



FCC TEST REPORT

REPORT NO. : RF951207L12

MODEL NO. : EMN 20-W0
(refer to item 3.1 for more details)

RECEIVED : Dec. 07, 2006

TESTED : Dec. 15, 2006 ~ Feb. 01, 2007

ISSUED : Feb. 05, 2007

APPLICANT : LEM SA

ADDRESS : 8, CHEMIN DES AULX PLAN LES OUATES
SWITZERLAND

ISSUED BY : Advance Data Technology Corporation

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TEST LOCATION : No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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1. CERTIFICATION

PRODUCT : Energy Meter Node

BRAND NAME : LEM

MODEL NO. : EMN 20-W0 (refer to item 3.1 for more details)

APPLICANT : LEM SA

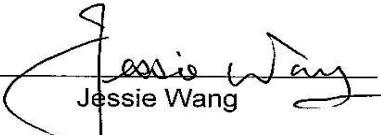
TESTED : Dec. 15, 2006 ~ Feb. 01, 2007

TEST SAMPLE : R&D SAMPLE

STANDARDS : FCC Part 15, Subpart C (Section 15.249)

ANSI C63.4-2003

The above equipment (model: EMN 20-W0) have been tested by **Advance Data Technology Corporation**, 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.

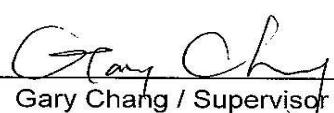
PREPARED BY :  , DATE: Feb. 05, 2007

Jessie Wang

**TECHNICAL
ACCEPTANCE** :  , DATE: Feb. 05, 2007

Responsible for RF

Long Chen

APPROVED BY :  , DATE: Feb. 05, 2007

Gary Chang / Supervisor



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	Minimum passing margin is -12.81dB at 0.548MHz.
15.209 15.249 15.249 (d)	Radiated Emission Test Out Band Emission Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 15.209	PASS	Minimum passing margin is -1.99dB at 2483.50MHz.

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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.61 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.



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Energy Meter Node
MODEL NO.	EMN 20-W0 (refer to note 1 for more details)
FCC ID	UVJ-EMN-A1-M-24
POWER SUPPLY	90 ~ 265Vac
MODULATION TYPE	O-QPSK
RADIO TECHNOLOGY	DSSS
FREQUENCY RANGE	2405 ~ 2480 MHz
TRANSFER RATE	250kbps
NUMBER OF CHANNEL	16
ANTENNA TYPE	PIFA antenna with 5dBi gain
DATA CABLE	NA
I/O PORT	Refer to user's manual

NOTE:

1. The models as below are identical to each other, except their model designation and probe dynamic range, due to marketing requirement.

MODEL	PART NO.	MODEL	PART NO.
EMN 5-W0	90.C7.08.300.0	EMN 50-W3	90.C7.25.500.0
EMN 20-W0	90.C7.17.300.0	EMN 100-W3	90.C7.34.500.0
EMN 50-W0	90.C7.25.300.0	EMN 5-W2	90.C7.08.400.0
EMN 100-W0	90.C7.34.300.0	EMN 20-W2	90.C7.17.400.0
EMN 5-D3	90.C7.08.100.0	EMN 50-W2	90.C7.25.400.0
EMN 20-D3	90.C7.17.100.0	EMN 100-W2	90.C7.34.400.0
EMN 50-D3	90.C7.25.100.0	EMN 5-W4	90.C7.08.600.0
EMN 100-D3	90.C7.34.100.0	EMN 20-W4	90.C7.17.600.0
EMN 5-W3	90.C7.08.500.0	EMN 50-W4	90.C7.25.600.0
EMN 20-W3	90.C7.17.500.0	EMN 100-W4	90.C7.34.600.0

NOTE: EMN 20-W0 is the worst for final test, and after pre-tested all the ways of power supply, these three are the worse to record for conducted emission test. A: 120Vac / 60Hz, B: 220Vac / 60Hz, C: 3ψ 220Vac / 60Hz.

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

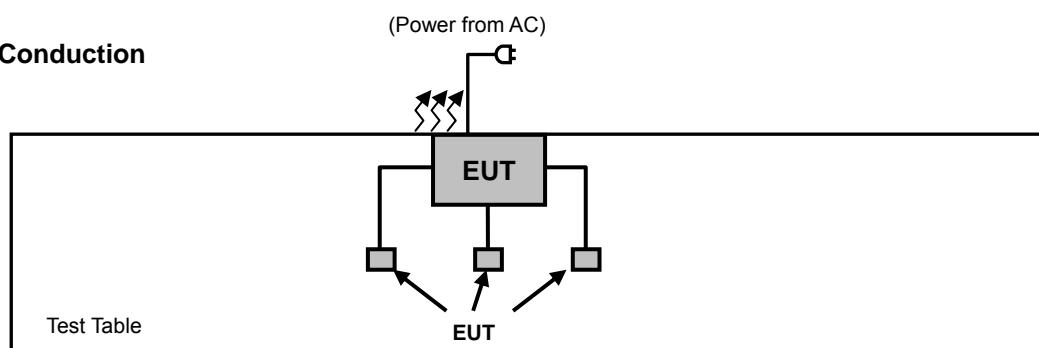
3.2 DESCRIPTION OF TEST MODES

16 channels are provided to this EUT.

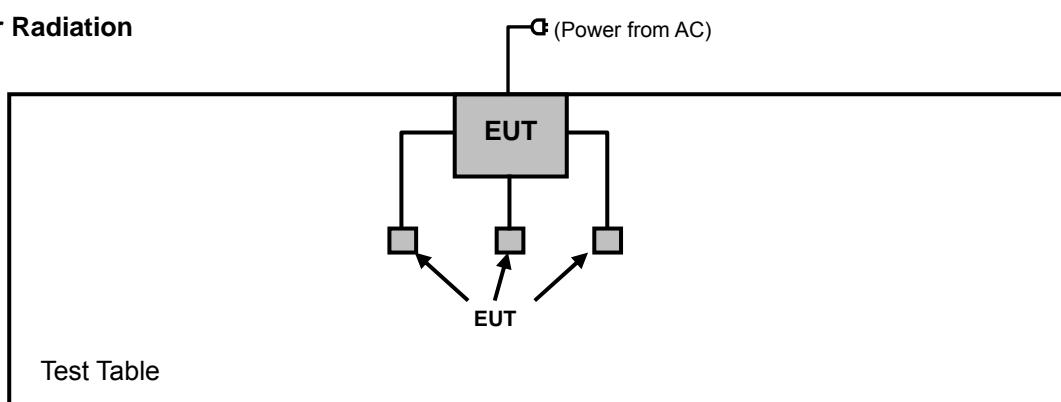
Channel	Freq. (MHz)	Channel	Freq. (MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440	26	2480

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

For Conduction



For Radiation



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **PLC**:: Power Line Conducted Emission

RE<1G: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

OBE: Out Band Emission Measurement

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 TECHNOLOGY	MODULATION TYPE
11 to 26	11, 18, 26	DSSS	O-QPSK

RADIATED EMISSION TEST (BELOW 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, X, Y, Z 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 TECHNOLOGY	MODULATION TYPE	AXIS
11 to 26	26	DSSS	O-QPSK	X

RADIATED EMISSION TEST (ABOVE 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, X, Y, Z 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 TECHNOLOGY	MODULATION TYPE	AXIS
11 to 26	11, 18, 26	DSSS	O-QPSK	X

OUT BAND EMISSION MEASUREMENT:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations 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 TECHNOLOGY	MODULATION TYPE
11 to 26	11, 26	DSSS	O-QPSK



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 (Section 15.249)
ANSI C63.4-2003**

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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	PP05L	42737890096	E2K24CLNS
2	MESH GATE	WiLEM	MG-5424-010-00	405390306	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8 m shielded RS232 to USB cable without core 1.8 m shielded USB to RS232 cable without core

NOTE:

1. Item 1 acted as a communication partner to transfer data.
2. Item 2 is provided by client.



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 25, 2007
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2008
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 08, 2008
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 16, 2008
Software ADT	ADT_Cond_V3	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.



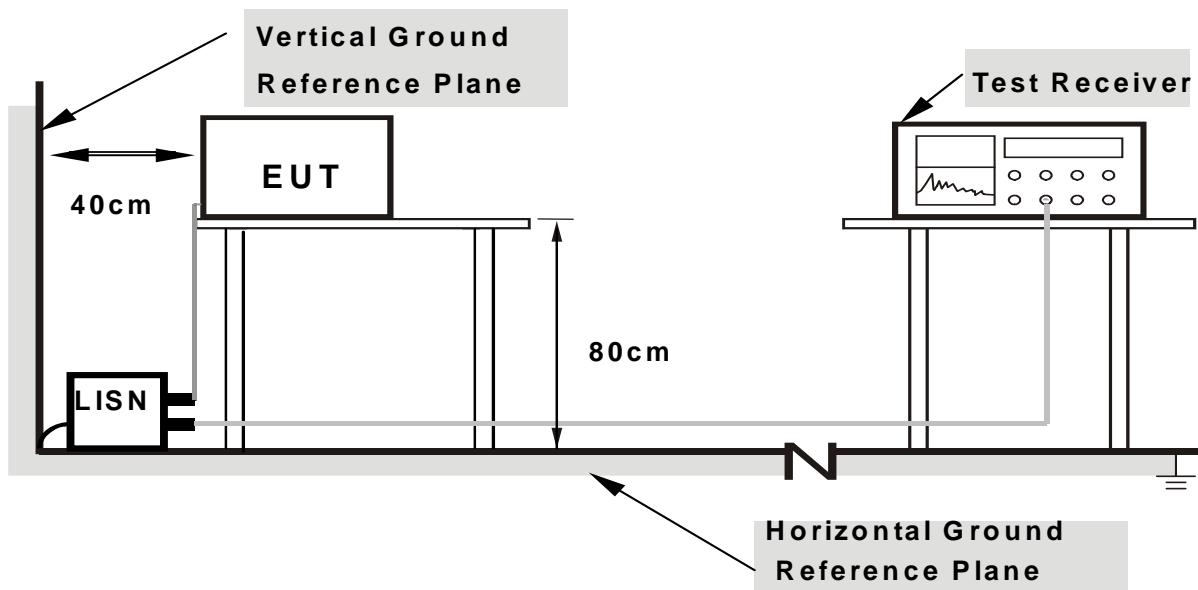
4.1.3 TEST PROCEDURES

- 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) was 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 cm from other units and other metal planes

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

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on a testing table.
- b. Prepared the Notebook PC, Mesh Gate and placed it outside of testing area to act as communication partner for EUT.
- c. The communication partner ran a test program (provided by manufacturer) to enable EUT under normal usage condition continuously at specific channel frequency.

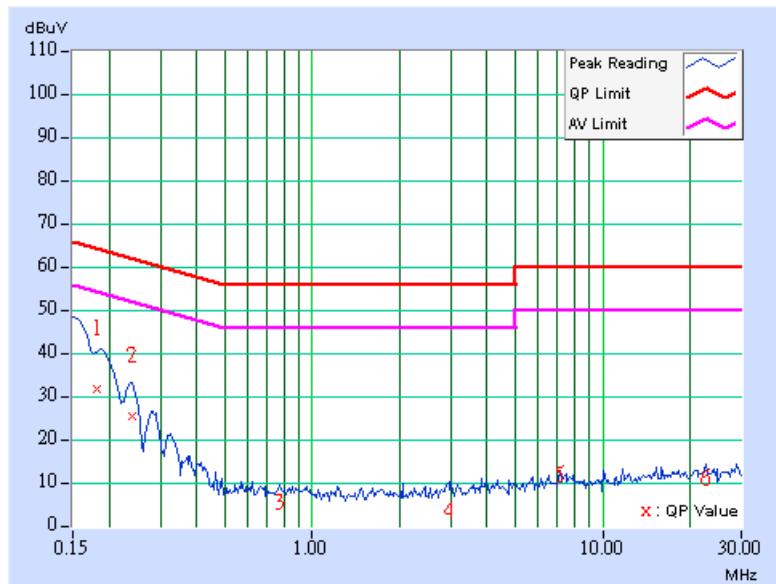
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA

EUT TEST CONDITION			MEASUREMENT DETAIL		
CHANNEL		Channel 11			Line
MODULATION TYPE		O-QPSK			6dB BANDWIDTH
TRANSFER RATE		250kbps			ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		120Vac, 60Hz			TESTED BY
					Dean Wang

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	0.181	0.10	30.99	-	31.09	-	64.44	54.44	-33.35	-
2	0.240	0.10	24.68	-	24.78	-	62.10	52.10	-37.32	-
3	0.771	0.11	-9.36	-	-9.25	-	56.00	46.00	-65.25	-
4	2.953	0.25	-10.93	-	-10.68	-	56.00	46.00	-66.68	-
5	7.156	0.31	-2.85	-	-2.54	-	60.00	50.00	-62.54	-
6	22.621	0.70	-3.72	-	-3.02	-	60.00	50.00	-63.02	-

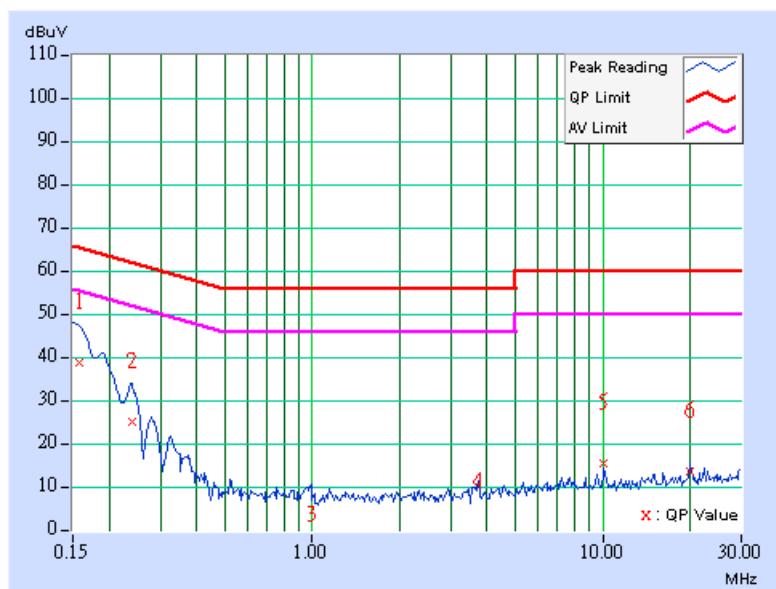
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11	PHASE	
MODULATION TYPE		O-QPSK	6dB BANDWIDTH	
TRANSFER RATE		250kbps	ENVIRONMENTAL CONDITIONS	
INPUT POWER (SYSTEM)		120Vac, 60Hz	TESTED BY	

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	0.158	0.10	38.48	-	38.58	-	65.58	55.58	-27.00	-
2	0.240	0.10	24.56	-	24.66	-	62.10	52.10	-37.44	-
3	0.990	0.21	-10.87	-	-10.66	-	56.00	46.00	-66.66	-
4	3.742	0.27	-3.31	-	-3.04	-	56.00	46.00	-59.04	-
5	10.000	0.43	15.01	-	15.44	-	60.00	50.00	-44.56	-
6	20.000	0.57	13.04	-	13.61	-	60.00	50.00	-46.39	-

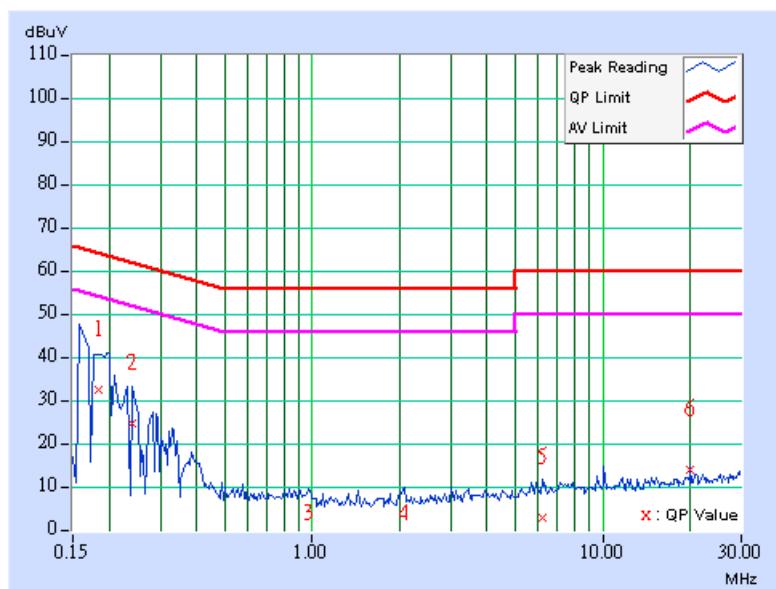
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		120Vac, 60Hz		TESTED BY
				Dean Wang

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	0.183	0.10	31.97	-	32.07	-	64.33	54.33	-32.26	-
2	0.240	0.10	24.29	-	24.39	-	62.10	52.10	-37.71	-
3	0.966	0.11	-10.53	-	-10.42	-	56.00	46.00	-66.42	-
4	2.074	0.22	-10.50	-	-10.28	-	56.00	46.00	-66.28	-
5	6.184	0.30	2.35	-	2.65	-	60.00	50.00	-57.35	-
6	20.000	0.57	13.38	-	13.95	-	60.00	50.00	-46.05	-

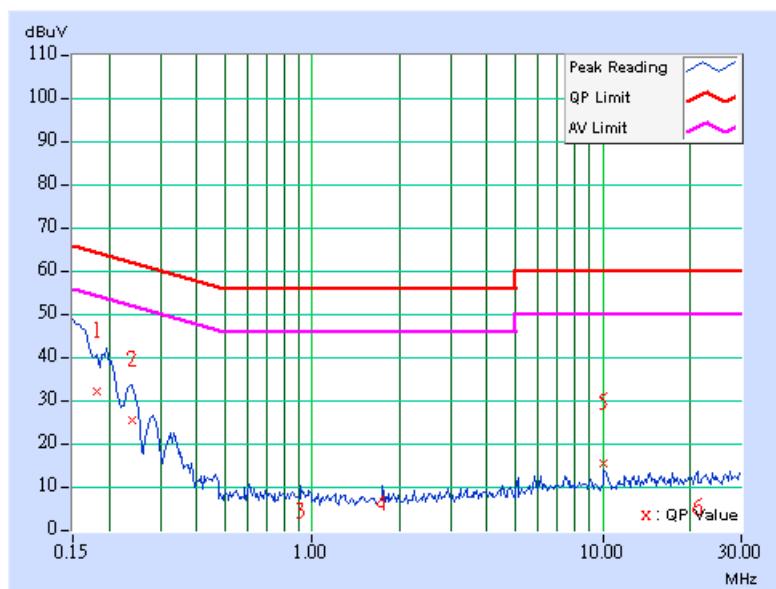
- REMARKS:**
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		120Vac, 60Hz		TESTED BY
				Dean Wang

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	0.183	0.10	31.52	-	31.62	-	64.37	54.37	-32.75	-
2	0.240	0.10	24.82	-	24.92	-	62.10	52.10	-37.18	-
3	0.916	0.19	-10.35	-	-10.16	-	56.00	46.00	-66.16	-
4	1.746	0.22	-8.34	-	-8.12	-	56.00	46.00	-64.12	-
5	10.000	0.43	15.03	-	15.46	-	60.00	50.00	-44.54	-
6	21.188	0.61	-9.35	-	-8.74	-	60.00	50.00	-68.74	-

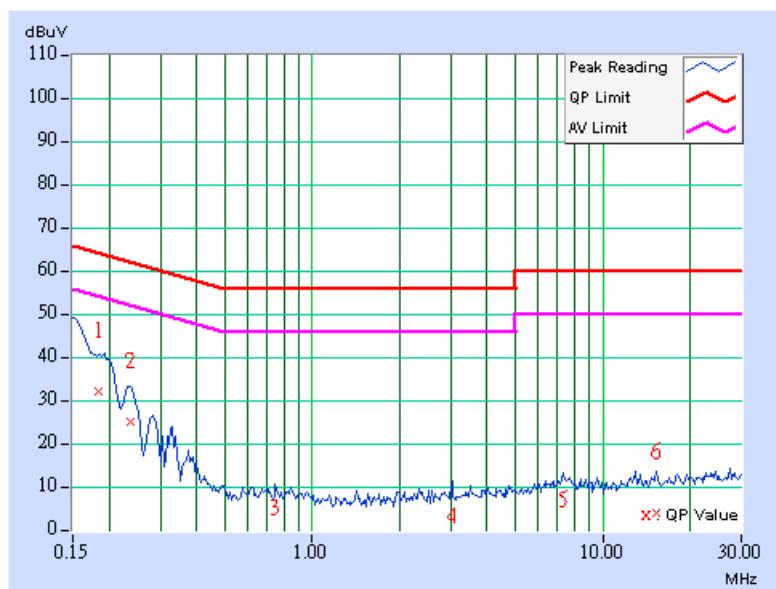
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		120Vac, 60Hz		TESTED BY
				Dean Wang

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	0.183	0.10	31.60	-	31.70	-	64.34	54.34	-32.64	-
2	0.236	0.10	24.58	-	24.68	-	62.24	52.24	-37.56	-
3	0.748	0.11	-9.22	-	-9.11	-	56.00	46.00	-65.11	-
4	3.031	0.25	-11.24	-	-10.99	-	56.00	46.00	-66.99	-
5	7.297	0.31	-7.63	-	-7.32	-	60.00	50.00	-67.32	-
6	15.355	0.49	3.63	-	4.12	-	60.00	50.00	-55.88	-

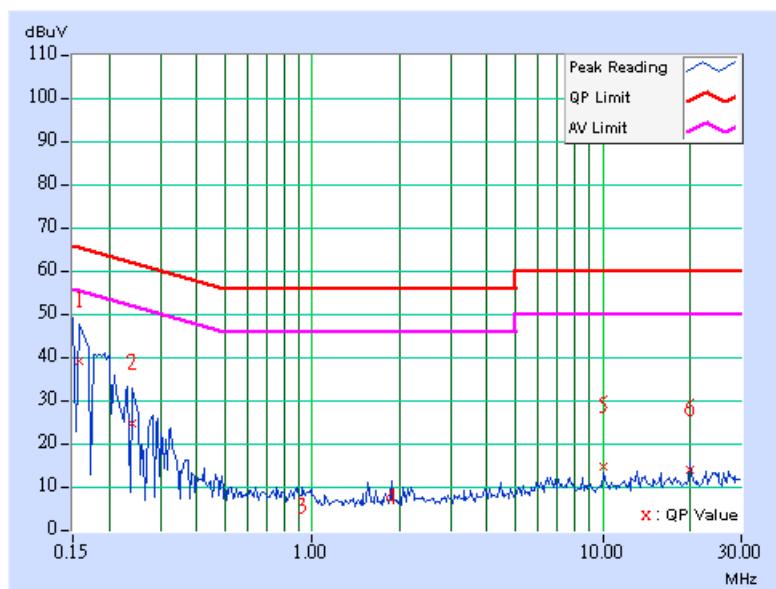
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		120Vac, 60Hz		TESTED BY
				Dean Wang

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	0.158	0.10	38.62	-	38.72	-	65.58	55.58	-26.86	-
2	0.240	0.10	24.23	-	24.33	-	62.10	52.10	-37.77	-
3	0.927	0.20	-9.10	-	-8.90	-	56.00	46.00	-64.90	-
4	1.883	0.22	-6.81	-	-6.59	-	56.00	46.00	-62.59	-
5	9.999	0.43	14.27	-	14.70	-	60.00	50.00	-45.30	-
6	20.000	0.57	13.60	-	14.17	-	60.00	50.00	-45.83	-

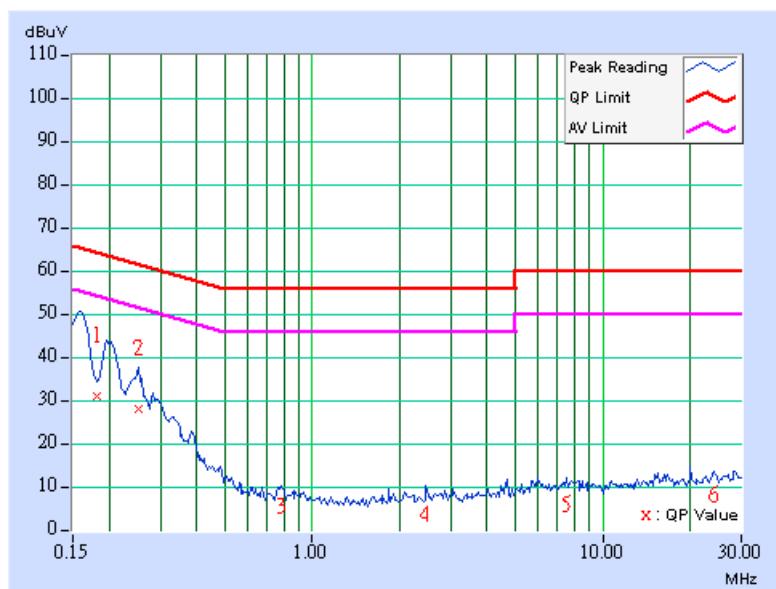
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1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		220Vac, 60Hz		TESTED BY
				Dean Wang

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	0.181	0.10	30.36	-	30.46	-	64.46	54.46	-34.00	-
2	0.252	0.10	27.22	-	27.32	-	61.71	51.71	-34.39	-
3	0.779	0.11	-9.22	-	-9.11	-	56.00	46.00	-65.11	-
4	2.461	0.23	-11.25	-	-11.02	-	56.00	46.00	-67.02	-
5	7.496	0.31	-8.78	-	-8.47	-	60.00	50.00	-68.47	-
6	24.148	0.78	-6.62	-	-5.84	-	60.00	50.00	-65.84	-

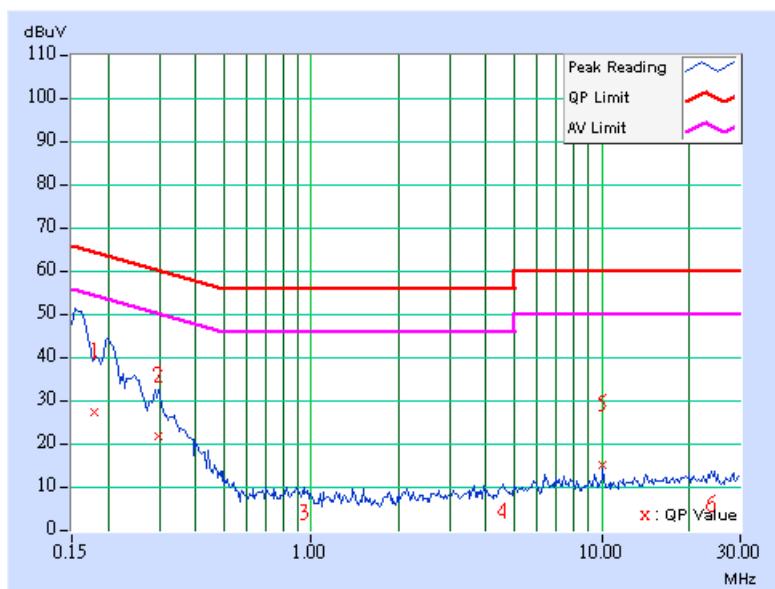
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		220Vac, 60Hz		TESTED BY
				Dean Wang

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	0.180	0.10	26.88	-	26.98	-	64.48	54.48	-37.50	-
2	0.298	0.10	21.01	-	21.11	-	60.29	50.29	-39.18	-
3	0.943	0.20	-10.77	-	-10.57	-	56.00	46.00	-66.57	-
4	4.598	0.29	-10.34	-	-10.05	-	56.00	46.00	-66.05	-
5	10.000	0.43	14.46	-	14.89	-	60.00	50.00	-45.11	-
6	23.777	0.68	-8.86	-	-8.18	-	60.00	50.00	-68.18	-

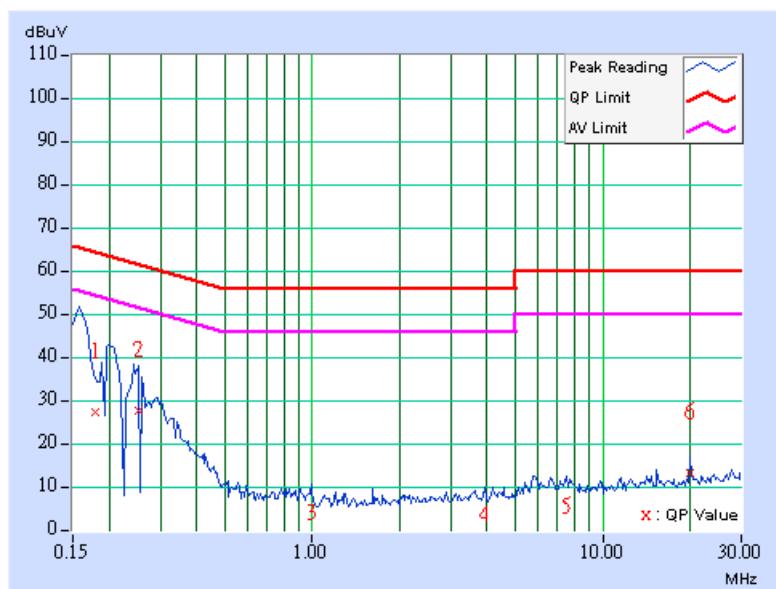
- REMARKS:**
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		220Vac, 60Hz		TESTED BY
				Dean Wang

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	0.180	0.10	26.90	-	27.00	-	64.47	54.47	-37.47	-
2	0.252	0.10	27.12	-	27.22	-	61.71	51.71	-34.49	-
3	0.994	0.11	-10.73	-	-10.62	-	56.00	46.00	-66.62	-
4	3.945	0.28	-10.89	-	-10.61	-	56.00	46.00	-66.61	-
5	7.547	0.31	-9.03	-	-8.72	-	60.00	50.00	-68.72	-
6	20.000	0.57	12.81	-	13.38	-	60.00	50.00	-46.62	-

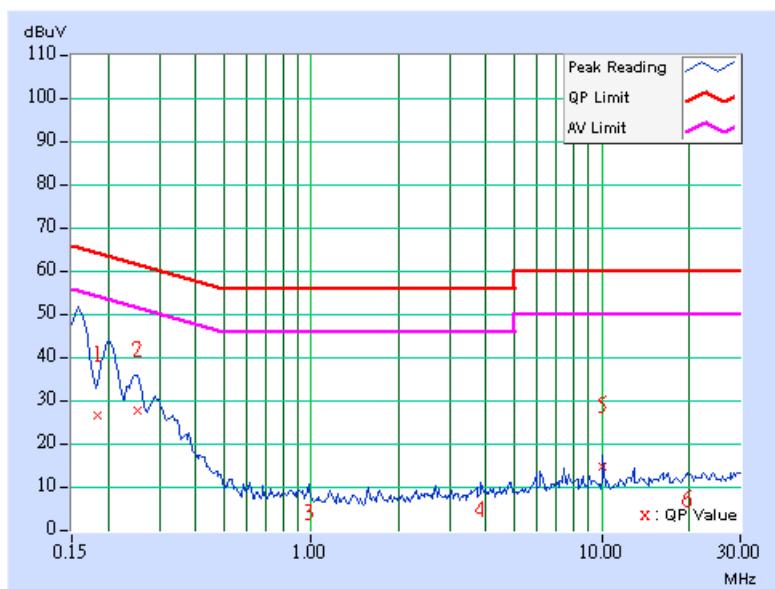
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		220Vac, 60Hz		TESTED BY
				Dean Wang

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	0.185	0.10	26.10	-	26.20	-	64.28	54.28	-38.08	-
2	0.252	0.10	27.32	-	27.42	-	61.71	51.71	-34.29	-
3	0.978	0.21	-10.71	-	-10.50	-	56.00	46.00	-66.50	-
4	3.852	0.28	-9.70	-	-9.42	-	56.00	46.00	-65.42	-
5	10.000	0.43	14.29	-	14.72	-	60.00	50.00	-45.28	-
6	19.793	0.57	-7.73	-	-7.16	-	60.00	50.00	-67.16	-

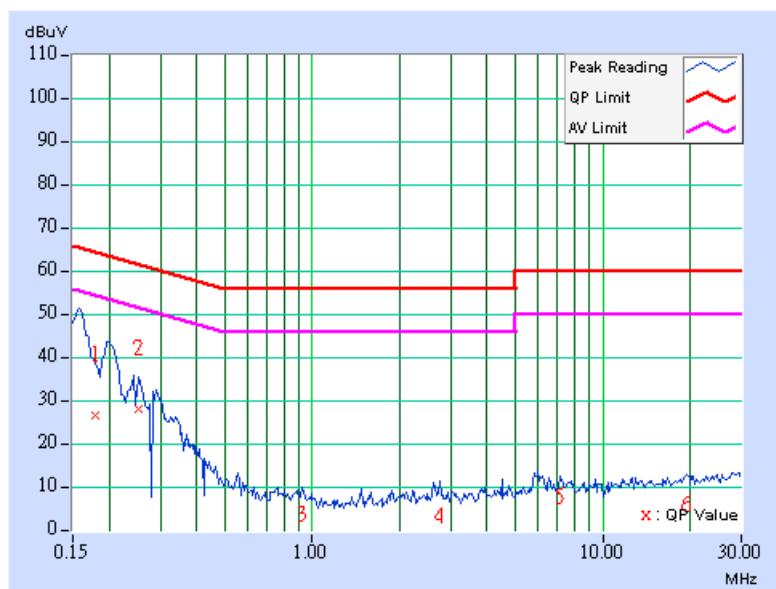
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		220Vac, 60Hz		TESTED BY
				Dean Wang

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	0.180	0.10	26.17	-	26.27	-	64.50	54.50	-38.23	-
2	0.252	0.10	27.44	-	27.54	-	61.71	51.71	-34.17	-
3	0.927	0.11	-10.87	-	-10.76	-	56.00	46.00	-66.76	-
4	2.738	0.24	-11.29	-	-11.05	-	56.00	46.00	-67.05	-
5	7.137	0.31	-7.04	-	-6.73	-	60.00	50.00	-66.73	-
6	19.387	0.56	-8.83	-	-8.27	-	60.00	50.00	-68.27	-

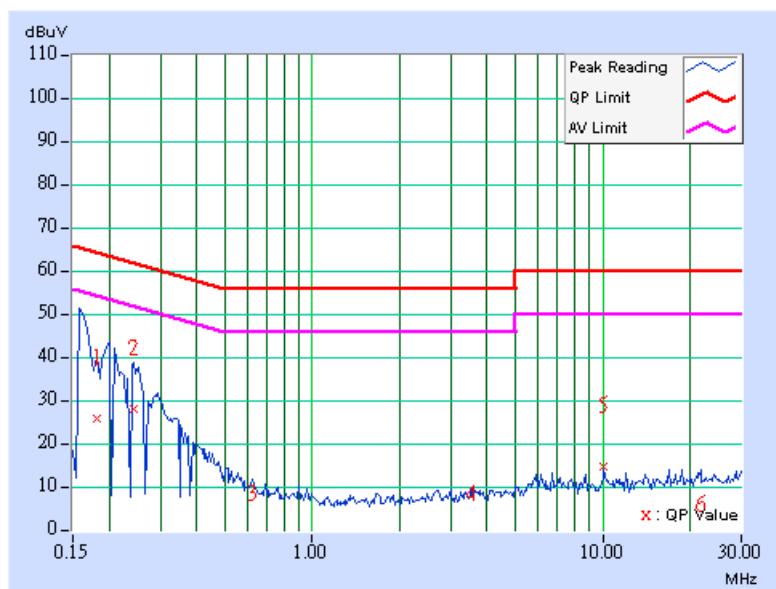
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		220Vac, 60Hz		TESTED BY
				Dean Wang

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	0.182	0.10	25.42	-	25.52	-	64.39	54.39	-38.87	-
2	0.244	0.10	27.54	-	27.64	-	61.97	51.97	-34.33	-
3	0.623	0.14	-6.19	-	-6.05	-	56.00	46.00	-62.05	-
4	3.555	0.27	-6.07	-	-5.80	-	56.00	46.00	-61.80	-
5	10.000	0.43	14.25	-	14.68	-	60.00	50.00	-45.32	-
6	21.801	0.62	-8.79	-	-8.17	-	60.00	50.00	-68.17	-

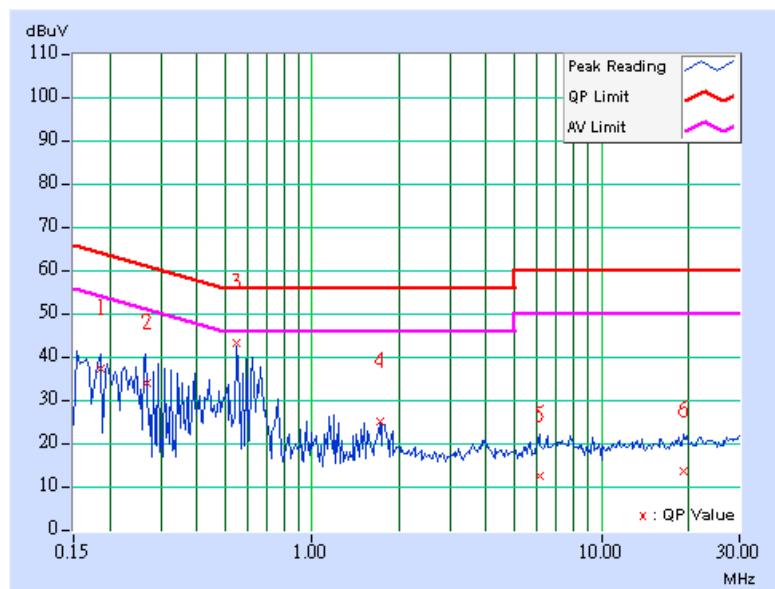
- REMARKS:**
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11	PHASE	
MODULATION TYPE		O-QPSK	6dB BANDWIDTH	
TRANSFER RATE		250kbps	ENVIRONMENTAL CONDITIONS	
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz	TESTED BY	

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	0.185	10.00	27.36	-	37.36	-	64.25	54.25	-26.89	-
2	0.268	9.99	23.92	-	33.91	-	61.17	51.17	-27.26	-
3	0.548	9.90	33.29	-	43.19	-	56.00	46.00	-12.81	-
4	1.710	9.85	14.96	-	24.81	-	56.00	46.00	-31.19	-
5	6.094	9.91	2.63	-	12.54	-	60.00	50.00	-47.46	-
6	19.250	10.07	3.70	-	13.77	-	60.00	50.00	-46.23	-

- REMARKS:**
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.

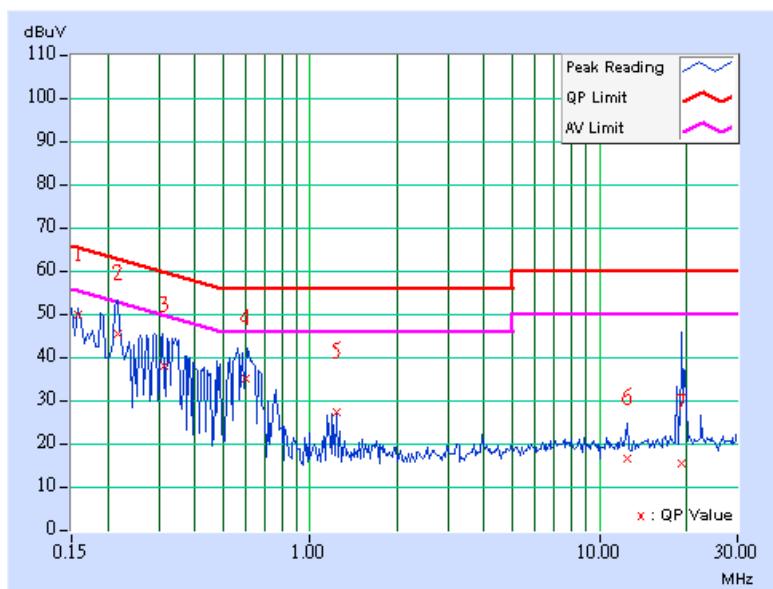


EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.158	9.97	40.19	-	50.16	-	65.58	55.58	-15.42	-
2	0.216	10.01	35.74	-	45.75	-	62.96	52.96	-17.20	-
3	0.315	9.96	28.23	-	38.19	-	59.83	49.83	-21.63	-
4	0.595	9.89	25.32	-	35.21	-	56.00	46.00	-20.79	-
5	1.232	9.84	17.57	-	27.41	-	56.00	46.00	-28.59	-
6	12.436	9.98	6.70	-	16.68	-	60.00	50.00	-43.32	-
7	19.221	9.99	5.60	-	15.59	-	60.00	50.00	-44.41	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

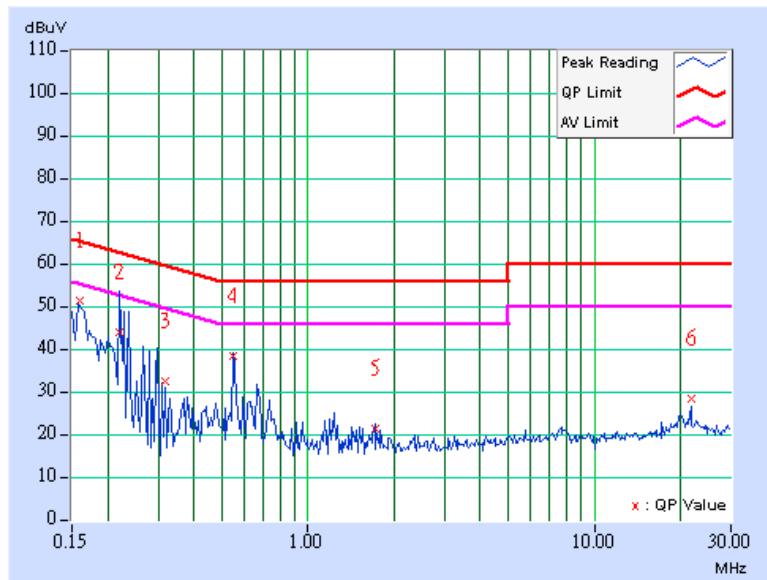
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value.
5. Correction factor = Insertion loss + Cable loss.
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11	PHASE	
MODULATION TYPE		O-QPSK	6dB BANDWIDTH	
TRANSFER RATE		250kbps	ENVIRONMENTAL CONDITIONS	
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz	TESTED BY	

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	0.159	10.15	41.43	-	51.58	-	65.51	55.51	-13.93	-
2	0.221	10.11	34.11	-	44.22	-	62.80	52.80	-18.58	-
3	0.319	10.06	22.56	-	32.62	-	59.74	49.74	-27.12	-
4	0.548	10.00	28.44	-	38.44	-	56.00	46.00	-17.56	-
5	1.710	9.95	11.47	-	21.42	-	56.00	46.00	-34.58	-
6	21.729	10.10	18.53	-	28.63	-	60.00	50.00	-31.37	-

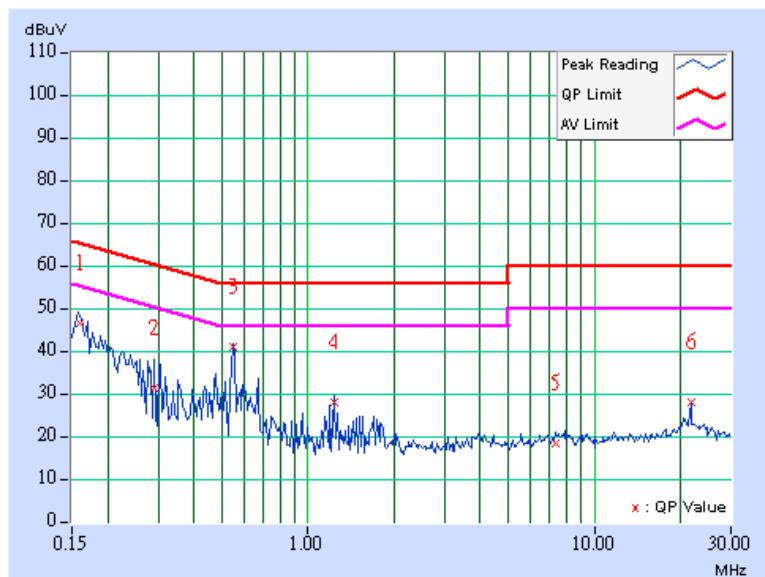
- REMARKS:**
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 11		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.159	9.87	37.06	-	46.93	-	65.51	55.51	-18.58	-
2	0.292	9.87	21.61	-	31.48	-	60.47	50.47	-28.99	-
3	0.548	9.82	31.44	-	41.26	-	56.00	46.00	-14.74	-
4	1.232	9.84	18.54	-	28.38	-	56.00	46.00	-27.62	-
5	7.312	9.88	8.79	-	18.67	-	60.00	50.00	-41.33	-
6	21.727	9.76	18.47	-	28.23	-	60.00	50.00	-31.77	-

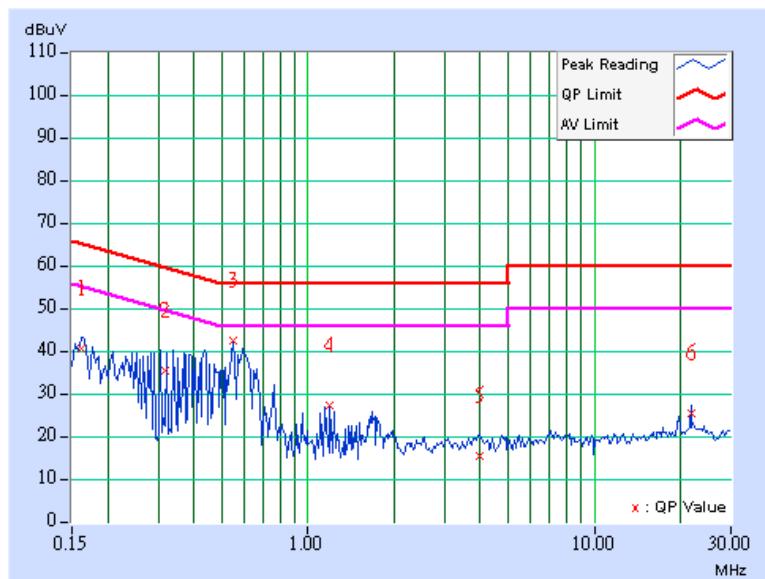
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.163	9.98	30.73	-	40.71	-	65.33	55.33	-24.63	-
2	0.318	9.96	25.34	-	35.30	-	59.77	49.77	-24.47	-
3	0.549	9.90	32.43	-	42.33	-	56.00	46.00	-13.67	-
4	1.193	9.84	17.36	-	27.20	-	56.00	46.00	-28.80	-
5	3.973	9.87	5.46	-	15.33	-	56.00	46.00	-40.67	-
6	21.716	10.06	15.38	-	25.44	-	60.00	50.00	-34.56	-

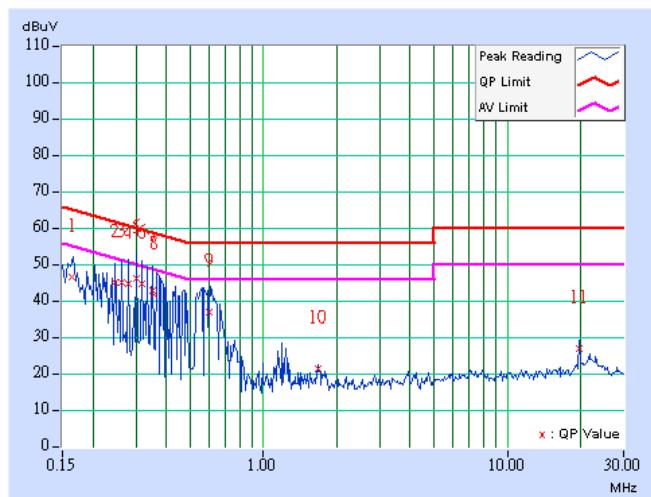
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 18	PHASE	Line 2
MODULATION TYPE	O-QPSK	6dB BANDWIDTH	9kHz
TRANSFER RATE	250kbps	ENVIRONMENTAL CONDITIONS	17 deg. C, 58%RH, 991hPa
INPUT POWER (SYSTEM)	3ψ 220Vac / 60Hz	TESTED BY	Lake Cheng

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	0.164	9.98	36.82	-	46.80	-	65.24	55.24	-18.44	-
2	0.248	10.00	35.28	-	45.28	-	61.84	51.84	-16.56	-
3	0.263	9.99	35.29	-	45.28	-	61.33	51.33	-16.05	-
4	0.279	9.98	34.90	-	44.88	-	60.85	50.85	-15.97	-
5	0.302	9.97	36.19	-	46.16	-	60.18	50.18	-14.02	-
6	0.318	9.96	34.68	-	44.64	-	59.76	49.76	-15.12	-
7	0.349	9.95	32.93	-	42.88	-	58.98	48.98	-16.11	-
8	0.358	9.94	31.78	-	41.72	-	58.78	48.78	-17.06	-
9	0.597	9.89	27.13	-	37.02	-	56.00	46.00	-18.98	-
10	1.668	9.85	11.35	-	21.20	-	56.00	46.00	-34.80	-
11	19.746	9.99	17.07	-	27.06	-	60.00	50.00	-32.94	-

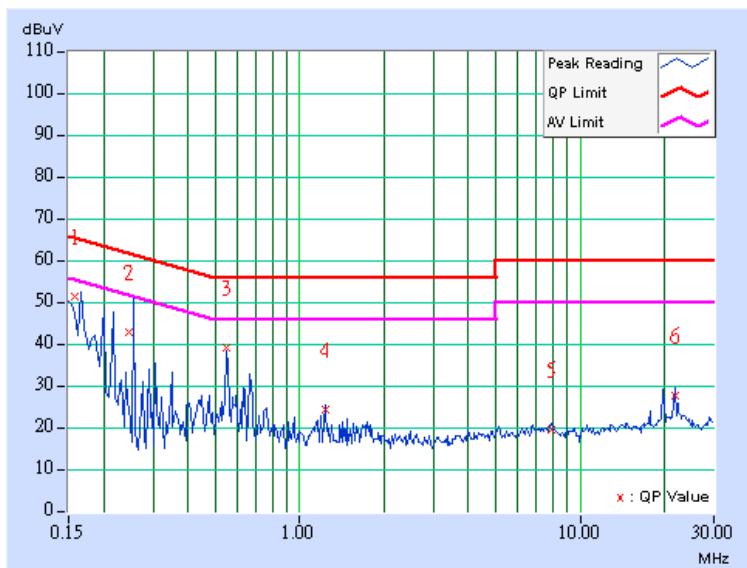
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 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.158	10.15	41.31	-	51.46	-	65.57	55.57	-14.10	-
2	0.245	10.10	32.74	-	42.84	-	61.91	51.91	-19.08	-
3	0.548	10.00	29.10	-	39.10	-	56.00	46.00	-16.90	-
4	1.233	9.94	14.41	-	24.35	-	56.00	46.00	-31.65	-
5	7.923	10.04	9.68	-	19.72	-	60.00	50.00	-40.28	-
6	21.723	10.10	17.74	-	27.84	-	60.00	50.00	-32.16	-

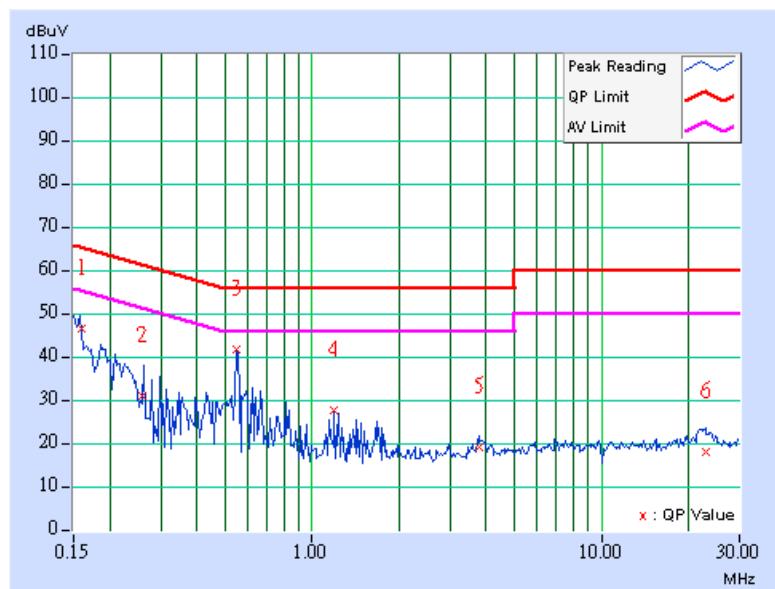
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 18		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.159	9.87	36.83	-	46.70	-	65.52	55.52	-18.82	-
2	0.258	9.89	21.39	-	31.28	-	61.49	51.49	-30.21	-
3	0.550	9.82	32.18	-	42.00	-	56.00	46.00	-14.00	-
4	1.193	9.84	18.17	-	28.01	-	56.00	46.00	-27.99	-
5	3.779	9.87	9.60	-	19.47	-	56.00	46.00	-36.53	-
6	22.855	9.74	8.30	-	18.04	-	60.00	50.00	-41.96	-

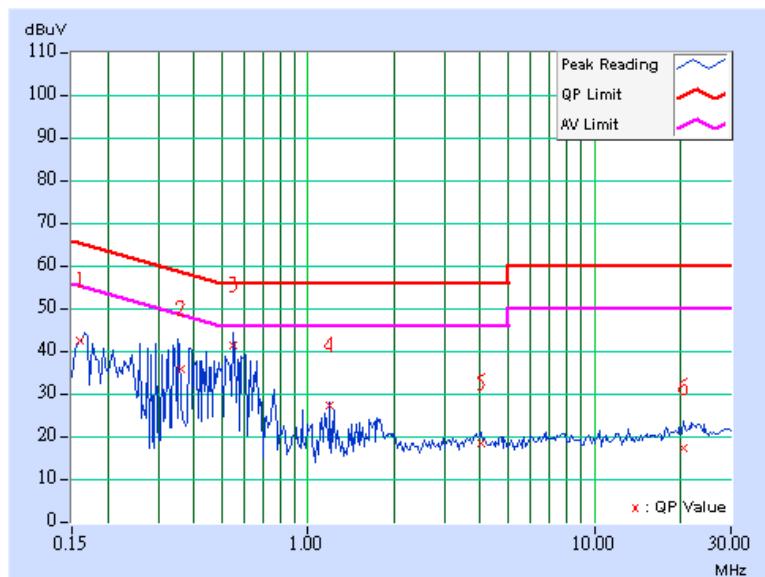
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.160	9.97	32.49	-	42.46	-	65.47	55.47	-23.01	-
2	0.358	9.94	25.82	-	35.76	-	58.77	48.77	-23.01	-
3	0.550	9.90	31.50	-	41.40	-	56.00	46.00	-14.60	-
4	1.193	9.84	17.25	-	27.09	-	56.00	46.00	-28.91	-
5	4.055	9.87	8.61	-	18.48	-	56.00	46.00	-37.52	-
6	20.480	10.08	7.32	-	17.40	-	60.00	50.00	-42.60	-

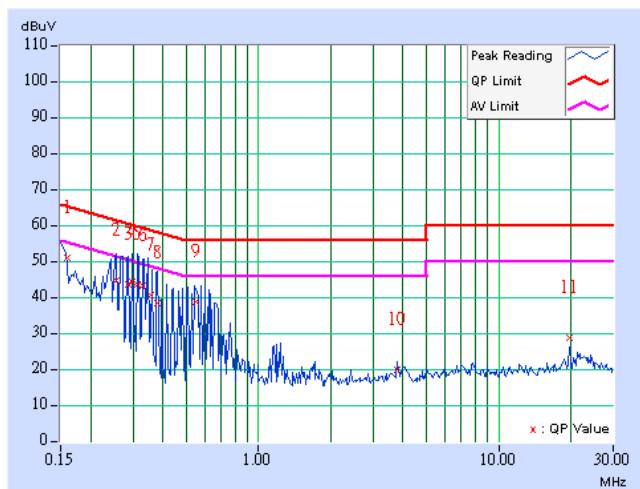
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 26	PHASE	Line 2
MODULATION TYPE	O-QPSK	6dB BANDWIDTH	9kHz
TRANSFER RATE	250kbps	ENVIRONMENTAL CONDITIONS	17 deg. C, 58%RH, 991hPa
INPUT POWER (SYSTEM)	3ψ 220Vac / 60Hz	TESTED BY	Lake Cheng

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	0.159	9.97	40.95	-	50.92	-	65.52	55.52	-14.60	-
2	0.255	9.99	34.78	-	44.77	-	61.58	51.58	-16.81	-
3	0.287	9.98	33.67	-	43.65	-	60.62	50.62	-16.97	-
4	0.298	9.97	34.43	-	44.40	-	60.29	50.29	-15.89	-
5	0.315	9.96	33.87	-	43.83	-	59.83	49.83	-16.00	-
6	0.330	9.96	33.26	-	43.22	-	59.46	49.46	-16.24	-
7	0.357	9.94	30.68	-	40.62	-	58.80	48.80	-18.18	-
8	0.380	9.93	28.40	-	38.33	-	58.27	48.27	-19.94	-
9	0.549	9.90	28.82	-	38.72	-	56.00	46.00	-17.28	-
10	3.779	9.87	9.94	-	19.81	-	56.00	46.00	-36.19	-
11	19.741	9.99	18.95	-	28.94	-	60.00	50.00	-31.06	-

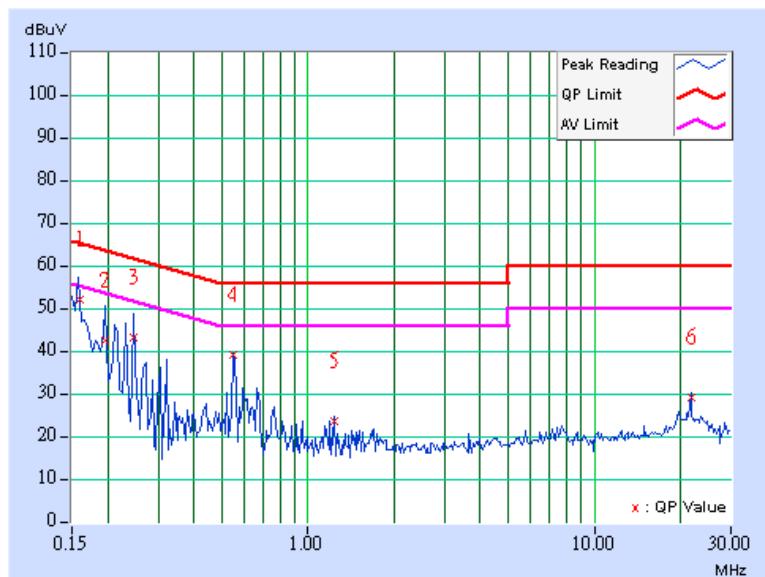
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.159	10.15	42.31	-	52.46	-	65.51	55.51	-13.05	-
2	0.196	10.12	32.68	-	42.80	-	63.80	53.80	-20.99	-
3	0.245	10.10	33.32	-	43.42	-	61.92	51.92	-18.51	-
4	0.549	10.00	29.30	-	39.30	-	56.00	46.00	-16.70	-
5	1.233	9.94	13.75	-	23.69	-	56.00	46.00	-32.31	-
6	21.714	10.10	19.02	-	29.12	-	60.00	50.00	-30.88	-

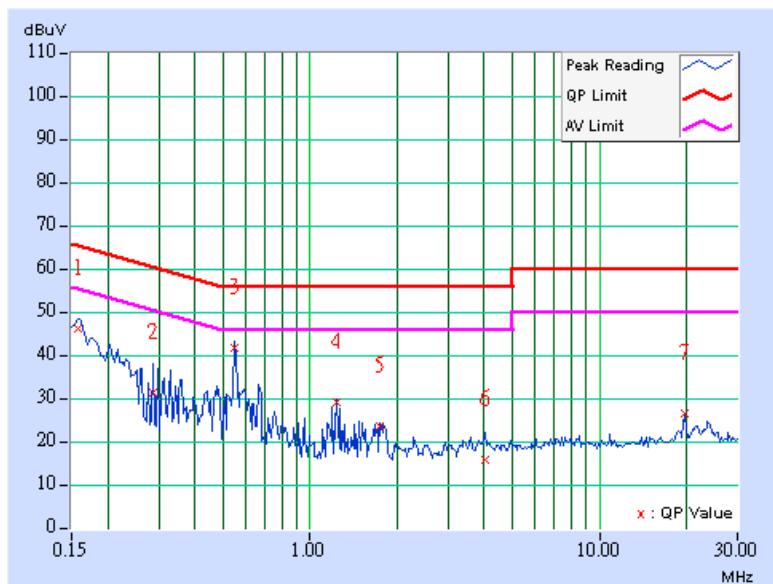
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION			MEASUREMENT DETAIL	
CHANNEL		Channel 26		PHASE
MODULATION TYPE		O-QPSK		6dB BANDWIDTH
TRANSFER RATE		250kbps		ENVIRONMENTAL CONDITIONS
INPUT POWER (SYSTEM)		3ψ 220Vac / 60Hz		TESTED BY
				Lake Cheng

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	0.158	9.87	36.55	-	46.42	-	65.57	55.57	-19.15	-
2	0.287	9.88	21.52	-	31.40	-	60.62	50.62	-29.22	-
3	0.548	9.82	32.02	-	41.84	-	56.00	46.00	-14.16	-
4	1.232	9.84	19.31	-	29.15	-	56.00	46.00	-26.85	-
5	1.749	9.85	13.93	-	23.78	-	56.00	46.00	-32.22	-
6	4.013	9.87	6.02	-	15.89	-	56.00	46.00	-40.11	-
7	19.738	9.79	17.00	-	26.79	-	60.00	50.00	-33.21	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value.
 5. Correction factor = Insertion loss + Cable loss.
 6. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209, 15.249 as following:

15.209 Limit

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

15.249 Limit

Fundamental Frequency	Field Strength of Fundamental (microvolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 – 928 MHz	50	500
2400 – 2483.5 MHz	50	500
5725 -5875 MHz	50	500
24.0 – 24.25 GHz	250	2500

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), 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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100212	May 08, 2007
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Aug. 07, 2007
BILOG Antenna SCHWARZBECK	VULB9168	9168-153	Jan. 04, 2008
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Jul. 26, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 16, 2008
Preamplifier Agilent	8449B	3008A01911	Sep. 13, 2007
Preamplifier Agilent	8447D	2944A10638	Dec. 20, 2007
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218188/218189	Nov. 14, 2007
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Mar. 08, 2007
Software	ADT_Radiated_V7.6	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA
Turn Table EMCO	2087-2.03	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	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 9.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The IC Site Registration No. is IC4924A-9.



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 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.

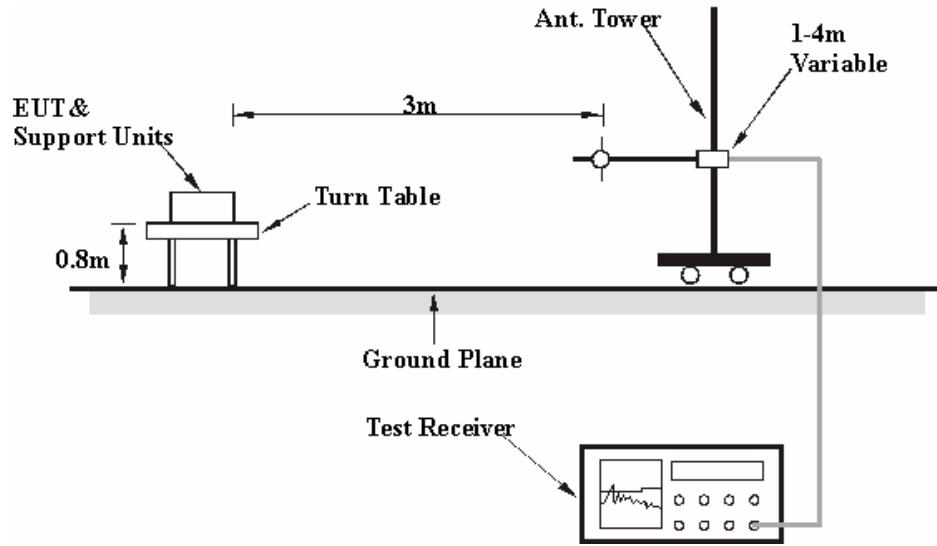
NOTE:

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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

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



4.2.7 TEST RESULTS

RADIATED WORST-CASE DATA: BELOW 1GHz

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 26	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 66%RH, 991hPa	TESTED BY	Match Tsui

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	683.15	23.16 QP	46.00	-22.84	1.00 H	274	-0.60	23.76
2	704.53	23.09 QP	46.00	-22.91	2.50 H	19	-1.20	24.29
3	747.29	25.24 QP	46.00	-20.76	1.00 H	274	-0.45	25.69
4	770.62	25.11 QP	46.00	-20.89	2.50 H	16	-0.76	25.87
5	805.61	25.73 QP	46.00	-20.27	1.50 H	67	-0.34	26.07
6	842.55	25.52 QP	46.00	-20.48	1.50 H	58	-1.05	26.57
7	852.26	26.02 QP	46.00	-19.98	1.50 H	355	-0.67	26.69
8	879.48	27.61 QP	46.00	-18.39	1.50 H	268	0.69	26.91
9	937.80	28.62 QP	46.00	-17.38	2.00 H	319	-0.22	28.85

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	739.52	25.30 QP	46.00	-20.70	2.50 V	148	-0.14	25.44
2	776.45	25.27 QP	46.00	-20.73	1.00 V	247	-0.63	25.89
3	793.95	25.70 QP	46.00	-20.30	1.00 V	43	-0.27	25.97
4	844.49	26.16 QP	46.00	-19.84	2.50 V	160	-0.44	26.60
5	854.21	26.25 QP	46.00	-19.75	1.00 V	199	-0.46	26.71
6	879.48	26.73 QP	46.00	-19.27	1.50 V	301	-0.19	26.91
7	930.02	28.94 QP	46.00	-17.06	1.50 V	154	0.46	28.48
8	951.40	28.83 QP	46.00	-17.17	2.00 V	46	-0.55	29.39

- 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.

**ABOVE 1GHZ WORST-CASE DATA**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

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	2390.00	54.97 PK	74.00	-19.03	1.31 H	27	23.76	31.21
2	2390.00	41.97 AV	54.00	-12.03	1.31 H	27	10.76	31.21
3	*2405.00	93.38 PK	114.00	-20.62	1.31 H	27	62.18	31.20
4	*2405.00	80.38 AV	94.00	-13.62	1.31 H	27	49.18	31.20
5	4810.00	48.96 PK	74.00	-25.04	1.03 H	346	12.57	36.39
6	4810.00	35.96 AV	54.00	-18.04	1.03 H	346	-0.43	36.39

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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log \frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13 \text{ dB}$$

Please see page 47 for plotted duty.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

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	2390.00	54.90 PK	74.00	-19.10	1.38 V	74	23.69	31.21
2	2390.00	41.90 AV	54.00	-12.10	1.38 V	74	10.69	31.21
3	*2405.00	88.30 PK	114.00	-25.70	1.38 V	74	57.10	31.20
4	*2405.00	75.30 AV	94.00	-18.70	1.38 V	74	44.10	31.20
5	4810.00	47.15 PK	74.00	-26.85	1.48 V	309	10.76	36.39
6	4810.00	34.15 AV	54.00	-19.85	1.48 V	309	-2.24	36.39

- 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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13\text{dB}$$

Please see page 47 for plotted duty



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 18	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

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	*2440.00	93.98 PK	114.00	-20.02	1.32 H	35	62.76	31.22
2	*2440.00	80.98 AV	94.00	-13.02	1.32 H	35	49.76	31.22
3	4880.00	47.92 PK	74.00	-26.08	1.00 H	355	11.39	36.54
4	4880.00	34.92 AV	54.00	-19.08	1.00 H	355	-1.61	36.54

- 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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log (\text{Duty cycle}) = 20\log \frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13 \text{ dB}$$

Please see page 47 for plotted duty



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 18	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

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	*2440.00	88.76 PK	114.00	-25.24	1.41 V	120	57.54	31.22
2	*2440.00	75.76 AV	94.00	-18.24	1.41 V	120	44.54	31.22
3	4880.00	47.87 PK	74.00	-26.13	1.00 V	236	11.33	36.54
4	4880.00	34.87 AV	54.00	-19.13	1.00 V	236	-1.67	36.54

- 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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13\text{dB}$$

Please see page 47 for plotted duty



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 26	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

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	94.17 PK	114.00	-19.83	1.25 H	137	62.94	31.23
2	*2480.00	81.17 AV	94.00	-12.83	1.25 H	137	49.94	31.23
3	2483.50	65.01 PK	74.00	-8.99	1.26 H	137	33.78	31.23
4	2483.50	52.01 AV	54.00	-1.99	1.26 H	137	20.78	31.23
5	4960.00	47.12 PK	74.00	-26.88	1.00 H	11	10.41	36.71
6	4960.00	34.12 AV	54.00	-19.88	1.00 H	11	-2.59	36.71

- 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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13\text{dB}$$

Please see page 47 for plotted duty



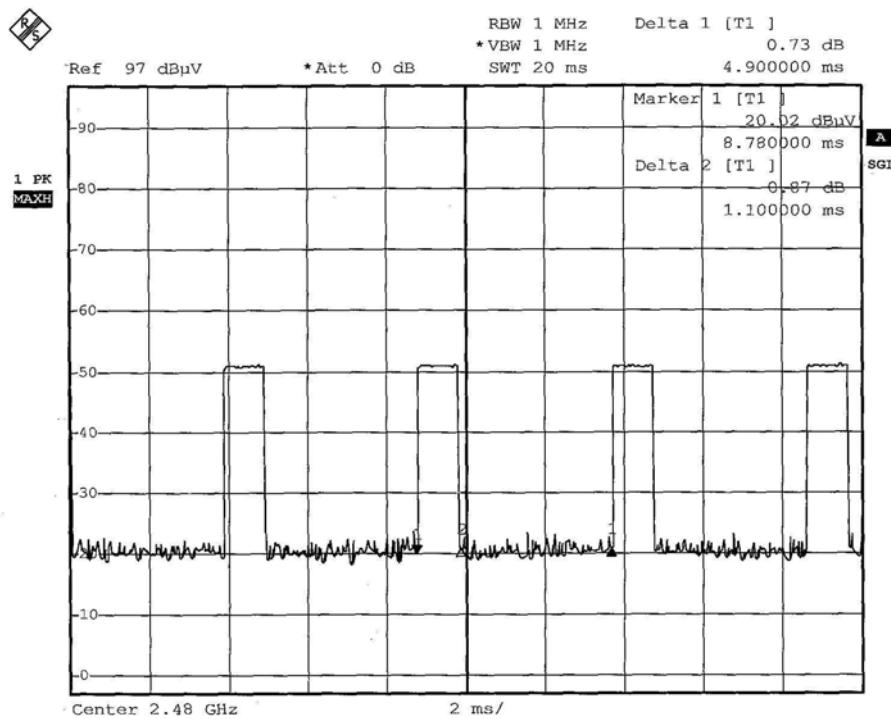
EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 26	FREQUENCY RANGE	1 ~ 25GHz
MODULATION TYPE	O-QPSK	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa	TESTED BY	Lori Chiu

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	89.27 PK	114.00	-24.73	1.38 V	124	58.04	31.23
2	*2480.00	76.27 AV	94.00	-17.73	1.38 V	124	45.04	31.23
3	2483.50	62.21 PK	74.00	-11.79	1.38 V	124	30.98	31.23
4	2483.50	49.21 AV	54.00	-4.79	1.38 V	124	17.98	31.23
5	4960.00	47.04 PK	74.00	-26.96	1.28 V	153	10.33	36.71
6	4960.00	34.04 AV	54.00	-19.96	1.28 V	153	-2.67	36.71

- 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 average value of fundamental frequency is: Average = Peak value + 20log(Duty cycle) Where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log \frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13 \text{ dB}$$

Please see page 47 for plotted duty



$$20\log(\text{Duty cycle}) = 20\log \frac{1.1 \text{ ms}}{4.9 \text{ ms}} = -13 \text{ dB}$$



4.3 EMISSION OF OUTSIDE BAND MEASUREMENT

4.3.1 LIMITS OF EMISSION OF OUTSIDE BAND MEASUREMENT

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSP40	100040	Jun. 07, 2007

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100 kHz and 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots are attached on the following pages.

4.3.4 DEVIATION FROM TEST STANDARD

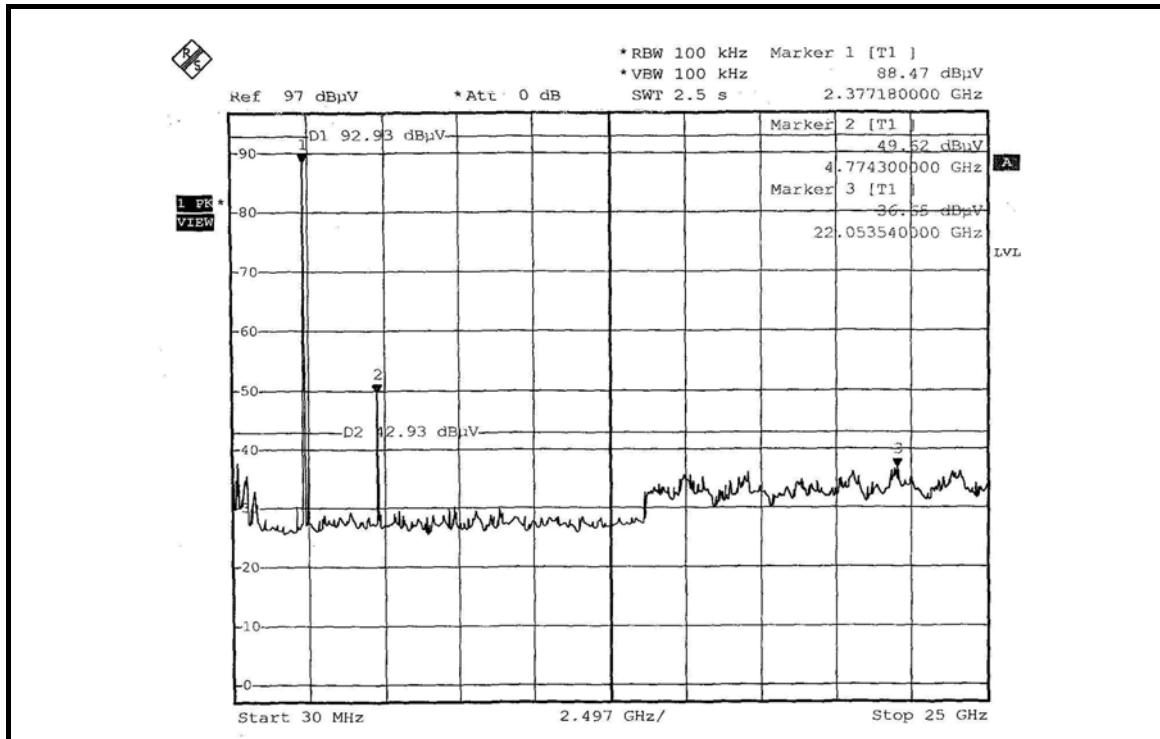
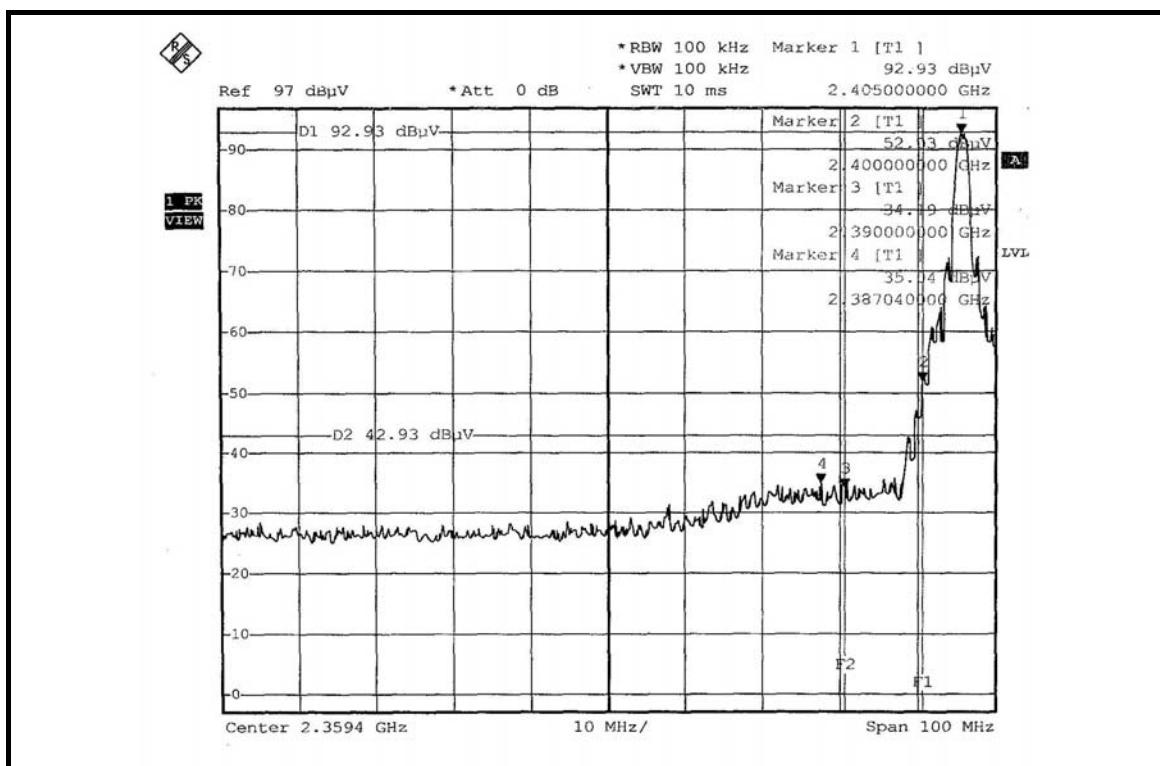
No deviation.

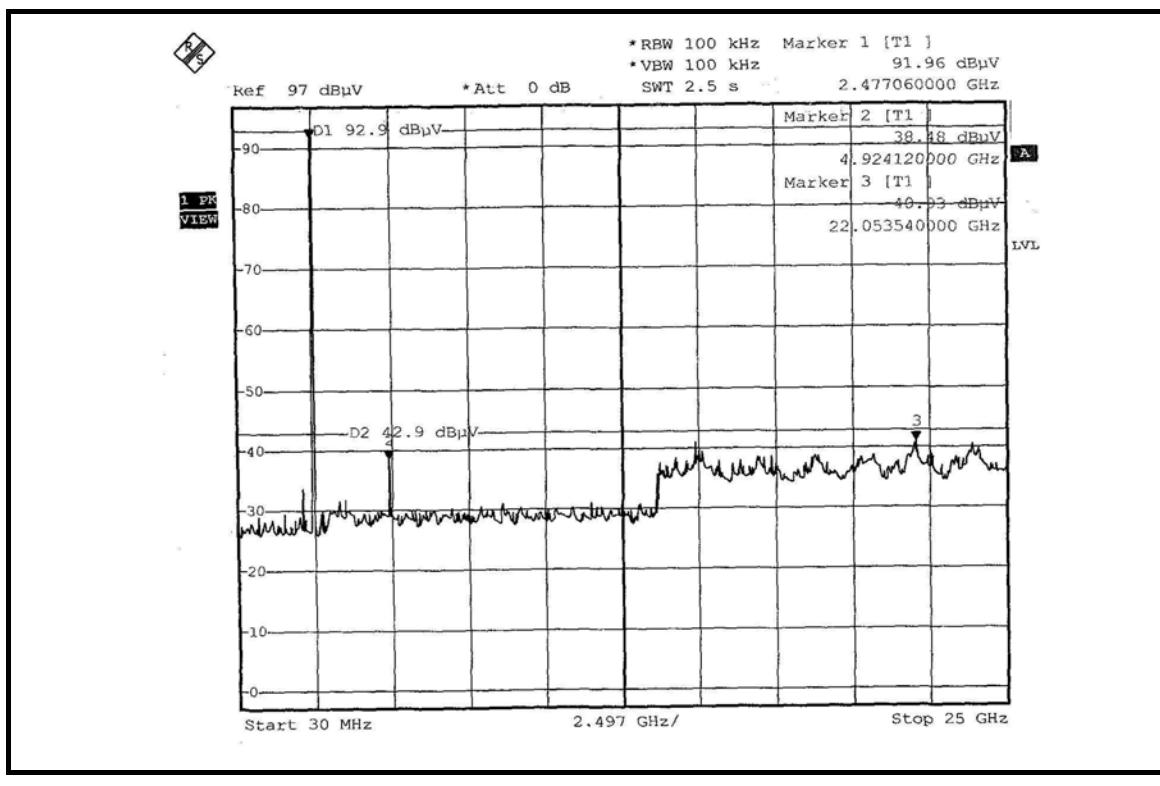
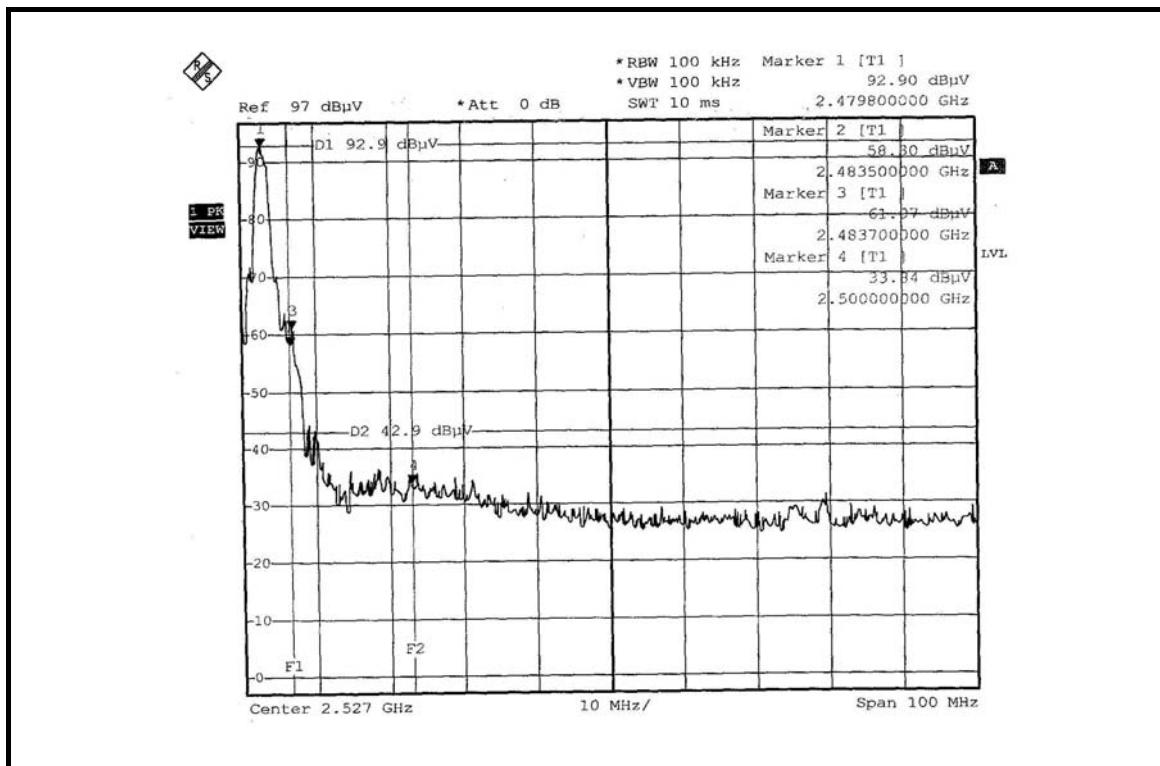
4.3.5 EUT OPERATING CONDITION

Same as Item 4.3.6.

4.3.6 TEST RESULTS

The spectrum plots are attached on the following 4 images. D1 line indicates the highest level, and D2 line indicates the 50dB offset below D1. It shows compliance with the requirement in part 15.249 (d).







5. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, NCC
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. 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
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

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



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.