FCC TEST REPORT (15.407)

REPORT NO.:	RF120910C28-3
MODEL NO.:	F-04E
FCC ID:	VQK-F04E
RECEIVED:	Sep. 10, 2012
TESTED:	Sep. 18 ~ Oct. 06, 2012
ISSUED:	Oct. 11, 2012

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.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120910C28-3	Original release	Oct. 11, 2012

1. CERTIFICATION

PRODUCT: Mobile Phone
MODEL: F-04E
BRAND: Xi
APPLICANT: FUJITSU LIMITED
TESTED: Sep. 18 ~ Oct. 06, 2012
TEST SAMPLE: Production Unit
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: F-04E) 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. 11, 2012
Ivy Lin / Specialist

APPROVED BY : _____ , **DATE :** Oct. 11, 2012
Ken Liu / Manager

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 -1.17dB at 13.55859MHz.
15.407(b/1/2/3)(b)(6)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.53dB at 66.99MHz.
15.407(a/1/2)	Max Average 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.	F-04E
POWER SUPPLY	3.8Vdc (Battery) 5.0Vdc (Adapter)
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 72.2Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz)
OUTPUT POWER	8.85mW for 5180 ~ 5240MHz 8.18mW for 5260 ~ 5320MHz 9.02mW for 5500 ~ 5700MHz
ANTENNA TYPE	λ/4 Monopole antenna with -3.2dBi gain
ANTENNA CONNECTOR	N/A
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Battery

NOTE:

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

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

2. The EUT consumes power from the following Li-ion battery.

BATTERY	
BRAND	Fujitsu Limited
MODEL	F28
RATING	3.8Vdc, 2420mAh

3. The following accessory is for support units only.

PRODUCT	BRAND	MODEL	DESCRIPTION
Adapter	NTT Docomo	TA08017-B219	I/P: 100-240Vac, 50-60Hz, 220mA O/P: 5.0Vdc, 1800mA

4. SW version is R07.1e.
5. HW version is V2.1.0.
6. IMEI Code: 354022050006473 and 354022050003520.
7. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

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

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

FOR 5500 ~ 5700MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE≥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.

EUT CONFIGURE MODE	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
-	802.11a	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
-	802.11a	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

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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5500-5700	100 to 140	100	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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5320	36 to 64	44	OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140	100	OFDM	BPSK	6.0

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.

EUT CONFIGURE MODE	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
-	802.11a	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
-	802.11a	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

TEST CONDITION:

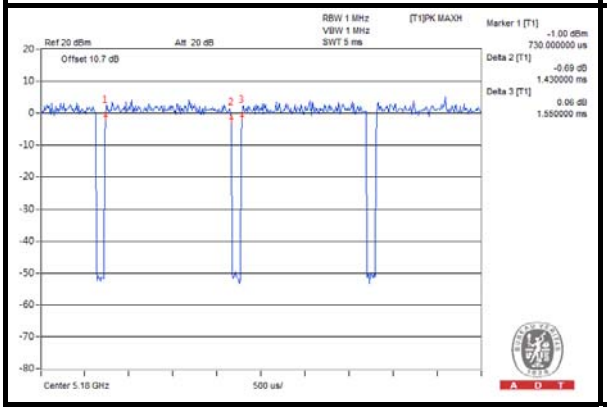
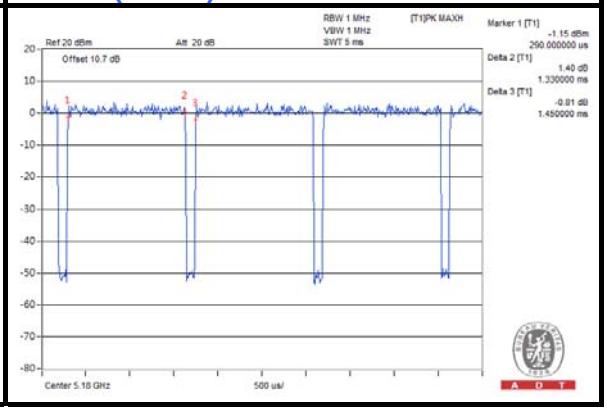
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu
PLC	25deg. C, 65%RH	120Vac, 60Hz	David Huang
APCM	25deg. C, 65%RH	120Vac, 60Hz	Howard Kao

3.3 DUTY CYCLE OF TEST SIGNAL

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

802.11a: Duty cycle = 1.43/1.55 = 0.923, Duty factor = 10 * log(1/0.923) = 0.35

802.11n (20MHz): Duty cycle = 1.33/1.45 = 0.917, Duty factor = 10 * log(1/0.917) = 0.38

802.11a	802.11n (20MHz)
	

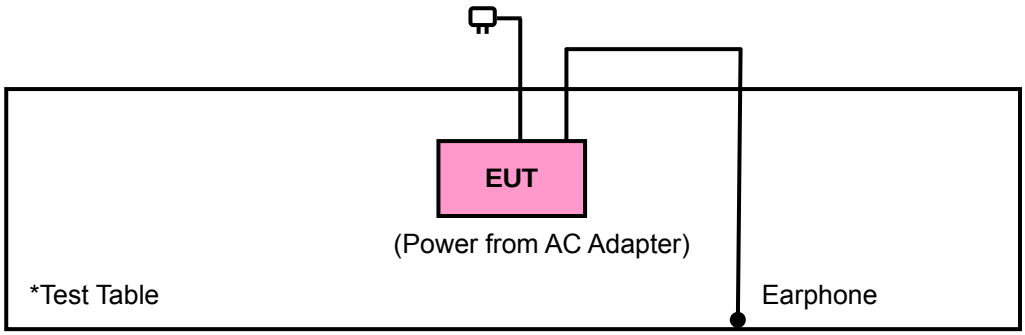
3.4 DESCRIPTION OF SUPPORT UNITS

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	EARPHONE	JVC	HA-FX22	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.5m audio cable

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)
789033 D01 General UNII Test Procedures v01r01
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:

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:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/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 184045	980116	Jan. 02, 2012	Jan. 01, 2013
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 21, 2011	Oct. 20, 2012
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

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 460141.

5. 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 camber. 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.

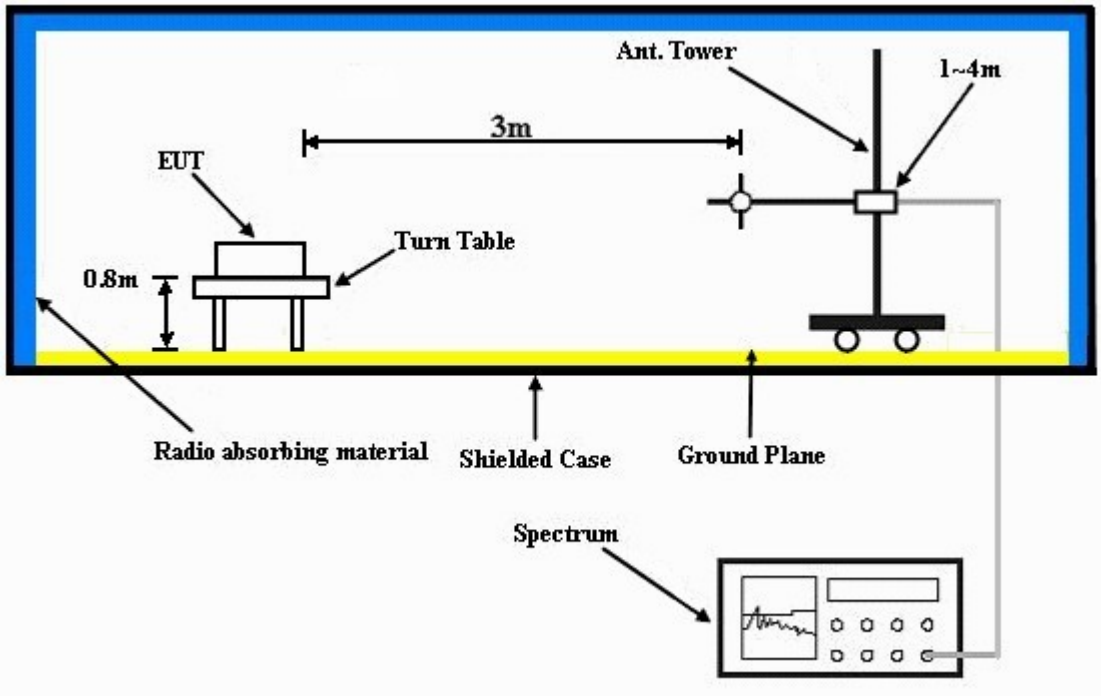
NOTE:

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

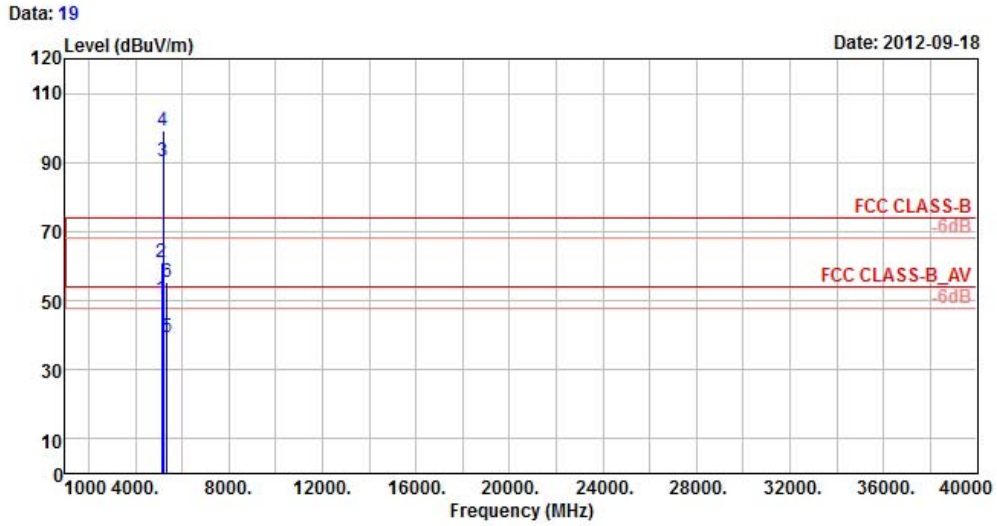
a. Placed the EUT on a testing table.

b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.8 TEST RESULTS

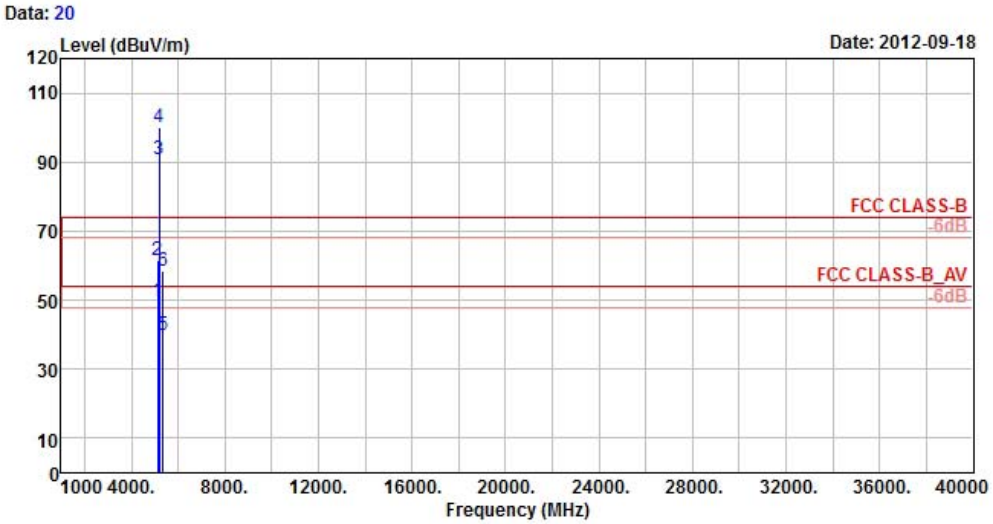
ABOVE 1GHz DATA: 802.11a

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH36
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

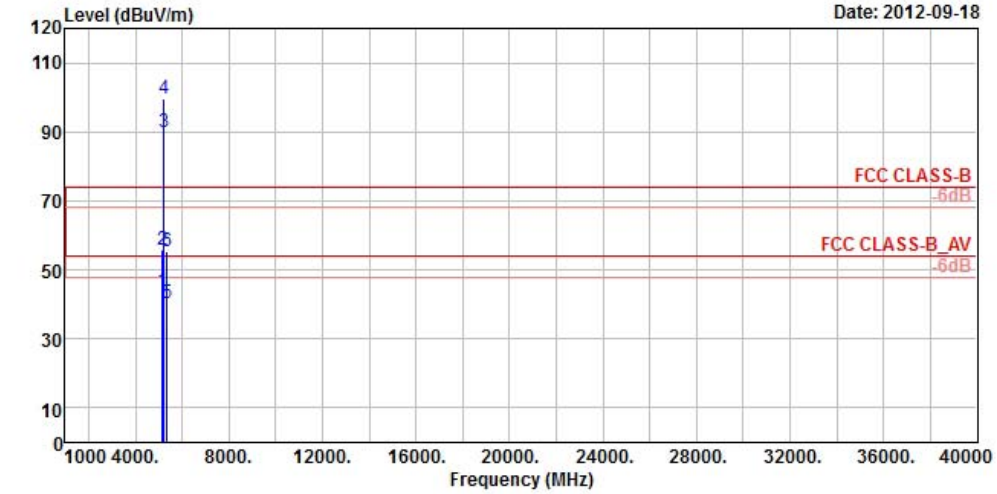
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1 !	5130.00	50.43	48.53	54.00	-3.57	31.86	7.34	37.30	107	220	Average
2	5130.00	60.96	59.06	74.00	-13.04	31.86	7.34	37.30	107	220	Peak
3 pp	5180.00	90.14	88.28			31.88	7.32	37.34	107	220	Average
4 pk	5180.00	99.19	97.33			31.88	7.32	37.34	107	220	Peak
5	5350.00	39.63	37.44	54.00	-14.37	31.97	7.40	37.18	107	220	Average
6	5350.00	55.47	53.28	74.00	-18.53	31.97	7.40	37.18	107	220	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH36
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1 !	5132.00	49.53	47.63	54.00	-4.47	31.86	7.34	37.30	102	178	Average
2	5132.00	61.35	59.45	74.00	-12.65	31.86	7.34	37.30	102	178	Peak
3 pp	5180.00	90.58	88.72			31.88	7.32	37.34	102	178	Average
4 pk	5180.00	100.13	98.27			31.88	7.32	37.34	102	178	Peak
5	5350.00	39.70	37.51	54.00	-14.30	31.97	7.40	37.18	102	178	Average
6	5350.00	58.39	56.20	74.00	-15.61	31.97	7.40	37.18	102	178	Peak

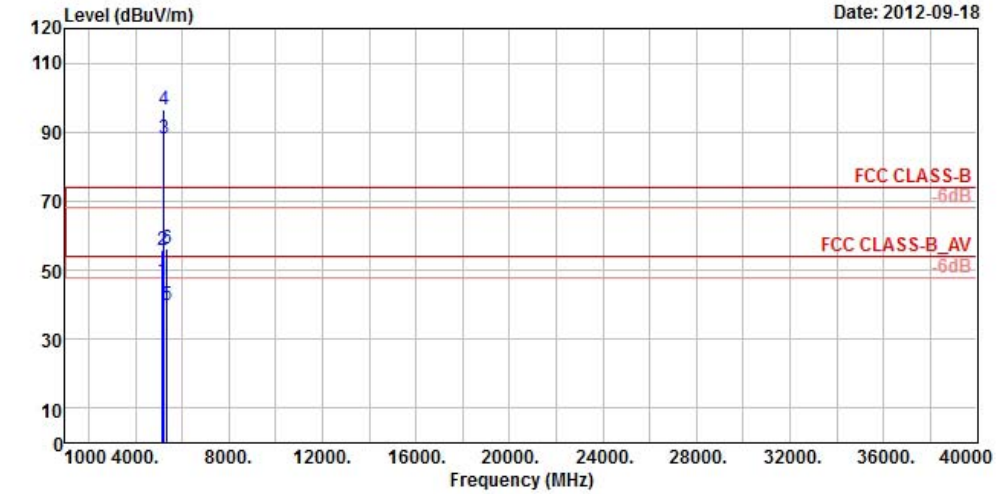
Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH44
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

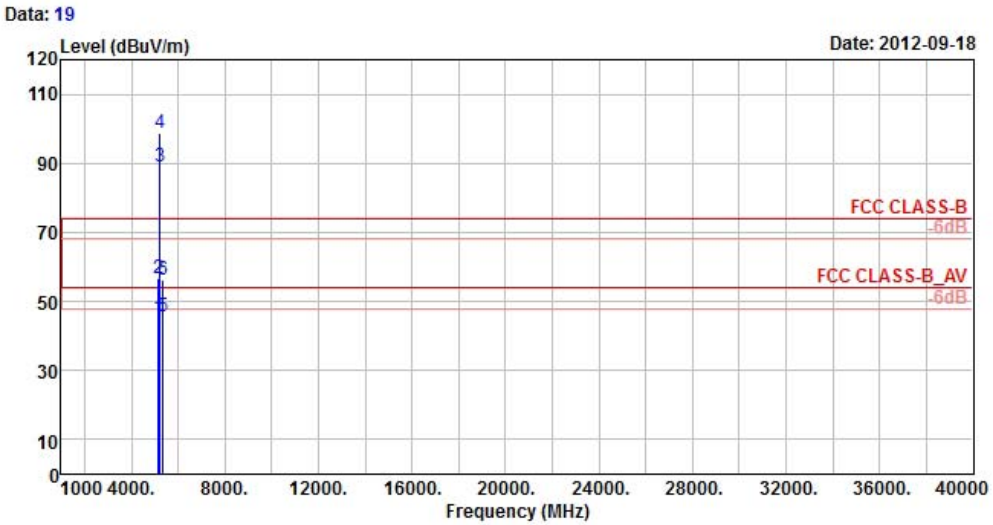
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.00	42.12	54.00	-10.00	31.87	7.33	37.32	106	216	Average
2	5150.00	55.88	54.00	74.00	-18.12	31.87	7.33	37.32	106	216	Peak
3 pp	5220.00	90.03	88.17			31.90	7.32	37.36	106	216	Average
4 pk	5220.00	99.47	97.61			31.90	7.32	37.36	106	216	Peak
5	5350.00	40.42	38.23	54.00	-13.58	31.97	7.40	37.18	106	216	Average
6	5350.00	55.18	52.99	74.00	-18.82	31.97	7.40	37.18	106	216	Peak

Data: 20



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH44
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

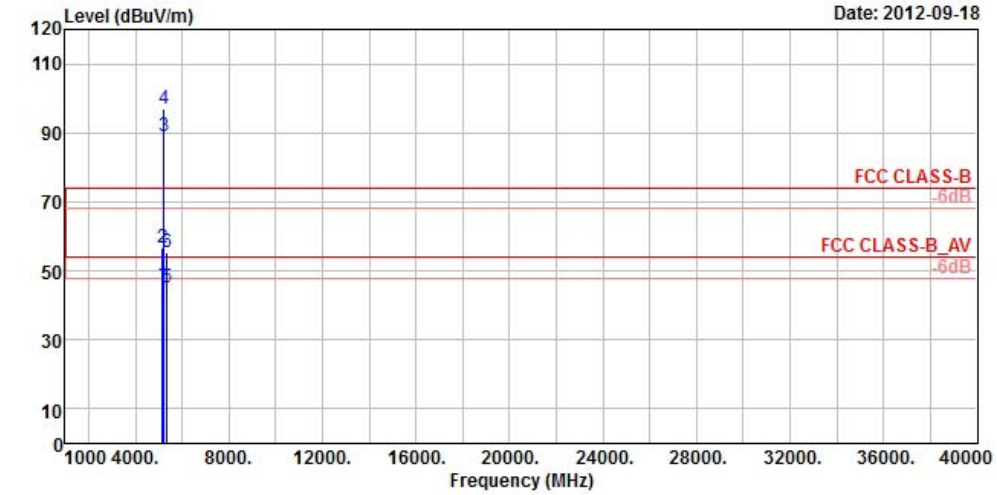
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	47.02	45.14	54.00	-6.98	31.87	7.33	37.32	100	161	Average
2	5150.00	55.93	54.05	74.00	-18.07	31.87	7.33	37.32	100	161	Peak
3 pp	5220.00	87.95	86.09			31.90	7.32	37.36	100	161	Average
4 pk	5220.00	96.39	94.53			31.90	7.32	37.36	100	161	Peak
5	5350.00	39.73	37.54	54.00	-14.27	31.97	7.40	37.18	100	161	Average
6	5350.00	56.29	54.10	74.00	-17.71	31.97	7.40	37.18	100	161	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH48
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.98	43.10	54.00	-9.02	31.87	7.33	37.32	116	213	Average
2	5150.00	56.54	54.66	74.00	-17.46	31.87	7.33	37.32	116	213	Peak
3 pp	5240.00	89.22	87.29			31.91	7.34	37.32	116	213	Average
4 pk	5240.00	98.71	96.78			31.91	7.34	37.32	116	213	Peak
5	5350.00	45.50	43.31	54.00	-8.50	31.97	7.40	37.18	116	213	Average
6	5350.00	56.17	53.98	74.00	-17.83	31.97	7.40	37.18	116	213	Peak

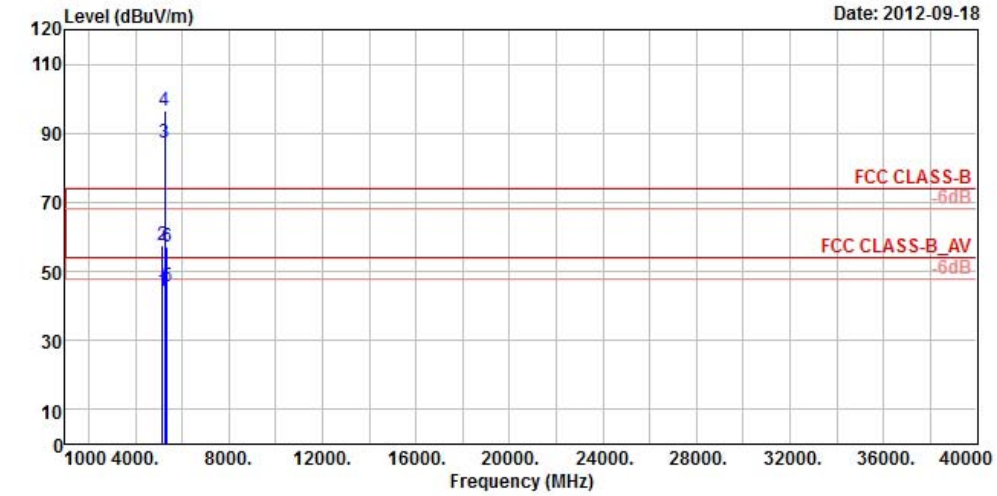
Data: 20



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH48
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	46.05	44.17	54.00	-7.95	31.87	7.33	37.32	100	174	Average
2	5150.00	56.73	54.85	74.00	-17.27	31.87	7.33	37.32	100	174	Peak
3 pp	5240.00	89.01	87.08			31.91	7.34	37.32	100	174	Average
4 pk	5240.00	97.14	95.21			31.91	7.34	37.32	100	174	Peak
5	5350.00	45.00	42.81	54.00	-9.00	31.97	7.40	37.18	100	174	Average
6	5350.00	55.36	53.17	74.00	-18.64	31.97	7.40	37.18	100	174	Peak

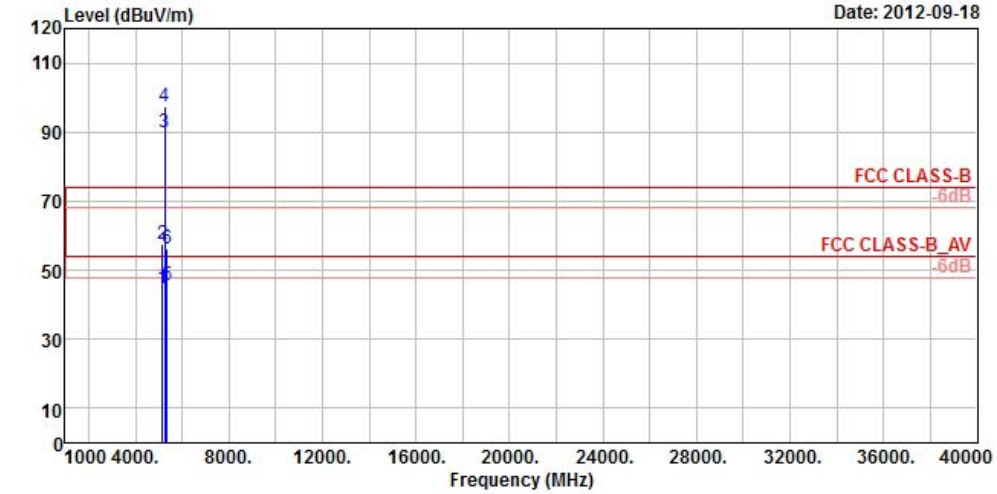
Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH52
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.38	42.50	54.00	-9.62	31.87	7.33	37.32	113	130	Average
2	5150.00	57.69	55.81	74.00	-16.31	31.87	7.33	37.32	113	130	Peak
3 pp	5260.00	87.33	85.32			31.92	7.36	37.27	113	130	Average
4 pk	5260.00	96.75	94.74			31.92	7.36	37.27	113	130	Peak
5	5350.00	45.58	43.39	54.00	-8.42	31.97	7.40	37.18	113	130	Average
6	5350.00	57.07	54.88	74.00	-16.93	31.97	7.40	37.18	113	130	Peak

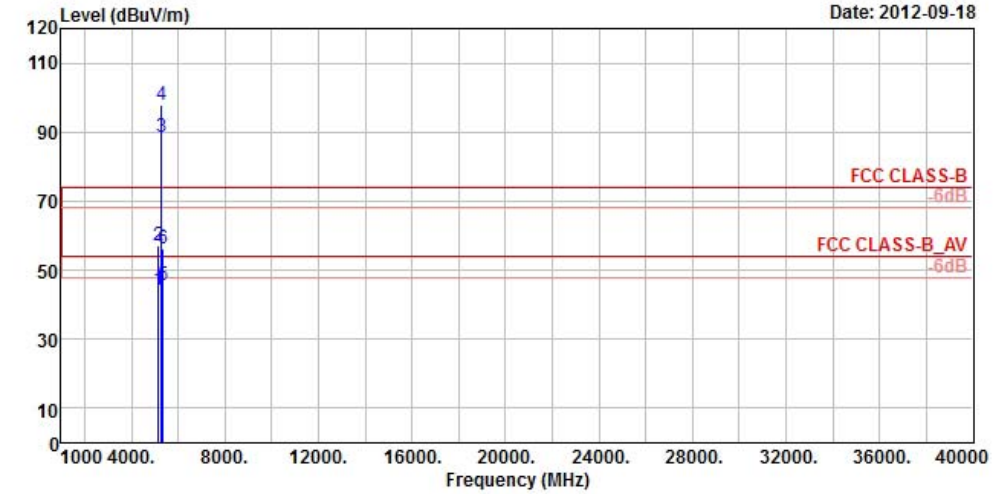
Data: 20



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH52
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

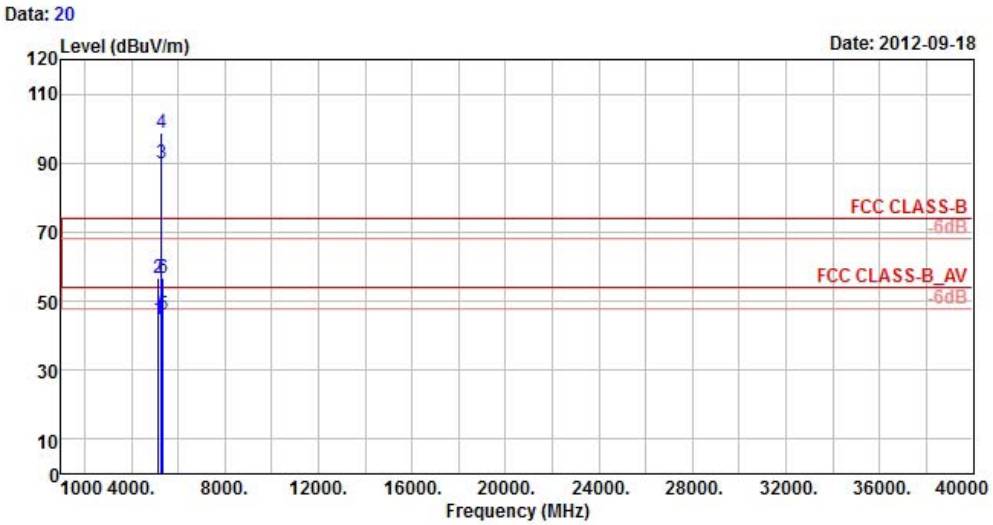
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.56	42.68	54.00	-9.44	31.87	7.33	37.32	100	171	Average
2	5150.00	57.53	55.65	74.00	-16.47	31.87	7.33	37.32	100	171	Peak
3 pp	5260.00	90.10	88.09			31.92	7.36	37.27	100	171	Average
4 pk	5260.00	97.41	95.40			31.92	7.36	37.27	100	171	Peak
5	5350.00	45.69	43.50	54.00	-8.31	31.97	7.40	37.18	100	171	Average
6	5350.00	56.34	54.15	74.00	-17.66	31.97	7.40	37.18	100	171	Peak

Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH60
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

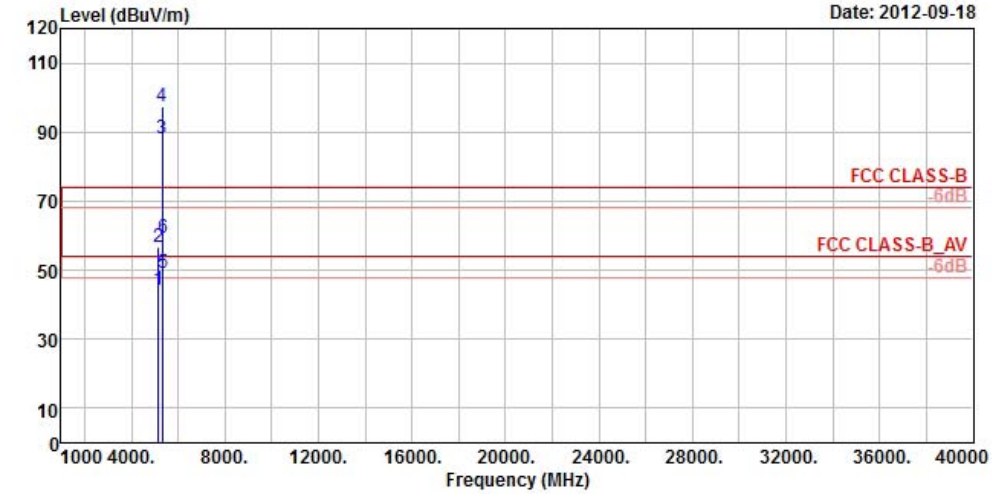
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.36	42.48	54.00	-9.64	31.87	7.33	37.32	106	15	Average
2	5150.00	57.13	55.25	74.00	-16.87	31.87	7.33	37.32	106	15	Peak
3 pp	5300.00	88.46	86.31			31.94	7.40	37.19	106	15	Average
4 pk	5300.00	97.93	95.78			31.94	7.40	37.19	106	15	Peak
5	5350.00	45.40	43.21	54.00	-8.60	31.97	7.40	37.18	106	15	Average
6	5350.00	56.22	54.03	74.00	-17.78	31.97	7.40	37.18	106	15	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH60
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

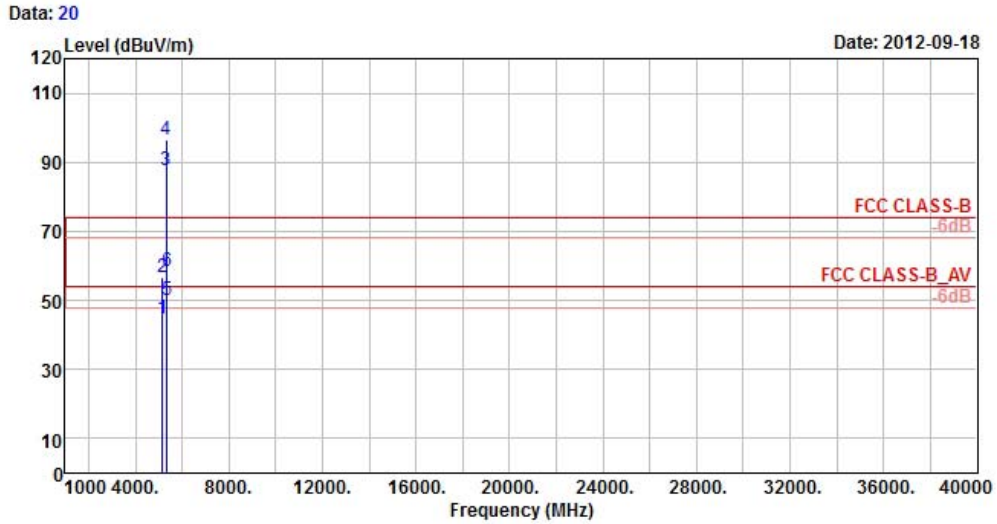
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.66	42.78	54.00	-9.34	31.87	7.33	37.32	100	169	Average
2	5150.00	56.63	54.75	74.00	-17.37	31.87	7.33	37.32	100	169	Peak
3 pp	5300.00	89.80	87.65			31.94	7.40	37.19	100	169	Average
4 pk	5300.00	98.70	96.55			31.94	7.40	37.19	100	169	Peak
5	5350.00	45.90	43.71	54.00	-8.10	31.97	7.40	37.18	100	169	Average
6	5350.00	56.50	54.31	74.00	-17.50	31.97	7.40	37.18	100	169	Peak

Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH64
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

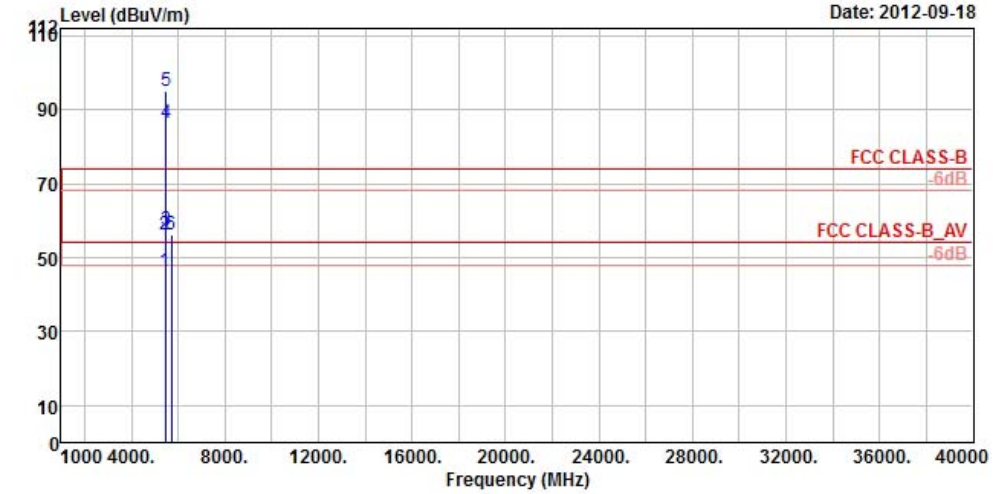
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.40	42.52	54.00	-9.60	31.87	7.33	37.32	102	128	Average
2	5150.00	56.58	54.70	74.00	-17.42	31.87	7.33	37.32	102	128	Peak
3 pp	5320.00	88.18	86.02			31.95	7.40	37.19	102	128	Average
4 pk	5320.00	97.44	95.28			31.95	7.40	37.19	102	128	Peak
5 !	5360.00	49.00	46.81	54.00	-5.00	31.97	7.40	37.18	102	128	Average
6	5360.00	59.32	57.13	74.00	-14.68	31.97	7.40	37.18	102	128	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH64
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

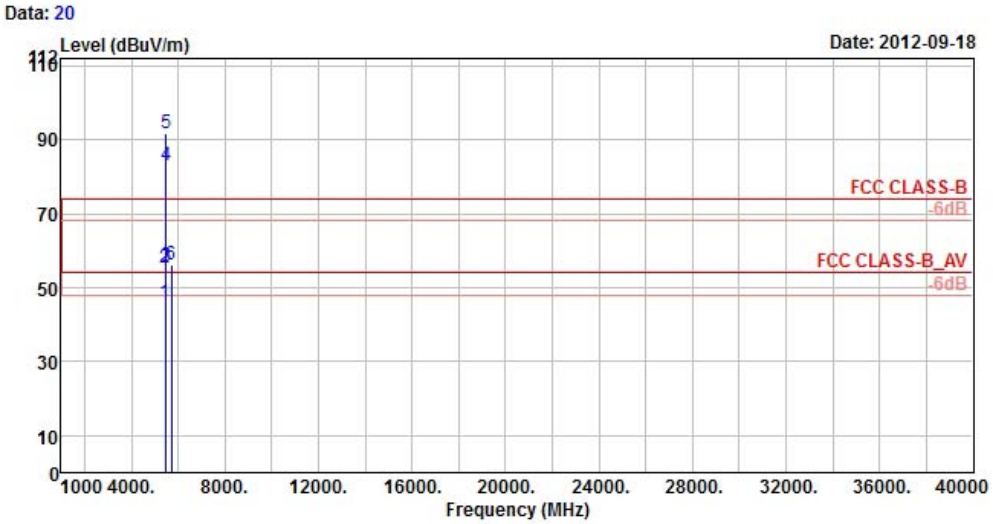
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.83	42.95	54.00	-9.17	31.87	7.33	37.32	100	170	Average
2	5150.00	56.87	54.99	74.00	-17.13	31.87	7.33	37.32	100	170	Peak
3 pp	5320.00	87.56	85.40			31.95	7.40	37.19	100	170	Average
4 pk	5320.00	96.67	94.51			31.95	7.40	37.19	100	170	Peak
5 !	5350.00	49.90	47.71	54.00	-4.10	31.97	7.40	37.18	100	170	Average
6	5350.00	58.55	56.36	74.00	-15.45	31.97	7.40	37.18	100	170	Peak

Data: 19



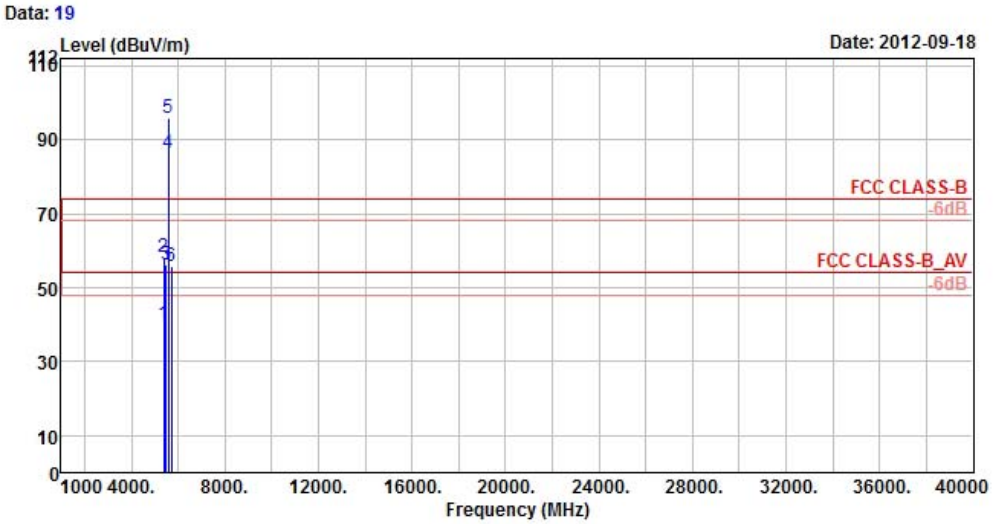
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH100
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5460.00	46.40	43.94	54.00	-7.60	32.01	7.53	37.08	100	152	Average
2	5460.00	56.15	53.69	74.00	-17.85	32.01	7.53	37.08	100	152	Peak
3	5470.00	57.47	55.00	68.30	-10.83	32.02	7.53	37.08	100	152	Peak
4 pp	5500.00	86.21	83.61			32.04	7.59	37.03	100	152	Average
5 pk	5500.00	95.06	92.46			32.04	7.59	37.03	100	152	Peak
6	5725.00	56.13	53.49	68.30	-12.17	32.36	7.71	37.43	100	152	Peak



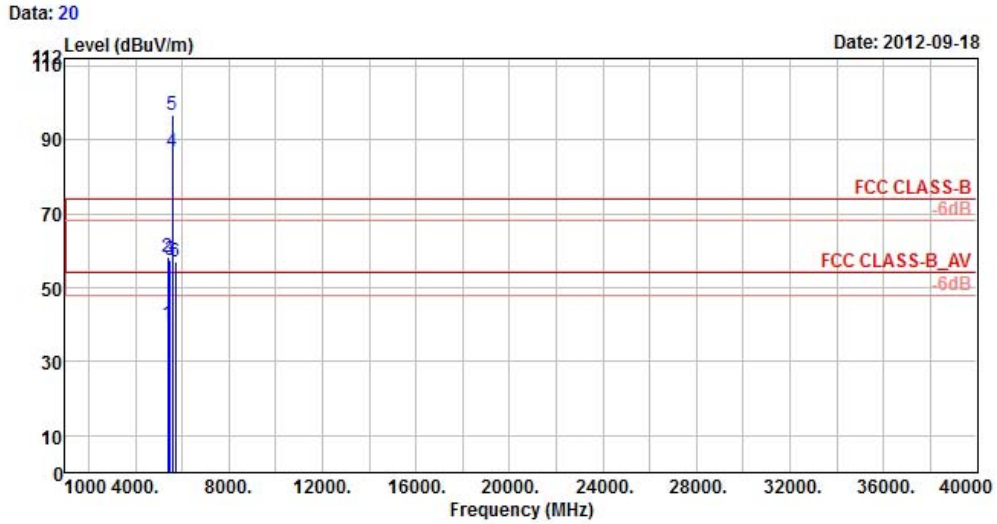
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH100
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5460.00	45.87	43.41	54.00	-8.13	32.01	7.53	37.08	100	53	Average
2	5460.00	55.53	53.07	74.00	-18.47	32.01	7.53	37.08	100	53	Peak
3	5470.00	55.89	53.42	68.30	-12.41	32.02	7.53	37.08	100	53	Peak
4 pp	5500.00	83.12	80.52			32.04	7.59	37.03	100	53	Average
5 pk	5500.00	91.56	88.96			32.04	7.59	37.03	100	53	Peak
6	5725.00	56.16	53.52	68.30	-12.14	32.36	7.71	37.43	100	53	Peak



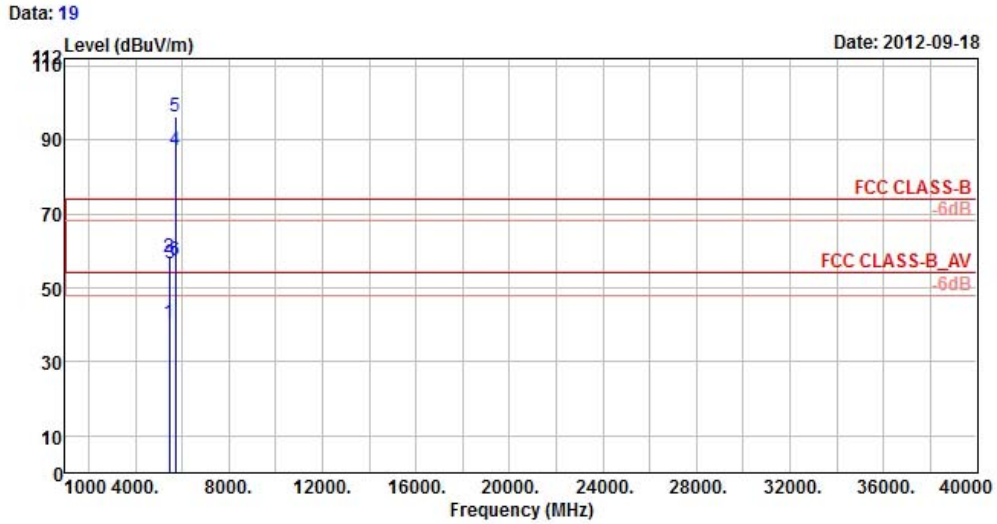
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH116
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5378.00	40.23	38.03	54.00	-13.77	31.98	7.40	37.18	100	5	Average
2	5378.00	58.44	56.24	74.00	-15.56	31.98	7.40	37.18	100	5	Peak
3	5470.00	56.05	53.58	68.30	-12.25	32.02	7.53	37.08	100	5	Peak
4 pp	5580.00	86.32	83.77			32.14	7.57	37.16	100	5	Average
5 pk	5580.00	95.84	93.29			32.14	7.57	37.16	100	5	Peak
6	5725.00	55.85	53.21	68.30	-12.45	32.36	7.71	37.43	100	5	Peak



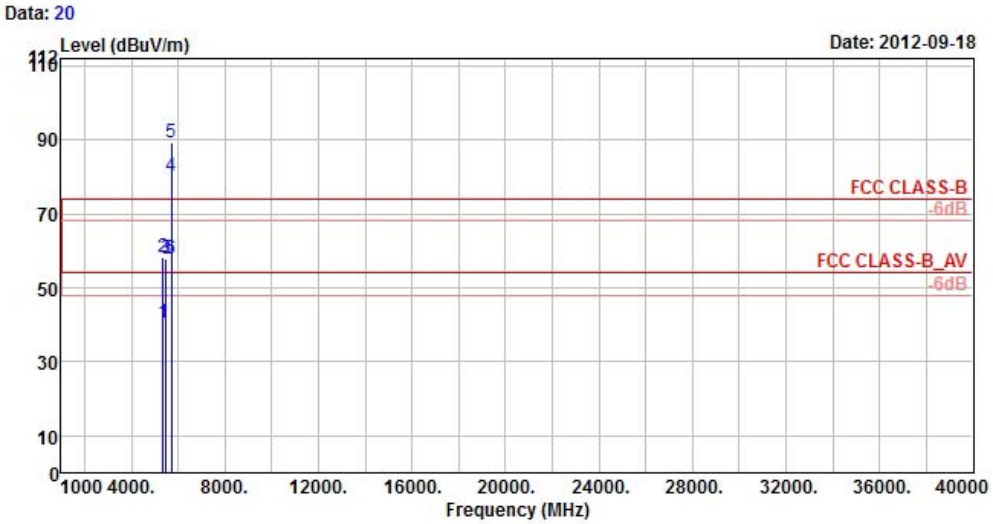
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH116
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5396.00	40.05	37.84	54.00	-13.95	31.99	7.40	37.18	117	179	Average
2	5396.00	58.30	56.09	74.00	-15.70	31.99	7.40	37.18	117	179	Peak
3	5470.00	57.57	55.10	68.30	-10.73	32.02	7.53	37.08	117	179	Peak
4 pp	5580.00	86.99	84.44			32.14	7.57	37.16	117	179	Average
5 pk	5580.00	96.82	94.27			32.14	7.57	37.16	117	179	Peak
6	5725.00	57.17	54.53	68.30	-11.13	32.36	7.71	37.43	117	179	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11A TX CH140
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5444.00	40.39	38.04	54.00	-13.61	32.01	7.47	37.13	100	150	Average
2	5444.00	58.43	56.08	74.00	-15.57	32.01	7.47	37.13	100	150	Peak
3	5470.00	56.71	54.24	68.30	-11.59	32.02	7.53	37.08	100	150	Peak
4 pp	5700.00	87.10	84.50			32.31	7.69	37.40	100	150	Average
5 pk	5700.00	96.10	93.50			32.31	7.69	37.40	100	150	Peak
6	5725.00	57.49	54.85	68.30	-10.81	32.36	7.71	37.43	100	150	Peak

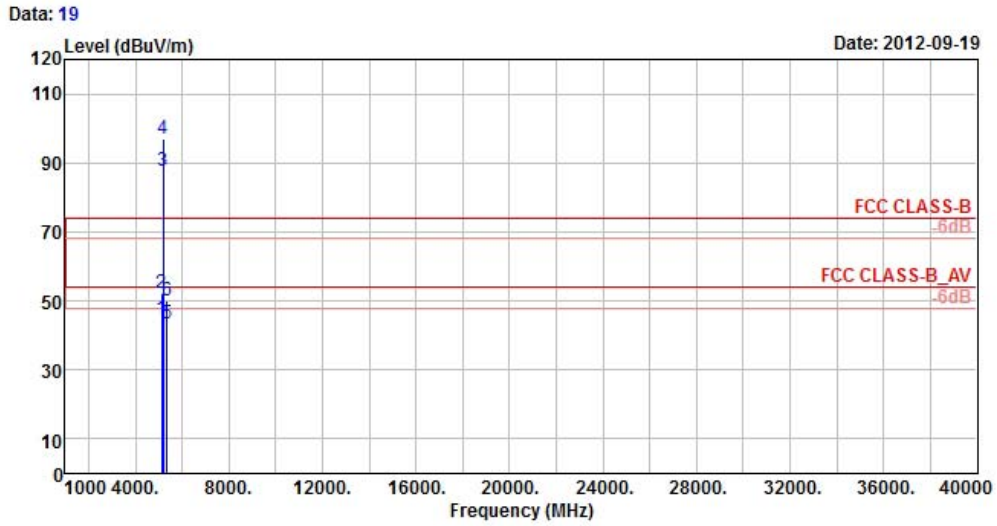


Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11A TX CH140
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : 6M

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5366.00	40.31	38.12	54.00	-13.69	31.97	7.40	37.18	111	77	Average
2	5366.00	58.09	55.90	74.00	-15.91	31.97	7.40	37.18	111	77	Peak
3	5470.00	57.75	55.28	68.30	-10.35	32.02	7.53	37.08	111	77	Peak
4 pp	5700.00	80.10	77.50			32.31	7.69	37.40	111	77	Average
5 pk	5700.00	89.18	86.58			32.31	7.69	37.40	111	77	Peak
6	5725.00	57.96	55.32	68.30	-10.34	32.36	7.71	37.43	111	77	Peak

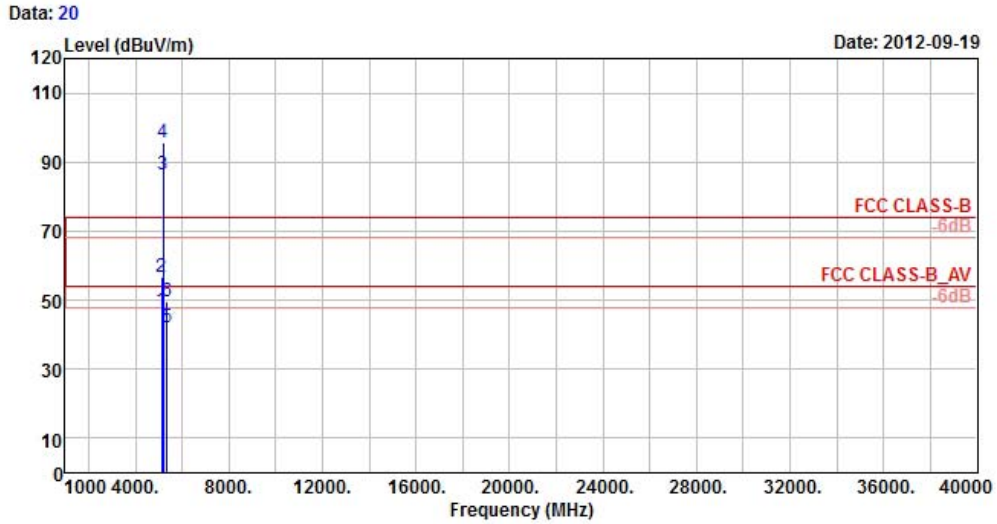
ABOVE 1GHz DATA: 802.11n (20Mhz)

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



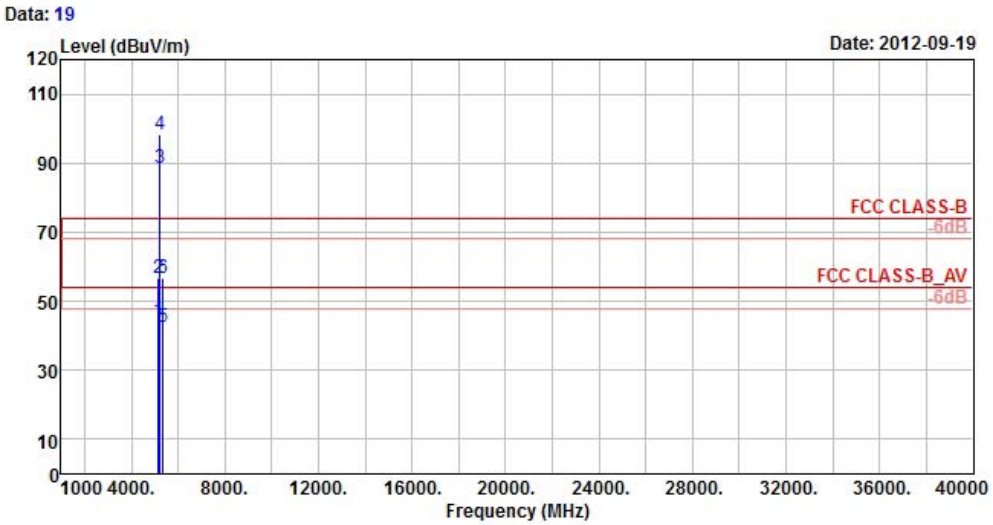
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH36
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5134.00	44.56	42.66	54.00	-9.44	31.86	7.34	37.30	110	198	Average
2	5134.00	52.10	50.20	74.00	-21.90	31.86	7.34	37.30	110	198	Peak
3 pp	5180.00	87.79	85.93			31.88	7.32	37.34	110	198	Average
4 pk	5180.00	96.80	94.94			31.88	7.32	37.34	110	198	Peak
5	5350.00	43.35	41.16	54.00	-10.65	31.97	7.40	37.18	110	198	Average
6	5350.00	50.14	47.95	74.00	-23.86	31.97	7.40	37.18	110	198	Peak



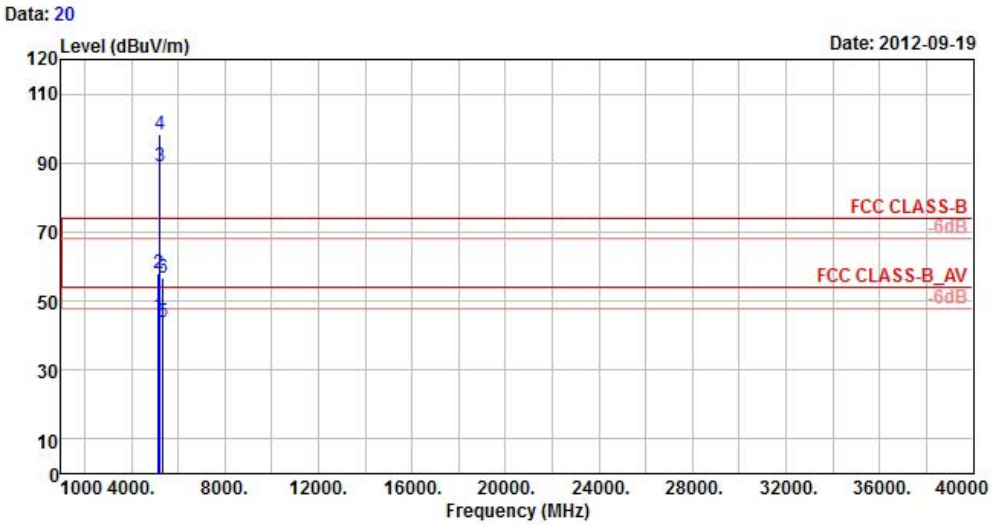
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH36
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5134.00	46.87	44.97	54.00	-7.13	31.86	7.34	37.30	100	45	Average
2	5134.00	56.71	54.81	74.00	-17.29	31.86	7.34	37.30	100	45	Peak
3 pp	5180.00	86.41	84.55			31.88	7.32	37.34	100	45	Average
4 pk	5180.00	95.58	93.72			31.88	7.32	37.34	100	45	Peak
5	5350.00	42.00	39.81	54.00	-12.00	31.97	7.40	37.18	100	45	Average
6	5350.00	49.80	47.61	74.00	-24.20	31.97	7.40	37.18	100	45	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH44
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

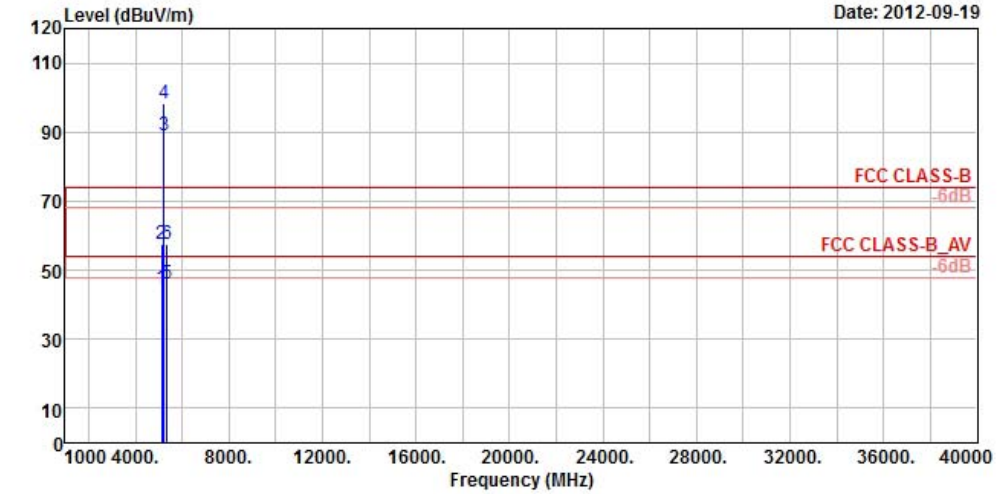
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.49	42.61	54.00	-9.51	31.87	7.33	37.32	107	206	Average
2	5150.00	56.62	54.74	74.00	-17.38	31.87	7.33	37.32	107	206	Peak
3 pp	5220.00	88.66	86.80			31.90	7.32	37.36	107	206	Average
4 pk	5220.00	98.14	96.28			31.90	7.32	37.36	107	206	Peak
5	5350.00	42.58	40.39	54.00	-11.42	31.97	7.40	37.18	107	206	Average
6	5350.00	56.61	54.42	74.00	-17.39	31.97	7.40	37.18	107	206	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH44
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	45.52	43.64	54.00	-8.48	31.87	7.33	37.32	102	175	Average
2	5150.00	57.82	55.94	74.00	-16.18	31.87	7.33	37.32	102	175	Peak
3 pp	5220.00	89.11	87.25			31.90	7.32	37.36	102	175	Average
4 pk	5220.00	98.20	96.34			31.90	7.32	37.36	102	175	Peak
5	5350.00	44.06	41.87	54.00	-9.94	31.97	7.40	37.18	102	175	Average
6	5350.00	56.52	54.33	74.00	-17.48	31.97	7.40	37.18	102	175	Peak

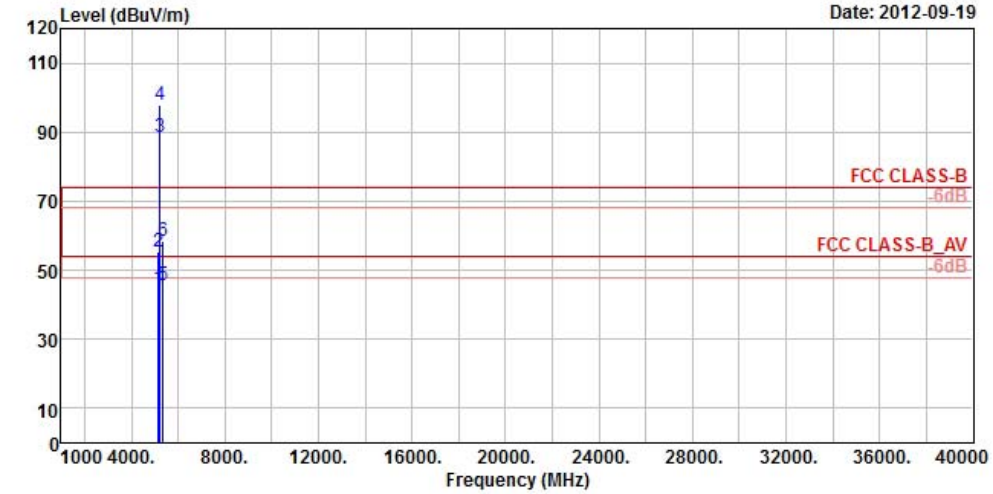
Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH48
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5140.00	44.60	42.69	54.00	-9.40	31.87	7.34	37.30	108	197	Average
2	5140.00	57.40	55.49	74.00	-16.60	31.87	7.34	37.30	108	197	Peak
3 pp	5240.00	88.81	86.88			31.91	7.34	37.32	108	197	Average
4 pk	5240.00	98.14	96.21			31.91	7.34	37.32	108	197	Peak
5	5350.00	46.22	44.03	54.00	-7.78	31.97	7.40	37.18	108	197	Average
6	5350.00	57.39	55.20	74.00	-16.61	31.97	7.40	37.18	108	197	Peak

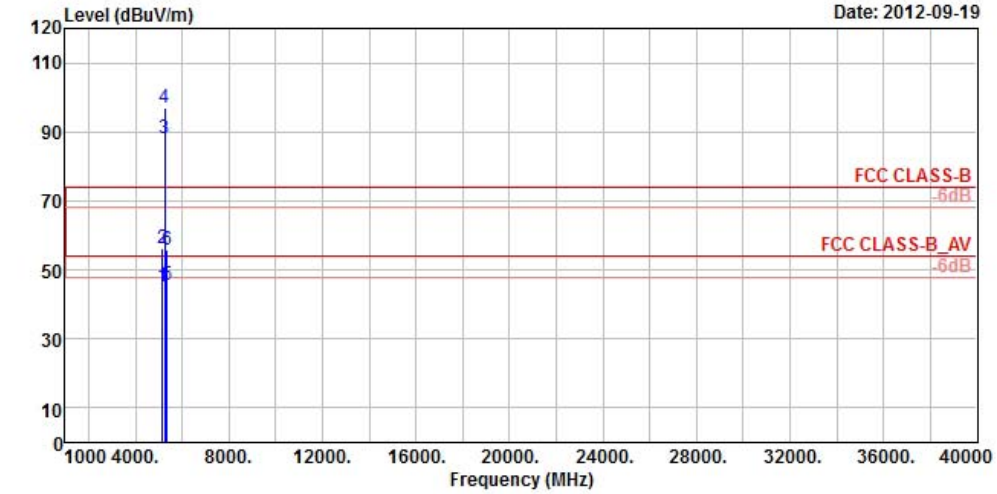
Data: 20



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH48
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

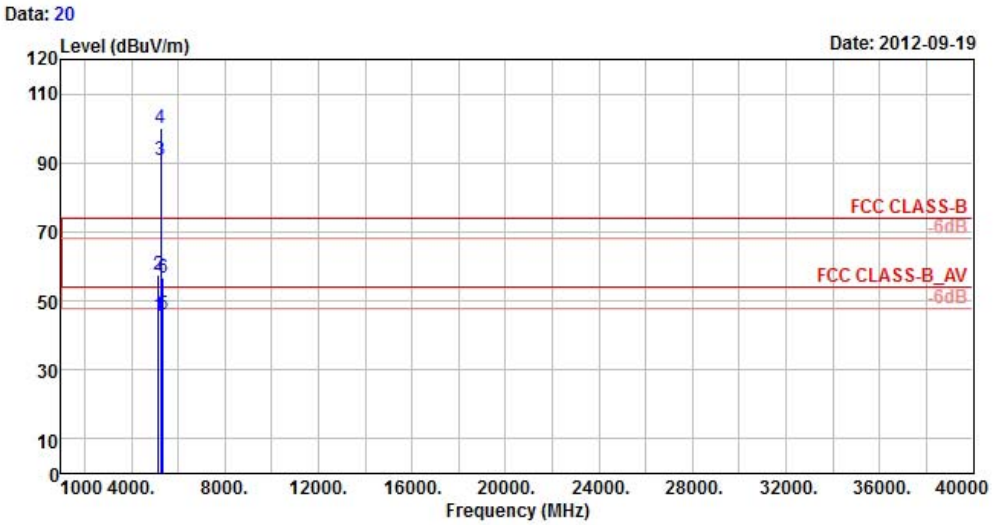
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.52	42.64	54.00	-9.48	31.87	7.33	37.32	102	185	Average
2	5150.00	55.35	53.47	74.00	-18.65	31.87	7.33	37.32	102	185	Peak
3 pp	5240.00	88.60	86.67			31.91	7.34	37.32	102	185	Average
4 pk	5240.00	97.86	95.93			31.91	7.34	37.32	102	185	Peak
5	5366.00	45.58	43.39	54.00	-8.42	31.97	7.40	37.18	102	185	Average
6	5366.00	58.33	56.14	74.00	-15.67	31.97	7.40	37.18	102	185	Peak

Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH52
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

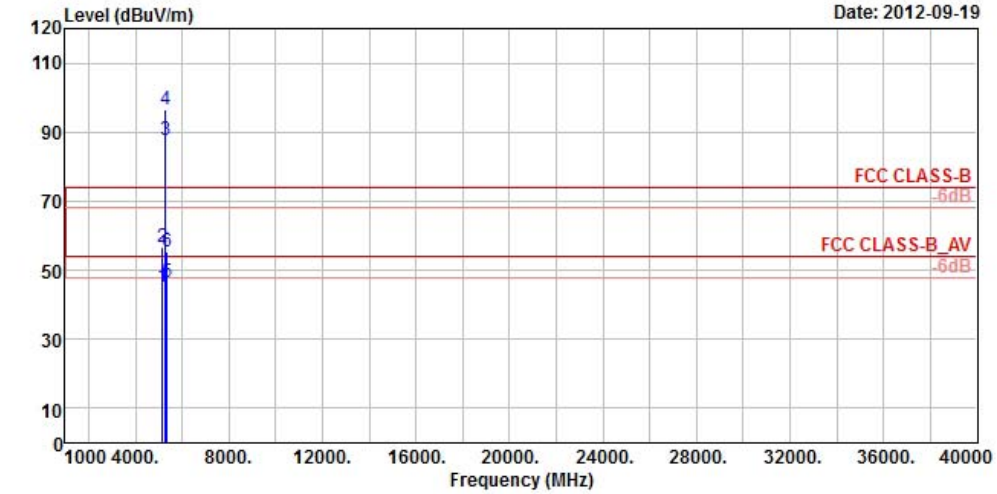
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	45.07	43.19	54.00	-8.93	31.87	7.33	37.32	100	135	Average
2	5150.00	56.31	54.43	74.00	-17.69	31.87	7.33	37.32	100	135	Peak
3 pp	5260.00	88.08	86.07			31.92	7.36	37.27	100	135	Average
4 pk	5260.00	97.03	95.02			31.92	7.36	37.27	100	135	Peak
5	5350.00	45.78	43.59	54.00	-8.22	31.97	7.40	37.18	100	135	Average
6	5350.00	55.67	53.48	74.00	-18.33	31.97	7.40	37.18	100	135	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH52
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

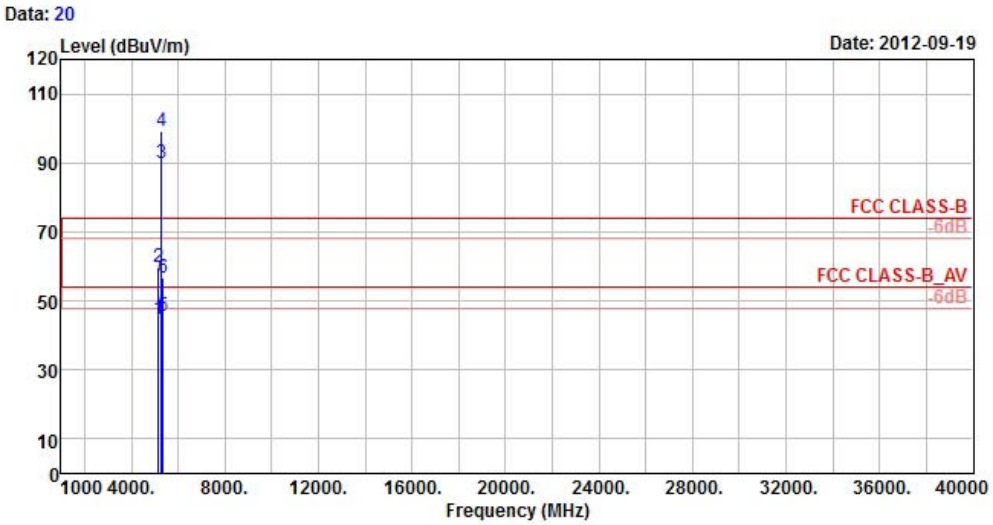
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	45.47	43.59	54.00	-8.53	31.87	7.33	37.32	102	172	Average
2	5150.00	57.35	55.47	74.00	-16.65	31.87	7.33	37.32	102	172	Peak
3 pp	5260.00	90.59	88.58			31.92	7.36	37.27	102	172	Average
4 pk	5260.00	100.23	98.22			31.92	7.36	37.27	102	172	Peak
5	5350.00	46.24	44.05	54.00	-7.76	31.97	7.40	37.18	102	172	Average
6	5350.00	56.79	54.60	74.00	-17.21	31.97	7.40	37.18	102	172	Peak

Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH60
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

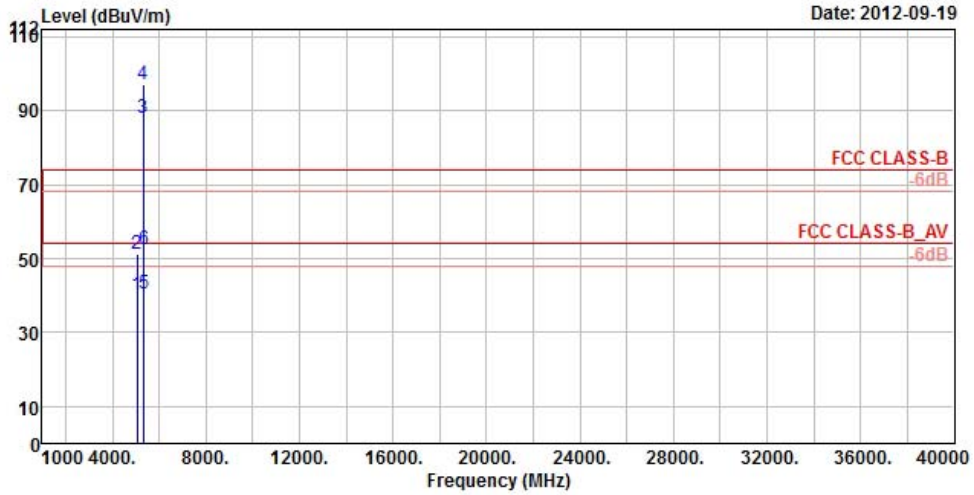
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	45.37	43.49	54.00	-8.63	31.87	7.33	37.32	100	131	Average
2	5150.00	56.80	54.92	74.00	-17.20	31.87	7.33	37.32	100	131	Peak
3 pp	5300.00	87.51	85.36			31.94	7.40	37.19	100	131	Average
4 pk	5300.00	96.33	94.18			31.94	7.40	37.19	100	131	Peak
5	5350.00	46.30	44.11	54.00	-7.70	31.97	7.40	37.18	100	131	Average
6	5350.00	55.46	53.27	74.00	-18.54	31.97	7.40	37.18	100	131	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH60
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5150.00	44.59	42.71	54.00	-9.41	31.87	7.33	37.32	113	181	Average
2	5150.00	59.81	57.93	74.00	-14.19	31.87	7.33	37.32	113	181	Peak
3 pp	5300.00	89.76	87.61			31.94	7.40	37.19	113	181	Average
4 pk	5300.00	99.03	96.88			31.94	7.40	37.19	113	181	Peak
5	5350.00	45.62	43.43	54.00	-8.38	31.97	7.40	37.18	113	181	Average
6	5350.00	56.76	54.57	74.00	-17.24	31.97	7.40	37.18	113	181	Peak

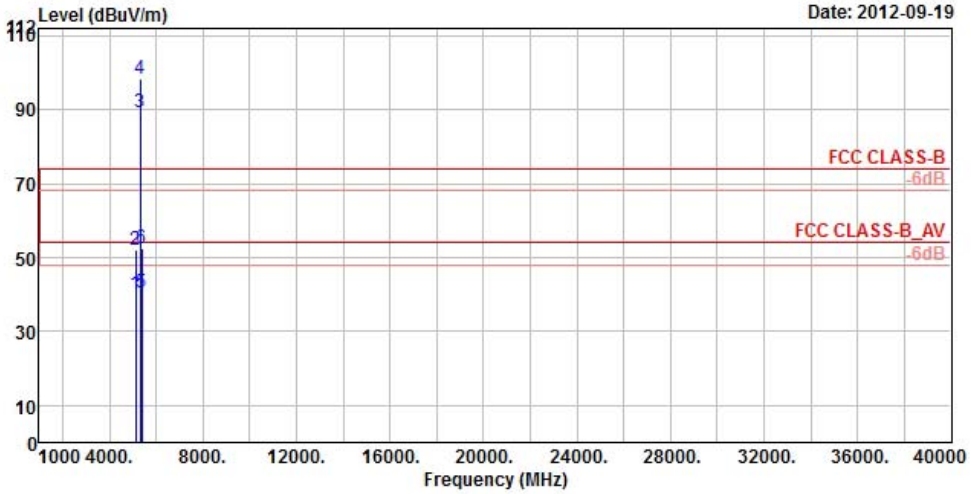
Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH64
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5050.00	39.94	38.12	54.00	-14.06	31.82	7.25	37.25	112	243	Average
2	5050.00	51.35	49.53	74.00	-22.65	31.82	7.25	37.25	112	243	Peak
3 pp	5320.00	88.01	85.85			31.95	7.40	37.19	112	243	Average
4 pk	5320.00	96.95	94.79			31.95	7.40	37.19	112	243	Peak
5	5356.00	40.33	38.14	54.00	-13.67	31.97	7.40	37.18	112	243	Average
6	5356.00	52.35	50.16	74.00	-21.65	31.97	7.40	37.18	112	243	Peak

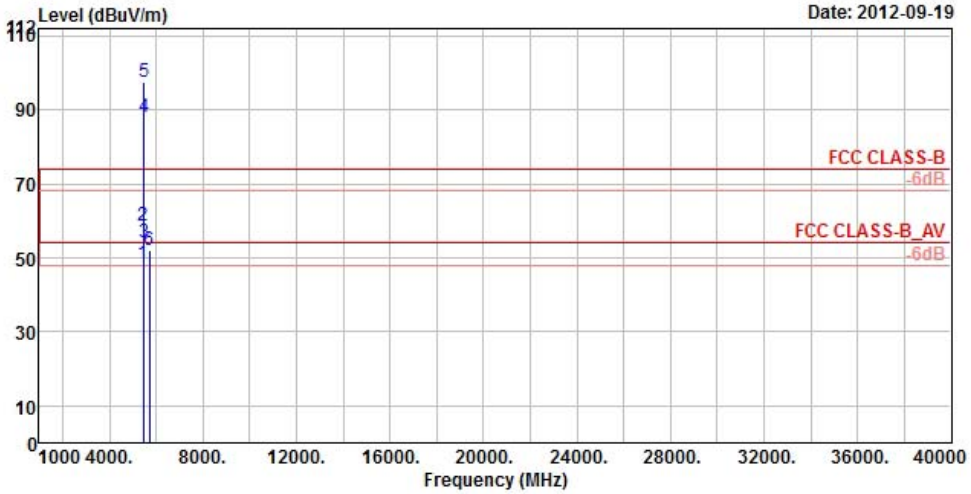
Data: 20



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH64
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5118.00	40.11	38.19	54.00	-13.89	31.85	7.35	37.28	112	190	Average
2	5118.00	52.05	50.13	74.00	-21.95	31.85	7.35	37.28	112	190	Peak
3 pp	5320.00	89.32	87.16			31.95	7.40	37.19	112	190	Average
4 pk	5320.00	98.55	96.39			31.95	7.40	37.19	112	190	Peak
5	5386.00	40.36	38.16	54.00	-13.64	31.98	7.40	37.18	112	190	Average
6	5386.00	52.50	50.30	74.00	-21.50	31.98	7.40	37.18	112	190	Peak

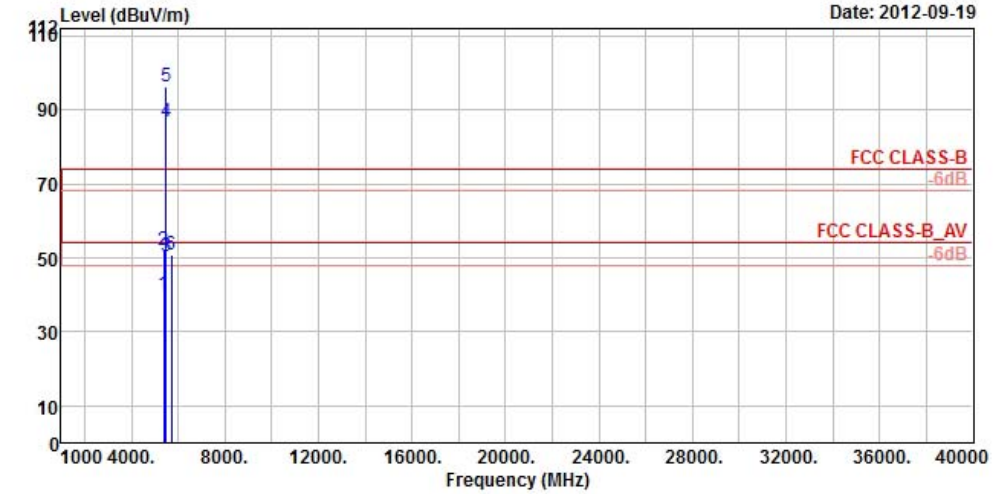
Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH100
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1 !	5448.00	48.23	45.88	54.00	-5.77	32.01	7.47	37.13	100	355	Average
2	5448.00	58.79	56.44	74.00	-15.21	32.01	7.47	37.13	100	355	Peak
3	5470.00	54.02	51.55	68.30	-14.28	32.02	7.53	37.08	100	355	Peak
4 pp	5500.00	88.08	85.48			32.04	7.59	37.03	100	355	Average
5 pk	5500.00	97.61	95.01	68.30	-16.38	32.04	7.59	37.03	100	355	Peak
6	5725.00	51.92	49.28			32.36	7.71	37.43	100	355	Peak

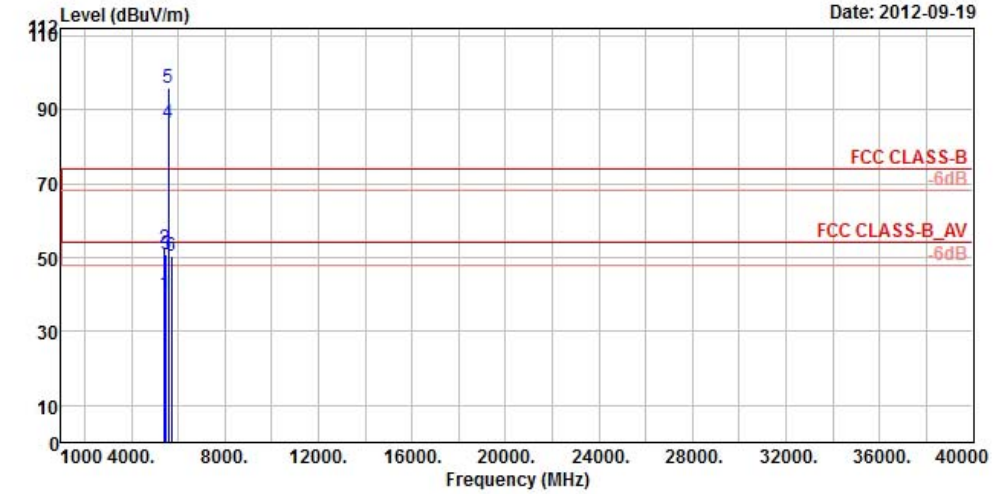
Data: 20



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH100
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5392.00	40.19	37.99	54.00	-13.81	31.98	7.40	37.18	107	192	Average
2	5392.00	52.14	49.94	74.00	-21.86	31.98	7.40	37.18	107	192	Peak
3	5470.00	50.28	47.81	68.30	-18.02	32.02	7.53	37.08	107	192	Peak
4 pp	5500.00	86.71	84.11			32.04	7.59	37.03	107	192	Average
5 pk	5500.00	96.28	93.68			32.04	7.59	37.03	107	192	Peak
6	5725.00	50.67	48.03	68.30	-17.63	32.36	7.71	37.43	107	192	Peak

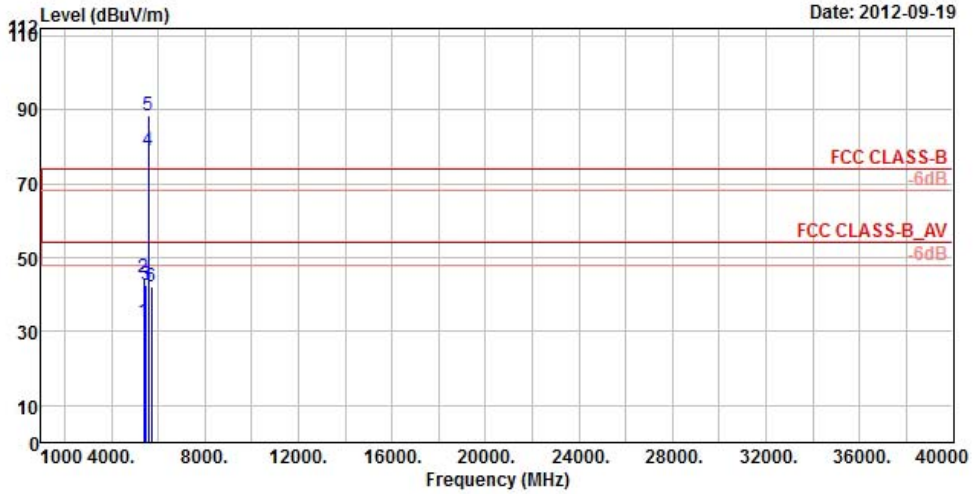
Data: 19



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH116
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

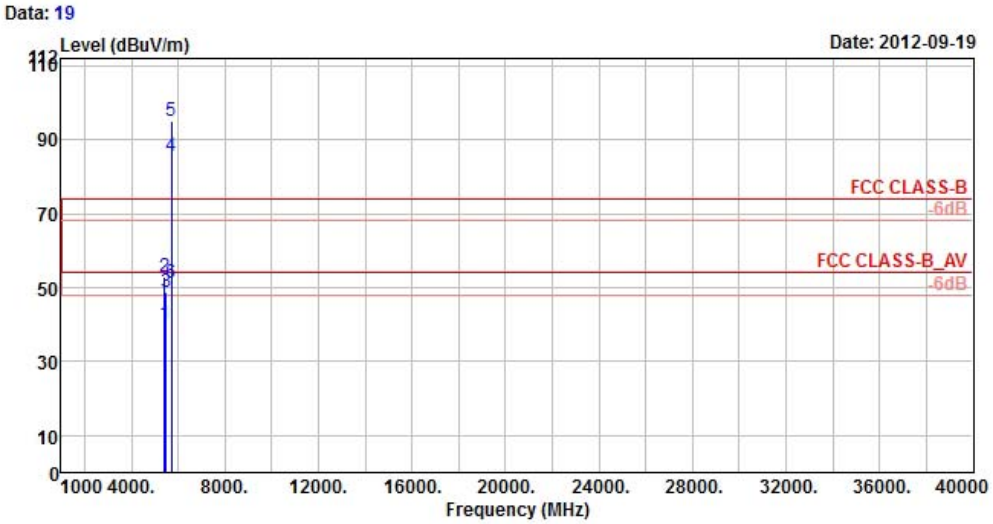
	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5410.00	40.10	37.89	54.00	-13.90	31.99	7.40	37.18	100	154	Average
2	5410.00	52.34	50.13	74.00	-21.66	31.99	7.40	37.18	100	154	Peak
3	5470.00	50.91	48.44	68.30	-17.39	32.02	7.53	37.08	100	154	Peak
4 pp	5580.00	86.58	84.03			32.14	7.57	37.16	100	154	Average
5 pk	5580.00	95.72	93.17			32.14	7.57	37.16	100	154	Peak
6	5725.00	50.58	47.94	68.30	-17.72	32.36	7.71	37.43	100	154	Peak

Data: 20



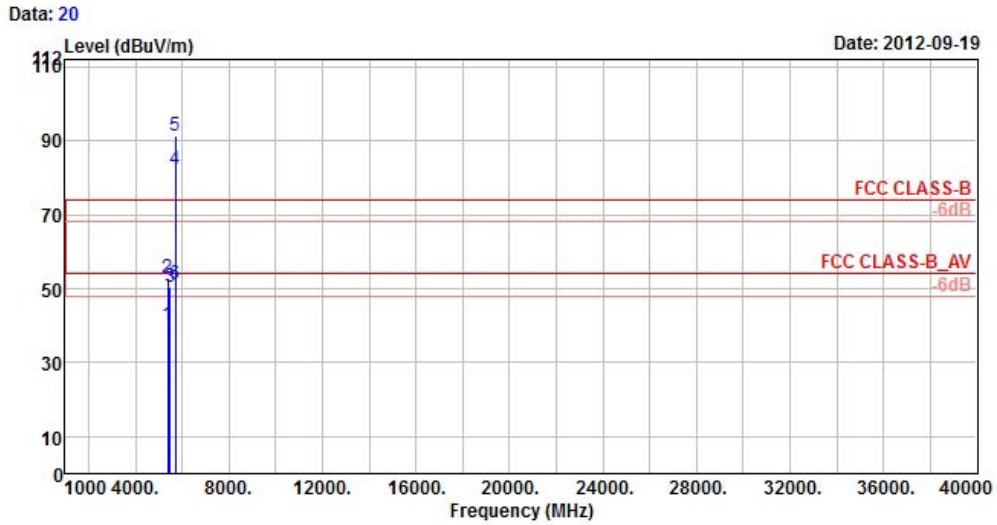
Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH116
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5380.00	32.74	30.54	54.00	-21.26	31.98	7.40	37.18	106	207	Average
2	5380.00	44.47	42.27	74.00	-29.53	31.98	7.40	37.18	106	207	Peak
3	5470.00	42.42	39.95	68.30	-25.88	32.02	7.53	37.08	106	207	Peak
4 pp	5580.00	78.79	76.24			32.14	7.57	37.16	106	207	Average
5 pk	5580.00	88.39	85.84			32.14	7.57	37.16	106	207	Peak
6	5725.00	42.24	39.60	68.30	-26.06	32.36	7.71	37.43	106	207	Peak



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF HORIZONTAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH140
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5432.00	40.14	37.79	54.00	-13.86	32.01	7.47	37.13	100	151	Average
2	5432.00	52.95	50.60	74.00	-21.05	32.01	7.47	37.13	100	151	Peak
3	5470.00	48.75	46.28	68.30	-19.55	32.02	7.53	37.08	100	151	Peak
4 pp	5700.00	85.44	82.84			32.31	7.69	37.40	100	151	Average
5 pk	5700.00	94.90	92.30			32.31	7.69	37.40	100	151	Peak
6	5725.00	51.17	48.53	68.30	-17.13	32.36	7.71	37.43	100	151	Peak

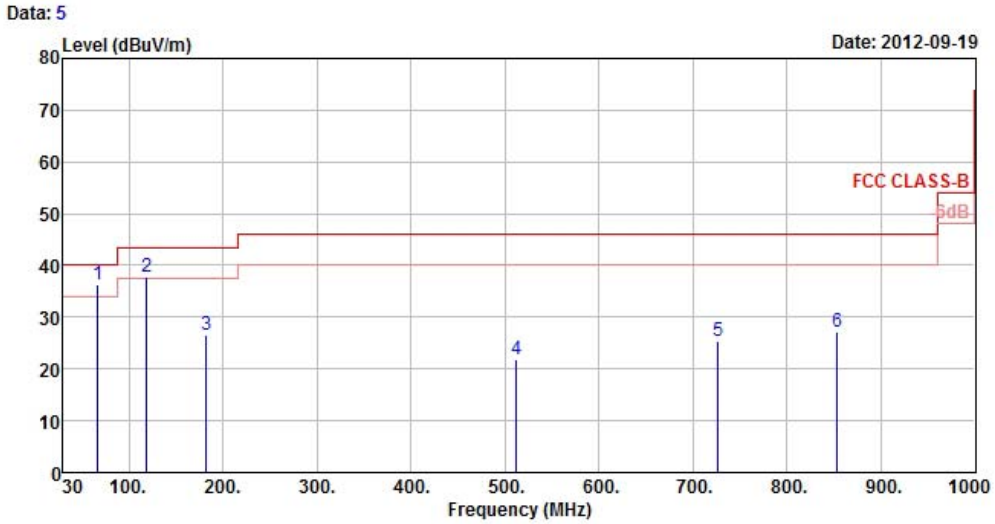


Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_18G~40G_HF VERTICAL
Brand/Model: F-04E
Remark : 11AN_HT20 TX CH140
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z
Rate : MCS0

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	5390.00	40.05	35.81	54.00	-13.95	31.98	7.40	35.14	108	244	Average
2	5390.00	52.88	48.64	74.00	-21.12	31.98	7.40	35.14	108	244	Peak
3	5470.00	50.60	46.18	68.30	-17.70	32.02	7.53	35.13	108	244	Peak
4 pp	5700.00	82.15	77.28			32.31	7.69	35.13	108	244	Average
5 pk	5700.00	91.35	86.48			32.31	7.69	35.13	108	244	Peak
6	5725.00	51.05	46.12	68.30	-17.25	32.36	7.71	35.14	108	244	Peak

BELOW 1GHz WORST-CASE DATA：802.11a

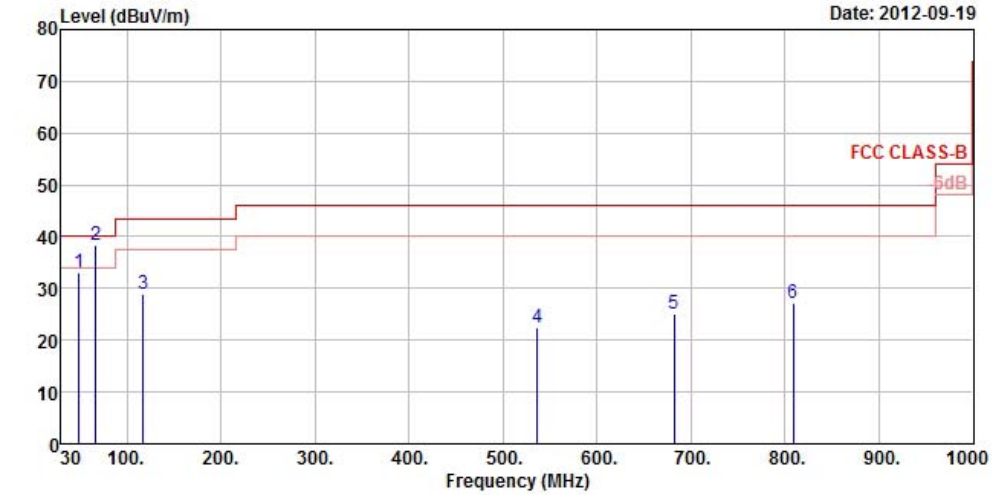
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_30M~1G_LF HORIZONTAL
Brand/Model: F-04E
Remark : WIFI TX LF(5G)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1 pp	66.99	36.22	55.90	40.00	-3.78	11.12	0.88	31.68	105	55	Peak
2 !	118.83	37.88	57.66	43.50	-5.62	10.93	1.18	31.89	133	274	Peak
3	182.01	26.55	46.25	43.50	-16.95	10.60	1.51	31.81	107	57	Peak
4	512.10	21.74	32.91	46.00	-24.26	17.60	2.82	31.59	100	274	Peak
5	726.30	25.53	32.45	46.00	-20.47	21.19	3.51	31.62	102	28	Peak
6	853.70	27.25	32.39	46.00	-18.75	22.91	3.83	31.88	100	331	Peak

Data: 6



Site : 966 Chamber 5
Condition : FCC CLASS-B 3m ANT_30M~1G_LF VERTICAL
Brand/Model: F-04E
Remark : WIFI TX LF(5G)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Z

	Freq	Level	Read Level	Limit Line	Over Limit	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB	dB	cm	deg	
1	48.63	33.01	50.32	40.00	-6.99	13.18	0.76	31.25	100	179	QP
2 pp	66.99	38.47	58.15	40.00	-1.53	11.12	0.88	31.68	100	350	QP
3 pk	116.94	29.06	49.03	43.50	-14.44	10.74	1.17	31.88	125	74	Peak
4	536.60	22.52	33.19	46.00	-23.48	18.15	2.90	31.72	100	133	Peak
5	682.20	25.12	33.00	46.00	-20.88	20.60	3.36	31.84	100	174	Peak
6	808.90	27.12	32.51	46.00	-18.88	22.34	3.72	31.45	100	112	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

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.

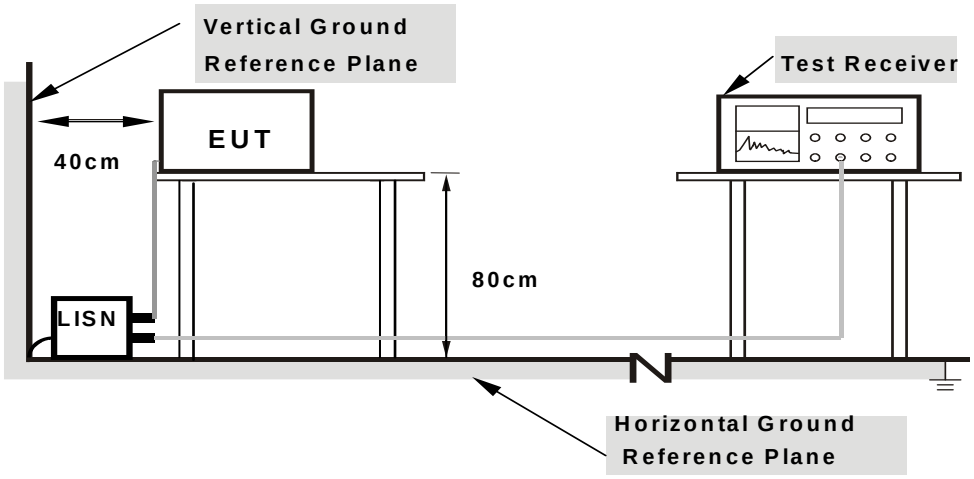
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

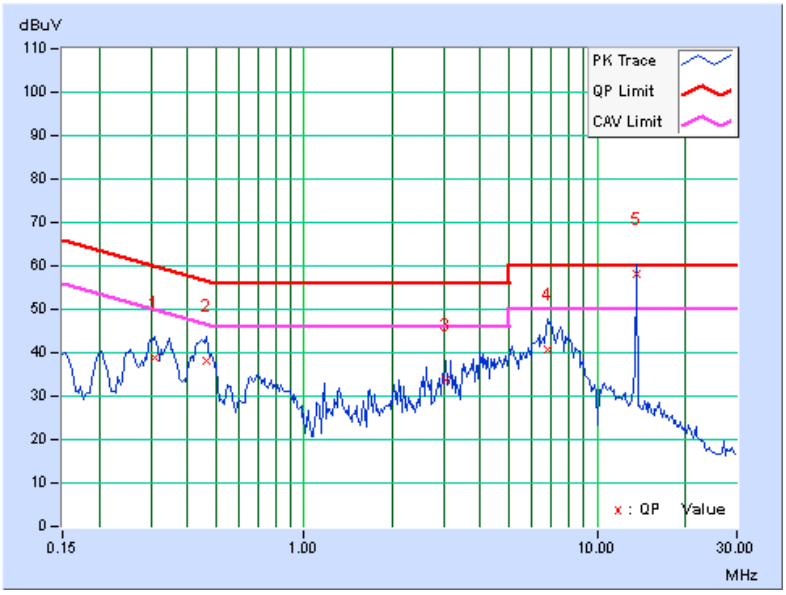
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA：802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.31016	0.16	38.76	33.04	38.92	33.20	59.97	49.97	-21.05	-16.77
2	0.46250	0.17	38.08	32.83	38.25	33.00	56.65	46.65	-18.40	-13.65
3	3.06250	0.30	33.24	25.11	33.54	25.41	56.00	46.00	-22.46	-20.59
4	6.77734	0.38	40.45	29.74	40.83	30.12	60.00	50.00	-19.17	-19.88
5	13.56250	0.50	57.54	47.39	58.04	47.89	60.00	50.00	-1.96	-2.11

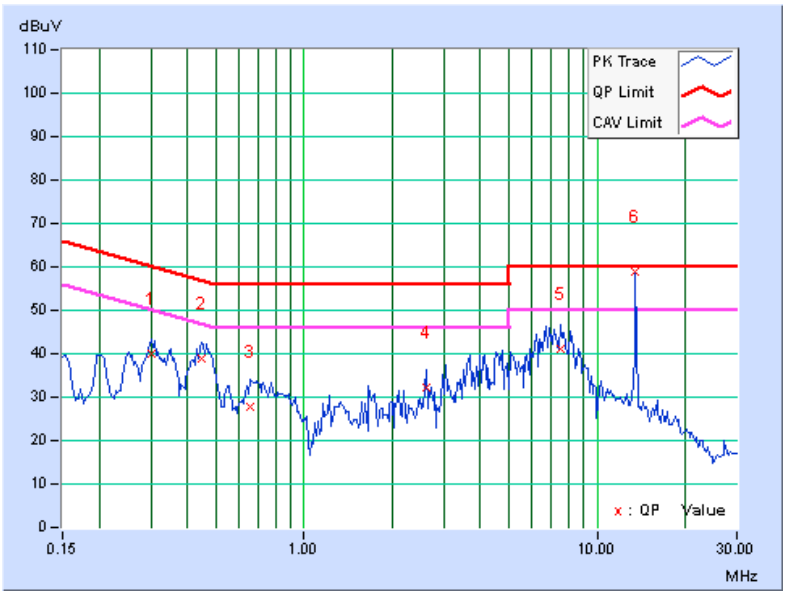
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading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



PHASE	Line 2	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.30234	0.15	39.97	35.12	40.12	35.27	60.18	50.18	-20.06	-14.91
2	0.44688	0.16	38.79	33.72	38.95	33.88	56.93	46.93	-17.98	-13.05
3	0.65391	0.17	27.68	20.60	27.85	20.77	56.00	46.00	-28.15	-25.23
4	2.61719	0.29	31.82	23.71	32.11	24.00	56.00	46.00	-23.89	-22.00
5	7.48438	0.43	40.78	30.49	41.21	30.92	60.00	50.00	-18.79	-19.08
6	**13.55859**	**0.57**	**58.26**	**47.82**	**58.83**	**48.39**	**60.00**	**50.00**	**-1.17**	**-1.61**

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

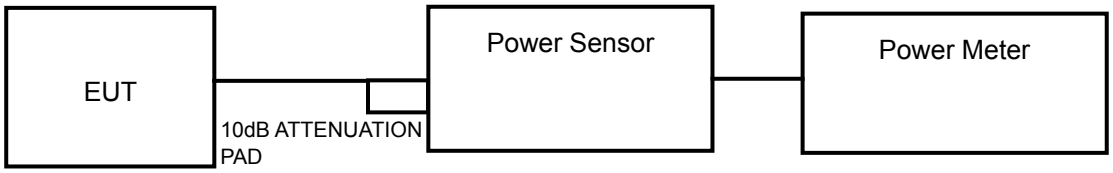
4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

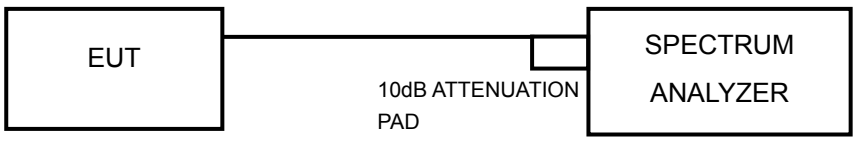
NOTE: Where B is the 26dB emission bandwidth in MHz.

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

Duty cycle of test signal is < 98 %. 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 was 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	7.94	9.00	17	PASS
44	5220	8.85	9.47	17	PASS
48	5240	8.20	9.14	17	PASS
52	5260	7.55	8.78	24	PASS
60	5300	8.18	9.13	24	PASS
64	5320	7.35	8.66	24	PASS
100	5500	9.02	9.55	24	PASS
116	5580	7.87	8.96	24	PASS
140	5700	7.59	8.80	24	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	7.03	8.47	17	PASS
44	5220	7.94	9.00	17	PASS
48	5240	7.05	8.48	17	PASS
52	5260	7.62	8.82	24	PASS
60	5300	7.69	8.86	24	PASS
64	5320	6.93	8.41	24	PASS
100	5500	8.39	9.24	24	PASS
116	5580	7.24	8.60	24	PASS
140	5700	7.85	8.95	24	PASS

26dB BANDWIDTH: 802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	23.17	PASS
44	5220	22.49	PASS
48	5240	23.12	PASS
52	5260	23.41	PASS
60	5300	22.80	PASS
64	5320	23.30	PASS
100	5500	22.86	PASS
116	5580	22.83	PASS
140	5700	22.97	PASS

802.11n (20MHz)

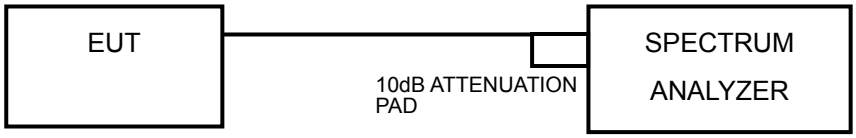
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
36	5180	24.43	PASS
44	5220	24.68	PASS
48	5240	23.92	PASS
52	5260	23.96	PASS
60	5300	24.58	PASS
64	5320	24.18	PASS
100	5500	24.25	PASS
116	5580	23.96	PASS
140	5700	24.05	PASS

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

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = 4 second.
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	-1.27	0.35	-0.92	4	PASS
44	5220	-0.01	0.35	0.34	4	PASS
48	5240	-0.97	0.35	-0.62	4	PASS
52	5260	-1.28	0.35	-0.93	11	PASS
60	5300	-1.38	0.35	-1.03	11	PASS
64	5320	-1.62	0.35	-1.27	11	PASS
100	5500	-0.97	0.35	-0.62	11	PASS
116	5580	-1.75	0.35	-1.40	11	PASS
140	5700	-1.31	0.35	-0.96	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	-2.31	0.38	-1.93	4	PASS
44	5220	-1.44	0.38	-1.06	4	PASS
48	5240	-1.58	0.38	-1.20	4	PASS
52	5260	-1.15	0.38	-0.77	11	PASS
60	5300	-1.58	0.38	-1.20	11	PASS
64	5320	-2.34	0.38	-1.96	11	PASS
100	5500	-1.11	0.38	-0.73	11	PASS
116	5580	-1.78	0.38	-1.40	11	PASS
140	5700	-2.23	0.38	-1.85	11	PASS

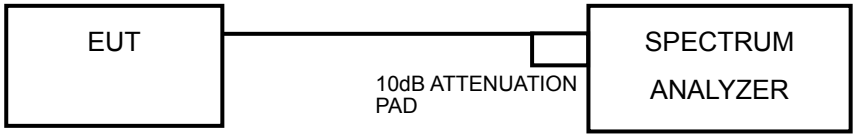
NOTE: Refer to section 3.3 for duty cycle spectrum plot.

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 ≥ 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

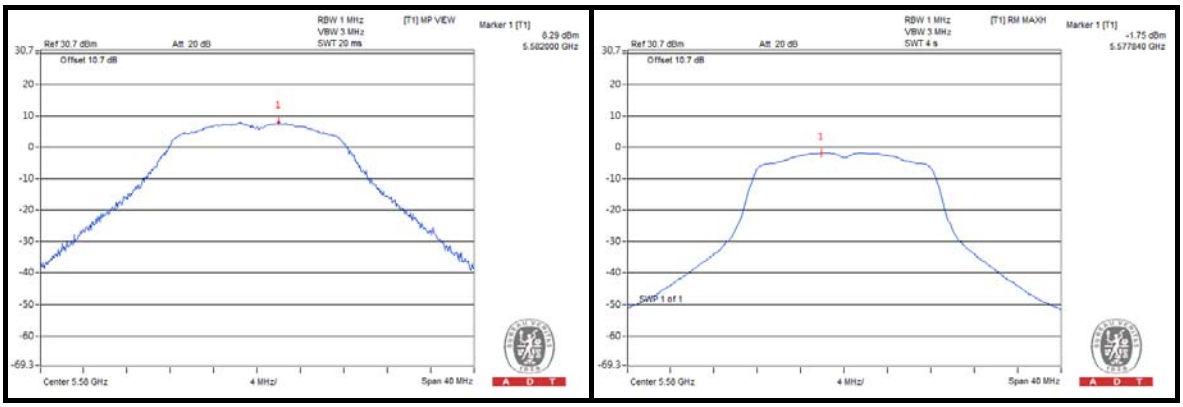
Same as 4.2.6

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	7.65	-1.27	-0.92	8.57	13	PASS
44	5220	9.16	-0.01	0.34	8.82	13	PASS
48	5240	8.06	-0.97	-0.62	8.68	13	PASS
52	5260	8.36	-1.28	-0.93	9.29	13	PASS
60	5300	8.03	-1.38	-1.03	9.06	13	PASS
64	5320	8.37	-1.62	-1.27	9.64	13	PASS
100	5500	8.69	-0.97	-0.62	9.31	13	PASS
116	5580	8.29	-1.75	-1.40	9.69	13	PASS
140	5700	7.78	-1.31	-0.96	8.74	13	PASS

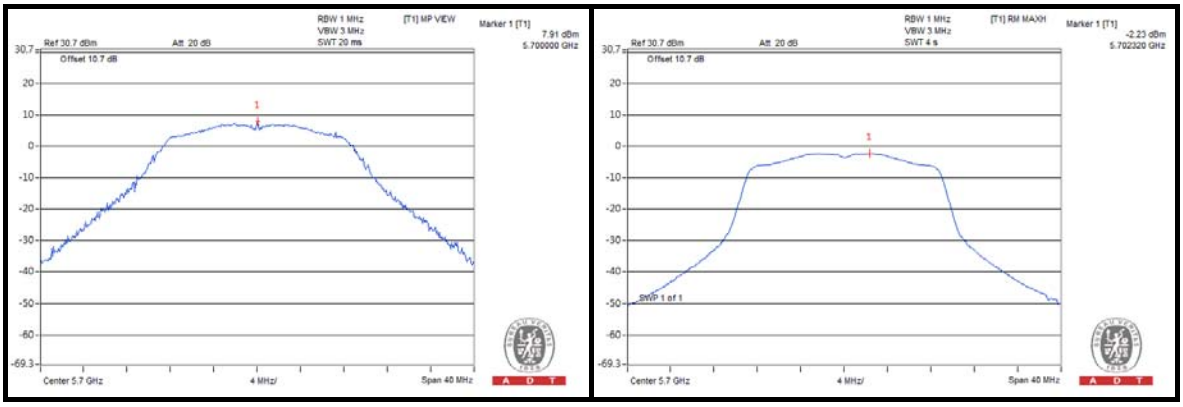
NOTE: Refer to section 3.3 for duty cycle spectrum plot.



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	6.96	-2.31	-1.93	8.89	13	PASS
44	5220	7.98	-1.44	-1.06	9.04	13	PASS
48	5240	7.90	-1.58	-1.20	9.10	13	PASS
52	5260	8.82	-1.15	-0.77	9.59	13	PASS
60	5300	7.50	-1.58	-1.20	8.70	13	PASS
64	5320	6.50	-2.34	-1.96	8.46	13	PASS
100	5500	8.35	-1.11	-0.73	9.08	13	PASS
116	5580	6.93	-1.78	-1.40	8.33	13	PASS
140	5700	7.91	-2.23	-1.85	9.76	13	PASS

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

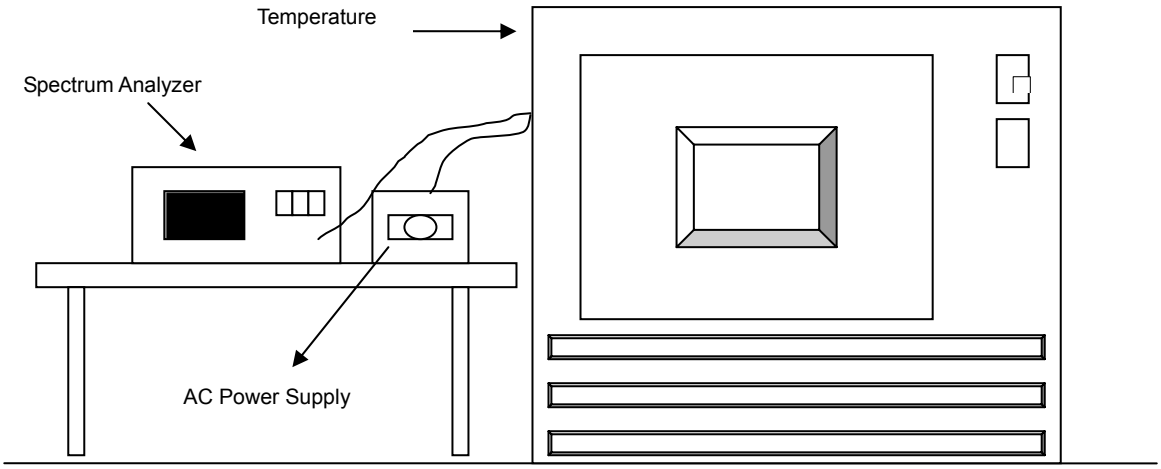


4.6 FREQUENCY STABILITY

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. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

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

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	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)
60	3.8	5320.012346	2.321	5320.012000	2.256	5320.011863	2.230	5320.011919	2.240
50	3.8	5320.012543	2.358	5320.012831	2.412	5320.012121	2.278	5320.012136	2.281
40	3.8	5320.013993	2.630	5320.013768	2.588	5320.013625	2.561	5320.013735	2.582
30	3.8	5320.016419	3.086	5320.016992	3.194	5320.016484	3.098	5320.016202	3.045
20	3.8	5320.014898	2.800	5320.015069	2.833	5320.015032	2.826	5320.015109	2.840
10	3.8	5320.015100	2.838	5320.014820	2.786	5320.014998	2.819	5320.015070	2.833
0	3.8	5320.013811	2.596	5320.013716	2.578	5320.013949	2.622	5320.013610	2.558
-10	3.8	5320.012610	2.370	5320.012629	2.374	5320.012644	2.377	5320.012831	2.412
-20	3.8	5320.012156	2.285	5320.011872	2.232	5320.011798	2.218	5320.012380	2.327

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	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)
20	3.4	5320.014175	2.664	5320.014288	2.686	5320.014630	2.750	5320.014234	2.676
	3.8	5320.014898	2.800	5320.015069	2.833	5320.015032	2.826	5320.015109	2.840
	4.18	5320.016713	3.142	5320.016262	3.057	5320.016434	3.089	5320.016403	3.083

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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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.

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