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FCC TEST REPORT (CO-LOCATED)

REPORT NO.: RF130131C17-3
MODEL NO.: PT133
FCC ID: CJ6UPDW07PC1
RECEIVED: Jan. 31, 2013
TESTED: Mar. 05 ~ Mar. 06, 2013
ISSUED: Mar. 07, 2013

APPLICANT: Toshiba Corporation

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ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130131C17-3	Original release	Mar. 07, 2013



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1. CERTIFICATION

PRODUCT: Tablet PC
MODEL NO.: PT133
BRAND: Toshiba
APPLICANT: Toshiba Corporation
TESTED: Mar. 05 ~ Mar. 06, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

The above equipment (model: PT133) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE :** Mar. 07, 2013
Pettie Chen / Senior Specialist

APPROVED BY :  , **DATE :** Mar. 07, 2013
Ken Liu / Senior Manager



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2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247) FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207 15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.89dB at 0.18516MHz.
15.247(d) 15.407(b)(1/2/3) (b)(5)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -5.0dB at 101.78MHz.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~ 1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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



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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Tablet PC
MODEL NO.	PT133
POWER SUPPLY	19Vdc (Adapter)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) 5.0GHz: 5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	261.480mW for 2412 ~ 2462MHz 43.258mW for 5180 ~ 5240MHz 39.915mW for 5260 ~ 5320MHz 41.786mW for 5500 ~ 5700MHz 183.244mW for 5745 ~ 5825MHz
ANTENNA TYPE	Refer to Note as below
ANTENNA CONNECTOR	NA
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below



NOTE:

1. The EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

*802.11b/g: ant 0 was for the final test; 802.11a: ant 1 was for the final test.

2. The EUT consumes power from the following adapter:

ADAPTER	
BRAND:	TOSHIBA
MODEL:	PA5072U-1ACA
INPUT:	100-240Vac, 1.3A
OUTPUT:	19Vdc, 2.37A
POWER LINE:	1.8m non-shielded cable without core

3. The following antennas for the EUT.

Antenna Part Number	Manufacture	Antenna Type	Antenna Connector	Cable Assembly Part Number and Information	Peak Gain W/ Cable loss (dBi)
Tx1: APP6P-700781 (Ant 0)	ACON	PIFA	NA	P/N: APP6P-700781 50 ohm Coaxial length: 100mm length diameter: 1.13mm	2400-2500MHz: -0.63dBi (peak)
					5150-5350MHz: -0.71dBi (peak)
					5470-5725MHz: -1.43dBi (peak)
					5725-5850MHz: -1.19dBi (peak)
Tx2: APP6P-700782 (Ant 1)	ACON	PIFA	NA	P/N: APP6P-700782 50 ohm Coaxial length: 100mm length diameter: 1.13mm	2400-2500MHz: -3.39dBi (peak)
					5150-5350MHz: 0.12dBi (peak)
					5470-5725MHz: -1.51dBi (peak)
					5725-5850MHz: -1.74dBi (peak)

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.



3.2 DESCRIPTION OF TEST MODES

FOR 2.4GHz

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

**FOR 5260 ~ 5320MHz**

4 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

8 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

FOR 5745 ~ 5825MHz

5 channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz



Bluetooth EDR:

79 channels are provided to this EUT:

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

Bluetooth LE 4.0:

40 channels are provided to this EUT:

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE≥1G	RE<1G	PLC	
-	√	√	√	-

Where **RE≥1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned as below.

RADIATED EMISSION TEST (ABOVE 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)	EUT POSITION
-	BT LE +802.11g	2402~2480	0 to 39	39 + 6	GFSK	1.0	X
		2412~2462	1 to 11		OFDM	6.0	
-	BT LE +802.11an(20MHz)	2402~2480	0 to 39	39 + 149	GFSK	1.0	Y
		5745~5825	149 to 165		OFDM	7.2	
-	BT LE +802.11an(40MHz)	2402~2480	0 to 39	39 + 46	GFSK	1.0	Y
		5180~5240	38 to 46		OFDM	15.0	

RADIATED EMISSION TEST (BELOW 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)	EUT POSITION
-	BT LE +802.11g	2402~2480	0 to 39	39 + 6	GFSK	1.0	X
		2412~2462	1 to 11		OFDM	6.0	
-	BT LE +802.11an(20MHz)	2402~2480	0 to 39	39 + 149	GFSK	1.0	Y
		5745~5825	149 to 165		OFDM	7.2	
-	BT LE +802.11an(40MHz)	2402~2480	0 to 39	39 + 46	GFSK	1.0	Y
		5180~5240	38 to 46		OFDM	15.0	



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CONDUCTED EMISSION TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	DATA RATE (Mbps)	EUT POSITION
-	BT LE +802.11g	2402~2480	0 to 39	39 + 6	GFSK	1.0	X
		2412~2462	1 to 11		OFDM	6.0	
-	BT LE +802.11an(20MHz)	2402~2480	0 to 39	39 + 149	GFSK	1.0	Y
		5745~5825	149 to 165		OFDM	7.2	
-	BT LE +802.11an(40MHz)	2402~2480	0 to 39	39 + 46	GFSK	1.0	Y
		5180~5240	38 to 46		OFDM	15.0	

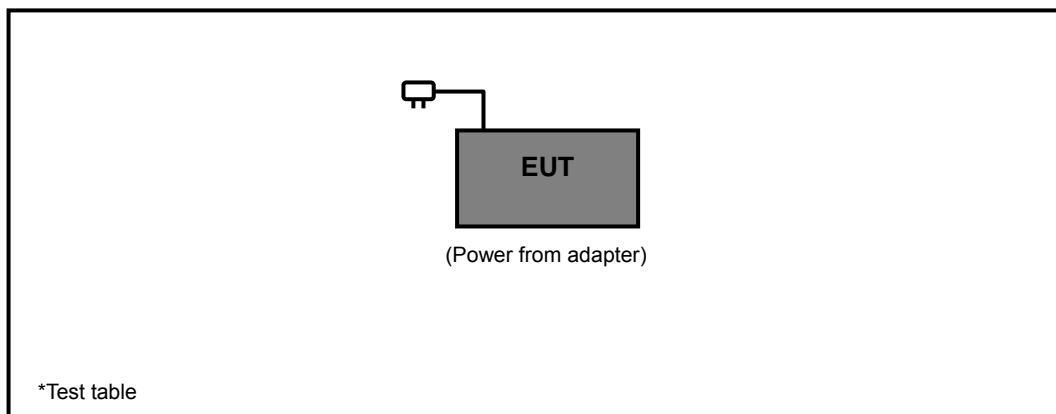
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE≥1G	23deg. C, 67%RH	120Vac, 60Hz	Martin Lee
RE<1G	23deg. C, 67%RH	120Vac, 60Hz	Alan Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	Martin Lee

3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (Section 15.247)

FCC Part 15, Subpart E (Section 15.407)

ANSI C63.10-2009

All test items have been performed and recorded as per the above standards.

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
	PK	PK
	-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$



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4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 03, 2012	Sep. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2012	Aug. 10, 2013
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 25, 2012	Oct. 24, 2013

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. The test was performed in HwaYa Chamber 9.
 4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 5. The FCC Site Registration No. is 215374.
 6. The IC Site Registration No. is IC 7450F-9.



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4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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 polarizations 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 rotatable 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 lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

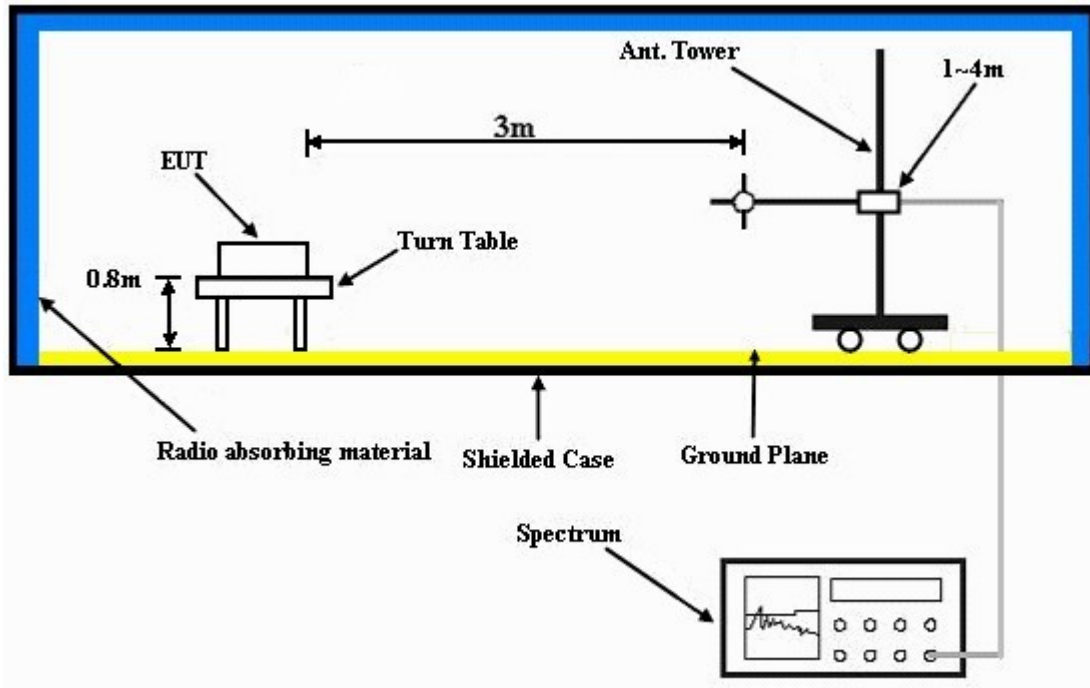
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 100kHz and video bandwidth is 300kHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.7 EUT OPERATING CONDITIONS

- a. Placed the EUT on a testing table.
- b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.



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4.1.8 TEST RESULTS

Above 1GHz data

BT LE + 802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.2 PK			1.29 H	279	72.90	32.30
2	*2437.00	94.9 AV			1.29 H	279	62.60	32.30
3	*2480.00	98.9 PK			1.29 H	333	66.40	32.50
4	*2480.00	97.4 AV			1.29 H	333	64.90	32.50
5	2483.50	57.6 PK	74.0	-16.4	1.54 H	66	25.10	32.50
6	2483.50	47.1 AV	54.0	-6.9	1.54 H	66	14.60	32.50
7	4874.00	46.2 PK	74.0	-27.8	1.36 H	65	8.40	37.80
8	4874.00	34.2 AV	54.0	-19.8	1.36 H	65	-3.60	37.80
9	4960.00	47.2 PK	74.0	-26.8	1.34 H	305	9.20	38.00
10	4960.00	36.9 AV	54.0	-17.1	1.34 H	305	-1.10	38.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	95.2 PK			1.10 V	150	62.90	32.30
2	*2437.00	85.0 AV			1.10 V	150	52.70	32.30
3	*2480.00	92.5 PK			1.04 V	113	60.00	32.50
4	*2480.00	91.9 AV			1.04 V	113	59.40	32.50
5	2483.50	55.9 PK	74.0	-18.1	1.04 V	113	23.40	32.50
6	2483.50	45.9 AV	54.0	-8.1	1.04 V	113	13.40	32.50
7	4874.00	45.3 PK	74.0	-28.7	1.54 V	169	7.50	37.80
8	4874.00	33.3 AV	54.0	-20.7	1.54 V	169	-4.50	37.80
9	4960.00	44.2 PK	74.0	-29.8	1.17 V	306	6.20	38.00
10	4960.00	34.9 AV	54.0	-19.1	1.17 V	306	-3.10	38.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.
 6. The limit value is defined as per 15.247.



A D T

BT LE + 802.11an (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 149	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	99.1 PK			1.30 H	295	66.60	32.50
2	*2480.00	97.3 AV			1.30 H	295	64.80	32.50
3	2483.50	57.5 PK	74.0	-16.5	1.50 H	44	25.00	32.50
4	2483.50	47.5 AV	54.0	-6.5	1.50 H	44	15.00	32.50
5	4960.00	47.3 PK	74.0	-26.7	1.50 H	58	9.30	38.00
6	4960.00	37.2 AV	54.0	-16.8	1.50 H	58	-0.80	38.00
7	#5725.00	62.4 PK	81.5	-19.1	1.25 H	325	23.10	39.30
8	#5725.00	49.5 AV	68.7	-19.2	1.25 H	325	10.20	39.30
9	*5745.00	101.5 PK			1.25 H	325	62.10	39.40
10	*5745.00	88.7 AV			1.25 H	325	49.30	39.40
11	11490.00	52.4 PK	74.0	-21.6	1.54 H	52	3.00	49.40
12	11490.00	41.3 AV	54.0	-12.7	1.54 H	52	-8.10	49.40

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.
 6. The limit value is defined as per 15.247.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 149	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	92.6 PK			1.06 V	132	60.10	32.50
2	*2480.00	91.8 AV			1.06 V	132	59.30	32.50
3	2483.50	56.2 PK	74.0	-17.8	1.00 V	158	23.70	32.50
4	2483.50	46.3 AV	54.0	-7.7	1.00 V	158	13.80	32.50
5	4960.00	44.8 PK	74.0	-29.2	1.00 V	306	6.80	38.00
6	4960.00	35.6 AV	54.0	-18.4	1.00 V	306	-2.40	38.00
7	#5725.00	63.8 PK	82.9	-19.1	1.39 V	123	24.50	39.30
8	#5725.00	51.6 AV	69.6	-18.0	1.39 V	123	12.30	39.30
9	*5745.00	102.9 PK			1.38 V	123	63.50	39.40
10	*5745.00	89.6 AV			1.38 V	123	50.20	39.40
11	11490.00	55.1 PK	74.0	-18.9	1.42 V	190	5.70	49.40
12	11490.00	44.1 AV	54.0	-9.9	1.42 V	190	-5.30	49.40

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. "#":The radiated frequency is out the restricted band.



A D T

BT LE + 802.11an (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 46	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	99.3 PK			1.36 H	298	66.80	32.50
2	*2480.00	97.4 AV			1.36 H	298	64.90	32.50
3	2483.50	57.5 PK	74.0	-16.5	1.36 H	298	25.00	32.50
4	2483.50	47.3 AV	54.0	-6.7	1.36 H	298	14.80	32.50
5	4960.00	47.2 PK	74.0	-26.8	1.38 H	306	9.20	38.00
6	4960.00	36.9 AV	54.0	-17.1	1.38 H	306	-1.10	38.00
7	*5230.00	103.2 PK			1.07 H	299	64.70	38.50
8	*5230.00	90.9 AV			1.07 H	299	52.40	38.50
9	#10460.00	53.2 PK	74.0	-20.8	1.30 H	320	5.20	48.00
10	#10460.00	42.5 AV	54.0	-11.5	1.30 H	320	-5.50	48.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. “#”:The radiated frequency is out the restricted band.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 46	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2480.00	92.5 PK			1.12 V	320	60.00	32.50
2	*2480.00	91.8 AV			1.12 V	320	59.30	32.50
3	2483.50	56.2 PK	74.0	-17.8	1.24 V	120	23.70	32.50
4	2483.50	46.0 AV	54.0	-8.0	1.24 V	120	13.50	32.50
5	4960.00	44.9 PK	74.0	-29.1	1.74 V	69	6.90	38.00
6	4960.00	35.6 AV	54.0	-18.4	1.74 V	69	-2.40	38.00
7	*5230.00	105.2 PK			1.30 V	44	66.70	38.50
8	*5230.00	93.5 AV			1.30 V	44	55.00	38.50
9	#10460.00	54.5 PK	74.0	-19.5	1.10 V	268	6.50	48.00
10	#10460.00	44.2 AV	54.0	-9.8	1.10 V	268	-3.80	48.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.
 6. The limit value is defined as per 15.247.
 7. “#”:The radiated frequency is out the restricted band.



A D T

Below 1GHz data

BT LE + 802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	101.78	34.2 QP	43.5	-9.3	1.49 H	69	25.00	9.20
2	179.38	38.1 QP	43.5	-5.4	1.49 H	189	25.60	12.50
3	253.10	37.9 QP	46.0	-8.1	1.24 H	351	24.80	13.10
4	336.52	36.8 QP	46.0	-9.2	1.00 H	234	21.00	15.80
5	577.08	35.7 QP	46.0	-10.3	1.24 H	301	13.80	21.90
6	625.58	34.1 QP	46.0	-11.9	1.75 H	233	11.50	22.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.94	33.6 QP	40.0	-6.4	1.00 V	346	21.40	12.20
2	101.78	34.0 QP	43.5	-9.5	1.00 V	240	24.80	9.20
3	177.44	33.1 QP	43.5	-10.4	1.75 V	288	20.50	12.60
4	227.88	37.3 QP	46.0	-8.7	1.00 V	152	25.30	12.00
5	388.90	33.1 QP	46.0	-12.9	1.24 V	128	16.00	17.10
6	689.60	31.9 QP	46.0	-14.1	1.00 V	135	8.70	23.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



A D T

BT LE + 802.11an (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 149	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	101.78	38.5 QP	43.5	-5.0	1.49 H	72	29.30	9.20
2	175.50	37.8 QP	43.5	-5.7	1.49 H	209	25.00	12.80
3	198.78	33.7 QP	43.5	-9.8	1.00 H	200	22.80	10.90
4	233.70	40.7 QP	46.0	-5.3	1.00 H	6	28.50	12.20
5	319.06	33.1 QP	46.0	-12.9	1.75 H	295	17.70	15.40
6	544.10	34.5 QP	46.0	-11.5	1.25 H	273	13.40	21.10

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.76	32.5 QP	40.0	-7.5	1.24 V	4	19.70	12.80
2	103.72	35.4 QP	43.5	-8.1	1.00 V	147	26.00	9.40
3	175.50	33.3 QP	43.5	-10.2	1.75 V	242	20.50	12.80
4	220.12	38.5 QP	46.0	-7.5	1.24 V	16	26.80	11.70
5	383.08	37.3 QP	46.0	-8.7	1.24 V	174	20.40	16.90
6	520.82	35.5 QP	46.0	-10.5	2.00 V	207	15.00	20.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



A D T

BT LE + 802.11an (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 39 + CH 46	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 67%RH	TESTED BY	Martin Lee

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	101.78	35.8 QP	43.5	-7.7	1.49 H	65	26.60	9.20
2	175.50	33.7 QP	43.5	-9.8	1.24 H	208	20.90	12.80
3	202.66	38.4 QP	43.5	-5.1	1.00 H	192	27.50	10.90
4	247.28	39.4 QP	46.0	-6.6	1.24 H	16	26.60	12.80
5	379.20	33.7 QP	46.0	-12.3	2.00 H	297	16.80	16.90
6	544.10	35.2 QP	46.0	-10.8	1.00 H	15	14.10	21.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.82	32.2 QP	40.0	-7.8	1.00 V	108	19.70	12.50
2	103.72	35.6 QP	43.5	-7.9	1.00 V	151	26.20	9.40
3	175.50	33.5 QP	43.5	-10.0	3.00 V	55	20.70	12.80
4	224.00	38.2 QP	46.0	-7.8	1.00 V	40	26.40	11.80
5	367.56	36.7 QP	46.0	-9.3	1.00 V	212	20.10	16.60
6	503.36	36.4 QP	46.0	-9.6	1.75 V	191	16.30	20.10

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 2.
 3. The VCCI Site Registration No. is C-2047.



A D T

4.2.3 TEST PROCEDURES

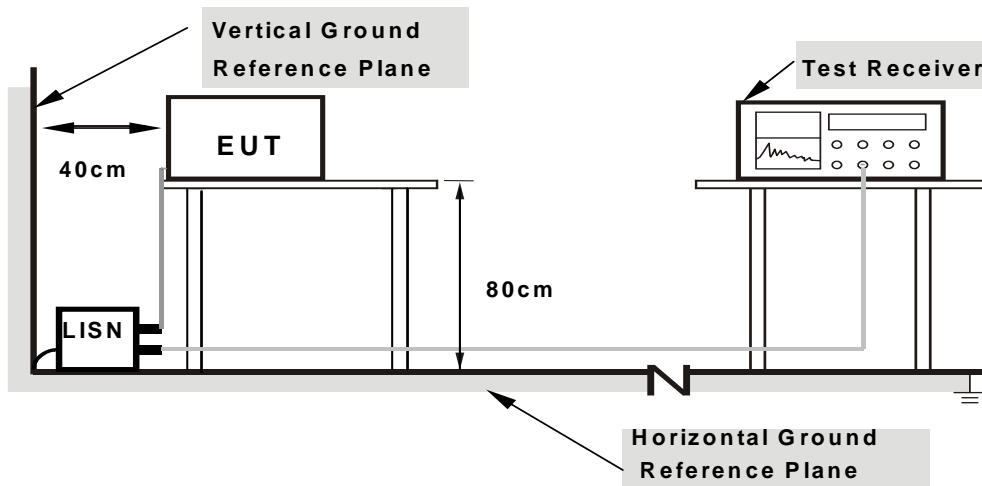
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA:

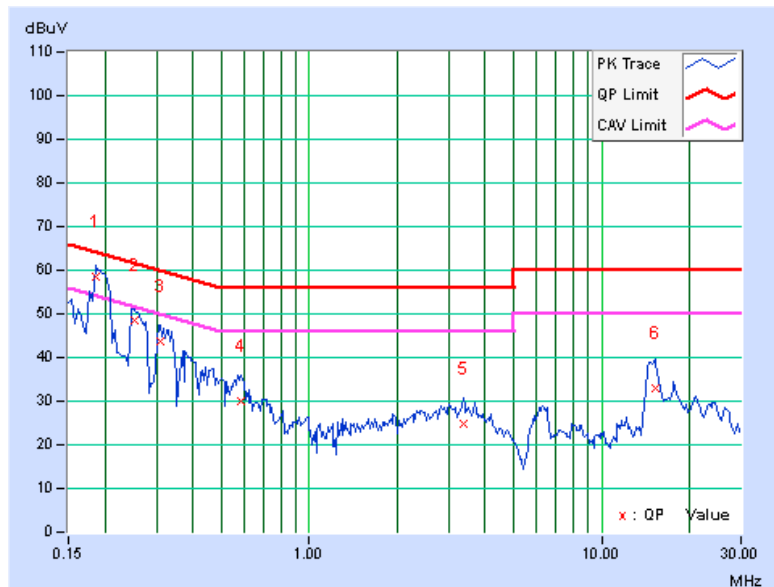
BT LE + 802.11g

CHANNEL	CH 39 + CH 6	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.12	58.24	41.20	58.36	41.32	64.25	54.25	-5.89	-12.93
2	0.25156	0.13	48.26	32.47	48.39	32.60	61.71	51.71	-13.32	-19.11
3	0.31016	0.14	43.47	26.60	43.61	26.74	59.97	49.97	-16.36	-23.23
4	0.58750	0.17	29.77	15.18	29.94	15.35	56.00	46.00	-26.06	-30.65
5	3.36328	0.31	24.52	18.17	24.83	18.48	56.00	46.00	-31.17	-27.52
6	15.22266	0.96	31.94	22.39	32.90	23.35	60.00	50.00	-27.10	-26.65

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

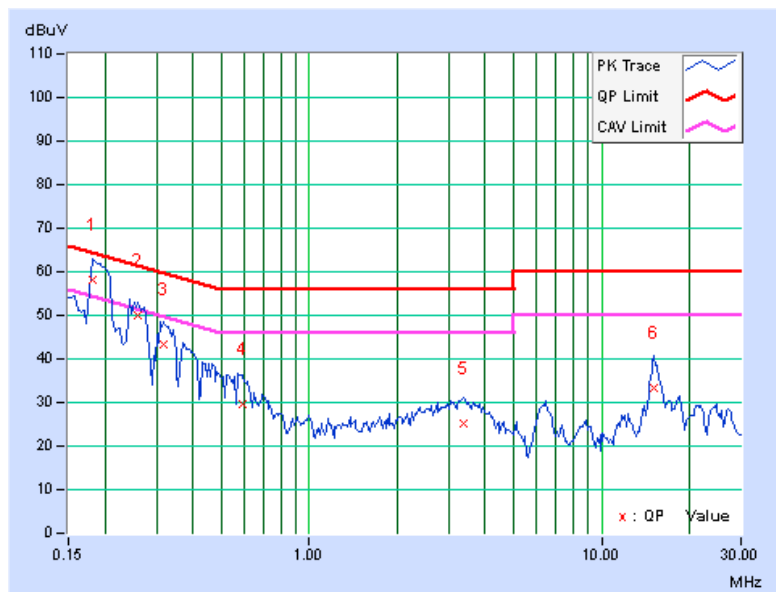


CHANNEL	CH 39 + CH 6	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.17	58.14	37.65	58.31	37.82	64.43	54.43	-6.12	-16.61
2	0.25938	0.18	49.87	33.75	50.05	33.93	61.45	51.45	-11.40	-17.52
3	0.31797	0.19	43.12	26.89	43.31	27.08	59.76	49.76	-16.45	-22.68
4	0.59141	0.22	29.28	15.50	29.50	15.72	56.00	46.00	-26.50	-30.28
5	3.36719	0.35	24.95	18.89	25.30	19.24	56.00	46.00	-30.70	-26.76
6	15.12500	0.76	32.63	24.76	33.39	25.52	60.00	50.00	-26.61	-24.48

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



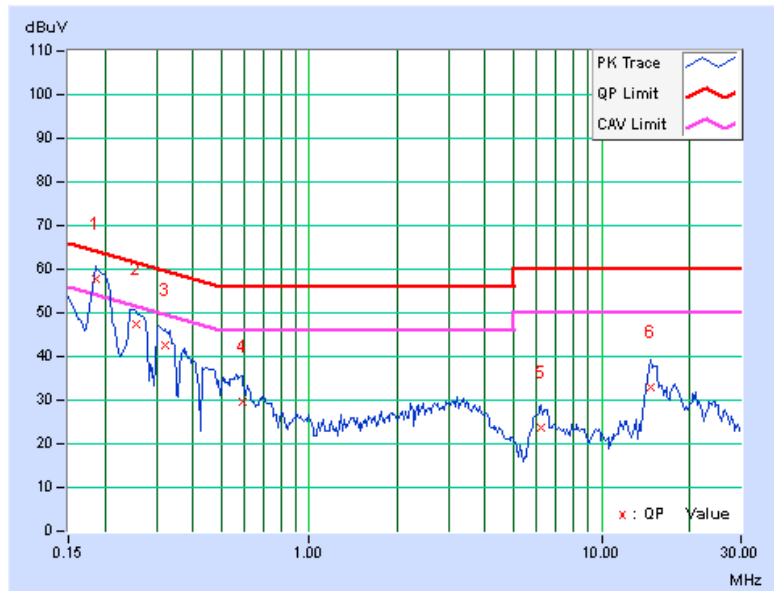
BT LE + 802.11an (20MHz)

CHANNEL	CH 39 + CH 149	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.12	57.73	40.79	57.85	40.91	64.25	54.25	-6.40	-13.34
2	0.25547	0.13	47.27	31.89	47.40	32.02	61.58	51.58	-14.18	-19.56
3	0.32188	0.14	42.43	26.21	42.57	26.35	59.66	49.66	-17.09	-23.31
4	0.59141	0.17	29.62	15.53	29.79	15.70	56.00	46.00	-26.21	-30.30
5	6.21094	0.46	23.17	17.87	23.63	18.33	60.00	50.00	-36.37	-31.67
6	14.72656	0.93	31.91	22.69	32.84	23.62	60.00	50.00	-27.16	-26.38

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

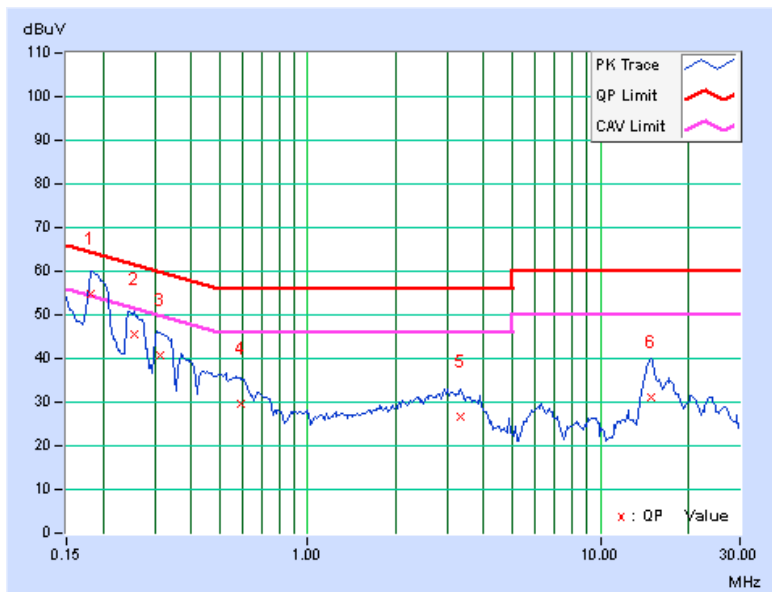


CHANNEL	CH 39 + CH 149	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.17	54.71	35.71	54.88	35.88	64.43	54.43	-9.55	-18.55
2	0.25547	0.18	45.36	30.01	45.54	30.19	61.58	51.58	-16.04	-21.39
3	0.31406	0.19	40.57	25.34	40.76	25.53	59.86	49.86	-19.10	-24.33
4	0.59141	0.22	29.27	16.82	29.49	17.04	56.00	46.00	-26.51	-28.96
5	3.33594	0.35	26.39	20.52	26.74	20.87	56.00	46.00	-29.26	-25.13
6	14.84375	0.75	30.30	21.78	31.05	22.53	60.00	50.00	-28.95	-27.47

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



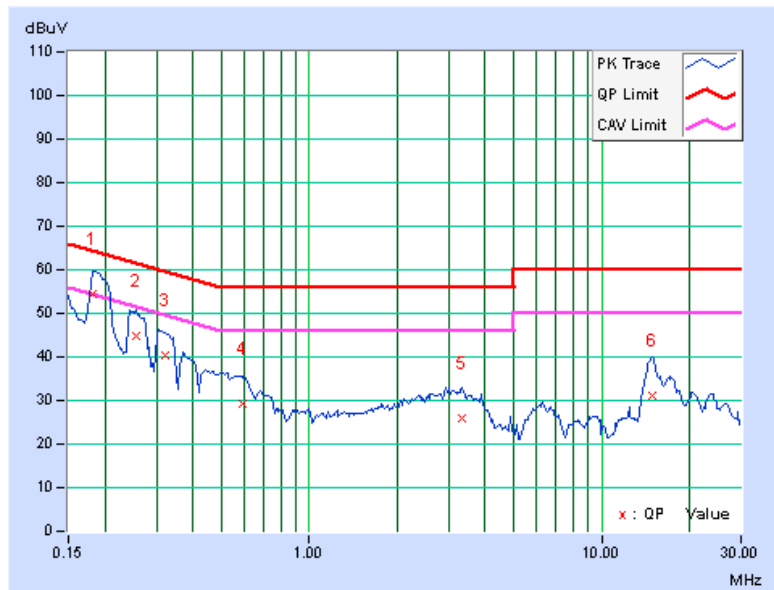
BT LE + 802.11an (40MHz)

CHANNEL	CH 39 + CH 46	6dB BANDWIDTH	9kHz
PHASE	Line 1		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.18125	0.12	54.30	34.49	54.42	34.61	64.43
2	0.25547	0.13	44.77	29.77	44.90	29.90	61.58	51.58	-16.68	-21.68
3	0.32188	0.14	40.17	24.64	40.31	24.78	59.66	49.66	-19.35	-24.88
4	0.59141	0.17	28.99	16.48	29.16	16.65	56.00	46.00	-26.84	-29.35
5	3.33594	0.31	25.53	20.03	25.84	20.34	56.00	46.00	-30.16	-25.66
6	14.84375	0.94	30.16	19.83	31.10	20.77	60.00	50.00	-28.90	-29.23

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

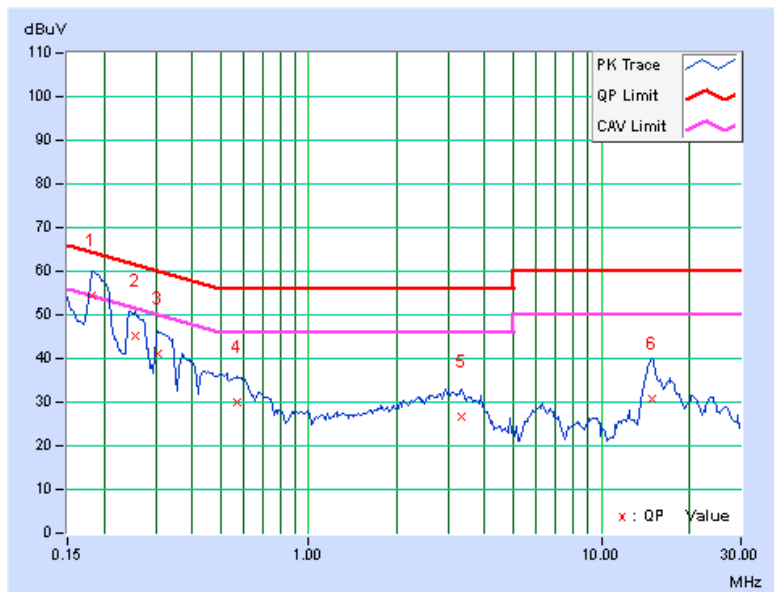


CHANNEL	CH 39 + CH 46	6dB BANDWIDTH	9kHz
PHASE	Line 2		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.17	54.36	34.51	54.53	34.68	64.43	54.43	-9.90	-19.75
2	0.25547	0.18	45.03	29.85	45.21	30.03	61.58	51.58	-16.37	-21.55
3	0.30625	0.19	40.93	23.59	41.12	23.78	60.07	50.07	-18.95	-26.29
4	0.56797	0.22	29.77	16.34	29.99	16.56	56.00	46.00	-26.01	-29.44
5	3.33594	0.35	26.36	20.95	26.71	21.30	56.00	46.00	-29.29	-24.70
6	14.84375	0.75	30.16	21.90	30.91	22.65	60.00	50.00	-29.09	-27.35

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.





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5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



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6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.



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7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---