

# **FCC Radio Test Report**

## FCC ID: 2AAJE-M736 FCC 47 CFR Part 15 Subpart C

**Product**: Tablet PC

Trade Name: KOCASO

Model Number: M736, M836, M870, M1062, M1066, M872,

#### Issued for

Global Phoenix Computer T&S, Inc. 21 Dutch Mill Road, Ithaca, NY 14850

#### Issued by

Shenzhen STONE Testing Technology Co., Ltd.

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## **TEST RESULT CERTIFICATION**

Product		: Tablet PC			
Applicant		: Global Phoenix Com	puter T&	S, Ir	nc.
Address	•••••	: 21 Dutch Mill Road,	Ithaca,	NY 1	14850
Manufacturer	•••••	: Global Phoenix Com	puter T&	S, Ir	nc.
Address		: 21 Dutch Mill Road,	Ithaca,	NY 1	14850
Model No		: M736, M836, M870,	M1062,	M10	66, M872, M1070
Standards		FCC Part 15 Subpa	rt C (15.	247)	
Test Method		: ANSI C63.4: 2003			
and found complia mentioned above. which was tested.	nce The Oth toler	has been tested by Shenzhe with the requirements set for results of testing in this reporter similar equipment will not rance and measurement unchange	rth in the ort apply necessa	tec only rily p	hnical standards to the product/system,
Date of receipt of tes	st ite	m 2013-07-03			
•		of test 2013-07-10	to 2013-0	7-16	;
Test Result		Pass			
Testing by	:	(Linna Liu)	Date	:	2013-07-15
Check by	:	Andy Huang)	Date	:	2013-07-17
Approved by	: .	Athan chen (Ethan Chen)	Date	:	2013-07-18

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## 1. TEST SUMMARY

Test procedures according to the technical standards:

FCC Part 15 Subpart C (15.247)					
Standard Section	Test Item	Judgment	Remark		
15.207	AC Power Conducted Emission	PASS			
15.247(d)	Transmitter Radiated Emissions	PASS			
15.247(b)(3)	Output Power	PASS			
15.247(a)(2)	6dB RF Bandwidht	PASS			
15.247(e)	Power Spectral Density	PASS			
15.247(c)	Out of Band Conducted Spurious Emission	PASS			
15.247(d)	Band Edge Measurement	PASS			
15.247(c)	Occupied Bandwidth Measurement	PASS			
15.203	Antenna Requirement	PASS			

#### NOTE:

- (1)" N/A" denotes test is not applicable in this Test Report
- (2) The test results of this report relate only to the tested sample(s) identified in this report.

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#### 1.1 TEST FACILITY

Shenzhen STONE Testing Technology Co., Ltd.

Add.: F/6, Bldg.12, Zhongxing Industrial City, Chuangye Rd., Nanshan District, Shenzhen, Guangdong, China

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

FCC Registration No.: 323508

#### 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $\mathbf{y} \pm \mathbf{U}$ , where expended uncertainty  $\mathbf{U}$  is based on a standard uncertainty multiplied by a coverage factor of  $\mathbf{k=2}$ , providing a level of confidence of approximately 95%.

#### A. Conducted Emission:

The measurement uncertainty is evaluated as  $\pm$  3.2 dB.

#### B. Radiated Measurement:

The measurement uncertainty is evaluated as  $\pm$  3.7 dB.



## 2. GENERAL INFORMATION

#### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Tablet PC	
Model Name	M736	
Additional Model Number(s)	M836, M870, M1062, M1066, M872, M1070	
Model Difference	All models are identical except model names.	
Frequency Range	IEEE 802.11b/g/n(HT20): 2412~2462 MHz Bluetooth(Version: 3.0): 2402~2480 MHz	
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g:OFDM IEEE 802.11n:OFDM Bluetooth: GFSK/ $\pi$ /4-DQPSK/8-DPSK	
RF Output Power	IEEE 802.11b: 8.54 dBm IEEE 802.11g: 8.13 dBm IEEE 802.11n: 8.26 dBm Bluetooth: GFSK: 0.75 dBm 8-DPSK: -0.33 dBm	
Antenna Type PIFA Antenna (Gain: 0 dBi)		
Power Source	DC power from AC/DC Adapter	
Power Source	DC power from USB cable by host system	
	AC/DC Adapter:	
Dower Dating	Input: AC 120~240V 50/60 Hz	
Power Rating	Output: DC5V 2A	
	DC 5.0V from USB cable.	
Remark	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	

#### Note:

(1) This Test Report is FCC Part 15 Subpart C, 15.247 for IEEE 802.11b/g/n. And the Test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance V03r01

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To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above

## 2.2 DESCRIPTION OF TEST MODES

was evaluated respectively.

Pretest Mode	Description
Mode 1	AC Charging Mode
Mode 2	USB Charging and Loading Mode
Mode 3	WiFi Link Mode
Mode 4	WiFi TX Mode

For Conducted Test				
Final Test Mode Description				
Mode 1	AC Charging Mode			
Mode 2	USB Charging and Loading Mode			

For Radiated Test				
Final Test Mode Description				
Mode 1 AC Charging Mode				
Mode 2	USB Charging and Loading Mode			
Mode 3 WiFi Link Mode				
Mode 4	WiFi TX Mode			

#### Note:

- (1) Software used to control the EUT for staying in continuous transmitting mode was programmed. After verification, all tests were carried out with the worst case test modes as shown below.
- (2) IEEE 802.11b Mode:
  - Channel (2412/2437/2462 MHz) with 1Mbps data rate were chosen for full testing.
- (3) IEEE 802.11g Mode:
  - Channel (2412/2437/2462 MHz) with 6 Mbps data rate were chosen for full testing.
- (4) IEEE 802.11n(HT20) Mode:
  Channel (2412/2437/2462 MHz) with 6.5 Mbps data rate were chosen for full testing.
- (5) By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

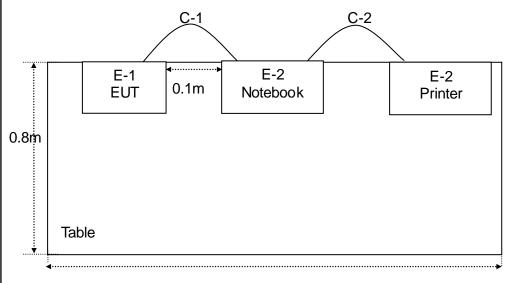
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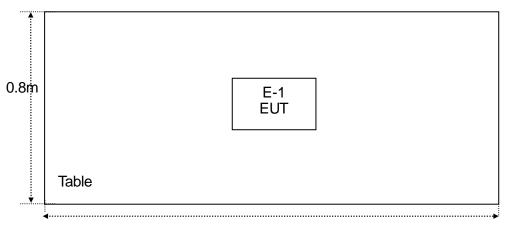
## 2.3 DESCRIPTION OF TEST SETUP

#### Conducted Emission



1.5m

#### Radiated Emission



1.5m



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Tablet PC	KOCASO	M736	N/A	EUT
E-2	Notebook	N/A	8.3R	N/A	
E-3	Printer	HP	5015N	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.5m	
C-1	USB Cable	YES	1.5m	

#### Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in <code>"Length\_"</code> column.
- (3) "YES" means "shielded" "with core"; "NO" means "unshielded" "without core".

#### 2.5 EUT Exercise Software

Test Software: CMD.exe

IEEE 802.11b:The command set for RF power-IEEE 802.11g:The command set for RF power-IEEE 802.11n:The command set for RF power-

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3. CONDUCTED EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Quasi-peak	Average
FREQUENCT (MINZ)	dBuV	dBuV
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

#### Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

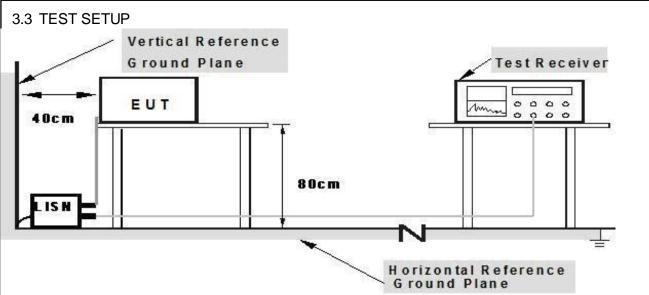
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

#### 3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

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Note: 1.Support units were connected to second LISM.

2.Both of LISMs (AMM) are 80 cm from EUT and at least 80 from other units and other metal planes

#### 3.4 TEST INSTRUMENTS

Equipm ent	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
LISN	R&S	NSLK81	8126466	Jul. 06, 2012	Jul. 05, 2014	1 year
LISN	R&S	NSLK81	8126487	Dec. 25, 2012	Dec. 24, 2013	1 year
50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	C01	N/A	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	C02	N/A	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	C03	N/A	Jul. 06, 2012	Jul. 05, 2014	1 year
EMI Test Receiver	R&S	ESCI	1166.595	Jul. 06, 2012	Jul. 05, 2014	1 year
Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2012	Jul. 05, 2014	1 year

#### 3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

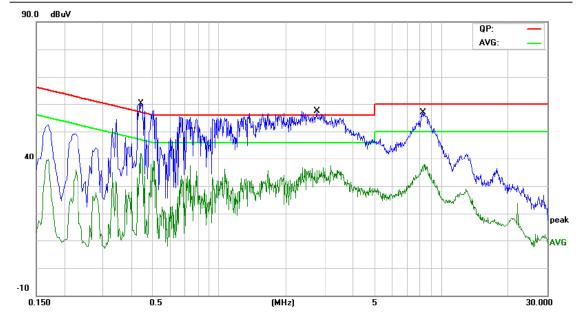
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## 3.6 TEST RESULTS

EUT:	Tablet PC	Model Name. :	M736
Temperature:	26 ℃	Relative Humidity:	56%
Pressure :	1010hPa	Test Date :	2013-07-12
Test Mode:	Mode 1	Phase :	Line
Test Voltage :	120V/ 60Hz		

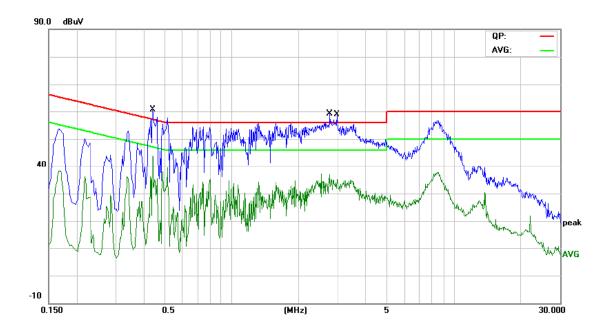
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.4460	45.96	9.55	55.51	56.95	-1.44	QP	
2	0.4460	26.74	9.55	36.29	46.95	-10.66	AVG	
3	2.7380	39.87	9.37	49.24	56.00	-6.76	QP	
4	2.7380	22.00	9.37	31.37	46.00	-14.63	AVG	
5	8.2980	38.81	9.83	48.64	60.00	-11.36	QP	
6	8.2980	24.00	9.83	33.83	50.00	-16.17	AVG	





EUT:	Tablet PC	Model Name. :	M736
Temperature : 26 ℃ Re		Relative Humidity:	56%
Pressure:	1010hPa	Test Date :	2013-07-12
Test Mode:	Mode 1	Phase :	Neutral
Test Voltage :	120V/ 60Hz		

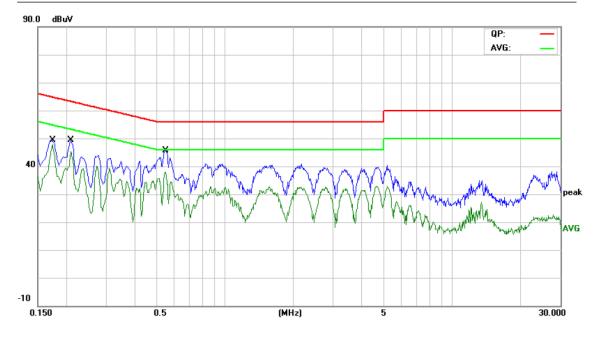
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.4420	46.02	9.58	55.60	57.02	-1.42	QP	
2	0.4420	26.22	9.58	35.80	47.02	-11.22	AVG	
3	2.7620	40.88	9.40	50.28	56.00	-5.72	QP	
4	2.7620	21.70	9.40	31.10	46.00	-14.90	AVG	
5	2.9700	39.72	9.41	49.13	56.00	-6.87	QP	
6	2.9700	22.06	9.41	31.47	46.00	-14.53	AVG	





EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010hPa	Test Date :	2013-07-12
Test Mode:	Mode 2	Phase :	Line
Test Voltage :	120V/ 60Hz		

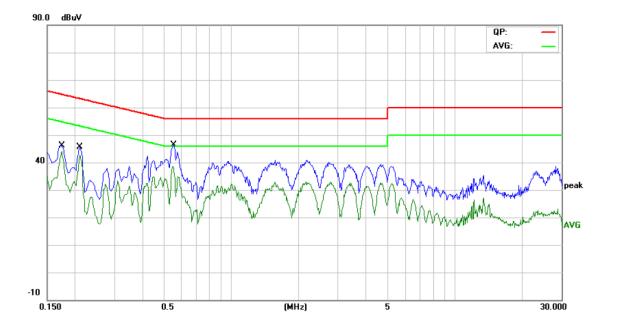
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1740	37.71	10.62	48.33	64.76	-16.43	QP	
2 *	0.1740	37.23	10.62	47.85	54.76	-6.91	AVG	
3	0.2100	37.72	10.25	47.97	63.20	-15.23	QP	
4	0.2100	34.57	10.25	44.82	53.20	-8.38	AVG	
5	0.5500	35.18	9.43	44.61	56.00	-11.39	QP	
6	0.5500	28.34	9.43	37.77	46.00	-8.23	AVG	





EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010hPa	Test Date :	2013-07-12
Test Mode:	Mode 2	Phase :	Neutral
Test Voltage :	120V/ 60Hz		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBuV	dBu∀	dB	Detector	Comment
1	0.1740	34.13	10.65	44.78	64.76	-19.98	QP	
2	0.1740	33.51	10.65	44.16	54.76	-10.60	AVG	
3	0.2100	34.16	10.28	44.44	63.20	-18.76	QP	
4	0.2100	32.41	10.28	42.69	53.20	-10.51	AVG	
5	0.5540	36.39	9.46	45.85	56.00	-10.15	QP	
6 *	0.5540	28.32	9.46	37.78	46.00	-8.22	AVG	





#### 4. RADIATED EMISSION MEASUREMENT

#### 4.1 RADIATED EMISSION LIMIT (Frequency Range 9KHz-1000MHz)

20 dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table bellow has to be followed.

FREQUENCY (MHz)	Field Strength	Measurement Distance		
PREQUENCT (IVINZ)	(uV/m at meter)	(meters)		
0.009 -0.490	2400/F(KHz)	300		
0.490 -1.705	24000/F(KHz)	30		
1.705 -30.0	30	30		
30 -88	100	3		
88 -216	150	3		
216~960	200	3		
Above 960	500	3		

#### RADIATED EMISSION LIMITS (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBu	V/m)(at 3 M)	Class B (dBuV/m)(at 3 M)		
TIVEQUEINOT (IVII IZ)	Peak	Average		Peak	
Above 1000	80	60	74	54	

#### Note:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

#### The following table is the setting of the receiver

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency~ Stop Frequency	9kHz~150kHz/ RB 200Hz for QP
Start Frequency~ Stop Frequency	150kHz~30MHz/ RB 9kHz for QP
Start Frequency~ Stop Frequency	30MHz~1000MHz/RB120kHz for QP

#### The following table is the setting of the spectrum

Spectrum Parameter	Setting		
Attenuation	Auto		
Start Frequency	1000 MHz		
Stop Frequency	10 <sup>th</sup> carrier harmonic		
RB/ VB (emission in restricted band)	1MHz/ 3 MHz for Peak, 1MHz/ 10Hz for Average		

#### 4.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

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- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item -EUT Test Photos.

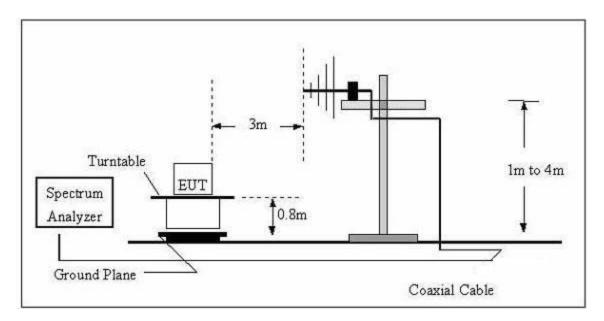
#### Note:

Both horizontal and vertical antenna polarities were tested.

And performed pretest to three orthogonal axis. The worst case emissions were reported.

#### 4.3 TEST SETUP

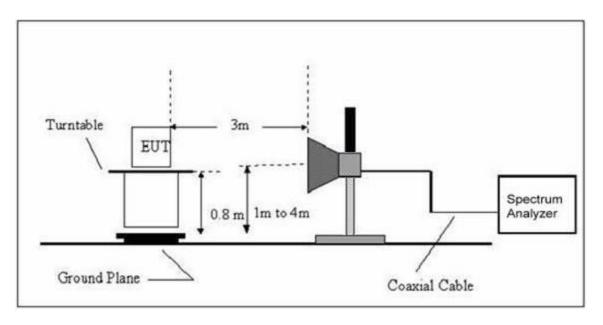
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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#### (B) Radiated Emission Test Set-Up Frequency Above 1GHz



#### 4.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Broadband Antenna	R&S	VULB 9168	VULB 9168-456	Jul. 06, 2012	Jul. 05, 2014	1 year
Test Cable	N/A	R-01	N/A	Dec. 25, 2012	Dec. 24, 2013	1 year
Test Cable	N/A	R-02	N/A	Dec. 25, 2012	Dec. 24, 2013	1 year
EMI Test Receiver	R&S	ESCI	101324	Jul. 06, 2012	Jul. 05, 2014	1 year
Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
Turn Table	EM	SC100	060531	N/A	N/A	N/A
50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 06, 2012	Jul. 05, 2014	1 year
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year
Horn Antenna	R&S	HF906	10029	Jul. 06, 2012	Jul. 05. 2014	1 year
Amplifier	EM	EM-30180	060538	Jul. 06, 2012	Jul. 05. 2014	1 year

### 4.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

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#### 4.6 TEST RESULTS

## 4.6.1 TEST RESULTS (Bellow 1GHz)

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	WiFi TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		98.8700	20.24	18.09	38.33	43.50	-5.17	peak
2	1	98.7800	23.06	15.58	38.64	43.50	-4.86	peak
3	3	332.6400	20.62	20.85	41.47	46.00	-4.53	peak
4	* 4	103.4500	19.77	22.49	42.26	46.00	-3.74	peak
5	4	57.7700	18.34	23.02	41.36	46.00	-4.64	peak
6	8	865.1699	14.07	27.73	41.80	46.00	-4.20	peak

#### Remark:

Factor = Antenna Factor + Cable Loss.

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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	WiFi TX Mode	Polarization :	Vertical
Test Power :	AC 120V/60 Hz		

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1 *	98.8700	31.94	8.17	40.11	43.50	-3.39	peak
2 !	229.8200	33.11	8.25	41.36	46.00	-4.64	peak
3 !	398.6000	26.66	13.61	40.27	46.00	-5.73	peak
4 !	457.7700	27.06	14.00	41.06	46.00	-4.94	peak
5	773.9900	20.86	17.73	38.59	46.00	-7.41	peak
6	878.7500	20.77	18.85	39.62	46.00	-6.38	peak

#### Remark:

Factor = Antenna Factor + Cable Loss.



4.6.2 TEST RESULTS (Above 1GHz)

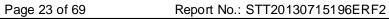
EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	B Mode 2412 TX Mode	Polarization:	Horizontal
Test Power :	AC 120V/60 Hz		

Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4824.100	51.24	4.28	55.52	74.00	-18.48	peak
4824.100	43.07	4.28	47.35	54.00	-6.65	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	B Mode 2412 TX Mode	Polarization :	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4823.950	46.03	4.28	50.31	74.00	-23.69	peak
4823.950	38.47	4.28	42.75	54.00	-11.25	AVG

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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	B Mode 2437 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4874.100	52.35	4.47	56.82	74.00	-17.18	peak
4874.100	44.46	4.47	48.93	54.00	-5.07	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	B Mode 2437 TX Mode	Polarization:	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4874.100	45.35	4.47	49.82	74.00	-24.18	peak
4874.100	37.62	4.47	42.09	54.00	-11.91	AVG

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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	B Mode 2462 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4924.150	43.95	4.67	48.62	74.00	-25.38	peak
4924.150	52.13	4.67	56.80	74.00	-17.20	peak

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	B Mode 2462 TX Mode	Polarization:	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4924.100	38.48	4.67	43.15	74.00	-30.85	peak
4924.100	46.35	4.67	51.02	74.00	-22.98	peak

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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	G Mode 2412 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4824.630	46.48	4.28	50.76	74.00	-23.24	peak
4824.630	36.52	4.28	40.80	54.00	-13.20	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	G Mode 2412 TX Mode	Polarization:	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4824.630	43.53	4.28	47.81	74.00	-26.19	peak
4824.630	33.61	4.28	37.89	54.00	-16.11	AVG

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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	G Mode 2437 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4874.720	47.78	4.47	52.25	74.00	-21.75	peak
4874.720	37.61	4.47	42.08	54.00	-11.92	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	G Mode 2437 TX Mode	Polarization :	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4874.720	43.78	4.47	48.25	74.00	-25.75	peak
4874.720	33.76	4.47	38.23	54.00	-15.77	AVG

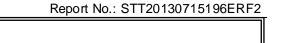
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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	G Mode 2462 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4924.250	35.94	4.67	40.61	54.00	-13.39	AVG
4924.350	45.05	4.67	49.72	74.00	-24.28	peak

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	G Mode 2462 TX Mode	Polarization:	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	•	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4924.350	42.63	4.67	47.30	74.00	-26.70	peak
4924.350	31.56	4.67	36.23	54.00	-17.77	AVG



EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	N Mode 2412 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4824.630	45.72	4.28	50.00	74.00	-24.00	peak
4824.630	33.72	4.28	38.00	54.00	-16.00	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	N Mode 2412 TX Mode	Polarization:	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4824.630	43.62	4.28	47.90	74.00	-26.10	peak
4824.630	31.34	4.28	35.62	54.00	-18.38	AVG

rage 29 01 09 Report No 31120 1307 13190ER1	Page 29 of 69	Report No.: STT20130715196ERF2
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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	N Mode 2437 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	•		Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4874.270	46.20	4.47	50.67	74.00	-23.33	peak
4874.270	33.86	4.47	38.33	54.00	-15.67	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	N Mode 2437 TX Mode	Polarization :	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4874.270	45.89	4.47	50.36	74.00	-23.64	peak
4874.270	33.71	4.47	38.18	54.00	-15.82	AVG

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EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010 hPa	Test Date :	2013-07-12
Test Mode :	N Mode 2462 TX Mode	Polarization :	Horizontal
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4924.000	46.75	4.67	51.42	74.00	-22.58	peak
4924.000	34.27	4.67	38.94	54.00	-15.06	AVG

EUT:	Tablet PC	Model Name. :	M736
Temperature:	<b>26</b> ℃	Relative Humidity:	56%
Pressure :	1010 hPa	Test Date :	2013-07-12
Test Mode :	N Mode 2462 TX Mode	Polarization:	Vertical
Test Power :	AC 120V/60 Hz		

. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
4924.000	44.16	4.67	48.83	74.00	-25.17	peak
4924.000	32.04	4.67	36.71	54.00	-17.29	AVG

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#### 5. MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

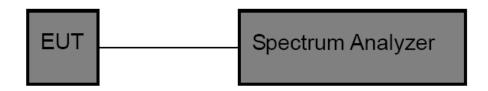
#### 5.1 LIMITS

Peak Output Power	For systems using digital modulation in 2400~2483.5MHz, the
	Limit for peak output power is 30dBm.

#### 5.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

#### 5.3 TEST SETUP



#### 5.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

#### 5.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

### 5.6 TEST RESULTS



801.11b Mode (1Mbps)					
Test Channel Frequency Peak Output Power Limit (dBm) (dBm)					
CH01	2412	8.54			
CH 06	2437	8.07	<30		
CH11	2462	7.97			

#### B Mode 2412MHz



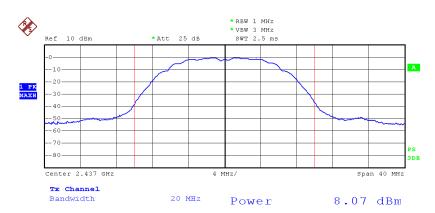
Date: 15.JUL.2013 16:09:29

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Date: 15.JUL.2013 15:59:50

#### B Mode 2462MHz

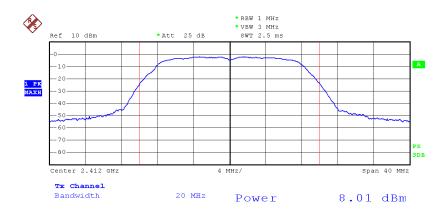


Date: 15.JUL.2013 16:01:41



801.11g Mode (6Mbps)					
Test Channel Frequency Peak Output Power Limit (dBm) (dBm)					
CH01	2412	8.01			
CH 06	2437	8.10	<30		
CH11	2462	8.13			

#### G Mode 2412MHz



Date: 15.JUL.2013 16:32:32

Version: STT-FCCRF-13V01



Report No.: STT20130715196ERF2

#### G Mode 2437 MHz



Date: 15.JUL.2013 16:41:49

#### G Mode 2462MHz



Date: 15.JUL.2013 16:37:07



801.11n(HT20) Mode (6Mbps)					
Test Channel Frequency (MHz) Peak Output Power Limit (dBm) (dBm)					
CH01	2412	8.26			
CH 06	2437	7.92	<30		
CH11	2462	8.16			

#### N Mode 2412MHz



Date: 15.JUL.2013 17:36:35

Version: STT-FCCRF-13V01











Date: 15.JUL.2013 17:45:46

## N Mode 2462MHz



Date: 15.JUL.2013 17:41:22

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# **6. OCCUPIED BANDWIDTH MEASUREMENT**

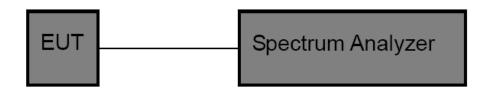
## 6.1 LIMITS

6dB Bandwidth	For systems using digital modulation in 2400~2483.5MHz, the minimum 6 dB band-width shall be at least 500 kHz.
99% Occupied Bandwidth	N/A

## 6.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

# 6.3 TEST SETUP



# 6.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

## 6.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

# 6.6 TEST RESULTS



801.11b Mode (1Mbps)					
Frequency (MHz)	Limit				
2412	10.20	13.88			
2437	10.20	13.88	>=500 kHz		
2462	10.20	13.88			

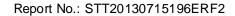
# B Mode 2412 MHz



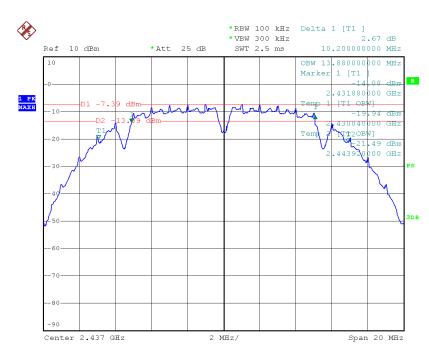
Date: 15.JUL.2013 16:10:05

Version: STT-FCCRF-13V01



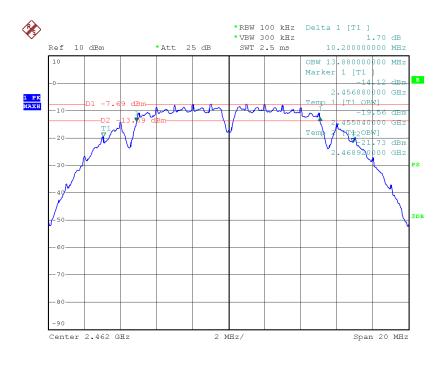






Date: 15.JUL.2013 16:07:56

## B Mode 2462 MHz

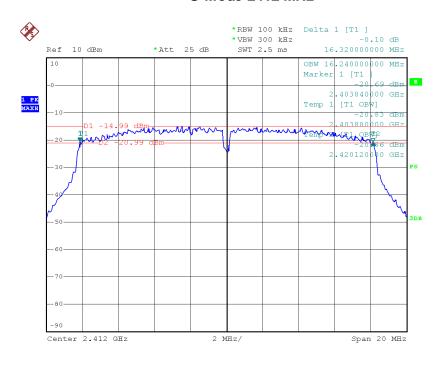


Date: 15.JUL.2013 16:06:54



801.11g Mode (6 Mbps)						
Frequency (MHz)	Limit					
2412	16.32	16.24				
2437	16.32	16.24	>=500 kHz			
2462	16.32	16.24				

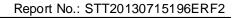
# G Mode 2412 MHz



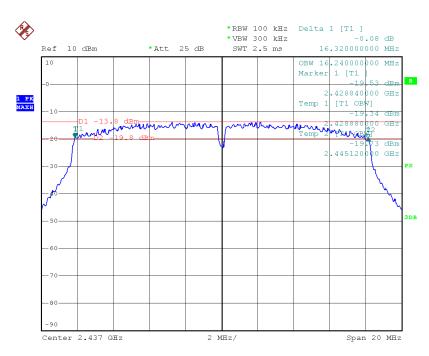
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Version: STT-FCCRF-13V01



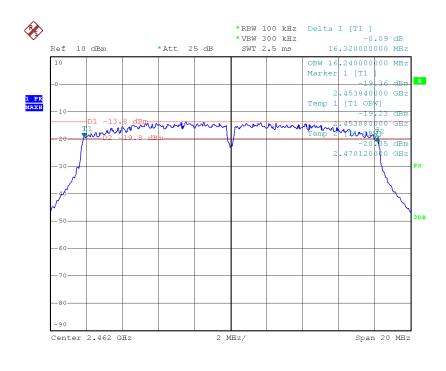






Date: 15.JUL.2013 16:43:34

#### G Mode 2462 MHz

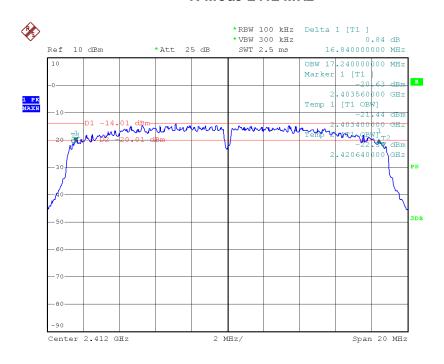


Date: 15.JUL.2013 16:37:48



801.11n Mode (6.5 Mbps)					
Frequency (MHz)	Limit				
2412	16.84	17.24			
2437	16.85	17.25	>=500 kHz		
2462	16.56	17.20			

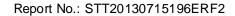
# N Mode 2412 MHz



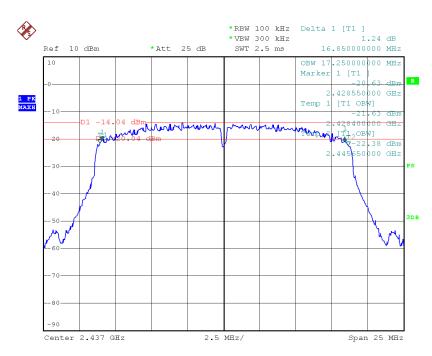
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Version: STT-FCCRF-13V01



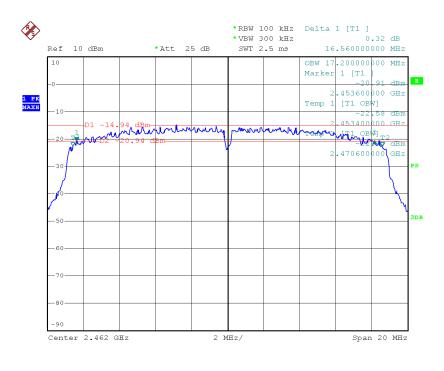






Date: 15.JUL.2013 17:46:54

#### N Mode 2462 MHz



Date: 15.JUL.2013 17:44:08

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## 7. POWER DENSITY

#### 7.1 LIMITS

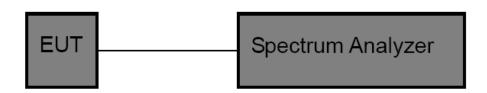
Power Density	For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not
	be greater than 8 dBm in any 3 kHz band during any time
	interval of continuous transmission

## 7.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

- a. Set spectrum center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to : 3kHz≤RBW≤100kHz
- d. Set the VBW to: VBW≥3 RBW
- e. Detector= Peak.
- f. Sweep time= auto couple
- g. Trace mode= maxhold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.
- j. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### 7.3 TEST SETUP



## 7.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

### 7.5 EUT OPERATING CONDITIONS

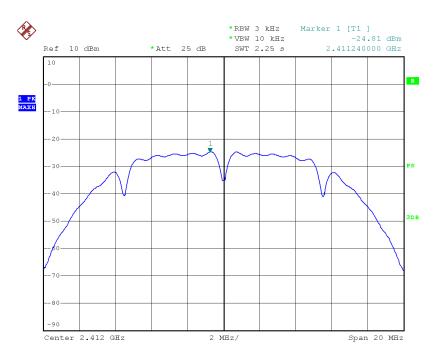
The EUT was set to continuously transmitting in the maximum power during the test.

## 7.6 TEST RESULTS



801.11b Mode (1 Mbps)						
Frequency (MHz)	Limit (dBm)					
2412	-24.81					
2437	-25.44	<8				
2462	-25.26					

# B Mode 2412 MHz



Date: 15.JUL.2013 16:10:48

Version: STT-FCCRF-13V01









Date: 15.JUL.2013 16:00:33

## B Mode 2462 MHz

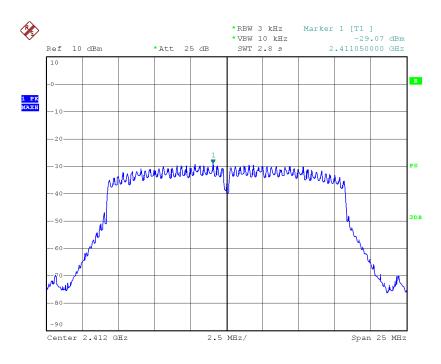


Date: 15.JUL.2013 16:02:16



801.11g Mode (6 Mbps)					
Frequency (MHz)	Power Density (dBm/ 3kHz)	Limit (dBm)			
2412	-29.07				
2437	-27.65	<8			
2462	-28.22				

# G Mode 2412 MHz



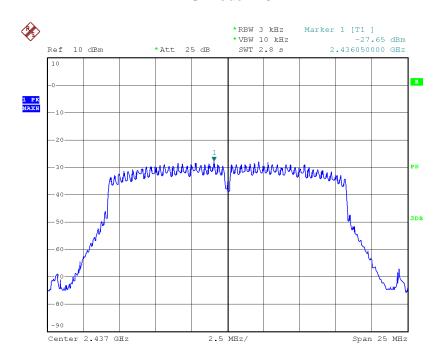
Date: 15.JUL.2013 16:34:53

Version: STT-FCCRF-13V01



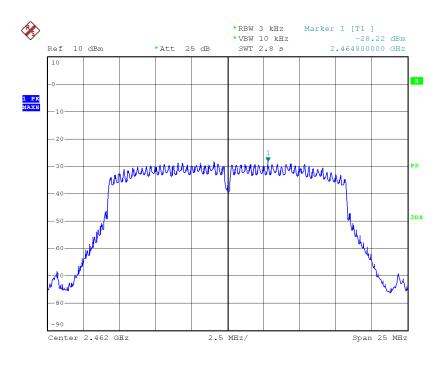
# Report No.: STT20130715196ERF2





Date: 15.JUL.2013 16:42:33

## G Mode 2462 MHz

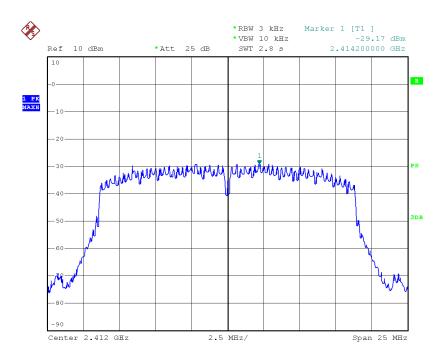


Date: 15.JUL.2013 16:39:57



801.11n Mode (6.5 Mbps)						
Frequency (MHz)	Power Density (dBm/ 3kHz)	Limit (dBm)				
2412	-29.17					
2437	-28.03	<8				
2462	-29.00					

## N Mode 2412 MHz



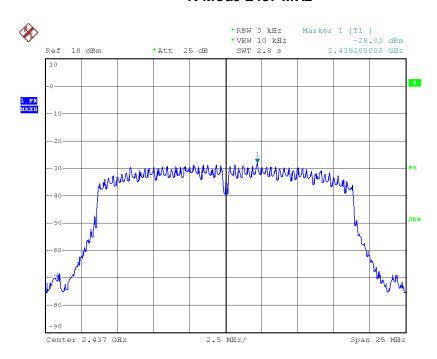
Date: 15.JUL.2013 17:38:22

Version: STT-FCCRF-13V01



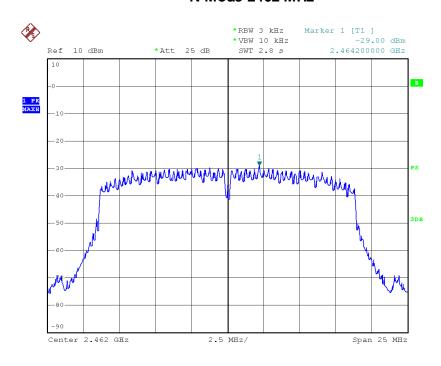






Date: 15.JUL.2013 17:46:12

## N Mode 2462 MHz



Date: 15.JUL.2013 17:44:51



Report No.: STT20130715196ERF2

# 8. BAND EDGES MEASUREMENT

#### 8.1 LIMITS

Band Edges Requirement

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

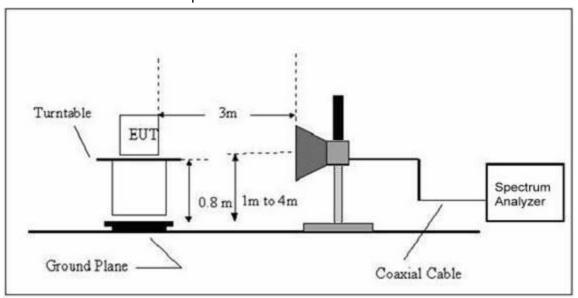
#### 8.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

- a. Set frequency range to capture low band-edge from 2310 MHz up to 2390 MHz, and fo up band-edge from 2483.5 MHz up to 2500 MHz
- b. For low band-edge set the equipment transmit at the lowest channel, and for up band-edge set the equipment transmit at the highest channel
- c. Set the VBW≥3 RBW (100kHz/300kHz) for conducted measurement
- d. For radiated measurements, Set the centre frequency to measured of the restricted frequency band, and span to 2 MHz, the RBW set to 100 kHz, and the VBW set to 300 kHz.
- Use band power function for peak and average measurement.

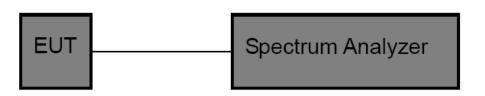
#### 8.3 TEST SETUP

(A) Radiated Emission Test Set-Up



(B) Conducted Emission Test Setup





# 8.4 TEST INSTRUMENTS

Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

# 8.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

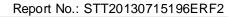
# 8.6 TEST RESULTS

B Mode (1Mbps)					
Conducted Emission					
Frequency Peak Power Emission Level Ratio Limit (MHz) (dBm) (dBm) (dBC) (dBc)					
Bellow 2400	-6.71	-55.26	48.55	20	
Up 2483.5	-7.41	-57.58	50.17	20	

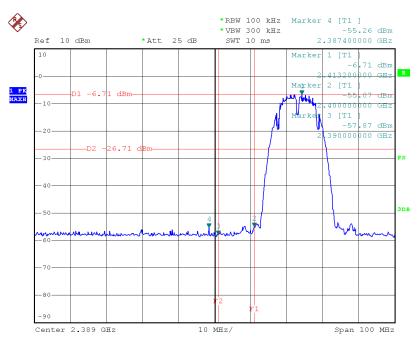
Radiated Emission					
Frequency	Polarization (H/V)	Emission (dBuV/m)		Limit (dBuV/m)	
(MHz)		PEAK	AVERAGE	PEAK	AVERAGE
2390	H	55.12	47.81		54
	V	55.76	48.15	74	
2483.5	Н	54.39	46.28	14	
	V	54.87	46.89	46.89	

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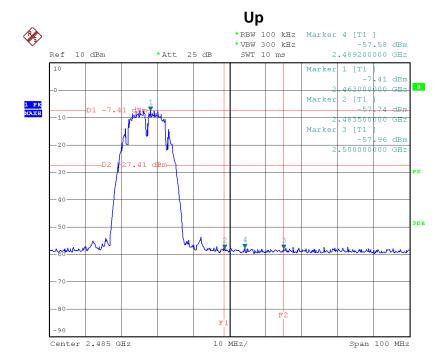








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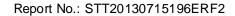


G Mode (6 Mbps)				
Conducted Emission				
Frequency Peak Power Emission Level Ratio Limit (MHz) (dBm) (dBC) (dBc)				
Bellow 2400	-14.37	-56.75	42.38	20
Up 2483.5	-13.62	-58.09	44.47	20

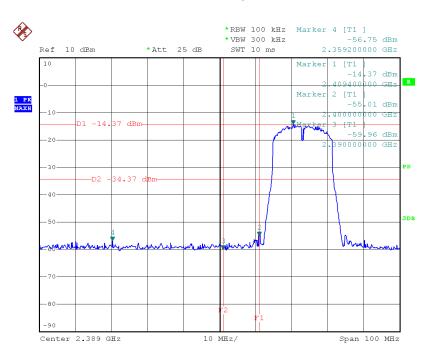
Radiated Emission					
Frequency	Polarization	Emission (dBuV/m)		Limit (dBuV/m)	
(MHz)	(H/V)	PEAK	AVERAGE	PEAK	AVERAGE
2390	Н	54.64	46.72		54
	V	55.36	47.17	74	
2483.5	Н	53.72	45.76	14	
	V	54.16	46.35		

Version: STT-FCCRF-13V01

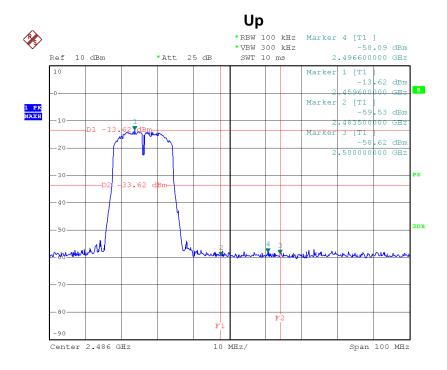








Date: 15.JUL.2013 16:33:28



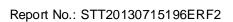
Date: 15.JUL.2013 16:39:12



N Mode (6.5 Mbps)				
Conducted Emission				
Frequency Peak Power Emission Level Ratio Limit (MHz) (dBm) (dBm) (dBC) (dBc)				
Bellow 2400	-14.74	-56.93	42.19	20
Up 2483.5	-14.25	-58.29	44.04	20

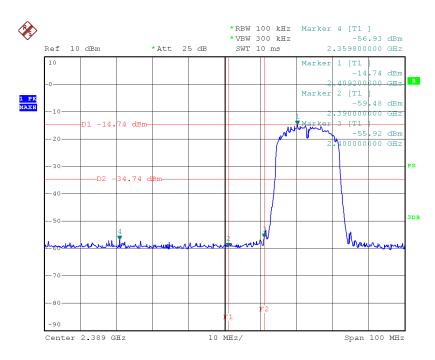
Radiated Emission					
Frequency	Polarization (H/V)	Emission (dBuV/m)		Limit (dBuV/m)	
(MHz)		PEAK	AVERAGE	PEAK	AVERAGE
2390	Н	54.71	46.82		54
	V	55.65	47.31	74	
2483.5	Н	53.81	45.91	74	
	V	54.37	46.66		

Version: STT-FCCRF-13V01

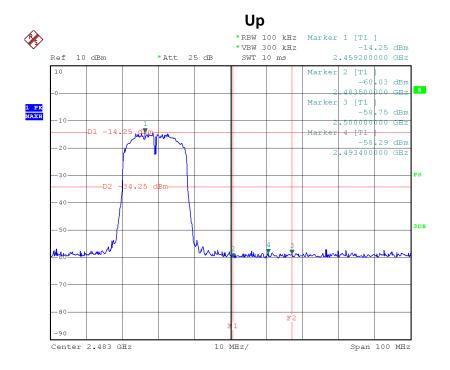








Date: 15.JUL.2013 17:39:36



Date: 15.JUL.2013 17:42:43

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## 9. OUT OF BAND CONDUCTED EMISSIONS MEASUREMENT

## 9.1 LIMITS

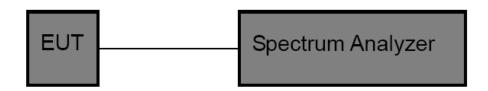
Requirement	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power
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#### 9.2 TEST PROCEDURE

The EUT was directly connected to the power meter and antenna output port as show in the block diagram as bellow.

- a. Set spectrum frequency range from 30 MHz~26.5 GHz.
- b. Set spectrum RBW=100 kHz, RBW=300 kHz.
- c. Detector= Peak.
- d. Sweep time= auto couple
- e. Trace mode= maxhold.
- f. Allow trace to fully stabilize.
- g. Use the peak marker function to determine the maximum amplitude level within the RBW.

## 9.3 TEST SETUP



## 9.4 TEST INSTRUMENTS

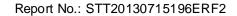
Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
Spectrum Analyzer	R&S	FSP40	100154	Jul. 06, 2012	Jul. 05. 2014	1 year

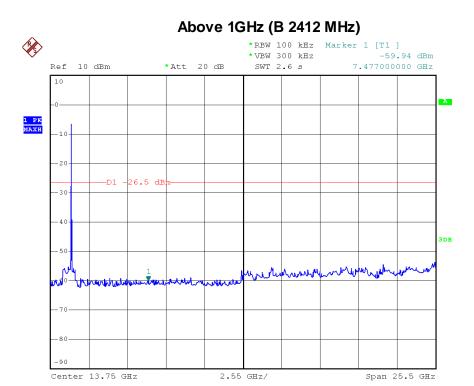
#### 9.5 EUT OPERATING CONDITIONS

The EUT was set to continuously transmitting in the maximum power during the test.

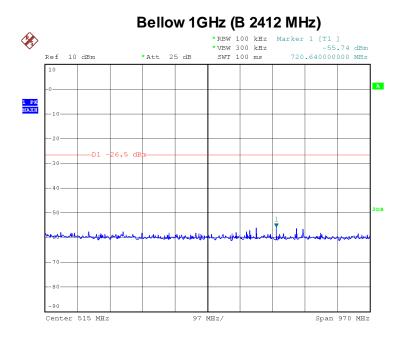
## 9.6 TEST RESULTS







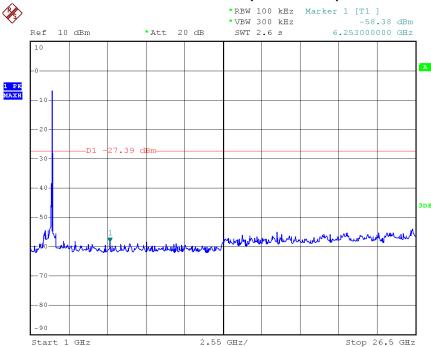
Date: 15.JUL.2013 17:05:39



Date: 15.JUL.2013 17:56:42

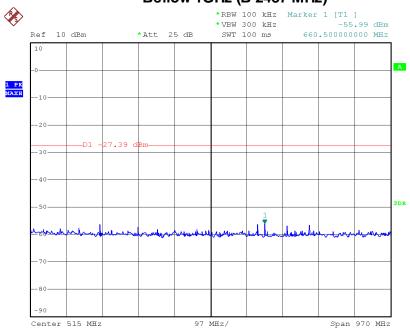






Date: 15.JUL.2013 17:27:26

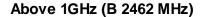
# Bellow 1GHz (B 2437 MHz)

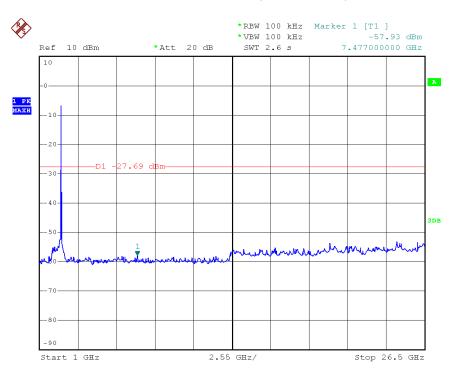


Date: 15.JUL.2013 17:50:01



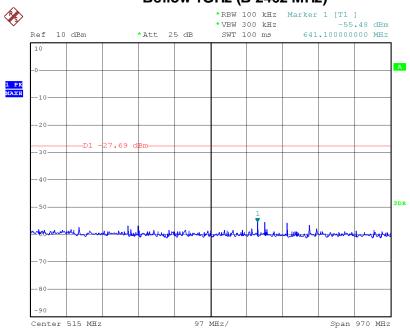
# Report No.: STT20130715196ERF2





Date: 15.JUL.2013 18:03:11

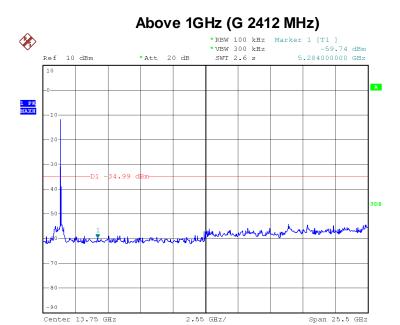
# Bellow 1GHz (B 2462 MHz)



Date: 15.JUL.2013 18:01:24

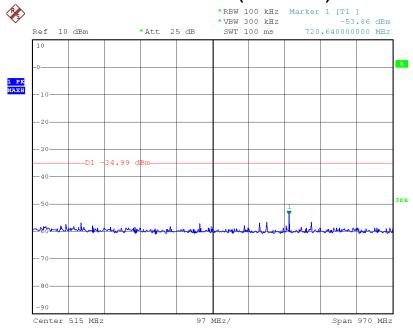






Date: 15.JUL.2013 17:45:43

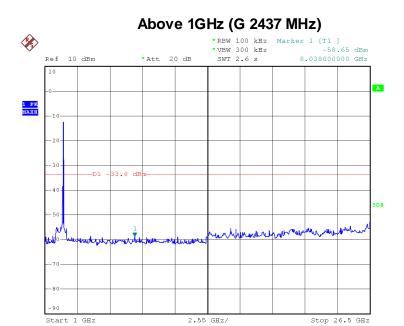
# Bellow 1GHz (G 2412 MHz)



Date: 15.JUL.2013 17:54:39

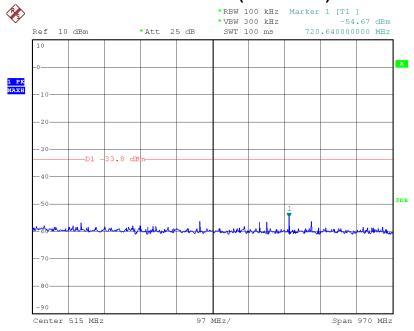






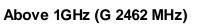
Date: 15.JUL.2013 17:47:38

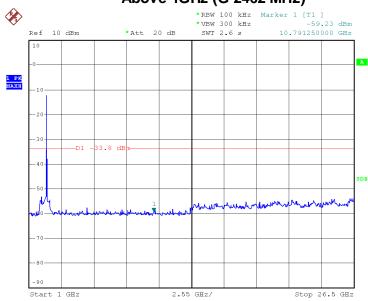
# Bellow 1GHz (G 2437 MHz)



Date: 15.JUL.2013 17:55:27

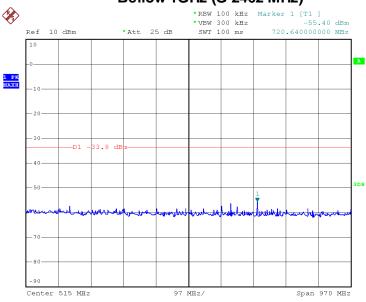






Date: 15.JUL.2013 17:44:36

# Bellow 1GHz (G 2462 MHz)



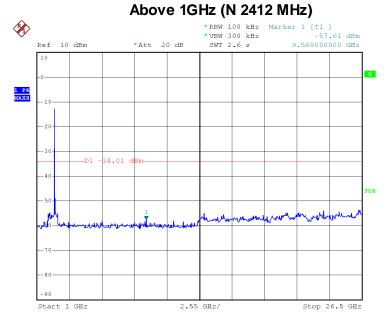
Date: 15.JUL.2013 17:55:53

Version: STT-FCCRF-13V01



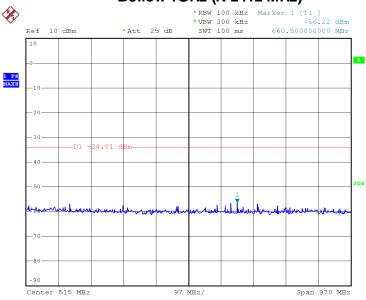


Report No.: STT20130715196ERF2



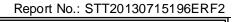
Date: 15.JUL.2013 17:59:20

# Bellow 1GHz (N 2412 MHz)



Date: 15.JUL.2013 17:52:18







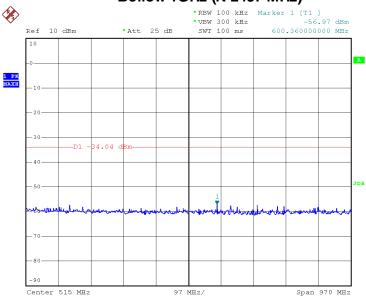
Date: 15.JUL.2013 17:00:17

Center 13.75 GHz

# Bellow 1GHz (N 2437 MHz)

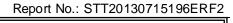
Span 25.5 GHz

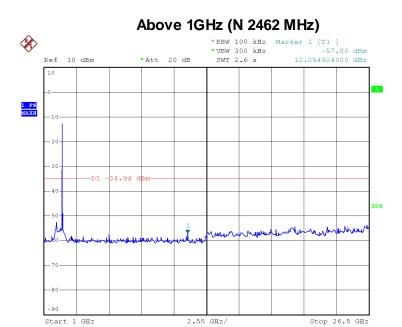
2.55 GHz/



Date: 15.JUL.2013 17:52:51

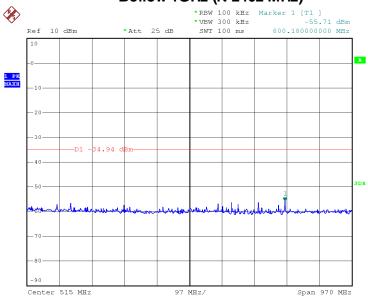






Date: 15.JUL.2013 17:11:57

# Bellow 1GHz (N 2462 MHz)



Date: 15.JUL.2013 17:53:34

Report No.: STT20130715196ERF2

# 10. ANTENNA REQUIREMENT

# 10.1 REQUIREMENT

Antenna Requirement (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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
Antenna Requirement (15.247)	If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

# 10.2 ANTENNA CONNECTOR CONSTRUCTION

The EUT antenna is a PIFA Antenna. And the maximum gain of this antenna is 0 dBi. It complies with the standard requirement.