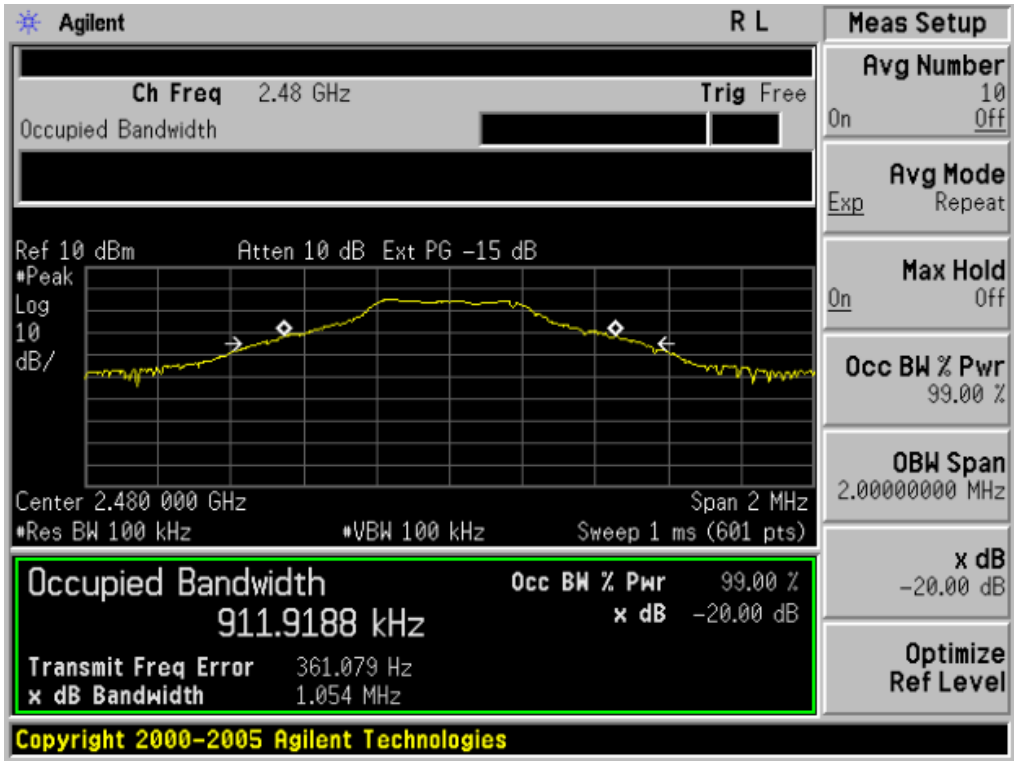
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

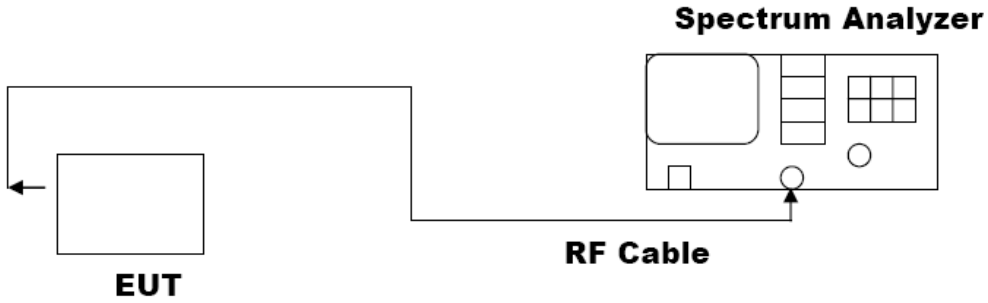


7 MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY (N/A)

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.
(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.

7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



7.3 MEASUREMENT EQUIPMENT USED:

SHIELDING ROOM					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4440A	US41421290	04/16/2009	04/15/2010

7.4 LIMITS AND MEASUREMENT RESULT:

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

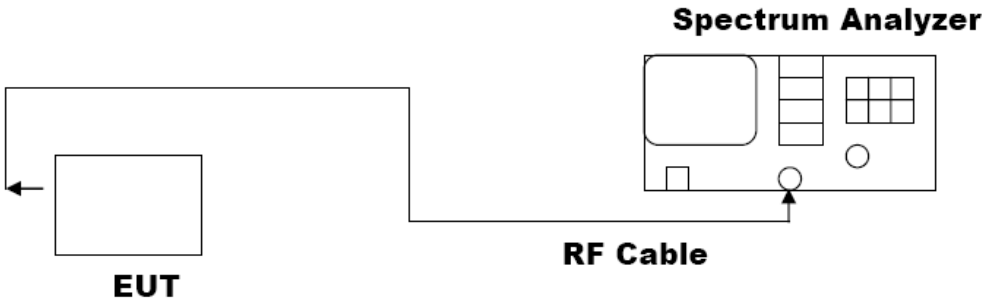
8 OUT OF BAND EMISSION

8.1 MEASUREMENT PROCEDURE:

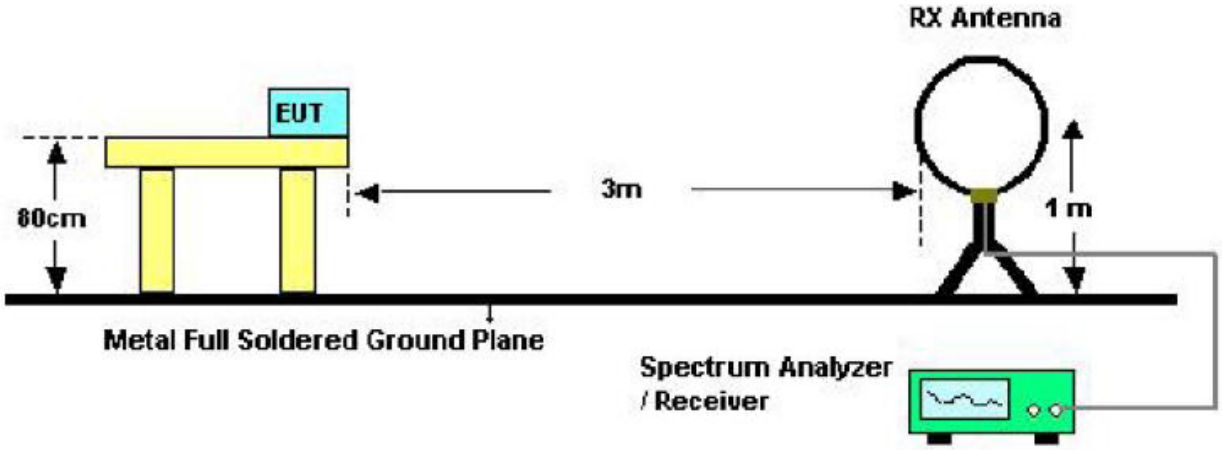
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2, Set the EUT Work on the low, middle and high operation frequency individually.
3. Set SPA RBW= 100 KHz,VBW= 100 KHz Below 1GHZ, RBW= 1MHz,VBW= 1MHz above 1GHZ.
4. Set SPA Trace 1 Max hold, then View.

8.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

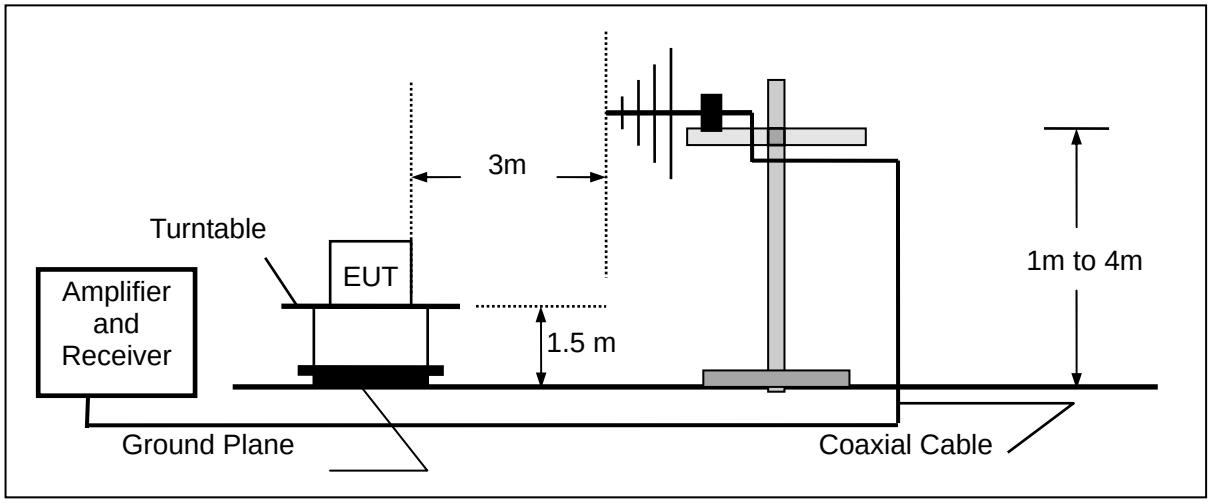
1. Conducted test setup



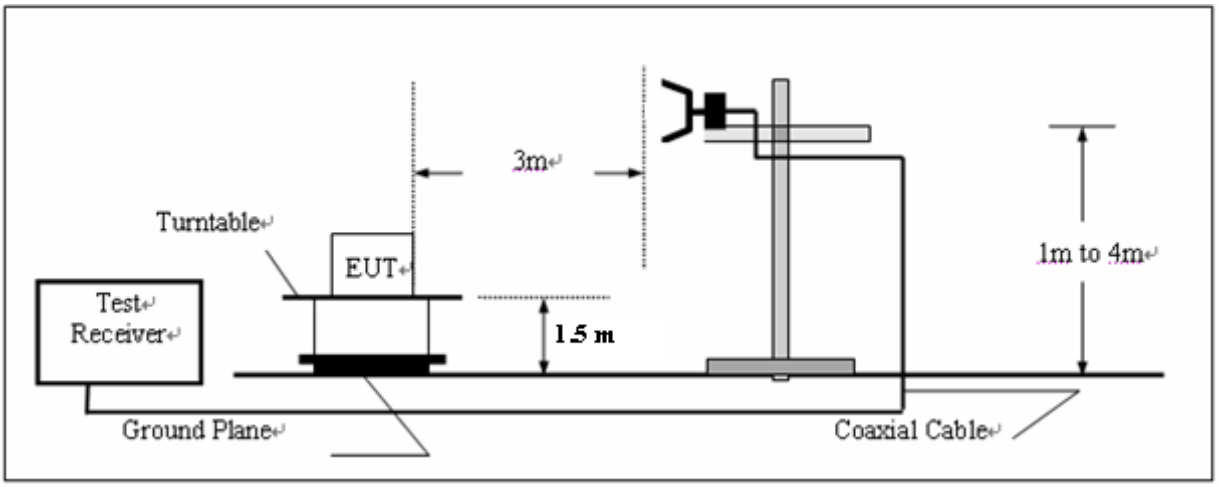
2. Radiated Emission test Setup below 1GHz and Above 1GHz



Below 30MHZ Test Setup



30MHZ~1GHZ Test Setup



Above 1GHz Test Setup

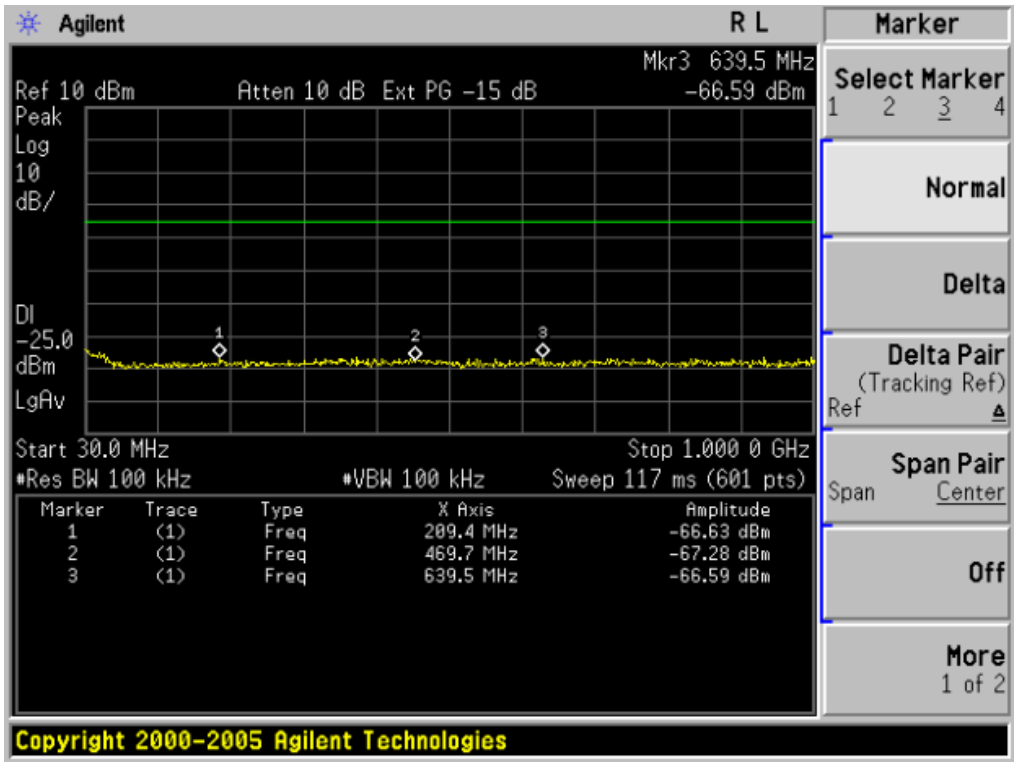
8.3 MEASUREMENT EQUIPMENT USED:

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Rohde & Schwarz	FSEM30	849720/019	05/29/2010	05/29/2011
Amplifier	H.P.	8449B	3008A00277	05/29/2010	05/29/2011
Horn Antenna	Sunol Sciences	DRH-118	A052604	05/29/2010	05/29/2011
Horn Antenna	A.H. Systems Inc.	SAS-574	--	05/29/2010	05/29/2011
Antenna	A.H.	SAS-521-4	N/A	06/29/2010	06/28/2011
Loop Antenna	Daze	ZN30900N	SEL0097	06/29/2010	06/28/2011
EMI Test Receiver	Rohde & Schwarz	ESCI	100028	05/29/2010	05/29/2011
Amplifier	H.P.	HP8447E	1937A01046	05/29/2010	05/29/2011

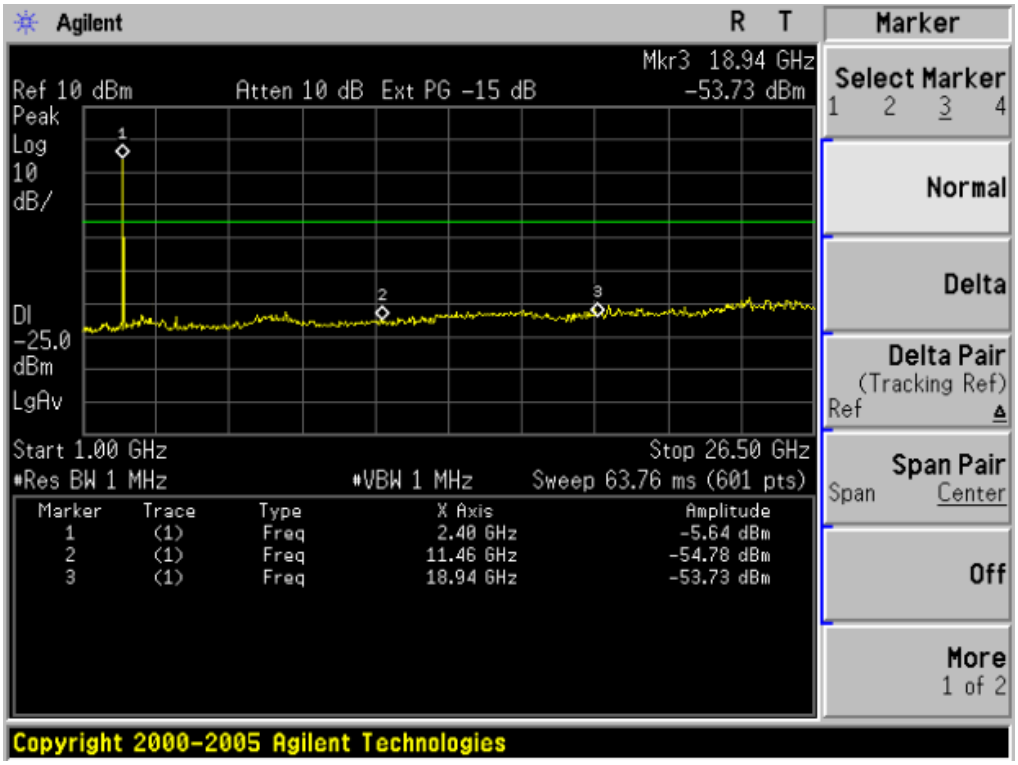
8.4 LIMITS AND MEASUREMENT RESULT:

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

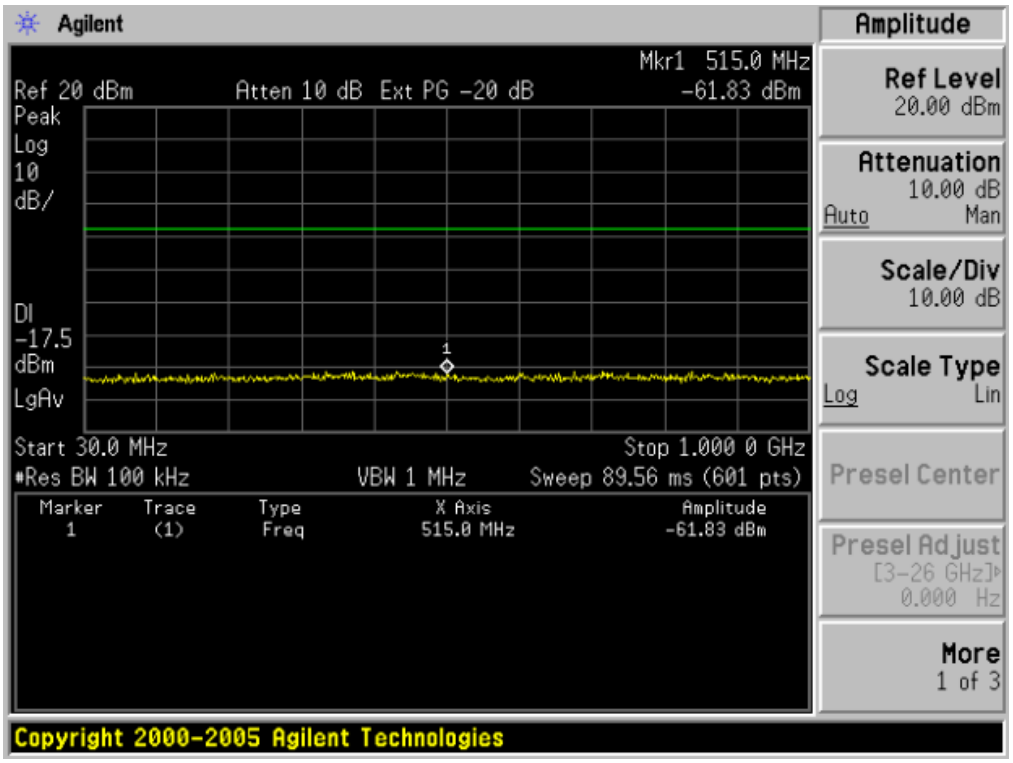
TEST PLOT OF OUT OF BAND EMISSIONS FOR LOW CHANNEL - 1



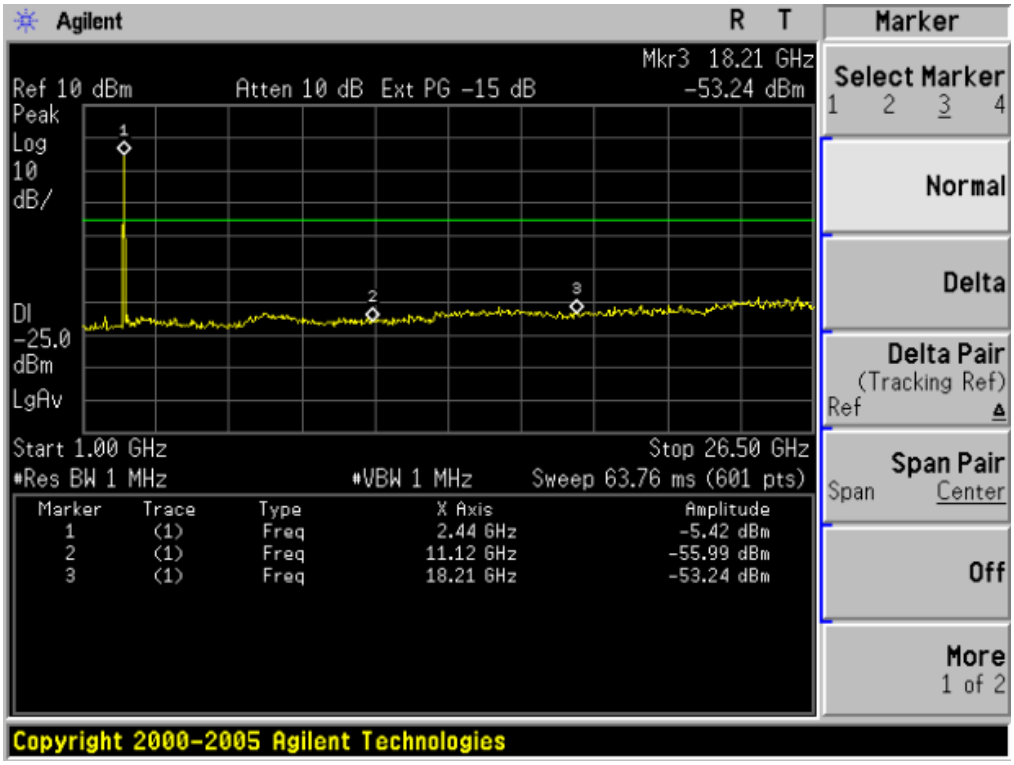
TEST PLOT OF OUT OF BAND EMISSIONS FOR LOW CHANNEL – 2



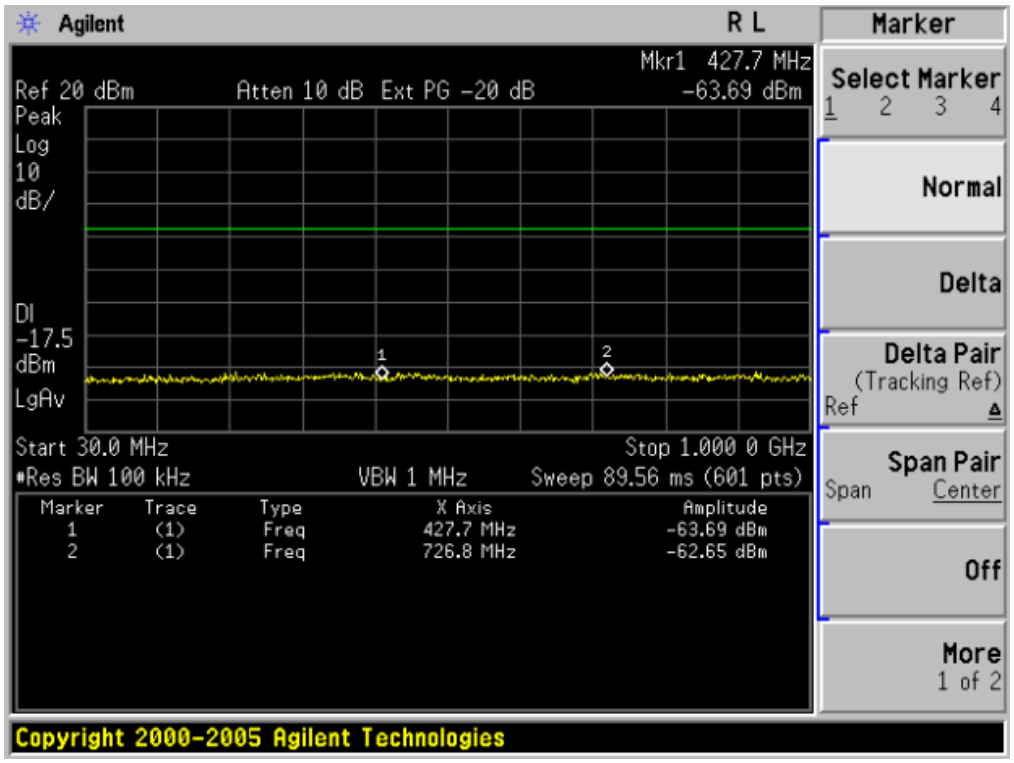
TEST PLOT OF OUT OF BAND EMISSIONS FOR MIDDLE CHANNEL – 1



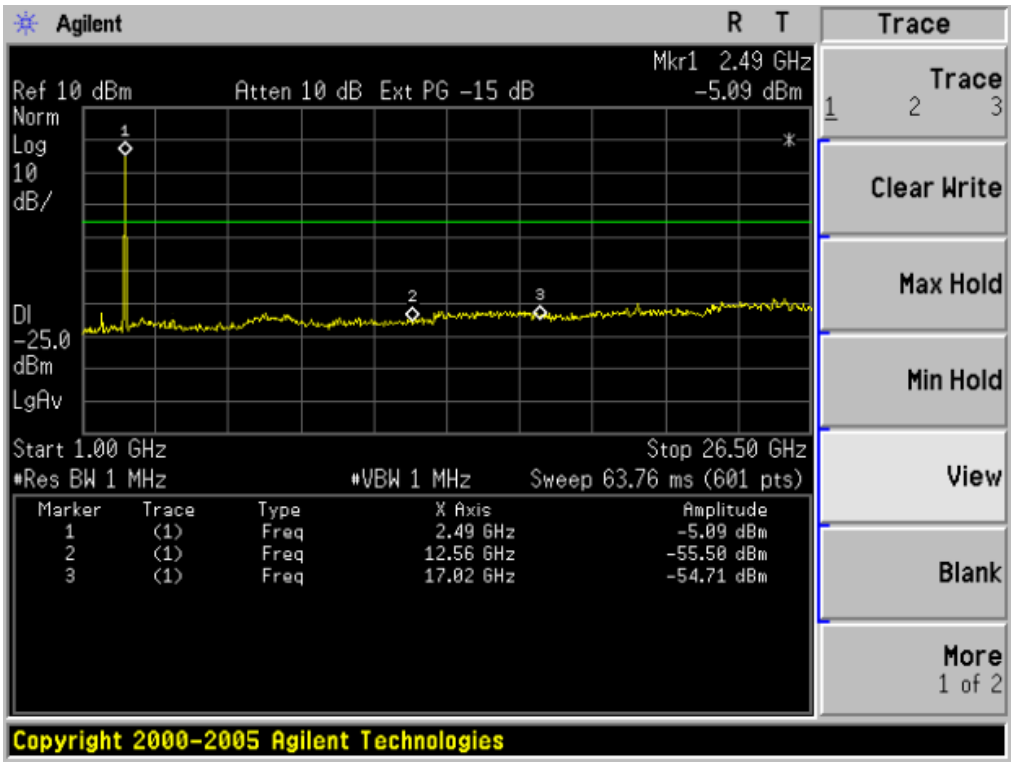
TEST PLOT OF OUT OF BAND EMISSIONS FOR MIDDLE CHANNEL – 2



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



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



RADIATED EMISSION BELOW 1GHZ

EUT	Wireless Body Scale	Model Name	BS 2.4
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC4.5V
Test Mode	BT2402MHZ		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
74.51	H	Peak	38.67	-20.16	18.51	40	-21.49
136.83	H	Peak	40.70	-19.34	21.36	43.5	-22.14
214.55	H	Peak	41.61	-17.93	23.68	43.5	-19.82
308.76	H	Peak	42.29	-13.58	28.71	46	-17.29
424.96	H	Peak	36.07	-10.76	25.31	46	-20.69
678.3	H	Peak	32.65	-7.59	25.06	46	-20.94
87.71	V	Peak	43.21	-20.10	23.11	40	-16.89
133.48	V	Peak	47.8	-19.73	28.07	43.5	-15.43
276.98	V	Peak	41.78	-15.49	26.29	46	-19.71
375.75	V	Peak	38	-12.44	25.56	46	-20.44
471.18	V	Peak	41.67	-10.83	30.84	46	-15.16
634.54	V	Peak	40.04	-7.93	32.11	46	-13.89

EUT	Wireless Body Scale	Model Name	BS 2.4
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC4.5V
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	--	--	--	--	--

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

RADIATED EMISSION ABOVE 1GHZ

EUT	Wireless Body Scale	Model Name	BS 2.4
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC4.5V
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)			
1321	H	55.96	--	-10.38	45.58	--	74	54	-8.42
1576	H	55.78	--	-9.46	46.32	--	74	54	-7.68
1923	H	53.41	--	-8.19	45.22	--	74	54	-8.78
2546	H	52.36	--	-7.67	44.69	--	74	54	-9.31
--	H	--	--	--	--	--	--	--	--
1365	V	55.45	--	-10.42	45.03	--	74	54	-8.97
1753	V	55.97	--	-9.49	46.48	--	74	54	-7.52
2137	V	55.48	--	-8.62	46.86	--	74	54	-7.14
2655	V	53.95	--	-7.34	46.61	--	74	54	-7.39
--	V	--	--	--	--	--	--	--	--

EUT	Wireless Body Scale	Model Name	BS 2.4
Temperature	26° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC4.5V
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	--	--	--	--	--	--	--	--

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

9 BAND EDGE EMISSION

9.1 MEASUREMENT PROCEDURE

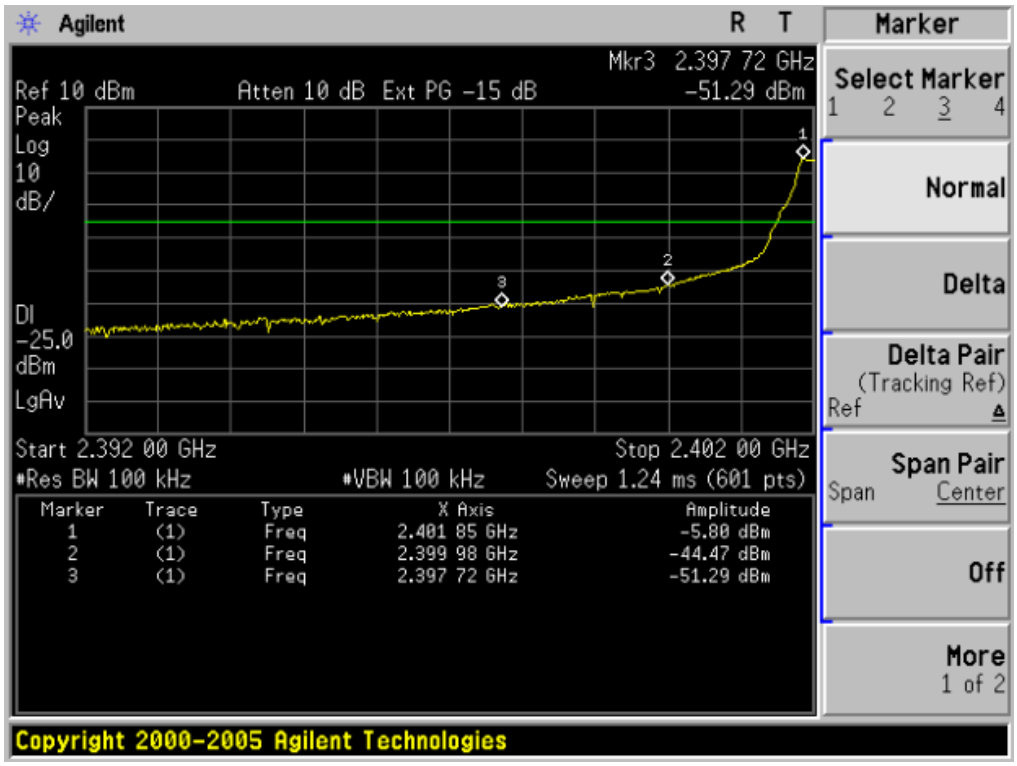
1, Set the EUT Work on the high, the low operation frequency individually.
2. Set SPA Centre Frequency = Operation Frequency, span=100MHz, RBW= 1 MHz, VBW= 1MHz.
3. The band edges was measured and receorded.

9.2 TEST SET-UP

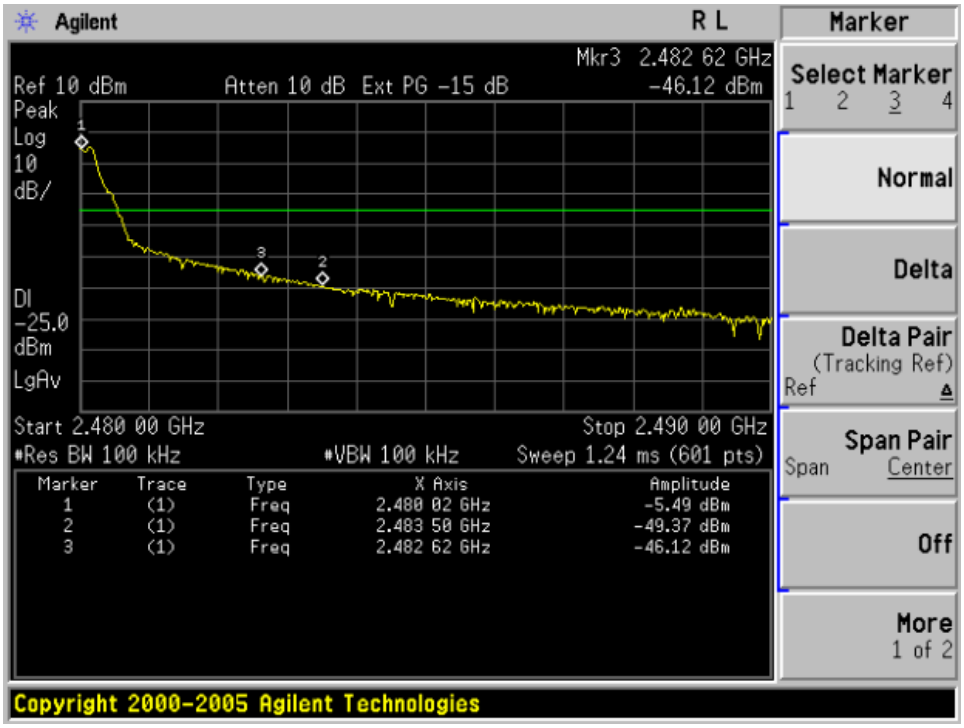
Same as clause 5.2

9.3 TEST RESULT

TEST PLOT OF BAND ELDG FOR LOW CHANNEL



TEST PLOT OF BAND ELDG FOR HIGH CHANNEL



10 NUMBER OF HOPPING FREQUENCY

10.1 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, span=20MHz
4. Set the Spectrum Analyzer as RBW = VBW = 510KHz

10.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 5.2

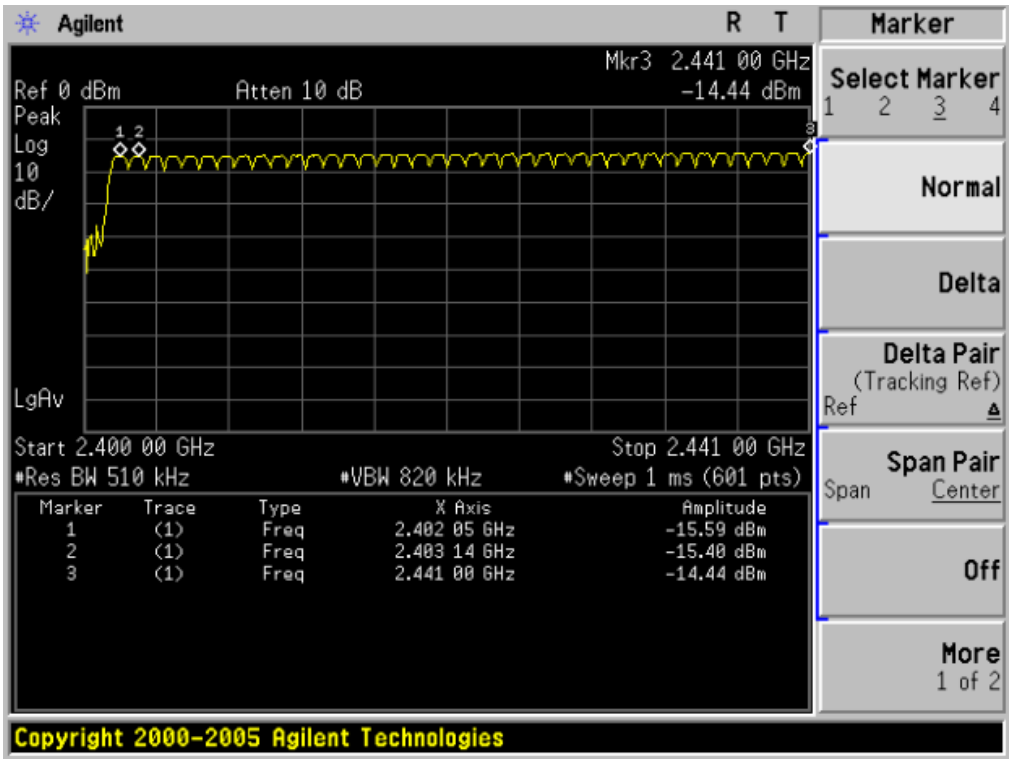
10.3 MEASUREMENT EQUIPMENT USED

The Same as described in section 5.3

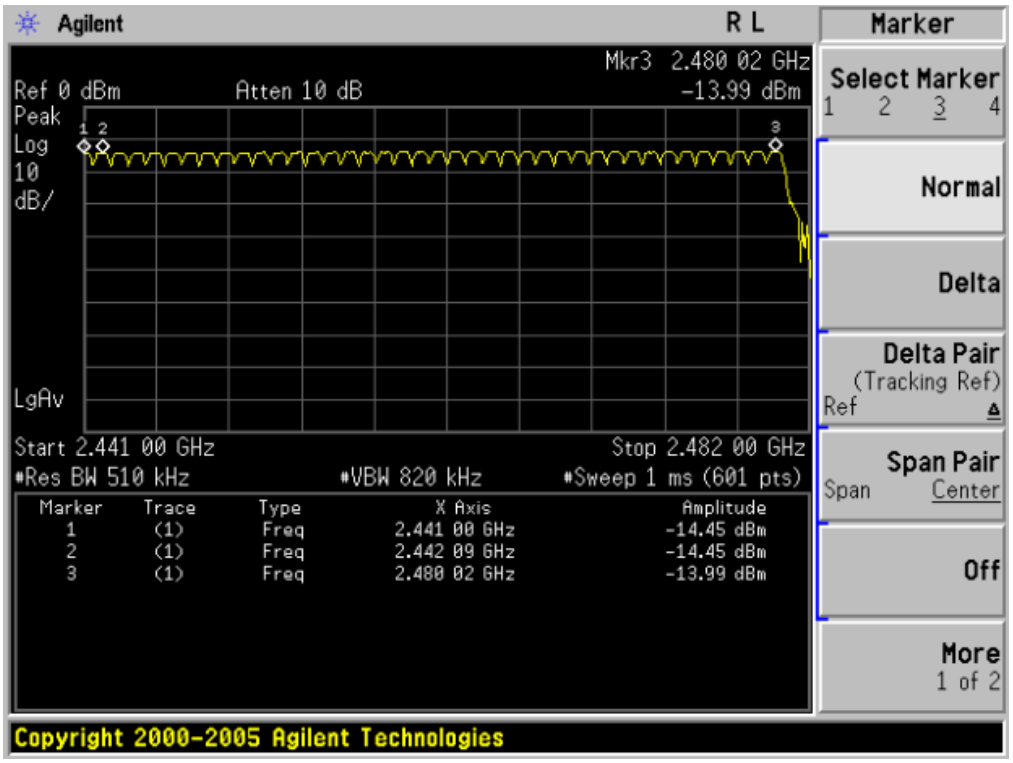
10.4 LIMITS AND MEASUREMENT RESULT:

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



11 TIME OF OCCUPANCY (DWELL TIME)

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 center frequency of spectrum analyzer = Operating frequency
4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0 Hz,

11.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 5.2

11.3 MEASUREMENT EQUIPMENT USED

The same as described in section 5.3

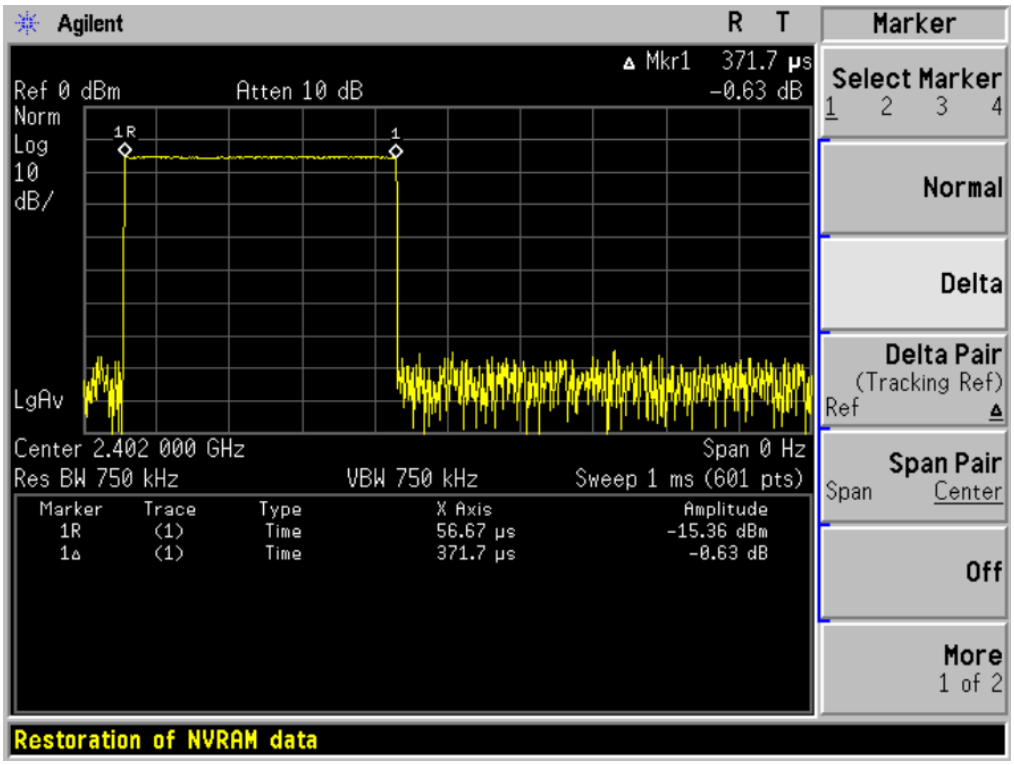
11.4 LIMITS AND MEASUREMENT RESULT

The dwell time = Time Slot Length * Hop Rate / Number of Hopping Channels * 0.4 * 79
L-CH:
DH1 Time Slot = 0.371 (ms) * (1600/(2*79))*31.6 = 118.9 (ms)
DH3 Time Slot = 1.628(ms) * (1600/(4*79))*31.6 = 260.4 (ms)
DH5 Time Slot = 2.855 (ms) * (1600/(6*79))*31.6 = 304.5 (ms)

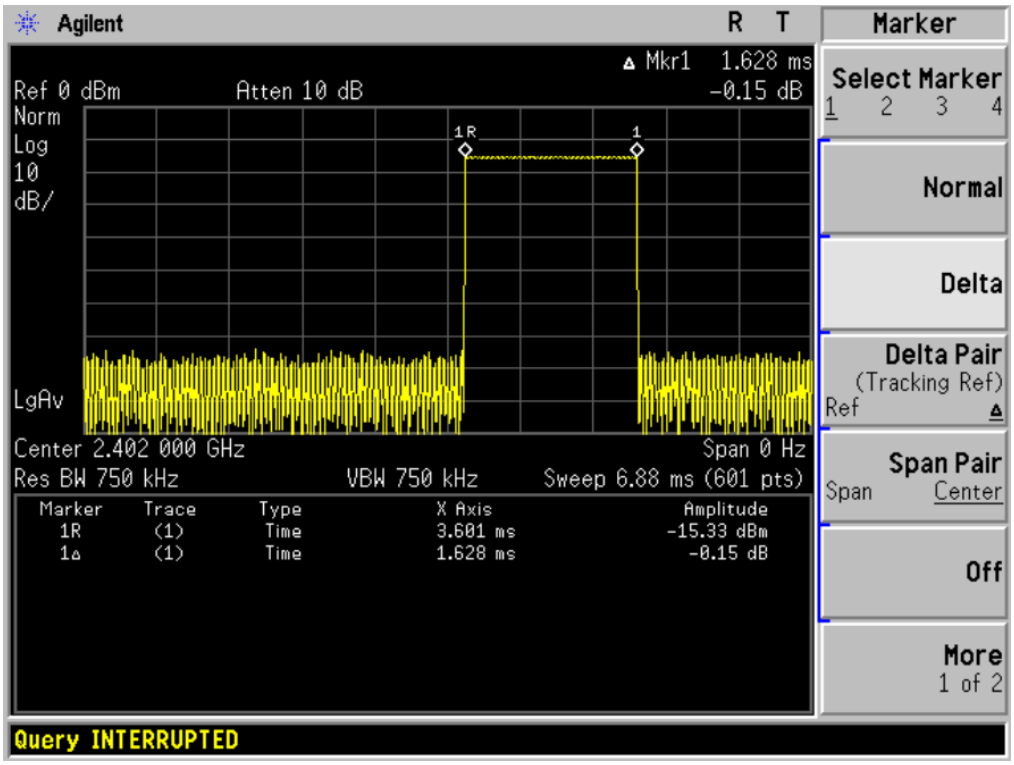
M-CH:
DH1 Time Slot = 0.373 (ms) * (1600/(2*79))*31.6 = 119.4 (ms)
DH3 Time Slot = 1.617 (ms) * (1600/(4*79))*31.6 = 258.7 (ms)
DH5 Time Slot = 2.867 (ms) * (1600/(6*79))*31.6 = 305.8 (ms)

H-CH:
DH1 Time Slot = 0.371(ms) * (1600/(2*79))*31.6 = 118.9 (ms)
DH3 Time Slot = 1.625 (ms) * (1600/(4*79))*31.6 = 260.0 (ms)
DH5 Time Slot = 2.867(ms) * (1600/(6*79))*31.6 = 305.8 (ms)

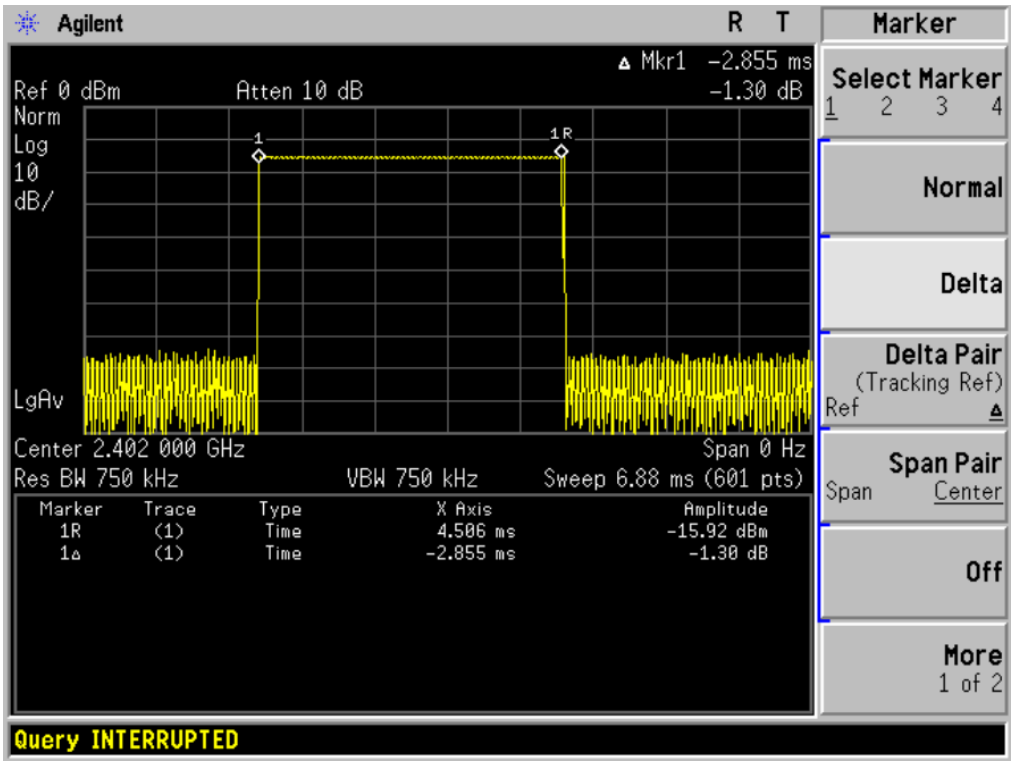
TEST PLOT DH1 MODE LOW CHANNEL



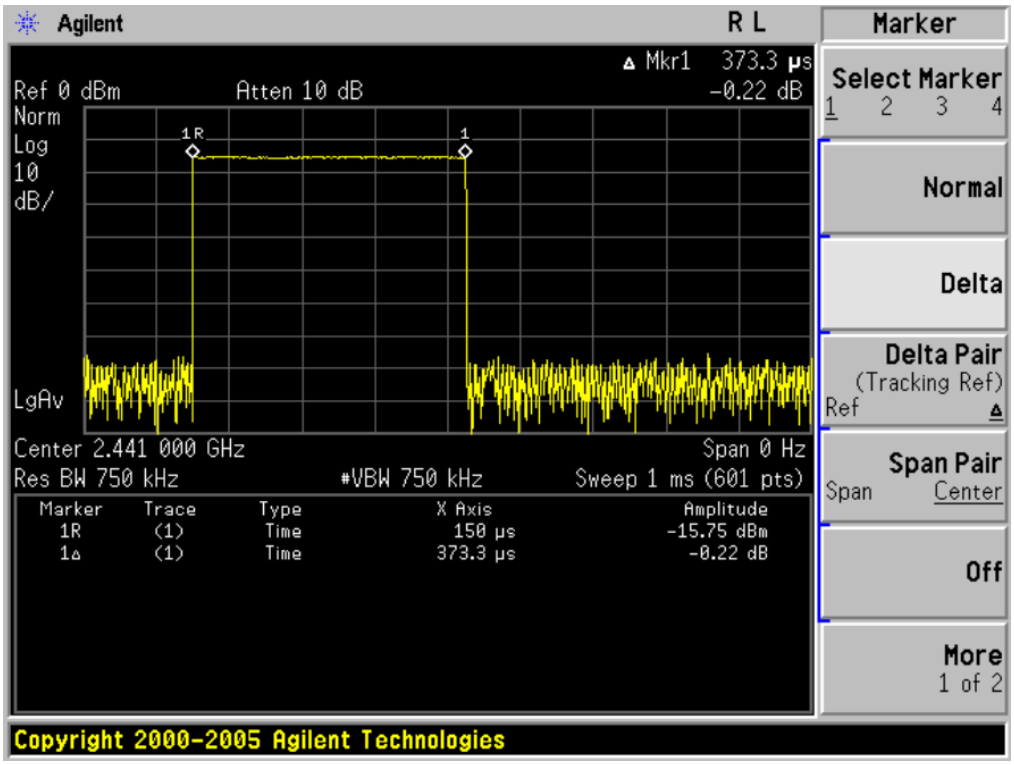
TEST PLOT DH3 MODE LOW CHANNEL



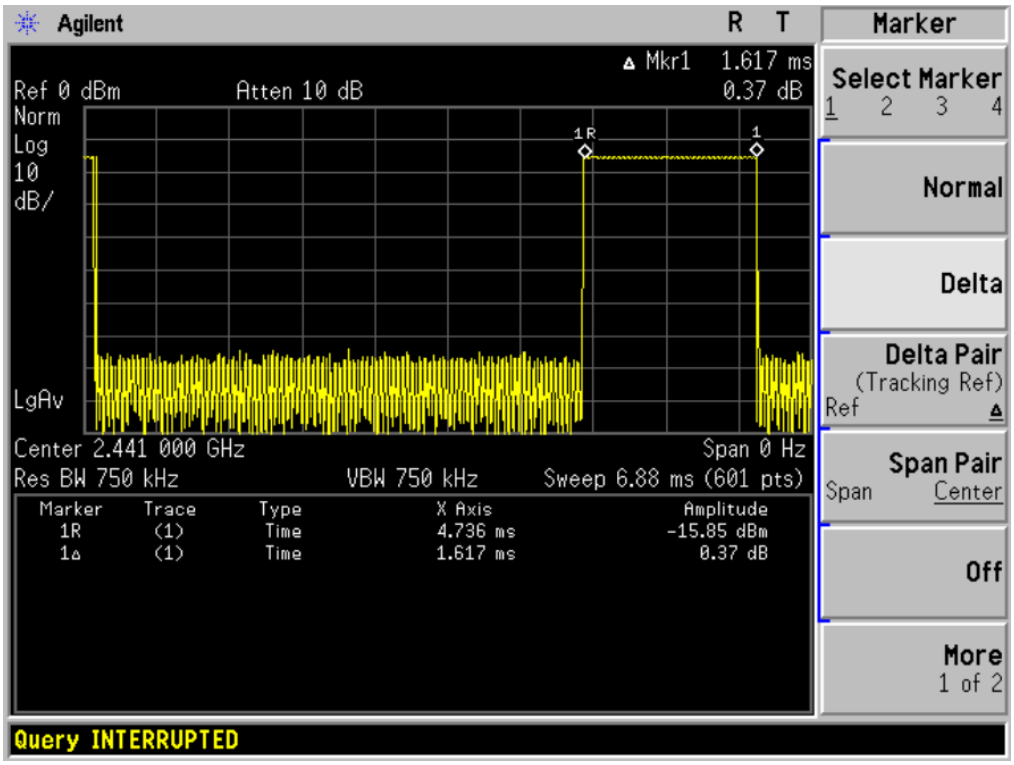
TEST PLOT DH5 MODE LOW CHANNEL



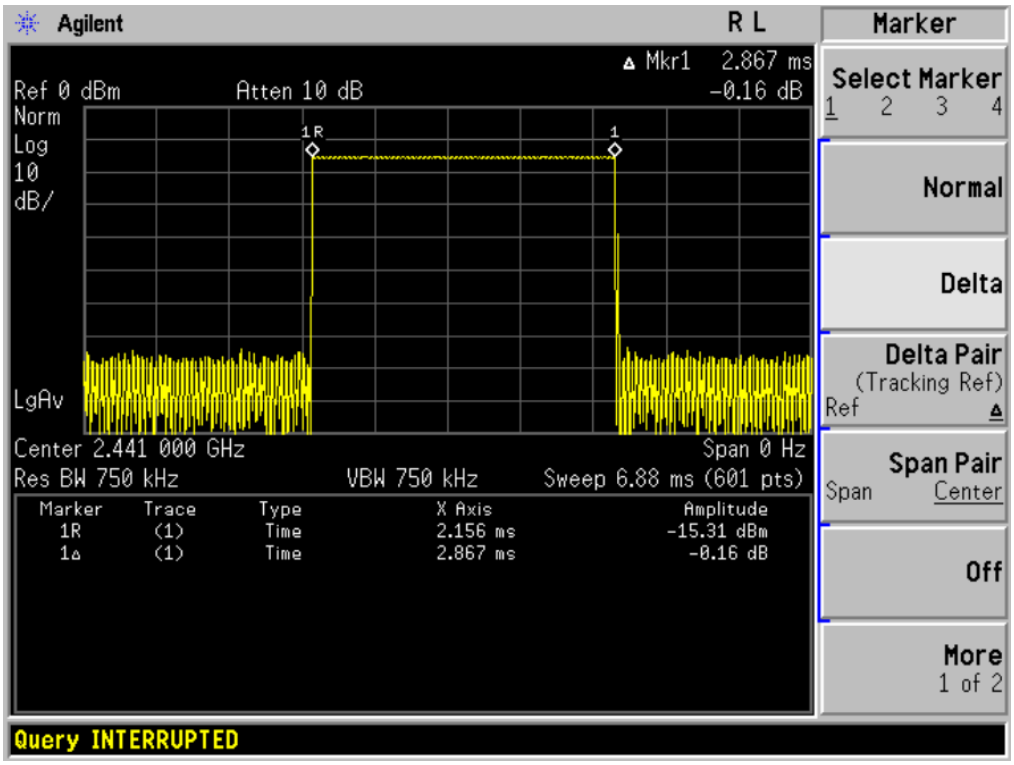
TEST PLOT DH1 MODE MIDDLE CHANNEL



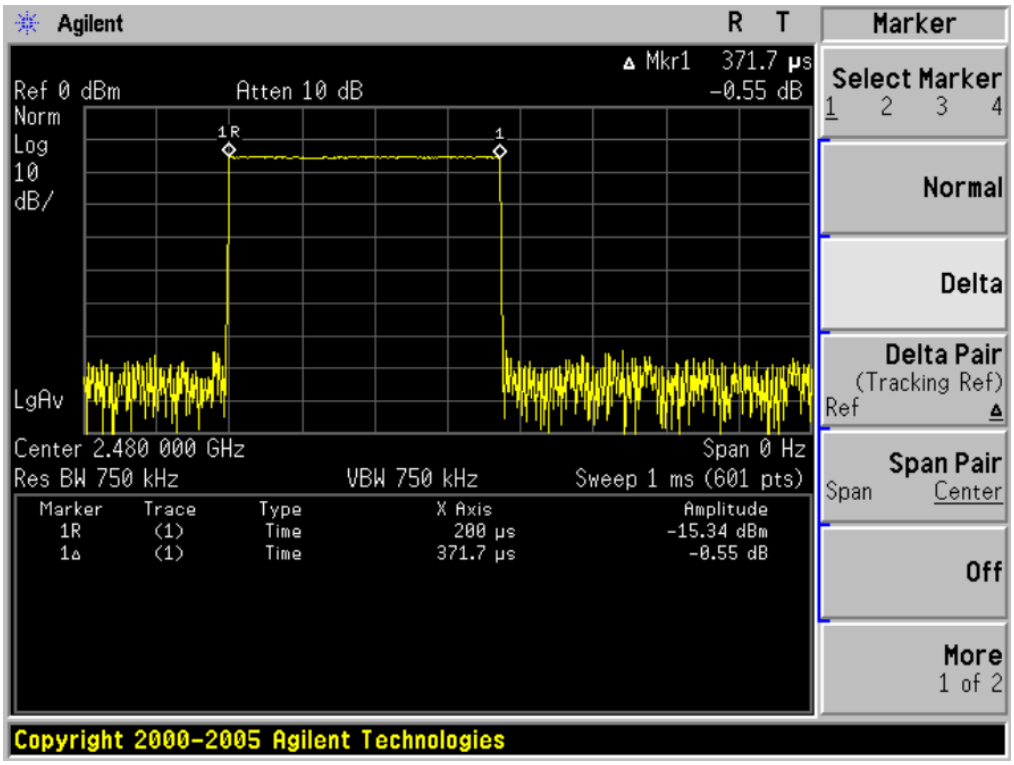
TEST PLOT DH3 MODE MIDDLE CHANNEL



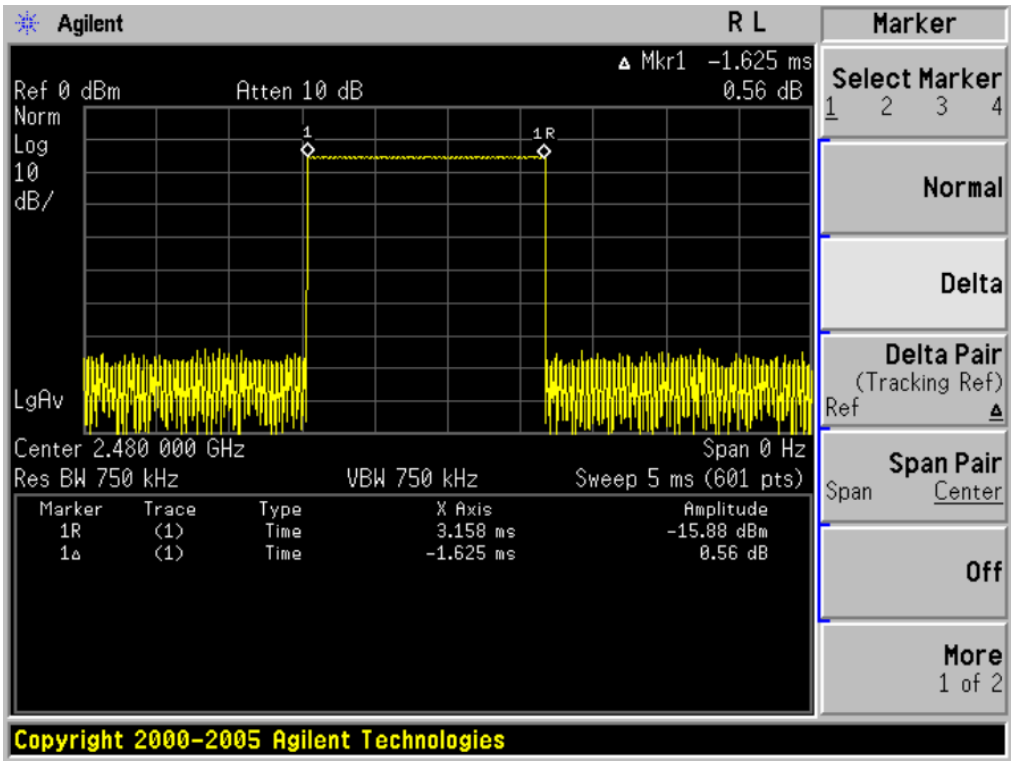
TEST PLOT DH5 MODE MIDDLE CHANNEL



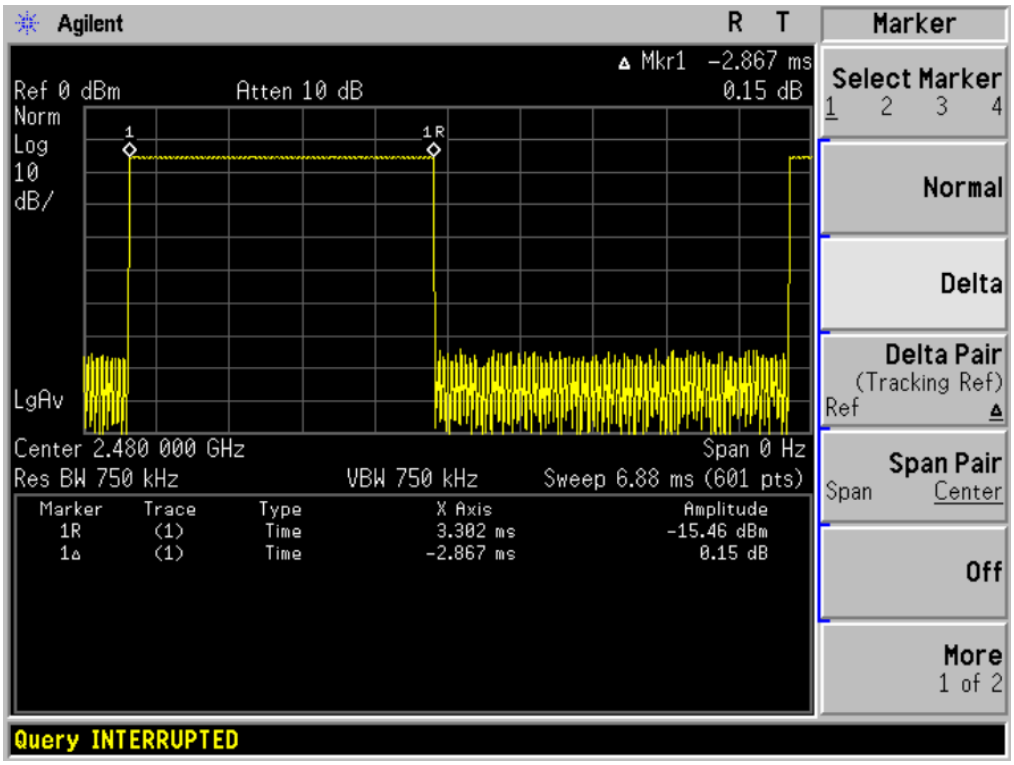
TEST PLOT DH1 MODE HIGH CHANNEL



TEST PLOT DH3 MODE HIGH CHANNEL



TEST PLOT DH5 MODE HIGH CHANNEL



12. FREQUENCY SEPARATION

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 = Middele of Operating frequency
4. Set the spectrum analyzer as RBW, VBW=100KHz, Span = 5 MHz,

12.2 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 5.2

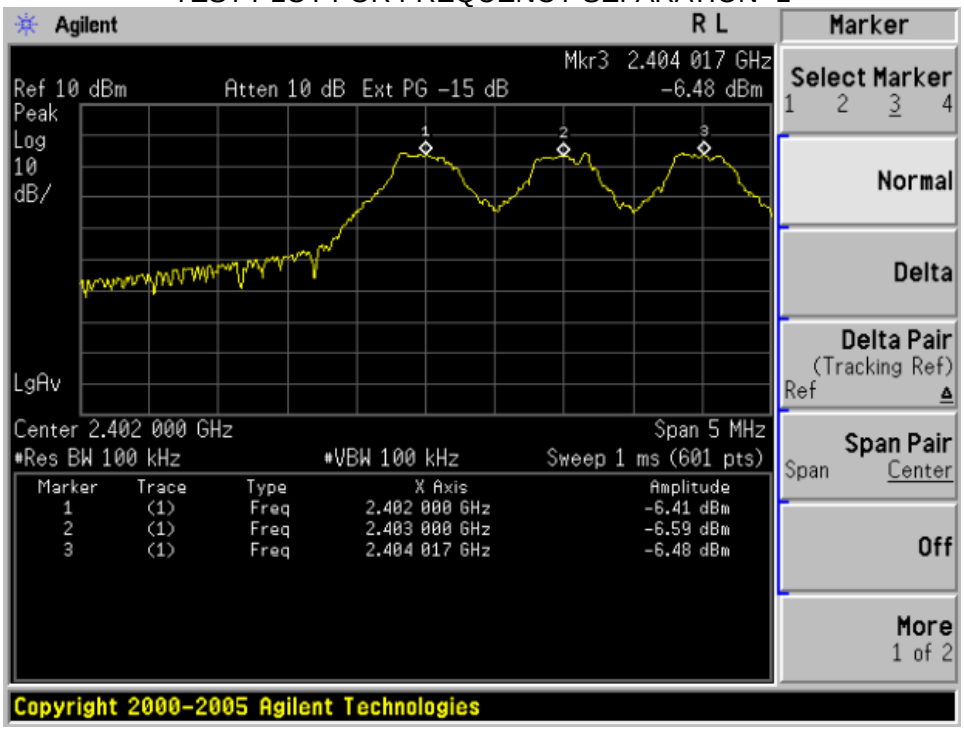
12.3 MEASUREMENT EQUIPMENT USED

The same as described in section 5.3

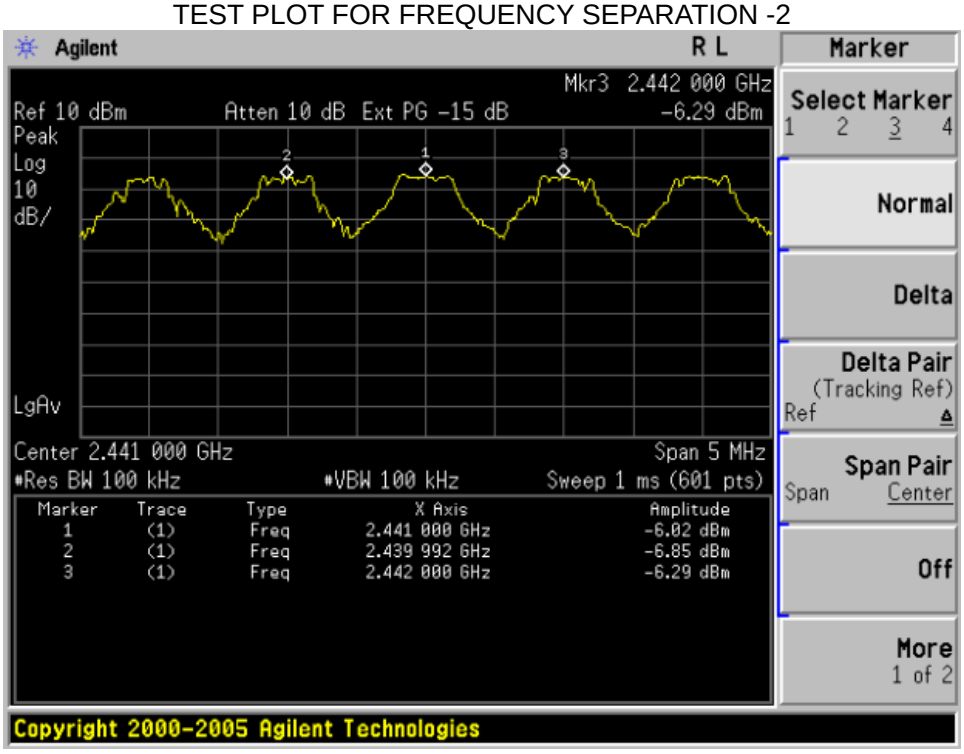
12.4 LIMITS AND MEASUREMENT RESULT

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	KHz	KHz	Pass
CH01-CH02	1000	>=25 KHz or 2/3 20 dB BW	
CH39-CH40	1000		
CH78-CH79	1008		

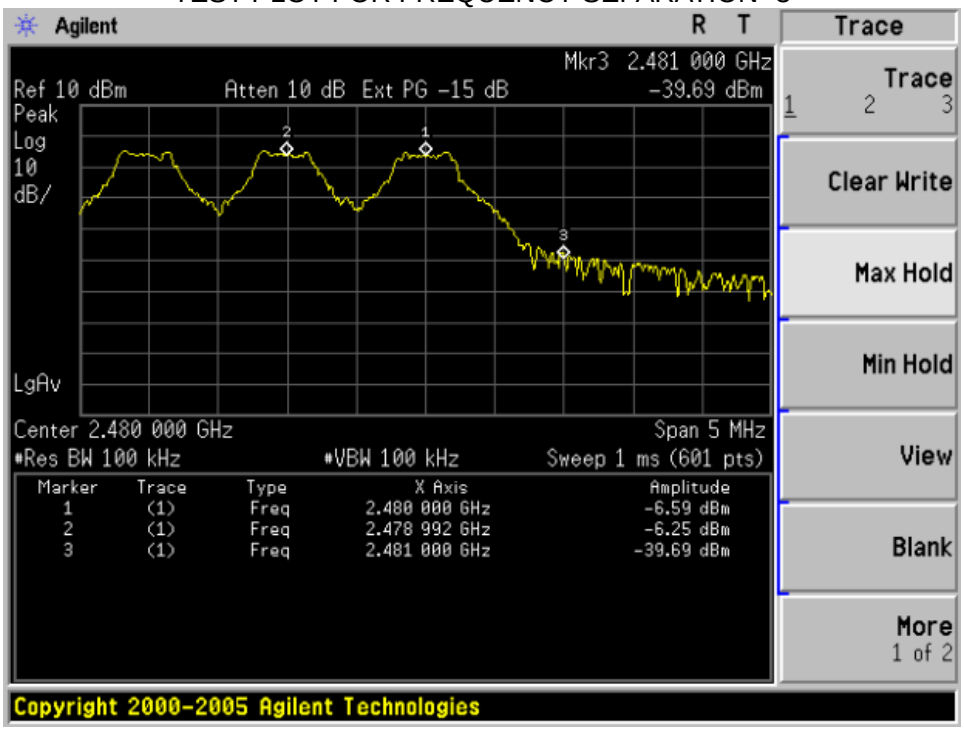
TEST PLOT FOR FREQUENCY SEPARATION -1



TEST PLOT FOR FREQUENCY SEPARATION -2

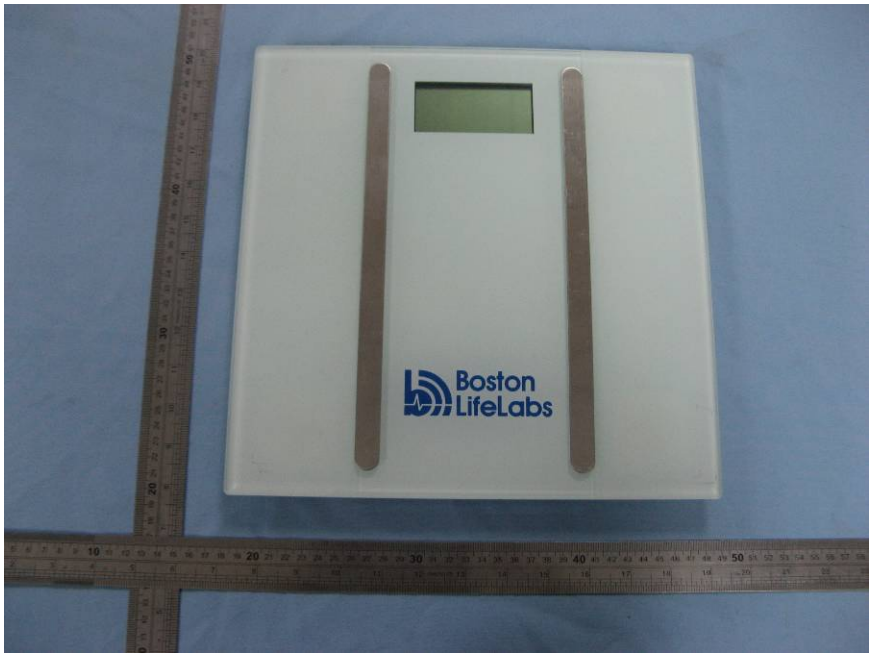


TEST PLOT FOR FREQUENCY SEPARATION -3

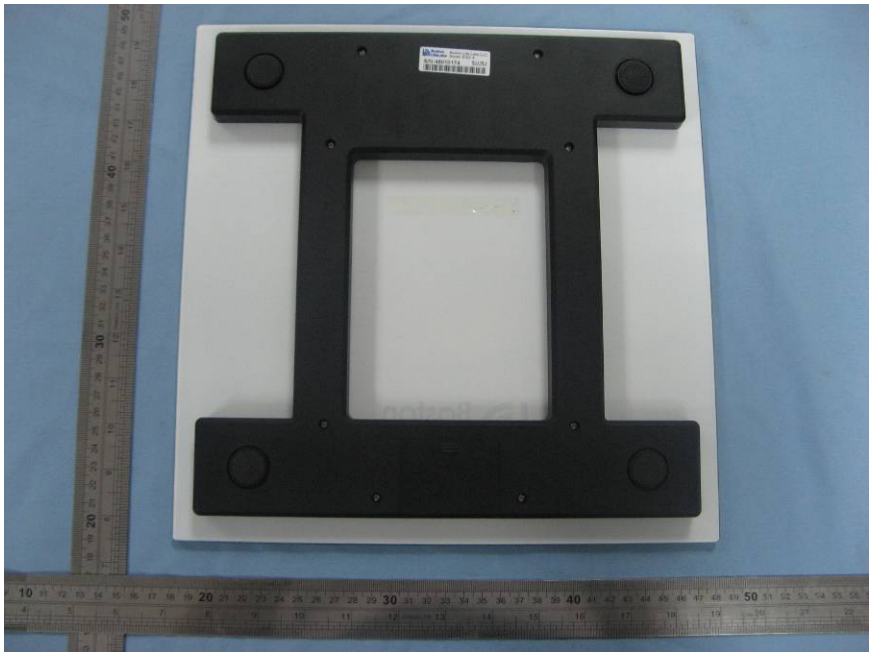


APPENDIX I
PHOTOGRAPHS OF THE EUT

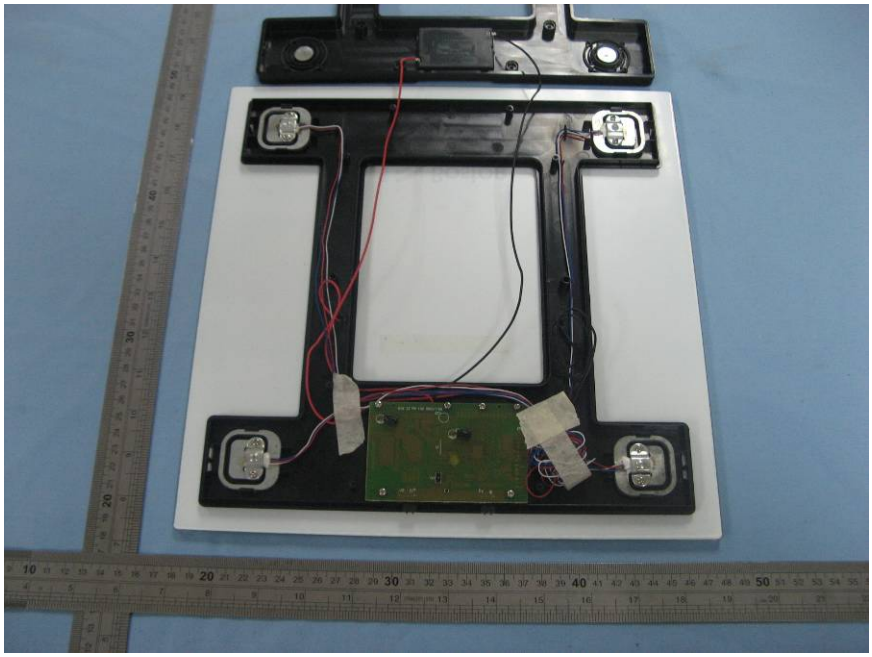
TOP VIEW OF EUT



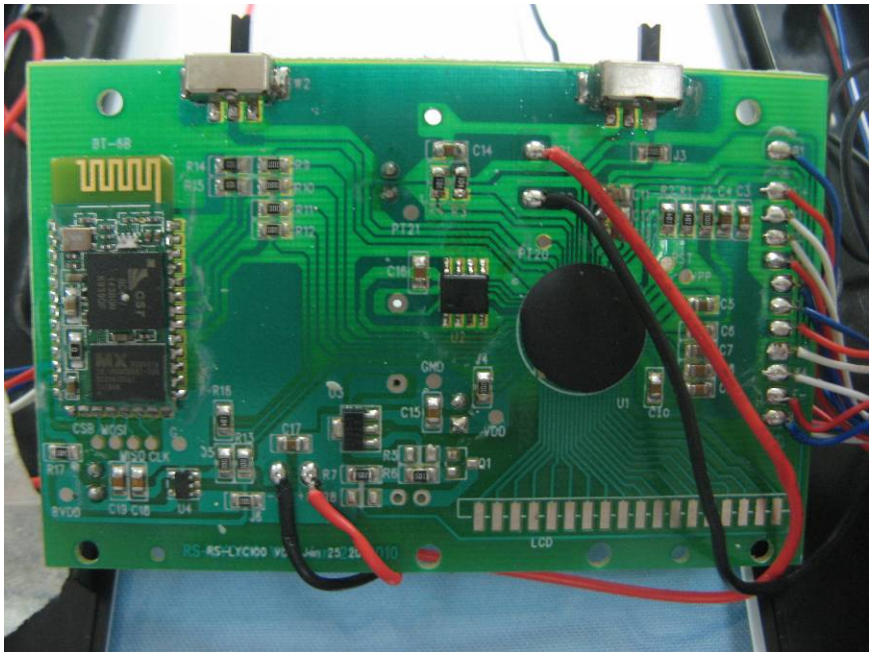
BOTTOM VIEW OF EUT



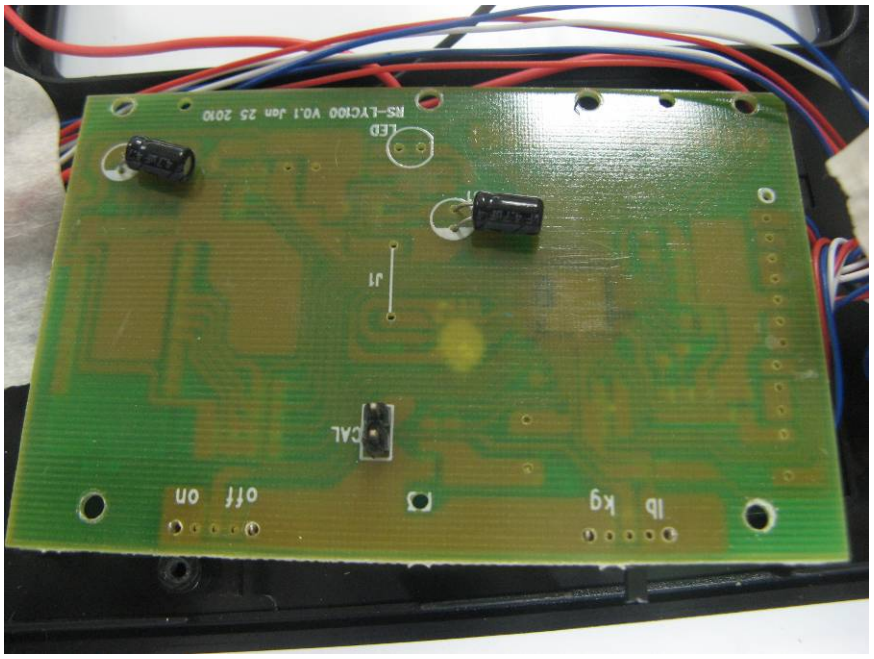
OPEN PHOTO OF EUT



INTERNAL PHOTO OF EUT – 1



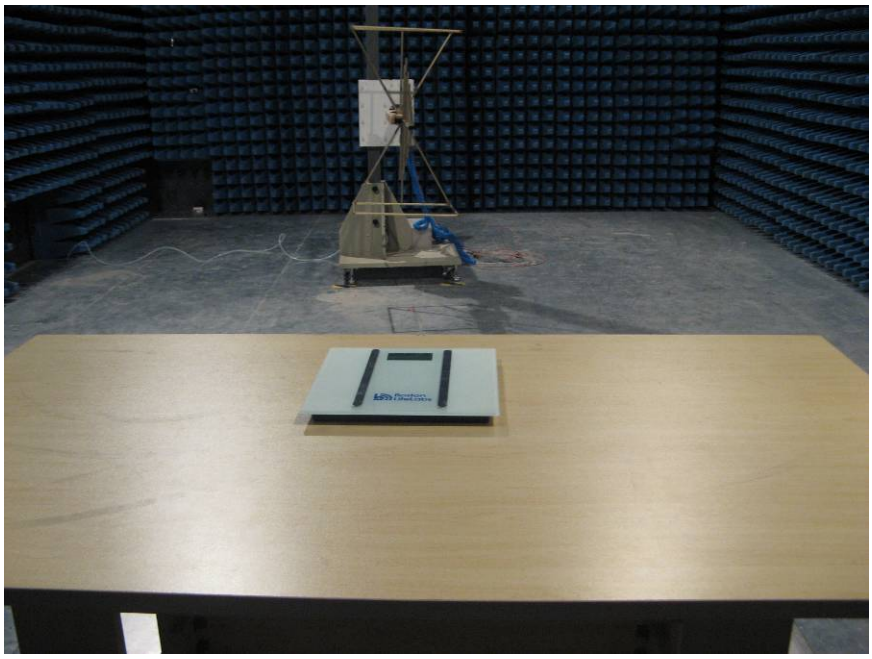
INTERNAL PHOTO OF EUT – 2



APPENDIX II

PHOTOGRAPHS OF THE TEST SETUP

RADIATED EMISSION TEST SETUP



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