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Dates of Tests : Oct 10~Nov 01 2011
 Test Report S/N: LR500111111B
 Test Site : LTA CO., LTD

CERTIFICATION OF COMPLIANCE

FCC ID.

YUE-ESP-E301

APPLICANT

ENSPERT Inc.

Equipment Class	:	Part 15 Spread Spectrum Transmitter (DSS)
Manufacturing Description	:	Tablet PC
Manufacturer	:	ENSPERT Inc.
Model name	:	ESP-E301
Test Device Serial No.:	:	Identical prototype
Rule Part(s)	:	FCC Part 15.247 Subpart C; ANSI C-63.4-2003
Frequency Range	:	2402 ~ 2480MHz
RF power	:	Max 4.48 dBm - Conducted
Data of issue	:	November 3, 2011

This test report is issued under the authority of:

The test was supervised by:

Hyun-Chae You, Manager

Ki-Hun Cho, Test Engineer

This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

NVLAP LAB Code.: 200723-0

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1. General information's

1-1 Test Performed

Company name : LTA Co., Ltd.
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 Web site : <http://www.ltalab.com>
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Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2012-09-30	ECT accredited Lab.
RRL	KOREA	KR0049	2013-04-24	EMC accredited Lab.
FCC	U.S.A	610755	2014-04-27	FCC filing
FCC	U.S.A	649054	2013-04-13	FCC CAB
VCCI	JAPAN	R2133(10m), C2307	2014-06-21	VCCI registration
VCCI	JAPAN	T-2009	2013-12-23	VCCI registration
IC	CANADA	IC5799	2012-05-14	IC filing

2. Information's about test item

2-1 Applicant & Manufacturer

Company name : ENSPERT Inc.
 Address : 2F, 7F DAEWHA B/D, 169 Samsung-dong, Gangnam-gu, Seoul, KOREA
 Tel / Fax : +82 2 6003 9501 / +82 2 6003 9322

2-2 Equipment Under Test (EUT)

Trade name : Tablet PC
 FCC ID : YUE-ESP-E301
 Model name : ESP-E301
 Serial number : Identical prototype
 Date of receipt : Oct 10, 2011
 EUT condition : Pre-production, not damaged
 Antenna type : PiFA antenna with Max. -2.27dBi gain
 Frequency Range : 2402 ~ 2480MHz
 RF output power : Maximum 4.48 dBm
 Number of channels : 79
 Channel spacing : 1MHz
 Channel Access Protocol : Frequency Hopping Spread Spectrum (FHSS)
 Type of Modulation : Basic Mode(GFSK), EDR Mode(DQPSK, 8DPSK)
 Power source (Batt.) : Battery : 3.7V (Li-Polymer Battery)
 Power source (Adaptor.) : Input: 100-240VAC, 0.3A Output: 5.0VDC, 2A

2-3 Tested frequency

	LOW	MID	HIGH
Frequency (MHz)	2402	2441	2480

2-4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
PC	HP Compaq dx7400 dx7400 microtower	CNG8330J95	HP
MONITOR	HPL1710	CNC816QH92	HP
KEYBOARD	SK-8115	641-OEWW	DELL
MOUSE	MO56UO	520107013	DELL
PRINTER	STYLUS C65	N/A	EPSON

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	Carrier Frequency Separation	> 25 kHz	Conducted	C
15.247(a)	Number of Hopping Frequencies	> 15 hops		C
15.247(a)	20 dB Bandwidth 99% Bandwidth	> 1.5 MHz		C
15.247	Dwell Time	< 0.4 seconds		C
15.247(b)	Transmitter Output Power	< 250 mWatt		C
15.247(d)	Conducted Spurious emission	> 20 dBc		C
15.247(d)	Band Edge	> 20 dBc		C
15.249 / 15.209	Field Strength of Harmonics	< 54 dBuV (at 3m)	Radiated	C
15.109	Field Strength	-		C
15.207 /15.107	AC Conducted Emissions	EN 55022	Line Conducted	C
15.203	Antenna requirement	-	-	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

→ Antenna Requirement

The ENSPERT Inc. FCC ID: YUE-ESP-E301 unit complies with the requirement of §15.203.

The antenna is connected to inside of EUT. And type is PiFA antenna.

The sample was tested according to the following specification:

FCC Parts 15.247; ANSI C-63.4-2003

3.2 Transmitter requirements

3.2.1 Carrier Frequency Separation

Procedure:

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

After the trace being stable, the reading value between the peaks of the adjacent channels using the marker-delta function was recorded as the measurement results.

The spectrum analyzer is set to:

Span = 3 MHz (wide enough to capture the peaks of two adjacent channels)

RBW = 10 kHz (1% of the span or more) Sweep = auto

VBW = 10 kHz Detector function = peak

Trace = max hold

Measurement Data:

Test Results	
Carrier Frequency Separation (MHz)	Result
1.002	Complies

- See next pages for actual measured spectrum plots.

Minimum Standard:

The EUT shall have hopping channel carrier frequencies separated by a minimum of 25kHz or two-thirds of 20dB bandwidth of the hopping channel, whichever is greater.

Measurement Setup

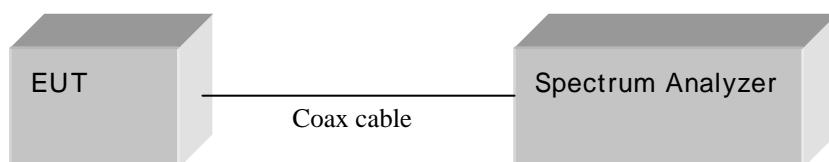
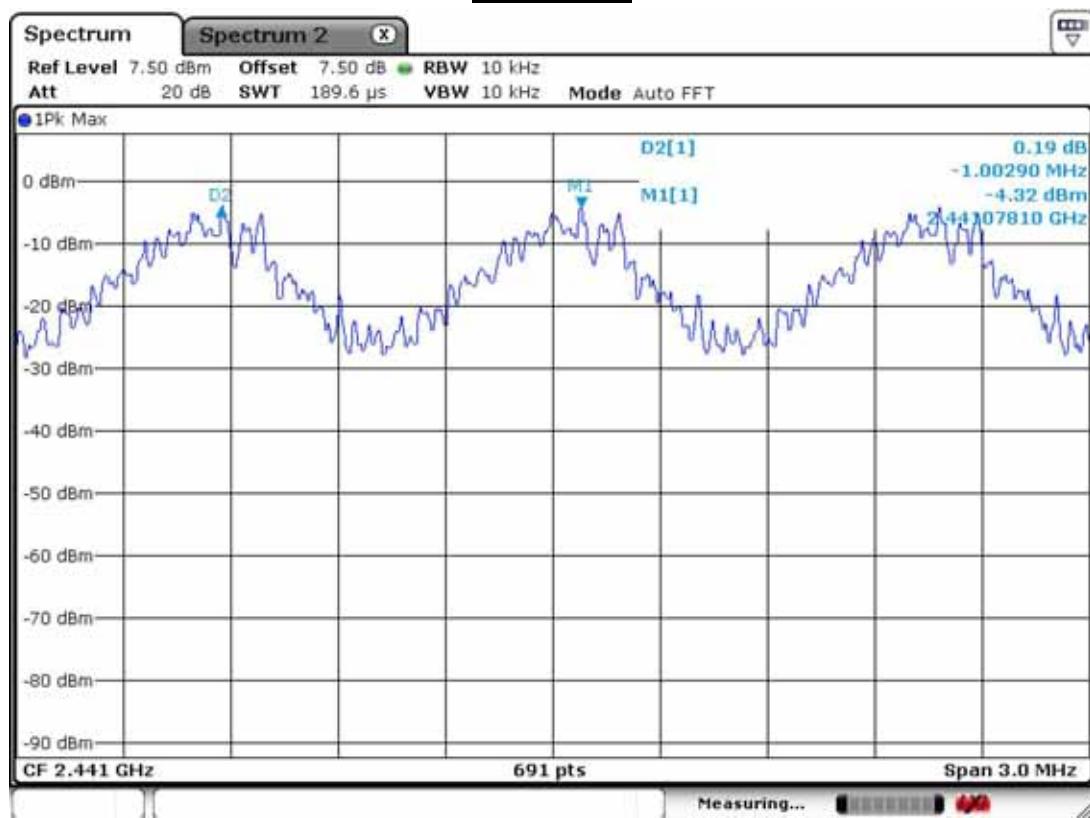
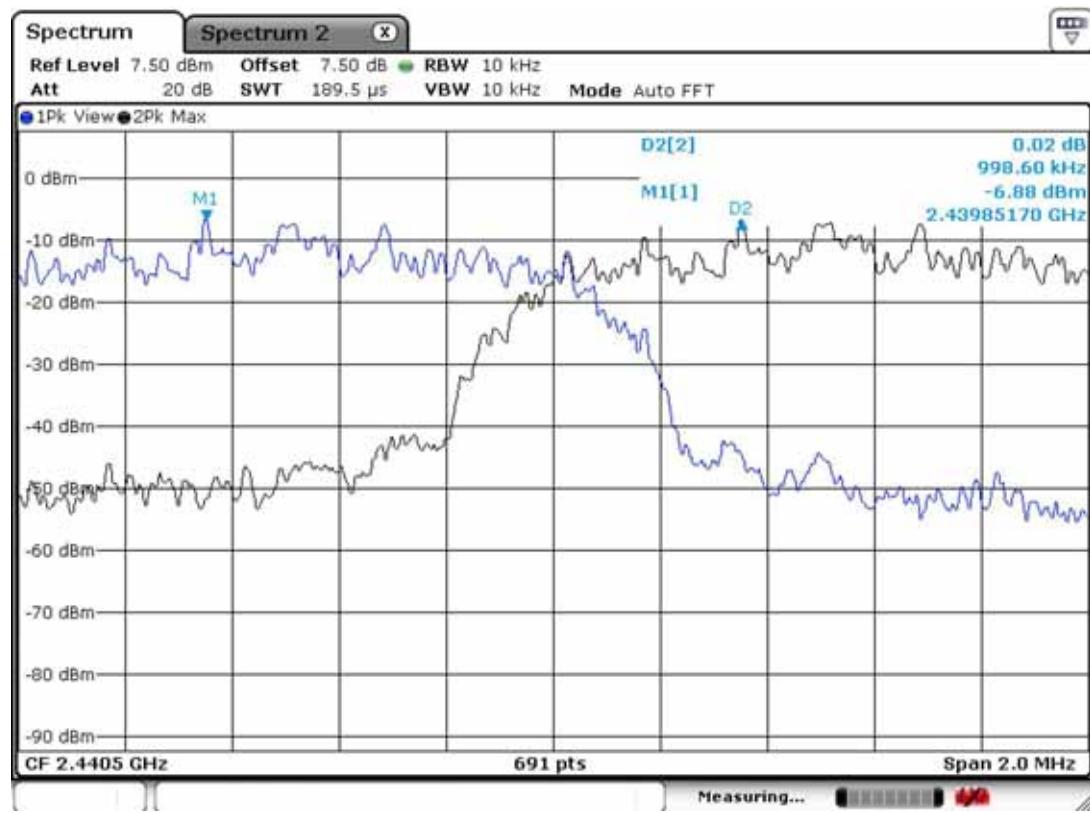


Figure 1: Measurement setup for the carrier frequency separation

Carrier Frequency SeparationBasic ModeEDR Mode

3.2.2 Number of Hopping Frequencies

Procedure:

The number of hopping frequencies was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

To get higher resolution, four frequency ranges within the 2400 ~ 2483.5 MHz FH band were examined.

The spectrum analyzer is set to:

Frequency range 1: Start = 2400.0MHz, Stop = 2441.5 MHz

2: Start = 2441.5MHz, Stop = 2483.5 MHz

RBW = 100 kHz (1% of the span or more) Sweep = auto

VBW = 100 kHz (VBW RBW) Detector function = peak

Trace = max hold Span > 40MHz

Measurement Data: Complies

Total number of Hopping Channels	79
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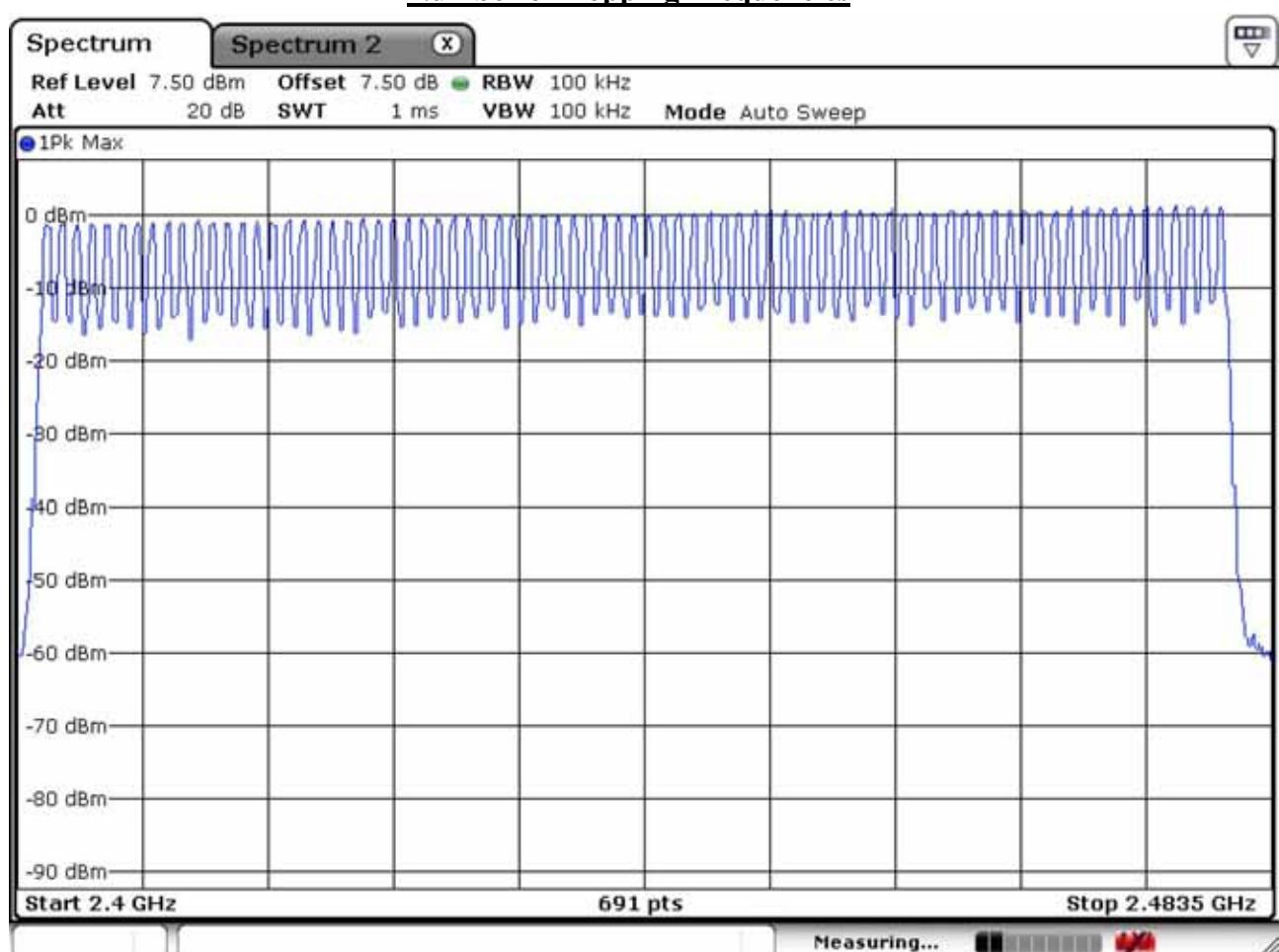
- See next pages for actual measured spectrum plots.

Minimum Standard:

At least 15 hopes

Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Number of Hopping Frequencies

3.2.3 20 dB Bandwidth

Procedure:

The bandwidth at 20 dB below the highest inband spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels..

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Span = 3 MHz (approximately 2 or 3 times of the 20 dB bandwidth)

RBW = 30 kHz Sweep = auto

VBW = 30 kHz (VBW = RBW) Detector function = peak

Trace = max hold dB/Div = 5dB

Measurement Data: Basic Mode

Frequency (MHz)	Channel No.	Test Results(MHz)	
		20dB Bandwidth	99% Bandwidth
2402	0	0.916	0.911
2441	39	0.912	0.907
2480	78	0.907	0.907

Measurement Data: EDR Mode

Frequency (MHz)	Channel No.	Test Results(MHz)	
		20dB Bandwidth	99% Bandwidth
2402	0	1.289	1.177
2441	39	1.289	1.172
2480	78	1.285	1.177

- See next pages for actual measured spectrum plots.

Minimum Standard:

N/A

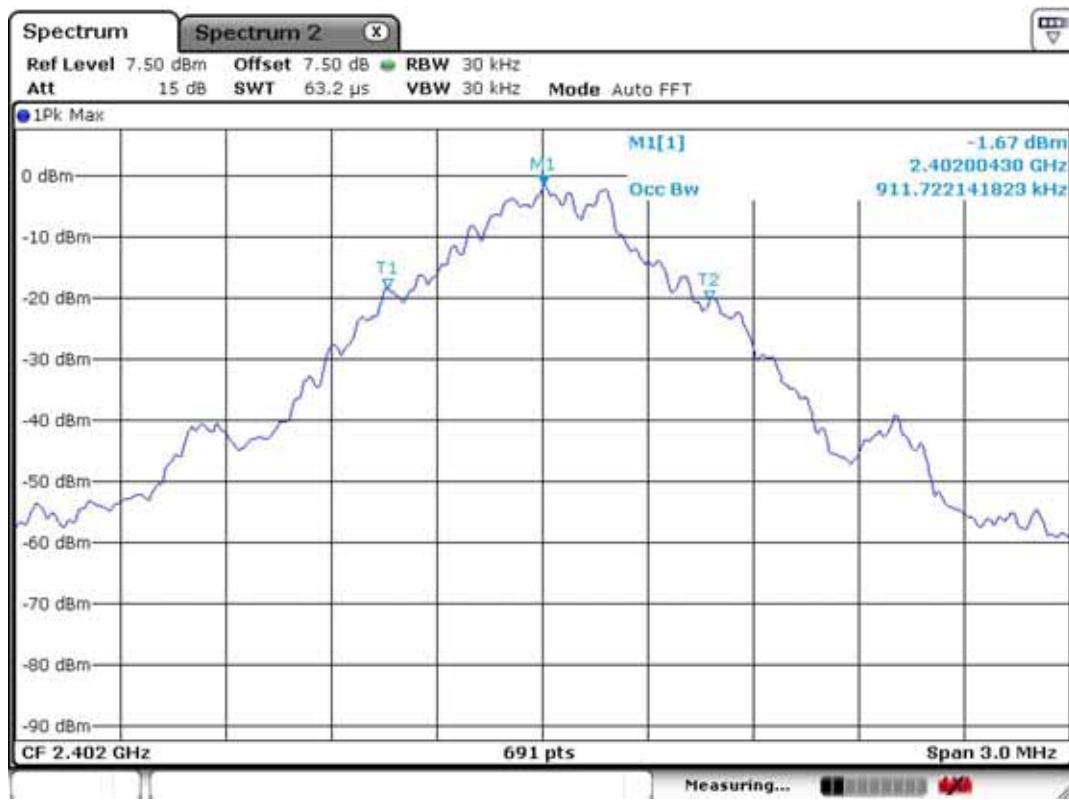
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Low Channel of basic mode
20 dB Bandwidth



99% Bandwidth



Mid Channel of basic mode
20 dB Bandwidth

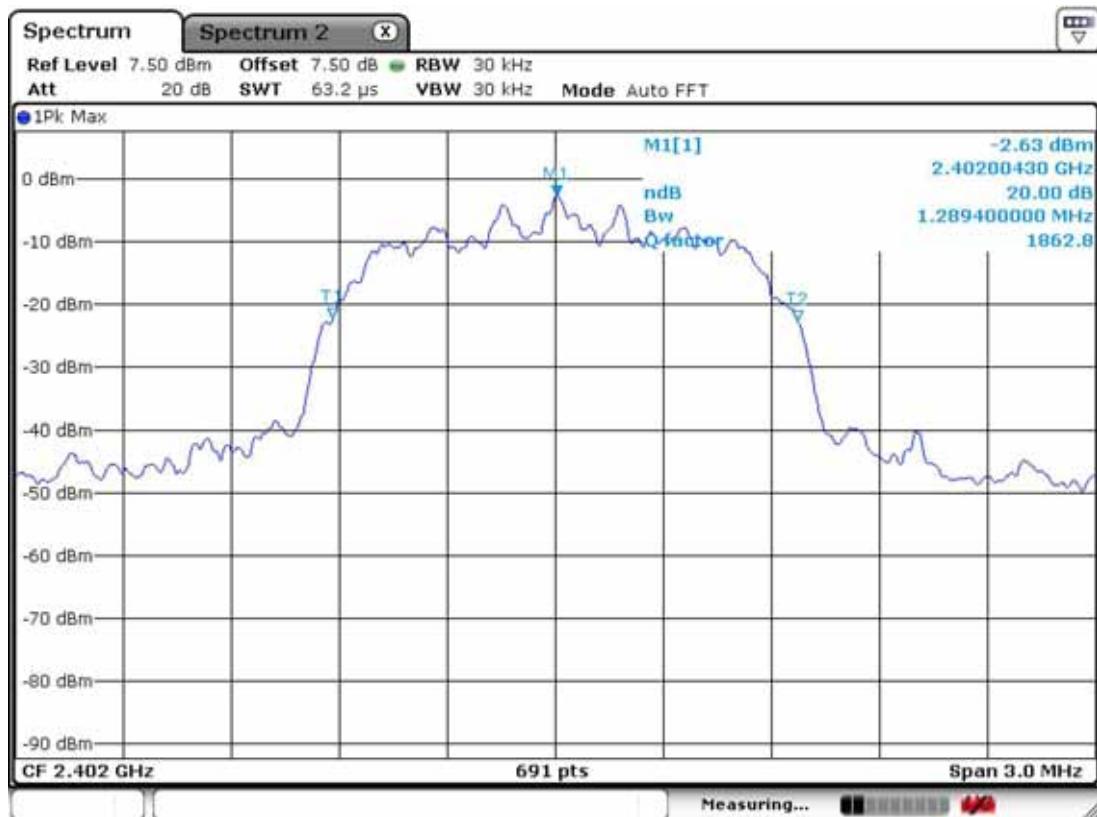


99% Bandwidth



High Channel of basic mode20 dB Bandwidth99% Bandwidth

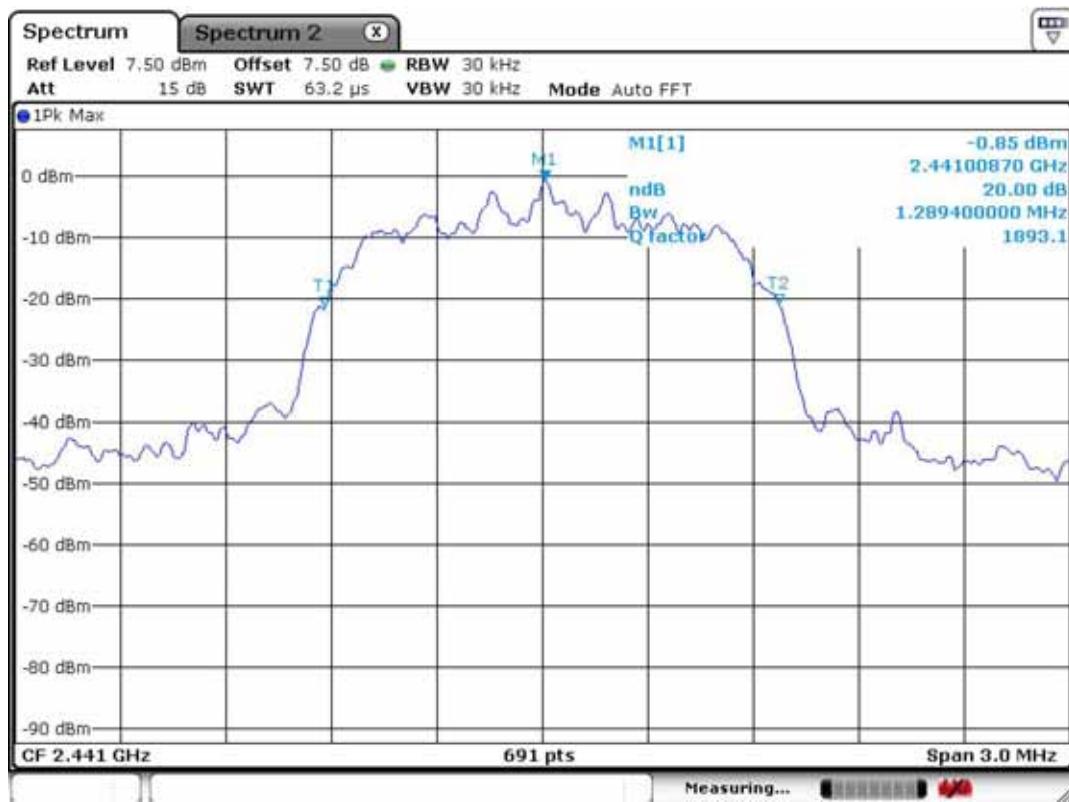
Low Channel at EDR mode
20 dB Bandwidth



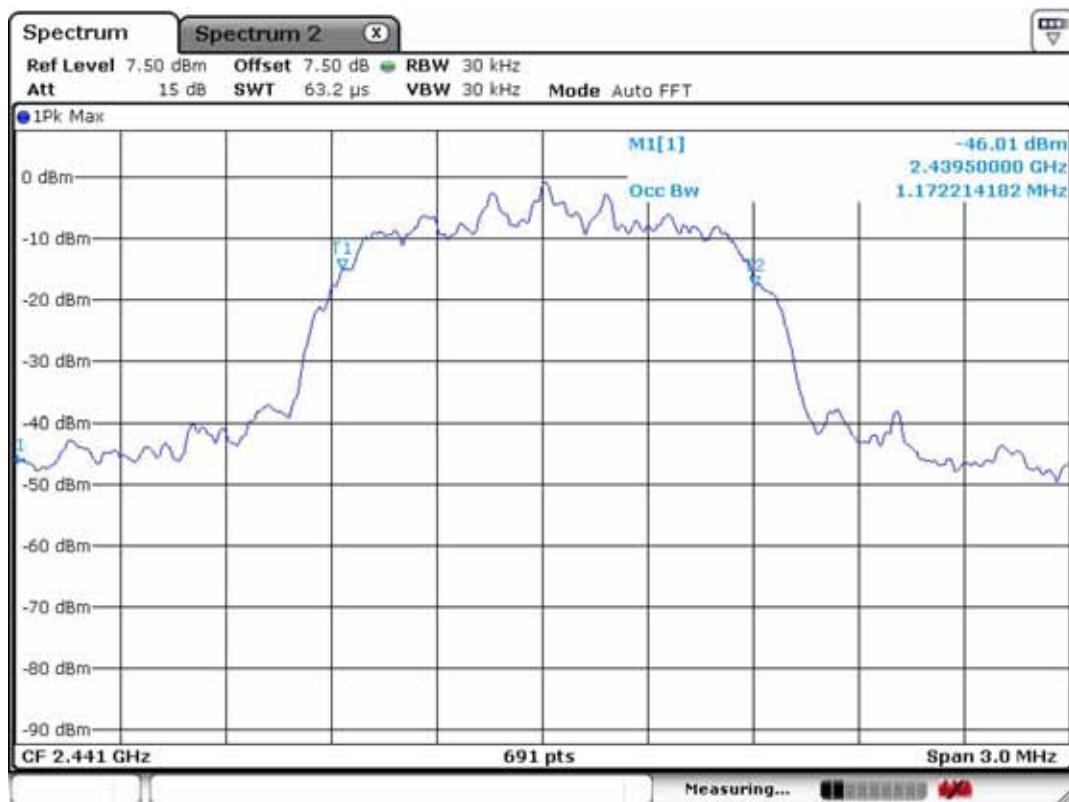
99% Bandwidth

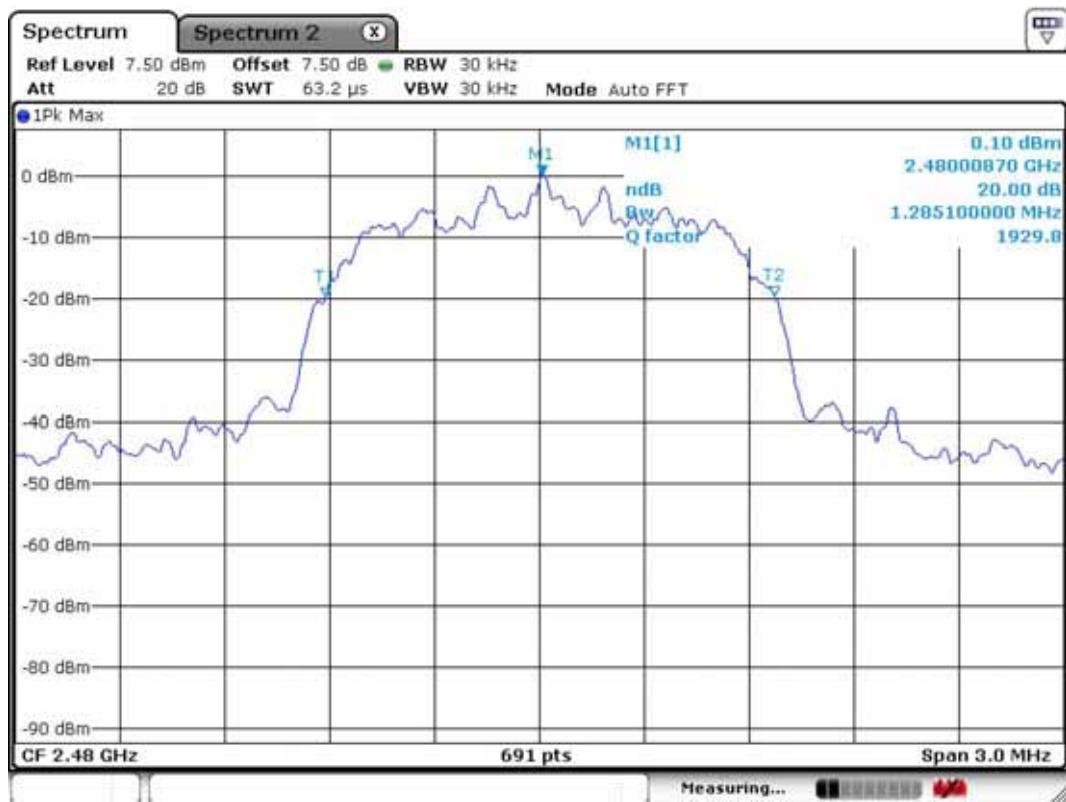


Mid Channel at EDR mode
20 dB Bandwidth



99% Bandwidth



High Channel at EDR mode20 dB Bandwidth99% Bandwidth

3.2.4 Time of Occupancy (Dwell Time)

Procedure:

The dwell time was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function enabled.

The spectrum analyzer is set to:

Center frequency = 2441 MHz	Span = zero
RBW = 1 MHz	VBW = 1 MHz (VBW = RBW)
Trace = max hold	Detector function = peak

Measurement Data:

Mode	Number of transmission in a 31.6s (79Hopping*0.4)	Length of Transmission Time (msec)	Result (msec)	Limit (msec)
DH1	30(Times / 3sec) *10.533 = 315.99	0.500	158.23	400
DH3	16(Times / 3sec) *10.533 = 168.53	1.768	297.96	400
DH5	11(Times / 3sec) *10.533 = 115.86	3.014	349.20	400
EDR 3Mbps DH5	11(Times / 3sec) *10.533 = 115.86	3.014	349.20	400

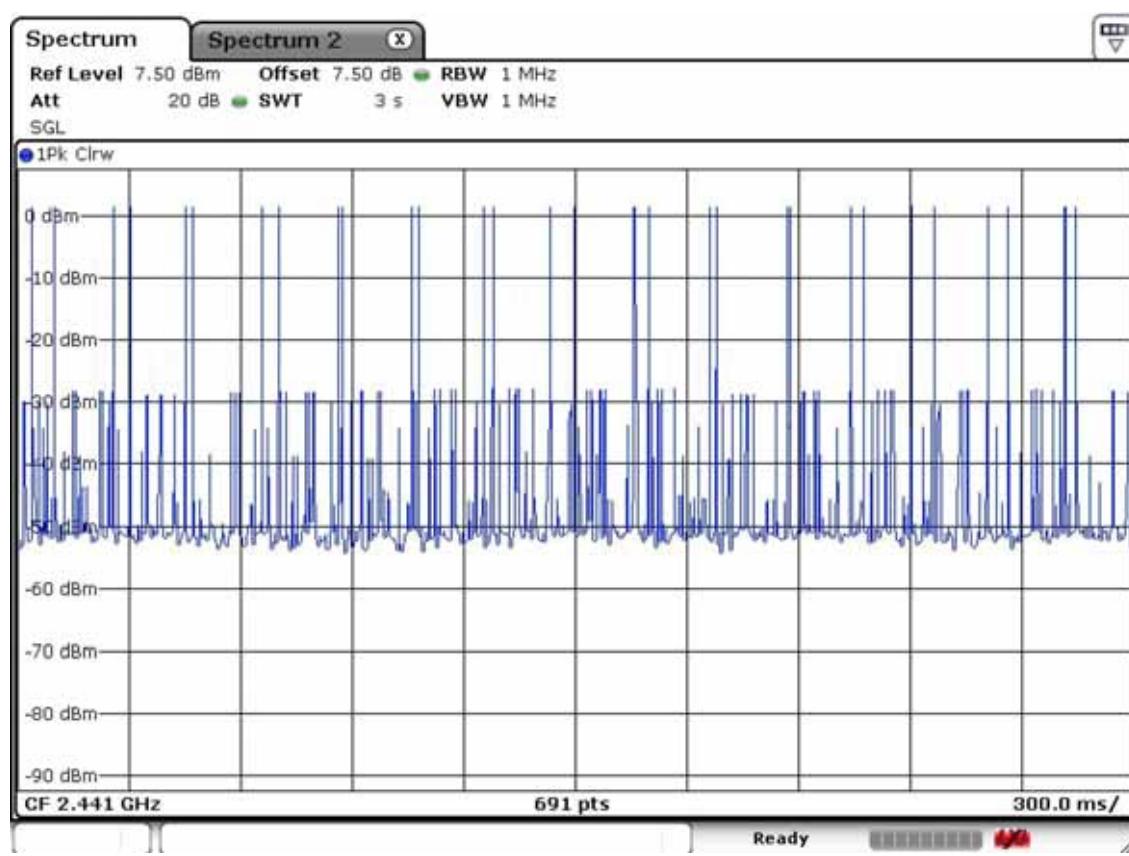
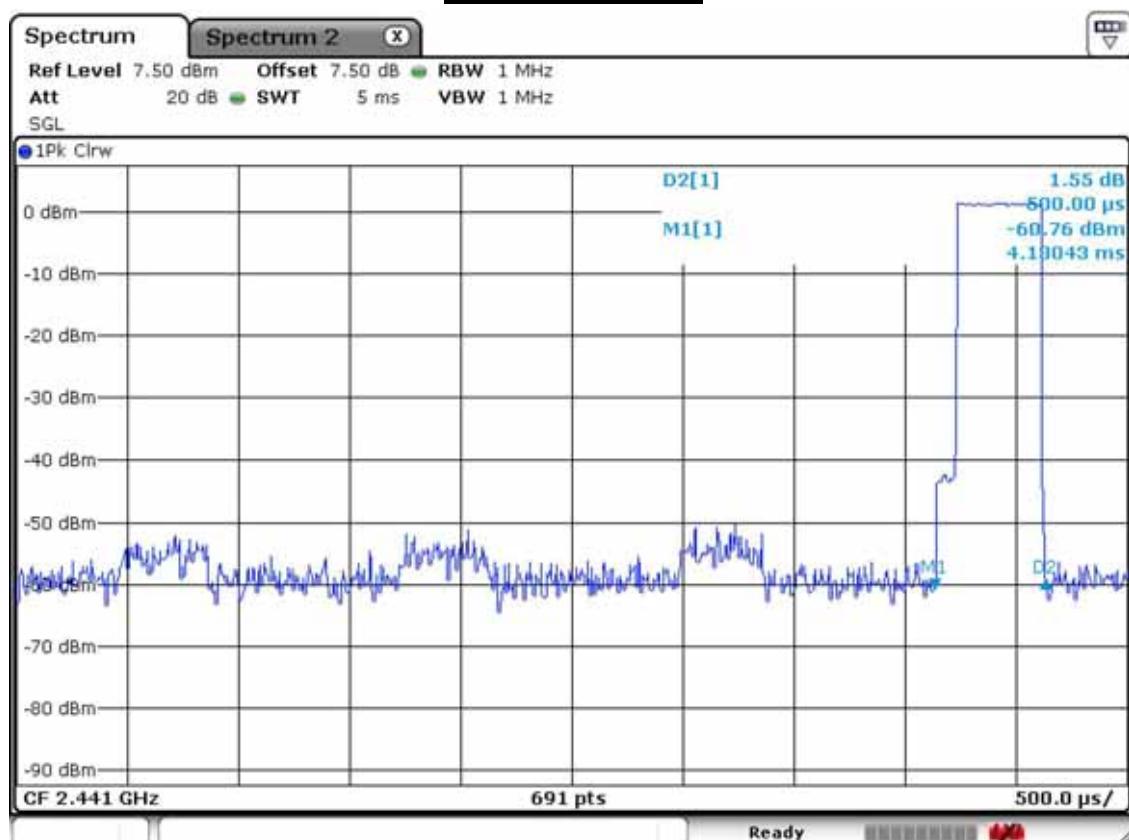
- See next pages for actual measured spectrum plots.
- dwell time = {(number of hopping per second / number of slot) x duration time per channel} x 0.4 ms

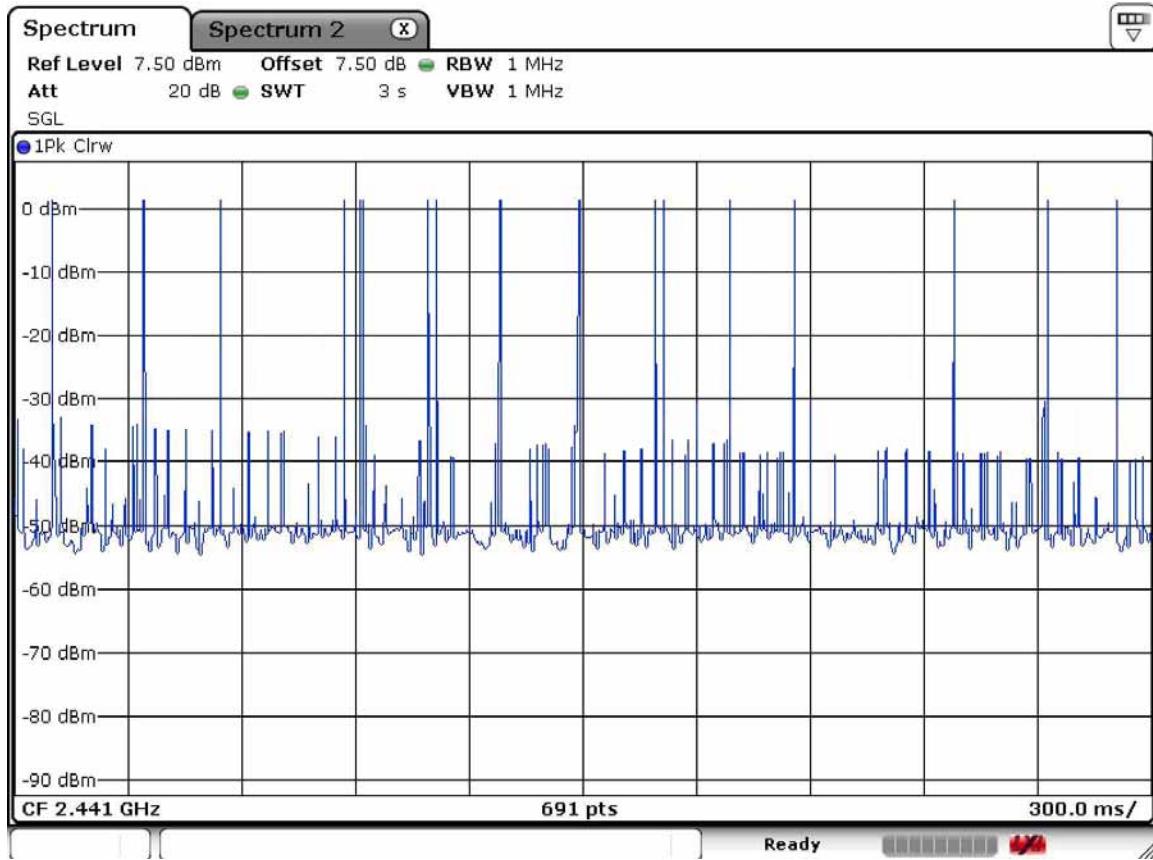
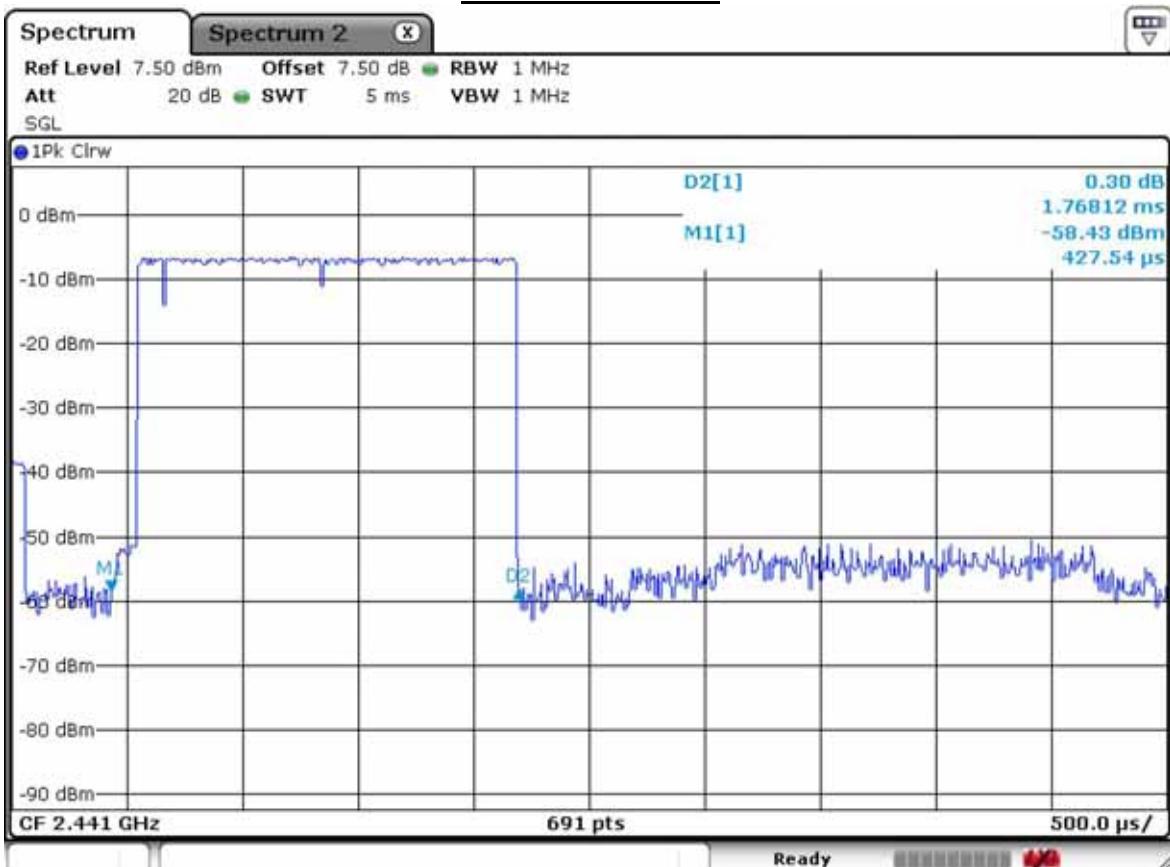
Minimum Standard:

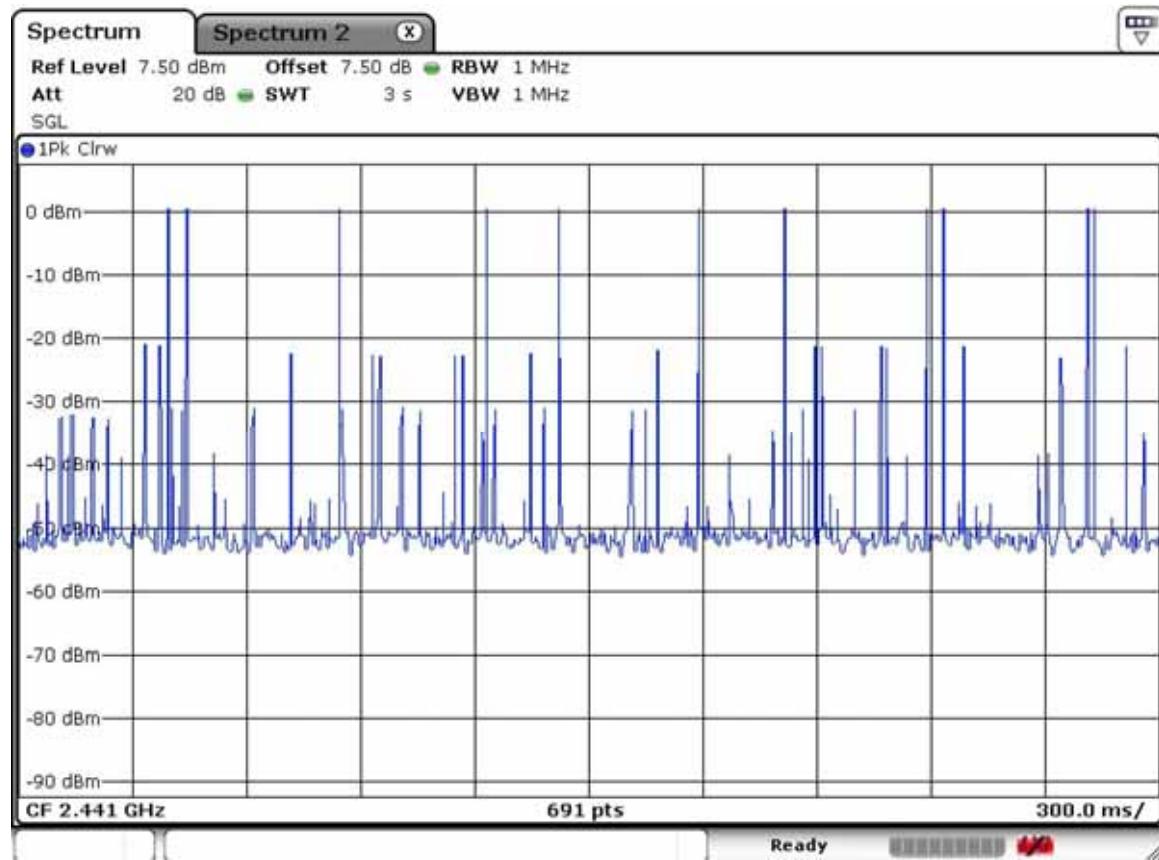
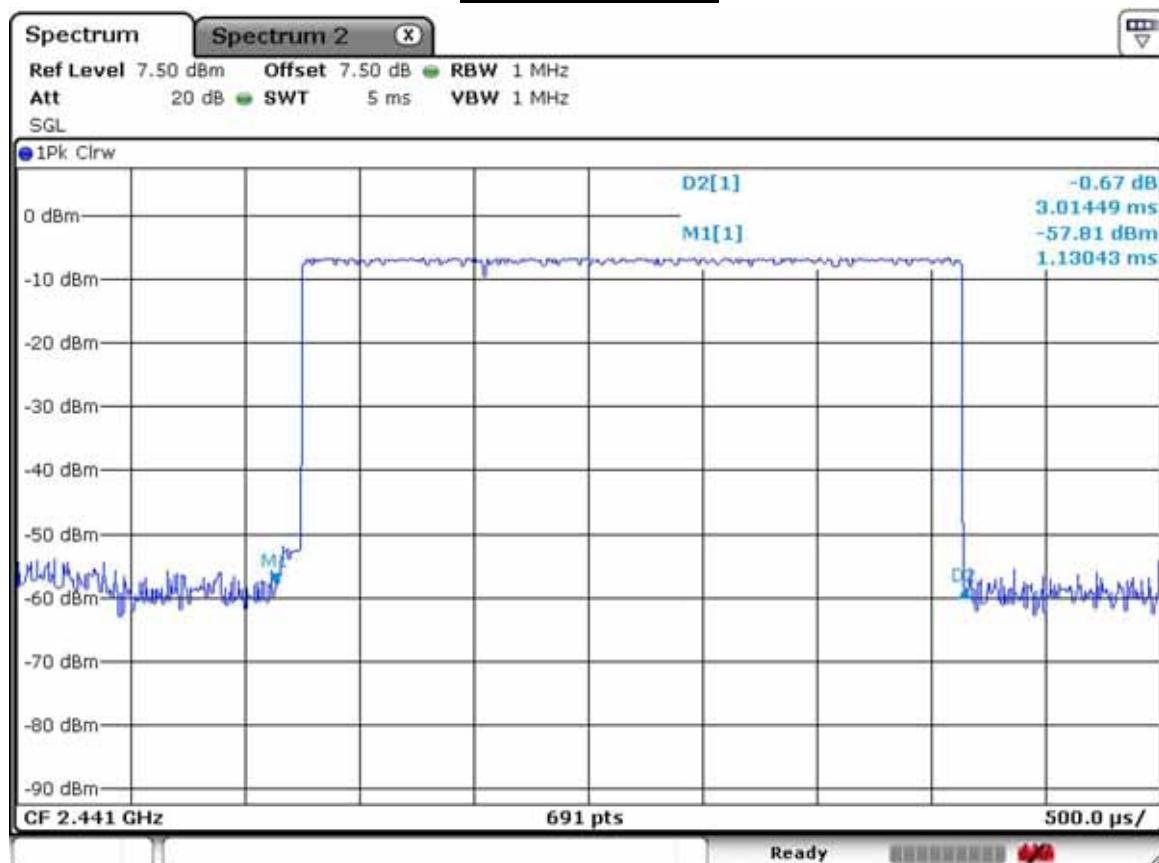
0.4 seconds within a 30 second period per any frequency

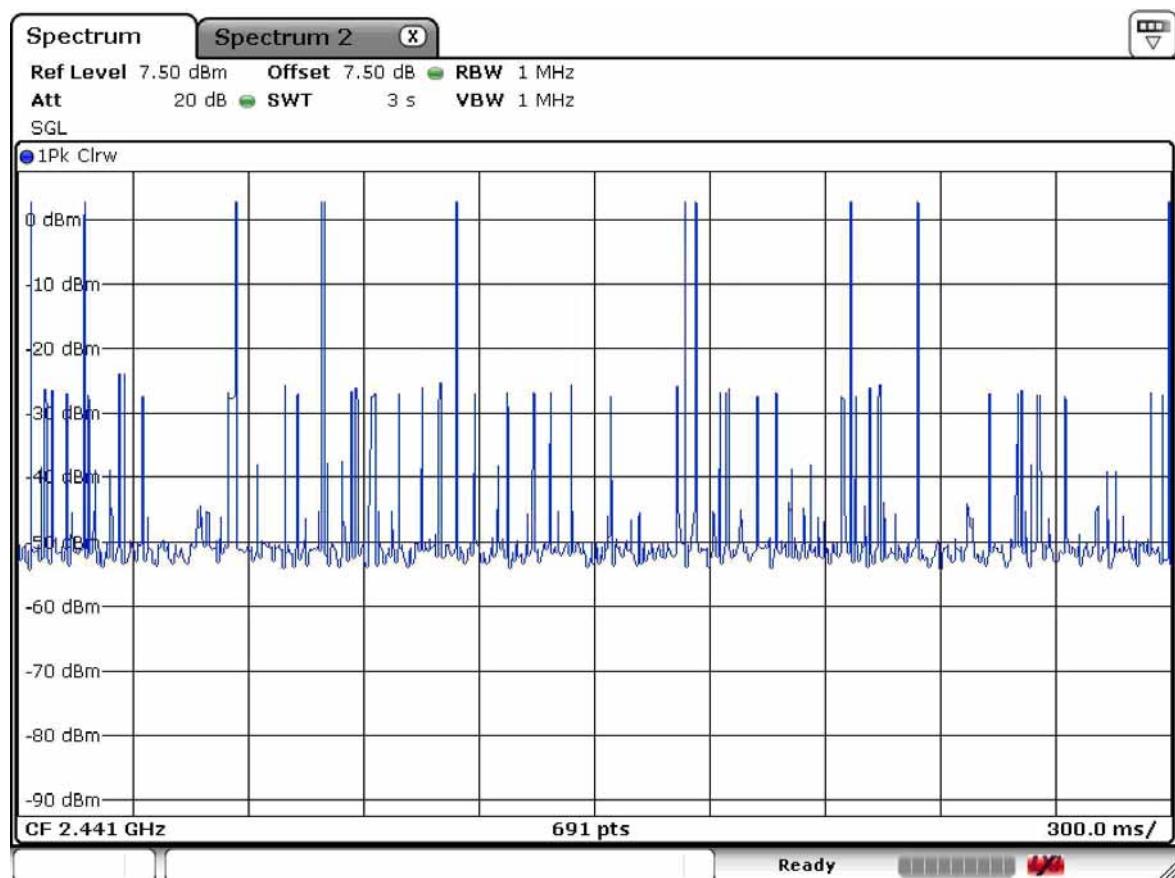
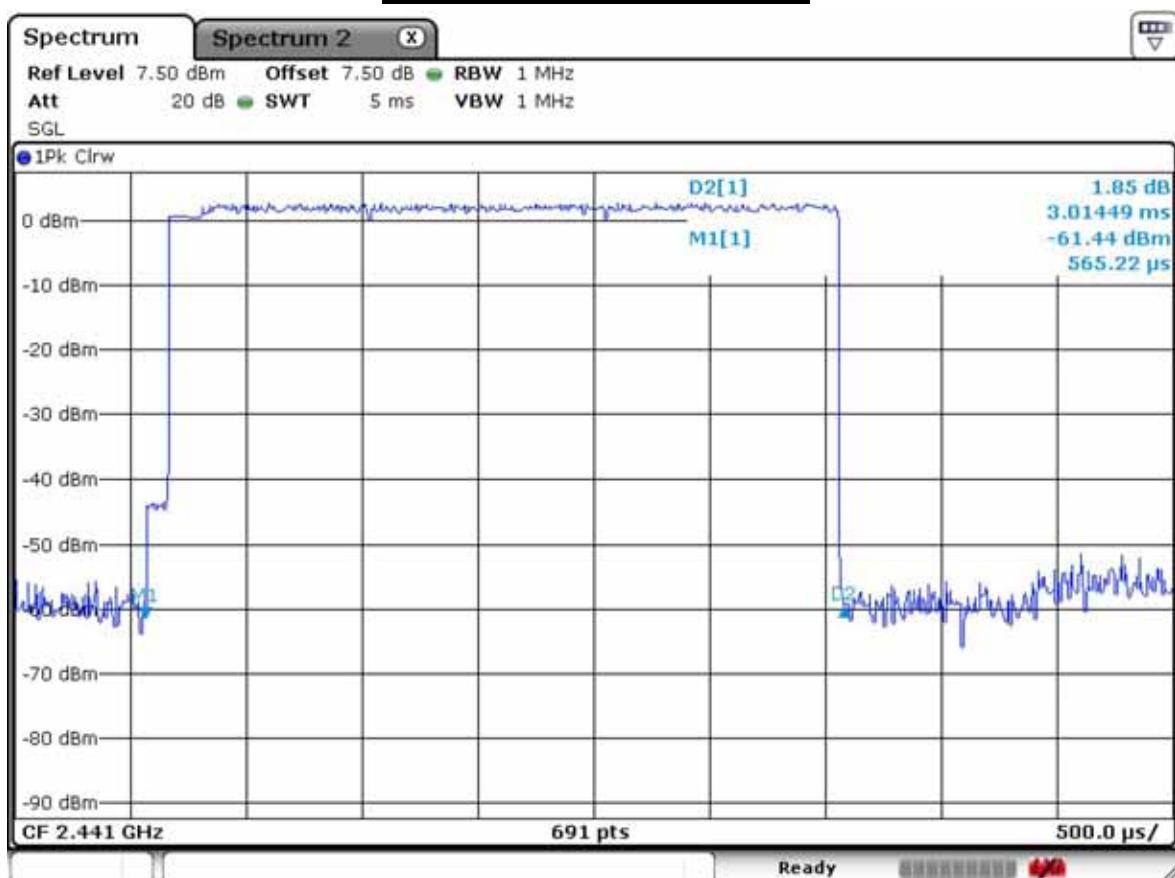
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

DH1 at basic mode

DH3 at basic mode

DH5 at basic mode

DH5 at EDR mode with 3Mbps

3.2.5 Transmitter Output Power

Procedure:

The peak output power was measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels..

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

Span = 10 MHz (approximately 5 times of the 20 dB bandwidth)

RBW = 3 MHz (greater than the 20dB bandwidth of the emission being measured)

VBW = 3 MHz (VBW = RBW) Detector function = peak

Trace = max hold Sweep = auto

Measurement Data: Basic Mode

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	0	-0.98	0.80	Complies
2441	39	0.60	1.15	Complies
2480	78	1.59	1.44	Complies

Measurement Data: EDR Mode

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	0	1.95	1.57	Complies
2441	39	3.60	2.29	Complies
2480	78	4.48	2.81	Complies

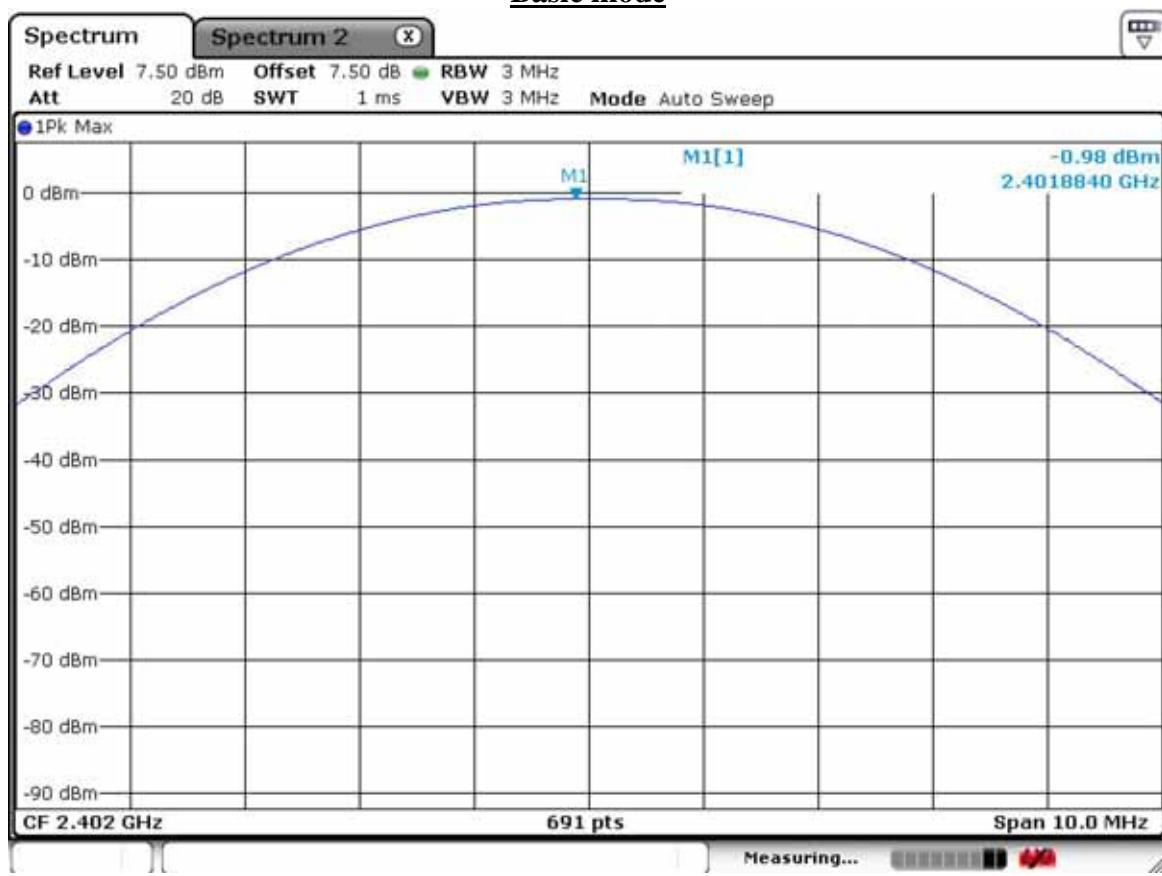
- See next pages for actual measured spectrum plots.

Minimum Standard:	< 250 mW
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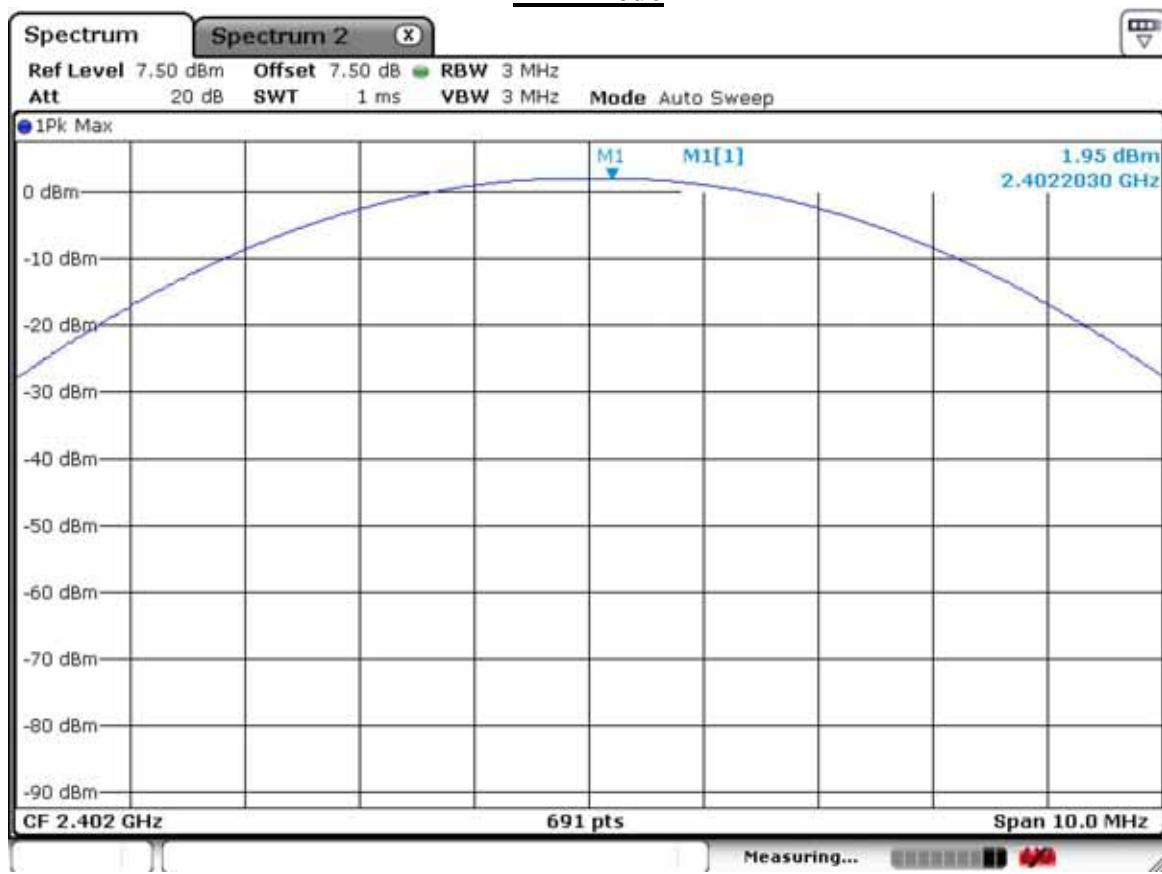
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

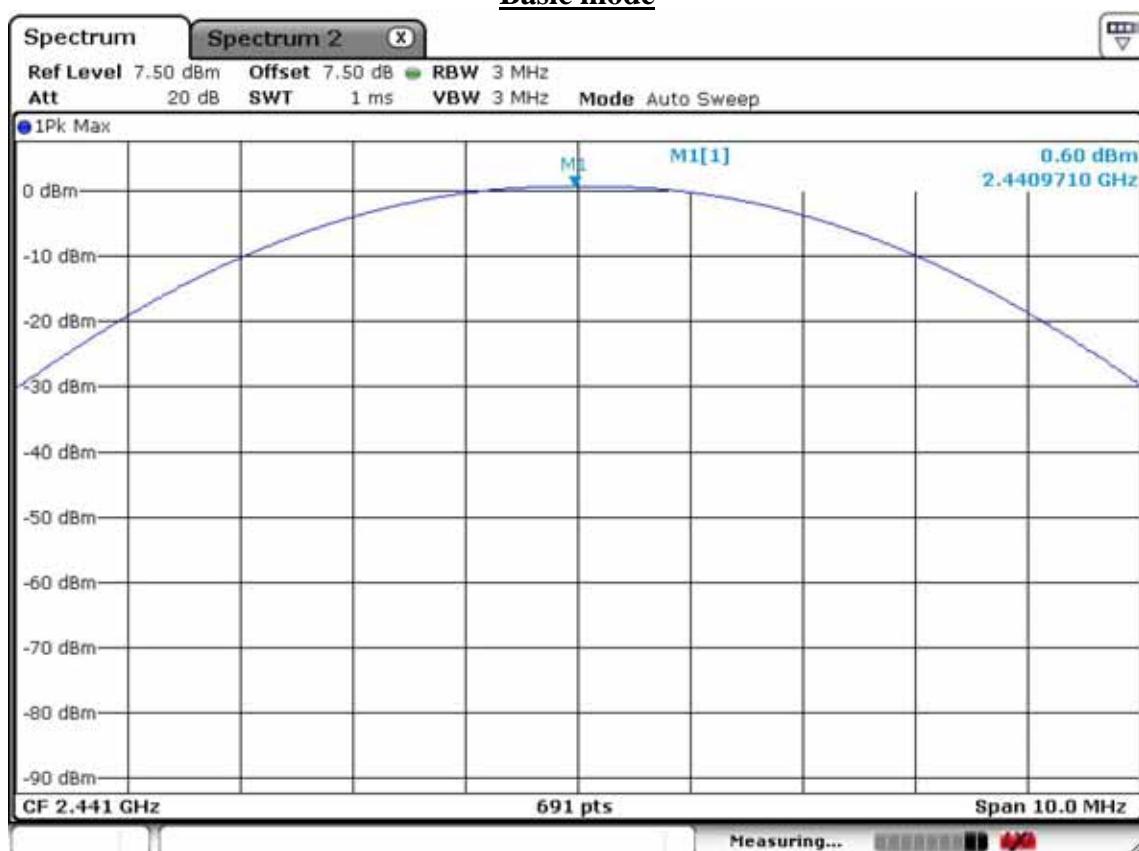
Low Channel
Basic mode



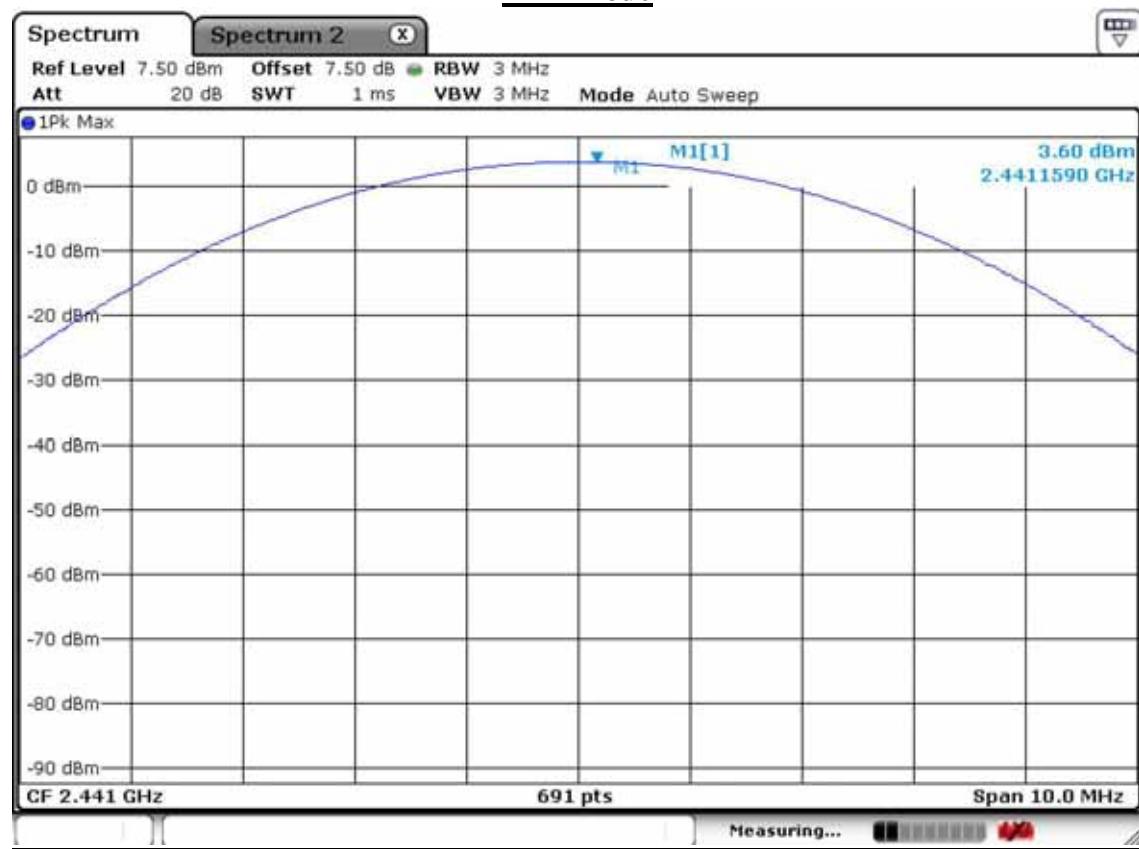
EDR mode



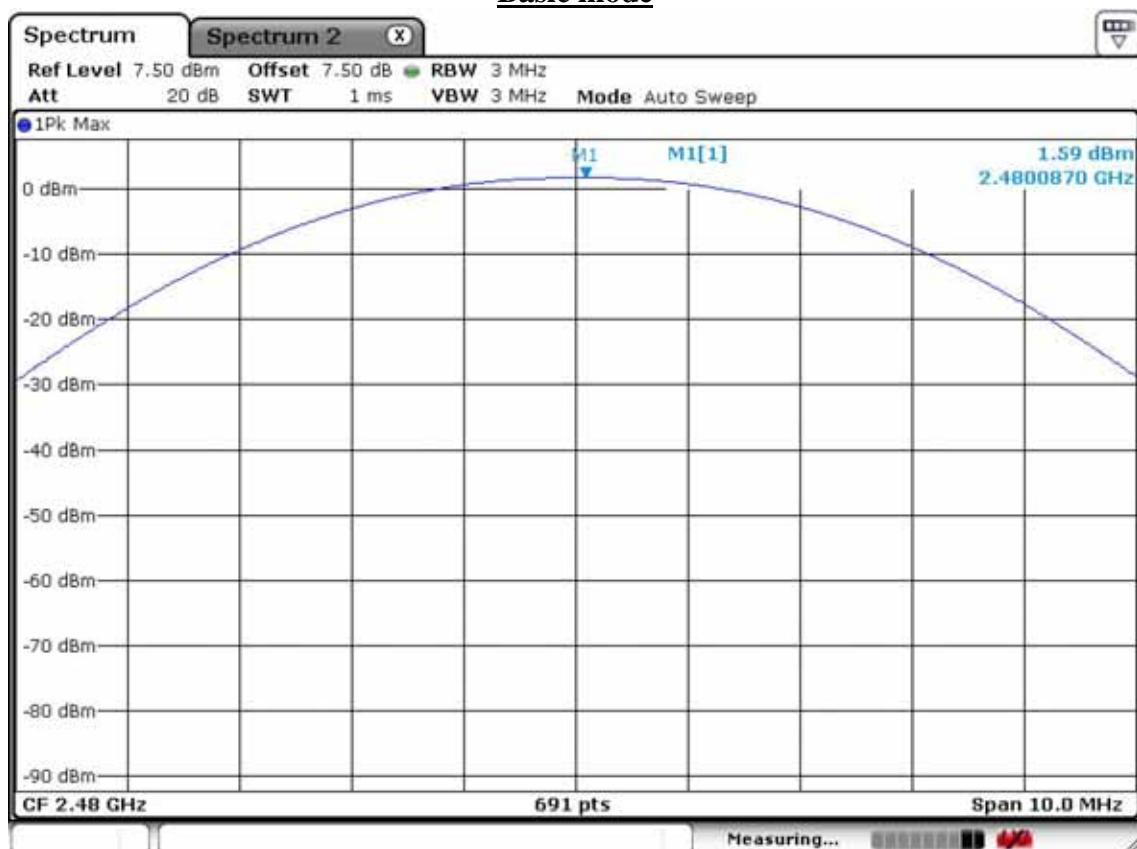
Mid Channel
Basic mode



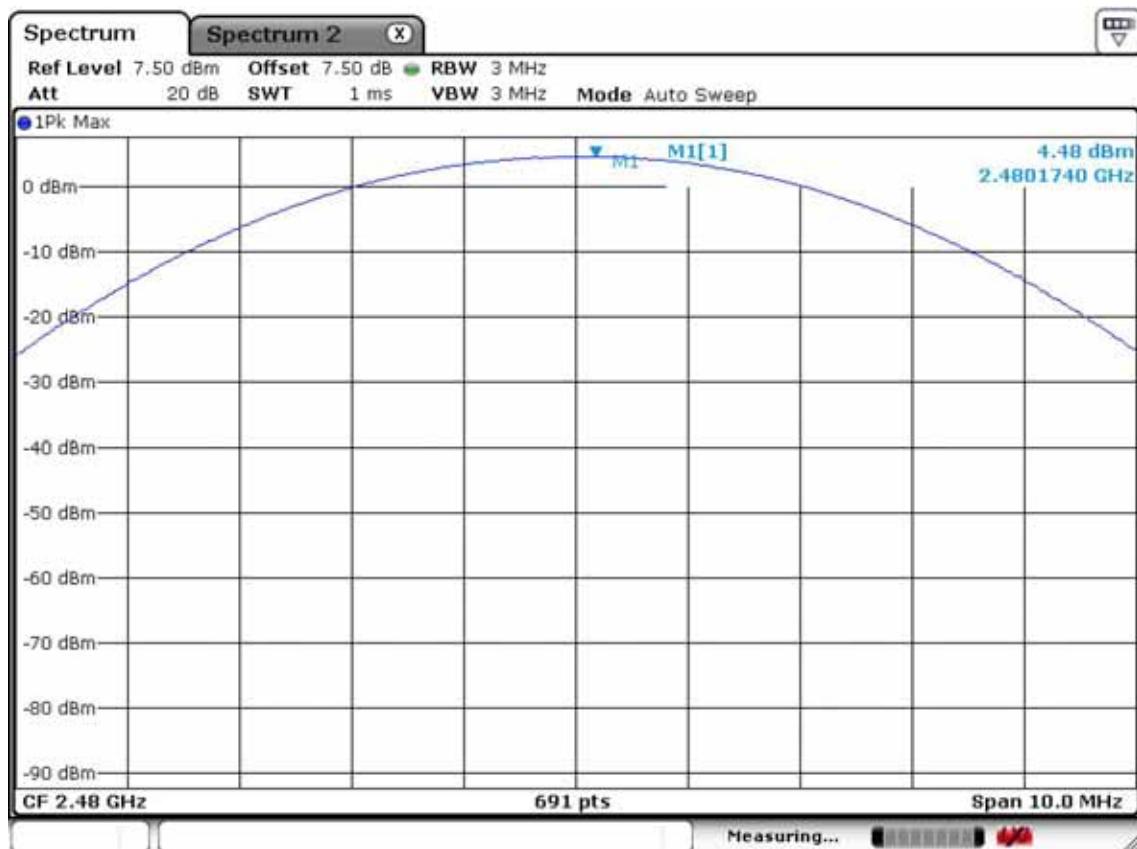
EDR mode



High Channel
Basic mode



EDR mode



3.2.6 Band Edge

Procedure:

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT had its hopping function disabled at the highest, middle and the lowest available channels.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

VBW = 100 kHz

Span = 10 MHz

Detector function = peak

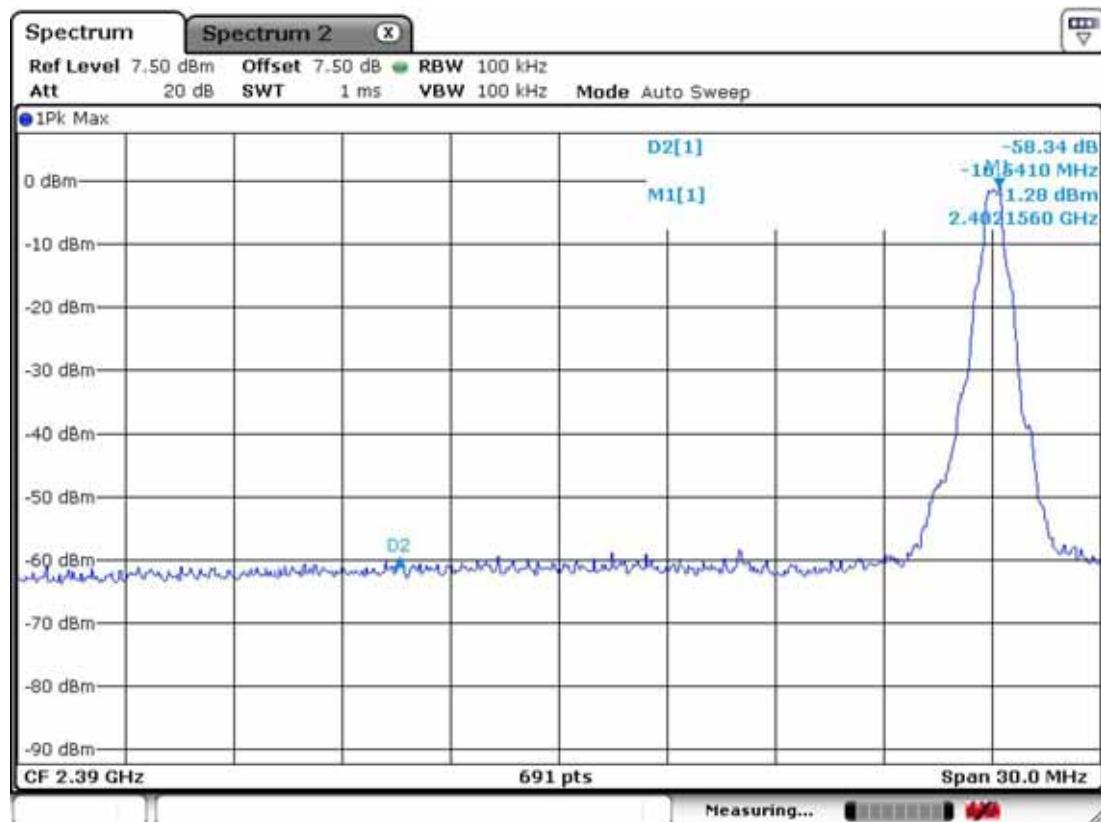
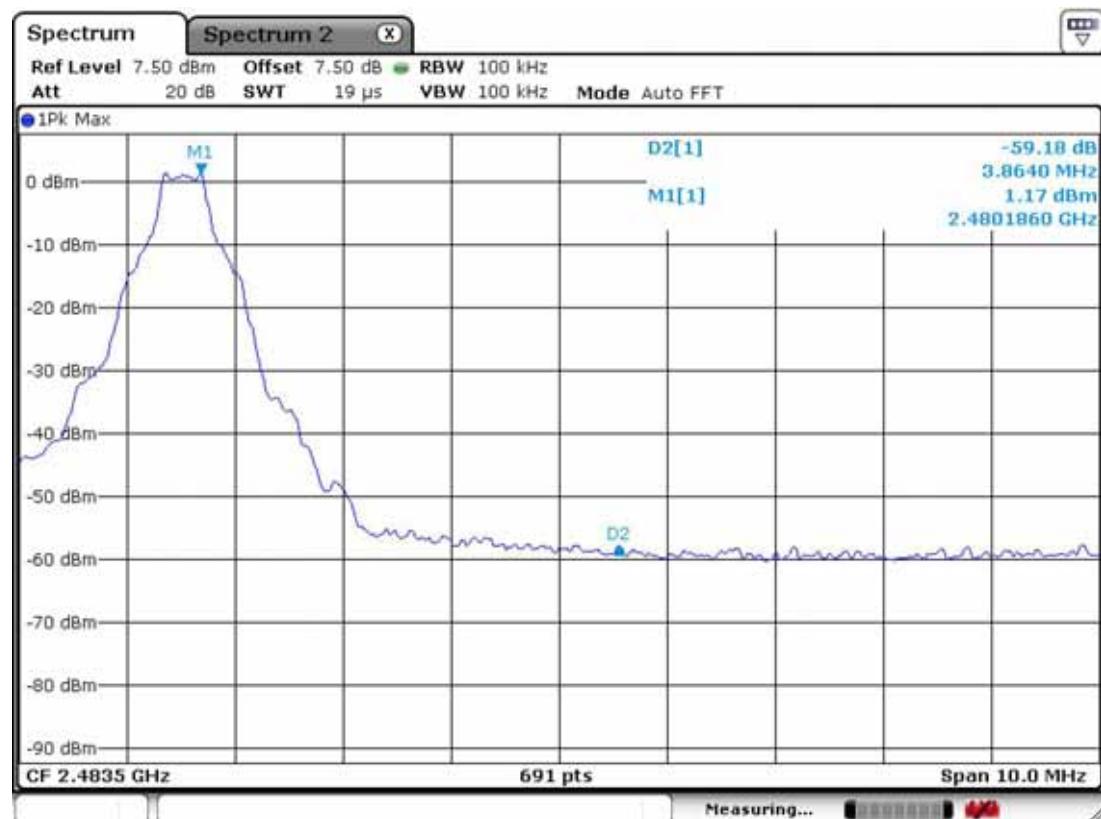
Measurement Data: Complies

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
 - See next pages for actual measured spectrum plots.

Minimum Standard:	> 20 dBc
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Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

Band – edgeLower edgeUpper edge

Band-edges in the restricted band 2310-2390 MHz measurement

Frequency [MHz]	Reading [dBuV/m]	Pol.	Correction Factor			Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]		
			Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	
2390	37.12	50.98	H	25.4	37.1	4.0	54.0	74.0	29.4	43.2	24.6	30.8

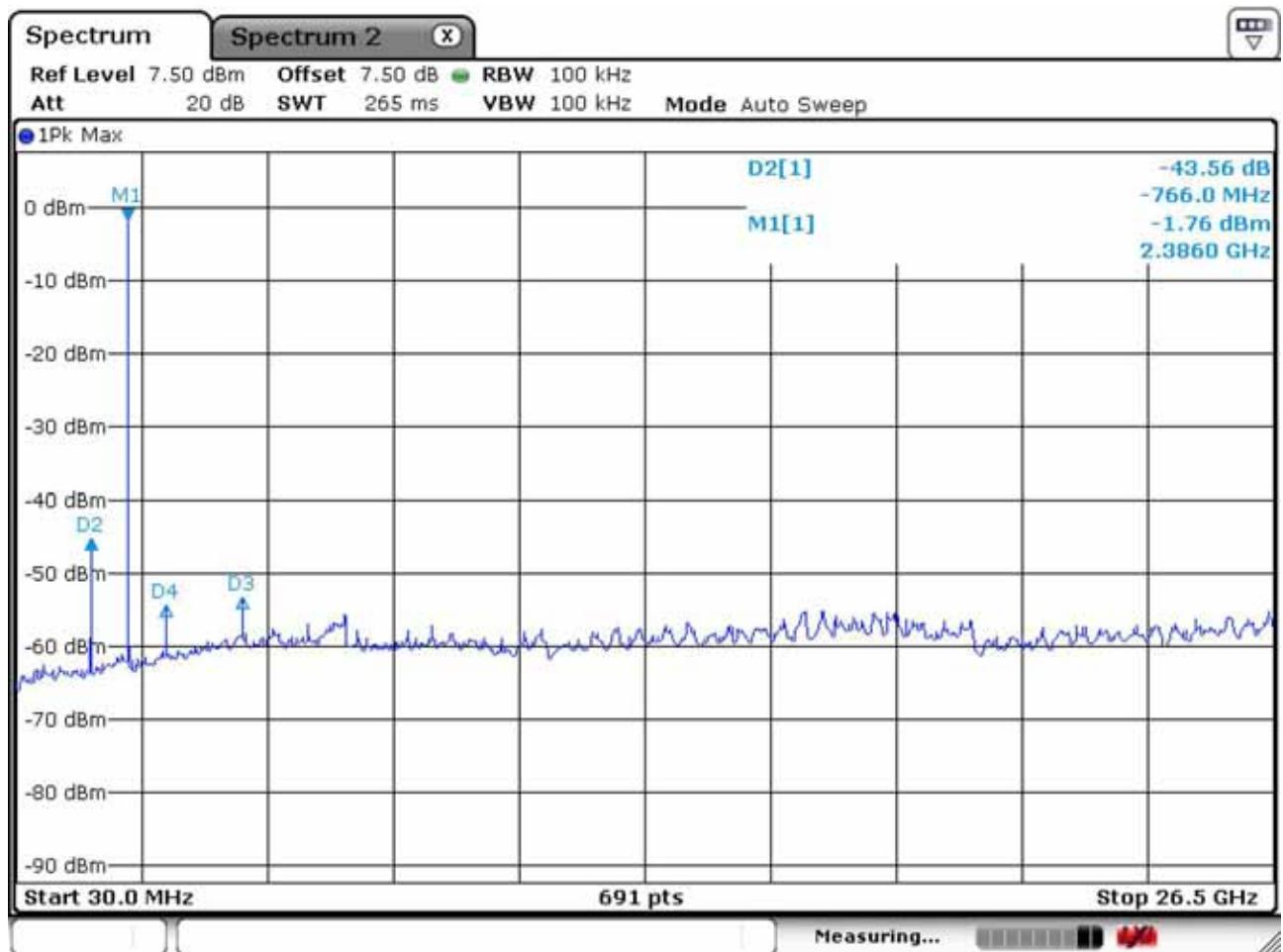
Band-edges in the restricted band 2483.5-2500 MHz measurement

Frequency [MHz]	Reading [dBuV/m]	Pol.	Correction Factor			Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]		
			Antenna	Amp. Gain	Cable	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	
2483.5	37.0	51.0	H	25.4	37.1	4.0	54.0	74.0	29.3	43.2	24.8	30.8

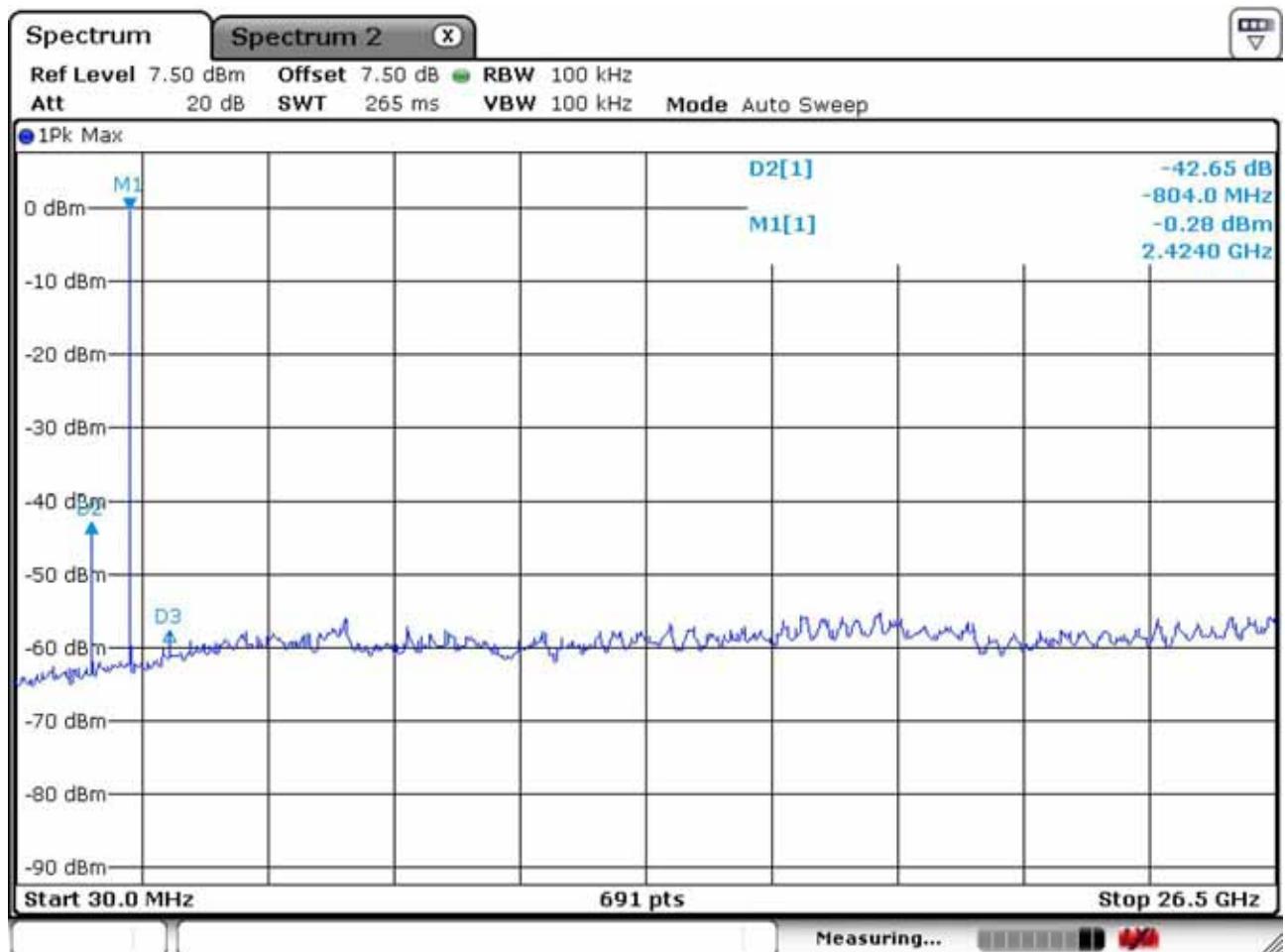
Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented.

Unwanted Emission – Low channel

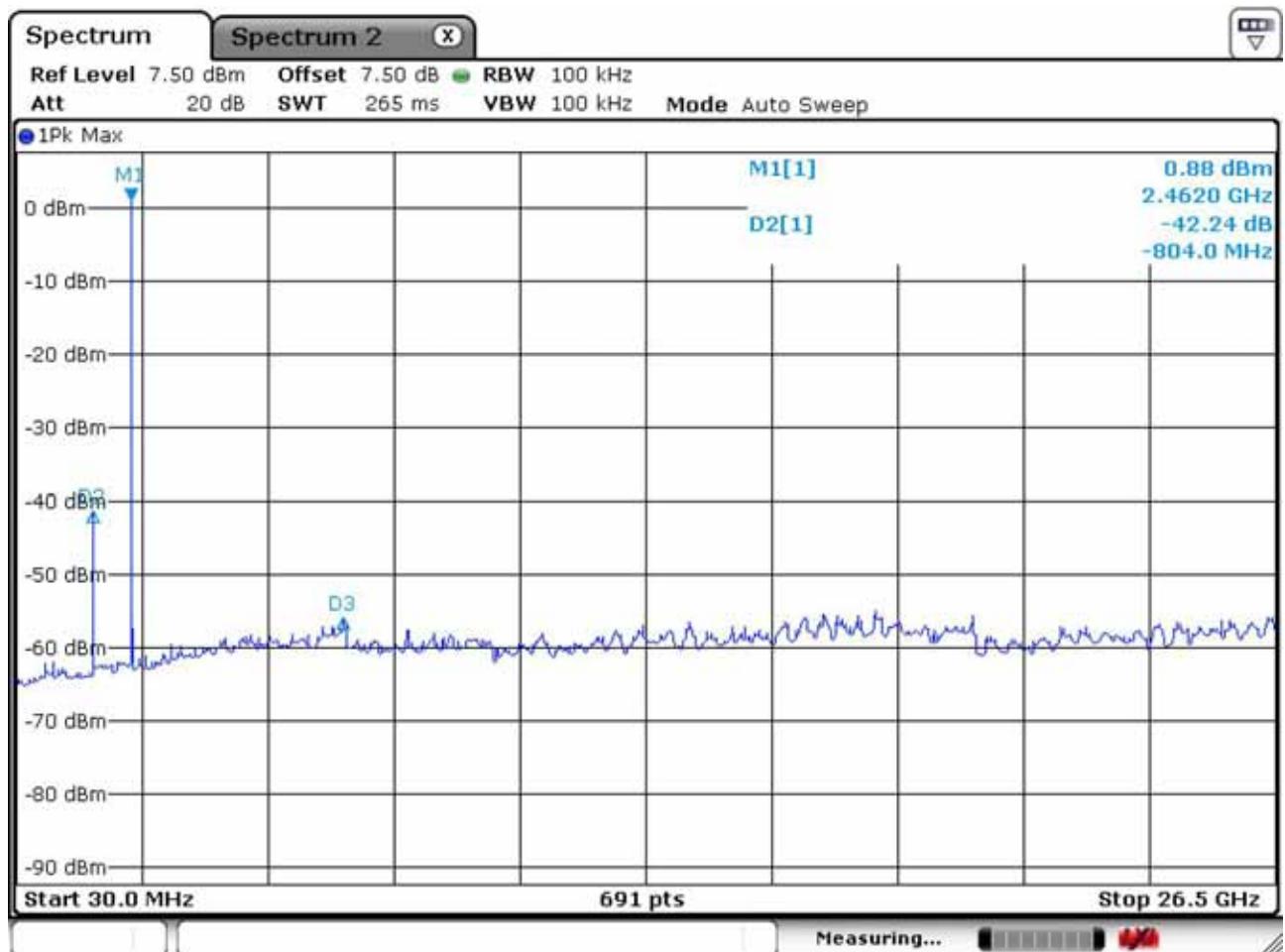
Frequency Range = 30 MHz ~ 26.5 GHz



Unwanted Emission – Middle channel
Frequency Range = 30 MHz ~ 26.5 GHz



Unwanted Emission – High channel
Frequency Range = 30 MHz ~ 26.5 GHz



3.2.7 Field Strength of Harmonics

Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 30 MHz ~ 10th harmonic.

RBW = 100 kHz (30MHz ~ 1 GHz)

Peak:VBW RBW

= 1 MHz (1 GHz ~ 10th harmonic)

Average:VBW=10Hz

Span = 100 MHz

Detector function = Peak and Average

Trace = max hold

Sweep = auto

Measurement Data: Complies

- Refer to the next page.
- No other emissions were detected at a level greater than 20dB below limit include from 9KHz to 30MHz.
- The three antennas were used with this EUT during the Testing.
- The used antenna is “R-AN2400-1901RS” and it gave the worse case emissions.

Minimum Standard: FCC Part 15.209(a)

Frequency (MHz)	Limit (uV/m) @ 3m
0.009 ~ 0.490	2400/F(kHz) (@ 300m)
0.490 ~ 1.705	24000/F(kHz) (@ 30m)
1.705 ~ 30	30(@ 30m)
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

Measurement Data:

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor			Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain	Cable	AV	Peak	AV	Peak	AV	Peak
4804.0	42.2	51.0	H	31.4	36.5	5.7	54.0	74.0	42.8	51.6	11.2	22.4
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor			Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain	Cable	AV	Peak	AV	Peak	AV	Peak
4882.0	39.3	48.7	H	31.4	36.5	5.7	54.0	74.0	40.0	49.4	14.0	24.6
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor			Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp.Gain	Cable	AV	Peak	AV	Peak	AV	Peak
4959.00	42.9	49.9	H	31.4	36.5	5.7	54.0	74.0	43.6	50.6	10.4	23.4
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

No other emissions were detected at a level greater than 20dB below limit.

Radiated Emissions – BT + MP3 Play mode

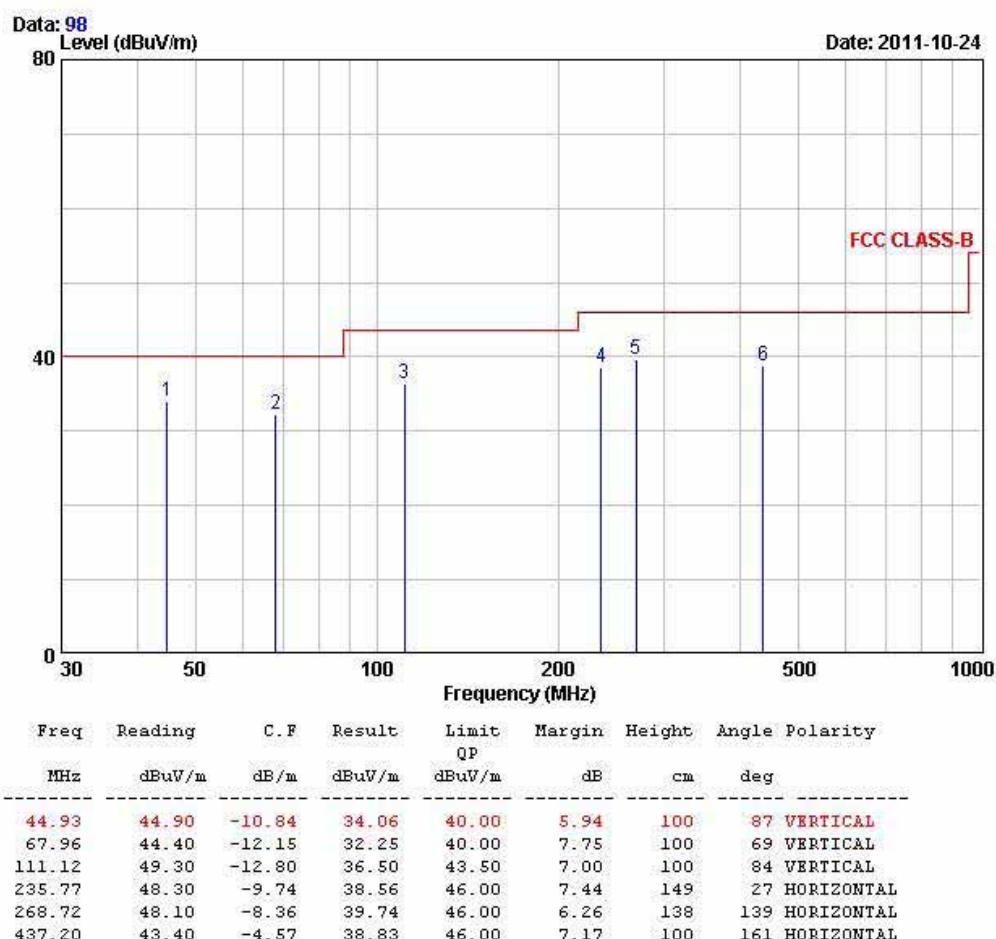
243 Jibug-ri, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel :+82-31-3236008,9
Fax :+82-31-3236010

EUT/Model No.: ESP-E301

TEST MODE: BT+MP3 play mode

Temp Humi : 2 / 37

Tested by: PARK H W



Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Radiated Emissions – BT + PC mode

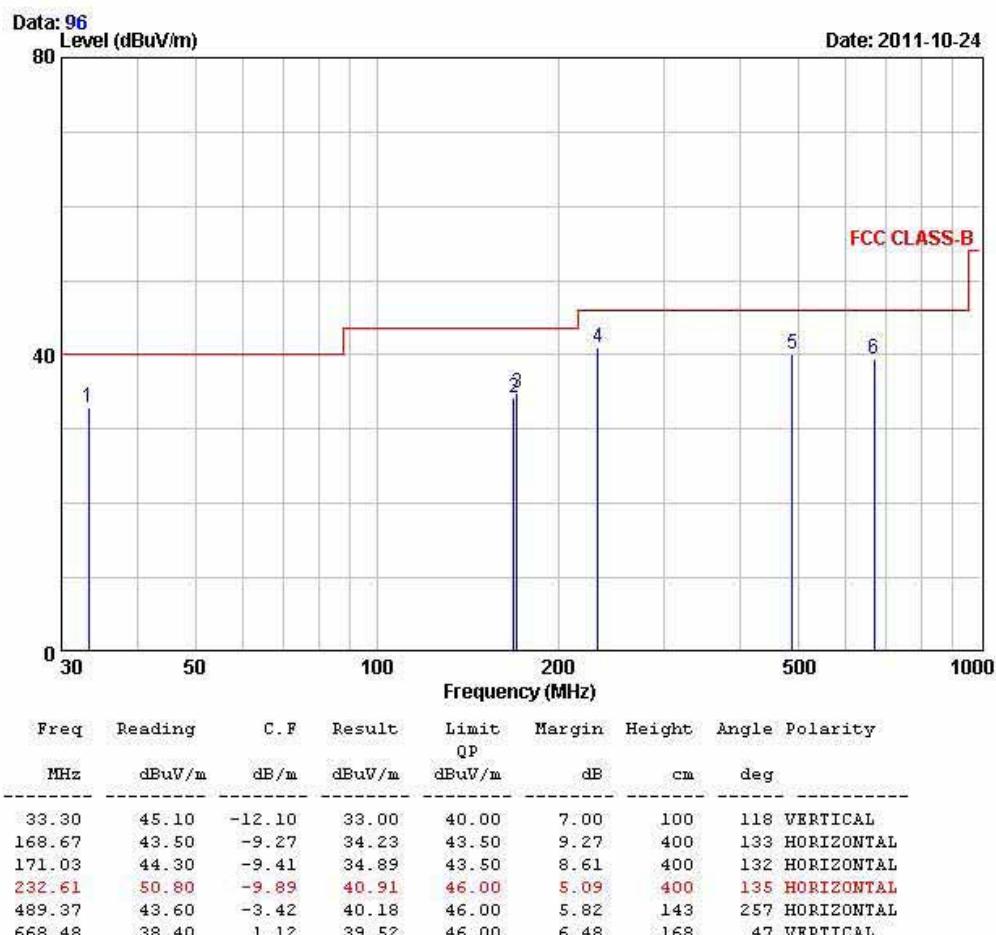
243 Jibug-ri, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel. +82-31-3236008,9
Fax. +82-31-3236010

BUT/Model No.: ESP-E301

TEST MODE: BT+PC mode

Temp Humi : 10 / 34

Tested by: PARK H W



Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

3.2.8 AC Conducted Emissions

Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

Measurement Data: Complies

- See next pages for actual measured spectrum plots.
- No emissions were detected at a level greater than 20dB below limit.

Minimum Standard: FCC Part 15.207(a)/EN 55022

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

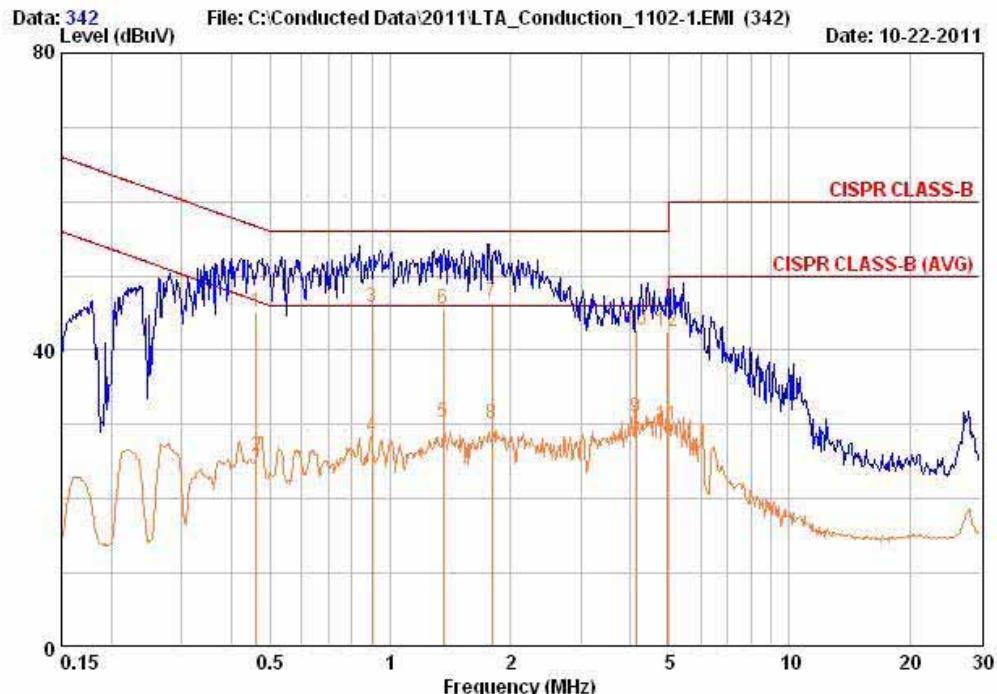


Decreases with the logarithm of the frequency

AC Conducted Emissions at BT + MP3 Play mode – Line

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Tel :+82-31-3236008,9
Fax :+82-31-3236010

BUT / Model No. : ESP-E301 Phase : LINE
 Test Mode : BT+MP3 play mode Test Power : 120 / 60
 Temp./Humid. : 19 / 23 Test Engineer : PARK.H.W



Freq MHz	RD QP		RD AV		C. F dB	Result QP		Result AV		Limit QP	Limit AV	Margin QP	Margin AV
	dBuV	dBuV	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dBuV	dBuV	dB	dB
0.461	35.35	16.05	9.67	45.02	25.72	56.67	46.67	11.65	20.95				
0.898	36.06	18.76	9.67	45.73	28.43	56.00	46.00	10.27	17.57				
1.358	35.88	20.68	9.69	45.57	30.37	56.00	46.00	10.43	15.63				
1.796	36.72	20.42	9.68	46.40	30.10	56.00	46.00	9.60	15.90				
4.128	33.03	21.33	9.73	42.76	31.06	56.00	46.00	13.24	14.94				
4.926	32.85	20.15	9.74	42.59	29.89	56.00	46.00	13.41	16.11				

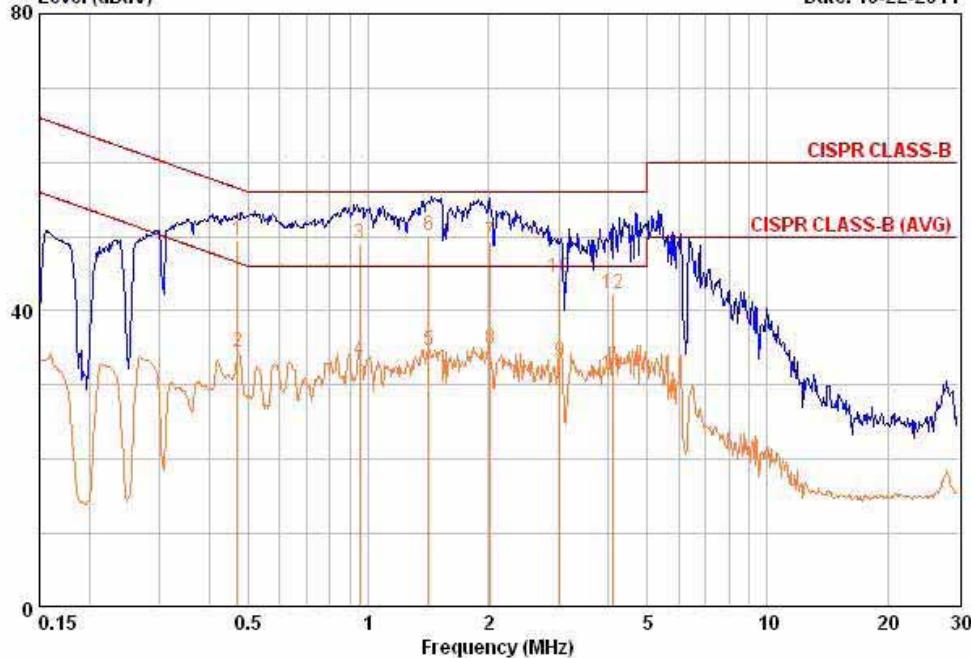
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

AC Conducted Emissions at BT + MP3 Play mode – Neutral

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Tel +82-31-3236008,9
Fax +82-31-3236010

EUT / Model No. : ESP-E301 Phase : NEUTRAL
 Test Mode : BT+MP3 play mode Test Power : 120 / 60
 Temp./Humid. : 19 / 23 Test Engineer : PARK. H. W

Data: 340 File: C:\Conducted Data\2011\LTA_Conduction_1102-1.EMI (340) Date: 10-22-2011



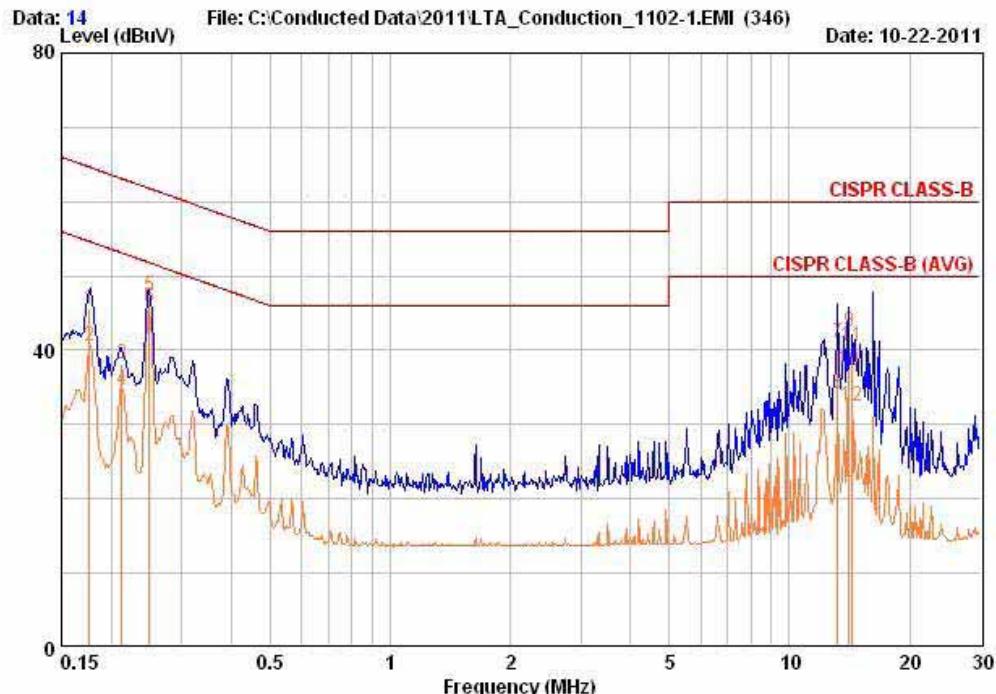
Freq MHz	RD dBuV	RD dBuV	C. F dB	Result		Result		Limit		Margin	
				QP dBuV	AV dBuV	QP dBuV	AV dBuV	QP dBuV	AV dBuV	QP dB	AV dB
0.471	39.85	24.75	9.66	49.51	34.41	56.50	46.50	6.98	12.08		
0.954	39.36	23.76	9.67	49.03	33.43	56.00	46.00	6.97	12.57		
1.413	40.39	24.89	9.68	50.06	34.56	56.00	46.00	5.94	11.44		
2.016	39.63	25.23	9.68	49.31	34.91	56.00	46.00	6.69	11.09		
3.021	34.84	23.34	9.70	44.54	33.04	56.00	46.00	11.46	12.96		
4.104	32.63	21.63	9.73	42.36	31.36	56.00	46.00	13.64	14.64		

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

AC Conducted Emissions at BT + PC mode – LINE

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Tel :+82-31-3236008,9
Fax :+82-31-3236010

BUT / Model No. : ESP-E301 Phase : LINE
 Test Mode : BT+PC mode Test Power : 120 / 60
 Temp./Humid. : 19 / 23 Test Engineer : PARK.H.W



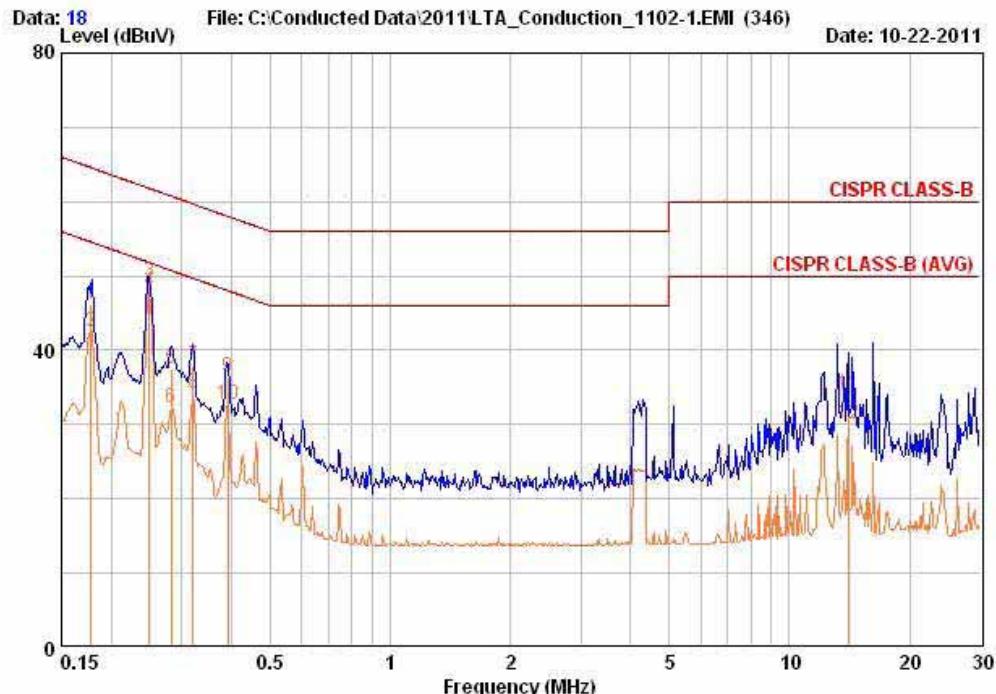
Freq MHz	RD QP		RD AV		C. F dB	Result QP		Result AV		Limit QP		Limit AV		Margin dB	Margin dB
	dBuV	dBuV	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dBuV	dBuV	dBuV	dBuV		
0.176	35.86	30.86	9.65		45.50	40.50	64.67	54.67	19.17		14.17				
0.212	28.46	24.96	9.64		38.10	34.60	63.13	53.13	25.03		18.53				
0.249	37.65	36.15	9.64		47.29	45.79	61.79	51.79	14.50		6.00				
13.211	31.10	24.40	9.89		40.99	34.29	60.00	50.00	19.01		15.71				
14.078	32.70	27.40	9.90		42.61	37.31	60.00	50.00	17.39		12.69				
14.369	30.61	22.61	9.91		40.51	32.51	60.00	50.00	19.49		17.49				

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

AC Conducted Emissions at BT + PC mode – Neutral

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BUT / Model No. : ESP-E301 Phase : NEUTRAL
 Test Mode : BT+PC mode Test Power : 120 / 60
 Temp./Humid. : 19 / 23 Test Engineer : PARK.H.W



Freq MHz	RD QP		RD AV		C. F dB	Result QP		Result AV		Limit QP	Limit AV	Margin QP	Margin AV
	dBuV	dBuV	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dBuV	dBuV	dB	dB
0.178	36.66	32.86	9.65	46.31	42.51	64.58	54.58	18.27	12.07				
0.249	39.55	38.25	9.65	49.20	47.90	61.79	51.79	12.59	3.89				
0.283	27.76	22.66	9.65	37.41	32.31	60.73	50.73	23.32	18.42				
0.320	28.36	24.56	9.65	38.01	34.21	59.71	49.71	21.70	15.50				
0.391	26.65	22.95	9.65	36.30	32.60	58.04	48.04	21.74	15.44				
14.079	24.00	20.10	9.92	33.92	30.02	60.00	50.00	26.08	19.98				

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

APPENDIX

TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Interval	Last Cal. Date
1	Spectrum Analyzer (~30GHz)	FSV-30	100757	R&S	1 year	2011-01-24
2	Signal Generator (~3.2GHz)	8648C	3623A02597	HP	1 year	2011-03-30
3	Signal Generator (1~20GHz)	83711B	US34490456	HP	1 year	2011-03-30
4	Attenuator (3dB)	8491A	37822	HP	2 year	2010-10-08
5	Attenuator (10dB)	8491A	63196	HP	2 year	2010-10-08
6	Attenuator (30dB)	8498A	3318A10929	HP	2 year	2011-01-05
7	Test Receiver (~30MHz)	ESHS10	828404/009	R&S	1 year	2011-03-30
8	EMI Test Receiver (~1GHz)	ESCI7	100722	R&S	1 year	2011-10-07
9	RF Amplifier (~1.3GHz)	8447D	2439A09058	HP	2 year	2010-10-08
10	RF Amplifier (1~18GHz)	8449B	3008A02126	HP	2 year	2010-03-29
11	Horn Antenna (1~18GHz)	BBHA 9120D	9120D122	SCHWARZBECK	2 year	2010-12-24
12	Horn Antenna (18 ~ 40GHz)	SAS-574	154	Schwarzbeck	2 year	2010-11-25
13	Horn Antenna (18 ~ 40GHz)	SAS-574	155	Schwarzbeck	2 year	2010-11-25
14	TRILOG Antenna	VULB 9160	9160-3172	SCHWARZBECK	2 year	2010-10-07
15	Dipole Antenna	VHA9103	2116	SCHWARZBECK	2 year	2010-11-25
16	Dipole Antenna	VHA9103	2117	SCHWARZBECK	2 year	2010-11-25
17	Dipole Antenna	VHA9105	2261	SCHWARZBECK	2 year	2010-11-25
18	Dipole Antenna	VHA9105	2262	SCHWARZBECK	2 year	2010-11-25
19	Hygro-Thermograph	THB-36	0041557-01	ISUZU	2 year	2010-04-12
20	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-	-
21	Power Divider	11636A	6243	HP	2 year	2010-10-08
22	DC Power Supply	6622A	3448A03079	HP	-	-
23	Frequency Counter	5342A	2826A12411	HP	1 year	2011-03-30
24	Power Meter	EPM-441A	GB32481702	HP	1 year	2011-03-30
25	Power Sensor	8481A	US41030291	HP	1 year	2011-10-07
26	Audio Analyzer	8903B	3729A18901	HP	1 year	2011-10-07
27	Modulation Analyzer	8901B	3749A05878	HP	1 year	2011-10-07
28	TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	Jin Young Tech	1 year	2011-10-07
29	Stop Watch	HS-3	601Q09R	CASIO	2 year	2010-03-31
30	LISN	ENV216	100408	R&S	1 year	2011-10-07
31	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	106243	R&S	2 year	2010-05-13
32	Highpass Filter	WHKX1.5/15G-10SS	74	Wainwright Instruments	-	-
33	Highpass Filter	WHKX3.0/18G-10SS	118	Wainwright Instruments	-	-
34	Loop Antenna	FMZB 1516	151602/94	SCHWARZBECK	2 year	2011-04-05