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FCC PART 15 SUBPART C and RSS-210TEST REPORT

FCC Part 15.249

Report Reference No.....:	**VITE090325001FC**
Compiled by (position+printed name+signature)..:	File administrators Andy Zhang
Supervised by (position+printed name+signature)..:	Test Engineer Andy Zhang
Approved by (position+printed name+signature)..:	Manager Tracy Qi
Date of issue.....:	Apr 03, 2009
Testing Laboratory Name .....:	**Shenzhen VITE Technology Co., Ltd**
Address.....:	Room 1702, Building 1A, Xi'an Guandi, 87 District Xin'an, Bao'an District, Shenzhen 518101, P.R. China
Applicant's name.....:	**ESP SYSTEMS, LLC.**
Address.....:	401 N.Tryon St-10th Floor, Charlotte, North Carolina 28202 United States
Test specification:	
Standard .....:	**FCC Part 15.249: Operation within the bands 920-928 MHz, 2400-2483.5 MHz, 5725-5850 MHz and 24.0 - 24.25 GHz.**
TRF Originator.....:	Shenzhen VITE Technology CO., Ltd
Master TRF.....:	Dated 2009-03

Test item description ..... :	SHUBLITE
Trade Mark .....:	/
Model/Type reference.....:	ESP-GEN2-05
Listed Models .....:	/
Serial Number .....:	/
Modulation .....:	FHSS
Work Frequency……..:	2405 MHz~2480 MHz
Antenna Type……:	Unique Reverse-Polarity screw thread connector
Result.....:	**Positive**

T E S T R E P O R T

Test Report No. :	VITE090325001FC	Apr 03, 2009 Date of issue

Equipment under Test	:	SHUBLITE
Model /Type	:	ESP-GEN2-05
Listed Models	:	/
Applicant	:	ESP SYSTEMS, LLC.
Address	:	401 N.Tryon St-10th Floor, Charlotte, North Carolina 28202 United States

Test Result according to the standards on page 4:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.249: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

2 . SUMMARY

2.1. General Remarks

Date of receipt of test sample : Mar 20, 2009

Testing commenced on : Mar 21, 2009

Testing concluded on : Mar 24, 2009

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage : o 120V / 60 Hz o 115V / 60Hz
o 12 V DC o 24 V DC
● Other (specified in blank below)

DC Power 45V from Ethernet (only power supply no data transferred)

2.3. Short description of the Equipment under Test (EUT)

Wireless Transmitter work at 2.4 GHz SHUBLITE

For more details, refer to the user's manual of the EUT.

Serial number: Prototype

2.4. EUT operation mode

The EUT has been tested under typical operating condition.

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

o - supplied by the manufacturer

o - supplied by the lab

o Power Cable	Length (m) :	/
	Shield :	/
	Detachable :	/
o Multimeter	Manufacturer :	/
	Model No. :	/

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

This submittal(s) (test report) is intended for FCC ID: **UGDESP-GEN2-05** filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

2.7. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Bontek Compliance Testing Laboratory Ltd
1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China

The sites are constructed in conformance with the requirements
of ANSI C63.7, ANSI C63.4 (2003) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

IC Registration No.: 126111

The 3m alternate test site of Bontek Compliance Testing Laboratory Ltd EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 126111 on March, 2008.

FCC-Registration No.: 338263

Bontek Compliance Testing Laboratory Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 338263, March 24, 2008.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

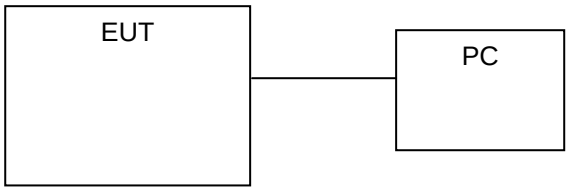


Table 2-1 Equipment Used in Tested System

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
	Notebook PC	IBM	2884	L3-MF472	

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Bontek Compliance Testing Laboratory Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Bontek laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	1~12.75GHz	4.15dB	(1)
Conducted Disturbance	0.15~30MHz	3.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

For Radiated Spurious Emission (30~25GHz) test:

Items	Equipment	Manufacturer	Model No.	Last Cal	Calibration Period
1	EMI Test Receiver	R&S	ESI 26	2008/6	1 year
2	Horn Antenna	R/S	CH14-H052	2008/6	1 year
3	3m Semi- Anechoic Chamber	ETS	N/A	2008/6	1 year
4	Horn Antenna	R/S	HF906	2008/6	1 year
5	Spectrum Analyzer	HP	8594EM	2008/6	1 year

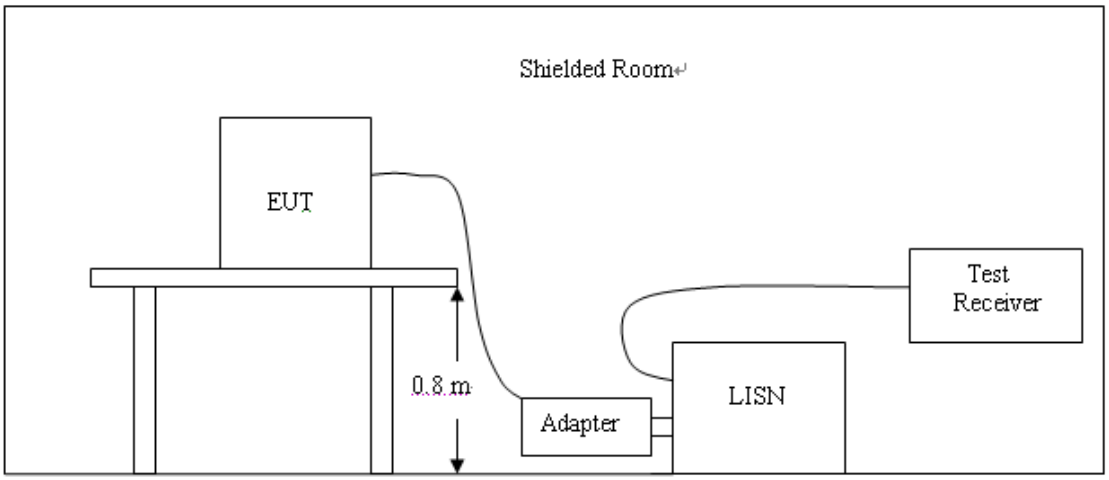
For Conducted Emissions Test:

Items	Equipment	Manufacturer	Model No.	Last Cal	Calibration Period
1	EMI Test Receiver	R&S	ESCI	2009/02	1 Year
2	EMI Test Receiver	R&S	ESPI	2009/02	1 Year
3	Amplifier	HP	8447D	2009/02	1 Year
4	3 phase Artificial Mains（L.I.S.N）	SCHWARZBECK	NSLK 8128	2009/02	1 Year
5	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	2009/02	1 Year
6	Horn Antenna	SCHWARZBECK	BBHA9120A	2009/02	1 Year
7	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	2008/09	1 Year
8	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	2008/09	1 Year
9	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	2008/09	1 Year
10	Power Clamp	SCHWARZBECK	MDS-21	2009/02	1 Year

4. TEST CONDITIONS AND RESULTS

4.1. Conducted Emissions Test

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4.

2 Support equipment, if needed, was placed as per ANSI C63.4.

3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

4 If a EUT received DC power from the adapter, the adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.

5 All support equipments received AC power from a second LISN, if any.

6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.

7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

8 During the above scans, the emissions were maximized by cable manipulation.

Conducted Power Line Emission Limit

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following：

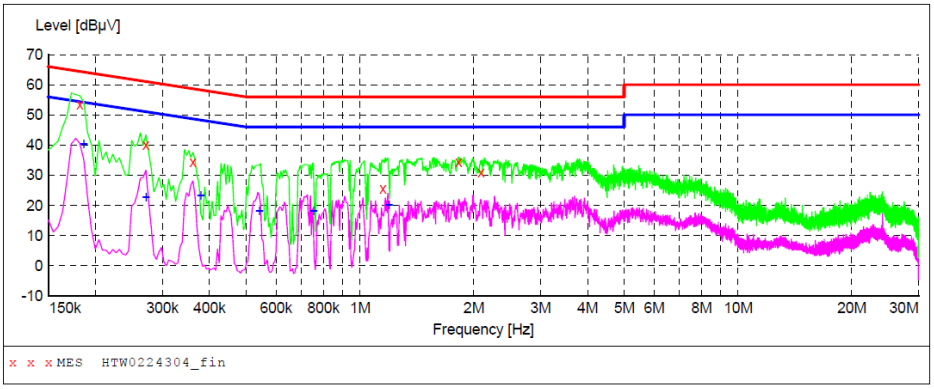
Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

TEST RESULTS

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0224304_fin"

2/24/2009 3:55PM

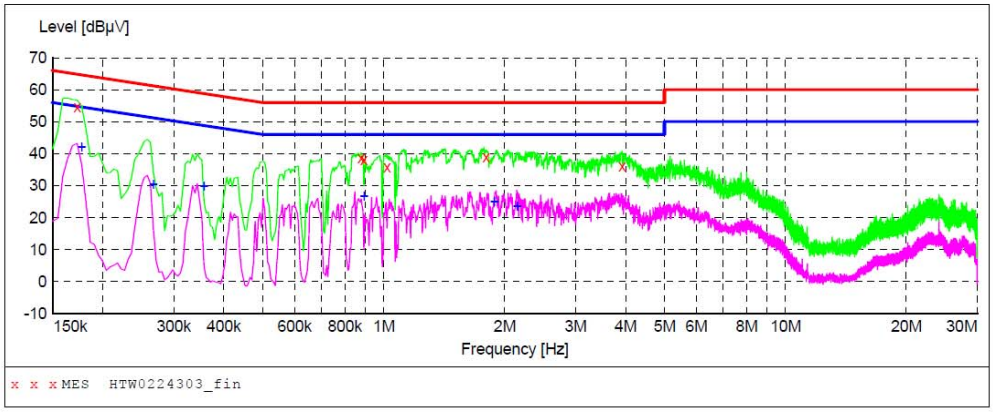
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	53.50	10.2	64	10.9	QP	N	GND
0.271500	40.10	10.2	61	21.0	QP	N	GND
0.361500	34.40	10.2	59	24.3	QP	N	GND
1.149000	25.50	10.3	56	30.5	QP	N	GND
1.824000	34.30	10.3	56	21.7	QP	N	GND
2.089500	31.00	10.4	56	25.0	QP	N	GND

MEASUREMENT RESULT: "HTW0224304_fin2"

2/24/2009 3:55PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.186000	40.30	10.2	54	13.9	AV	N	GND
0.271500	22.70	10.2	51	28.4	AV	N	GND
0.379500	23.40	10.2	48	24.9	AV	N	GND
0.541500	18.20	10.2	46	27.8	AV	N	GND
0.753000	18.30	10.2	46	27.7	AV	N	GND
1.194000	20.30	10.3	46	25.7	AV	N	GND

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0224303_fin"

2/24/2009 3:51PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.172500	54.50	10.2	65	10.3	QP	L1	GND
0.879000	38.70	10.2	56	17.3	QP	L1	GND
0.892500	38.00	10.2	56	18.0	QP	L1	GND
1.018500	35.70	10.3	56	20.3	QP	L1	GND
1.797000	38.90	10.3	56	17.1	QP	L1	GND
3.921000	36.10	10.4	56	19.9	QP	L1	GND

MEASUREMENT RESULT: "HTW0224303_fin2"

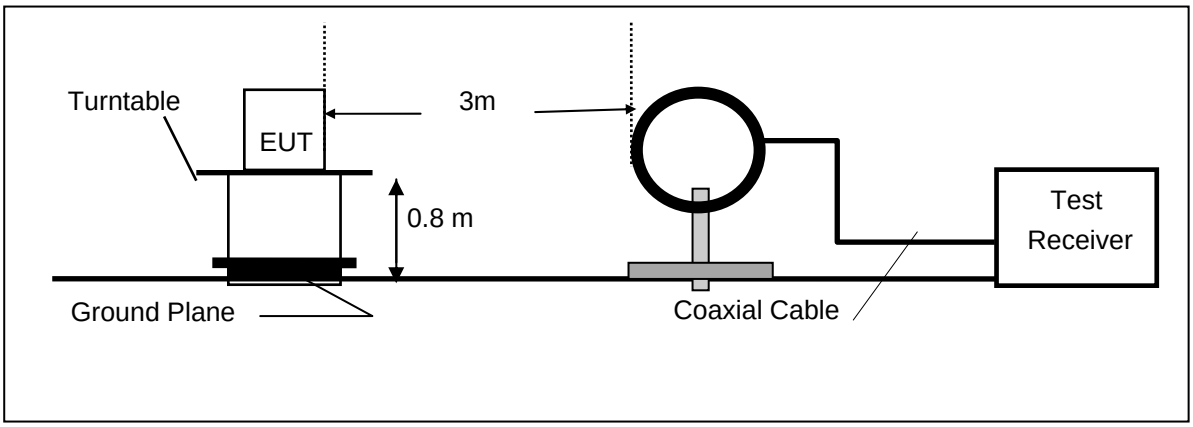
2/24/2009 3:51PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	42.20	10.2	55	12.4	AV	L1	GND
0.267000	30.40	10.2	51	20.8	AV	L1	GND
0.357000	29.80	10.2	49	19.0	AV	L1	GND
0.892500	26.60	10.2	46	19.4	AV	L1	GND
1.882500	25.00	10.3	46	21.0	AV	L1	GND
2.148000	23.70	10.4	46	22.3	AV	L1	GND

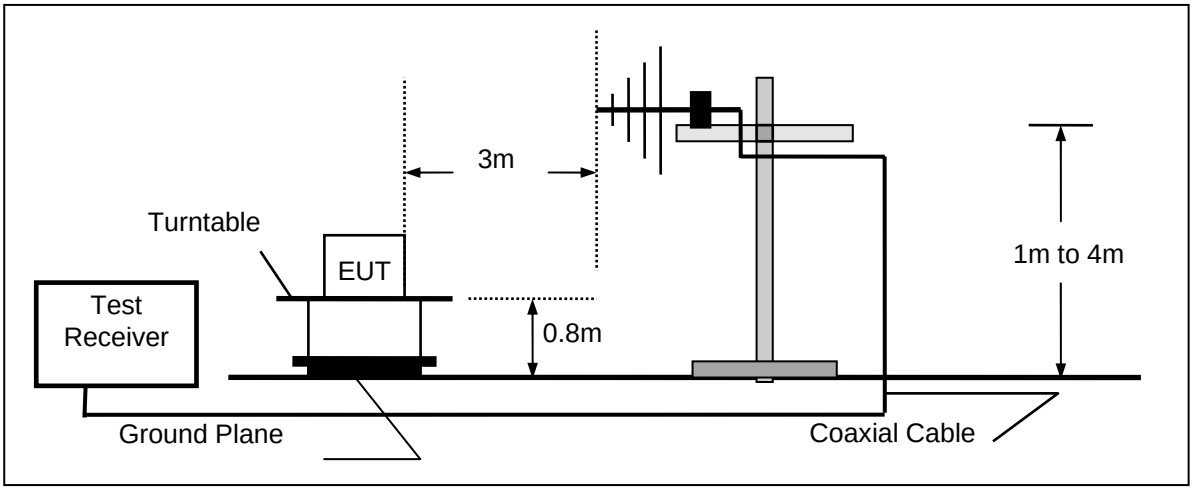
4.2. Radiated Emission Test

TEST CONFIGURATION

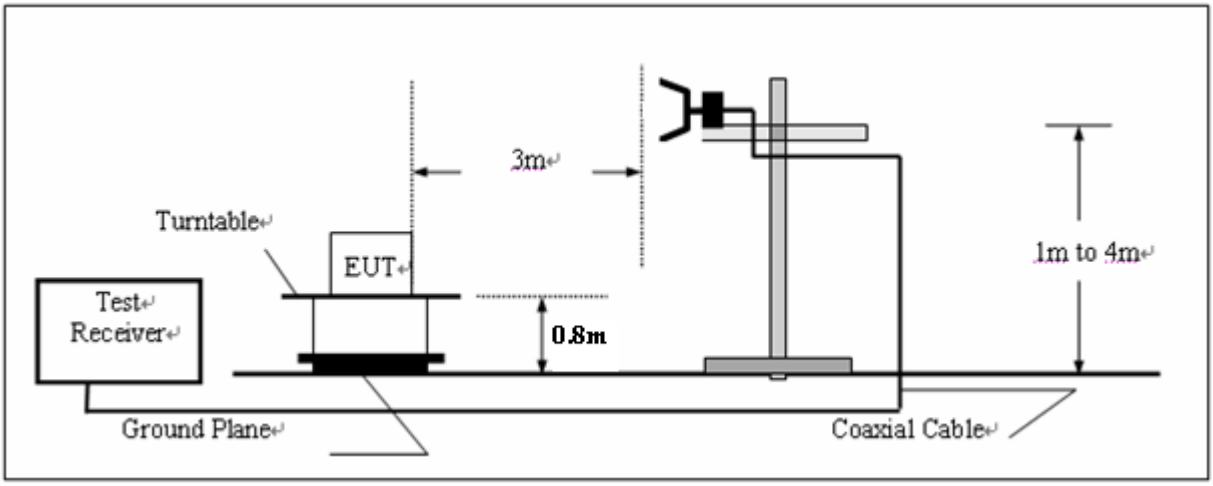
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



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	

RADIATION LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

Test Procedure

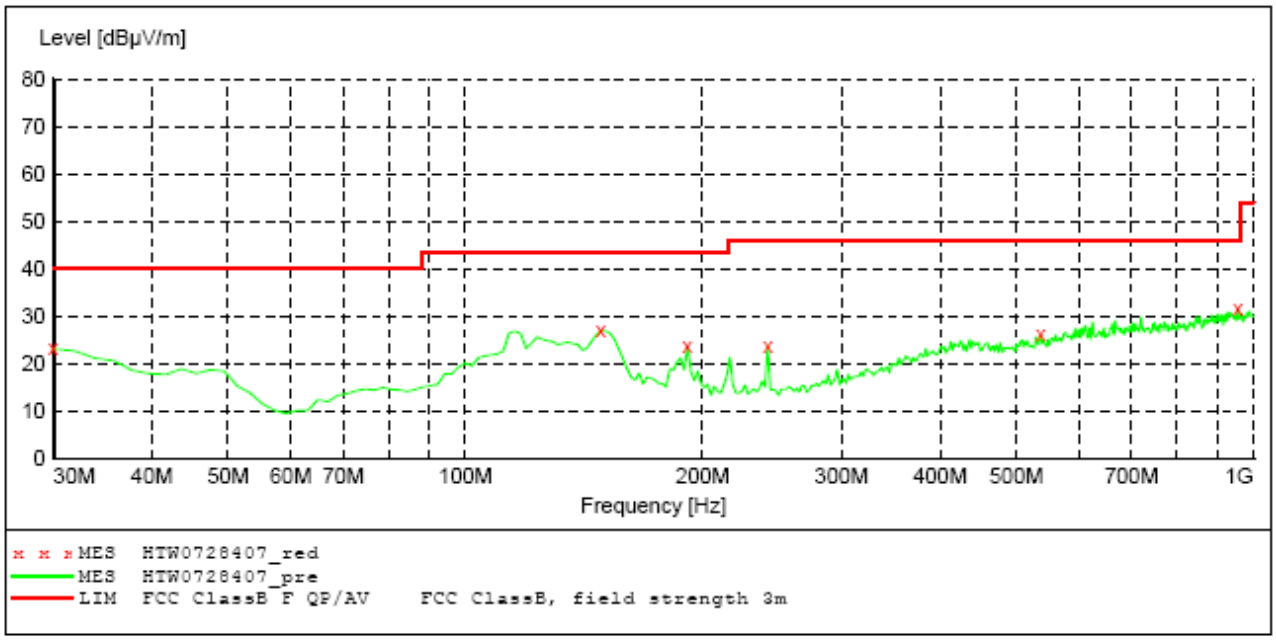
1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure 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.

TEST RESULTS

Below 1GHz Test Results:

SCAN TABLE: "test (30M-1G)QP"

Short Description:			Field Strength(30M-1G)		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	QP	Coupled	120 kHz	HL562 08



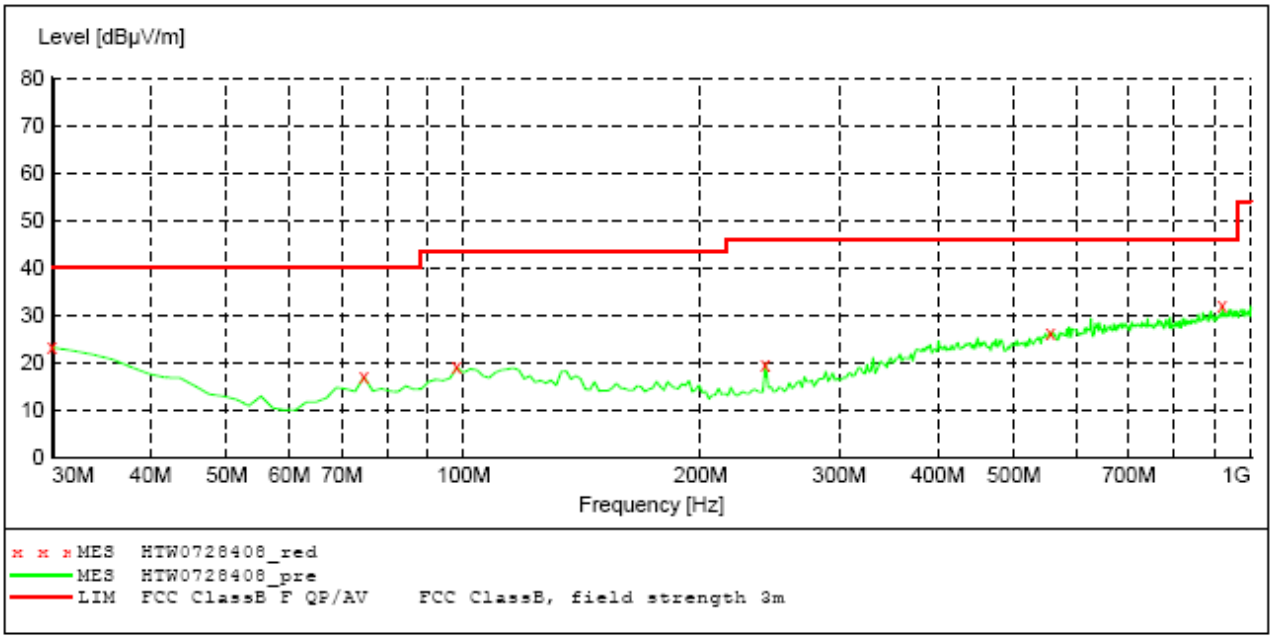
MEASUREMENT RESULT: "HTW0728407_red"

7/28/2008 9:38AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.20	21.2	40.0	16.8	QP	100.0	289.00	VERTICAL
148.577154	27.10	10.9	43.5	16.4	QP	100.0	139.00	VERTICAL
191.342685	23.60	11.0	43.5	19.9	QP	100.0	359.00	VERTICAL
241.883768	23.90	11.9	46.0	22.1	QP	100.0	113.00	VERTICAL
537.354709	26.10	21.2	46.0	19.9	QP	100.0	189.00	VERTICAL
955.290581	31.70	25.6	46.0	14.3	QP	100.0	139.00	VERTICAL

SCAN TABLE: "test (30M-1G)QP"

Short Description:			Field Strength(30M-1G)		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	QP	Coupled	120 kHz	HL562 08



MEASUREMENT RESULT: "HTW0728408_red"

7/28/2008 9:40AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.30	21.2	40.0	16.7	QP	300.0	0.00	HORIZONTAL
74.709419	17.00	11.0	40.0	23.0	QP	100.0	155.00	HORIZONTAL
98.036072	19.00	14.2	43.5	24.5	QP	300.0	82.00	HORIZONTAL
241.883768	19.60	11.9	46.0	26.4	QP	300.0	132.00	HORIZONTAL
556.793587	26.40	21.7	46.0	19.6	QP	300.0	34.00	HORIZONTAL
920.300601	32.00	25.5	46.0	14.0	QP	100.0	82.00	HORIZONTAL

Above 1 GHz Test Results:

Top Channel:

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)	Note
2480	V	Peak	84.10	-3.30	80.80	93.98	-13.18	F
2480	H	Peak	84.60	-3.30	81.30	93.98	-12.68	F
4960	V	Peak	48.00	3.90	51.90	73.98	-22.08	H
4960	H	Peak	44.40	3.90	48.30	73.98	-25.68	H
7440	V		---					H
7440	H		---					H
Others			---					

Middle Channel:

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)	Note
2445	V	Peak	84.00	-3.40	80.60	93.98	-13.38	F
2445	H	Peak	84.60	-3.40	81.20	93.98	-12.78	F
4890	V	Peak	47.70	3.70	51.40	73.98	-22.58	H
4890	H	Peak	43.20	3.70	46.90	73.98	-27.08	H
7335	V		---					H
7335	H		---					H
Others			---					

Bottom Channel:

Freq. (MHz)	Ant.Pol. H/V	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)	Note
2405	V	Peak	83.80	-3.50	80.30	93.98	-13.68	F
2405	H	Peak	84.60	-3.50	81.10	93.98	-12.88	F
4810	V	Peak	47.00	3.80	50.80	73.98	-23.18	H
4810	H	Peak	41.80	3.80	45.60	73.98	-28.38	H
7215	V		---					H
7215	H		---					H
Others			---					

Remark：

(1) Measuring frequencies from 30 MHz to the 10 GHz。

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

*(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.*

(4) 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.

(5) The IF bandwidth of EMI Test Receiver was 120KHz for measuring from 30 MHz to 1 GHz and 1 MHz for measuring above 1 GHz

4.3. Band Edge Measurement

TEST CONFIGURATION

Same as Section 4.2

TEST PROCEDURE

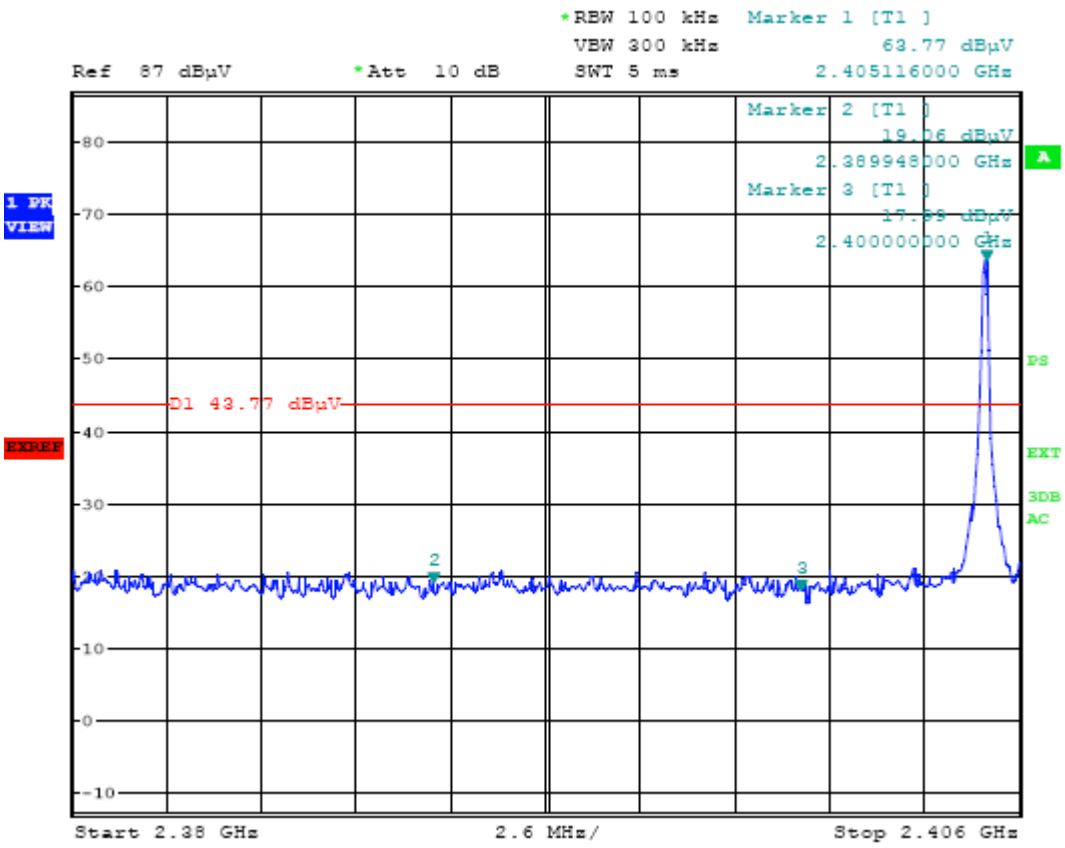
The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 100KHz and VBM to 300KHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength.

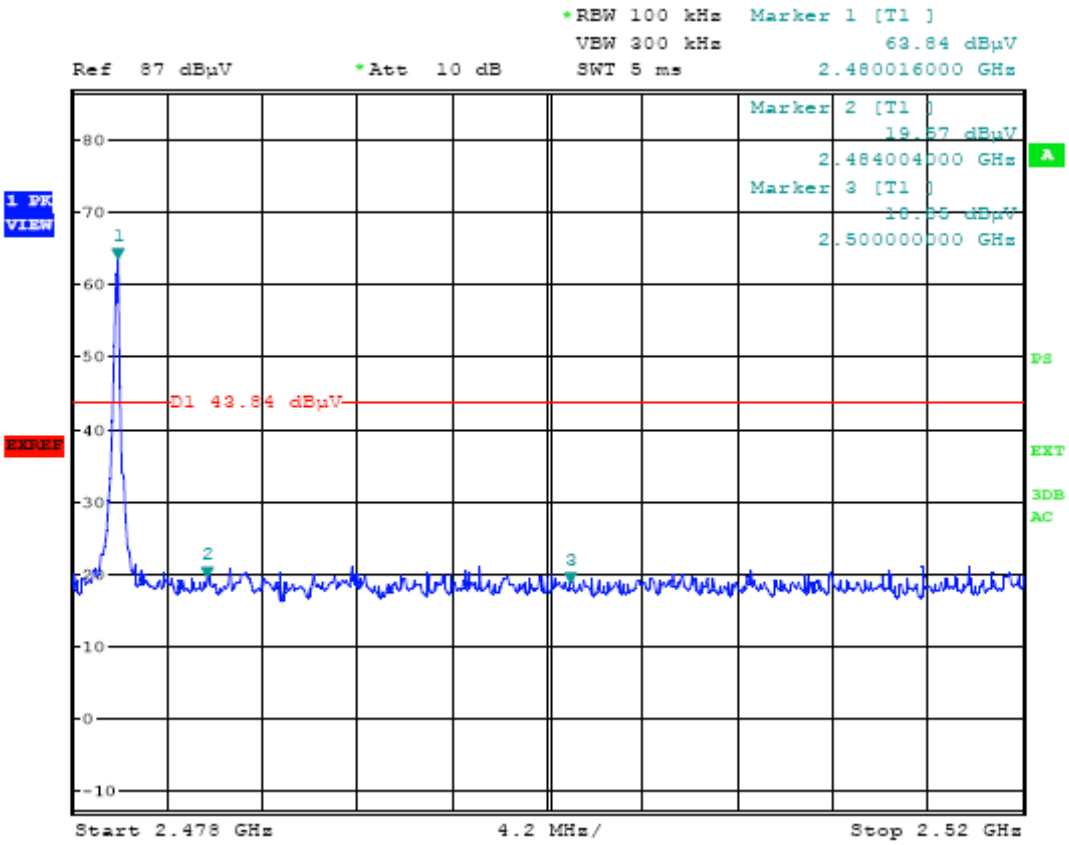
The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW to 100 KHz and VBM to 300 KHz, to measure the conducted peak band edge.

LIMIT

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

TEST RESULTS



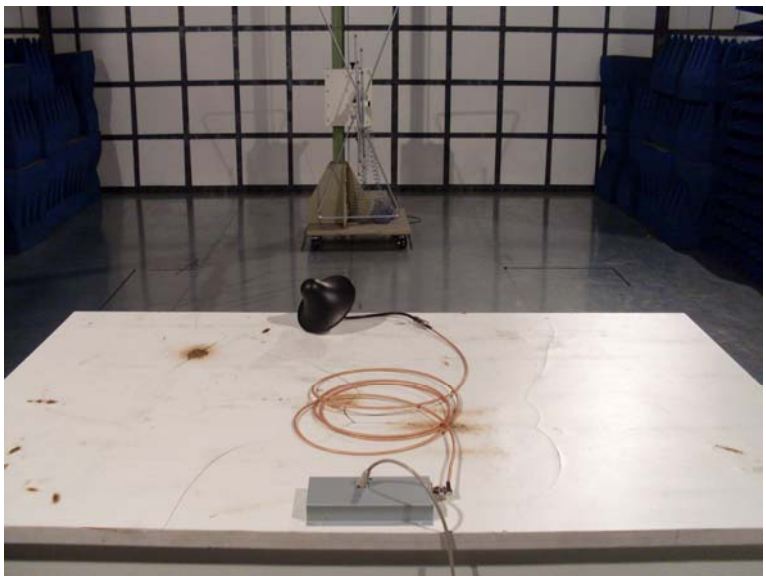


Note:

1. The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.209.

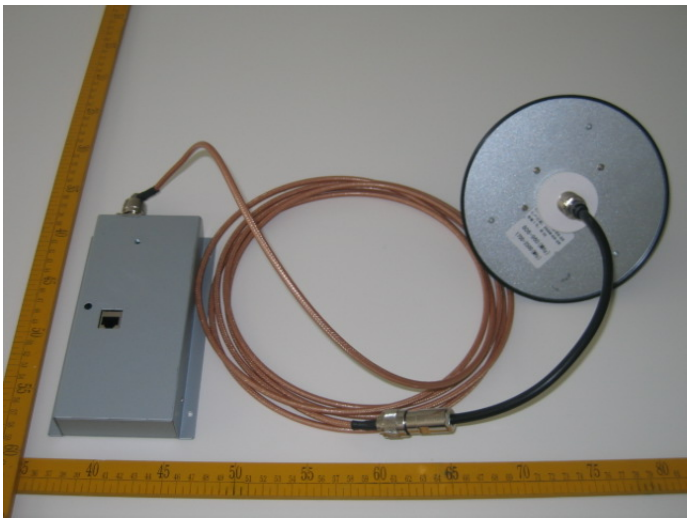
2. The average measurement was not performed when the peak measured data under the limit of average detection.

5. Test Setup Photos of the EUT

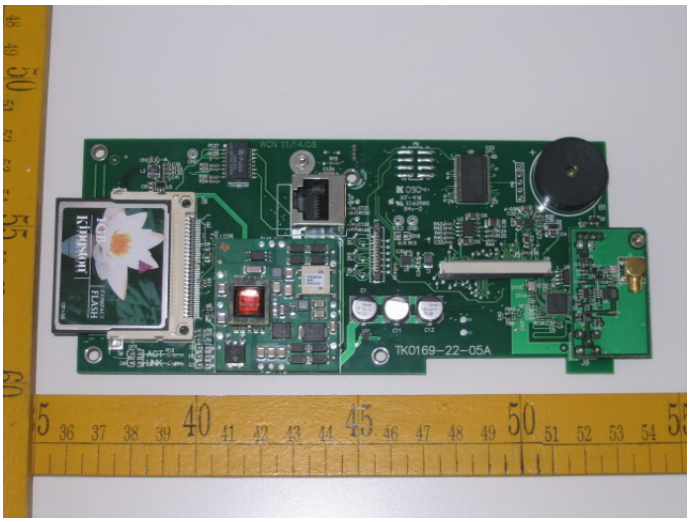


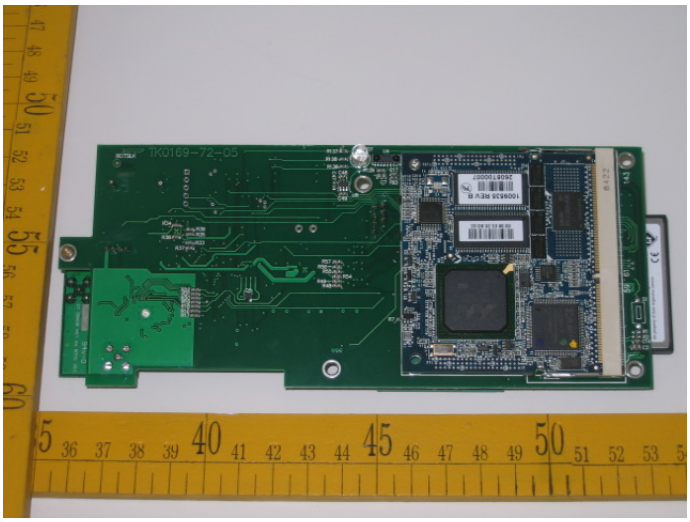
6. External and Internal Photos of the EUT

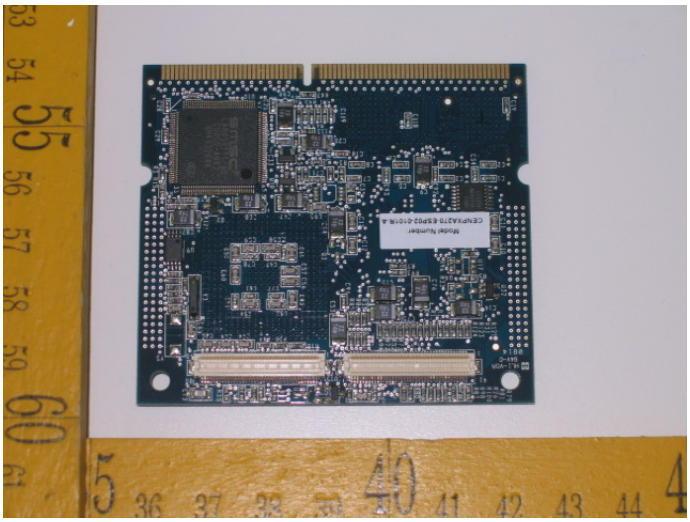
External Photos



Internal Photos





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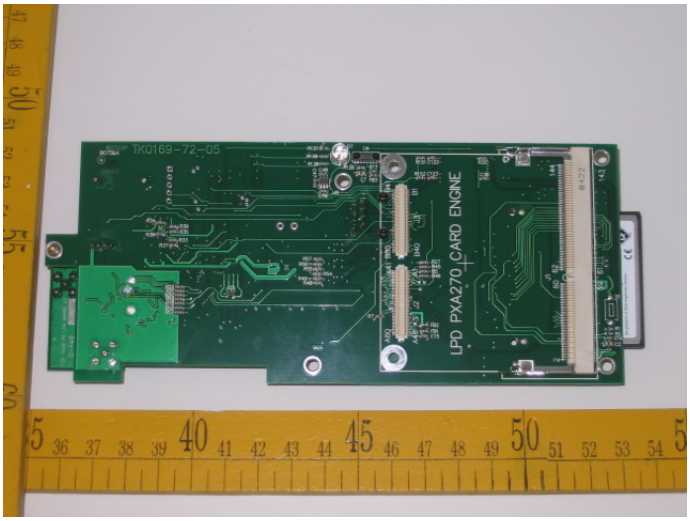
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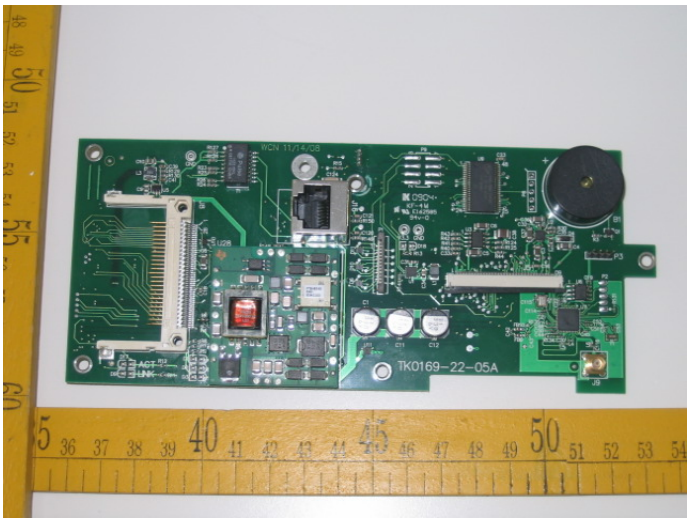
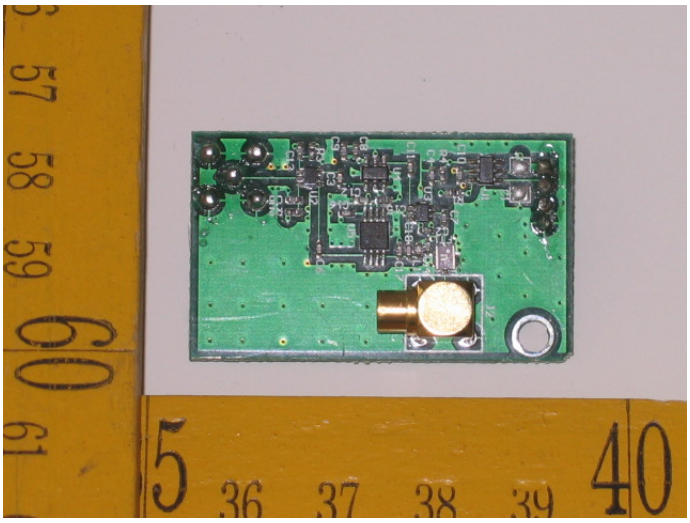
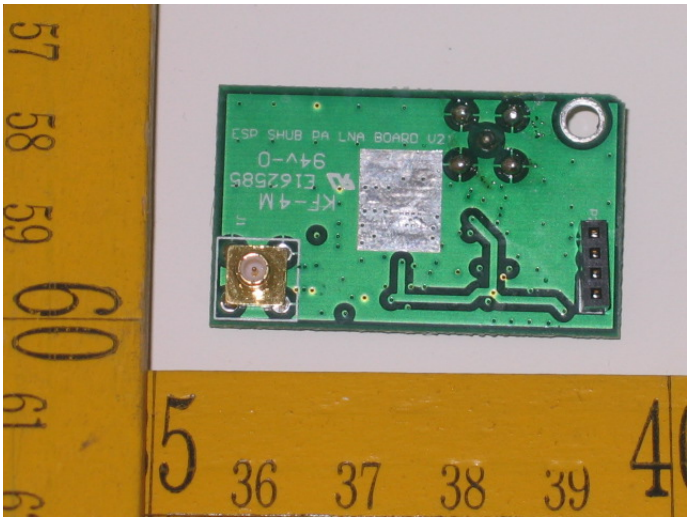
LPD PXA270 CARD ENGINE







.....End of Report.....