Test Report for FCC

FCC ID:WBL-DVT780

Report Number		ESTF150805-012		
Applicant	Company name	FMS CO.,LTD.		
	Address	Rm#403,404,507, DongYoung Venturestel 5th 199-32, Anyang 7-Dong, Manan-Gu, Anyang-si, Gyeonggi-do, 430-817, Korea		
	Telephone	82-31-463-7017		
Product	Product name	Car A/V System		
	Model No.	DVT-780	Manufacturer	FMS CO.,LTD.
	Serial No.	NONE	Country of origin	KOREA
Test date	2008-5-22 ~ 2008-5-23		Date of issue	26-May-08
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea			
Standard	FCC PART 15 2007 , ANSI C 63.4 2003			
Measurement facility registration number	94696			
Tested by	Senior Engineer J.H.Kim (Signature)			
Reviewed by	Engineering Manager J.M.Yang (Signature)			
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable			

* Note

- Basic Model : DVT-780
- Additional Model : VNMC-1000
- Basic Model and Addition Models are same product,only model name is different.
- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test result based on a single evaluation of one sample of the above mentioned

Contents

1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.
ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.
ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : Rm 1015, World Venture Center II, 426-5, Gasan-dong, Geumcheon-gu, Seoul, Kor
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

1.3 Official Qualification(s)

MIC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication
KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements
FCC : Filed Laboratory at Federal Communications Commission
VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

2. Description of EUT

2.1 Summary of Equipment Under Test (Bluetooth)

Product Name	: Car A/V System
Model Number	: DVT-780
Modulation Type	: FHSS,GFSK
Transfer Rate	: 1Mbps
Number of Channe	: 79 ch
Serial Number	: NONE
Manufacturer	: FMS CO.,LTD.
Country of origin	: KOREA
Rating	: INPUT : 13.2Vdc
Receipt Date	: 8-May-08

2.2 General descriptions of EUT

- The Bluetooth frequency hopping transceiver is designed to operate between 2400 and 2483.5MHz.

- the system is designed to comply with all of the regulations in Section 15.247 when the transmitter is presented with a continuous data (or information) stream. It is also comply with FHSS requirements in Section 15.247(a)(1).
: Its hopping sequence is pseudo random, all channels used equally on average.
The receiver input bandwidth approximately equal the transmit band bandwidth, and its hop in sequence with the transmit signal.

- the system does not coordinate its channel selection/hopping sequence with other frequency hopping systems for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters.

3. Test Standards

Test Standard : FCC PART 15 (2007)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2003)

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

Summary of Test Results

Applied Satandard : 47 CFR Part 15, Subpart C				
Standard	Test Type	Result	Remark	Limit
15.207	AC Power Conducted Emission	N/A	Not applicable	
15.209	Intentional Radiated Emission	Pass	Meet the requirement	
15.247(a)(1)	Carrier Frequency Separation &	Pass	Meet the requirement	>25kHz
	20 Bandwidth			
15.247(b)	Maximum Peak ouput power	Pass	Meet the requirement	30dBm(1W)
15.247(a)(1)(ii)	Number of Hopping Frequency	Pass	Meet the requirement	>75
15.247(c)	Transmitter Radiated Emission	Pass	Meet the requirement	
15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Pass	Meet the requirement	<400ms
15.247(c)	Band Edge Measurement	Pass	Meet the requirement	

4. Measurement Condition

4.1 EUT Operation.

a. Channel

Ch.	Frequency	Ch.	Frequency
0	2402 MHz	40	2442 MHz
1	2403 MHz	41	2443 MHz
2	2404 MHz	42	2444 MHz
3	2405 MHz	43	2445 MHz
4	2406 MHz	...	...
...	...	78	2480 MHz
39	2441 MHz		

b. Measurement Channel : Low(2402MHz), Middle(2441MHz),High(2480MHz)

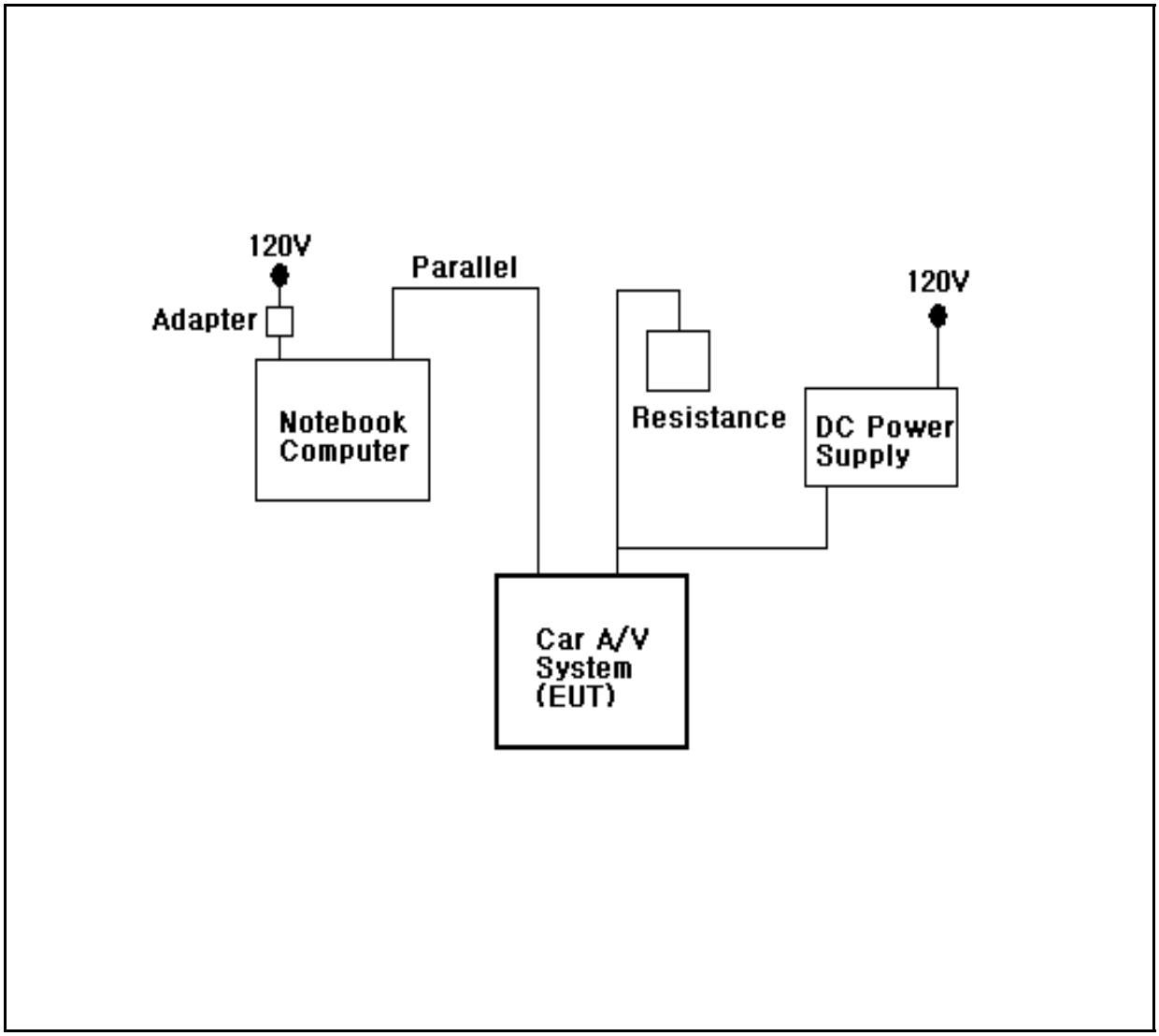
c. Test Mode : FHSS, GFSK

d. Test rate : 1Mbps

4.2 EUT Operation.

* The EUT was in the following operation mode during all testing
* The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected hightest level of emission
* After setting the EUT by the provided Test Program, tested under transmission/receiving condition continuously at specific channel frequency.

4.3 Configuration and Peripherals



4.4 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Car A/V System	DVT-780	NONE	FMS CO.,LTD.	EUT
DC Power Supply	105-09SM	NONE	DONG YANG ELECTRONICS COMMUNICATION	
Resistance	NONE	NONE	DONG YANG ELECTRONICS COMMUNICATION	

4.5 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Car A/V System	Line	DC POWER SUPPLY	Line	1	No	
Car A/V System	HN445	Notebook Computer	Parallel	1	Yes	
Car A/V System	Line	Resistance	Line	1	Yes	

5. Carrier Frequency Separation

5.1 Test procedure

According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

5.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 300KHz

. VBW= 300KHz

. Span= 3MHz

. Sweep= suitable duration based on the EUT specification.

6dB Bandwidth Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-02-28
Dual Directional Coupler	778D	16502	2009-02-28
-Spectrum Analyzer <=> EUT	Loss: 1.22dB	-	

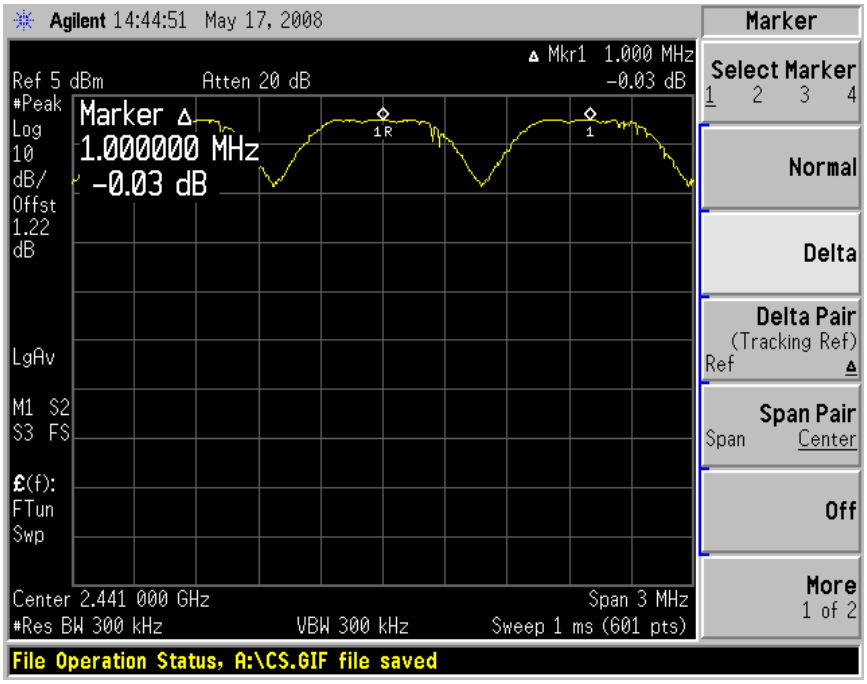
5.3 Measurement results

EUT	Bluetooth	MODEL	DVT-780
MODE	FHSS	ENVIRONMENTAL CONDITION	25°C, 43%RH
INPUT POWER	13.2Vdc		

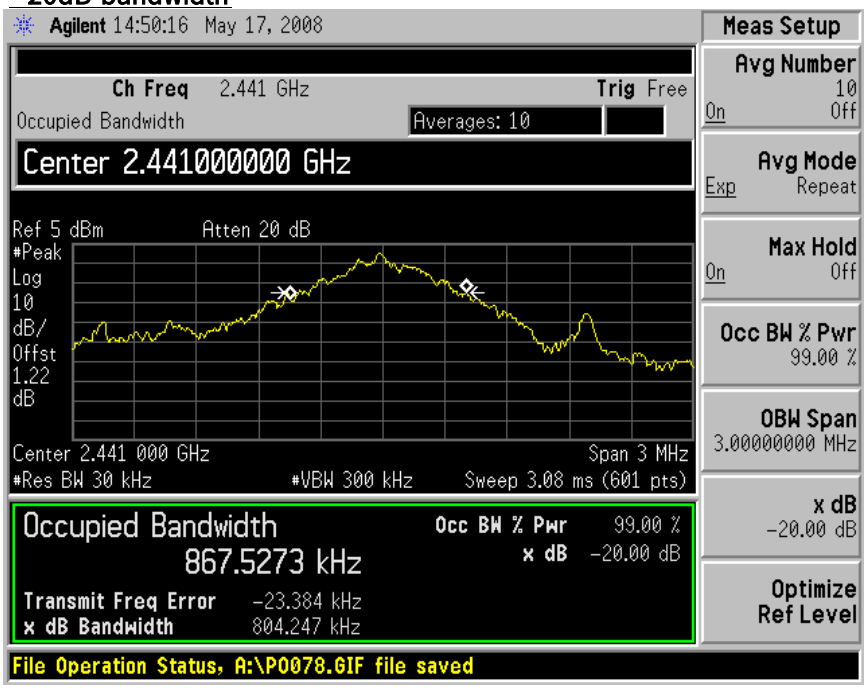
CHANNEL	Channel Frequency (MHz)	Bandwidth at 20dB below(kHz)	Channel Separation (MHz)	Limit (kHz)	PASS/FAIL
39	2441	804.2	1.0	>25	PASS

5.4 Trace data

Channel Separation



20dB bandwidth



6. MAXIMUM PEAK OUTPUT POWER

6.1 Test procedure

The transmitter antenna terminal is connected to the input of a Spectrum Analyzer. Measurement is made while EUT is operating in transmission mode at the appropriate center frequency. The maximum peak output power measurement is 30dBm.

The spectrum analyzer is set to as following.

. RBW= 1MHz

. VBW= 1MHz

. Span= 1MHz

. Sweep= 1.6s

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-02-28
Dual Directional Coupler	778D	16502	2009-02-28
-Spectrum Analyzer <=> EUT	Loss: 1.22dB	-	

6.2 Measurement results

EUT	Bluetooth	MODEL	DVT-780
MODE	GFSK, DH5	ENVIRONMENTAL CONDITION	25°C, 43%RH
INPUT POWER	13.2Vdc		

CHANNEL	Channel Frequency (MHz)	Peak Power Output(dBm)		Limit[1W] (dBm)	PASS/ FAIL
		(dBm)	(W)		
0	2402	0.13	0.0010	30.0	PASS
39	2441	0.47	0.0011	30.0	PASS
78	2480	-0.36	0.0009	30.0	PASS

7. Number of Hopping Frequency

7.1 Test procedure

According to §15.247(a)(1)(ii), Frequency hopping systems operating in the 2400MHz-2483.5MHz bands shall use at least 75 hopping frequencies.

7.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 300KHz

. VBW= 300KHz

. Span= the frequency band of operation

. Sweep= suitable duration based on the EUT specification.

The Number of Hopping Frequency Test Instruments

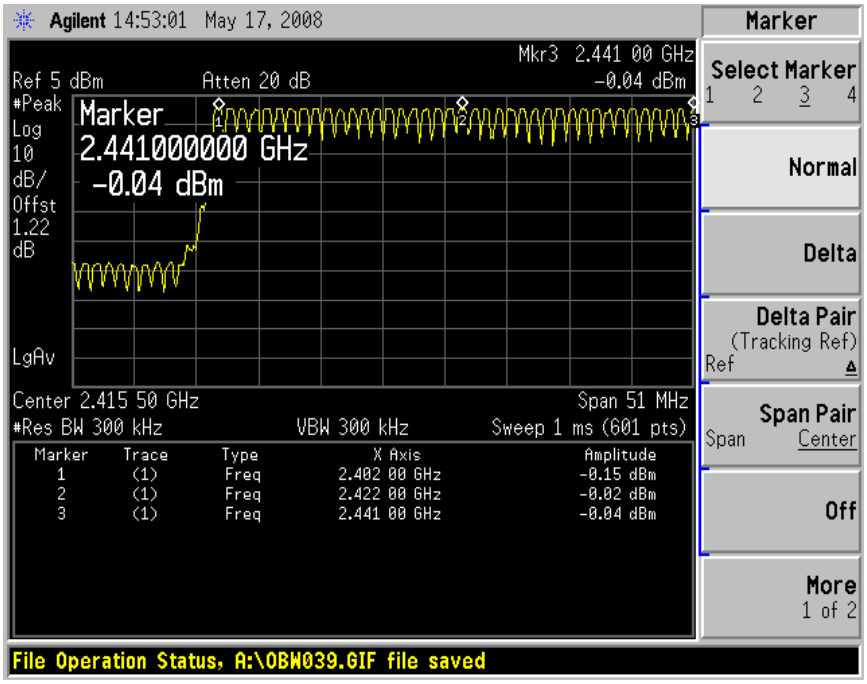
Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-02-28
Dual Directional Coupler	778D	16502	2009-02-28
-Spectrum Analyzer <=> EUT	Loss: 1.22dB		

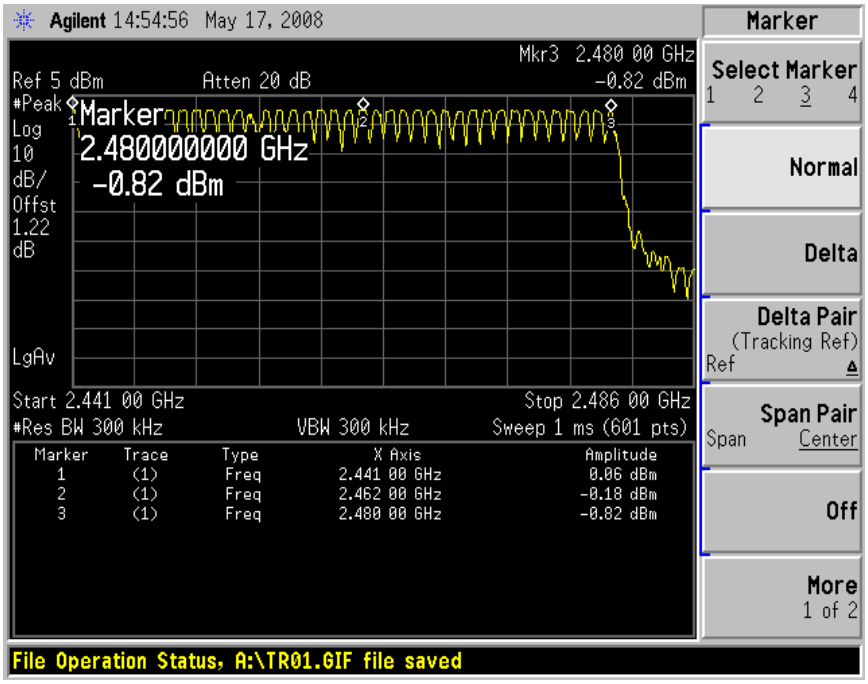
7.3 Measurement results

EUT	Bluetooth	MODEL	DVT-780
MODE	FHSS	ENVIRONMENTAL CONDITION	25℃, 43%RH
INPUT POWER	13.2Vdc		

Number of CH	Limit (Number of CH)	PASS/FAIL
79	>75	PASS

7.4 Trace data





8. Time of Occupancy (Dwell Time)

8.1 Test procedure

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a
period 0.4 s multiplied by the number of hopping channels employed.

8.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 1MHz

. VBW≥RBW

. Span= zero span, centered on a hoppong channel

. Sweep = as necessary to capture the entire dwell time per hoppong channel

. Detector function = Peak

. Trace = Max hold

The Time of Occupancy Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-03-28
Dual Directional Coupler	778D	16502	2009-03-28
-Spectrum Analyzer <=> EUT	Loss: 1.22dB	-	

8.3 Measurement results

EUT	Bluetooth	MODEL	DVT-780
MODE	FHSS	ENVIRONMENTAL CONDITION	24°C, 43%RH
INPUT POWER	13.2Vdc		

8.4 Measurement Data

A. DH1 Mode

One peiod for each particular channel : 0.420 ms X 320.1 = 134.442 ms

Channel	Pulse Time(ms)	Limit (ms)	PASS/FAIL
39	134.442	400	PASS

B. DH3 Mode

One peiod for each particular channel : 1.668 ms X 159.9 = 266.713 ms

Channel	Pulse Time(ms)	Limit (ms)	PASS/FAIL
39	266.713	400	PASS

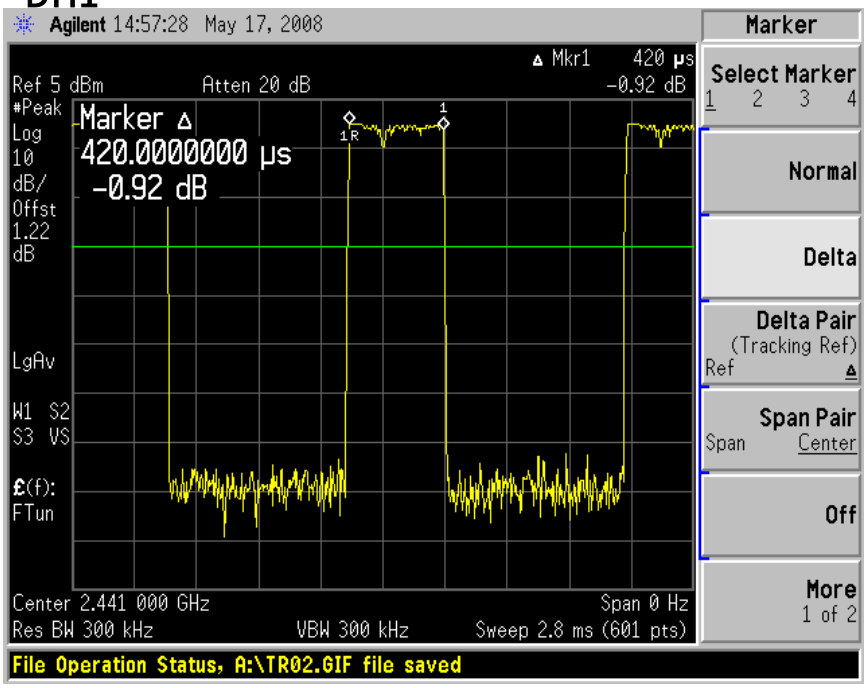
C. DH5 Mode

One peiod for each particular channel : 2.933 ms X 106.81 = 313.274 ms

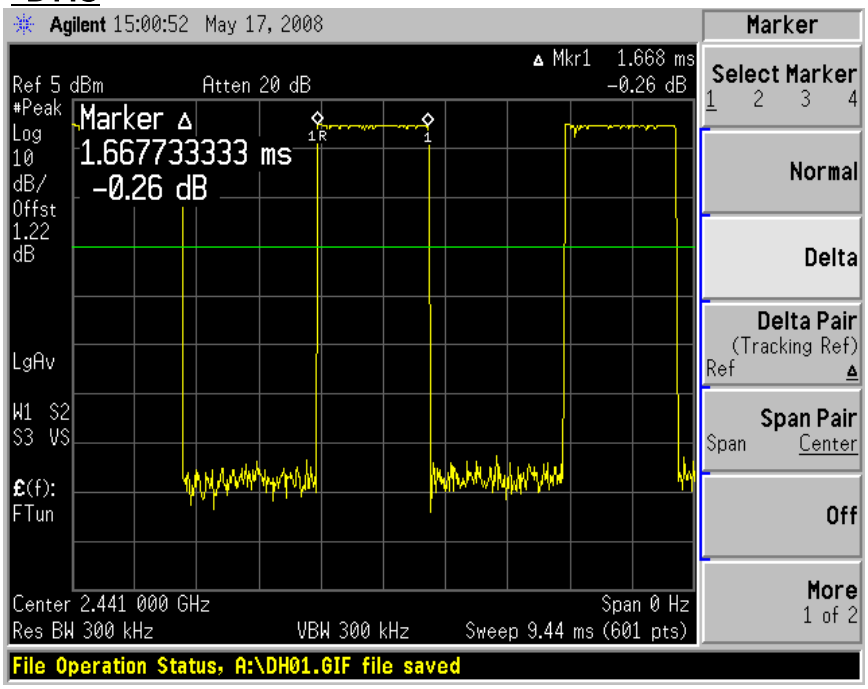
Channel	Pulse Time(ms)	Limit (ms)	PASS/FAIL
39	313.274	400	PASS

8.5 Trace data

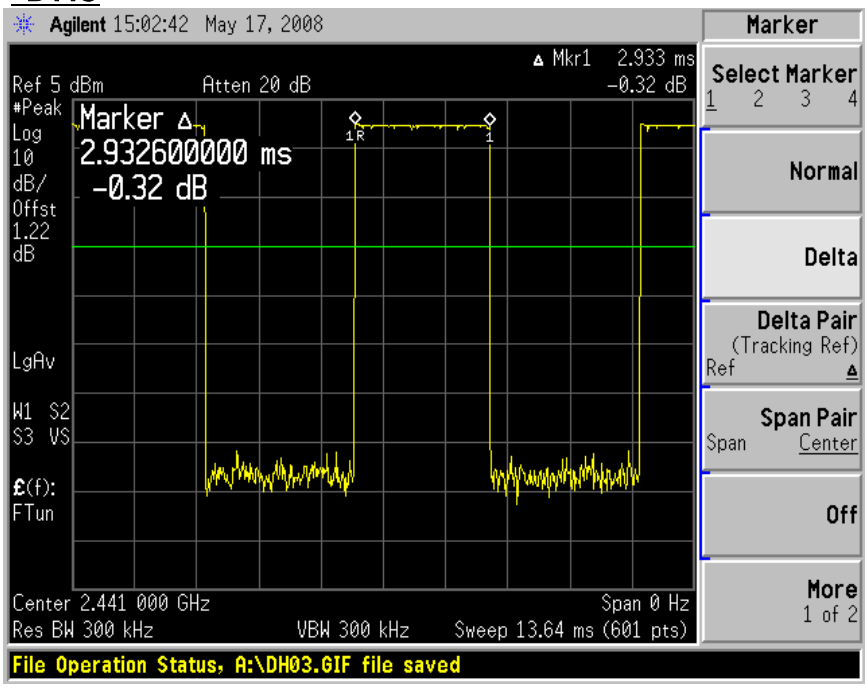
DH1



DH3


Agilent 15:00:52 May 17, 2008
Marker
Mkr1 1.668 ms
Ref 5 dBm
Atten 20 dB
-0.26 dB
#Peak
Log
10
dB/
Offst
1.22
dB
Marker Δ
1.667733333 ms
-0.26 dB
LgAv
W1 S2
S3 VS
£(f):
FTun
Center 2.441 000 GHz
Span 0 Hz
Res BW 300 kHz
VBW 300 kHz
Sweep 9.44 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, A:\DH01.GIF file saved

DH5


Agilent 15:02:42 May 17, 2008
Marker
Mkr1 2.933 ms
Ref 5 dBm
Atten 20 dB
-0.32 dB
#Peak
Log
10
dB/
Offst
1.22
dB
Marker Δ
2.932600000 ms
-0.32 dB
LgAv
W1 S2
S3 VS
£(f):
FTun
Center 2.441 000 GHz
Span 0 Hz
Res BW 300 kHz
VBW 300 kHz
Sweep 13.64 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, A:\DH03.GIF file saved

9. band-edge and out of band emissions.

9.1 Test procedure

The radio frequecy power at 20dB down from the highest inband power level is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency. The band edge&out of band emission shall be at least 20dB below of the highest inband power level.

9.2 Test instruments and measurement setup

The spectrum analyzer is set to as following.

. RBW= 100KHz

. VBW= 100KHz

. Span= suitable frequency span

. Sweep= suitable duration based on the EUT specification.

Band Edge&Out of Emission Test Instruments

Description	Model	Serial Number	Cal. Due Date
Spectrum Analyzer	E4407B	US42041281	2009-02-28
Dual Directional Coupler	778D	16502	2009-02-28
-Spectrum Analyzer <=> EUT	Loss: 1.22dB		

9.3 Measurement results of band-edge & out of emission

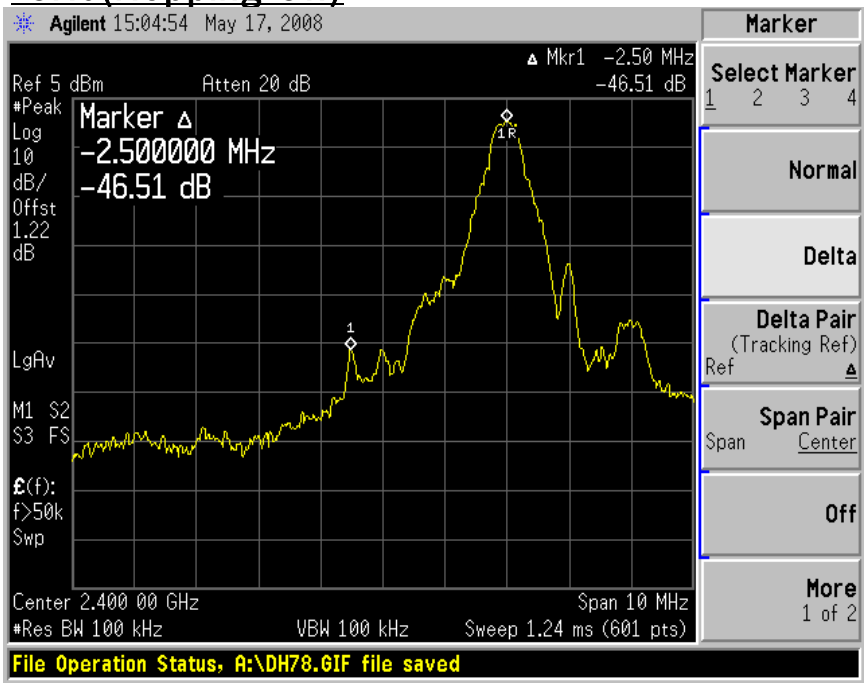
EUT	Bluetooth	MODEL	KM520d
MODE	GFSK	ENVIRONMENTAL CONDITION	25°C, 43%RH
INPUT POWER	13.2Vdc		

*** Refer to attach spectrum analyzer data chart.**

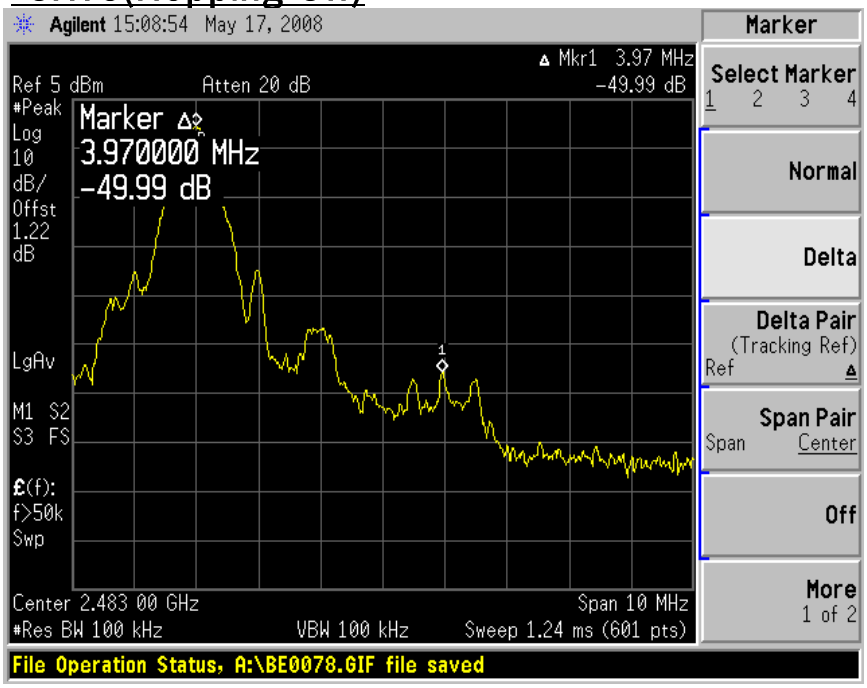
9.4 Trace data of band-edge & Out of Emission

band-edge

CH0(Hopping Off)

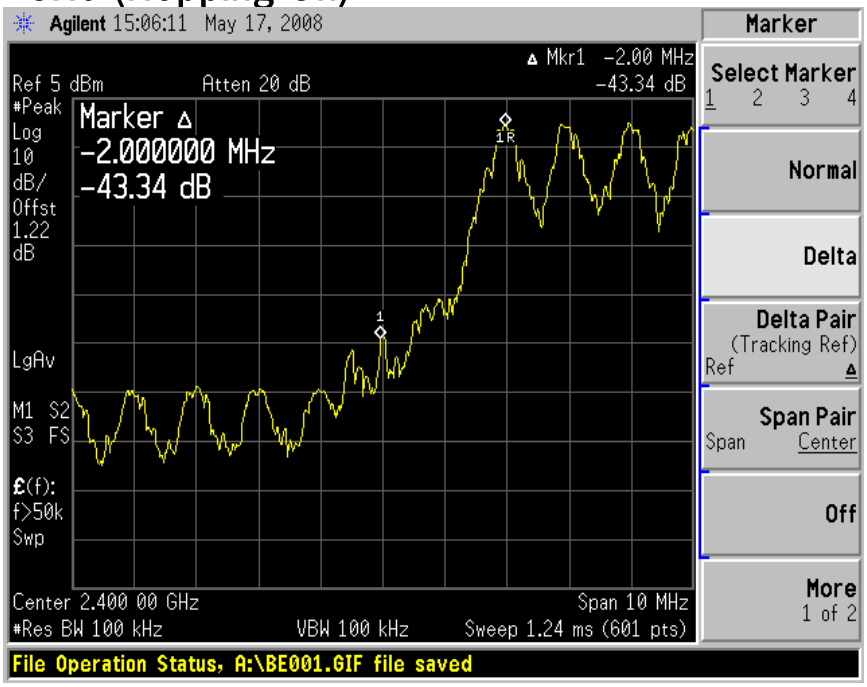


CH78(Hopping Off)

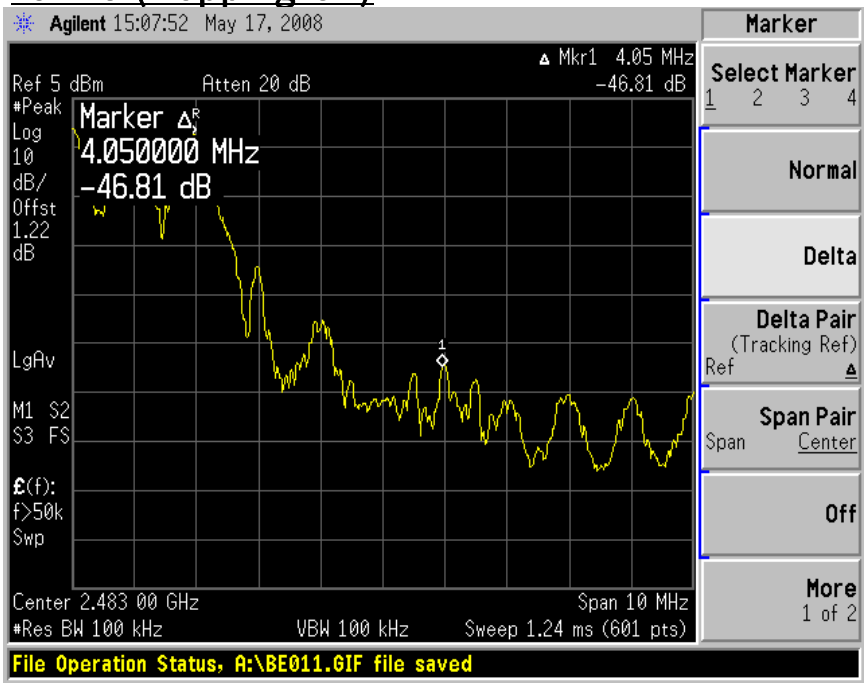


band-edge

CH0 (Hopping On)

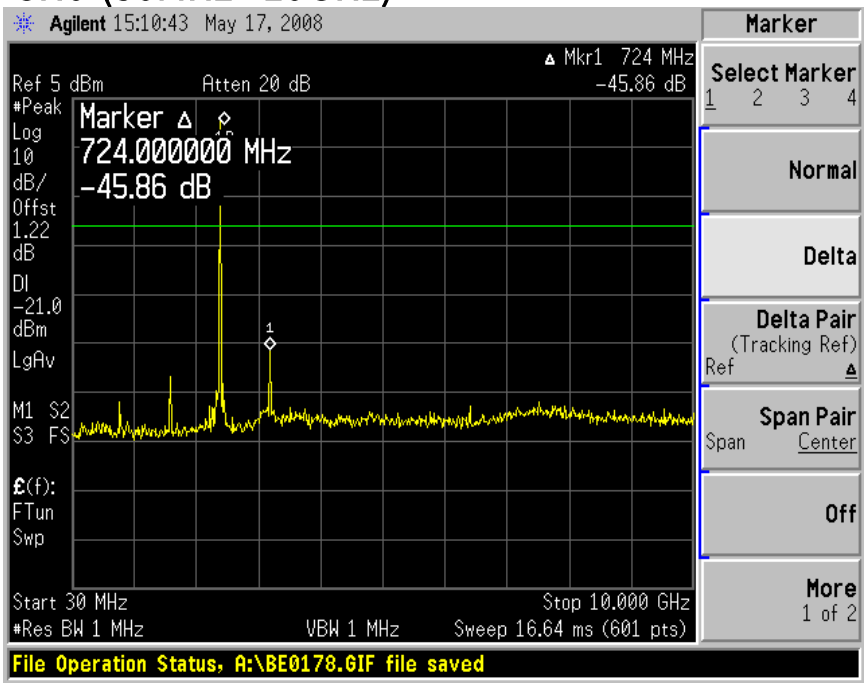


CH78 (Hopping On)

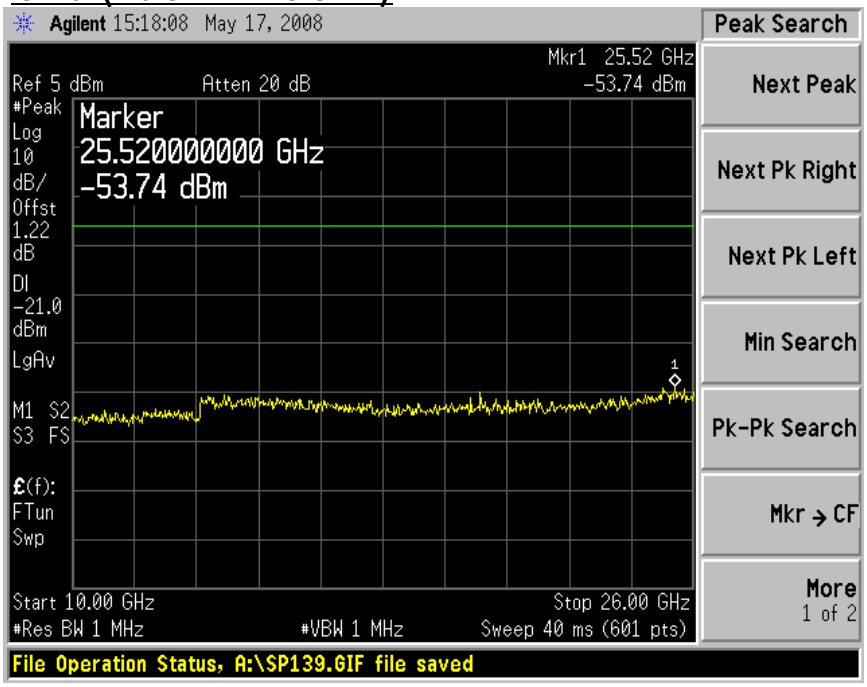


Out of Band Emissions

CH0 (30MHz~10GHz)

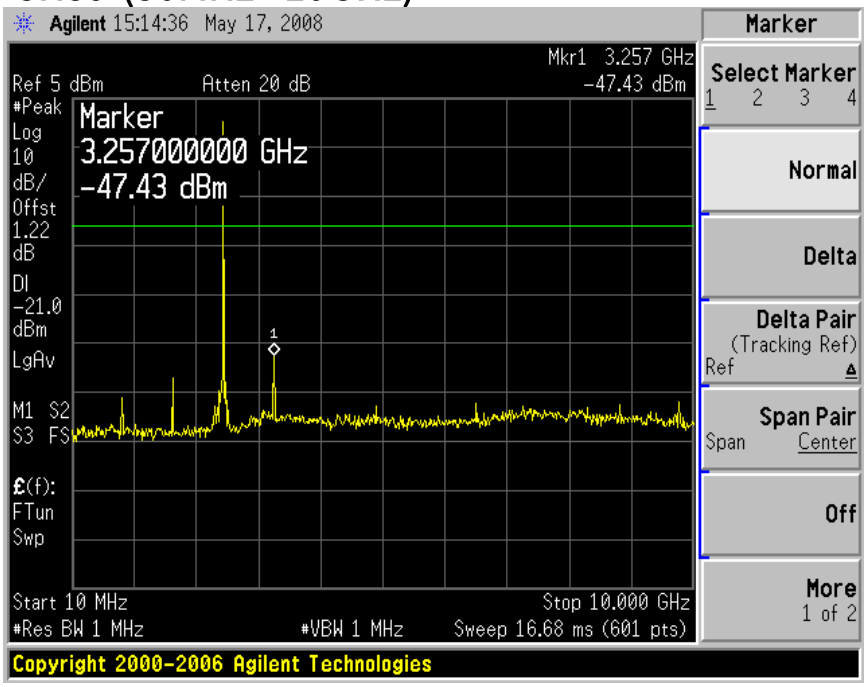


CH0 (10GHz~25GHz)

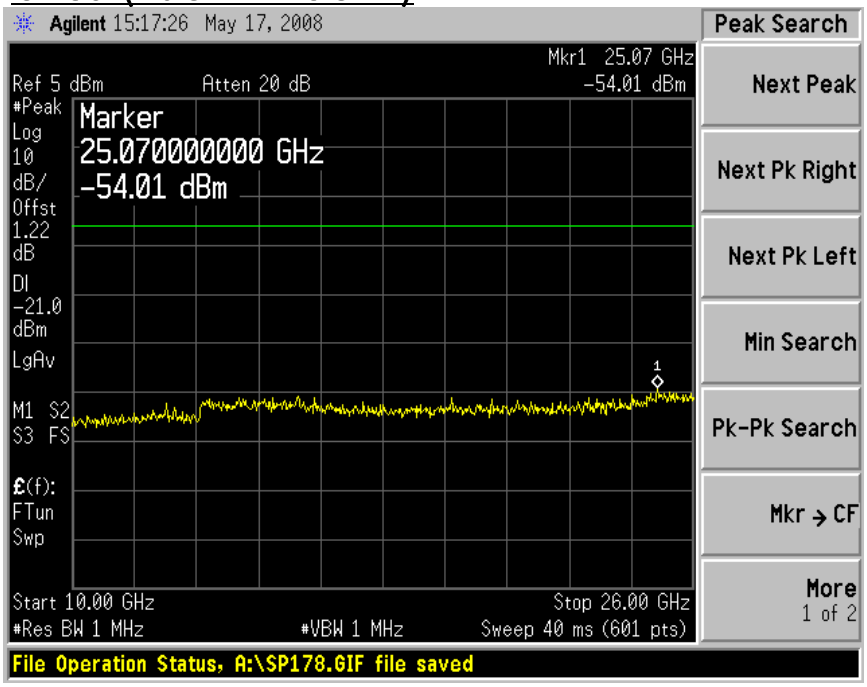


Out of Band Emissions

CH39 (30MHz~10GHz)

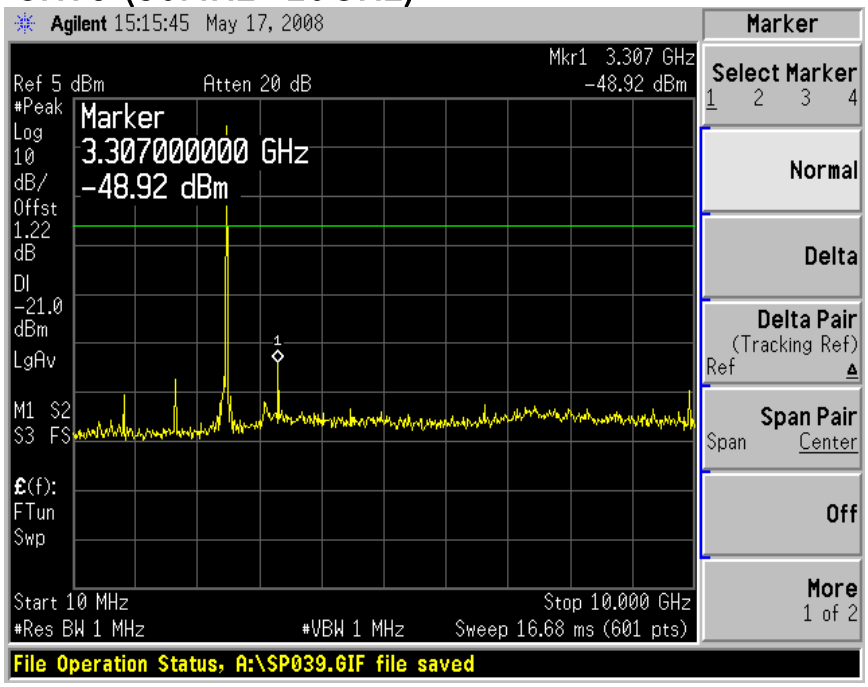


CH39 (10GHz~25GHz)

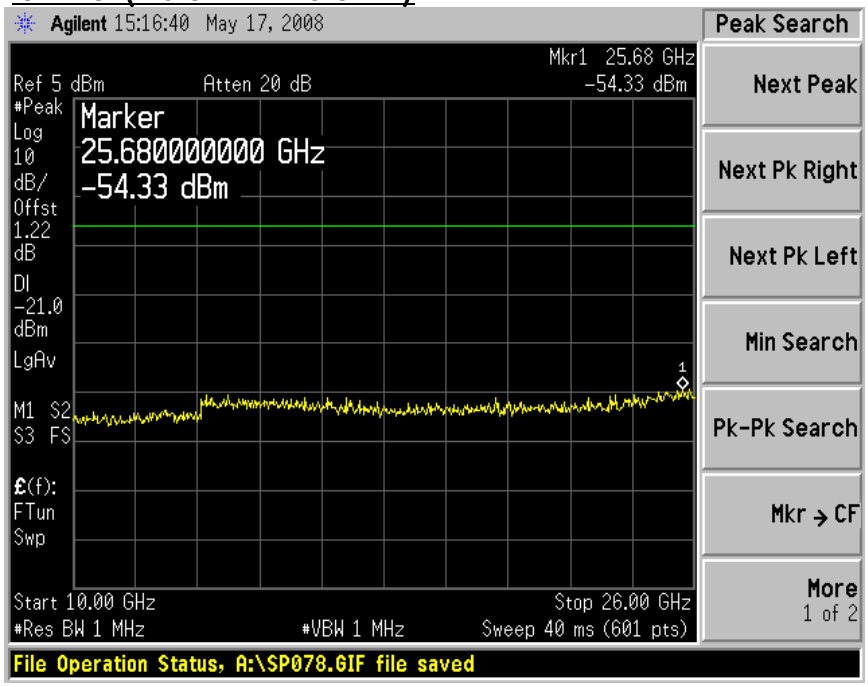


Out of Band Emissions

CH78 (30MHz~10GHz)



CH78 (10GHz~25GHz)



10. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2007) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2007) & ANSI C 63.4 (2003) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

10.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESVS10	Rohde & Schwarz	838562/002	2009. 1. 23
LogBicon Antenna	VULB 9160	SCHWARZBECK	3142	2009. 5. 15
Amplifier	8447F	HP	2805A02972	2008. 6. 26
Spectrum Analyzer	R3273	ADVANTEST	121200664	2008. 11. 27
Horn Antenna	BBHA 9120 D	S/B	469	2008. 07. 24
Spectrum Analyzer	R3261C	ADVANTEST	61720116	2009. 4. 22
PREAMPLIFIER	8449B	HP	3008A00581	2009. 3. 07
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

10.2 Environmental Condition

Test Place : Open site(3m)
Temperature (°C) : 24 °C
Humidity (%) : 51 %

10.3-1 Test data for Bluetooth

Test Date : 22-May-08 Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
32.01	18.20	V	1.0	12.24	0.9	40.0	31.30	-8.70
44.89	20.00	V	1.0	12.72	1.0	40.0	33.69	-6.31
112.03	20.90	V	1.0	11.07	1.6	43.5	33.60	-9.90
120.99	20.70	H	2.6	12.03	1.7	43.5	34.42	-9.08
160.09	15.00	H	1.9	13.88	1.9	43.5	30.81	-12.69
224.00	26.90	H	1.4	10.77	2.4	46.0	40.06	-5.94
300.02	23.00	H	1.0	13.19	3.0	46.0	39.17	-6.83
351.99	19.00	H	1.0	14.11	3.2	46.0	36.32	-9.68
400.00	22.90	H	1.0	15.32	3.6	46.0	41.80	-4.20
432.02	14.50	H	1.0	15.72	3.7	46.0	33.95	-12.05
500.01	12.00	V	2.0	17.06	4.2	46.0	33.30	-12.70
700.01	11.40	H	1.0	20.14	5.3	46.0	36.80	-9.20
Remark	H : Horizontal, V : Vertical *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz) *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120KHz for Quasi-peak detection at frequency below 1GHz.							

10.3-2 Test data(CH0)

Test Date : 23-May-08 Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK (RBW / VBW-1MHz)								
1601.00	49.59	H	1.4	24.52	-26.9	74.0	47.21	-26.79
1601.00	50.20	V	1.9	24.52	-26.9	74.0	47.82	-26.18
2402.00	58.81	H	1.2	27.31	4.4	*OB	90.52	-
2402.00	59.13	V	1.2	27.31	4.4	*OB	90.84	-
4804.00	48.08	H	1.0	31.21	-27.9	74.0	51.39	-22.61
4804.00	46.45	V	2.0	31.21	-27.9	74.0	49.76	-24.24
AV (RBW -1MHz / VBW-10Hz)								
1601.00	45.04	H	1.4	24.52	-26.9	54.0	42.66	-11.34
1601.00	46.28	V	1.9	24.52	-26.9	54.0	43.90	-10.10
2402.00	48.97	H	1.2	27.31	4.4	*OB	80.68	-
2402.00	49.13	V	1.2	27.31	4.4	*OB	80.84	-
4804.00	42.11	H	1.0	31.21	-27.9	54.0	45.42	-8.58
4804.00	40.45	V	2.0	31.21	-27.9	54.0	43.76	-10.24

Remark	H : Horizontal, V : Vertical TEST MODE : CH 0(2402MHz) *The TX signal isn't detected from 2th harmonics. *OB = Operating band *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz)

10.3-3 Test data(CH39)

Test Date : 23-May-08 Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK (RBW / VBW-1MHz)								
1628.00	50.09	H	1.8	24.57	-28.4	74.0	46.26	-27.74
1628.00	53.16	V	1.4	24.57	-28.4	74.0	49.33	-24.67
2441.00	52.12	H	1.2	27.42	4.5	*OB	84.04	-
2441.00	58.10	V	1.2	27.42	4.5	*OB	90.02	-
4882.00	49.11	H	1.2	31.37	-28.6	74.0	51.88	-22.12
4882.00	48.82	V	1.9	31.37	-28.6	74.0	51.59	-22.41
AV (RBW -1MHz / VBW-10Hz)								
1628.00	44.56	H	1.8	24.57	-28.4	54.0	40.73	-13.27
1628.00	48.41	V	1.4	24.57	-28.4	54.0	44.58	-9.42
2441.00	45.52	H	1.2	27.42	4.5	*OB	77.44	-
2441.00	51.19	V	1.2	27.42	4.5	*OB	83.11	-
4882.00	42.51	H	1.2	31.37	-28.6	54.0	45.28	-8.72
4882.00	41.56	V	1.9	31.37	-28.6	54.0	44.33	-9.67
Remark	H : Horizontal, V : Vertical TEST MODE : CH 39(2441MHz) *The TX signal isn't detected from 2th harmonics. *OB = Operating band *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz)							

10.3-4 Test data(CH78)

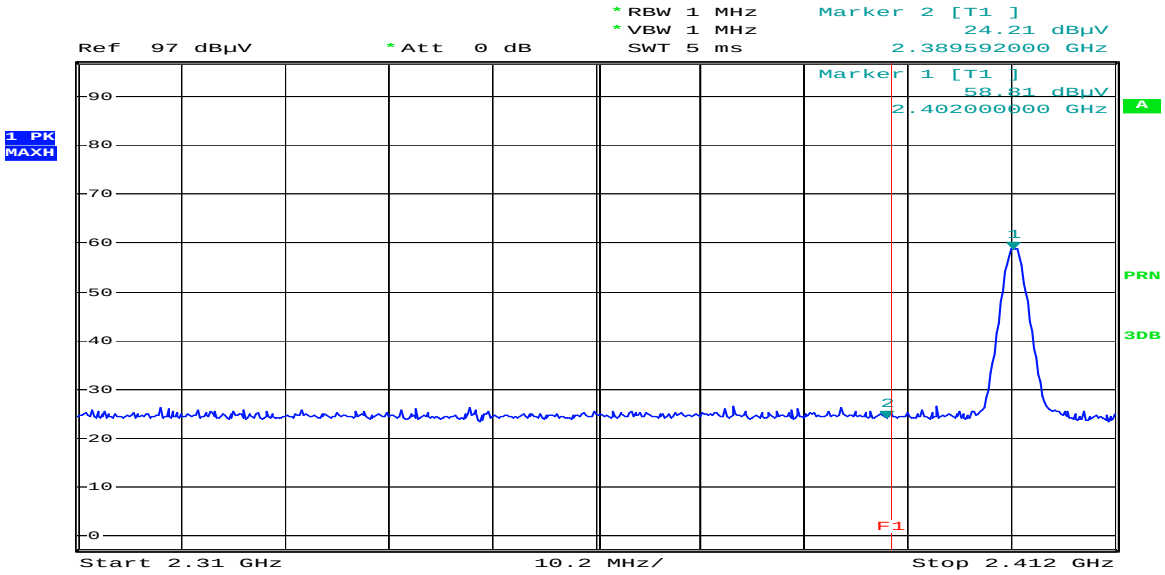
Test Date : 23-May-08 Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dB)
PEAK (RBW / VBW-1MHz)								
1655.00	44.79	H	1.9	31.47	-28.2	74.0	48.06	-25.94
1655.00	45.80	V	1.6	31.47	-28.2	74.0	49.07	-24.93
2480.00	51.79	H	1.9	27.53	4.5	*OB	83.82	-
2480.00	56.62	V	1.6	27.53	4.5	*OB	88.65	-
2483.70	27.52	H	1.3	27.54	4.6	74.0	59.66	-14.34
2483.70	25.46	V	1.1	27.54	4.6	74.0	57.60	-16.40
4960.00	47.63	H	1.0	24.63	-30.4	74.0	41.86	-32.14
4960.00	50.63	V	1.8	24.63	-30.4	74.0	44.86	-29.14
AV (RBW -1MHz / VBW-10Hz)								
1655.00	35.78	H	1.9	24.63	-30.4	54.0	30.01	-23.99
1655.00	39.59	V	1.6	24.63	-30.4	54.0	33.82	-20.18
2480.00	31.54	H	1.9	27.53	4.5	*OB	63.57	-
2480.00	33.99	V	1.6	27.53	4.5	*OB	66.02	-
2483.70	13.62	H	1.3	27.54	4.6	54.0	45.76	-8.24
2483.70	14.45	V	1.1	27.54	4.6	54.0	46.59	-7.41
4960.00	36.34	H	1.0	31.47	-28.2	54.0	39.61	-14.39
4960.00	38.75	V	1.8	31.47	-28.2	54.0	42.02	-11.98
Remark	H : Horizontal, V : Vertical TEST MODE : CH 78(2480MHz) *The TX signal isn't detected from 2th harmonics. *OB = Operating band *CL = Cable Loss-Amplifier Gain(In case of above1000Mhz) *CL = Cable Loss(In case of below1000Mhz)							

10.3-6 Restricted Band Edges

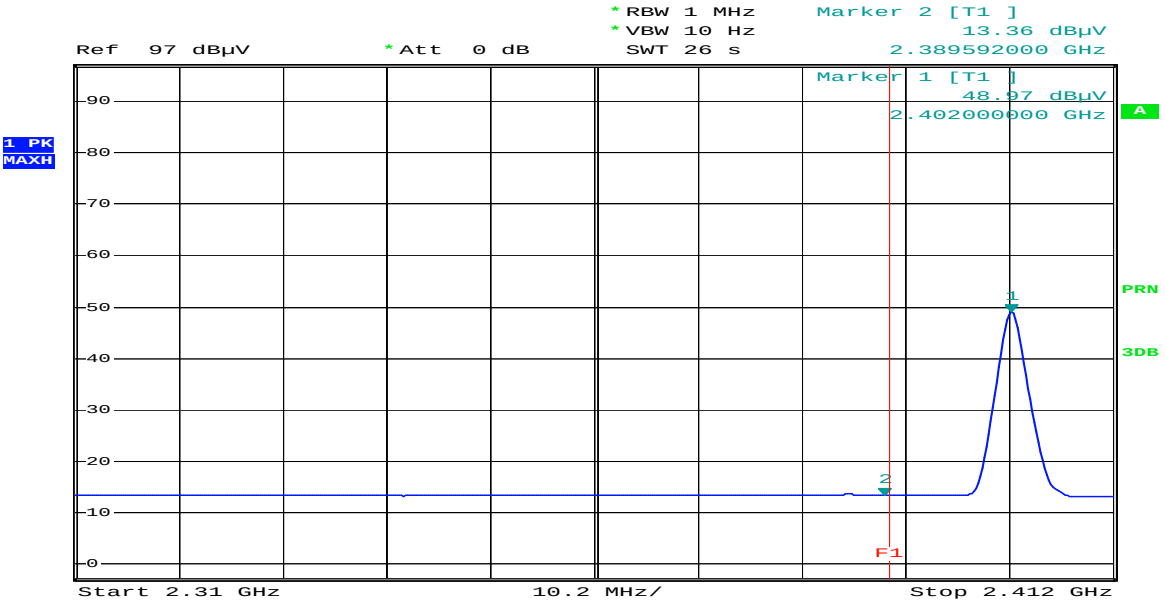
Band Edges(CH Low)

Detector mode:Peak Polarity:Horizontal



Comment: DVT-780 BT CH0_PEAK_HOR
Date: 22.MAY.2008 14:43:34

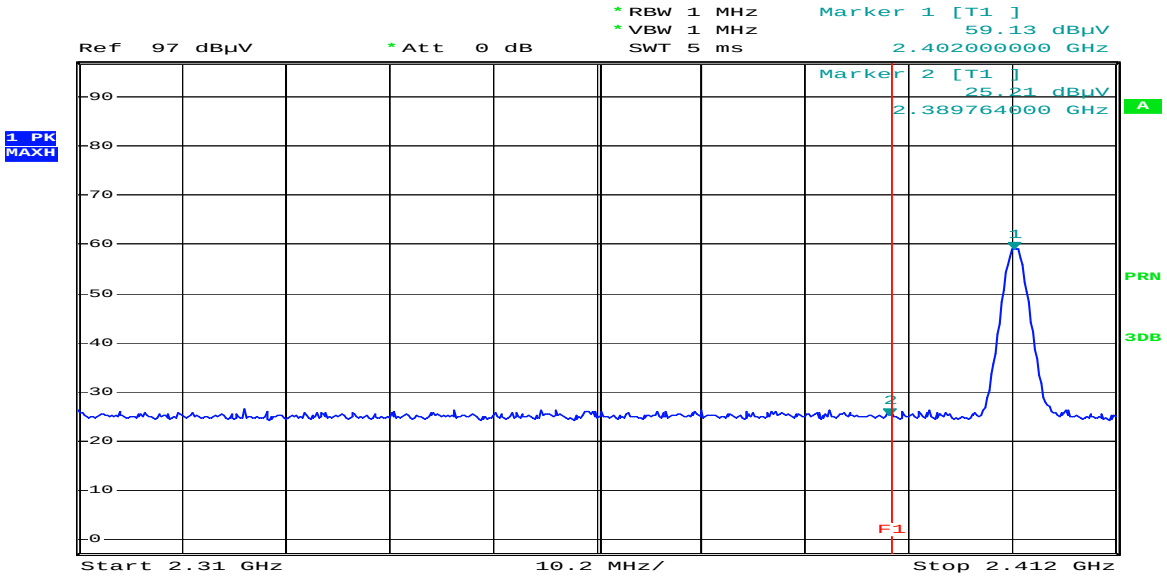
Detector mode:Average Polarity:Horizontal



Comment: DVT-780 BT CH0_AV_HOR
Date: 22.MAY.2008 14:45:51

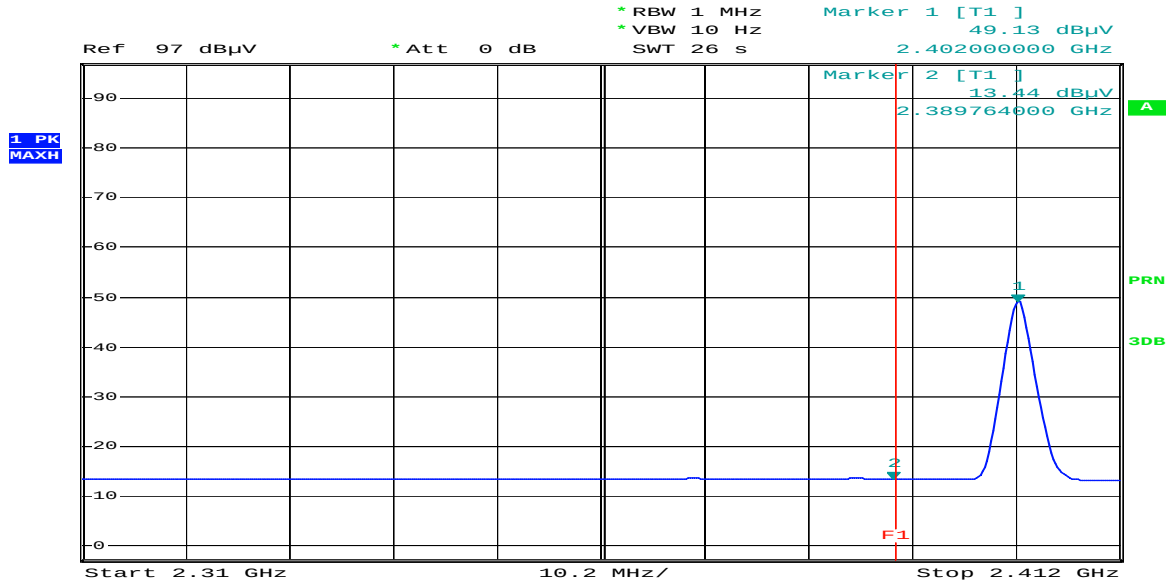
Band Edges(CH Low)

Detector mode:Peak Polarity:Vertical



Comment: DVT-780 BT CH0_PEAK_VER
Date: 22.MAY.2008 14:31:51

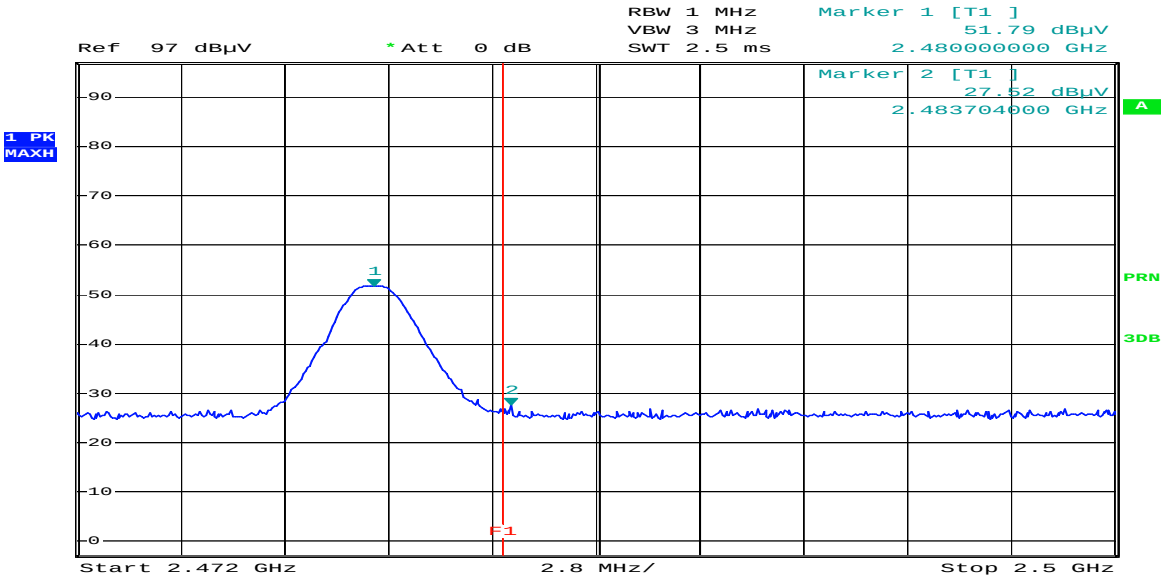
Detector mode:Average Polarity:Vertical



Comment: DVT-780 BT CH0_AV_VER
Date: 22.MAY.2008 14:33:26

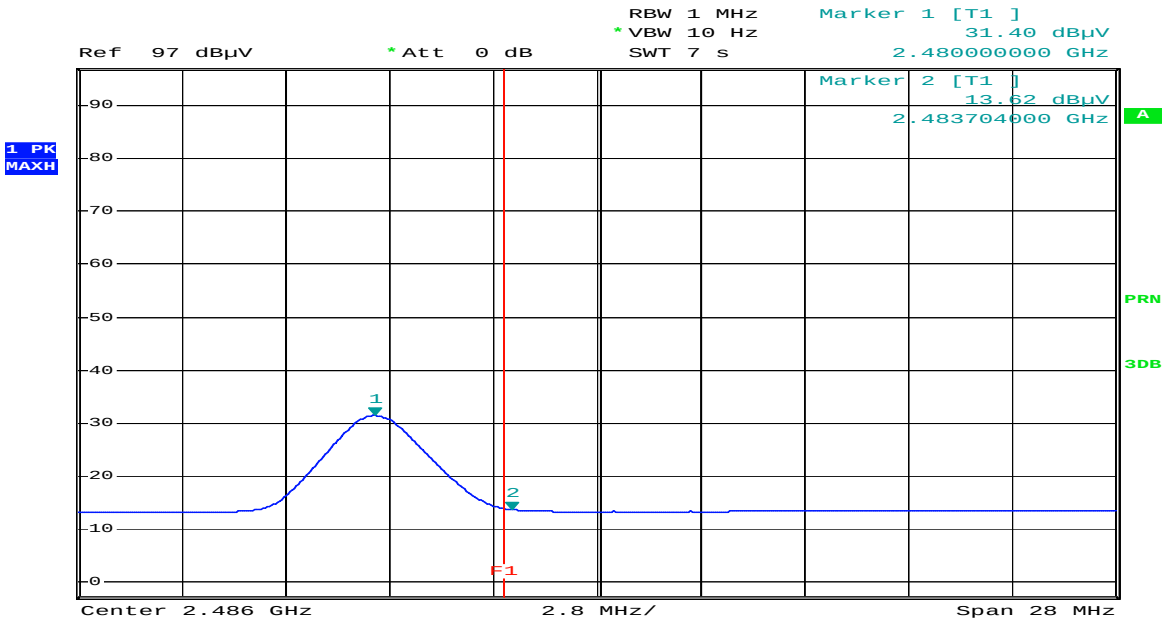
Band Edges(CH High)

Detector mode:Peak Polarity:Horizontal



Comment: DVT-780 BT CH78_PEAK_HOR
Date: 23.MAY.2008 03:38:58

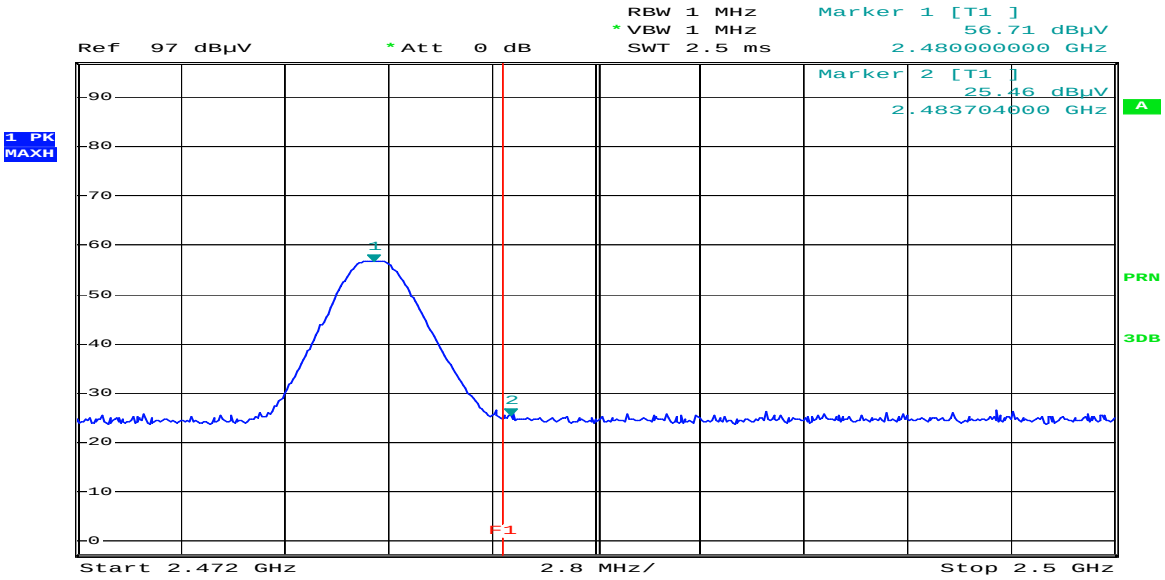
Detector mode:Average Polarity:Horizontal



Comment: DVT-780 BT CH78_AV_HOR
Date: 23.MAY.2008 03:57:15

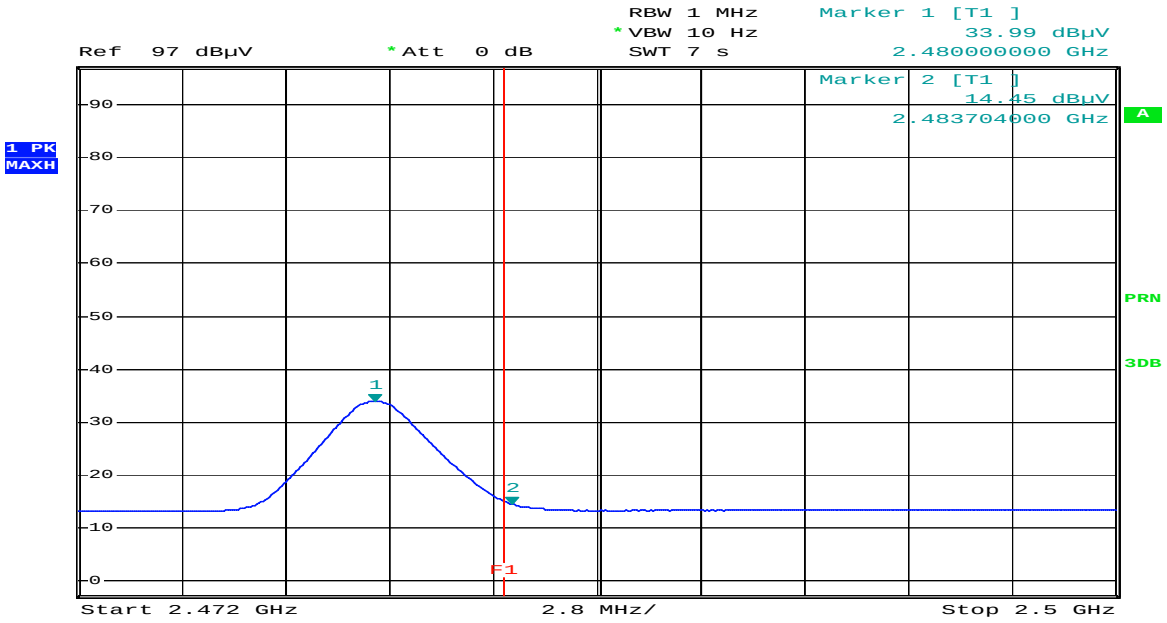
Band Edges(CH High)

Detector mode:Peak Polarity:Vertical



Comment: DVT-780 BT CH78_PEAK_VER
Date: 23.MAY.2008 03:49:40

Detector mode:Average Polarity:Vertical



Comment: DVT-780 BT CH78_AV_VER
Date: 23.MAY.2008 03:51:36

11. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2007) & ANSI C 63.4 (2003) The test setup was made according to FCC Part 15 (2007) & ANSI C 63.4 (2003) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0m.. The test receiver with Quasi Peak detector complies with CISPR 16.

11.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	NNLA8120A	Schwarzbeck	8120161	2009. 2. 29
LISN	ESH3-Z5	Schwarzbeck	838979/010	2009. 2. 29
TEST Receive	ESP17	Rohde & Schwarz	100185	2008. 8. 27
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	-

11.2 Environmental Condition

Test Place : Shield Room
Temperature (°C) : °C
Humidity (%) : %

11.3 Test data(CH39)(N/A)

Test Date :

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-peak Value			Average Value		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dB)
Remark	H : Hot Line, N : Neutral Line *It does not need to test this requirement, because of the power of the EUT is supplied from DC Power								

12. Antenna Requirement

12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.24

12.2 Antenna Connected Construction

The antenna types used in this product are Multilayer Chip Antenna. The maximum Gain of this antenna is -5.65dBi.