



Dates of Tests: June. 29 ~ July 13, 2009

Test Report S/N: LR500190907C

Test Site : LTA CO., LTD

CERTIFICATION OF COMPLIANCE

FCC ID.

XBQ-X70EX

APPLICANT

YUKYUNG TECHNOLOGIES INC.

Equipment Class	:	Part 15 Spread Spectrum Transmitter (DSS)
Manufacturing Description	:	MID(MOBILE INTERNET DEVICE)
Manufacturer	:	YUKYUNG TECHNOLOGIES INC.
Model name	:	X70 EX xxxx
		(→ About 'xxxx', Refer to the Model Description)
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 2.81dBm - Conducted
Data of issue	:	July 14, 2009

This test report is issued under the authority of:



Dong -Min JUNG, Technical Manager

The test was supervised by:



Kyung-Taek LEE, 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. This report must not be used by the applicant to claim product endorsement by any agency.



NVLAP LAB Code.: 200723-0

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1. General information's

1-1 Test Performed

Company name : LTA Co., Ltd.
 Address : 243, Jubug-ri, Yangji-Myeon, Youngin-Si, Kyunggi-Do, Korea. 449-822
 Web site : <http://www.ltalab.com>
 E-mail : chahn@ltalab.com
 Telephone : +82-31-323-6008
 Facsimile : +82-31-323-6010

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	2009-09-30	ECT accredited Lab.
RRL	KOREA	KR0049	2011-06-20	EMC accredited Lab.
FCC	U.S.A	610755	2011-04-22	FCC filing
VCCI	JAPAN	R2133, C2307	2011-06-21	VCCI registration
IC	CANADA	IC5799	2010-05-03	IC filing

2-4 Ancillary Equipment

Equipment	Model No.	Serial No.	Manufacturer
PC	HP Compaq dx7400	CNG8330J95	HP
MONITOR	HPL1710	CNC816QH92	HP
KEYBOARD	SK-8115	641-OEWW	DELL
MOUSE	MO56UO	520107013	DELL
PRINTER	STYLUS C65	N/A	EPSON
EARPHONE	N/A	N/A	N/A
SD CARD	ULTIMA	SD41238E0509SCF0TWN	SILICON POWER
USB Memories	MICROVALUT	08N18NDDV	SONY

2-5 Model Description

Model Name	SSD	CPU	Note
X70 EX PREMIUM S	16/32/64/ 128	1.33GHz	Tested
X70 EX EXPRESS	16/32/64/128	1.2GHz / 1.33GHz	-

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 YUKYUNG TECHNOLOGIES INC. FCC ID: XBQ-X70EX unit complies with the requirement of §15.203. The antenna is connected to inside of EUT. And type is Chip 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
1.0217	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

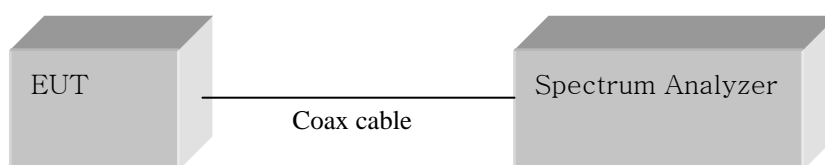
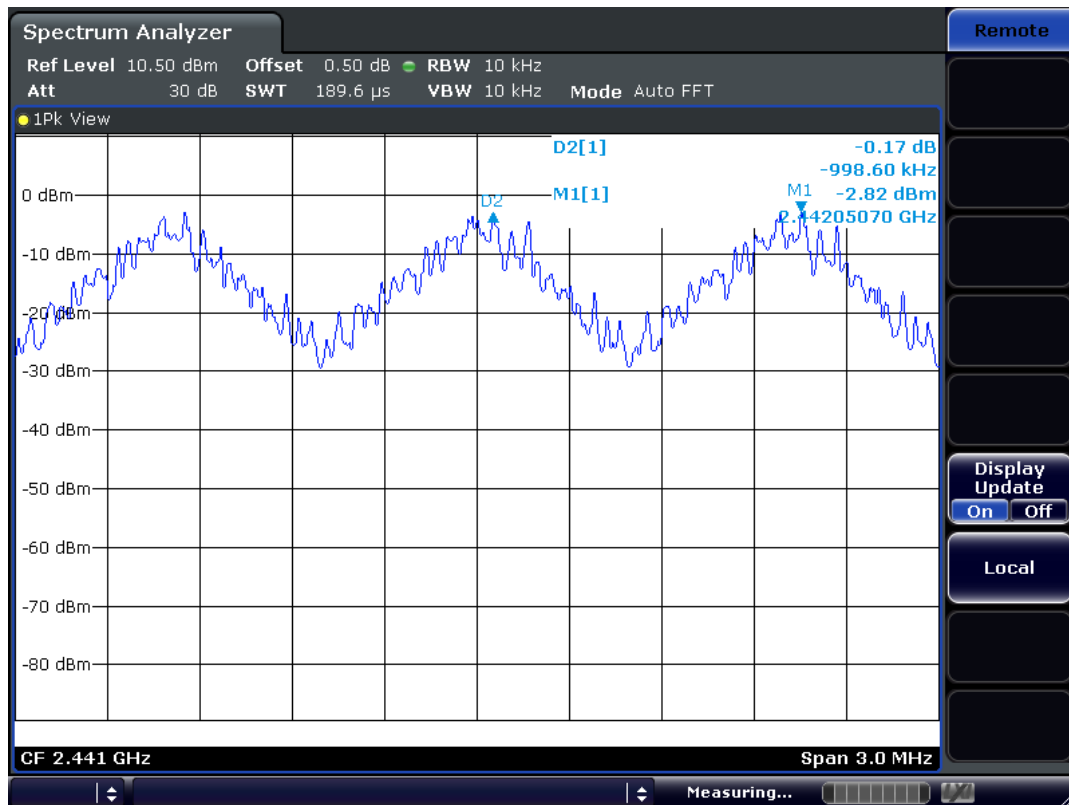


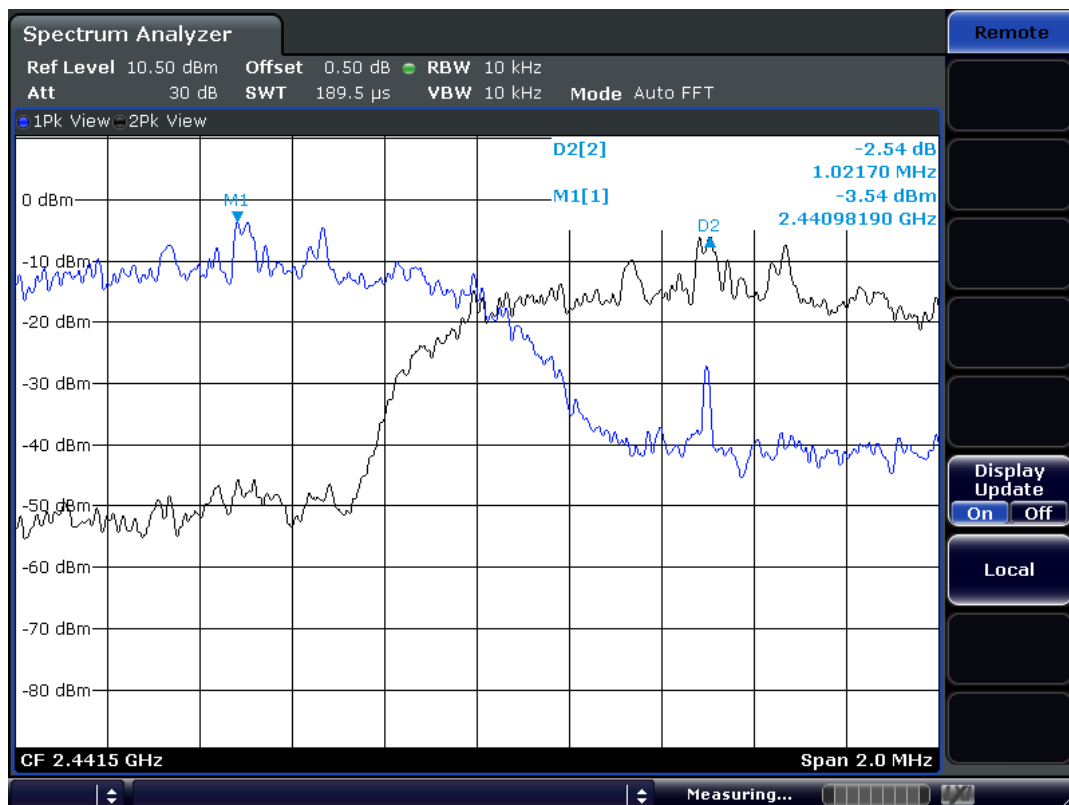
Figure 1: Measurement setup for the carrier frequency separation

Carrier Frequency Separation

Basic Mode



EDR 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 \geq 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.

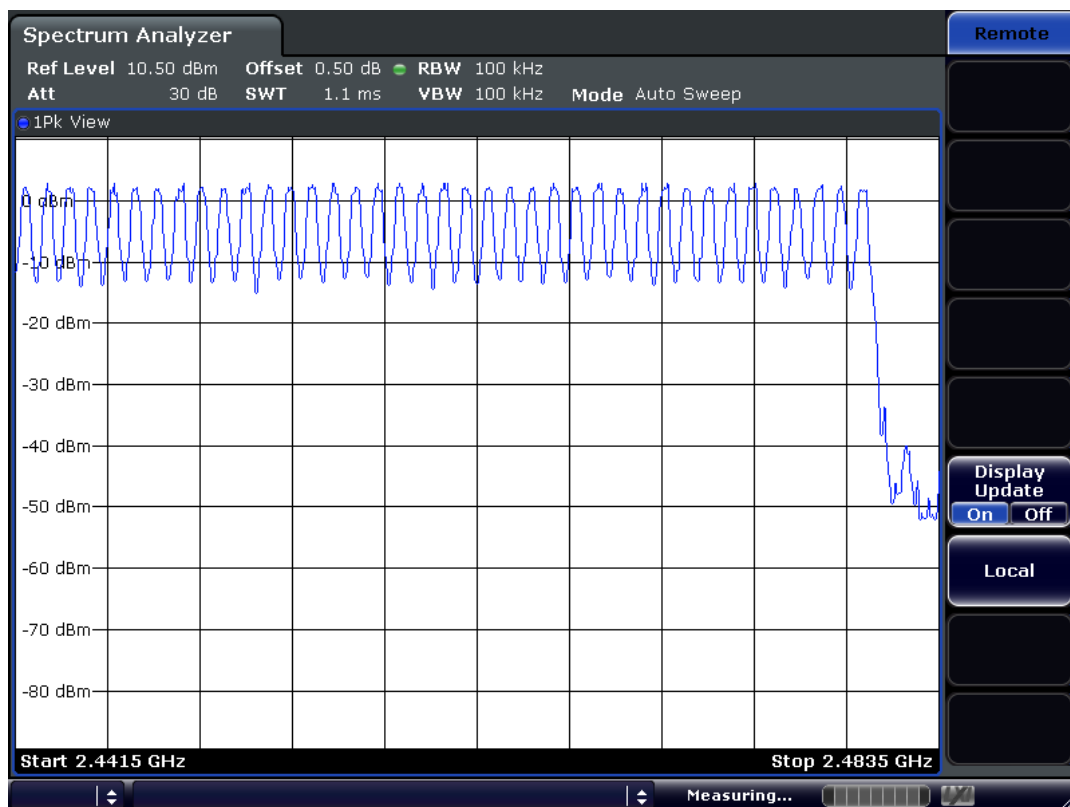
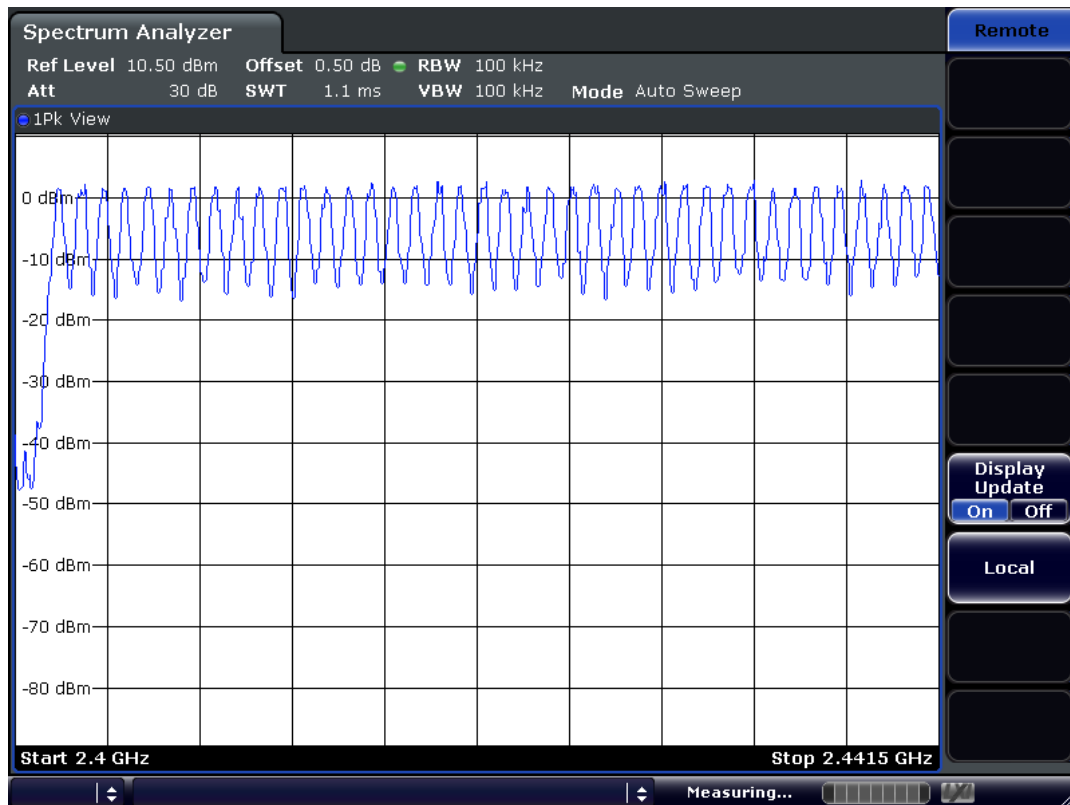
Minimum Standard:

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 \geq 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	0.842	0.890
2441	39	0.842	0.877
2480	78	0.842	0.881

Measurement Data: EDR Mode

Frequency (MHz)	Channel No.	Test Results(MHz)	
		20dB Bandwidth	99% Bandwidth
2402	0	1.252	1.151
2441	39	1.252	1.158
2480	78	1.252	1.172

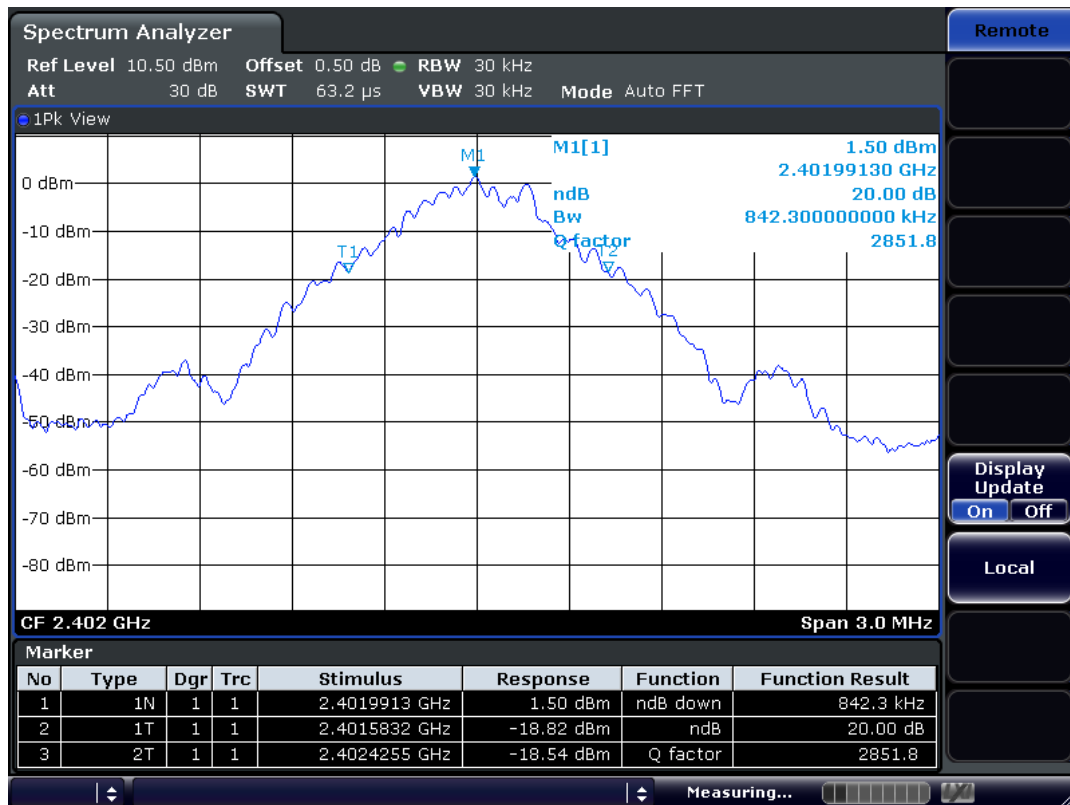
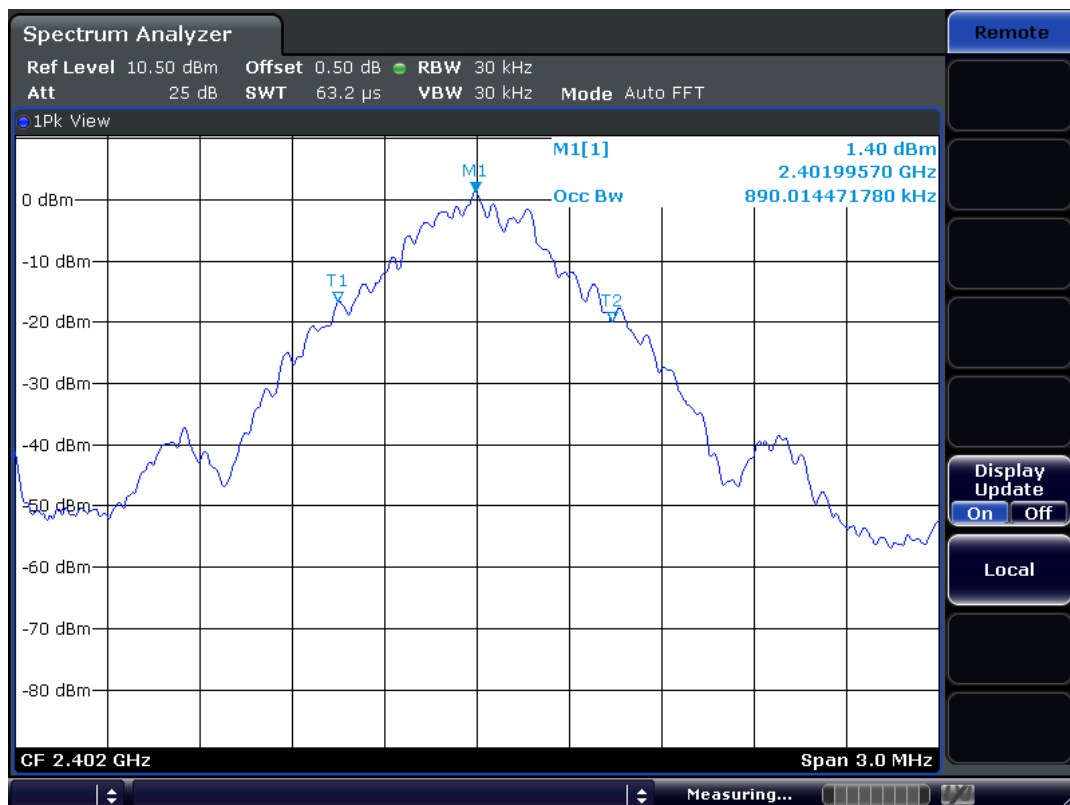
- See next pages for actual measured spectrum plots.

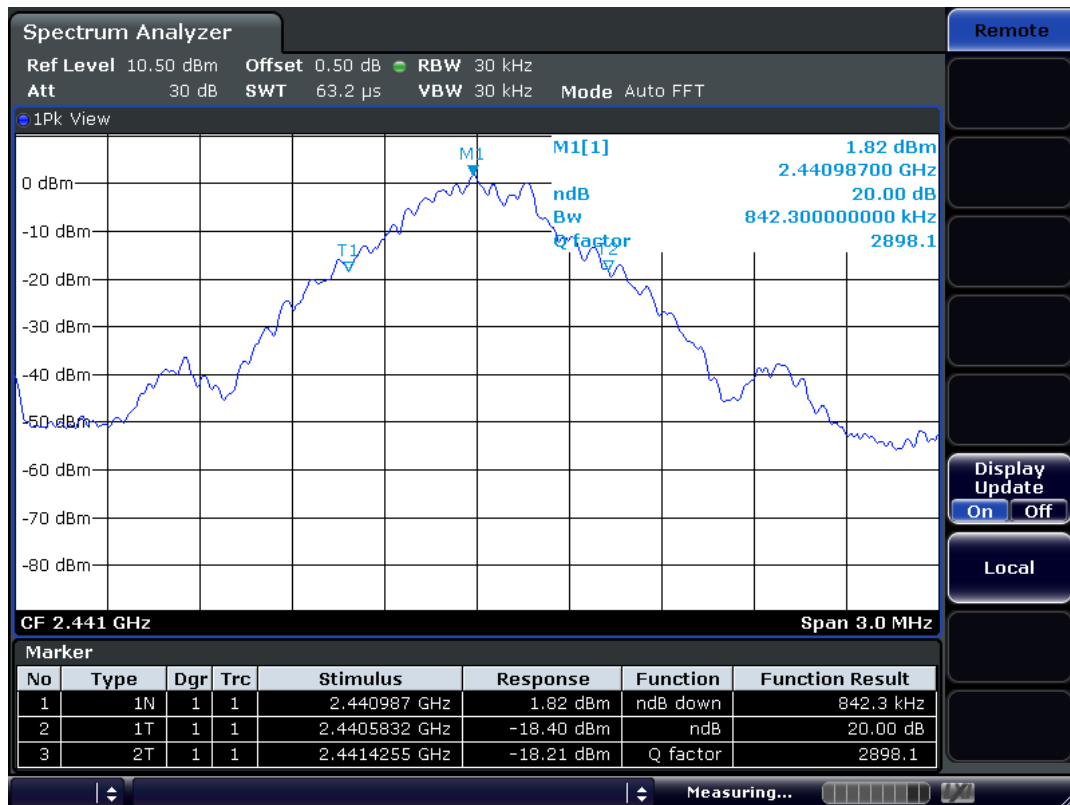
Minimum Standard:

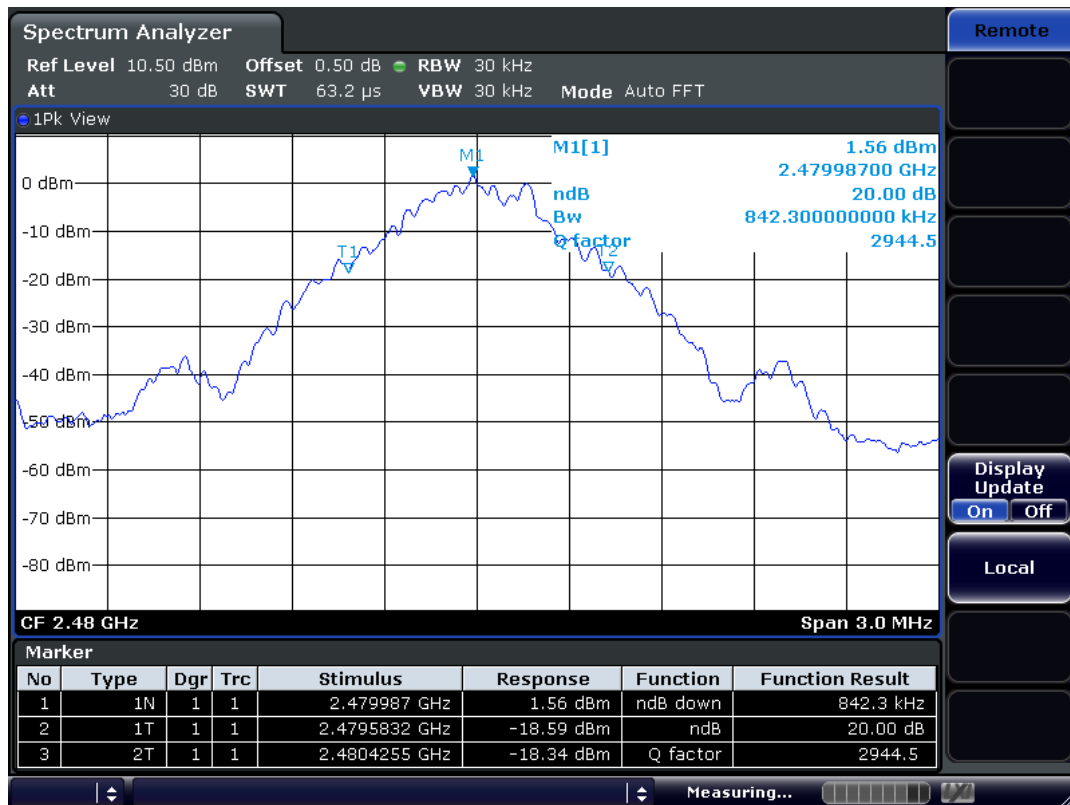
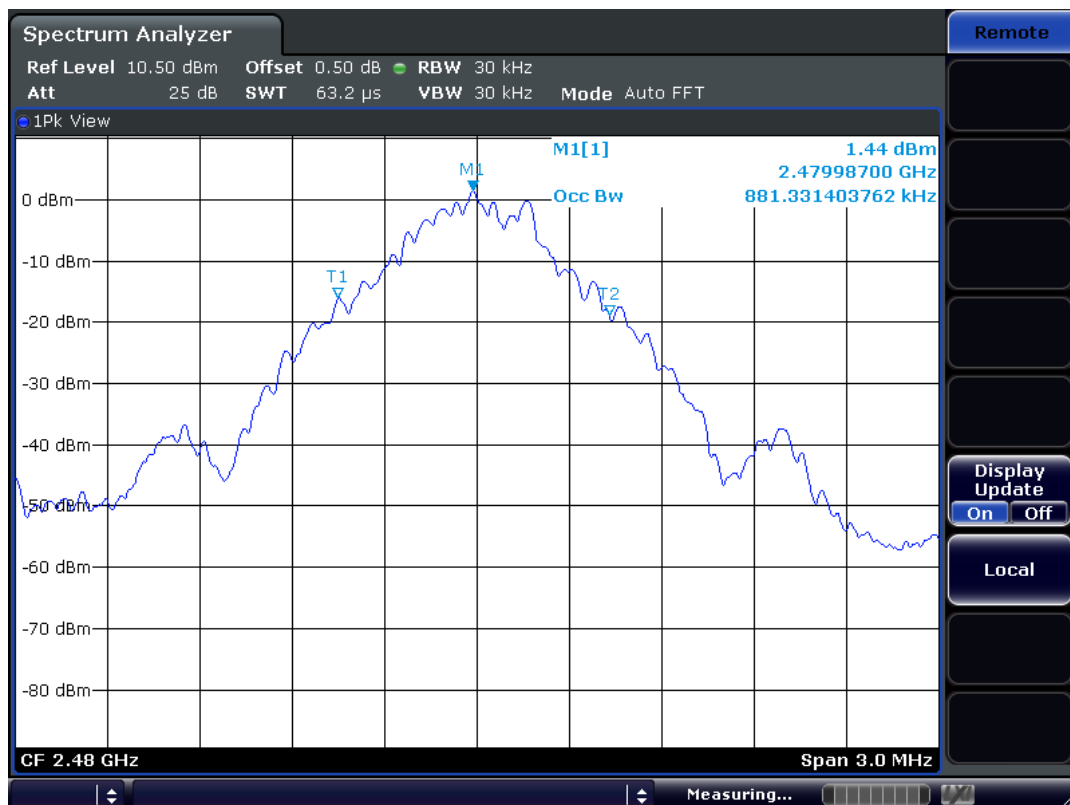
N/A

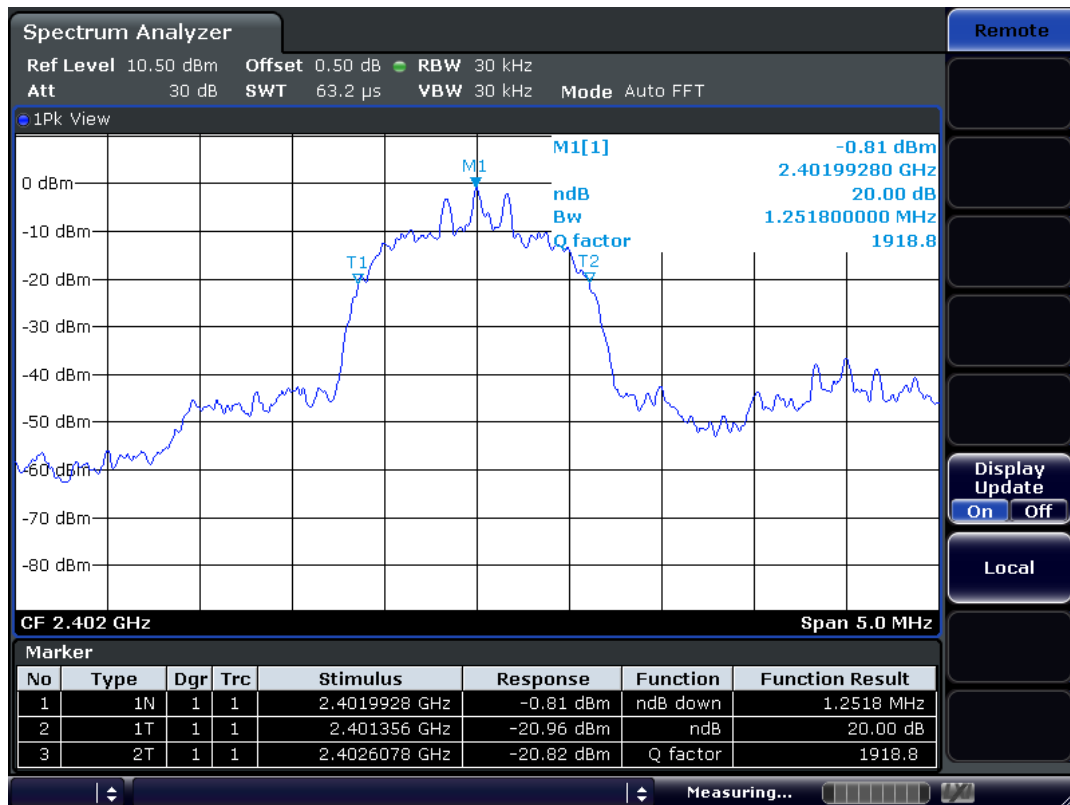
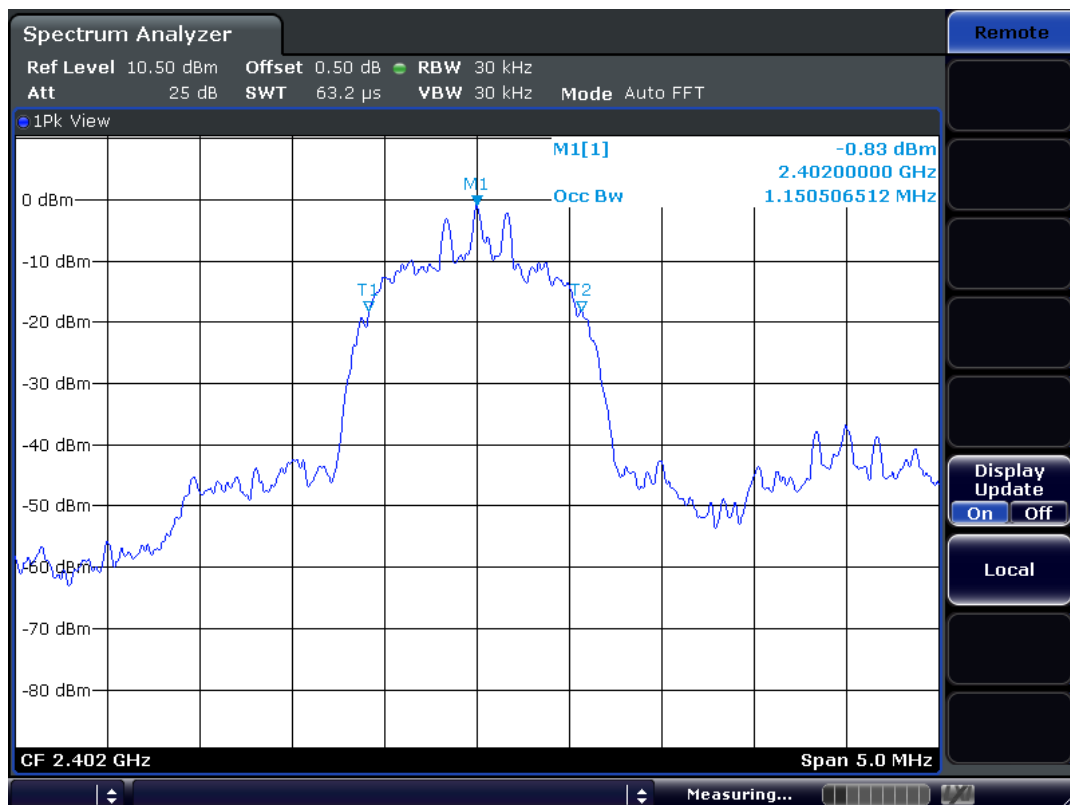
Measurement Setup

Same as the Chapter 3.2.1 (Figure 1)

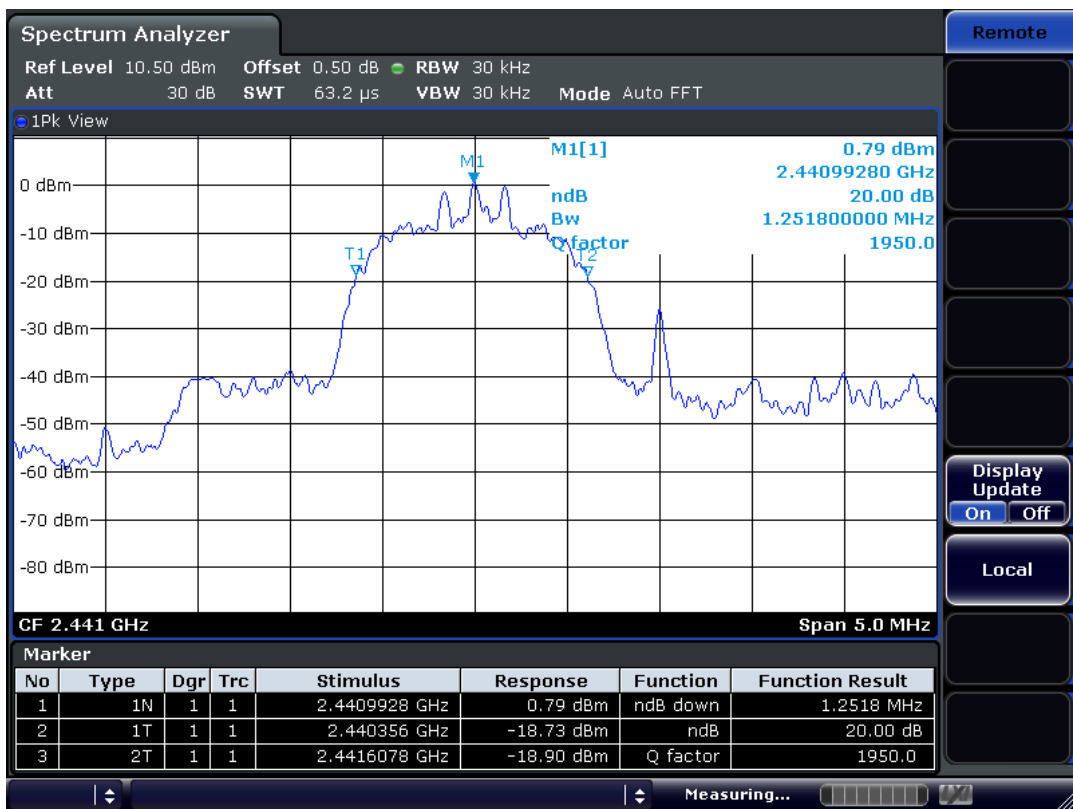
Channel 1 of basic mode**20 dB Bandwidth****99% Bandwidth**

Channel 2 of basic mode**20 dB Bandwidth****99% Bandwidth**

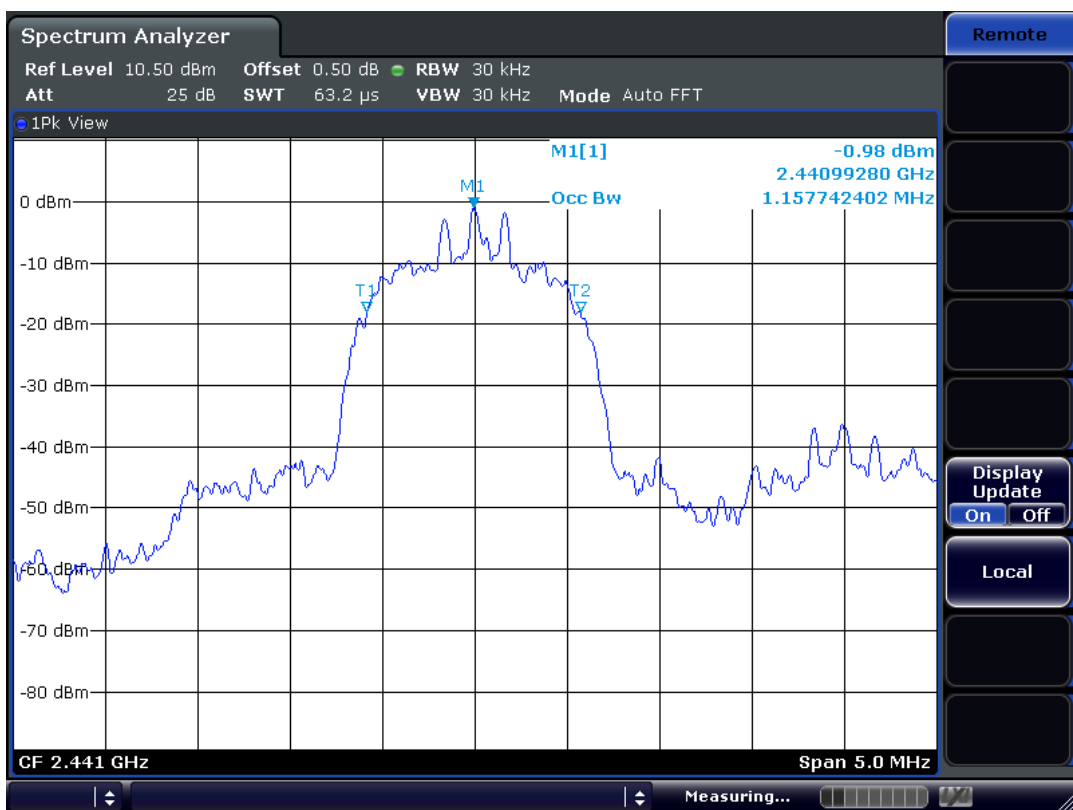
Channel 3 of basic mode**20 dB Bandwidth****99% Bandwidth**

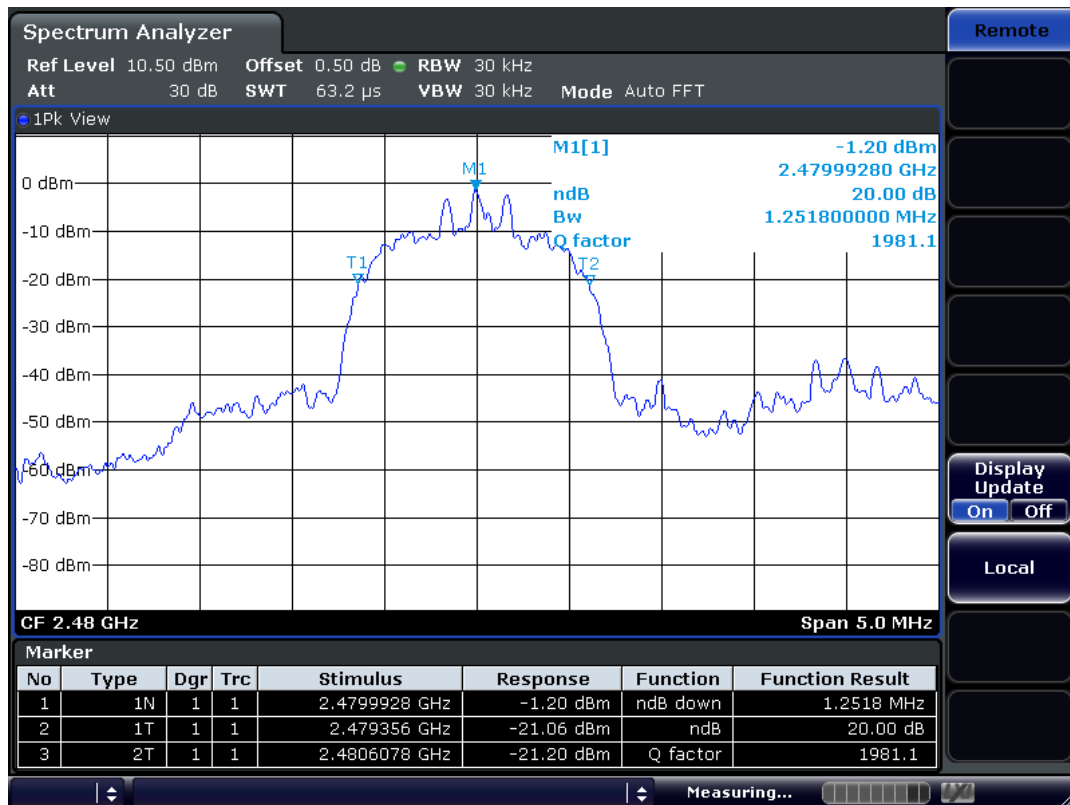
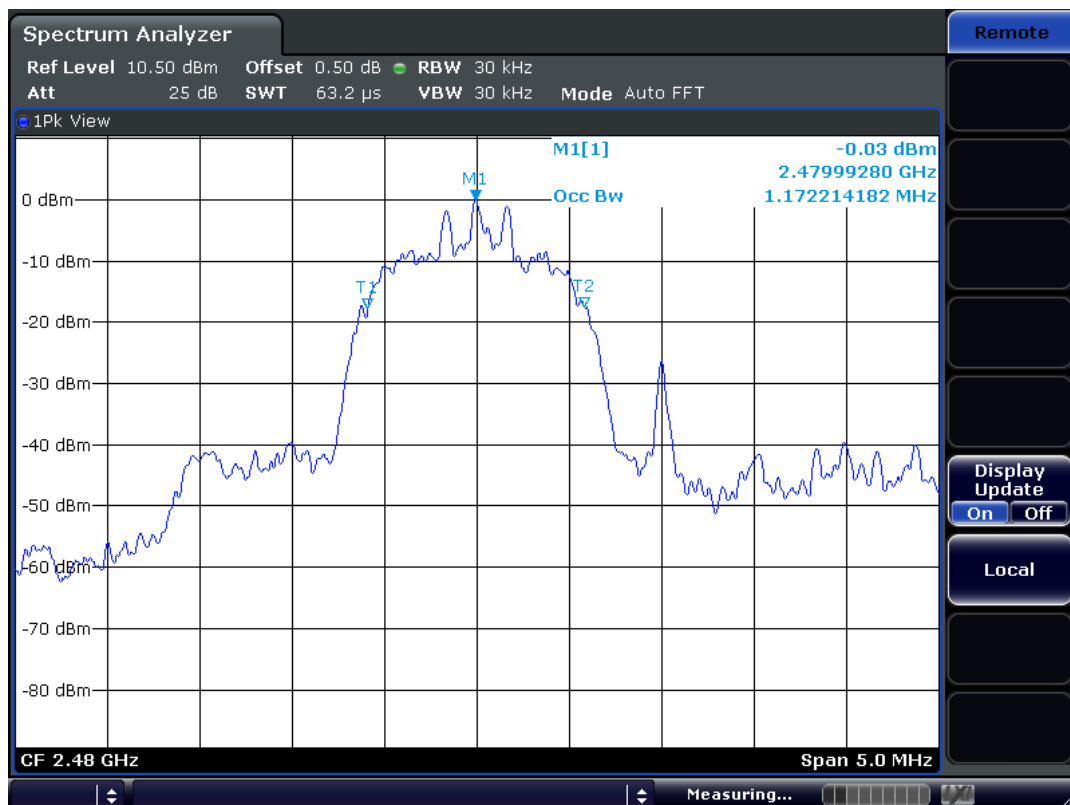
Channel 1 at EDR mode**20 dB Bandwidth****99% Bandwidth**

Channel 2 at EDR mode
20 dB Bandwidth



99% Bandwidth



Channel 3 at EDR mode**20 dB Bandwidth****99% 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 \geq RBW)

Trace = max hold

Detector function = peak

Measurement Data:

Channel Number	Channel Frequency (MHz)	Packet Type	Test Results		
			Duration Time (ms)	Dwell Time (ms)	Result
39	2441	Basic DH 1	0.4348	139.18	Complies
		Basic DH 3	1.6652	268.36	Complies
		Basic DH 5	2.9443	313.54	Complies
		EDR 3Mbps DH5	2.9588	315.08	Complies

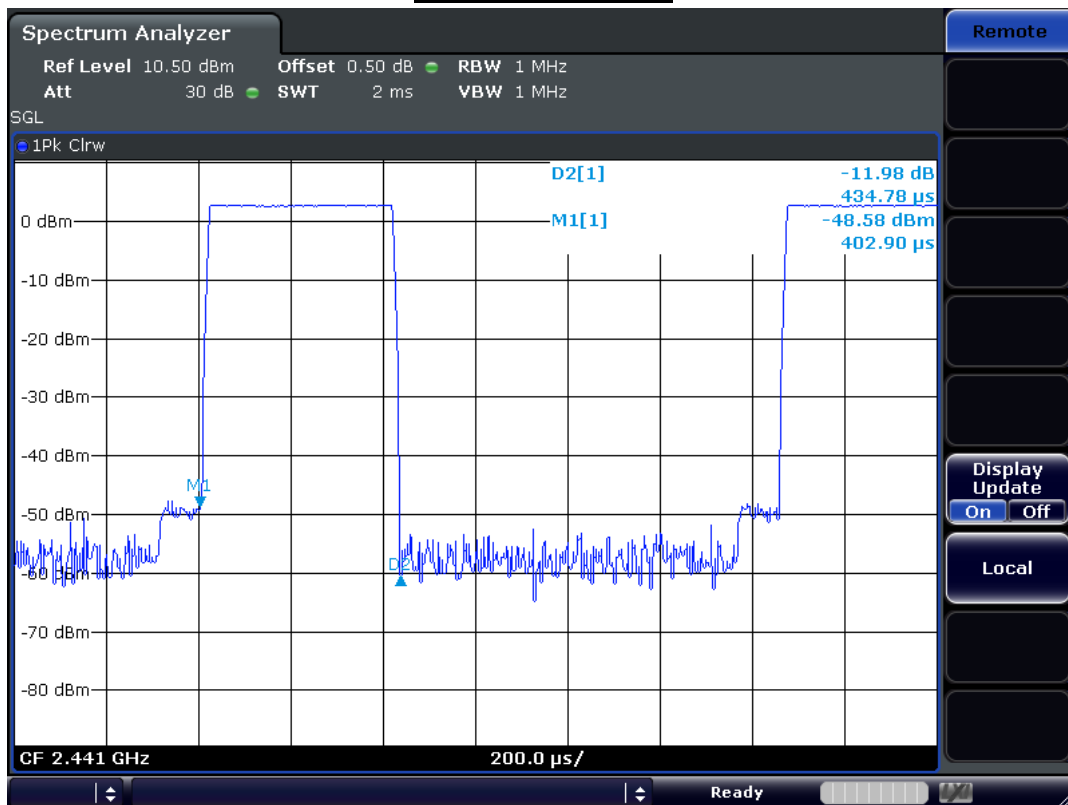
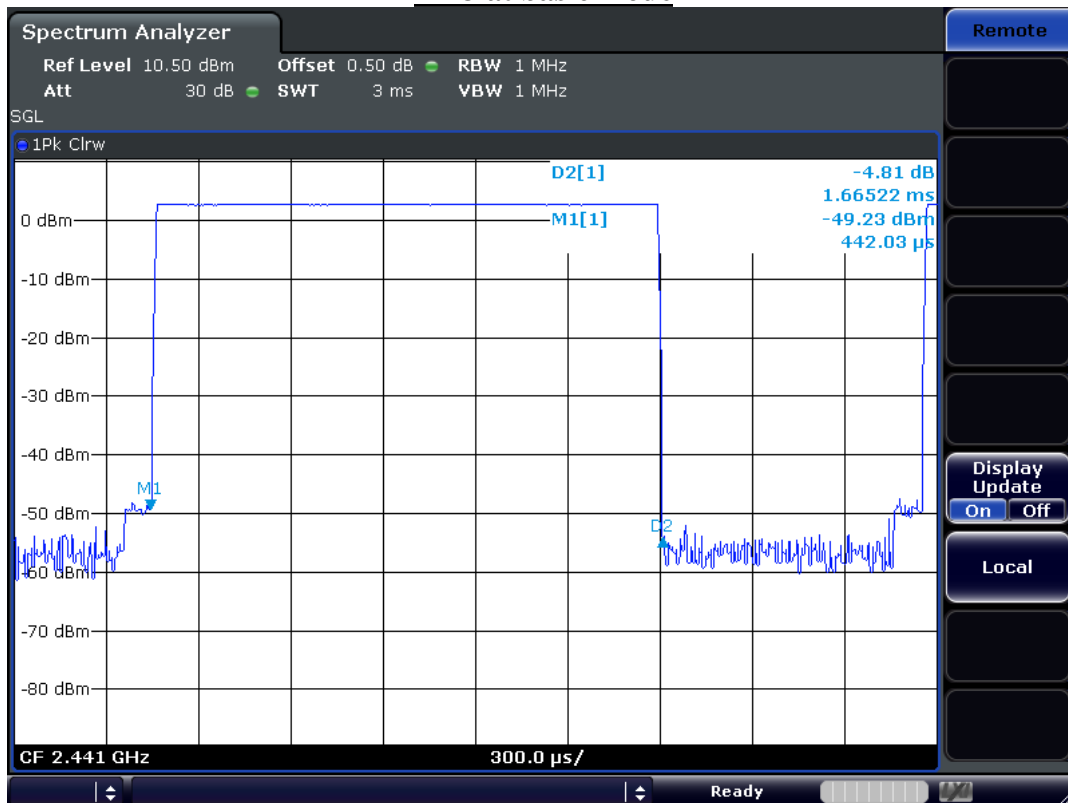
- See next pages for actual measured spectrum plots.
- dwell time = {(number of hopping per second / number of slot) x duration time per channel} x 0.4 ms

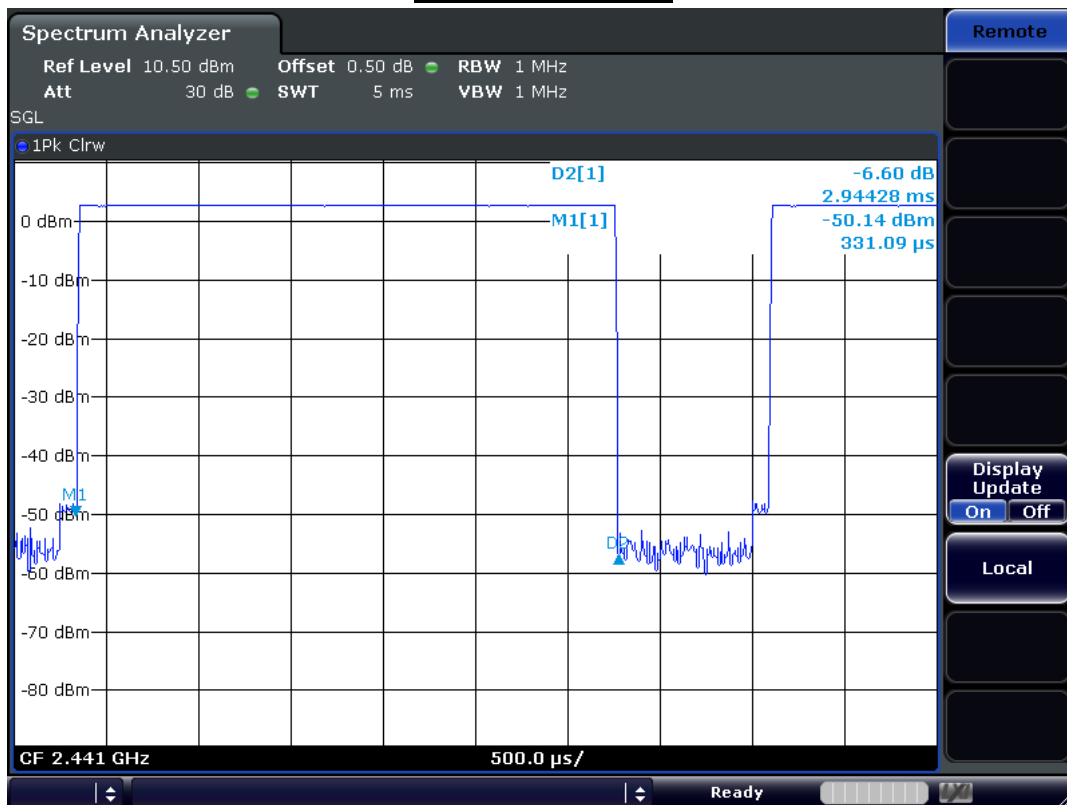
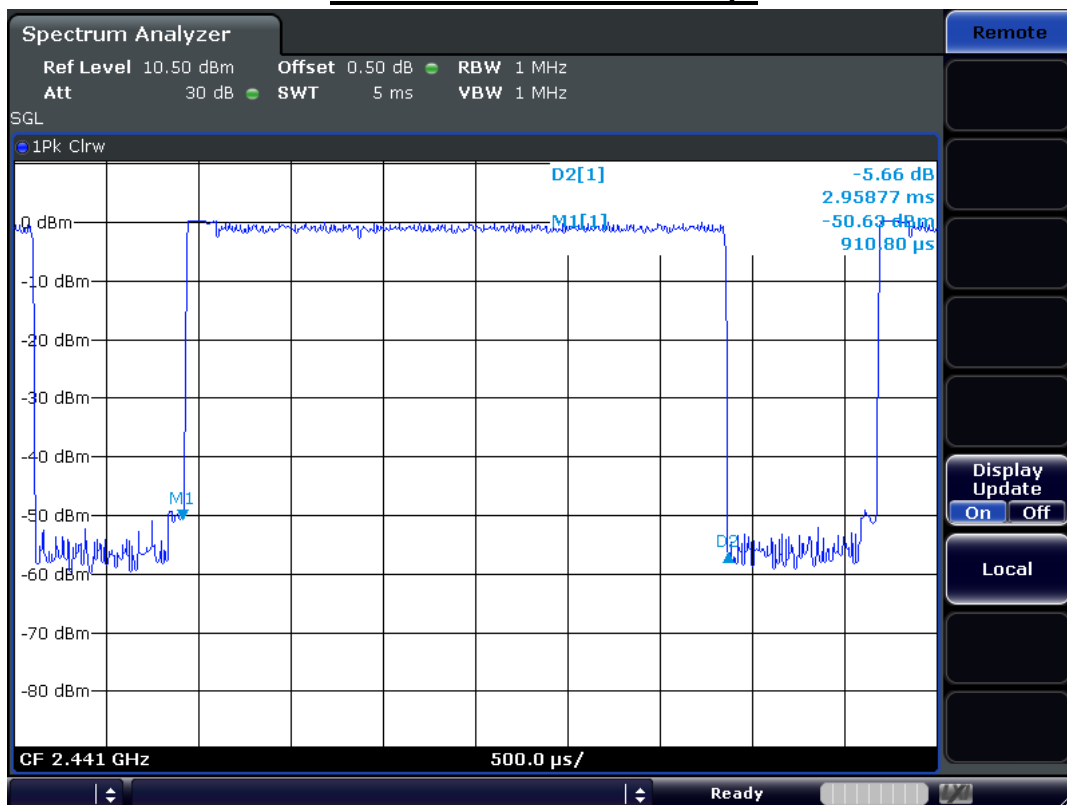
Minimum Standard:

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 = 20 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 \geq RBW)

Detector function = peak

Trace = max hold

Sweep = auto

Measurement Data: Basic Mode

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	0	2.30	1.698	Complies
2441	39	2.81	1.910	Complies
2480	78	2.55	1.799	Complies

Measurement Data: EDR Mode

Frequency (MHz)	Ch.	Test Results		
		dBm	mW	Result
2402	0	1.78	1.507	Complies
2441	39	0.58	1.143	Complies
2480	78	0.12	1.028	Complies

- See next pages for actual measured spectrum plots.

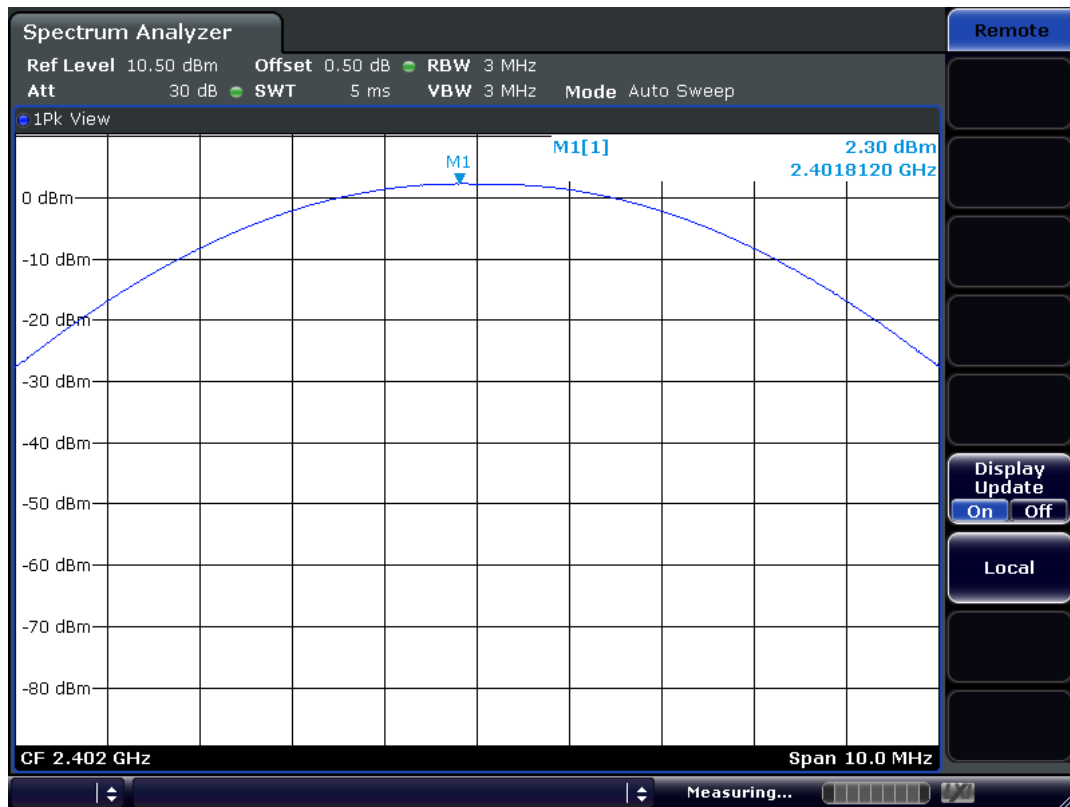
Minimum Standard:	< 250 mW
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Measurement Setup

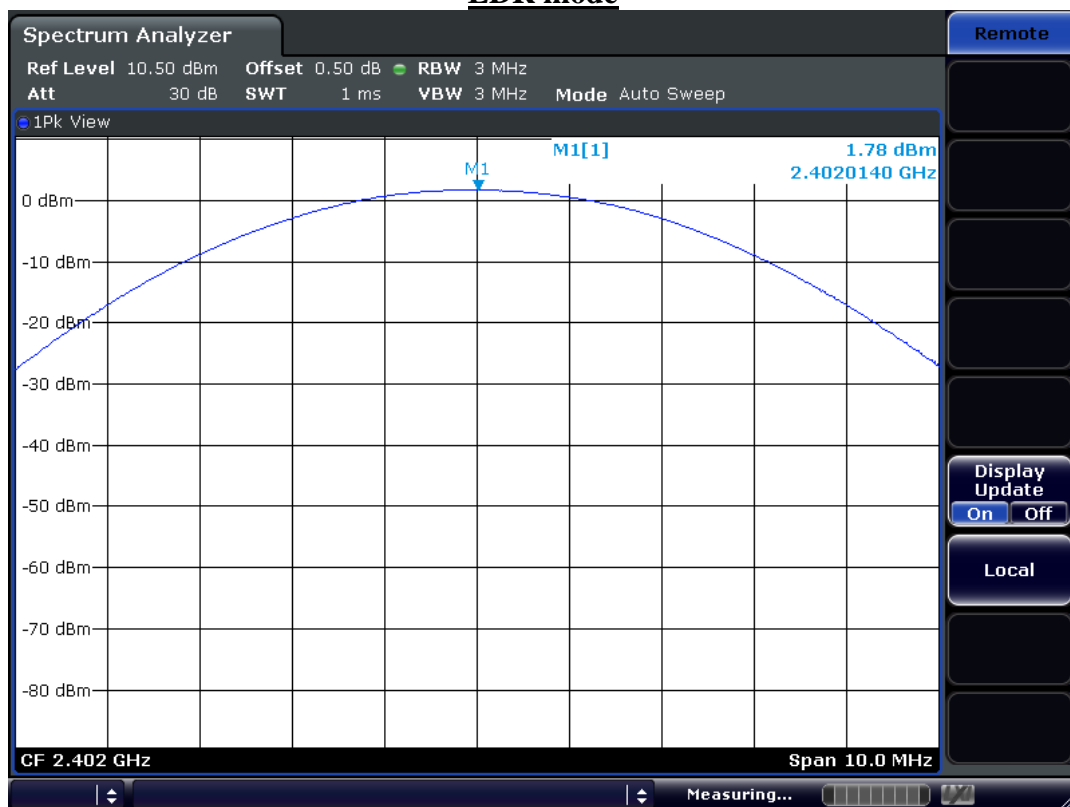
Same as the Chapter 3.2.1 (Figure 1)

Channel 1

Basic mode

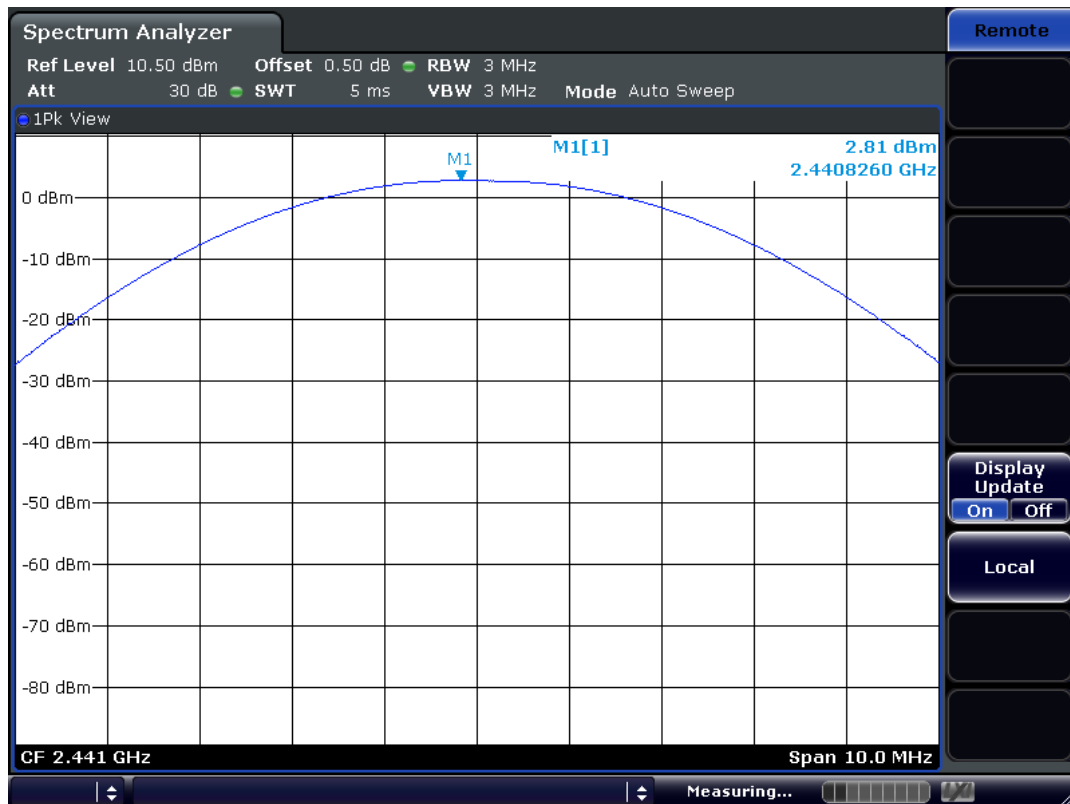


EDR mode

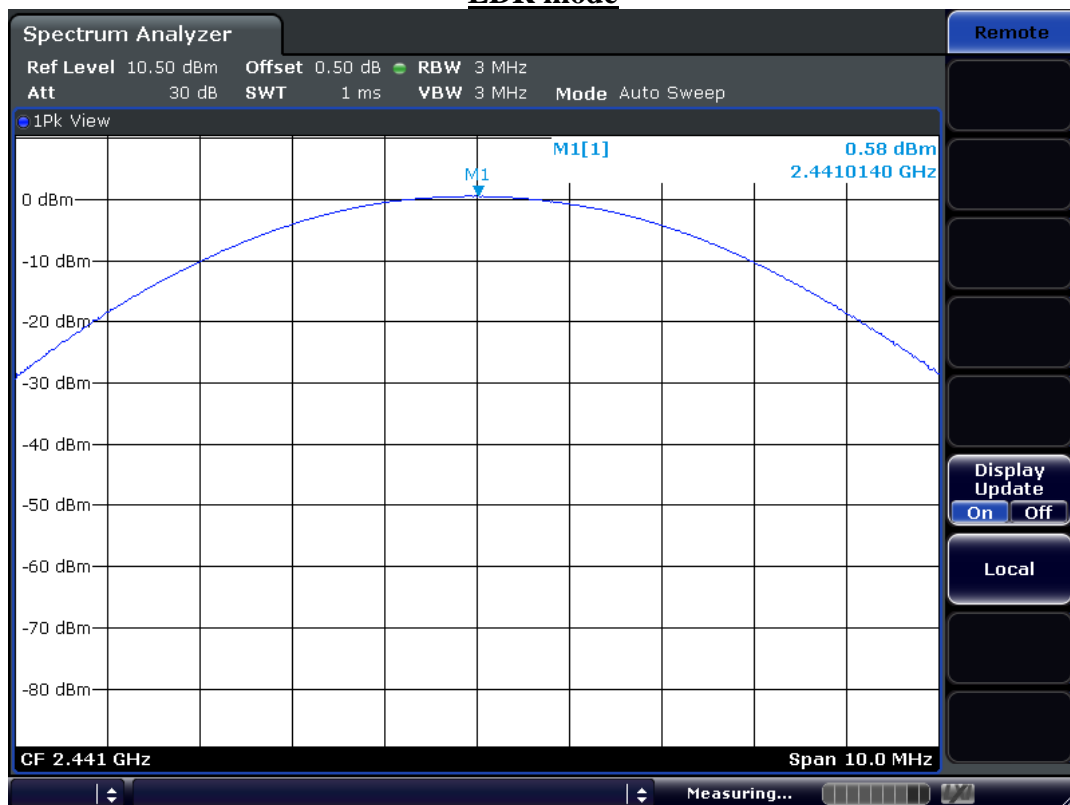


Channel 2

Basic mode

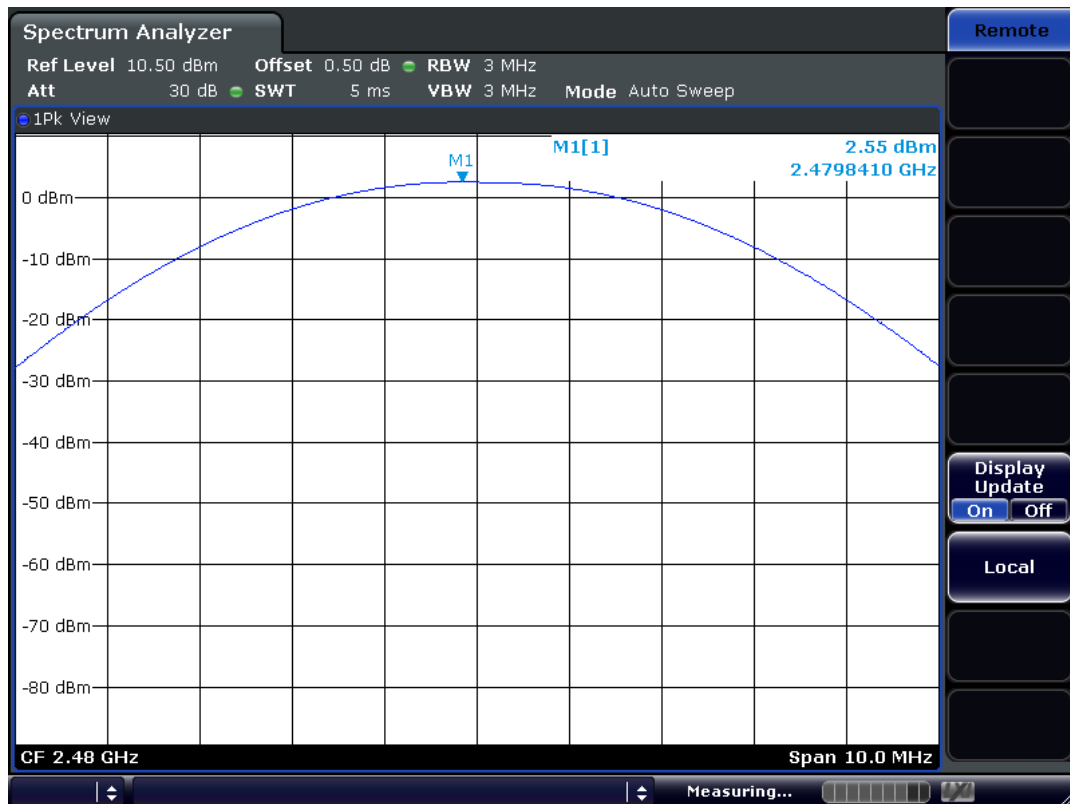


EDR mode

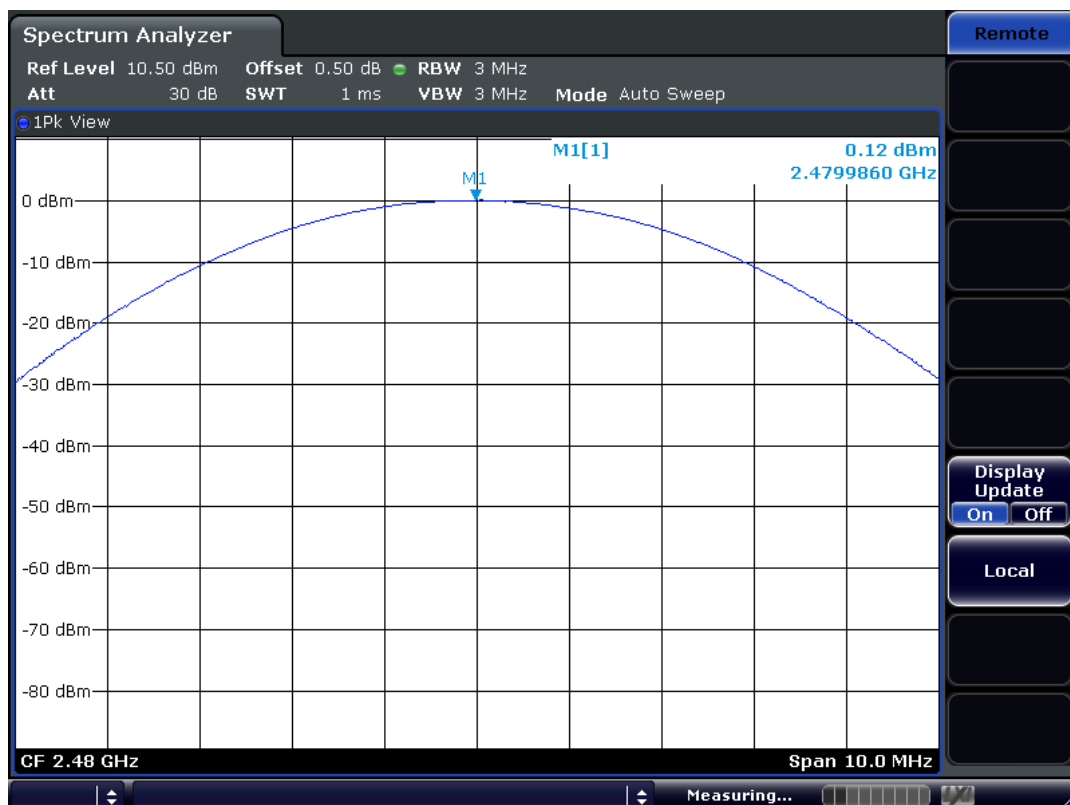


Channel 3

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

RBW = 100 kHz

VBW = 100 kHz

Span = 10 MHz

Detector function = peak

Trace = max hold

Sweep = auto

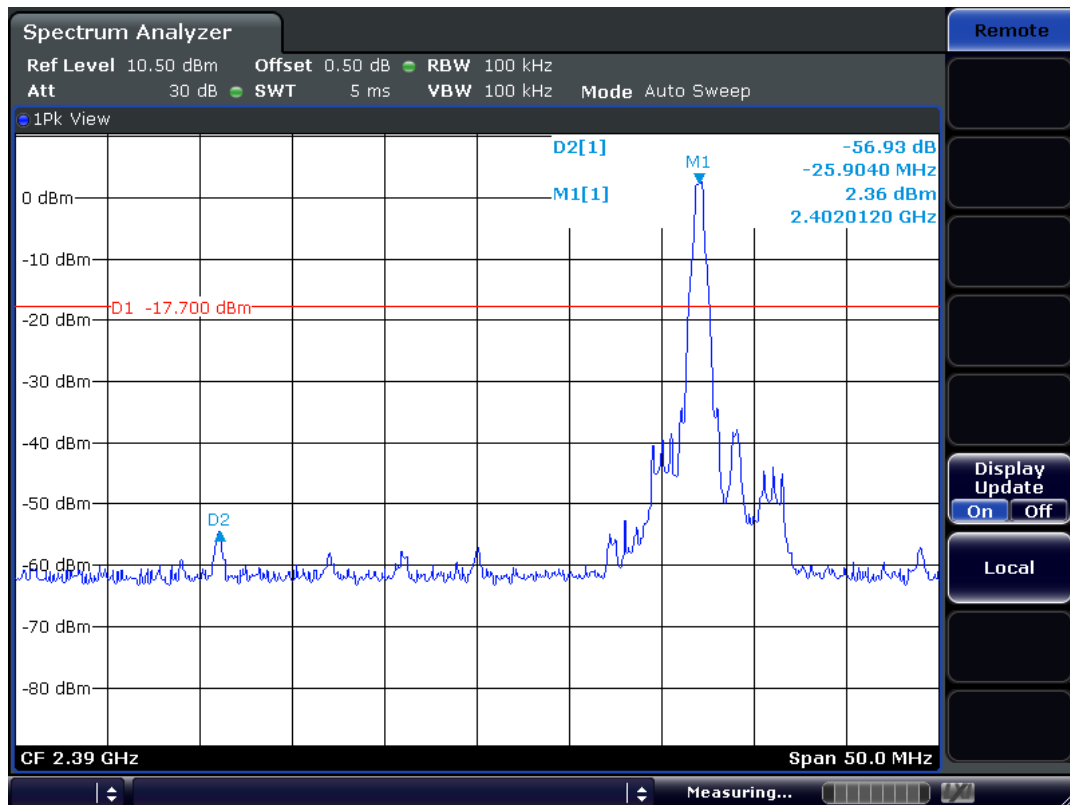
Measurement Data: Complies

- 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 – edge of Basic Mode**Lower edge****Upper edge**

Band-edges in the restricted band 2483.5 ~ 2500 MHz measurement**- Document DA 00-705 Marker Delta Method**

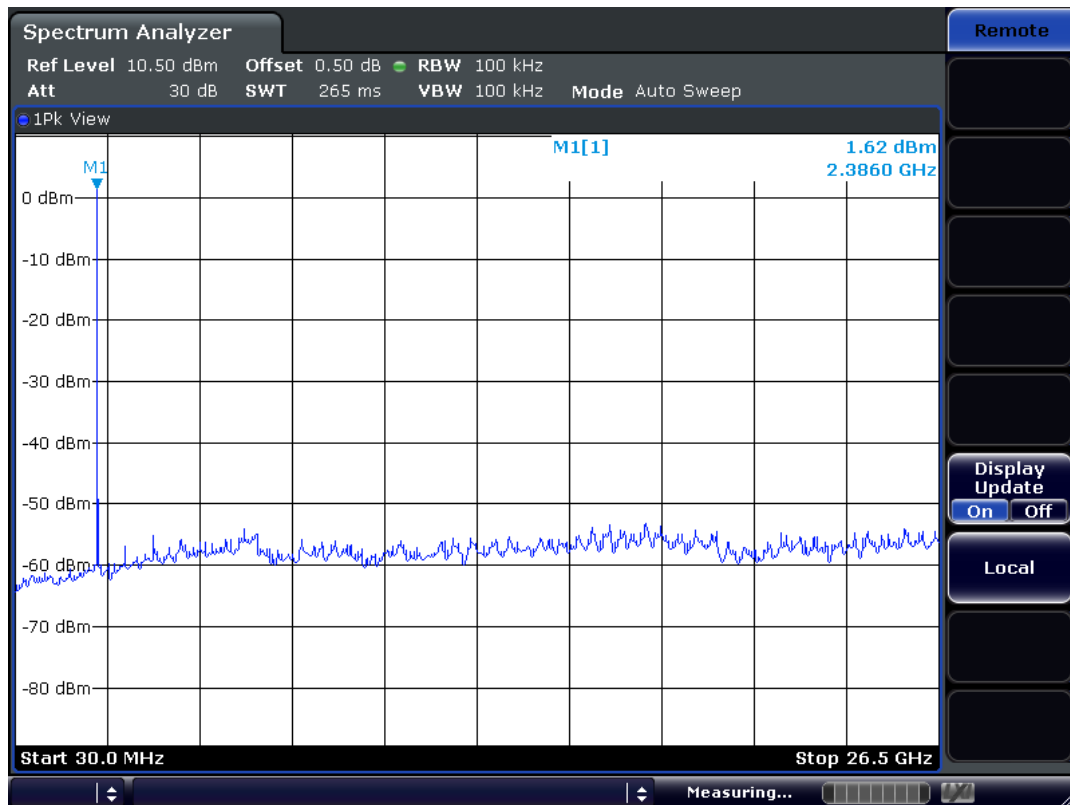
Frequency (MHz)	Detect mode	Pol.	Reading (dBuV/m)	T.F (dB)	Step 1 Data	delta	Step 3 Data	Limit
2483.5	PK	H	99.17	1.1	100.27	46.96	53.31	74
	AV	H	87.70	1.1	88.80	46.96	41.84	54

Note) Step 1 = Reading + T.F

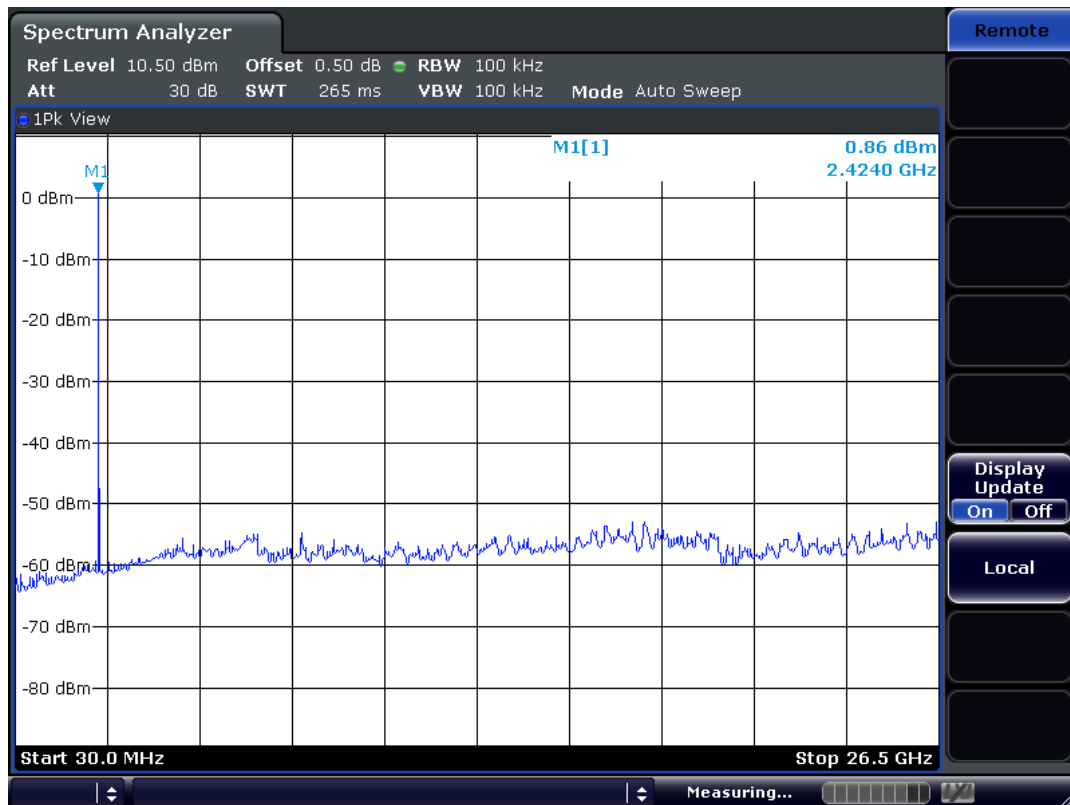
(T.F = Ant.F + Cable loss – PreAmp Gain)

Step 3 = Step 1 – Delta Value

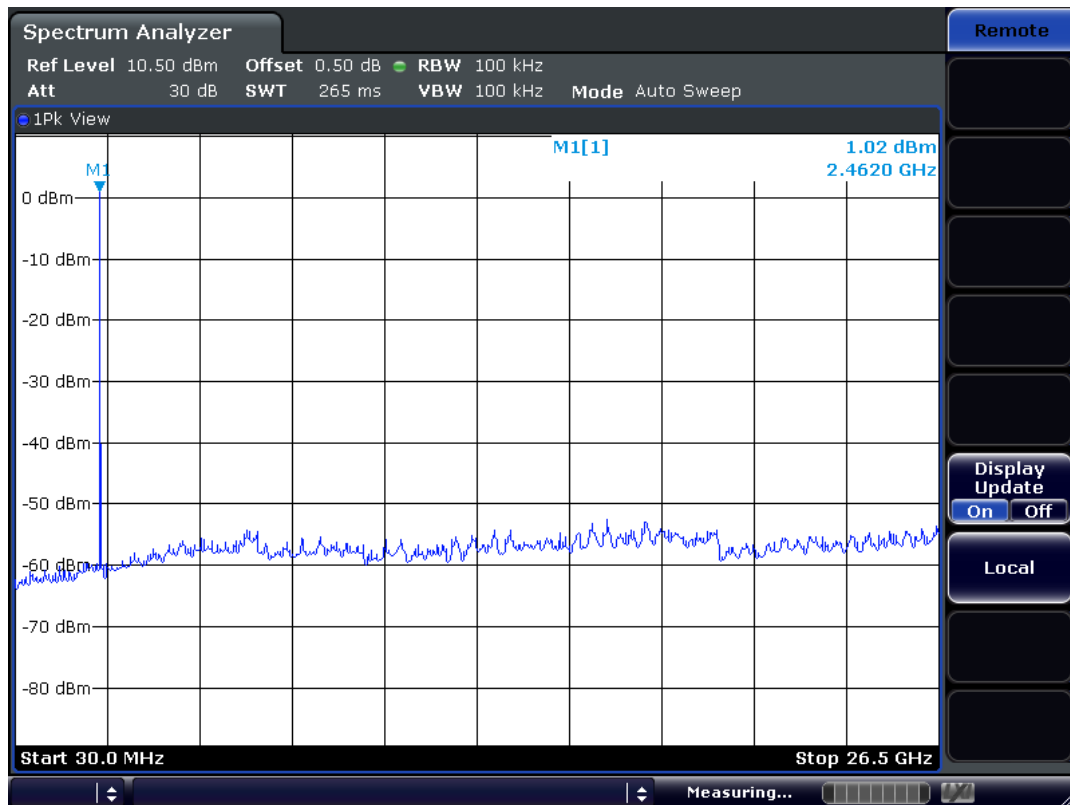
Unwanted Emission – Low channel
Frequency Range = 30 MHz ~ 26.5 GHz



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)

= 1 MHz (1 GHz ~ 10th harmonic)

Span = 100 MHz

Trace = max hold

Peak:VBW \geq RBW

Average:VBW=10Hz

Detector function = Peak and Average

Sweep = auto

Measurement Data: Complies

- Refer to the next page.
- No other emissions were detected at a level greater than 10dB below limit.
- 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
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:**1. PEAK data**

Low channel		Mid channel		High channel	
Frequency (MHz)	Level (dBuV/m)	Frequency (MHz)	Level (dBuV/m)	Frequency (MHz)	Level (dBuV/m)
-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.					
-	-	-	-	-	-
Measurement uncertainty		± 6 dB			

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

2. AVERAGE data

Low channel		Mid channel		High channel	
Frequency (MHz)	Level (dBuV/m)	Frequency (MHz)	Level (dBuV/m)	Frequency (MHz)	Level (dBuV/m)
-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.					
-	-	-	-	-	-
Measurement uncertainty		± 6 dB			

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

Radiated Emissions – PC+FILE UP/ DOWN+MOVIE+”H” +SD Mode

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

EUT/Model No.: X70 EX

TEST MODE: PC+FILE UP/ DOWN+MOVIE+SD mode

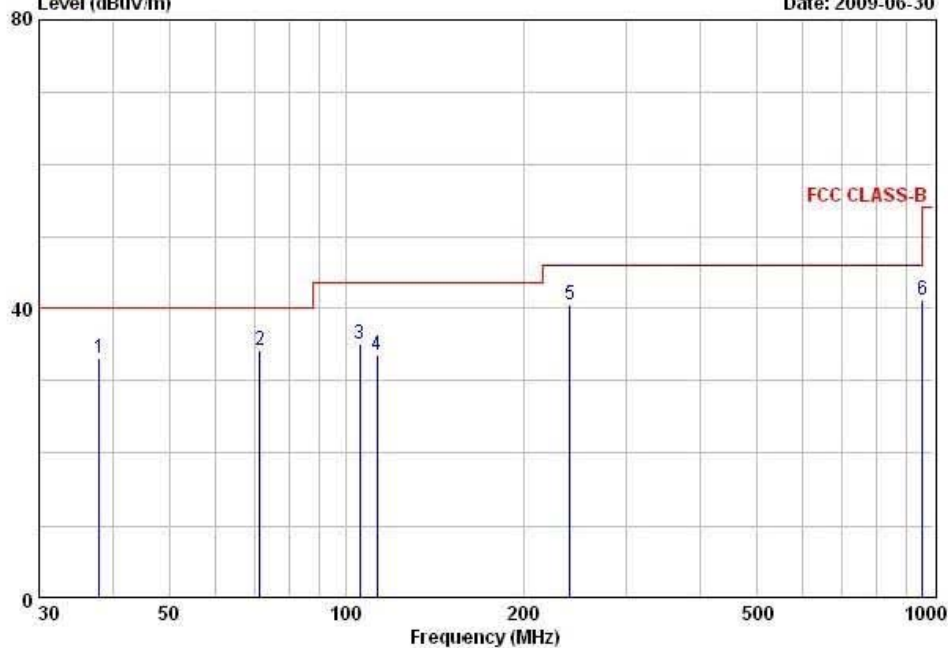
Temp Humi : 25 / 72

Tested by: B.S.KIM

Data: 132

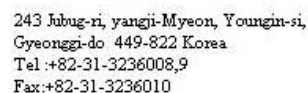
Level (dBuV/m)

Date: 2009-06-30



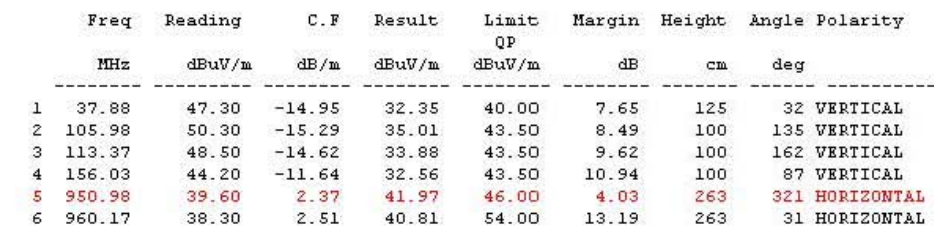
	Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
	MHz	dBuV/m	dB/m	dBuV/m	QP	dB	cm	deg	
1	37.99	48.00	-14.94	33.06	40.00	6.94	100	165	VERTICAL
2	71.39	50.20	-16.05	34.15	40.00	5.85	100	155	VERTICAL
3	105.69	50.50	-15.32	35.18	43.50	8.32	100	132	VERTICAL
4	113.19	48.30	-14.64	33.66	43.50	9.84	100	32	VERTICAL
5	240.26	51.10	-10.64	40.46	46.00	5.54	186	25	HORIZONTAL
6	960.07	38.60	2.51	41.11	54.00	12.89	274	320	HORIZONTAL

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



TEST MODE: BLUETOOTH mode

Tested by: B.S.KIM



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

Radiated Emissions – WI-FI Mode



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

EUT/Model No.: X70 EX

TEST MODE: WI-FI mode

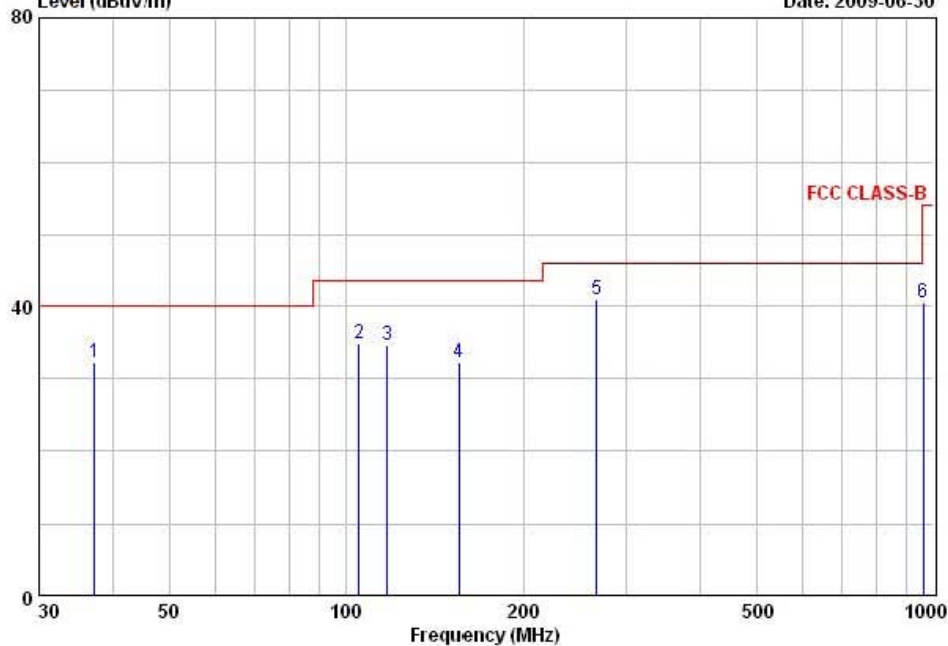
Temp Humi : 25 / 72

Tested by: B.S.KIM

Data: 135

Level (dBUV/m)

Date: 2009-06-30



	Freq	Reading	C.F	Result	Limit	Margin	Height	Angle	Polarity
	MHz	dBuV/m	dB/m	dBuV/m	QP dBuV/m	dB	cm	deg	
1	37.25	47.20	-15.01	32.19	40.00	7.81	100	125	VERTICAL
2	105.58	50.20	-15.33	34.87	43.50	8.63	100	152	VERTICAL
3	117.99	49.00	-14.23	34.77	43.50	8.73	100	149	VERTICAL
4	156.38	44.00	-11.64	32.36	43.50	11.14	100	47	VERTICAL
5	266.48	50.70	-9.65	41.05	46.00	4.95	100	128	VERTICAL
6	960.92	38.00	2.52	40.52	54.00	13.48	165	27	HORIZONTAL

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 10dB below limit.
- The used antenna is “R-AN2400-1901RS” and it gave the worse case emissions.

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

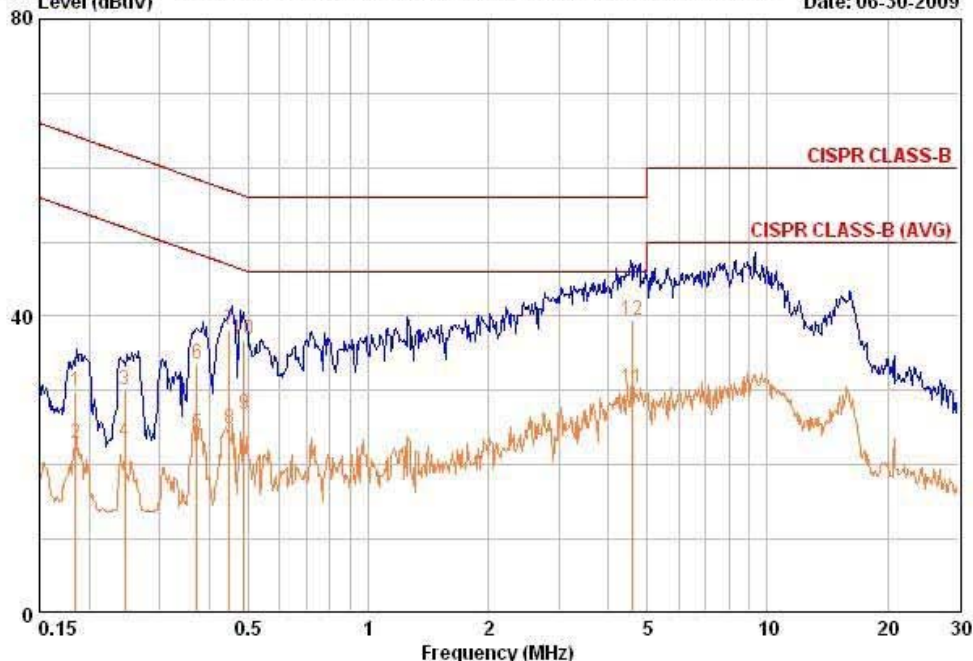
* Decreases with the logarithm of the frequency

AC Conducted Emissions – PC+FILE UP/ DOWN+MOVIE+”H” +SD – Line

243 Jubug-ni, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel +82-31-323-6008
Fax:+82-31-323-6010

EUT / Model No. : X70 EX Phase : LINE
Test Mode : PC+FILEUP/DOWN+MOVIE+”H”+SDmode Test Power : 120 / 60
Temp./Humi. : 26 / 64 Test Engineer : B.S.KIM

Data: 172 Level (dBuV) File: D:\Conducted Data\2009\LTA_Conduction_0906_4.EMI (337) Date: 06-30-2009



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV		QP	AV	QP	AV	QP	AV
	dBuV	dBuV	dB	dBuV	dBuV	dBuV	dBuV	dB	dB
0.185	20.29	13.39	9.60	29.90	23.00	64.26	54.26	34.36	31.26
0.245	20.38	13.38	9.68	30.06	23.06	61.92	51.92	31.87	28.87
0.373	23.86	14.46	9.71	33.57	24.17	58.43	48.43	24.87	24.27
0.448	28.55	15.15	9.67	38.22	24.82	56.91	46.91	18.69	22.09
0.488	27.25	17.05	9.68	36.93	26.73	56.20	46.20	19.27	19.47
4.573	29.45	20.25	9.97	39.41	30.21	56.00	46.00	16.59	15.79

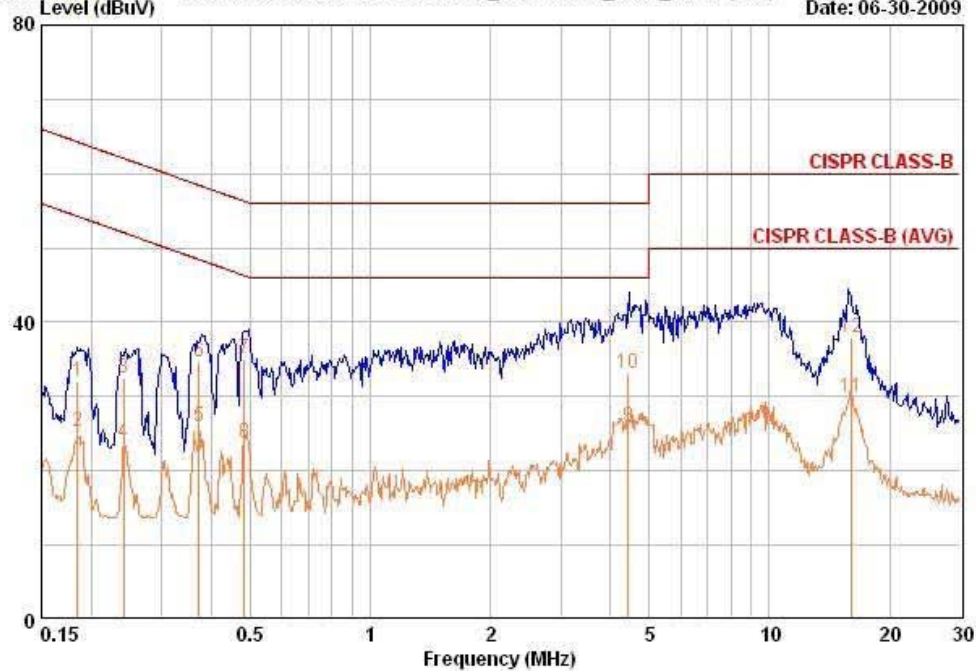
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

AC Conducted Emissions – PC+FILE UP/ DOWN+MOVIE+"H"+SD – Neutral

243 Jubug-ri, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel +82-31-323-6008
Fax: +82-31-323-6010

EUT / Model No. : X70 EX Phase : NEUTRAL
Test Mode : PC+FILEUP/DOWN+MOVIE+"H"+SDmode Test Power : 120 / 60
Temp./Humi. : 26 / 64 Test Engineer : B.S.KIM

Data: 174 File: D:\Conducted Data\2009\LTA_Conduction_0906_4.EMI (337) Date: 06-30-2009



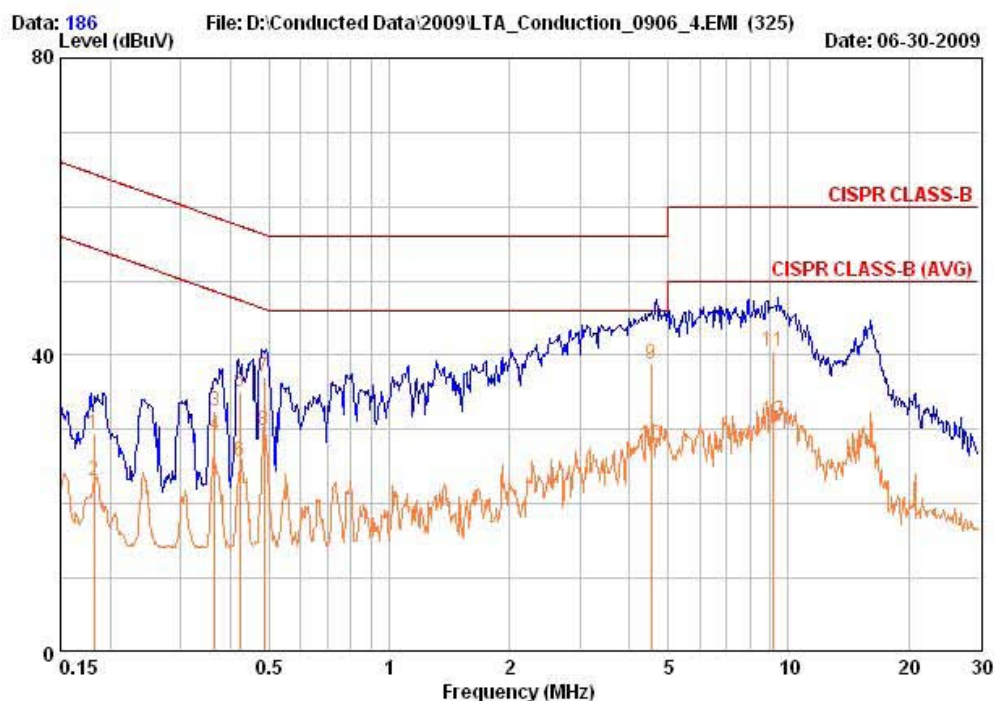
Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.185	22.39	15.49	9.70	32.09	25.19	64.26	54.26	32.17	29.07
0.241	22.88	14.18	9.68	32.56	23.86	62.06	52.06	29.50	28.20
0.373	24.86	16.26	9.72	34.58	25.98	58.43	48.43	23.86	22.46
0.483	25.35	14.15	9.68	35.03	23.83	56.29	46.29	21.25	22.45
4.425	23.14	15.94	9.91	33.05	25.85	56.00	46.00	22.95	20.15
15.971	27.50	19.50	10.32	37.82	29.82	60.00	50.00	22.18	20.18

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

AC Conducted Emissions – BLUETOOTH – Line

243 Jubug-ri, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel +82-31-323-6008
Fax: +82-31-323-6010

EUT / Model No. : X70 EX	Phase : LINE
Test Mode : BLUETOOTH mode	Test Power : 120 / 60
Temp./Humi. : 26 / 64	Test Engineer : B.S.KIM



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.182	19.79	13.59	9.60	29.39	23.19	64.39	54.39	35.00	31.20
0.365	22.66	19.56	9.71	32.37	29.27	58.61	48.61	26.24	19.34
0.422	25.36	16.06	9.68	35.03	25.73	57.41	47.41	22.37	21.67
0.485	27.45	20.15	9.68	37.13	29.83	56.25	46.25	19.13	16.43
4.524	28.95	18.05	9.96	38.91	28.01	56.00	46.00	17.09	17.99
9.151	30.48	20.98	10.09	40.57	31.07	60.00	50.00	19.44	18.94

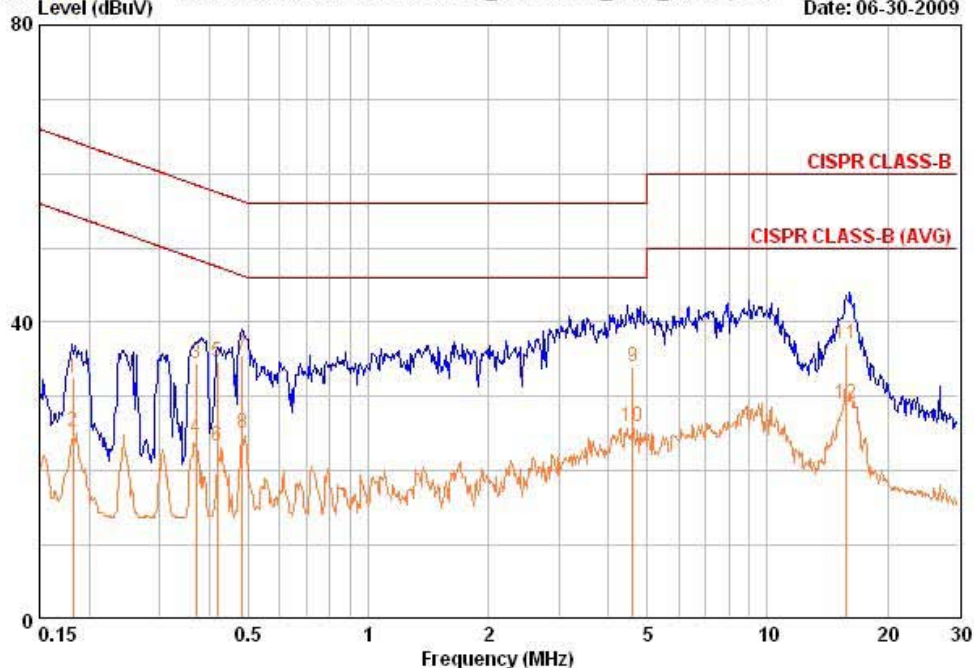
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

AC Conducted Emissions – BLUETOOTH – Neutral

243 Jubug-ri, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel +82-31-323-6008
Fax: +82-31-323-6010

EUT / Model No. : X70 EX	Phase : NEUTRAL
Test Mode : BLUETOOTH mode	Test Power : 120 / 60
Temp./Humi. : 26 / 64	Test Engineer : B.S.KIM

Data: 176 File: D:\Conducted Data\2009\LTA_Conduction_0906_4.EMI (325) Date: 06-30-2009



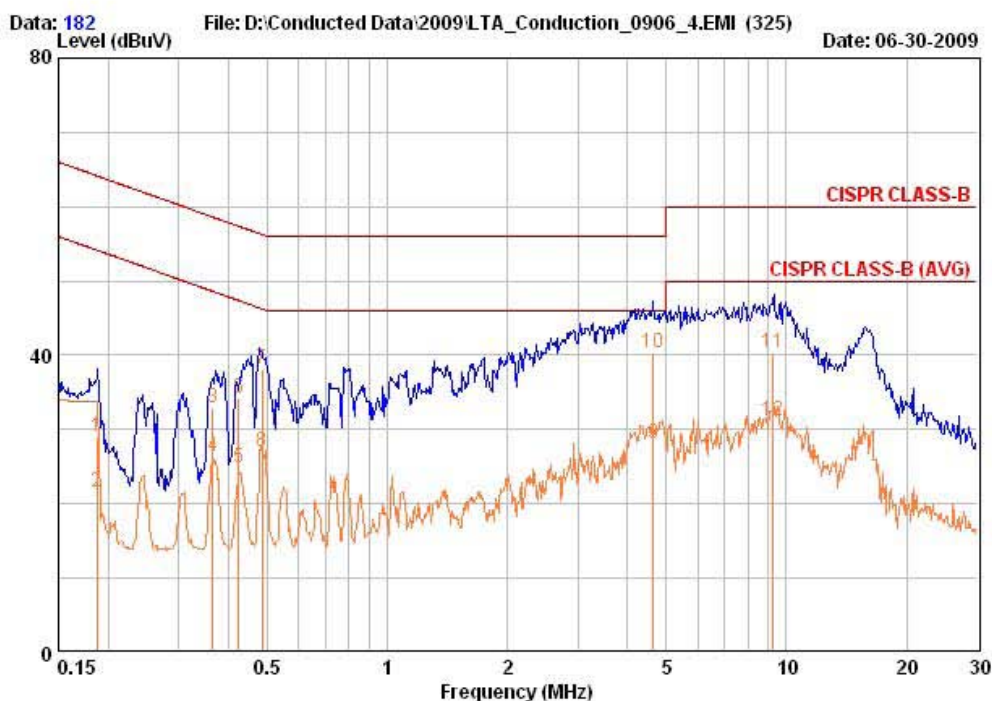
Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.182	22.69	15.49	9.70	32.39	25.19	64.39	54.39	32.00	29.20
0.371	24.66	14.66	9.71	34.38	24.38	58.48	48.48	24.10	24.10
0.419	24.86	13.56	9.73	34.58	23.28	57.47	47.47	22.88	24.18
0.484	25.95	15.45	9.68	35.63	25.13	56.27	46.27	20.64	21.14
4.595	24.15	16.05	9.92	34.07	25.97	56.00	46.00	21.93	20.03
15.719	26.70	18.60	10.31	37.01	28.91	60.00	50.00	22.99	21.09

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

AC Conducted Emissions – WI-FI – Line

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Gyeonggi-do 449-822 Korea
Tel +82-31-323-6008
Fax: +82-31-323-6010

EUT / Model No. : X70 EX	Phase : LINE
Test Mode : WI-FI mode	Test Power : 120 / 60
Temp./Humi. : 26 / 64	Test Engineer : B.S.KIM



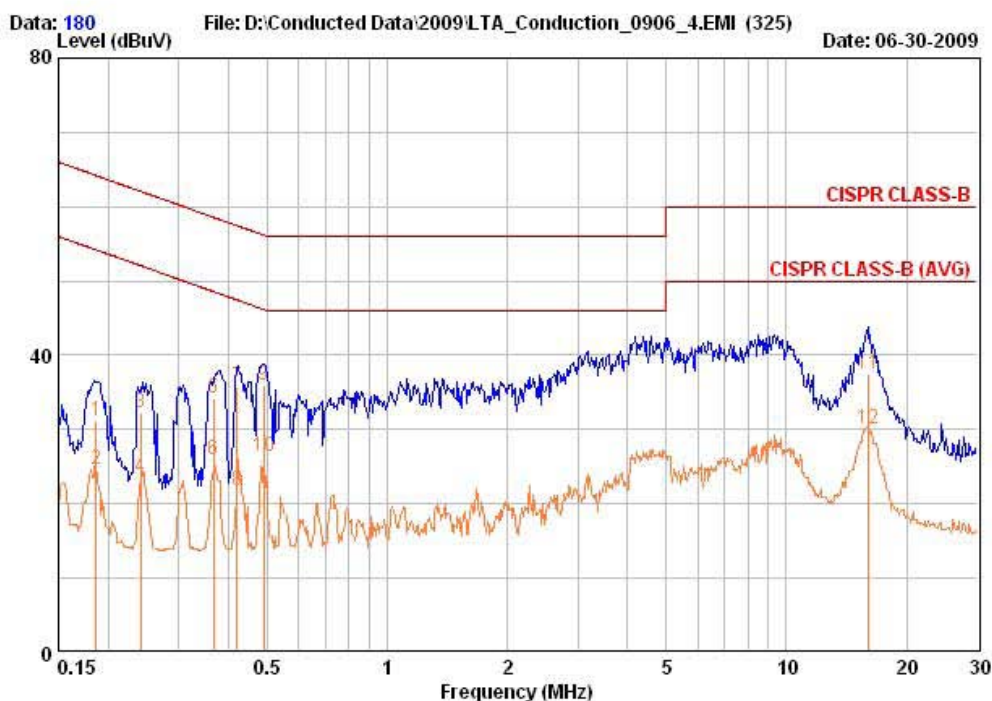
Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.187	19.49	11.99	9.61	29.10	21.60	64.17	54.17	35.07	32.57
0.365	23.16	16.66	9.71	32.87	26.37	58.61	48.61	25.74	22.24
0.425	24.45	15.15	9.68	34.13	24.83	57.35	47.35	23.22	22.52
0.485	28.55	17.25	9.68	38.23	26.93	56.25	46.25	18.03	19.33
4.645	30.45	18.25	9.97	40.42	28.22	56.00	46.00	15.58	17.78
9.251	30.18	21.08	10.09	40.26	31.16	60.00	50.00	19.74	18.84

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

AC Conducted Emissions – WI-FI – Neutral

243 Jubug-ri, yangji-Myeon, Youngin-si,
Gyeonggi-do 449-822 Korea
Tel +82-31-323-6008
Fax: +82-31-323-6010

EUT / Model No. : X70 EX	Phase : NEUTRAL
Test Mode : WI-FI mode	Test Power : 120 / 60
Temp./Humi. : 26 / 64	Test Engineer : B.S.KIM



Freq	RD	RD	C.F	Result	Result	Limit	Limit	Margin	Margin
MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	dBuV	dBuV		dBuV	dBuV	dBuV	dBuV	dB	dB
0.186	21.39	14.99	9.69	31.08	24.68	64.21	54.21	33.13	29.53
0.241	22.48	13.88	9.68	32.16	23.56	62.06	52.06	29.90	28.50
0.367	24.46	16.26	9.71	34.17	25.97	58.57	48.57	24.40	22.60
0.421	25.96	12.16	9.73	35.68	21.88	57.43	47.43	21.75	25.55
0.491	26.35	16.65	9.69	36.03	26.33	56.15	46.15	20.12	19.82
15.969	27.20	19.70	10.32	37.52	30.02	60.00	50.00	22.48	19.98

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

APPENDIX

TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Next Cal. Date
1	Spectrum Analyzer	FSV-30	100757	R&S	Feb-10
2	Spectrum Analyzer	8563E	3425A02505	HP	Apr-10
3	Spectrum Analyzer	8594E	3710A04074	HP	Oct-09
4	Signal Generator	8648C	3623A02597	HP	Apr-10
5	Signal Generator	83711B	US34490456	HP	Apr-10
6	Attenuator (3dB)	8491A	37822	HP	Oct-09
7	Attenuator (10dB)	8491A	63196	HP	Oct-09
8	Attenuator (30dB)	8498A	1801A06689	HP	Oct-09
9	EMI Test Receiver	ESVD	843748/001	R&S	Apr-10
10	Horn Antenna(18 ~ 40GHz)	SAS-574	154	Schwarzbeck	Nov-10
11	Horn Antenna(18 ~ 40GHz)	SAS-574	155	Schwarzbeck	Nov-10
12	RF Amplifier	8447D	2949A02670	HP	Oct-10
13	RF Amplifier	8449B	3008A02126	HP	Apr-10
14	Test Receiver	ESHS10	828404/009	R&S	Apr-10
15	TRILOG Antenna	VULB 9160	9160-3212	SCHWARZBECK	Apr-11
16	Log.-Per. Antenna	VULP 9118	9118 A 401	SCHWARZBECK	Apr-11
17	Biconical Antenna	BBA 9106	VHA 9103-2315	SCHWARZBECK	Apr-11
18	Horn Antenna	3115	00055005	ETS LINDGREN	Mar-11
19	Horn Antenna	BBHA 9120D	9120D122	SCHWARZBECK	Dec-11
20	Dipole Antenna	VHA9103	2116	SCHWARZBECK	Nov-09
21	Dipole Antenna	VHA9103	2117	SCHWARZBECK	Nov-09
22	Dipole Antenna	VHA9105	2261	SCHWARZBECK	Nov-09
23	Dipole Antenna	VHA9105	2262	SCHWARZBECK	Nov-09
24	Hygro-Thermograph	THB-36	0041557-01	ISUZU	Apr-10
25	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-
26	RF Switch	MP59B	6200414971	ANRITSU	-
27	Power Divider	11636A	6243	HP	Oct-09
28	DC Power Supply	6622A	3448A03079	HP	Oct-09
29	Frequency Counter	5342A	2826A12411	HP	Apr-10
30	Power Meter	EPM-441A	GB32481702	HP	Apr-10
31	Power Sensor	8481A	2702A64048	HP	Apr-10
32	Audio Analyzer	8903B	3729A18901	HP	Oct-09
33	Modulation Analyzer	8901B	3749A05878	HP	Oct-09
34	TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	JinYoung Tech	Oct-09
35	LOOP-ANTENNA	FMZB 1516	151602/94	SCHWARZBECK	Mar-11
36	Stop Watch	HS-3	601Q09R	CASIO	Apr-10
37	LISN	ENV216	100408	R&S	Oct-09