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FCC TEST REPORT

REPORT NO.: RF110516C08B
MODEL NO.: DuraFon 1X (refer to item 3.1 for more detail)
FCC ID: U2M-SN902
RECEIVED: Nov. 01, 2012
TESTED: Nov. 05 ~ Nov. 23, 2012
ISSUED: Nov. 27, 2012

APPLICANT: Senao Networks, Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF110516C08B	Original release	Nov. 27, 2012



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1. CERTIFICATION

PRODUCT: Industrial Cordless Phone System

BRAND: EnGenius

MODEL: DuraFon 1X (refer to item 3.1 for more detail)

APPLICANT: Senao Networks, Inc.

TESTED: Nov. 05 ~ Nov. 23, 2012

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.10-2009

This report is issued as a supplementary report of RF110516C08. This report shall be used combined together with its original report.

PREPARED BY :


Pettie Chen / Senior Specialist

, DATE : Nov. 27, 2012

APPROVED BY :


Ken Liu / Manager

, DATE : Nov. 27, 2012

NOTE: The radiated emission below 1GHz and conducted emission tests were performed for the addendum. Refer to original report for the other test data.

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)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -2.06dB at 0.52544MHz.
15.247(a)(1)(i)	Number of Hopping Frequency Used	NA	Refer to Note
15.247(a)(1)(i)	Dwell Time on Each Channel	NA	Refer to Note
15.247(a)(1)(i)	1. Hopping Channel Separation 2. Spectrum Bandwidth of a Frequency Hopping Sequence Spread Spectrum System	NA	Refer to Note
15.247(b)(2)	Maximum Peak Output Power	NA	Refer to Note
15.247(d)	Transmitter Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.5dB at 84.23MHz.
15.247(d)	Band Edge Measurement	NA	Refer to Note
15.203	Antenna Requirement	NA	Refer to Note

NOTE: The radiated emission below 1GHz and conducted emission tests were performed for the addendum. Refer to original report for the other test data.

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 Emission	9KHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Industrial Cordless Phone System
MODEL NO.	DuraFon 1X (refer to note as below)
POWER SUPPLY	12Vdc (from AC Adapter) 3.7Vdc (from battery) 5.5Vdc (from charger)
MODULATION TYPE	MSK
OPERATING FREQUENCY	902.5155 ~ 927.5972MHz
NUMBER OF CHANNEL	50
CHANNEL SPACING	202.272kHz
OUTPUT POWER	972.7mW
ANTENNA TYPE	Dipole antenna with 2dBi gain (Base Station) Dipole antenna with 1.5dBi gain (Portable Handset)
ANTENNA CONNECTOR	RTNC
DATA CABLE	1.8m non-shielded RJ11 cable without core
I/O PORTS	Refer to user's manual
ACCESSORY DEVICE	Adapter, charger, Battery

NOTE:

1. This report is issued as a supplementary report of BVADT report no.: RF110516C08. This report shall be combined together with its original report.
2. This report is prepared for FCC class II permissive change. Difference compared with the original report is adding second source adapters (Model: PA1024-2DUA, DSA-15P-12 US 120120, PA1008-1HU). Therefore, we re-tested radiated emission below 1GHz and conducted emission tests and presented in the test report.
3. All models are electrically identical, different model names are for marketing purpose.

Brand	Model	Remark
EnGenius	DuraFon 1X	marketing purpose
EnGenius	SN-902SPK	marketing purpose

4. The EUT uses following adapters, battery & Charger adapter.

ADAPTER 1 (for Base Station used)	
BRAND	Powertron Electronics Corp.
MODEL	PA1024-2DUA
INPUT POWER	100-240Vac, 50/60Hz, 0.6A
OUTPUT POWER	12Vdc, 1A, 12W Max
POEWR LINE	1.5m non-shielded cable without core

ADAPTER 2 (for Base Station used)	
BRAND	DVE
MODEL	DSA-15P-12 US 120120
INPUT POWER	100-240Vac, 50-60Hz, 0.5A
OUTPUT POWER	12Vdc, 1.0A, 12W MAX
POEWR LINE	1.5m non-shielded cable without core

BATTERY (for Portable Handset used)	
BRAND	EnGenius
RATING	3.7Vdc, 1700mAh

ADAPTER 3 (for Portable Handset Charger used)	
BRAND	Powertron Electronics Corp.
MODEL	PA1008-1HU
INPUT POWER	100-240Vac, 50-60Hz, 0.3A
OUTPUT POWER	5.5Vdc, 1.45A 8W MAX
POEWR LINE	1.5m non-shielded cable without core

CHARGER (for Portable Handset used)	
BRAND	EnGenius
MODEL	DuraFon
INPUT POWER	90-264Vac
OUTPUT POWER	5.5Vdc, 1.5A

5. A set of the EUT include Base station & Portable handset.
6. 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

50 channels are provided to this EUT:

CH.	FREQ. (MHz)	CH.	FREQ. (MHz)	CH.	FREQ. (MHz)	CH	FREQ. (MHz)	CH	FREQ. (MHz)
1	902.5155	11	907.7746	21	912.6291	31	918.2927	41	923.1472
2	902.9200	12	908.1791	22	913.0336	32	919.1018	42	923.9563
3	903.3246	13	908.5837	23	913.4382	33	919.5063	43	924.3608
4	903.7291	14	909.3927	24	914.2473	34	919.9109	44	924.7654
5	904.5382	15	909.7973	25	915.0563	35	920.3154	45	925.1699
6	904.9428	16	910.2018	26	915.4609	36	920.7200	46	925.5745
7	905.3473	17	910.6064	27	915.8654	37	921.5290	47	926.3836
8	905.7519	18	911.0109	28	916.6745	38	921.9336	48	926.7881
9	906.1564	19	911.8200	29	917.4836	39	922.3381	49	927.1926
10	906.9655	20	912.2245	30	917.8881	40	922.7427	50	927.5972

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE<1G	PLC	
A	√	√	Handset mode
B	√	√	Base Station mode with adapter 1
C	√	√	Base Station mode with adapter 2

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

RADIATED EMISSION TEST (BELOW 1 GHz):

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

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	AXIS
A	1 to 50	1, 25, 50	MSK	Y
B	1 to 50	1, 25, 50	MSK	X
C	1 to 50	1, 25, 50	MSK	X

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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
A	1 to 50	1, 25, 50	MSK
B	1 to 50	1, 25, 50	MSK
C	1 to 50	1, 25, 50	MSK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	26deg. C, 69%RH (Test Mode A, B)	120Vac, 60Hz	Alan Wu Credic Wu
	24deg. C, 72%RH (Test Mode C)		
PLC	24deg. C, 63%RH (Test Mode A, B)	120Vac, 60Hz	Credic Wu
	26deg. C, 65%RH (Test Mode C)		

3.3 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. (15.247)
ANSI C63.10-2009

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

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.

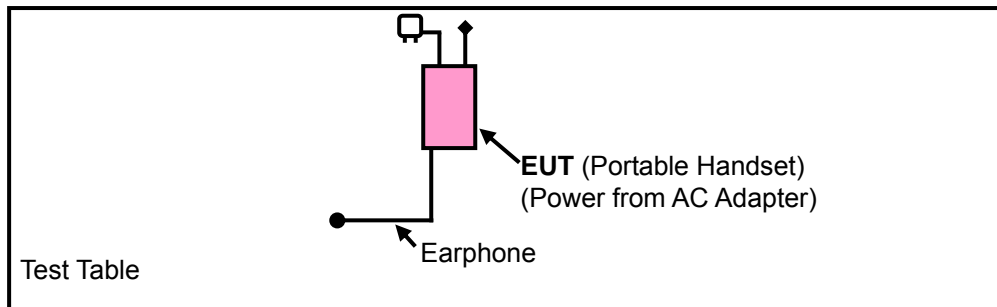
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Telephone	WONDER	WD-303	3C17IA03847	NA
2	iPod mini	apple	A1051	YM5270HGS41	NA
3	Earphone	Panasonic	KX-TCA400	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ11 cable
2	1.2m non-shielded cable without core
3	1.2m non-shielded cable without core

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

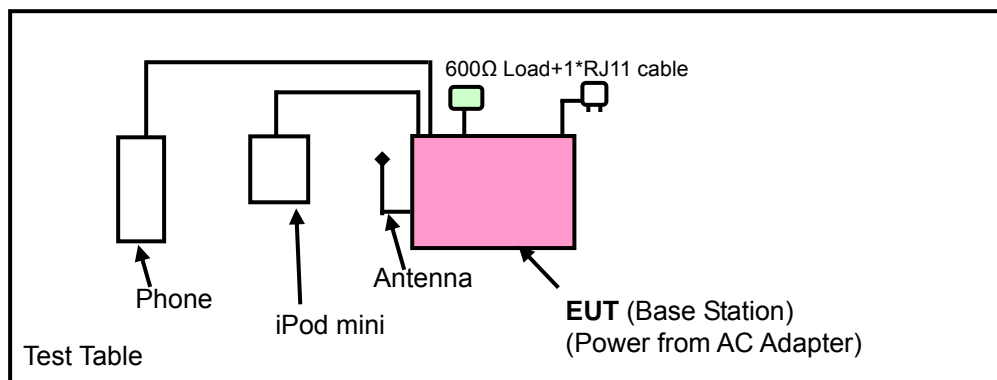
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

TEST MODE A (Handset-Standalone mode)



NOTE: The configuration was the worst case as above.

TEST MODE B, C (Base Station mode)



4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Jan. 03, 2012	Jan. 02, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP 40	100039	Feb. 03, 2012	Feb. 02, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-408	Jan. 05, 2012	Jan. 04, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Preamplifier Agilent	8449B	3008A01961	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10738	Oct. 26, 2012	Oct. 25, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	230132/4	Oct. 26, 2012	Oct. 25, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
Software ADT	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT	TT100.	TT93021704	NA	NA
Turn Table Controller ADT	SC100.	SC93021704	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 Chamber 4.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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.

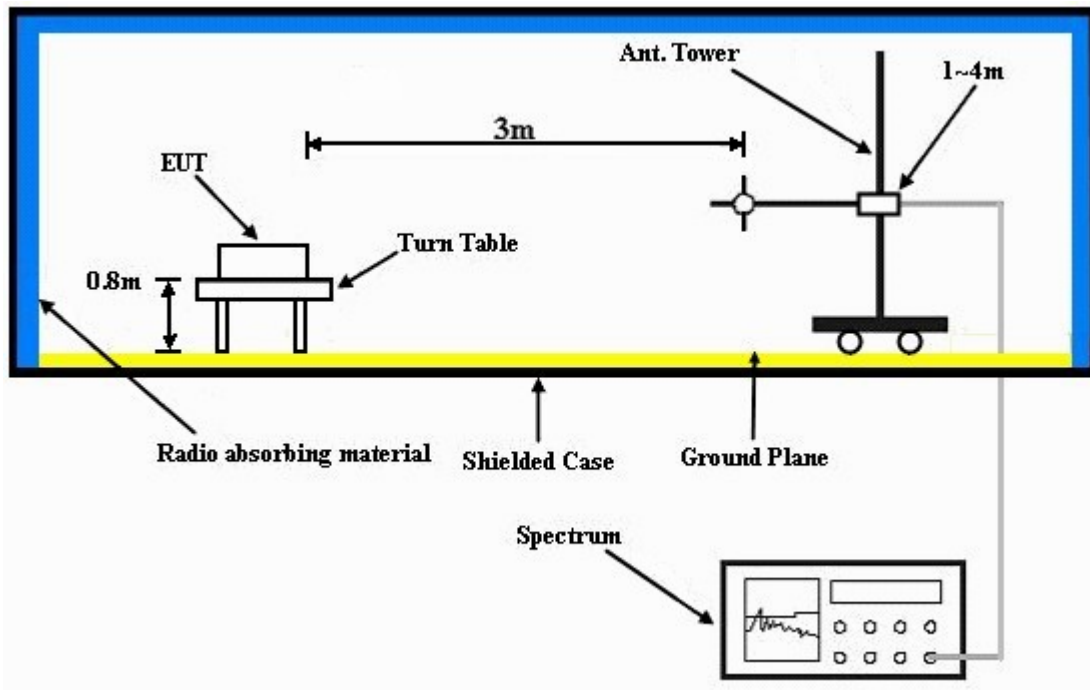
NOTE:

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 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

- Placed the EUT on a testing table.
- Set the EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.



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4.1.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 69%RH	TEST MODE	A
TESTED BY	Alan Wu		

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	86.17	35.7 QP	40.0	-4.3	1.99 H	136	26.80	8.90
2	136.62	36.3 QP	43.5	-7.2	1.99 H	243	23.10	13.20
3	185.13	25.8 QP	43.5	-17.7	1.24 H	237	13.70	12.10
4	654.71	26.5 QP	46.0	-19.5	1.00 H	39	4.60	21.90
5	811.88	39.4 QP	46.0	-6.6	1.99 H	64	14.70	24.70
6	994.28	47.7 QP	54.0	-6.3	1.49 H	106	21.10	26.60
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	39.60	32.3 QP	40.0	-7.7	1.49 V	6	18.70	13.60
2	84.23	32.3 QP	40.0	-7.7	1.49 V	6	23.10	9.20
3	130.80	31.2 QP	43.5	-12.3	1.00 V	145	18.50	12.70
4	654.71	27.4 QP	46.0	-18.6	1.00 V	19	5.50	21.90
5	811.88	33.5 QP	46.0	-12.5	1.24 V	345	8.80	24.70
6	994.28	43.7 QP	54.0	-10.3	1.00 V	234	17.10	26.60

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 25	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 69%RH	TEST MODE	A
TESTED BY	Alan Wu		

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	84.23	37.5 QP	40.0	-2.5	1.99 H	163	28.30	9.20
2	130.80	36.9 QP	43.5	-6.6	1.99 H	86	24.20	12.70
3	198.71	27.3 QP	43.5	-16.2	1.74 H	269	16.40	10.90
4	254.99	25.2 QP	46.0	-20.8	1.00 H	101	12.10	13.10
5	668.29	30.5 QP	46.0	-15.5	1.00 H	95	8.50	22.00
6	994.28	43.1 QP	54.0	-10.9	1.00 H	241	16.50	26.60
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	39.60	34.6 QP	40.0	-5.4	1.24 V	2	21.00	13.60
2	82.29	32.9 QP	40.0	-7.1	1.74 V	267	23.30	9.60
3	128.86	34.4 QP	43.5	-9.1	1.24 V	175	21.90	12.50
4	202.60	22.1 QP	43.5	-21.4	1.00 V	150	11.20	10.90
5	668.29	28.8 QP	46.0	-17.2	1.74 V	92	6.80	22.00
6	994.28	42.4 QP	54.0	-11.6	1.24 V	33	15.80	26.60

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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 50	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 69%RH	TEST MODE	A
TESTED BY	Alan Wu		

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	84.23	34.9 QP	40.0	-5.1	2.00 H	160	25.70	9.20
2	130.80	35.3 QP	43.5	-8.2	2.00 H	97	22.60	12.70
3	198.71	27.2 QP	43.5	-16.3	2.00 H	270	16.30	10.90
4	654.71	26.5 QP	46.0	-19.5	1.00 H	219	4.60	21.90
5	811.88	40.1 QP	46.0	-5.9	1.00 H	318	15.40	24.70
6	994.28	49.0 QP	54.0	-5.0	1.50 H	121	22.40	26.60
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	41.54	34.5 QP	40.0	-5.5	1.00 V	79	20.70	13.80
2	84.23	33.5 QP	40.0	-6.5	1.00 V	271	24.30	9.20
3	128.86	34.7 QP	43.5	-8.8	1.00 V	144	22.20	12.50
4	654.71	24.5 QP	46.0	-21.5	3.00 V	136	2.60	21.90
5	811.88	35.5 QP	46.0	-10.5	1.24 V	193	10.80	24.70
6	994.28	46.1 QP	54.0	-7.9	1.24 V	44	19.50	26.60

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 69%RH	TEST MODE	B
TESTED BY	Cedric Wu		

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	82.29	32.3 QP	40.0	-7.7	1.25 H	303	22.70	9.60
2	126.92	24.3 QP	43.5	-19.2	1.50 H	255	11.90	12.40
3	237.52	37.1 QP	46.0	-8.9	1.00 H	261	24.70	12.40
4	253.05	37.0 QP	46.0	-9.0	1.00 H	276	24.00	13.00
5	811.88	30.6 QP	46.0	-15.4	1.00 H	4	5.90	24.70
6	932.19	35.3 QP	46.0	-10.7	1.50 H	42	9.20	26.10
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	65.09	34.7 QP	40.0	-5.3	1.50 V	65	21.90	12.80
2	245.28	33.7 QP	46.0	-12.3	1.00 V	52	21.00	12.70
3	278.27	28.5 QP	46.0	-17.5	1.00 V	56	14.60	13.90
4	433.50	27.4 QP	46.0	-18.6	1.75 V	150	9.50	17.90
5	811.88	30.7 QP	46.0	-15.3	1.00 V	300	6.00	24.70
6	934.13	40.5 QP	46.0	-5.5	1.24 V	3	14.40	26.10

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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 25	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 69%RH	TEST MODE	B
TESTED BY	Cedric Wu		

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	64.83	29.9 QP	40.0	-10.1	1.75 H	298	17.00	12.90
2	179.31	26.1 QP	43.5	-17.4	1.50 H	182	13.50	12.60
3	262.75	35.7 QP	46.0	-10.3	1.00 H	282	22.30	13.40
4	336.48	33.0 QP	46.0	-13.0	1.00 H	192	17.40	15.60
5	796.36	30.3 QP	46.0	-15.7	1.25 H	181	5.80	24.50
6	934.13	35.1 QP	46.0	-10.9	1.50 H	58	9.00	26.10
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	65.09	35.7 QP	40.0	-4.3	1.25 V	65	22.9	12.80
2	88.11	35.7 QP	43.5	-7.8	1.00 V	50	27.10	8.60
3	185.13	27.1 QP	43.5	-16.4	1.00 V	94	15.00	12.10
4	253.05	33.4 QP	46.0	-12.6	1.00 V	60	20.40	13.00
5	466.49	25.6 QP	46.0	-20.4	1.00 V	66	6.90	18.70
6	792.48	28.2 QP	46.0	-17.8	1.00 V	288	3.80	24.40
7	934.09	40.1 QP	46.0	-5.9	1.00 V	3	14.00	26.10

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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 50	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 69%RH	TEST MODE	B
TESTED BY	Cedric Wu		

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	64.83	31.5 QP	40.0	-8.5	1.00 H	81	18.60	12.90
2	86.17	33.5 QP	40.0	-6.5	1.74 H	111	24.60	8.90
3	237.52	36.8 QP	46.0	-9.2	1.24 H	270	24.40	12.40
4	262.75	35.8 QP	46.0	-10.2	1.24 H	272	22.40	13.40
5	433.50	23.9 QP	46.0	-22.1	1.00 H	211	6.00	17.90
6	934.13	36.0 QP	46.0	-10.0	1.49 H	32	9.90	26.10
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	65.08	34.2 QP	40.0	-5.8	1.50 V	175	21.40	12.80
2	86.17	36.1 QP	40.0	-3.9	1.25 V	28	27.20	8.90
3	245.28	32.0 QP	46.0	-14.0	1.25 V	49	19.30	12.70
4	278.27	28.6 QP	46.0	-17.4	1.25 V	162	14.70	13.90
5	433.50	26.0 QP	46.0	-20.0	1.25 V	41	8.10	17.90
6	932.19	42.2 QP	46.0	-3.8	1.75 V	61	16.10	26.10

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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 72%RH	TEST MODE	C
TESTED BY	Alan Wu		

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	53.18	15.4 QP	40.0	-24.6	1.24 H	44	1.50	13.90
2	425.74	25.0 QP	46.0	-21.0	1.49 H	24	7.30	17.70
3	683.81	22.3 QP	46.0	-23.7	1.74 H	70	0.20	22.10
4	798.30	25.7 QP	46.0	-20.3	1.74 H	229	1.10	24.60
5	872.03	32.5 QP	46.0	-13.5	1.99 H	5	7.10	25.40
6	986.52	43.9 QP	54.0	-10.1	1.49 H	17	17.30	26.60
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	45.42	15.4 QP	40.0	-24.6	1.49 V	111	1.40	14.00
2	361.71	18.6 QP	46.0	-27.4	1.00 V	350	2.40	16.20
3	645.01	23.2 QP	46.0	-22.8	1.49 V	286	1.40	21.80
4	794.42	26.2 QP	46.0	-19.8	1.00 V	91	1.70	24.50
5	873.97	33.9 QP	46.0	-12.1	1.24 V	231	8.40	25.50
6	984.47	44.5 QP	54.0	-9.5	1.00 V	267	17.90	26.60

- 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.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 25	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 72%RH	TEST MODE	C
TESTED BY	Alan Wu		

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	45.42	14.6 QP	40.0	-25.4	1.00 H	311	0.60	14.00
2	507.24	20.6 QP	46.0	-25.4	1.49 H	16	1.00	19.60
3	660.53	22.3 QP	46.0	-23.7	1.49 H	187	0.40	21.90
4	722.62	23.3 QP	46.0	-22.7	1.74 H	196	0.60	22.70
5	872.03	34.4 QP	46.0	-11.6	1.25 H	57	9.00	25.40
6	986.52	43.5 QP	54.0	-10.5	1.99 H	44	16.90	26.60
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	49.30	15.9 QP	40.0	-24.1	1.49 V	174	1.90	14.00
2	489.77	19.9 QP	46.0	-26.1	1.00 V	295	0.60	19.30
3	710.98	23.6 QP	46.0	-22.4	1.75 V	222	1.20	22.40
4	794.42	25.9 QP	46.0	-20.1	1.99 V	207	1.40	24.50
5	872.03	33.0 QP	46.0	-13.0	1.99 V	236	7.60	25.40
6	986.52	45.9 QP	54.0	-8.1	1.00 V	357	19.30	26.60

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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 50	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 72%RH	TEST MODE	C
TESTED BY	Alan Wu		

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	53.18	15.0 QP	40.0	-25.0	1.99 H	246	1.10	13.90
2	505.30	20.8 QP	46.0	-25.2	1.49 H	305	1.20	19.60
3	648.89	22.3 QP	46.0	-23.7	1.00 H	336	0.40	21.90
4	794.42	25.7 QP	46.0	-20.3	1.00 H	136	1.20	24.50
5	872.03	33.6 QP	46.0	-12.4	1.25 H	2	8.20	25.40
6	986.52	43.4 QP	54.0	-10.6	1.49 H	60	16.80	26.60
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	49.30	15.3 QP	40.0	-24.7	1.75 V	279	1.30	14.00
2	464.55	19.6 QP	46.0	-26.4	1.75 V	225	0.90	18.70
3	604.26	22.1 QP	46.0	-23.9	2.00 V	300	0.50	21.60
4	691.58	22.5 QP	46.0	-23.5	1.00 V	297	0.40	22.10
5	872.03	33.1 QP	46.0	-12.9	1.49 V	148	7.70	25.40
6	986.52	46.6 QP	54.0	-7.4	1.49 V	234	20.00	26.60

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	100291	Nov. 23, 2011	Nov. 22, 2012
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 02, 2012	Jul. 01, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 07, 2012	Feb. 06, 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 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 TEST PROCEDURES

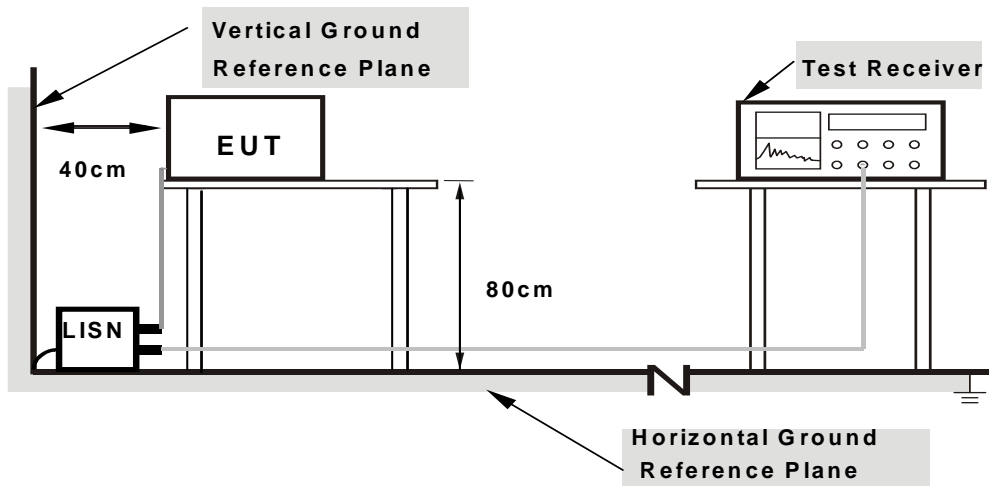
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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 cm 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

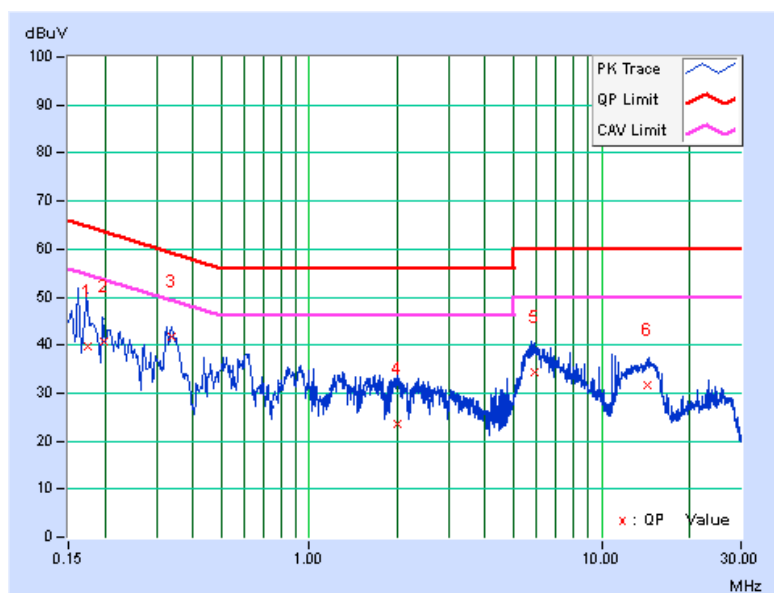
CONDUCTED WORST-CASE DATA

PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 1	TEST MODE	A

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	0.17374	0.21	39.51	16.57	39.72	16.78	64.78	54.78	-25.06	-38.00
2	0.19717	0.22	40.42	25.61	40.64	25.83	63.73	53.73	-23.09	-27.90
3	0.33661	0.23	41.36	30.23	41.59	30.46	59.29	49.29	-17.69	-18.82
4	1.99843	0.34	23.32	5.22	23.66	5.56	56.00	46.00	-32.34	-40.44
5	5.87105	0.46	33.82	24.41	34.28	24.87	60.00	50.00	-25.72	-25.13
6	14.26901	0.64	30.96	21.86	31.60	22.50	60.00	50.00	-28.40	-27.50

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.

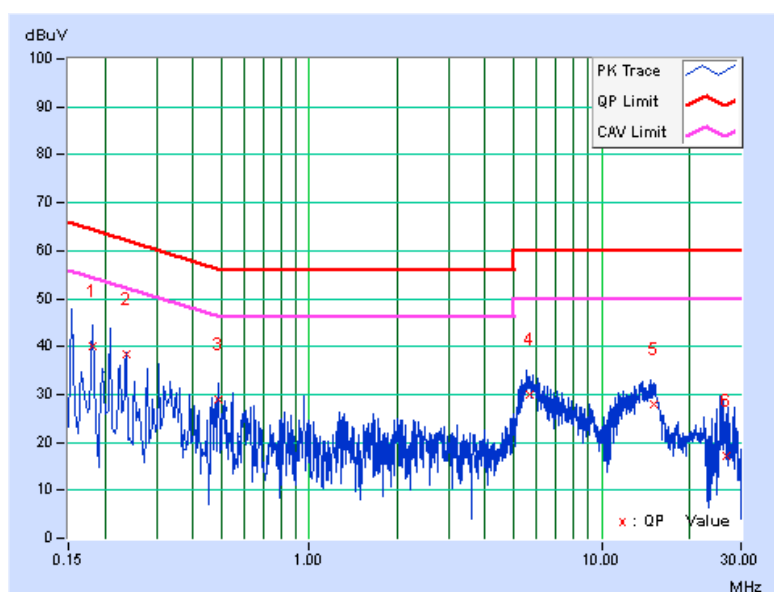


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 1	TEST MODE	A

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	0.18075	0.20	39.78	24.76	39.98	24.96	64.45	54.45	-24.47	-29.49
2	0.23586	0.20	38.30	23.06	38.50	23.26	62.24	52.24	-23.74	-28.98
3	0.48678	0.23	28.61	13.40	28.84	13.63	56.22	46.22	-27.39	-32.60
4	5.64355	0.48	29.46	21.02	29.94	21.50	60.00	50.00	-30.06	-28.50
5	15.03965	0.75	27.09	17.42	27.84	18.17	60.00	50.00	-32.16	-31.83
6	26.62461	0.82	16.25	-0.90	17.07	-0.08	60.00	50.00	-42.93	-50.08

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.

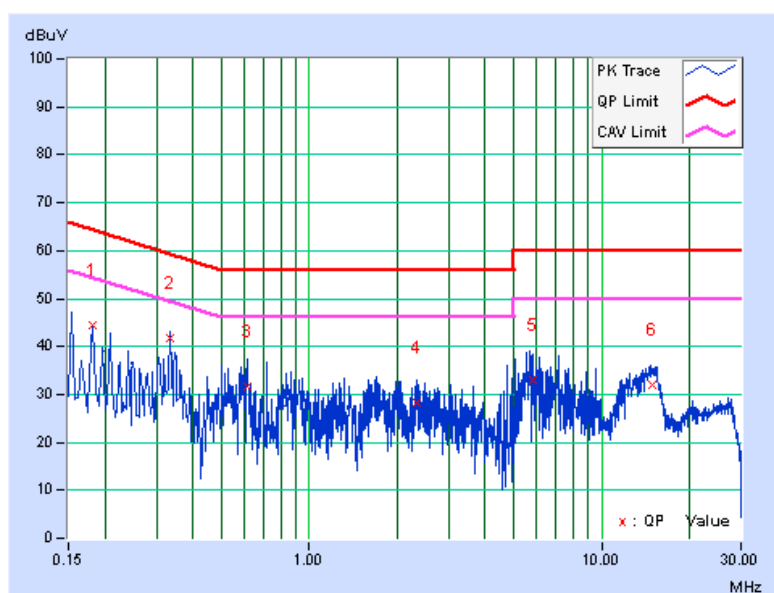


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 25	TEST MODE	A

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	0.18075	0.21	44.07	33.11	44.28	33.32	64.45	54.45	-20.17	-21.13
2	0.33221	0.23	41.58	31.01	41.81	31.24	59.40	49.40	-17.58	-18.15
3	0.61220	0.26	31.40	20.87	31.66	21.13	56.00	46.00	-24.34	-24.87
4	2.32841	0.36	28.03	16.82	28.39	17.18	56.00	46.00	-27.61	-28.82
5	5.79604	0.46	32.40	21.80	32.86	22.26	60.00	50.00	-27.14	-27.74
6	14.84769	0.65	31.43	22.25	32.08	22.90	60.00	50.00	-27.92	-27.10

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.

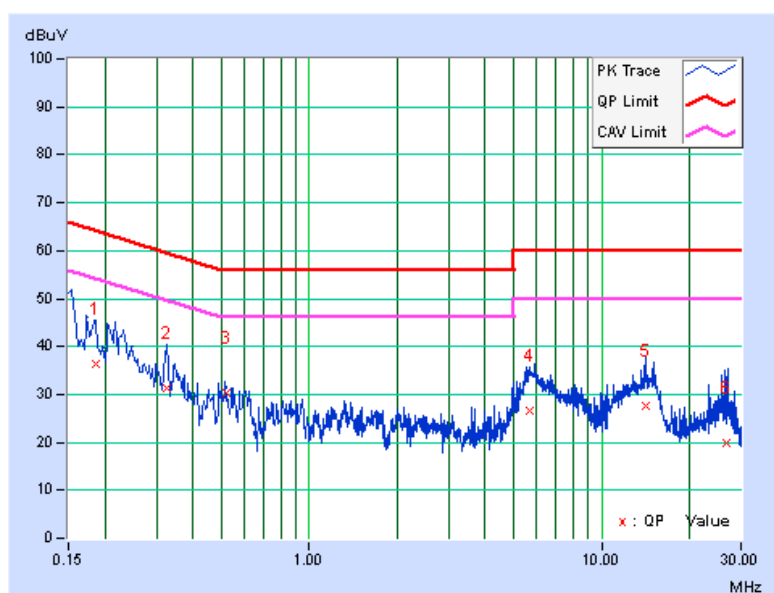


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 25	TEST MODE	A

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	0.18508	0.20	36.08	12.00	36.28	12.20	64.25	54.25	-27.97	-42.05
2	0.32357	0.21	31.06	20.63	31.27	20.84	59.61	49.61	-28.34	-28.77
3	0.51856	0.23	30.11	17.56	30.34	17.79	56.00	46.00	-25.66	-28.21
4	5.65842	0.48	25.97	8.06	26.45	8.54	60.00	50.00	-33.55	-41.46
5	14.13998	0.72	26.99	17.58	27.71	18.30	60.00	50.00	-32.29	-31.70
6	26.64127	0.82	19.04	7.13	19.86	7.95	60.00	50.00	-40.14	-42.05

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.

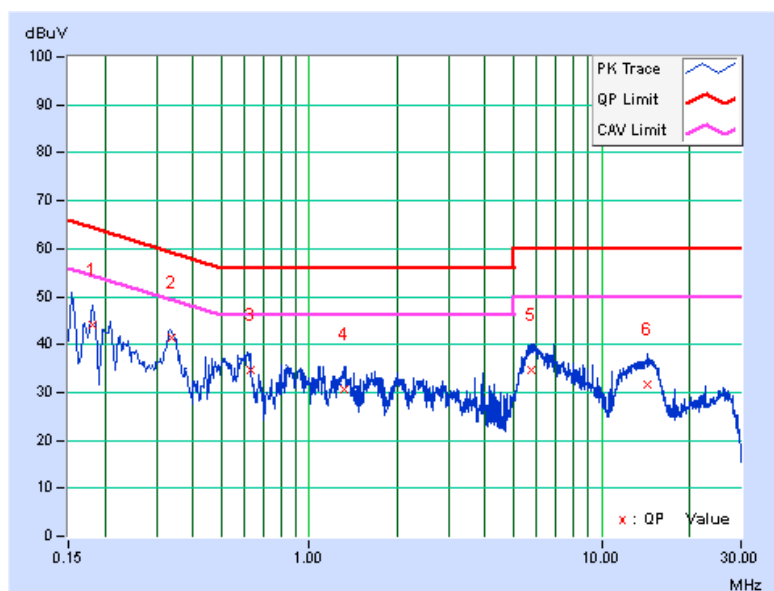


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 50	TEST MODE	A

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	0.18075	0.21	43.78	32.98	43.99	33.19	64.45	54.45	-20.46	-21.26
2	0.33768	0.23	41.22	29.72	41.45	29.95	59.26	49.26	-17.81	-19.31
3	0.62689	0.27	34.47	21.66	34.74	21.93	56.00	46.00	-21.26	-24.07
4	1.31099	0.32	30.48	18.85	30.80	19.17	56.00	46.00	-25.20	-26.83
5	5.73346	0.46	34.26	24.79	34.72	25.25	60.00	50.00	-25.28	-24.75
6	14.29638	0.64	30.95	21.37	31.59	22.01	60.00	50.00	-28.41	-27.99

REMARKS:

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2. The emission levels of other frequencies were very low against the limit.
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4. Correction factor = Insertion loss + Cable loss
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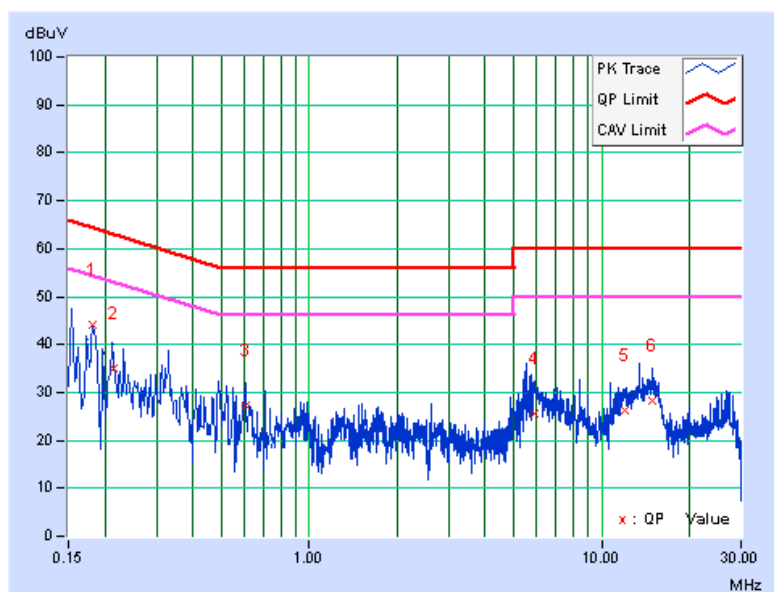


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 50	TEST MODE	A

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	0.18075	0.20	43.87	29.66	44.07	29.86	64.45	54.45	-20.38	-24.59
2	0.21282	0.20	34.65	10.96	34.85	11.16	63.09	53.09	-28.24	-41.93
3	0.60418	0.24	27.19	14.88	27.43	15.12	56.00	46.00	-28.57	-30.88
4	5.87424	0.49	25.03	7.38	25.52	7.87	60.00	50.00	-34.48	-42.13
5	11.96993	0.66	25.53	15.98	26.19	16.64	60.00	50.00	-33.81	-33.36
6	14.83205	0.74	27.47	17.65	28.21	18.39	60.00	50.00	-31.79	-31.61

REMARKS:

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4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

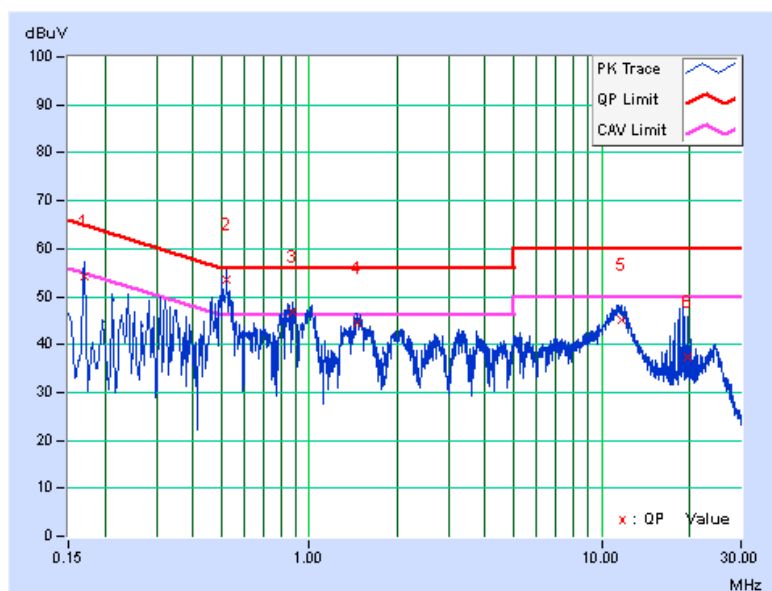


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 1	TEST MODE	B

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	0.16967	0.21	54.13	37.83	54.34	38.04	64.98	54.98	-10.64	-16.94
2	0.51856	0.25	53.18	41.90	53.43	42.15	56.00	46.00	-2.57	-3.85
3	0.87372	0.30	46.42	36.82	46.72	37.12	56.00	46.00	-9.28	-8.88
4	1.44905	0.32	44.10	34.87	44.42	35.19	56.00	46.00	-11.58	-10.81
5	11.66104	0.56	44.55	39.09	45.11	39.65	60.00	50.00	-14.89	-10.35
6	19.63353	0.78	36.76	33.44	37.54	34.22	60.00	50.00	-22.46	-15.78

REMARKS:

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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.

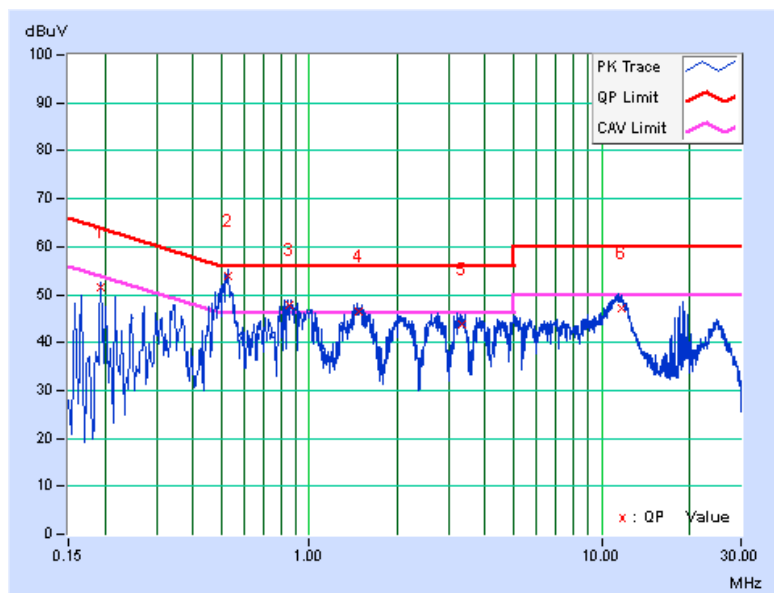


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 1	TEST MODE	B

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	0.19255	0.20	51.36	36.34	51.56	36.54	63.93	53.93	-12.37	-17.39
2	0.52544	0.23	53.63	43.71	53.86	43.94	56.00	46.00	-2.14	-2.06
3	0.84989	0.26	47.69	37.15	47.95	37.41	56.00	46.00	-8.05	-8.59
4	1.46767	0.29	46.06	37.00	46.35	37.29	56.00	46.00	-9.65	-8.71
5	3.31435	0.39	43.28	36.95	43.67	37.34	56.00	46.00	-12.33	-8.66
6	11.65322	0.65	46.32	41.72	46.97	42.37	60.00	50.00	-13.03	-7.63

REMARKS:

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4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

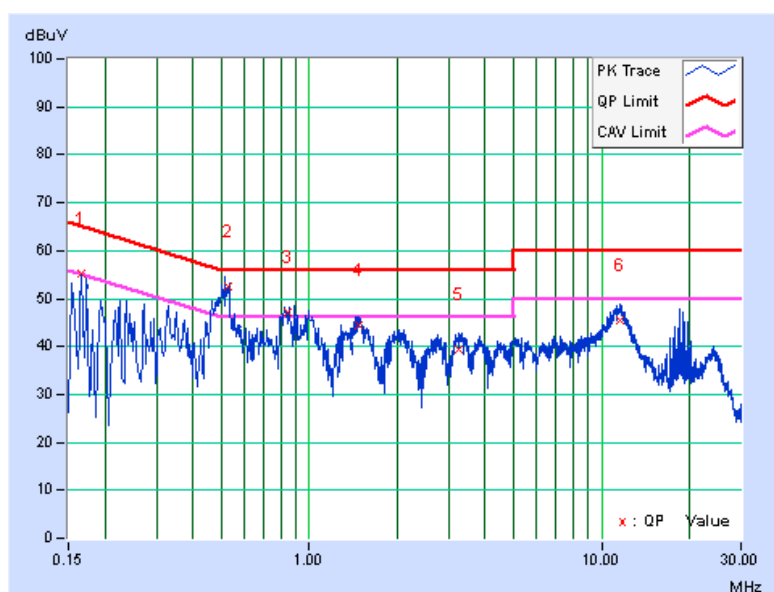


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 25	TEST MODE	B

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	0.16526	0.21	55.17	41.80	55.38	42.01	65.20	55.20	-9.82	-13.19
2	0.52544	0.25	52.39	42.80	52.64	43.05	56.00	46.00	-3.36	-2.95
3	0.84207	0.29	46.77	37.10	47.06	37.39	56.00	46.00	-8.94	-8.61
4	1.46826	0.32	44.24	35.42	44.56	35.74	56.00	46.00	-11.44	-10.26
5	3.22816	0.40	39.14	32.04	39.54	32.44	56.00	46.00	-16.46	-13.56
6	11.52554	0.56	44.77	39.25	45.33	39.81	60.00	50.00	-14.67	-10.19

REMARKS:

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4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

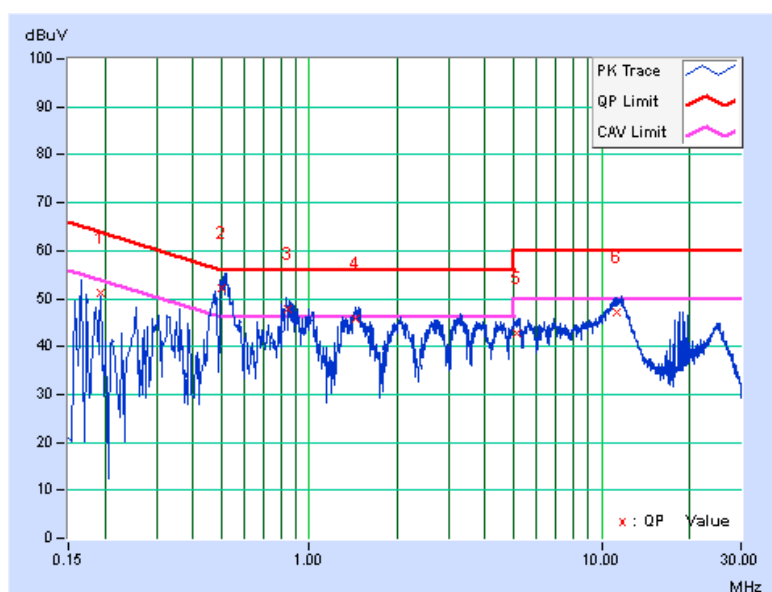


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 25	TEST MODE	B

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	0.19255	0.20	50.88	35.99	51.08	36.19	63.93	53.93	-12.85	-17.74
2	0.49846	0.23	51.88	42.01	52.11	42.24	56.03	46.03	-3.92	-3.79
3	0.84207	0.26	47.65	37.24	47.91	37.50	56.00	46.00	-8.09	-8.50
4	1.43386	0.29	45.52	36.13	45.81	36.42	56.00	46.00	-10.19	-9.58
5	5.11931	0.46	42.45	36.85	42.91	37.31	60.00	50.00	-17.09	-12.69
6	11.23485	0.64	46.40	41.70	47.04	42.34	60.00	50.00	-12.96	-7.66

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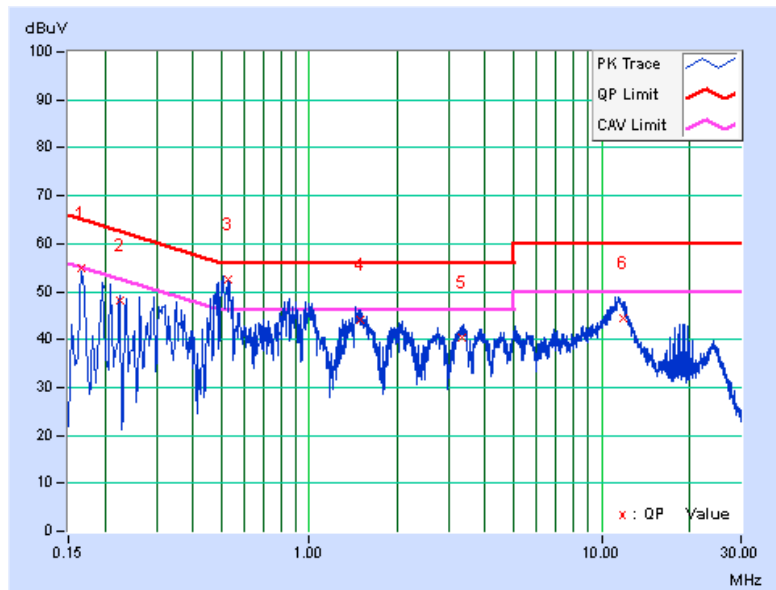


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 50	TEST MODE	B

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	0.16526	0.21	54.81	41.64	55.02	41.85	65.20	55.20	-10.18	-13.35
2	0.22434	0.22	47.93	34.67	48.15	34.89	62.66	52.66	-14.50	-17.76
3	0.52544	0.25	52.41	42.87	52.66	43.12	56.00	46.00	-3.34	-2.88
4	1.48774	0.32	43.95	34.95	44.27	35.27	56.00	46.00	-11.73	-10.73
5	3.31319	0.41	39.95	32.87	40.36	33.28	56.00	46.00	-15.64	-12.72
6	11.79789	0.57	43.98	38.63	44.55	39.20	60.00	50.00	-15.45	-10.80

REMARKS:

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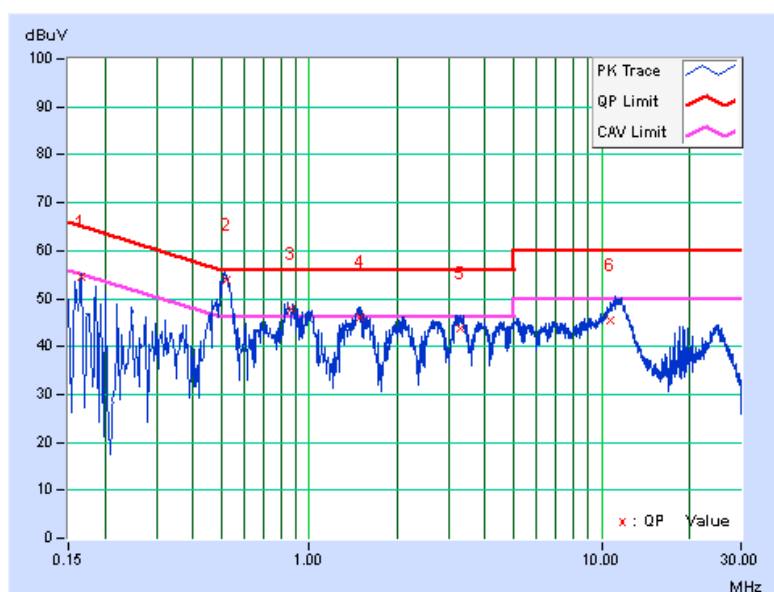


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 50	TEST MODE	B

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	0.16526	0.20	54.47	39.15	54.67	39.35	65.20	55.20	-10.52	-15.84
2	0.51993	0.23	53.61	42.26	53.84	42.49	56.00	46.00	-2.16	-3.51
3	0.86162	0.26	47.68	36.85	47.94	37.11	56.00	46.00	-8.06	-8.89
4	1.48774	0.29	45.74	36.47	46.03	36.76	56.00	46.00	-9.97	-9.24
5	3.27097	0.39	43.44	37.05	43.83	37.44	56.00	46.00	-12.17	-8.56
6	10.66399	0.63	44.67	39.59	45.30	40.22	60.00	50.00	-14.70	-9.78

REMARKS:

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4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

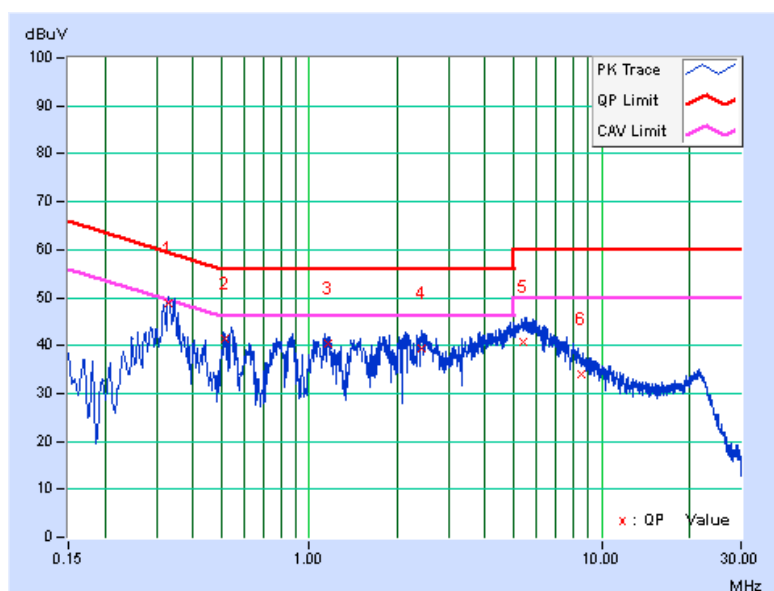


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 1	TEST MODE	C

No	Freq.	Corr. Factor	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	0.32786	0.23	48.59	38.75	48.82	38.98	59.51	49.51	-10.68	-10.52
2	0.51363	0.25	41.26	31.67	41.51	31.92	56.00	46.00	-14.49	-14.08
3	1.15524	0.31	39.97	29.77	40.28	30.08	56.00	46.00	-15.72	-15.92
4	2.41591	0.36	38.89	28.68	39.25	29.04	56.00	46.00	-16.75	-16.96
5	5.36985	0.46	40.33	32.45	40.79	32.91	60.00	50.00	-19.21	-17.09
6	8.47439	0.50	33.44	25.98	33.94	26.48	60.00	50.00	-26.06	-23.52

REMARKS:

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4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

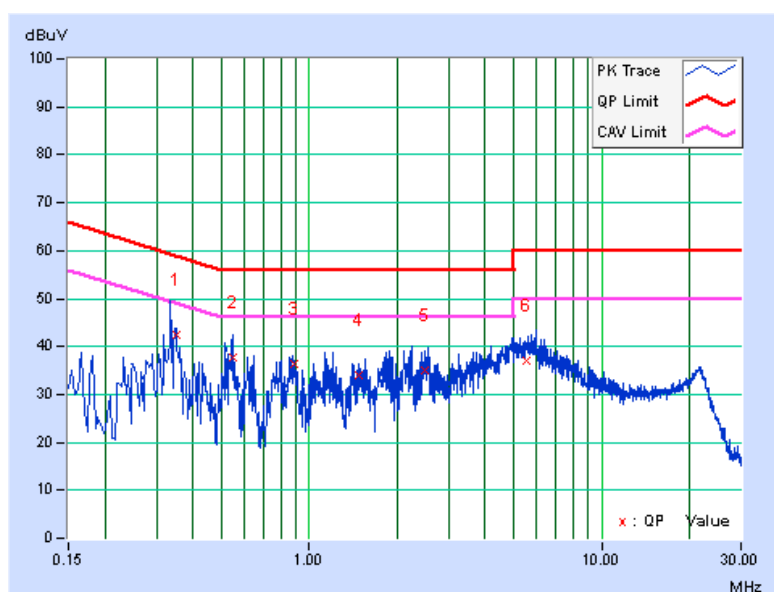


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 1	TEST MODE	C

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	0.34926	0.21	42.16	30.21	42.37	30.42	58.98	48.98	-16.61	-18.56
2	0.54518	0.23	37.62	26.38	37.85	26.61	56.00	46.00	-18.15	-19.39
3	0.88298	0.26	36.17	24.87	36.43	25.13	56.00	46.00	-19.57	-20.87
4	1.47214	0.29	33.86	23.61	34.15	23.90	56.00	46.00	-21.85	-22.10
5	2.48041	0.34	34.57	24.64	34.91	24.98	56.00	46.00	-21.09	-21.02
6	5.51843	0.48	36.48	29.25	36.96	29.73	60.00	50.00	-23.04	-20.27

REMARKS:

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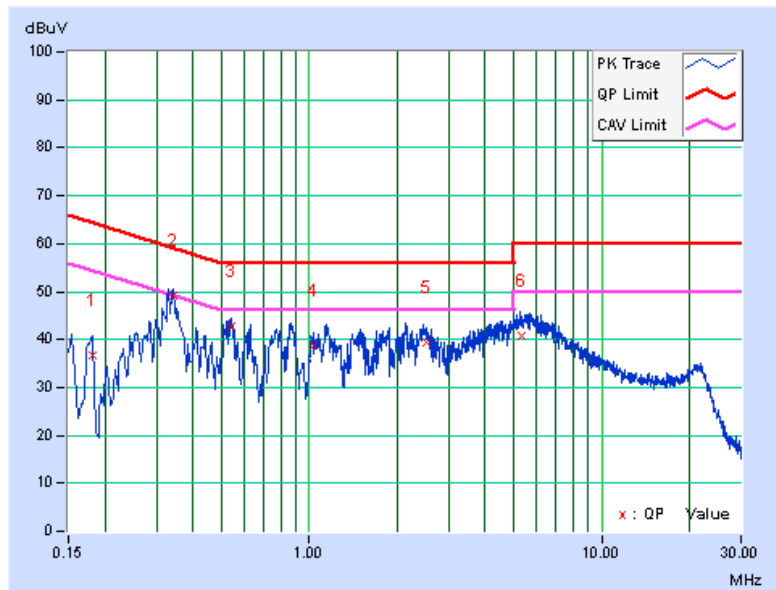


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 25	TEST MODE	C

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	0.18075	0.21	36.49	19.58	36.70	19.79	64.45	54.45	-27.75	-34.66
2	0.34108	0.23	48.79	37.98	49.02	38.21	59.18	49.18	-10.15	-10.96
3	0.53804	0.26	42.60	32.89	42.86	33.15	56.00	46.00	-13.14	-12.85
4	1.02878	0.31	38.42	27.42	38.73	27.73	56.00	46.00	-17.27	-18.27
5	2.50669	0.37	38.97	28.85	39.34	29.22	56.00	46.00	-16.66	-16.78
6	5.31168	0.46	40.43	32.56	40.89	33.02	60.00	50.00	-19.11	-16.98

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5. Emission Level = Correction Factor + Reading Value.

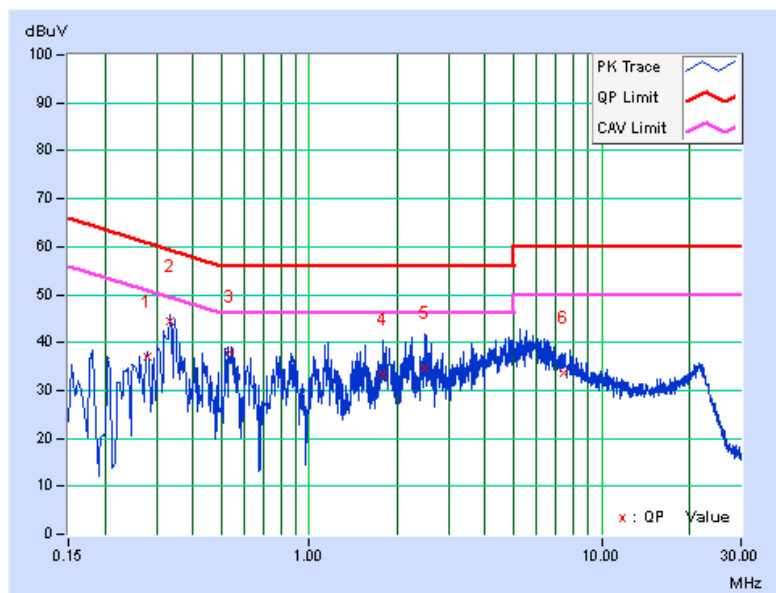


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 25	TEST MODE	C

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	0.27844	0.21	36.97	27.80	37.18	28.01	60.86	50.86	-23.68	-22.85
2	0.33221	0.21	44.10	33.82	44.31	34.03	59.40	49.40	-15.08	-15.36
3	0.53318	0.23	37.87	26.45	38.10	26.68	56.00	46.00	-17.90	-19.32
4	1.77967	0.30	32.94	22.19	33.24	22.49	56.00	46.00	-22.76	-23.51
5	2.48041	0.34	34.28	24.25	34.62	24.59	56.00	46.00	-21.38	-21.41
6	7.37959	0.53	33.24	26.32	33.77	26.85	60.00	50.00	-26.23	-23.15

REMARKS:

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5. Emission Level = Correction Factor + Reading Value.

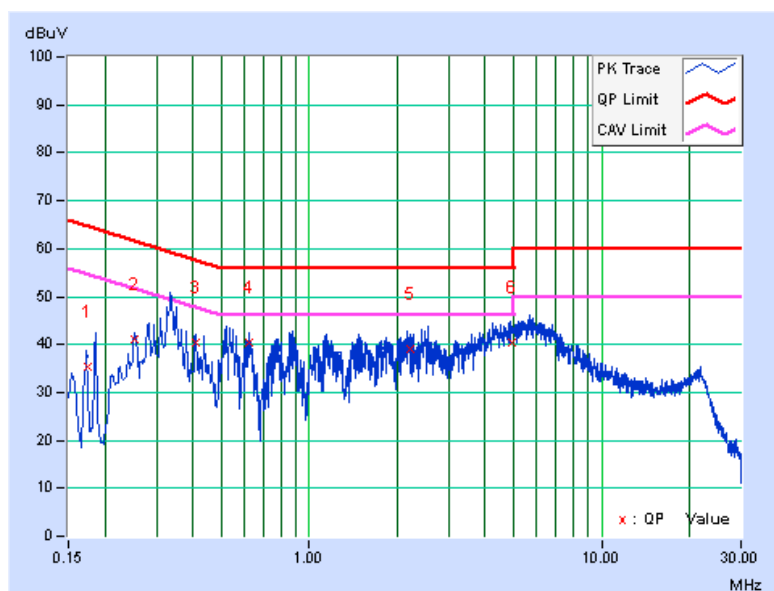


PHASE	Line 1	6dB BANDWIDTH	9kHz
CHANNEL	CH 50	TEST MODE	C

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	0.17374	0.21	35.29	20.68	35.50	20.89	64.78	54.78	-29.28	-33.89
2	0.25125	0.23	40.74	32.69	40.97	32.92	61.72	51.72	-20.75	-18.80
3	0.40693	0.24	40.09	29.61	40.33	29.85	57.71	47.71	-17.38	-17.86
4	0.61868	0.27	40.05	29.80	40.32	30.07	56.00	46.00	-15.68	-15.93
5	2.20666	0.35	38.66	28.93	39.01	29.28	56.00	46.00	-16.99	-16.72
6	4.92092	0.45	39.96	31.46	40.41	31.91	56.00	46.00	-15.59	-14.09

REMARKS:

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4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

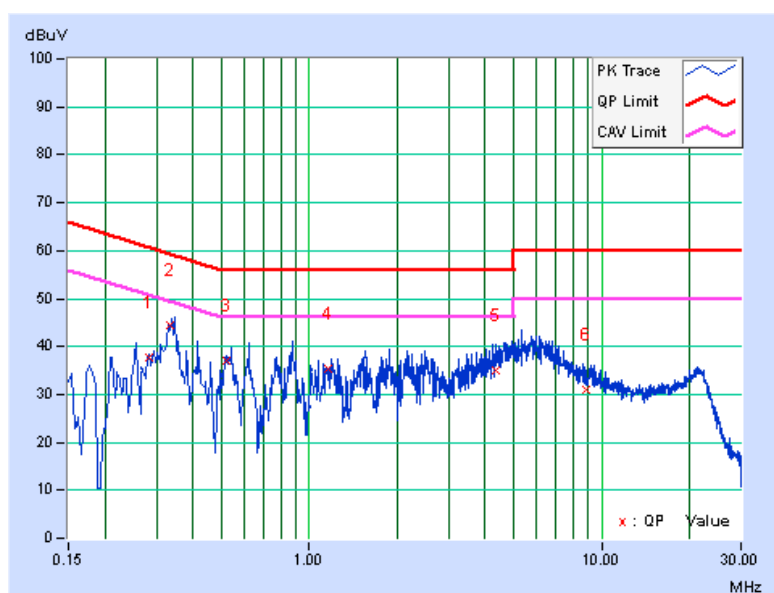


PHASE	Line 2	6dB BANDWIDTH	9kHz
CHANNEL	CH 50	TEST MODE	C

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	0.28140	0.21	37.41	27.87	37.62	28.08	60.77	50.77	-23.16	-22.70
2	0.33484	0.21	44.38	33.82	44.59	34.03	59.33	49.33	-14.74	-15.30
3	0.51993	0.23	36.74	25.62	36.97	25.85	56.00	46.00	-19.03	-20.15
4	1.15829	0.28	35.18	24.26	35.46	24.54	56.00	46.00	-20.54	-21.46
5	4.32489	0.44	34.59	26.27	35.03	26.71	56.00	46.00	-20.97	-19.29
6	8.80929	0.57	30.43	23.72	31.00	24.29	60.00	50.00	-29.00	-25.71

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.



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:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

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Tel: 886-3-3183232

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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.

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

No any modifications are made to the EUT by the lab during the test.

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