

FCC TEST REPORT (15.407)

REPORT NO.: RF121025C13-2

MODEL NO.: SHV-E220S

FCC ID: A3LSHVE220S

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TESTED: Oct. 26 ~ Nov. 10, 2012

ISSUED: Nov. 15, 2012

APPLICANT: SAMSUNG Electronics Co., LTD.

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ISSUED BY: Bureau Veritas Consumer Products Services
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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121025C13-2	Original release	Nov. 15, 2012

1. CERTIFICATION

PRODUCT: Mobile Phone

MODEL NO.: SHV-E220S

BRAND: SAMSUNG

APPLICANT: SAMSUNG Electronics Co., LTD.

TESTED: Oct. 26 ~ Nov. 10, 2012

TEST SAMPLE: Production Unit

STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**

ANSI C63.10-2009

The above equipment (model: SHV-E220S) 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 : Ivonne Wu , **DATE** : Nov. 15, 2012
Ivonne Wu / Senior Specialist

APPROVED BY : Anderson Chiu , **DATE** : Nov. 15, 2012
Anderson Chiu / Senior Engineer

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.42dB at 2.13281MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -7.84dB at 302.1MHz.
15.407(a/1/2)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	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:

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile Phone
MODEL NO.	SHV-E220S
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion battery)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 135.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (20MHz) 5 for 802.11n (40MHz)
OUTPUT POWER	28.64mW for 5180 ~ 5240MHz 27.35mW for 5260 ~ 5320MHz 27.61mW for 5500 ~ 5700MHz
ANTENNA TYPE	Chip antenna with -1.1dBi gain
ANTENNA CONNECTOR	NA
DATA CABLE	Refer to Note as below
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

1. The EUT has following accessories.

No.	Product	Brand	MODEL	Description
1	Power Adapter	SAMSUNG	ETA0U18KBK	I/P: 100-240Vac, 50-60Hz, 0.15A O/P: 5.0Vdc, 1.0A
2	Battery	SAMSUNG	EB-L1H2LLK	Rating: 3.8 Vdc, 7.98Wh Type: Li-ion
3	Earphone	SAMSUNG	EHS64AFWE (GH59-11720A)	1.2m non-shielded cable with ferrite core
4	USB Cable	SAMSUNG	ECC1DU4BBE (RT1C703KS E)	1.0m non-shielded cable without ferrite core

2. SW version is E220S.001.
3. HW version is REV01.

4. The EUT provides one completed transmitter and one receiver.

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

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

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500MHz	124	5620MHz
104	5520MHz	128	5640MHz
108	5540MHz	132	5660MHz
112	5560MHz	136	5680MHz
116	5580MHz	140	5700MHz
120	5600MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510MHz	126	5630MHz
110	5550MHz	134	5670MHz
118	5590MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0

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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0

BANDEDGE 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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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.

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

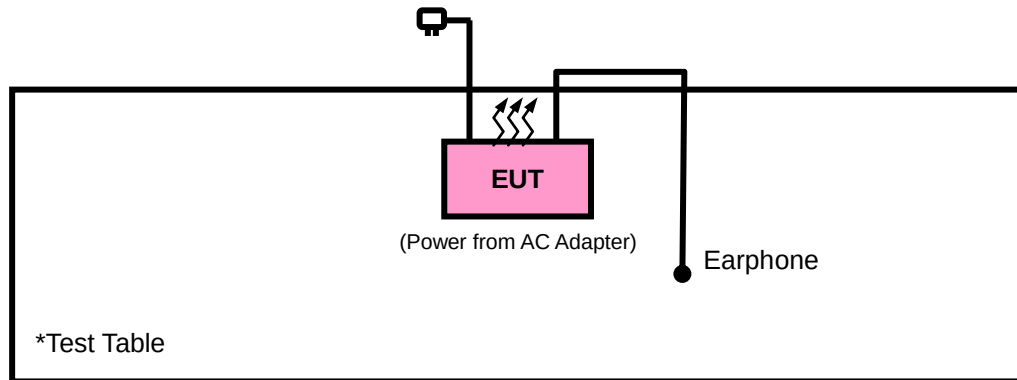
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Phoenix Chen

3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 DUTY CYCLE OF TEST SIGNAL

If duty cycle is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $1.42/1.53 = 0.928$, Duty factor = $10 * \log(1/0.928) = 0.32$

802.11n (20MHz): Duty cycle = $1.33/1.43 = 0.930$, Duty factor = $10 * \log(1/0.930) = 0.32$

802.11n (40MHz): Duty cycle = $630/760 = 0.829$, Duty factor = $10 * \log(1/0.829) = 0.81$



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2009

KDB 789033 D01 General UNII Test Procedures v01r01

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
PK	PK
-27	68.3

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver Agilent	N9038A	MY51210203	Dec. 22, 2011	Dec. 21, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2011	Dec. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 20, 2011	Dec. 19, 2012
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier EMCI	EMC 012645	980115	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 184045	980116	Jan. 02, 2012	Jan. 01, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 26, 2012	Oct. 25, 2013
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Jan. 02, 2012	Jan. 01, 2013
RF signal cable Worken	RG-213	NA	Jan. 02, 2012	Jan. 01, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Power Meter	ML2495A	1232002	Aug. 10, 2012	Aug. 09, 2013
Power Sensor	MA2411B	1207325	Aug. 15, 2012	Aug. 14, 2013

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. The test was performed in HwaYa Chamber 9.
 4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 5. The FCC Site Registration No. is 460141.
 6. The IC Site Registration No. is IC 7450F-4.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 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 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

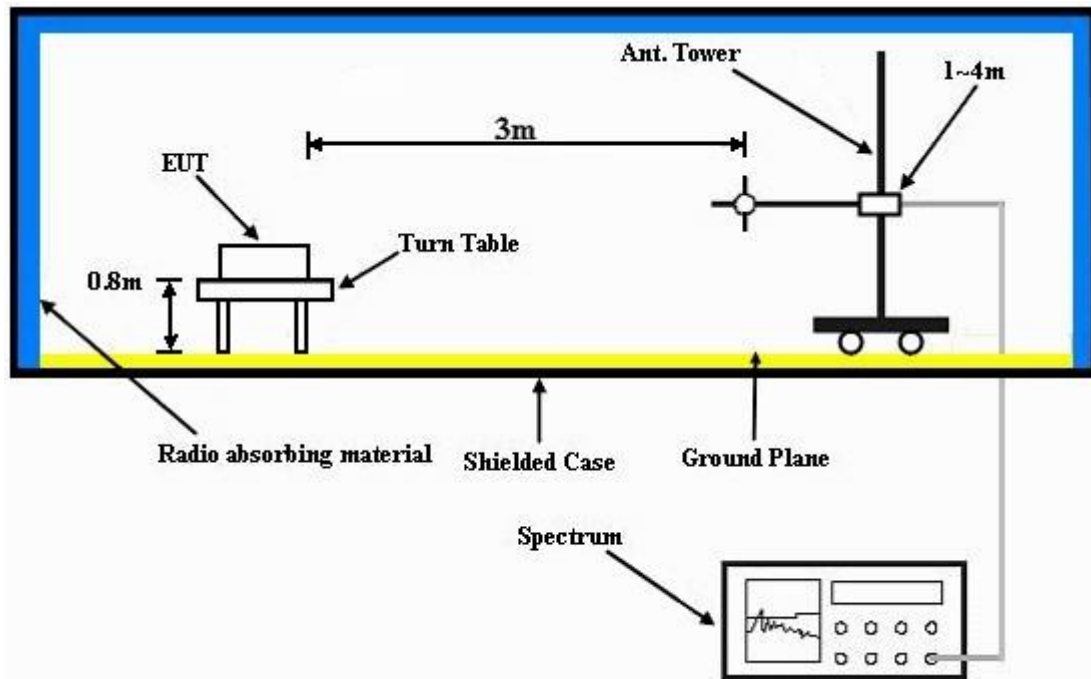
NOTE:

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

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITION

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

4.1.8 TEST RESULTS

ABOVE 1GHz DATA: 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5146	40.37	38.49	54	-13.63	31.87	7.33	37.32	101	132	Average
5146	52.78	50.9	74	-21.22	31.87	7.33	37.32	101	132	Peak
5180	87.73	85.87			31.88	7.32	37.34	101	132	Average
5180	96.76	94.9			31.88	7.32	37.34	101	132	Peak
5422	40.37	38.15	54	-13.63	32	7.4	37.18	101	132	Average
5422	52.92	50.7	74	-21.08	32	7.4	37.18	101	132	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5144	40.14	38.26	54	-13.86	31.87	7.33	37.32	100	32	Average
5144	51.79	49.91	74	-22.21	31.87	7.33	37.32	100	32	Peak
5180	82.9	81.04			31.88	7.32	37.34	100	32	Average
5180	91.63	89.77			31.88	7.32	37.34	100	32	Peak
5458	40.53	38.07	54	-13.47	32.01	7.53	37.08	100	32	Average
5458	52.38	49.92	74	-21.62	32.01	7.53	37.08	100	32	Peak

REMARKS: 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5126	40.22	38.32	54	-13.78	31.86	7.34	37.3	100	132	Average
5126	52.74	50.84	74	-21.26	31.86	7.34	37.3	100	132	Peak
5220	87.78	85.92			31.9	7.32	37.36	100	132	Average
5220	96.79	94.93			31.9	7.32	37.36	100	132	Peak
5414	40.45	38.23	54	-13.55	32	7.4	37.18	100	132	Average
5414	52.68	50.46	74	-21.32	32	7.4	37.18	100	132	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5070	39.96	38.11	54	-14.04	31.82	7.3	37.27	100	32	Average
5070	52.41	50.56	74	-21.59	31.82	7.3	37.27	100	32	Peak
5220	84.09	82.23			31.9	7.32	37.36	100	32	Average
5220	93.64	91.78			31.9	7.32	37.36	100	32	Peak
5408	40.16	37.95	54	-13.84	31.99	7.4	37.18	100	32	Average
5408	52.18	49.97	74	-21.82	31.99	7.4	37.18	100	32	Peak

REMARKS: 5220MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5138	40.2	38.3	54	-13.8	31.86	7.34	37.3	100	130	Average
5138	52	50.1	74	-22	31.86	7.34	37.3	100	130	Peak
5240	88.02	86.09			31.91	7.34	37.32	100	130	Average
5240	96.93	95			31.91	7.34	37.32	100	130	Peak
5418	40.39	38.17	54	-13.61	32	7.4	37.18	100	130	Average
5418	53.3	51.08	74	-20.7	32	7.4	37.18	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5060	39.95	38.13	54	-14.05	31.82	7.25	37.25	100	46	Average
5060	52.58	50.76	74	-21.42	31.82	7.25	37.25	100	46	Peak
5240	84	82.07			31.91	7.34	37.32	100	46	Average
5240	93.41	91.48			31.91	7.34	37.32	100	46	Peak
5358	40.3	38.11	54	-13.7	31.97	7.4	37.18	100	46	Average
5358	51.94	49.75	74	-22.06	31.97	7.4	37.18	100	46	Peak

REMARKS: 5240MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	40	38.24	54	-14	31.81	7.19	37.24	106	132	Average
5024	53.24	51.48	74	-20.76	31.81	7.19	37.24	106	132	Peak
5260	88.39	86.38			31.92	7.36	37.27	106	132	Average
5260	98.35	96.34			31.92	7.36	37.27	106	132	Peak
5412	40.43	38.21	54	-13.57	32	7.4	37.18	106	132	Average
5412	53.13	50.91	74	-20.87	32	7.4	37.18	106	132	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5120	40.14	38.25	54	-13.86	31.85	7.34	37.3	100	45	Average
5120	51.99	50.1	74	-22.01	31.85	7.34	37.3	100	45	Peak
5260	83.35	81.34			31.92	7.36	37.27	100	45	Average
5260	92.63	90.62			31.92	7.36	37.27	100	45	Peak
5362	40.35	38.16	54	-13.65	31.97	7.4	37.18	100	45	Average
5362	51.77	49.58	74	-22.23	31.97	7.4	37.18	100	45	Peak

REMARKS: 5260MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5034	39.98	38.22	54	-14.02	31.81	7.19	37.24	100	130	Average
5034	51.93	50.17	74	-22.07	31.81	7.19	37.24	100	130	Peak
5300	88.52	86.37			31.94	7.4	37.19	100	130	Average
5300	97.75	95.6			31.94	7.4	37.19	100	130	Peak
5378	40.73	38.53	54	-13.27	31.98	7.4	37.18	100	130	Average
5378	53.08	50.88	74	-20.92	31.98	7.4	37.18	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	40.2	38.32	54	-13.8	31.87	7.33	37.32	100	48	Average
5148	53.15	51.27	74	-20.85	31.87	7.33	37.32	100	48	Peak
5300	83.71	81.56			31.94	7.4	37.19	100	48	Average
5300	92.38	90.23			31.94	7.4	37.19	100	48	Peak
5446	40.36	38.01	54	-13.64	32.01	7.47	37.13	100	48	Average
5446	52.14	49.79	74	-21.86	32.01	7.47	37.13	100	48	Peak

REMARKS: 5300MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5022	40.06	38.3	54	-13.94	31.81	7.19	37.24	100	127	Average
5022	52.14	50.38	74	-21.86	31.81	7.19	37.24	100	127	Peak
5320	87.53	85.37			31.95	7.4	37.19	100	127	Average
5320	97.66	95.5			31.95	7.4	37.19	100	127	Peak
5424	40.69	38.47	54	-13.31	32	7.4	37.18	100	127	Average
5424	52.44	50.22	74	-21.56	32	7.4	37.18	100	127	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5092	40	38.13	54	-14	31.84	7.3	37.27	100	47	Average
5092	51.87	50	74	-22.13	31.84	7.3	37.27	100	47	Peak
5320	83.37	81.21			31.95	7.4	37.19	100	47	Average
5320	92.59	90.43			31.95	7.4	37.19	100	47	Peak
5410	40.39	38.18	54	-13.61	31.99	7.4	37.18	100	47	Average
5410	52.4	50.19	74	-21.6	31.99	7.4	37.18	100	47	Peak

REMARKS: 5320MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	40.73	38.27	54	-13.27	32.01	7.53	37.08	100	145	Average
5456	52.64	50.18	74	-21.36	32.01	7.53	37.08	100	145	Peak
5470	52.06	49.59	68.3	-16.24	32.02	7.53	37.08	100	145	Peak
5500	89.76	87.16			32.04	7.59	37.03	100	145	Average
5500	99.15	96.55			32.04	7.59	37.03	100	145	Peak
5725	52.86	50.22	68.3	-15.44	32.36	7.71	37.43	100	145	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5388	40.49	38.29	54	-13.51	31.98	7.4	37.18	100	58	Average
5388	51.93	49.73	74	-22.07	31.98	7.4	37.18	100	58	Peak
5470	50.71	48.24	68.3	-17.59	32.02	7.53	37.08	100	58	Peak
5500	85.62	83.02			32.04	7.59	37.03	100	58	Average
5500	95.09	92.49			32.04	7.59	37.03	100	58	Peak
5725	51.26	48.62	68.3	-17.04	32.36	7.71	37.43	100	58	Peak

REMARKS:

- 5550MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5436	40.67	38.32	54	-13.33	32.01	7.47	37.13	100	150	Average
5436	53.55	51.2	74	-20.45	32.01	7.47	37.13	100	150	Peak
5470	50.81	48.34	68.3	-17.49	32.02	7.53	37.08	100	150	Peak
5580	91.12	88.57			32.14	7.57	37.16	100	150	Average
5580	100.67	98.12			32.14	7.57	37.16	100	150	Peak
5725	51.46	48.82	68.3	-16.84	32.36	7.71	37.43	100	150	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5452	40.32	37.86	54	-13.68	32.01	7.53	37.08	100	8	Average
5452	52.31	49.85	74	-21.69	32.01	7.53	37.08	100	8	Peak
5470	49.26	46.79	68.3	-19.04	32.02	7.53	37.08	100	8	Peak
5580	84.79	82.24			32.14	7.57	37.16	100	8	Average
5580	94.69	92.14			32.14	7.57	37.16	100	8	Peak
5725	51.33	48.69	68.3	-16.97	32.36	7.71	37.43	100	8	Peak

REMARKS:

- 5580MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5442	40.42	38.07	54	-13.58	32.01	7.47	37.13	101	115	Average
5442	52.18	49.83	74	-21.82	32.01	7.47	37.13	101	115	Peak
5470	50.67	48.2	68.3	-17.63	32.02	7.53	37.08	101	115	Peak
5700	92.39	89.79			32.31	7.69	37.4	101	115	Average
5700	101.57	98.97			32.31	7.69	37.4	101	115	Peak
5725	55.38	52.74	68.3	-12.92	32.36	7.71	37.43	101	115	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5412	40.3	38.08	54	-13.7	32	7.4	37.18	100	17	Average
5412	52.35	50.13	74	-21.65	32	7.4	37.18	100	17	Peak
5450	50.74	48.28	68.3	-17.56	32.01	7.53	37.08	100	17	Peak
5700	88.83	86.23			32.31	7.69	37.4	100	17	Average
5700	98.08	95.48			32.31	7.69	37.4	100	17	Peak
5725	52.42	49.78	68.3	-15.88	32.36	7.71	37.43	100	17	Peak

REMARKS:

1. 5700MHz: Fundamental frequency.
2. 5470MHz & 5725MHz: Out of restricted band

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 36	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5134	40.23	38.33	54	-13.77	31.86	7.34	37.3	100	135	Average
5134	53.6	51.7	74	-20.4	31.86	7.34	37.3	100	135	Peak
5180	85.49	83.63			31.88	7.32	37.34	100	135	Average
5180	94.79	92.93			31.88	7.32	37.34	100	135	Peak
5422	40.39	38.17	54	-13.61	32	7.4	37.18	100	135	Average
5422	52.46	50.24	74	-21.54	32	7.4	37.18	100	135	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5134	40.17	38.27	54	-13.83	31.86	7.34	37.3	100	44	Average
5134	52.46	50.56	74	-21.54	31.86	7.34	37.3	100	44	Peak
5180	80.64	78.78			31.88	7.32	37.34	100	44	Average
5180	89.73	87.87			31.88	7.32	37.34	100	44	Peak
5446	40.32	37.97	54	-13.68	32.01	7.47	37.13	100	44	Average
5446	52.76	50.41	74	-21.24	32.01	7.47	37.13	100	44	Peak

REMARKS: 5180MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 44	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5046	40.03	38.21	54	-13.97	31.82	7.25	37.25	103	129	Average
5046	52.01	50.19	74	-21.99	31.82	7.25	37.25	103	129	Peak
5220	86.83	84.97			31.9	7.32	37.36	103	129	Average
5220	95.94	94.08			31.9	7.32	37.36	103	129	Peak
5428	40.36	38.02	54	-13.64	32	7.47	37.13	103	129	Average
5428	51.85	49.51	74	-22.15	32	7.47	37.13	103	129	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5038	39.85	38.08	54	-14.15	31.82	7.19	37.24	100	34	Average
5038	51.39	49.62	74	-22.61	31.82	7.19	37.24	100	34	Peak
5220	80.43	78.57			31.9	7.32	37.36	100	34	Average
5220	89.76	87.9			31.9	7.32	37.36	100	34	Peak
5370	40.22	38.03	54	-13.78	31.97	7.4	37.18	100	34	Average
5370	52.29	50.1	74	-21.71	31.97	7.4	37.18	100	34	Peak

REMARKS: 5220MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 48	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5034	39.89	38.13	54	-14.11	31.81	7.19	37.24	100	131	Average
5034	52.47	50.71	74	-21.53	31.81	7.19	37.24	100	131	Peak
5240	86.54	84.61			31.91	7.34	37.32	100	131	Average
5240	95.66	93.73			31.91	7.34	37.32	100	131	Peak
5430	40.45	38.1	54	-13.55	32.01	7.47	37.13	100	131	Average
5430	51.67	49.32	74	-22.33	32.01	7.47	37.13	100	131	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5144	40.07	38.19	54	-13.93	31.87	7.33	37.32	100	48	Average
5144	51.64	49.76	74	-22.36	31.87	7.33	37.32	100	48	Peak
5240	81.71	79.78			31.91	7.34	37.32	100	48	Average
5240	91.08	89.15			31.91	7.34	37.32	100	48	Peak
5428	40.34	38	54	-13.66	32	7.47	37.13	100	48	Average
5428	52.32	49.98	74	-21.68	32	7.47	37.13	100	48	Peak

REMARKS: 5240MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 52	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5120	40.05	38.16	54	-13.95	31.85	7.34	37.3	100	131	Average
5120	51.96	50.07	74	-22.04	31.85	7.34	37.3	100	131	Peak
5260	85.74	83.73			31.92	7.36	37.27	100	131	Average
5260	95.06	93.05			31.92	7.36	37.27	100	131	Peak
5436	40.45	38.1	54	-13.55	32.01	7.47	37.13	100	131	Average
5436	53.76	51.41	74	-20.24	32.01	7.47	37.13	100	131	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5134	40.05	38.15	54	-13.95	31.86	7.34	37.3	100	49	Average
5134	51.81	49.91	74	-22.19	31.86	7.34	37.3	100	49	Peak
5260	81.36	79.35			31.92	7.36	37.27	100	49	Average
5260	90.62	88.61			31.92	7.36	37.27	100	49	Peak
5446	40.42	38.07	54	-13.58	32.01	7.47	37.13	100	49	Average
5446	51.9	49.55	74	-22.1	32.01	7.47	37.13	100	49	Peak

REMARKS: 5260MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 60	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5106	40.09	38.17	54	-13.91	31.85	7.35	37.28	100	128	Average
5106	51.98	50.06	74	-22.02	31.85	7.35	37.28	100	128	Peak
5300	86.56	84.41			31.94	7.4	37.19	100	128	Average
5300	96.25	94.1			31.94	7.4	37.19	100	128	Peak
5416	40.42	38.2	54	-13.58	32	7.4	37.18	100	128	Average
5416	53.28	51.06	74	-20.72	32	7.4	37.18	100	128	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5086	39.94	38.08	54	-14.06	31.83	7.3	37.27	100	47	Average
5086	51.82	49.96	74	-22.18	31.83	7.3	37.27	100	47	Peak
5300	81.97	79.82			31.94	7.4	37.19	100	47	Average
5300	91.42	89.27			31.94	7.4	37.19	100	47	Peak
5408	40.25	38.04	54	-13.75	31.99	7.4	37.18	100	47	Average
5408	51.89	49.68	74	-22.11	31.99	7.4	37.18	100	47	Peak

REMARKS: 5300MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 64	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5112	40.08	38.16	54	-13.92	31.85	7.35	37.28	100	130	Average
5112	51.09	49.17	74	-22.91	31.85	7.35	37.28	100	130	Peak
5320	86.23	84.07			31.95	7.4	37.19	100	130	Average
5320	95.23	93.07			31.95	7.4	37.19	100	130	Peak
5404	40.3	38.09	54	-13.7	31.99	7.4	37.18	100	130	Average
5404	51.54	49.33	74	-22.46	31.99	7.4	37.18	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5106	40.1	38.18	54	-13.9	31.85	7.35	37.28	100	48	Average
5106	51.47	49.55	74	-22.53	31.85	7.35	37.28	100	48	Peak
5320	81.37	79.21			31.95	7.4	37.19	100	48	Average
5320	90.54	88.38			31.95	7.4	37.19	100	48	Peak
5460	40.37	37.91	54	-13.63	32.01	7.53	37.08	100	48	Average
5460	52.48	50.02	74	-21.52	32.01	7.53	37.08	100	48	Peak

REMARKS: 5320MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 100	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5438	40.7	38.35	54	-13.3	32.01	7.47	37.13	102	146	Average
5438	52.49	50.14	74	-21.51	32.01	7.47	37.13	102	146	Peak
5470	50.84	48.37	68.3	-17.46	32.02	7.53	37.08	102	146	Peak
5500	88.61	86.01			32.04	7.59	37.03	102	146	Average
5500	97.93	95.33			32.04	7.59	37.03	102	146	Peak
5725	50.33	47.69	68.3	-17.97	32.36	7.71	37.43	102	146	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	40.58	38.12	54	-13.42	32.01	7.53	37.08	100	58	Average
5460	52.16	49.7	74	-21.84	32.01	7.53	37.08	100	58	Peak
5470	51.08	48.61	68.3	-17.22	32.02	7.53	37.08	100	58	Peak
5500	83.22	80.62			32.04	7.59	37.03	100	58	Average
5500	93.26	90.66			32.04	7.59	37.03	100	58	Peak
5725	51.02	48.38	68.3	-17.28	32.36	7.71	37.43	100	58	Peak

REMARKS:

- 5500MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 116	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	40.58	38.12	54	-13.42	32.01	7.53	37.08	100	152	Average
5456	53.32	50.86	74	-20.68	32.01	7.53	37.08	100	152	Peak
5470	51.4	48.93	68.3	-16.9	32.02	7.53	37.08	100	152	Peak
5580	90.19	87.64			32.14	7.57	37.16	100	152	Average
5580	99.9	97.35			32.14	7.57	37.16	100	152	Peak
5725	52.35	49.71	68.3	-15.95	32.36	7.71	37.43	100	152	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5450	40.25	37.79	54	-13.75	32.01	7.53	37.08	112	19	Average
5450	52.49	50.03	74	-21.51	32.01	7.53	37.08	112	19	Peak
5470	50.44	47.97	68.3	-17.86	32.02	7.53	37.08	112	19	Peak
5580	86.21	83.66			32.14	7.57	37.16	112	19	Average
5580	95.07	92.52			32.14	7.57	37.16	112	19	Peak
5725	50.96	48.32	68.3	-17.34	32.36	7.71	37.43	112	19	Peak

REMARKS:

- 5580MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 140	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	40.34	37.88	54	-13.66	32.01	7.53	37.08	107	146	Average
5460	52.55	50.09	74	-21.45	32.01	7.53	37.08	107	146	Peak
5470	52.46	49.99	68.3	-15.84	32.02	7.53	37.08	107	146	Peak
5700	90.49	87.89			32.31	7.69	37.4	107	146	Average
5700	100.2	97.6			32.31	7.69	37.4	107	146	Peak
5725	57.01	54.37	68.3	-11.29	32.36	7.71	37.43	107	146	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5458	40.41	37.95	54	-13.59	32.01	7.53	37.08	108	20	Average
5458	52.06	49.6	74	-21.94	32.01	7.53	37.08	108	20	Peak
5470	50.77	48.3	68.3	-17.53	32.02	7.53	37.08	108	20	Peak
5700	87.93	85.33			32.31	7.69	37.4	108	20	Average
5700	97.54	94.94			32.31	7.69	37.4	108	20	Peak
5725	52.76	50.12	68.3	-15.54	32.36	7.71	37.43	108	20	Peak

REMARKS:

- 5700MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 38	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.4	40.52	54	-11.6	31.87	7.33	37.32	109	156	Average
5150	57.48	55.6	74	-16.52	31.87	7.33	37.32	109	156	Peak
5190	84.9	83.04			31.88	7.32	37.34	109	156	Average
5190	93.57	91.71			31.88	7.32	37.34	109	156	Peak
5384	40.72	38.52	54	-13.28	31.98	7.4	37.18	109	156	Average
5384	51.03	48.83	74	-22.97	31.98	7.4	37.18	109	156	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5024	40.29	38.53	54	-13.71	31.81	7.19	37.24	100	46	Average
5024	51.99	50.23	74	-22.01	31.81	7.19	37.24	100	46	Peak
5190	79.76	77.9			31.88	7.32	37.34	100	46	Average
5190	88.18	86.32			31.88	7.32	37.34	100	46	Peak
5348	40.84	38.65	54	-13.16	31.97	7.4	37.18	100	46	Average
5348	52.07	49.88	74	-21.93	31.97	7.4	37.18	100	46	Peak

REMARKS: 5190MHz: Fundamental frequency.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 46	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5064	40.41	38.59	54	-13.59	31.82	7.25	37.25	100	131	Average
5064	52.4	50.58	74	-21.6	31.82	7.25	37.25	100	131	Peak
5230	83.94	82.01			31.91	7.34	37.32	100	131	Average
5230	92.92	90.99			31.91	7.34	37.32	100	131	Peak
5392	40.59	38.39	54	-13.41	31.98	7.4	37.18	100	131	Average
5392	52.98	50.78	74	-21.02	31.98	7.4	37.18	100	131	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5134	40.44	38.54	54	-13.56	31.86	7.34	37.3	100	47	Average
5134	51.72	49.82	74	-22.28	31.86	7.34	37.3	100	47	Peak
5230	78.8	76.87			31.91	7.34	37.32	100	47	Average
5230	87.92	85.99			31.91	7.34	37.32	100	47	Peak
5414	40.61	38.39	54	-13.39	32	7.4	37.18	100	47	Average
5414	52.31	50.09	74	-21.69	32	7.4	37.18	100	47	Peak

REMARKS: 5230MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 54	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5148	40.49	38.61	54	-13.51	31.87	7.33	37.32	100	129	Average
5148	51.82	49.94	74	-22.18	31.87	7.33	37.32	100	129	Peak
5270	84.22	82.21			31.92	7.36	37.27	100	129	Average
5270	93.19	91.18			31.92	7.36	37.27	100	129	Peak
5422	40.6	38.38	54	-13.4	32	7.4	37.18	100	129	Average
5422	51.98	49.76	74	-22.02	32	7.4	37.18	100	129	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5128	40.54	38.64	54	-13.46	31.86	7.34	37.3	100	48	Average
5128	52.16	50.26	74	-21.84	31.86	7.34	37.3	100	48	Peak
5270	79.91	77.9			31.92	7.36	37.27	100	48	Average
5270	88.71	86.7			31.92	7.36	37.27	100	48	Peak
5438	40.68	38.33	54	-13.32	32.01	7.47	37.13	100	48	Average
5438	52.85	50.5	74	-21.15	32.01	7.47	37.13	100	48	Peak

REMARKS: 5270MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5086	40.44	38.58	54	-13.56	31.83	7.3	37.27	100	129	Average
5086	51.91	50.05	74	-22.09	31.83	7.3	37.27	100	129	Peak
5310	84.03	81.87			31.95	7.4	37.19	100	129	Average
5310	93.05	90.89			31.95	7.4	37.19	100	129	Peak
5456	41.62	39.16	54	-12.38	32.01	7.53	37.08	100	129	Average
5456	52.33	49.87	74	-21.67	32.01	7.53	37.08	100	129	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5084	40.37	38.51	54	-13.63	31.83	7.3	37.27	100	50	Average
5084	51.62	49.76	74	-22.38	31.83	7.3	37.27	100	50	Peak
5310	78.84	76.68			31.95	7.4	37.19	100	50	Average
5310	87.67	85.51			31.95	7.4	37.19	100	50	Peak
5348	40.58	38.39	54	-13.42	31.97	7.4	37.18	100	50	Average
5348	52.28	50.09	74	-21.72	31.97	7.4	37.18	100	50	Peak

REMARKS: 5310MHz: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 102	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5440	41.01	38.66	54	-12.99	32.01	7.47	37.13	100	143	Average
5440	52.15	49.8	74	-21.85	32.01	7.47	37.13	100	143	Peak
5470	50.45	47.98	68.3	-17.85	32.02	7.53	37.08	100	143	Peak
5510	85.65	83.08			32.04	7.59	37.06	100	143	Average
5510	94.89	92.32			32.04	7.59	37.06	100	143	Peak
5725	51.19	48.55	68.3	-17.11	32.36	7.71	37.43	100	143	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5456	40.82	38.36	54	-13.18	32.01	7.53	37.08	100	60	Average
5456	51.95	49.49	74	-22.05	32.01	7.53	37.08	100	60	Peak
5470	51.27	48.8	68.3	-17.03	32.02	7.53	37.08	100	60	Peak
5510	81.64	79.07			32.04	7.59	37.06	100	60	Average
5510	90.77	88.2			32.04	7.59	37.06	100	60	Peak
5725	50.17	47.53	68.3	-18.13	32.36	7.71	37.43	100	60	Peak

REMARKS:

- 5510MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 110	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5448	40.98	38.63	54	-13.02	32.01	7.47	37.13	100	148	Average
5448	52.31	49.96	74	-21.69	32.01	7.47	37.13	100	148	Peak
5470	51.83	49.36	68.3	-16.47	32.02	7.53	37.08	100	148	Peak
5550	86.44	83.84			32.11	7.58	37.09	100	148	Average
5550	96.18	93.58			32.11	7.58	37.09	100	148	Peak
5725	49.82	47.18	68.3	-18.48	32.36	7.71	37.43	100	148	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5436	40.65	38.3	54	-13.35	32.01	7.47	37.13	100	60	Average
5436	52.06	49.71	74	-21.94	32.01	7.47	37.13	100	60	Peak
5470	52.5	50.03	68.3	-15.8	32.02	7.53	37.08	100	60	Peak
5550	81.3	78.7			32.11	7.58	37.09	100	60	Average
5550	90.98	88.38			32.11	7.58	37.09	100	60	Peak
5725	50.98	48.34	68.3	-17.32	32.36	7.71	37.43	100	60	Peak

REMARKS:

- 5550MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 134	FREQUENCY RANGE	1GHz ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5380	40.79	38.59	54	-13.21	31.98	7.4	37.18	100	149	Average
5380	51.56	49.36	74	-22.44	31.98	7.4	37.18	100	149	Peak
5470	51.85	49.38	68.3	-16.45	32.02	7.53	37.08	100	149	Peak
5670	88.23	85.63			32.28	7.66	37.34	100	149	Average
5670	97.45	94.85			32.28	7.66	37.34	100	149	Peak
5725	51.03	48.39	68.3	-17.27	32.36	7.71	37.43	100	149	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5428	40.5	38.16	54	-13.5	32	7.47	37.13	100	28	Average
5428	51.6	49.26	74	-22.4	32	7.47	37.13	100	28	Peak
5470	50.87	48.4	68.3	-17.43	32.02	7.53	37.08	100	28	Peak
5670	84.23	81.63			32.28	7.66	37.34	100	28	Average
5670	93.73	91.13			32.28	7.66	37.34	100	28	Peak
5725	50.54	47.9	68.3	-17.76	32.36	7.71	37.43	100	28	Peak

REMARKS:

- 5670MHz: Fundamental frequency.
- 5470MHz & 5725MHz: Out of restricted band



A D T

BELOW 1GHz WORST-CASE DATA : 802.11a

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 62	FREQUENCY RANGE	30MHz ~ 1GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	TESTED BY	Kay Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
55.38	19.27	37.35	40	-20.73	12.45	0.8	31.33	100	166	Peak
200.1	27.85	48.67	43.5	-15.65	9.36	1.59	31.77	132	252	Peak
269.49	30.25	48.32	46	-15.75	12.05	1.91	32.03	144	57	Peak
302.1	38.16	54.96	46	-7.84	13.01	2.06	31.87	100	174	Peak
358.1	32.78	48.13	46	-13.22	14.33	2.26	31.94	133	224	Peak
614.3	25.71	34.93	46	-20.29	19.77	3.13	32.12	100	196	Peak
ANTENNA POLARITY & test distance: VERTICAL at 3 m										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.42	23.22	40.02	40	-16.78	13.58	0.7	31.08	102	274	Peak
53.76	22.57	40.45	40	-17.43	12.66	0.79	31.33	102	222	Peak
297.84	28.88	45.77	46	-17.12	12.88	2.04	31.81	133	210	Peak
358.1	29.47	44.82	46	-16.53	14.33	2.26	31.94	202	200	Peak
521.9	22.13	33.05	46	-23.87	17.82	2.85	31.59	100	210	Peak
697.6	25.06	32.66	46	-20.94	20.78	3.42	31.8	133	275	Peak

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 19, 2011	Nov. 18, 2012
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 29, 2011	Dec. 28, 2012
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 30, 2011	Dec. 29, 2012
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 06, 2012	Jul. 05, 2013
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 TEST PROCEDURES

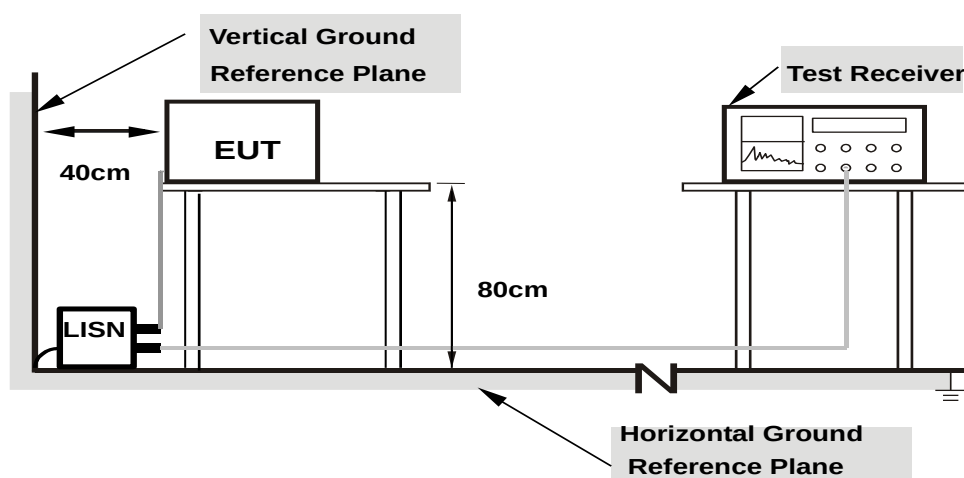
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 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 :

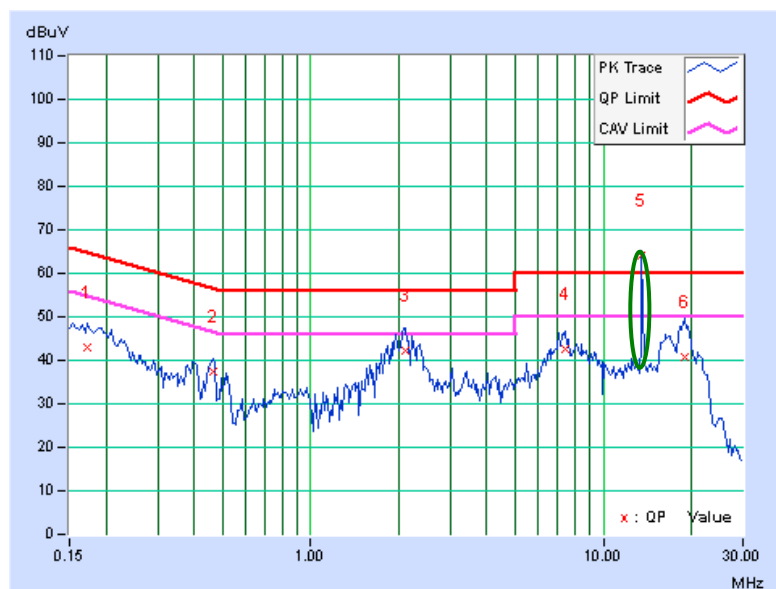
802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
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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	0.17344	0.15	42.98	30.66	43.13	30.81	64.79	54.79	-21.66	-23.98
2	0.46250	0.17	37.41	30.64	37.58	30.81	56.65	46.65	-19.07	-15.84
3	2.09766	0.26	42.09	34.46	42.35	34.72	56.00	46.00	-13.65	-11.28
4	7.38672	0.39	42.25	32.82	42.64	33.21	60.00	50.00	-17.36	-16.79
5	13.55859	0.50	63.48	57.14	63.98	57.64	60.00	50.00	3.98	7.64
6	18.90234	0.61	40.23	35.01	40.84	35.62	60.00	50.00	-19.16	-14.38

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.
6. This is NFC signal inductive with measurement system. Please check P48-49 to see test result for EUT with a suitable dummy load.

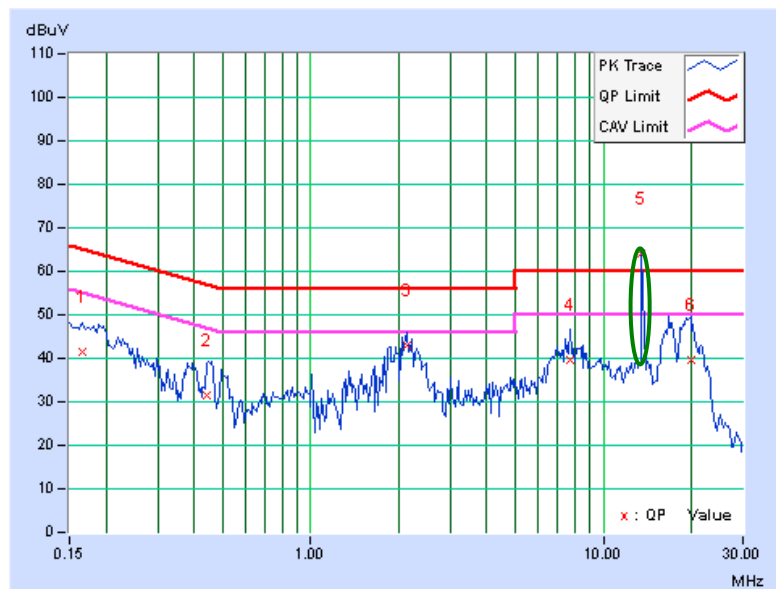


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	0.13	41.48	29.29	41.61	29.42	65.18	55.18	-23.56	-25.75
2	0.43906	0.16	31.22	25.45	31.38	25.61	57.08	47.08	-25.70	-21.47
3	2.13281	0.27	42.87	35.31	43.14	35.58	56.00	46.00	-12.86	-10.42
4	7.67969	0.43	39.37	32.00	39.80	32.43	60.00	50.00	-20.20	-17.57
5	13.55859	0.57	63.48	57.10	64.05	57.67	60.00	50.00	4.05	7.67
6	19.88672	0.72	38.97	28.58	39.69	29.30	60.00	50.00	-20.31	-20.70

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.
6. This is NFC signal inductive with measurement system. Please check P48-49 to see test result for EUT with a suitable dummy load.



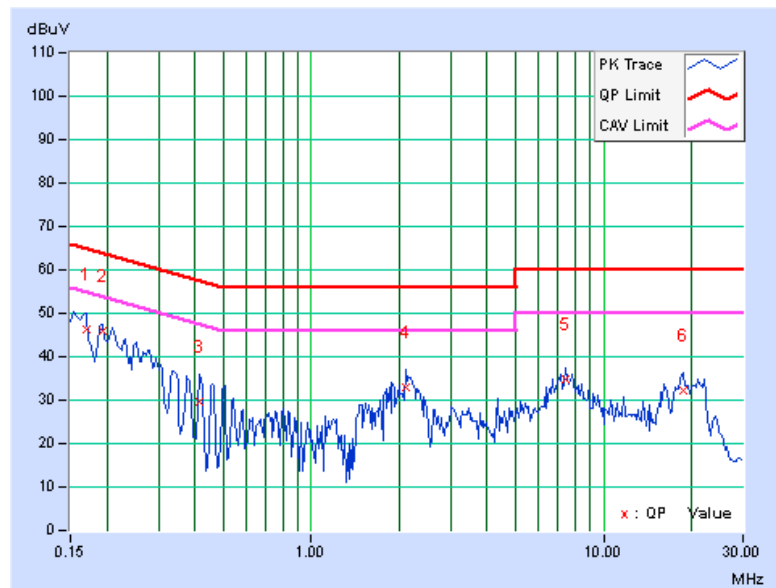
Test with suitable dummy load

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	0.15	46.15	26.85	46.30	27.00	64.98	54.98	-18.68	-27.98
2	0.19297	0.15	45.80	33.24	45.95	33.39	63.91	53.91	-17.96	-20.52
3	0.41563	0.17	29.43	20.15	29.60	20.32	57.54	47.54	-27.93	-27.21
4	2.10156	0.26	32.81	18.42	33.07	18.68	56.00	46.00	-22.93	-27.32
5	7.39844	0.39	34.32	23.70	34.71	24.09	60.00	50.00	-25.29	-25.91
6	18.86719	0.61	31.64	23.74	32.25	24.35	60.00	50.00	-27.75	-25.65

REMARKS:

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

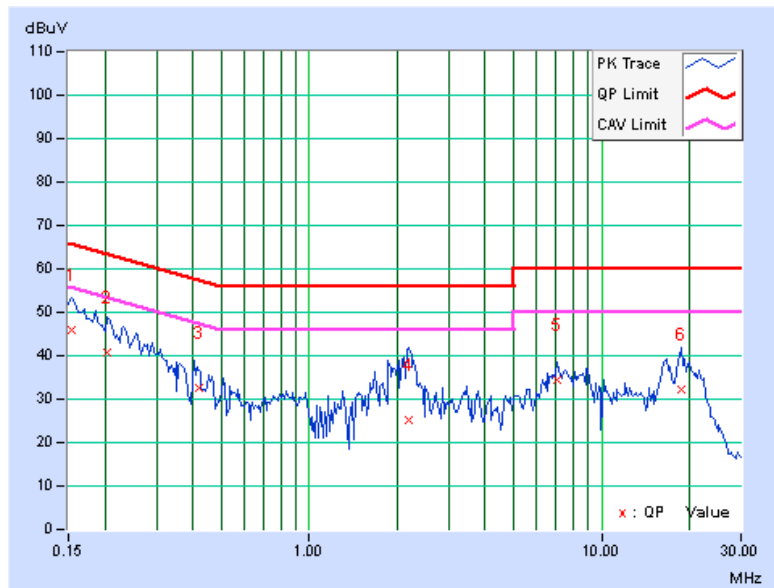


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
	[MHz]	(dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.13	45.73	22.75	45.86	22.88	65.79	55.79	-19.93	-32.91
2	0.20469	0.14	40.46	27.59	40.60	27.73	63.42	53.42	-22.82	-25.69
3	0.41797	0.16	32.39	28.18	32.55	28.34	57.49	47.49	-24.94	-19.15
4	2.20313	0.27	24.82	10.69	25.09	10.96	56.00	46.00	-30.91	-35.04
5	7.08984	0.42	34.05	22.47	34.47	22.89	60.00	50.00	-25.53	-27.11
6	18.72266	0.69	31.61	22.47	32.30	23.16	60.00	50.00	-27.70	-26.84

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 PEAK TRANSMIT POWER MEASUREMENT

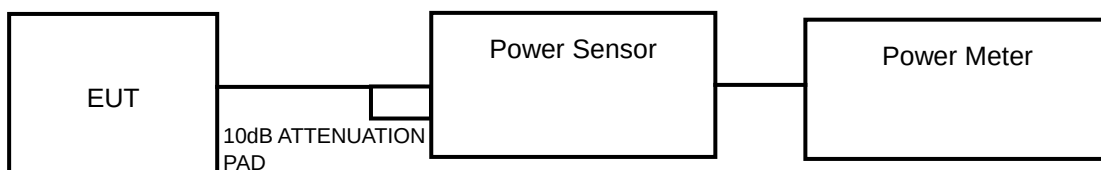
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

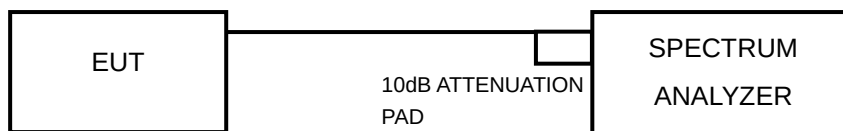
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB BANDWIDTH

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

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 specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	28.64	14.57	17	PASS
44	5220	28.12	14.49	17	PASS
48	5240	27.86	14.45	17	PASS
52	5260	27.35	14.37	24	PASS
60	5300	26.73	14.27	24	PASS
64	5320	26.67	14.26	24	PASS
100	5500	27.61	14.41	24	PASS
116	5580	26.00	14.15	24	PASS
140	5700	27.29	14.36	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	23.17	13.65	17	PASS
44	5220	22.44	13.51	17	PASS
48	5240	22.34	13.49	17	PASS
52	5260	22.49	13.52	24	PASS
60	5300	21.88	13.40	24	PASS
64	5320	21.18	13.26	24	PASS
100	5500	21.43	13.31	24	PASS
116	5580	21.23	13.27	24	PASS
140	5700	21.78	13.38	24	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	20.99	13.22	17	PASS
46	5230	20.37	13.09	17	PASS
54	5270	20.28	13.07	24	PASS
62	5310	19.95	13.00	24	PASS
102	5510	19.82	12.97	24	PASS
110	5550	19.50	12.90	24	PASS
134	5670	19.91	12.99	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.93	PASS
44	5220	23.64	PASS
48	5240	23.44	PASS
52	5260	23.58	PASS
60	5300	23.73	PASS
64	5320	23.31	PASS
100	5500	23.55	PASS
116	5580	23.24	PASS
140	5700	23.17	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.85	PASS
44	5220	24.04	PASS
48	5240	24.05	PASS
52	5260	23.83	PASS
60	5300	24.62	PASS
64	5320	23.96	PASS
100	5500	24.20	PASS
116	5580	24.03	PASS
140	5700	23.74	PASS

802.11n (40MHz)

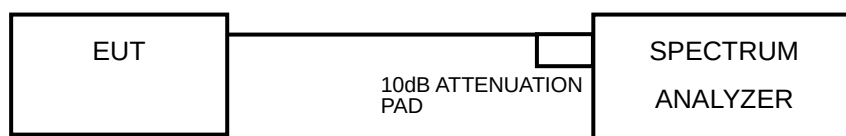
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
38	5190	48.49	PASS
46	5230	47.59	PASS
54	5270	46.43	PASS
62	5310	47.14	PASS
102	5510	46.78	PASS
110	5550	47.04	PASS
134	5670	47.16	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-2 alternative

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW $\geq$ 3 MHz, Detector = RMS
- 3) Sweep time = 4second.
- 4) Perform a single sweep.
- 5) Record the max value and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.35	0.32	3.67	4	PASS
44	5220	1.77	0.32	2.09	4	PASS
48	5240	1.66	0.32	1.98	4	PASS
52	5260	3.77	0.32	4.09	11	PASS
60	5300	3.26	0.32	3.58	11	PASS
64	5320	3.37	0.32	3.69	11	PASS
100	5500	3.07	0.32	3.39	11	PASS
116	5580	3.42	0.32	3.74	11	PASS
140	5700	3.27	0.32	3.59	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	1.99	0.32	2.31	4	PASS
44	5220	2.37	0.32	2.69	4	PASS
48	5240	2.42	0.32	2.74	4	PASS
52	5260	2.47	0.32	2.79	11	PASS
60	5300	2.20	0.32	2.52	11	PASS
64	5320	2.16	0.32	2.48	11	PASS
100	5500	1.95	0.32	2.27	11	PASS
116	5580	2.26	0.32	2.58	11	PASS
140	5700	2.42	0.32	2.74	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	0.77	0.81	1.58	4	PASS
46	5230	1.33	0.81	2.14	4	PASS
54	5270	0.98	0.81	1.79	11	PASS
62	5310	1.02	0.81	1.83	11	PASS
102	5510	0.69	0.81	1.50	11	PASS
110	5550	0.83	0.81	1.64	11	PASS
134	5670	1.04	0.81	1.85	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- 1) Set RBW = 1 MHz, VBW $\geq$ 3 MHz, Detector = peak.
- 2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- 3) Use the peak search function to find the peak of the spectrum.
- 4) Measure the PPSD.
- 5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITIONS

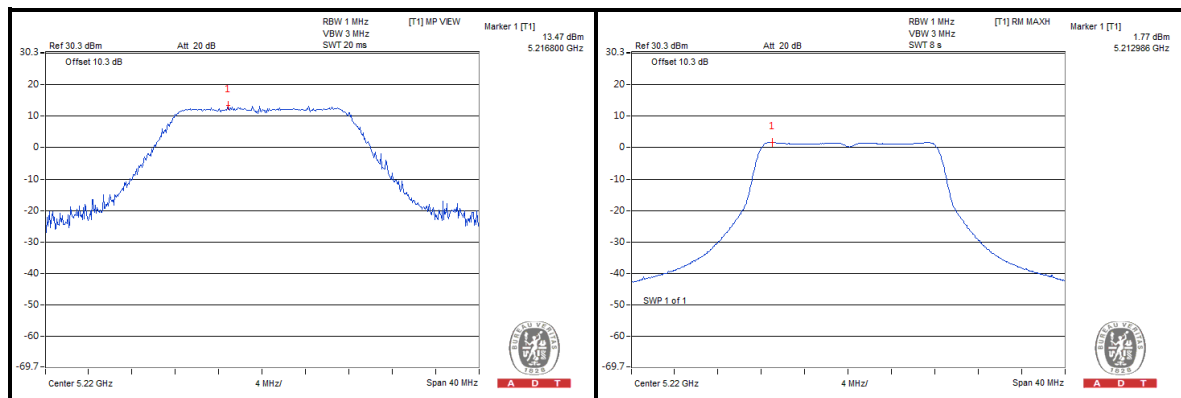
Same as 4.2.6

4.5.7 TEST RESULTS

802.11a

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
36	5180	13.03	3.35	3.67	9.36	13	PASS
44	5220	13.47	1.77	2.09	11.38	13	PASS
48	5240	13.33	1.66	1.98	11.35	13	PASS
52	5260	13.90	3.77	4.09	9.81	13	PASS
60	5300	12.84	3.26	3.58	9.26	13	PASS
64	5320	13.47	3.37	3.69	9.78	13	PASS
100	5500	12.59	3.07	3.39	9.20	13	PASS
116	5580	13.34	3.42	3.74	9.60	13	PASS
140	5700	13.04	3.27	3.59	9.45	13	PASS

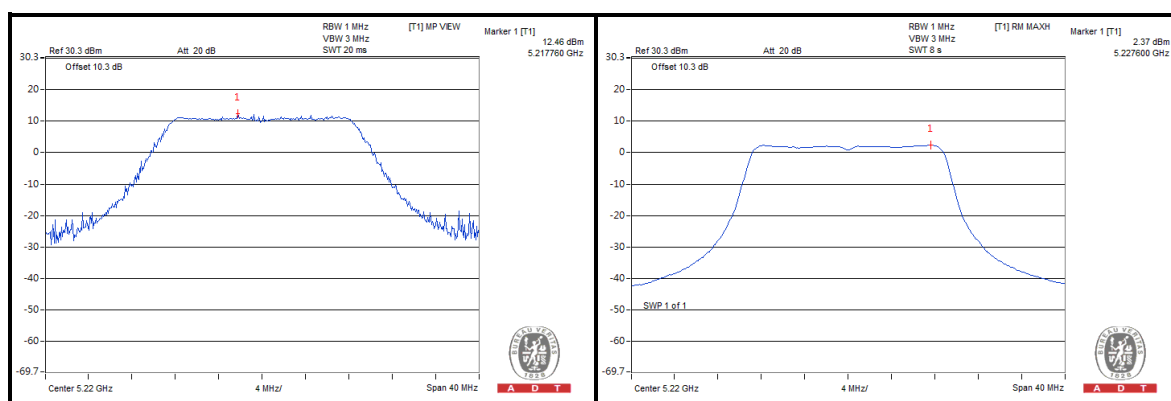
NOTE: Refer to section 3.3 for duty cycle spectrum plot.



802.11n (20MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
36	5180	11.86	1.99	2.31	9.55	13	PASS
44	5220	12.46	2.37	2.69	9.77	13	PASS
48	5240	11.82	2.42	2.74	9.08	13	PASS
52	5260	11.98	2.47	2.79	9.19	13	PASS
60	5300	11.82	2.20	2.52	9.30	13	PASS
64	5320	11.58	2.16	2.48	9.10	13	PASS
100	5500	11.54	1.95	2.27	9.27	13	PASS
116	5580	11.41	2.26	2.58	8.83	13	PASS
140	5700	11.78	2.42	2.74	9.04	13	PASS

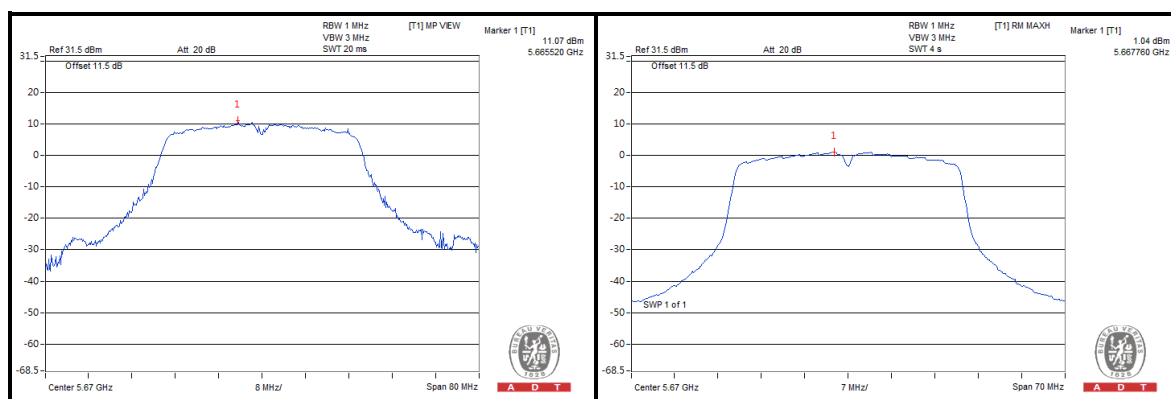
NOTE: Refer to section 3.3 for duty cycle spectrum plot.



802.11n (40MHz)

CHAN.	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS /FAIL
38	5190	10.33	0.77	1.58	8.75	13	PASS
46	5230	10.86	1.33	2.14	8.72	13	PASS
54	5270	10.84	0.98	1.79	9.05	13	PASS
62	5310	11.03	1.02	1.83	9.20	13	PASS
102	5510	10.45	0.69	1.50	8.95	13	PASS
110	5550	10.39	0.83	1.64	8.75	13	PASS
134	5670	11.07	1.04	1.85	9.22	13	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

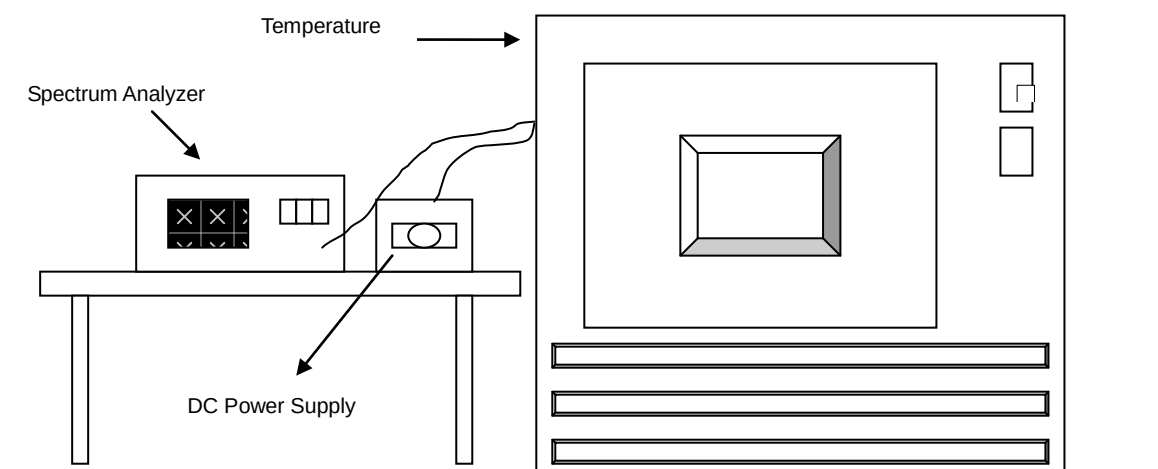


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

- a. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
- b. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
- c. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
55	4.0	5320.015180	2.853	5320.014965	2.813	5320.015209	2.859	5320.015013	2.822
50	4.0	5320.019708	3.705	5320.019506	3.667	5320.019426	3.652	5320.019492	3.664
40	4.0	5320.015912	2.991	5320.015288	2.874	5320.015305	2.877	5320.015117	2.842
30	4.0	5320.016939	3.184	5320.016487	3.099	5320.017033	3.202	5320.016675	3.134
20	4.0	5320.018423	3.463	5320.018173	3.416	5320.018023	3.388	5320.017888	3.362
10	4.0	5320.019435	3.653	5320.020034	3.766	5320.019492	3.664	5320.019705	3.704
0	4.0	5320.017708	3.329	5320.018177	3.417	5320.017784	3.343	5320.017779	3.342
-10	4.0	5320.016426	3.088	5320.016267	3.058	5320.016763	3.151	5320.016527	3.107
-20	4.0	5320.015867	2.983	5320.016158	3.037	5320.016190	3.043	5320.015828	2.975
-30	4.0	5320.014882	2.797	5320.014792	2.780	5320.014878	2.797	5320.015183	2.854

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	3.8	5320.017572	3.303	5320.017258	3.244	5320.017249	3.242	5320.017631	3.314
	4.0	5320.018423	3.463	5320.018173	3.416	5320.018023	3.388	5320.017888	3.362
	4.3	5320.019880	3.737	5320.019264	3.621	5320.019824	3.726	5320.019393	3.645

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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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---