



A D T

FCC TEST REPORT (BLUETOOTH LE4.0)

REPORT NO.: RF130517C12B-5

MODEL NO.: F-04F

FCC ID: VQK-F04F

RECEIVED: May 17, 2013

TESTED: May 28 ~ Jul. 10, 2013
Oct. 14 ~ Oct. 17, 2013

ISSUED: Oct. 24, 2013

APPLICANT: FUJITSU LIMITED

ADDRESS: 1-1, Kamikodanaka 4-chome, Nakahara-ku,
Kawasaki 211-8588, Japan

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

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,
New Taipei City, Taiwan, R.O.C.

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

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

Table of Contents

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	8
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	9
3.3 DESCRIPTION OF SUPPORT UNITS	10
3.3.1 CONFIGURATION OF SYSTEM UNDER TEST	11
3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS	12
4. TEST TYPES AND RESULTS	13
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	13
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	13
4.1.2 TEST INSTRUMENTS	14
4.1.3 TEST PROCEDURES	16
4.1.4 DEVIATION FROM TEST STANDARD	16
4.1.5 TEST SETUP	17
4.1.6 EUT OPERATING CONDITIONS	17
4.1.7 TEST RESULTS	18
4.2 CONDUCTED EMISSION MEASUREMENT	24
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	24
4.2.2 TEST INSTRUMENTS	24
4.2.3 TEST PROCEDURES	25
4.2.4 DEVIATION FROM TEST STANDARD	25
4.2.5 TEST SETUP	26
4.2.6 EUT OPERATING CONDITIONS	26
4.2.7 TEST RESULTS	27
4.3 6dB BANDWIDTH MEASUREMENT	33
4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT	33
4.3.2 TEST SETUP	33
4.3.3 TEST INSTRUMENTS	33
4.3.4 TEST PROCEDURE	33
4.3.5 DEVIATION FROM TEST STANDARD	33
4.3.6 EUT OPERATING CONDITIONS	33
4.3.7 TEST RESULTS	34
4.4 CONDUCTED OUTPUT POWER	35
4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT	35



4.4.2	TEST SETUP	35
4.4.3	TEST INSTRUMENTS	35
4.4.4	TEST PROCEDURES.....	35
4.4.5	DEVIATION FROM TEST STANDARD.....	35
4.4.6	EUT OPERATING CONDITIONS	35
4.4.7	TEST RESULTS.....	35
4.5	POWER SPECTRAL DENSITY MEASUREMENT	36
4.5.1	LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT	36
4.5.2	TEST SETUP	36
4.5.3	TEST INSTRUMENTS	36
4.5.4	TEST PROCEDURE	36
4.5.5	DEVIATION FROM TEST STANDARD.....	36
4.5.6	EUT OPERATING CONDITION	36
4.5.7	TEST RESULTS.....	37
4.6	CONDUCTED OUT OF BAND EMISSION MEASUREMENT	38
4.6.1	LIMITS OF OUT OF BAND EMISSION MEASUREMENT	38
4.6.2	TEST SETUP	38
4.6.3	TEST INSTRUMENTS	38
4.6.4	TEST PROCEDURE	38
4.6.5	DEVIATION FROM TEST STANDARD.....	39
4.6.6	EUT OPERATING CONDITION.....	39
4.6.7	TEST RESULTS.....	39
4.6.8	TEST RESULTS.....	40
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	41
6.	INFORMATION ON THE TESTING LABORATORIES	42
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	43



RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130517C12B-5	Original release	Oct. 24, 2013

1. CERTIFICATION

PRODUCT: Mobile Phone
MODEL NO.: F-04F
BRAND: FUJITSU
APPLICANT: FUJITSU LIMITED
TESTED: May 28 ~ Jul. 10, 2013
Oct. 14 ~ Oct. 17, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10-2009

The above equipment (model: F-04F) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE** : Oct. 24, 2013
Pettie Chen / Senior Specialist

APPROVED BY :  , **DATE** : Oct. 24, 2013
Ken Liu / Senior Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.15dB at 0.17344MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -6.9dB at 161.85MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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:

Tested date: May 28 ~ Jul. 10, 2013

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

Tested date: Oct. 14 ~ Oct. 17, 2013

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emission	150kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 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	Mobile Phone
MODEL NO.	F-04F
POWER SUPPLY	3.8Vdc (Battery) 5.0Vdc (Adapter or cradle or host equipment)
MODULATION TYPE	GFSK
TRANSFER RATE	1Mbps
OPERATING FREQUENCY	2402 ~ 2480MHz
NUMBER OF CHANNEL	40
CHANNEL SPACING	2MHz
OUTPUT POWER	0.966mW
ANTENNA TYPE	λ/4 Monopole antenna with -3.9 dBi gain
ANTENNA CONNECTOR	N/A
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

- This report is issued as a supplementary report to the original BV ADT report no.: RF130517C12-5 (FCC ID: VQK-F08E). The differences compared with the original report are changing model, FCC ID, battery pack, model of cradle, updating versions of SW and HW, removing touch panel sensibility & receiving function for TV broadcast function and adding one fingerprint button function. Therefore, only AC Power Conducted Emission and radiated emission tests had been re-tested and the other original test data are kept in this report.
- The EUT contains the following accessories.

No.	Product	Brand	Model	Description
1	Battery	Fujitsu Limited	F31	Rating: 3.8V, 2500mA Type: Li-ion
2	Cradle	Fujitsu Limited	F45	Input: 5.0Vdc, 1.5A Output: 5.0Vdc, 1.5A

- The EUT uses following support unit.

No.	Product	Brand	Model	Description
1	Adapter	NTT docomo	AC Adaptor 04	Input: 100-240Vac, 0.22A, 50-60Hz Output: 5.0V, 1.8A 1.05m DC cable with 2 cores

- SW version is R05.1e.
- HW version is V3.0.0.
- IMEI Code: 355755050013655, 358679040049859
- The above EUT information is declared by manufacturer and for more detailed feature description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

40 channels are provided to this EUT:

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE \geq 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	-	√	√	-	Power from cradle
C	-	√	√	-	Power from host equipment

Where **RE \geq 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE 1: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

NOTE 2: "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

- ☒ 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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
A	0 to 39	0, 19, 39	GFSK	1.0

RADIATED EMISSION TEST (BELOW 1GHz):

- ☒ 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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
A, B, C	0 to 39	39	GFSK	1.0

POWER LINE CONDUCTED EMISSION:

- ☒ 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.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	DATA RATE (Mbps)
A, B, C	0 to 39	39	GFSK	1.0

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ 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	DATA RATE (Mbps)
A	0 to 39	0, 19, 39	GFSK	1.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE \geq 1G	26deg. C, 65%RH	120Vac, 60Hz	Alan Wu
RE<1G	23deg. C, 66%RH	120Vac, 60Hz	Alan Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
APCM	24deg. C, 64%RH	120Vac, 60Hz	Nick Chen

3.3 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	ADAPTER	NTT docomo	AC Adaptor 04	NA	NA
2	NOTEBOOK	DELL	D531	CN-0XM006-48643-8 1U-2973	QDS-BRCM1020

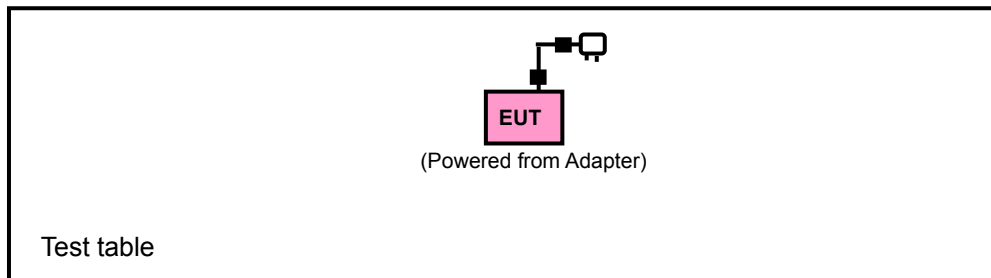
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.0m USB cable

NOTE:

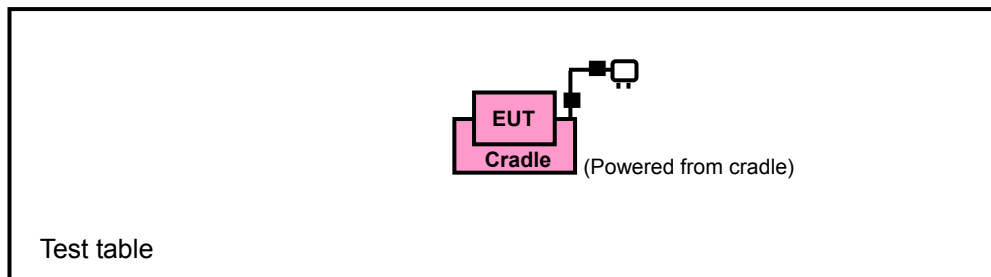
- 1.05m DC cable with 2 cores.
- Item 1 is provided by the client.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST

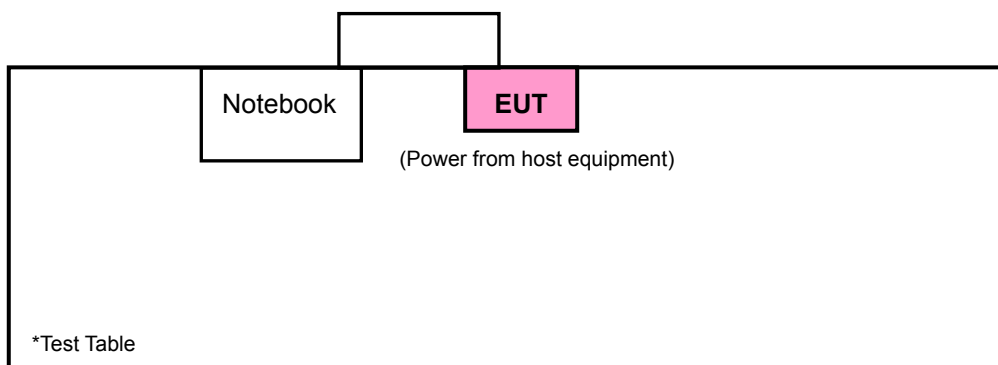
Test Mode A



Test Mode B



Test Mode C



3.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

558074 D01 DTS Meas Guidance v03r01

ANSI C63.10-2009

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.

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE 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

Tested date: May 28 ~ Jul. 10, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 16, 2012	Nov. 15, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 28, 2013	Jan. 27, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Mar. 22, 2013	Mar. 21, 2014
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Sep. 03, 2012	Sep. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Preamplifier Agilent	8449B	3008A01911	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10638	Oct. 25, 2012	Oct. 24, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 28, 2012	Aug. 27, 2013
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 11, 2012	Aug. 10, 2013
Software BV ADT	ADT_Radiated_ V7.6.15.9.3	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 22, 2012	Aug. 21, 2013
Power Sensor	MA2411B	0738171	Jul. 30, 2012	Jul. 29, 2013

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The 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 FCC Site Registration No. is 215374.

5. The IC Site Registration No. is IC 7450F-9.

Tested date: Oct. 14 ~ Oct. 17, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Sep. 09, 2013	Sep. 08, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Oct. 25, 2012	Oct. 24, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Mar. 25, 2013	Mar. 24, 2014
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Dec. 22, 2012	Dec. 21, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01961	Oct. 25, 2012	Oct. 24, 2013
Preamplifier Agilent	8447D	2944A10738	Oct. 23, 2012	Oct. 22, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 26, 2013	Aug. 25, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	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 BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV 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.

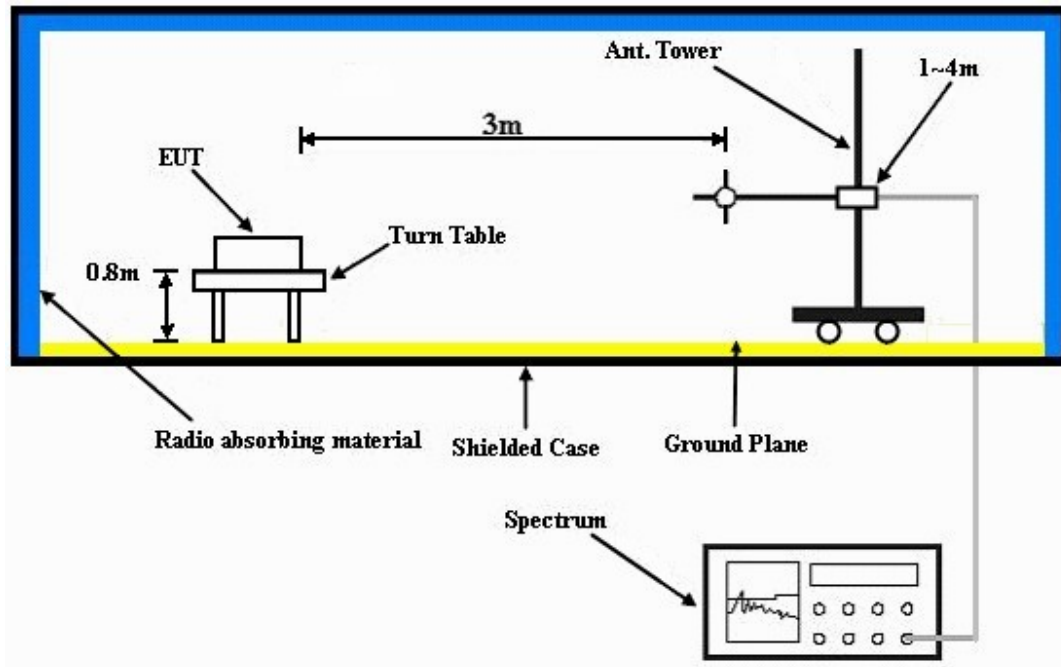
NOTE:

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. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1kHz(Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. 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

Test Mode A

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

Test Mode B

- Plugged the EUT into the cradle and placed them on the test table.
- Set the EUT under transmission condition continuously at specific channel frequency.

Test Mode C

- Connected the EUT with the notebook via a USB cable.
- Set the EUT under charging condition.

4.1.7 TEST RESULTS

ABOVE 1GHz DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 0	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH	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	2390.00	55.3 PK	74.0	-18.7	1.14 H	179	23.40	31.90
2	2390.00	42.6 AV	54.0	-11.4	1.14 H	179	10.70	31.90
3	*2402.00	87.0 PK			1.13 H	173	55.10	31.90
4	*2402.00	82.7 AV			1.13 H	173	50.80	31.90
5	4804.00	47.1 PK	74.0	-26.9	1.00 H	100	42.50	4.60
6	4804.00	33.7 AV	54.0	-20.3	1.00 H	100	29.10	4.60
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	2390.00	54.8 PK	74.0	-19.2	1.00 V	286	22.90	31.90
2	2390.00	41.8 AV	54.0	-12.2	1.00 V	286	9.90	31.90
3	*2402.00	78.6 PK			1.00 V	281	46.70	31.90
4	*2402.00	75.0 AV			1.00 V	281	43.10	31.90
5	4804.00	46.8 PK	74.0	-27.2	1.00 V	206	42.20	4.60
6	4804.00	33.0 AV	54.0	-21.0	1.00 V	206	28.40	4.60

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)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 19	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH	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	*2440.00	89.1 PK			1.42 H	170	57.10	32.00
2	*2440.00	84.6 AV			1.42 H	170	52.60	32.00
3	4880.00	47.4 PK	74.0	-26.6	1.00 H	106	42.40	5.00
4	4880.00	34.0 AV	54.0	-20.0	1.00 H	106	29.00	5.00
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	80.2 PK			1.00 V	283	48.20	32.00
2	*2440.00	77.2 AV			1.00 V	283	45.20	32.00
3	4880.00	47.1 PK	74.0	-26.9	1.00 V	200	42.10	5.00
4	4880.00	33.5 AV	54.0	-20.5	1.00 V	200	28.50	5.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 39	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	26deg. C, 65%RH	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	*2480.00	88.6 PK			1.11 H	176	56.40	32.20
2	*2480.00	84.2 AV			1.11 H	176	52.00	32.20
3	2483.50	56.0 PK	74.0	-18.0	1.16 H	174	23.70	32.30
4	2483.50	42.5 AV	54.0	-11.5	1.16 H	174	10.20	32.30
5	4960.00	47.8 PK	74.0	-26.2	1.00 H	102	42.80	5.00
6	4960.00	33.9 AV	54.0	-20.1	1.00 H	102	28.90	5.00

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	81.5 PK			1.00 V	281	49.30	32.20
2	*2480.00	77.7 AV			1.00 V	281	45.50	32.20
3	2483.50	55.5 PK	74.0	-18.5	1.00 V	289	23.20	32.30
4	2483.50	41.7 AV	54.0	-12.3	1.00 V	289	9.40	32.30
5	4960.00	47.5 PK	74.0	-26.5	1.00 V	209	42.50	5.00
6	4960.00	33.2 AV	54.0	-20.8	1.00 V	209	28.20	5.00

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.



A D T

BELOW 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 39	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 66%RH	TESTED BY	Alan Wu
TEST MODE	A		

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	51.24	22.2 QP	40.0	-17.8	1.00 H	9	36.40	-14.20
2	76.47	18.7 QP	40.0	-21.3	3.00 H	58	36.30	-17.60
3	101.69	22.2 QP	43.5	-21.3	1.24 H	12	40.60	-18.40
4	161.85	18.7 QP	43.5	-24.8	1.00 H	8	32.30	-13.60
5	495.60	21.3 QP	46.0	-24.7	1.75 H	265	30.40	-9.10
6	705.16	24.5 QP	46.0	-21.5	1.24 H	12	29.80	-5.30
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	51.24	31.1 QP	40.0	-8.9	1.00 V	8	45.30	-14.20
2	76.47	28.0 QP	40.0	-12.0	1.00 V	329	45.60	-17.60
3	103.64	25.7 QP	43.5	-17.8	2.00 V	318	43.80	-18.10
4	161.85	21.9 QP	43.5	-21.6	1.00 V	299	35.50	-13.60
5	582.91	22.7 QP	46.0	-23.3	3.00 V	8	30.10	-7.40
6	751.73	26.2 QP	46.0	-19.8	1.24 V	178	29.90	-3.70

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)
– Pre-Amplifier 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 39	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 66%RH	TESTED BY	Alan Wu
TEST MODE	B		

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	51.24	15.3 QP	40.0	-24.7	1.00 H	168	29.50	-14.20
2	101.69	13.3 QP	43.5	-30.2	1.50 H	97	31.70	-18.40
3	161.85	15.0 QP	43.5	-28.5	1.00 H	277	28.60	-13.60
4	518.88	20.7 QP	46.0	-25.3	2.00 H	64	29.50	-8.80
5	623.66	24.0 QP	46.0	-22.0	1.00 H	345	30.40	-6.40
6	784.72	26.2 QP	46.0	-19.8	1.00 H	239	29.60	-3.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.72	21.1 QP	40.0	-18.9	1.00 V	135	35.80	-14.70
2	101.69	19.3 QP	43.5	-24.2	1.00 V	141	37.70	-18.40
3	136.62	15.5 QP	43.5	-28.0	3.00 V	300	30.20	-14.70
4	227.82	14.9 QP	46.0	-31.1	1.00 V	340	31.40	-16.50
5	641.13	23.5 QP	46.0	-22.5	1.50 V	4	29.60	-6.10
6	716.80	25.7 QP	46.0	-20.3	1.00 V	305	30.60	-4.90

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)
– Pre-Amplifier 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 39	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 66%RH	TESTED BY	Alan Wu
TEST MODE	C		

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	70.65	21.2 QP	40.0	-18.8	1.00 H	199	37.10	-15.90
2	119.16	27.5 QP	43.5	-16.0	1.50 H	16	43.80	-16.30
3	161.85	36.6 QP	43.5	-6.9	1.00 H	270	50.20	-13.60
4	239.46	31.3 QP	46.0	-14.7	1.00 H	312	46.20	-14.90
5	297.68	28.6 QP	46.0	-17.4	3.00 H	268	41.20	-12.60
6	664.41	33.0 QP	46.0	-13.0	1.00 H	158	38.90	-5.90
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	33.78	30.7 QP	40.0	-9.3	1.00 V	220	46.50	-15.80
2	99.75	33.6 QP	43.5	-9.9	1.00 V	232	52.20	-18.60
3	144.38	32.1 QP	43.5	-11.4	1.75 V	213	46.00	-13.90
4	229.76	35.3 QP	46.0	-10.7	1.00 V	93	51.50	-16.20
5	431.56	26.3 QP	46.0	-19.7	1.00 V	282	36.30	-10.00
6	666.35	32.3 QP	46.0	-13.7	2.00 V	11	38.10	-5.80

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)
– Pre-Amplifier 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

Tested date: Oct. 16 ~ Oct. 17, 2013

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 09, 2012	Nov. 08, 2013
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 28, 2012	Dec. 27, 2013
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 21, 2012	Dec. 20, 2013
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 17, 2013	Jul. 16, 2014
Software ADT	BV ADT_Conf_ V7.3.7.3	NA	NA	NA

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

4.2.3 TEST PROCEDURES

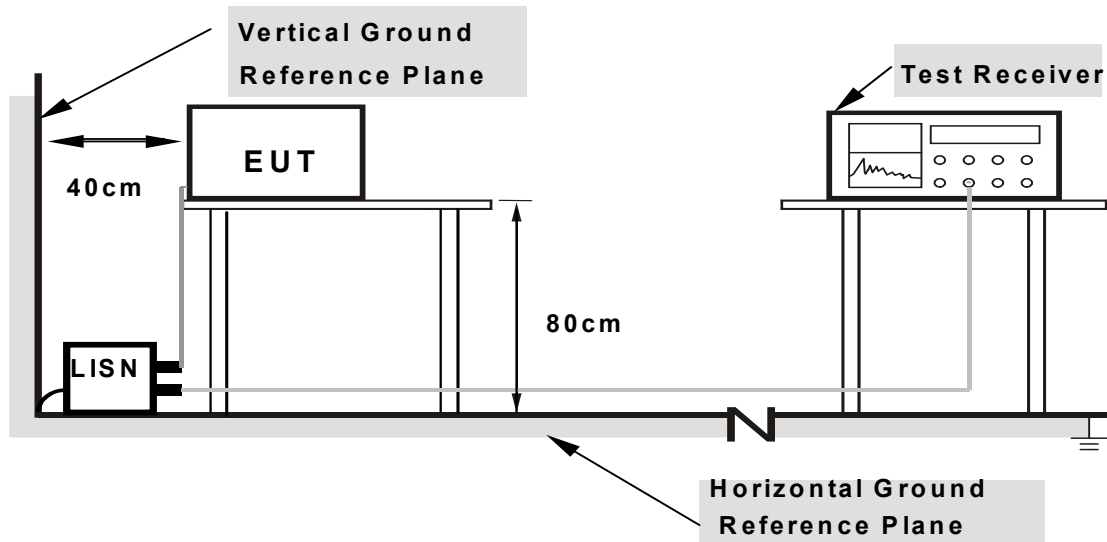
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

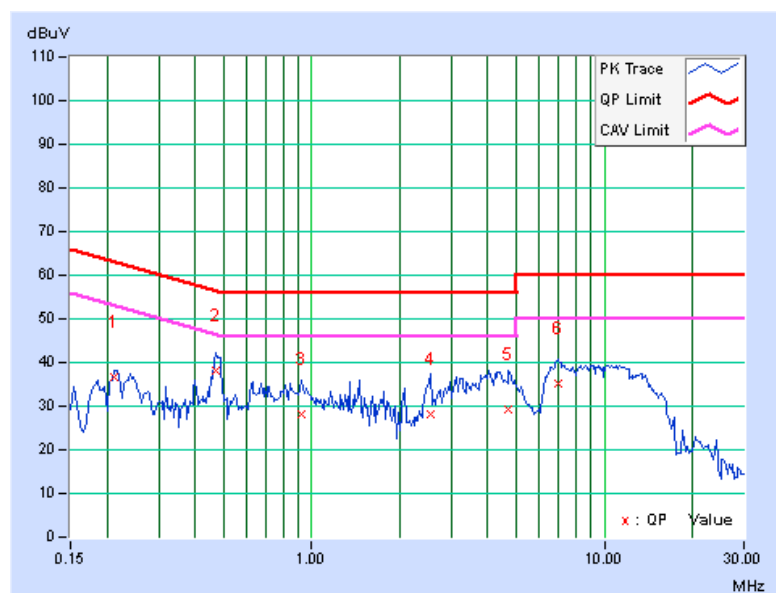
CONDUCTED WORST CASE DATA:

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

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	0.21250	0.17	36.66	29.21	36.83	29.38	63.11	53.11	-26.27	-23.72
2	0.47031	0.22	37.78	31.54	38.00	31.76	56.51	46.51	-18.51	-14.75
3	0.92344	0.26	27.97	22.25	28.23	22.51	56.00	46.00	-27.77	-23.49
4	2.54688	0.30	27.78	23.70	28.08	24.00	56.00	46.00	-27.92	-22.00
5	4.70703	0.38	28.78	21.14	29.16	21.52	56.00	46.00	-26.84	-24.48
6	6.95313	0.40	34.69	30.43	35.09	30.83	60.00	50.00	-24.91	-19.17

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.

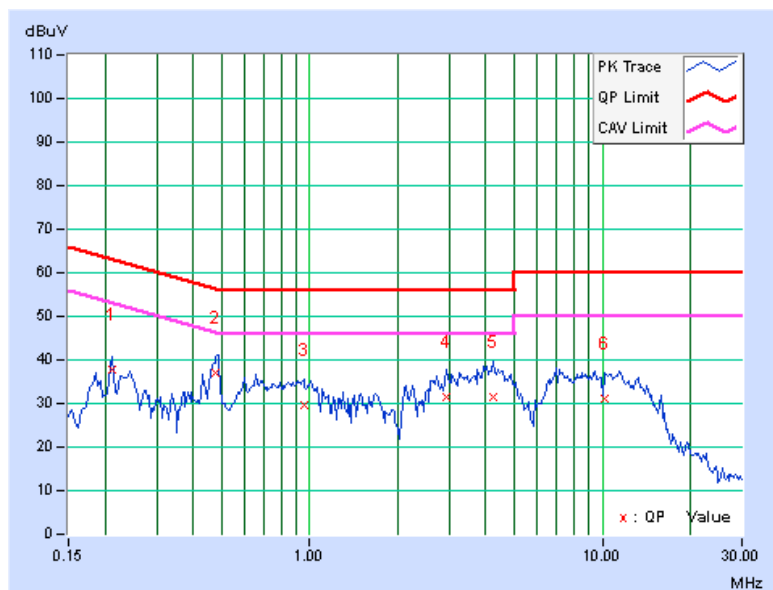


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

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	0.21250	0.18	37.52	24.86	37.70	25.04	63.11	53.11	-25.40	-28.06
2	0.47813	0.25	36.79	29.12	37.04	29.37	56.37	46.37	-19.33	-17.00
3	0.95469	0.23	29.31	20.39	29.54	20.62	56.00	46.00	-26.46	-25.38
4	2.92188	0.33	31.00	20.89	31.33	21.22	56.00	46.00	-24.67	-24.78
5	4.24219	0.39	31.22	20.23	31.61	20.62	56.00	46.00	-24.39	-25.38
6	10.14844	0.48	30.74	26.13	31.22	26.61	60.00	50.00	-28.78	-23.39

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.

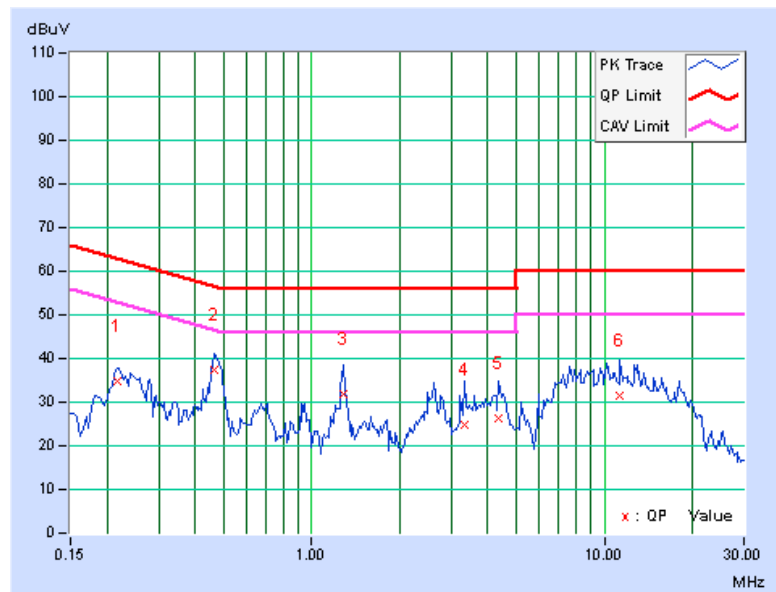


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

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	0.21641	0.17	34.49	26.55	34.66	26.72	62.96	52.96	-28.29	-26.23
2	0.46641	0.22	37.30	30.77	37.52	30.99	56.58	46.58	-19.06	-15.59
3	1.28906	0.27	31.46	19.83	31.73	20.10	56.00	46.00	-24.27	-25.90
4	3.31250	0.34	24.34	17.16	24.68	17.50	56.00	46.00	-31.32	-28.50
5	4.34766	0.37	25.84	18.47	26.21	18.84	56.00	46.00	-29.79	-27.16
6	11.33594	0.46	30.92	25.97	31.38	26.43	60.00	50.00	-28.62	-23.57

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.

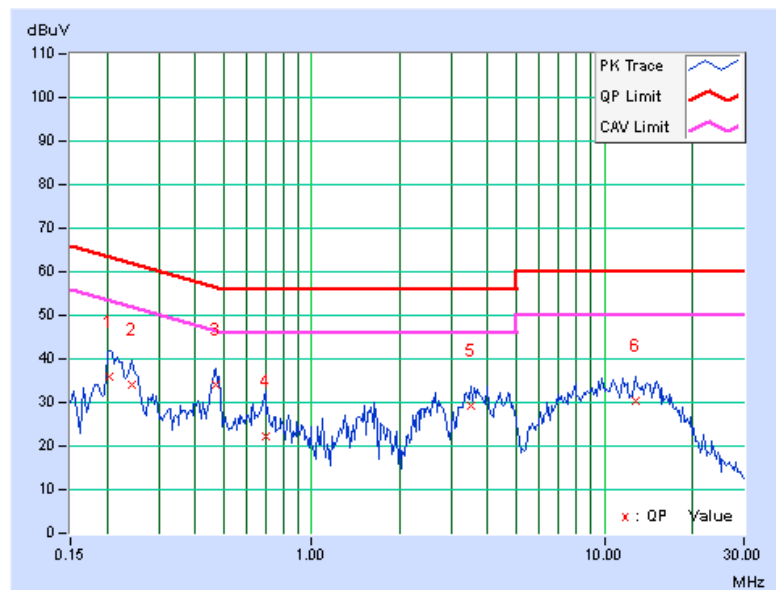


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

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	0.20469	0.18	35.78	23.47	35.96	23.65	63.42	53.42	-27.46	-29.77
2	0.24375	0.20	33.72	23.14	33.92	23.34	61.97	51.97	-28.05	-28.63
3	0.47031	0.25	33.90	25.26	34.15	25.51	56.51	46.51	-22.36	-21.00
4	0.69688	0.24	22.14	13.15	22.38	13.39	56.00	46.00	-33.62	-32.61
5	3.49609	0.36	28.90	15.22	29.26	15.58	56.00	46.00	-26.74	-30.42
6	12.84375	0.55	29.71	24.62	30.26	25.17	60.00	50.00	-29.74	-24.83

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.

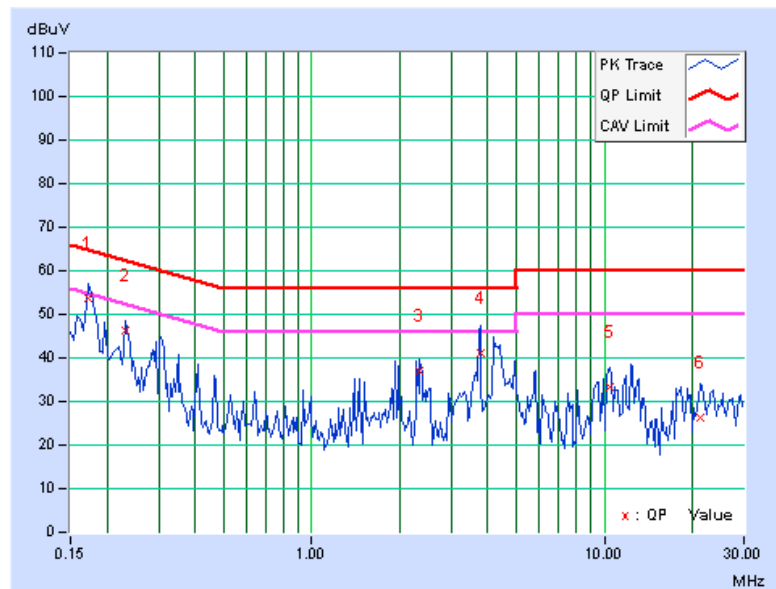


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	C		

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	0.17344	0.17	53.47	40.05	53.64	40.22	64.79	54.79	-11.15	-14.57
2	0.23203	0.18	46.04	35.46	46.22	35.64	62.38	52.38	-16.16	-16.74
3	2.33594	0.30	36.57	26.95	36.87	27.25	56.00	46.00	-19.13	-18.75
4	3.79688	0.36	40.89	25.64	41.25	26.00	56.00	46.00	-14.75	-20.00
5	10.44922	0.44	32.72	25.29	33.16	25.73	60.00	50.00	-26.84	-24.27
6	21.19531	0.63	25.82	18.41	26.45	19.04	60.00	50.00	-33.55	-30.96

REMARKS:

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

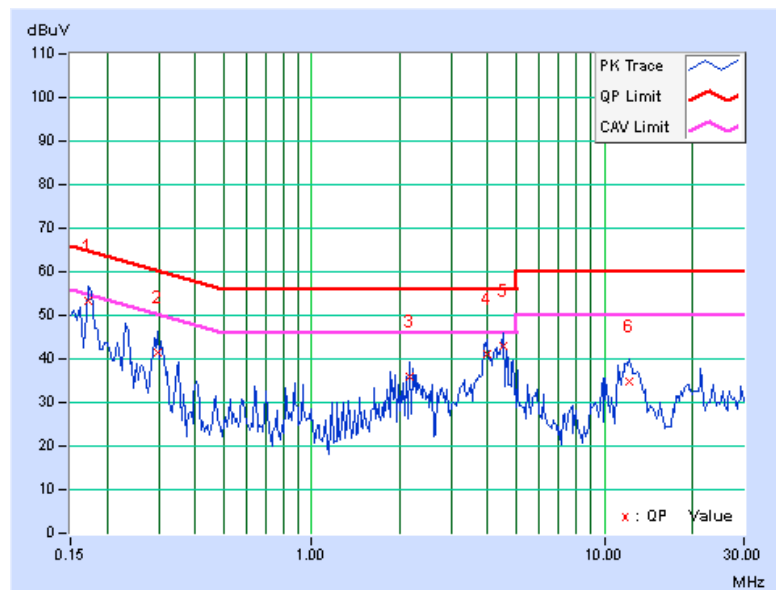


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	C		

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	0.17344	0.18	53.31	39.99	53.49	40.17	64.79	54.79	-11.30	-14.62
2	0.29844	0.21	41.18	32.19	41.39	32.40	60.29	50.29	-18.89	-17.88
3	2.16016	0.29	35.81	26.85	36.10	27.14	56.00	46.00	-19.90	-18.86
4	3.96484	0.39	40.72	28.74	41.11	29.13	56.00	46.00	-14.89	-16.87
5	4.49219	0.40	42.62	30.78	43.02	31.18	56.00	46.00	-12.98	-14.82
6	12.12500	0.53	34.20	25.28	34.73	25.81	60.00	50.00	-25.27	-24.19

REMARKS:

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

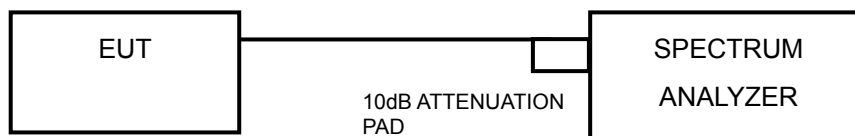


4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.3.4 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.3.5 DEVIATION FROM TEST STANDARD

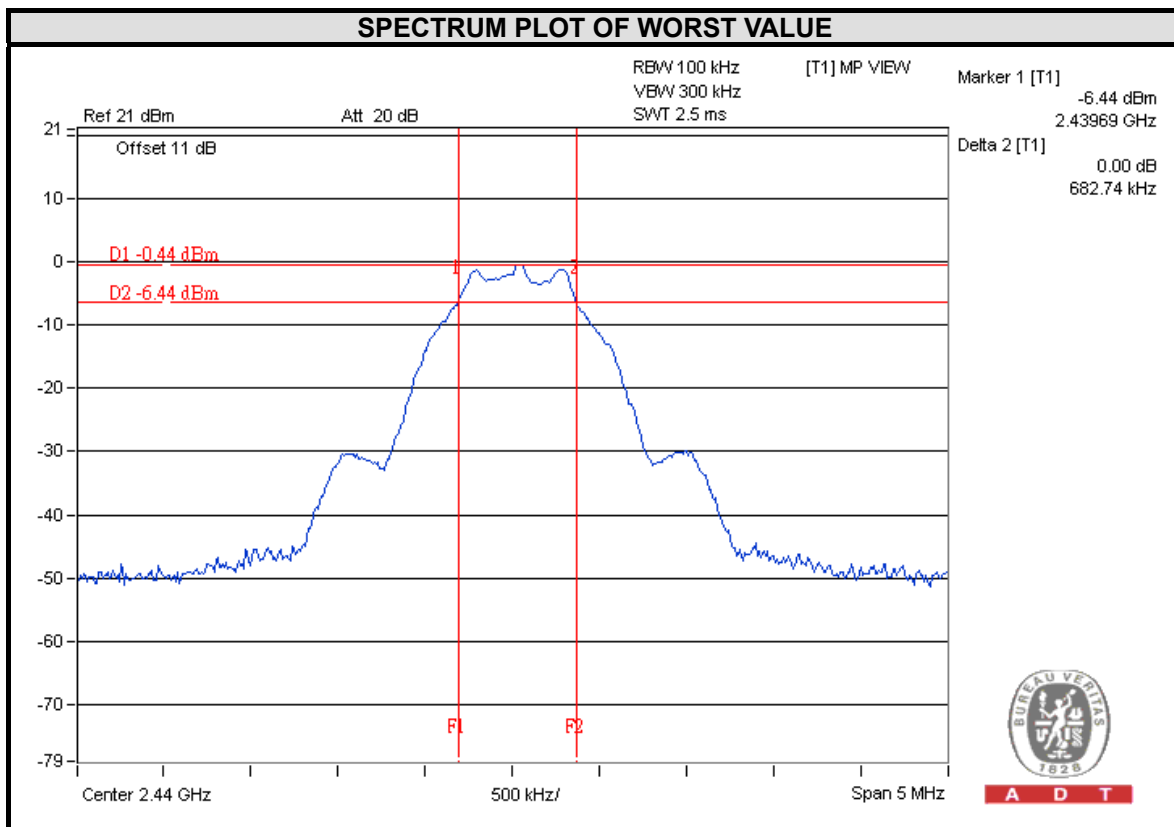
No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.67	0.5	PASS
19	2440	0.68	0.5	PASS
39	2480	0.68	0.5	PASS

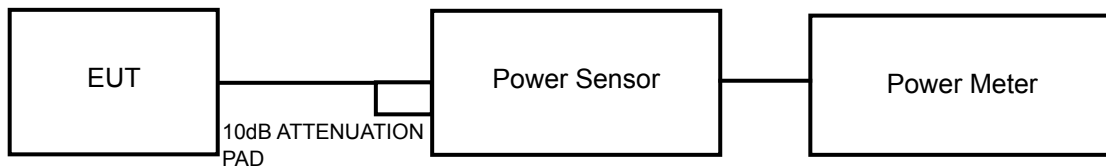


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz: 1 Watt (30dBm)

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak power level.

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

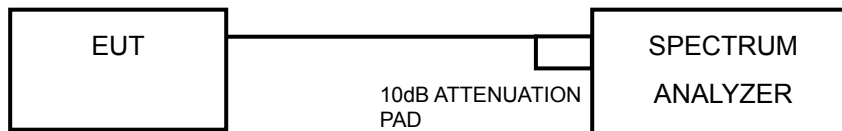
CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
0	2402	0.925	-0.34	30	PASS
19	2440	0.966	-0.15	30	PASS
39	2480	0.798	-0.98	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.5.5 DEVIATION FROM TEST STANDARD

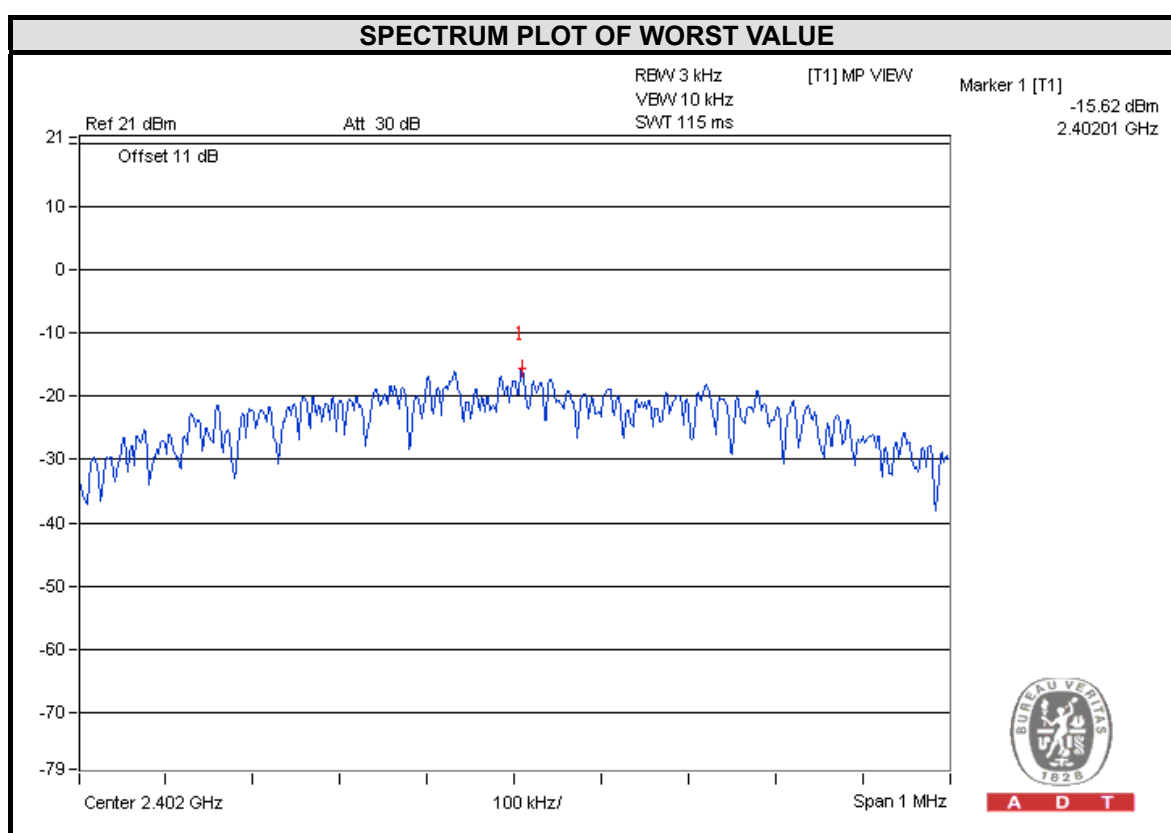
No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-15.62	8	PASS
19	2440	-15.63	8	PASS
39	2480	-16.46	8	PASS

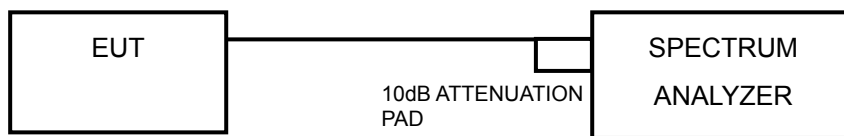


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW \geq 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW \geq 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

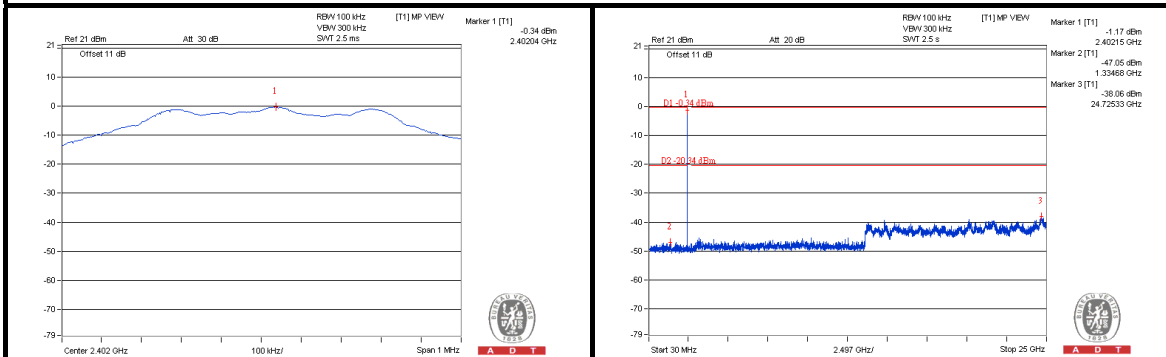
Same as Item 4.3.6

4.6.7 TEST RESULTS

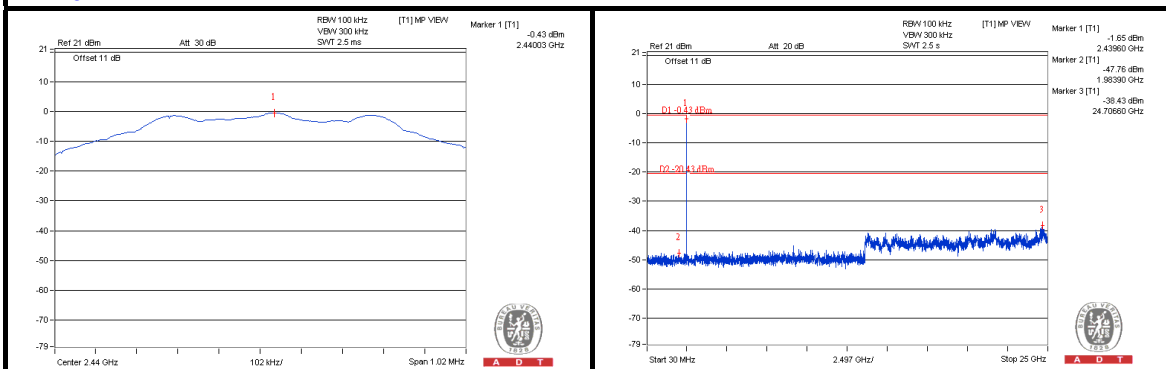
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

4.6.8 TEST RESULTS

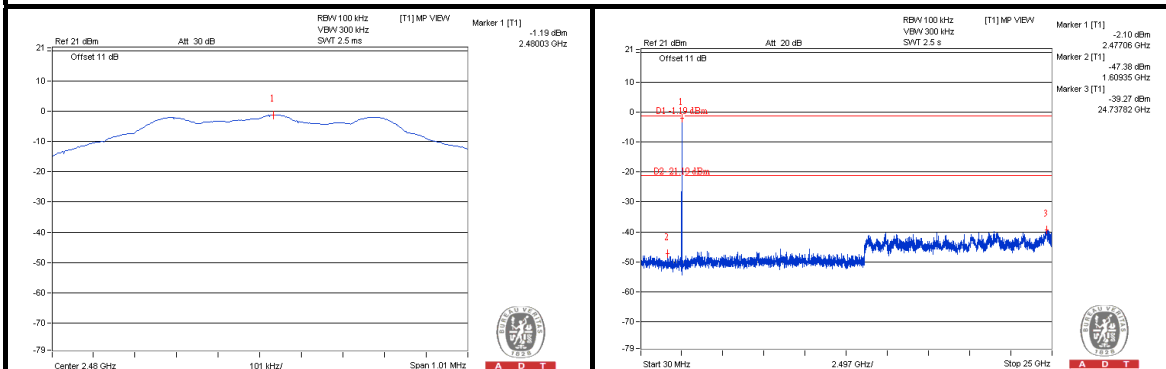
CH 0



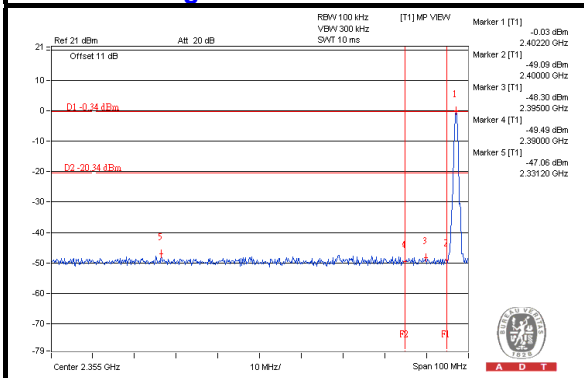
CH 19



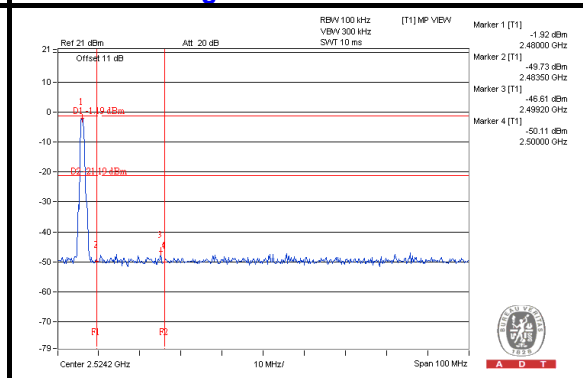
CH 39



CH 0 Band edge



CH 39 Band edge



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

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

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 modifications were made to the EUT by the lab during the test.

--- END ---