

Report No.: ER/2006/50009 Issue Date: Jun. 22, 2006

Page: 1 of 78

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

Product Name: Rainbow

Brand Name: E28

Model Name: R2811

Model Different: N/A

ID Number: T6LR2811

ER/2006/50009 **Report No.:**

Issue Date: Jun. 22, 2006

Rule Part: FCC §15.247

E28 Ltd.

Prepared for 689 BEIJING EAST ROAD. 2nd FLOOR

SHANGHAL. 200001

Prepared by SGS Taiwan Ltd.

No. 134, Wu Kung Rd., Wuku Industrial Zone,

Taipei County, Taiwan.



Note: This report shall not be reproduced except in full, without the written approval of SGS Taiwan Ltd. This document may be altered or revised by SGS Taiwan Ltd. personnel only, and shall be noted in the revision section of the document.

Any unauthorized alteration, forgery or falsification of the content or appearance of this report is unlawful and offenders may be prosecuted to the fullest extent of the law. 對本報告內容或外觀之任何未經授權之變更、偽造、竄改皆屬非法,違犯者將會被依法追訴。



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 2

VERIFICATION OF COMPLIANCE

Applicant: E28 Ltd.

689 BEIJING EAST ROAD. 2nd FLOOR SHANGHAI.. 200001

Product Name: Rainbow

Brand Name: E28

Model No.: R2811

Model Difference: N/A

FCC ID: T6LR2811

File Number: ER/2006/50009

May 23. 2006 ~ Jun. 21, 2006 Date of test:

May 23. 2006 **Date of EUT Received:**

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247.

The test results of this report relate only to the tested sample identified in this report.

Test By:	Alex	Hsieh	Date	Jun. 22, 2006	
Prepared By:	Ale	x Hsieh Cow	Date	Jun. 22, 2006	
Approved By:	Time	va Kao L cent Su	Date	Jun. 22, 2006	



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 3

Version

Version No.	Date
00	May 29, 2006
01	Jun. 22, 2006



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 4

Table of Contents

1.	GEN	ERAL INFORMATION	
	1.1.	Product Description	
	1.2.	Related Submittal(s) / Grant (s)	
	1.3.	Test Methodology	
	1.4.	Test Facility	
	1.5.	Special Accessories	
	1.6.	Equipment Modifications	
2.	SYST	TEM TEST CONFIGURATION	8
	2.1.	EUT Configuration	8
	2.2.	EUT Exercise	8
	2.3.	Test Procedure	8
	2.4.	Configuration of Tested System	9
3.	SUM	MARY OF TEST RESULTS	11
4.	DES	CRIPTION OF TEST MODES	11
5.	CON	DUCTED EMISSION TEST	12
	5.1.	Standard Applicable	12
	5.2.	EUT Setup	12
	5.3.	Measurement Procedure	12
	5.4.	Measurement Equipment Used:	13
	5.5.	Measurement Result	13
6.	PEA]	K OUTPUT POWER MEASUREMENT	10
	6.1.	Standard Applicable	16
	6.2.	Measurement Procedure	17
	6.3.	Measurement Equipment Used:	17
	6.4.	Measurement Result	18
7.	6dB	Bandwidth	19
	7.1.	Standard Applicable	19
	7.2.	Measurement Procedure	19
	7.3.	Measurement Equipment Used:	19
	7.4.	Measurement Result	20
8.	100K	Hz BANDWIDTH OF BAND EDGES MEASUREMENT	23
	8.1.	Standard Applicable	23
	8.2.	Measurement Procedure	23
	8.3.	Measurement Equipment Used:	23
	8.4.	Measurement Result	23



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 5

9.	SURI	OUS RADIATED EMISSION TEST	31
	9.1.	Standard Applicable	31
	9.2.	EUT Setup	31
	9.3.	Measurement Procedure	31
	9.4.	Test SET-UP (Block Diagram of Configuration)	32
	9.5.	Measurement Equipment Used:	33
	9.6.	Field Strength Calculation	33
	9.7.	Measurement Result	33
10.	Peak	Power Spectral Density	61
	10.1.	Standard Applicable	
	10.2.	Measurement Procedure	61
	10.3.	Measurement Equipment Used:	61
	10.4.	Measurement Result	62
11.	ANTI	ENNA REQUIREMENT	65
	11.1.	Standard Applicable	65
	11.2.	. Antenna Connected Construction	65
PН	OTOG	GRPHS OF SET UP	66
		AL PHOTOGRPHS OF EUT	



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 6

1. GENERAL INFORMATION

1.1. Product Description

Product Name:	Rainbow			
Brand Name	E28			
Model Name:	R2811			
Model Difference:	N/A			
Danier Carrale	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter			
Power Supply	Model:	PSC05R-050, Supplier: SWITCHING POWER SUPPLY		
Software Version	P4			
Hardware Version	V1.5			

GSM:

Frequency Range and	GSM 850: 824MHz – 849MHz	33 dBm
Power	GSM 1900: 1850MHz –1910MHz	30 dBm
Type of Emission	300KGXW	
IMEI	N/A	

WLAN:

Frequency Range	2412 – 2462MHz
Channel number	11 channels
Rated Power	17 dBm
Modulation type	Direct Sequence Spread Spectrum, DBPSK(1Mbps),DQPSK(2Mbps),CCK(5.5/11Mbps)
Transition Speed:	1/2/5.5/11Mbps;
Antenna Designation	Metal Antenna, 1.6 dBi max.

The EUT is compliance with IEEE 802.11 b Standard.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 7

1.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: <u>T6LR2811</u> filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4. Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and CISPR 22/EN 55022 requirements. Site No. 1(3 &10 meters) Registration Number: 94644, Both OATS and Anechoic chamber (3 meters) was accredited by CNLA (0513).

1.5. Special Accessories

Not available for this EUT intended for grant.

1.6. Equipment Modifications

Not available for this EUT intended for grant.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 8

SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.4-2003.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 9

2.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System (AC Power Line Conducted Emission)

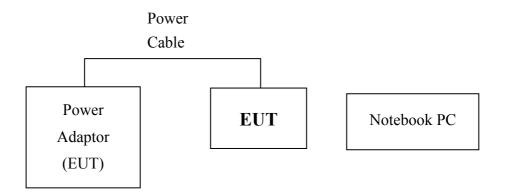
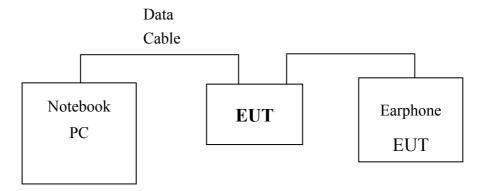


Fig. 2-2 Configuration of Tested System (Fixed channel)



Remote Side (on the corner)

CMU200

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company. 此報告是遵循本公司訂定之通用服務條款所製作發放。請注意此條款列印於背面,將本公司之義務,免責,管轄權皆明確規範之。此報告結果除非另有說明僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。

 SGS Taiwan Ltd.
 No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路 134 號台灣檢驗科技股份有限公司
 t (886-2) 2299-3939
 f (886-2) 2298-2698
 www.sgs.com.tw



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 10

Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.	Data Cable	Power Cord
1.	Notebook PC	IBM	T42	N/A	N/A	Un-shielded	Notebook PC

Table 2-2 Support Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.	Data Cable	Power Cord
1.	Communica- tion Tester	R&S	CMU200	N/A	102189	N/A	N/A



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 11

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)	AC Power Line Conducted Emission	Compliant
§15.247(b) (3),(4)(c)	Peak Output Power	Compliant
§15.247(a)(2)	6dB Bandwidth	Compliant
§15.247(d)	100 KHz Bandwidth Of Frequency Band Edges	Compliant
§15.247(d)	Spurious Emission	Compliant
§15.247(e)	Peak Power Density	Compliant
§15.203	Antenna Requirement	Compliant

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Test program was used to control the EUT for staying in continuous transmitting mode.

Channel low (2412MHz) · mid (2437MHz) and high (2462MHz) with 11Mbps data rate are chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for transmitter at channel Low, Mid and High the worst case E2 mode was reported.

The field strength of co-located spurious radiation emission was measured as worst case of EUT at E2 position at WLAN channel lowest and highest with GSM 850 at channel lowest and highest modes were reported.

The field strength of co-located spurious radiation emission was measured as worst case of EUT at E2 position at WLAN channel lowest and highest with GSM 1900 at channel Low mode were reported.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 12

CONDUCTED EMISSION TEST

5.1. Standard Applicable

According to §15.207. frequency within 150KHz to 30MHz shall not exceed the Limit table as below.

Frequency range		mits (uV)
MHz	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Note

5.2. EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2003.
- 2. The EUT was plug-in the AC/DC Power adapter. The host system was placed on the center of the back edge on the test table. The peripherals was placed on the side of the host PC system.
 - 3. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 4. The spacing between the peripherals was 10 centimeters. External I/O cables were draped along the edge of the test table and bundle when necessary.
- 5. The host system was connected with 110Vac/60Hz power source.

5.3. Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- **3.** Repeat above procedures until all frequency measured were complete.

^{1.} The lower limit shall apply at the transition frequencies

^{2.} The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 13

5.4. Measurement Equipment Used:

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
EMC Analyzer	НР	8594EM	3624A00203	09/02/2005	09/03/2006	
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2005	06/10/2006	
Transient Limiter	НР	11947A	3107A02062	09/02/2005	09/03/2006	
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2005	12/30/2006	
LISN	Rolf-Heine	NNB-2/16Z	99013	12/24/2005	12/23/2006	
Coaxial Cables	N/A	No. 3, 4	N/A	12/01/2005	12/01/2206	

5.5. Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

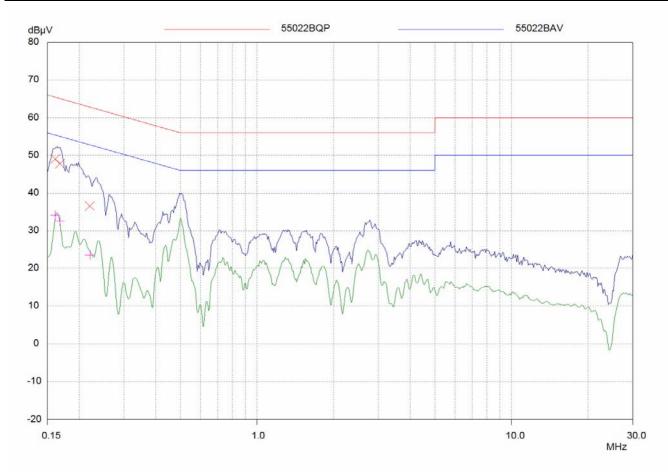


Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 14

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode	Normal Operation ,GSM + WLAN	Test Date	May 25, 2006
Temperature	22 ℃	Test By	Jathy
Humidity	59 %	Pol	Line



Frequency	QP Level	QP Limit	QP Delta
MHz	dΒμV	dΒμV	dB
0.16115	49.06	65.40	16.34
0.1677	47.80	65.07	17.27
0.21988	36.53	62.82	26.29
Frequency	AV Level	AV Limit	AV Delta
MHz	dΒμV	dΒμV	dB
0.16115	34.17	55.40	21.23
0.1677	32.51	55.07	22.56
0.21988	23.41	52.82	29.41

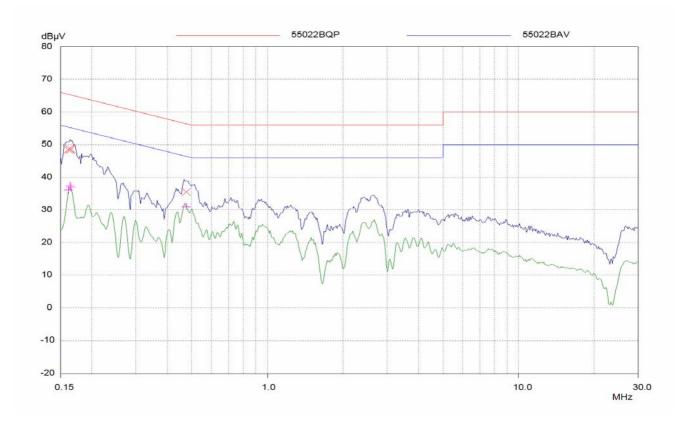


Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 15

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode	Normal Operation ,GSM + WLAN	Test Date	May 25, 2006
Temperature	22 ℃	Test By	Jathy
Humidity	59 %	Pol	Neutral



Frequency	QP Level	QP Limit	QP Delta
MHz	dΒμV	dΒμV	dB
0.16115	48.52	65.40	16.88
0.16374	48.68	65.27	16.59
0.16505	48.48	65.21	16.73
0.47628	35.56	56.40	20.84
120000000000000000000000000000000000000	Natural Control of	444-54-53	
Frequency	AV Level	AV Limit	AV Delta
MHz	dΒμV	dΒμV	dB
0.16115	36.16	55.40	19.24
0.16374	37.39	55.27	17.88
0.16505	36.98	55.21	18.23
0.47628	30.98	46.40	15.42



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 16

PEAK OUTPUT POWER MEASUREMENT

6.1. Standard Applicable

According to §15.247(a)(2), (b)

- (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods),
- (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

the maximum conducted output power is the highest total transmit power occurring in any mode.

- (c) Operation with directional antenna gains greater than 6 dBi.
- (1) Fixed point-to-point operation:
- (i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.
- (ii) Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 17

6.2. Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.
- 3. Record the max. reading.
- 4. Repeat above procedures until all frequency measured were complete.

6.3. Measurement Equipment Used:

	Conducted Emission Test Site											
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.								
Power Meter	Anritsu	ML2487A	6K00002070	06/24/2005	06/23/2006							
Power Sensor	wer Sensor Anritsu		31431	06/24/2005	06/23/2006							
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A							
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2005	10/06/2006							
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2005	10/06/2006							
Splitter	Agilent	Power Biviber	51818	01/05/2006	01/04/2007							



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 18

6.4. Measurement Result

СН	Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Output Power (dBm)	Limit (dBm)	Result
LOW	2412.00	16.66	0.00	16.66	30	PASS
MID	2437.00	16.40	0.00	16.40	30	PASS
HIGH	2462.00	15.96	0.00	15.96	30	PASS

The data was offseted 11dB.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 19

7. 6dB Bandwidth

7.1. Standard Applicable

According to §15.247(a)(2), Systems using digital modulation techniques may operate in the 902 - 928 MHz,2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

7.2. Measurement Procedure

- 1.Place the EUT on the table and set it in transmitting mode.
- 2.Remove the antenna from the EUT and then connect a low loss RF cable from the 3.antenna port to the spectrum analyzer.
- 3.Set the spectrum analyzer as RBW=100KHz, VBW = RBW, Span=20MHz, Sweep=auto
- 4. Mark the peak frequency and –6dB (upper and lower) frequency.
- 5. Repeat above procedures until all frequency measured were complete.

7.3. Measurement Equipment Used:

Conducted Emission Test Site												
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.								
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007							
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006							
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A							
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2005	10/06/2006							
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2005	10/06/2006							
Splitter	Agilent	11636B	51818	01/05/2006	01/04/2007							



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 20

7.4. Measurement Result

СН	Bandwidth (MHz)	Limit Bandwidth (KHz)	Result
2412	10.679	> 500	PASS
2437	10.655	> 500	PASS
2462	10.368	> 500	PASS

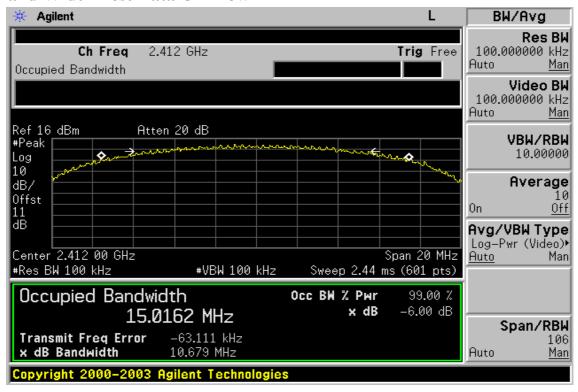


Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

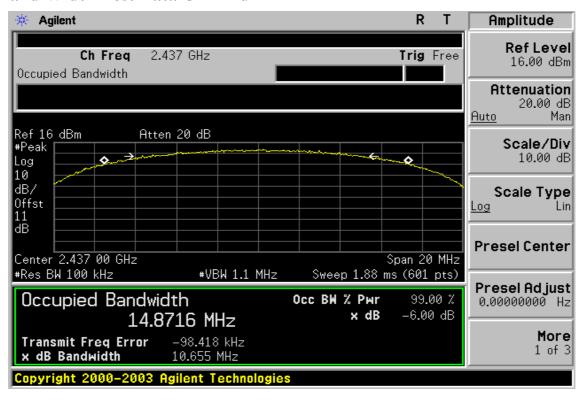
Page: 21

802.11b

6dB Band Width Test Data CH-Low



6dB Band Width Test Data CH-Mid





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 22

6dB Band Width Test Data CH-High





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 23

8. 100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

8.1. Standard Applicable

According to §15.247(c), in any 100 KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

8.2. Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set center frequency of spectrum analyzer = operating frequency.
- 4. Set the spectrum analyzer as RBW=100KHz, VBW=300KHz, Span=50MHz, Sweep = auto
- 5. Mark Peak, 2.390GHz and 2.4835GHz and record the max. level.
- 6. Repeat above procedures until all frequency measured were complete.

8.3. Measurement Equipment Used:

	Conducted Emission Test Site											
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.							
TYPE		NUMBER	NUMBER	CAL.								
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007							
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006							
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A							
Attenuator	Mini-Circult	BW-S10W5	BW-S10W5 N/A		10/06/2006							
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2005	10/06/2006							
Splitter	Agilent	11636B	51818	01/05/2006	01/04/2007							

8.4. Measurement Result

Refer to attach spectrum analyzer data chart.

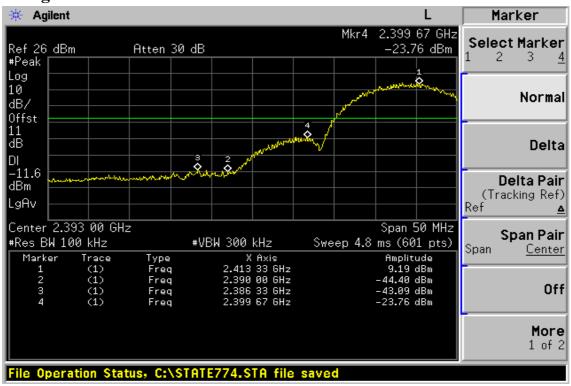


Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 24

802.11b

Band Edges Test Data CH-Low



Band Edges Test Data CH-High





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 25

Radiated Emission:

Operation Mode TX CH Low Test Date May 25, 2006

Fundamental Frequency 2412 MHz Test By Alex Temperature 25 $^{\circ}$ C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dBuV/m	(dB)	
2385.45	44.78		-3.49	41.29		74.00	54.00	-12.71	Peak
2390.00	42.86		-3.40	39.46		74.00	54.00	-14.54	Peak
Operation			CH Low				est Date	May 25,	2006
Fundamen	tai Freque	2	2 MHz				est By	Alex	
Temperatu	ıre	25 °	С			P	ol	Hor.	
Humidity		65 %	, 0						

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2386.35	51.43		-3.49	47.94		74.00	54.00	-6.06	Peak
2390.00	48.91		-3.40	45.51		74.00	54.00	-8.49	Peak

- (1) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 26

Radiated Emission:

Operation Mode TX CH High Test Date May 25, 2006 Fundamental Frequency 2462 MHz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ial FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)(dBuV/m)	(dB)	
2483.50	37.74		-3.04	34.70		74.00	54.00	-19.30	Peak
2486.95	41.06		-3.04	38.02		74.00	54.00	-15.98	Peak
Operation			CH High				est Date	May 25,	2006
Fundamen	1	2	2 MHz				est By	Alex	
Temperatu	ıre	25 °	C			P	ol	Hor.	
Humidity		65 %	0						

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2483.50	42.28		-3.04	39.24		74.00	54.00	-14.76	Peak
2486.95	44.18		-2.98	41.20		74.00	54.00	-12.80	Peak

- (1) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 27

Radiated Emission: Co-Located

Operation Mode TX CH Low + GSM850 CH low Test Date Jun. 21, 2006

Fundamental Frequency 2412 MHz +824.2MHz Test By Alex Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2386.30	41.01		-3.43	37.58		74.00	54.00	-16.42	Peak
2390.00	40.64		-3.40	37.24		74.00	54.00	-16.76	Peak
Operation Fundamen				- GSM850 24.2MHz	CH low		est Date	Jun. 21, Alex	2006
Temperatu		25 °				Po	2	Hor.	
Humidity		65 %	, 0						

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2386.35	48.69		-3.49	45.20		74.00	54.00	-8.80	Peak
2390.00	50.08		-3.40	46.68		74.00	54.00	-7.32	Peak

- (1) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 28

Radiated Emission: Co-Located

Operation Mode TX CH Low + GSM1900 CH low Test Date May 25, 2006

Fundamental Frequency 2412 MHz +1850.2MHz Test By Alex Tmperature 25 $^{\circ}$ C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2385.45	45.66		-3.49	42.17		74.00	54.00	-11.83	Peak
2390.00	43.10		-3.40	39.70		74.00	54.00	-14.30	Peak
Operation				+ GSM1900			est Date	May 25,	2006
Fundamen	tal Freque	ncy 2412	2 MHz + 1	850.2MHz		Te	est By	Alex	
Temperatu	ire	25 °	C			Po	ol	Hor.	
Humidity		65 %	0						

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2386.35	51.33		-3.49	47.84		74.00	54.00	-6.16	Peak
2390.00	48.61		-3.40	45.21		74.00	54.00	-8.79	Peak

- (1) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 29

Radiated Emission: Co-Located

Operation Mode TX CH High +GSM850 CH High Test Date Jun. 21, 2006

Fundamental Frequency 2462 MHz +848.8MHz Test By Alex Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)((dBuV/m)	(dBuV/m	(dB)	
2483.50	38.70		-3.04	35.66		74.00	54.00	-18.34	Peak
2486.95	36.49		-3.04	33.45		74.00	54.00	-20.55	Peak
Operation			_		CH Highest		est Date	Jun. 21,	2006
Fundamen	tal Freque	ncy 2462	2 MHz -	+848.8MHz		T	est By	Alex	
Temperatu	ire	25 °	C			Pe	ol	Hor.	
Humidity		65 %	o						

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2483.50	43.06		-3.04	40.02		74.00	54.00	-13.98	Peak
2486.95	42.37		-2.98	39.39		74.00	54.00	-14.61	Peak

- (1) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 30

Radiated Emission: Co-Located

Operation Mode TX CH High +GSM1900 CH low Test Date May 25, 2006

Fundamental Frequency 2462 MHz + 1850.2MHz Test By Alex Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2483.50	37.54		-3.04	34.50		74.00	54.00	-19.50	Peak
2486.95	40.16		-3.04	37.12		74.00	54.00	-16.88	Peak
Operation			_	+GSM1900			est Date	May 25,	2006
Fundamen	tal Freque	ncy 2462	2 MHz + 1	1850.2MHz		16	est By	Alex	
Temperatu	ıre	25 °	C			Po	ol	Hor.	
Humidity		65 %	, 0						

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
,	2483.50	41.88		-3.04	38.84		74.00	54.00	-15.16	Peak
	2486.95	43.08		-2.98	40.10		74.00	54.00	-13.90	Peak

- (1) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 31

9. SURIOUS RADIATED EMISSION TEST

9.1. Standard Applicable

According to §15.247(c), all other emissions outside these bands shall not exceed the general radiated emission limits specified in §15.209(a). And according to §15.33(a)(1), for an intentional radiator op erates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

9.2. EUT Setup

- 1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
- 2. The EUT was put in the front of the test table. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The spacing between the peripherals was 10 centimeters.
- 4. External I/O cables were draped along the edge of the test table and bundle when necessary.

9.3. Measurement Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until all frequency measured were complete.

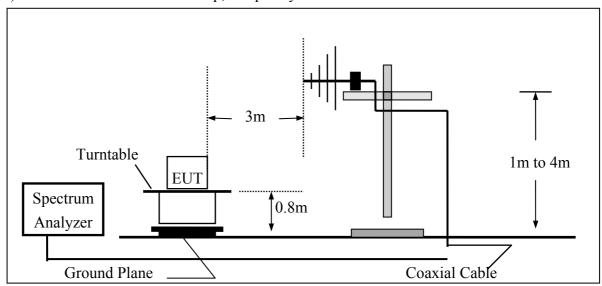


Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

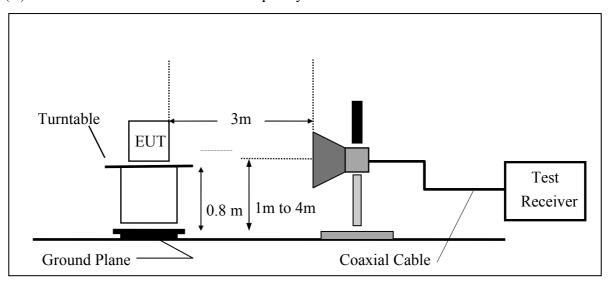
Page: 32

9.4. Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 33

9.5. Measurement Equipment Used:

	966 Chamber										
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.						
TYPE		NUMBER	NUMBER	CAL.							
Spectrum Ana- lyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007						
Spectrum Analyzer	Agilent	E7405A	US41160416	08/27/2005	08/26/2006						
Bilog Antenna	SCHWAZBECK	VULB9160	152	06/03/2006	06/02/2007						
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2005	08/15/2006						
Horn antenna	Schwarzbeck	BBHA 9170	184/185	07/04/2005	07/03/2006						
Pre-Amplifier	HP	8447D	2944A09469	07/19/2005	07/18/2006						
Pre-Amplifier	HP	8449B	3008A00578	02/26/2006	02/25/2007						
Turn Table	HD	DT420	N/A	N.C.R	N.C.R						
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R						
Controller	HD	HD100	N/A	N.C.R	N.C.R						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	10/09/2005	10/08/2006						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2005	10/08/2006						
Site NSA	SGS	966 chamber	N/A	11/17/2005	11/16/2006						

9.6. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

9.7. Measurement Result

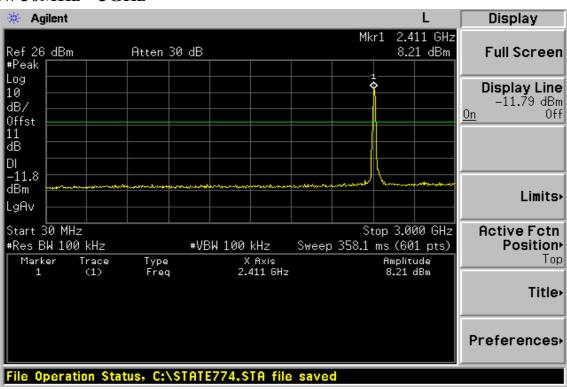
Refer to attach tabular data sheets.



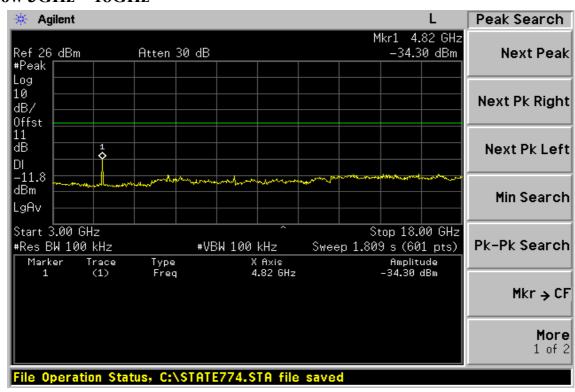
Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 34

Conducted Spurious Emission Measurement Result Ch Low 30MHz - 3GHz



Ch Low 3GHz - 18GHz

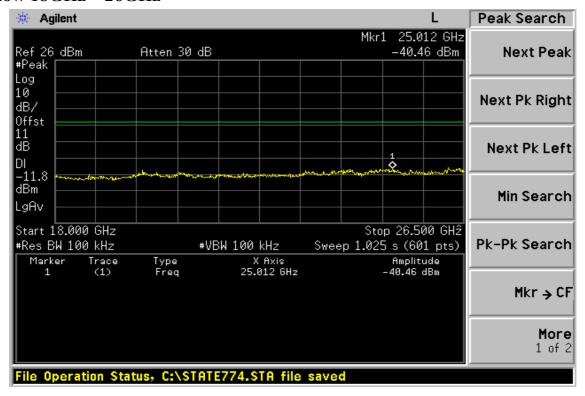




Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 35

Ch Low 18GHz - 26GHz

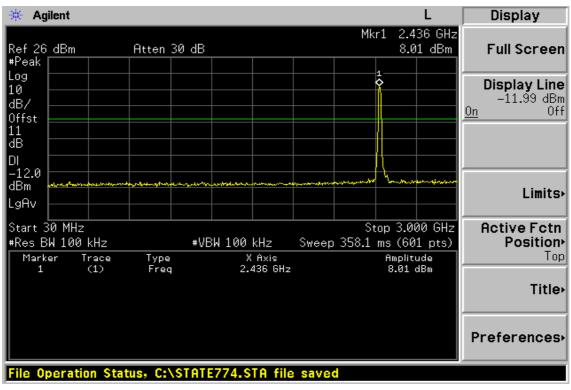




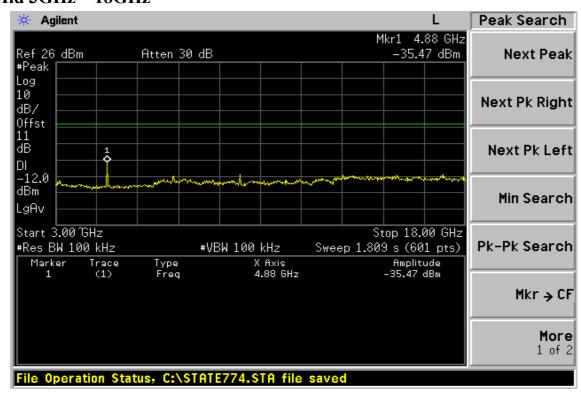
Report No.: ER/2006/50009 **Issue Date: Jun. 21, 2006**

Page: 36

Ch Mid 30MHz - 3GHz



Ch Mid 3GHz – 18GHz

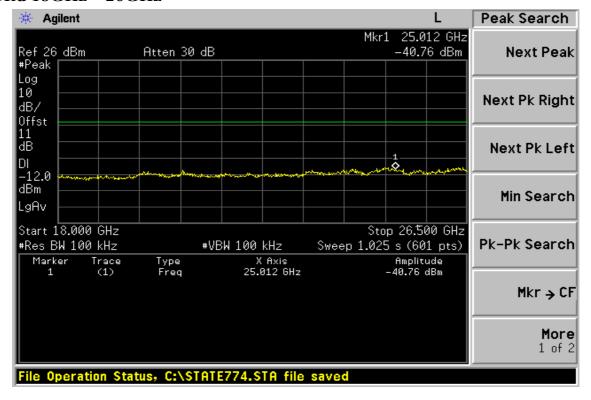




Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 37

Ch Mid 18GHz – 26GHz

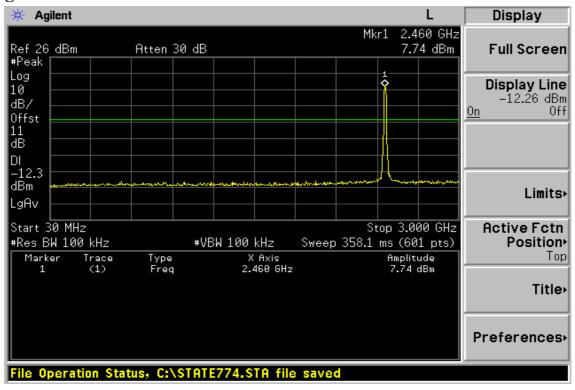




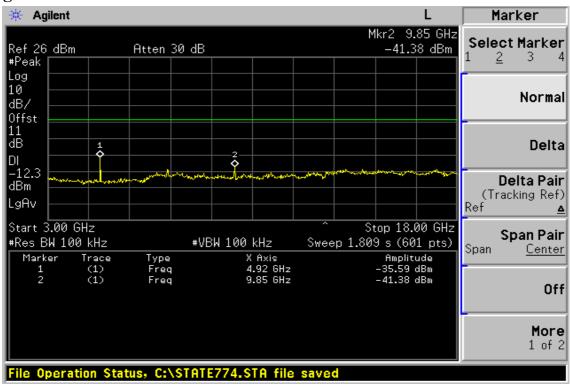
Report No.: ER/2006/50009 **Issue Date: Jun. 21, 2006**

Page: 38

Ch High 30MHz – 3GHz



Ch High 3GHz – 18GHz

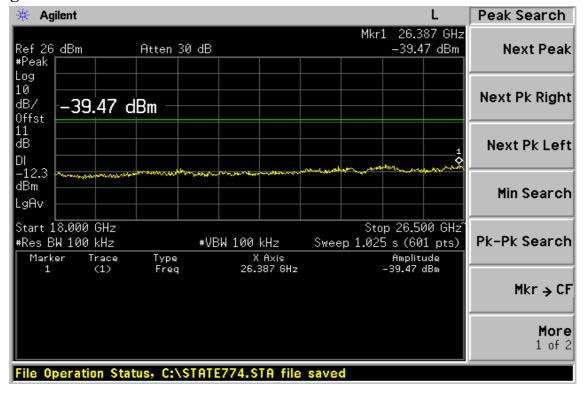




Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 39

Ch High 18GHz – 26GHz





Report No.: ER/2006/50009 **Issue Date: Jun. 21, 2006**

Page: 40

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode 802.11b TX CH Low Test Date May 25, 2006

Fundamental Frequency 2412MHz Test By Alex Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Mode		Reading	Factor	Actual FS	Limit3m	Safe Margin	
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
36.78	V	Peak	43.42	-14.93	28.49	40.00	-11.51	
61.04	V	Peak	42.82	-14.83	27.99	40.00	-12.01	
140.58	V	Peak	45.31	-13.85	31.46	43.50	-12.04	
400.54	V	Peak	40.01	-10.58	29.43	46.00	-16.57	
455.83	V	Peak	39.63	-9.72	29.91	46.00	-16.09	
599.39	V	Peak	37.49	-7.64	29.85	46.00	-16.15	
33.88	Н	Peak	46.50	-15.12	31.38	40.00	-8.62	
56.19	Н	Peak	44.90	-14.95	29.95	40.00	-10.05	
143.49	Н	Peak	44.24	-13.38	30.86	43.50	-12.64	
400.54	Н	Peak	38.42	-10.58	27.84	46.00	-18.16	
596.48	Н	Peak	40.10	-7.68	32.42	46.00	-13.58	
623.64	Н	Peak	42.58	-7.10	35.48	46.00	-10.52	

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2006/50009 **Issue Date: Jun. 21, 2006**

Page: 41

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode 802.11b TX CH Mid Test Date May 25, 2006

Fundamental Frequency 2437MHz Test By Alex Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
36.79	V	Peak	45.55	-14.93	30.62	40.00	-9.38
56.19	V	Peak	46.29	-14.95	31.34	40.00	-8.66
145.43	V	Peak	40.55	-13.58	26.97	43.50	-16.53
232.73	V	Peak	37.18	-15.76	21.42	46.00	-24.58
400.54	V	Peak	37.02	-10.58	26.44	46.00	-19.56
455.83	V	Peak	39.12	-9.72	29.40	46.00	-16.60
36.79	Н	Peak	46.18	-14.93	31.25	40.00	-8.75
56.19	Н	Peak	45.00	-14.95	30.05	40.00	-9.95
143.49	Н	Peak	41.33	-13.68	27.65	43.50	-15.85
400.54	Н	Peak	39.02	-10.58	28.44	46.00	-17.56
499.48	Н	Peak	37.89	-9.30	28.59	46.00	-17.41
623.64	H	Peak	42.02	-7.10	34.92	46.00	-11.08

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2006/50009 **Issue Date: Jun. 21, 2006**

Page: 42

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode 802.11b TX CH High Test Date May 25, 2006

Fundamental Frequency 2462MHz Test By Alex Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
61.04	V	Peak	41.40	-14.83	26.57	40.00	-13.43
75.59	V	Peak	43.25	-17.65	25.60	40.00	-14.40
140.58	V	Peak	43.31	-13.85	29.46	43.50	-14.04
153.19	V	Peak	41.87	-13.67	28.20	43.50	-15.30
400.54	V	Peak	38.51	-10.58	27.93	46.00	-18.07
455.83	V	Peak	40.09	-9.72	30.37	46.00	-15.63
33.88	Н	Peak	45.16	-15.12	30.04	40.00	-9.96
56.19	Н	Peak	43.86	-14.95	28.91	40.00	-11.09
143.49	Н	Peak	42.42	-13.68	28.74	43.50	-14.76
191.99	Н	Peak	40.53	-16.08	24.45	43.50	-19.05
499.48	Н	Peak	38.25	-9.30	28.95	46.00	-17.05
623.64	Н	Peak	40.47	-7.10	33.37	46.00	-12.63

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 43

Radiated Spurious Emission Measurement Result (below 1GHz) Co-Located

Operation Mode 802.11b TX CH Low + GSM 850 CH low Test Date Jun. 21, 2006

Fundamental Frequency 2412MHz + 824.2MHz Test By Alex Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
65.89	V	Peak	43.04	-15.35	27.69	40.00	-12.31
130.88	V	Peak	47.40	-14.62	32.78	43.50	-10.72
259.89	V	Peak	53.06	-14.95	38.11	46.00	-7.89
390.84	V	Peak	41.46	-10.85	30.61	46.00	-15.39
480.08	V	Peak	40.91	-9.49	31.42	46.00	-14.58
652.74	V	Peak	37.50	-6.44	31.06	46.00	-14.94
65.89	Н	Peak	39.29	-15.35	23.94	40.00	-16.06
126.03	Н	Peak	43.37	-15.03	28.34	43.50	-15.16
259.89	Н	Peak	46.11	-14.95	31.16	46.00	-14.84
274.44	Н	Peak	43.64	-14.38	29.26	46.00	-16.74
465.53	Н	Peak	41.10	-9.63	31.47	46.00	-14.53
625.58	Н	Peak	40.67	-7.06	33.61	46.00	-12.39

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 44

Radiated Spurious Emission Measurement Result (below 1GHz) Co-Located

Operation Mode 802.11b TX CH High + GSM 850 CH High Test Date Jun. 21, 2006

Fundamental Frequency 2462MHz + 848.8Mhz Test By Alex Pol Temperature Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
65.89	V	Peak	46.01	-15.35	30.66	40.00	-9.34
130.88	V	Peak	48.66	-14.62	34.04	43.50	-9.46
259.89	V	Peak	53.08	-14.95	38.13	46.00	-7.87
324.88	V	Peak	40.33	-12.66	27.67	46.00	-18.33
480.08	V	Peak	41.59	-9.49	32.10	46.00	-13.90
586.78	V	Peak	39.93	-7.85	32.08	46.00	-13.92
65.89	Н	Peak	42.67	-15.35	27.32	40.00	-12.68
126.03	Н	Peak	43.73	-15.03	28.70	43.50	-14.80
143.49	Н	Peak	40.35	-13.68	26.67	43.50	-16.83
259.89	Н	Peak	48.48	-14.95	33.53	46.00	-12.47
400.54	Н	Peak	40.01	-10.58	29.43	46.00	-16.57
480.08	Н	Peak	40.64	-9.49	31.15	46.00	-14.85

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 45

Radiated Spurious Emission Measurement Result (below 1GHz) Co-Located

Operation Mode 802.11b TX CH Low + GSM 1900 CH low Test Date May 25, 2006

Fundamental Frequency 2412MHz + 1850.2MHz Test By Alex Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Fre q.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3 m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	49.12	-14.91	34.21	40.00	-5.79
193.93	V	Peak	43.95	-16.23	27.72	43.50	-15.78
247.28	V	Peak	47.00	-15.41	31.59	46.00	-14.41
298.69	V	Peak	44.39	-13.43	30.96	46.00	-15.04
402.48	V	Peak	40.23	-10.55	29.68	46.00	-16.32
528.58	V	Peak	40.83	-8.83	32.00	46.00	-14.00
33.88	Н	Peak	46.45	-15.12	31.33	40.00	-8.67
182.29	Н	Peak	44.07	-15.35	28.72	43.50	-14.78
259.89	Н	Peak	50.48	-14.95	35.53	46.00	-10.47
313.24	Н	Peak	46.08	-13.00	33.08	46.00	-12.92
480.08	Н	Peak	41.96	-9.49	32.47	46.00	-13.53
528.58	Н	Peak	44.48	-8.83	35.65	46.00	-10.35

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 46

Radiated Spurious Emission Measurement Result (below 1GHz) Co-Located

Operation Mode 802.11b TX CH High + GSM 1900 CH low Test Date May 25, 2006

Fundamental Frequency 2462MHz +1909.8MHz Test By Alex Temperature Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
33.88	V	Peak	46.12	-15.12	31.00	40.00	-9.00
67.83	V	Peak	43.33	-15.88	27.45	40.00	-12.55
247.28	V	Peak	47.42	-15.41	32.01	46.00	-13.99
298.69	V	Peak	44.45	-13.43	31.02	46.00	-14.98
402.48	V	Peak	40.42	-10.55	29.87	46.00	-16.13
528.58	V	Peak	41.93	-8.83	33.10	46.00	-12.90
65.89	Н	Peak	38.70	-15.35	23.35	40.00	-16.65
193.93	Н	Peak	46.45	-16.23	30.22	43.50	-13.28
259.89	Н	Peak	49.05	-14.95	34.10	46.00	-11.90
313.24	Н	Peak	7.26	-13.00	-5.74	46.00	-51.74
363.68	Н	Peak	44.24	-11.58	32.66	46.00	-13.34
468.44	Н	Peak	41.53	-9.60	31.93	46.00	-14.07

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

f (886-2) 2298-2698



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 47

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b TX CH Low Test Date May 25, 2006

Fundamental Frequency 2412MHz Test By Alex Temperature 25 $^{\circ}$ C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq. (MHz)	Reading (dBuV)	Reading (dBuV)	Ant./CL CF(dB)	Peak (dBuV/m)	AV (dBuV/m)	Limit (dBuV/m)	Limit (dBuV/m)	Margin (dB)	
1045.5	49.32		-9.25	40.07		74.00	54.00	-13.93	Peak
1143.0	48.98		-8.50	40.48		74.00	54.00	-13.52	Peak
4824.0	38.98		3.01	41.99		74.00	54.00	-12.01	Peak
7236.0	42.84		9.32	52.16		74.00	54.00	-1.84	Peak
9648.0									
12060.0									
14472.0									
16884.0									
19296.0									
21708.0									
24120.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 48

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b TX CH Low Test Date May 25, 2006

Fundamental Frequency 2412MHz Temperature 2412MHz Test By Alex Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1110.5	46.39		-9.02	37.37		74.00	54.00	-16.63	Peak
4824.0	46.66		3.01	49.67		74.00	54.00	-4.33	Peak
7236.0	44.20	42.63	9.32	53.52	51.95	74.00	54.00	-2.05	Peak
9648.0									
12060.0									
14472.0									
16884.0									
19296.0									
21708.0									
24120.0									

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 49

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b TX CH Mid Test Date May 25, 2006

Fundamental Frequency 2437MHz Test By Alex Temperature 25 $^{\circ}$ C Pol Ver

Humidity 65 %

	Peak	AV		Actu	al FS	Peak	AV		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1045.5	47.94		-9.25	38.69		74.00	54.00	-15.31	Peak
1110.5	49.82		2.00	51.82		74.00	54.00	-2.18	Peak
4874.0	39.54		3.12	42.66		74.00	54.00	-11.34	Peak
7311.0	40.53		9.41	49.94		74.00	54.00	-4.06	Peak
9748.0									
12185.0									
14622.0									
17059.0									
19496.0									
21933.0									
24370.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 50

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b TX CH Mid Test Date May 25, 2006

Fundamental Frequency 2437MHz Test By Alex Temperature 25 $^{\circ}$ C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1110.5	47.26		-9.02	38.24		74.00	54.00	-15.76	Peak
1175.5	45.30		-8.68	36.62		74.00	54.00	-17.38	Peak
4874.0	44.62		3.18	47.80		74.00	54.00	-6.20	Peak
7311.0	42.65		9.46	52.11		74.00	54.00	-1.89	Peak
9748.0									
12185.0									
14622.0									
17059.0									
19496.0									
21933.0									
24370.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 51

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b TX CH High Test Date May 25, 2006

Fundamental Frequency 2462 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Ver

Humidity 65 %

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Fr	eq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(M	Hz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
101	3.0	49.11		-9.38	39.73		74.00	54.00	-14.27	Peak
111	0.5	47.29		-9.02	38.27		74.00	54.00	-15.73	Peak
492	24.0	37.40		3.18	40.58		74.00	54.00	-13.42	Peak
738	86.0	40.34		9.55	49.89		74.00	54.00	-4.11	Peak
984	8.0									
123	10.0									
147	72.0									
1723	34.0									
1969	96.0									
221	58.0									
2462	20.0									

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 52

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b TX CH High Test Date May 25, 2006

Fundamental Frequency 2462 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1045.5	46.09		-9.25	36.84		74.00	54.00	-17.16	Peak
1110.5	47.22		-9.02	38.20		74.00	54.00	-15.80	Peak
4924.0	43.09		3.31	46.40		74.00	54.00	-7.60	Peak
7386.0	41.20		9.55	50.75		74.00	54.00	-3.25	Peak
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency °
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 53

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH Low + GSM 850 CH low Test Date Jun. 21, 2006

Fundamental Frequency 2412MHz + 824.2MHz Test By Alex Temperature 25 °C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1338.0	42.77		-7.95	34.82		74.00	54.00	-19.18	Peak
1643.5	45.51		-6.60	38.91		74.00	54.00	-15.09	Peak
4824.0	41.05		-3.34	50.37		74.00	54.00	-3.63	Peak
7236.0									
9648.0									
12060.0									
14472.0									
16884.0									
19296.0									
21708.0									
24120.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 54

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH Low + GSM 850 CH low Test Date Jun. 21, 2006

Fundamental Frequency 2412 MHz + 824.2 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Hor

Humidity 65 %

	Peak	AV		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1565.5	43.71		-6.94	36.77		74.00	54.00	-17.23	Peak
4824.0	42.52		-3.34	39.18		74.00	54.00	-14.82	Peak
7236.0	43.32		9.32	52.64		74.00	54.00	-1.36	Peak
9648.0									
12060.0									
14472.0									
16884.0									
19296.0									
21708.0									
24120.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency °
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 55

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH High + GSM 850 CH High Test Date Jun. 21, 2006

Fundamental Frequency 2462 MHz + 848.8 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1695.5	45.22		-6.39	38.83		74.00	54.00	-15.17	Peak
2540.5	46.29		-3.12	50.37		74.00	54.00	-3.63	Peak
4924.0									
7386.0									
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 56

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH High + GSM 850 CH High Test Date Jun. 21, 2006

Fundamental Frequency 2462 MHz + 848.8 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1695.5	43.71		-6.94	36.77		74.00	54.00	-17.23	Peak
2540.5	42.52		-3.34	39.18		74.00	54.00	-14.82	Peak
4924.0	40.97		3.31	44.28		74.00	54.00	-9.72	Peak
7386.0	38.85		9.55	48.40		74.00	54.00	-5.60	Peak
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 57

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH Low + GSM 1900 CH low Test Date May 25, 2006

Fundamental Frequency 2412 MHz + 1850.2 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1315.0	49.15		-9.38	39.77		74.00	54.00	-14.23	Peak
4924.0	38.60		3.18	41.78		74.00	54.00	-12.22	Peak
7386.0	39.99		9.32	49.31		74.00	54.00	-4.69	Peak
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 58

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH Low + GSM 1900 CH low Test Date May 25, 2006

Fundamental Frequency 2412MHz +1850.2MHz Test By Alex Temperature 25 °C Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	AV	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1351.0	43.51		-9.38	34.13		74.00	54.00	-19.87	Peak
4924.0	38.60		3.18	41.78		74.00	54.00	-12.22	Peak
7386.0	39.96		9.32	49.28		74.00	54.00	-4.72	Peak
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 59

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH High + GSM 1900 CH low Test Date May 25, 2006

Fundamental Frequency 2462MHz +1850.2MHz Test By Alex Temperature 25 °C Pol Ver

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1315.0	49.32		-9.38	39.94		74.00	54.00	-14.06	Peak
4924.0	38.62		3.18	41.80		74.00	54.00	-12.20	Peak
7386.0	41.30		9.32	50.62		74.00	54.00	-3.38	Peak
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency \circ
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 60

Radiated Spurious Emission Measurement Result (above 1GHz) Co-Located

Operation Mode 802.11b TX CH High + GSM 1900 CH low Test Date May 25, 2006

Fundamental Frequency 2462 MHz + 1850.2 MHz Test By Alex Temperature $25 \, ^{\circ}\text{C}$ Pol Hor

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	_
1045.5	46.29		-9.25	37.04		74.00	54.00	-16.96	Peak
1110.5	47.02		-9.02	38.00		74.00	54.00	-16.00	Peak
4924.0	43.19		3.31	46.50		74.00	54.00	-7.50	Peak
7386.0	41.50		9.55	51.05		74.00	54.00	-2.95	Peak
9848.0									
12310.0									
14772.0									
17234.0									
19696.0									
22158.0									
24620.0									

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency °
- (2) Datas of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column \circ
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 61

10. Peak Power Spectral Density

10.1. Standard Applicable

According to §15.247(e) 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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

10.2. Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW = 3KHz, VBW = 3KHz, Span = 300KHz, Sweep=100s
- 4. Record the max. reading.
- 5. Repeat above procedures until all frequency measured were complete.

10.3. Measurement Equipment Used:

10.5. Weasurement Equipment Oscu.									
	Conducted Emission Test Site								
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007				
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006				
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A				
Attenuator	Mini-Circult	BW-S10W5	N/A	10/07/2005	10/06/2006				
Attenuator	Mini-Circult	BW-S6W5	N/A	10/07/2005	10/06/2006				
Splitter	Agilent	11636B	51818	01/05/2006	01/04/2007				



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 62

10.4. Measurement Result

802.11b

002.110				
СН	RF Power Density	Cable loss	RF Power Density	Maximum Limit
	Reading (dBm)	(dB)	Level (dBm)	(dBm)
Low	-3.33	0.00	-3.33	8
Mid	-3.57	0.00	-3.57	8
High	-3.43	0.00	-3.43	8

The data was offseted 11dB.

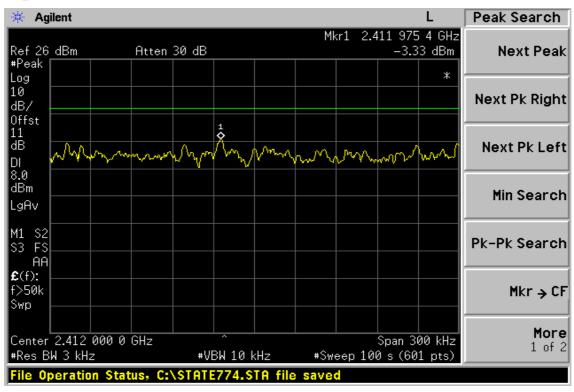


Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

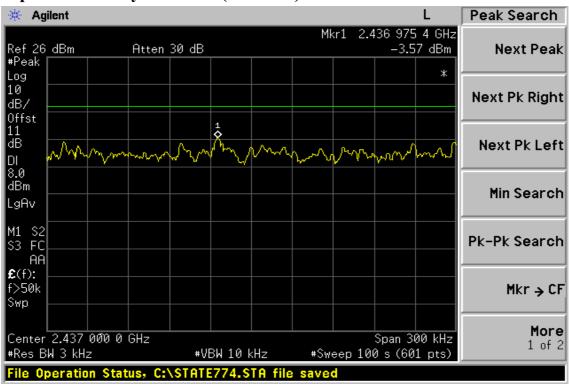
Page: 63

802.11b

Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)

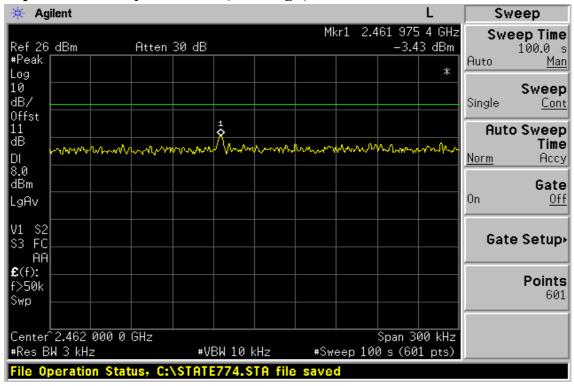




Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 64

Power Spectral Density Test Plot (CH-High)





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 65

11. ANTENNA REQUIREMENT

11.1. Standard Applicable

According to §15.203, Antenna requirement.

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. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

And according to §15.247(4)(1), system operating in the 2400-2483.5MHz bands that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

11.2. . Antenna Connected Construction

The directional gains of antenna used for transmitting is 1.6dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 66

APPENDIX 1

PHOTOGRPHS OF SET UP

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company. 此報告是遵循本公司訂定之通用服務條款所製作發放。請注意此條款列印於背面,將本公司之義務,発責,管轄權皆明確規範之。此報告結果除非另有說明僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。

 SGS Taiwan Ltd.
 No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路 134 號台灣檢驗科技股份有限公司

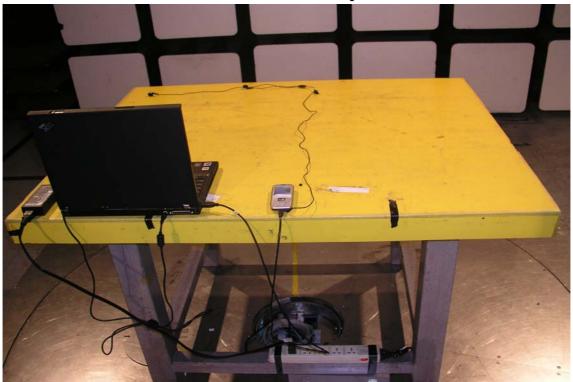
 t (886-2) 2299-3939
 f (886-2) 2298-2698
 www.sgs.com.tw



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 67

Radiated Emission Set up Photos



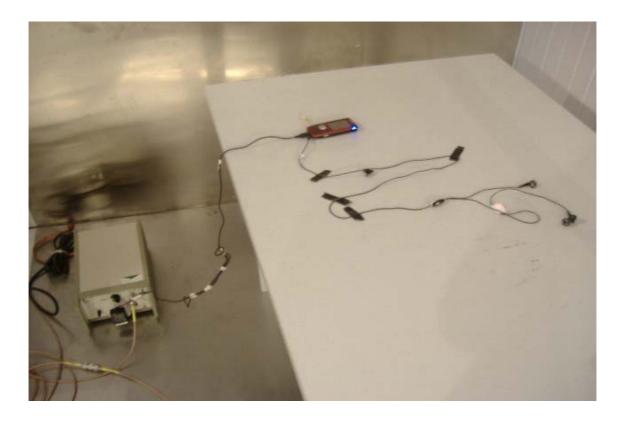




Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 68

Conducted Emission Setup Photos





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 69

APPENDIX 2

EXTERNAL PHOTOGRPHS OF EUT

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company. 此報告是遵循本公司訂定之通用服務條款所製作發放。請注意此條款列印於背面,將本公司之義務,発責,管轄權皆明確規範之。此報告結果除非另有說明僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。

 SGS Taiwan Ltd.
 No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路 134 號台灣檢驗科技股份有限公司

 t (886-2) 2299-3939
 f (886-2) 2298-2698
 www.sgs.com.tw



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 70

All of EUT



Front View of EUT





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 71

Back View of EUT



Side of EUT





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 72

Side of EUT



Side of EUT





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 73

Side of EUT





Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 74

Open View of EUT – 1



Open View of EUT – 2



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company. 此報告是遵循本公司訂定之通用服務條款所製作發放。請注意此條款列印於背面,將本公司之義務,発責,管 轄權皆明確規範之。此報告結果除非另有說明僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3939

f (886-2) 2298-2698

www.sas.com.tw



Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 75

Internal of EUT – 1



Internal of EUT – 2

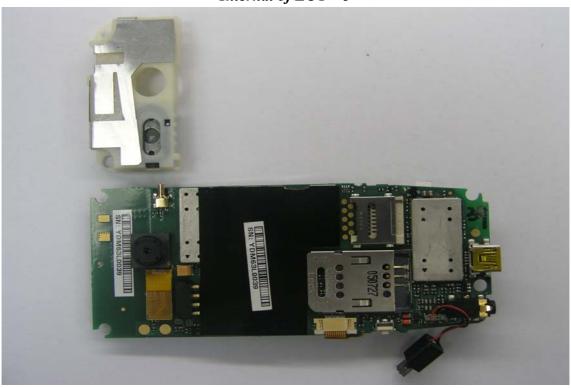




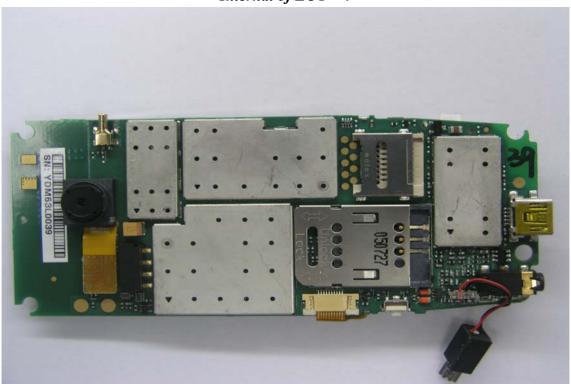
Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 76

Internal of EUT – 3



Internal of EUT – 4



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification, and Jurisdictional issued defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report cannot be reproduced, except in full, without prior written permission of the Company. 此報告是遵循本公司訂定之通用服務條款所製作發放。請注意此條款列印於背面,將本公司之義務,冤責,管 轄權皆明確規範之。此報告結果除非另有說明僅對檢驗之樣品負責。本報告未經本公司書面許可,不可部份複製。

SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3939

f (886-2) 2298-2698

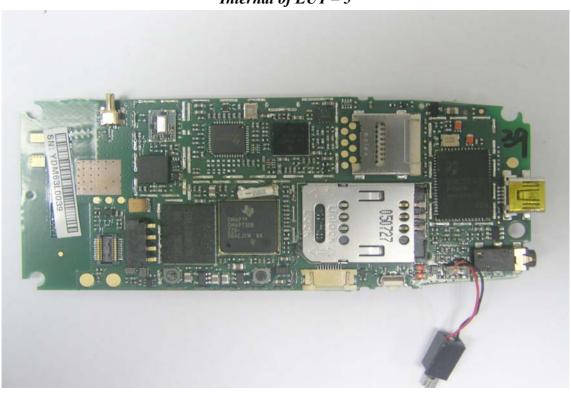
www.sas.com.tw



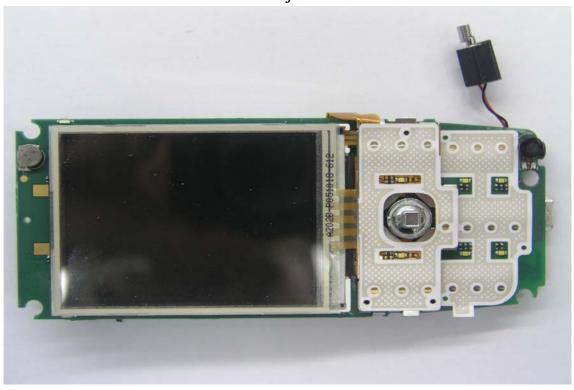
Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 77

Internal of EUT – 5



Internal of EUT – 6

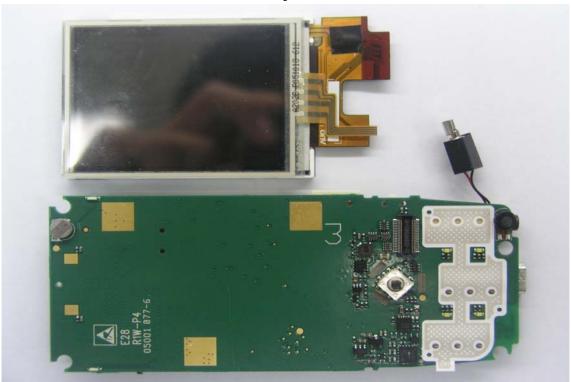




Report No.: ER/2006/50009 Issue Date: Jun. 21, 2006

Page: 78

Internal of EUT – 7



Internal of EUT – 8

