



FCC TEST REPORT (15.407)

REPORT NO.: RF951026H01

MODEL NO.: AP-5181

RECEIVED: Oct. 26, 2006

TESTED: Dec. 15 to 22, 2006

ISSUED: Dec. 26, 2006

APPLICANT: Symbol Technologies Inc.

ADDRESS: One Symbol Plaza, Holtsville, NY 11742- 1300
U.S.A.

ISSUED BY: Advance Data Technology Corporation

TEST LOCATION: No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung
Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien,
Taiwan, R.O.C.

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No. 2177-01

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1. CERTIFICATION

PRODUCT: Symbol Access Point
BRAND NAME: Symbol
MODEL NO.: AP-5181
TEST SAMPLE: R&D SAMPLE
TESTED: Dec. 15 to 22, 2006
APPLICANT: Symbol Technologies Inc.
STANDARDS: FCC Part 15, Subpart E (Section 15.407)
ANSI C63.4-2003

The above equipment (Model: AP-5181) has been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Midoli Peng , **DATE:** Dec. 26, 2006
(Midoli Peng)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Dec. 26, 2006
Responsible for RF (Hank Chung)

APPROVED BY : May Chen , **DATE:** Dec. 26, 2006
(May Chen, Deputy 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)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.86dB at 19.707MHz
15.407(b/1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -0.6dB at 5144.0MHz
15.407(a/1/2/3)	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/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

NOTE:

1. The EUT was operating in 2.412 ~ 2.462GHz, 5.150 ~ 5.250GHz and 5.725 ~ 5.850GHz frequencies band. This report was recorded the RF parameters including 5.150 ~ 5.250GHz and 5.725 ~ 5.825GHz. For the 2.412 ~ 2.462GHz and 5.725 ~ 5.850GHz RF parameters was recorded in another test report.

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:

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

Measurement	Value
Conducted emissions	2.26 dB
Radiated emissions (30MHz-1GHz)	2.98 dB
Radiated emissions (1GHz -18GHz)	2.91 dB
Radiated emissions (18GHz -40GHz)	1.88 dB



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Symbol Access Point
MODEL NO.	AP-5181
FCC ID	H9PAP5181D
POWER SUPPLY	DC 48V from POE (Power over Ethernet)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps
FREQUENCY RANGE	For 15.407 802.11a: 5.15 ~ 5.25GHz and 5.725 ~ 5.825GHz For 15.247 802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.725 ~ 5.850GHz
NUMBER OF CHANNEL	For 15.407 802.11a (5.15 ~ 5.25GHz):4 802.11a (5.725 ~ 5.825GHz):4 For 15.247 802.11b & 802.11g: 11 802.11a (5.725 ~ 5.850GHz):5
CHANNEL SPACING	802.11b & 802.11g: 5MHz 802.11a: 20MHz for Normal mode
OUTPUT POWER	Please see note 4 (on next page)
DATA CABLE	NA
ANTENNA TYPE	Please see note 3 (on next page)
I/O PORTS	Console Port x1, LAN Port x1, WAN Port x1
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.

2. The EUT was operated with the following POE::

POE (Only for test, not for sale)	
BRAND:	Symbol
MODEL:	AP-PSBIAS-1P2-AFR
INPUT:	AC100~250V,0.5A, 60/50Hz
OUTPUT:	DC 48V, 0.35A

3. There are six antennas provided to this EUT, please refer to the following table:

For 2.4GHz				
No.	Model No.	Gain (dBi)	Antenna Type	Connector
1	ML-2499-FHPA5-01R	7.7	Omni	Type-N(m)
2	ML-2499-FHPA9-01R	9	Omni	Type-N(m)
3	* ML-2452-PNA7-01R	7.8	Panel	Type-N(m)
4	* ML-2452-PNA5-01R	4.5	Panel	Type-N(m)
For 5GHz				
No.	Model No.	Gain (dBi)	Antenna Type	Connector
A	* ML-2452-PNA7-01R	4.9-5.25: 7.0 5.25-5.9: 10.7	Panel	Type-N(m)
B	* ML-2452-PNA5-01R	4.9-5.25: 5 5.25-5.9: 7.5	Panel	Type-N(m)
C	ML-5299-FHPA10-01R	10	Omni	Type-N(m)
D	ML-5299-FHPA6-01R	8	Omni	Type-N(m)
Note:				
1. "*" is a Dual Band antenna can be used in both 2.4GHz and 5GHz.				

4. Peak output power (Unit : mW) :

For 2.4GHz

Operated in 2412 ~ 2462MHz

802.11b:

No.	Symbol P/N (Antenna)	Operating Frequency (MHz)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
1	ML-2499-FHPA5-01R	23.442	53.703	20.893
2	ML-2499-FHPA9-01R	11.220	42.658	11.220
3	ML-2452-PNA7-01R	12.882	43.652	12.589
4	ML-2452-PNA5-01R	10.000	33.113	9.333

802.11g:

No.	Symbol P/N (Antenna)	Operating Frequency (MHz)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462MHz (Ch11)
1	ML-2499-FHPA5-01R	46.774	95.499	35.481
2	ML-2499-FHPA9-01R	23.442	60.256	17.783
3	ML-2452-PNA7-01R	31.623	66.069	17.783
4	ML-2452-PNA5-01R	21.380	67.608	15.136

For 5GHz

Operated in 5150 ~ 5250MHz, 5725MHz ~ 5825MHz band:

<FCC Part 15, Subpart C (Section 15.407)>

No.	Symbol P/N (Antenna)	Operating Frequency (MHz)				
		5180MHz (Ch1)	5240MHz (Ch4)	5745MHz (Ch5)	5785MHz (Ch7)	5805MHz (Ch8)
A	ML-2452-PNA7-01R	37.757	37.931	29.174	99.541	23.823
B	ML-2452-PNA5-01R	47.643	47.315	29.174	99.541	29.040
C	ML-5299-FHPA10-01R	17.906	18.578	24.044	99.541	36.898
D	ML-5299-FHPA6-01R	29.580	27.102	16.444	99.541	15.560

For 5GHz

Operated in 5725 ~ 5850MHz band:

<FCC Part 15, Subpart C (Section 15.247)>

No.	Symbol P/N (Antenna)	Operating Frequency (MHz)		
		5745MHz (Ch1)	5785MHz (Ch3)	5825MHz (Ch5)
A	ML-2452-PNA7-01R	79.433	69.183	54.954
B	ML-2452-PNA5-01R	79.433	69.183	54.954
C	ML-5299-FHPA10-01R	79.433	69.183	54.954
D	ML-5299-FHPA6-01R	79.433	69.183	54.954

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

3.2 DESCRIPTION OF TEST MODES

Eight channels are provided to this EUT for normal mode.

Operated in 5150 ~ 5250MHz band:

Operated in 5725 ~ 5825MHz band:

Channel	Frequency
1	5180 MHz
2	5200 MHz
3	5220 MHz
4	5240 MHz
5	5745 MHz
6	5765 MHz
7	5785 MHz
8	5805 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	√	NA

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

Power Line Conducted Emission Test:

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

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	1 to 8	8	OFDM	BPSK	6

Radiated Emission Test (Below 1 GHz):

- 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	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	1 to 8	8	OFDM	BPSK	6

- : The EUT was tested with the following modes:

Test Mode	Description
Mode 1	5G Port : Antenna A + 2.4G Port : Antenna 2(as terminator)
Mode 2	5G Port : Antenna C + 2.4G Port : Antenna 2(as terminator)

Radiated Emission Test (Above 1 GHz):

- 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	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	1 to 8	1, 4, 5, 7, 8	OFDM	BPSK	6

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	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	1 to 8	1	OFDM	BPSK	6

Antenna Port Conducted Measurement:

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

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	1 to 8	1, 4, 5, 7, 8	OFDM	BPSK	6

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Symbol Access Point. 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 C63.4-2003

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

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



3.4 DESCRIPTION OF SUPPORT UNITS

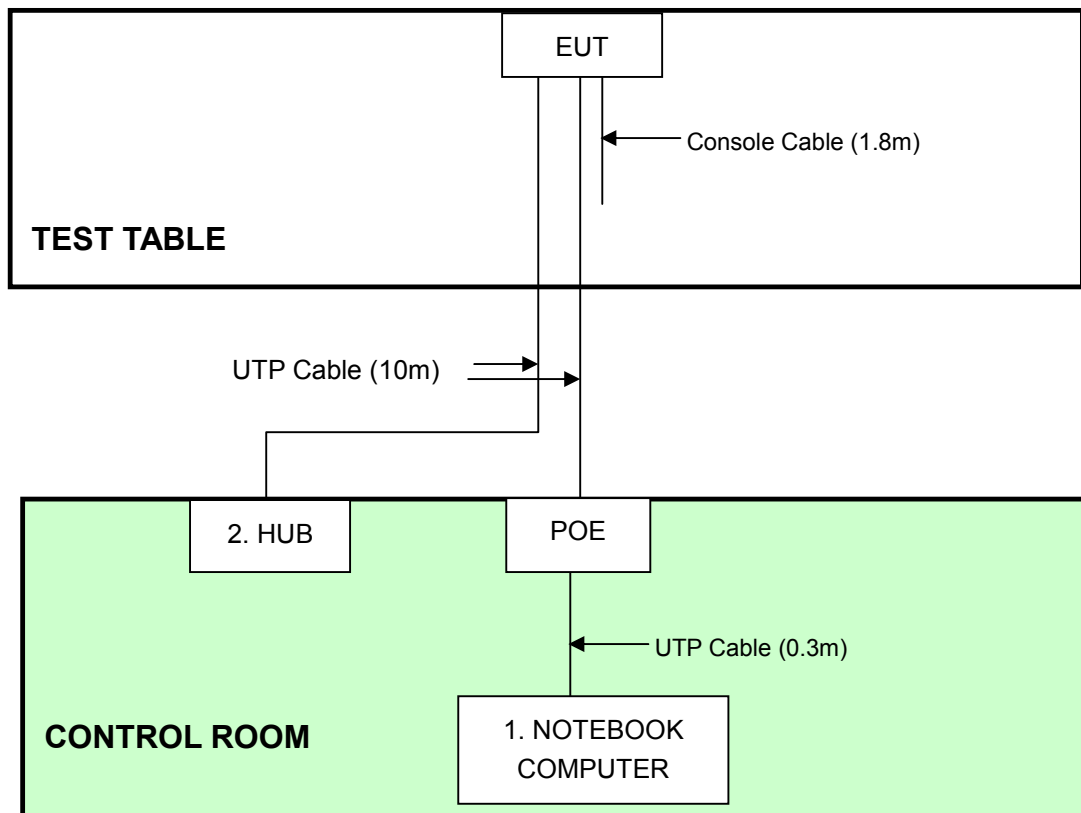
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP18L	6976685584	FCC DoC
2	HUB	AVSYS	110H8	01-20E-000006	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Support units 1~2 were kept in the control room during the test.

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver	ESCS 30	847124/029	Dec. 15, 2007
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 26, 2007
Line-Impedance Stabilization Network(for Peripheral)	KNW-407	8/1395/12	Aug. 15, 2007
RF Cable (JETBAO)	RG233/U	Cable_CB_01	Dec. 09, 2007
Terminator	50	2	Oct. 19, 2007
Software	ADT_Cond_V7.3.2	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 ADT Shielded Room No. B.
 3. The VCCI Con B Registration No. is C-2193.

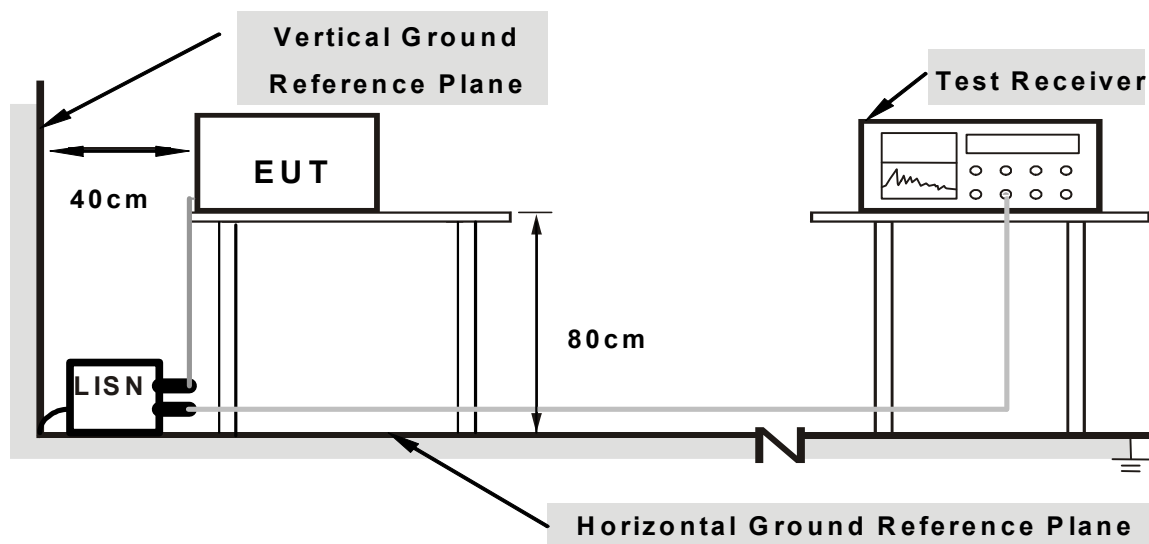
4.1.3 TEST PROCEDURES

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared other computer systems to act as a communication partner and placed them outside of testing area.
- c. The communication partner run test program “Wintron V00.02” to enable EUT under transmission/receiving condition continuously at specific channel frequency via UTP cable and wireless.

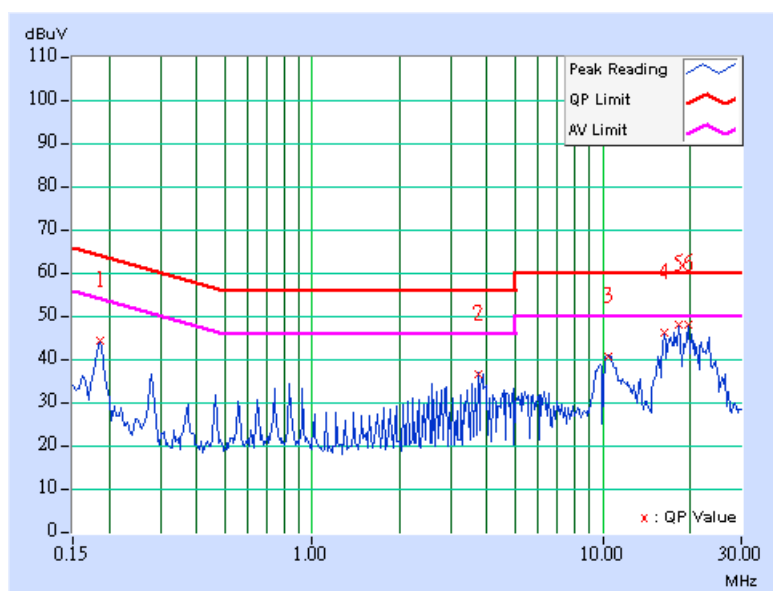
4.1.7 TEST RESULTS

Conducted Worst-Case Data

MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TRANSFER RATE	6Mbps
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 961hPa	PHASE	Line (L)
TESTED BY	Tony Chen		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.185	9.60	34.24	-	43.84	-	64.25
2	3.711	9.70	26.60	-	36.30	-	56.00	46.00	-19.70	-
3	10.395	9.92	30.66	-	40.58	-	60.00	50.00	-19.42	-
4	16.230	10.10	36.34	-	46.44	-	60.00	50.00	-13.56	-
5	18.242	10.10	37.98	-	48.08	-	60.00	50.00	-11.92	-
6	19.707	10.10	38.04	-	48.14	-	60.00	50.00	-11.86	-

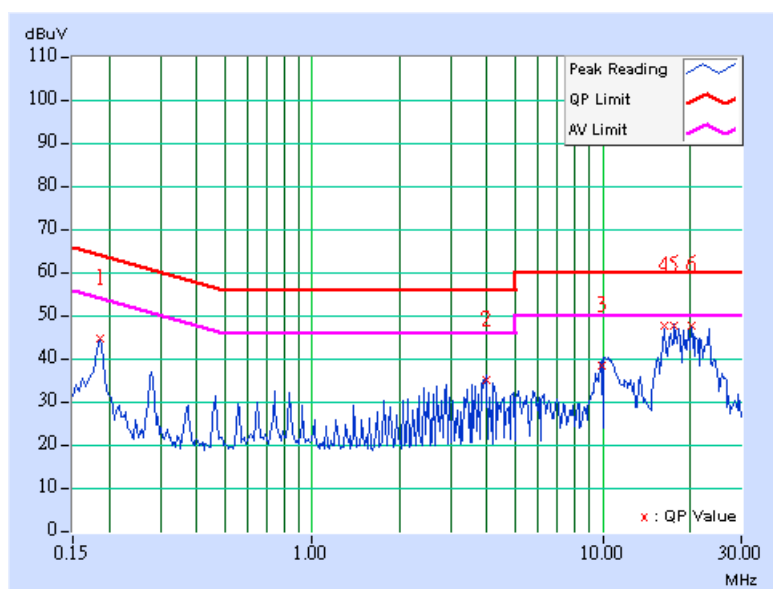
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TRANSFER RATE	6Mbps
ENVIRONMENTAL CONDITIONS	20deg. C, 63%RH, 961hPa	PHASE	Neutral (N)
TESTED BY	Tony Chen		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.185	9.60	34.62	-	44.22	-	64.25
2	3.992	9.70	25.00	-	34.70	-	56.00	46.00	-21.30	-
3	9.934	9.90	28.44	-	38.34	-	60.00	50.00	-21.66	-
4	16.227	10.02	37.64	-	47.66	-	60.00	50.00	-12.34	-
5	17.691	10.05	37.66	-	47.71	-	60.00	50.00	-12.29	-
6	20.258	10.10	37.68	-	47.78	-	60.00	50.00	-12.22	-

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



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dB μ V/m) *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

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

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 03, 2007
HP Pre_Amplifier	8449B	3008A01922	Sep. 18, 2007
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Sep. 20, 2007
CHASE Broadband Antenna	VULB9168	138	Dec. 11, 2007
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 27, 2006
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 05, 2007
SCHWARZBECK Biconical Antenna	VHBA9123	459	Jun. 08, 2009
SCHWARZBECK Periodic Antenna	UPA6108	1148	Jun. 08, 2009
R&S Loop Antenna	HFH2-Z2	881058/15	Nov. 29, 2007
RF Switches (ARNITSU)	CS-201	1565157	NA
RF CABLE (Chaintek)	SF102	22054-2	Nov. 14. 2007
RF Cable(RICHTEC)	9913-30M N-N Cable	STCCAB-30M-1 GHz	Jul. 15, 2007
Software	ADT_Radiated_V 5.14	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

- Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Biconical and Periodic Antenna) and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 4824A-3.

4.2.4 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.

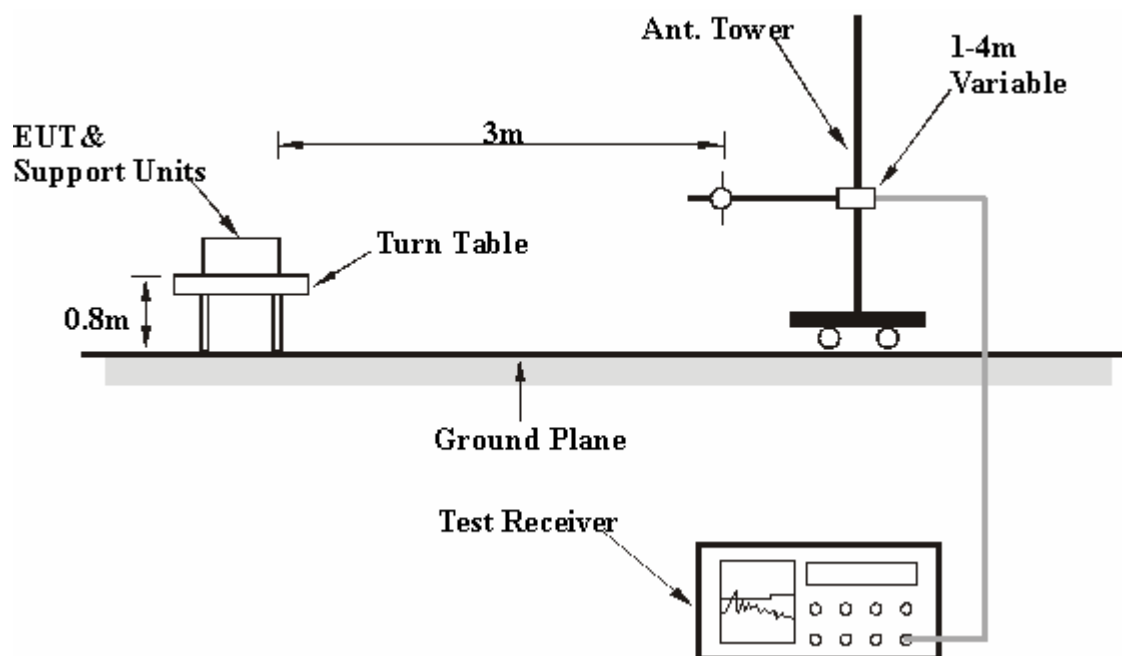
NOTE:

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 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS

Below 1GHz Worst-Case Data

TEST MODE	Mode 1	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 59%RH, 961hPa	TESTED BY	Tony Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	280.00	34.20 QP	46.00	-11.80	1.08 H	49	18.30	15.90
2	440.00	32.10 QP	46.00	-13.90	1.00 H	36	11.90	20.20
3	480.00	36.60 QP	46.00	-9.40	1.11 H	91	15.40	21.20
4	520.00	32.60 QP	46.00	-13.40	1.21 H	87	10.20	22.40
5	600.00	32.60 QP	46.00	-13.40	1.52 H	20	8.10	24.50
6	880.00	35.20 QP	46.00	-10.80	1.15 H	121	6.50	28.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.52	33.30 QP	40.00	-6.70	1.22 V	333	18.90	14.50
2	440.00	31.30 QP	46.00	-14.70	1.07 V	359	11.10	20.20
3	480.00	30.30 QP	46.00	-15.70	1.04 V	181	9.00	21.20
4	520.00	30.30 QP	46.00	-15.70	1.00 V	286	7.90	22.40
5	600.00	30.60 QP	46.00	-15.40	1.02 V	8	6.10	24.50
6	920.00	35.00 QP	46.00	-11.00	1.04 V	19	5.70	29.30

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

Below 1GHz Worst-Case Data

TEST MODE	Mode 2	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	27deg. C, 59%RH, 961hPa	TESTED BY	Tony Chen

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	280.00	28.50 QP	46.00	-17.50	1.62 H	17	12.60	15.90
2	440.00	32.20 QP	46.00	-13.80	1.22 H	331	12.00	20.20
3	480.00	34.60 QP	46.00	-11.40	1.18 H	72	13.40	21.20
4	520.00	30.70 QP	46.00	-15.30	1.10 H	326	8.40	22.40
5	600.00	33.10 QP	46.00	-12.90	1.02 H	125	8.70	24.50
6	880.00	33.90 QP	46.00	-12.10	1.00 H	327	5.20	28.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.77	33.90 QP	40.00	-6.10	1.25 V	44	19.50	14.50
2	440.00	38.00 QP	46.00	-8.00	1.05 V	0	17.80	20.20
3	480.00	36.20 QP	46.00	-9.80	1.01 V	1	15.00	21.20
4	520.00	32.10 QP	46.00	-13.90	1.03 V	199	9.80	22.40
5	600.00	32.30 QP	46.00	-13.70	1.08 V	157	7.80	24.50
6	920.00	35.80 QP	46.00	-10.20	1.10 V	72	6.60	29.30

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

4.2.9 TEST RESULTS (ANTENNA A)

802.11a OFDM modulation

CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 961hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5144.00	50.60 PK	74.00	-23.40	1.35 H	315	14.20	36.40
1	#5144.00	39.10 AV	54.00	-14.90	1.35 H	315	2.70	36.40
2	#5150.00	48.30 PK	74.00	-25.70	1.35 H	315	11.90	36.40
2	#5150.00	37.00 AV	54.00	-17.00	1.35 H	315	0.60	36.40
3	*5180.00	100.80 PK			1.35 H	315	64.40	36.40
3	*5180.00	90.20 AV			1.35 H	315	53.80	36.40
4	10360.00	58.00 PK	68.30	-10.30	1.28 H	160	12.50	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5144.00	64.80 PK	74.00	-9.20	1.00 V	355	28.40	36.40
1	#5144.00	53.40 AV	54.00	-0.60	1.00 V	355	17.00	36.40
2	#5150.00	62.50 PK	74.00	-11.50	1.00 V	355	26.10	36.40
2	#5150.00	51.30 AV	54.00	-2.70	1.00 V	355	14.90	36.40
3	*5180.00	115.00 PK			1.00 V	355	78.60	36.40
3	*5180.00	104.50 AV			1.00 V	355	68.10	36.40
4	10360.00	62.60 PK	68.30	-5.70	1.08 V	192	17.10	45.50

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 961hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	101.00 PK			1.37 H	320	64.50	36.50
1	*5240.00	90.60 AV			1.37 H	320	54.10	36.50
2	10480.00	58.90 PK	68.30	-9.40	1.26 H	125	13.20	45.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	115.00 PK			1.00 V	353	78.50	36.50
1	*5240.00	104.40 AV			1.00 V	353	67.90	36.50
2	10480.00	61.60 PK	68.30	-6.70	1.18 V	193	15.90	45.70

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.

CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.00	67.20 PK	68.30	-1.10	1.01 H	152	29.70	37.50
2	5715.00	67.10 PK	68.30	-1.20	1.01 H	152	29.50	37.60
3	5725.00	67.40 PK	78.30	-10.90	1.01 H	152	29.80	37.60
4	*5745.00	102.40 PK			1.01 H	152	64.80	37.60
4	*5745.00	90.10 AV			1.01 H	152	52.50	37.60
5	#11490.00	56.90 PK	74.00	-17.10	1.00 H	251	9.90	47.00
5	#11490.00	44.00 AV	54.00	-10.00	1.00 H	251	-3.00	47.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.00	67.10 PK	68.30	-1.20	1.45 V	175	29.60	37.50
2	5715.00	67.30 PK	68.30	-1.00	1.45 V	175	29.70	37.60
3	5725.00	76.20 PK	78.30	-2.10	1.45 V	175	38.60	37.60
4	*5745.00	112.50 PK			1.45 V	175	74.90	37.60
4	*5745.00	101.20 AV			1.45 V	175	63.60	37.60
5	#11490.00	58.30 PK	74.00	-15.70	1.25 V	233	11.30	47.00
5	#11490.00	45.10 AV	54.00	-8.90	1.25 V	233	-1.90	47.00

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	67.00 PK	68.30	-1.30	1.00 H	153	29.44	37.56
2	5725.00	67.10 PK	78.30	-11.20	1.00 H	153	29.51	37.59
3	*5785.00	106.00 PK			1.00 H	153	68.26	37.74
3	*5785.00	94.60 AV			1.00 H	153	56.86	37.74
4	5825.00	68.30 PK	78.30	-10.00	1.00 H	153	30.46	37.84
5	5835.00	66.80 PK	68.30	-1.50	1.00 H	153	28.94	37.86
6	#11570.00	56.92 PK	74.00	-17.08	1.09 H	243	9.97	46.95
6	#11570.00	44.02 AV	54.00	-9.98	1.09 H	243	-2.93	46.95

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	67.30 PK	68.30	-1.00	1.37 V	181	29.74	37.56
2	5725.00	69.90 PK	78.30	-8.40	1.37 V	181	32.31	37.59
3	*5785.00	117.60 PK			1.37 V	181	79.86	37.74
3	*5785.00	106.40 AV			1.37 V	181	68.66	37.74
4	5825.00	73.50 PK	78.30	-4.80	1.37 V	181	35.66	37.84
5	5835.00	67.40 PK	68.30	-0.90	1.37 V	181	29.54	37.86
6	#11570.00	58.02 PK	74.00	-15.98	1.25 V	208	11.07	46.95
6	#11570.00	44.92 AV	54.00	-9.08	1.25 V	208	-2.03	46.95

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	101.20 PK			1.07 H	154	63.41	37.79
1	*5805.00	88.40 AV			1.07 H	154	50.61	37.79
2	5825.00	67.10 PK	78.30	-11.20	1.07 H	154	29.26	37.84
3	5835.00	66.80 PK	68.30	-1.50	1.07 H	154	28.94	37.86
4	#11610.00	56.97 PK	74.00	-17.03	1.08 H	244	10.06	46.91
4	#11610.00	44.17 AV	54.00	-9.83	1.08 H	244	-2.74	46.91

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	110.60 PK			1.38 V	189	72.81	37.79
1	*5805.00	99.40 AV			1.38 V	189	61.61	37.79
2	5825.00	76.00 PK	78.30	-2.30	1.38 V	189	38.16	37.84
3	5835.00	67.00 PK	68.30	-1.30	1.38 V	189	29.14	37.86
4	#11610.00	57.87 PK	74.00	-16.13	1.23 V	203	10.96	46.91
4	#11610.00	44.77 AV	54.00	-9.23	1.23 V	203	-2.14	46.91

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

4.2.10 TEST RESULTS (ANTENNA B)

802.11a OFDM modulation

CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 961hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5144.00	47.60 PK	74.00	-26.40	1.22 H	281	11.20	36.40
1	#5144.00	36.10 AV	54.00	-17.90	1.22 H	281	-0.30	36.40
2	#5150.00	46.20 PK	74.00	-27.80	1.22 H	281	9.80	36.40
2	#5150.00	34.30 AV	54.00	-19.70	1.22 H	281	-2.10	36.40
3	*5180.00	98.10 PK			1.22 H	281	61.70	36.40
3	*5180.00	87.50 AV			1.22 H	281	51.10	36.40
4	10360.00	59.00 PK	68.30	-9.30	1.30 H	190	13.50	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5144.00	63.10 PK	74.00	-10.90	1.07 V	353	26.70	36.40
1	#5144.00	51.50 AV	54.00	-2.50	1.07 V	353	15.10	36.40
2	#5150.00	61.70 PK	74.00	-12.30	1.07 V	353	25.30	36.40
2	#5150.00	49.70 AV	54.00	-4.30	1.07 V	353	13.30	36.40
3	*5180.00	113.60 PK			1.07 V	353	77.20	36.40
3	*5180.00	102.90 AV			1.07 V	353	66.50	36.40
4	10360.00	62.80 PK	68.30	-5.50	1.08 V	192	17.30	45.50

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 961hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	98.90 PK			1.22 H	295	62.40	36.50
1	*5240.00	88.50 AV			1.22 H	295	52.00	36.50
2	10480.00	59.00 PK	68.30	-9.30	1.31 H	124	13.30	45.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	113.80 PK			1.06 V	355	77.30	36.50
1	*5240.00	103.30 AV			1.06 V	355	66.80	36.50
2	10480.00	61.30 PK	68.30	-7.00	1.19 V	192	15.60	45.70

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.

CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.00	65.10 PK	68.30	-3.20	1.00 H	343	27.60	37.50
2	5715.00	65.30 PK	68.30	-3.00	1.00 H	343	27.70	37.60
3	5725.00	65.90 PK	78.30	-12.40	1.00 H	343	28.30	37.60
4	*5745.00	94.00 PK			1.00 H	343	56.40	37.60
4	*5745.00	82.30 AV			1.00 H	343	44.70	37.60
5	#11490.00	53.30 PK	74.00	-20.70	1.10 H	298	6.30	47.00
5	#11490.00	40.90 AV	54.00	-13.10	1.10 H	298	-6.10	47.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.00	67.20 PK	68.30	-1.10	1.31 V	262	29.70	37.50
2	5715.00	67.50 PK	68.30	-0.80	1.31 V	262	29.90	37.60
3	5725.00	76.60 PK	78.30	-1.70	1.31 V	262	39.00	37.60
4	*5745.00	112.40 PK			1.31 V	262	74.80	37.60
4	*5745.00	101.80 AV			1.31 V	262	64.20	37.60
5	#11490.00	56.50 PK	74.00	-17.50	1.30 V	254	9.50	47.00
5	#11490.00	44.30 AV	54.00	-9.70	1.30 V	254	-2.70	47.00

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	60.00 PK	68.30	-8.30	1.00 H	342	22.44	37.56
2	5725.00	66.20 PK	78.30	-12.10	1.00 H	342	28.61	37.59
3	*5785.00	100.50 PK			1.00 H	342	62.76	37.74
3	*5785.00	88.60 AV			1.00 H	342	50.86	37.74
4	5825.00	67.50 PK	78.30	-10.80	1.00 H	342	29.66	37.84
5	5835.00	65.60 PK	68.30	-2.70	1.00 H	342	27.74	37.86
6	#11570.00	53.62 PK	74.00	-20.38	1.05 H	306	6.67	46.95
6	#11570.00	41.22 AV	54.00	-12.78	1.05 H	306	-5.73	46.95

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	66.50 PK	68.30	-1.80	1.29 V	253	28.94	37.56
2	5725.00	67.80 PK	78.30	-10.50	1.29 V	253	30.21	37.59
3	*5785.00	117.50 PK			1.29 V	253	79.76	37.74
3	*5785.00	107.00 AV			1.29 V	253	69.26	37.74
4	5825.00	71.70 PK	78.30	-6.60	1.29 V	253	33.86	37.84
5	5835.00	67.20 PK	68.30	-1.10	1.29 V	253	29.34	37.86
6	#11570.00	56.22 PK	74.00	-17.78	1.38 V	266	9.27	46.95
6	#11570.00	43.92 AV	54.00	-10.08	1.38 V	266	-3.03	46.95

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Phoenix Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	92.70 PK			1.00 H	340	54.91	37.79
1	*5805.00	81.90 AV			1.00 H	340	44.11	37.79
2	5825.00	67.20 PK	78.30	-11.10	1.00 H	340	29.36	37.84
3	5835.00	66.10 PK	68.30	-2.20	1.00 H	340	28.24	37.86
4	#11610.00	53.37 PK	74.00	-20.63	1.08 H	325	6.46	46.91
4	#11610.00	40.97 AV	54.00	-13.03	1.08 H	325	-5.94	46.91

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5805.00	113.90 PK			1.30 V	254	76.11	37.79
1	5805.00	102.80 AV			1.30 V	254	65.01	37.79
2	5825.00	75.80 PK	78.30	-2.50	1.30 V	245	37.96	37.84
3	5835.00	66.90 PK	68.30	-1.40	1.30 V	245	29.04	37.86
4	#11610.00	55.87 PK	74.00	-18.13	1.38 V	252	8.96	46.91
4	#11610.00	43.97 AV	54.00	-10.03	1.38 V	252	-2.94	46.91

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

4.2.11 TEST RESULTS (ANTENNA C)

802.11a OFDM modulation

CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 961hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5144.00	42.50 PK	74.00	-31.50	1.27 H	348	6.10	36.40
1	#5144.00	30.10 AV	54.00	-23.90	1.27 H	348	-6.30	36.40
2	#5150.00	41.10 PK	74.00	-32.90	1.27 H	348	4.70	36.40
2	#5150.00	28.60 AV	54.00	-25.40	1.27 H	348	-7.80	36.40
3	*5180.00	90.50 PK			1.27 H	348	54.10	36.40
3	*5180.00	79.90 AV			1.27 H	348	43.50	36.40
4	10360.00	57.90 PK	68.30	-10.40	1.10 H	66	12.40	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5144.00	60.00 PK	74.00	-14.00	1.16 V	263	23.60	36.40
1	#5144.00	47.80 AV	54.00	-6.20	1.16 V	263	11.40	36.40
2	#5150.00	58.60 PK	74.00	-15.40	1.16 V	263	22.20	36.40
2	#5150.00	46.30 AV	54.00	-7.70	1.16 V	263	9.90	36.40
3	*5180.00	108.00 PK			1.16 V	263	71.60	36.40
3	*5180.00	97.60 AV			1.16 V	263	61.20	36.40
4	10360.00	60.70 PK	68.30	-7.60	1.04 V	243	15.20	45.50

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 68%RH, 961hPa	TESTED BY	Rex Huang

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	90.30 PK			1.31 H	52	53.80	36.50
1	*5240.00	79.80 AV			1.31 H	52	43.30	36.50
2	10480.00	58.30 PK	68.30	-10.00	1.13 H	84	12.60	45.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	108.40 PK			1.14 V	267	71.90	36.50
1	*5240.00	97.90 AV			1.14 V	267	61.40	36.50
2	10480.00	59.20 PK	68.30	-9.10	1.09 V	314	13.50	45.70

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.

CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Moris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.00	64.20 PK	68.30	-4.10	1.54 H	29	26.70	37.50
2	5715.00	63.70 PK	68.30	-4.60	1.54 H	29	26.10	37.60
3	5725.00	64.90 PK	78.30	-13.40	1.54 H	29	27.30	37.60
4	*5745.00	95.40 PK			1.54 H	29	57.80	37.60
4	*5745.00	85.80 AV			1.54 H	29	48.20	37.60
5	#11490.00	53.70 PK	74.00	-20.30	1.15 H	26	6.70	47.00
5	#11490.00	41.20 AV	54.00	-12.80	1.15 H	26	-5.80	47.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.00	65.20 PK	68.30	-3.10	1.54 V	7	27.70	37.50
2	5715.00	64.50 PK	68.30	-3.80	1.54 V	7	26.90	37.60
3	5725.00	77.10 PK	78.30	-1.20	1.54 V	7	39.50	37.60
4	*5745.00	114.70 PK			1.54 V	7	77.10	37.60
4	*5745.00	104.30 AV			1.54 V	7	66.60	37.60
5	#11490.00	57.40 PK	74.00	-16.60	1.30 V	255	10.40	47.00
5	#11490.00	43.30 AV	54.00	-10.70	1.30 V	255	-3.70	47.00

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Moris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	64.70 PK	68.30	-3.60	1.56 H	27	27.14	37.56
2	5725.00	65.70 PK	78.30	-12.60	1.56 H	27	28.11	37.59
3	*5785.00	101.50 PK			1.56 H	27	63.76	37.74
3	*5785.00	91.50 AV			1.56 H	27	53.76	37.74
4	5825.00	65.30 PK	78.30	-13.00	1.56 H	27	27.46	37.84
5	5835.00	65.20 PK	68.30	-3.10	1.56 H	27	27.34	37.86
6	#11570.00	53.52 PK	74.00	-20.48	1.31 H	28	6.57	46.95
6	#11570.00	40.72 AV	54.00	-13.28	1.31 H	28	-6.23	46.95

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5715.00	66.01 PK	68.30	-2.29	1.53 V	8	28.45	37.56
2	5725.00	67.40 PK	78.30	-10.90	1.53 V	8	29.81	37.59
3	*5785.00	120.40 PK			1.53 V	8	82.66	37.74
3	*5785.00	110.08 AV			1.53 V	8	72.34	37.74
4	5825.00	73.07 PK	78.30	-5.23	1.53 V	8	35.23	37.84
5	5835.00	67.60 PK	68.30	-0.70	1.53 V	8	29.74	37.86
6	#11570.00	56.52 PK	74.00	-17.48	1.25 V	100	9.57	46.95
6	#11570.00	43.02 AV	54.00	-10.98	1.25 V	100	-3.93	46.95

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	23deg. C, 56%RH, 961hPa	TESTED BY	Moris Lin

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	97.10 PK			1.49 H	28	59.31	37.79
1	*5805.00	86.80 AV			1.49 H	28	49.01	37.79
2	5825.00	65.20 PK	78.30	-13.10	1.49 H	28	27.36	37.84
4	#11610.00	53.67 PK	74.00	-20.33	1.25 H	300	6.76	46.91
4	#11610.00	40.77 AV	54.00	-13.23	1.25 H	300	-6.14	46.91

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	115.80 PK			1.52 V	28	78.01	37.79
1	*5805.00	105.50 AV			1.52 V	28	67.71	37.79
2	5825.00	77.40 PK	78.30	-0.90	1.52 V	28	39.56	37.84
4	#11610.00	56.27 PK	74.00	-17.73	1.36 V	25	9.36	46.91
4	#11610.00	42.47 AV	54.00	-11.53	1.36 V	25	-4.44	46.91

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.

4.2.12 TEST RESULTS (ANTENNA D)

802.11a OFDM modulation

CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 66%RH, 961hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5143.60	51.80 PK	74.00	-22.20	1.21 H	208	15.40	36.30
1	#5143.60	38.90 AV	54.00	-15.10	1.21 H	208	2.50	36.30
2	*5180.00	101.40 PK			1.21 H	208	65.00	36.40
2	*5180.00	90.70 AV			1.21 H	208	54.30	36.40
3	10360.00	57.10 PK	68.30	-11.20	1.14 H	186	11.60	45.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5143.60	63.40 PK	74.00	-10.60	1.40 V	155	27.00	36.30
1	#5143.60	50.50 AV	54.00	-3.50	1.40 V	155	14.10	36.30
2	*5180.00	113.00 PK			1.40 V	155	76.60	36.40
2	*5180.00	102.30 AV			1.40 V	155	65.90	36.40
3	10360.00	57.50 PK	68.30	-10.80	1.08 V	142	12.00	45.50

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#" The radiated frequency falling in the restricted band.

CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 66%RH, 961hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	101.80 PK			1.20 H	215	65.30	36.50
1	*5240.00	91.00 AV			1.20 H	215	54.50	36.50
2	10480.00	56.80 PK	68.30	-11.50	1.05 H	155	11.10	45.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	111.50 PK			1.20 V	155	75.00	36.50
1	*5240.00	100.80 AV			1.20 V	155	64.30	36.50
2	10480.00	57.20 PK	68.30	-11.10	1.03 V	112	11.50	45.70

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.



CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 66%RH, 961hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.40	56.20 PK	68.30	-12.10	1.00 H	205	19.20	37.00
2	5715.00	52.80 PK	68.30	-15.50	1.00 H	205	15.70	37.10
3	5725.00	68.00 PK	78.30	-10.30	1.00 H	205	30.90	37.10
4	*5745.00	99.60 PK			1.00 H	205	62.50	37.10
4	*5745.00	88.50 AV			1.00 H	205	51.40	37.10
5	#11490.00	59.30 PK	74.00	-14.70	1.08 H	165	12.50	46.80
5	#11490.00	45.50 AV	54.00	-8.50	1.08 H	165	-1.30	46.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5708.40	63.30 PK	68.30	-5.00	1.34 V	155	25.80	37.50
2	5715.00	60.10 PK	68.30	-8.20	1.34 V	155	22.50	37.60
3	5725.00	75.60 PK	78.30	-2.70	1.34 V	155	38.00	37.60
4	*5745.00	113.40 PK			1.30 V	155	75.80	37.60
4	*5745.00	102.50 AV			1.30 V	155	64.90	37.60
5	#11490.00	58.50 PK	74.00	-15.50	1.00 V	128	11.40	47.00
5	#11490.00	45.70 AV	54.00	-8.30	1.00 V	128	-1.40	47.00

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 66%RH, 961hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	107.20 PK			1.00 H	200	70.00	37.20
1	*5785.00	96.70 AV			1.00 H	200	59.50	37.20
2	#11570.00	59.60 PK	74.00	-14.40	1.15 H	214	12.90	46.70
2	#11570.00	45.70 AV	54.00	-8.30	1.15 H	214	-1.00	46.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	114.80 PK			1.04 V	358	77.60	37.20
1	*5785.00	104.00 AV			1.04 V	358	66.80	37.20
2	#11570.00	61.30 PK	74.00	-12.70	1.46 V	104	14.60	46.70
2	#11570.00	47.60 AV	54.00	-6.40	1.46 V	104	0.90	46.70

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak(PK) Average (AV)
ENVIRONMENTAL CONDITIONS	18deg. C, 66%RH, 961hPa	TESTED BY	Sky Liao

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	100.30 PK			1.00 H	205	63.10	37.20
1	*5805.00	88.70 AV			1.00 H	205	51.50	37.20
2	5825.00	68.30 PK	78.30	-10.00	1.00 H	205	31.10	37.20
3	5835.00	56.00 PK	68.30	-12.30	1.00 H	205	18.70	37.30
4	#11650.00	58.80 PK	74.00	-15.20	1.16 H	208	12.10	46.70
4	#11650.00	45.20 AV	54.00	-8.80	1.16 H	208	-1.50	46.70

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5805.00	112.80 PK			1.32 V	157	75.60	37.20
1	*5805.00	102.20 AV			1.32 V	157	65.00	37.20
2	5825.00	76.90 PK	78.30	-1.40	1.30 V	158	39.70	37.20
3	5835.00	64.10 PK	68.30	-4.20	1.30 V	158	26.80	37.30
4	#11610.00	59.60 PK	74.00	-14.40	1.14 V	188	12.90	46.70
4	#11610.00	46.20 AV	54.00	-7.80	1.14 V	188	-0.50	46.70

- NOTE:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value
 5. "*" : Fundamental frequency
 6. "#"The radiated frequency falling in the restricted band.

4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

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

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Dec. 09, 2007

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

NOTE:

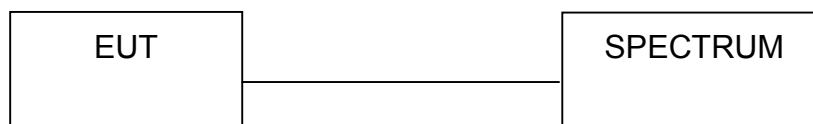
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



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 (ANTENNA A)

802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 961hPa
TESTED BY	Rex Huang		

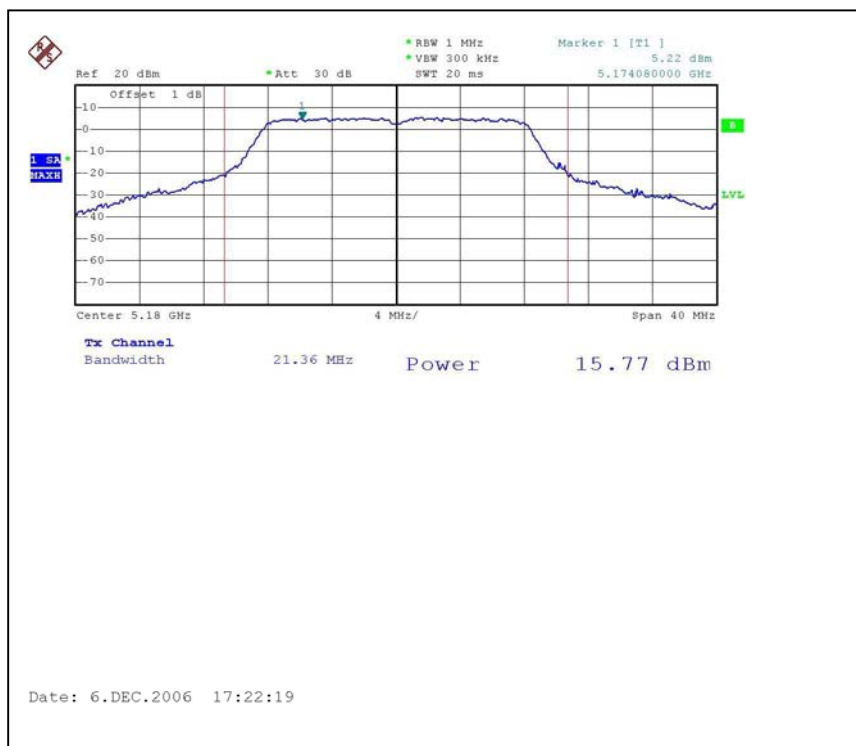
Antenna A (4.9GHz~5.25GHz) Gain : 7.0 dBi

Antenna A (5.25GHz~5.9GHz) Gain : 10.7 dBi

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	37.757	15.77	16	21.36	PASS
4	5240	37.931	15.79	16	21.04	PASS
5	5745	29.174	14.65	25.3	21.92	PASS
7	5785	99.541	19.95	25.3	40.70	PASS
8	5805	23.823	13.77	25.3	21.52	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

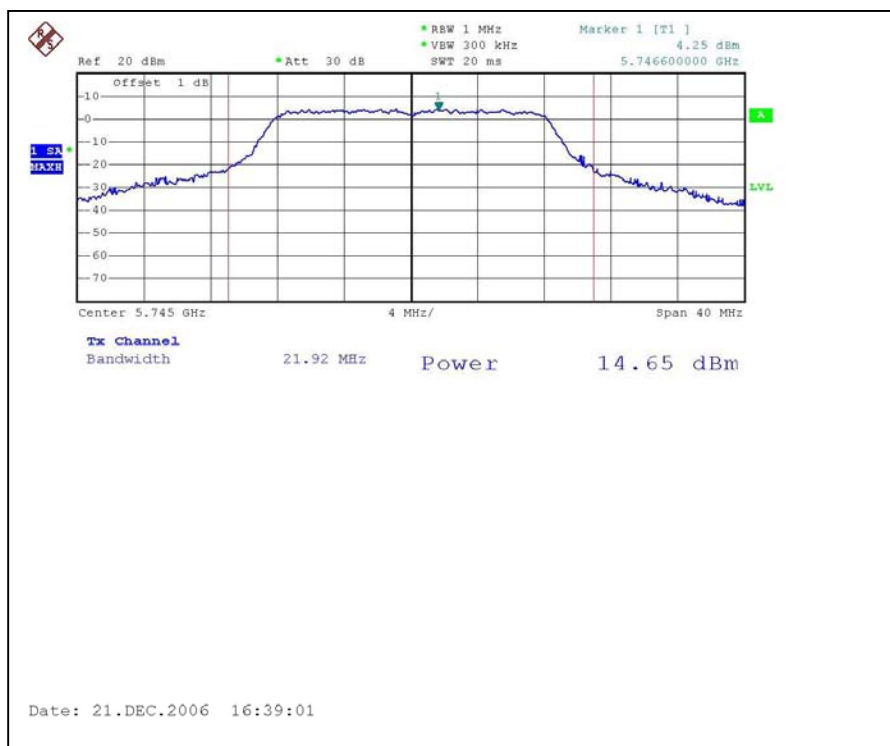
Peak Power Output:
CH1



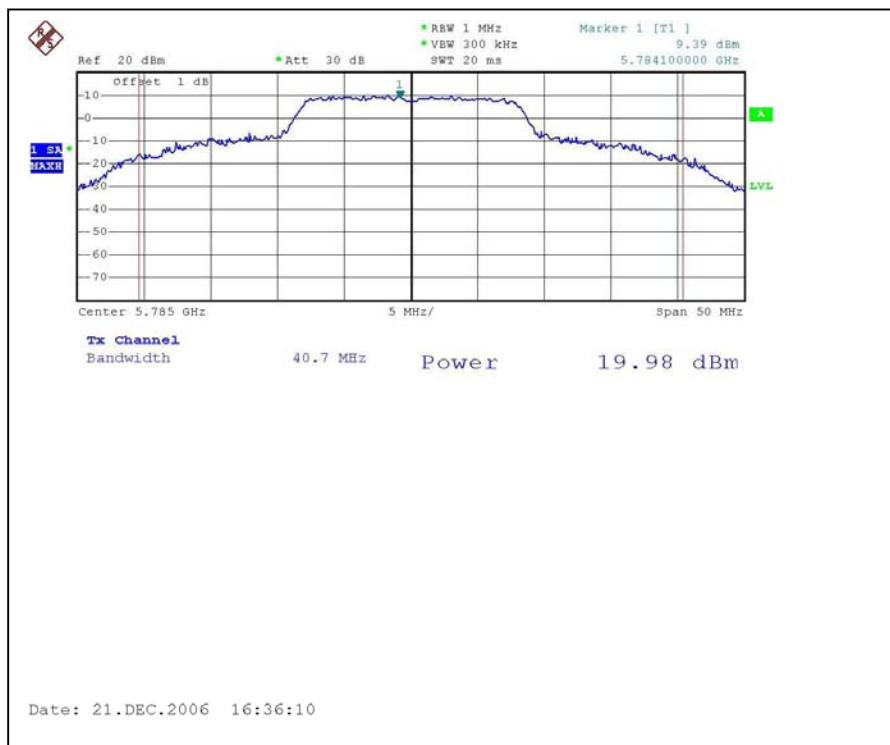
CH4



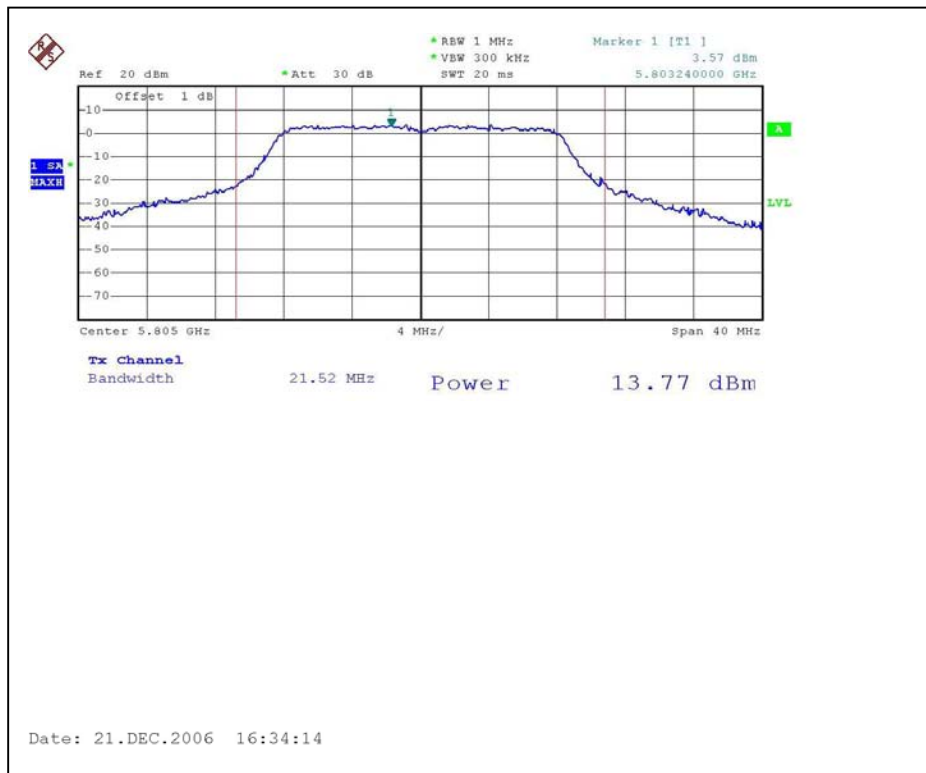
CH5



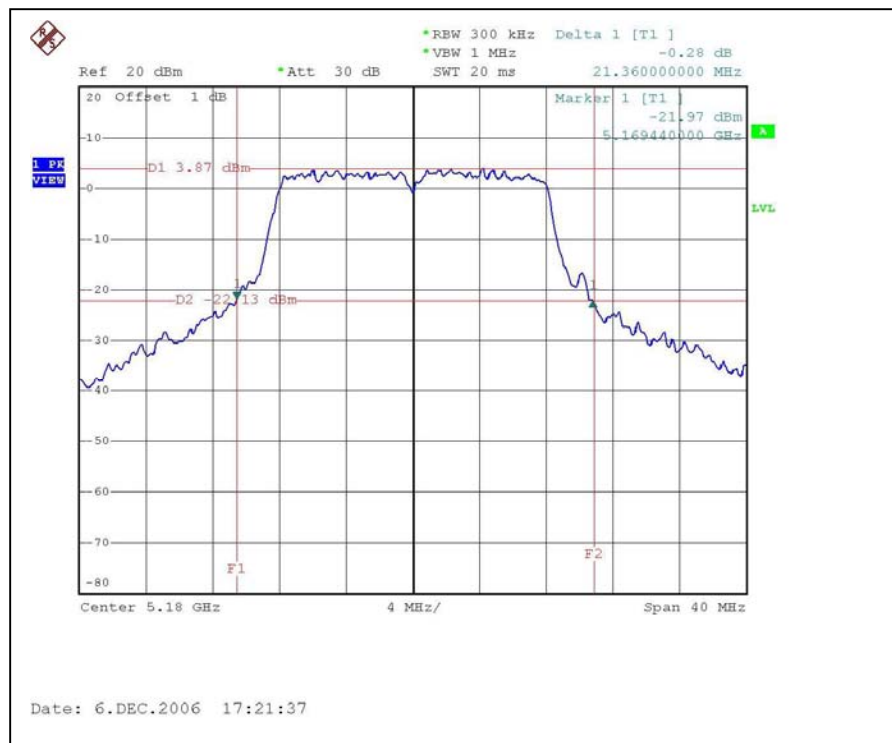
CH7



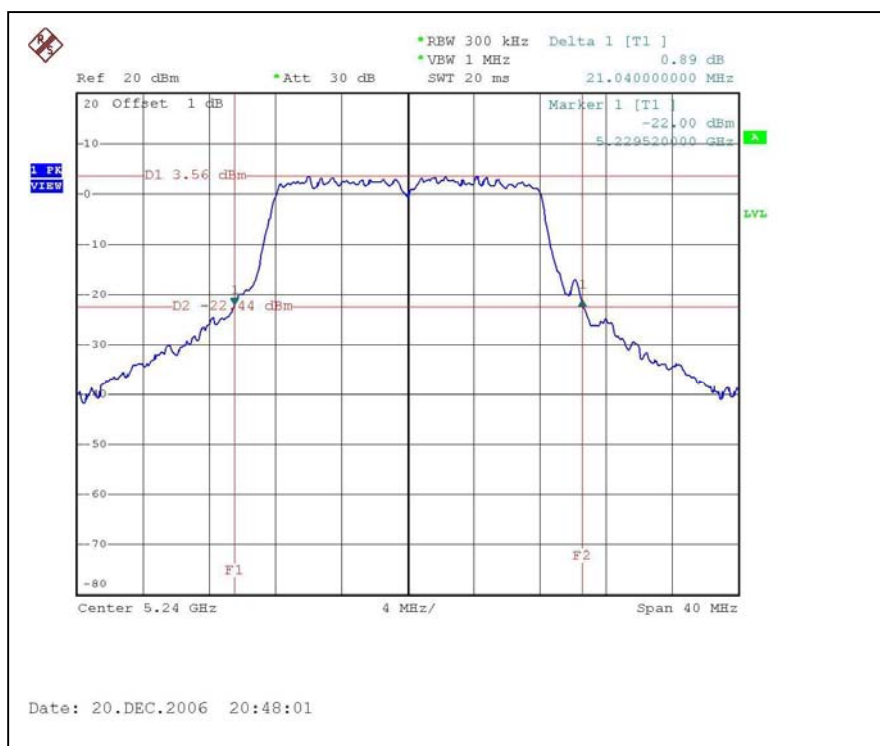
CH8



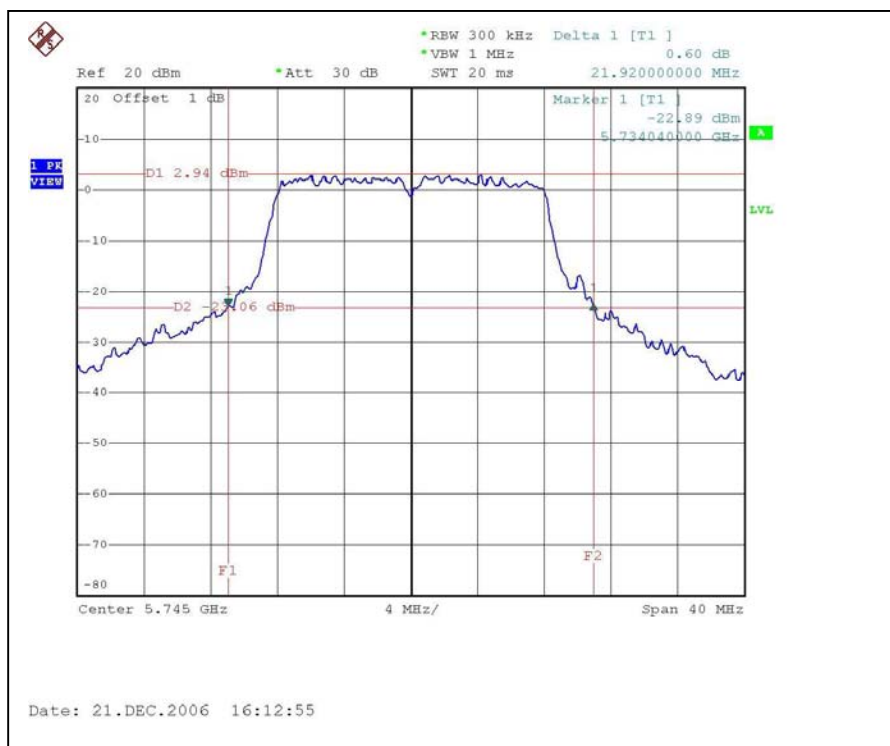
26dB Occupied Bandwidth:
CH1



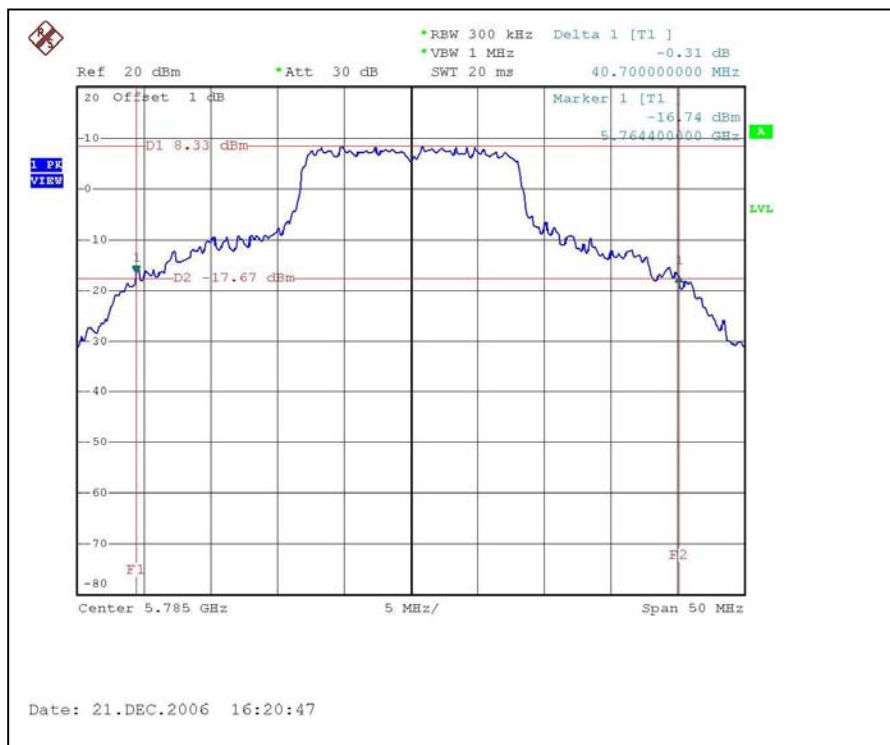
CH4



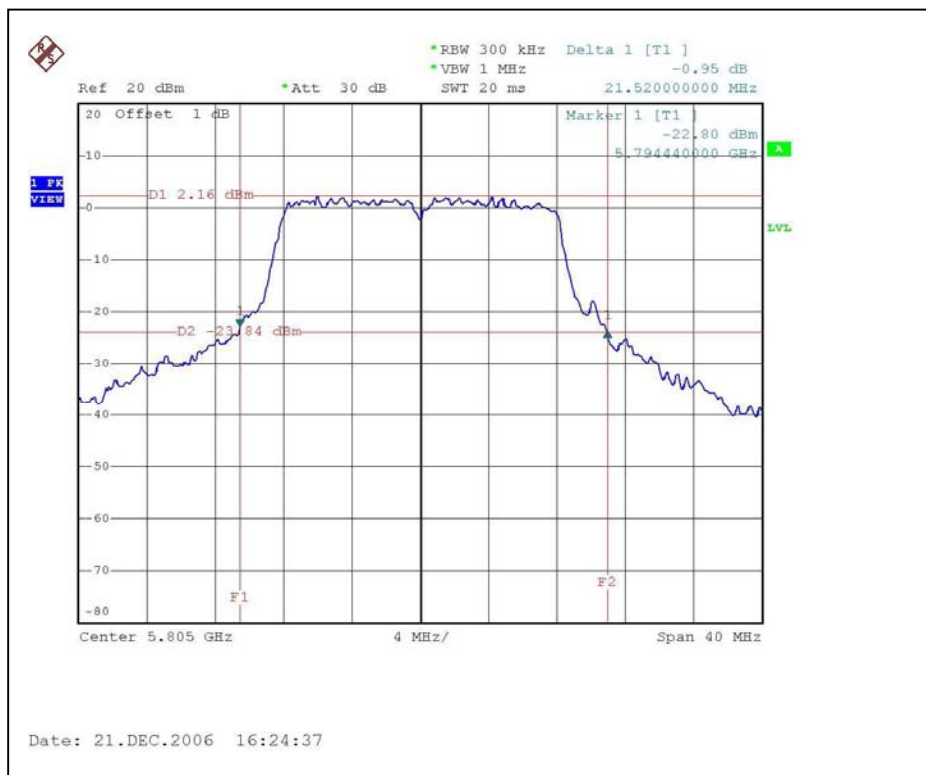
CH5



CH7



CH8





4.3.8 TEST RESULTS (ANTENNA B)

802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 961hPa
TESTED BY	Rex Huang		

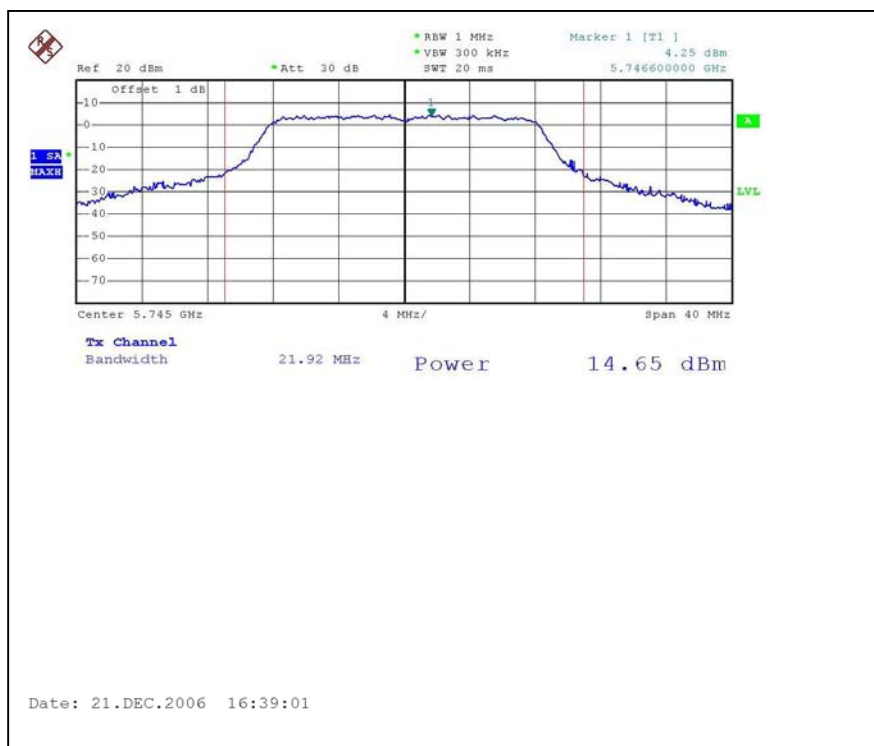
Antenna B (4.9GHz~5.25GHz)Gain : 5 dBi

Antenna B (5.25GHz~5.9GHz)Gain : 7.5 dBi

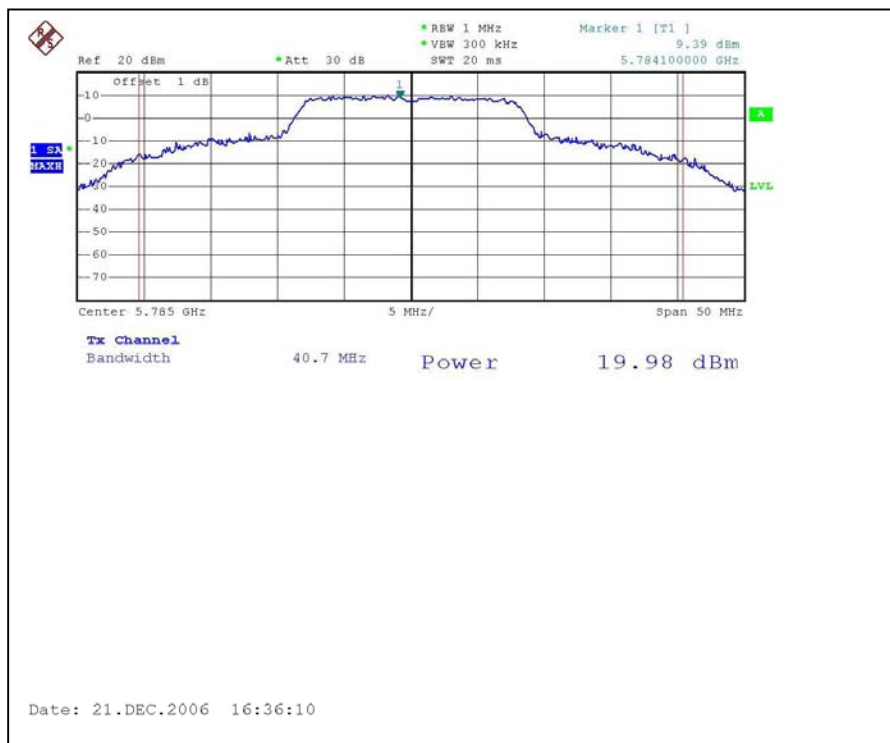
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	47.643	16.78	17	22.24	PASS
4	5240	47.315	16.75	17	21.04	PASS
5	5745	29.174	14.65	28.5	21.92	PASS
7	5785	99.541	19.98	28.5	40.70	PASS
8	5805	29.040	14.63	28.5	21.92	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

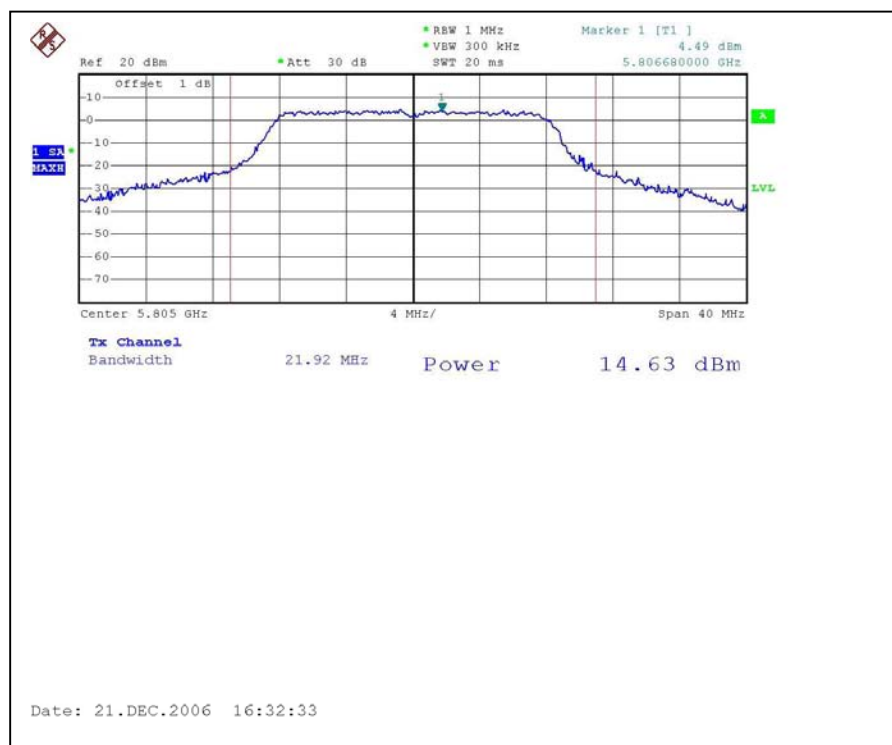
CH5



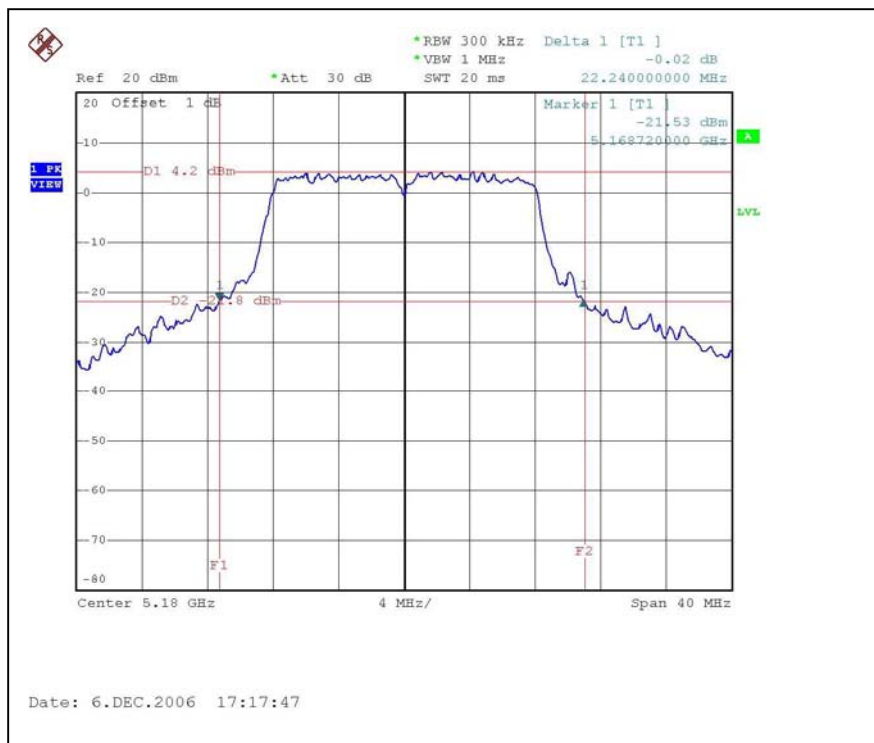
CH7



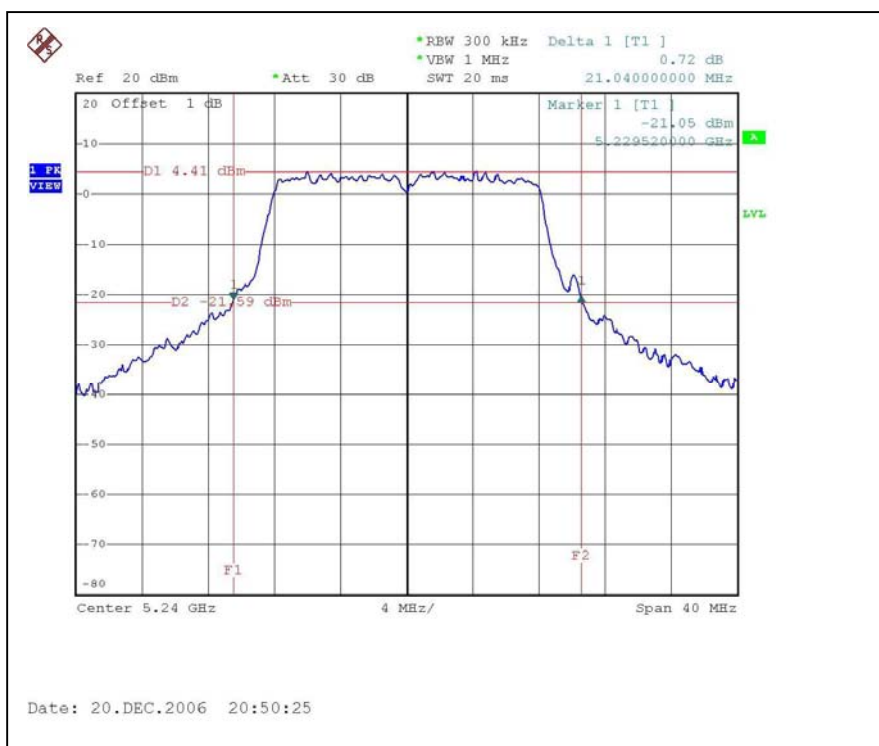
CH8



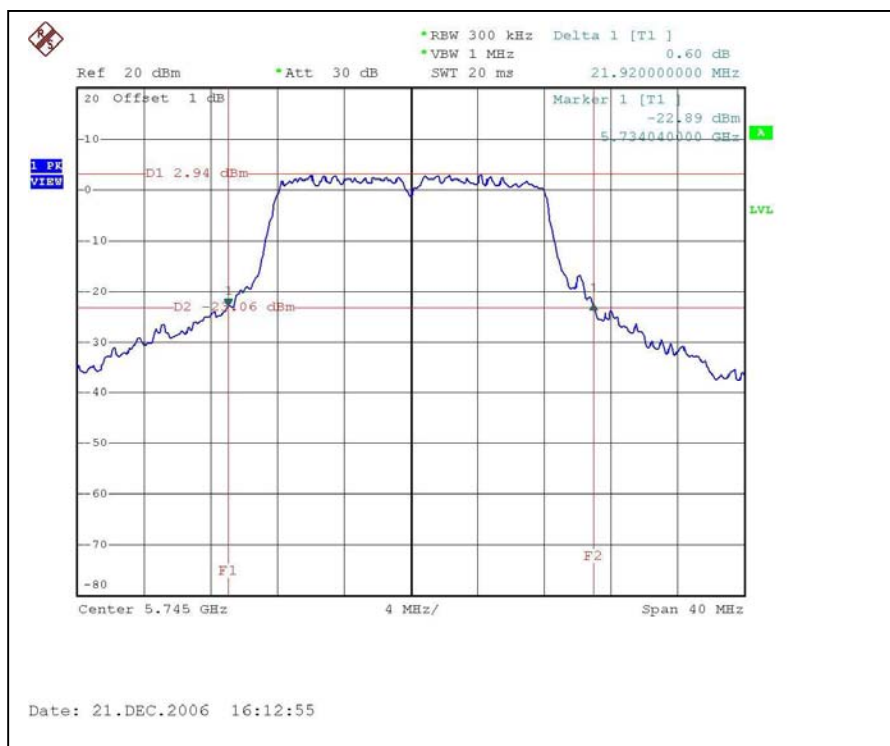
26dB Occupied Bandwidth:
CH1



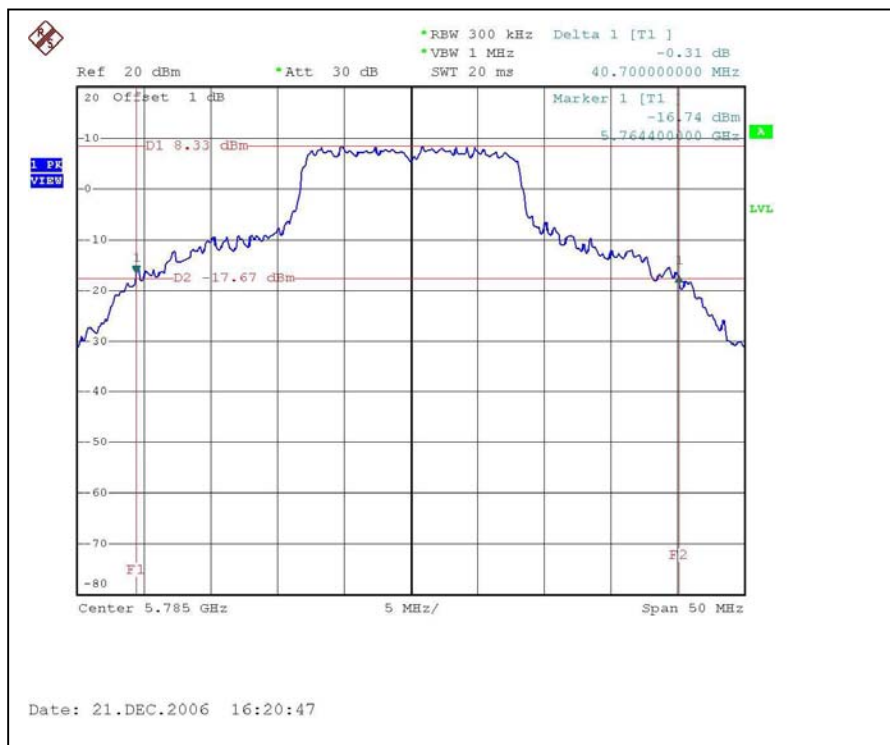
CH4



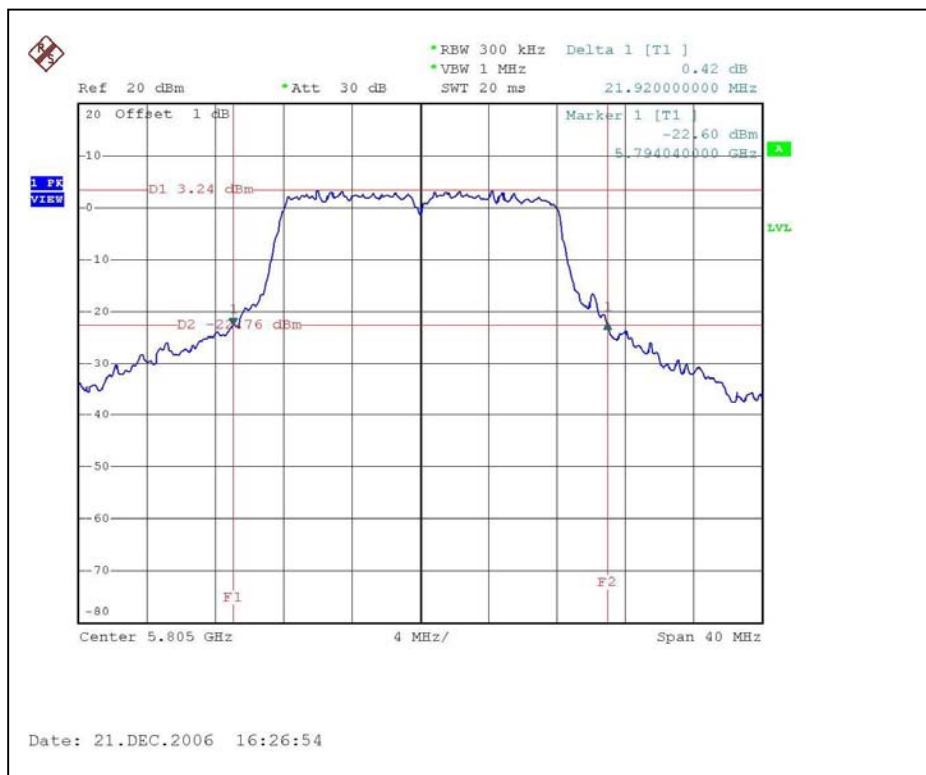
CH5



CH7



CH8



4.3.9 TEST RESULTS (ANTENNA C)

802.11a OFDM modulation

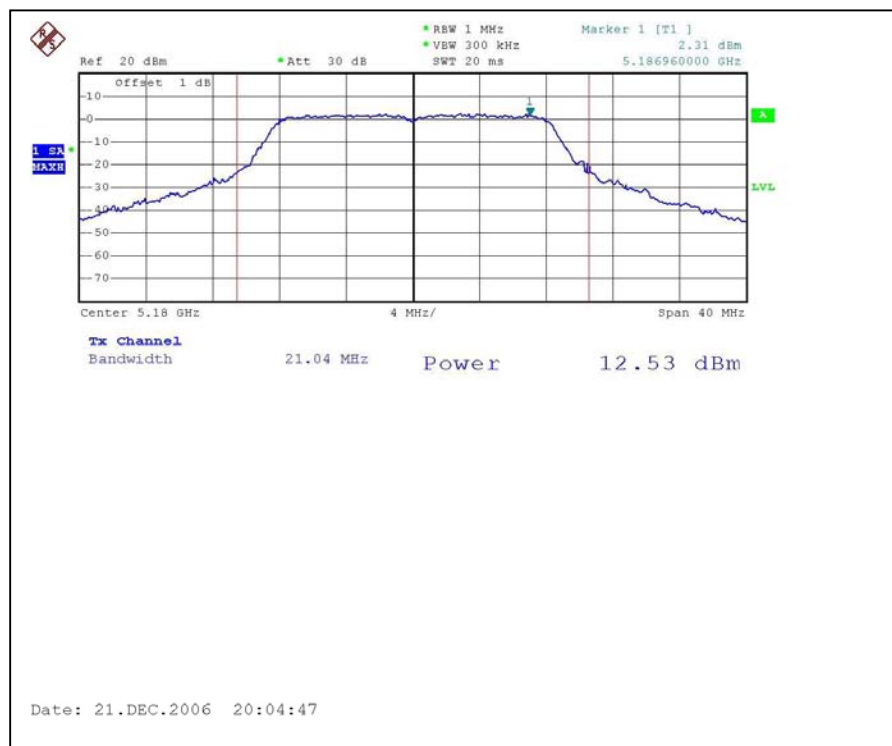
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 961hPa
TESTED BY	Rex Huang		

Antenna C - Gain : 10 dBi

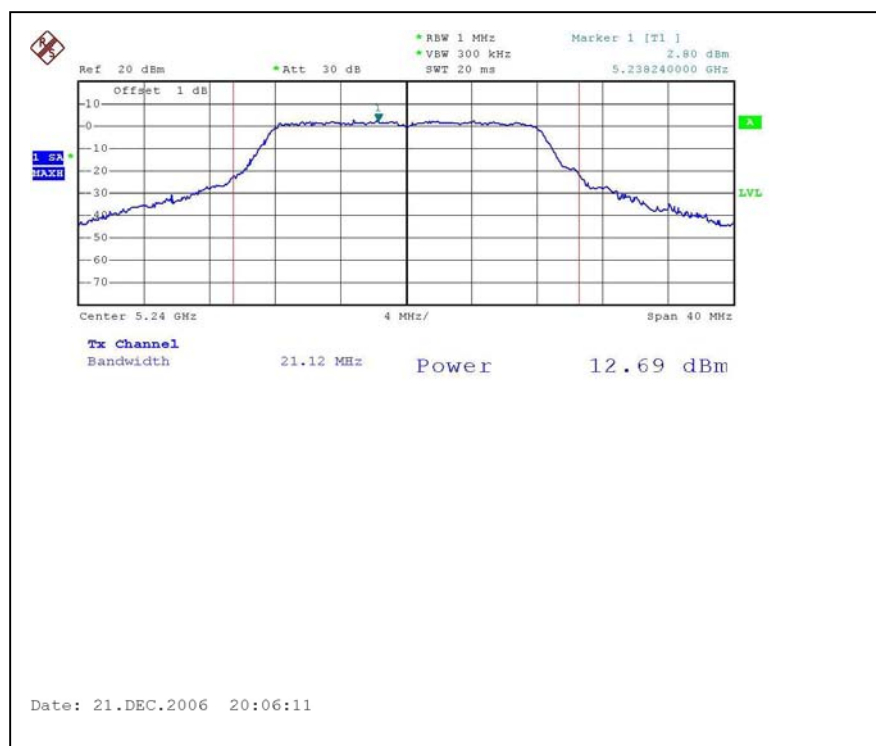
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	17.906	12.53	13	21.04	PASS
4	5240	18.578	12.69	13	21.12	PASS
5	5745	24.044	13.81	26	21.52	PASS
7	5785	99.541	19.98	26	40.70	PASS
8	5805	36.898	15.67	26	22.16	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

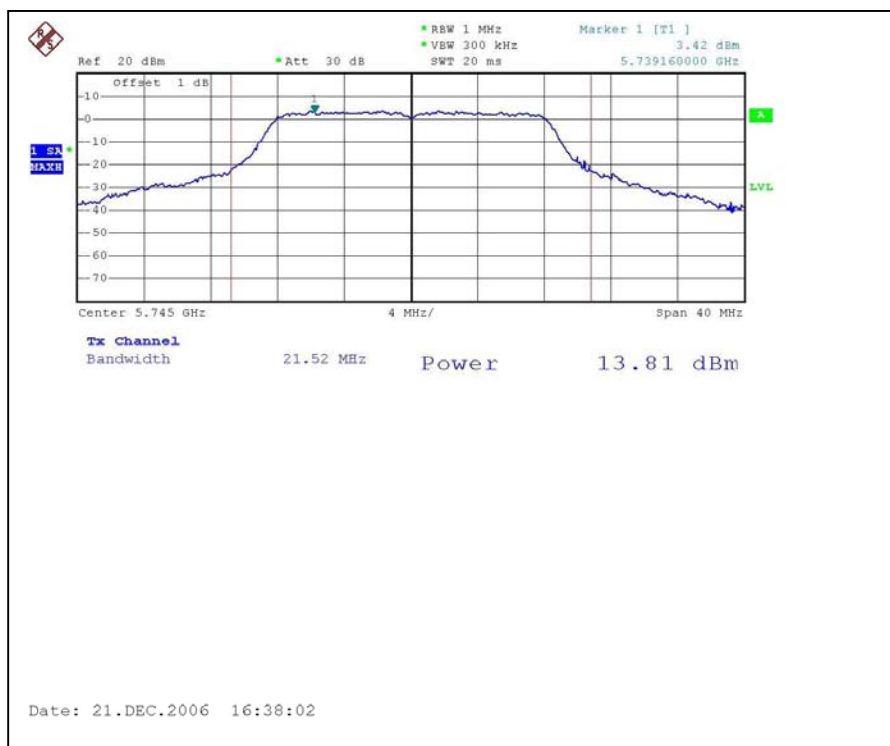
Peak Power Output:
CH1



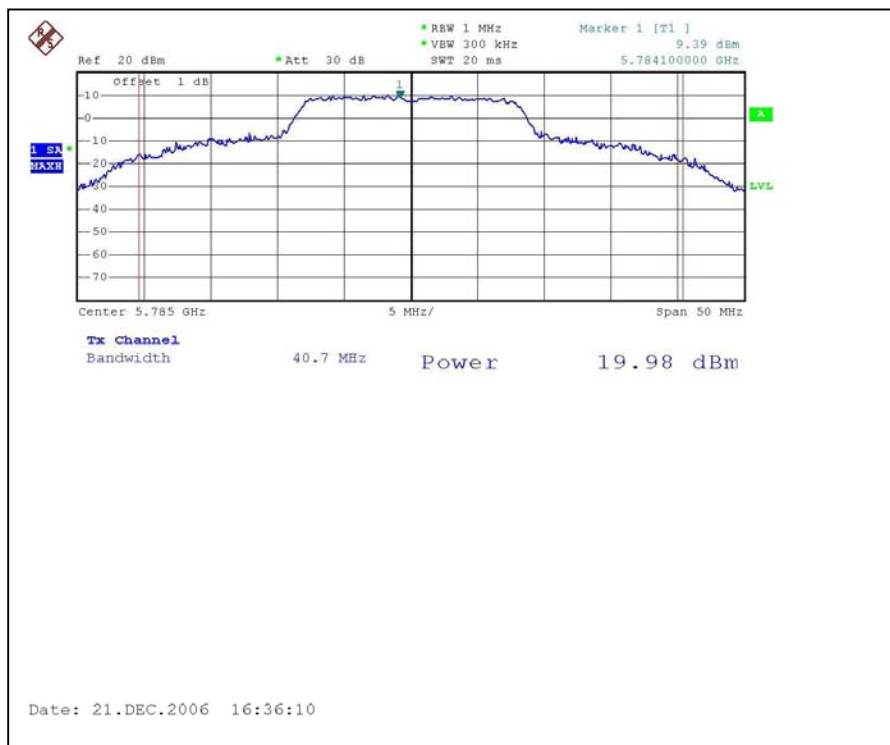
CH4



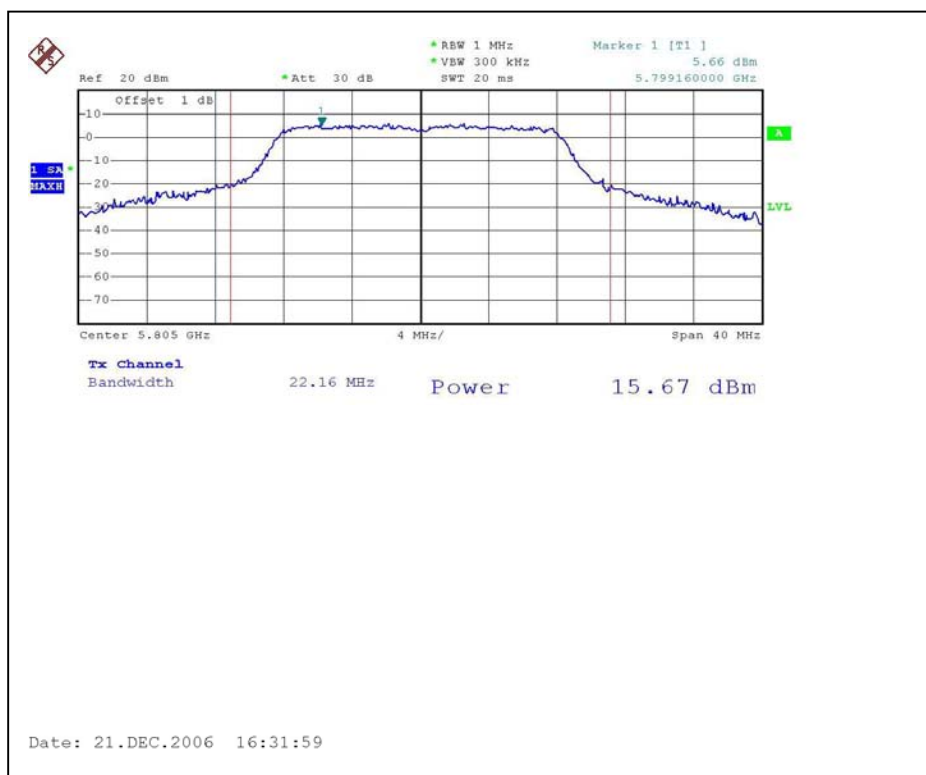
CH5



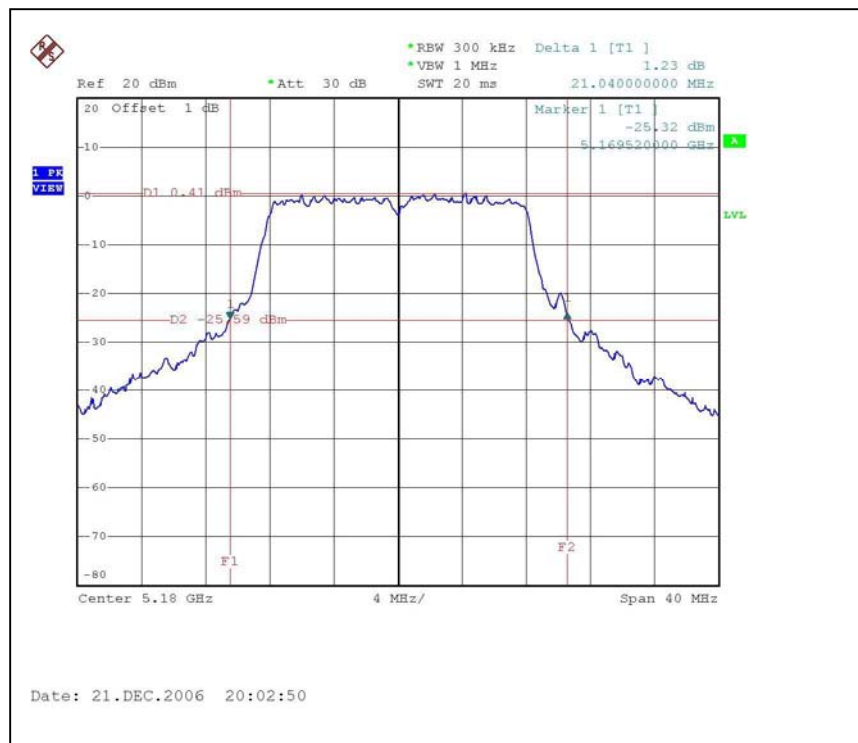
CH7



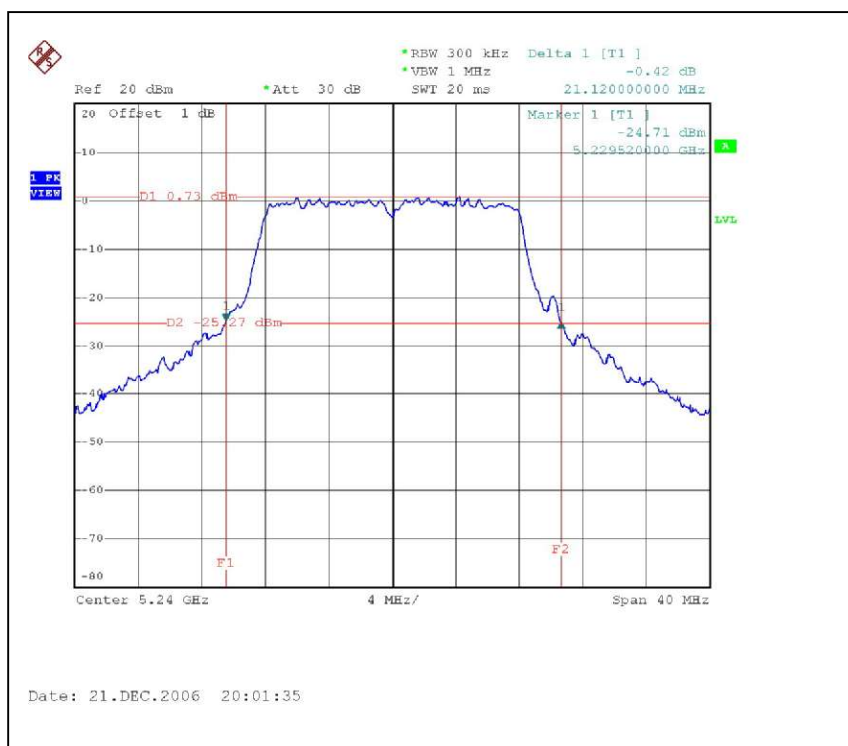
CH8



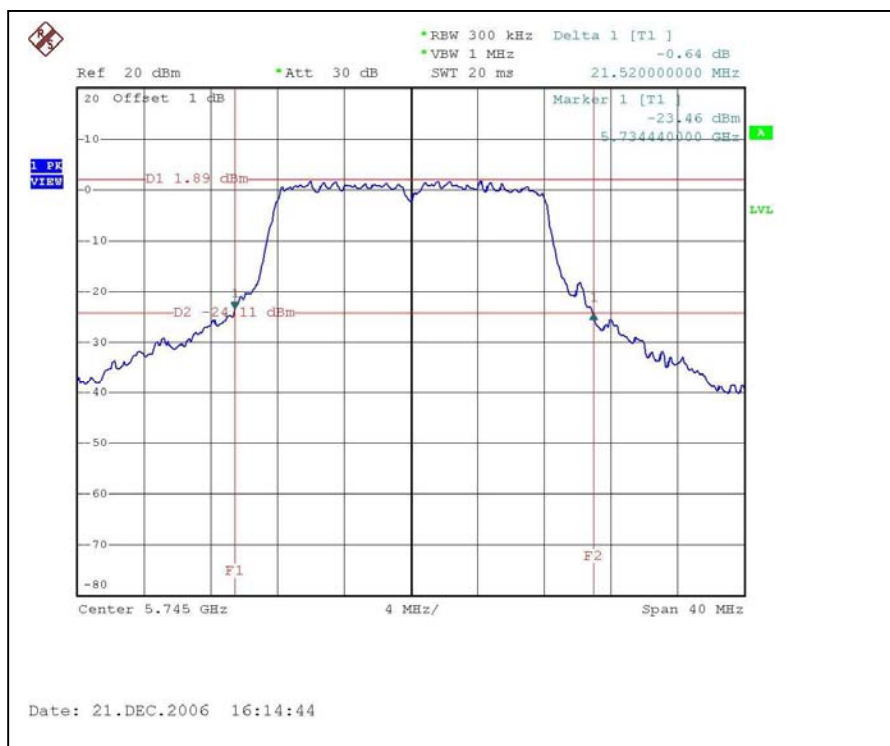
26dB Occupied Bandwidth: CH1



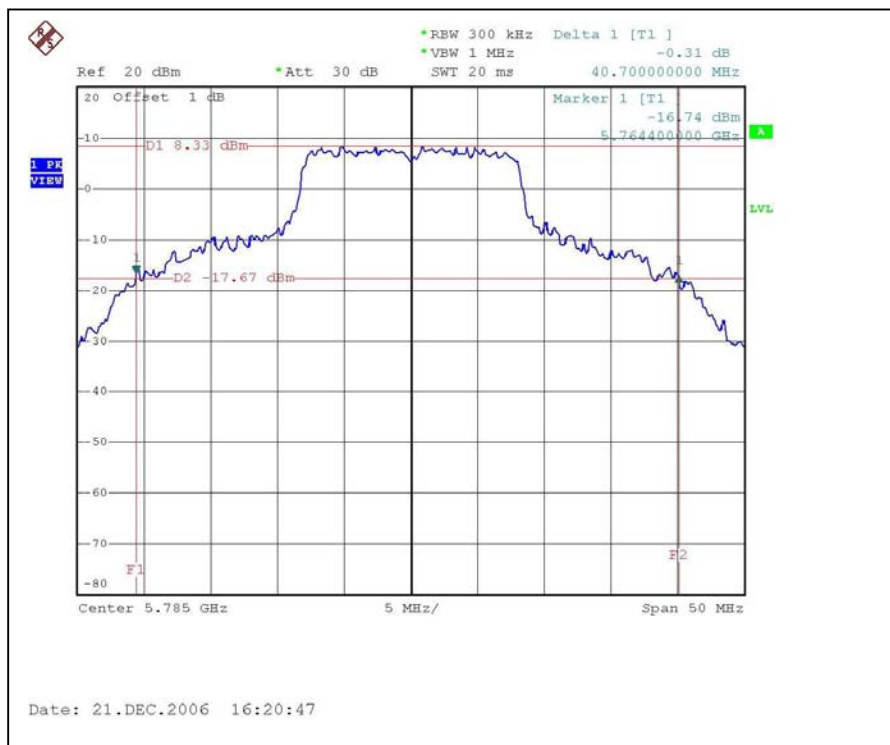
CH4



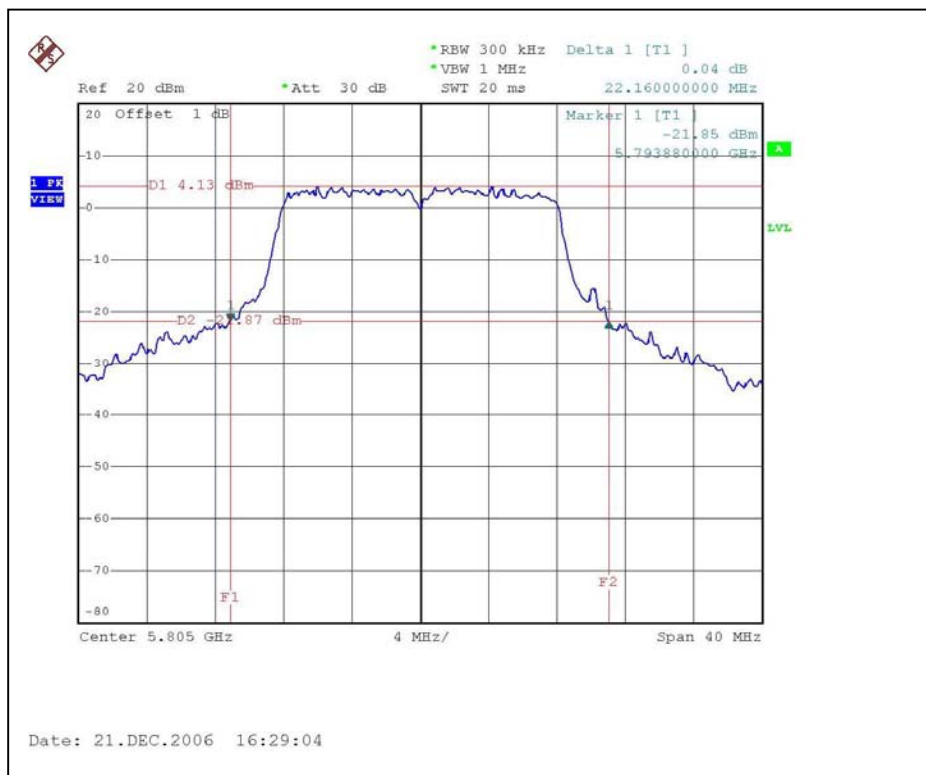
CH5



CH7



CH8





4.3.10 TEST RESULTS (ANTENNA D)

802.11a OFDM modulation

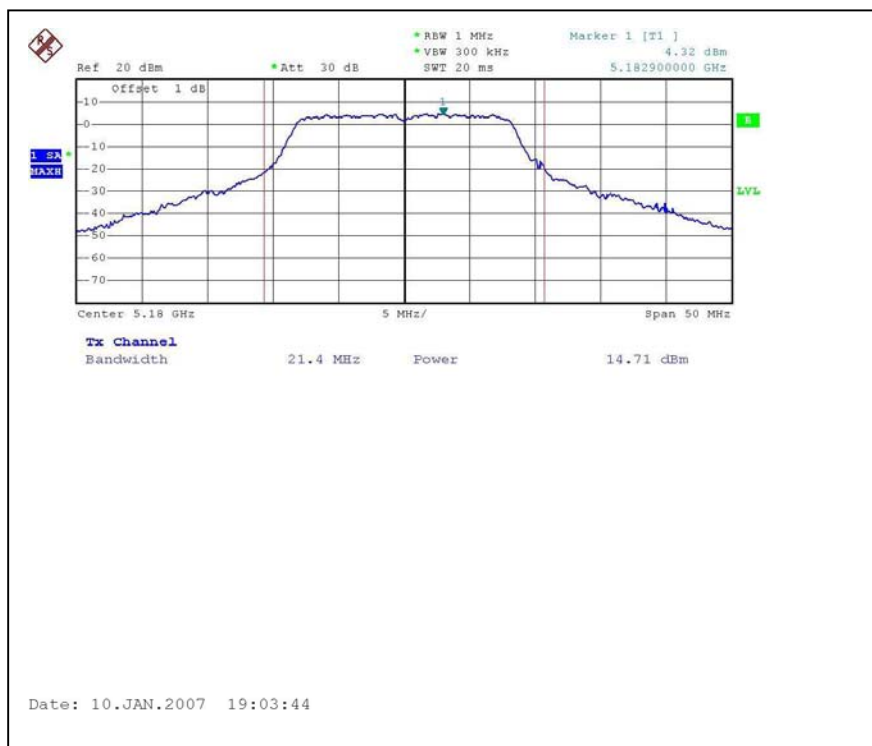
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 60%RH, 961hPa
TESTED BY	Rex Huang		

Antenna D Gain : 8 dBi

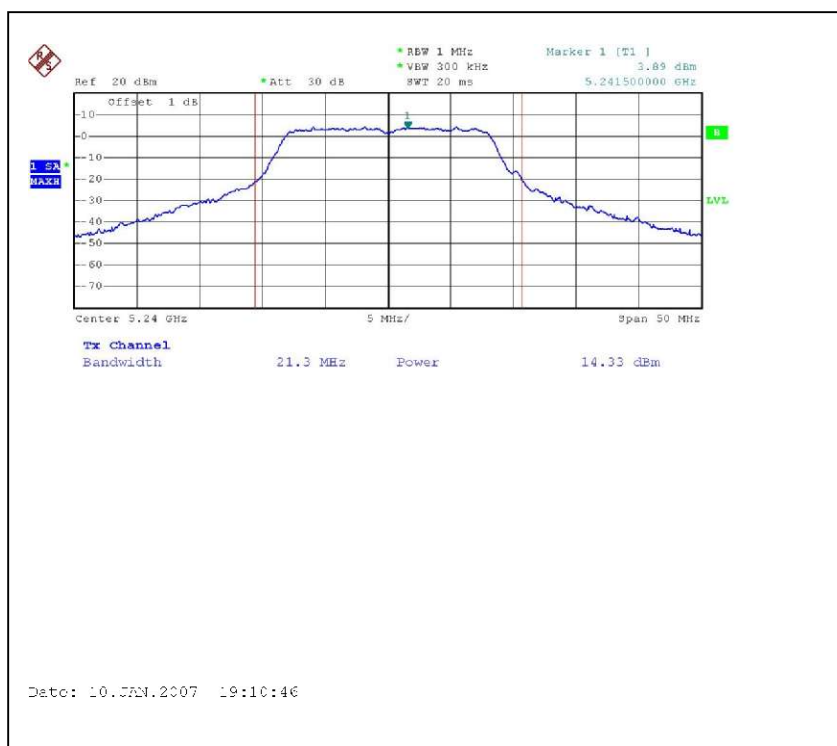
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	29.580	14.71	15	21.40	PASS
4	5240	27.101	14.33	15	21.30	PASS
5	5745	16.443	12.16	28	21.44	PASS
7	5785	99.541	19.98	28	40.70	PASS
8	5805	15.560	11.92	28	21.52	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

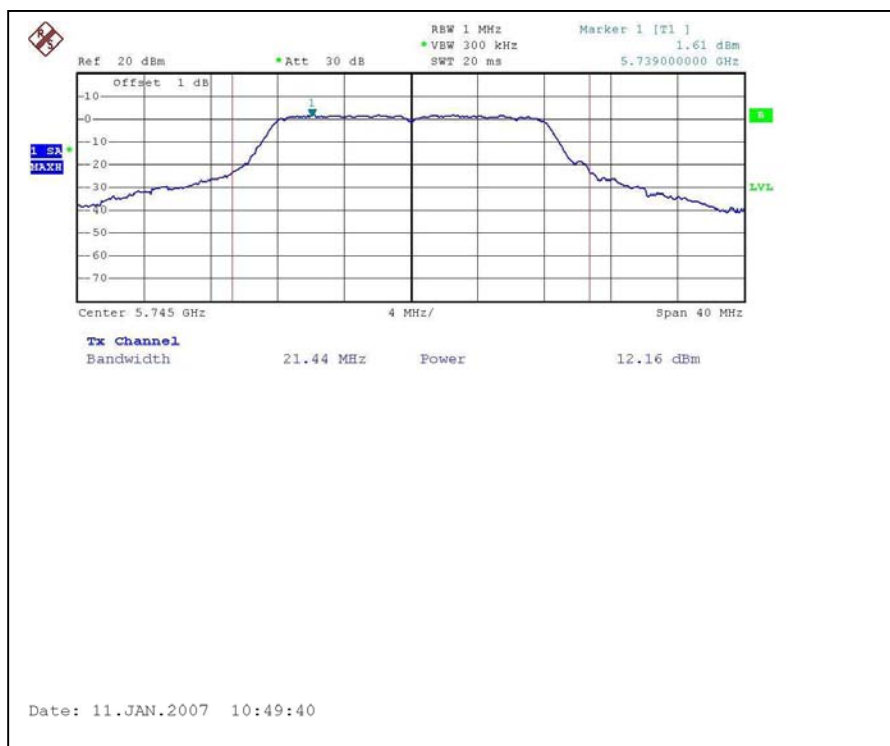
Peak Power Output:
CH1



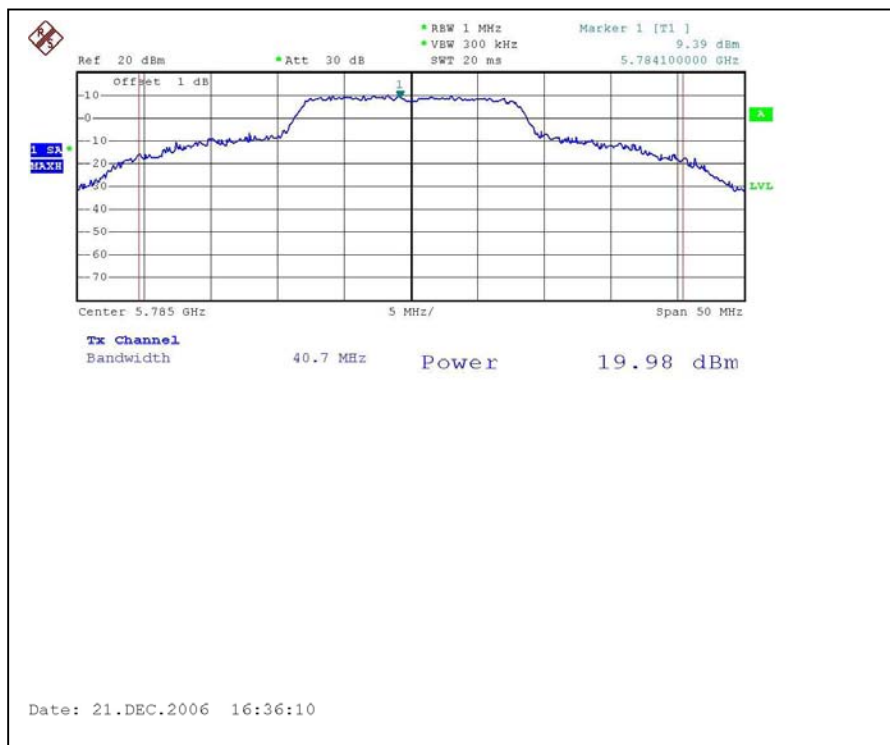
CH4



CH5



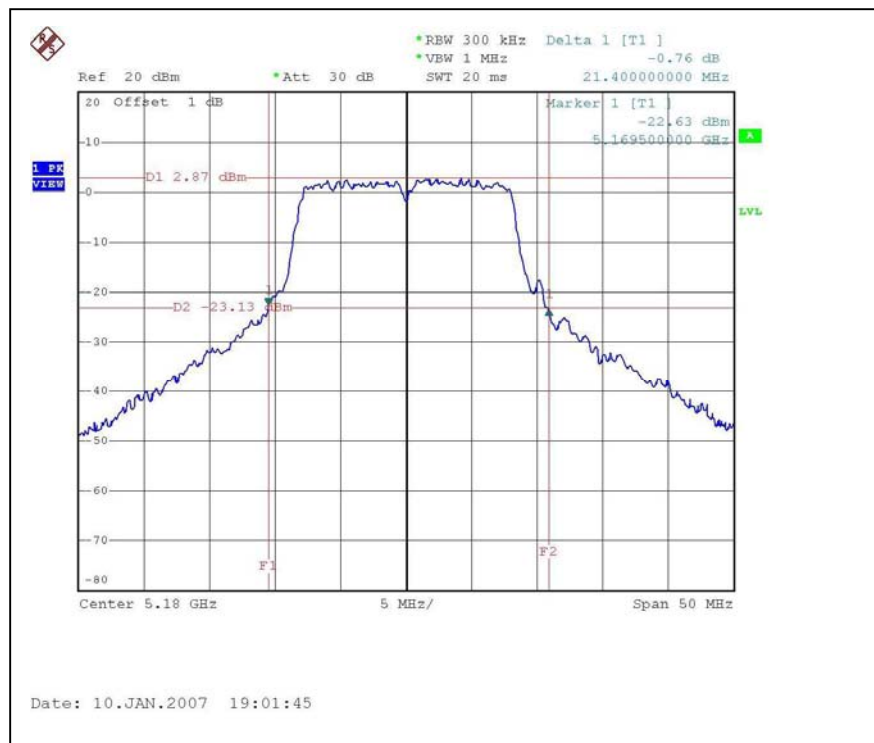
CH7



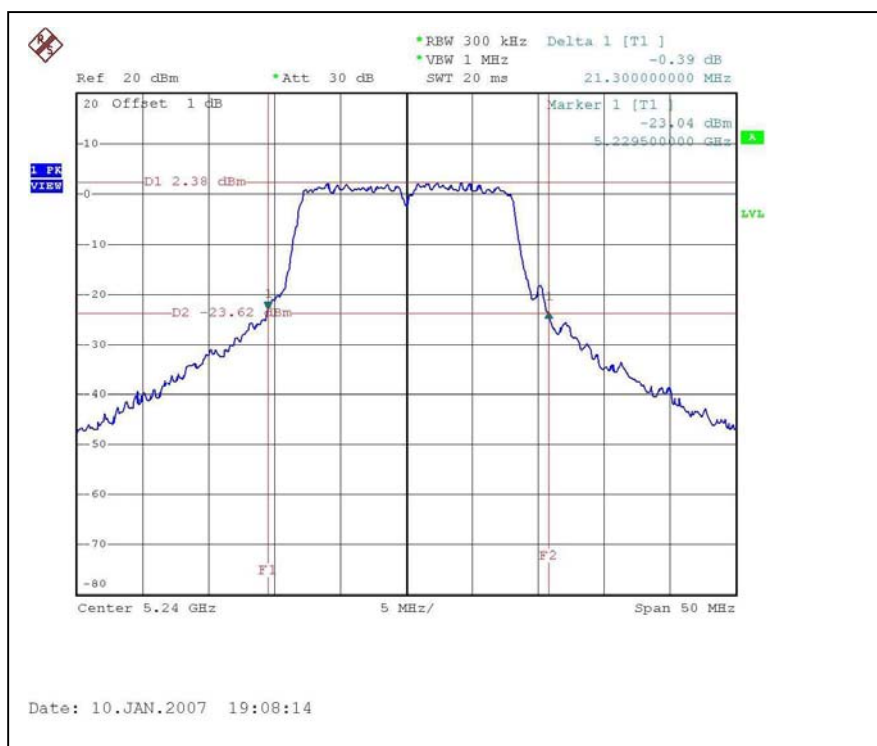
CH8



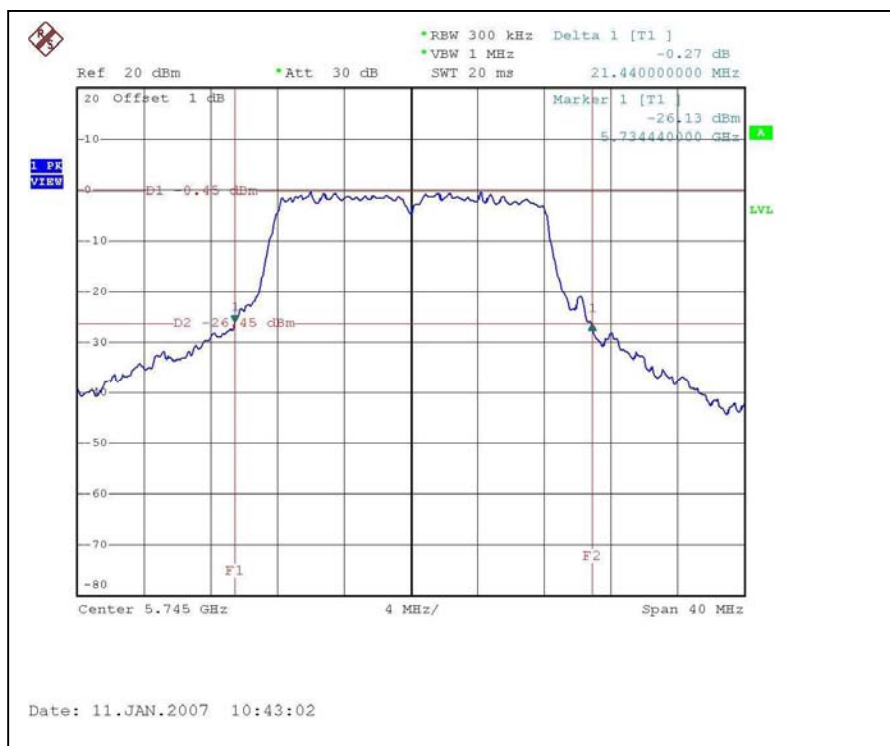
26dB Occupied Bandwidth: CH1



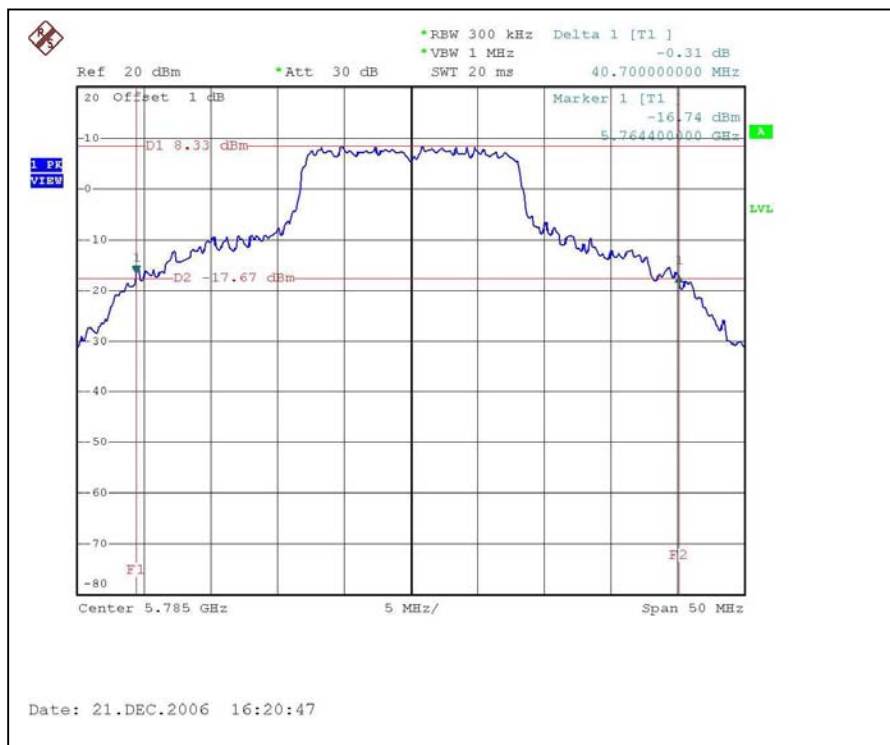
CH4



CH5



CH7



CH8

