







# ISO/IEC17025Accredited Lab.

Report No: FCC/IC 1210114-01 File reference No: 2012-09-03

Applicant: Kobian Canada INC.

Product: MID

Model No: HS-9DTB4-8GB, HS-9DTB4, HS-9DTB5, HS-9DTB6

Trademark: Hipstreet

Test Standards: FCC Part 15 Subpart C, Paragraph 15.247

RSS-210 Issue 8

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4,FCC Part 15 Subpart C, Paragraph 15.247 regulations and RSS-210 Issue 8 for the

evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung Manager

Dated: Sep. 03, 2012

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

# SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

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# **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

## **CNAL-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

# FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

# IC-Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

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# **Test Report Conclusion**

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#### 1.0 General Details

Date: 2012-09-03

#### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District,

Shenzhen, CHINA.

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Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-02

For 3m & 10 m OATS

#### 1.2 Applicant Details

Applicant: Kobian Canada INC.

Address: 560 Denison Street, Unit 5, Markham, Ontario, L3R 2M8, Canada

Telephone: (001) 905-948-9967 Fax: (001) 905-948-1601

#### 1.3 Description of EUT

Product: MID

Manufacturer: Kobian Canada INC.

Address: 560 Denison Street, Unit 5, Markham, Ontario, L3R 2M8, Canada

Brand Name: Hipstreet

Model Number: HS-9DTB4-8GB

Additional Model Number: HS-9DTB4, HS-9DTB5, HS-9DTB6

Power Adapter Input:100-240VAC~, 50-60Hz,0.32A Max; Output: DC5V, 2000mA

Type of Modulation IEEE 802.11b : DSSS (CCK, QPSK, DBPSK)

IEEE 802.11g/n (HT20/HT40): OFDM(64QAM, 16QAM, QPSK, BPSK)

Frequency range IEEE 802.11b/g/n (HT20) : 2412-2462MHz;

IEEE 802.11n HT40: 2422MHz-2452MHz

Channel Spacing IEEE 802.11b/g/n (HT20/40) : 5MHz
Air Data Rate IEEE 802.11b : 11, 5.5, 2, 1 Mbps

IEEE 802.11g: 54, 48,36, 24, 18, 12, 9, 6 Mbps

IEEE 802.11n HT20 : 150, 117, 104, 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6 Mbps IEEE 802.11n HT40 : 150, 117, 104, 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6 Mbps

Frequency Selection By software

The report refers only to the sample tested and does not apply to the bulk.

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Channel Number

IEEE 802.11b/g/n (HT20): 11 Channels

IEEE 802.11n HT40: 7 Channels

Antenna:

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PCB Antenna with maximum gain 2.0dBi

1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2012-08-17 to 2012-08-31

1.6 Test Uncertainty

Conducted Emissions Uncertainty = 3.6dB Radiated Emissions Uncertainty = 4.7dB

1.7 Test Engineer

Terry Tang

The sample tested by

Print Name: Terry Tang

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2.0	2.0 Test Equipments						
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date		
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2012-04-21	2013-04-20		
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2012-04-21	2013-04-20		
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2012-04-21	2013-04-20		
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2012-04-21	2013-04-20		
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2012-04-21	2013-04-20		
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2012-04-21	2013-04-20		
System Controller	CT	SC100	-				
Printer	EPSON	РНОТО ЕХЗ	CFNH234850				
Computer	IBM	8434	1S8434KCE99BLXL O*	-	-		
Loop Antenna	EMCO	6502	00042960	2012-04-21	2013-04-20		
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2012-04-21	2013-04-20		
3m OATS			N/A	2012-04-21	2013-04-20		
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170265	2012-04-21	2013-04-20		
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-631	2012-04-21	2013-04-20		
Power meter	Anritsu	ML2487A	6K00003613	2012-04-21	2013-04-20		
Power sensor	Anritsu	MA2491A	32263	2012-04-21	2013-04-20		
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2012-04-21	2013-04-20		
LISN	AFJ	LS16C	10010947251	2012-04-21	2013-04-20		
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2012-04-21	2013-04-20		
9*6*6 Anechoic			N/A	2012-04-21	2013-04-20		
EMI Test Receiver	RS	ESCS30	100139	2012-04-21	2013-04-20		
LISN	AFJ	LS16C	10010947251	2012-04-21	2013-04-20		
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2012-04-21	2013-04-20		

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#### 2.1 **Auxiliary Equipment**

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Name	Model No.	Serial No.	Manufacturer	Cable	FCC ID/DOC
	Wiodel Ivo.	Scrium 110.		Cuote	T CC ID/DCC
TF Card			Kingston	-	
Earphone					

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#### 3. DESCRIPTION OF TEST MODES

## IEEE 802.11b, 802.11g, 802.11n (HT20) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 11Mbps data rate (worst case) was chosen for full testing. IEEE 802.11g mode: 54Mbps data rate (worst case) was chosen for full testing. IEEE 802.11n (HT20) mode: 65Mbps data rate (worst case) were chosen for full testing

#### IEEE 802.11n HT40

The EUT had been tested under operating condition. There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2422
Mid	2437
High	2452

IEEE 802.11n HT40 mode: 65Mbps data rate (worst case) was chosen for full testing.

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD and average power across all the data rates, bandwidths, modulations and spatial stream modes.

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#### 3.0 **Technical Details**

#### 3.1 **Summary of test results**

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107	<b>Conducted Emission Test</b>	PASS	Complies
& 15.207 & RSS-210 Issue 8			
	Spectrum bandwidth of a		Complies
FCC Part 15 Subpart C	Orthogonal Frequency		
Paragraph 15.247(a)(2) Limit &	<b>Division Multiplex System</b>	PASS	
RSS-210 Issue 8	Limit: 6dB		
	bandwidth>500kHz		
FCC Part 15, Paragraph	Maximum peak output		
15.247(b) & RSS-210 Issue 8	power	PASS	Complies
13.247(b) & R55-210 Issue 0	Limit: max. 30dBm		
FCC Part 15, Paragraph	Transmitter Radiated	PASS	Complies
15.109,15.205 & 15.209 &	Emission		
RSS-210 Issue 8	Limit: Table 15.209		
FCC Part 15, Paragraph	<b>Power Spectral Density</b>	PASS	Complies
15.247(e) & RSS-210 Issue 8	Limit: max. 8dBm		
FCC Part 15, Paragraph	Out of Band Emission and	PASS	Complies
15.247(d) & RSS-210 Issue 8	<b>Restricted Band</b>		
	Radiation		
	Limit: 20dB less than		
	peak value of fundamental		
	frequency		
	Restricted band limit:		
	<b>Table 15.209</b>		

#### 3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247 & RSS-210 Issue 8

#### **EUT Modification** 4.0

No modification by Shenzhen Timeway Technology Consulting Co., Ltd

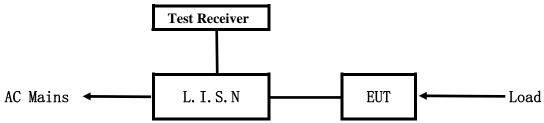
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#### 5. Power Line Conducted Emission Test

# 5.1 Schematics of the test

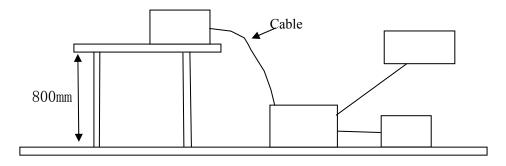


**EUT: Equipment Under Test** 

#### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



## 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

# A. EUT

Device	Manufacturer	Model	FCC ID/IC
MID	Vahian Canada INC	HS-9DTB4-8GB, HS-9DTB4,	IC: 8012A-9DTB4
MID	Kobian Canada INC.	HS-9DTB5, HS-9DTB6	FCC ID: YH5-9DTB4

#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

The report refers only to the sample tested and does not apply to the bulk.

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# C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
N/A				

# 5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

# 5.5 Power line conducted Emission Limit according to Paragraph 15.207 and 15.107 and RSS-210

Frequency	Class A Lim	its (dB µ V)	Class B Limits (dB µ V)		
(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0	
$5.00 \sim 30.00$	73.0	60.0	60.0	50.0	

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

## 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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# A: Conducted Emission on Live Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

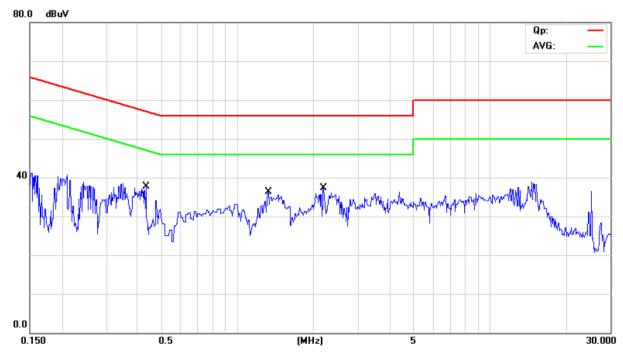
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Charging Mode** 

**Equipment Level: Class B** 

**Results: PASS** 

Please refer to following diagram for individual



Frequency	Reading(dBμV)		Limit(dBµV)		
(MHz)	Line	Quasi-peak	Average	Quasi-peak	Average
2.187	Live	29.07	24.57	56.00	46.00
1.323	Live	28.93	28.13	56.00	46.00
0.431	Live	30.00	23.50	57.22	47.22

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# B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

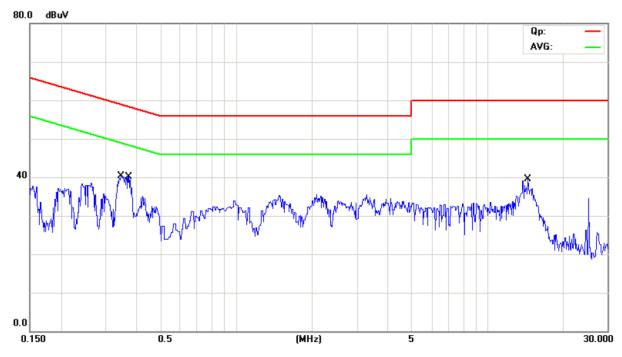
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Charging Mode** 

**Equipment Level: Class B** 

**Results: Pass** 

Please refer to following diagram for individual



Frequency	Lina	Reading(	dBμV)	Limit(	dBμV)
(MHz)	Line	Quasi-peak	Average	Quasi-peak	Average
0.345	Neutral	36.41	28.11	59.07	49.07
0.370	Neutral	38.03	25.73	58.50	48.50
14.415	Neutral	34.61	24.01	60.00	50.00

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#### 6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.

# Block diagram of Test setup Distance = 3m Computer Pre -Amplifier Furn-table Receiver

- 6.2 Configuration of The EUT
  Same as section 5.3 of this report
- 6.3 EUT Operating Condition
  Same as section 5.4 of this report.

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#### 6.4 Radiated Emission Limit

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All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

### Frequencies in restricted band are complied to limit on Paragraph 15.209 and 15.109 and RSS-210

Frequency Range (MHz)	Distance (m)	Field strength (dB µ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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#### Test result

## General Radiated Emission Data and Harmonics Radiated Emission Data

#### Radiated Emission In Horizontal (30MHz----1000MHz)

**EUT set Condition:** Keep WIFI Transmitting

**Results: Pass** 

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
672.044	36.68	Н	46.00
504.015	41.14	Н	46.00
277.350	34.33	Н	46.00
401.025	35.17	Н	46.00
202.175	26.21	Н	43.50
32.462	35.94	V	40.00
401.025	34.48	V	46.00
505.300	39.66	V	46.00
672.625	39.94	V	46.00
481.050	36.16	V	46.00
202.175	29.11	V	43.50

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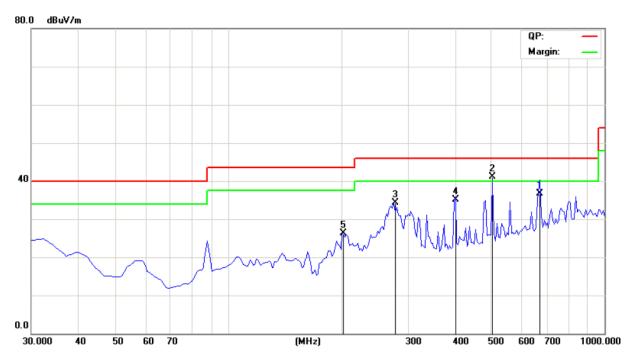
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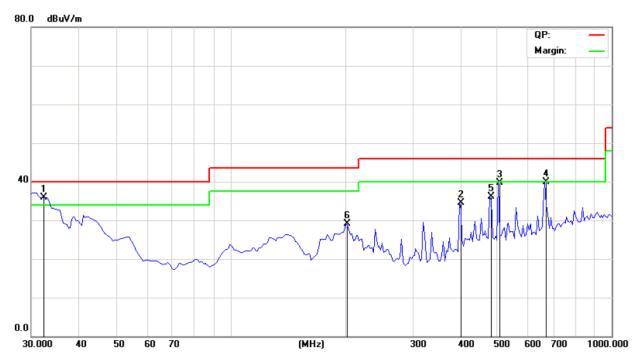
Test Figure:

H



Test Figure:

V



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#### Test result

#### General Radiated Emission Data and Harmonics Radiated Emission Data

#### Radiated Emission In Horizontal (30MHz----1000MHz)

**EUT set Condition:** Keep WIFI Receiving and Full Load

**Results: Pass** 

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
786.600	37.90	Н	46.00
505.300	35.19	Н	46.00
401.025	33.47	Н	46.00
321.000	30.69	Н	46.00
257.950	30.05	Н	46.00
32.748	35.04	V	40.00
202.175	31.28	V	43.50
321.000	31.86	V	46.00
401.025	37.29	V	46.00
483.475	37.05	V	46.00
507.725	39.57	V	46.00

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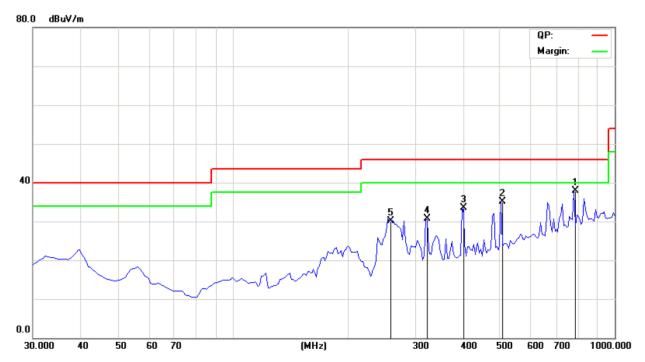
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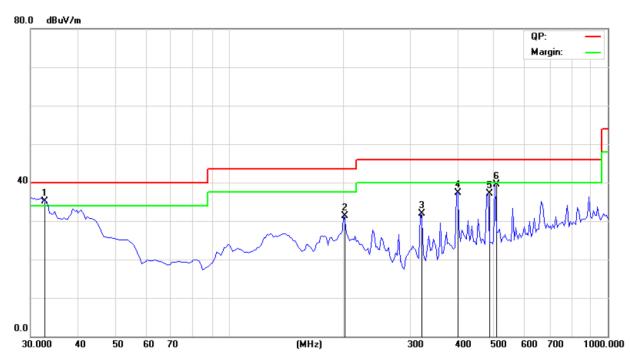
Test Figure:

H



# **Test Figure:**

V



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# Operation Mode: Transmitting & Receiving under CH01 for 11g at 54Mbps

_			
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
2412.00	96.36 (PK)	Н	Fundamental Frequency
2412.00	97.12 (PK)	V	Fundamental Frequency
4824.00	47.37 (PK)	Н	74(Peak)/ 54(AV)
4824.00	48.78 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00		H/V	74(Peak)/ 54(AV)
12060		H/V	74(Peak)/ 54(AV)
14472		H/V	74(Peak)/ 54(AV)
16884		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

<sup>2.</sup> Remark "---" means that the emissions level is too low to be measured

<sup>3.</sup> For 802.11g mode 54Mbps

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# Operation Mode: Transmitting & Receiving under CH06 for 11g at 54Mbps

	8 8	Ü	
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
2437.00	92.24 (PK)	Н	Even dominantal Engavianos
2437.00	95.87 (PK)	V	Fundamental Frequency
4874.00	43.91 (PK)	Н	74(Peak)/ 54(AV)
4874.00	49.12 (PK)	V	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059		H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11g mode 54 Mbps

### Operation Mode: Transmitting & Receiving under CH11 for 11g at 54Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
2462.00	95.52 (PK)	Н	Fundamental Frequency
2462.00	97.38 (PK)	V	Fundamental Frequency
4924	47.51 (PK)	Н	74(Peak)/ 54(AV)
4924	45.64 (PK)	V	74(Peak)/ 54(AV)
7368	-	H/V	74(Peak)/ 54(AV)
9848	1	H/V	74(Peak)/ 54(AV)
12310	-	H/V	74(Peak)/ 54(AV)
14772	-	H/V	74(Peak)/ 54(AV)
17234	-	H/V	74(Peak)/ 54(AV)
19696	-	H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24650		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11g mode at 54 Mbps

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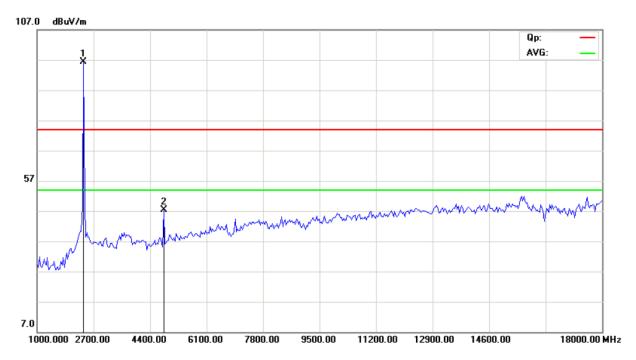
In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co.,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Date: 2012-09-03

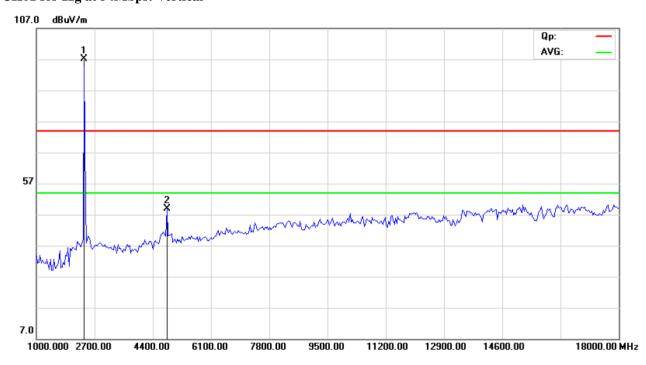


Please refer to the following test plots for details:

# CH01 for 11g at 54Mbps: Horizontal



# CH01 for 11g at 54Mbps: Vertical



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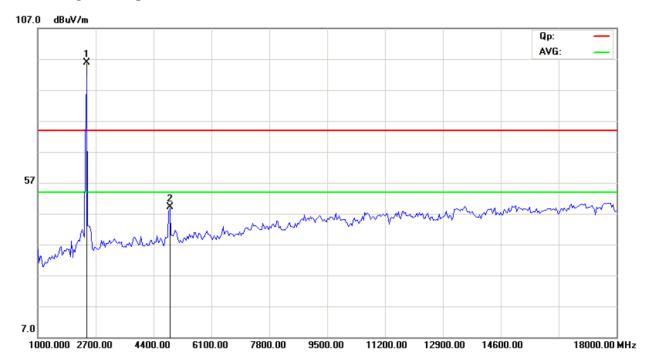
Page 23 of 125

Report No: 1210114-01

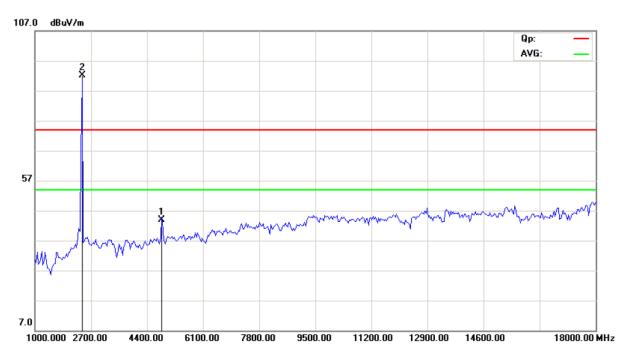
Date: 2012-09-03



# CH06 for 11g at 54Mbps: Vertical



# CH06 for 11g at 54Mbps: Horizontal

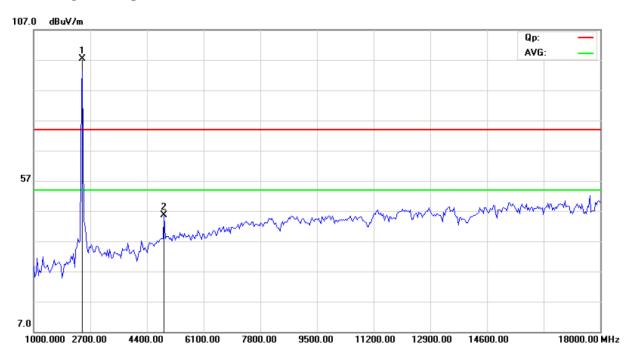


The report refers only to the sample tested and does not apply to the bulk.

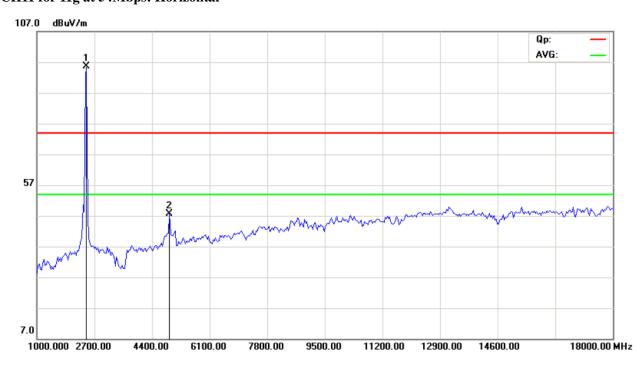
Date: 2012-09-03



# CH11 for 11g at 54Mbps: Vertical



# CH11 for 11g at 54Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Date: 2012-09-03



# Operation Mode: Transmitting & Receiving under CH01 for 11b at 11Mbps

	8 8		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
2412.00	95.92 (PK)	V	Even dominantal Englavior av
2412.00	97.75 (PK)	Н	Fundamental Frequency
4824.00	45.85 (PK)	Н	74(Peak)/ 54(AV)
4824.00	44.12 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00	-	H/V	74(Peak)/ 54(AV)
12060	-	H/V	74(Peak)/ 54(AV)
14472	-	H/V	74(Peak)/ 54(AV)
16684		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode 11Mbps

### Operation Mode: Transmitting & Receiving under CH06 for 11b at 11Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
2437.00	89.64 (PK)	Н	Fundamental Frequency
2437.00	94.11 (PK)	V	Fundamental Frequency
4874.00	42.01 (PK)	Н	74(Peak)/ 54(AV)
4874.00	47.67 (PK)	V	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185	-	H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059	-	H/V	74(Peak)/ 54(AV)
19496	-	H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode 11Mbps

The report refers only to the sample tested and does not apply to the bulk.

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Date: 2012-09-03



# Operation Mode: Transmitting & Receiving under CH11 for 11b at 11Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
2462.00	96.32 (PK)	Н	Fundamental Frequency
2462.00	96.37 (PK)	V	Fundamental Frequency
4924	(PK)	Н	74(Peak)/ 54(AV)
4924	51.13 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24650		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

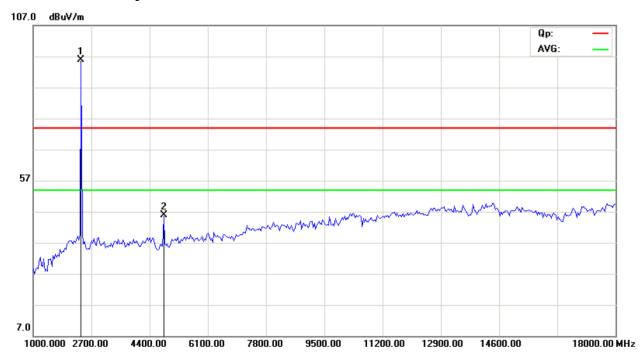
- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11b mode at 11Mbps

Date: 2012-09-03

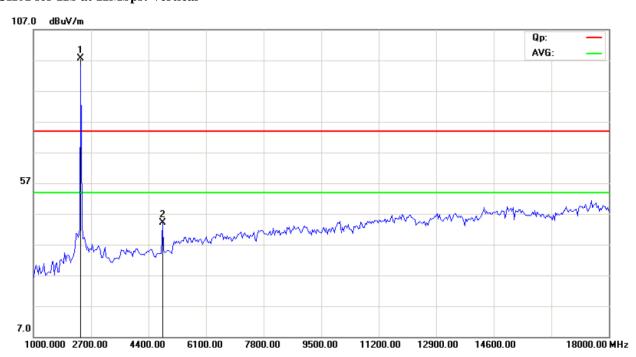


Please refer to the following test plots for details:

# CH01 for 11b at 11Mbps: Horizontal



# CH01 for 11b at 11Mbps: Vertical

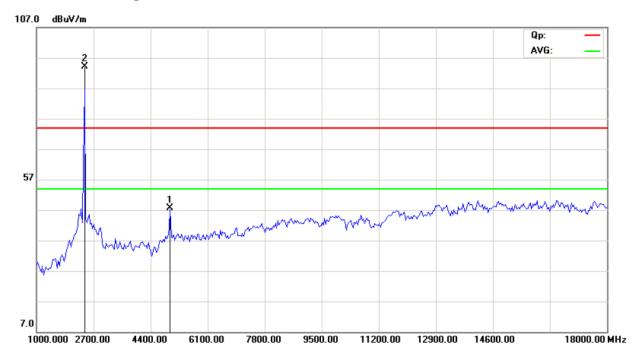


The report refers only to the sample tested and does not apply to the bulk.

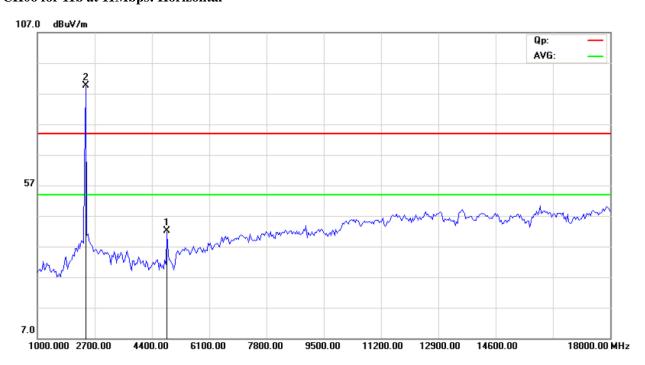
Date: 2012-09-03



# CH06 for 11b at 11Mbps: Vertical



# CH06 for 11b at 11Mbps: Horizontal

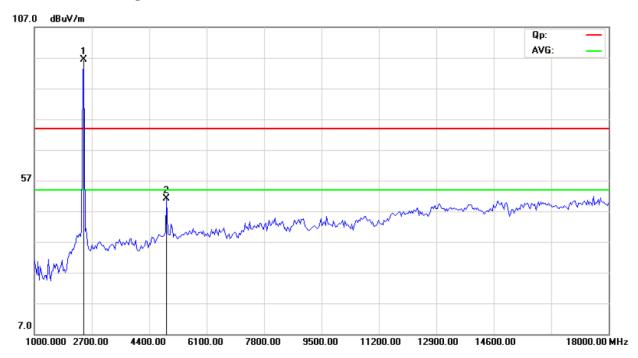


The report refers only to the sample tested and does not apply to the bulk.

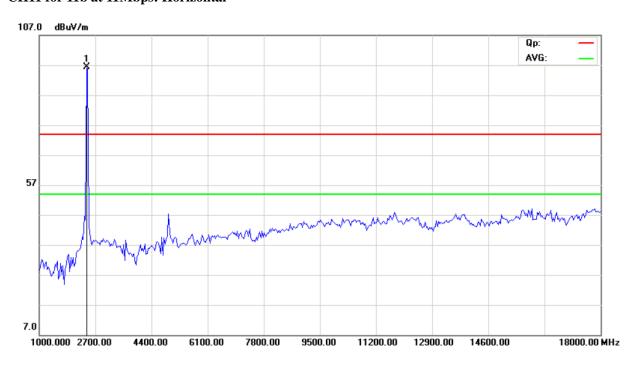
Date: 2012-09-03



# CH11 for 11b at 11Mbps: Vertical



# CH11 for 11b at 11Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

Date: 2012-09-03



# Operation Mode: Transmitting & Receiving under CH01 for 11n HT20 at 65Mbps

Frequency (MHz)	Level@3m (dB \u03ba V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
2412.00	93.10 (PK)	Н	Fundamental Frequency
2412.00	95.95 (PK)	V	Fundamental Frequency
4824.00	45.09 (PK)	Н	74(Peak)/ 54(AV)
4824.00	48.09 (PK)	V	74(Peak)/ 54(AV)
7236.00		H/V	74(Peak)/ 54(AV)
9648.00		H/V	74(Peak)/ 54(AV)
12060		H/V	74(Peak)/ 54(AV)
14472	-	H/V	74(Peak)/ 54(AV)
16684		H/V	74(Peak)/ 54(AV)
19296		H/V	74(Peak)/ 54(AV)
21708		H/V	74(Peak)/ 54(AV)
24120		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 65Mbps

# Operation Mode: Transmitting & Receiving under CH06 for 11n HT20 at 65Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
2437.00	96.19 (PK)	Н	Fundamental Frequency
2437.00	93.57 (PK)	V	Fundamental Frequency
4874.00	45.54 (PK)	Н	74(Peak)/ 54(AV)
4874.00	46.32 (PK)	V	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00	1	H/V	74(Peak)/ 54(AV)
12185	1	H/V	74(Peak)/ 54(AV)
14622	1	H/V	74(Peak)/ 54(AV)
17059		H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370	-	H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 65Mbps

The report refers only to the sample tested and does not apply to the bulk.

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Date: 2012-09-03



# Operation Mode: Transmitting & Receiving under CH11 for 11n HT20 at 65Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
2462.00	96.23 (PK)	Н	Fundamental Frequency
2462.00	94.88 (PK)	V	
4924	49.18 (PK)	Н	74(Peak)/ 54(AV)
4924	45.13 (PK)	V	74(Peak)/ 54(AV)
7368		H/V	74(Peak)/ 54(AV)
9848		H/V	74(Peak)/ 54(AV)
12310		H/V	74(Peak)/ 54(AV)
14772		H/V	74(Peak)/ 54(AV)
17234		H/V	74(Peak)/ 54(AV)
19696		H/V	74(Peak)/ 54(AV)
22158		H/V	74(Peak)/ 54(AV)
24650		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

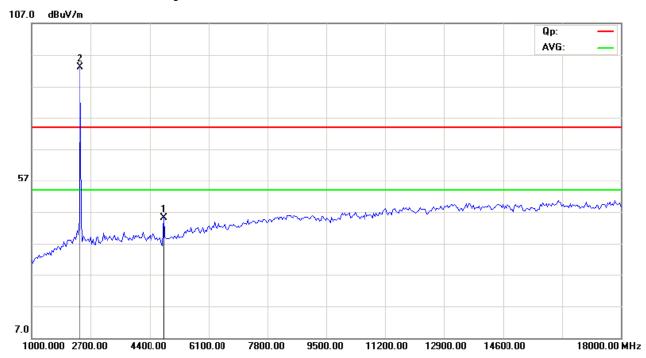
- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT20) mode 65Mbps

Date: 2012-09-03

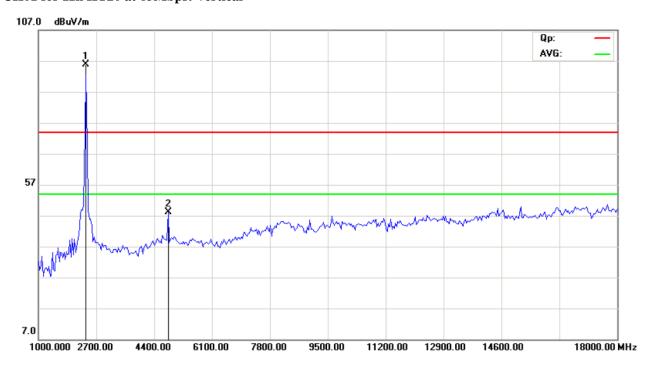


Please refer to the following test plots for details:

# CH01 for 11n HT20 at 65Mbps: Horizontal



# CH01 for 11n HT20 at 65Mbps: Vertical



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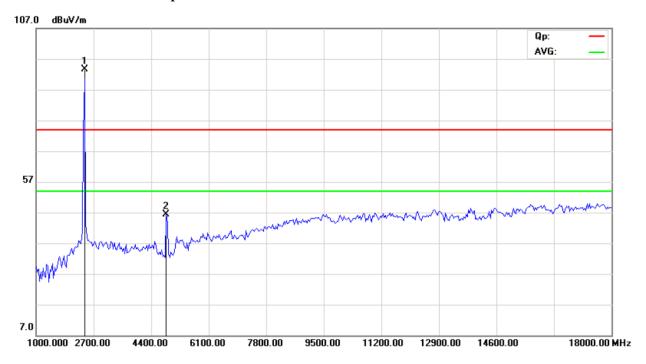
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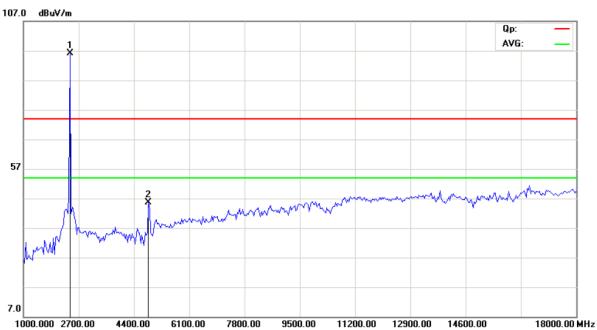
Date: 2012-09-03



# CH06 for 11n HT20 at 65Mbps: Vertical



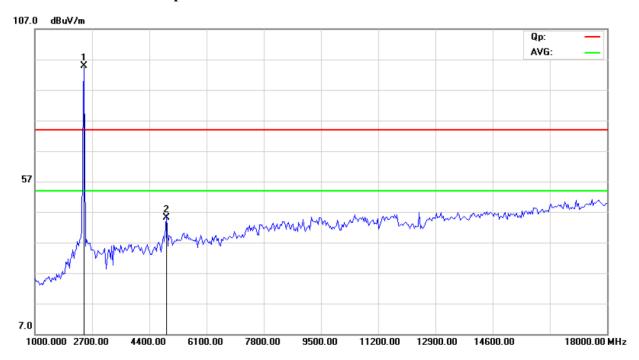
# CH06 for 11n HT20 at 65Mbps: Horizontal



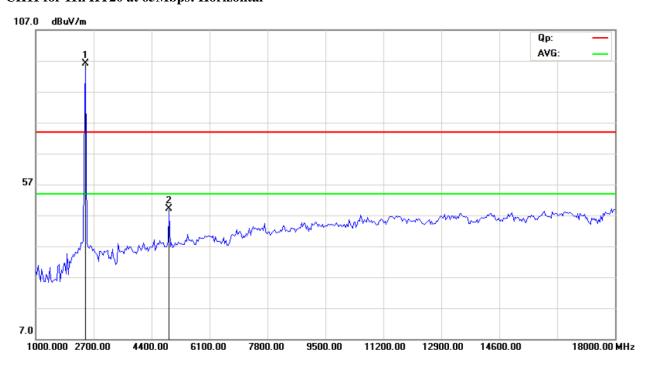
Date: 2012-09-03



# CH11 for 11n HT20 at 65Mbps: Vertical



# CH11 for 11n HT20 at 65Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

Date: 2012-09-03



# Operation Mode: Transmitting & Receiving under CH01 for 11n HT40 at 65Mbps

	8 8		
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
2422.00	94.92 (PK)	V	Fundamental Frequency
2422.00	95.18 (PK)	Н	
4844.00	45.51 (PK)	V	74(Peak)/ 54(AV)
4844.00	48.36 (PK)	Н	74(Peak)/ 54(AV)
7266.00		H/V	74(Peak)/ 54(AV)
9688.00		H/V	74(Peak)/ 54(AV)
12110		H/V	74(Peak)/ 54(AV)
14532		H/V	74(Peak)/ 54(AV)
16954		H/V	74(Peak)/ 54(AV)
19376		H/V	74(Peak)/ 54(AV)
21798		H/V	74(Peak)/ 54(AV)
24220		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT40) mode 65Mbps

### Operation Mode: Transmitting & Receiving under CH04 for 11n HT40 at 65Mbps

Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB \( \mu \) V/m)
2437.00	95.58 (PK)	Н	Fundamental Frequency
2437.00	97.13 (PK)	V	
4874.00	46.56 (PK)	Н	74(Peak)/ 54(AV)
4874.00	44.05 (PK)	V	74(Peak)/ 54(AV)
7311.00		H/V	74(Peak)/ 54(AV)
9748.00		H/V	74(Peak)/ 54(AV)
12185		H/V	74(Peak)/ 54(AV)
14622		H/V	74(Peak)/ 54(AV)
17059		H/V	74(Peak)/ 54(AV)
19496		H/V	74(Peak)/ 54(AV)
21933		H/V	74(Peak)/ 54(AV)
24370		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT40) mode 65Mbps

The report refers only to the sample tested and does not apply to the bulk.

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# Operation Mode: Transmitting & Receiving under CH7 for 11n HT40 at 65Mbps

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
2452.00	97.22 (PK)	Н	Fundamental Frequency
2452.00	97.82 (PK)	V	
4904	47.73 (PK)	Н	74(Peak)/ 54(AV)
4904	45.36 (PK)	V	74(Peak)/ 54(AV)
7356		H/V	74(Peak)/ 54(AV)
9808		H/V	74(Peak)/ 54(AV)
12260		H/V	74(Peak)/ 54(AV)
14712		H/V	74(Peak)/ 54(AV)
17164		H/V	74(Peak)/ 54(AV)
19616		H/V	74(Peak)/ 54(AV)
22068		H/V	74(Peak)/ 54(AV)
24520		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11n (HT40) mode 65Mbps

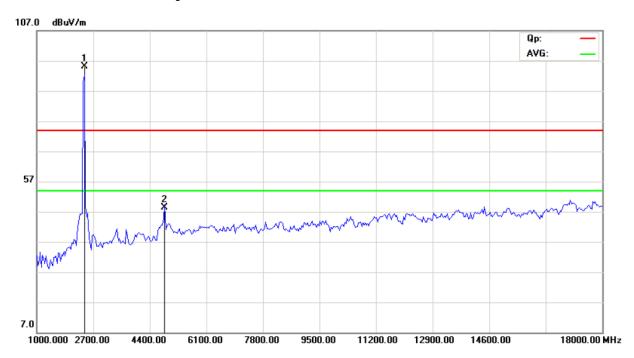
Report No: 1210114-01

Date: 2012-09-03

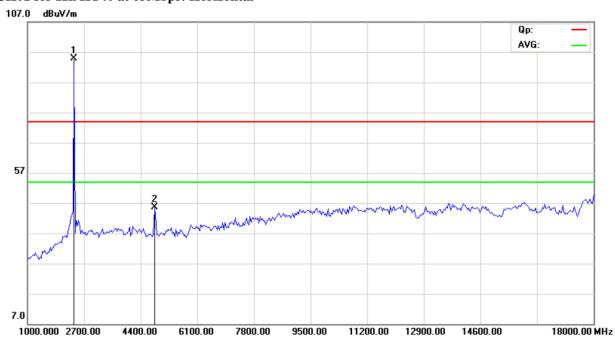


Please refer to the following test plots for details:

# CH01 for 11n HT40 at 65Mbps: Vertical



### CH01 for 11n HT40 at 65Mbps: Horizontal



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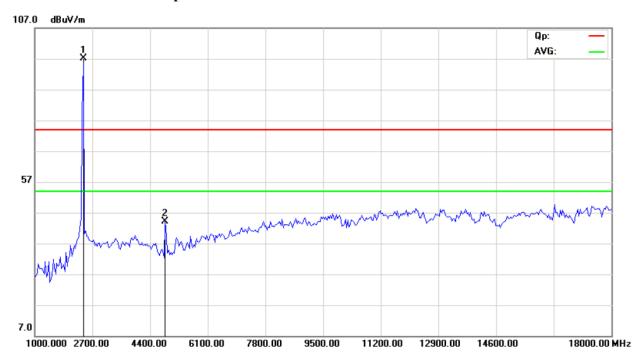
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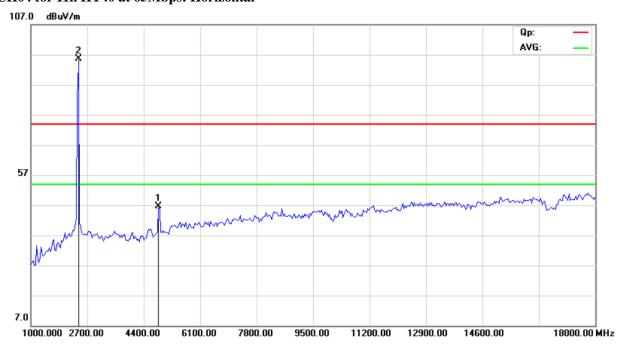
Date: 2012-09-03



### CH04 for 11n HT40 at 65Mbps: Vertical



## CH04 for 11n HT40 at 65Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

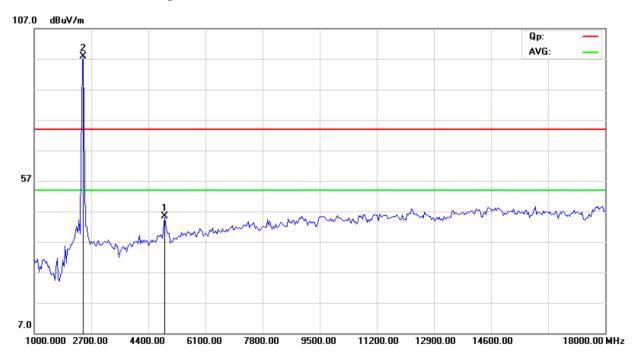
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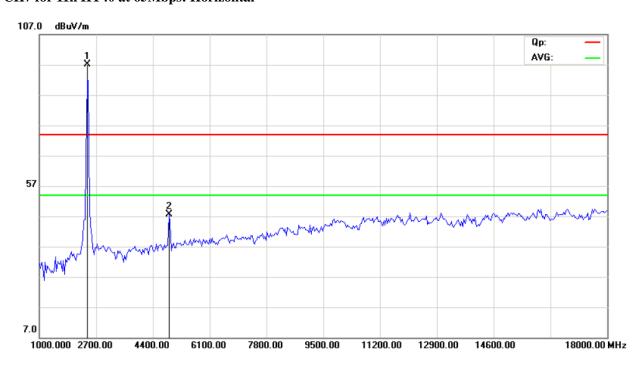
Date: 2012-09-03



## CH7 for 11n HT40 at 65Mbps: Vertical



## CH7 for 11n HT40 at 65Mbps: Horizontal



Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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#### Radiated Disturbance (1000MHz----18000MHz)

## **EUT Operating Environment**

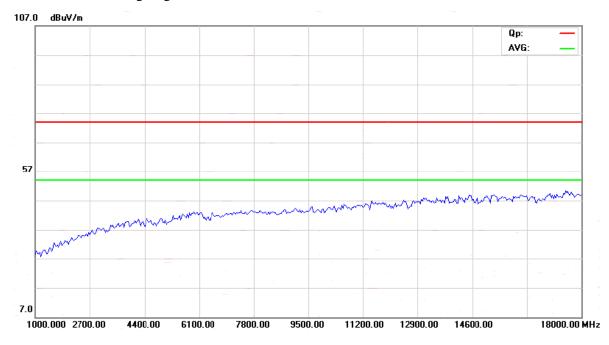
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep WIFI Receiving and Full Load

**Equipment Level: Class B** 

**Results: Pass** 

Please refer to following diagram for individual



Frequency (MHz)	requency (MHz) Level@3m (dBμV/m)		Limit@3m (dBµV/m)	
		Н	54(AV)	

Note: 1. Due to the final radiated level much less than the limit, so necessary take down final radiated level

2. For radiated Emissions from 18-25GHz, it is only the floor noise.

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#### Radiated Disturbance (1000MHz----18000MHz)

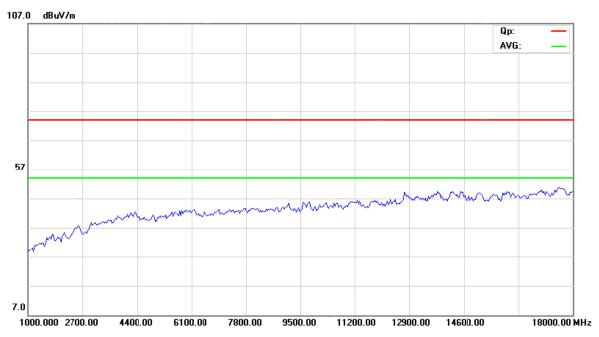
## **EUT Operating Environment**

Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Keep WIFI Receiving and Full Load** 

**Equipment Level: Class B** 

**Results: Pass** 



Please refer to following diagram for individual

Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
		V	54(AV)

Note: 1. Due to the final radiated level much less than the limit, so necessary take down final radiated level

2. For radiated Emissions from 18-25GHz, it is only the floor noise.

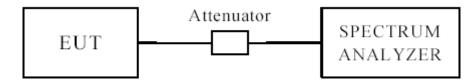
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#### 7.0 6dB and 99% Bandwidth Measurement

## 7.1 Test Setup



#### 7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

#### 7.3 Test Procedure

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

#### 7.4 Test Result

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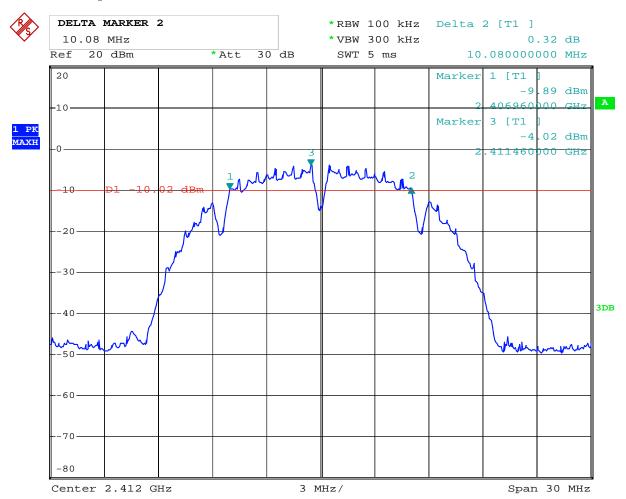
### 6dB Occupied Bandwidth

EUT	EUT M		MID	MID		Model		TB4-8GB
Mode	ode 802.11t		302.11b	.11b Input Vo		it Voltage A		120V
Temperat	ure	24	4 deg. C,		Humidity	r	56%	6 RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)		ndwidth Minimum Limit Hz) (MHz)		Pass/ Fail	
1		2412	1	10.08		0.5		Pass
6		2437	1	10.08			0.5	Pass
11		2462	1	10.08			0.5	Pass
1		2412	11	7.56		7.56		Pass
6		2437	11	7.56			0.5	Pass
11		2462	11	7.	7.56		0.5	Pass

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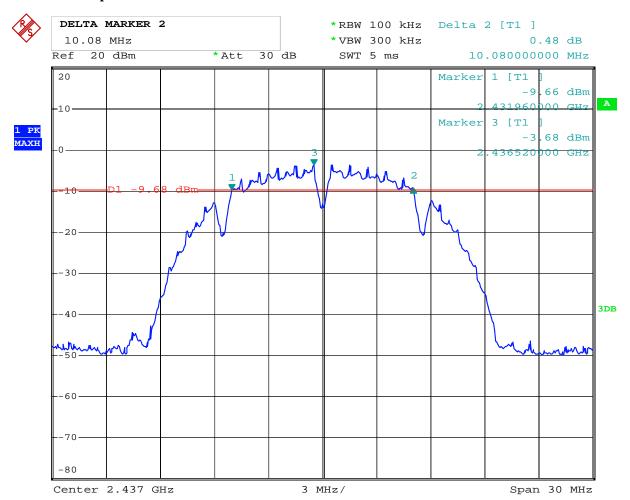


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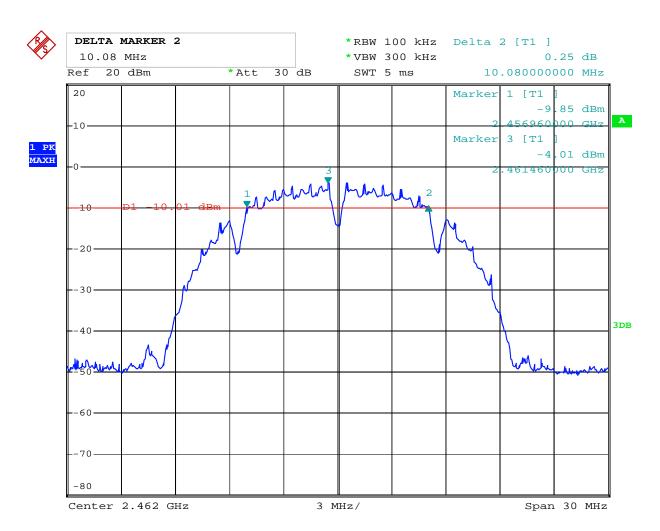




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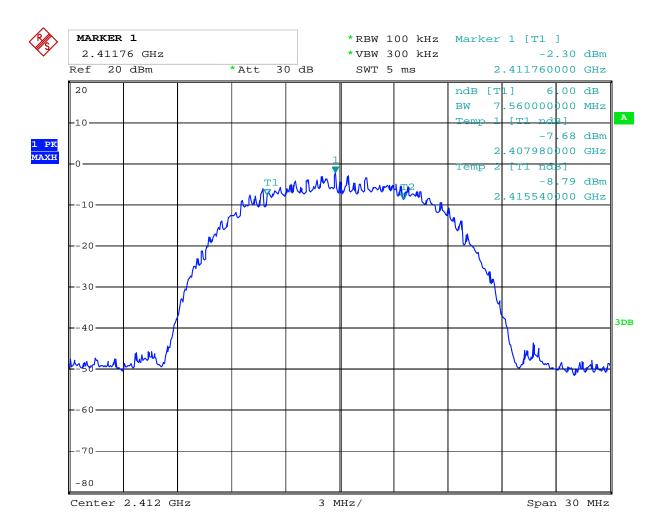




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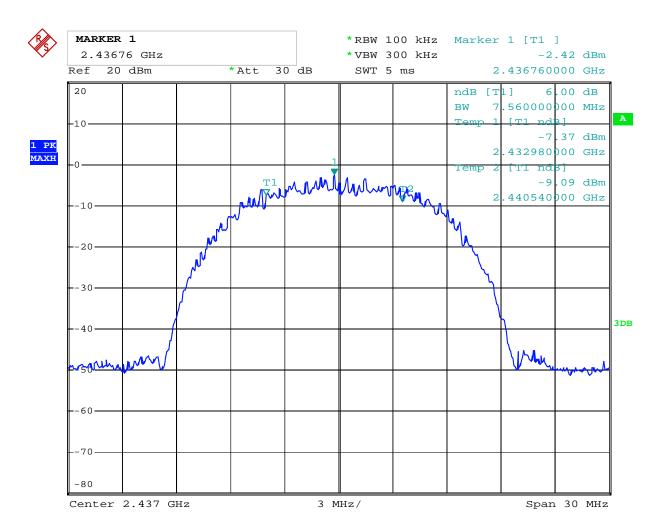




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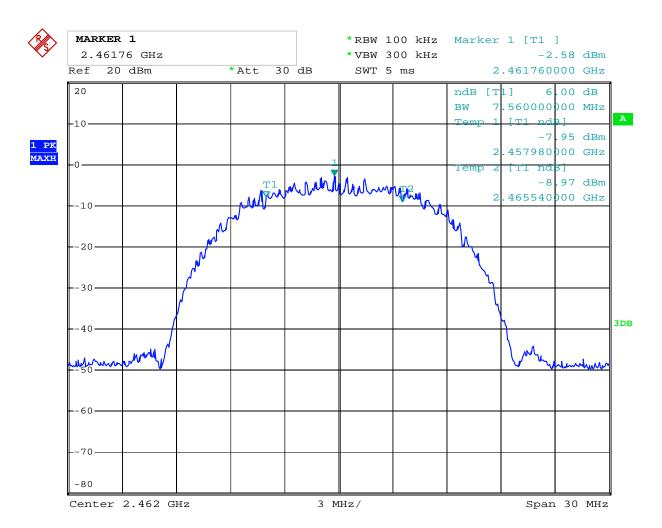




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### 6dB Occupied Bandwidth

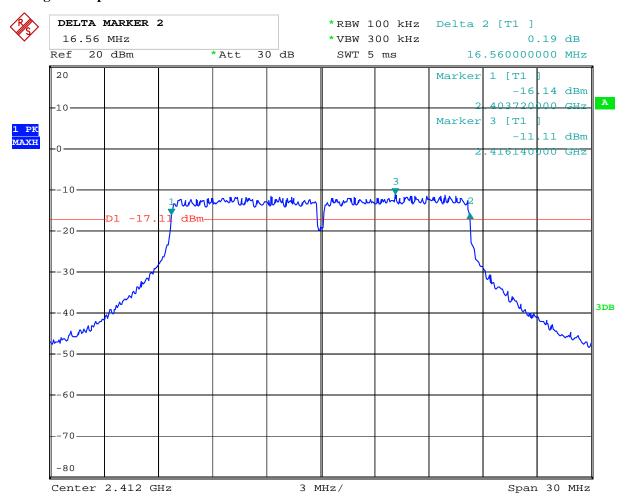
EUT	[		MID		Model		HS-9DTB4-8GB	
Mode	Mode 8		302.11g		Input Voltage		AC 120V	
Temperat	ure	24	4 deg. C,		Humidity		56% RH	
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)		andwidth Hz)	Minimum Limit (MHz) Pass/		Pass/ Fail
1		2412	6 16.56		5.56	0.5		Pass
6		2437	6	16.68		0.5		Pass
11		2462	6	16.56		56		Pass

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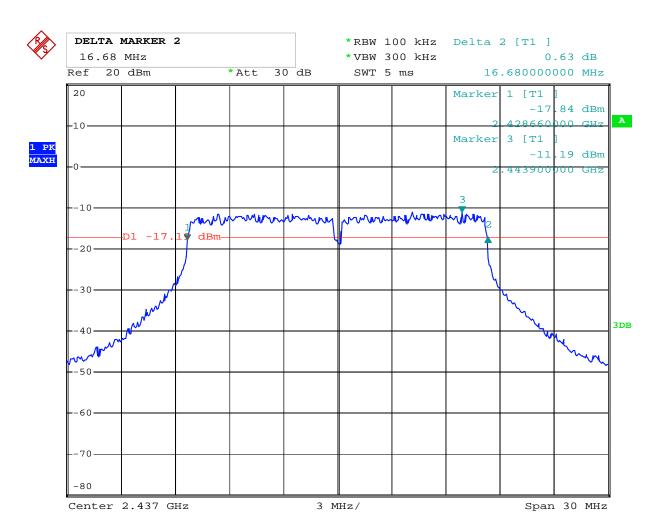
#### **Test Plots:**



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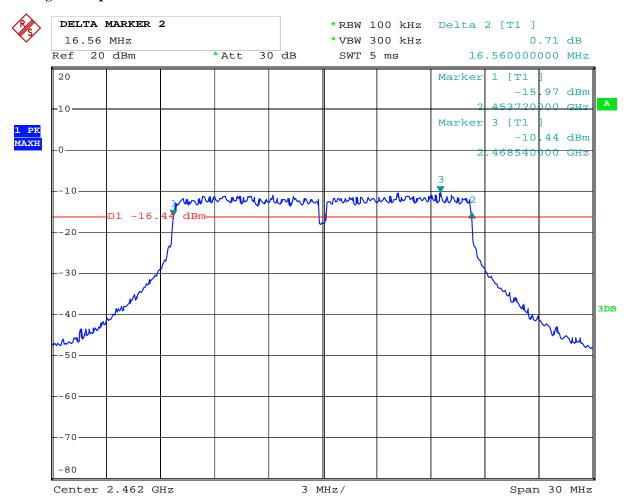


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### 6dB Occupied Bandwidth

EUT		MID		Model		HS-9DTB4-8GB		
Mode	Mode 8		302.11n	02.11n		Input Voltage		120V
Temperat	ure	24	4 deg. C,		Humidity	r	56%	6 RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	(MHz) (M		mum Limit MHz)	Pass/ Fail	
1		2412	HT20	17.82		0.5		Pass
6		2437	HT20	17.	766	0.5		Pass
11		2462	HT20	17.	17.737		0.5	Pass
1		2422	HT40	36.40		40 0.5		Pass
4		2437	HT40	36.50		.50 0.5		Pass
7		2452	HT40	36	.40 0.5		0.5	Pass

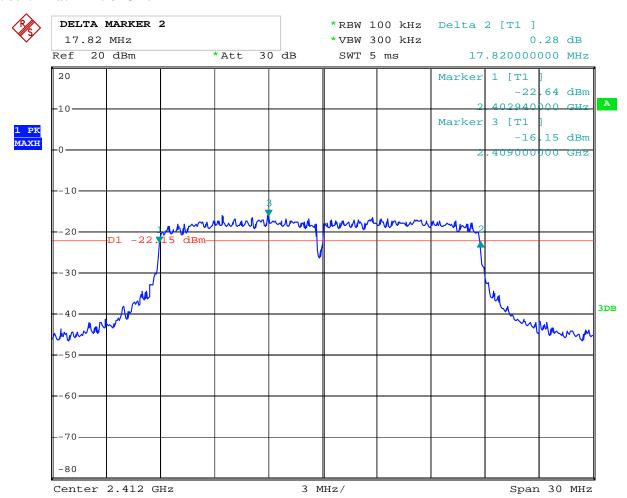
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#### **Test Plots:**

#### 1.802.11n at HT20 of CH01

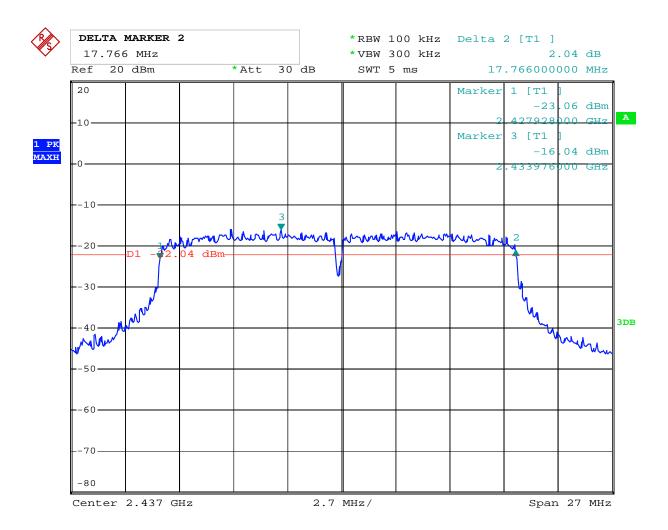


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#### 2. 802.11n at HT20 of CH06

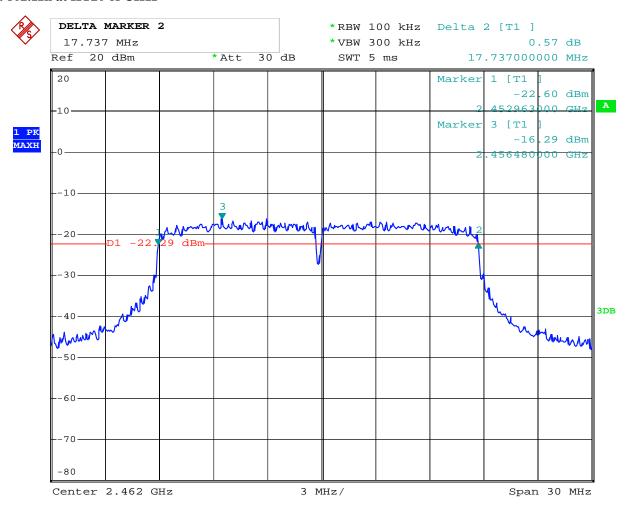


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#### 3. 802.11n at HT20 of CH11

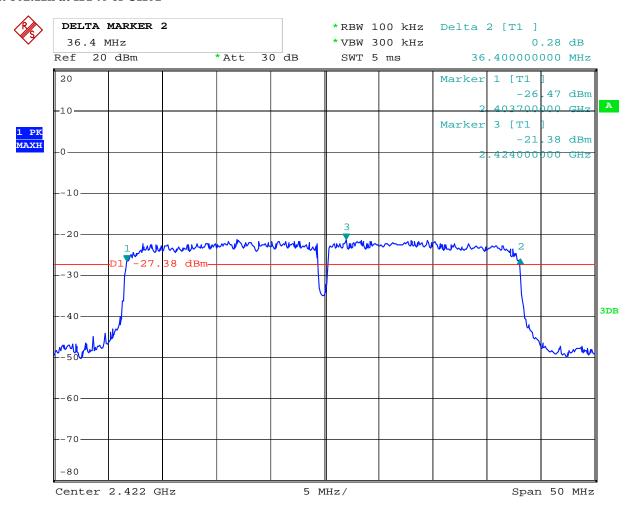


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#### 4. 802.11n at HT40 of CH01

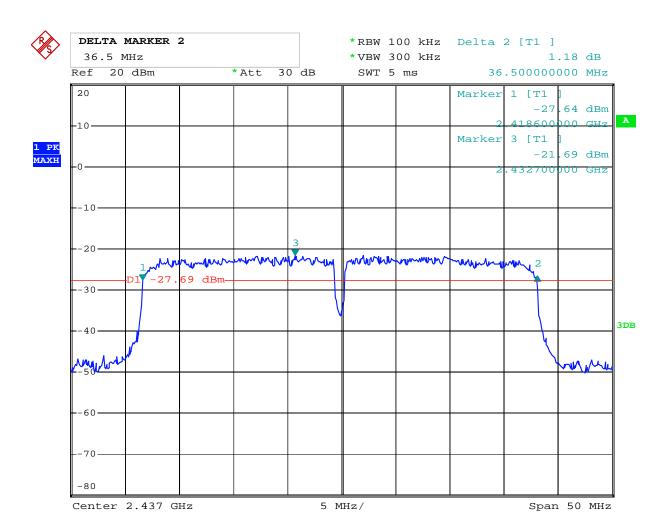


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#### 5. 802.11n at HT40 of CH04

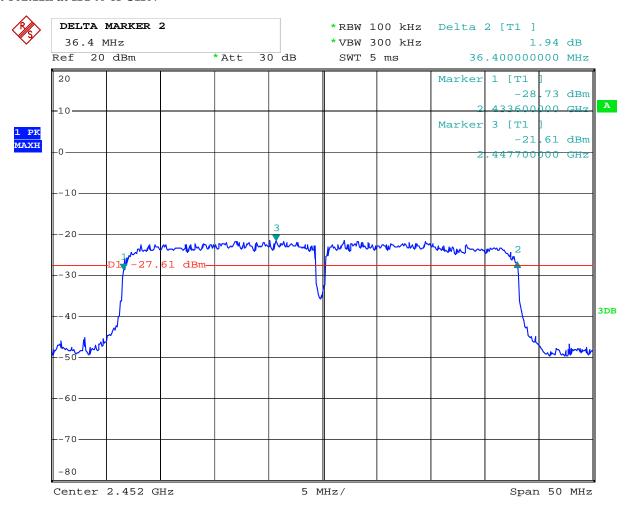


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#### 6. 802.11n at HT40 of CH07



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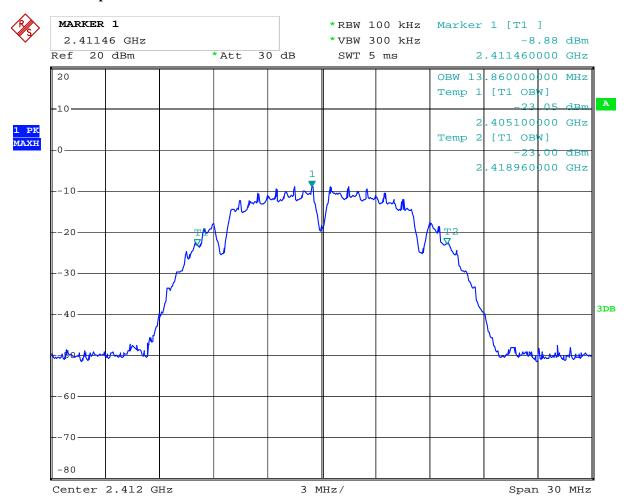
### 99% Occupied Bandwidth

EUT		MID		Model		HS-9DTB4-8GB		
Mode	de 802.11b			Input Voltage		AC 120V		
Temperat	ure	24	4 deg. C,	Humidity 56% RH		6 RH		
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)		ndwidth Hz)	Minimum Limit (MHz)		Pass/ Fail
1		2412	1	13.86				Pass
6		2437	1	13	.80			Pass
11		2462	1	13.80				Pass
1		2412	11	13.62				Pass
6		2437	11	13.62				Pass
11		2462	11	13	.62			Pass

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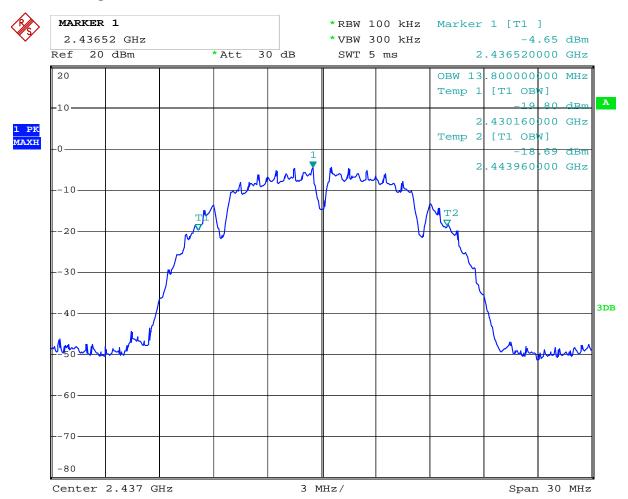




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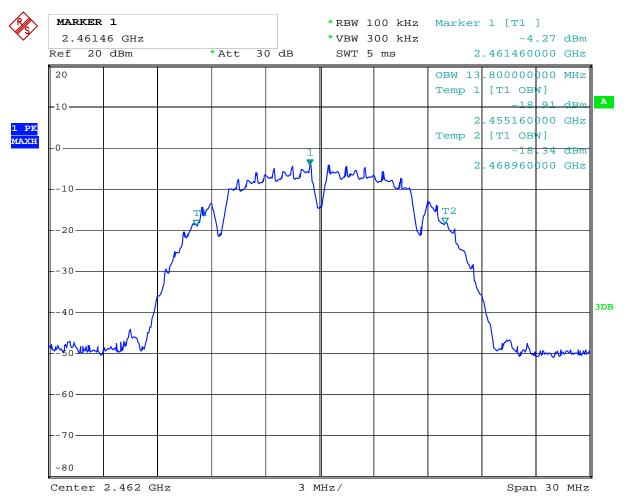


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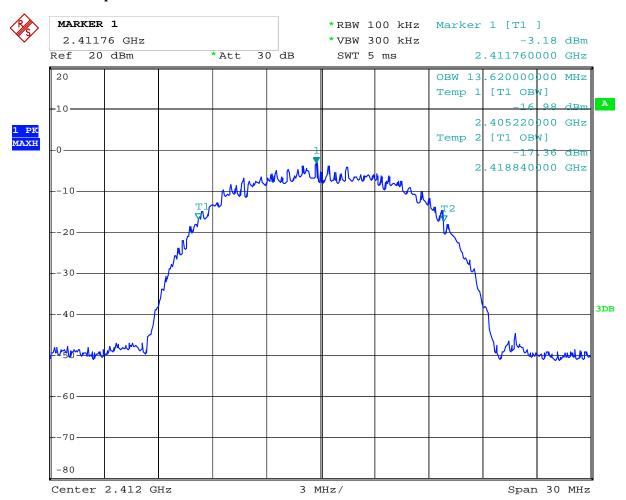


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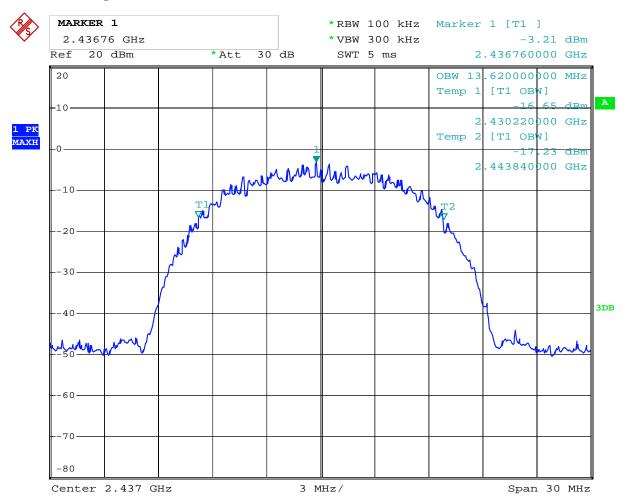




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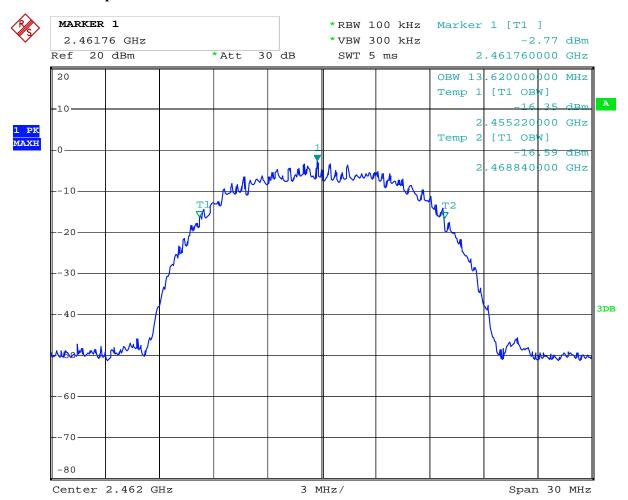




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## 99% Occupied Bandwidth

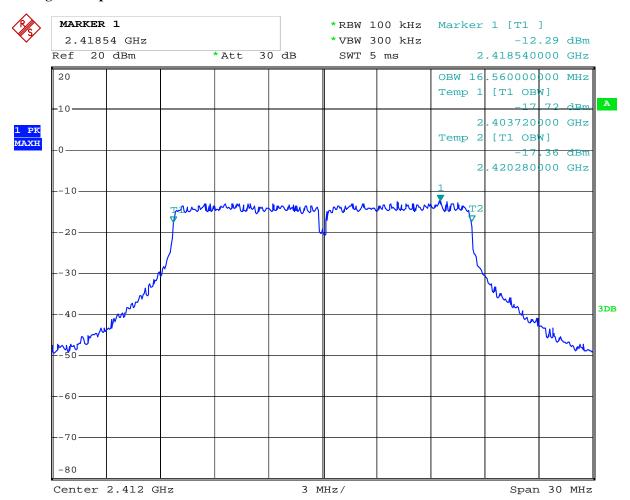
EUT	UT		MID		Model		HS-9DTB4-8GB			
Mode		802.1		02.11g Inp		Input Voltage		120V		
Temperat	ure	24	4 deg. C,		Humidity		56% RH			
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	,,,,,,	ndwidth Hz)	Minimum Limit (MHz)		Pass/		Pass/ Fail
1		2412	6	16	.56			Pass		
6		2437	6	16.56		56		Pass		
11		2462	6	16	.56			Pass		

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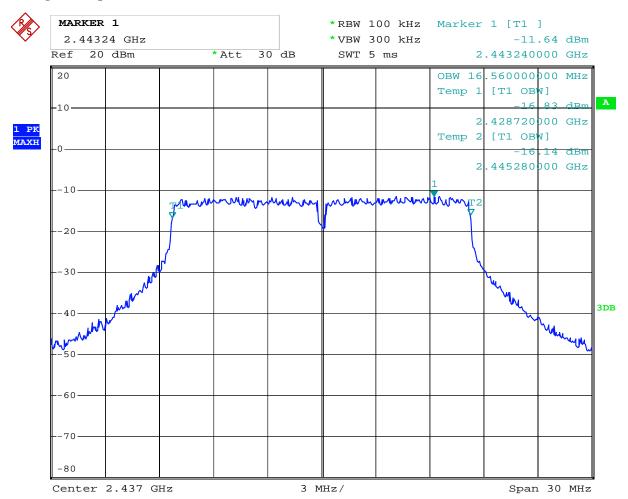




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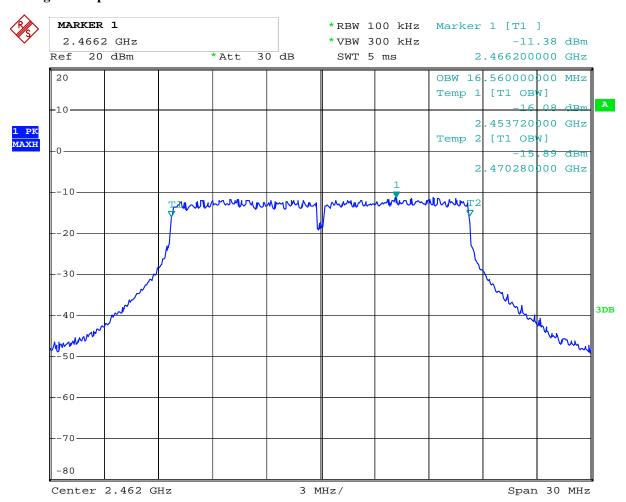




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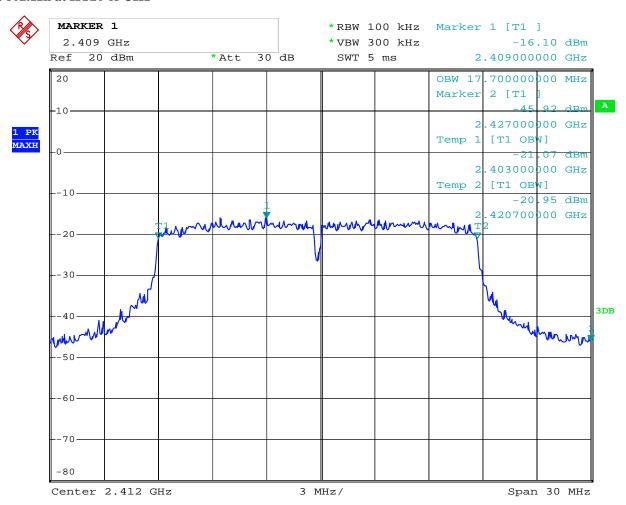
### 99% Occupied Bandwidth

EUT			MID		Model		HS-9DTB4-8GB	
Mode	Mode 8		02.11n		Input Voltage		AC 120V	
Temperat	ure	24	4 deg. C,		Humidity		56% RH	
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	99% Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail
1		2412	HT20	17	.70			Pass
6		2437 HT20 1		17.	17.712			Pass
11		2462	HT20	17	.70			Pass
1		2422	HT40	36.00				Pass
4		2437	HT40	36.00				Pass
7		2452	HT40	36	.10			Pass

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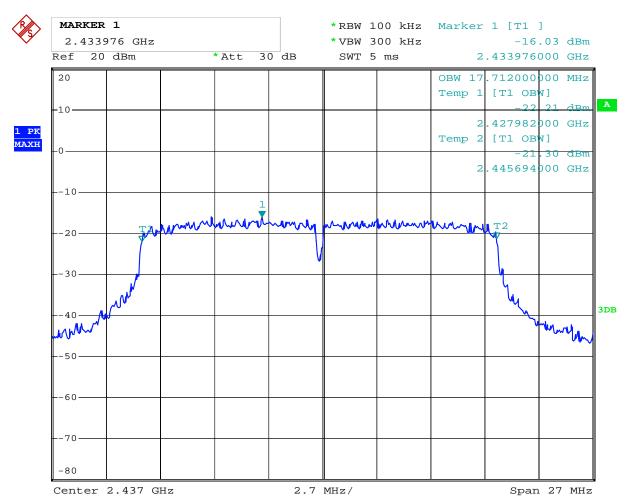




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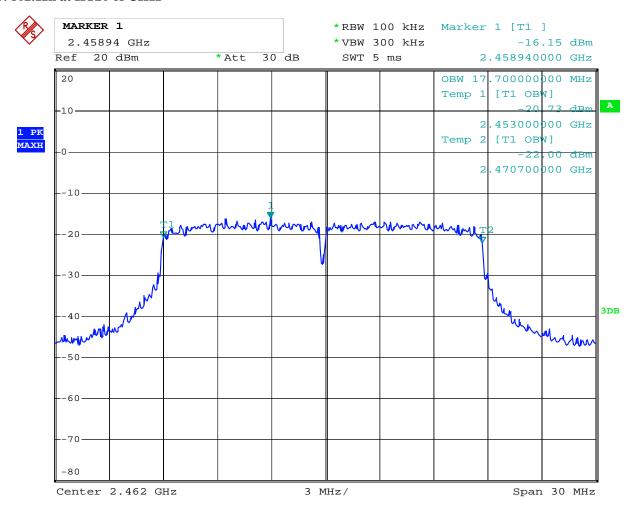




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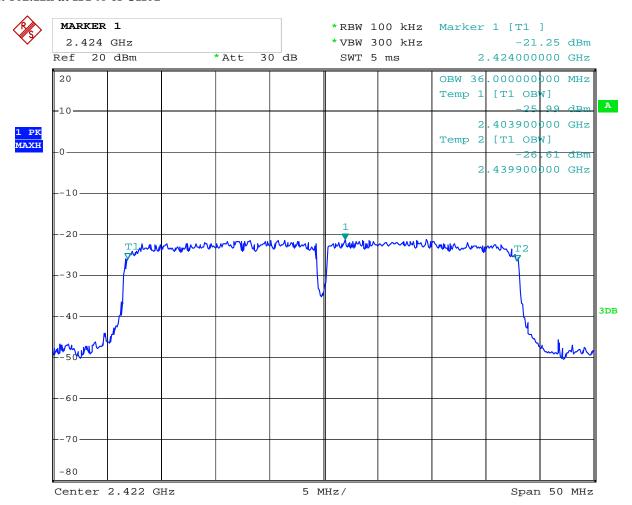




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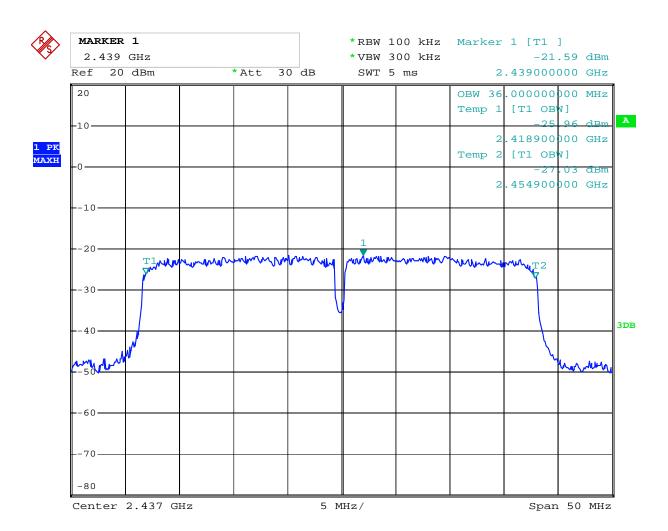




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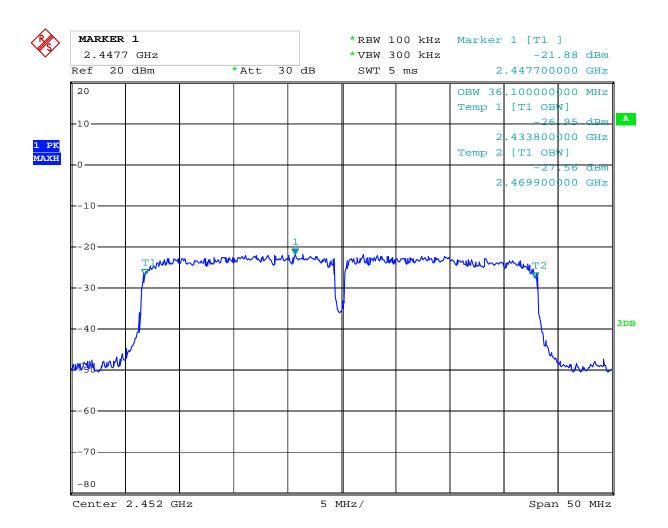




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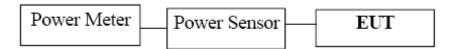
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# 8. Maximum Peak Output Power

## 8.1 Test Setup



## 8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

### **8.3 Test Procedure**

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the peak power was measured

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### **8.4Test Results**

EUT		MID Mod		odel HS-9		9DTB4-8GB	
Mode		802.11b Input Voltage		Input Voltage		ee Below	
Temperati	ure	24 deg	g. C,	Humidity			56% RH
Channel	Cha	annel Frequency (MHz)	Peak Power C (dBm)	ver Output Bm)		Power nit m)	Pass/ Fail
1		2412	10.12	.2		)	Pass
6		2437 10.26		30		)	Pass
11		2462	10.18	10.18		)	Pass

Note: 1. At finial test to get the worst-case emission at 11Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EUT		MII	)	M	odel	HS-9	DTB4-8GB
Mode		802.1	1g	Input	Voltage S		ee Below
Temperati	ure	24 deg	g. C,	Humidity		:	56% RH
Channel	Cha	annel Frequency (MHz)	Peak Power C (dBm)	Output	Peak F Lin (dB	nit	Pass/ Fail
1		2412	9.76		30		Pass
6		2437	9.92		30	)	Pass
11		2462	9.85		30	)	Pass

Note: 1. At finial test to get the worst-case emission at 6Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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EUT		MII	D	Mod		HS-9	9DTB4-8GB	
Mode		802.11n (	(HT20)	Input	Voltage S		See Below	
Temperat	ure	24 deg	g. C,	Humidity		;	56% RH	
Channel	Cha	annel Frequency (MHz)	Peak Power C (dBm)	Power Output (dBm)		Power nit m)	Pass/ Fail	
1		2412 9.			30	)	Pass	
6		2437 9.36			30		Pass	
11		2462	9.32		30	)	Pass	

Note: 1. At finial test to get the worst-case emission at 11n HT20 for CH01, CH06 and CH11

The result basic equation calculation as follow:
 Peak Power Output = Peak Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EUT		MII	MID Mod		odel	HS-9	DTB4-8GB
Mode		802.11n (	HT40)	Input	Voltage S		ee Below
Temperat	ure	24 deg	g. C,	Humidity		:	56% RH
Channel	Cha	annel Frequency (MHz)	Peak Power (dBm)	Output	Peak F Lin (dB	nit	Pass/ Fail
1		2422	4.45		30		Pass
4		2437	4.83	4.83		)	Pass
7		2452	4.67		30	)	Pass

Note: 1. At finial test to get the worst-case emission at 11n HT40 for CH01, CH04 and CH07

- 2. The result basic equation calculation as follow:

  Peak Power Output = Peak Power Reading + Cable loss + Attenuator
- 3. The worse case was recorded

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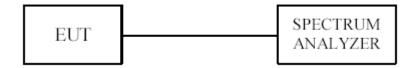
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# 9. Power Spectral Density Measurement

## 9.1 Test Setup



# 9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

#### 9.3 Test Procedure

- 1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
- 2. Set the RBW = 10 kHz.
- 3. Set the VBW  $\geq$  30 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be  $\leq 8$  dBm.

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### 9.4Test Result

EUT		MII	MID		odel	HS-9DTB4-8GB		
Mode		802.11b 1	1Mbps	Mbps Input V		I	AC 120V	
Temperati	ure	24 deg	g. C,	Humidity		:	56% RH	
Channel	Cha	annel Frequency (MHz)	Final RF Po Level in 3kH (dBm)		Maximum Limit (dBm)		Pass/ Fail	
			11Mbps					
1		2412	-12.93		8		Pass	
6		2437 -13.02		•	8	•	Pass	
11		2462	-12.81		8		Pass	

EUT		MII	D	Model		HS-9DTB4-8GB	
Mode		802.11b	1Mbps	Input Voltage		I	AC 120V
Temperat	ure	24 deg	g. C,	Humidity			56% RH
Channel	Ch	annel Frequency (MHz)	Final RF Po Level in 3kH (dBm)	z BW Maximi		m Limit m)	Pass/ Fail
			1Mbps				
1		2412	-16.76		8		Pass
6		2437	-16.59		8		Pass
11		2462	-16.70		8		Pass

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EUT		MII	MID M		odel HS-9		DTB4-8GB	
Mode		802.11g	802.11g 6Mbps Input Vo		Voltage A		AC 120V	
Temperat	ure	24 deg	g. C,	Humidity		:	56% RH	
Channel	Cha	annel Frequency (MHz)	Final RF Po Level in 3kH: (dBm)	z BW   Maxim		m Limit m)	Pass/ Fail	
			6Mbps					
1		2412	-19.49		8		Pass	
6		2437	-18.42		8		Pass	
11		2462	-18.72		8		Pass	

EUT		MII	MID		odel HS-9		DTB4-8GB	
Mode		802.11n	802.11n HT20 Input V		Voltage A		AC 120V	
Temperati	ure	24 deg	g. C,	Humidity		:	56% RH	
Channel	Cha	annel Frequency (MHz)	Final RF Po Level in 3kH: (dBm)		Maximum Limit (dBm)		Pass/ Fail	
			HT20					
1		2412	-23.88		8		Pass	
6		2437 -23.22			8		Pass	
11		2462	-23.84	•	8		Pass	

EUT		MII	MID Mod		odel HS-9		9DTB4-8GB	
Mode		802.11n	2.11n HT40 Input V		Voltage A		AC 120V	
Temperati	ure	24 deg	g. C,	Humidity		:	56% RH	
Channel	Cha	annel Frequency (MHz)	Final RF Po Level in 3kH: (dBm)		Maximum Limit (dBm)		Pass/ Fail	
			HT40					
1		2422	-28.62		8		Pass	
6		2437 -28.02			8		Pass	
11		2452	-29.22		8		Pass	

The report refers only to the sample tested and does not apply to the bulk.

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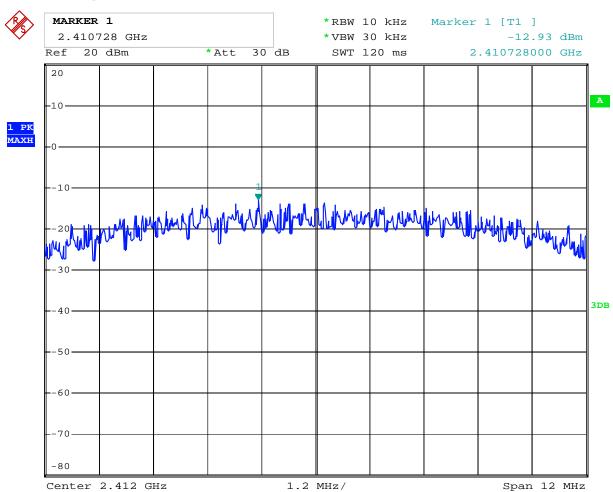
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## 9.5 Photo of Power Spectral Density Measurement

1.802.11b at 11Mbps of CH01



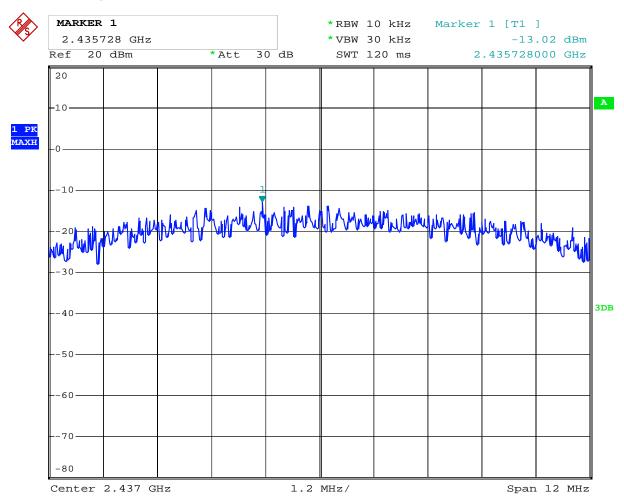
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### 2. 802.11b at 11Mbps at CH06



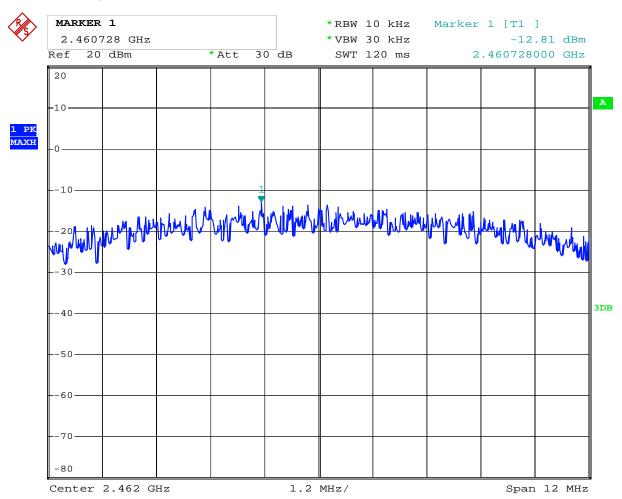
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## 3. 802.11b at 11Mbps of CH11



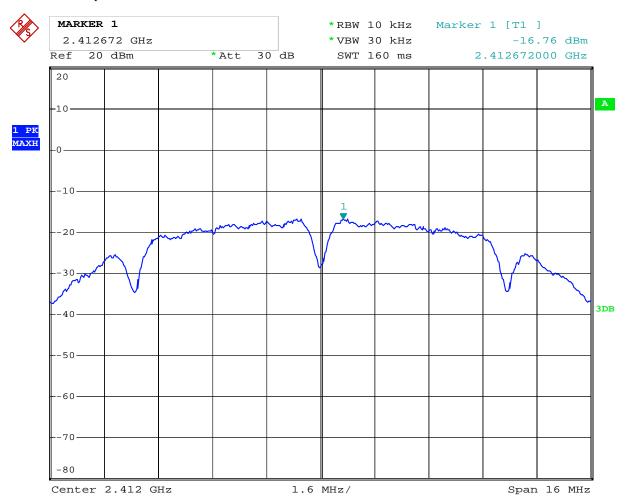
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## 4. 802.11b at 1Mbps of CH1



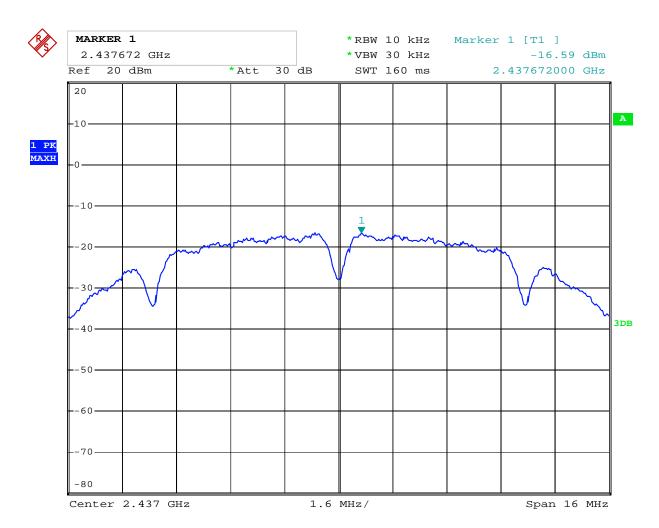
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## 5. 802.11b at 1Mbps of CH6



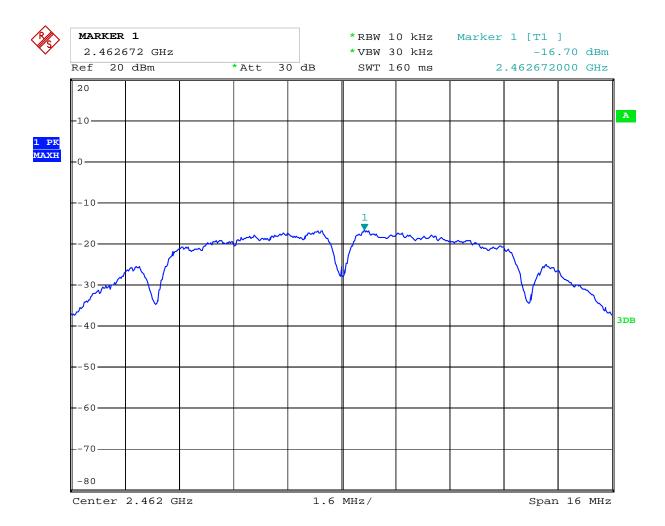
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## 6. 802.11b at 1Mbps of CH11



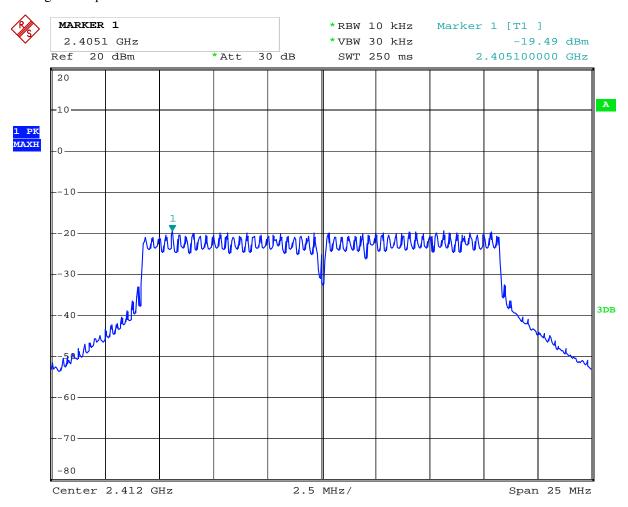
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## 7. 802.11g at 6Mbps of CH1



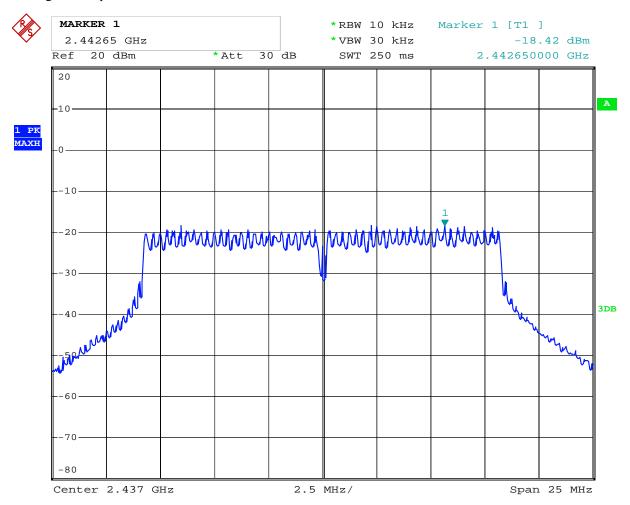
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## 8. 802.11g at 6 Mbps of CH6



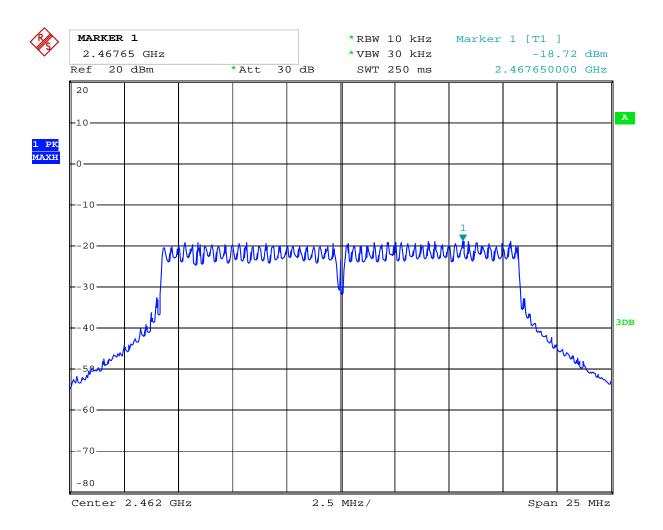
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## 9. 802.11g at 6 Mbps of CH11

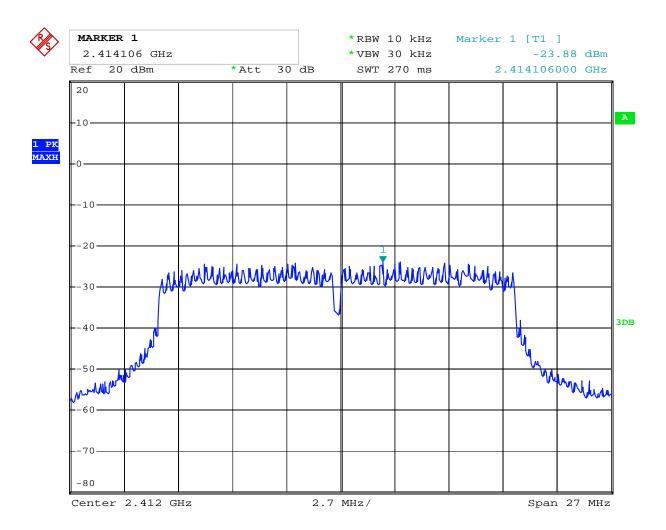


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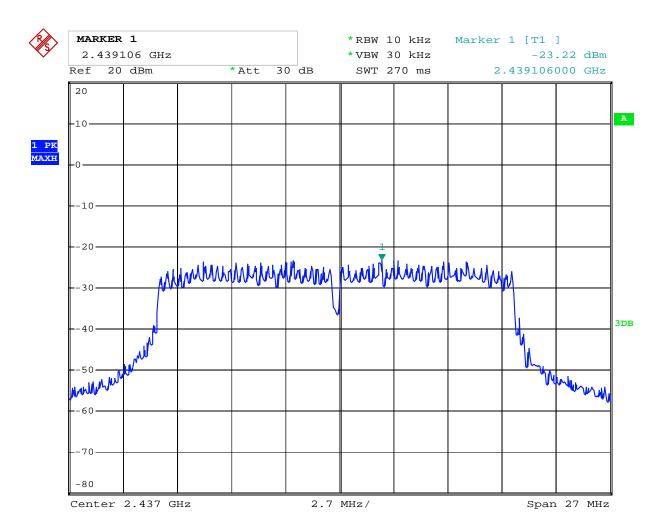


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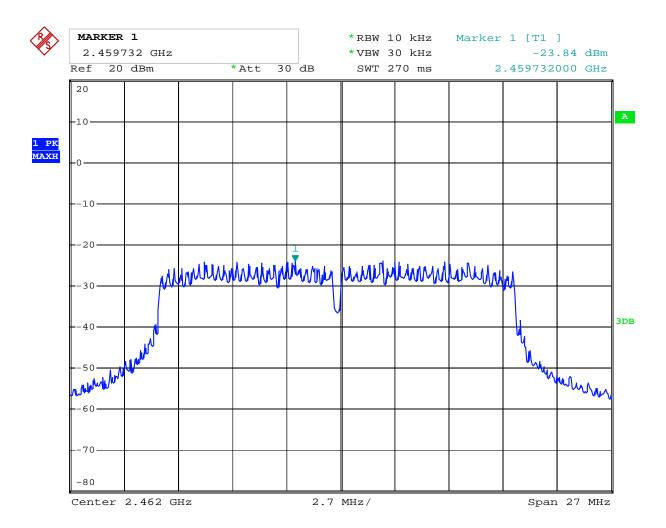


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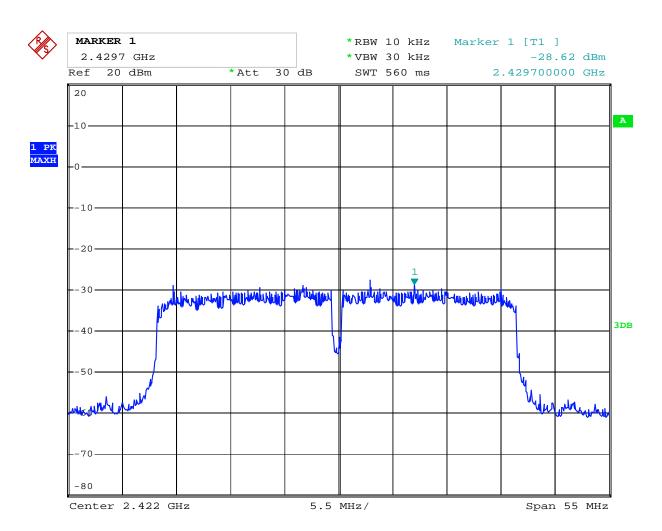


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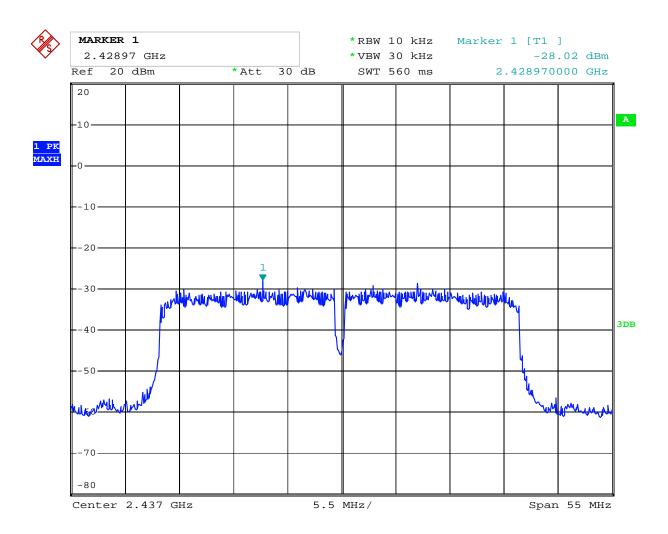


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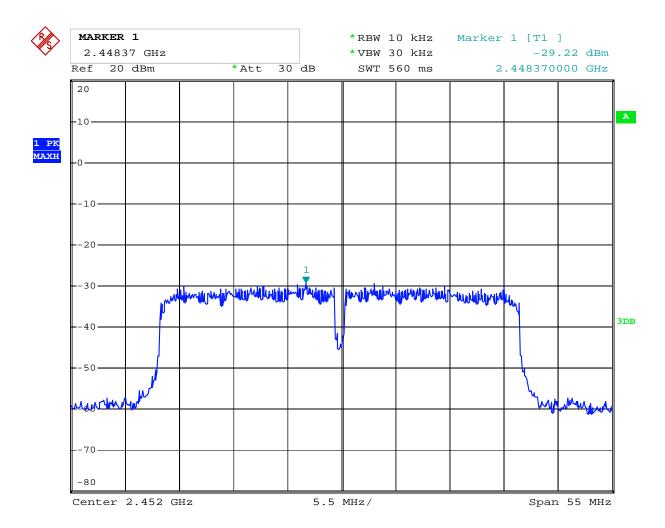


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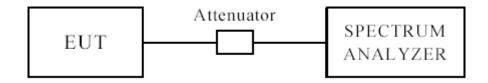
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### **10 Out of Band Measurement**

## 10.1 Test Setup for band edge



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

### 10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

#### **10.3 Test Procedure**

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test.( Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector)

For bandage test, the spectrum set as follows: RBW=VBW=100 kHz. A conducted measurement used

## 10.4 Test Result

Please see next pages

Note: 1. this is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), after pre-test. It was found that the worse radiated emission was get at the lying position.

2. The worse case was recorded

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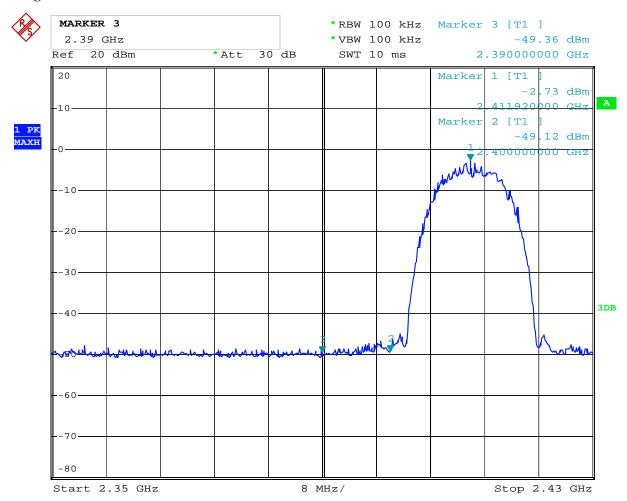
### For 802.11b mode

CH01 at 11Mbps

**10.4** Band-edge and Restricted band Measurement

Product:		MID	Model:	HS-9DTB4-8GB			
Mode	Keeping Transmitting		Input Voltage	AC 120V			
Temperature	24 deg. C,		Humidity	56% RH			
Test Result:	Pass		Detector	PK			
2400	PK (dBμV/m)	42.23	T ::4	$74(dB\mu V/m)$			
	AV (dBμV/m)		Limit	$54(dB\mu V/m)$			
2390	PK (dBμV/m)	41.61	Limit	$74(dB\mu V/m)$			
	AV (dBμV/m)		Limit	54(dBμV/m)			

### **Test Figure:**



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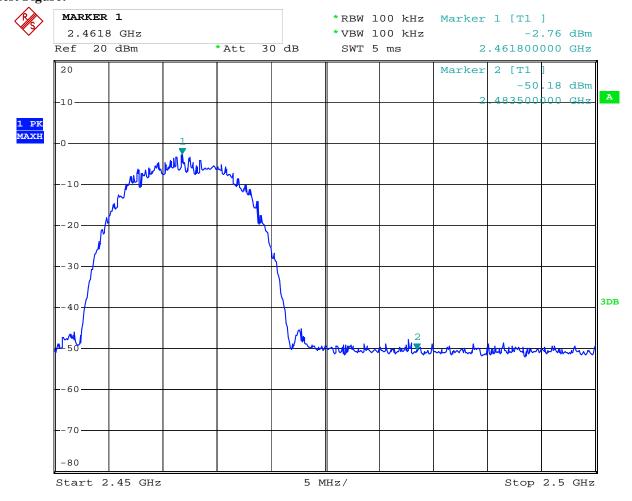


### CH11 at 11Mbps

### **10.4** Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
2483.5	PK (dBµV/m)	42.73	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)		Limit	$54(dB\mu V/m)$

### **Test Figure:**



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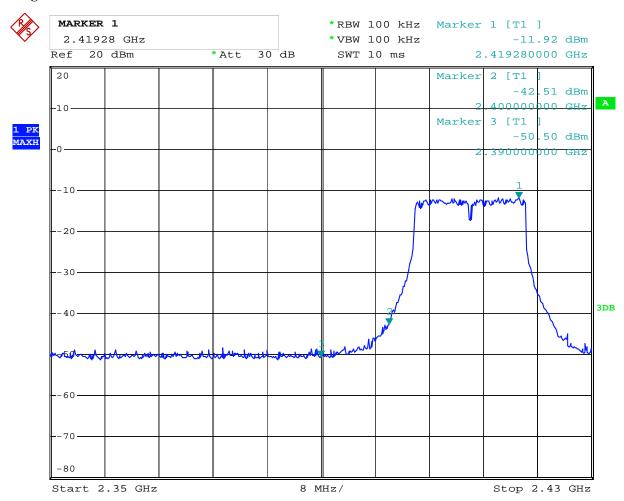
### For 802.11g mode

CH01 at 6Mbps

10.4 Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBµV/m)	53.29	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)	37.55	Limit	$54(dB\mu V/m)$
2390	PK (dBμV/m)	42.18	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)		Limit	$54(dB\mu V/m)$

### **Test Figure:**



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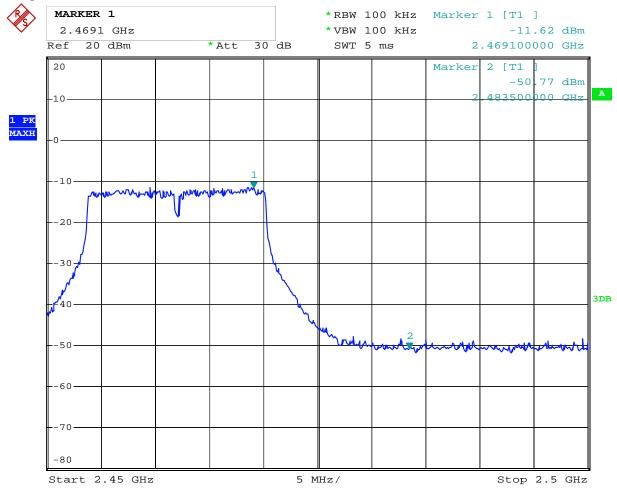


### CH11 at 6Mbps

### **10.4** Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBµV/m)	43.20	T ::4	$74(dB\mu V/m)$
	$AV (dB\mu V/m)$		Limit	$54(dB\mu V/m)$

# **Test Figure:**



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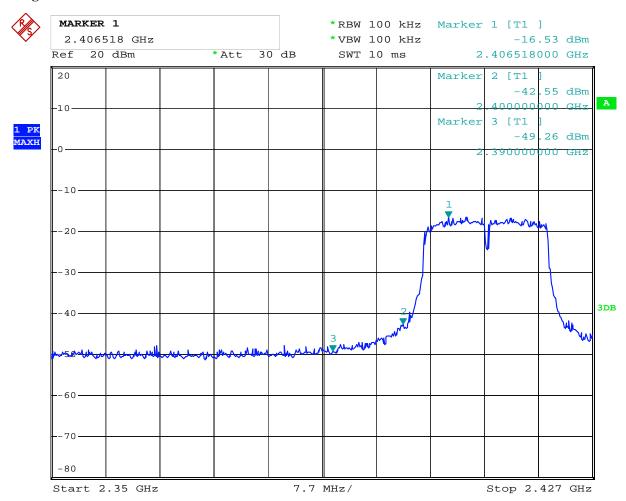
## For 802.11n (HT20) mode

CH01 at 65Mbps

10.4 Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBµV/m)	51.89	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)	37.03	Limit	$54(dB\mu V/m)$
2390	PK (dBµV/m)	41.75	Limit	$74(dB\mu V/m)$
	AV (dBμV/m)			$54(dB\mu V/m)$

### **Test Figure:**



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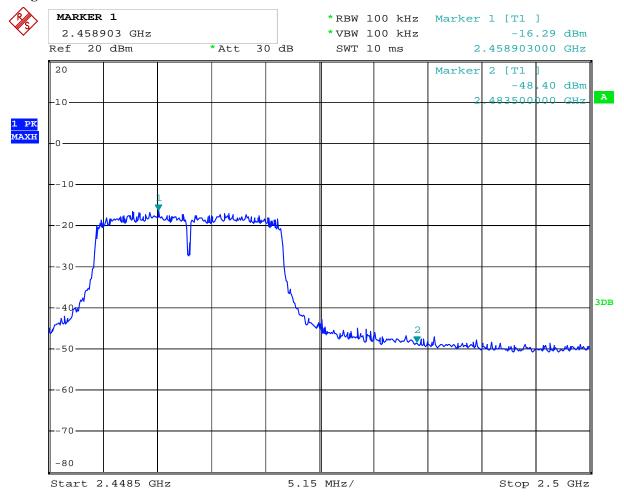


### CH11 at 65Mbps

### **10.4** Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBµV/m)	43.72	T in it	74(dBμV/m)
	$AV (dB\mu V/m)$		Limit	54(dBμV/m)

## **Test Figure:**



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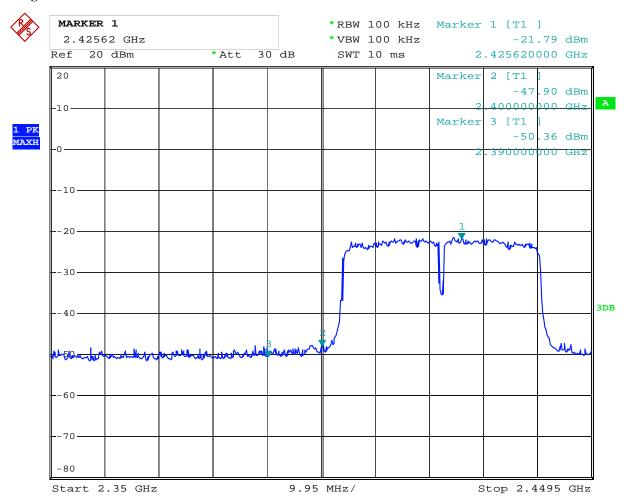
## For 802.11n (HT40) mode

CH01 at 65Mbps

10.4 Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2400	PK (dBμV/m)	46.15	T ::4	$74(dB\mu V/m)$
	AV (dBμV/m)		Limit	$54(dB\mu V/m)$
2390	PK (dBμV/m)	40.58	Limit	74(dBμV/m)
	AV (dBμV/m)			54(dBμV/m)

### **Test Figure:**



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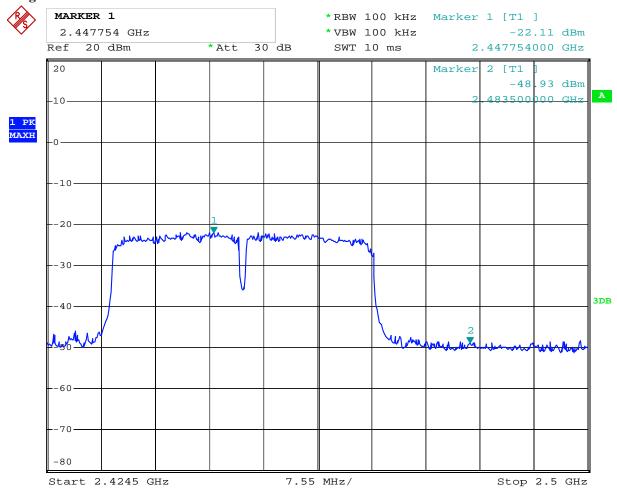


### CH7 at 65Mbps

**10.4** Band-edge and Restricted band Measurement

Product:	MID		Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting		Input Voltage	AC 120V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
2483.5	PK (dBμV/m)	42.79	T in it	$74(dB\mu V/m)$
	AV (dBμV/m)		Limit	$54(dB\mu V/m)$

# **Test Figure:**



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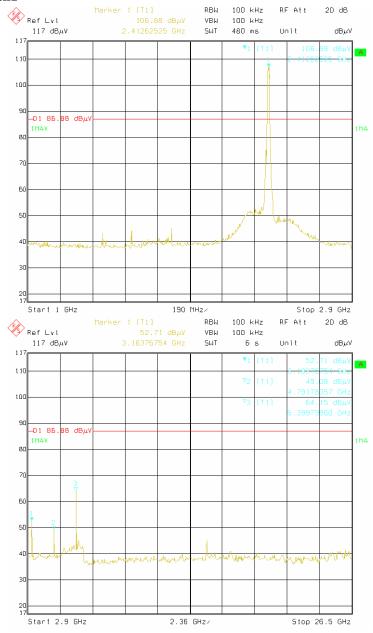
Date: 2012-09-03



#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11b ch1



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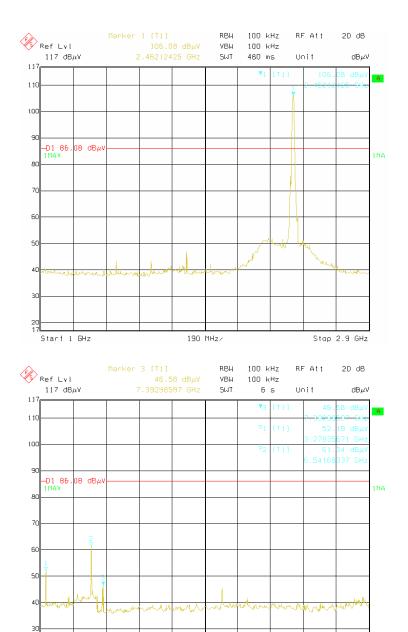
Date: 2012-09-03



### 10.4 Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11b ch11



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Start 2.9 GHz

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2.36 GHz/

Stop 26.5 GHz

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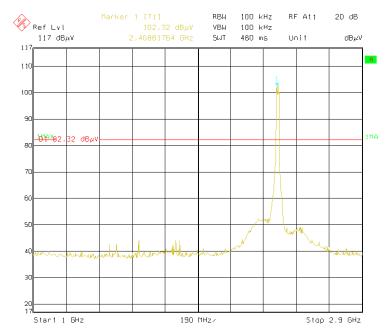
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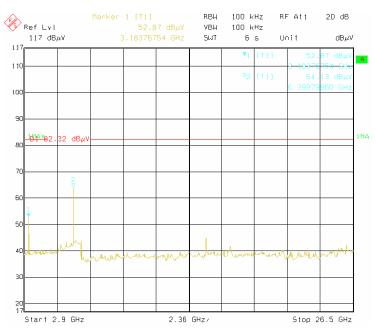


#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11g ch1





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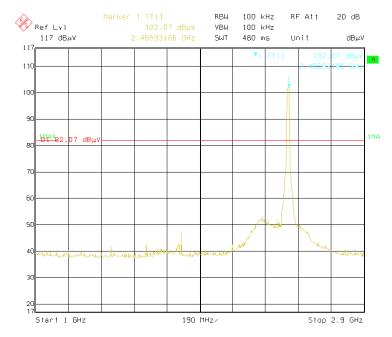
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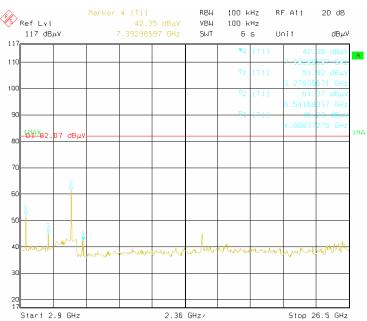


#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11g ch11





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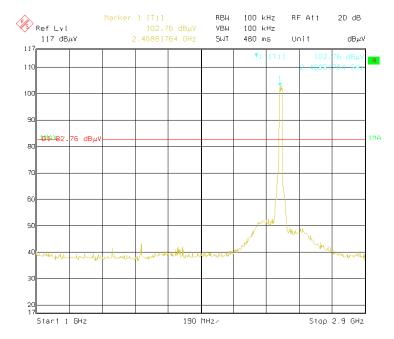
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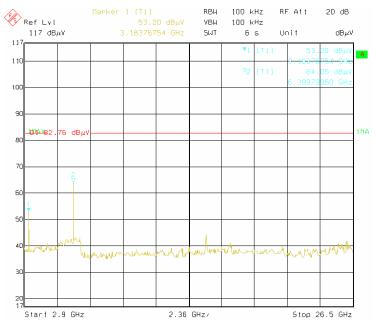


#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11n HT20 ch1





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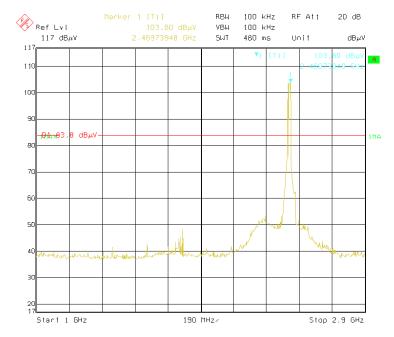
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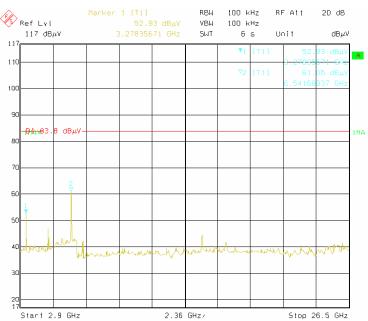


#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11n HT20 ch11





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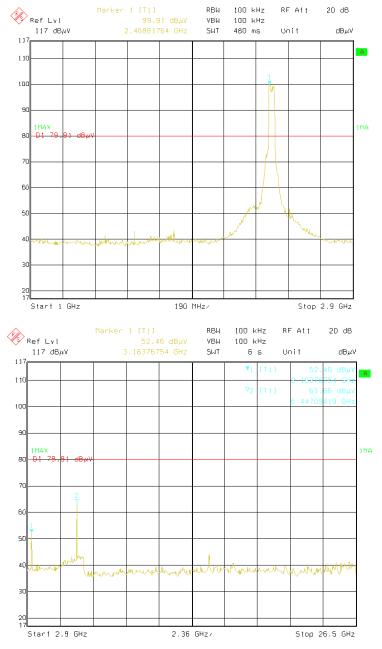
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#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11n HT40 ch1



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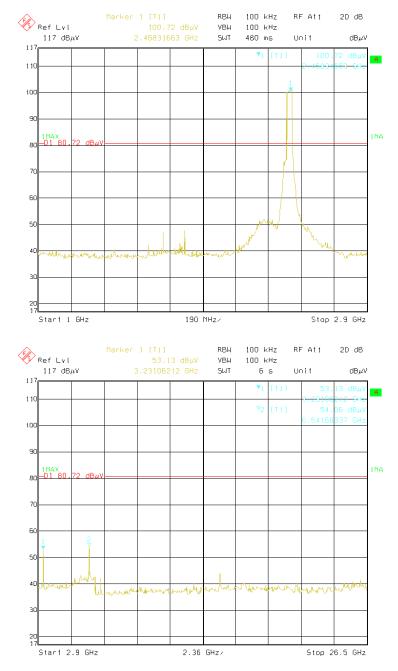
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#### **10.4** Conducted Spurious Emissions

Product:	MID	Model:	HS-9DTB4-8GB
Mode	Keeping Transmitting	Input Voltage	AC 120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure: 802.11n HT40 ch7



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## 11.0 Antenna Requirement

## 11.1 Standard Applicable

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

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

#### 11.2 Antenna Connected construction

PCB antenna used. The maximum Gain of the antennas is 2.0dBi.

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#### 12.0 FCC ID Label

FCC ID: YH5-9DTB4 IC: 8012A-9DTB4

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### Mark Location:



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#### 13.0 Photo of testing

Conducted Emission Test Setup:



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## Radiated Emission Test Setup:





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## Photographs - EUT

#### Outside view





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#### Outside view



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Inside view





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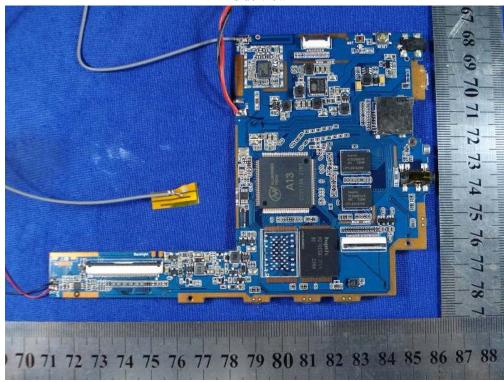
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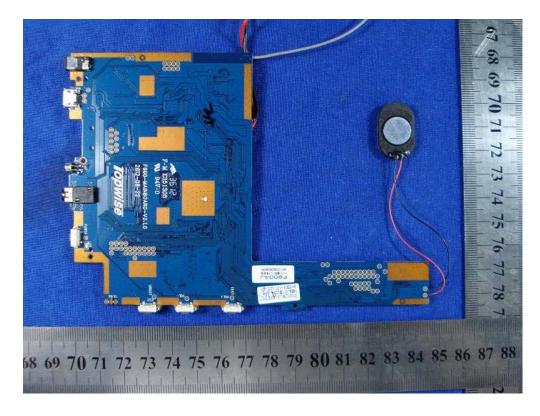
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Inside view





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Power Supply





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