FCC 47 CFR PART 15 SUBPART C AND ANSI C63.4 : 2003

TEST REPORT

For

Fixed RFID Reader

Model : RF1B1AMUS

Trade Name : AMOS

Issued for

AMOS Technologies Inc.

1F, No. 19 Li Hsin Rd., Hsinchu Science Park, Hsinchu, Taiwan 30078, R.O.C.

Issued by

Compliance Certification Services Inc.
Hsinchu Lab.
Rm. 258, Bldg. 17, NO.195, Sec.4 Chung HsingRd.,
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	05/03/2008	Initial Issue	All Page 40	Jason Chang

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION

Applicant	：AMOS Technologies Inc.
Address	：1F, No. 19 Li Hsin Rd., Hsinchu Science Park, Hsinchu, Taiwan 30078, R.O.C.
Equipment Under Test	：Fixed RFID Reader
Model	：RF1B1AMUS
Trade Name	：AMOS
Tested Date	：January 08 ~ May 02, 2008

APPLICABLE STANDARD	
STANDARD	**TEST RESULT**
FCC Part 15 Subpart C:2006 AND ANSI C63.4:2003	No non-compliance noted

Approved by: ***Reviewed by:***

Jason Chang
Team Leader of Hsinchu Laboratory
Compliance Certification Services Inc.

Alan Fan
Team Leader of Hsinchu Laboratory
Compliance Certification Services Inc.

WE HEREBY CERTIFY THAT: The measurements shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable. We assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.

2. EUT DESCRIPTION

2.1 DESCRIPTION OF EUT & POWER

Product Name	Fixed RFID Reader
Model Number	RF1B1AMUS
Trade Name	AMOS
Frequency Range	902.00 MHz to 928.00 MHz
Transmit Power	11.5dBm
Channel Spacing	500 kHz
Channel Number	51 Channel
Air Data Rate	DB-ASK
Type of Modulation	Frequency Hopping Spread Spectrum / ASK
Frequency Selection	by software / firmware
Transmitter Classification	portable device
Antenna Type	Patch Antenna, Antenna Gain : -1.78dBi
Power Source	12VDC / 0.5A (For DC Power supply)
RF Exposure Evaluation	Since the EUT is classed portable device, and the maximum peak power is 11.5dBm (<13.6dBm), the MPE evaluation is not required and no SAR consideration applied.

Remark:

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

2. This submittal(s) (test report) is intended for FCC ID: VX3GC277631 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

3. For more details, please refer to the User's manual of the EUT.

3. DESCRIPTION OF TEST MODES

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low 902.5	
Middle 915.0	
High 927.5	

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 (200 3) and FCC CFR 47, 15.207, 15.209 and 15.247.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at Rm.258, Bldg.17, NO.195 , Sec. 4, Chung Hsing Rd., Chu-Tung Chen. Hsin-Chu, Taiwan 310 R.O.C.
The sites are constructed in conform ance with the requirem ents of ANSI C63.7, ANSI C63.4(2003) and CISPR Publication 22.

5.2 EQUIPMENT

Radiated em issions are m easured with one or m ore of the f ollowing types of linear ly polarized antennas: tuned dipol e, biconical, log periodic, bi -log, and/or ridged waveguide, horn. Spectrum analyzers with preselecto rs and quasi-peak detectors are used to perfor m radiated measurements.
Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.
Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.
All receiving equipm ent conforms to CI SPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5.3 LABORATORY ACCREDITATIONS LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by Taiwan Accreditation Foundation f or the sp ecific scope of accred itation under Lab Code: 0240 to perfor m Electrom agnetic Interference tests according to FCC PART 15 AND CISPR 22 requirem ents. No part of this re port m ay be use d to claim or im ply pr oduct endorsement by TAF or any agency of the Gove rnment. In addition, th e test facilities are listed with Federal Communications Commission (registration no: 90585 and 90584).

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA FCC		3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	90585, 90584
Japan VCCI		3/10 meter Open Area Test Sites to perform conducted/radiated measurements	R-1229/1189 C-1250/1294
Taiwan TAF		FCC Method-47 CFR Part 15 Subpart C,D,E CISPR 11, FCC METHOD-47 CFR Part 18, EN 55011, CNS 13803, CISPR 13, CNS 13439, FCC Method-47 CFR Part 15 Subpart B, CISPR 14-1, EN 55014-1, CNS 13783-1, EN 55015, CNS 14115, CISPR 22, EN 55022, VCCI CNS 13438, EN 61000-4-2/3/4/5/6/8/11	Testing Laboratory 0240
Taiwan BSMI		CNS 13803, CNS 13438, CNS 13439, CNS 13783-1, CNS 14115	SL2-IS-E-0002 SL2-IN-E-0002 SL2-A1-E-0002 SL2-R1-E-0002 SL2-R2-E-0002 SL2-L1-E-0002
Canada	Industry Canada	RSS-GEN Issue 2	IC 4417-1, IC-4417-2

** No part of this report may be used to claim or imply product endorsement by TAF or any agency of the US Government.*

6. CALIBRATION AND UNCERTAINTY

6.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

6.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 1000 MHz	+/- 3.2 dB
Radiated Emission, 1 to 26.5GHz	+/- 3.2 dB
Power Line Conducted Emission	+/- 2.1 dB

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

7. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	Notebook PC	COMPAQ	N800V	5Y33KSQZMOXV 1YR	DoC

No.	Signal cable descriptive
A	RS232 cable 1.2M

SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

1. Run AMOS_RFID program
2. Choice test mode.
3. Start test.

8. APPLICABLE LIMITS AND TEST RESULTS

8.1 20dB BANDWIDTH FOR HOPPING

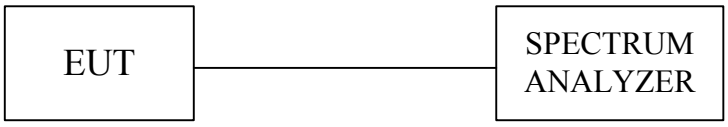
LIMIT

§15.247 (a) (1) (i)The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2007
AGILENT DC POWER SUPPLY	E3641A	MY40002337	June 24, 2007

TEST SETUP



TEST PROCEDURE

The 20dB band width was m easured with a sp ectrum analyzer connected to RF antenna connector(conducted m easurement) while E UT was operating in transm it mode at the appropriate center frequency. The analyzer cen ter f requency was set to the EUT carrie r frequency, using the analyzer. Display Line and Marker Delta functions, the 20dB band width of the emission was determined.

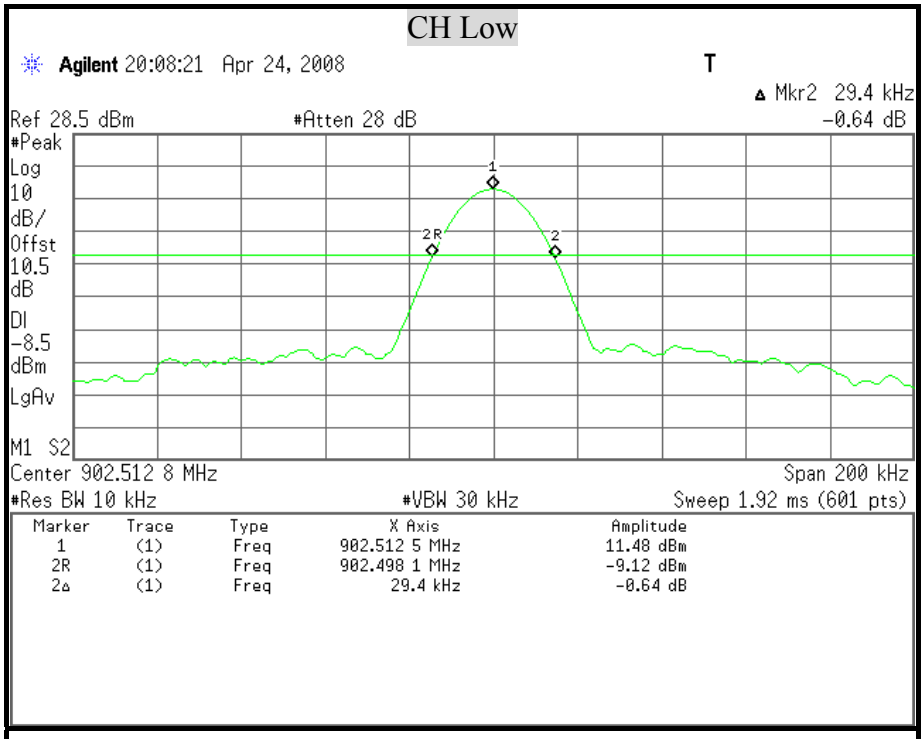
TEST RESULTS

No non-compliance noted

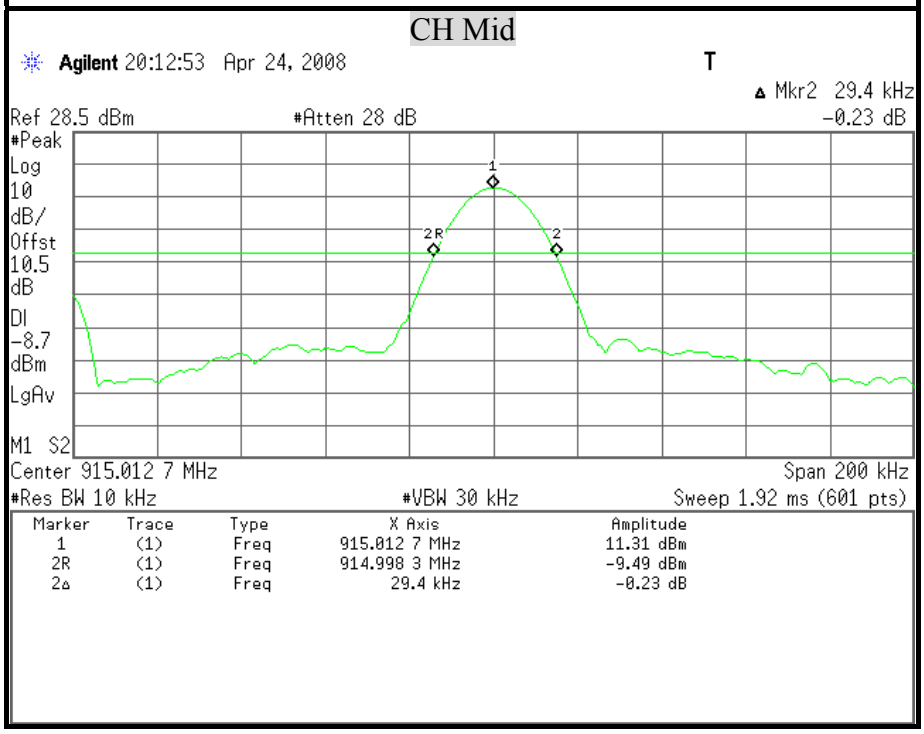
Channel	Channel Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)	Pass / Fail
Low 902.5		29.4	≦500	Pass
Middle 915.0		29.4	≦500	Pass
High 927.5		29.4	≦500	Pass

20dB BANDWIDTH

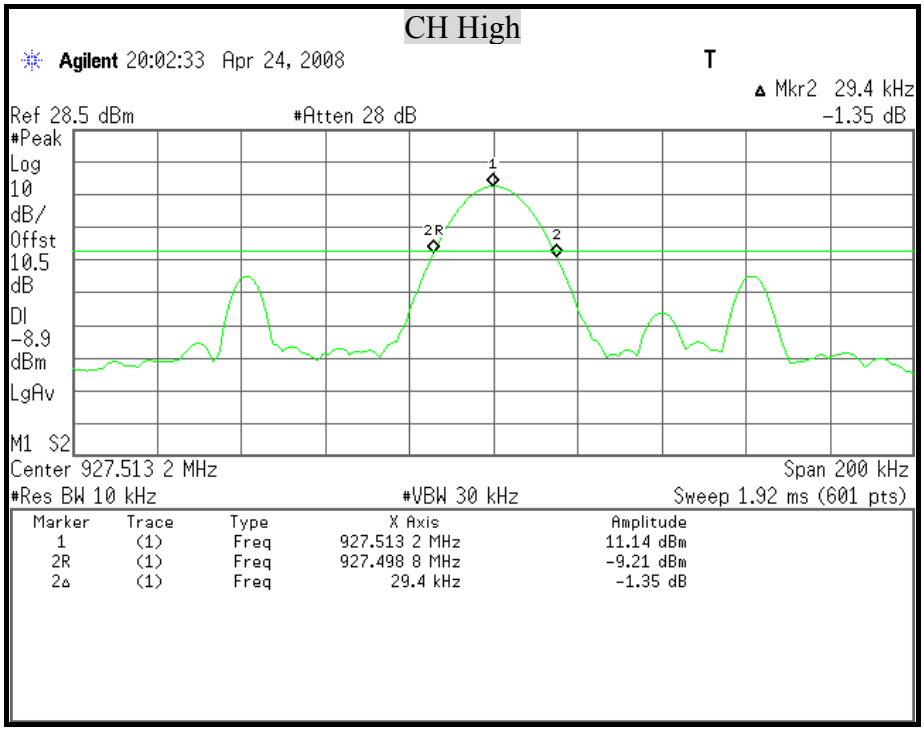
CH Low



CH Mid



CH High


Agilent 20:02:33 Apr 24, 2008
T
Mkr2 29.4 kHz
Ref 28.5 dBm
#Atten 28 dB
-1.35 dB
#Peak
Log
10
dB/
Offst
10.5
dB
Dl
-8.9
dBm
LgAv
M1 S2
1
2R
2
Center 927.513 2 MHz
Span 200 kHz
#Res BW 10 kHz
#VBW 30 kHz
Sweep 1.92 ms (601 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 927.513 2 MHz 11.14 dBm
2R (1) Freq 927.498 8 MHz -9.21 dBm
2Δ (1) Freq 29.4 kHz -1.35 dB

8.2 MAXIMUM PEAK OUTPUT POWER

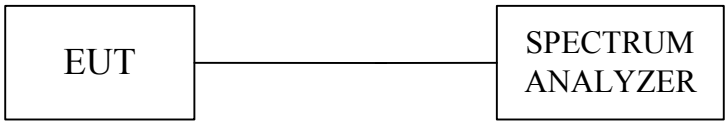
LIMIT

§15.247(b)(2) For frequency hopping system s operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for system s employing less than 50 hopping chan nels, but at least 25 hopping channels, as perm itted under parag raph (a)(1)(i) of this section.

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2007
AGILENT DC POWER SUPPLY	E3641A	MY40002337	June 24, 2007

TEST SETUP



TEST PROCEDURE

The RF power output was m easured with a Spect rum analyzer connected to the RF Antenna connector (conducted m easurement) while E UT was operating in transm it mode at the appropriate center frequ ency, A spectrum analyzer was used to record the shape of the transm it signal.

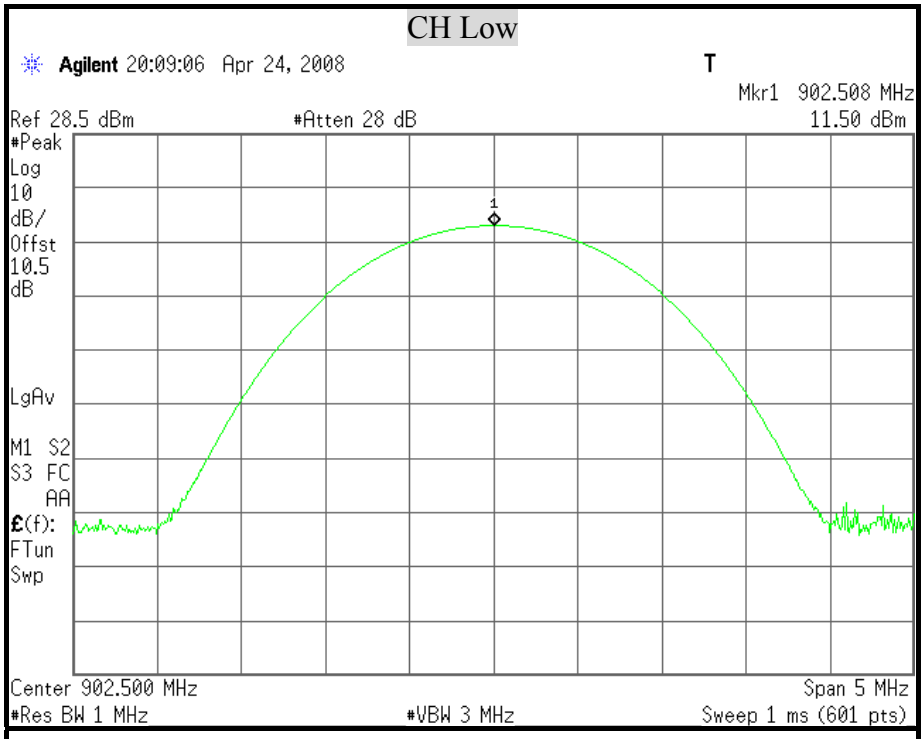
TEST RESULTS

No non-compliance noted

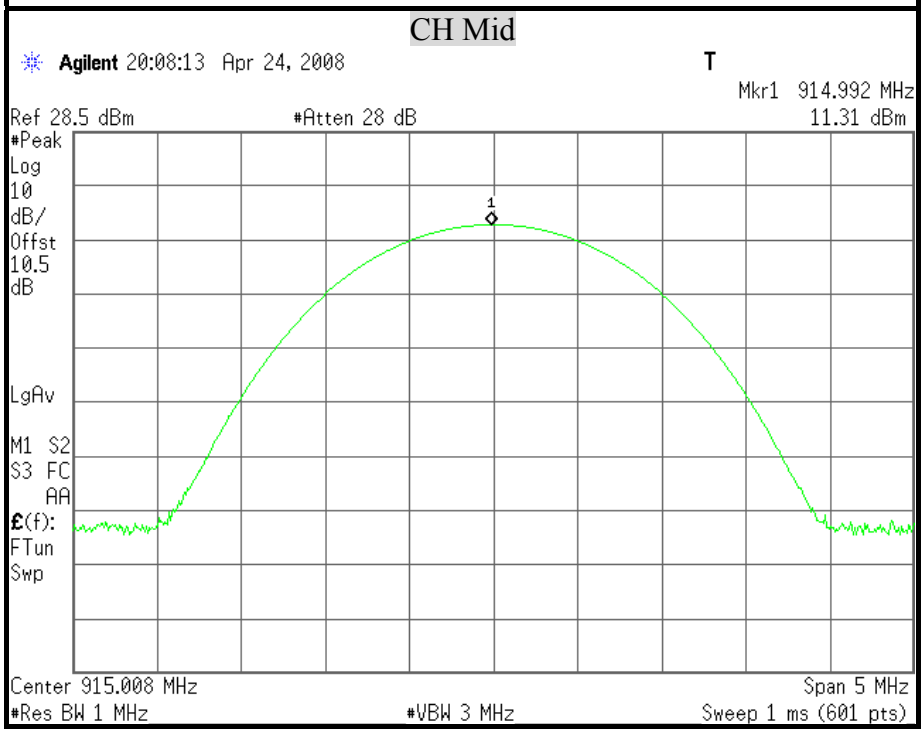
Channel	Channel Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass / Fail
Low	902.5	11.50	30	PASS
Middle	915.0	11.31	30	PASS
High	927.5	11.15	30	PASS

MAXIMUM PEAK OUTPUT POWER

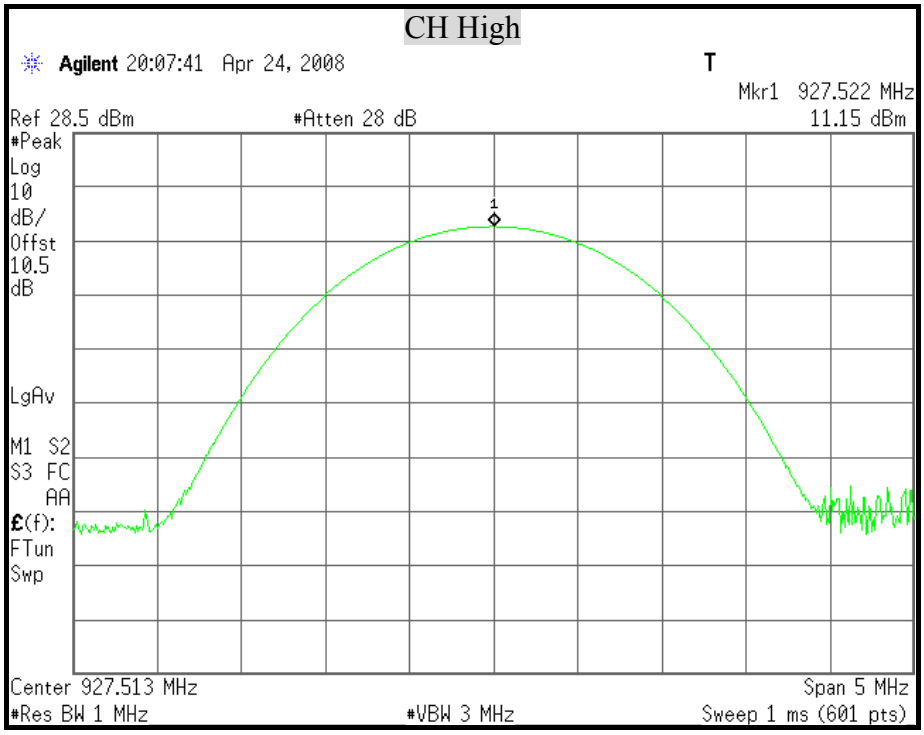
CH Low



CH Mid



CH High


Agilent 20:07:41 Apr 24, 2008
T
Mkr1 927.522 MHz
11.15 dBm
Ref 28.5 dBm
#Atten 28 dB
#Peak
Log
10
dB/
Offst
10.5
dB
LgAv
M1 S2
S3 FC
AA
£(f):
FTun
Swp
Center 927.513 MHz
Span 5 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)

8.3 HOPPING CHANNEL SEPARATION

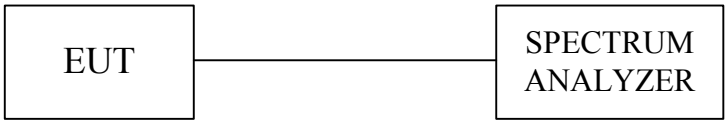
LIMIT

§15.247(a)(1) Frequency hopping systems shall have, hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies.

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2007
AGILENT DC POWER SUPPLY	E3641A	MY40002337	June 24, 2007

TEST SETUP



TEST PROCEDURE

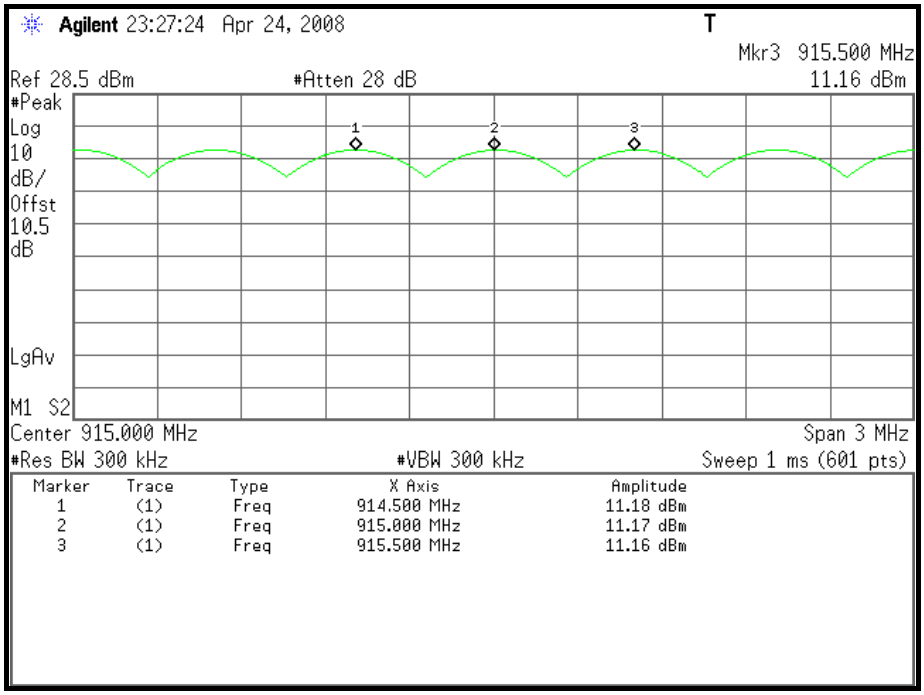
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in test setup without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the MaxHold function record the separation of adjacent channels.
4. Measure the frequency difference of these two adjacent channels by spectrum analyzer MARK function. And then plot the result on spectrum analyzer screen.
5. Repeat above procedures until all frequencies measured were complete.

TEST RESULTS

No non-compliance noted

Channel	Adjacent Hopping Channel Separation (kHz)	Minimum Bandwidth (kHz)	Result
915 MHz	500	29.4	PASS

HOPPING CHANNEL SEPARATION



8.4 NUMBER OF HOPPING FREQUENCY USED

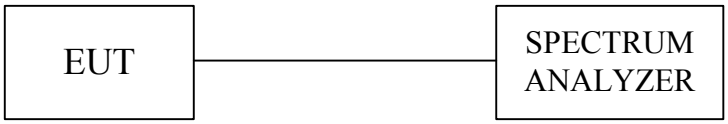
LIMIT

§15.247(a)(1)(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2007
AGILENT DC POWER SUPPLY	E3641A	MY40002337	June 24, 2007

TEST SETUP



TEST PROCEDURE

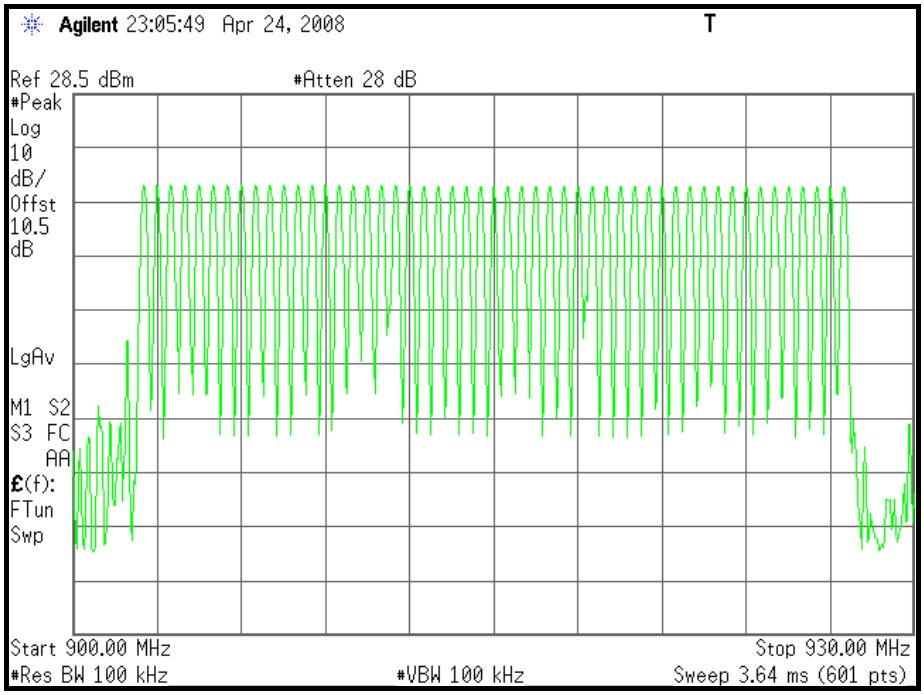
1 Check the calib ration of the m easuring in strument (spectrum analyzer) us ing either an internal calibrator or a known signal from an external generator.
2 Position the EUT as sh own in tes t setup wi thout connectio n to m easurement instrum ent. Turn on the EUT and connect its antenna term inal to measurement instrument via a low loss cable. Then set it to any one m easured frequency within its operating range and m ake sure the instrument is operated in its linear range.
3 Set the spectrum analyzer on MaxH old Mode , and then keep the EUT in hopping mode. Record all the signals from each channel until each one has been recorded.
4 Set the spectrum analyzer on View m ode and then p lot the result o n spectrum analyzer screen.
5 Repeat above procedures until all frequencies measured were complete.

TEST RESULTS

No non-compliance noted

Refer to the attached plot.
There are 51 hopping frequencies in a hopping sequence.

NUMBER OF HOPPING FREQUENCY USED



8.5 DWELL TIME ON EACH CHANNEL

LIMIT

§15.247(a)(1)(i) For frequency hopping system operating in the 902-928MHz band, the average time of occupancy on any frequency shall not be greater than 0.4 second swithin a 20 second period

TEST EQUIPMENT

Description & Manufacturer	Model No.	Serial No.	Date of Calibration
ROHDE & SCHWARZ SPECTRUM ANALYZER	FSEK30	835253/002	October 25, 2007
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2007
AGILENT DC POWER SUPPLY	E3641A	MY40002337	June 24, 2007

TEST SETUP

TEST PROCEDURE

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in test setup without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of spectrum analyzer on any frequency be measured and set spectrum analyzer to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency. And then plot the result with time difference of this time duration.
5. Repeat above procedures until all frequencies measured were complete.

The longer the payload is, the slower the hopping rate is.

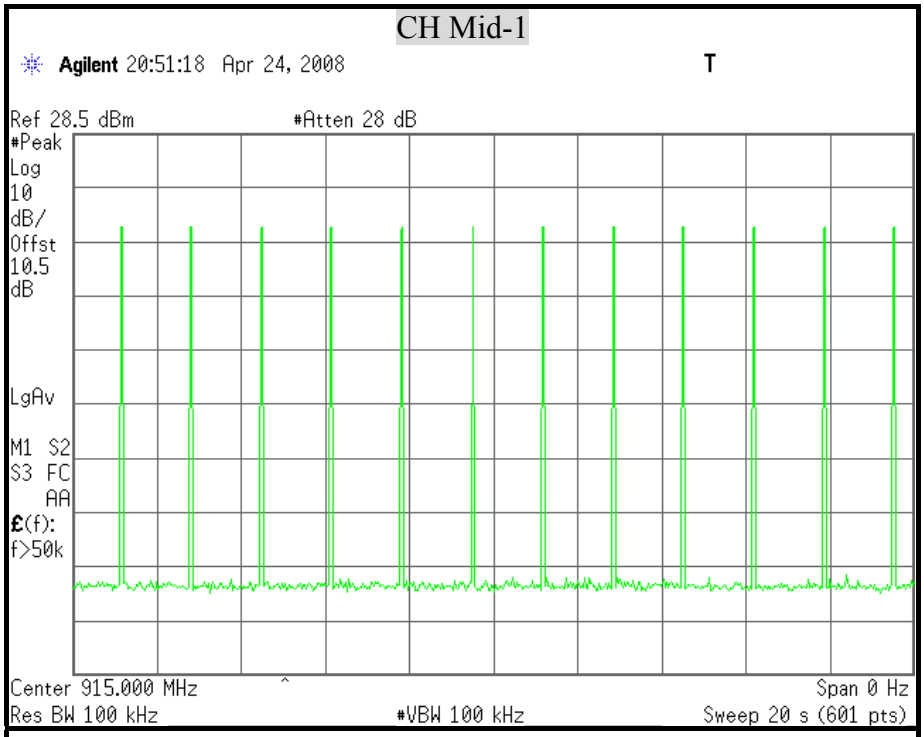
TEST RESULTS

Transmitting Frequency	Pulse width (ms)	Pulse Quantity Per 20 Sec	Dwell Time (sec.)	Limit (sec.)	Results
915 MHz	29.2 12		0.3504	0.4 PASS	

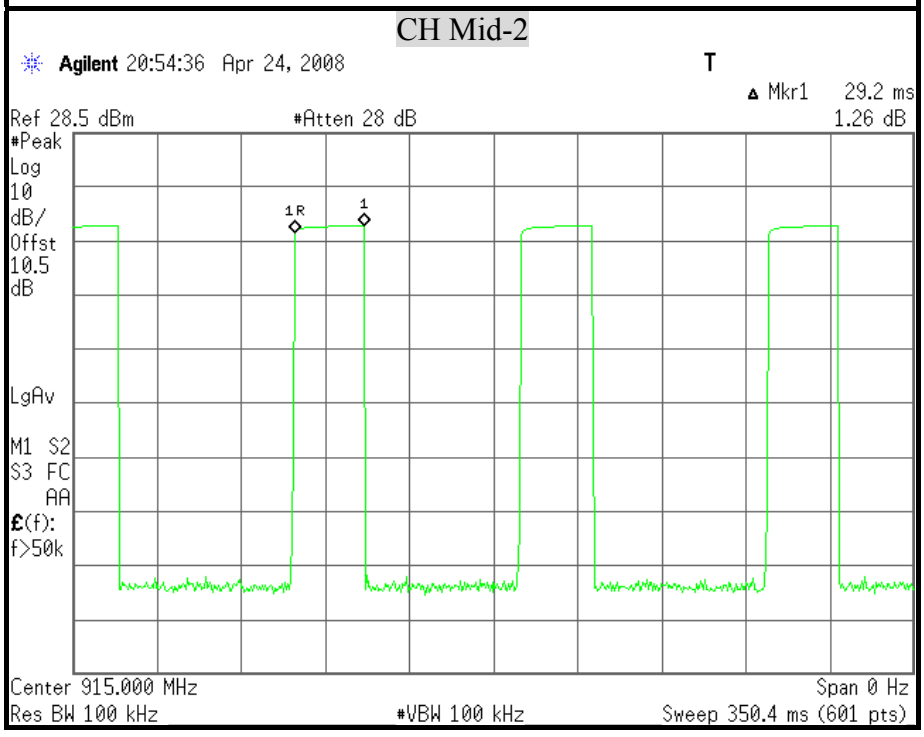
Please refer the following plots.

DWELL TIME ON EACH PAYLOAD

CH Mid-1



CH Mid-2



8.6 CONDUCTED SPURIOUS EMISSION

LIMITS

§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is 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 and that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. 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) (see § 15.205(c)).

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 10 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 902-928 MHz band.

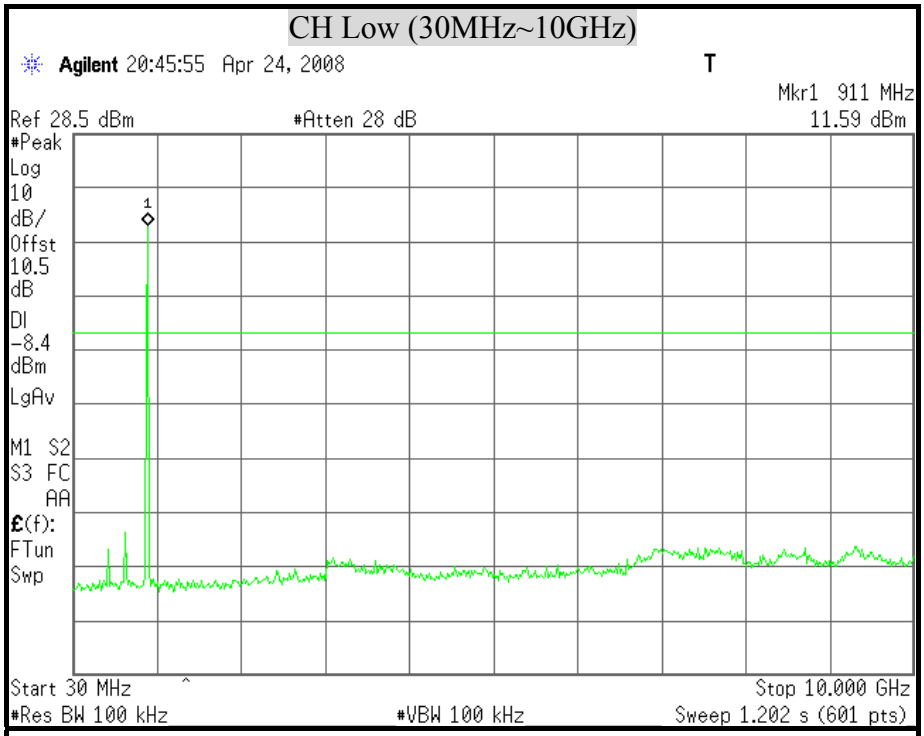
TEST RESULTS

No non-compliance noted

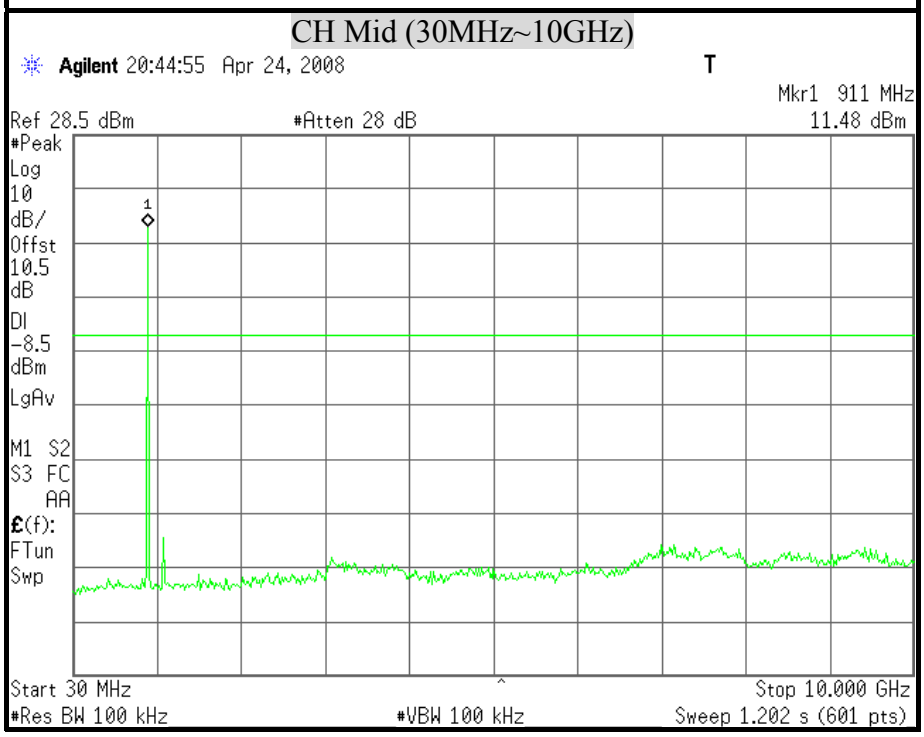
BAND EDGE COMPLIANCE OF RF CONDUCTED EMISSIONS

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

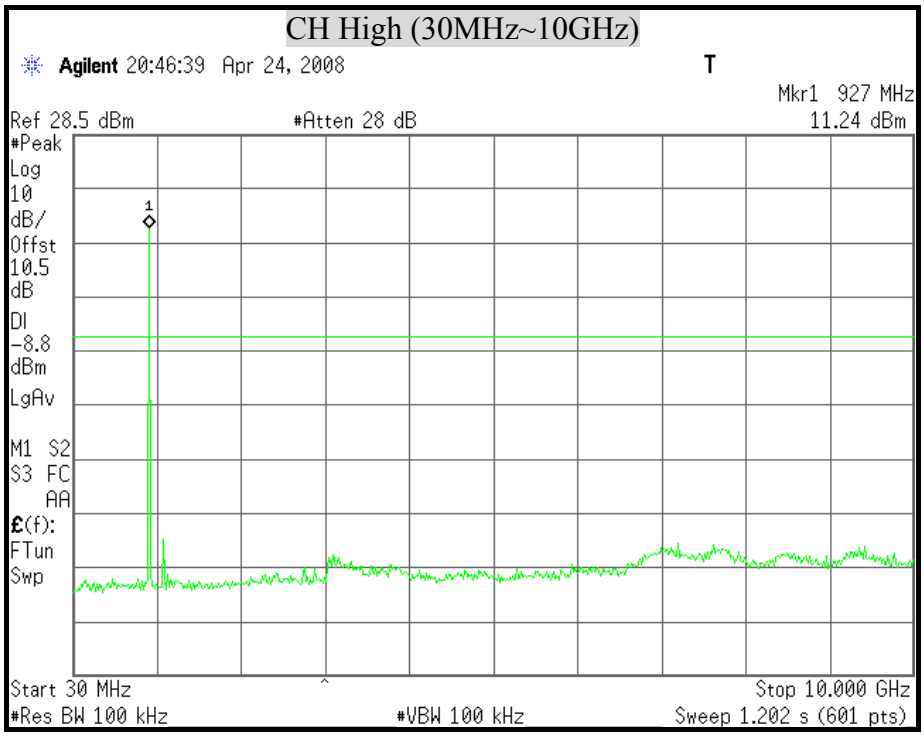
CH Low (30MHz~10GHz)



CH Mid (30MHz~10GHz)



CH High (30MHz~10GHz)



8.7 RADIATED EMISSIONS

8.7.1 TRANSMITTER RADIATED SUPURIOUS EMSSIONS

LIMITS

§ 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 – 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of e missions appearing within these frequency bands shall no t exceed th e limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, comp liance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be de monstrated based on the average value of th e m easured em issions. The provisions in S ection 15.35 apply to these measurements.

§ 15.209 (a) Except as provided elsewhere in this Subpart, the em issions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500 3	

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this S ection shall not be located in th e frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz, However, operation within th ese frequency bands is perm itted under other sections of this Part, e-g, Sections 15.231 and 15.241.

§ 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

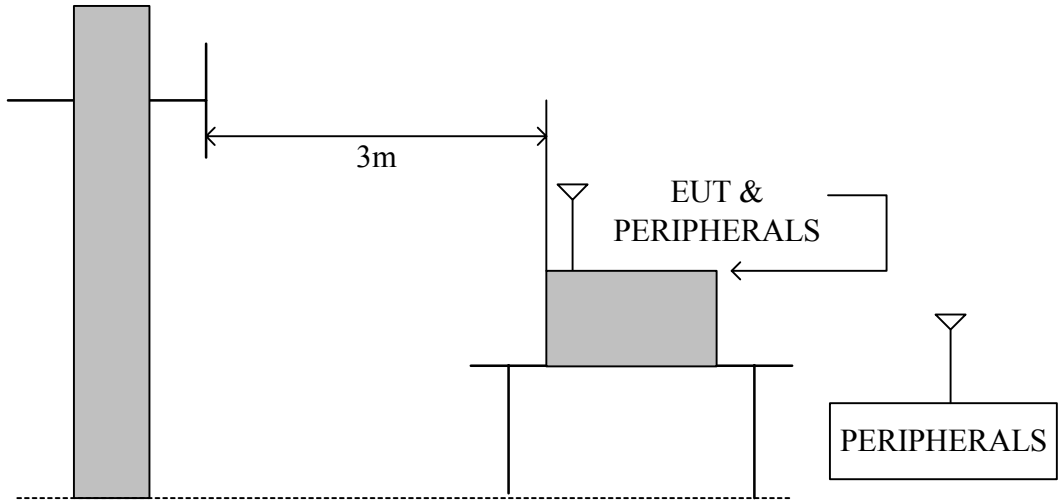
TEST EQUIPMENT

The following test equipment is utilized in making the measurements contained in this report.

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period	Remark
CHASE BILOG ANTENNA	CBL6112B	2817	December 21, 2007	1 Year	FINAL
R/S SPECTRUM ANALYZER	FSEK30 83	5253/002	October 25, 2007	1 Year	FINAL
AGILENT SPECTRUM ANALYZER	E4446A	MY433601.32	June 24, 2007	1 Year	FINAL
R/S EMI TEST RECEIVER	ESCS30 83	5418/008	October 16, 2007	1 Year	FINAL
OPEN SITE	----------	No.2	May 07, 2007	1 Year	FINAL
MIYAZAKI N TYPE COAXIAL CABLE	8D-FB	02	May 16, 2007	1 Year	FINAL
Horn Antenna	AH-118	10089	October 18, 2007	1 Year	FINAL
Horn Antenna	AH-840	03077	December 25, 2007	1 Year	FINAL
Agilent Pre-amplifier	8449B	3008A01471	December 20, 2007	1 Year	FINAL
AGILENT DC POWER SUPPLY	E3641A	MY40002337	June 24, 2007	1 Year	FINAL
HP Amplifier	8447D	2944A10052	December 24, 2007	1 Year	FINAL
HP High pass filter	84300/80038	002	CAL. ON USE	1 Year	FINAL
HP High pass filter	84300/80039	003	CAL. ON USE	1 Year	FINAL

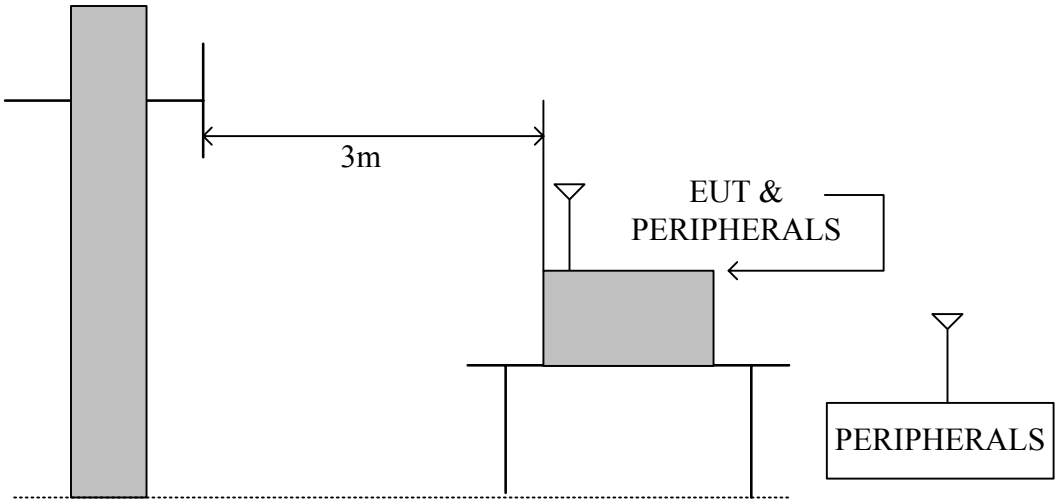
TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission from below 1GHz.



Antenna Elevation Variable

The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



Antenna Elevation Variable

TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. White measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. White measuring the radiated emission above 1GHz, the EUT was set 1 meters away from the interference-receiving antenna

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Note：

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

TEST RESULTS

No non-compliance noted

8.7.2 WORST-CASE RADIATED EMISSION BELOW 1 GHz

Product Name	Fixed RFID Reader	**Test Date**	2008/01/10
Model	RF1B1AMUS	**Test By**	Jerry Chang
Test Mode	Normal operating / Low	**TEMP & Humidity**	23℃ ,56%

Horizontal					
Frequency (MHz)	Reading (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBμV/m)	Margin (dB)
112.45	67.07	-35.78	31.29	43.50	-12.21
159.98	65.53	-32.43	33.10	43.50	-10.40
431.58	67.59	-29.43	38.16	46.00	-7.84
463.59	65.94	-28.86	37.08	46.00	-8.92
480.08	62.73	-28.67	34.06	46.00	-11.94
495.60	61.19	-28.40	32.79	46.00	-13.21
Vertical					
Frequency (MHz)	Reading (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBμV/m)	Margin (dB)
63.95	70.41	-35.29	35.11	40.00	-4.89
127.97	68.32	-34.34	33.98	43.50	-9.52
159.98	66.16	-32.43	33.73	43.50	-9.77
431.58	71.20	-29.43	41.77	46.00	-4.23
463.59	71.60	-28.86	42.74	46.00	-3.26
495.60	65.20	-28.40	36.80	46.00	-9.20

Remark:

1. Emission level (dBμV/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dBμV).

2. Margin (dB) = Emission level (dBuV/m) - Quasi-peak limit (dBuV/m).

Product Name	Fixed RFID Reader	**Test Date**	2008/01/10
Model	RF1B1AMUS	**Test By**	Jerry Chang
Test Mode	Normal operating / Mid	**TEMP & Humidity**	23℃,56%

Horizontal					
Frequency (MHz)	Reading (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBμV/m)	Margin (dB)
224.00	68.73	-34.39	34.34	46.00	-11.66
303.54	69.03	-31.06	37.97	46.00	-8.03
320.03	70.05	-30.98	39.06	46.00	-6.94
431.58	72.08	-29.43	42.65	46.00	-3.35
463.59	68.73	-28.86	39.88	46.00	-6.12
480.08	67.28	-28.67	38.62	46.00	-7.38
Vertical					
Frequency (MHz)	Reading (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBμV/m)	Margin (dB)
63.95	67.99	-35.29	32.70	40.00	-7.30
159.98	65.70	-32.43	33.27	43.50	-10.23
431.58	68.12	-29.43	38.68	46.00	-7.32
463.59	69.37	-28.86	40.52	46.00	-5.48
480.08	67.76	-28.67	39.09	46.00	-6.91
931.13	64.38	-21.84	42.54	46.00	-3.46

Remark:

1. Emission level (dBμV/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dBμV).

2. Margin (dB) = Emission level (dBuV/m) - Quasi-peak limit (dBuV/m).

Product Name	Fixed RFID Reader	**Test Date**	2008/01/10
Model	RF1B1AMUS	**Test By**	Jerry Chang
Test Mode	Normal operating / High	**TEMP & Humidity**	23℃ ,56%

Horizontal					
Frequency (MHz)	Reading (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBμV/m)	Margin (dB)
127.97	62.95	-34.34	28.61	43.50	-14.89
224.00	68.60	-34.39	34.21	46.00	-11.79
303.54	64.99	-31.06	33.93	46.00	-12.07
352.04	65.98	-30.87	35.11	46.00	-10.89
431.58	67.17	-29.43	37.74	46.00	-8.26
463.59	64.58	-28.86	35.72	46.00	-10.28
927.25	123.30	-21.87	101.43	----	carrier

Vertical					
Frequency (MHz)	Reading (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBμV/m)	Margin (dB)
63.95	69.63	-35.29	34.33	40.00	-5.67
159.98	61.82	-32.43	29.39	43.50	-14.11
224.00	63.78	-34.39	29.39	46.00	-16.61
352.04	62.55	-30.87	31.69	46.00	-14.31
431.58	62.50	-29.43	33.07	46.00	-12.93
463.59	63.14	-28.86	34.29	46.00	-11.71
927.25	122.23	-21.87	100.36	----	carrier

Remark:

1. Emission level (dBμV/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dBμV).

2. Margin (dB) = Emission level (dBuV/m) - Quasi-peak limit (dBuV/m).

8.7.3 TRANSMITTER RADIATED EMISSION ABOVE 1 GHz

Product Name	Fixed RFID Reader	**Test Date**	2008/01/08
Model Name	RF1B1AMUS	**Test By**	Jerry Chang
Test Mode	CH Low TX	**TEMP & Humidity**	23°C, 58%

Horizontal polarity									
Freq. (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Mark (P/Q/A)
2332.00	51.55	---	-9.61	41.95	---	74.00	54.00	-12.05	P
3286.00	51.55	---	-7.21	44.34	---	74.00	54.00	-9.66	P

Vertical polarity									
Freq. (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Mark (P/Q/A)
1801.00	52.81	---	-12.83	39.98	---	74.00	54.00	-14.02	P
2665.00	52.08	---	-8.14	43.93	---	74.00	54.00	-10.07	P

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Data 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. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
4. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	Fixed RFID Reader	**Test Date**	2008/01/08
Model Name	RF1B1AMUS	**Test By**	Jerry Chang
Test Mode	CH Middle TX	**TEMP & Humidity**	23°C, 58%

Horizontal polarity									
Freq. (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Mark (P/Q/A)
1828.00	53.48	---	-12.74	40.74	---	74.00	54.00	-13.26	P
2746.00	59.80	56.40	-8.06	51.74	48.34	74.00	54.00	-5.66	A

Vertical polarity									
Freq. (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Mark (P/Q/A)
1882.00	53.36	---	-12.57	40.79	---	74.00	54.00	-13.21	P
2548.00	51.91	---	-8.26	43.66	---	74.00	54.00	-10.34	P

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Data 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. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
4. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	Fixed RFID Reader	**Test Date**	2008/01/08
Model Name	RF1B1AMUS	**Test By**	Jerry Chang
Test Mode	CH High TX	**TEMP & Humidity**	23°C, 58%

Horizontal polarity									
Freq. (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Mark (P/Q/A)
1855.00	56.59	51.50	-12.66	43.94	38.84	74.00	54.00	-15.16	A
2782.00	59.11	---	-8.03	51.08	---	74.00	54.00	-2.92	P

Vertical polarity									
Freq. (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Mark (P/Q/A)
2782.00	58.86	54.62	-8.03	50.83	46.59	74.00	54.00	-7.41	A
4312.00	48.58	---	-4.81	43.77	---	74.00	54.00	-10.23	P

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Data 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. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
4. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)

8.8 POWERLINE CONDUCTED EMISSIONS

LIMITS

§ 15.207 (a) Except as shown in paragr aph (b) and (c) this s ection, for an inten tional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC pow er line on any frequency or fr equencies within the band 150 kHz to 30 MHz shall n ot exceed th e limits in the following table, as m easured using a 50 µH/50 ohms line impedance stabiliza tion network (LISN). Com pliance with the provisions of this paragraph shall be based on the m easurement of the radio frequency vo ltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

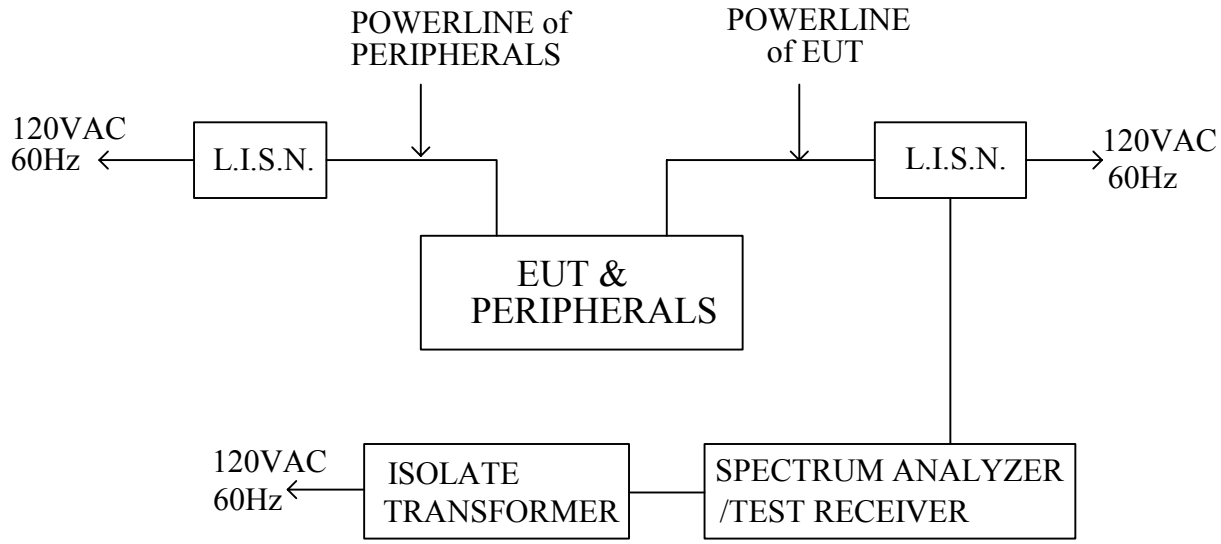
Frequency of Emission (MHz)	Conducted limit (dBµv)	
Quasi-peak		Average
0.15 - 0.5	66 to 56	56 to 46
0.5 - 5	56	46
5 - 30	60	50

TEST EQUIPMENT

The following test equipment is used during the conducted powerline tests：

Manufacturer or Type	Model No.	Serial No.	Date of Calibration	Calibration Period	Remark
SCHWARZBECK L.I.S.N	NSLK 8127	8127-465	July 09, 2007	1 Year	FINAL
SCHWARZBECK L.I.S.N	NSLK 8127	8127-473	October 04, 2007	1 Year	FINAL
R & S TEST RECEIVER	ESHS30	838550/003	January 23, 2008	1 Year	FINAL
KEENE SHIELDED ROOM	5983 No.1		N/A	N/A	FINAL
AGILENT DC POWER SUPPLY	E3641A	MY4000233 7	June 24, 2007	1 Year	FINAL
R & S PULSE LIMIT	ESH3-Z2 10117		September 17, 2007	1 Year	FINAL
BELDEN N TYPE COAXIAL CABLE	8268 M17/164	003	September 14, 2007	1 Year	FINAL

TEST SETUP



TEST PROCEDURE

The EUT is placed on a non-condu cting table 40 cm from the vertical ground plane and 80c m above the horizontal ground plane. The EU T IS CONFIGURED IN ACCORDANCE W ITH ANSI C63.4(2003).
The reso lution bandwid th is se t to 9 kHz for both quasi-peak de tection and av erage detectio n measurements.
Line conducted data is recorded for both NEUTRAL and LINE.

TEST RESULTS

No non-compliance noted

Sine this EUT is powered by Battery Powered, this test item is not applicable.

9. ANTENNA REQUIREMENT

9.1 STANDARD APPLICABLE

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

And according to FCC 47 CFR Section 15.247 (b), if trans mitting antennas of directional gain greater than 6dBi are used, the power shall be re duced by the am ount in dB that the directional gain of the antenna exceeds 6dBi.

9.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Patch an tenna. The maxim um gain of the antenna only -1.78dBi.