FCC TEST REPORT

REPORT NO.:	RF120511C23-1
MODEL NO.:	PGZNG1, C24-HUB2, ASG1000
FCC ID:	PY312100192
RECEIVED:	May 11, 2012
TESTED:	May 23 to 24, 2012
ISSUED:	June 27, 2012

APPLICANT:	Netgear Incorporated
ADDRESS:	350 East Plumeria Drive San Jose California United States 95134

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS :	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120511C23	Original release	June 27, 2012

1. CERTIFICATION

PRODUCT :	Home Security
BRAND NAME :	ADT, DSC, NTGR, G2i
MODEL NO. :	PGZNG1, C24-HUB2, ASG1000
TEST SAMPLE :	ENGINEERING SAMPLE
APPLICANT :	Netgear Incorporated
TESTED :	May 23 to 24, 2012
STANDARDS :	**FCC Part 15, Subpart C (Section 15.249)** ANSI C63.10-2009

The above equipment (Model: PGZNG1) 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 : Phoenix Huang , **DATE:** June 27, 2012
(Phoenix Huang, Specialist)

APPROVED BY : , **DATE:** June 27, 2012
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.249)			
STANDARD PARAGRAPH	**TEST TYPE**	**RESULT**	**REMARK**
15.207	Conducted Emission Test	PASS	Meet the requirement of limit. Minimum passing margin is -9.15dB at 0.30255MHz.
15.209 15.249 15.249 (d)	Radiated Emission Test Band Edge Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -0.5dB at 908.42MHz

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:

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	2.98dB
Radiated emission	30MHz ~ 1GHz	5.59 dB
	1GHz ~6GHz	5.12 dB
	6GHz ~ 18GHz	5.32 dB
	18GHz ~ 40GHz	5.37 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Home Security
MODEL NO.	PGZNG1, C24-HUB2, ASG1000
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	FSK
CARRIER FREQUENCY OF EACH CHANNEL	908.40MHz ~ 908.42MHz
NUMBER OF CHANNEL	2
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Adapter x 1

NOTE:

1. There are WLAN technology and Z-Wave technology used for the EUT. <the WLAN test data please refer " Report No.: RF120511C23">
2. The EUT has three model names and four brand names which are identical to each other in all aspects except for the following table:

Brand	Model Name	Description
ADT	PGZNG1	for different brand name
DSC	C24-HUB2	
NTGR	ASG1000	
G2i		

From the above models, model: **PGZNG1** was selected as representative model for the test and its data was recorded in this report.

3. The EUT could be supplied with a power adapter, following three different adapter models could be chosen as following table:

No	Brand	Model No.	Spec.
1	NETGEAR	MT18-9120150-A1	Input: 120V, 60Hz, 0.5A Output: 12V, 1.5A (unshielded 1.8m)
2	NETGEAR	AD817F10	Input: 100-120V, 50/60Hz, 0.56A Output: 12V, 1.5A (unshielded 1.8m)
3	NETGEAR	SAL018F1 NA	Input: 100-120V, 47/63Hz, 0.6A Output: 12V, 1.5A (unshielded 1.8m)
For radiated test, the EUT was pre-tested with above adapters, the worse case was found in adapter 1. Therefore only the test data of the adapter was recorded in this report.			

4. There are three antennas provided to this EUT, please refer to the following table:

For WLAN			
Transmitter Circuit	Antenna Type	Peak Gain (dBi)	Connector Type
Chain (1)	PIFA	3.85	iPEX
Chain (2)	PIFA	4.01	iPEX

For Z-Wave		
Antenna Type	Peak Gain (dBi)	Connector Type
Dipole	3.1	iPEX

5. The EUT incorporates a MIMO function.

MODULATION MODE	TX/Rx FUNCTION
802.11b	2Tx/2Rx
802.11g	2Tx/2Rx
802.11n (20MHz)	2Tx/2Rx
802.11n (40MHz)	2Tx/2Rx

6. Radiated emission of the simultaneous operation (WiFi & Z-Wave) has been evaluated and no non-compliance was found.

7. The EUT incorporates CDD function with 802.11b, 802.11g and MIMO function with 802.11n.

8. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function.

9. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

10. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

2 channels are provided in this EUT.

Channel	Freq. (MHz)
1	908.40
2	908.42

3.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	PLC	RE<1G	RE≥1G	
1	√	√	√	Adapter 1
2	√	-	-	Adapter 2
3	√	-	-	Adapter 3

Where **RE<1G:** Radiated Emission below 1GHz **RE≥1G:** Radiated Emission above 1GHz

PLC: Power Line Conducted Emission

NOTE: The EUT had been pre-tested on the positioned of each 2 polarity. The worst case was found when positioned on **laying – flat.**

POWER LINE 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.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
1 to 2	2	FSK

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
1 to 2	2	FSK

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations axis and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
1 to 2	2	FSK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	25deg. C, 75%RH	120Vac, 60Hz	JyunChun Lin
RE≥1G	21deg. C, 65%RH	120Vac, 60Hz	Robert Chen
RE<1G	22deg. C, 63%RH	120Vac, 60Hz	Robert Chen

3.4 DESCRIPTION OF SUPPORT UNITS

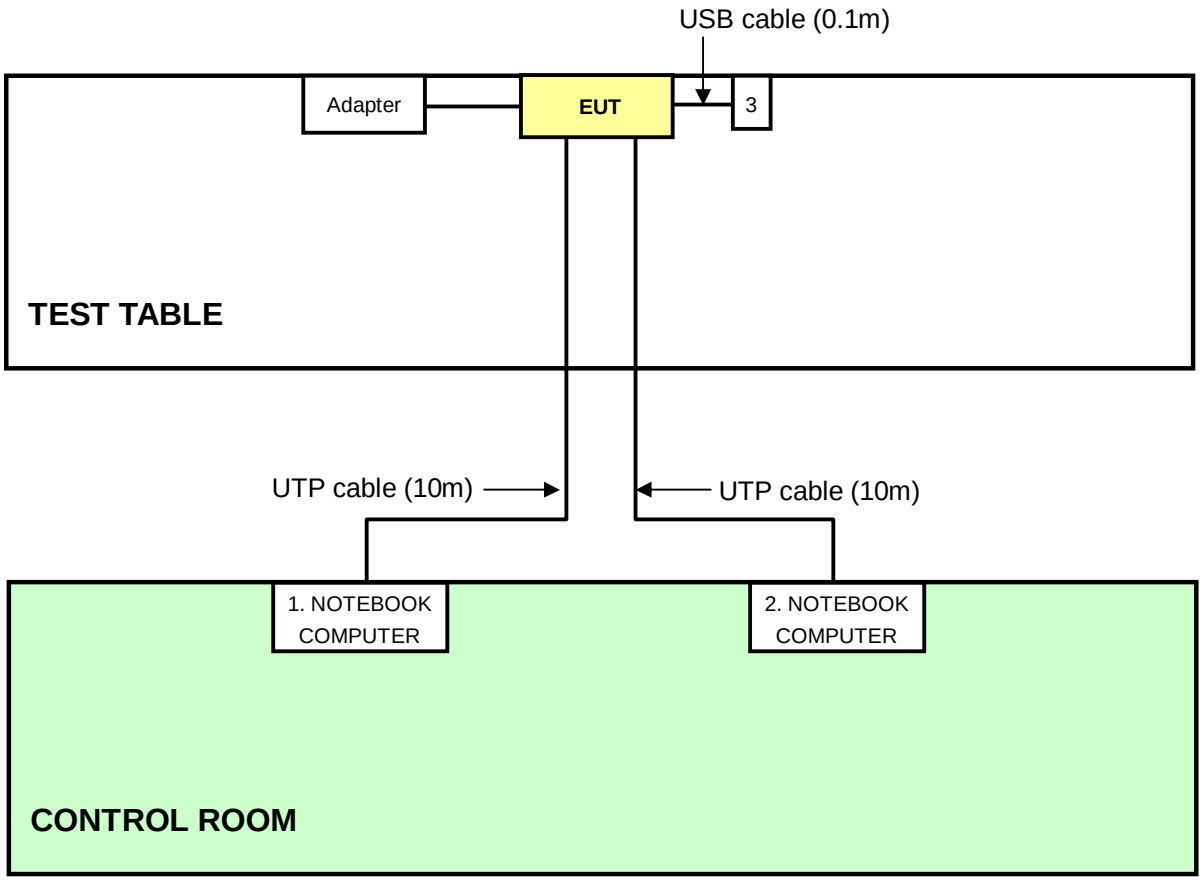
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
3	iPod shuffle	Apple	MC749TA/A	CC4DN25WDFDM	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	UTP cable, 10m
2	UTP cable, 10m
3	USB cable, 0.1m

NOTE: All power cords of the above support units are non shielded (1.8m).

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 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 15.249)

ANSI C63.10-2009

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 08, 2012	Mar. 07, 2013
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 07, 2011	Sep. 06, 2012
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 02, 2011	Nov. 01, 2012
RF Cable (JYEBAO)	5DFB	COCCAB-001	Aug. 29, 2011	Aug. 28, 2012
50 ohms Terminator	50	3	Nov. 02, 2011	Nov. 01, 2012
Software ADT	BV ADT_Cond_V7.3.7	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 Shielded Room No. C.
3 The VCCI Con C Registration No. is C-3611.
4 Tested Date: May 24, 2012

4.1.3 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.

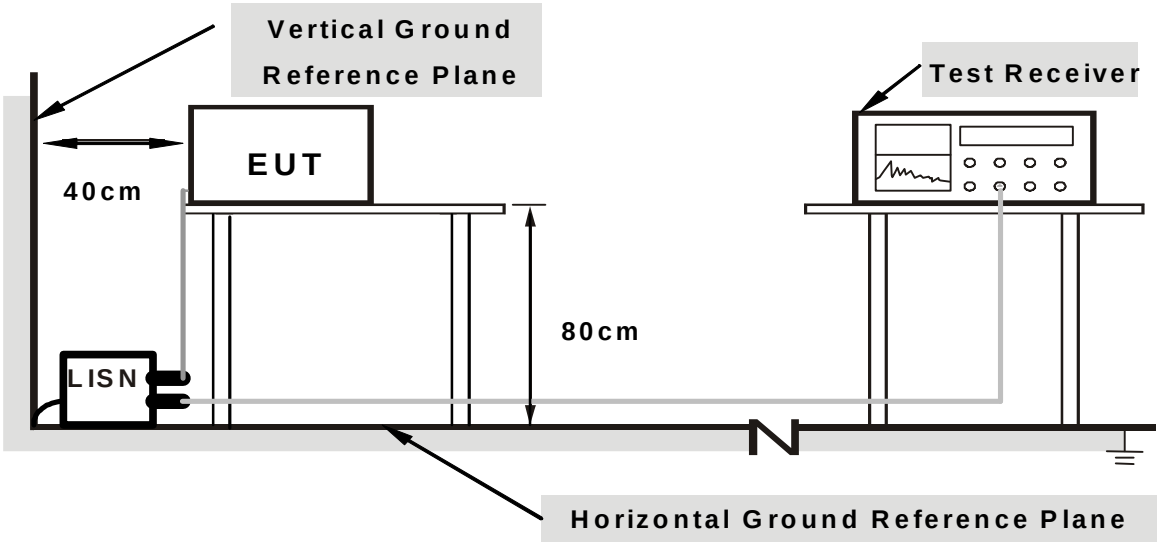
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 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 related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

1. Placed the EUT on testing table.
2. Prepared computer system (support unit 1) to act as communication partner.
3. The communication partner ran test program “artgui.exe” to enable EUT under transmission/receiving condition continuously.

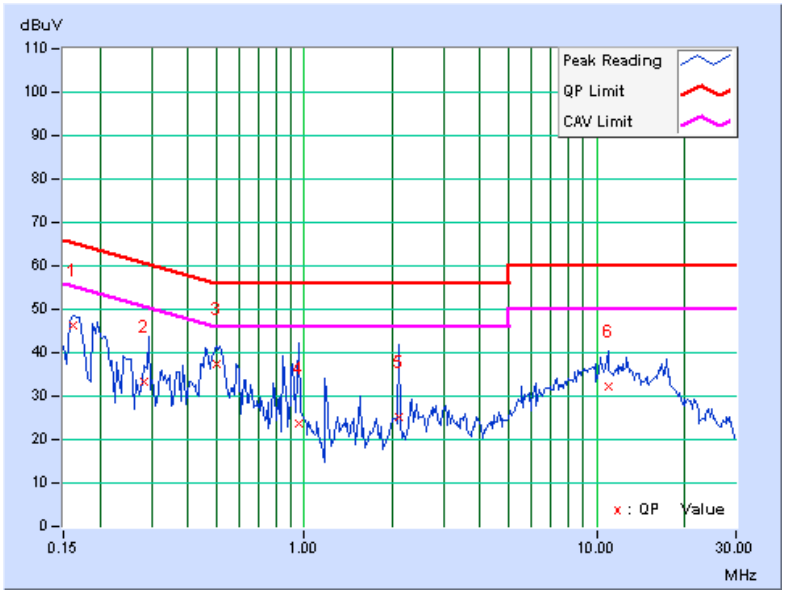
4.1.7 TEST RESULTS (MODE 1)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16155	0.07	46.22	40.52	46.29	40.59	65.38	55.38	-19.09	-14.79
2	0.28447	0.09	33.24	29.31	33.33	29.40	60.68	50.68	-27.35	-21.28
3	0.50178	0.12	37.26	29.75	37.38	29.87	56.00	46.00	-18.62	-16.13
4	0.95876	0.15	23.51	15.50	23.66	15.65	56.00	46.00	-32.34	-30.35
5	2.11345	0.28	24.99	15.49	25.27	15.77	56.00	46.00	-30.73	-30.23
6	10.94189	0.75	31.44	26.95	32.19	27.70	60.00	50.00	-27.81	-22.30

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.

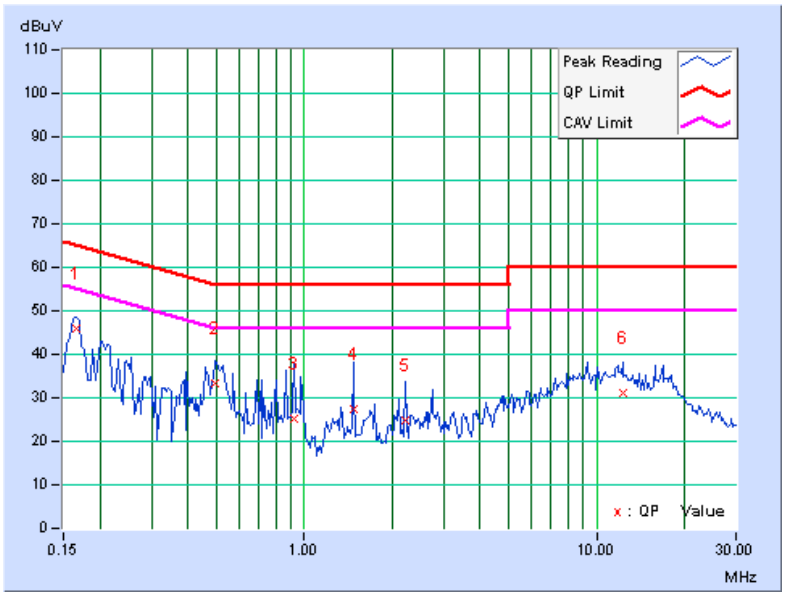


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16588	0.06	45.82	37.66	45.88	37.72	65.16	55.16	-19.28	-17.44
2	0.49721	0.08	33.20	28.63	33.28	28.71	56.05	46.05	-22.76	-17.33
3	0.92756	0.09	24.95	12.89	25.04	12.98	56.00	46.00	-30.96	-33.02
4	1.47675	0.13	27.46	13.56	27.59	13.69	56.00	46.00	-28.41	-32.31
5	2.21445	0.18	24.72	12.70	24.90	12.88	56.00	46.00	-31.10	-33.12
6	12.30889	0.47	30.56	25.78	31.03	26.25	60.00	50.00	-28.97	-23.75

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.



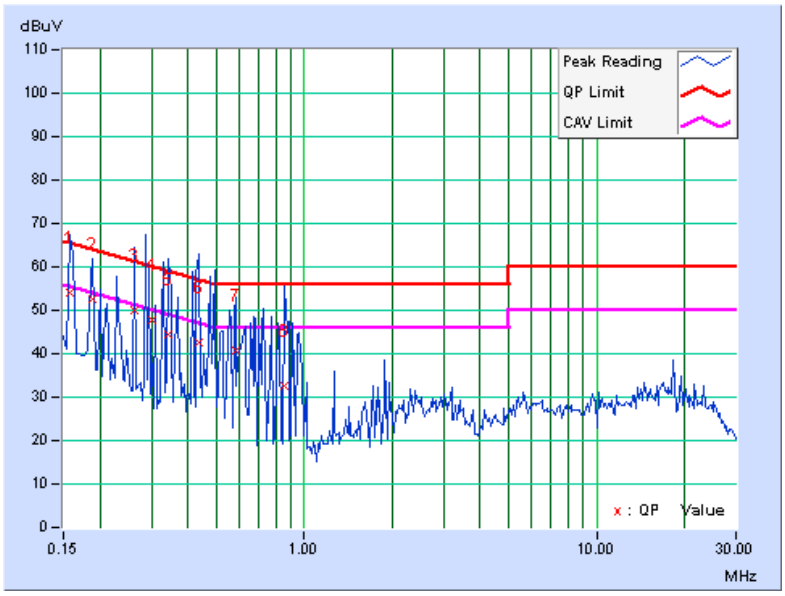
4.1.8 TEST RESULTS (MODE 2)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15765	0.07	53.86	30.16	53.93	30.23	65.59	55.59	-11.66	-25.36
2	0.18926	0.08	52.67	27.78	52.75	27.86	64.07	54.07	-11.32	-26.21
3	0.26345	0.09	49.81	23.95	49.90	24.04	61.32	51.32	-11.42	-27.28
4	0.30235	0.10	47.76	20.22	47.86	20.32	60.18	50.18	-12.32	-29.86
5	0.34178	0.10	44.26	20.29	44.36	20.39	59.16	49.16	-14.80	-28.77
6	0.43554	0.11	42.53	20.81	42.64	20.92	57.15	47.15	-14.50	-26.22
7	0.58367	0.12	40.46	12.72	40.58	12.84	56.00	46.00	-15.42	-33.16
8	0.85723	0.14	32.45	9.14	32.59	9.28	56.00	46.00	-23.41	-36.72

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.

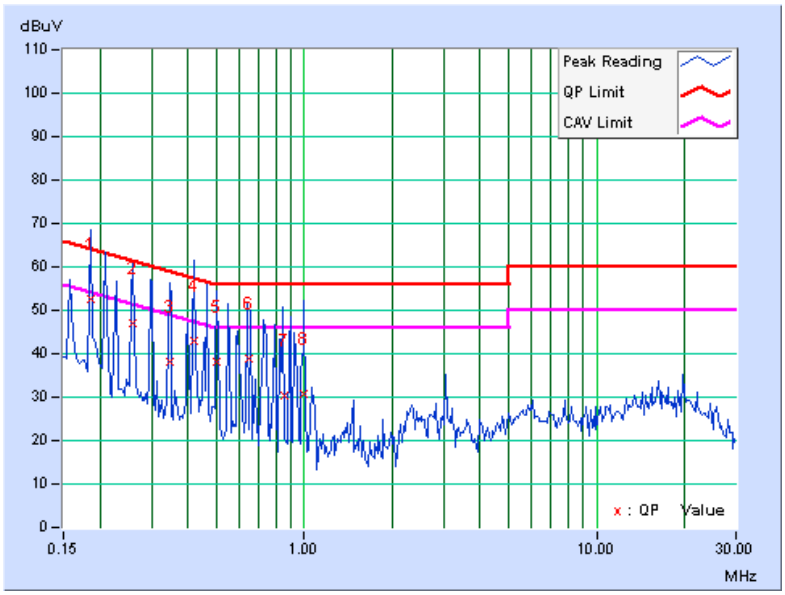


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18543	0.07	52.65	27.37	52.72	27.44	64.24	54.24	-11.52	-26.80
2	0.25955	0.08	46.78	21.36	46.86	21.44	61.45	51.45	-14.59	-30.01
3	0.34545	0.09	37.98	16.45	38.07	16.54	59.07	49.07	-21.00	-32.53
4	0.41946	0.10	42.78	20.45	42.88	20.55	57.46	47.46	-14.58	-26.91
5	0.50025	0.10	37.91	14.18	38.01	14.28	56.00	46.00	-17.99	-31.72
6	0.64256	0.10	38.78	13.03	38.88	13.13	56.00	46.00	-17.12	-32.87
7	0.84978	0.11	30.11	8.67	30.22	8.78	56.00	46.00	-25.78	-37.22
8	0.99734	0.11	30.78	8.89	30.89	9.00	56.00	46.00	-25.11	-37.00

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.



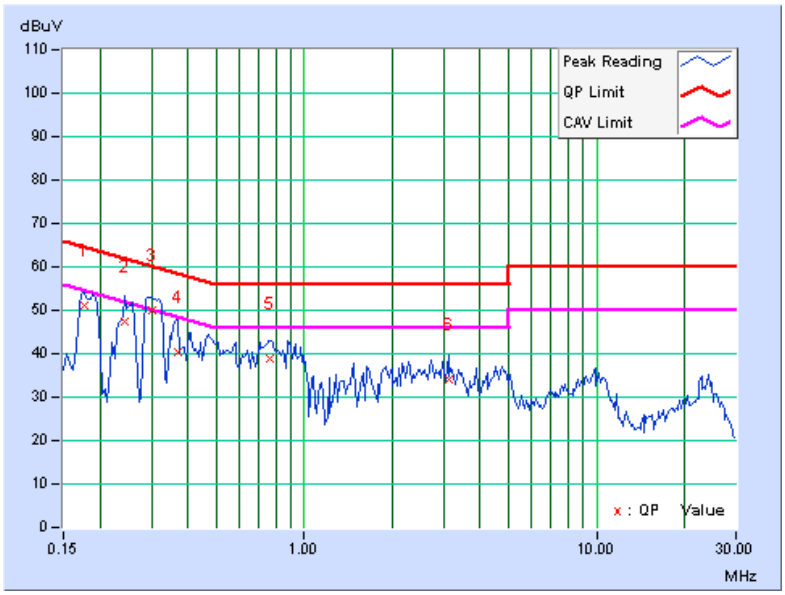
4.1.9 TEST RESULTS (MODE 3)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17789	0.07	51.22	41.56	51.29	41.63	64.58	54.58	-13.29	-12.95
2	0.24364	0.07	47.34	38.48	47.41	38.55	61.97	51.97	-14.56	-13.42
3	**0.30255**	**0.08**	**49.92**	**40.95**	**50.00**	**41.03**	**60.17**	**50.17**	**-10.18**	**-9.15**
4	0.36866	0.08	40.22	23.84	40.30	23.92	58.53	48.53	-18.23	-24.61
5	0.76756	0.10	38.77	28.68	38.87	28.78	56.00	46.00	-17.13	-17.22
6	3.10976	0.27	33.78	25.43	34.05	25.70	56.00	46.00	-21.95	-20.30

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.

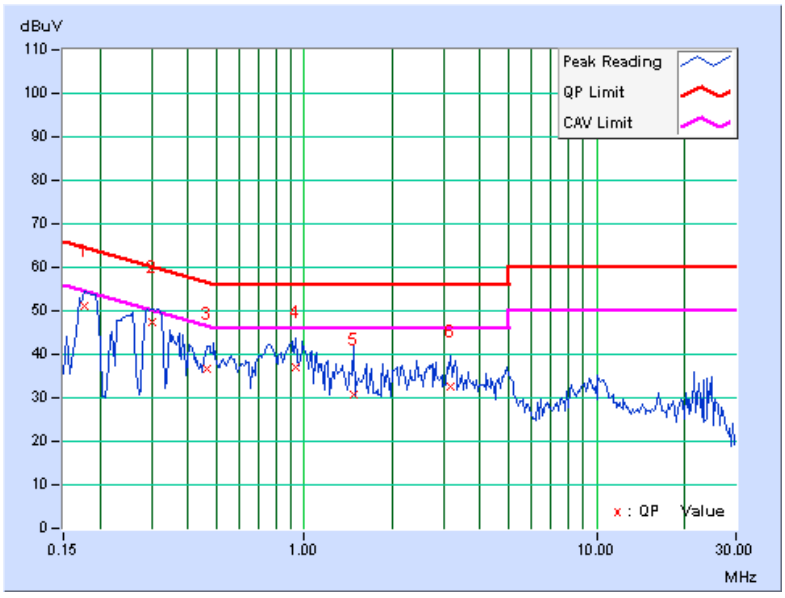


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17743	0.07	50.89	40.86	50.96	40.93	64.61	54.61	-13.65	-13.68
2	0.30255	0.09	47.45	38.21	47.54	38.30	60.17	50.17	-12.64	-11.88
3	0.46654	0.10	36.56	23.21	36.66	23.31	56.58	46.58	-19.91	-23.26
4	0.93932	0.11	36.78	24.99	36.89	25.10	56.00	46.00	-19.11	-20.90
5	1.48078	0.15	30.43	17.67	30.58	17.82	56.00	46.00	-25.42	-28.18
6	3.18334	0.26	32.27	23.78	32.53	24.04	56.00	46.00	-23.47	-21.96

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.



4.2 RADIATED EMISSION AND BAND EDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BAND EDGE MEASUREMENT

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 ~ 928 MHz	50	500
2400 ~ 2483.5 MHz	50	500
5725 ~ 5875 MHz	50	500
24 ~ 24.25 GHz	250	2500

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 as below table, whichever is the lesser attenuation

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.

4.2.2 TEST INSTRUMENTS

For Below 1GHz (except for Fundamental frequency and Bandedge emission):

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250254	July 12, 2011	July 11, 2012
Agilent Pre-Selector	N9039A	MY46520311	July 12, 2011	July 11, 2012
Agilent Signal Generator	N5181A	MY49060517	July 12, 2011	July 11, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-03	Nov. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02578	July 04, 2011	July 03, 2012
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-360	Apr. 09, 2012	Apr. 08, 2013
AISI Horn_Antenna	AIH.8018	0000320091110	Nov. 14, 2011	Nov. 13, 2012
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-201 RF104-203 RF104-204	Dec. 26, 2011	Dec. 25, 2012
RF Cable	NA	CHGCAB_001	Oct. 07, 2011	Oct. 06, 2012
Software	ADT_Radiated_ V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3 The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: May 23, 2012

For Above 1GHz, Fundamental frequency and Bandedge emission :

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Agilent Pre-Selector	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF CABLE	NA	RF104-205 RF104-207 RF104-202	Dec. 27, 2011	Dec. 26, 2012
RF Cable	NA	CHHCAB_001	Oct. 08, 2011	Oct. 07, 2012
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested date: May 23, 2012

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

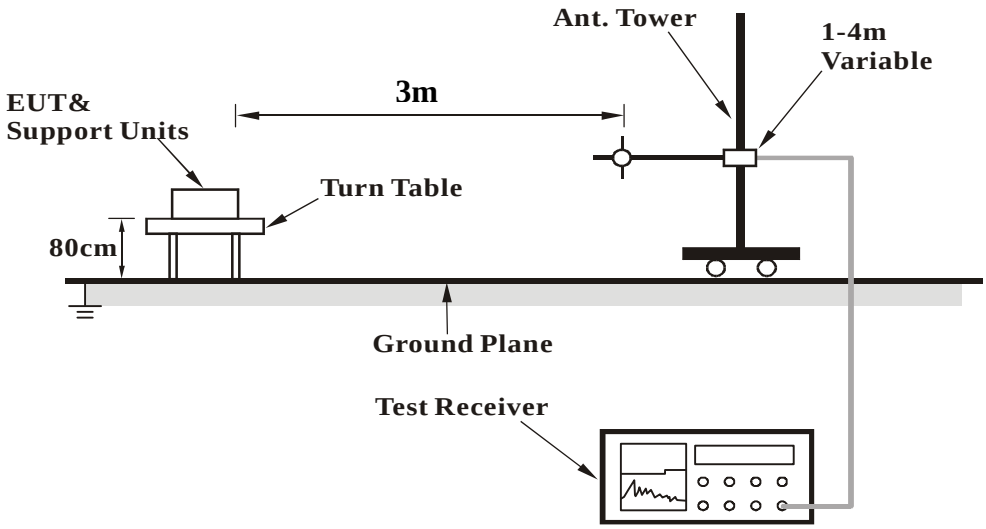
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at 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 and from 902MHz to 928MHz.
4. 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



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

Zwave

CHANNEL	TX Channel 2	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	55.93	27.3 QP	40.0	-12.7	1.50 H	294	13.48	13.83
2	141.20	30.7 QP	43.5	-12.8	1.00 H	75	16.67	14.06
3	399.95	34.3 QP	46.0	-11.7	1.00 H	117	16.48	17.86
4	600.09	33.1 QP	46.0	-12.9	1.00 H	190	10.46	22.66
5	908.34	35.1 QP	46.0	-10.9	2.00 H	172	7.52	27.58
6	1000.00	37.2 QP	54.0	-16.8	2.00 H	164	8.73	28.46
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	69.67	34.1 QP	40.0	-5.9	1.50 V	194	21.41	12.66
2	141.20	29.9 QP	43.5	-13.6	1.00 V	169	15.82	14.06
3	400.19	20.7 QP	46.0	-25.3	1.00 V	0	2.88	17.86
4	799.98	40.2 QP	46.0	-5.8	1.50 V	360	14.30	25.92
5	908.34	35.3 QP	46.0	-10.7	1.00 V	94	7.73	27.58
6	1000.00	37.1 QP	54.0	-16.9	1.00 V	0	8.60	28.46

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.

CHANNEL	TX Channel 2	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	Below 1GHz		Average (AV)

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	902.00	42.6 PK	66.0	-23.4	1.67 H	3	16.70	25.90
2	902.00	33.9 AV	46.0	-12.1	1.67 H	3	8.00	25.90
3	*908.42	95.0 PK	114.0	-19.0	1.67 H	3	69.02	25.98
4	***908.42**	**93.5 AV**	**94.0**	**-0.5**	**1.67 H**	**3**	**67.52**	**25.98**
5	928.00	42.4 PK	66.0	-23.6	1.67 H	3	16.16	26.24
6	928.00	28.5 AV	46.0	-17.5	1.67 H	3	2.26	26.24
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	902.00	40.3 PK	66.0	-25.7	1.00 V	256	14.40	25.90
2	902.00	29.3 AV	46.0	-16.7	1.00 V	256	3.40	25.90
3	*908.42	83.7 PK	114.0	-30.3	1.00 V	256	57.72	25.98
4	*908.42	82.1 AV	94.0	-11.9	1.00 V	256	56.12	25.98
5	928.00	43.1 PK	66.0	-22.9	1.00 V	256	16.86	26.24
6	928.00	28.7 AV	46.0	-17.3	1.00 V	256	2.46	26.24

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.

ABOVE 1GHz DATA

Zwave

CHANNEL	TX Channel 2	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 10GHz		

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	2725.26	42.6 PK	74.0	-31.4	1.00 H	246	15.33	27.27
2	2725.26	33.9 AV	54.0	-20.1	1.00 H	246	6.63	27.27
3	3633.68	44.6 PK	74.0	-29.4	1.00 H	167	17.33	27.27
4	3633.68	36.9 AV	54.0	-17.1	1.00 H	167	9.63	27.27
5	4542.10	44.4 PK	74.0	-29.6	1.00 H	67	17.13	27.27
6	4542.10	33.3 AV	54.0	-20.7	1.00 H	67	6.03	27.27
7	5450.52	47.0 PK	74.0	-27.0	1.00 H	115	19.73	27.27
8	5450.52	35.6 AV	54.0	-18.4	1.00 H	115	8.33	27.27
9	7267.36	54.9 PK	74.0	-19.1	1.00 H	302	27.63	27.27
10	7267.36	42.4 AV	54.0	-11.6	1.00 H	302	15.13	27.27
11	8175.78	54.0 PK	74.0	-20.0	1.00 H	287	26.73	27.27
12	8175.78	41.9 AV	54.0	-12.1	1.00 H	287	14.63	27.27
13	9084.20	53.5 PK	74.0	-20.5	1.00 H	321	26.23	27.27
14	9084.20	41.5 AV	54.0	-12.5	1.00 H	321	14.23	27.27
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	2725.26	40.3 PK	74.0	-33.7	1.00 V	65	13.03	27.27
2	2725.26	29.3 AV	54.0	-24.7	1.00 V	65	2.03	27.27
3	3633.68	43.0 PK	74.0	-31.0	1.00 V	358	15.73	27.27
4	3633.68	33.3 AV	54.0	-20.7	1.00 V	358	6.03	27.27
5	4542.10	44.5 PK	74.0	-29.5	1.00 V	77	17.23	27.27
6	4542.10	33.3 AV	54.0	-20.7	1.00 V	77	6.03	27.27
7	5450.52	46.9 PK	74.0	-27.1	1.00 V	54	19.63	27.27
8	5450.52	35.3 AV	54.0	-18.7	1.00 V	54	8.03	27.27
9	7267.36	54.4 PK	74.0	-19.6	1.05 V	301	27.13	27.27
10	7267.36	42.0 AV	54.0	-12.0	1.05 V	301	14.73	27.27
11	8175.78	54.1 PK	74.0	-19.9	1.01 V	231	26.83	27.27
12	8175.78	42.1 AV	54.0	-11.9	1.01 V	231	14.83	27.27
13	9084.20	53.8 PK	74.0	-20.2	1.06 V	125	26.53	27.27
14	9084.20	41.6 AV	54.0	-12.4	1.06 V	125	14.33	27.27

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. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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.adt.com.tw

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

7. APPENDIX A – MODIFICATION RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

---END---