

FCC TEST REPORT (15.247)

REPORT NO.: 100313FIA01

MODEL NO.: WMP-N12

RECEIVED: Mar. 15, 2010

TESTED: Mar. 16, 2010

ISSUED: Mar. 24, 2010

APPLICANT: Alpha Networks Inc.

ADDRESS: No.8 Li-shing 7th Rd., Science-based Industrial
Park, Hsinchu, Taiwan, R.O.C.

ISSUED BY: ADT (Shanghai) Corporation

ADDRESS: 2F, Building C, No.1618, Yishan Rd., 201103,
Shanghai, China

This test report consists of 106 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by TAF, A2LA or any government agencies. The test results in the report only apply to the tested sample.



TABLE OF CONTENTS

1. CERTIFICATION	3
2. SUMMARY OF TEST RESULTS.....	4
2.1 MEASUREMENT UNCERTAINTY.....	4
3. GENERAL INFORMATION.....	5
3.1 GENERAL DESCRIPTION OF EUT	5
3.2 DESCRIPTION OF TEST MODES	7
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	11
3.4 DESCRIPTION OF SUPPORT UNITS.....	11
4. TEST TYPES AND RESULTS	12
4.1 RADIATED EMISSION MEASUREMENT	12
4.2 CONDUCTED EMISSION MEASUREMENT.....	46
4.3 6dB BANDWIDTH MEASUREMENT	53
4.4 MAXIMUM PEAK OUTPUT POWER.....	73
4.5 POWER SPECTRAL DENSITY MEASUREMENT	77
4.6 BAND EDGES MEASUREMENT	91
4.7 ANTENNA REQUIREMENT	105
5. APPENDIX - INFORMATION ON THE TESTING LABORATORIES.....	106

1. CERTIFICATION

PRODUCT: 11N Wireless Lan Card

MODEL: WMP-N12

BRAND: Alpha

APPLICANT: Alpha Networks Inc.

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Mar.16, 2010

STANDARDS: FCC Part 15, Subpart C (Section 15.247)

ANSI C63.4-2003

The above equipment (Model: WMP-N12) has been tested by **Bureau Veritas 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 : Ray Xue , **DATE:** Mar. 24, 2010
Ray Xue
Project Engineer

TECHNICAL ACCEPTANCE : Joy Zhu , **DATE:** Mar. 24, 2010
Joy Zhu
Lab Manager

APPROVED BY : Wallace Pan , **DATE:** Mar. 24, 2010
Wallace Pan
Director of Operations

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.93dB at 0.45MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -0.4dB at 2390MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.

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 Ed 1.0.

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

This lab's measurement uncertainty U_{Lab} , is low than U_{Cispr} , Table 1 – Values of U_{Cispr} of CISPR 16-4-2 Ed. 1.0, therefore compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.

Measurement	Value
Conducted emissions	2.55 dB
Conducted emissions at telecom port	2.6180 dB
Radiated emissions	3.99 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	11N Wireless Lan Card
MODEL NO.	WMP-N12
FCC ID	RRK-WMPN12A1
POWER SUPPLY	Powered by test PCB board
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps Draft 802.11n: up to 300.0Mbps
FREQUENCY RANGE	2.4GHz: 2400 ~ 2483.5MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, draft 802.11n (20MHz) 7 for draft 802.11n (40MHz)
OUTPUT POWER	106.74mW for 2400.0 ~ 2483.5MHz
ANTENNA TYPE	2.4GHz: PCB Antenna A with 3.77dBi gain for chain 1 PCB Antenna B with 3.47dBi gain for chain 0 PCB Antenna C with 1.50dBi gain for chain 1 PCB Antenna D with 1.10dBi gain for chain 0
I/O PORTS	N/A
ASSOCIATED DEVICES	N/A

NOTE:

- The frequency bands used in this EUT are listed as follows:

Frequency Band (MHz)	2400~2483.5
802.11b	√
802.11g	√
Draft 802.11n (20MHz)	√
Draft 802.11n (40MHz)	√

2. The EUT was powered by the test PCB board.
3. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
Draft 802.11n (20MHz)	2TX
Draft 802.11n (40MHz)	2TX

4. The applicant has decided not to use the internal antenna shown on the EUT photo.
5. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

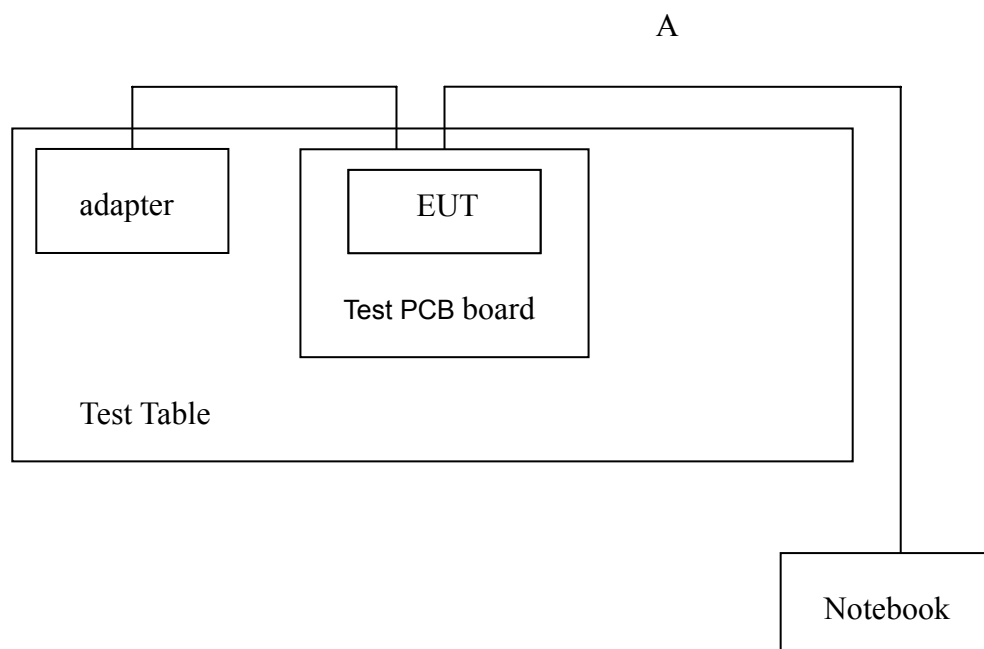
11 channels are provided for 802.11b, 802.11g and draft 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for draft 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR 2.400 ~ 2.4835GHz:

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

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 11	1, 4, 7	OFDM	BPSK	13.0

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	1.0

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	1.0

BANDEDGE MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 11	DSSS	CCK	1.0
802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 11	1, 7	OFDM	BPSK	13.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
Draft 802.11n (40MHz)	1 to 11	1, 4, 7	OFDM	BPSK	13.0

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

ANSI C63.4-2003

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

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.	FCC ID
1	Notebook	Lenovo	R61i	FCC DoC Approved
2	Test PCB board	Provided by manufacturer	N/A	FCC DoC Approved
3	adapter	Shenzhen Ruide Electronic	STC-A22O12C5 5-5	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m Ethernet cable

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Agilent	E4403B	E1S1001	Aug. 04, 2010
Receiver R&S	ESCS30	E1R1001	Jan. 03, 2011
Trilog Broadband Antenna Schwarzbeck	VULB 9168	E1A1001	Aug. 04, 2010
Double Ridged Broadband Horn Antenna Schwarzbeck	BBHA 9120D	E1A1002	Nov. 01, 2010
Preamplifier Agilent	HP 8447D-CFG001	E1A2001	Nov. 12, 2010
Signal Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	Aug. 04, 2010
RF signal cable Woken	RG-402	E1CBH01	Aug. 04, 2010
RF signal cable Woken	RG-412	E1CBL02	Aug. 04, 2010
RF signal cable Woken	RG-412	E1CBL03	Aug. 04, 2010
RF signal cable Woken	RG-412	E1CBL04	Aug. 04, 2010
Software ADT	ADT_Radiated_V7.5	N/A	N/A

NOTE: The calibration interval of the above test instruments is 12 months.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

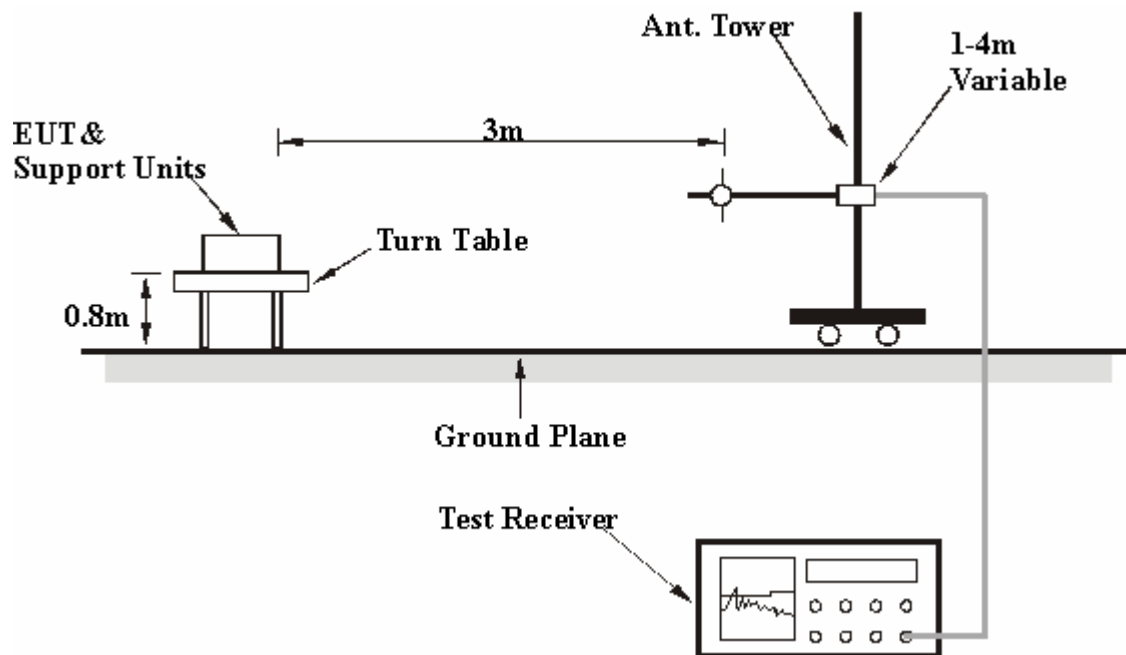
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 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 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

- Put EUT onto the center of the test table, then link EUT to the Notebook.
- Use the software to control the EUT work on the certain channel, then do the test.



A D T

4.1.7 TEST RESULTS

EUT WORK WITH ANTENNA A&B

802.11b DSSS MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	29.84	62.43	74.00	-11.57
2	2390.00	AV	32.59	17.17	49.76	54.00	-4.24
3	*2412.00	PK	32.61	80.70	113.31		
4	*2412.00	AV	32.61	69.45	102.06		
5	4824.00	PK	37.82	9.20	47.01	74.00	-26.99
6	4824.00	AV	37.82	-3.31	34.51	54.00	-19.49
7	#7236.00	PK	44.64	10.02	54.65	93.31	-38.66
8	#7236.00	AV	44.64	-4.53	40.11	82.06	-41.95
9	#9648.00	PK	47.23	9.43	56.65	93.31	-36.66
10	#9648.00	AV	47.23	-3.86	43.36	82.06	-38.70

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2386.48	PK	32.58	29.86	62.44	74.00	-11.56
2	2386.00	AV	32.58	14.62	47.21	54.00	-6.79
3	*2412.00	PK	32.61	76.52	109.14		
4	*2412.00	AV	32.61	66.70	99.32		
5	4824.00	PK	37.82	9.17	46.99	74.00	-27.01
6	4824.00	AV	37.82	-2.80	35.02	54.00	-18.98
7	#7236.00	PK	44.64	8.07	52.71	89.14	-36.43
8	#7236.00	AV	44.64	-4.58	40.06	79.32	-39.26
9	#9648.00	PK	47.23	9.63	56.85	89.14	-32.29
10	#9648.00	AV	47.23	-3.83	43.40	79.32	-35.92

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).



A D T

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 out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	79.01	111.67		
2	*2437.00	AV	32.66	69.42	102.08		
3	4874.00	PK	38.00	8.33	46.33	74.00	-27.67
4	4874.00	AV	38.00	-4.56	33.44	54.00	-20.56
5	7311.00	PK	44.65	8.45	53.11	74.00	-20.89
6	7311.00	AV	44.65	-4.39	40.26	54.00	-13.74
7	#9748.00	PK	47.48	8.64	56.12	91.67	-35.55
8	#9748.00	AV	47.48	-3.97	43.51	82.08	-38.57

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	75.97	108.63		
2	*2437.00	AV	32.66	66.80	99.46		
3	4874.00	PK	38.00	8.75	46.75	74.00	-27.25
4	4874.00	AV	38.00	-4.50	33.51	54.00	-20.49
5	7311.00	PK	44.65	9.07	53.72	74.00	-20.28
6	7311.00	AV	44.65	-4.38	40.27	54.00	-13.73
7	#9748.00	PK	47.48	9.39	56.88	88.63	-31.75
8	#9748.00	AV	47.48	-3.99	43.49	79.46	-35.97

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	80.09	112.81		
2	*2462.00	AV	32.71	71.83	104.54		
3	2484.82	PK	32.76	31.41	64.17	74.00	-9.83
4	2484.83	AV	32.76	17.93	50.69	54.00	-3.31
5	4924.00	PK	38.19	9.70	47.89	74.00	-26.11
6	4924.00	AV	38.19	-4.55	33.64	54.00	-20.36
7	7386.00	PK	44.64	9.02	53.66	74.00	-20.34
8	7386.00	AV	44.64	-4.22	40.42	54.00	-13.58
9	#9848.00	PK	47.66	8.93	56.59	92.81	-36.22
10	#9848.00	AV	47.66	-3.40	44.26	84.54	-40.28

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	75.23	107.94		
2	*2462.00	AV	32.71	66.73	99.44		
3	2487.82	PK	32.77	27.87	60.64	74.00	-13.36
4	2487.82	AV	32.77	14.48	47.25	54.00	-6.75
5	4924.00	PK	38.19	7.34	45.53	74.00	-28.47
6	4924.00	AV	38.19	-4.56	33.62	54.00	-20.38
7	7386.00	PK	44.64	7.95	52.59	74.00	-21.41
8	7386.00	AV	44.64	-4.20	40.44	54.00	-13.56
9	#9848.00	PK	47.66	8.87	56.54	87.94	-31.40
10	#9848.00	AV	47.66	-3.43	44.23	79.44	-35.21

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



A D T

6. “#”: The radiated frequency falling out the restricted band.

802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	34.32	66.91	74.00	-7.09
2	2390.00	AV	32.59	17.68	50.26	54.00	-3.74
3	*2412.00	PK	32.61	75.36	107.98		
4	*2412.00	AV	32.61	65.44	98.06		
5	4824.00	PK	37.82	7.64	45.46	74.00	-28.54
6	4824.00	AV	37.82	-4.59	33.23	54.00	-20.77
7	#7236.00	PK	44.64	8.06	52.70	87.98	-35.28
8	#7236.00	AV	44.64	-4.54	40.10	78.06	-37.96
9	#9648.00	PK	47.23	8.78	56.01	87.98	-31.97
10	#9648.00	AV	47.23	-3.90	43.33	78.06	-34.73

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	33.49	66.08	74.00	-7.92
2	2390.00	AV	32.59	15.98	48.57	54.00	-5.43
3	*2412.00	PK	32.61	71.12	103.74		
4	*2412.00	AV	32.61	61.48	94.09		
5	4824.00	PK	37.82	8.60	46.42	74.00	-27.58
6	4824.00	AV	37.82	-4.54	33.28	54.00	-20.72
7	#7236.00	PK	44.64	7.64	52.28	83.74	-31.46
8	#7236.00	AV	44.64	-4.51	40.13	74.09	-33.96
9	#9648.00	PK	47.23	8.49	55.72	83.74	-28.02
10	#9648.00	AV	47.23	-3.93	43.30	74.09	-30.79

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	73.90	106.57		
2	*2437.00	AV	32.66	64.67	97.33		
3	4874.00	PK	38.00	7.44	45.44	74.00	-28.56
4	4874.00	AV	38.00	-4.65	33.35	54.00	-20.65
5	7311.00	PK	44.65	9.16	53.82	74.00	-20.18
6	7311.00	AV	44.65	-4.20	40.45	54.00	-13.55
7	#9748.00	PK	47.48	10.73	58.22	86.57	-28.35
8	#9748.00	AV	47.48	-3.99	43.49	77.33	-33.84

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	70.53	103.19		
2	*2437.00	AV	32.66	61.05	93.71		
3	4874.00	AV	38.00	-4.54	33.46	54.00	-20.54
4	4874.00	PK	38.00	7.65	45.66	74.00	-28.34
5	7311.00	AV	44.65	-4.35	40.31	54.00	-13.69
6	7311.00	PK	44.65	8.55	53.20	74.00	-20.80
7	#9748.00	PK	47.48	8.42	55.90	83.19	-27.29
8	#9748.00	AV	47.48	-4.02	43.46	73.71	-30.25

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	75.47	108.19		
2	*2462.00	AV	32.71	60.28	93.00		
3	2483.57	PK	32.76	35.01	67.77	74.00	-6.23
4	2483.63	AV	32.76	14.78	47.54	54.00	-6.46
5	4924.00	PK	38.19	8.99	47.17	74.00	-26.83
6	4924.00	AV	38.19	-4.69	33.49	54.00	-20.51
7	7386.00	PK	44.64	8.29	52.93	74.00	-21.07
8	7386.00	AV	44.64	-4.15	40.49	54.00	-13.51
9	#9848.00	PK	47.66	9.23	56.89	88.19	-31.30
10	#9848.00	AV	47.66	-3.46	44.20	73.00	-28.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	70.09	102.80		
2	*2462.00	AV	32.71	60.28	93.00		
3	2483.63	PK	32.76	31.24	64.00	74.00	-10.00
4	2483.63	AV	32.76	14.78	47.54	54.00	-6.46
5	4924.00	PK	38.19	7.82	46.01	74.00	-27.99
6	4924.00	AV	38.19	-4.73	33.46	54.00	-20.54
7	7386.00	PK	44.64	8.38	53.02	74.00	-20.98
8	7386.00	AV	44.64	-4.16	40.48	54.00	-13.52
9	#9848.00	PK	47.66	9.08	56.75	82.80	-26.05
10	#9848.00	AV	47.66	-3.47	44.19	73.00	-28.81

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

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2386.00	PK	32.58	37.47	70.05	74.00	-3.95
2	2386.00	AV	32.58	14.57	47.15	54.00	-6.85
3	*2412.00	PK	32.61	74.17	106.79		
4	*2412.00	AV	32.61	68.52	101.14		
5	4824.00	PK	37.82	8.54	46.36	74.00	-27.64
6	4824.00	AV	37.82	-4.64	33.18	54.00	-20.82
7	#7236.00	PK	44.64	7.30	51.93	86.79	-34.86
8	#7236.00	AV	44.64	-4.47	40.16	81.14	-40.98
9	#9648.00	PK	47.23	8.96	56.19	86.79	-30.60
10	#9648.00	AV	47.23	-3.91	43.32	81.14	-37.82

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2389.36	PK	32.59	30.11	62.70	74.00	-11.30
2	2389.36	AV	32.59	14.74	47.32	54.00	-6.68
3	*2412.00	PK	32.61	70.65	103.26		
4	*2412.00	AV	32.61	61.79	94.40		
5	4824.00	PK	37.82	8.50	46.32	74.00	-27.68
6	4824.00	AV	37.82	-4.62	33.20	54.00	-20.80
7	#7236.00	PK	44.64	7.75	52.39	83.26	-30.87
8	#7236.00	AV	44.64	-4.52	40.12	74.40	-34.28
9	#9648.00	PK	47.23	8.70	55.92	83.26	-27.34
10	#9648.00	AV	47.23	-3.91	43.32	74.40	-31.08

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	78.19	110.86		
2	*2437.00	AV	32.66	65.06	97.72		
3	4874.00	PK	38.00	7.69	45.69	74.00	-28.31
4	4874.00	AV	38.00	-4.69	33.31	54.00	-20.69
5	7311.00	PK	44.65	7.61	52.27	74.00	-21.73
6	7311.00	AV	44.65	-4.33	40.33	54.00	-13.67
7	#9748.00	PK	47.48	8.74	56.22	90.86	-34.64
8	#9748.00	AV	47.48	-4.01	43.47	77.72	-34.25

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	70.08	102.75		
2	*2437.00	AV	32.66	59.56	92.23		
3	4874.00	PK	38.00	8.06	46.06	74.00	-27.94
4	4874.00	AV	38.00	-4.65	33.36	54.00	-20.64
5	7311.00	PK	44.65	8.86	53.51	74.00	-20.49
6	7311.00	AV	44.65	-4.29	40.36	54.00	-13.64
7	#9748.00	PK	47.48	8.74	56.22	82.75	-26.53
8	#9748.00	AV	47.48	-4.01	43.47	72.23	-28.76

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	78.32	111.04		
2	*2462.00	AV	32.71	68.64	101.35		
3	2484.95	PK	32.76	37.53	70.29	74.00	-3.71
4	2484.95	AV	32.76	16.39	49.15	54.00	-4.85
5	4924.00	PK	38.19	7.65	45.84	74.00	-28.16
6	4924.00	AV	38.19	-4.73	33.45	54.00	-20.55
7	7386.00	PK	44.64	8.24	52.88	74.00	-21.12
8	7386.00	AV	44.64	-4.19	40.45	54.00	-13.55
9	#9848.00	PK	47.66	8.57	56.24	91.04	-34.80
10	#9848.00	AV	47.66	-3.50	44.16	81.35	-37.19

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	70.47	103.18		
2	*2462.00	AV	32.71	60.18	92.89		
3	2485.22	PK	32.76	31.56	64.32	74.00	-9.68
4	2485.22	AV	32.76	13.16	45.92	54.00	-8.08
5	4924.00	PK	38.19	7.69	45.87	74.00	-28.13
6	4924.00	AV	38.19	-4.70	33.49	54.00	-20.51
7	7386.00	PK	44.64	8.76	53.40	74.00	-20.60
8	7386.00	AV	44.64	-4.20	40.44	54.00	-13.56
9	#9848.00	PK	47.66	10.15	57.81	83.18	-25.37
10	#9848.00	AV	47.66	-3.50	44.16	72.89	-28.73

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



A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	30.08	62.67	74.00	-11.33
2	2390.00	AV	32.59	15.77	48.35	54.00	-5.65
3	*2422.00	PK	32.63	68.94	101.58		
4	*2422.00	AV	32.63	60.70	93.34		
5	4844.00	PK	37.89	7.72	45.61	74.00	-28.39
6	4844.00	AV	37.89	-4.49	33.41	54.00	-20.59
7	7266.00	PK	44.66	7.82	52.48	74.00	-21.52
8	7266.00	AV	44.66	-4.66	40.00	54.00	-14.00
9	#9688.00	PK	47.33	8.35	55.67	81.58	-25.91
10	#9688.00	AV	47.33	-3.94	43.39	73.34	-29.95

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	25.31	57.90	74.00	-16.10
2	2390.00	AV	32.59	13.57	46.15	54.00	-7.85
3	*2422.00	PK	32.63	62.83	95.46		
4	*2422.00	AV	32.63	52.38	85.02		
5	4844.00	PK	37.89	8.01	45.90	74.00	-28.10
6	4844.00	AV	37.89	-4.49	33.40	54.00	-20.60
7	7266.00	PK	44.66	8.15	52.81	74.00	-21.19
8	7266.00	AV	44.66	-4.62	40.04	54.00	-13.96
9	#9688.00	PK	47.33	8.28	55.60	75.46	-19.86
10	#9688.00	AV	47.33	-3.93	43.40	65.02	-21.62

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	65.59	98.25		
2	*2437.00	AV	32.66	56.08	88.75		
3	4874.00	PK	38.00	8.10	46.11	74.00	-27.89
4	4874.00	AV	38.00	-4.70	33.31	54.00	-20.69
5	7311.00	PK	44.65	8.25	52.90	74.00	-21.10
6	7311.00	AV	44.65	-4.30	40.35	54.00	-13.65
7	#9748.00	PK	47.48	8.71	56.19	78.25	-22.06
8	#9748.00	AV	47.48	-3.99	43.49	68.75	-25.26

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	60.70	93.36		
2	*2437.00	AV	32.66	49.19	81.86		
3	4874.00	PK	38.00	7.58	45.58	74.00	-28.42
4	4874.00	AV	38.00	-4.72	33.29	54.00	-20.71
5	7311.00	PK	44.65	7.96	52.62	74.00	-21.38
6	7311.00	AV	44.65	-4.39	40.27	54.00	-13.73
7	#9748.00	PK	47.48	9.11	56.59	73.36	-16.77
8	#9748.00	AV	47.48	-3.98	43.50	61.86	-18.36

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2452.00	PK	32.69	65.44	98.14		
2	*2452.00	AV	32.69	56.55	89.24		
3	2483.50	PK	32.76	27.34	60.10	74.00	-13.90
4	2483.50	AV	32.76	15.32	48.07	54.00	-5.93
5	4904.00	PK	38.11	8.20	46.31	74.00	-27.69
6	4904.00	AV	38.11	-4.80	33.32	54.00	-20.68
7	7356.00	PK	44.65	7.72	52.36	74.00	-21.64
8	7356.00	AV	44.65	-4.29	40.36	54.00	-13.64
9	#9808.00	PK	47.62	9.42	57.04	78.14	-21.10
10	#9808.00	AV	47.62	-3.38	44.25	69.24	-24.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2452.00	PK	32.69	59.36	92.05		
2	*2452.00	AV	32.69	50.23	82.92		
3	2483.50	PK	32.76	23.62	56.38	74.00	-17.62
4	2483.50	AV	32.76	12.52	45.28	54.00	-8.72
5	4904.00	PK	38.11	7.62	45.74	74.00	-28.26
6	4904.00	AV	38.11	-4.75	33.36	54.00	-20.64
7	7356.00	PK	44.65	8.60	53.25	74.00	-20.75
8	7356.00	AV	44.65	-4.31	40.34	54.00	-13.66
9	#9808.00	PK	47.62	9.58	57.21	72.05	-14.84
10	#9808.00	AV	47.62	-3.38	44.24	62.92	-18.68

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



A D T

EUT WORK WITH ANTENNA C&D**802.11b DSSS MODULATION**

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2386.16	PK	32.58	30.61	63.19	74.00	-10.81
2	2390.00	AV	32.59	18.75	51.33	54.00	-2.67
3	*2412.00	PK	32.61	79.89	112.50		
4	*2412.00	AV	32.61	71.90	104.52		
5	4824.00	PK	37.82	9.35	47.17	74.00	-26.83
6	4824.00	AV	37.82	-4.90	32.92	54.00	-21.08
7	#7236.00	PK	44.64	7.70	52.34	92.50	-40.16
8	#7236.00	AV	44.64	-4.70	39.94	84.52	-44.58
9	#9648.00	PK	47.23	8.91	56.14	92.50	-36.36
10	#9648.00	AV	47.23	-4.14	43.08	84.52	-41.44

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2386.32	PK	32.58	28.28	60.86	74.00	-13.14
2	2390.00	AV	32.59	15.26	47.85	54.00	-6.15
3	*2412.00	PK	32.61	78.54	111.15		
4	*2412.00	AV	32.61	67.89	100.51		
5	4824.00	PK	37.82	7.16	44.98	74.00	-29.02
6	4824.00	AV	37.82	-4.88	32.94	54.00	-21.06
7	#7236.00	PK	44.64	7.71	52.35	91.15	-38.80
8	#7236.00	AV	44.64	-4.78	39.86	80.51	-40.65
9	#9648.00	PK	47.23	8.20	55.43	91.15	-35.72
10	#9648.00	AV	47.23	-4.13	43.10	80.51	-37.41

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	77.79	110.45		
2	*2437.00	AV	32.66	71.14	103.80		
3	4874.00	PK	38.00	7.76	45.76	74.00	-28.24
4	4874.00	AV	38.00	-4.95	33.05	54.00	-20.95
5	7311.00	PK	44.65	8.34	52.99	74.00	-21.01
6	7311.00	AV	44.65	-4.55	40.10	54.00	-13.90
7	#9748.00	PK	47.48	8.22	55.71	90.45	-34.74
8	#9748.00	AV	47.48	-4.31	43.17	83.80	-40.63

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	77.97	110.63		
2	*2437.00	AV	32.66	67.51	100.18		
3	4874.00	PK	38.00	6.86	44.86	74.00	-29.14
4	4874.00	AV	38.00	-4.99	33.02	54.00	-20.98
5	7311.00	PK	44.65	8.64	53.30	74.00	-20.70
6	7311.00	AV	44.65	-4.49	40.17	54.00	-13.83
7	#9748.00	PK	47.48	7.80	55.28	90.63	-35.35
8	#9748.00	AV	47.48	-4.31	43.17	80.18	-37.01

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	77.41	110.12		
2	*2462.00	AV	32.71	70.53	103.25		
3	2484.62	PK	32.76	28.13	60.89	74.00	-13.11
4	2483.50	AV	32.76	17.47	50.23	54.00	-3.77
5	4924.00	PK	38.19	7.27	45.46	74.00	-28.54
6	4924.00	AV	38.19	-4.94	33.25	54.00	-20.75
7	7386.00	PK	44.64	7.31	51.95	74.00	-22.05
8	7386.00	AV	44.64	-4.42	40.22	54.00	-13.78
9	#9848.00	PK	47.66	10.78	58.44	90.12	-31.68
10	#9848.00	AV	47.66	-3.84	43.82	83.25	-39.43

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	78.10	110.81		
2	*2462.00	AV	32.71	67.38	100.10		
3	2487.79	PK	32.77	28.13	60.89	74.00	-13.11
4	2483.50	AV	32.76	15.79	48.55	54.00	-5.45
5	4924.00	PK	38.19	7.12	45.30	74.00	-28.70
6	4924.00	AV	38.19	-5.17	33.02	54.00	-20.98
7	7386.00	PK	44.64	7.90	52.54	74.00	-21.46
8	7386.00	AV	44.64	-4.41	40.23	54.00	-13.77
9	#9848.00	PK	47.66	8.46	56.12	90.81	-34.69
10	#9848.00	AV	47.66	-3.82	43.84	80.10	-36.26

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



A D T

802.11g OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	36.55	69.14	74.00	-4.86
2	2390.00	AV	32.59	17.14	49.73	54.00	-4.27
3	*2412.00	PK	32.61	74.84	107.45		
4	*2412.00	AV	32.61	65.89	98.50		
5	4824.00	PK	37.82	7.80	45.62	74.00	-28.38
6	4824.00	AV	37.82	-4.88	32.94	54.00	-21.06
7	#7236.00	PK	44.64	6.47	51.11	87.45	-36.34
8	#7236.00	AV	44.64	-4.76	39.88	78.50	-38.62
9	#9648.00	PK	47.23	7.99	55.21	87.45	-32.24
10	#9648.00	AV	47.23	-4.20	43.03	78.50	-35.47

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2389.68	PK	32.59	34.29	66.87	74.00	-7.13
2	2390.00	AV	32.59	15.12	47.71	54.00	-6.29
3	*2412.00	PK	32.61	74.44	107.05		
4	*2412.00	AV	32.61	61.91	94.53		
5	4824.00	PK	37.82	7.81	45.63	74.00	-28.37
6	4824.00	AV	37.82	-4.85	32.96	54.00	-21.04
7	#7236.00	PK	44.64	6.87	51.51	87.05	-35.54
8	#7236.00	AV	44.64	-4.71	39.93	74.53	-34.60
9	#9648.00	PK	47.23	7.66	54.89	87.05	-32.16
10	#9648.00	AV	47.23	-4.20	43.03	74.53	-31.50

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	73.00	105.66		
2	*2437.00	AV	32.66	65.06	97.73		
3	4874.00	PK	38.00	7.99	46.00	74.00	-28.00
4	4874.00	AV	38.00	-4.98	33.03	54.00	-20.97
5	7311.00	PK	44.65	7.54	52.19	74.00	-21.81
6	7311.00	AV	44.65	-4.50	40.16	54.00	-13.84
7	#9748.00	PK	47.48	8.51	55.99	85.66	-29.67
8	#9748.00	AV	47.48	-4.32	43.17	77.73	-34.56

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	73.54	106.21		
2	*2437.00	AV	32.66	61.79	94.46		
3	4874.00	PK	38.00	7.81	45.82	74.00	-28.18
4	4874.00	AV	38.00	-4.98	33.02	54.00	-20.98
5	7311.00	PK	44.65	7.37	52.02	74.00	-21.98
6	7311.00	AV	44.65	-4.52	40.14	54.00	-13.86
7	#9748.00	PK	47.48	8.22	55.70	86.21	-30.51
8	#9748.00	AV	47.48	-4.31	43.17	74.46	-31.29

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	72.37	105.08		
2	*2462.00	AV	32.71	64.65	97.37		
3	2483.60	PK	32.76	35.13	67.89	74.00	-6.11
4	2483.50	AV	32.76	16.90	49.65	54.00	-4.35
5	4924.00	PK	38.19	6.86	45.04	74.00	-28.96
6	4924.00	AV	38.19	-4.97	33.22	54.00	-20.78
7	7386.00	PK	44.64	7.48	52.12	74.00	-21.88
8	7386.00	AV	44.64	-4.44	40.20	54.00	-13.80
9	#9848.00	PK	47.66	7.81	55.47	85.08	-29.61
10	#9848.00	AV	47.66	-3.82	43.84	77.37	-33.53

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	72.99	105.71		
2	*2462.00	AV	32.71	61.58	94.29		
3	2483.60	PK	32.76	35.75	68.51	74.00	-5.49
4	2483.50	AV	32.76	15.29	48.05	54.00	-5.95
5	4924.00	PK	38.19	6.96	45.14	74.00	-28.86
6	4924.00	AV	38.19	-4.97	33.22	54.00	-20.78
7	7386.00	PK	44.64	7.62	52.26	74.00	-21.74
8	7386.00	AV	44.64	-4.44	40.20	54.00	-13.80
9	#9848.00	PK	47.66	8.22	55.88	85.71	-29.83
10	#9848.00	AV	47.66	-3.85	43.81	74.29	-30.48

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



A D T

DRAFT 802.11n (20MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	41.01	73.60	74.00	-0.40
2	2390.00	AV	32.59	19.94	52.52	54.00	-1.48
3	*2412.00	PK	32.61	78.08	110.70		
4	*2412.00	AV	32.61	67.83	100.45		
5	4824.00	PK	37.82	7.72	45.54	74.00	-28.46
6	4824.00	AV	37.82	-4.91	32.91	54.00	-21.09
7	#7236.00	PK	44.64	7.11	51.75	90.70	-38.95
8	#7236.00	AV	44.64	-4.74	39.90	80.45	-40.55
9	#9648.00	PK	47.23	8.85	56.08	90.70	-34.62
10	#9648.00	AV	47.23	-4.21	43.01	80.45	-37.44

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	31.37	63.96	74.00	-10.04
2	2390.00	AV	32.59	13.80	46.39	54.00	-7.61
3	*2412.00	PK	32.61	70.59	103.20		
4	*2412.00	AV	32.61	61.43	94.05		
5	4824.00	PK	37.82	6.95	44.77	74.00	-29.23
6	4824.00	AV	37.82	-4.84	32.98	54.00	-21.02
7	#7236.00	PK	44.64	7.24	51.88	83.20	-31.32
8	#7236.00	AV	44.64	-4.75	39.89	74.05	-34.16
9	#9648.00	PK	47.23	7.43	54.66	83.20	-28.54
10	#9648.00	AV	47.23	-4.23	43.00	74.05	-31.05

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	77.83	110.49		
2	*2437.00	AV	32.66	67.39	100.05		
3	4874.00	PK	38.00	6.35	44.36	74.00	-29.64
4	4874.00	AV	38.00	-5.00	33.00	54.00	-21.00
5	7311.00	PK	44.65	7.41	52.06	74.00	-21.94
6	7311.00	AV	44.65	-4.53	40.12	54.00	-13.88
7	#9748.00	PK	47.48	6.91	54.39	90.49	-36.10
8	#9748.00	AV	47.48	-4.35	43.14	80.05	-36.91

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	72.79	105.46		
2	*2437.00	AV	32.66	61.47	94.14		
3	4874.00	PK	38.00	7.50	45.50	74.00	-28.50
4	4874.00	AV	38.00	-4.83	33.17	54.00	-20.83
5	7311.00	PK	44.65	7.40	52.06	74.00	-21.94
6	7311.00	AV	44.65	-4.49	40.17	54.00	-13.83
7	#9748.00	PK	47.48	7.61	55.09	85.46	-30.37
8	#9748.00	AV	47.48	-4.33	43.15	74.14	-30.99

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	78.80	111.52		
2	*2462.00	AV	32.71	60.96	93.68		
3	2485.05	PK	32.76	38.05	70.81	74.00	-3.19
4	2485.05	AV	32.76	14.30	47.06	54.00	-6.94
5	4924.00	PK	38.19	6.54	44.73	74.00	-29.27
6	4924.00	AV	38.19	-4.99	33.20	54.00	-20.80
7	7386.00	PK	44.64	7.99	52.63	74.00	-21.37
8	7386.00	AV	44.64	-4.42	40.22	54.00	-13.78
9	#9848.00	PK	47.66	8.06	55.72	91.52	-35.80
10	#9848.00	AV	47.66	-3.85	43.81	73.68	-29.87

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2462.00	PK	32.71	68.50	101.22		
2	*2462.00	AV	32.71	59.09	91.80		
3	2485.05	PK	32.76	30.86	63.62	74.00	-10.38
4	2485.05	AV	32.76	14.56	47.32	54.00	-6.68
5	4924.00	PK	38.19	6.51	44.70	74.00	-29.30
6	4924.00	AV	38.19	-4.93	33.26	54.00	-20.74
7	7386.00	PK	44.64	7.01	51.65	74.00	-22.35
8	7386.00	AV	44.64	-4.45	40.19	54.00	-13.81
9	#9848.00	PK	47.66	8.42	56.08	81.22	-25.14
10	#9848.00	AV	47.66	-3.83	43.84	71.80	-27.96

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



A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	27.80	60.38	74.00	-13.62
2	2390.00	AV	32.59	18.04	50.62	54.00	-3.38
3	*2422.00	PK	32.63	71.18	103.81		
4	*2422.00	AV	32.63	51.44	84.07		
5	4844.00	PK	37.89	7.37	45.26	74.00	-28.74
6	4844.00	AV	37.89	-4.76	33.13	54.00	-20.87
7	7266.00	PK	44.66	7.54	52.20	74.00	-21.80
8	7266.00	AV	44.66	-4.94	39.73	54.00	-14.27
9	#9688.00	PK	47.33	8.04	55.37	83.81	-28.44
10	#9688.00	AV	47.33	-4.25	43.08	64.07	-20.99

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.00	PK	32.59	24.23	56.81	74.00	-17.19
2	2390.00	AV	32.59	13.58	46.16	54.00	-7.84
3	*2422.00	PK	32.63	60.99	93.62		
4	*2422.00	AV	32.63	52.79	85.42		
5	4844.00	PK	37.89	8.26	46.16	74.00	-27.84
6	4844.00	AV	37.89	-4.77	33.12	54.00	-20.88
7	7266.00	PK	44.66	7.27	51.93	74.00	-22.07
8	7266.00	AV	44.66	-4.79	39.87	54.00	-14.13
9	#9688.00	PK	47.33	8.27	55.59	73.62	-18.03
10	#9688.00	AV	47.33	-4.22	43.10	65.42	-22.32

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	70.05	102.71		
2	*2437.00	AV	32.66	59.86	92.52		
3	4874.00	PK	38.00	7.15	45.15	74.00	-28.85
4	4824.00	AV	37.82	-5.20	32.62	54.00	-21.38
5	7311.00	PK	44.65	6.94	51.59	74.00	-22.41
6	7311.00	AV	44.65	-4.45	40.20	54.00	-13.80
7	#9748.00	PK	47.48	7.62	55.10	82.71	-27.61
8	#9748.00	AV	47.48	-4.37	43.11	72.52	-29.41

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2437.00	PK	32.66	60.13	92.79		
2	*2437.00	AV	32.66	50.46	83.12		
3	4874.00	PK	38.00	7.52	45.52	74.00	-28.48
4	4874.00	AV	38.00	-5.06	32.94	54.00	-21.06
5	7311.00	PK	44.65	7.59	52.24	74.00	-21.76
6	7311.00	AV	44.65	-4.54	40.11	54.00	-13.89
7	#9748.00	PK	47.48	7.18	54.67	72.79	-18.12
8	#9748.00	AV	47.48	-4.35	43.13	63.12	-19.99

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2452.00	PK	32.69	66.19	98.88		
2	*2452.00	AV	32.69	56.39	89.09		
3	2483.50	PK	32.76	27.63	60.39	74.00	-13.61
4	2483.50	AV	32.76	16.70	49.45	54.00	-4.55
5	4904.00	PK	38.11	6.97	45.08	74.00	-28.92
6	4904.00	AV	38.11	-5.31	32.81	54.00	-21.19
7	7356.00	PK	44.65	8.25	52.89	74.00	-21.11
8	7356.00	AV	44.65	-4.51	40.14	54.00	-13.86
9	#9808.00	PK	47.62	8.01	55.63	78.88	-23.25
10	#9808.00	AV	47.62	-3.71	43.92	69.09	-25.17

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
NO.	Frequency (MHz)	Detector	Factor (dB)	Reading (dBuV/m)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	*2452.00	PK	32.69	62.51	95.21		
2	*2452.00	AV	32.69	52.92	85.61		
3	2483.50	PK	32.76	24.58	57.34	74.00	-16.66
4	2483.50	AV	32.76	14.44	47.19	54.00	-6.81
5	4904.00	PK	38.11	6.58	44.69	74.00	-29.31
6	4904.00	AV	38.11	-5.29	32.82	54.00	-21.18
7	7356.00	PK	44.65	7.33	51.98	74.00	-22.02
8	7356.00	AV	44.65	-4.45	40.19	54.00	-13.81
9	#9808.00	PK	47.62	8.52	56.14	75.21	-19.07
10	#9808.00	AV	47.62	-3.71	43.91	65.61	-21.7

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

BELOW 1GHz WORST-CASE DATA : CCK MODULATION

EUT work with Antenna A&B

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

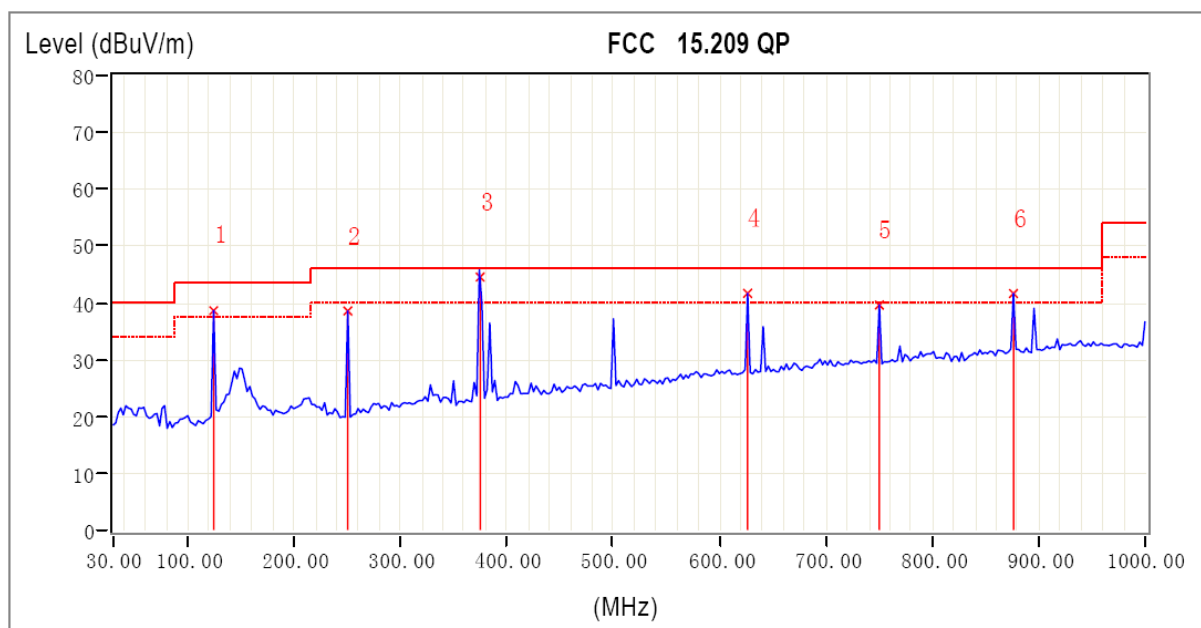
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	124.58	15.04	23.56	38.60	43.50	-4.90	108	20
2	250.68	14.83	23.71	38.55	46.00	-7.45	100	15
3	375.03	18.17	26.32	44.49	46.00	-1.51	100	35
4	626.55	23.62	18.03	41.65	46.00	-4.35	100	175
5	750.23	25.33	14.24	39.57	46.00	-6.43	100	183
6	876.33	26.59	15.02	41.61	46.00	-4.39	100	166

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.

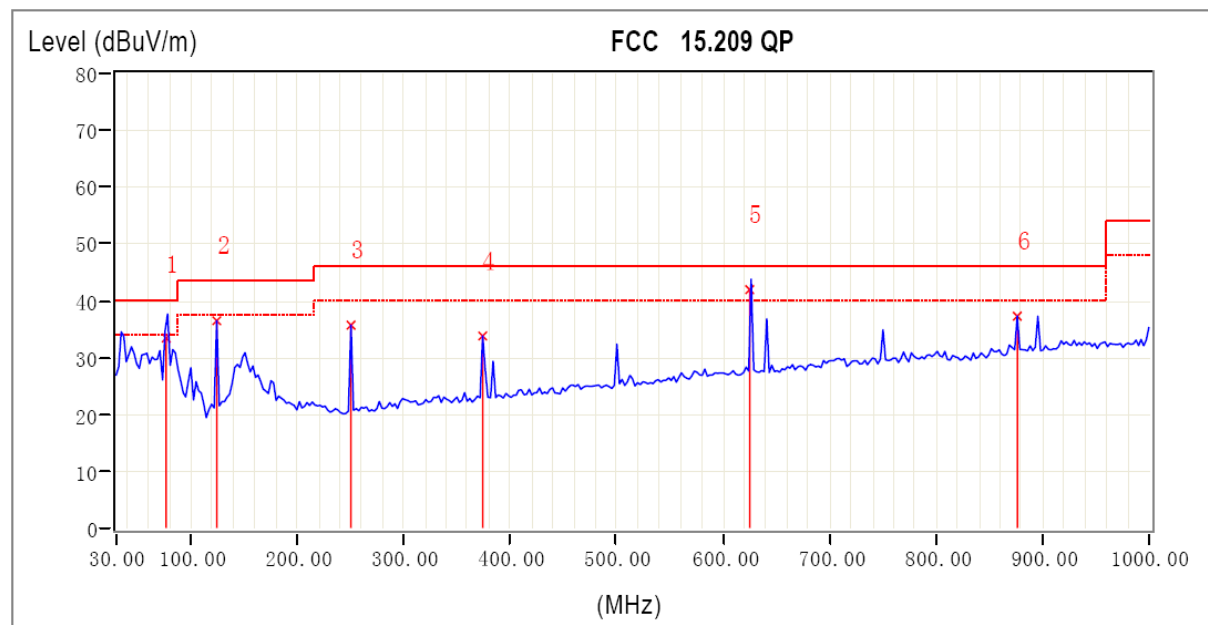
4. Margin value = Emission level – Limit value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	77.15	11.96	21.44	33.40	40.00	-6.60	100	35
2	124.58	15.04	21.40	36.44	43.50	-7.06	100	40
3	250.68	14.83	20.84	35.67	46.00	-10.33	100	23
4	374.35	18.15	15.62	33.78	46.00	-12.22	100	65
5	625.05	23.60	18.33	41.93	46.00	-4.07	100	175
6	876.33	26.59	10.65	37.24	46.00	-8.76	100	77

- 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.

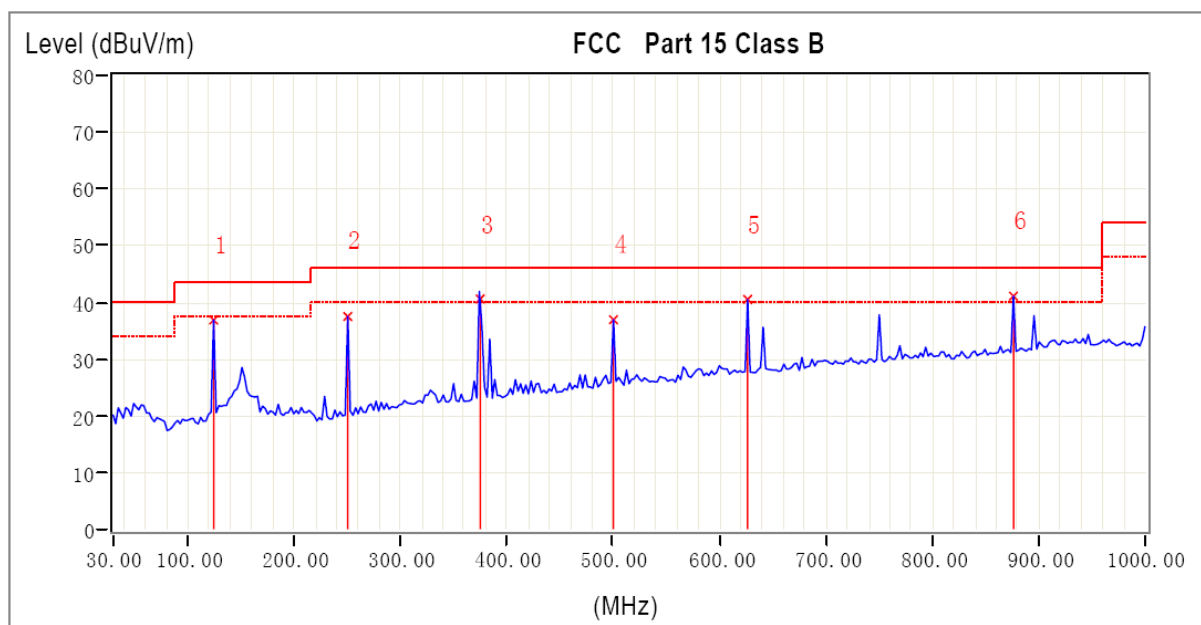


EUT work with Antenna C&D

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	124.58	15.04	23.81	38.85	43.50	-4.65	100	87
2	250.68	14.83	19.83	34.67	46.00	-11.33	100	91
3	375.03	18.17	24.60	42.77	46.00	-3.23	100	91
4	626.55	23.62	15.46	39.08	46.00	-6.92	100	58
5	750.23	25.33	13.62	38.95	46.00	-7.05	100	8
6	876.33	26.59	15.26	41.85	46.00	-4.15	100	25

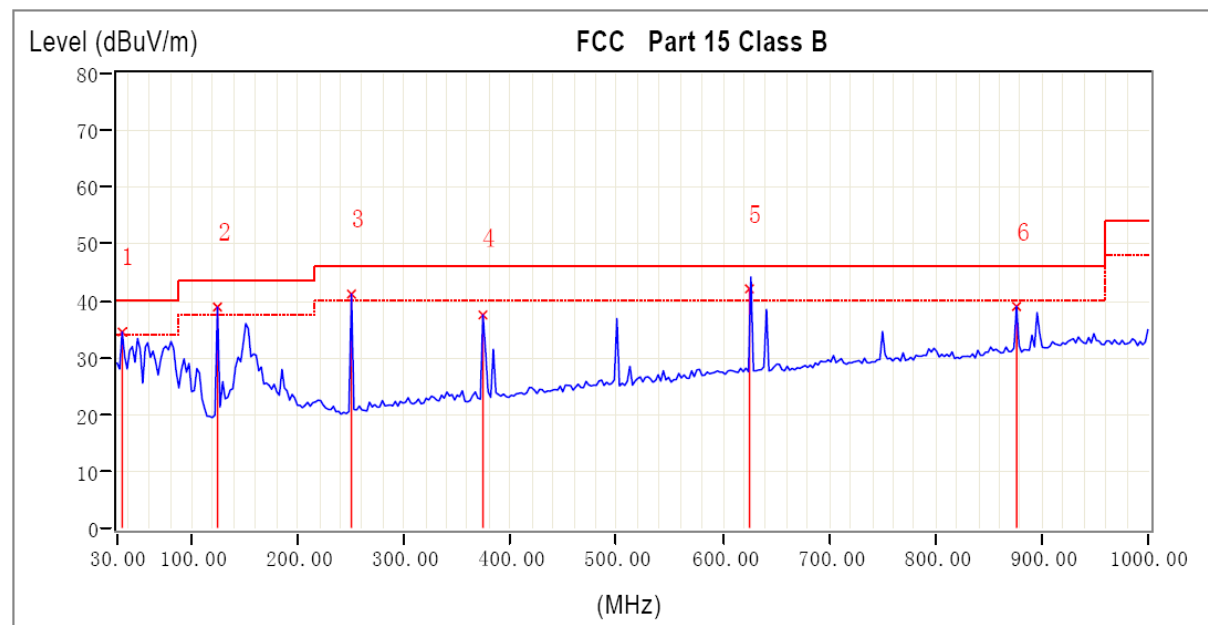
- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	24deg. C, 70%RH 999hPa	TESTED BY	Ray

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	42.12	15.75	20.98	36.73	40.00	-3.27	100	297
2	124.58	15.04	23.02	38.06	43.50	-5.44	100	272
3	250.68	14.83	23.79	38.62	46.00	-7.38	100	235
4	374.35	18.15	17.61	35.76	46.00	-10.24	100	207
5	626.55	23.62	17.37	40.99	46.00	-5.01	100	178
6	876.33	26.59	12.42	39.00	46.00	-7.00	100	150

- 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 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
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.	CALIBRATED UNTIL
Receiver R&S	ESCS30	E1R1002	Dec. 27, 2010
LISN Schwarzbeck	ENV216	E1L1011	Apr. 01, 2010
RF signal cable Woken	RG-58	E1CBL09	Apr. 01, 2010
Software ADT	ADT_Cond_ V7.3.0	N/A	N/A

NOTE: The calibration interval of the above test instruments is 12 months.

4.2.3 TEST PROCEDURES

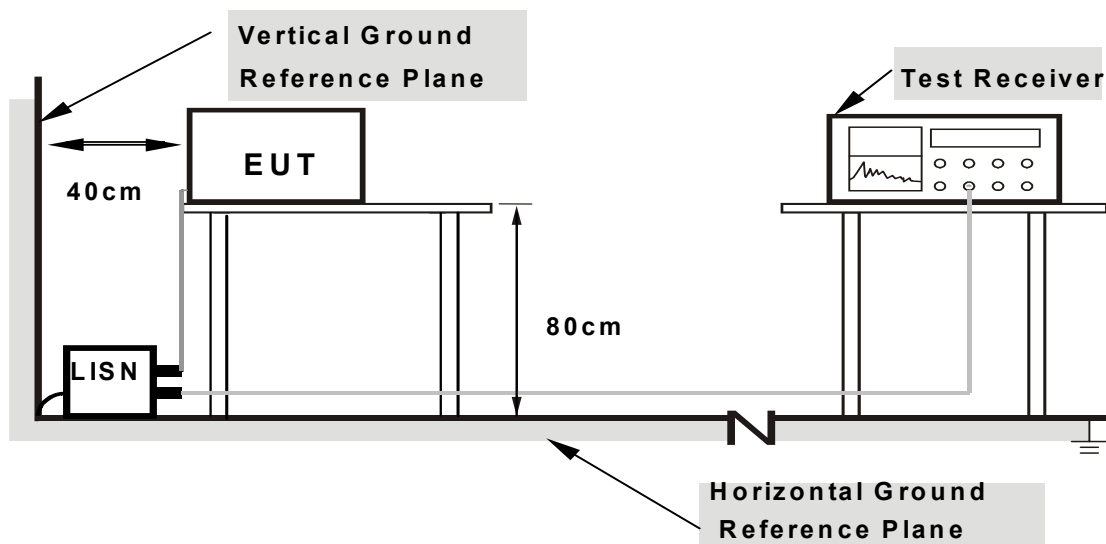
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

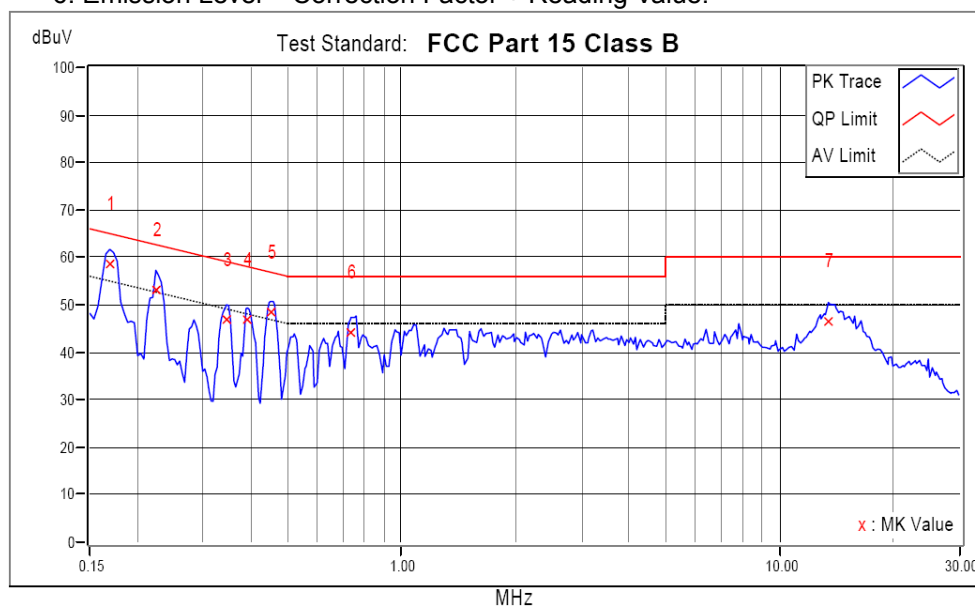
EUT work with Antenna A&B

CONDUCTED WORST-CASE DATA : CCK MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	L
MODULATION TYPE	CCK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	21deg. C, 66%RH, 988hPa	TESTED BY	Ray

No	Freq.	Corr.	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	0.17	9.77	48.99	38.98	58.76	48.75	64.98	54.98	-6.22	-6.23
2	0.22	9.70	43.30	36.42	53.00	46.12	62.66	52.66	-9.66	-6.54
3	0.35	9.71	37.25	31.85	46.96	41.56	59.07	49.07	-12.11	-7.51
4	0.39	9.72	37.19	30.15	46.91	39.87	58.01	48.01	-11.11	-8.15
5	0.45	9.72	38.53	32.21	48.25	41.93	56.86	46.86	-8.61	-4.93
6	0.74	9.71	34.25	26.02	43.96	35.73	56.00	46.00	-12.04	10.27
7	3.46	10.10	36.39	30.99	46.49	41.09	60.00	50.00	-13.51	-8.91

- 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.



	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17	9.75	47.45	37.24	57.20	46.99	64.79	54.79	-7.59	-7.80
2	0.22	9.71	40.70	30.94	50.41	40.65	62.66	52.66	-12.25	-12.01
3	0.45	9.71	32.26	26.24	41.97	35.95	56.86	46.86	-14.88	-10.90
4	0.74	9.74	30.07	21.60	39.81	31.34	56.00	46.00	-16.19	-14.66
5	1.08	9.78	28.99	19.40	38.77	29.18	56.00	46.00	-17.23	-16.82
6	13.98	10.20	32.32	27.20	42.52	37.40	60.00	50.00	-17.48	-12.60

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

4. Margin value = Emission level - Limit value

5. Correction factor = Insertion loss + Cable loss

6. Emission Level = Correction Factor + Reading Value.



EUT work with Antenna C&D

CONDUCTED WORST-CASE DATA : CCK MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	L
MODULATION TYPE	CCK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	21deg. C, 66%RH, 988hPa	TESTED BY	Ray

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17	9.78	49.70	35.81	59.48	45.59	65.18	55.18	-5.69	-9.58
2	0.22	9.70	44.81	36.72	54.51	46.42	62.95	52.95	-8.44	-6.53
3	0.26	9.70	35.85	22.61	45.55	32.31	61.45	51.45	-15.90	-19.14
4	0.37	9.72	38.03	32.07	47.75	41.79	58.44	48.44	-10.69	-6.65
5	0.45	9.72	32.24	15.11	41.96	24.83	56.93	46.93	-14.97	-22.10
6	0.47	9.72	33.12	24.88	42.84	34.60	56.43	46.43	-13.60	-11.84
7	13.51	10.10	30.52	24.52	40.62	34.62	60.00	50.00	-19.38	-15.38

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

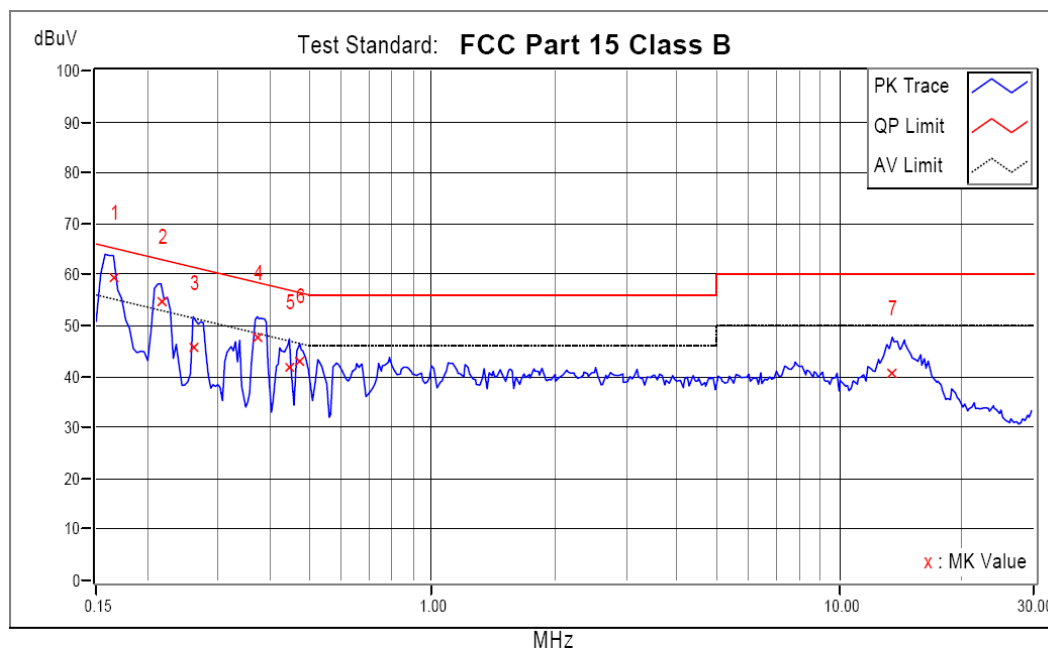
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

3. The emission levels of other frequencies were very low against the limit.

4. Margin value = Emission level - Limit value

5. Correction factor = Insertion loss + Cable loss

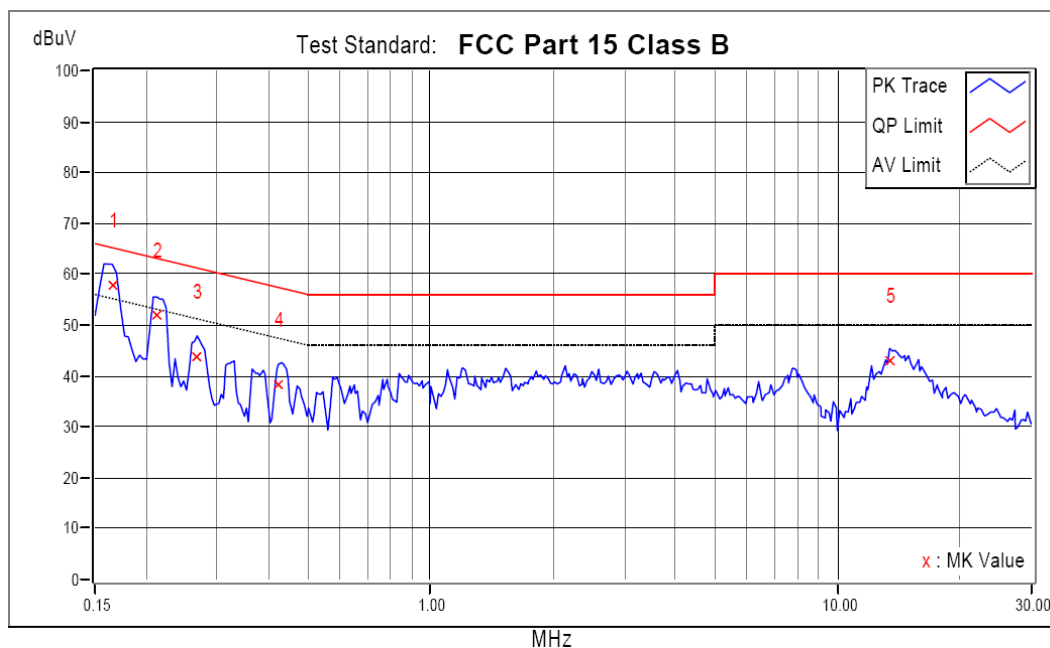
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	PHASE	N
MODULATION TYPE	CCK	INPUT POWER (SYSTEM)	120Vac, 60Hz
TRANSFER RATE	1.0Mbps	6dB BANDWIDTH	9kHz
ENVIRONMENTAL CONDITIONS	21deg. C, 66%RH, 988hPa	TESTED BY	Ray

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17	9.76	47.90	34.43	57.66	44.19	65.18	55.18	-7.51	-10.98
2	0.21	9.71	42.18	33.02	51.89	42.73	63.10	53.10	-11.22	-10.38
3	0.27	9.71	33.86	20.04	43.57	29.75	61.20	51.20	-17.63	-21.45
4	0.42	9.71	28.40	21.48	38.11	31.19	57.38	47.38	-19.26	-16.18
5	13.48	10.18	32.75	28.97	42.93	39.15	60.00	50.00	-17.07	-10.85

- 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.



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Signal Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	Aug. 04, 2010

NOTE: The calibration interval of the above test instruments is 12 months.

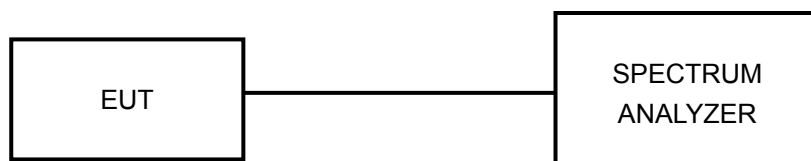
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

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 lowest, middle and highest channel frequencies individually.

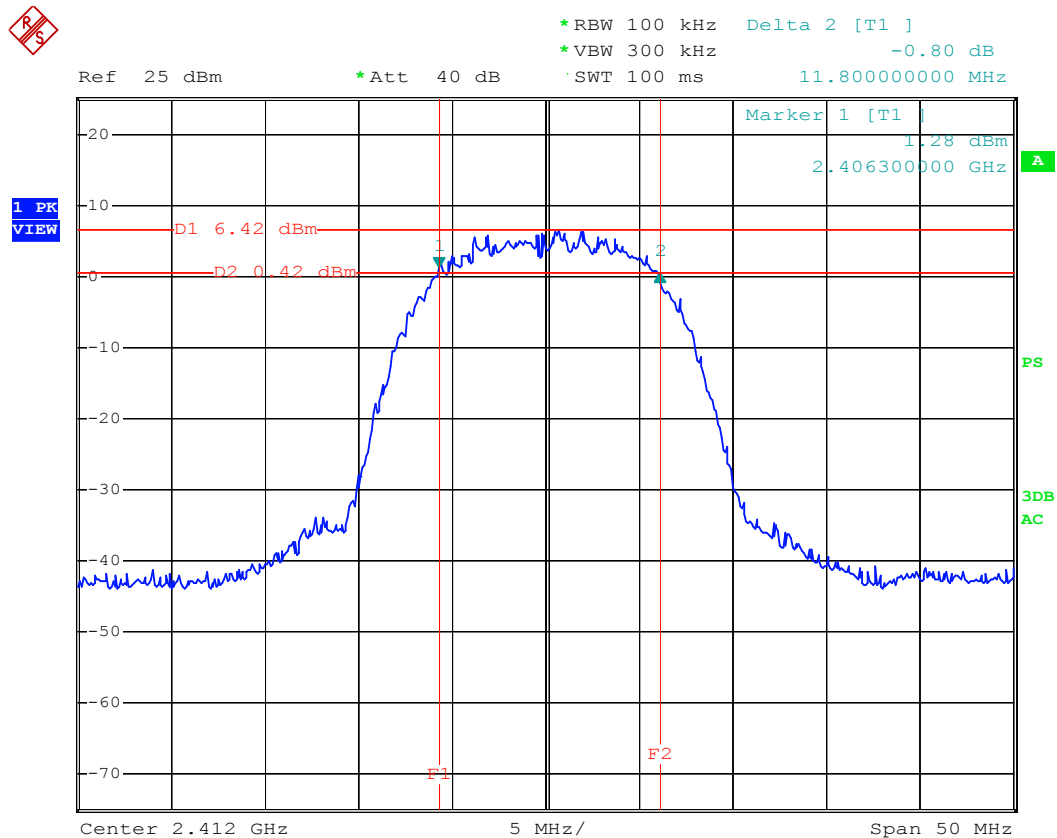
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

MODULATION TYPE	CCK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.8	0.5	PASS
6	2437	11.8	0.5	PASS
11	2462	12.0	0.5	PASS

CH 1





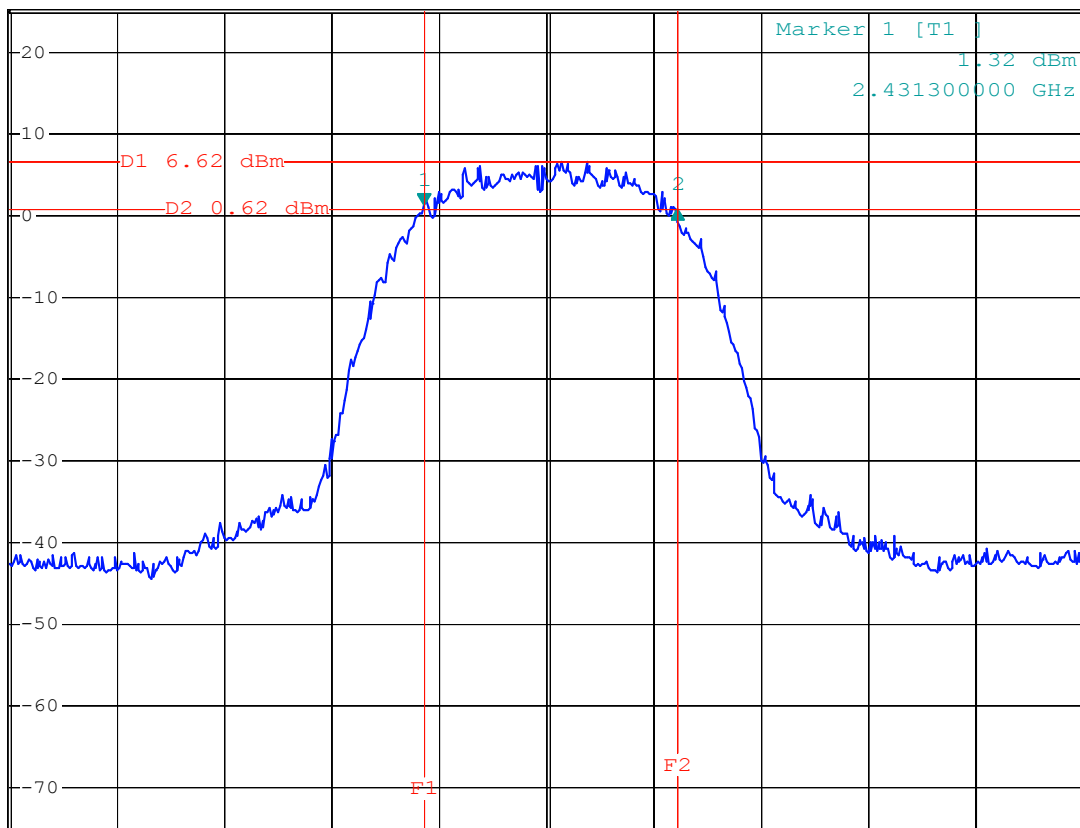
A D T

CH 6



Ref 25 dBm *Att 40 dB *RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz -0.71 dB
*SWT 100 ms 11.800000000 MHz

1 PK
VIEW



Center 2.437 GHz 5 MHz/ Span 50 MHz



A D T

CH 11

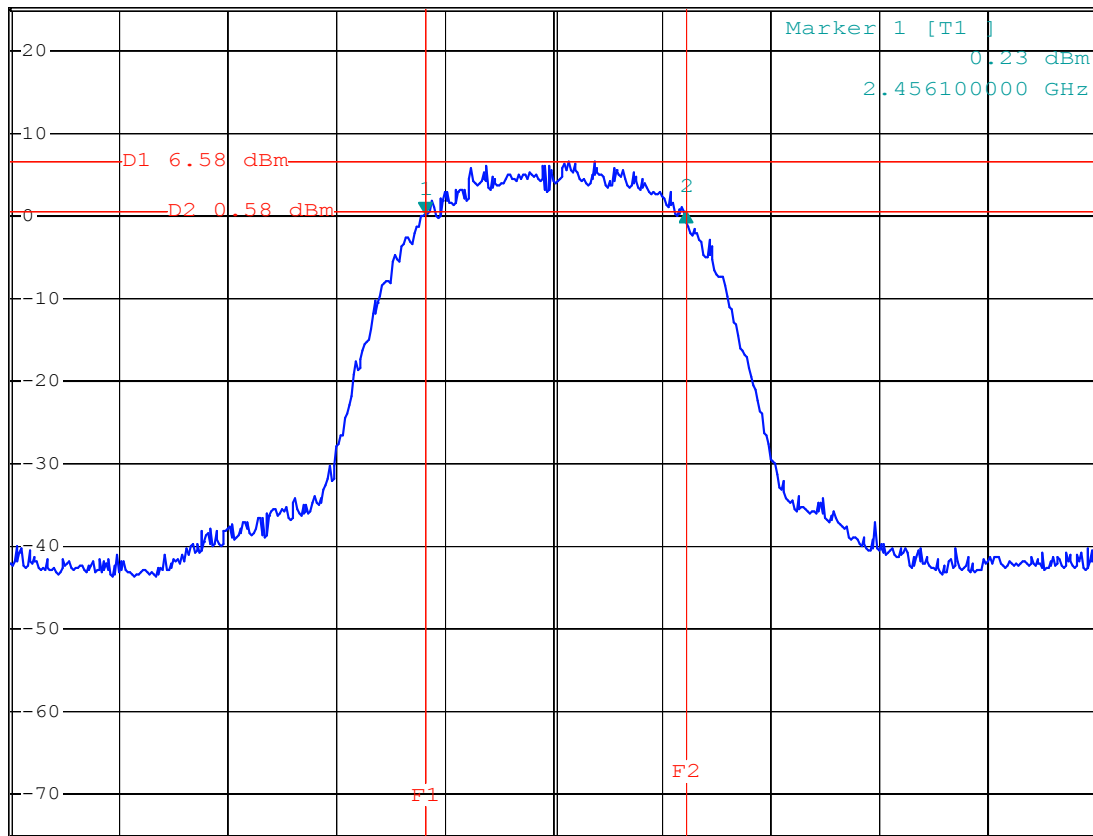


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 0.36 dB
*SWT 100 ms 12.000000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.5	0.5	PASS
6	2437	16.5	0.5	PASS
11	2462	16.4	0.5	PASS

CH 1

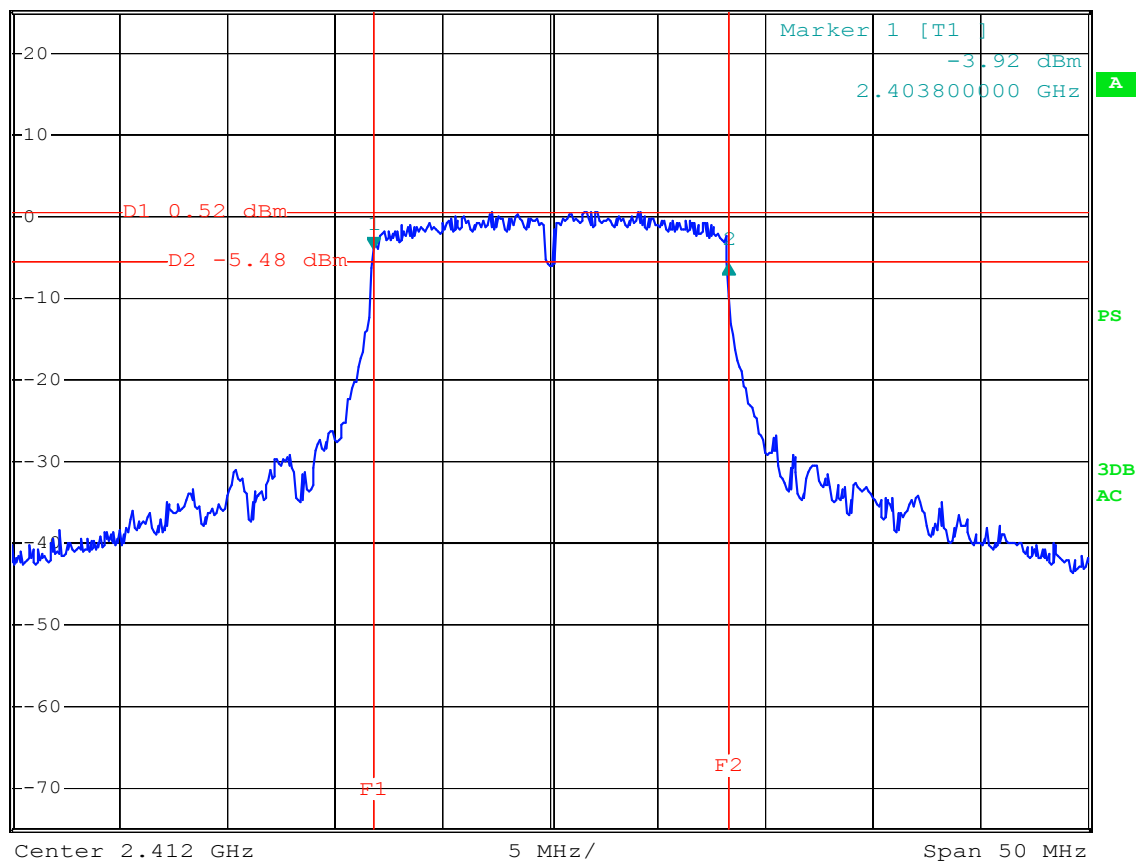


*RBW 100 kHz Delta 2 [T1]
 *VBW 300 kHz -2.03 dB
 *SWT 100 ms 16.500000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW





A D T

CH 6

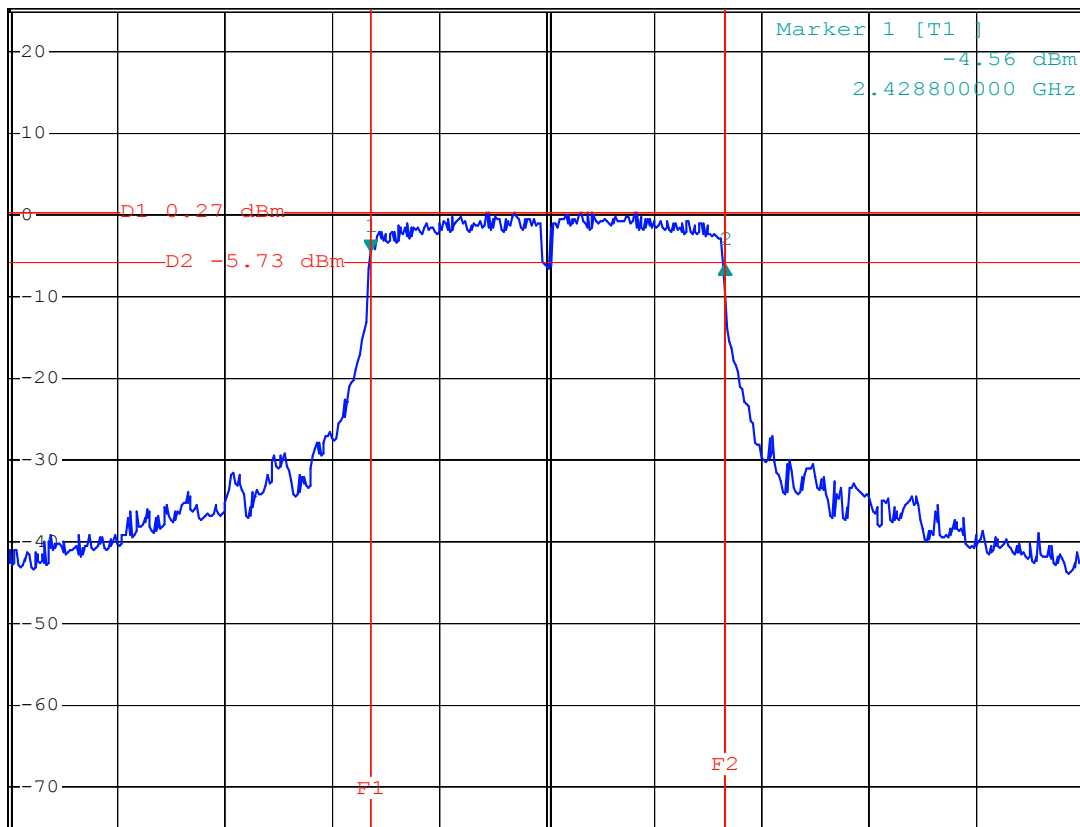


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz -1.64 dB
*SWT 100 ms 16.50000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW





A D T

CH 11

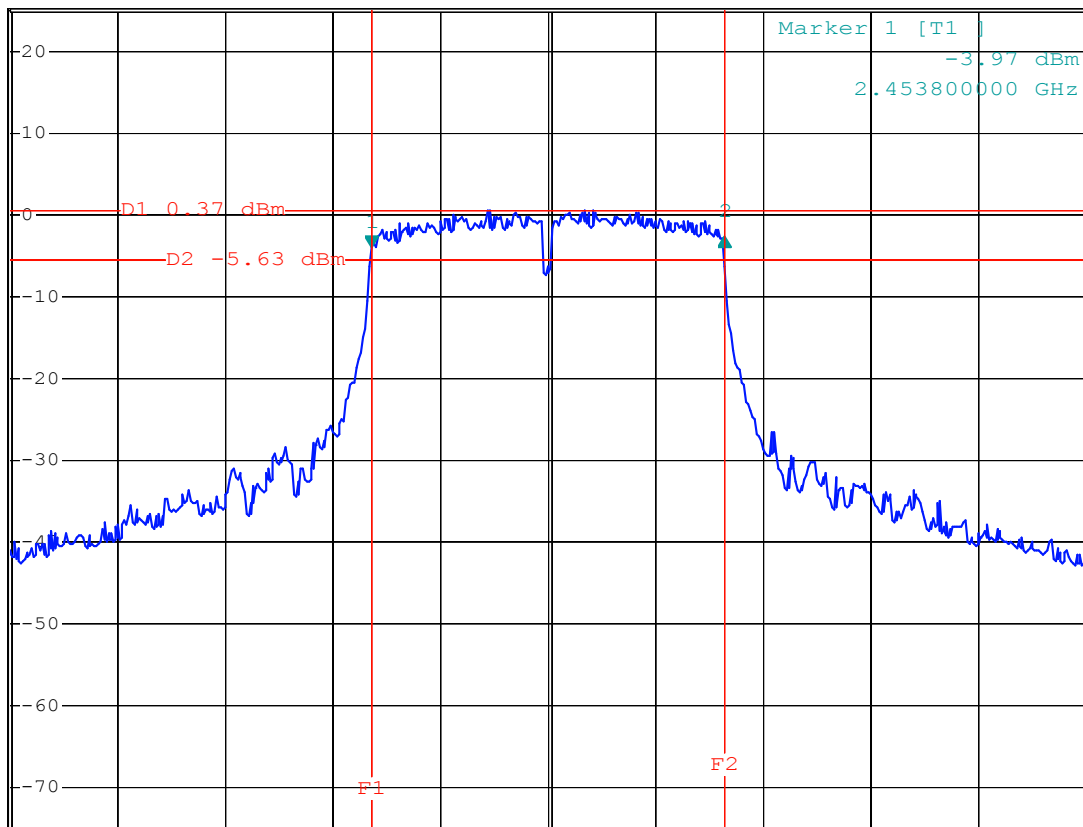


1 PK
VIEW

*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 1.36 dB
*SWT 100 ms 16.40000000 MHz

Ref 25 dBm

*Att 40 dB



Center 2.462 GHz

5 MHz/

Span 50 MHz



A D T

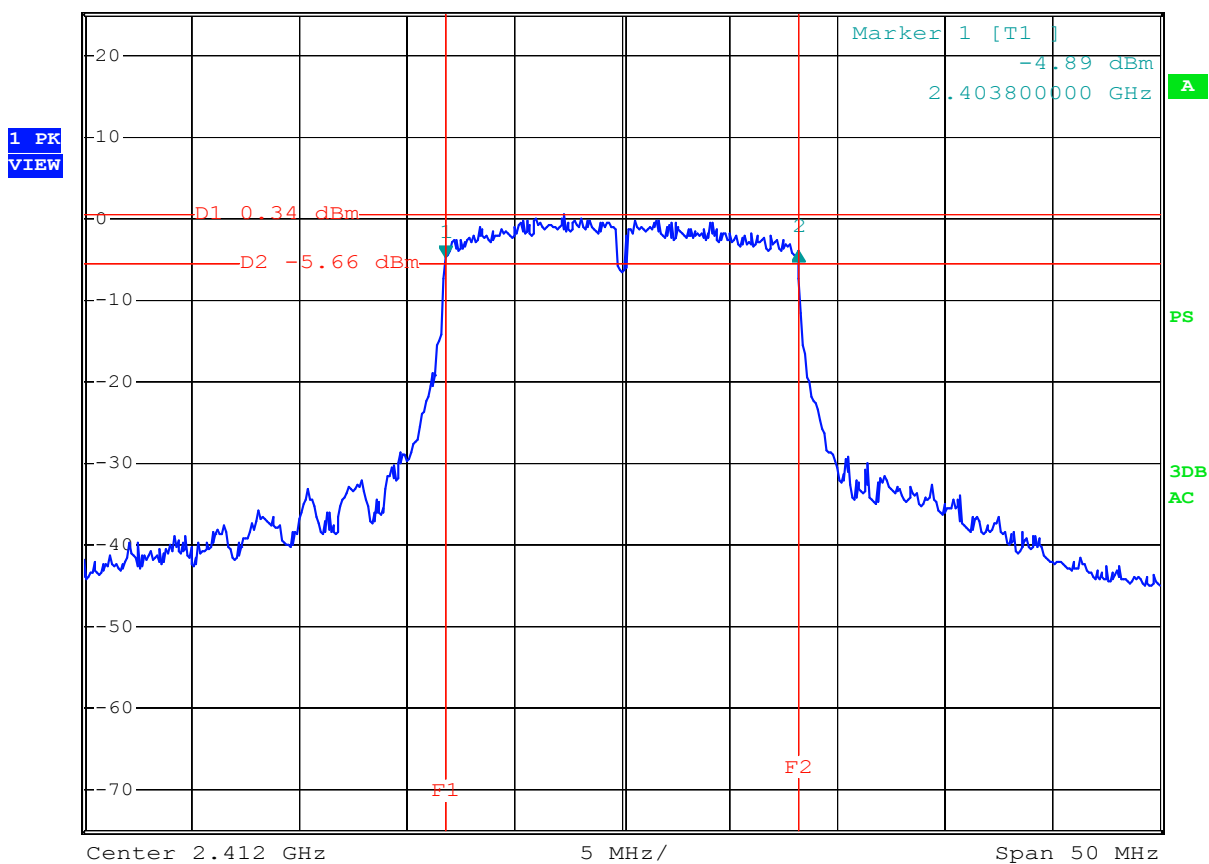
DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY(MHz)	6dB BANDWIDTH(MHz)		MINIMUM LIMIT(MHz)	PASS/FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	16.4	17.2	0.5	PASS
6	2437	16.4	17	0.5	PASS
11	2462	16.4	17.6	0.5	PASS

**FOR CHAIN(0):
CH1**

Ref 25 dBm *Att 40 dB *RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 0.93 dB
*SWT 100 ms 16.400000000 MHz





A D T

CH6

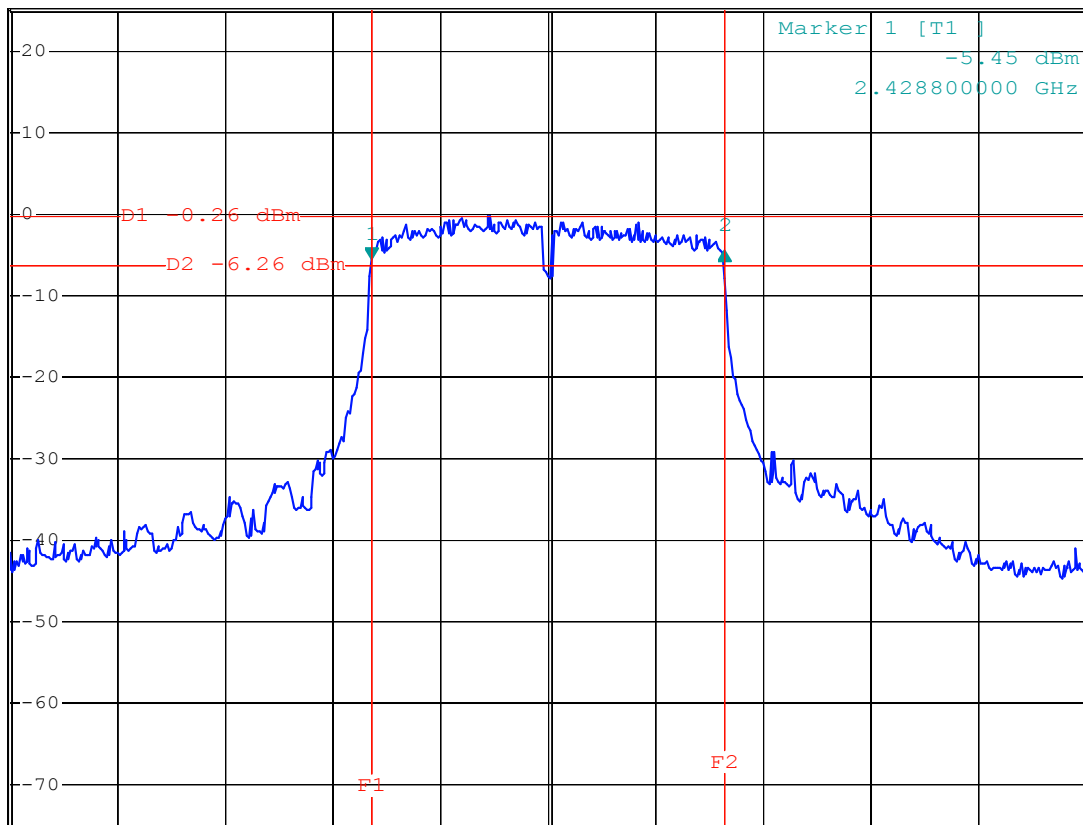


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 1.05 dB
*SWT 100 ms 16.400000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.437 GHz

5 MHz/

Span 50 MHz



A D T

CH11

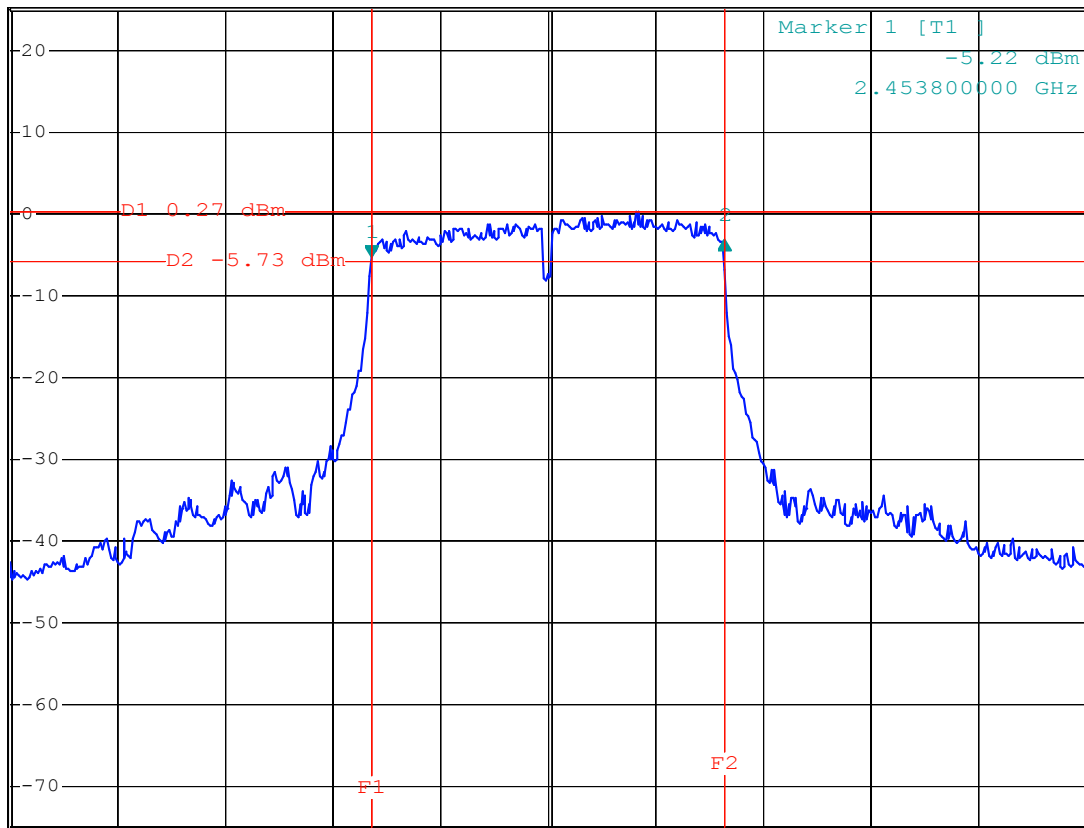


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 2.03 dB
*SWT 100 ms 16.400000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.462 GHz

5 MHz/

Span 50 MHz



A D T

FOR CHAIN(1):

CH 1

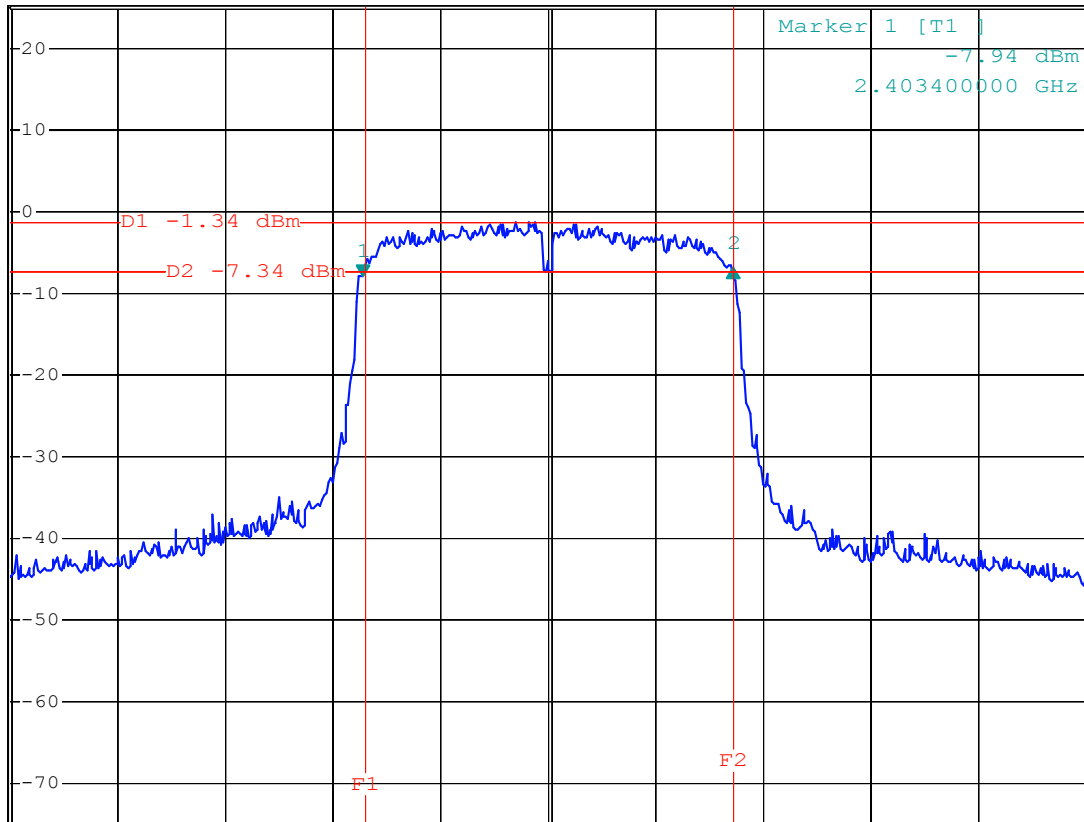


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 1.11 dB
*SWT 100 ms 17.200000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.412 GHz

5 MHz/

Span 50 MHz



A D T

CH 6

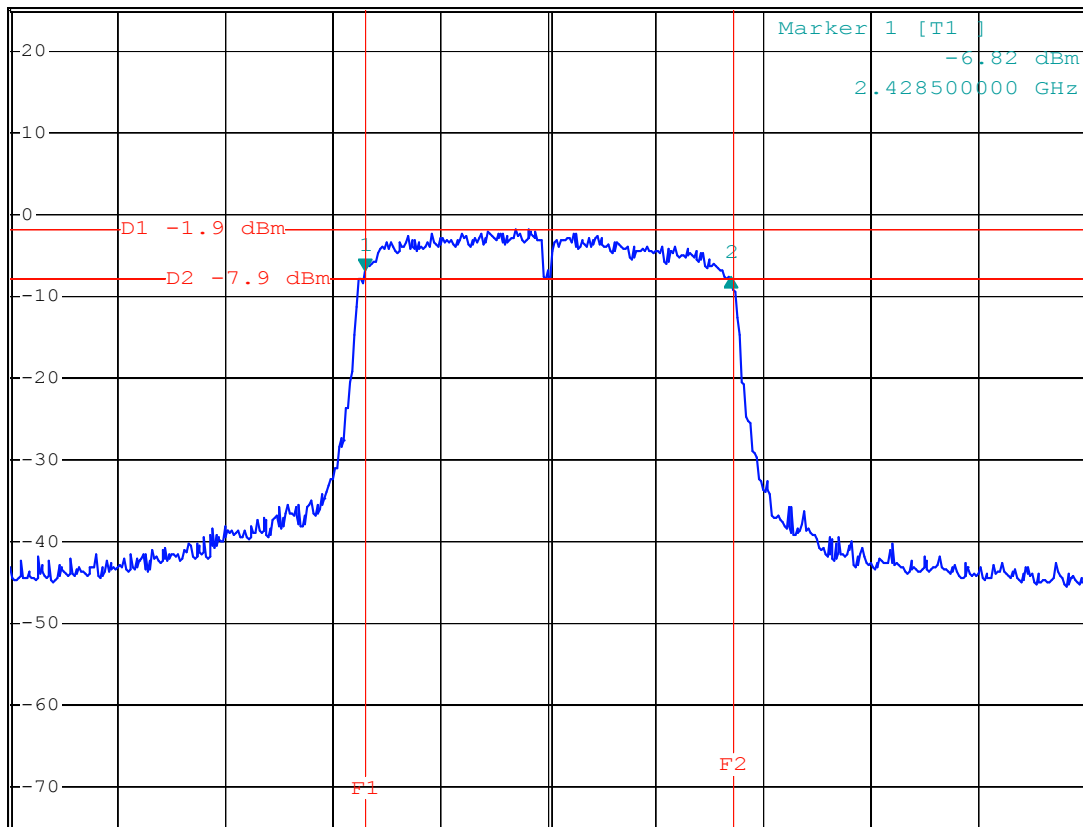


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz -0.76 dB
*SWT 100 ms 17.000000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.437 GHz

5 MHz/

Span 50 MHz

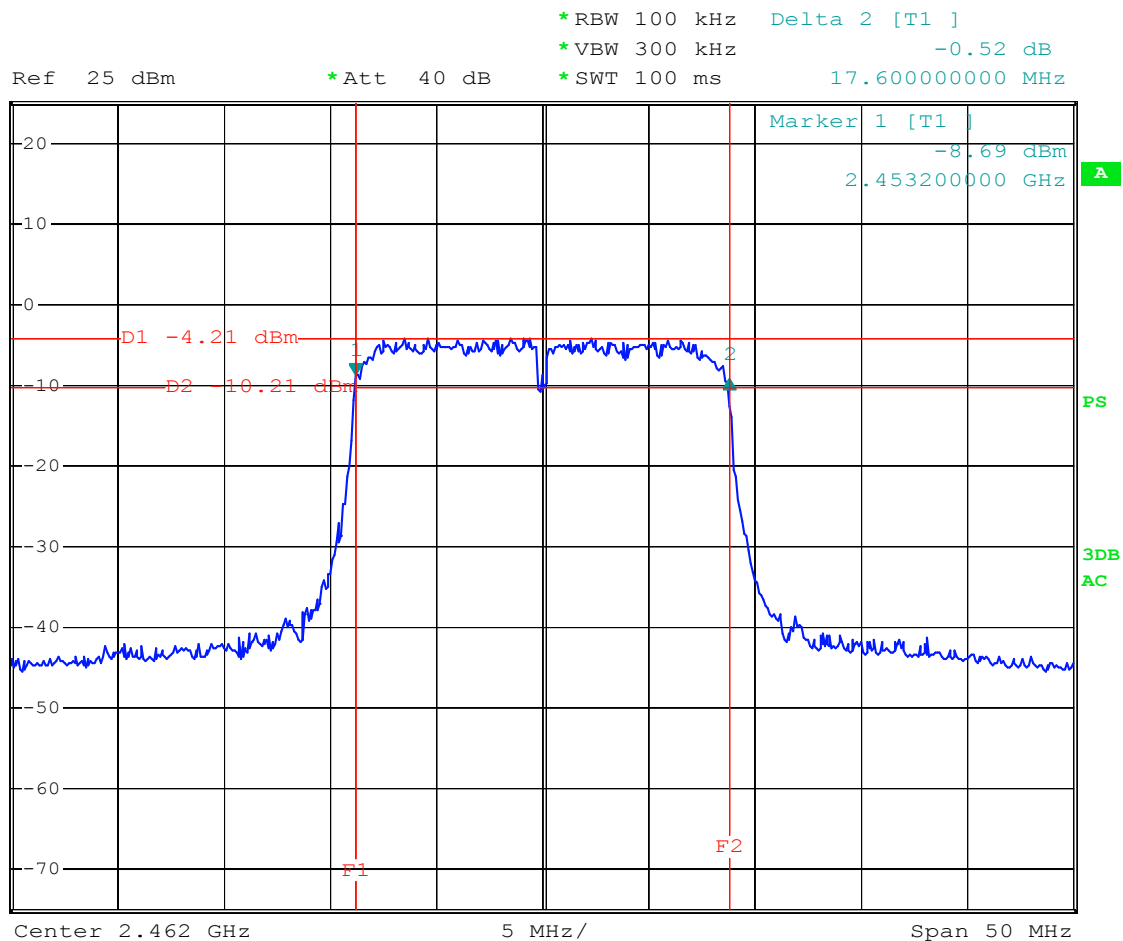


A D T

CH 11



1 PK
VIEW





MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

Report Format Version 2.1.0



A D T

CH4

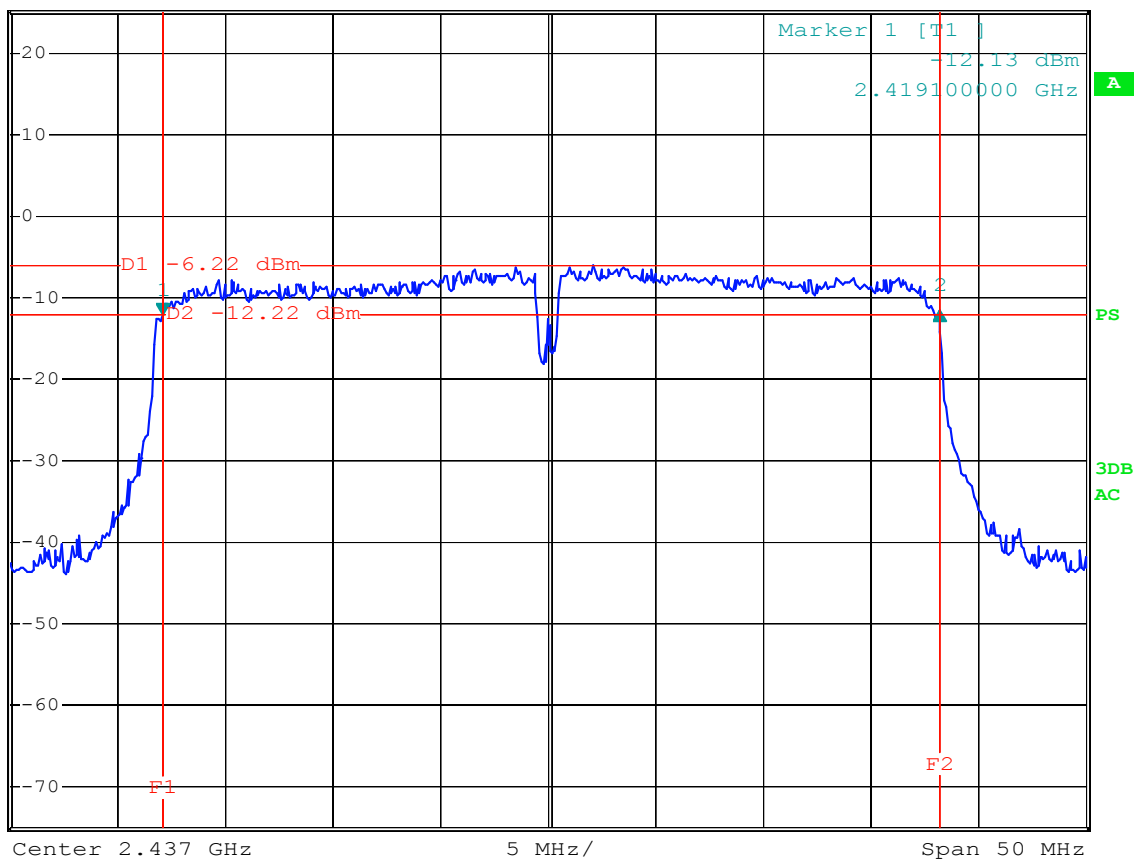


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 0.52 dB
*SWT 100 ms 36.100000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW





A D T

CH7

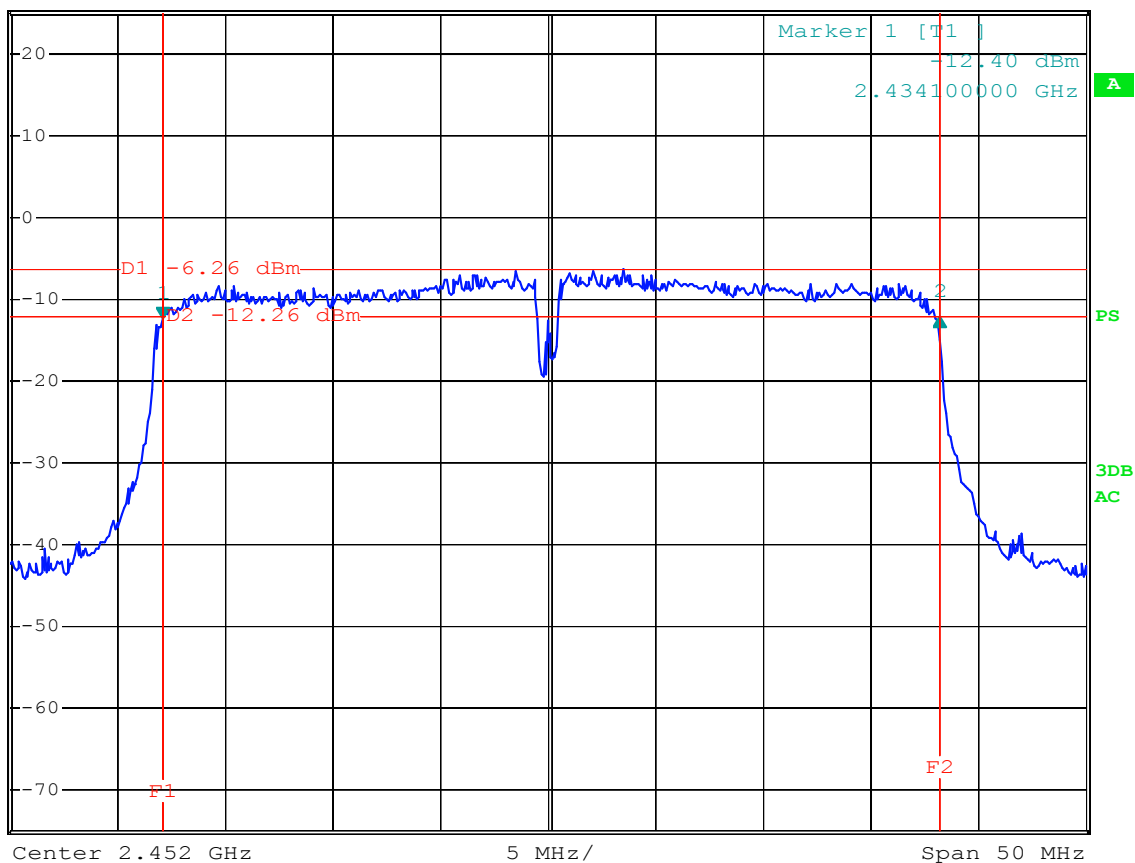


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 0.22 dB
*SWT 100 ms 36.10000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW





A D T

FOR CHAIN(1):

CH 1

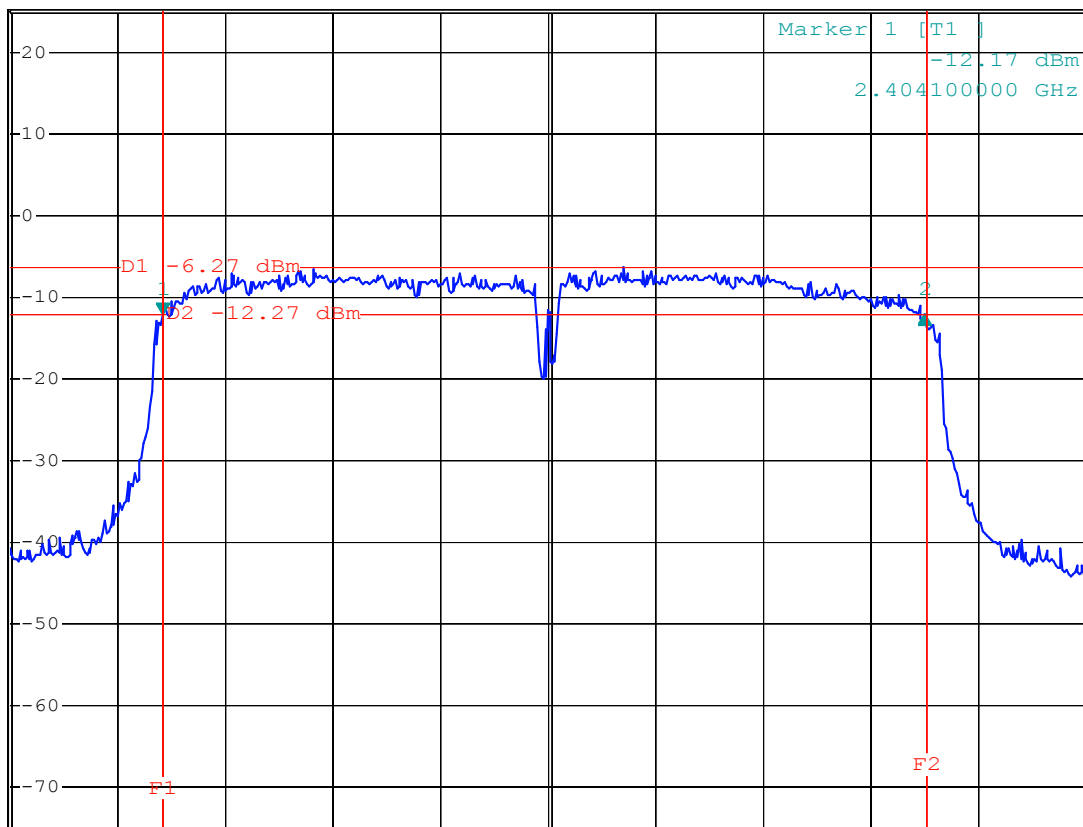


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz 0.09 dB
*SWT 100 ms 35.40000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.422 GHz

5 MHz/

Span 50 MHz



A D T

CH 4

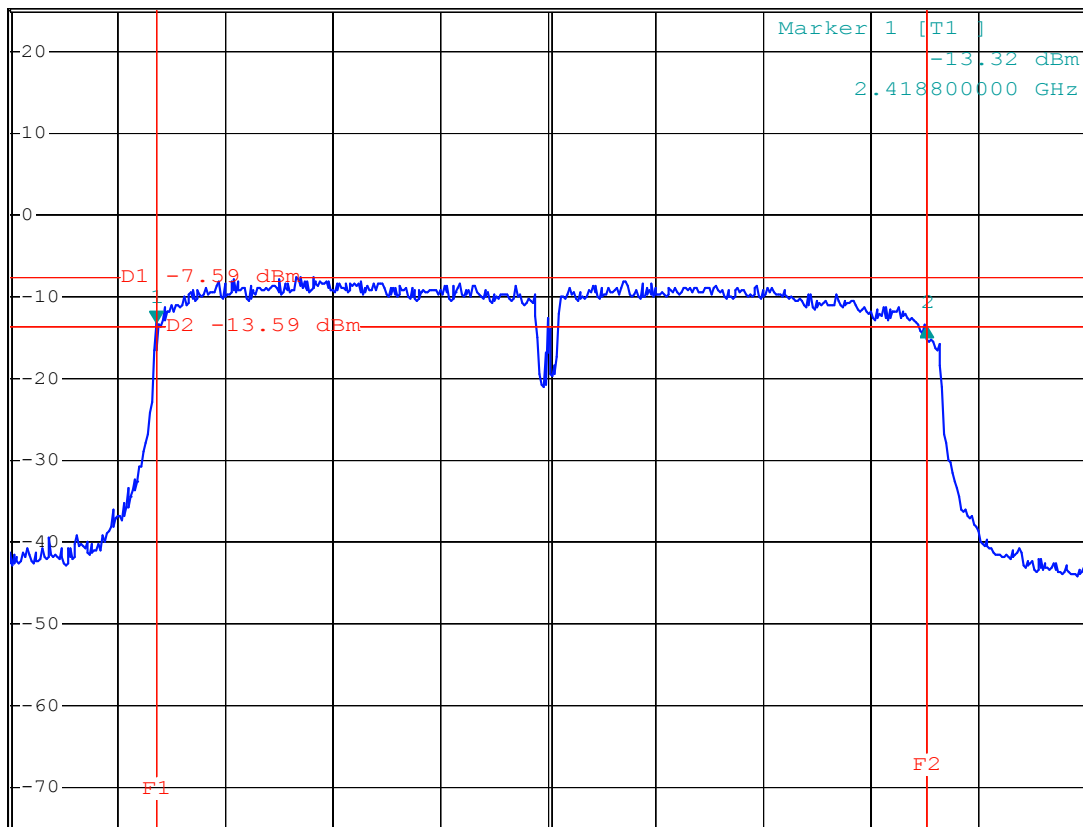


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz -0.35 dB
*SWT 100 ms 35.80000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.437 GHz

5 MHz/

Span 50 MHz



A D T

CH 7

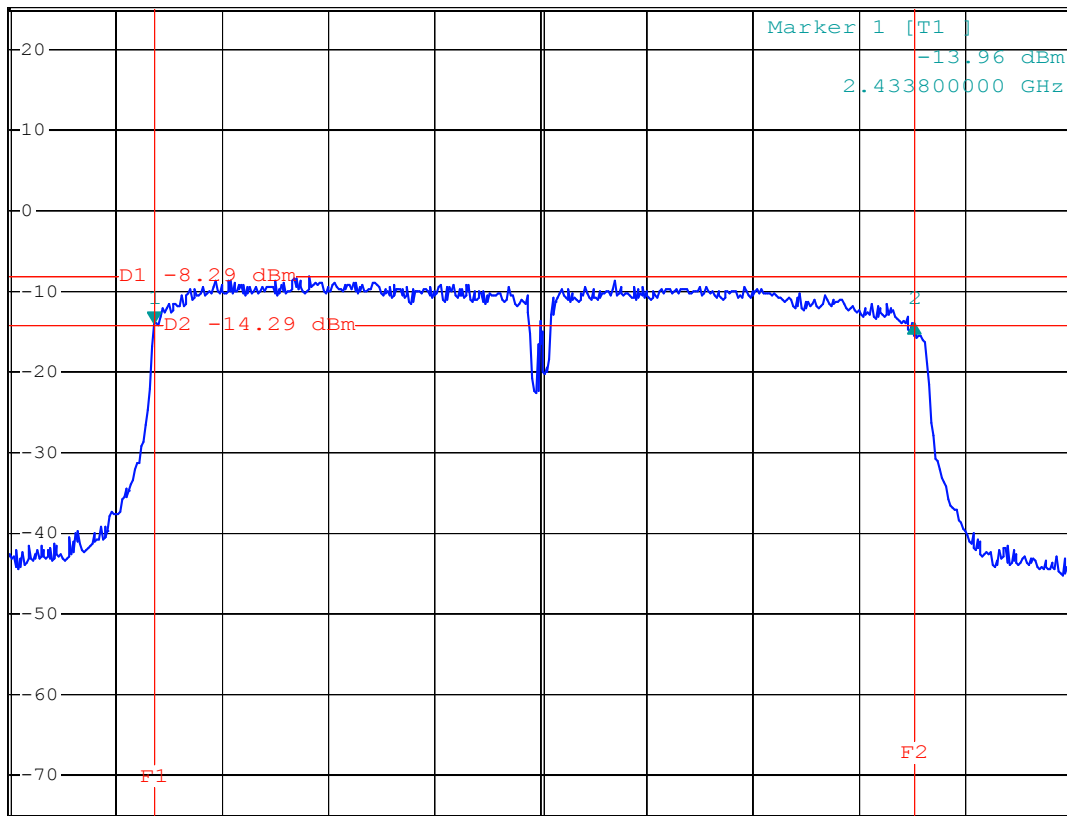


*RBW 100 kHz Delta 2 [T1]
*VBW 300 kHz -0.01 dB
*SWT 100 ms 35.80000000 MHz

Ref 25 dBm

*Att 40 dB

1 PK
VIEW



Center 2.452 GHz

5 MHz/

Span 50 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Signal Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	Aug. 04, 2010

NOTE: The calibration interval of the above test instruments is 12 months.

4.4.3 TEST PROCEDURES

- A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
- Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
- Adjusted the power to have the same reading on oscilloscope. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6



4.4.7 TEST RESULTS

802.11b DSSS MODULATION

MODULATION TYPE	CCK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	66.68	18.24	30	PASS
6	2437	65.92	18.19	30	PASS
11	2462	64.12	18.07	30	PASS

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS / FAIL
1	2412	67.61	18.30	30	PASS
6	2437	68.55	18.36	30	PASS
11	2462	66.83	18.25	30	PASS

DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL (dBm)		TOTAL POWER (mw)	TOTAL POWER (dBm)	MAXIMUM LIMIT (dBm)	PASS /FAIL
		CHAIN(0)	CHAIN(1)				
1	2412	17.11	17.43	106.74	20.28	30	PASS
6	2437	17.12	17.37	106.10	20.26	30	PASS
11	2462	17.29	16.29	96.14	19.83	30	PASS

DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL (dBm)		TOTAL POWER (mw)	TOTAL POWER (dBm)	MAXIMUM LIMIT (dBm)	PASS /FAIL
		CHAIN(0)	CHAIN(1)				
1	2412	15.3	15.37	68.32	18.35	30	PASS
6	2437	15.4	15.4	69.35	18.41	30	PASS
11	2462	15.61	15.05	68.38	18.35	30	PASS



A D T

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Signal Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	Aug. 04, 2010

NOTE: The calibration interval of the above test instruments is 12 months.

4.5.3 TEST PROCEDURE

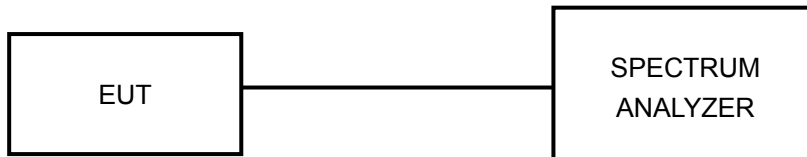
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

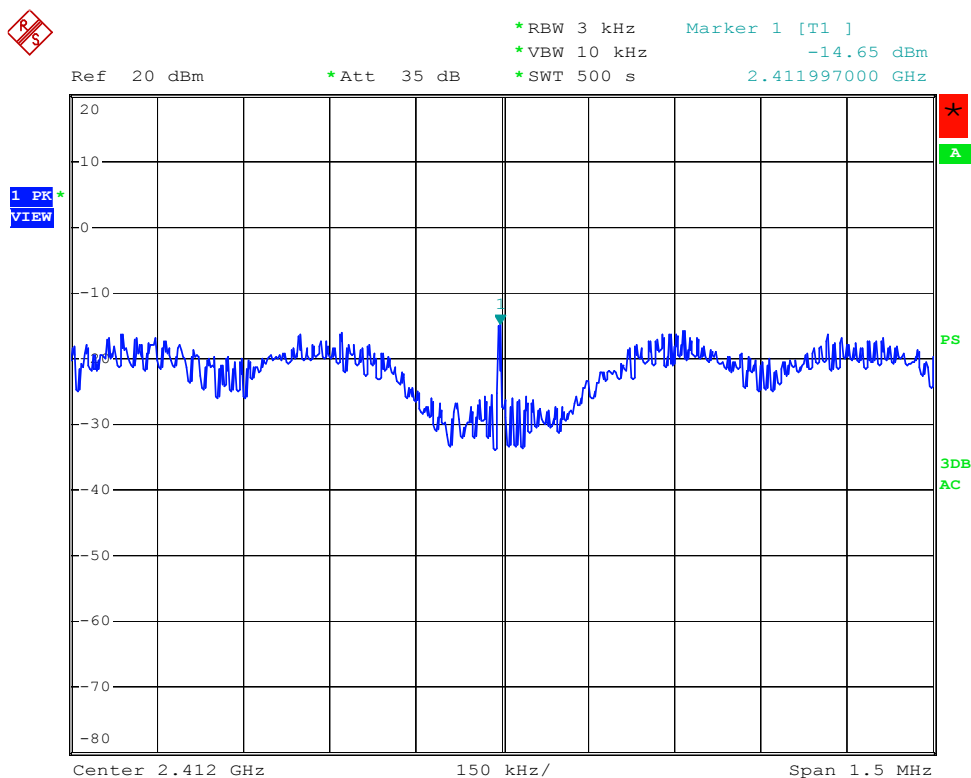
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

MODULATION TYPE	CCK	TRANSFER RATE	1.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-14.65	8	PASS
6	2437	-14.22	8	PASS
11	2462	-14.84	8	PASS

CH1





A D T

CH6

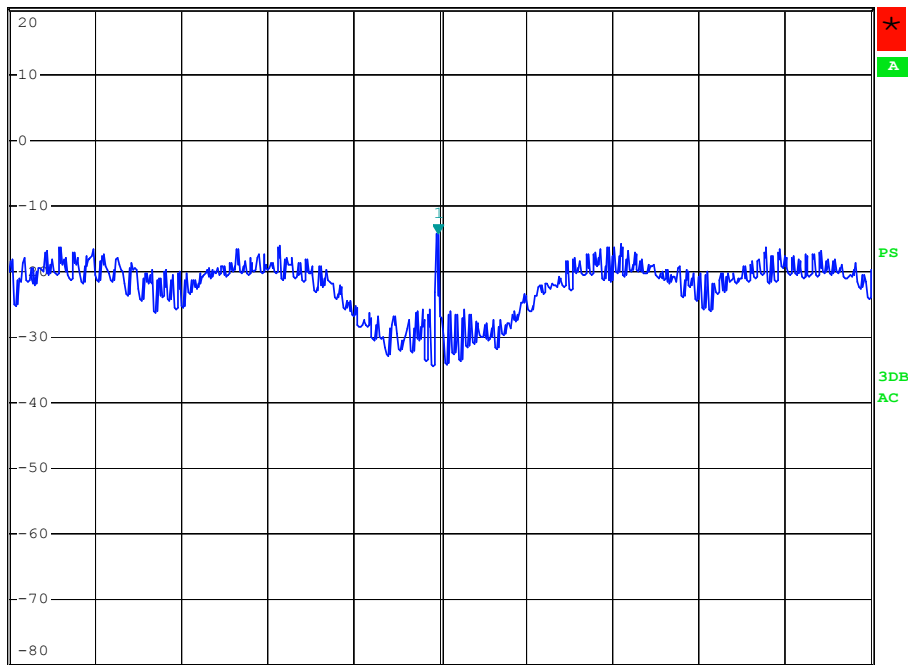


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -14.22 dBm
*SWT 500 s 2.436997000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



CH11

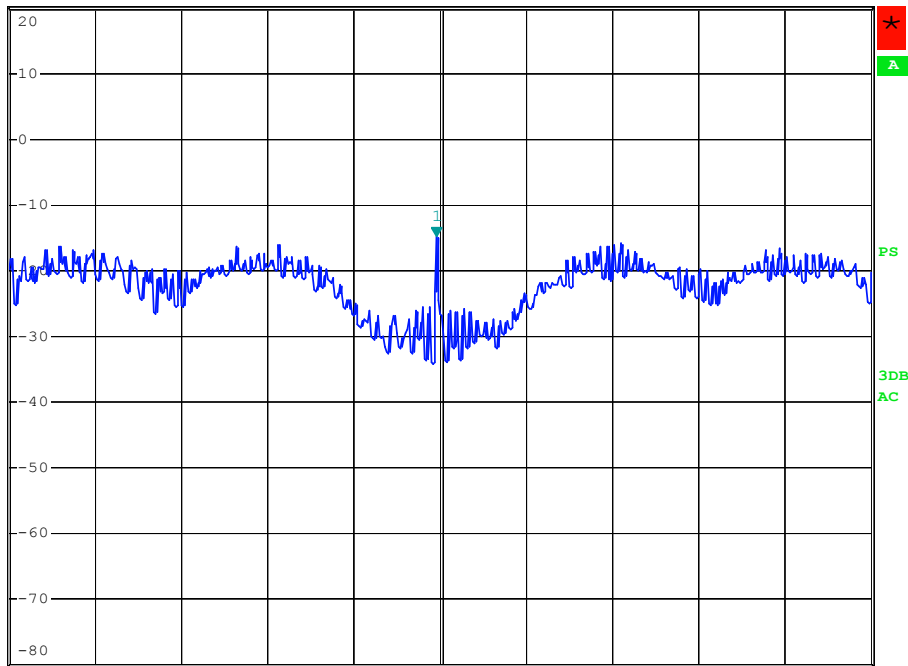


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -14.84 dBm
*SWT 500 s 2.461994000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW





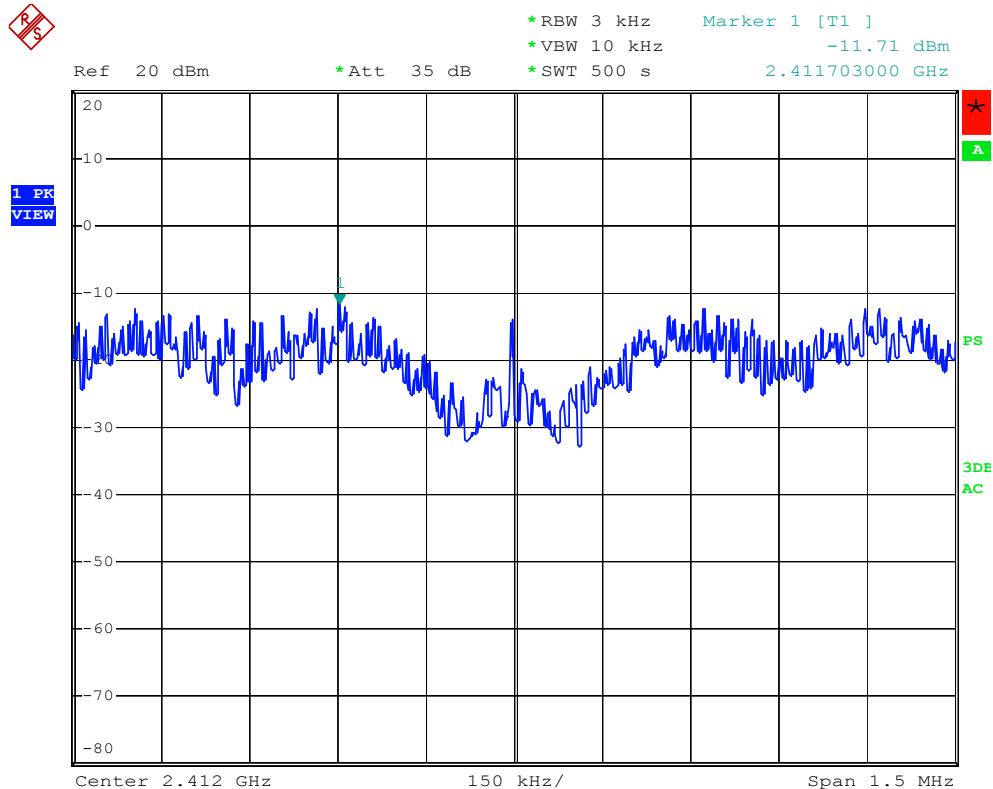
A D T

802.11g OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.0Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS / FAIL
1	2412	-11.71	8	PASS
6	2437	-11.71	8	PASS
11	2462	-11.82	8	PASS

CH1





A D T

CH6

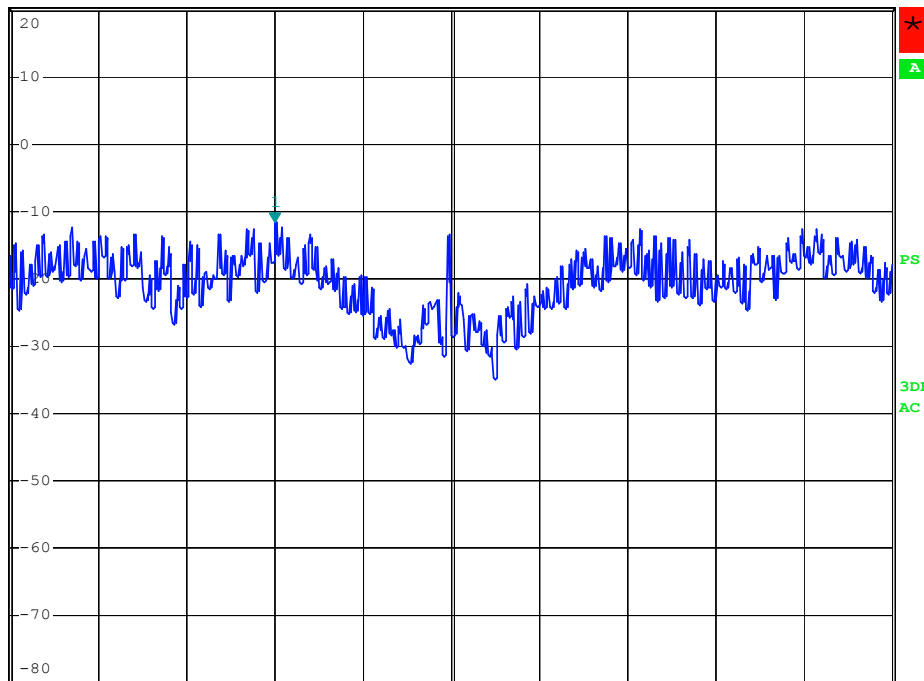


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -11.71 dBm
*SWT 500 s 2.436700000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.437 GHz

150 kHz/

Span 1.5 MHz

CH11

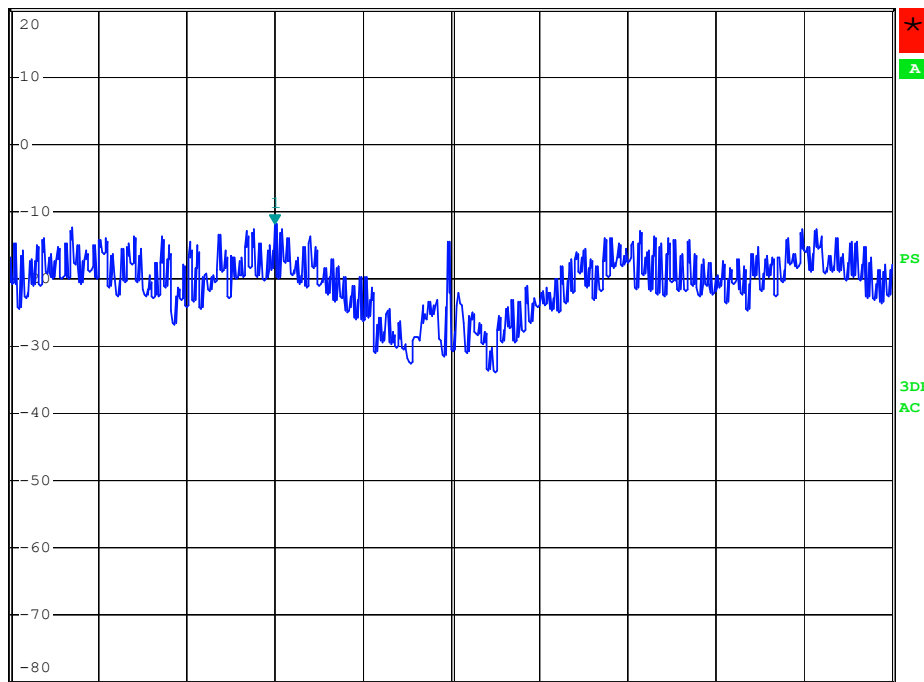


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -11.82 dBm
*SWT 500 s 2.461700000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.462 GHz

150 kHz/

Span 1.5 MHz

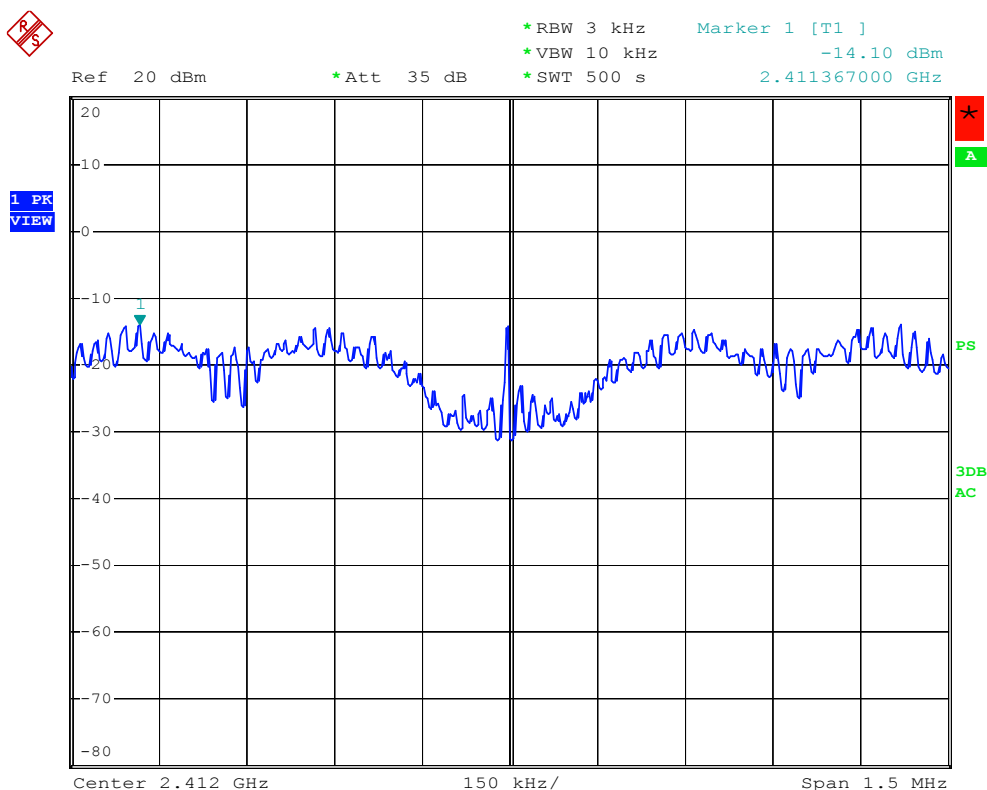
DRAFT 802.11n (20MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	6.5Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 65%RH, 991hPa
TESTED BY	Ray		

CHANNE L	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW(dBm)		TOTAL POWER DENSITY (mw)	TOTAL POWER DENSITY (dBm)	MAXIMU M LIMIT (dBm)	PASS /FAIL
		CHAIN(0)	CHAIN(1)				
1	2412	-14.1	-10.75	0.12	-9.10	8	PASS
6	2437	-14.55	-11.42	0.11	-9.70	8	PASS
11	2462	-14.72	-13.22	0.08	-10.90	8	PASS

FOR CHAIN(0):

CH1





A D T

CH6

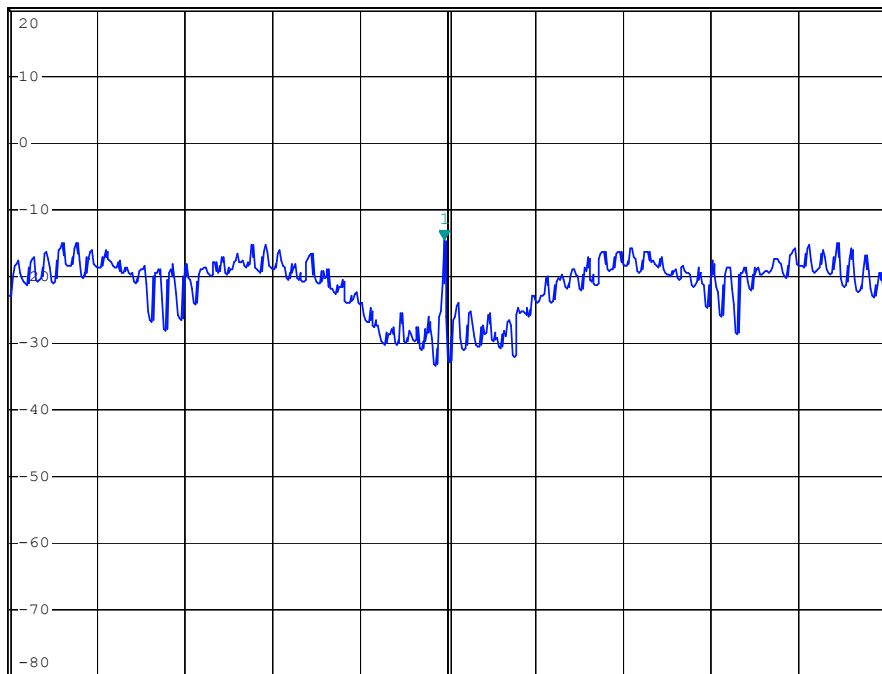


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -14.55 dBm
*SWT 500 s 2.436994000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.437 GHz

150 kHz/

Span 1.5 MHz

CH11

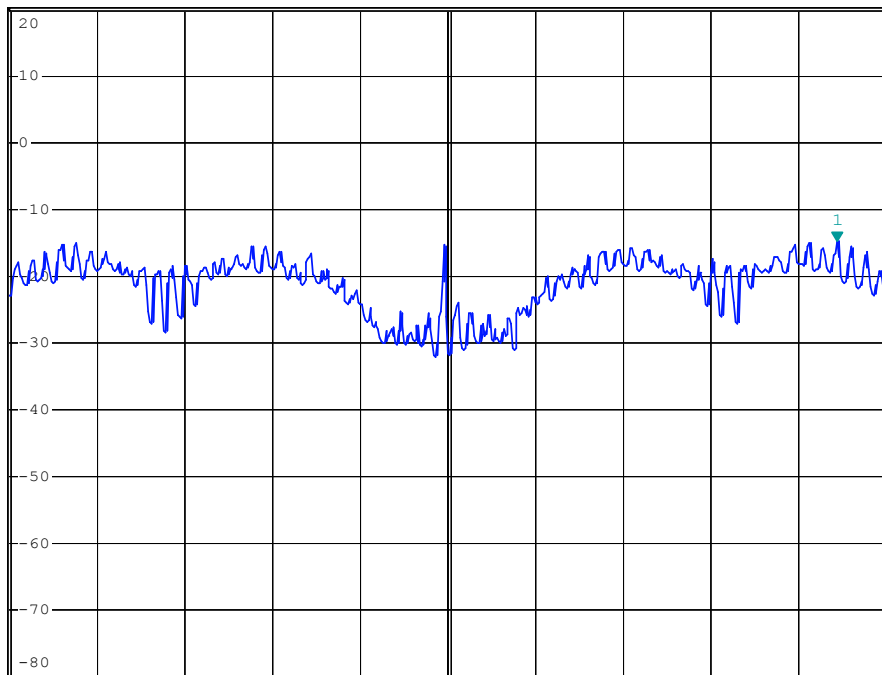


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -14.72 dBm
*SWT 500 s 2.462666000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.462 GHz

150 kHz/

Span 1.5 MHz



A D T

FOR CHAIN(1)

CH1

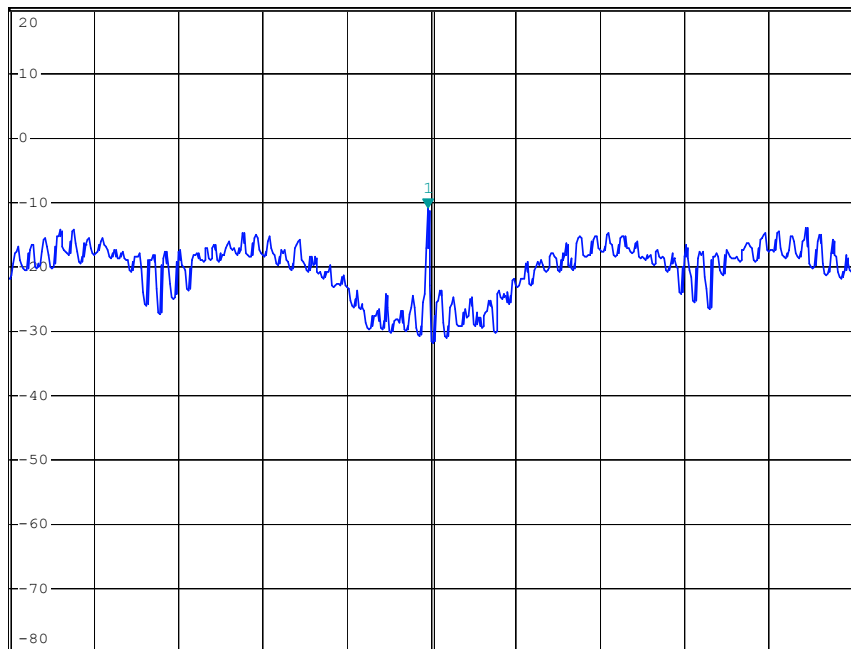


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -10.75 dBm
*SWT 500 s 2.411994000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.412 GHz

150 kHz/

Span 1.5 MHz

CH6

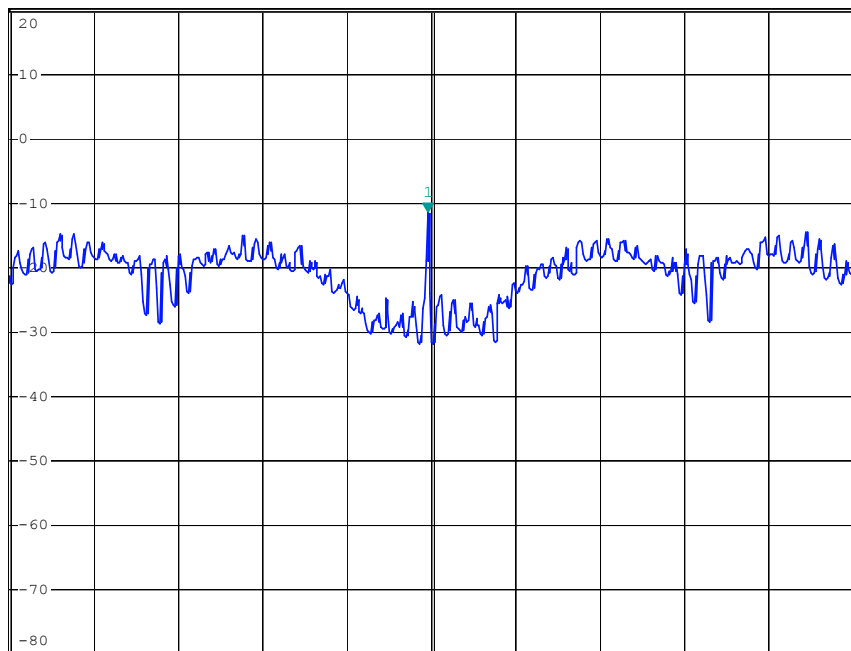


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -11.42 dBm
*SWT 500 s 2.436994000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.437 GHz

150 kHz/

Span 1.5 MHz



A D T

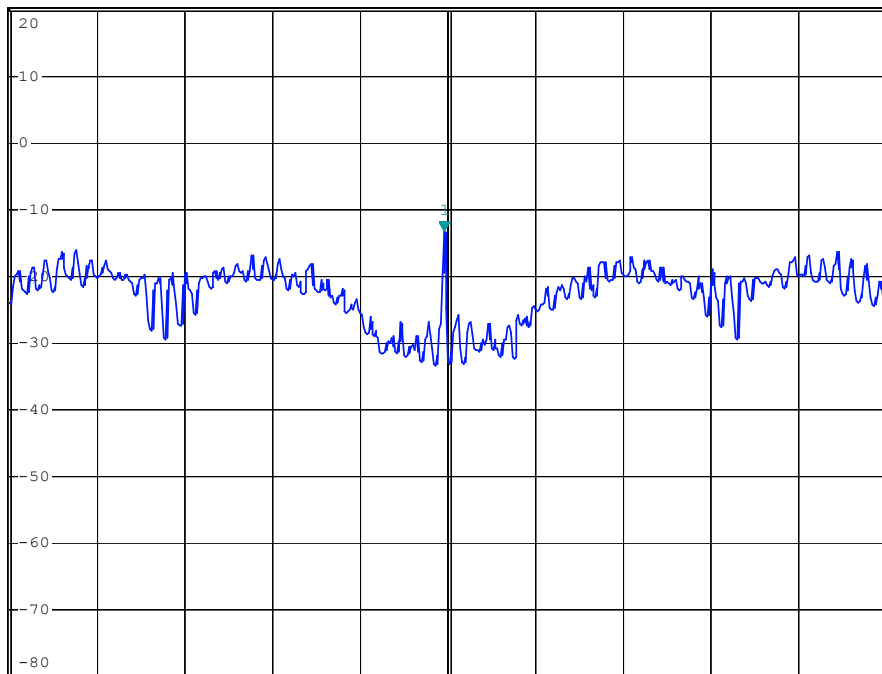
CH11



*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -13.22 dBm
*Att 35 dB *SWT 500 s 2.461994000 GHz

Ref 20 dBm

1 PK
VIEW



Center 2.462 GHz

150 kHz/

Span 1.5 MHz

★
A

PS
3DB
AC



A D T

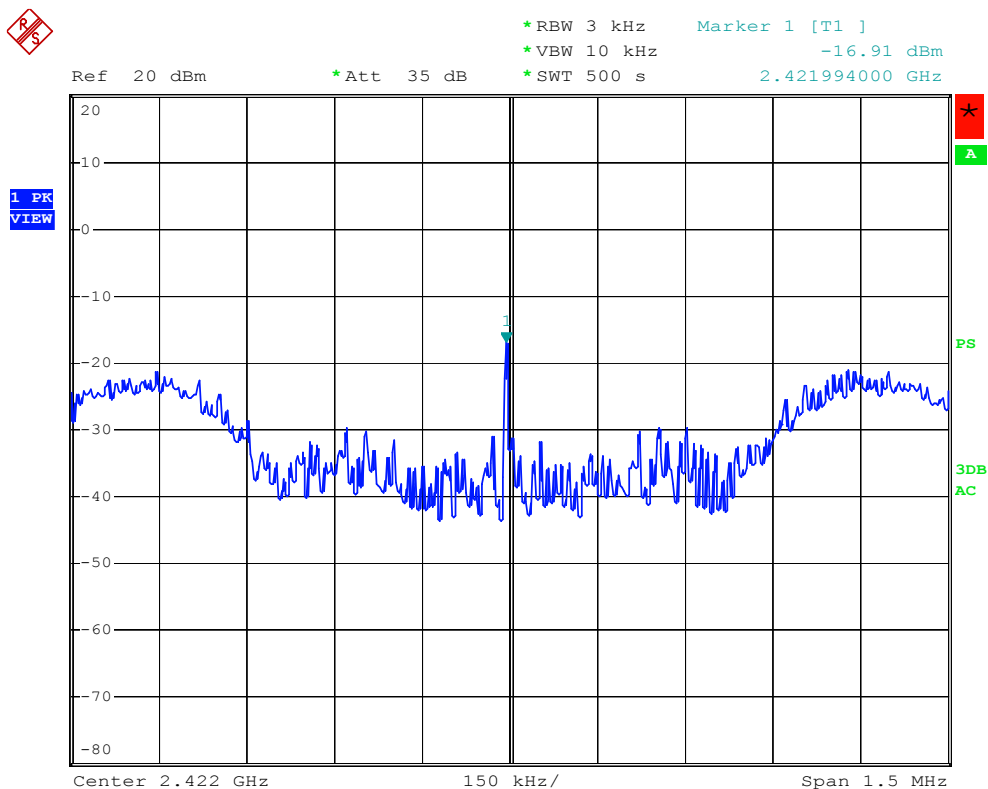
DRAFT 802.11n (40MHz) OFDM MODULATION

MODULATION TYPE	BPSK	TRANSFER RATE	13Mbps
INPUT POWER (SYSTEM)	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25 deg.C, 65 %RH, 991hPa
TESTED BY	Ray		

CHANNE L	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3kHz BW(dBm)		TOTAL POWER DENSITY (mw)	TOTAL POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS /FAIL
		CHAIN(0)	CHAIN(1)				
1	2422	-16.91	-14.32	0.06	-12.41	8	PASS
4	2437	-16.41	-15.55	0.05	-12.95	8	PASS
7	2452	-16.31	-16.41	0.05	-13.35	8	PASS

FOR CHAIN(0):

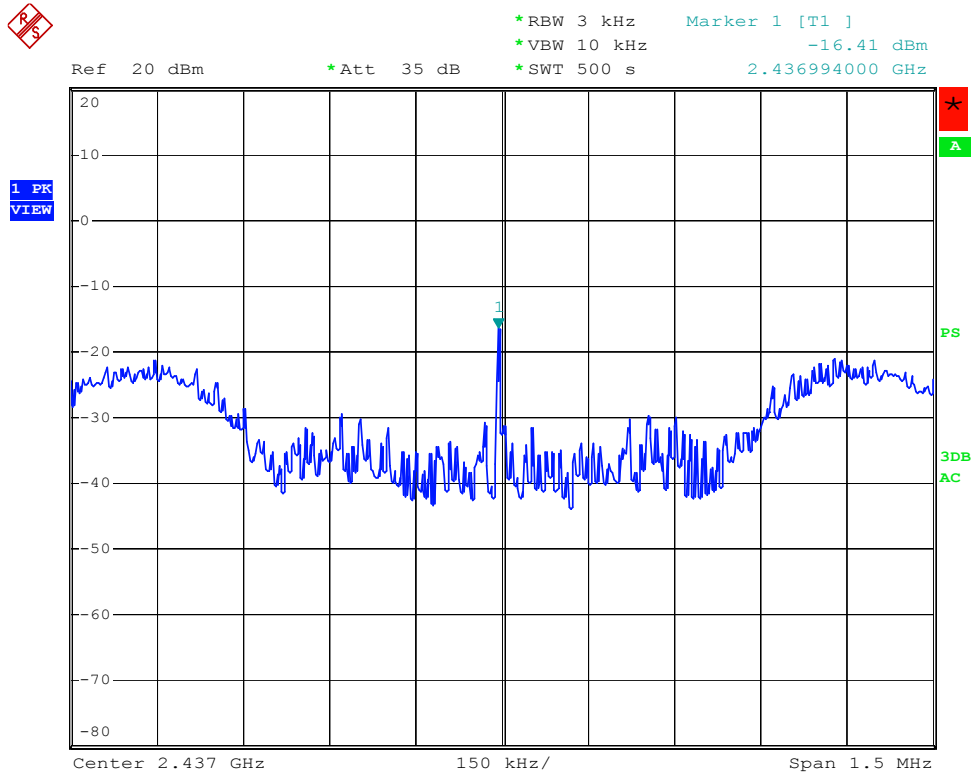
CH1



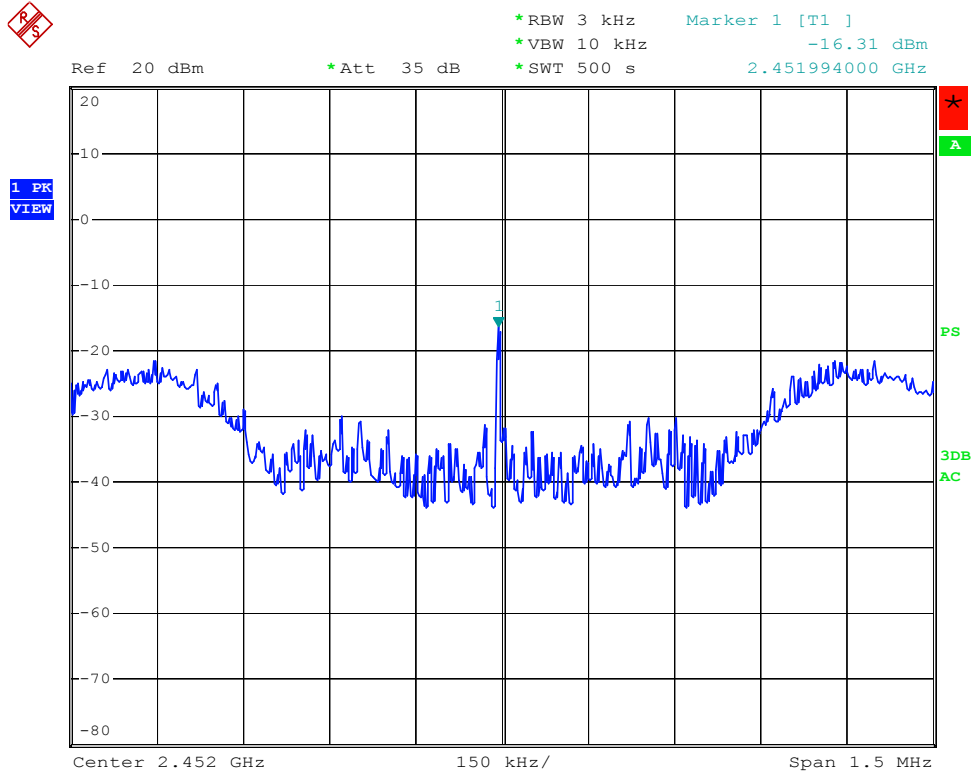


A D T

CH4



CH7

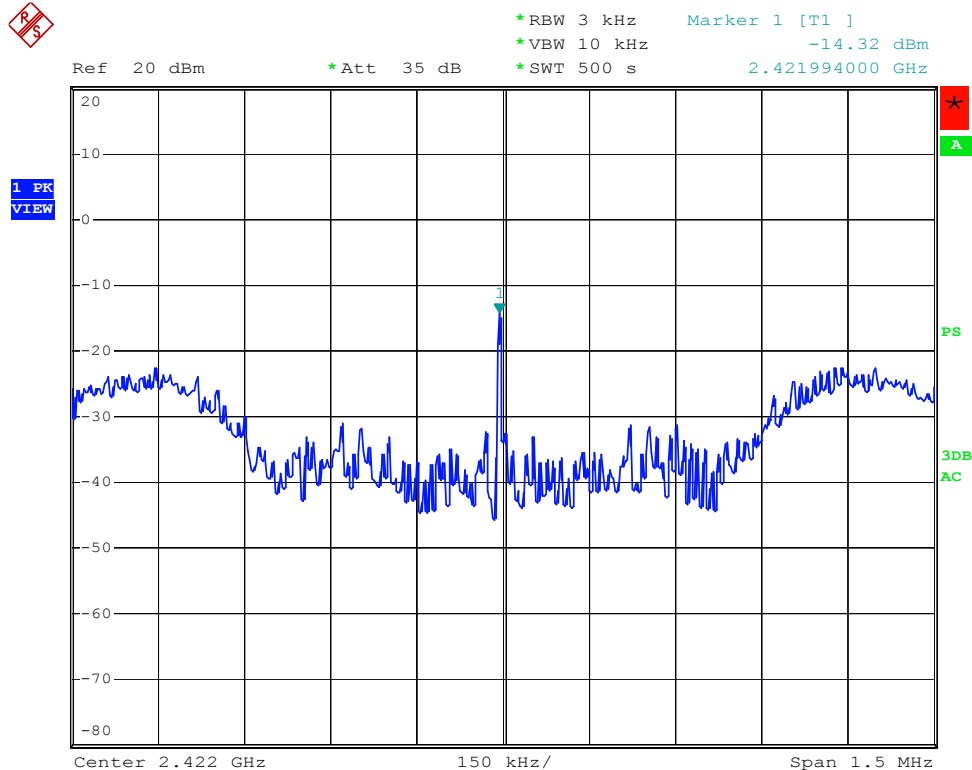




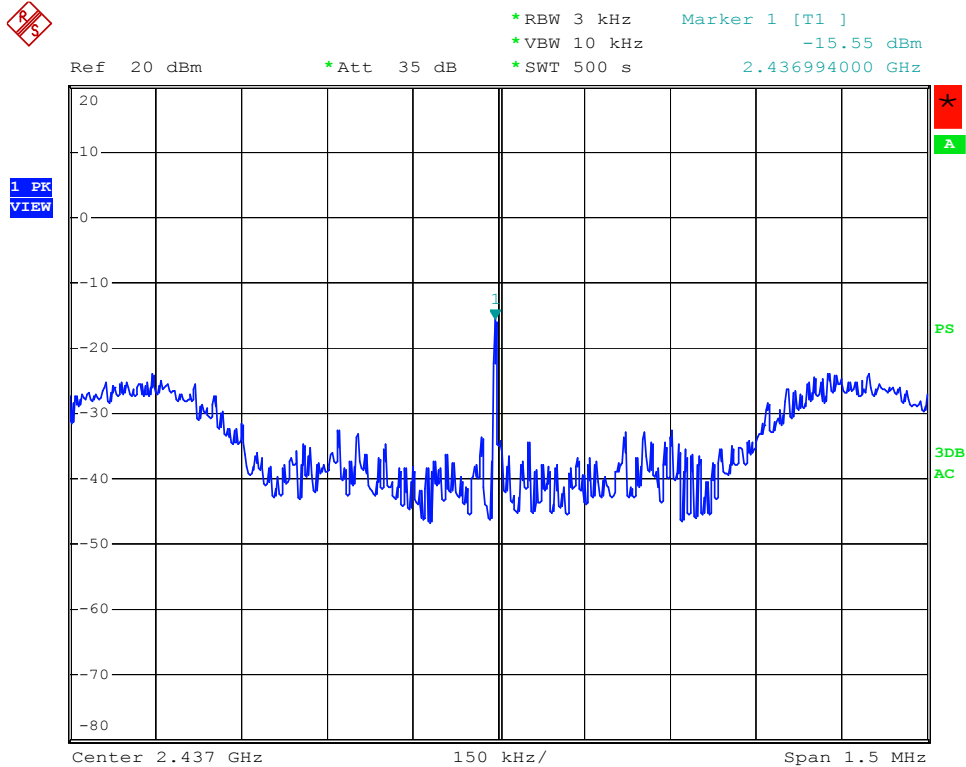
A D T

FOR CHAIN(1):

CH1



CH4





A D T

CH7

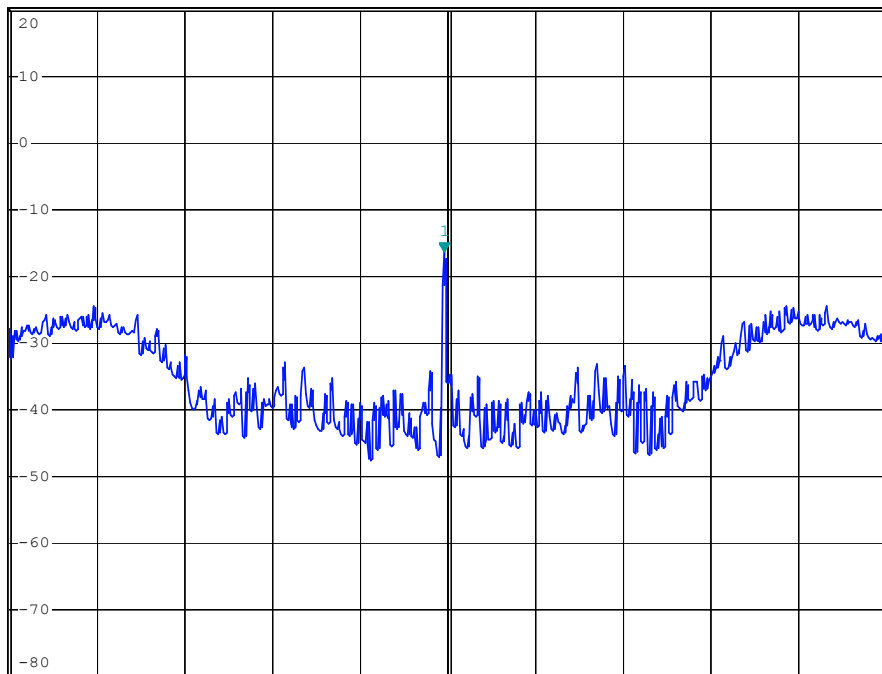


*RBW 3 kHz Marker 1 [T1]
*VBW 10 kHz -16.41 dBm
*SWT 500 s 2.451994000 GHz

Ref 20 dBm

*Att 35 dB

1 PK
VIEW



Center 2.452 GHz

150 kHz/

Span 1.5 MHz

PS

3DB
AC

**A D T**

4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Signal Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	Aug. 04, 2010

NOTE: The calibration interval of the above test instruments is 12 months.

4.6.3 TEST PROCEDURE

FOR CONDUCTED MEASUREMENT:

The transmitter output was connected to the spectrum analyzer via a low loss cable. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz) are attached on the following pages.

FOR RADIATED MEASUREMENT:

- 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. Set both RBW and VBW of spectrum analyzer to 100kHz and 300kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = 100kHz, VBW = 300kHz) are attached on the following pages.

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

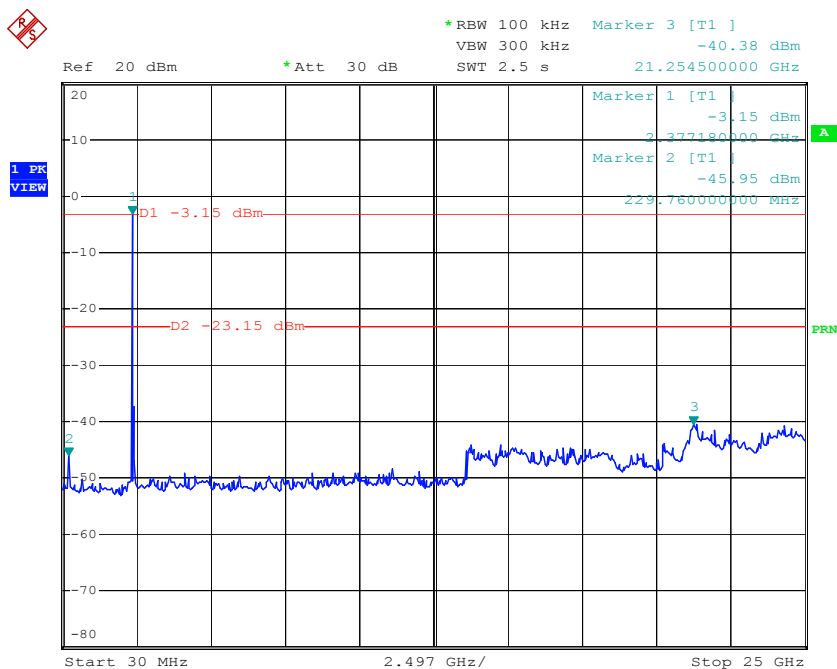
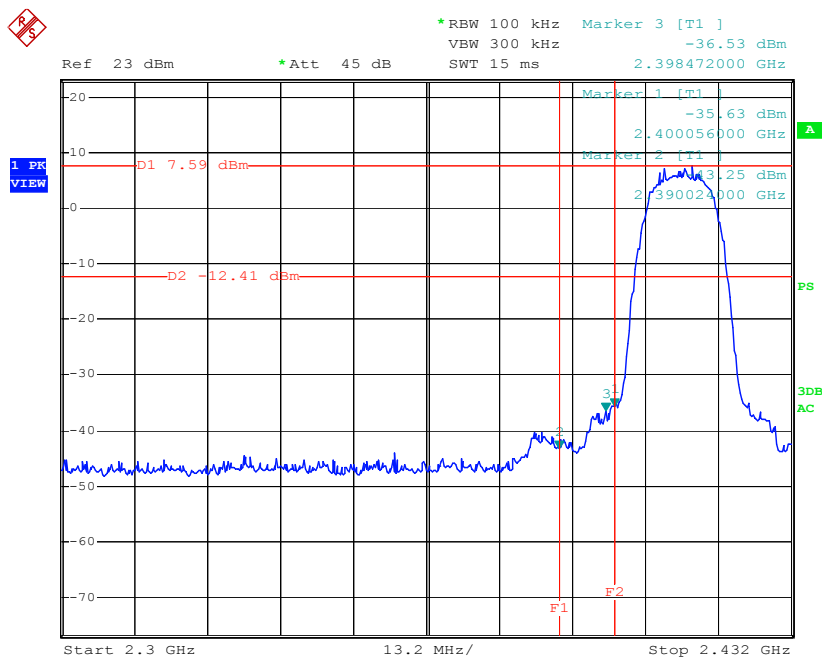
4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

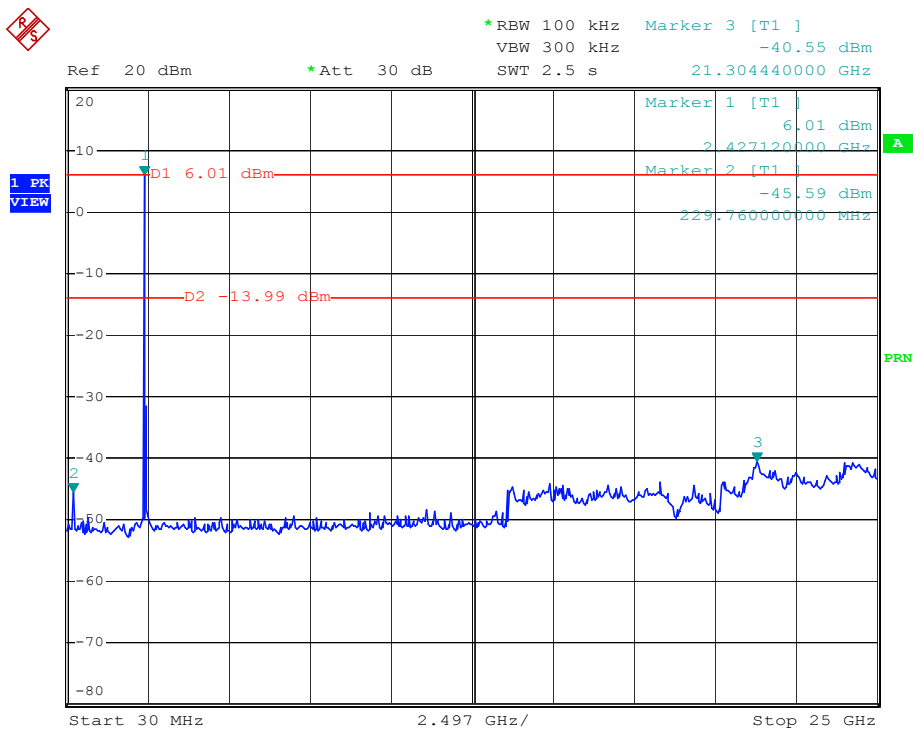
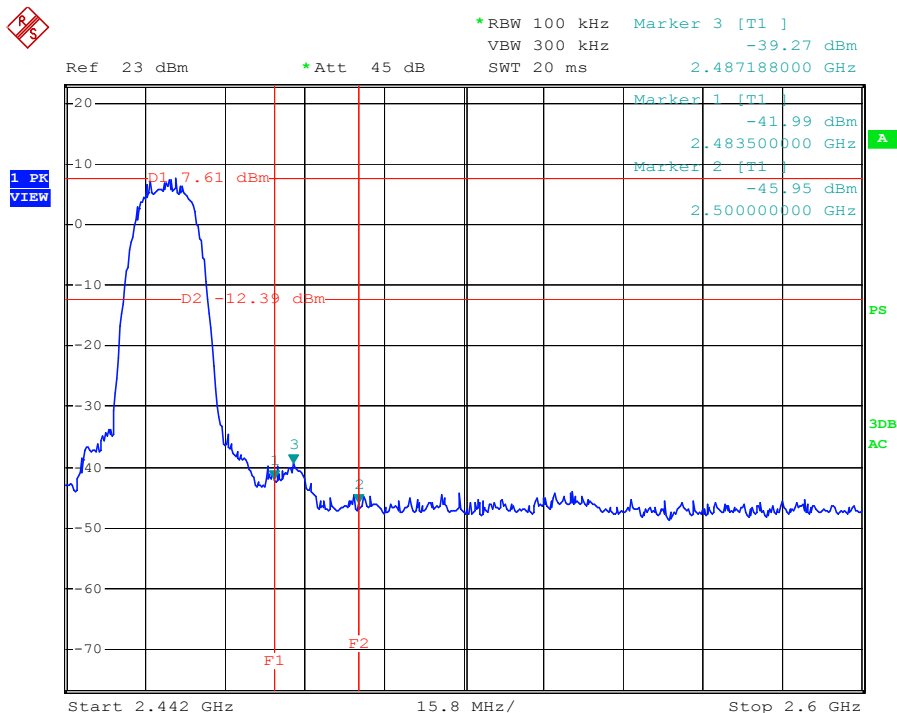
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b DSSS MODULATION CH 1



Date: 18.MAR.2010 15:22:10

CH 11



Date: 18.MAR.2010 15:23:22



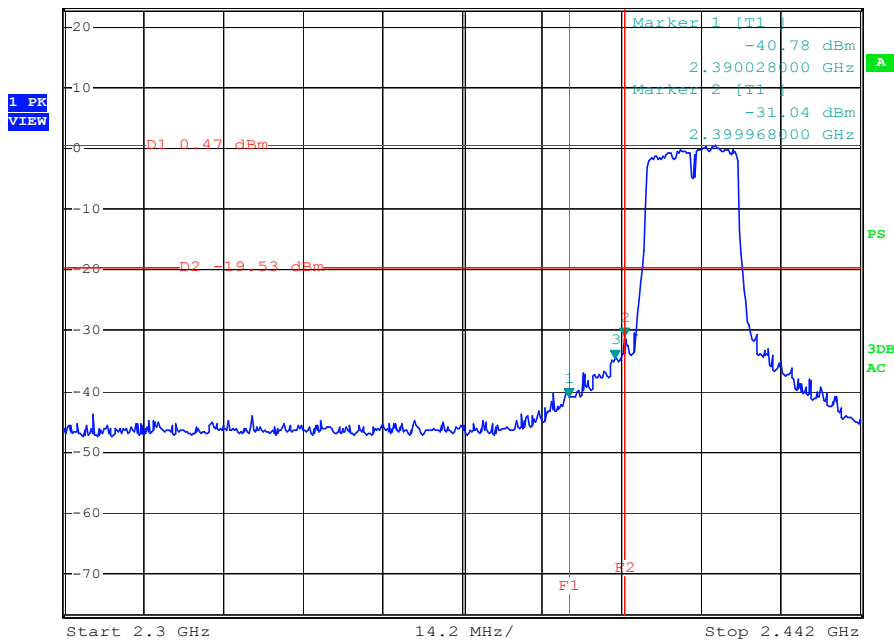
A D T

802.11g OFDM MODULATION

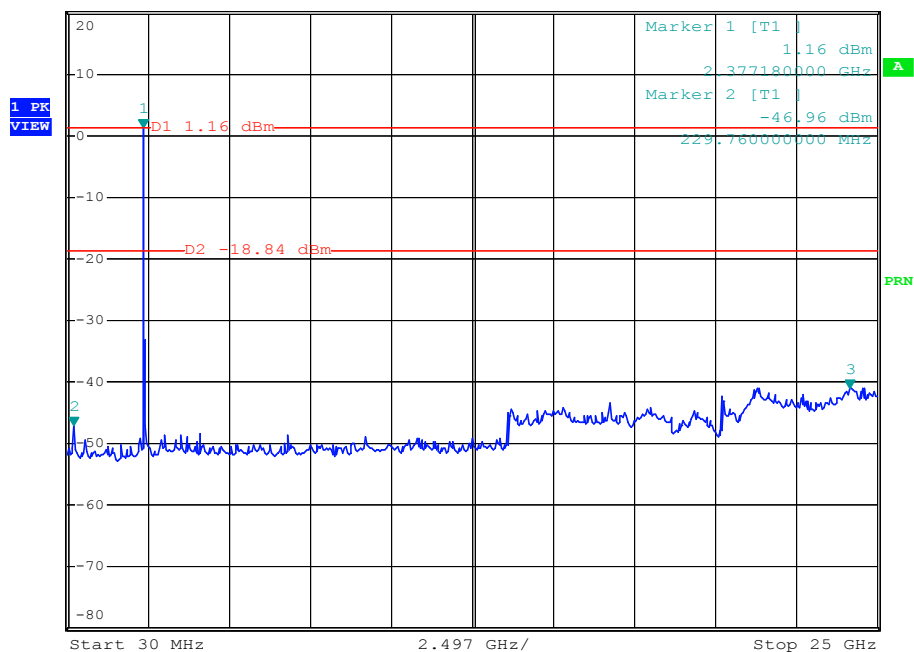
CH 1



Ref 23 dBm *Att 45 dB RBW 100 kHz Marker 3 [T1]
VBW 300 kHz -34.69 dBm
SWT 15 ms 2.398264000 GHz



Ref 20 dBm *Att 30 dB RBW 100 kHz Marker 3 [T1]
VBW 300 kHz -41.03 dBm
SWT 2.5 s 24.151020000 GHz

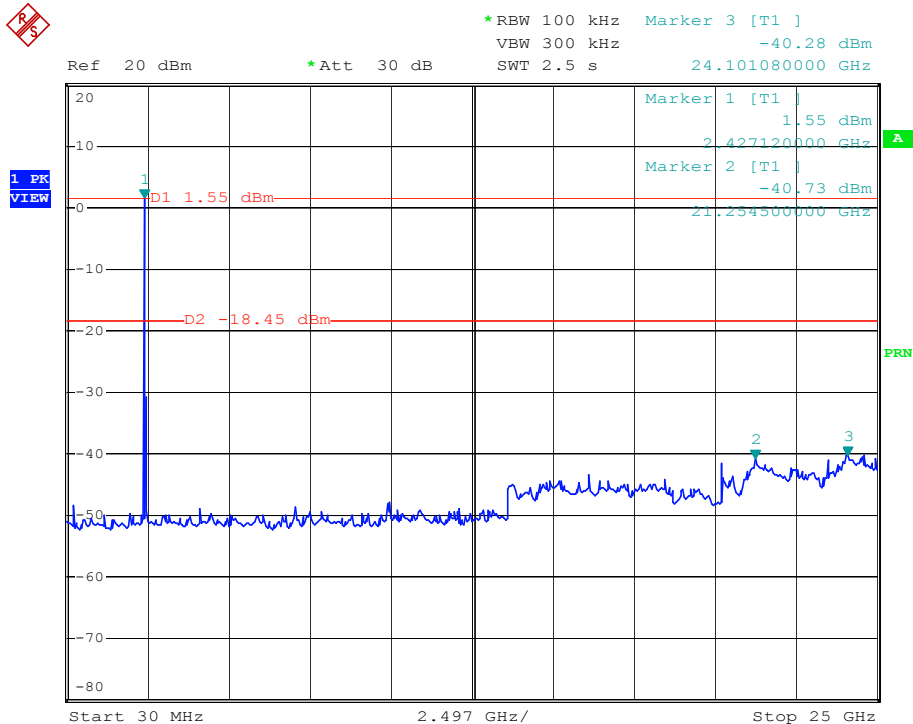
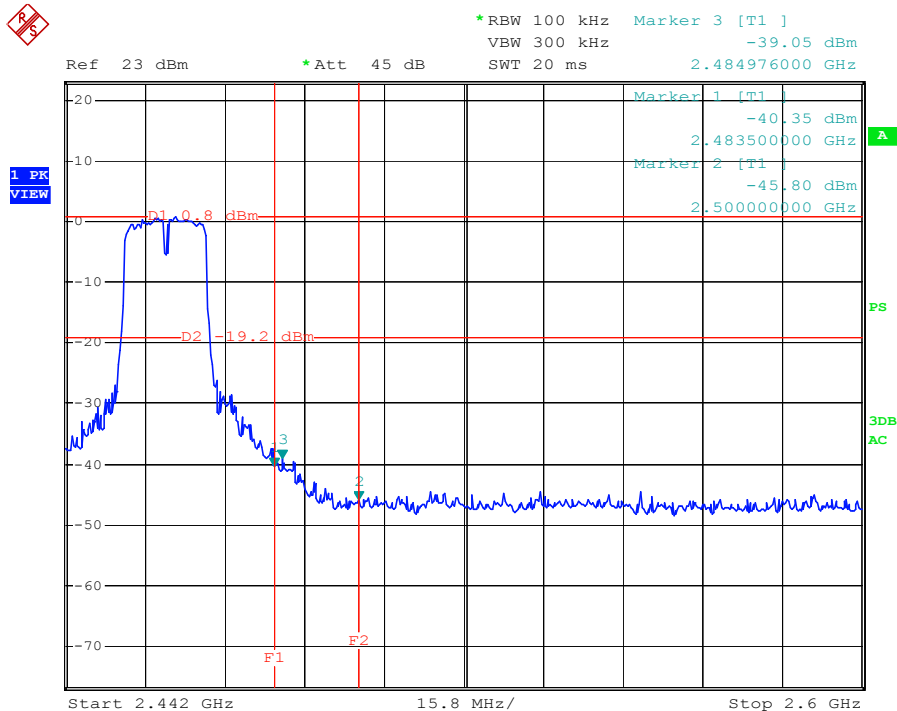


Date: 18.MAR.2010 15:25:23



A D T

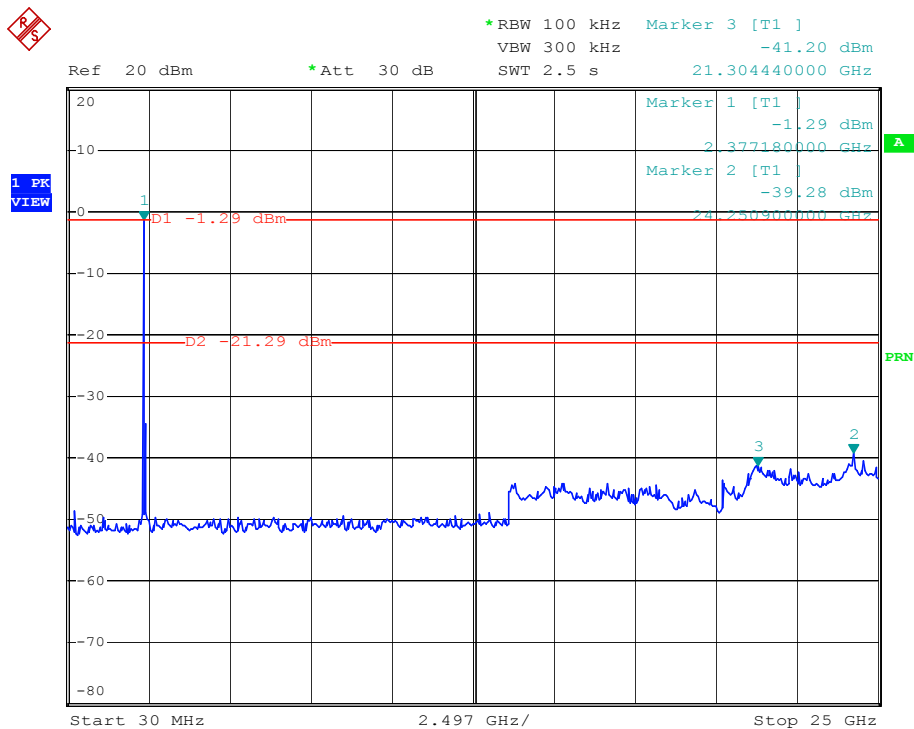
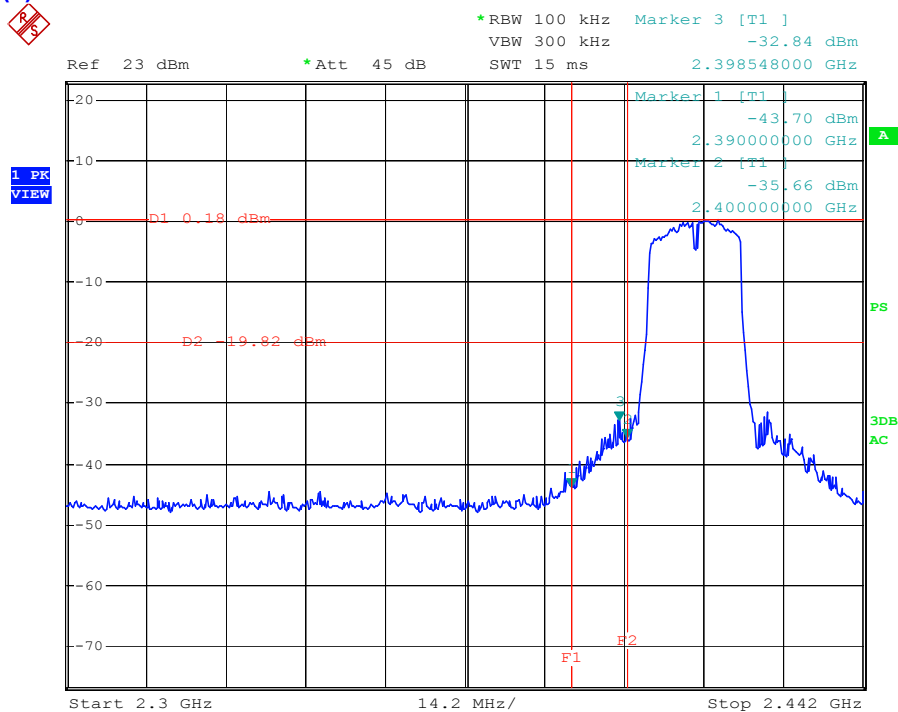
CH 11



Date: 18.MAR.2010 15:26:37

DRAFT 802.11n (20MHz) OFDM MODULATION

For Chain (0):CH1

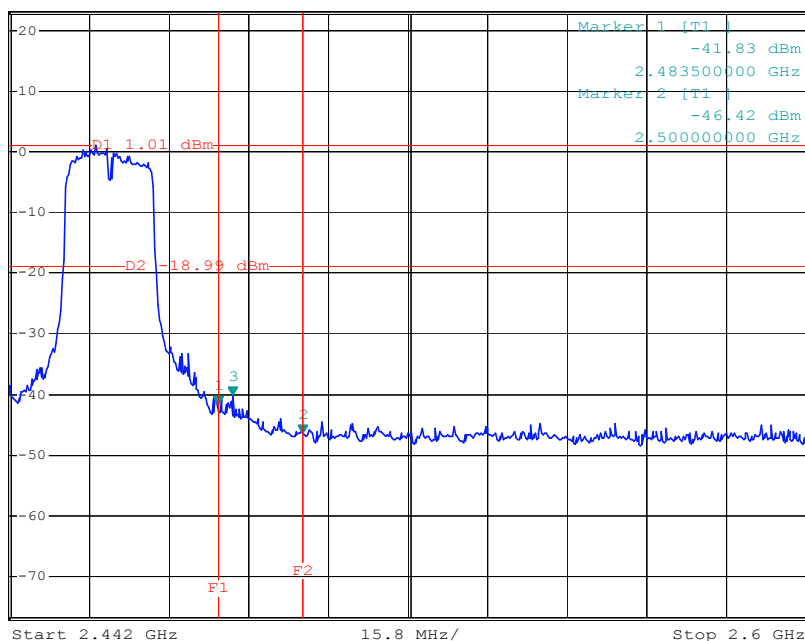


Date: 18.MAR.2010 15:29:12

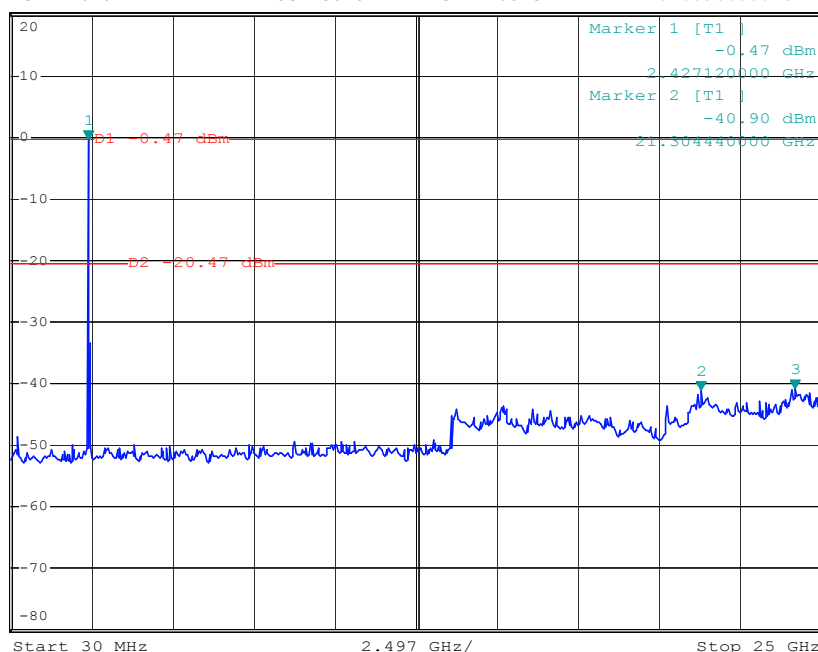
CH11



*RBW 100 kHz Marker 3 [T1]
 VBW 300 kHz -40.12 dBm
 Ref 23 dBm *Att 45 dB SWT 20 ms 2.486240000 GHz

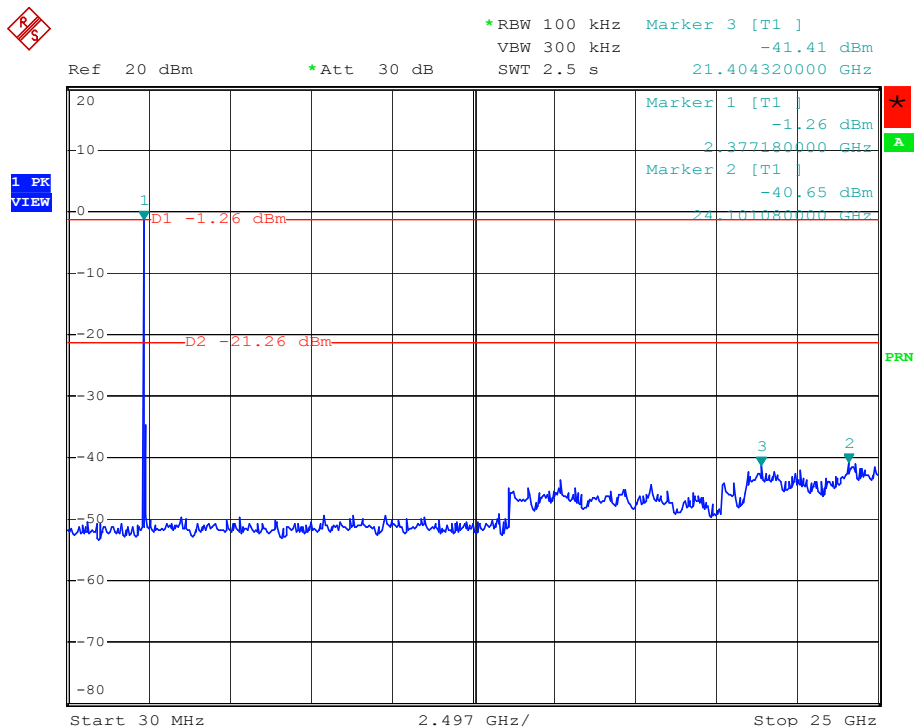
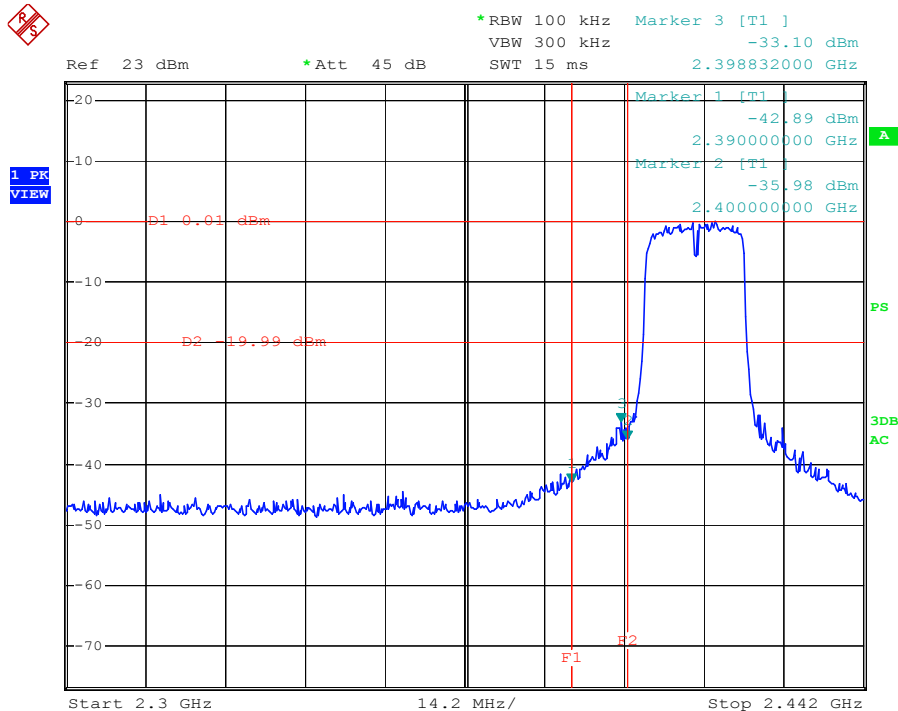
1 PK
VIEW


*RBW 100 kHz Marker 3 [T1]
 VBW 300 kHz -40.85 dBm
 Ref 20 dBm *Att 30 dB SWT 2.5 s 24.200960000 GHz

1 PK
VIEW


Date: 18.MAR.2010 15:30:34

For Chain (1):CH1

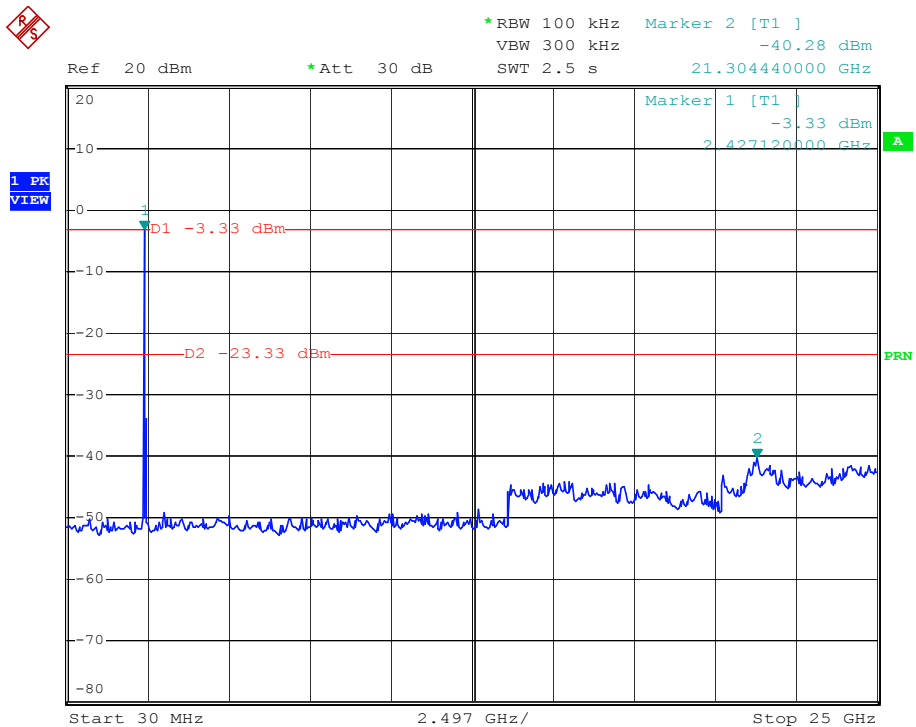
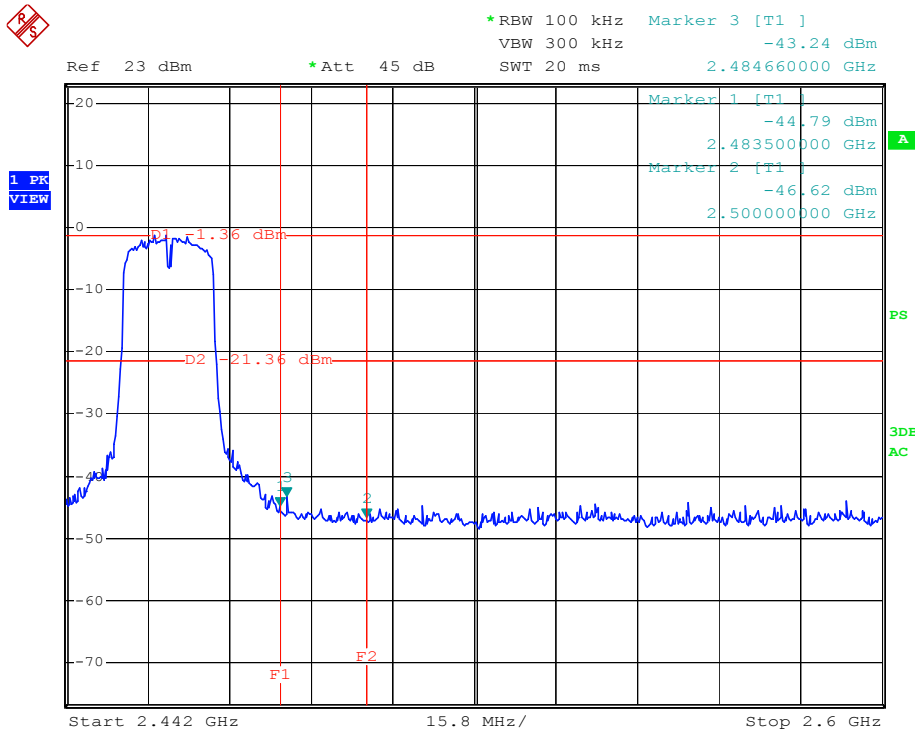


Date: 18.MAR.2010 15:39:54



A D T

CH 11



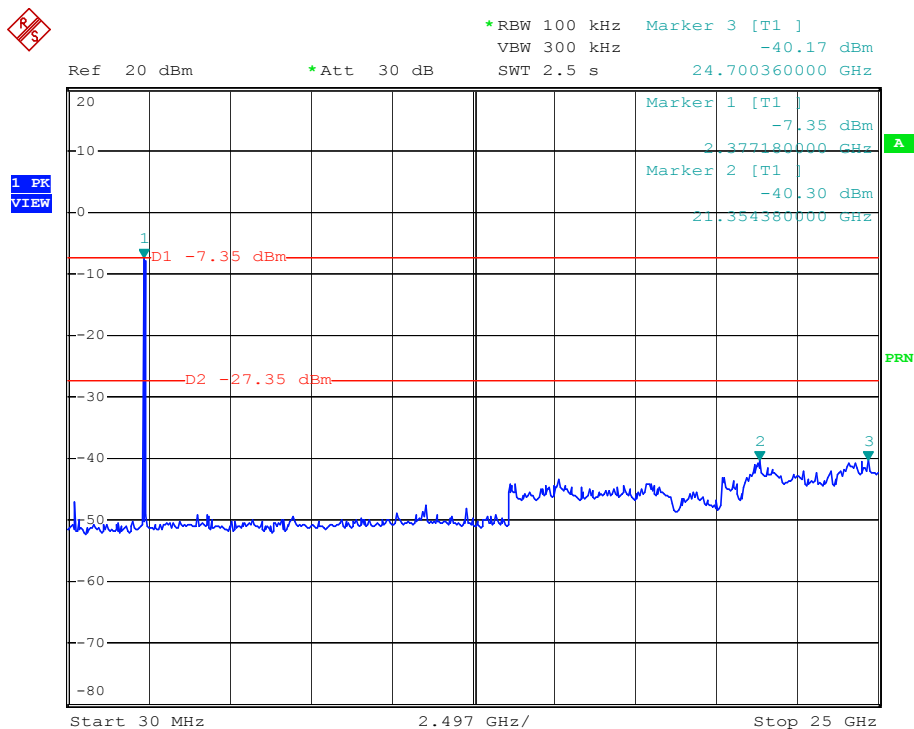
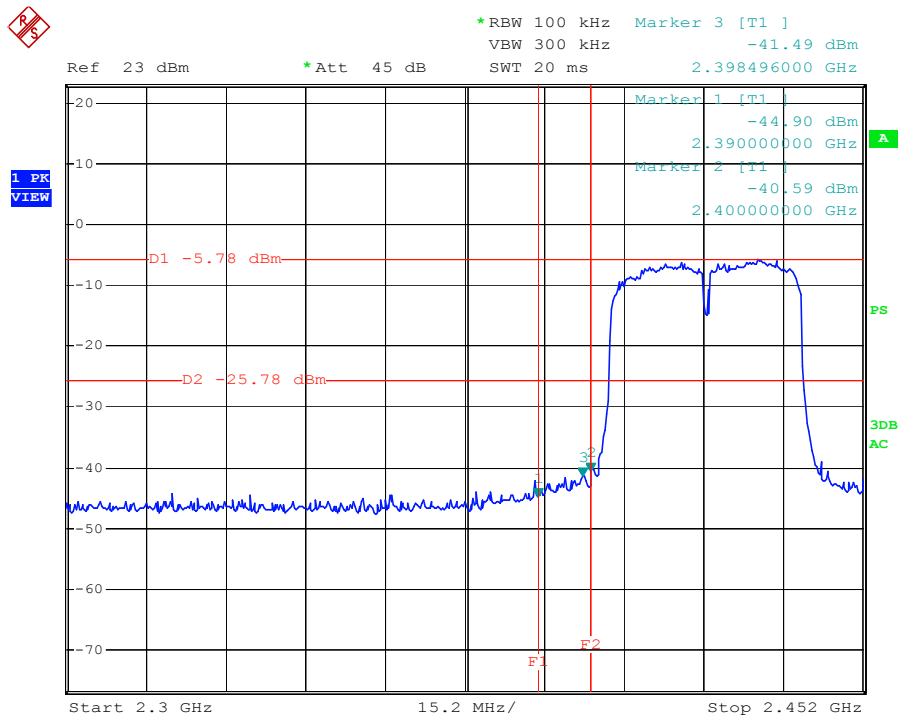
Date: 18.MAR.2010 15:40:55



A D T

DRAFT 802.11n (40MHz) OFDM MODULATION

For Chain (0):CH1

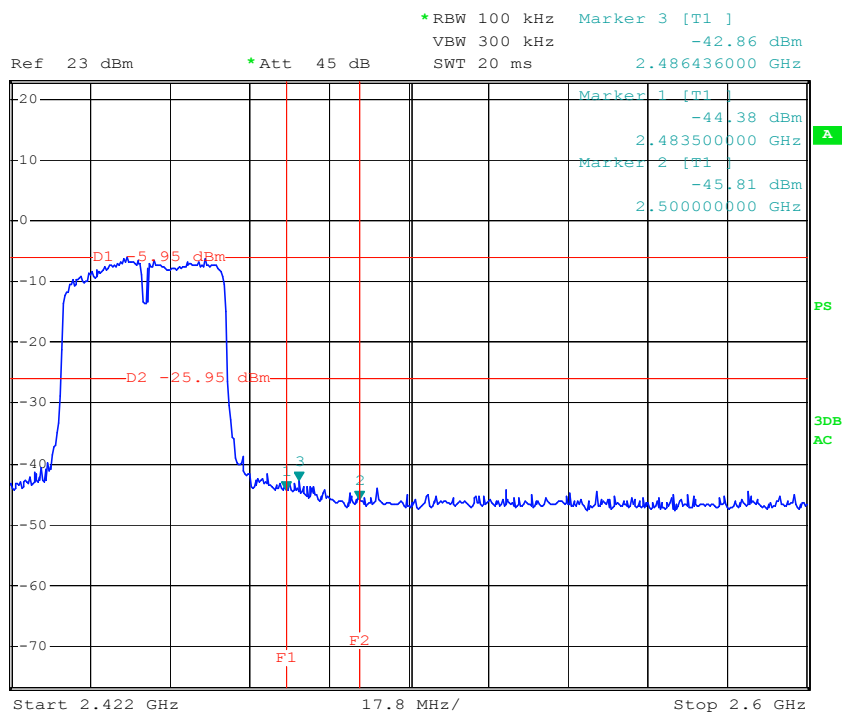
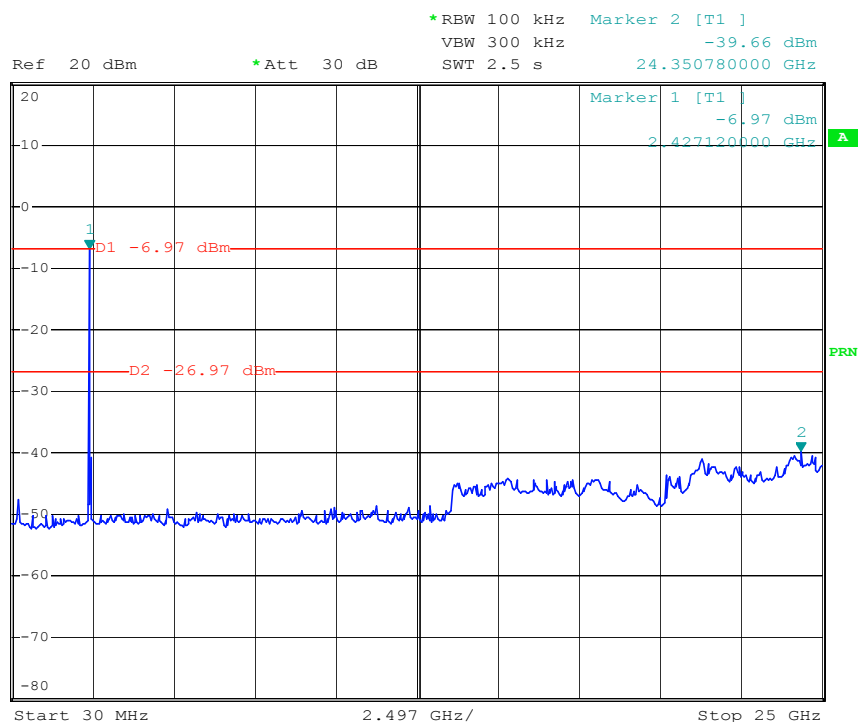


Date: 18.MAR.2010 15:37:36



A D T

CH7

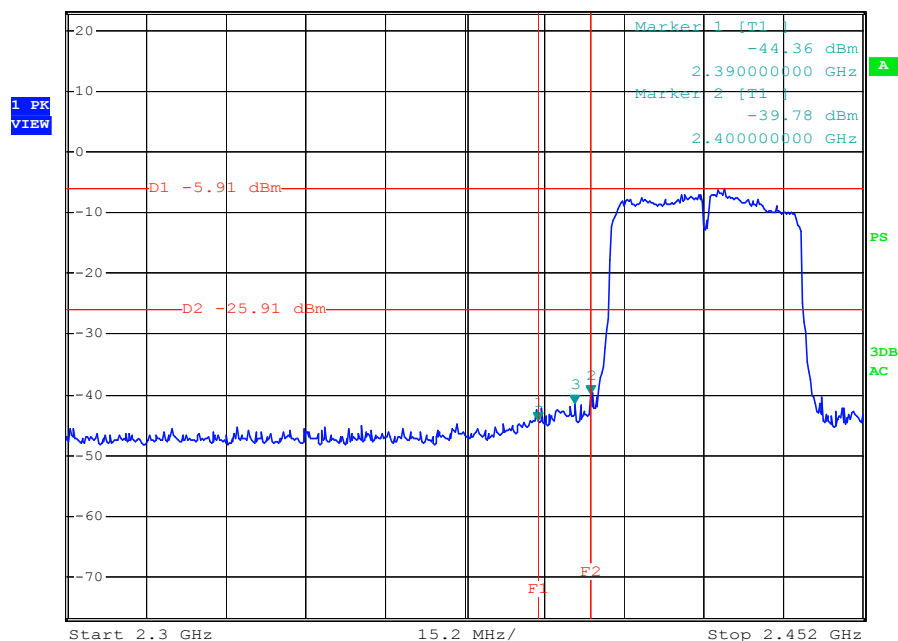
1 PK
VIEW1 PK
VIEW

Date: 18.MAR.2010 15:33:20

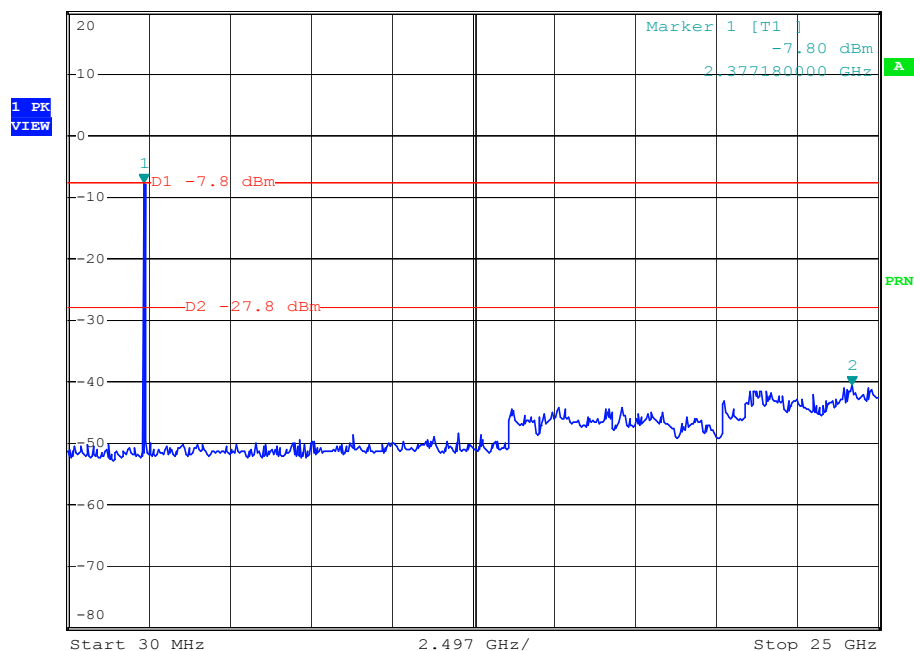
For Chain (1):CH1



*RBW 100 kHz Marker 3 [T1]
 VBW 300 kHz -41.53 dBm
 Ref 23 dBm *Att 45 dB SWT 20 ms 2.396976000 GHz



*RBW 100 kHz Marker 2 [T1]
 VBW 300 kHz -40.37 dBm
 Ref 20 dBm *Att 30 dB SWT 2.5 s 24.200960000 GHz

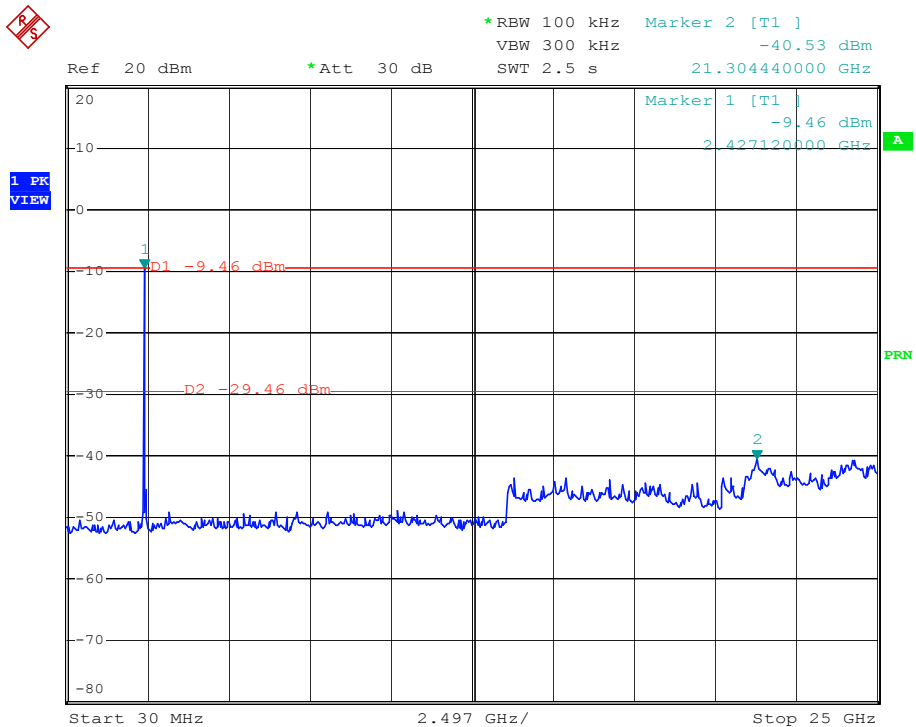
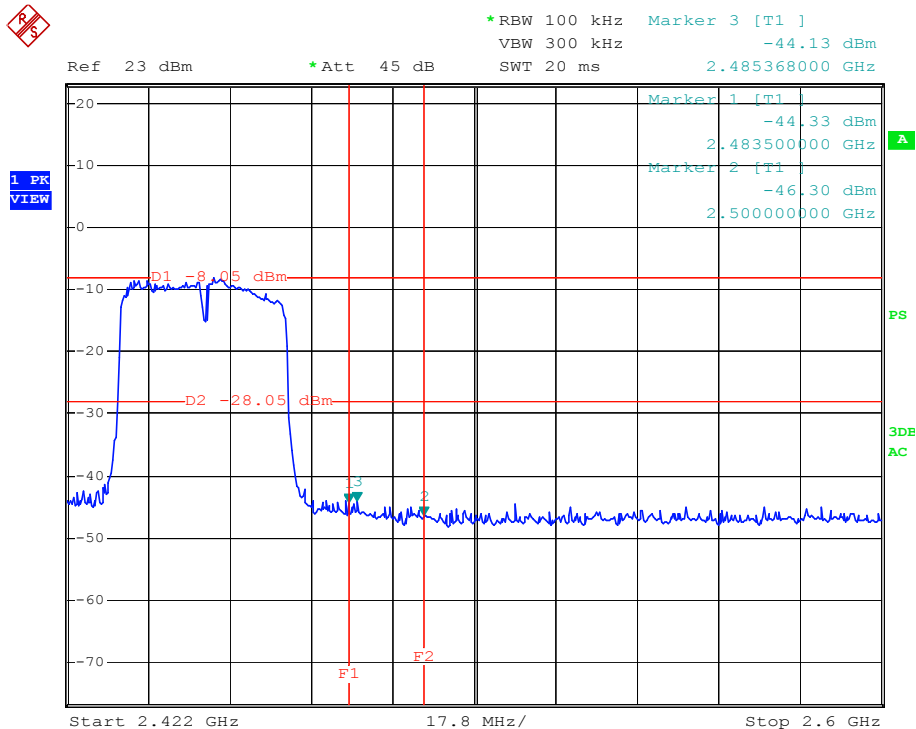


Date: 18.MAR.2010 15:42:06



A D T

CH 7



Date: 18.MAR.2010 15:43:07

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is PCB antenna. The maximum Gain of the antenna is 3.77dBi.

5. APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, ADT (Shanghai) Corporation, were founded in 2004 to provide our best service in EMC, Radio and Vehicle consultation. Our laboratories are accredited by the following accreditation bodies according to ISO/IEC 17025 (2005) .

USA	A2LA Certificate No.: 2343.01
China	CNAS Certificate No.: L2810

Copies of accreditation certificates could be inquired from our office. If you have any comments, please feel free to contact us at the following:

EMC / RF / Vehicle Lab:

Tel: +86 21 6465 9091

Fax: +86 21 6465 9092

Email: bvadtshmail@cn.bureauveritas.com

--END--