

FCC TEST REPORT (15.247)

REPORT NO.: RF140421C35

MODEL NO.: WAP351

FCC ID: PD5-WAP351

RECEIVED: Apr. 18, 2014

TESTED: May 23 ~ Jun. 18, 2014

ISSUED: Jun. 26, 2014

APPLICANT: Delta Networks, Inc.

ADDRESS: 252, Shang Ying Road, Kuei San Taoyuan Shien
333, Taiwan, R.O.C.

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

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

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140421C35	Original release	Jun. 26, 2014



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1. CERTIFICATION

PRODUCT: Wireless-N Dual Radio Access Point with 5 Ports Switch
MODEL NO.: WAP351
BRAND: CISCO
APPLICANT: Delta Networks, Inc.
TESTED: May 23 ~ Jun. 18, 2014
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.10-2009

The above equipment (model: WAP351) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE :** Jun. 26, 2014

Pettie Chen / Senior Specialist

APPROVED BY :  , **DATE :** Jun. 26, 2014

Ken Liu / Senior Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.64dB at 22.42188MHz.
15.205 & 209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2390.00MHz.
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.1dB at 2483.5MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is I-PEX (MHF) not a standard connector.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Wireless-N Dual Radio Access Point with 5 Ports Switch
MODEL NO.	WAP351
POWER SUPPLY	48Vdc (Adapter) 56Vdc (PoE)
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 802.11n: up to 270.0Mbps
OPERATING FREQUENCY	2412 ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
OUTPUT POWER	346.306mW
ANTENNA TYPE	Refer to NOTE
ANTENNA CONNECTOR	Refer to NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

- 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	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

*The EUT supports diversity function.

802.11b: The EUT supports chain 1 or chain 2.

802.11g, n: The EUT supports chain 0/1 or chain 0/2.

2. The EUT consumes power from the following adapter & PoE.

Adapter	
Brand	LEADER ELECTRONICS INC.
Model	NU60-F480125-I1
Input Power	100-240Vac~50/60Hz, 1.4A
Output Power	48.0Vdc, 1.25A
Power Line	1.85m DC cable with 1 core attached on adapter

PoE (Support unit only)	
Brand	PowerDsine
Model	9001G-40/SP
Input Power	100-240Vac, 50-60Hz, 1.5A
Output Power	56V, 0.73A

3. The following antennas were provided to the EUT.

Antenna NO.	Antenna Type	Frequency range	Antenna Gain (dBi) Including cable loss	Connector Type
Left rear (LB1) (chain 0)	Dipole	2.4~2.5GHz	3.1 (TX/RX)	I-PEX(MHF)
Front left (LB2) (chain 2)	Dipole	2.4~2.5GHz	5.3 (TX/RX)	I-PEX(MHF)
Right rear (LB3) (chain 1)	Dipole	2.4~2.5GHz	3.4 (TX/RX)	I-PEX(MHF)

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

3.2 DESCRIPTION OF TEST MODES

FOR 2.4GHz:

11 channels are provided for 802.11b, 802.11g and 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 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	-	√	√	-	Power from PoE

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

NOTE:

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

NOTE: “-” means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Chain 1
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Chain 2
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Chain 0/1
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Chain 0/2
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Chain 0/1
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Chain 0/2
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	Chain 0/1
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	Chain 0/2

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A, B	802.11n (20MHz)	1 to 11	1	OFDM	BPSK	6.5	Chain 0/1

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A, B	802.11n (20MHz)	1 to 11	1	OFDM	BPSK	6.5	Chain 0/1

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.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Chain 1
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Chain 2
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Chain 0/1
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Chain 0/2
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Chain 0/1
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Chain 0/2
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	Chain 0/1
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	Chain 0/2

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	TX FUNCTION
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Chain 1
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Chain 2
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Chain 0/1
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Chain 0/2
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Chain 0/1
A	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5	Chain 0/2
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	Chain 0/1
A	802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5	Chain 0/2



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	28deg. C, 64%RH	120Vac, 60Hz	Alan Wu
RE<1G	23deg. C, 63%RH	120Vac, 60Hz	Brad Tung
PLC	22deg. C, 62%RH	120Vac, 60Hz	Leo Tsai
APCM	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

3.3 DUTY CYCLE OF TEST SIGNAL

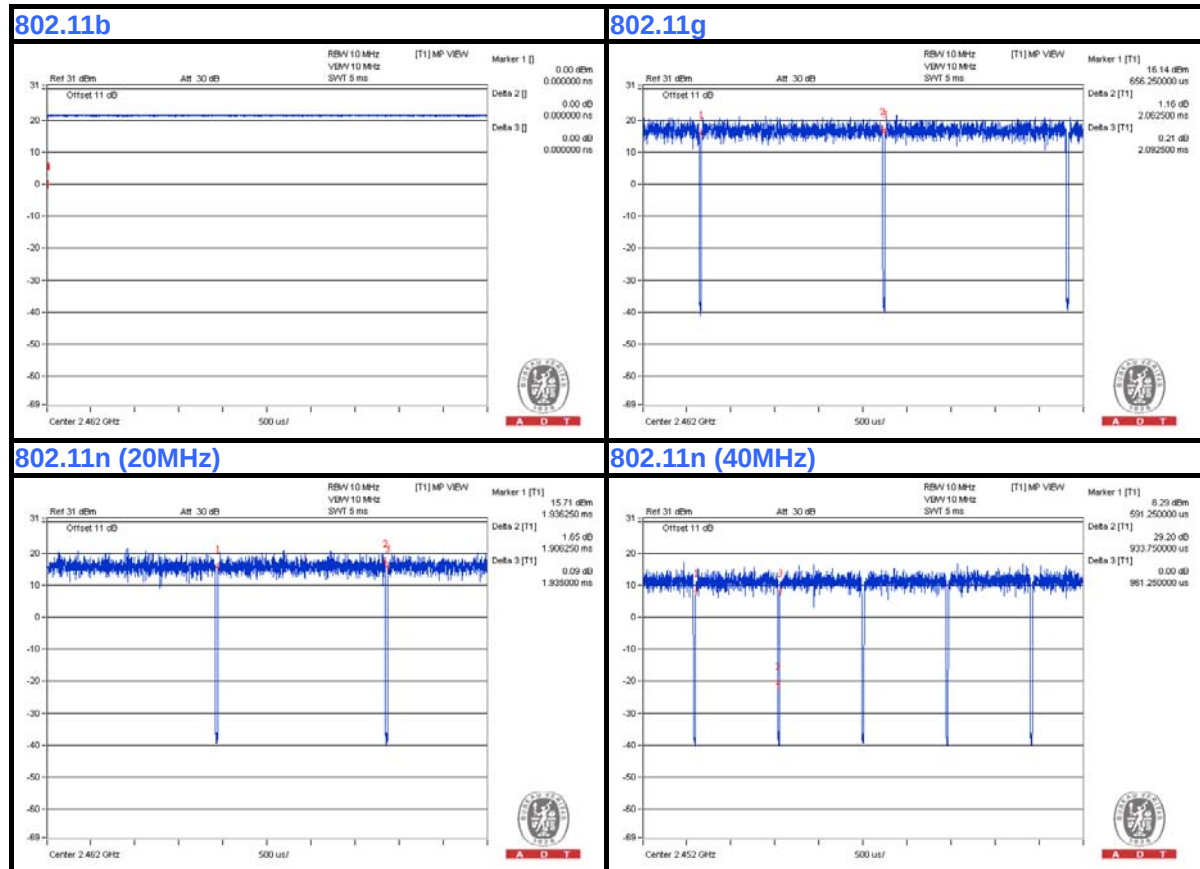
2.4GHz Band:

802.11b: Duty cycle = 100%

802.11g: Duty cycle = $2.0625/2.0925 = 0.986 > 98\%$

802.11n (20MHz): Duty cycle = $1.90625/1.935 = 0.985 > 98\%$

802.11n (40MHz): Duty cycle = $0.93375/0.96125 = 0.971$, Duty factor = $10 * \log(1/0.971) = 0.128$





3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	DELL	D531	CN-0XM006-48643-8 1U-2786	QDS-BRCM1020
2	PoE	PowerDsine	9001G-40/SP	NA	NA

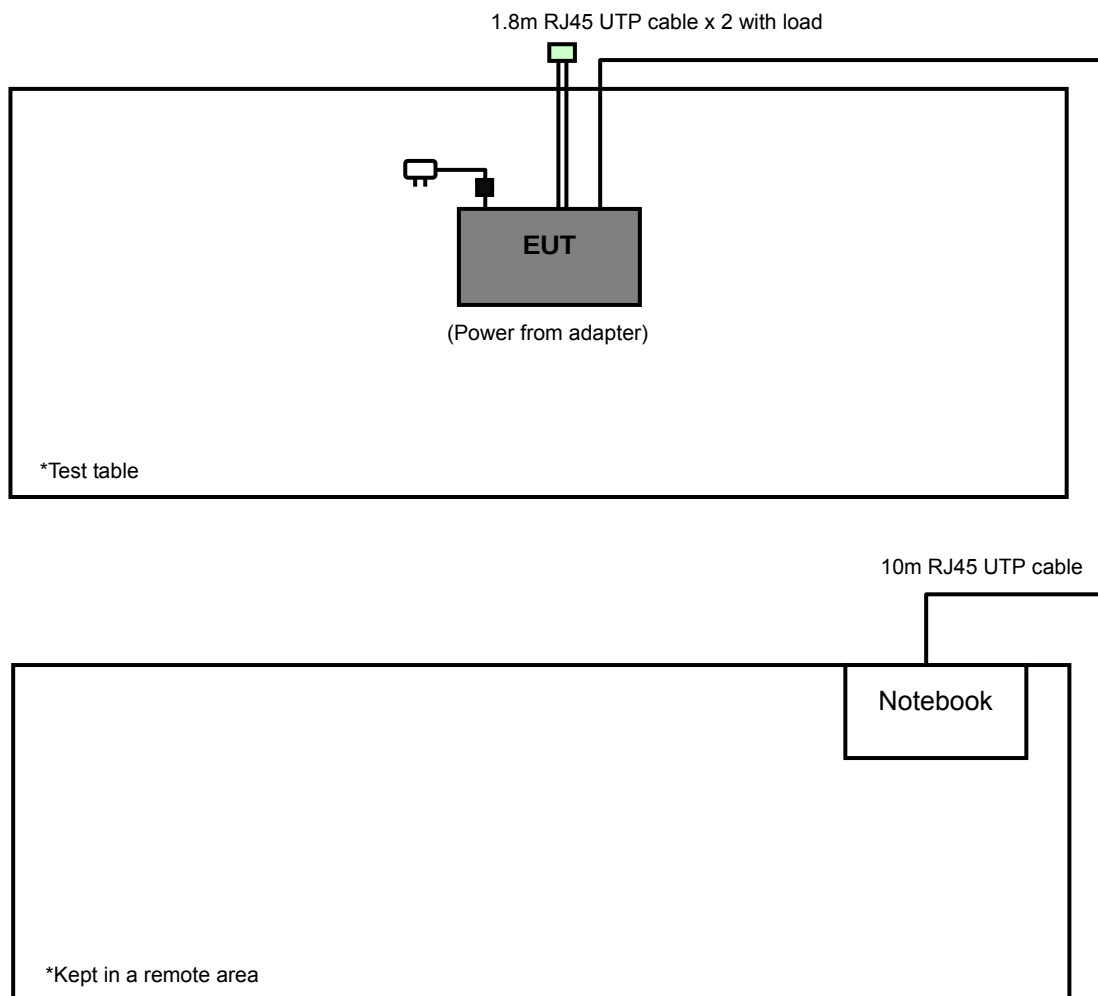
NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable (For Test Mode A), 3m RJ45 UTP cable (For Test Mode B)
2	10m RJ45 UTP cable

NOTE:

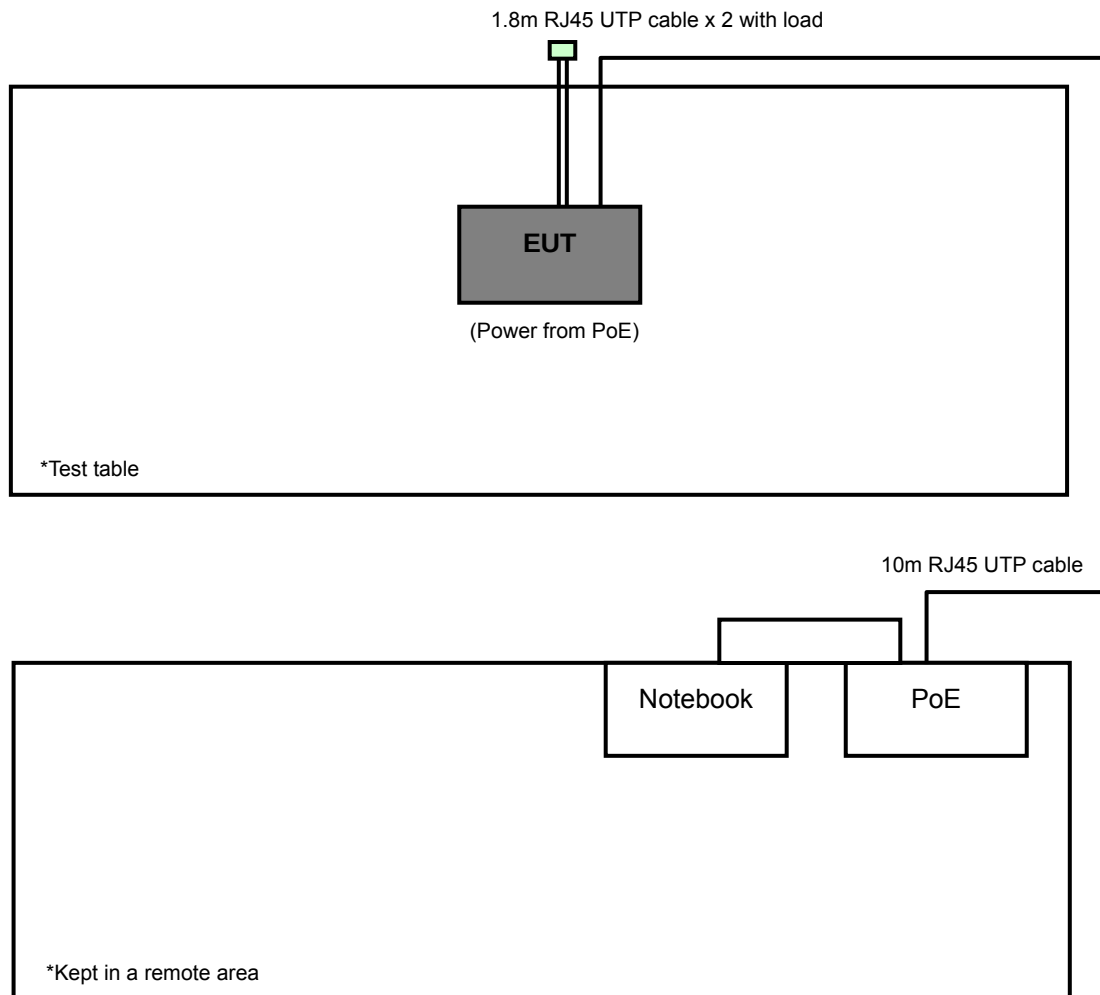
1. All power cords of the above support units are non-shielded (1.8m).
2. Item 1, 2 acted as communication partners to transfer data.
3. Item 2 was provided by client.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST

Test Mode A



Test Mode B





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3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

558074 D01 DTS Meas Guidance v03r02

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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

NOTE:

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Sep. 09, 2013	Sep. 08, 2014
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Dec. 18, 2013	Dec. 17, 2014
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 26, 2014	Feb. 25, 2015
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2014	Jan. 04, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 15, 2013	Jul. 14, 2014
Preamplifier Agilent	8449B	3008A01961	Oct. 28, 2013	Oct. 27, 2014
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2013	Oct. 17, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 26, 2013	Aug. 25, 2014
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 26, 2013	Aug. 25, 2014
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021704	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2013	Oct. 17, 2014
High Speed Peak Power Meter	ML2495A	0824011	Jul. 29, 2013	Jul. 28, 2014
Power Sensor	MA2411B	0738171	Jul. 29, 2013	Jul. 28, 2014

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 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:

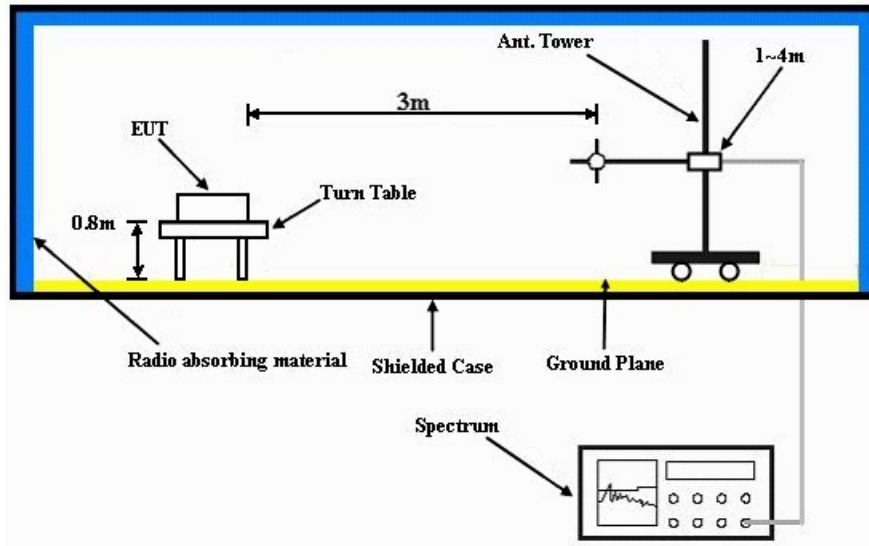
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $> 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

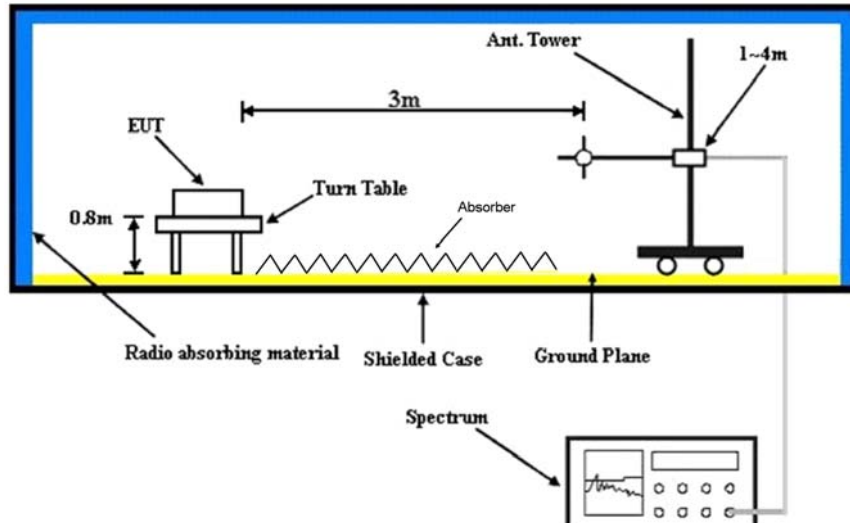
No deviation.

4.1.5 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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

4.1.6 EUT OPERATING CONDITIONS

TEST MODE A

- a. Placed the EUT on the testing table.
- b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
- c. The communication partner was connected with the EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable the EUT under transmission condition continuously at specific channel frequency.
- d. The communication partner sent data to EUT by command "PING".

TEST MODE B

- a. Placed the EUT on the testing table.
- b. Prepared a notebook and a POE to act as communication partners and placed them outside of testing area.
- c. The POE was connected with the EUT and the notebook via RJ45 cables and the notebook ran a test program (provided by manufacturer) to enable the EUT under transmission condition continuously at specific channel frequency.
- d. The communication partners sent data to EUT by command "PING".

4.1.7 TEST RESULTS

ABOVE 1GHz DATA :

802.11b_Chain 1

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.5 PK	74.0	-16.5	1.07 H	8	25.50	32.00
2	2390.00	45.7 AV	54.0	-8.3	1.07 H	8	13.70	32.00
3	*2412.00	108.1 PK			1.10 H	6	76.10	32.00
4	*2412.00	104.6 AV			1.10 H	6	72.60	32.00
5	4824.00	48.9 PK	74.0	-25.1	1.00 H	192	43.70	5.20
6	4824.00	39.5 AV	54.0	-14.5	1.00 H	192	34.30	5.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.2 PK	74.0	-17.8	1.00 V	90	24.20	32.00
2	2390.00	44.2 AV	54.0	-9.8	1.00 V	90	12.20	32.00
3	*2412.00	101.9 PK			1.00 V	97	69.90	32.00
4	*2412.00	98.8 AV			1.00 V	97	66.80	32.00
5	4824.00	51.1 PK	74.0	-22.9	1.00 V	181	45.90	5.20
6	4824.00	45.3 AV	54.0	-8.7	1.00 V	181	40.10	5.20

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.6 PK			1.07 H	8	76.50	32.10
2	*2437.00	104.9 AV			1.07 H	8	72.80	32.10
3	4874.00	48.9 PK	74.0	-25.1	1.00 H	194	43.60	5.30
4	4874.00	40.2 AV	54.0	-13.8	1.00 H	194	34.90	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.8 PK			1.00 V	101	69.70	32.10
2	*2437.00	98.4 AV			1.00 V	101	66.30	32.10
3	4874.00	51.7 PK	74.0	-22.3	1.00 V	183	46.40	5.30
4	4874.00	45.7 AV	54.0	-8.3	1.00 V	183	40.40	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.2 PK			1.06 H	6	75.90	32.30
2	*2462.00	104.5 AV			1.06 H	6	72.20	32.30
3	2483.50	57.8 PK	74.0	-16.2	1.04 H	3	25.40	32.40
4	2483.50	46.1 AV	54.0	-7.9	1.04 H	3	13.70	32.40
5	4924.00	49.4 PK	74.0	-24.6	1.00 H	197	44.00	5.40
6	4924.00	40.2 AV	54.0	-13.8	1.00 H	197	34.80	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.1 PK			1.00 V	275	70.80	32.30
2	*2462.00	100.2 AV			1.00 V	275	67.90	32.30
3	2483.50	55.8 PK	74.0	-18.2	1.00 V	272	23.40	32.40
4	2483.50	42.8 AV	54.0	-11.2	1.00 V	272	10.40	32.40
5	4924.00	53.1 PK	74.0	-20.9	1.00 V	263	47.70	5.40
6	4924.00	48.4 AV	54.0	-5.6	1.00 V	263	43.00	5.40

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

802.11b_Chain 2

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.0 PK	74.0	-17.0	1.10 H	25	25.00	32.00
2	2390.00	45.0 AV	54.0	-9.0	1.10 H	25	13.00	32.00
3	*2412.00	107.0 PK			1.06 H	17	75.00	32.00
4	*2412.00	103.4 AV			1.06 H	17	71.40	32.00
5	4824.00	48.6 PK	74.0	-25.4	1.00 H	306	43.40	5.20
6	4824.00	39.2 AV	54.0	-14.8	1.00 H	306	34.00	5.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.5 PK	74.0	-18.5	1.00 V	135	23.50	32.00
2	2390.00	43.2 AV	54.0	-10.8	1.00 V	135	11.20	32.00
3	*2412.00	100.6 PK			1.00 V	140	68.60	32.00
4	*2412.00	97.8 AV			1.00 V	140	65.80	32.00
5	4824.00	51.0 PK	74.0	-23.0	1.00 V	275	45.80	5.20
6	4824.00	45.0 AV	54.0	-9.0	1.00 V	275	39.80	5.20

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	107.5 PK			1.11 H	25	75.40	32.10
2	*2437.00	103.9 AV			1.11 H	25	71.80	32.10
3	4874.00	48.5 PK	74.0	-25.5	1.00 H	303	43.20	5.30
4	4874.00	40.0 AV	54.0	-14.0	1.00 H	303	34.70	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.0 PK			1.00 V	99	68.90	32.10
2	*2437.00	97.4 AV			1.00 V	99	65.30	32.10
3	4874.00	51.3 PK	74.0	-22.7	1.00 V	154	46.00	5.30
4	4874.00	45.5 AV	54.0	-8.5	1.00 V	154	40.20	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.2 PK			1.08 H	11	74.90	32.30
2	*2462.00	103.7 AV			1.08 H	11	71.40	32.30
3	2483.50	57.0 PK	74.0	-17.0	1.10 H	2	24.60	32.40
4	2483.50	45.6 AV	54.0	-8.4	1.10 H	2	13.20	32.40
5	4924.00	49.1 PK	74.0	-24.9	1.00 H	200	43.70	5.40
6	4924.00	40.0 AV	54.0	-14.0	1.00 H	200	34.60	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.3 PK			1.00 V	300	70.00	32.30
2	*2462.00	99.2 AV			1.00 V	300	66.90	32.30
3	2483.50	55.0 PK	74.0	-19.0	1.00 V	243	22.60	32.40
4	2483.50	42.0 AV	54.0	-12.0	1.00 V	243	9.60	32.40
5	4924.00	53.0 PK	74.0	-21.0	1.00 V	156	47.60	5.40
6	4924.00	48.0 AV	54.0	-6.0	1.00 V	156	42.60	5.40

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

802.11g_Chain 0/1

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.1 PK	74.0	-16.9	1.51 H	60	25.10	32.00
2	2390.00	44.1 AV	54.0	-9.9	1.51 H	60	12.10	32.00
3	*2412.00	104.2 PK			1.52 H	60	72.20	32.00
4	*2412.00	94.1 AV			1.52 H	60	62.10	32.00
5	4824.00	46.4 PK	74.0	-27.6	1.00 H	23	41.20	5.20
6	4824.00	37.2 AV	54.0	-16.8	1.00 H	23	32.00	5.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.7 PK	74.0	-5.3	1.00 V	71	36.70	32.00
2	2390.00	53.0 AV	54.0	-1.0	1.00 V	71	21.00	32.00
3	*2412.00	110.3 PK			1.00 V	65	78.30	32.00
4	*2412.00	101.3 AV			1.00 V	65	69.30	32.00
5	4824.00	47.7 PK	74.0	-26.3	1.00 V	166	42.50	5.20
6	4824.00	38.4 AV	54.0	-15.6	1.00 V	166	33.20	5.20

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.7 PK			1.49 H	57	72.60	32.10
2	*2437.00	94.6 AV			1.49 H	57	62.50	32.10
3	4874.00	47.0 PK	74.0	-27.0	1.00 H	28	41.70	5.30
4	4874.00	37.7 AV	54.0	-16.3	1.00 H	28	32.40	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.8 PK			1.00 V	106	78.70	32.10
2	*2437.00	101.4 AV			1.00 V	106	69.30	32.10
3	4874.00	48.0 PK	74.0	-26.0	1.00 V	162	42.70	5.30
4	4874.00	38.9 AV	54.0	-15.1	1.00 V	162	33.60	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.0 PK			1.45 H	55	71.70	32.30
2	*2462.00	94.0 AV			1.45 H	55	61.70	32.30
3	2483.50	60.0 PK	74.0	-14.0	1.42 H	56	27.60	32.40
4	2483.50	45.0 AV	54.0	-9.0	1.42 H	56	12.60	32.40
5	4924.00	46.0 PK	74.0	-28.0	1.00 H	24	40.60	5.40
6	4924.00	37.0 AV	54.0	-17.0	1.00 H	24	31.60	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.2 PK			1.00 V	104	77.90	32.30
2	*2462.00	100.7 AV			1.00 V	104	68.40	32.30
3	2483.50	68.1 PK	74.0	-5.9	1.00 V	114	35.70	32.40
4	2483.50	52.9 AV	54.0	-1.1	1.00 V	114	20.50	32.40
5	4924.00	47.3 PK	74.0	-26.7	1.00 V	168	41.90	5.40
6	4924.00	38.2 AV	54.0	-15.8	1.00 V	168	32.80	5.40

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

802.11g_Chain 0/2

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	56.8 PK	74.0	-17.2	1.90 H	310	24.80	32.00
2	2390.00	43.5 AV	54.0	-10.5	1.90 H	310	11.50	32.00
3	*2412.00	103.6 PK			1.92 H	306	71.60	32.00
4	*2412.00	93.5 AV			1.92 H	306	61.50	32.00
5	4824.00	45.9 PK	74.0	-28.1	1.00 H	33	40.70	5.20
6	4824.00	37.1 AV	54.0	-16.9	1.00 H	33	31.90	5.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.3 PK	74.0	-5.7	1.00 V	91	36.30	32.00
2	2390.00	52.5 AV	54.0	-1.5	1.00 V	91	20.50	32.00
3	*2412.00	110.1 PK			1.00 V	95	78.10	32.00
4	*2412.00	100.4 AV			1.00 V	95	68.40	32.00
5	4824.00	47.2 PK	74.0	-26.8	1.00 V	162	42.00	5.20
6	4824.00	37.7 AV	54.0	-16.3	1.00 V	162	32.50	5.20

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.1 PK			1.99 H	307	72.00	32.10
2	*2437.00	94.0 AV			1.99 H	307	61.90	32.10
3	4874.00	46.4 PK	74.0	-27.6	1.00 H	81	41.10	5.30
4	4874.00	37.0 AV	54.0	-17.0	1.00 H	81	31.70	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.5 PK			1.00 V	92	78.40	32.10
2	*2437.00	100.5 AV			1.00 V	92	68.40	32.10
3	4874.00	47.7 PK	74.0	-26.3	1.00 V	128	42.40	5.30
4	4874.00	38.0 AV	54.0	-16.0	1.00 V	128	32.70	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.8 PK			1.89 H	311	71.50	32.30
2	*2462.00	93.8 AV			1.89 H	311	61.50	32.30
3	2483.50	59.3 PK	74.0	-14.7	1.96 H	307	26.90	32.40
4	2483.50	44.8 AV	54.0	-9.2	1.96 H	307	12.40	32.40
5	4924.00	45.7 PK	74.0	-28.3	1.00 H	48	40.30	5.40
6	4924.00	36.6 AV	54.0	-17.4	1.00 H	48	31.20	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.6 PK			1.00 V	98	77.30	32.30
2	*2462.00	100.2 AV			1.00 V	98	67.90	32.30
3	2483.50	67.9 PK	74.0	-6.1	1.00 V	90	35.50	32.40
4	2483.50	52.1 AV	54.0	-1.9	1.00 V	90	19.70	32.40
5	4924.00	47.0 PK	74.0	-27.0	1.00 V	124	41.60	5.40
6	4924.00	38.0 AV	54.0	-16.0	1.00 V	124	32.60	5.40

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

802.11n (20MHz)_Chain 0/1

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.8 PK	74.0	-16.2	1.56 H	59	25.80	32.00
2	2390.00	44.2 AV	54.0	-9.8	1.56 H	59	12.20	32.00
3	*2412.00	102.6 PK			1.53 H	58	70.60	32.00
4	*2412.00	92.2 AV			1.53 H	58	60.20	32.00
5	4824.00	45.8 PK	74.0	-28.2	1.00 H	25	40.60	5.20
6	4824.00	36.3 AV	54.0	-17.7	1.00 H	25	31.10	5.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.0 PK	74.0	-5.0	1.00 V	114	37.00	32.00
2	2390.00	52.3 AV	54.0	-1.7	1.00 V	114	20.30	32.00
3	*2412.00	107.8 PK			1.00 V	65	75.80	32.00
4	*2412.00	98.6 AV			1.00 V	65	66.60	32.00
5	4824.00	47.1 PK	74.0	-26.9	1.00 V	161	41.90	5.20
6	4824.00	37.6 AV	54.0	-16.4	1.00 V	161	32.40	5.20

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.9 PK			1.00 H	59	71.80	32.10
2	*2437.00	93.2 AV			1.00 H	59	61.10	32.10
3	4874.00	46.6 PK	74.0	-27.4	1.00 H	21	41.30	5.30
4	4874.00	37.4 AV	54.0	-16.6	1.00 H	21	32.10	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.3 PK			1.00 V	60	77.20	32.10
2	*2437.00	99.7 AV			1.00 V	60	67.60	32.10
3	4874.00	47.9 PK	74.0	-26.1	1.00 V	164	42.60	5.30
4	4874.00	38.6 AV	54.0	-15.4	1.00 V	164	33.30	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.2 PK			1.46 H	56	69.90	32.30
2	*2462.00	92.6 AV			1.46 H	56	60.30	32.30
3	2483.50	57.6 PK	74.0	-16.4	1.40 H	56	25.20	32.40
4	2483.50	44.6 AV	54.0	-9.4	1.40 H	56	12.20	32.40
5	4924.00	46.2 PK	74.0	-27.8	1.00 H	26	40.80	5.40
6	4924.00	37.0 AV	54.0	-17.0	1.00 H	26	31.60	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.3 PK			1.00 V	43	77.00	32.30
2	*2462.00	100.1 AV			1.00 V	43	67.80	32.30
3	2483.50	68.3 PK	74.0	-5.7	1.00 V	105	35.90	32.40
4	2483.50	52.6 AV	54.0	-1.4	1.00 V	105	20.20	32.40
5	4924.00	47.5 PK	74.0	-26.5	1.00 V	162	42.10	5.40
6	4924.00	38.2 AV	54.0	-15.8	1.00 V	162	32.80	5.40

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

802.11n (20MHz)_Chain 0/2

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.5 PK	74.0	-16.5	1.98 H	314	25.50	32.00
2	2390.00	43.6 AV	54.0	-10.4	1.98 H	314	11.60	32.00
3	*2412.00	101.8 PK			1.91 H	307	69.80	32.00
4	*2412.00	90.4 AV			1.91 H	307	58.40	32.00
5	4824.00	45.2 PK	74.0	-28.8	1.00 H	57	40.00	5.20
6	4824.00	35.6 AV	54.0	-18.4	1.00 H	57	30.40	5.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.5 PK	74.0	-5.5	1.00 V	91	36.50	32.00
2	2390.00	51.5 AV	54.0	-2.5	1.00 V	91	19.50	32.00
3	*2412.00	107.5 PK			1.00 V	99	75.50	32.00
4	*2412.00	98.4 AV			1.00 V	99	66.40	32.00
5	4824.00	46.3 PK	74.0	-27.7	1.00 V	157	41.10	5.20
6	4824.00	36.8 AV	54.0	-17.2	1.00 V	157	31.60	5.20

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

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.2 PK			1.90 H	320	71.10	32.10
2	*2437.00	92.9 AV			1.90 H	320	60.80	32.10
3	4874.00	46.1 PK	74.0	-27.9	1.00 H	13	40.80	5.30
4	4874.00	37.2 AV	54.0	-16.8	1.00 H	13	31.90	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.9 PK			1.00 V	100	76.80	32.10
2	*2437.00	99.3 AV			1.00 V	100	67.20	32.10
3	4874.00	47.4 PK	74.0	-26.6	1.00 V	140	42.10	5.30
4	4874.00	37.8 AV	54.0	-16.2	1.00 V	140	32.50	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.8 PK			1.96 H	301	69.50	32.30
2	*2462.00	91.8 AV			1.96 H	301	59.50	32.30
3	2483.50	57.3 PK	74.0	-16.7	1.90 H	306	24.90	32.40
4	2483.50	44.0 AV	54.0	-10.0	1.90 H	306	11.60	32.40
5	4924.00	46.0 PK	74.0	-28.0	1.00 H	63	40.60	5.40
6	4924.00	36.2 AV	54.0	-17.8	1.00 H	63	30.80	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.0 PK			1.00 V	92	76.70	32.30
2	*2462.00	99.5 AV			1.00 V	92	67.20	32.30
3	2483.50	68.1 PK	74.0	-5.9	1.00 V	98	35.70	32.40
4	2483.50	52.2 AV	54.0	-1.8	1.00 V	98	19.80	32.40
5	4924.00	47.0 PK	74.0	-27.0	1.00 V	129	41.60	5.40
6	4924.00	38.0 AV	54.0	-16.0	1.00 V	129	32.60	5.40

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

802.11n (40MHz)_Chain 0/1

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.7 PK	74.0	-16.3	1.47 H	51	25.70	32.00
2	2390.00	45.7 AV	54.0	-8.3	1.47 H	51	13.70	32.00
3	*2422.00	95.4 PK			1.49 H	59	63.30	32.10
4	*2422.00	85.1 AV			1.49 H	59	53.00	32.10
5	4844.00	44.3 PK	74.0	-29.7	1.00 H	28	39.00	5.30
6	4844.00	34.7 AV	54.0	-19.3	1.00 H	28	29.40	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.1 PK	74.0	-5.9	1.00 V	107	36.10	32.00
2	2390.00	52.6 AV	54.0	-1.4	1.00 V	107	20.60	32.00
3	*2422.00	103.4 PK			1.00 V	105	71.30	32.10
4	*2422.00	92.8 AV			1.00 V	105	60.70	32.10
5	4844.00	45.8 PK	74.0	-28.2	1.00 V	168	40.50	5.30
6	4844.00	36.0 AV	54.0	-18.0	1.00 V	168	30.70	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	61.5 PK	74.0	-12.5	1.00 H	56	29.50	32.00
2	2390.00	45.3 AV	54.0	-8.7	1.00 H	56	13.30	32.00
3	*2437.00	98.0 PK			1.00 H	58	65.90	32.10
4	*2437.00	88.3 AV			1.00 H	58	56.20	32.10
5	4874.00	45.4 PK	74.0	-28.6	1.00 H	23	40.10	5.30
6	4874.00	35.9 AV	54.0	-18.1	1.00 H	23	30.60	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.7 PK	74.0	-6.3	1.00 V	103	35.70	32.00
2	2390.00	53.0 AV	54.0	-1.0	1.00 V	103	21.00	32.00
3	*2437.00	106.7 PK			1.00 V	105	74.60	32.10
4	*2437.00	97.4 AV			1.00 V	105	65.30	32.10
5	4874.00	46.8 PK	74.0	-27.2	1.00 V	163	41.50	5.30
6	4874.00	36.3 AV	54.0	-17.7	1.00 V	163	31.00	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	97.5 PK			1.44 H	57	65.20	32.30
2	*2452.00	88.2 AV			1.44 H	57	55.90	32.30
3	2483.50	59.3 PK	74.0	-14.7	1.47 H	50	26.90	32.40
4	2483.50	46.0 AV	54.0	-8.0	1.47 H	50	13.60	32.40
5	4904.00	44.9 PK	74.0	-29.1	1.00 H	27	39.50	5.40
6	4904.00	35.7 AV	54.0	-18.3	1.00 H	27	30.30	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	103.5 PK			1.00 V	59	71.20	32.30
2	*2452.00	95.1 AV			1.00 V	59	62.80	32.30
3	2483.50	69.8 PK	74.0	-4.2	1.00 V	106	37.40	32.40
4	2483.50	52.9 AV	54.0	-1.1	1.00 V	106	20.50	32.40
5	4904.00	46.3 PK	74.0	-27.7	1.00 V	166	40.90	5.40
6	4904.00	36.1 AV	54.0	-17.9	1.00 V	166	30.70	5.40

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

802.11n (40MHz)_Chain 0/2

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	57.4 PK	74.0	-16.6	1.96 H	308	25.40	32.00
2	2390.00	45.2 AV	54.0	-8.8	1.96 H	308	13.20	32.00
3	*2422.00	93.9 PK			1.92 H	300	61.80	32.10
4	*2422.00	84.6 AV			1.92 H	300	52.50	32.10
5	4844.00	44.1 PK	74.0	-29.9	1.00 H	81	5.00	39.10
6	4844.00	34.3 AV	54.0	-19.7	1.00 H	81	-4.80	39.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.9 PK	74.0	-6.1	1.00 V	95	35.90	32.00
2	2390.00	51.8 AV	54.0	-2.2	1.00 V	95	19.80	32.00
3	*2422.00	102.7 PK			1.00 V	92	70.60	32.10
4	*2422.00	92.0 AV			1.00 V	92	59.90	32.10
5	4844.00	45.0 PK	74.0	-29.0	1.00 V	184	39.70	5.30
6	4844.00	35.8 AV	54.0	-18.2	1.00 V	184	30.50	5.30

REMARKS:

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



A D T

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.6 PK	74.0	-13.4	2.00 H	192	28.60	32.00
2	2390.00	44.8 AV	54.0	-9.2	2.00 H	192	12.80	32.00
3	*2437.00	97.4 PK			1.94 H	302	65.30	32.10
4	*2437.00	87.8 AV			1.94 H	302	55.70	32.10
5	4874.00	44.6 PK	74.0	-29.4	1.00 H	34	39.30	5.30
6	4874.00	35.1 AV	54.0	-18.9	1.00 H	34	29.80	5.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.4 PK	74.0	-6.6	1.00 V	98	35.40	32.00
2	2390.00	52.2 AV	54.0	-1.8	1.00 V	98	20.20	32.00
3	*2437.00	106.3 PK			1.00 V	98	74.20	32.10
4	*2437.00	97.1 AV			1.00 V	98	65.00	32.10
5	4874.00	46.0 PK	74.0	-28.0	1.00 V	134	40.70	5.30
6	4874.00	35.6 AV	54.0	-18.4	1.00 V	134	30.30	5.30

REMARKS:

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



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CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	97.2 PK			1.91 H	307	64.90	32.30
2	*2452.00	88.0 AV			1.91 H	307	55.70	32.30
3	2483.50	58.5 PK	74.0	-15.5	1.97 H	301	26.10	32.40
4	2483.50	45.5 AV	54.0	-8.5	1.97 H	301	13.10	32.40
5	4904.00	44.2 PK	74.0	-29.8	1.00 H	71	38.80	5.40
6	4904.00	35.3 AV	54.0	-18.7	1.00 H	71	29.90	5.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.8 PK			1.10 V	94	70.50	32.30
2	*2452.00	94.6 AV			1.10 V	94	62.30	32.30
3	2483.50	69.1 PK	74.0	-4.9	1.00 V	95	36.70	32.40
4	2483.50	52.1 AV	54.0	-1.9	1.00 V	95	19.70	32.40
5	4904.00	45.7 PK	74.0	-28.3	1.00 V	172	40.30	5.40
6	4904.00	35.7 AV	54.0	-18.3	1.00 V	172	30.30	5.40

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.



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BELOW 1GHz WORST-CASE DATA**802.11n(20MHz)_Chain 0/1**

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	189.33	37.6 QP	43.5	-5.9	1.00 H	63	53.70	-16.10
2	282.66	32.9 QP	46.0	-13.1	1.25 H	8	45.70	-12.80
3	500.42	35.1 QP	46.0	-10.9	1.50 H	141	43.90	-8.80
4	624.85	36.8 QP	46.0	-9.2	1.50 H	233	43.00	-6.20
5	751.23	36.5 QP	46.0	-9.5	1.00 H	127	40.10	-3.60
6	875.67	31.7 QP	46.0	-14.3	2.00 H	180	33.70	-2.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	64.90	32.1 QP	40.0	-7.9	1.25 V	354	47.10	-15.00
2	189.33	35.5 QP	43.5	-8.0	1.00 V	311	51.60	-16.10
3	243.77	31.4 QP	46.0	-14.6	1.49 V	226	45.90	-14.50
4	500.42	32.3 QP	46.0	-13.7	1.00 V	161	41.10	-8.80
5	624.85	34.8 QP	46.0	-11.2	2.00 V	194	41.00	-6.20
6	751.23	34.7 QP	46.0	-11.3	1.49 V	36	38.30	-3.60

REMARKS:

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



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CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.13	30.0 QP	40.0	-10.0	1.00 H	211	44.10	-14.10
2	190.95	41.4 QP	43.5	-2.1	1.99 H	30	57.70	-16.30
3	270.51	35.7 QP	46.0	-10.3	1.00 H	4	49.00	-13.30
4	499.48	37.6 QP	46.0	-8.4	1.49 H	151	46.50	-8.90
5	749.79	33.5 QP	46.0	-12.5	1.24 H	8	37.20	-3.70
6	875.91	33.9 QP	46.0	-12.1	1.49 H	193	35.90	-2.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.13	37.5 QP	40.0	-2.5	1.00 V	335	51.60	-14.10
2	192.89	37.5 QP	43.5	-6.0	1.00 V	89	53.90	-16.40
3	429.62	34.8 QP	46.0	-11.2	1.00 V	279	44.70	-9.90
4	499.48	40.0 QP	46.0	-6.0	1.00 V	11	48.90	-8.90
5	751.73	37.4 QP	46.0	-8.6	1.24 V	322	41.00	-3.60
6	875.91	36.8 QP	46.0	-9.2	1.00 V	292	38.80	-2.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Apr. 24, 2014	Apr. 23, 2015
RF signal cable Woken	5D-FB	Cable-HYCO2-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Dec. 23, 2013	Dec. 22, 2014
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 08, 2013	Jul. 07, 2014
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 TEST PROCEDURES

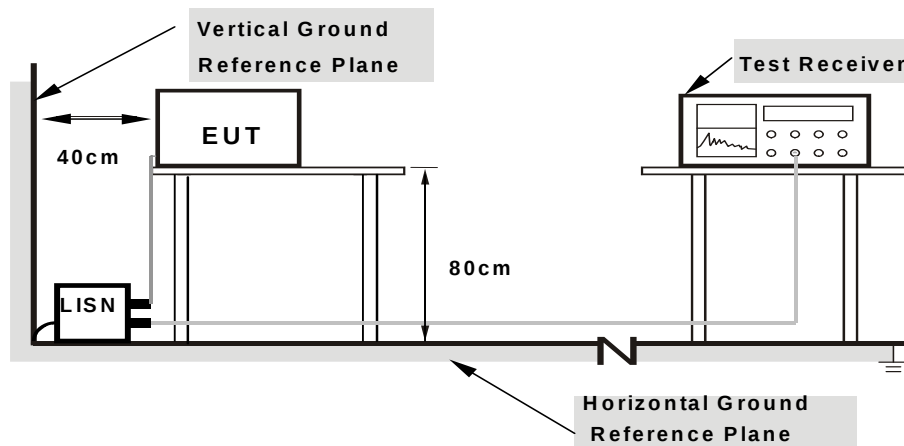
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

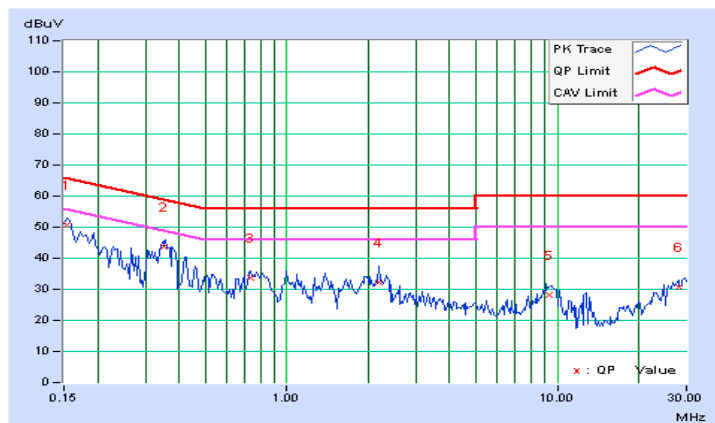
CONDUCTED WORST-CASE DATA : 802.11n(20MHz)_Chain 0/1

PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.27	50.61	41.27	50.88	41.54	65.79	55.79	-14.91	-14.25
2	0.34922	0.29	43.45	41.05	43.74	41.34	58.98	48.98	-15.24	-7.64
3	0.73594	0.32	33.27	28.72	33.59	29.04	56.00	46.00	-22.41	-16.96
4	2.19531	0.37	31.72	25.16	32.09	25.53	56.00	46.00	-23.91	-20.47
5	9.35938	0.49	27.80	23.37	28.29	23.86	60.00	50.00	-31.71	-26.14
6	28.00000	0.48	30.42	27.33	30.90	27.81	60.00	50.00	-29.10	-22.19

REMARKS:

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

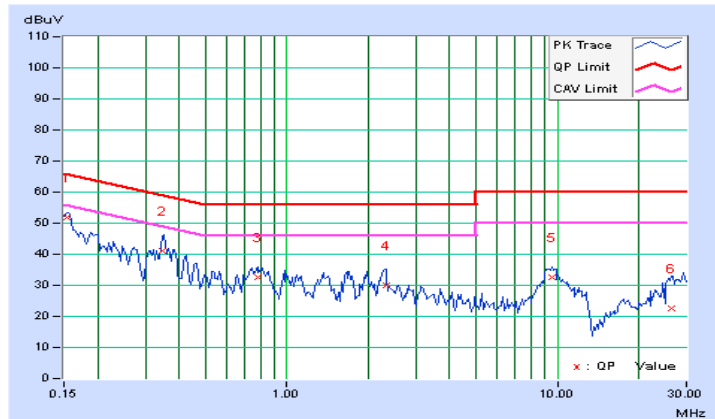


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.27	51.64	41.51	51.91	41.78	65.79	55.79	-13.88	-14.01
2	0.34531	0.29	40.72	36.15	41.01	36.44	59.07	49.07	-18.06	-12.63
3	0.77891	0.33	32.34	25.87	32.67	26.20	56.00	46.00	-23.33	-19.80
4	2.32422	0.38	29.53	24.13	29.91	24.51	56.00	46.00	-26.09	-21.49
5	9.57422	0.51	32.18	27.52	32.69	28.03	60.00	50.00	-27.31	-21.97
6	26.43359	0.53	22.09	19.61	22.62	20.14	60.00	50.00	-37.38	-29.86

REMARKS:

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

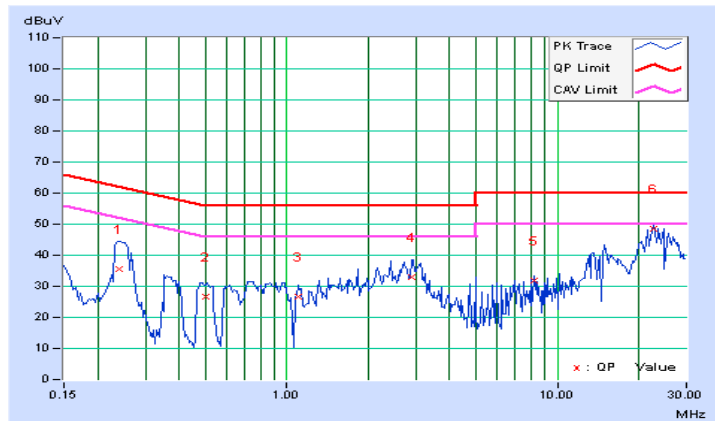


PHASE	Line 1	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.23984	0.28	35.24	27.58	35.52	27.86	62.10	52.10	-26.58	-24.24
2	0.50156	0.31	26.18	23.10	26.49	23.41	56.00	46.00	-29.51	-22.59
3	1.10156	0.34	26.23	19.76	26.57	20.10	56.00	46.00	-29.43	-25.90
4	2.90234	0.39	32.72	22.41	33.11	22.80	56.00	46.00	-22.89	-23.20
5	8.22266	0.48	31.35	28.56	31.83	29.04	60.00	50.00	-28.17	-20.96
6	22.67578	0.56	48.00	42.85	48.56	43.41	60.00	50.00	-11.44	-6.59

REMARKS:

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

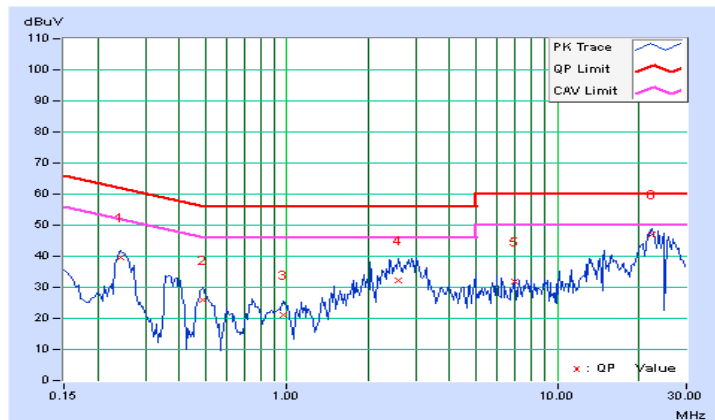


PHASE	Line 2	6dB BANDWIDTH	9kHz
TEST MODE	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.24375	0.28	39.51	22.98	39.79	23.26	61.97	51.97	-22.17	-28.70
2	0.48594	0.31	25.64	20.96	25.95	21.27	56.24	46.24	-30.29	-24.97
3	0.96641	0.34	20.75	-5.88	21.09	-5.54	56.00	46.00	-34.91	-51.54
4	2.59766	0.39	31.93	22.02	32.32	22.41	56.00	46.00	-23.68	-23.59
5	6.97656	0.48	31.30	24.68	31.78	25.16	60.00	50.00	-28.22	-24.84
6	22.42188	0.60	46.61	44.76	47.21	45.36	60.00	50.00	-12.79	-4.64

REMARKS:

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

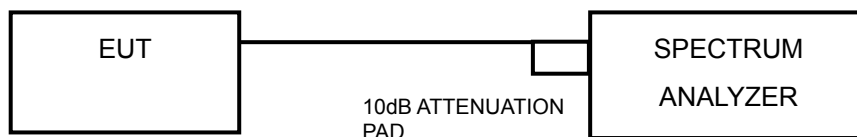


4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST SETUP



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.3.4 TEST PROCEDURE

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11b_Chain 1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.10	0.5	PASS
6	2437	8.10	0.5	PASS
11	2462	8.10	0.5	PASS

802.11b_Chain 2

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	8.12	0.5	PASS
6	2437	8.12	0.5	PASS
11	2462	8.11	0.5	PASS

802.11g_Chain 0/1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	14.57	15.15	0.5	PASS
6	2437	15.08	15.08	0.5	PASS
11	2462	14.46	15.09	0.5	PASS

802.11g_Chain 0/2

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 2		
1	2412	15.14	14.53	0.5	PASS
6	2437	15.14	15.13	0.5	PASS
11	2462	15.09	15.16	0.5	PASS



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802.11n (20MHz)_Chain 0/1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	15.11	16.35	0.5	PASS
6	2437	15.07	15.70	0.5	PASS
11	2462	15.12	15.11	0.5	PASS

802.11n (20MHz)_Chain 0/2

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 2		
1	2412	15.14	15.73	0.5	PASS
6	2437	15.13	15.14	0.5	PASS
11	2462	15.13	15.73	0.5	PASS

802.11n (40MHz)_Chain 0/1

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	35.47	35.88	0.5	PASS
6	2437	35.77	35.82	0.5	PASS
9	2452	31.42	35.81	0.5	PASS

802.11n (40MHz)_Chain 0/2

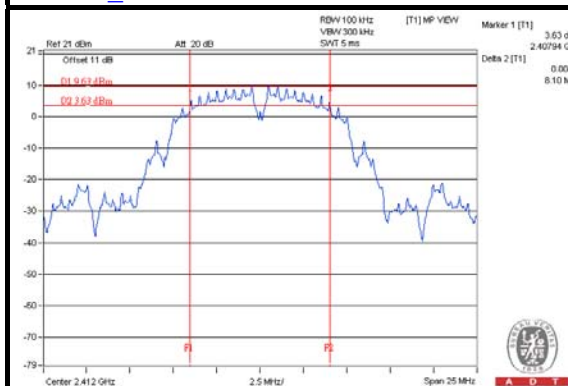
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 2		
3	2422	35.25	35.85	0.5	PASS
6	2437	32.69	35.78	0.5	PASS
9	2452	33.95	35.82	0.5	PASS



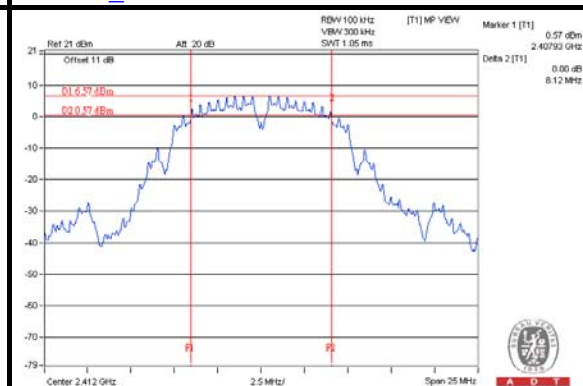
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SPECTRUM PLOT OF WORST VALUE

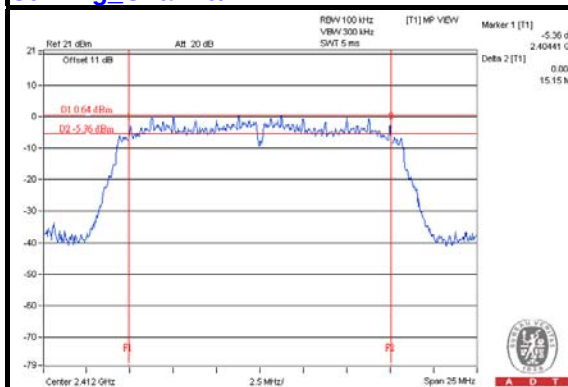
802.11b_Chain 1



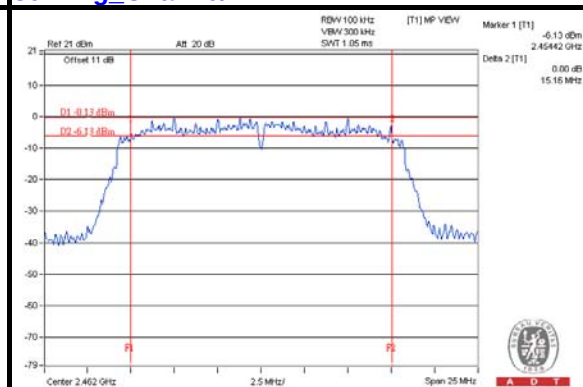
802.11b_Chain 2



802.11g_Chain 0/1

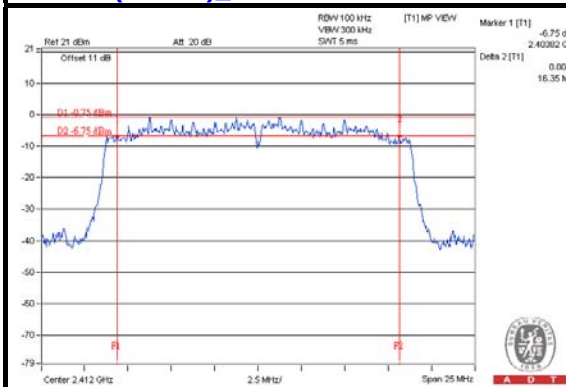


802.11g_Chain 0/2

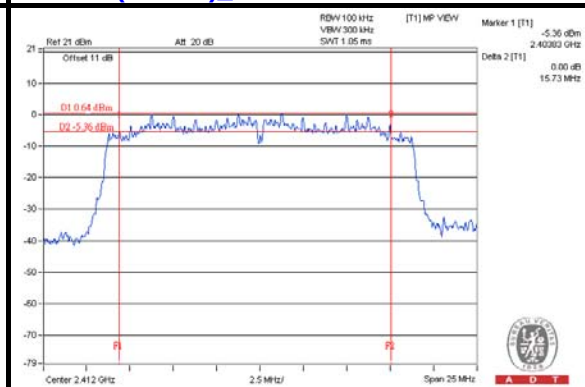


SPECTRUM PLOT OF WORST VALUE

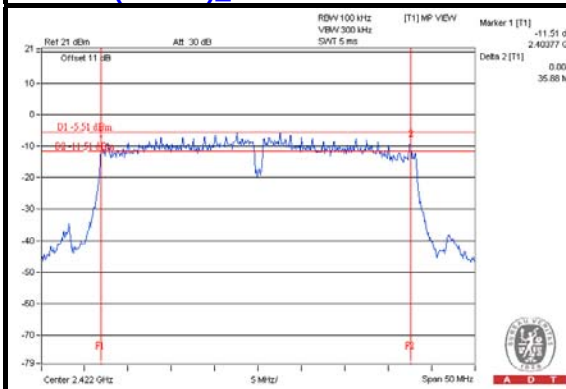
802.11n (20MHz)_Chain 0/1



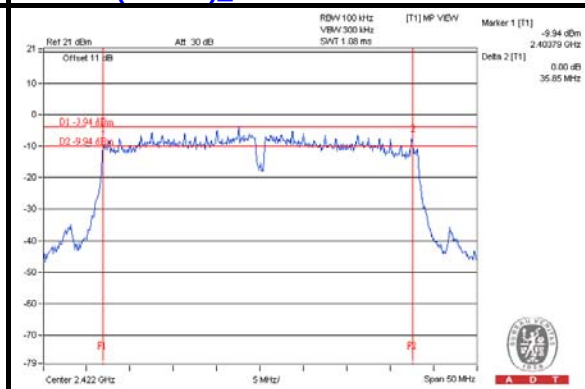
802.11n (20MHz)_Chain 0/2



802.11n (40MHz)_Chain 0/1



802.11n (40MHz)_Chain 0/2



4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

Per KDB 662911 D01 Multiple Transmitter Output v02r01 Method of conducted output power measurement on IEEE 802.11 devices,

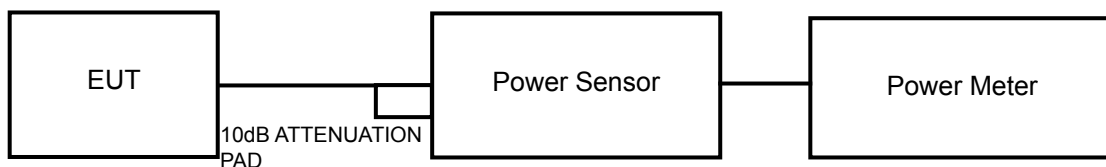
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(NANT/NSS)$ dB.

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.4.4 TEST PROCEDURES

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



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4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

FOR PEAK POWER

802.11b_Chain 1

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	93.111	19.69	30	PASS
6	2437	90.782	19.58	30	PASS
11	2462	93.756	19.72	30	PASS

802.11b_Chain 2

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	64.417	18.09	30	PASS
6	2437	65.163	18.14	30	PASS
11	2462	64.565	18.10	30	PASS

802.11g_Chain 0/1

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	20.96	21.21	256.868	24.10	30	PASS
6	2437	21.62	21.68	292.442	24.66	30	PASS
11	2462	20.89	20.96	247.482	23.94	30	PASS

802.11g_Chain 0/2

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 2				
1	2412	20.99	19.79	220.883	23.44	30	PASS
6	2437	21.57	20.11	246.114	23.91	30	PASS
11	2462	20.85	20.15	225.133	23.52	30	PASS

802.11n (20MHz)_Chain 0/1

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	21.85	22.86	346.306	25.39	30	PASS
6	2437	22.00	21.62	303.700	24.82	30	PASS
11	2462	22.04	21.21	292.086	24.66	30	PASS

802.11n (20MHz)_Chain 0/2

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 2				
1	2412	21.56	19.85	239.824	23.80	30	PASS
6	2437	21.95	20.21	261.629	24.18	30	PASS
11	2462	22.02	20.04	260.146	24.15	30	PASS

802.11n (40MHz)_Chain 0/1

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	19.21	21.49	224.297	23.51	30	PASS
6	2437	21.11	21.25	262.474	24.19	30	PASS
9	2452	20.05	20.01	201.389	23.04	30	PASS

802.11n (40MHz)_Chain 0/2

CHAN.	FREQ. (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 2				
3	2422	18.85	16.89	125.601	20.99	30	PASS
6	2437	21.05	19.38	214.046	23.31	30	PASS
9	2452	19.95	18.52	169.976	22.30	30	PASS

FOR AVERAGE POWER

802.11b_Chain 1

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	EIRP (dBm)
1	2412	39.355	15.95	19.35
6	2437	38.726	15.88	19.28
11	2462	39.537	15.97	19.37

802.11b_Chain 2

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	EIRP (dBm)
1	2412	25.177	14.01	19.31
6	2437	25.410	14.05	19.35
11	2462	25.235	14.02	19.32

802.11g_Chain 0/1

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	EIRP (dBm)
		CHAIN 0	CHAIN 1			
1	2412	12.02	12.11	32.177	15.08	18.48
6	2437	13.06	12.84	39.461	15.96	19.36
11	2462	12.96	12.58	37.883	15.78	19.18

802.11g_Chain 0/2

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	EIRP (dBm)
		CHAIN 0	CHAIN 2			
1	2412	11.62	9.64	23.725	13.75	19.05
6	2437	12.46	10.48	28.789	14.59	19.89
11	2462	12.56	10.58	29.459	14.69	19.99

802.11n (20MHz)_Chain 0/1

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	EIRP (dBm)
		CHAIN 0	CHAIN 1			
1	2412	12.31	12.55	35.011	15.44	18.84
6	2437	13.12	12.85	39.787	16.00	19.40
11	2462	12.86	12.02	35.242	15.47	18.87

802.11n (20MHz)_Chain 0/2

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	EIRP (dBm)
		CHAIN 0	CHAIN 2			
1	2412	11.91	10.03	25.593	14.08	19.38
6	2437	12.52	10.54	29.189	14.65	19.95
11	2462	12.46	10.48	28.789	14.59	19.89

802.11n (40MHz)_Chain 0/1

CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	EIRP (dBm)
		CHAIN 0	CHAIN 1			
3	2422	9.91	11.16	22.857	13.59	16.99
6	2437	12.96	12.86	39.090	15.92	19.32
9	2452	10.93	10.72	24.191	13.84	17.24

802.11n (40MHz)_Chain 0/2

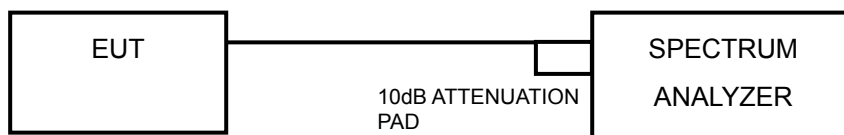
CHAN.	FREQUENCY (MHz)	AVG. POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	EIRP (dBm)
		CHAIN 0	CHAIN 2			
3	2422	9.52	7.86	15.063	11.78	17.08
6	2437	12.51	10.58	29.253	14.66	19.96
9	2452	10.53	8.55	18.459	12.66	17.96

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

- Set the RBW = 3 kHz, VBW = 10 kHz, Detector = peak.
- Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
- Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b_Chain 1

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-4.10	8	PASS
6	2437	-3.44	8	PASS
11	2462	-3.95	8	PASS

802.11b_Chain 2

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-6.57	8	PASS
6	2437	-6.64	8	PASS
11	2462	-5.48	8	PASS

802.11g_Chain 0/1

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-12.06	3.01	-9.05	7.74	PASS
	6	2437	-10.84	3.01	-7.83	7.74	PASS
	11	2462	-10.70	3.01	-7.69	7.74	PASS
1	1	2412	-11.76	3.01	-8.75	7.74	PASS
	6	2437	-11.93	3.01	-8.92	7.74	PASS
	11	2462	-13.30	3.01	-10.29	7.74	PASS

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2]$ = 6.26dBi > 6dBi , so the power density limit shall be reduced to $8-(6.26-6) = 7.74$ dBm.

802.11g_Chain 0/2

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-12.48	3.01	-9.47	6.72	PASS
	6	2437	-11.68	3.01	-8.67	6.72	PASS
	11	2462	-10.36	3.01	-7.35	6.72	PASS
2	1	2412	-13.37	3.01	-10.36	6.72	PASS
	6	2437	-11.50	3.01	-8.49	6.72	PASS
	11	2462	-13.43	3.01	-10.42	6.72	PASS

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2]$ = 7.28dBi > 6dBi , so the power density limit shall be reduced to $8-(7.28-6) = 6.72$ dBm.

802.11n (20MHz)_Chain 0/1

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-13.27	3.01	-10.26	7.74	PASS
	6	2437	-11.60	3.01	-8.59	7.74	PASS
	11	2462	-12.88	3.01	-9.87	7.74	PASS
1	1	2412	-13.89	3.01	-10.88	7.74	PASS
	6	2437	-13.64	3.01	-10.63	7.74	PASS
	11	2462	-13.33	3.01	-10.32	7.74	PASS

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 6.26\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(6.26-6) = 7.74\text{dBm}$.

802.11n (20MHz)_Chain 0/2

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-12.25	3.01	-9.24	6.72	PASS
	6	2437	-11.18	3.01	-8.17	6.72	PASS
	11	2462	-11.52	3.01	-8.51	6.72	PASS
2	1	2412	-13.58	3.01	-10.57	6.72	PASS
	6	2437	-11.39	3.01	-8.38	6.72	PASS
	11	2462	-12.84	3.01	-9.83	6.72	PASS

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 7.28\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(7.28-6) = 6.72\text{dBm}$.

802.11n (40MHz)_Chain 0/1

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-18.32	3.01	-15.31	7.74	PASS
	6	2437	-14.16	3.01	-11.15	7.74	PASS
	9	2452	-17.03	3.01	-14.02	7.74	PASS
1	3	2422	-19.29	3.01	-16.28	7.74	PASS
	6	2437	-15.66	3.01	-12.65	7.74	PASS
	9	2452	-17.99	3.01	-14.98	7.74	PASS

NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 6.26\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(6.26-6) = 7.74\text{dBm}$.

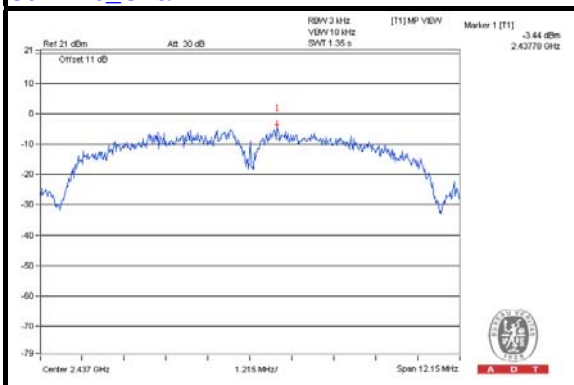
802.11n (40MHz)_Chain 0/2

TX chain	Channel	Freq. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-18.10	3.01	-15.09	6.72	PASS
	6	2437	-15.17	3.01	-12.16	6.72	PASS
	9	2452	-15.82	3.01	-12.81	6.72	PASS
2	3	2422	-18.15	3.01	-15.14	6.72	PASS
	6	2437	-15.01	3.01	-12.00	6.72	PASS
	9	2452	-18.15	3.01	-15.14	6.72	PASS

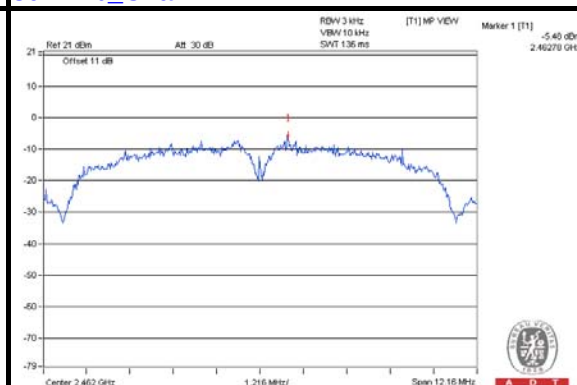
NOTE: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2] = 7.28\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $8-(7.28-6) = 6.72\text{dBm}$.

SPECTRUM PLOT OF WORST VALUE

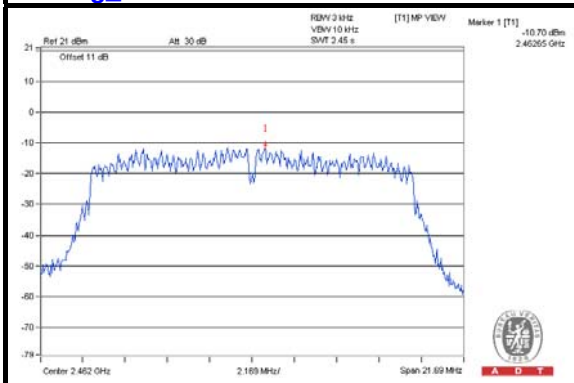
802.11b_Chain 1



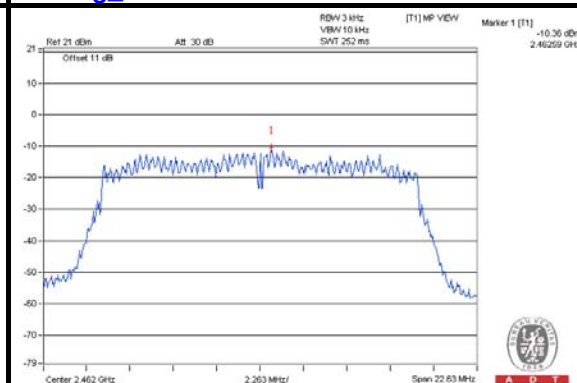
802.11b_Chain 2



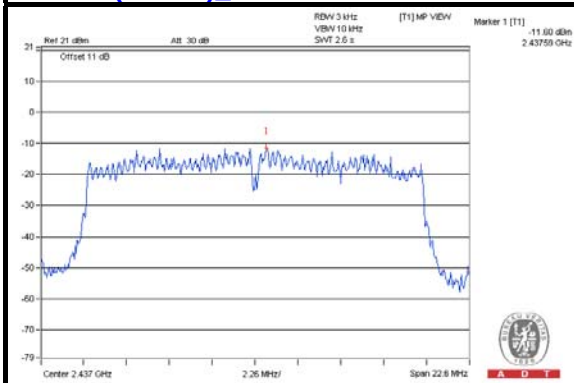
802.11g_Chain 0/1



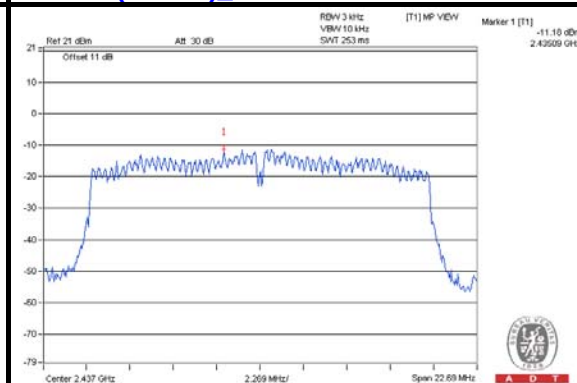
802.11g_Chain 0/2



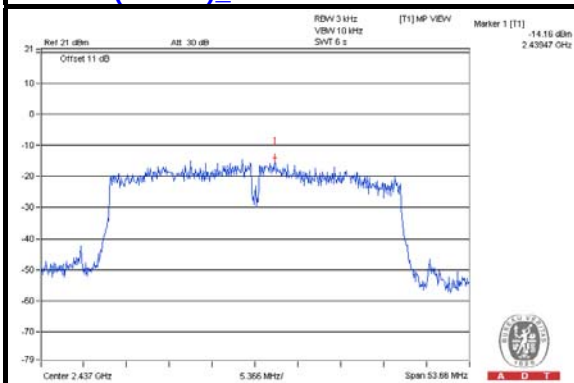
802.11n (20MHz)_Chain 0/1



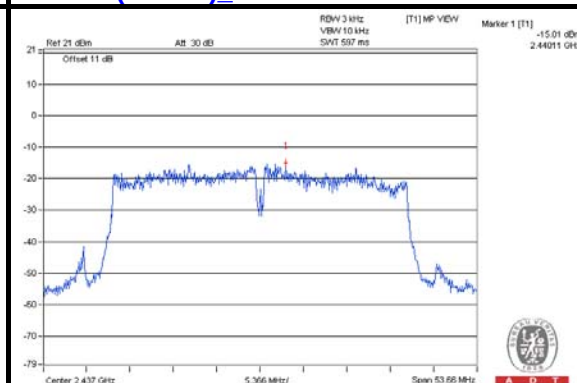
802.11n (20MHz)_Chain 0/2



802.11n (40MHz)_Chain 0/1



802.11n (40MHz)_Chain 0/2

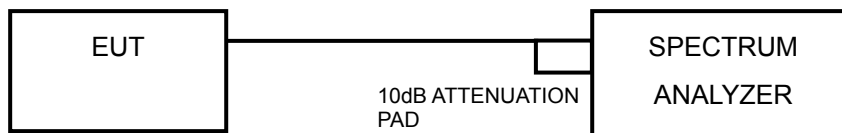


4.6 CONDUCTED OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT OF BAND EMISSION MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

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

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.7 TEST RESULTS

The conducted emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.

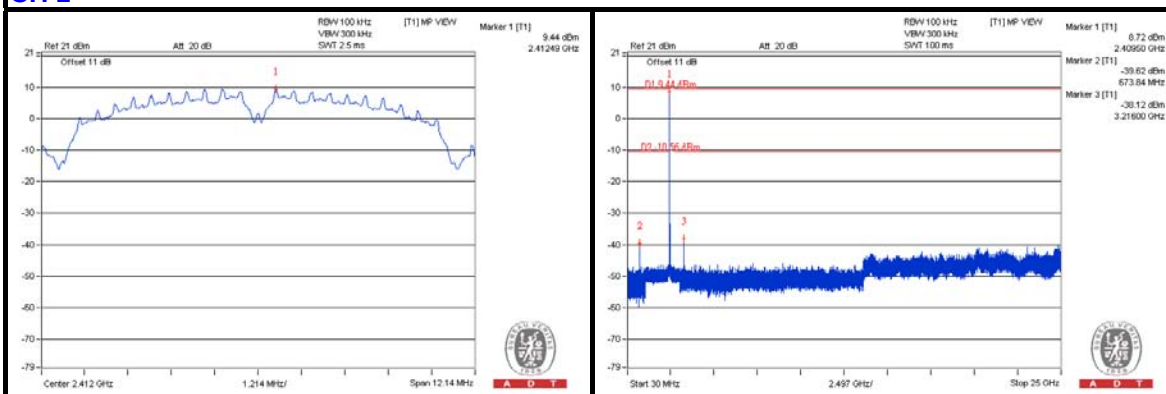
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



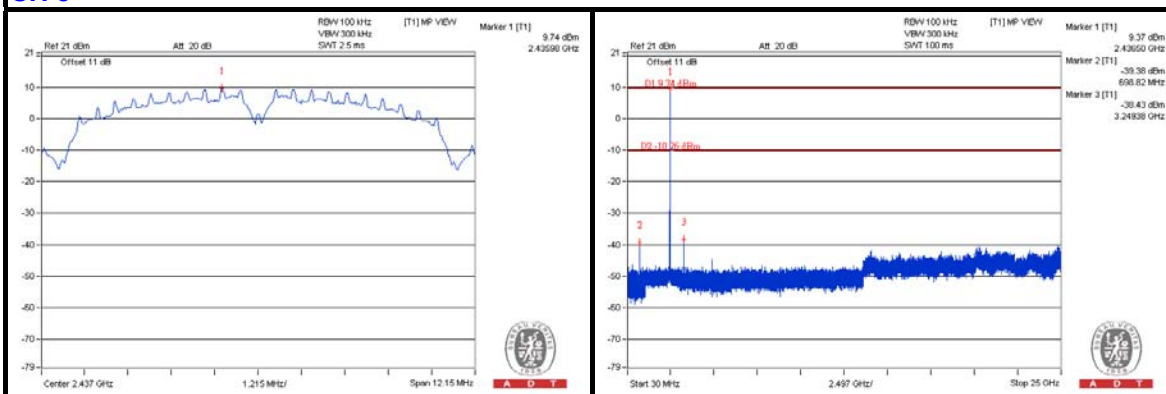
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802.11b_Chain 1

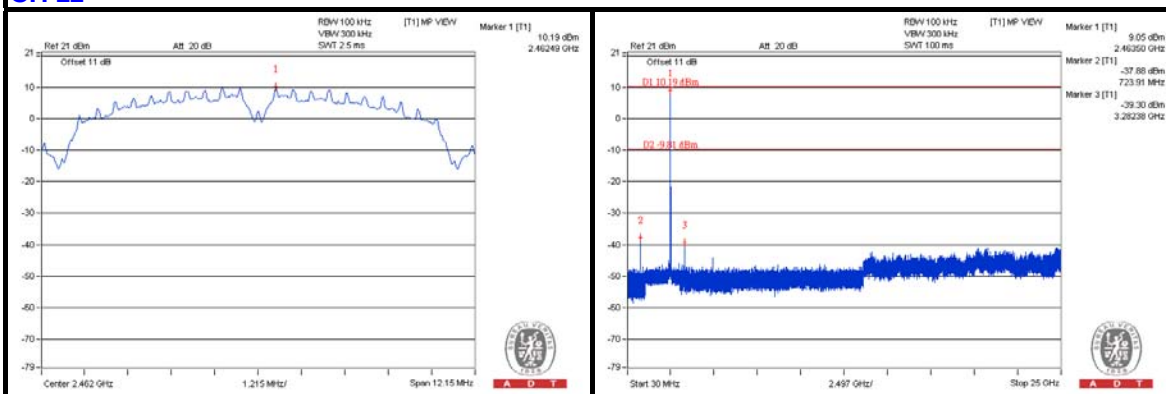
CH 1



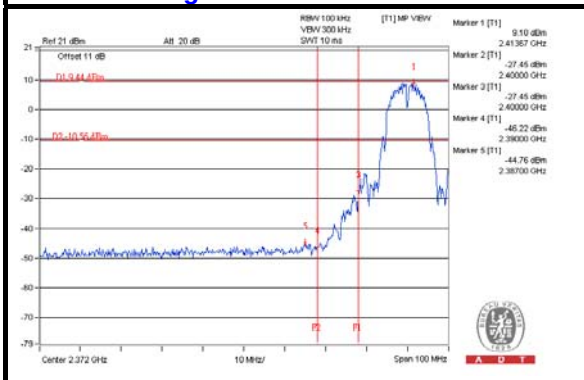
CH 6



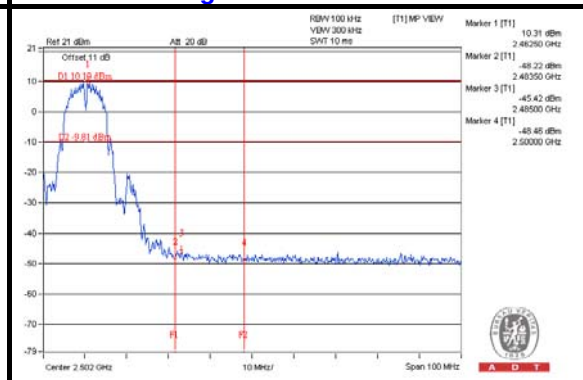
CH 11



CH 1 Band edge



CH 11 Band edge

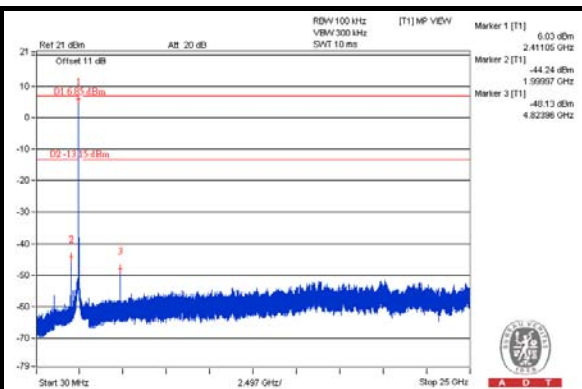
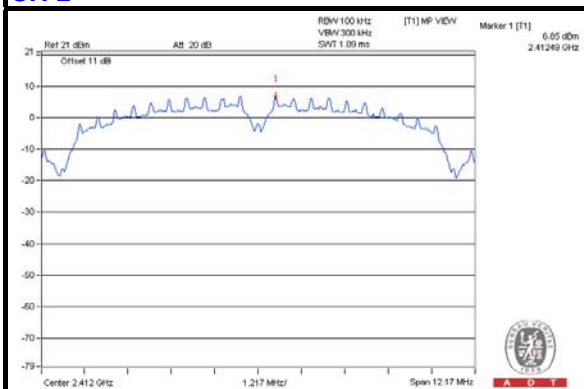




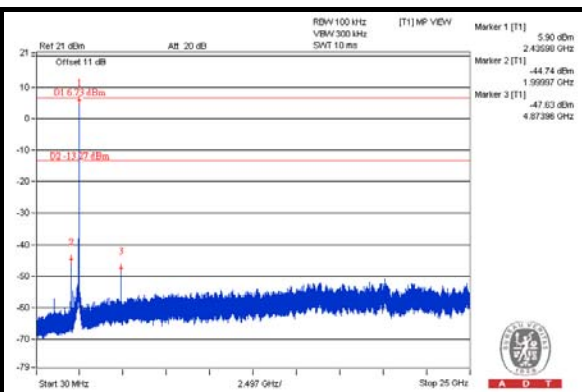
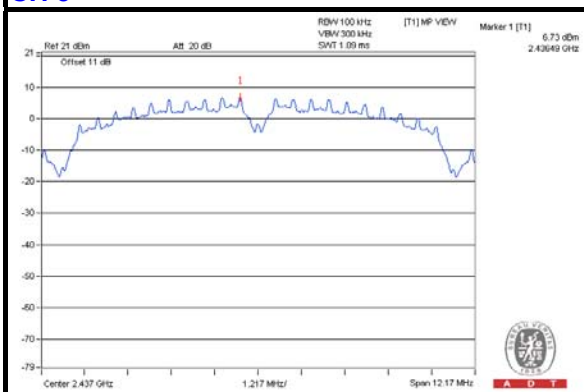
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802.11b_Chain 2

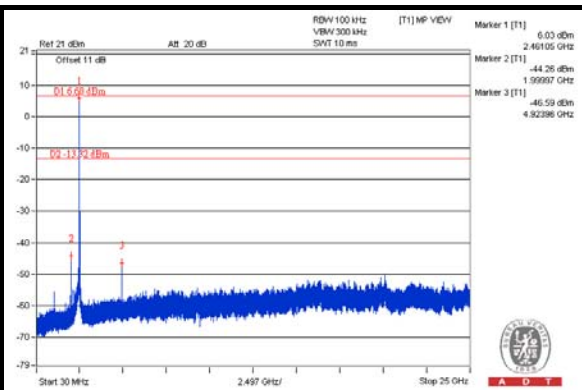
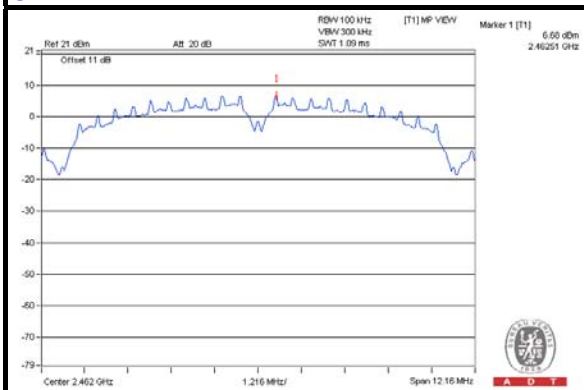
CH 1



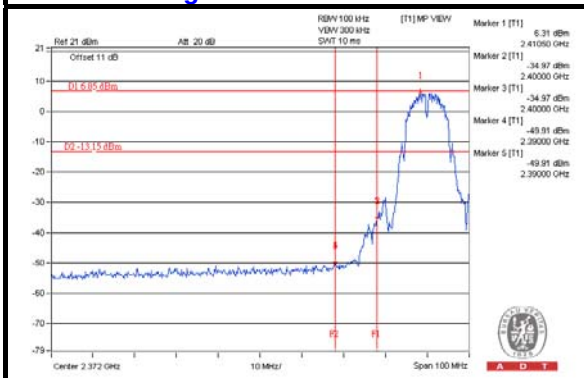
CH 6



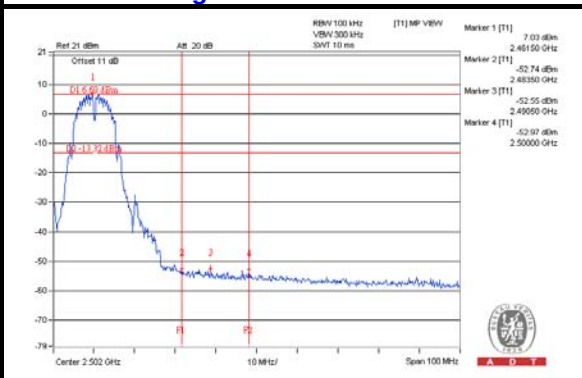
CH 11



CH 1 Band edge



CH 11 Band edge



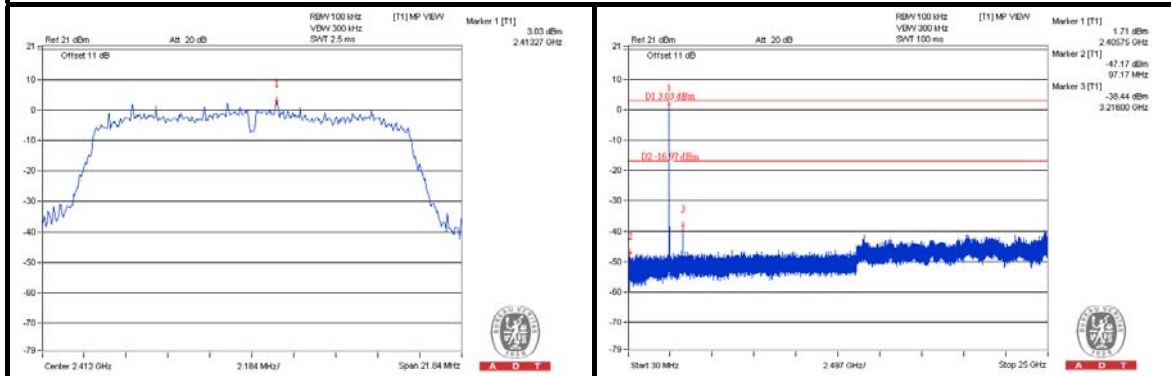


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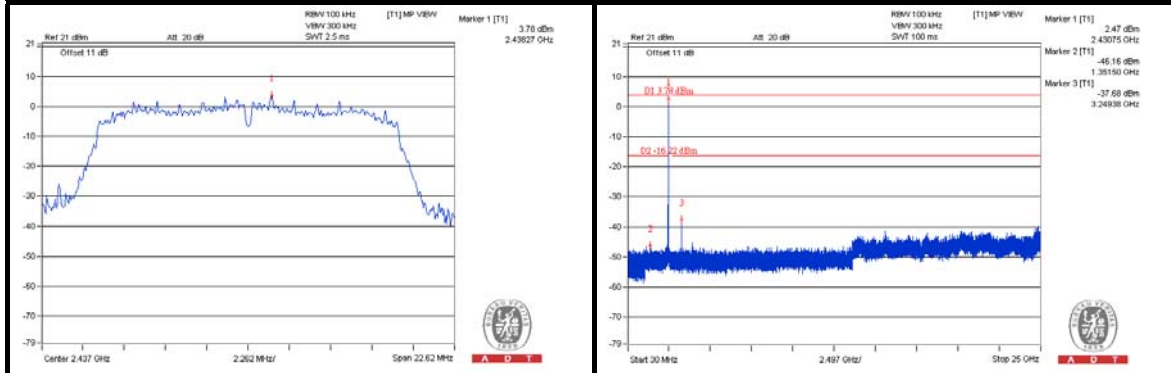
802.11g_Chain 0/1

CHAIN 0

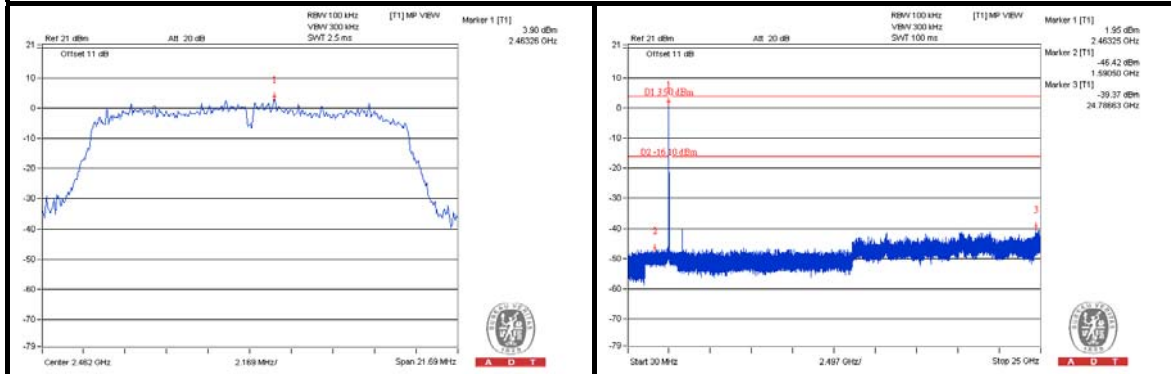
CH 1



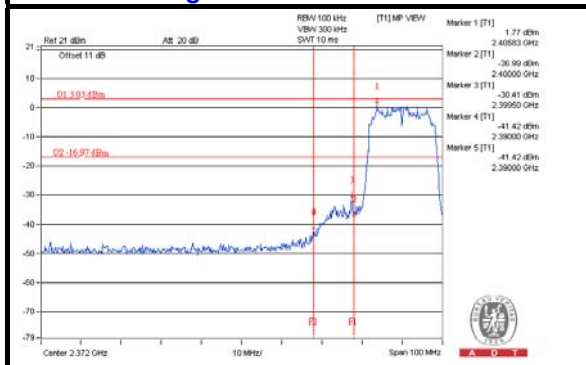
CH 6



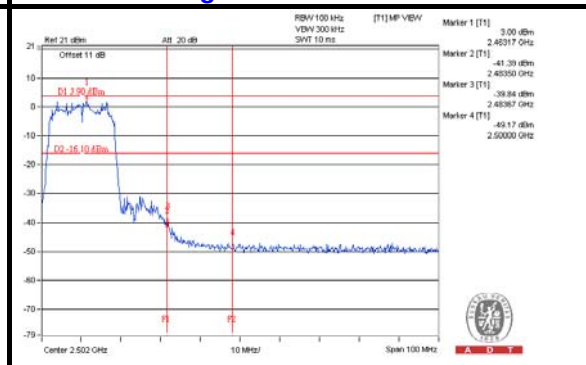
CH 11



CH 1 Band edge



CH 11 Band edge

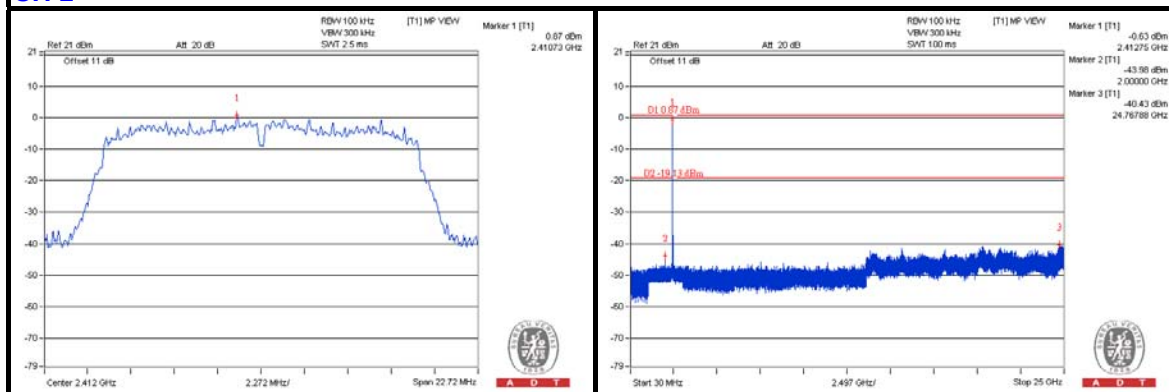




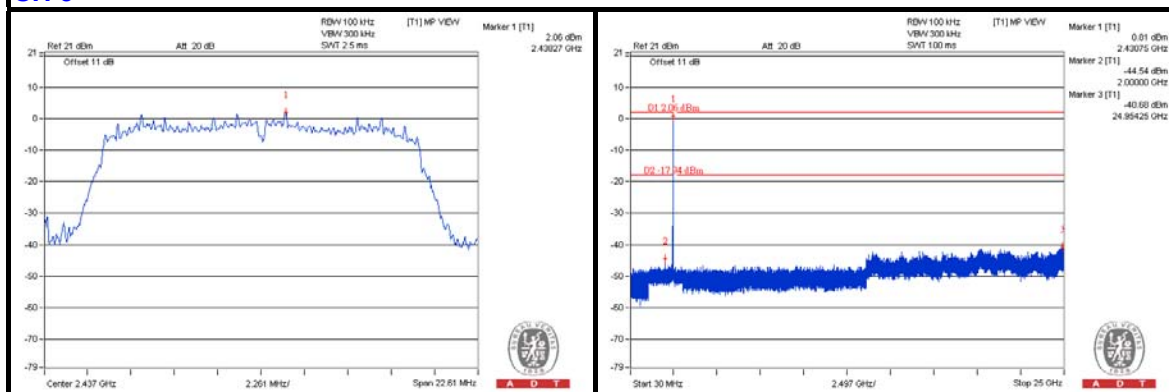
A D T

CHAIN 1

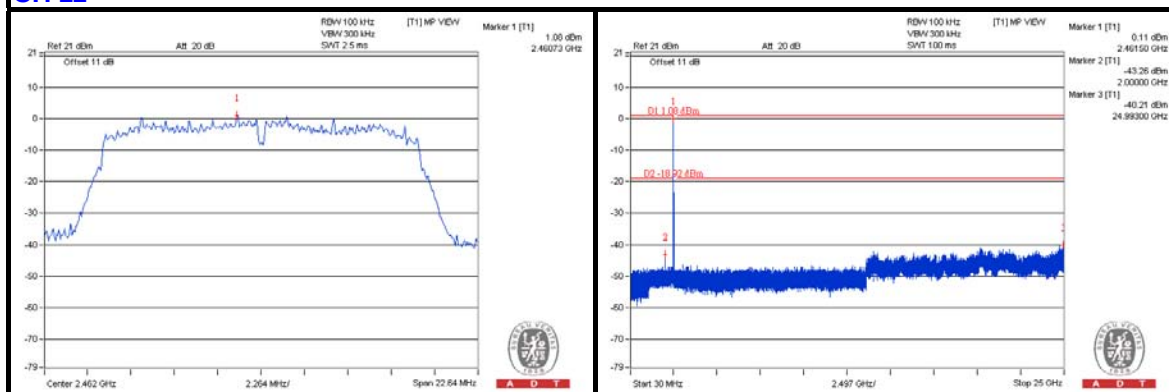
CH 1



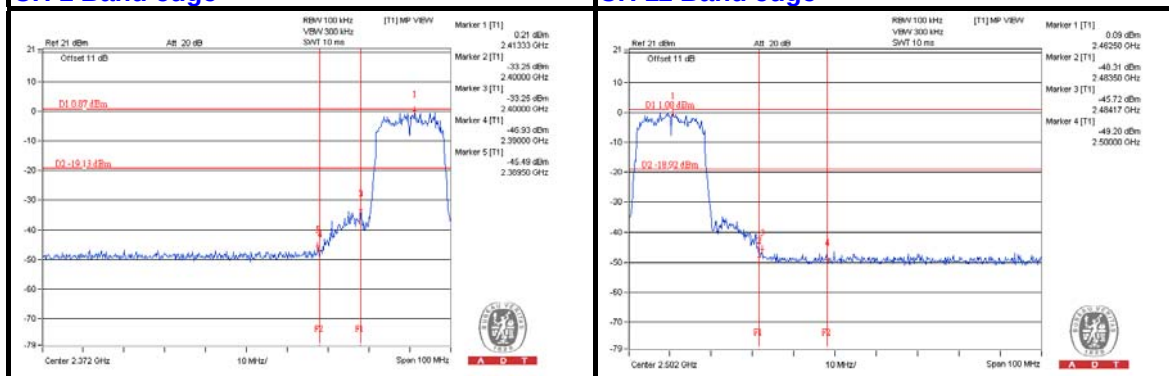
CH 6



CH 11

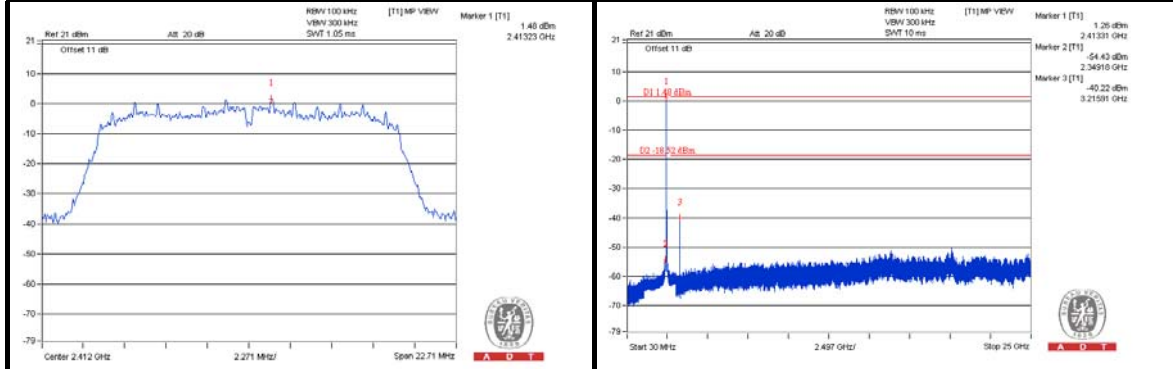


CH 1 Band edge

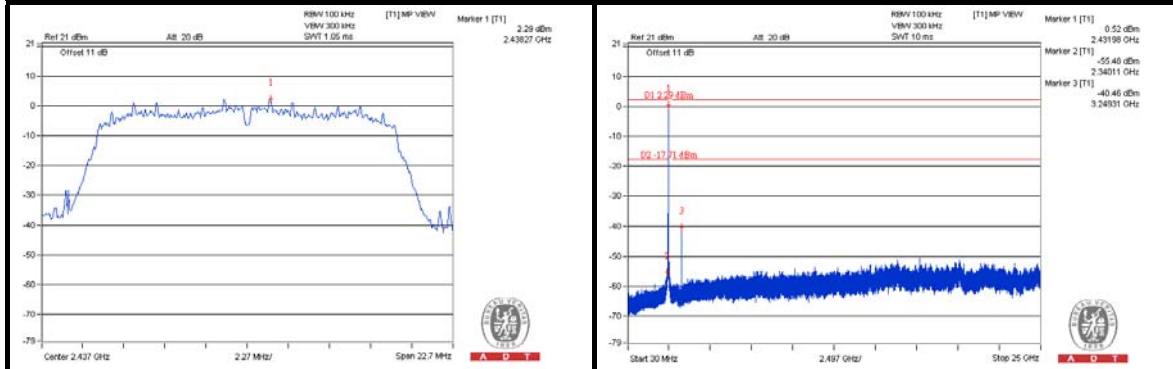


802.11g_Chain 0/2 CHAIN 0

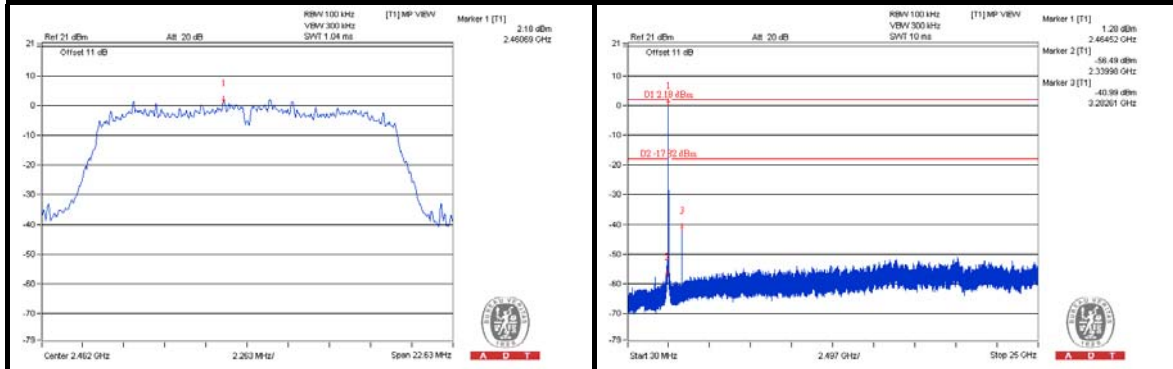
CH 1



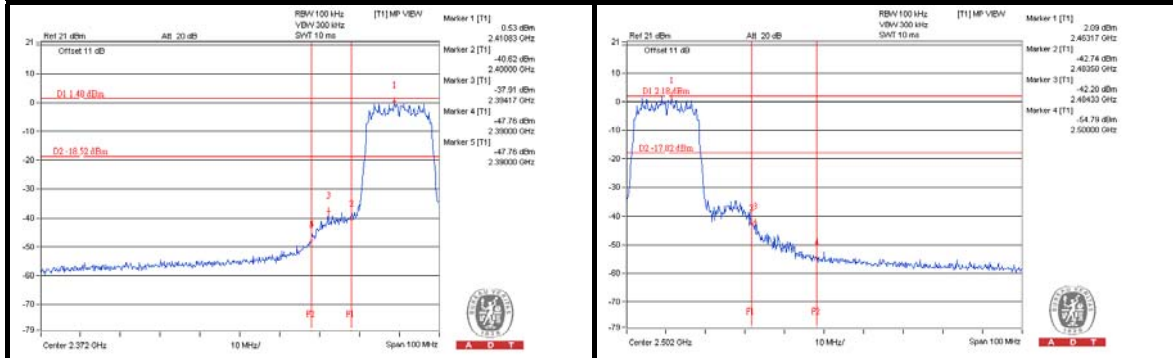
CH 6



CH 11



CH 1 Band edge

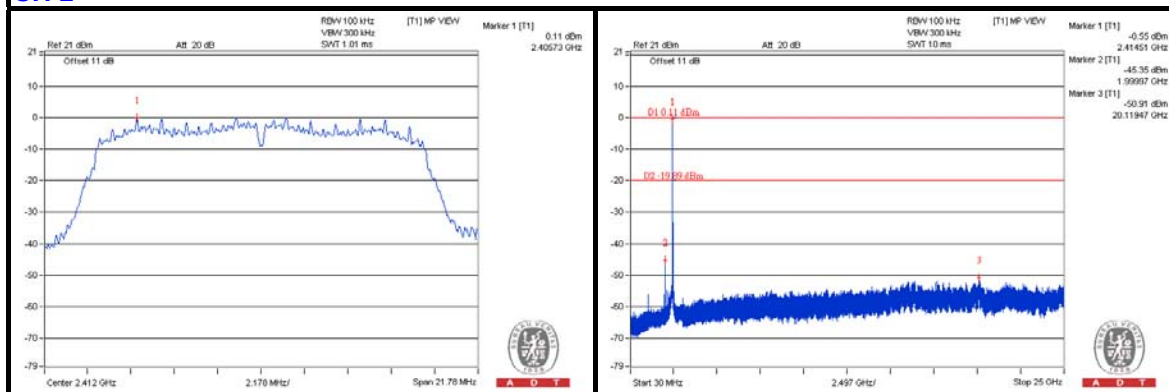




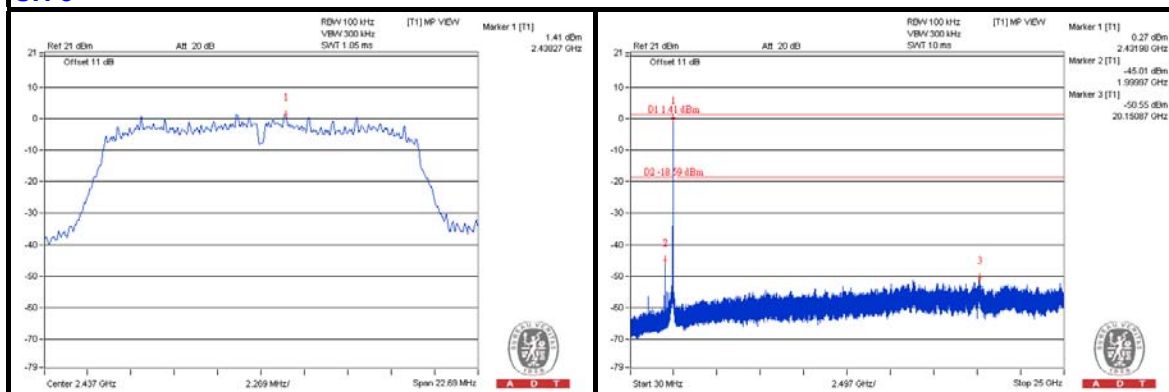
A D T

CHAIN 2

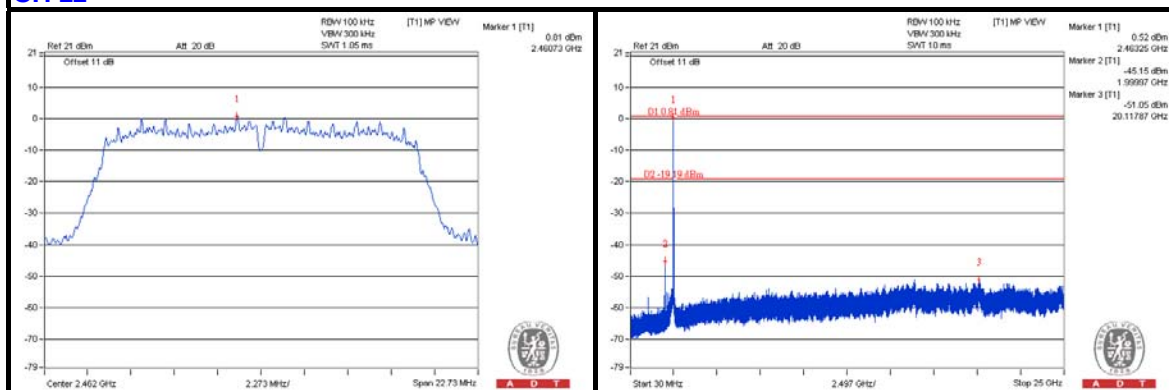
CH 1



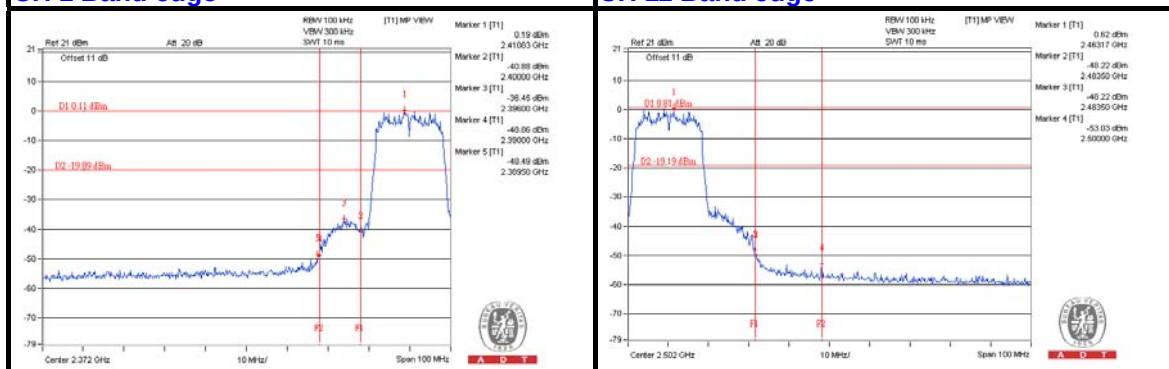
CH 6



CH 11



CH 1 Band edge



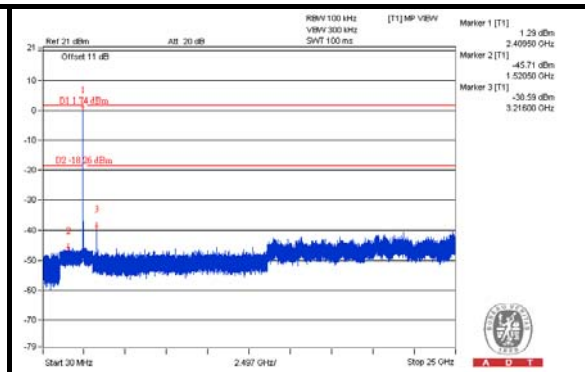
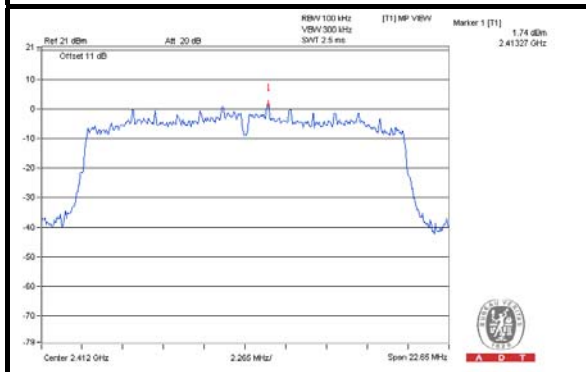


A D T

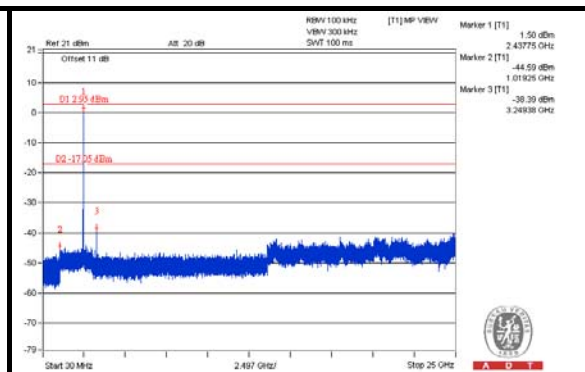
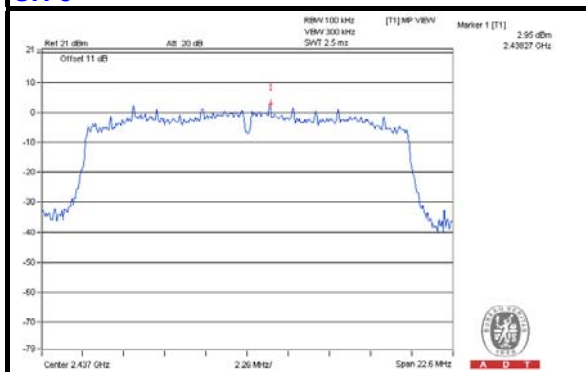
802.11n (20MHz)_Chain 0/1

CHAIN 0

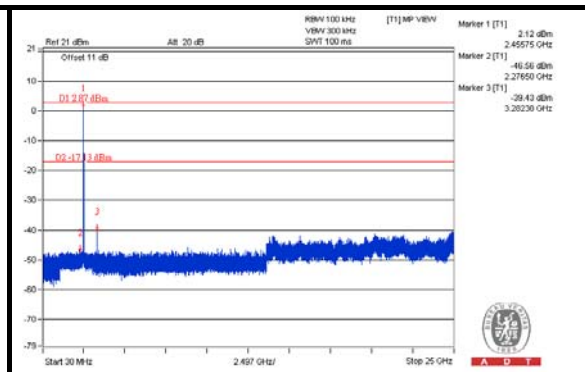
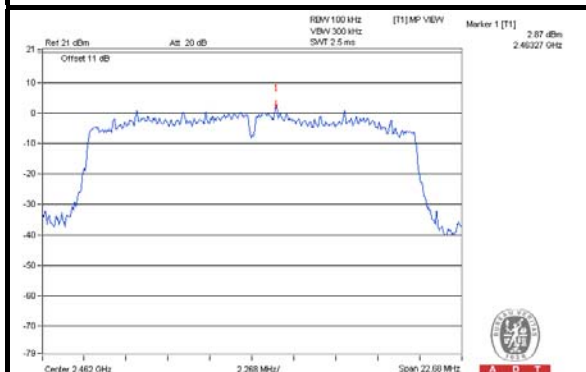
CH 1



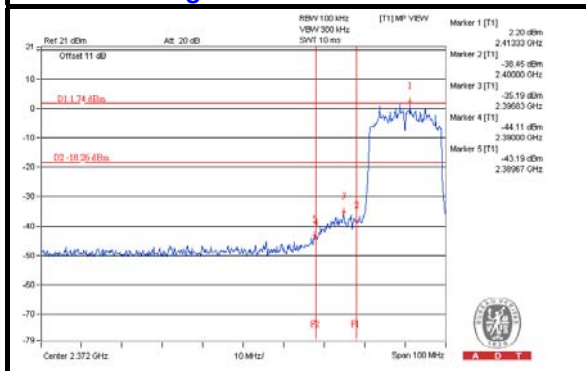
CH 6



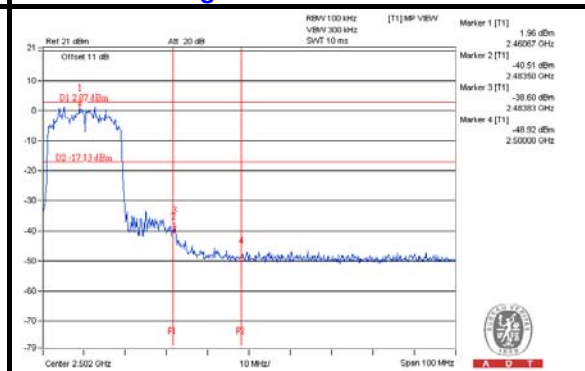
CH 11



CH 1 Band edge



CH 11 Band edge

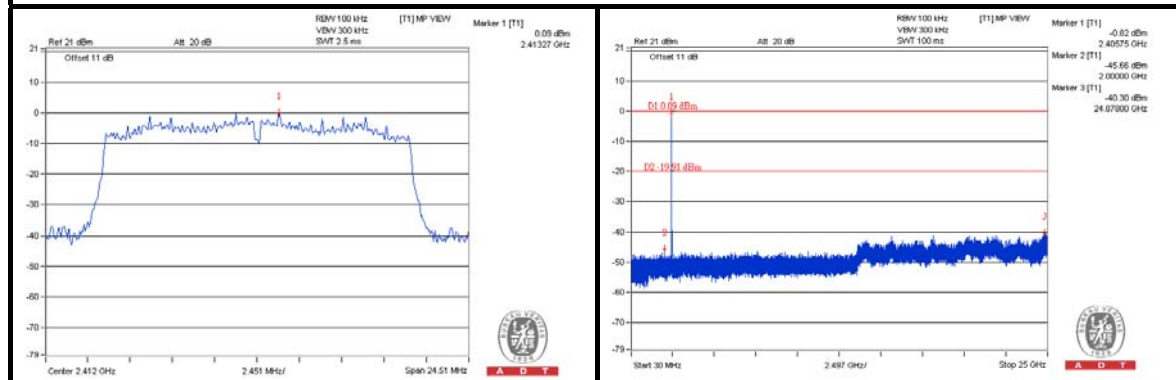




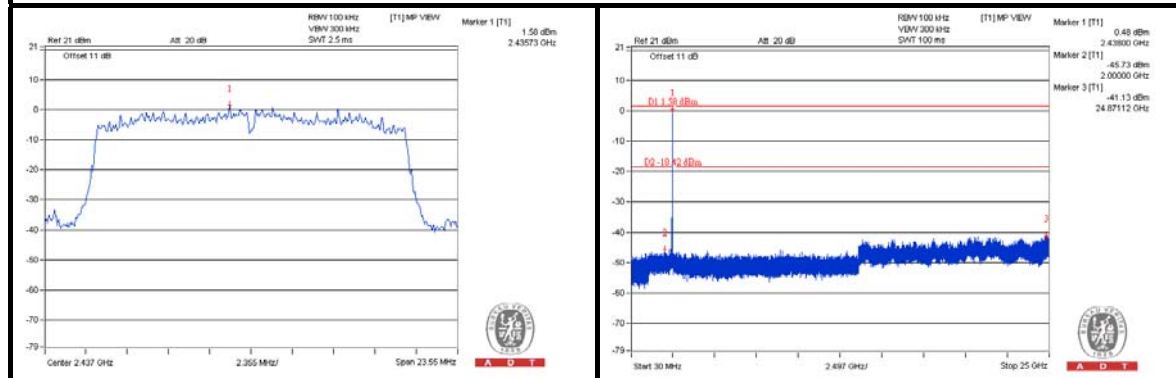
A D T

CHAIN 1

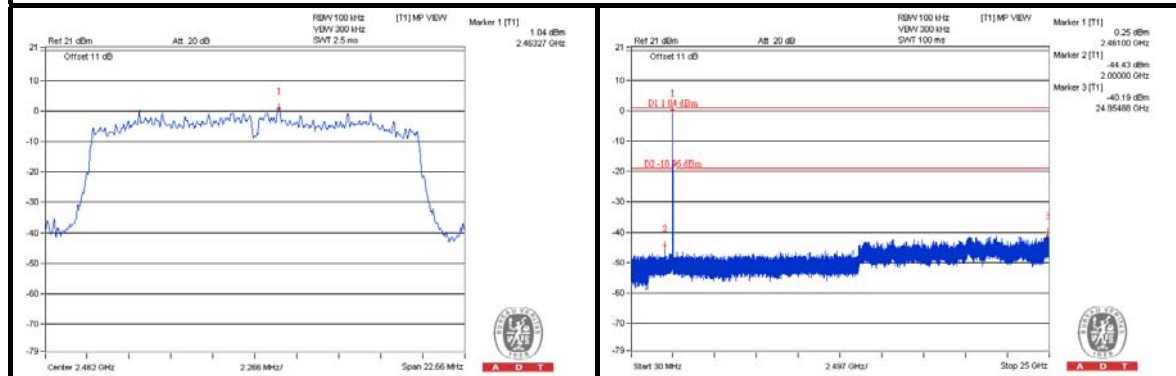
CH 1



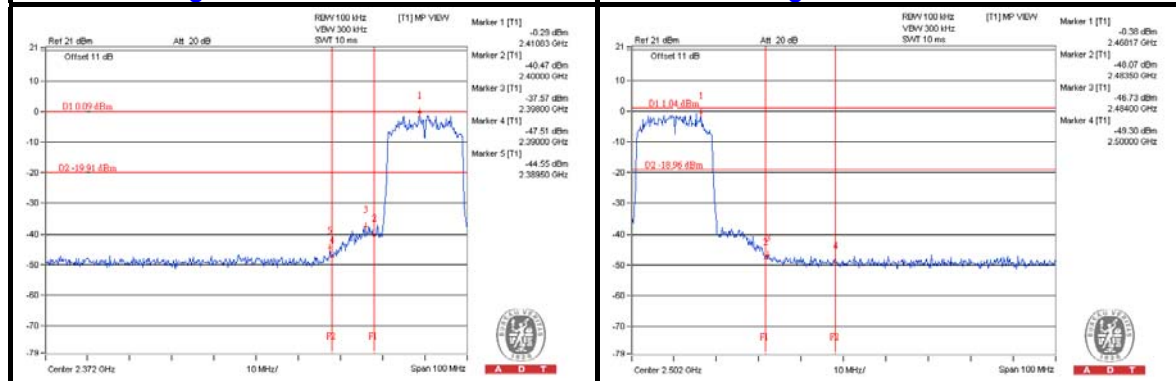
CH 6



CH 11



CH 11 Band edge



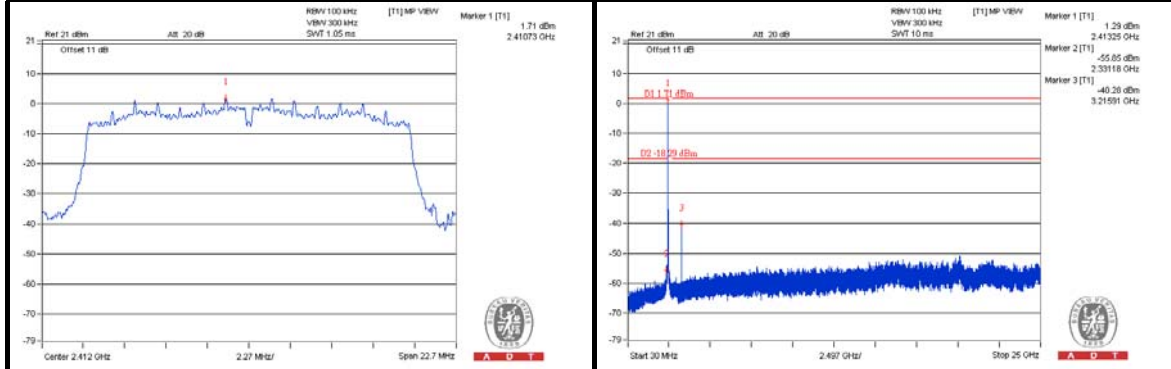


A D T

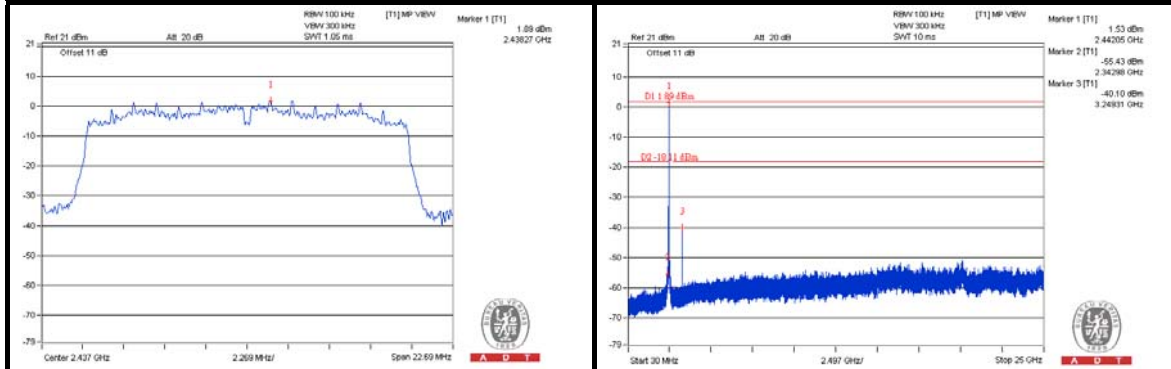
802.11n (20MHz)_Chain 0/2

CHAIN 0

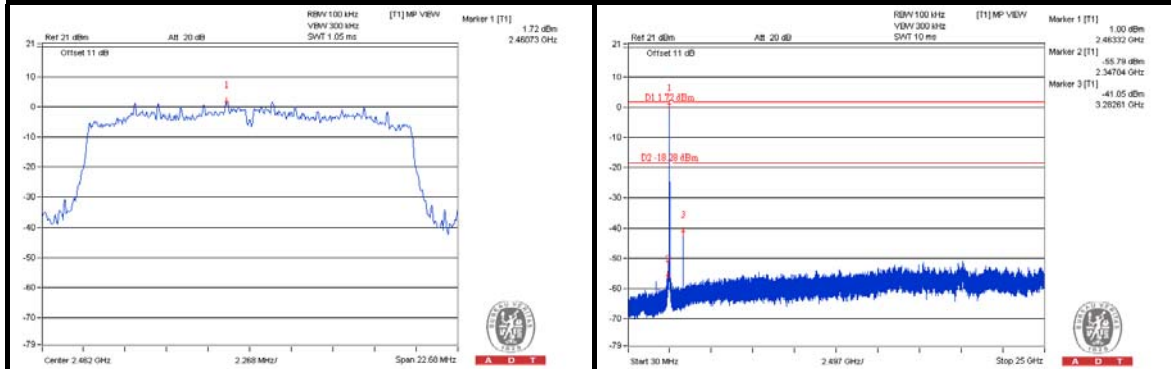
CH 1



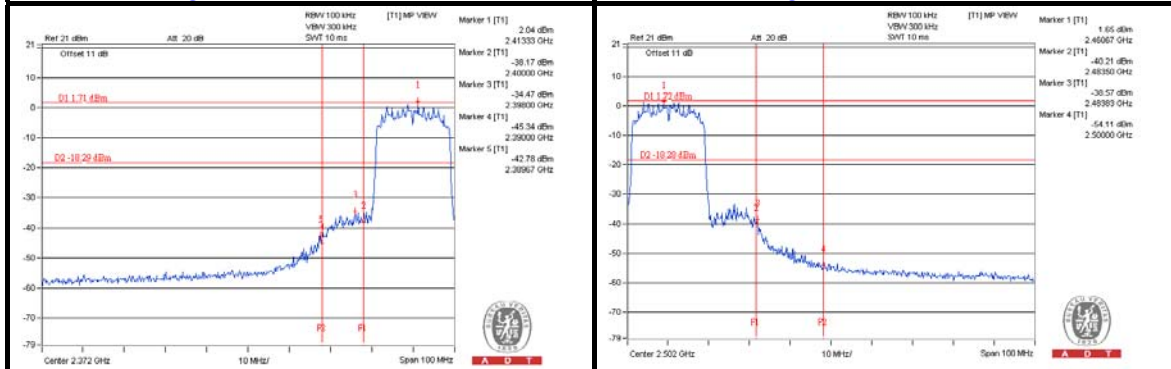
CH 6



CH 11

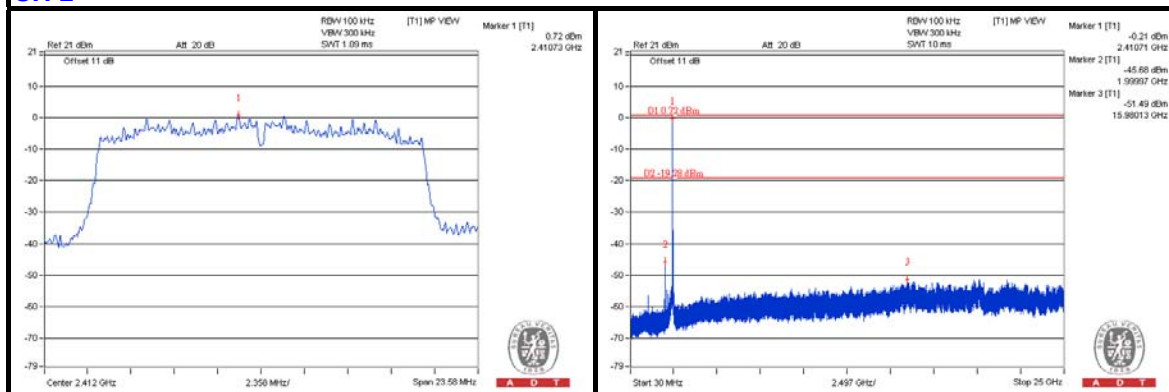


CH 1 Band edge

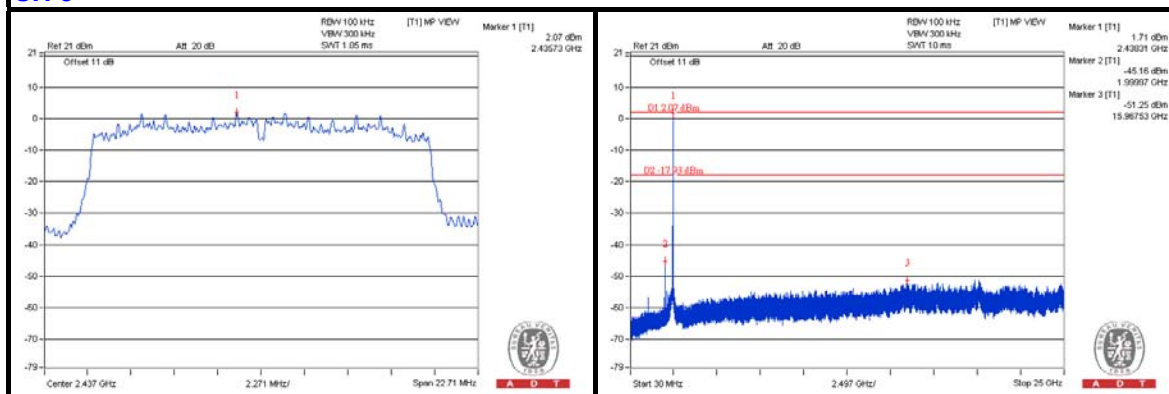


CHAIN 2

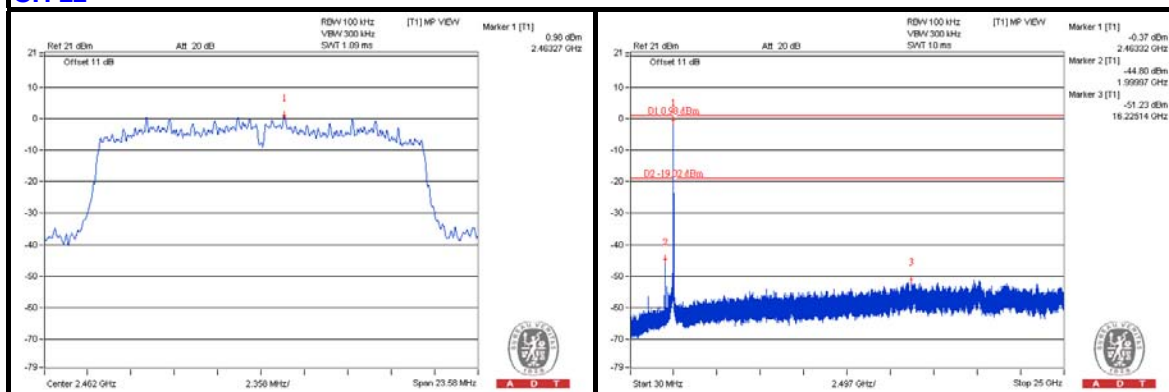
CH 1



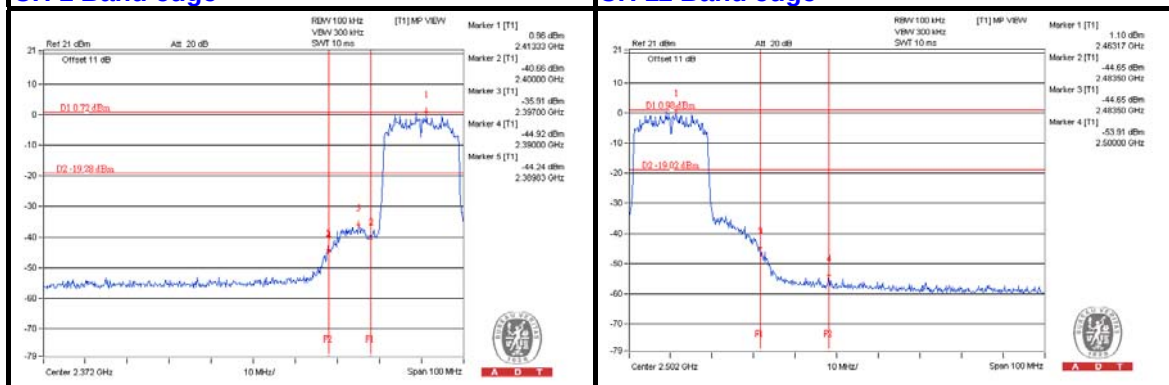
CH 6



CH 11

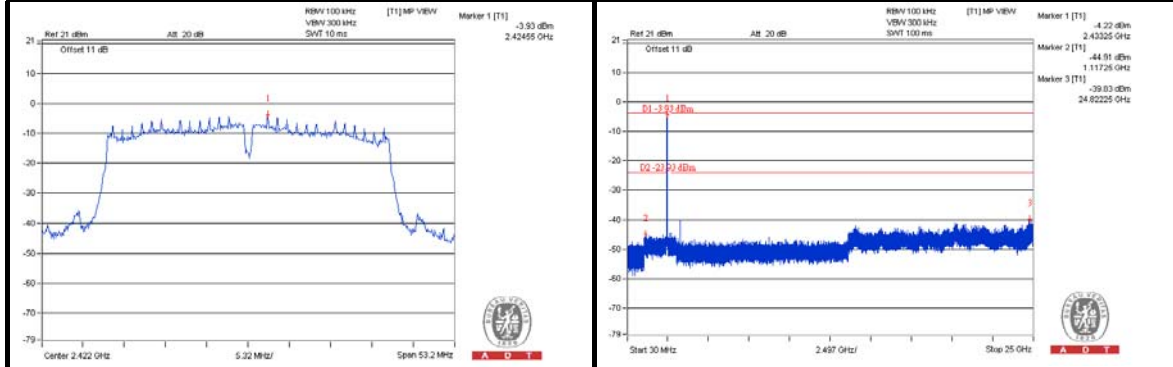


CH 1 Band edge

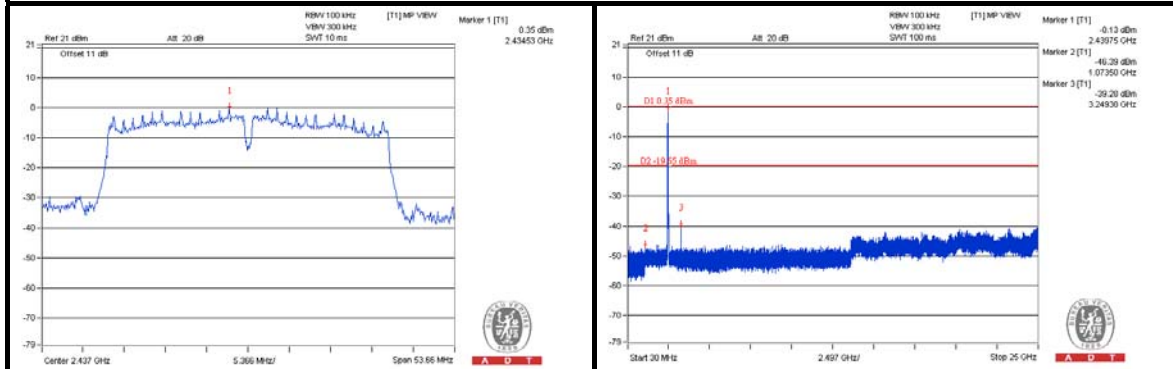


802.11n (40MHz)_Chain 0/1 CHAIN 0

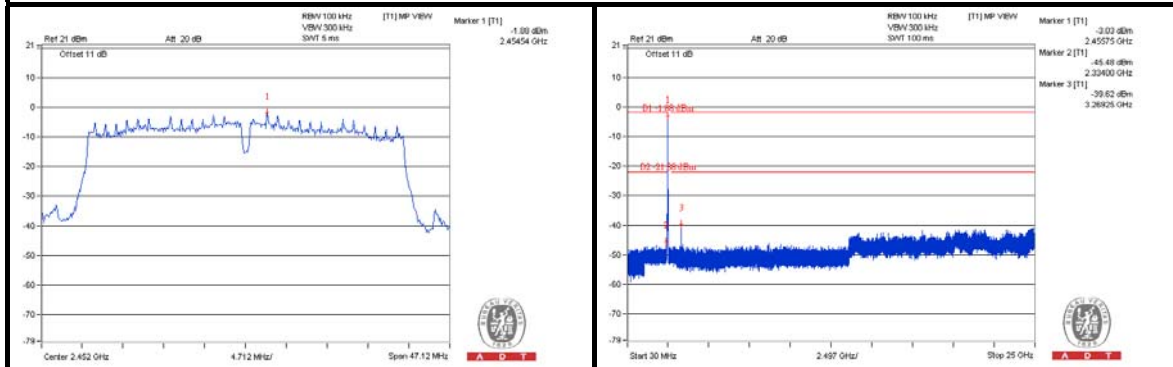
CH 3



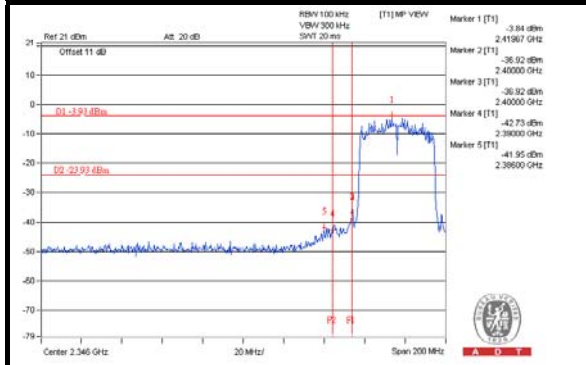
CH 6



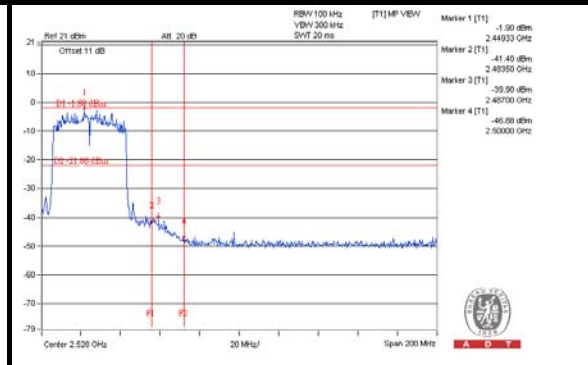
CH 9



CH 3 Band edge



CH 9 Band edge

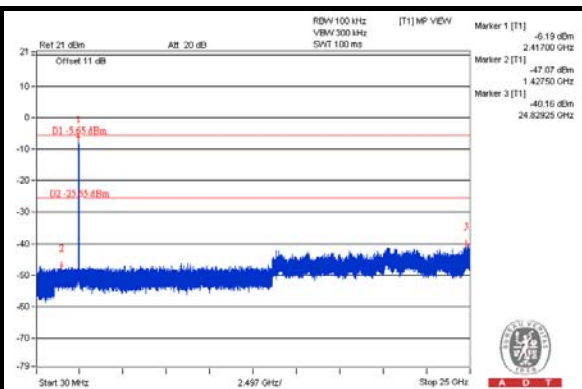
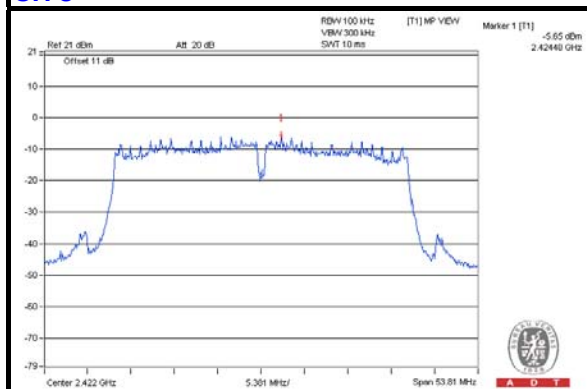




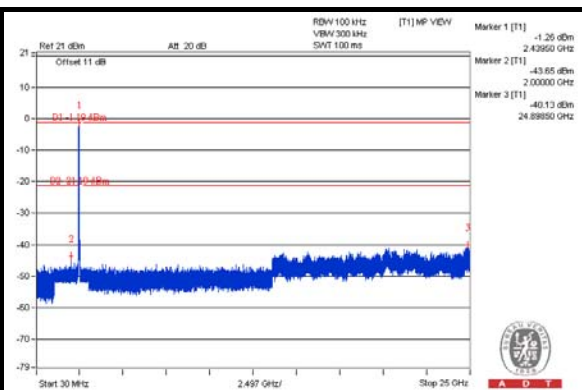
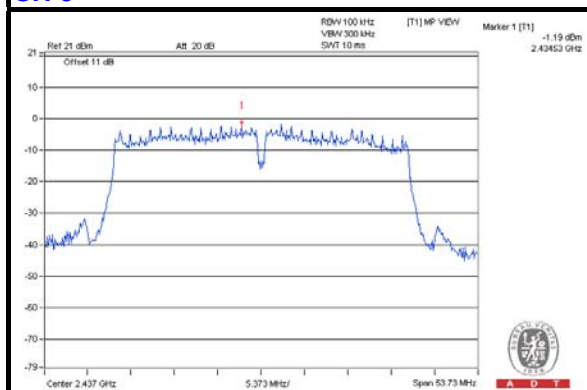
A D T

CHAIN 1

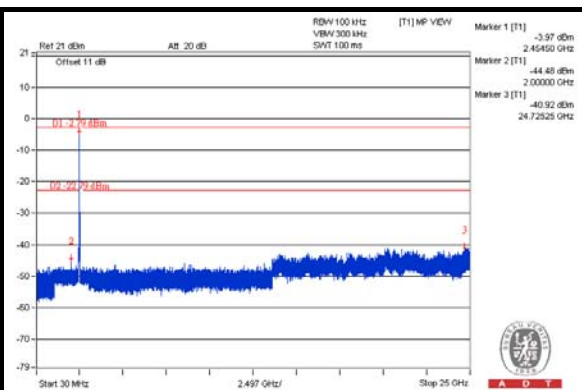
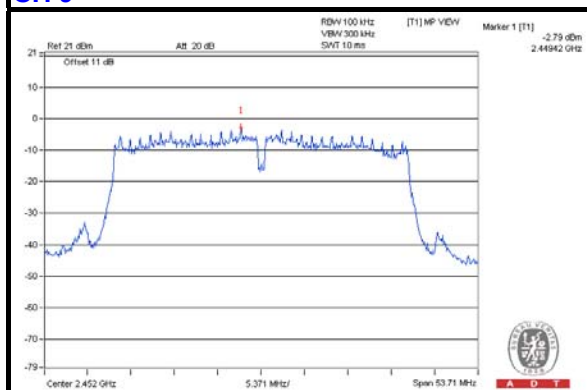
CH 3



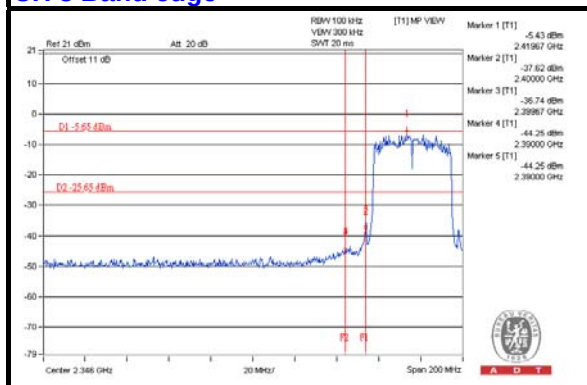
CH 6



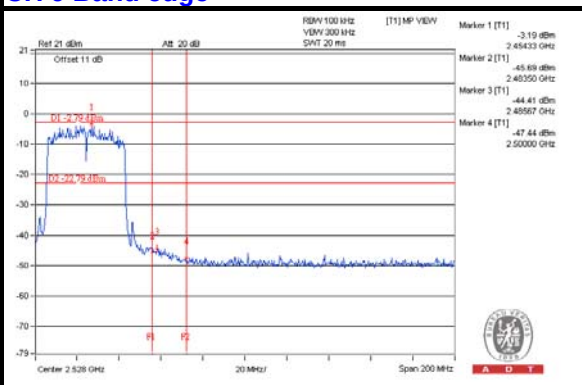
CH 9



CH 3 Band edge



CH 9 Band edge



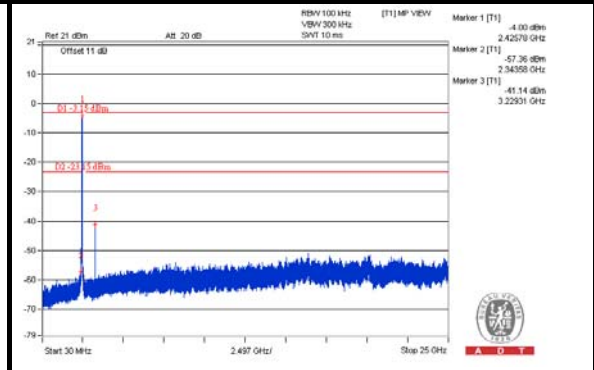
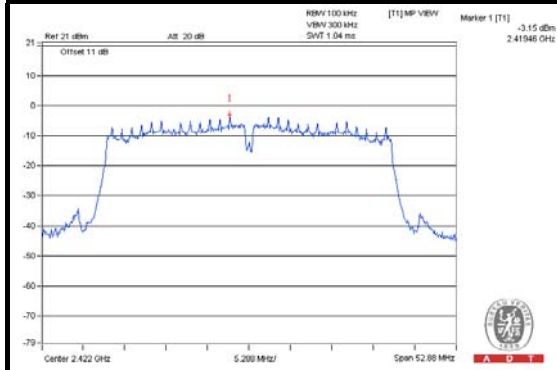


A D T

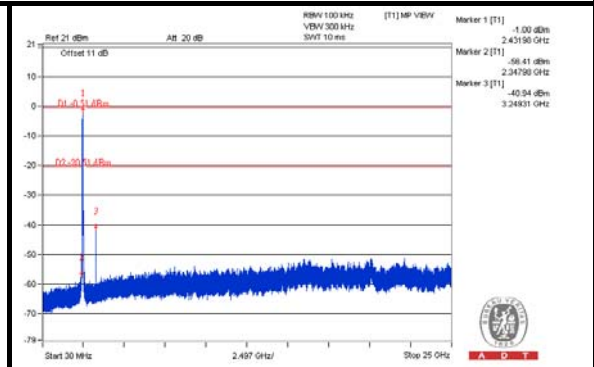
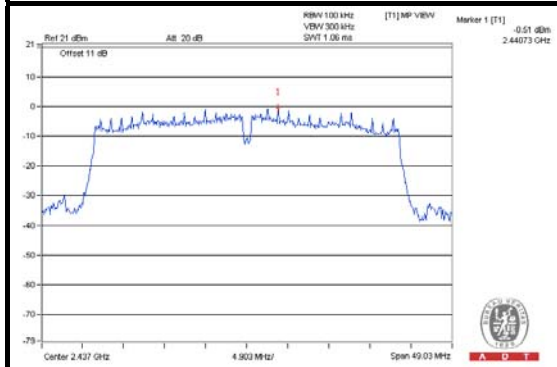
802.11n (40MHz)_Chain 0/2

CHAIN 0

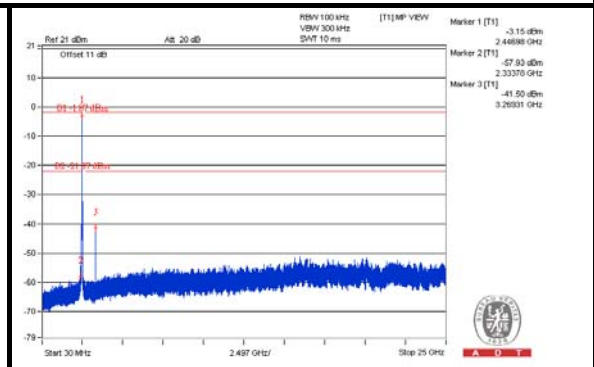
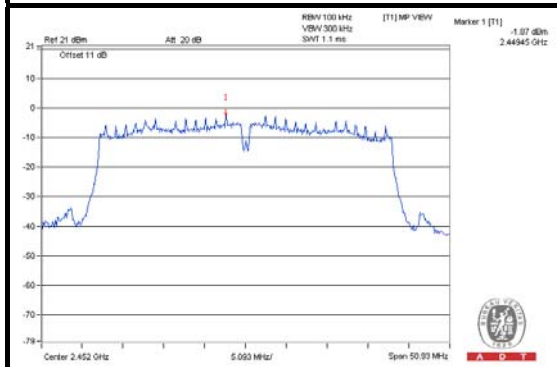
CH 3



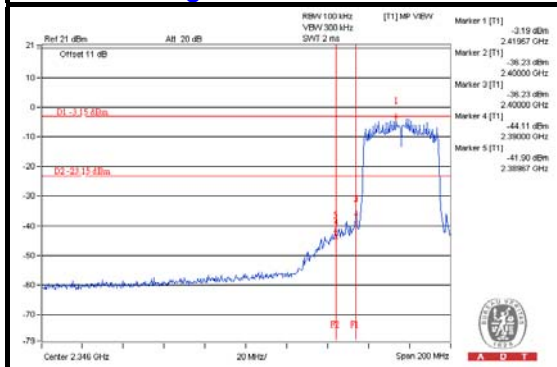
CH 6



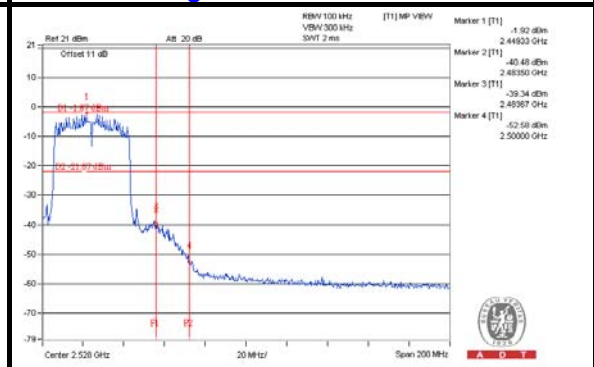
CH 9



CH 3 Band edge



CH 9 Band edge

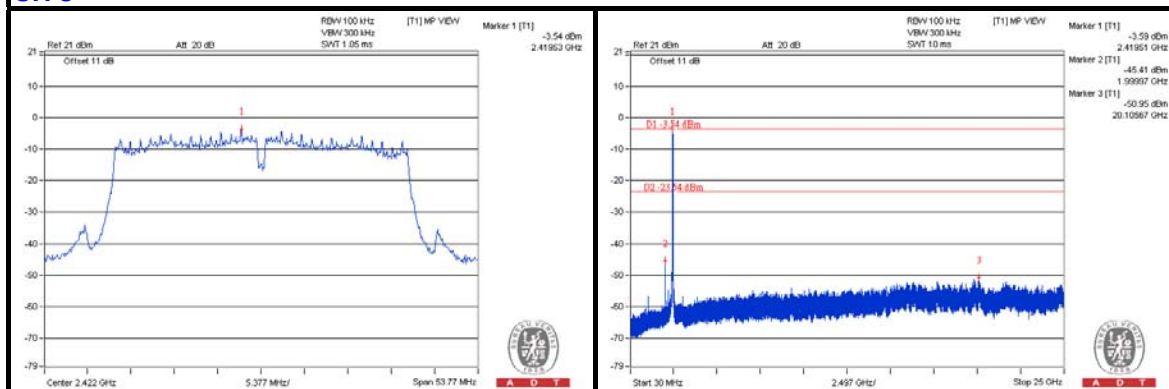




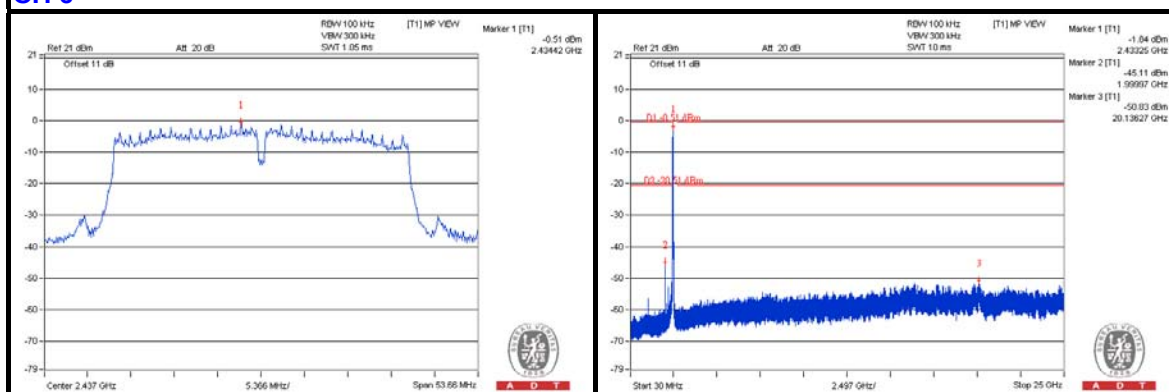
A D T

CHAIN 2

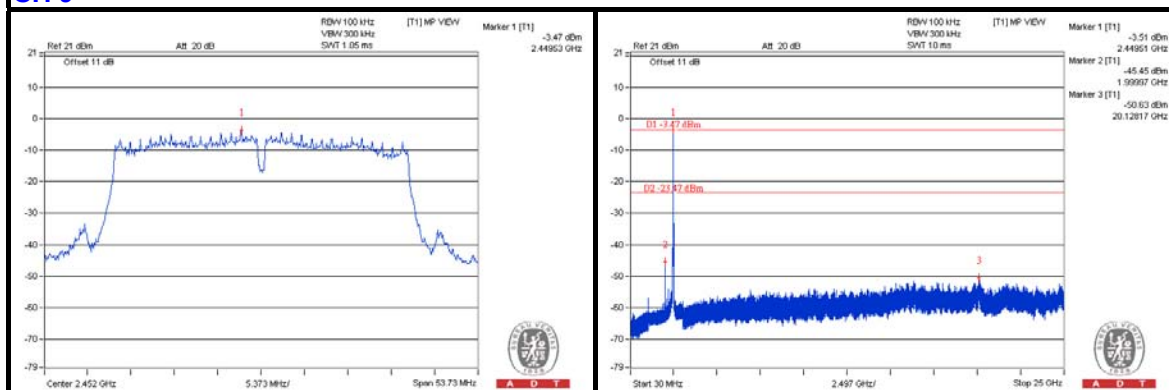
CH 3



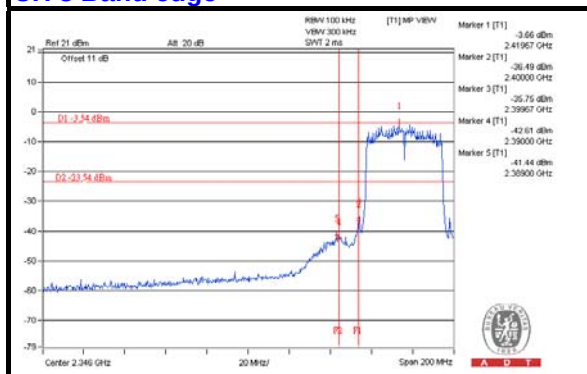
CH 6



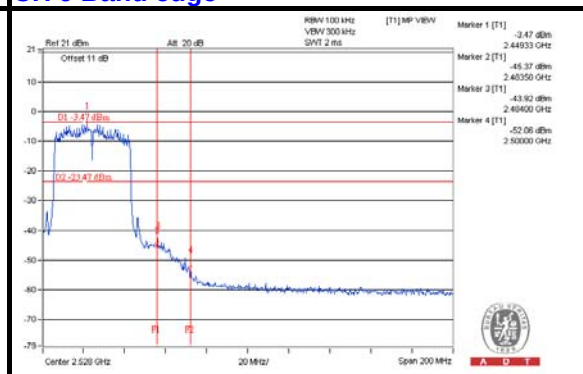
CH 9



CH 3 Band edge



CH 9 Band edge



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.



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7. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---