



# FCC TEST REPORT (WIFI 5G)

**Product:** Mobile Hotspot Folio

Model No.: Y860OA

FCC ID: 2ACCJB005

Applicant: TCL Communication Ltd.

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Address: Park, Pudong, Shanghai, China

Manufacturer: TCL Mobile Communication Co. Ltd. Huizhou

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Report No.: RF141120N008-5

Received Date: Nov. 20, 2014

Test Date: Nov. 20, 2014 ~ Dec. 01, 2014

Issued Date: Dec. 02, 2014

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## **RELEASE CONTROL RECORD**

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF141120N008-5	Original release	Dec. 02, 2014

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## 1 CERTIFICATION

PRODUCT: Mobile Hotspot Folio

**BRAND NAME:** ALCATEL ONETOUCH

MODEL NO.: Y860OA

APPLICANT: TCL Communication Ltd.

**TESTED:** Nov. 20, 2014 ~ Dec. 01, 2014

TEST SAMPLE: PRODUCT UNIT

STANDARDS: FCC Part 15, Subpart E (15.407), Section 15.407

ANSI C63.10-2009

The above equipment has been tested by **Bureau Veritas Shenzhen Co., Ltd. Dongguan 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: Dec. 02, 2014

(Yuqiang Yin / Engineer)

APPROVED BY : \_\_\_\_\_\_\_ , DATE: \_\_\_\_\_ Dec. 02, 2014

(Glyn He / Supervisor)

## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPL	APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)								
STANDARD SECTION	TEST TYPE AND LIMIT	RESUL T	REMARK						
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -19.31dB at 0.50391MHz.						
15.407(b/1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -10.2dB at 5860.00MHz.						
15.407(a/1/2/3)	15.407(a/1/2/3) Peak Transmit Power		Meet the requirement of limit.						
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.						
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.						
15.203	Antenna Requirement	PASS	No antenna connector is used.						

## 2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
	9KHz ~ 30MHz	2.74dB
Radiated emissions	30MHz ~ 1GMHz	3.55dB
Nadiated emissions	1GHz ~ 18GHz	4.84dB
	18GHz ~ 40GHz	1.94dB

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

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## 3 GENERAL INFORMATION

## 3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile Hotspot Folio		
MODEL NO.	Y860OA		
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (battery)		
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK		
MODULATION TECHNOLOGY	OFDM		
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps		
TRANSPER RATE	802.11n: up to MCS7		
OPERATING FREQUENCY	5745 ~ 5850MHz		
NUMBER OF CHANNEL	5 for 802.11a, 802.11n (20MHz)		
OUTPUT POWER	175.115mW for 5745 ~ 5850MHz		
ANTENNA TYPE	PCB Antenna with 2dBi gain		
I/O PORTS	Refer to user's manual		
CABLE SUPPLIED	USB Cable: Shielded, Detachable, 1.0 meter		

#### NOTE:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2. The EUT incorporates a SISO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11a	2TX/2RX
802.11n (20MHz)	2TX/2RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

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#### 3.2 DESCRIPTION OF TEST MODES

## FOR 5725 ~ 5850MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	157 5785MHz		

#### 3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE		APPLICA	ABLE TO	DESCRIPTION		
MODE	RE≥1G	RE<1G	PLC	APCM	DESCRIPTION	
Α	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	-	Powered by Adapter with wifi(5G) link	
В	-	-	-	√	Powered by Battery with wifi(5G) link	
С	-	-	-	-	Powered by USB with wifi(5G) link	

Where

RE≥1G: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

#### NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-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	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Α	802.11a	5725-5850	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0

#### RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Α	802.11a	5725-5850	149 to 165	149	OFDM	BPSK	6.0

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#### **POWER LINE CONDUCTED EMISSION TEST:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Α	802.11a	5725-5850	149 to 165	149	OFDM	BPSK	6.0

#### **BANDEDGE MEASUREMENT:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
Α	802.11a	5725-5850	149 to 165	149, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	3123-3030	149 to 165	149, 165	OFDM	BPSK	MCS0

#### ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
В	802.11a	5725-5850	149 to 165	149, 157, 165	OFDM	BPSK	6.0
В	802.11n (20MHz)	3723-3030	149 to 165	149, 157, 165	OFDM	BPSK	MCS0

### **TEST CONDITION:**

APPLICABLE TO	APPLICABLE TO ENVIRONMENTAL CONDITIONS		TESTED BY	
RE<1G	23deg. C, 62%RH	DC 5V By Adapter	Blue Zheng	
<b>RE≥1G</b> 23deg. C, 62%RH		DC 5V By Adapter	Blue Zheng	
PLC	24deg. C, 61%RH	DC 5V By Adapter	Yuqiang Yin	
APCM	23.5deg. C, 60%RH	DC 3.8V By battery	Yuqiang Yin	



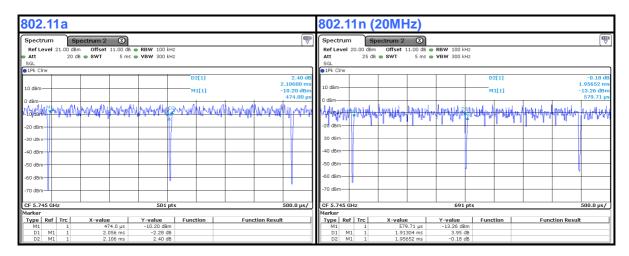
BUREAU VERITAS Test Report No.: RF141120N008-5

## 3.3 DUTY CYCLE OF TEST SIGNAL

Duty cycle of test signal is < 98%, duty factor shall be considered.

**802.11a:** Duty cycle = 2.056/2.106 = 0.976, Duty factor = 10 \* log(1/0.976) = 0.11

**802.11n (20MHz):** Duty cycle = 1.913/1.957 = 0.978, Duty factor = 10 \* log(1/0.872) = 0.10



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## 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.

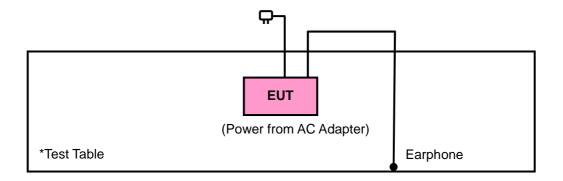
NO.	PRODUCT	PRODUCT BRAND M		SERIAL NO.	FCC ID
1	1 DC source LON		PS-6403D	010934269	N/A
2	PC HP		A6608CN	3CR83825X3	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS						
1	DC Line: Unshielded, Detachable 1.0m						
2	AC Line: Unshielded, Detachable 1.5m						

#### NOTE:

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

## 3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



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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 E (15.407)
KDB 789033 D02\_v01\_General UNII Test Procedures New Rules
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 (Verification). The test report has been issued separately.

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## 4 TEST TYPES AND RESULTS

## 4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

## 4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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

#### NOTE:

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

## 4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT					
	FIELD STRENGTH AT 3m (dBµV/m)					
	PK	AV				
	74	54				
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)				
$\sqrt{}$	PK	PK				
	-27	68.3				

**NOTE:** The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

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## 4.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU 26	100005	May 13,14	May 12,15
Bilog Antenna	Teseq	CBL 6111D	27089	Jun. 27, 14	Jun. 26, 15
Horn Antenna (1GHz -18GHz)	IETS -Lindaren		3117 00062558		May 29, 16
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Feb. 13,14	Feb. 12,17
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 05,14	Mar. 04, 15
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 03,14	Nov. 02,15
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 13,14	May 12,15
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Apr. 19,14	Apr. 18,15
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A

#### NOTE:

- 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
- 2. The test was performed in 966 Chamber.
- 3. The FCC Site Registration No. is 502831.

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#### 4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

#### NOTE:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.5 **DEVIATION FROM TEST STANDARD**

No deviation.

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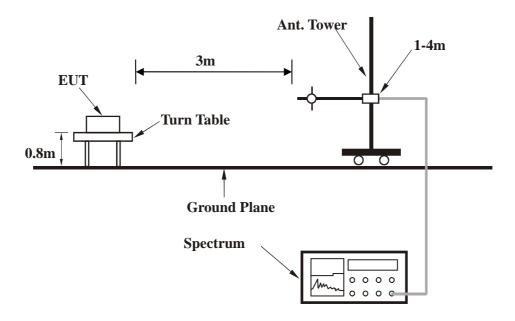
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## 4.1.6 TEST SETUP



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

## 4.1.7 EUT OPERATING CONDITION

- a. Set the EUT under full load condition and placed them on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.



## 4.1.8 TEST RESULTS

## **BELOW 1GHz WORST-CASE DATA:**

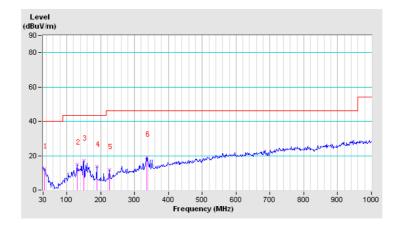
#### 802.11a

CHANNEL	Channel 149	DETECTOR FUNCTION	Ougai Book (OB)
FREQUENCY RANGE		DETECTOR FUNCTION	Quasi-Peak (QP)

	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	33.23	12.4 QP	40.0	-27.6	1.00 H	0	26.19	-13.81		
2	130.23	15.0 QP	43.5	-28.5	1.00 H	0	33.20	-18.19		
3	149.63	17.0 QP	43.5	-26.5	1.00 H	0	35.55	-18.52		
4	188.43	13.6 QP	43.5	-29.9	1.00 H	0	34.22	-20.63		
5	225.62	12.0 QP	46.0	-34.0	1.00 H	0	31.15	-19.16		
6	337.17	19.2 QP	46.0	-26.8	1.00 H	0	33.46	-14.24		

#### **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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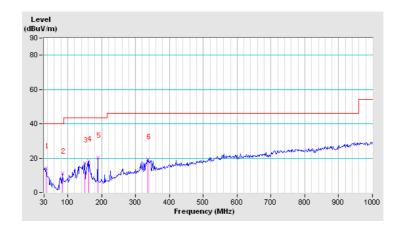


CHANNEL	Channel 149	DETECTOR FUNCTION	Ougai Book (OB)
FREQUENCY RANGE		DETECTOR FUNCTION	Quasi-Peak (QP)

	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	36.47	14.0 QP	40.0	-26.0	1.00 V	197	29.39	-15.36	
2	83.35	11.0 QP	40.0	-29.0	1.00 V	209	33.61	-22.58	
3	149.63	17.3 QP	43.5	-26.2	1.00 V	237	35.85	-18.52	
4	162.57	18.2 QP	43.5	-25.4	1.00 V	250	37.43	-19.28	
5	188.43	20.1 QP	43.5	-23.4	1.00 V	265	40.69	-20.63	
6	337.17	19.3 QP	46.0	-26.7	1.00 V	224	33.53	-14.24	

#### **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.





## **ABOVE 1GHz WORST-CASE DATA: Band 4**

#### 802.11a

CHANNEL	TX Channel 149	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY &	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	57.9 PK	68.3	-10.4	1.00 H	114	46.52	11.38
2	#5725.00	65.2 PK	78.3	-13.1	1.00 H	114	53.80	11.40
3	*5745.00	99.8 PK			1.00 H	114	88.37	11.43
4	*5745.00	86.8 AV			1.00 H	114	75.37	11.43
5	11490.00	56.3 PK	74.0	-17.7	1.00 H	165	37.77	18.53
6	11490.00	41.9 AV	54.0	-12.1	1.00 H	165	23.37	18.53
		ANTENNA	POLARITY	& TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	57.2 PK	68.3	-11.1	1.00 V	198	45.82	11.38
2	#5725.00	60.4 PK	78.3	-17.9	1.00 V	198	49.00	11.40
3	*5745.00	92.5 PK			1.00 V	198	81.07	11.43
4	*5745.00	80.8 AV			1.00 V	198	69.37	11.43
5	11490.00	56.3 PK	74.0	-17.7	1.00 V	256	37.77	18.53
6	11490.00	42.0 AV	54.0	-12.0	1.00 V	256	23.47	18.53

#### **REMARKS:**

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

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CHANNEL	TX Channel 157	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5785.00	100.2 PK			1.00 H	116	88.71	11.49	
2	*5785.00	88.3 AV			1.00 H	116	76.81	11.49	
3	11570.00	55.9 PK	74.0	-18.1	1.00 H	125	37.42	18.48	
4	11570.00	41.5 AV	54.0	-12.5	1.00 H	125	23.02	18.48	
		ANTENNA	POLARITY	& TEST DI	STANCE: V	ERTICAL A	T 3 M		
NO.	FREQ. EMISSION LIMIT MARGIN ANTENNA TABLE RAW CORRECTION								
1	*5785.00	93.2 PK			1.00 V	197	81.71	11.49	
2	*5785.00	81.3 AV			1.00 V	197	69.81	11.49	
3	11570.00	55.0 PK	74.0	-19.0	1.00 V	225	36.52	18.48	

## **REMARKS:**

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

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CHANNEL	TX Channel 165	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY	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	*5825.00	104.0 PK			1.00 H	114	92.45	11.55				
2	*5825.00	92.6 AV			1.00 H	114	81.05	11.55				
3	#5850.00	58.7 PK	78.3	-19.6	1.00 H	114	47.11	11.59				
4	#5860.00	57.0 PK	68.3	-11.3	1.00 H	114	45.40	11.60				
5	11650.00	54.9 PK	74.0	-19.1	1.00 H	118	36.48	18.42				
6	11650.00	40.7 AV	54.0	-13.3	1.00 H	118	22.28	18.42				
		ANTENNA	POLARITY	& TEST DI	STANCE: V	ERTICAL A	Г 3 М					
NO.	FREQ. (MHz)	FREQ. EMISSION LIMIT MARGIN ANTENNA TABLE RAW CORRECTION HEIGHT ANGLE VALUE FACTOR										
					` '							
1	*5825.00	96.0 PK			1.00 V	197	84.45	11.55				
2	*5825.00 *5825.00	96.0 PK 84.1 AV			Y 1	197 197	84.45 72.55	11.55 11.55				
			78.3	-21.3	1.00 V	_						
2	*5825.00	84.1 AV	78.3 <b>68.3</b>	-21.3 -10.2	1.00 V 1.00 V	197	72.55	11.55				
3	*5825.00 #5850.00	84.1 AV 57.0 PK			1.00 V 1.00 V 1.00 V	197 197	72.55 45.41	11.55 11.59				

### **REMARKS:**

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

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## 802.11n (20MHz)

CHANNEL	TX Channel 149	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA I	POLARITY	& TEST DIS	TANCE: HO	RIZONTAL	AT 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	57.0 PK	68.3	-11.3	1.00 H	115	45.62	11.38
2	#5725.00	62.7 PK	78.3	-15.6	1.00 H	115	51.30	11.40
3	*5745.00	97.7 PK			1.00 H	115	86.27	11.43
4	*5745.00	83.9 AV			1.00 H	115	72.47	11.43
5	11490.00	56.5 PK	74.0	-17.5	1.00 H	144	37.97	18.53
6	11490.00	41.8 AV	54.0	-12.2	1.00 H	144	23.27	18.53
		ANTENNA	POLARITY	/ & TEST DI	STANCE: V	ERTICAL A	T 3 M	
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	57.4 PK	68.3	-10.9	1.00 V	194	46.02	11.38
2	#5725.00	57.5 PK	78.3	-20.8	1.00 V	194	46.10	11.40
3	*5745.00	91.0 PK			1.00 V	194	79.57	11.43
4	*5745.00	78.0 AV			1.00 V	194	66.57	11.43
5	11490.00	56.1 PK	74.0	-17.9	1.00 V	211	37.57	18.53
6	11490.00	42.2 AV	54.0	-11.8	1.00 V	211	23.67	18.53

## **REMARKS:**

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

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CHANNEL	TX Channel 157	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANITENINIA	DOL ADITY	TECT DIC	TANCE: UO	DIZONTAL	AT 0 M		
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	TANCE: HO ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)	
1	*5785.00	95.7 PK			1.00 H	115	84.21	11.49	
2	*5785.00	83.5 AV			1.00 H	115	72.01	11.49	
3	11570.00	56.1 PK	74.0	-17.9	1.00 H	108	37.62	18.48	
4	11570.00	41.3 AV	54.0	-12.7	1.00 H	108	22.82	18.48	
		ANTENNA	POLARITY	& TEST DI	STANCE: V	ERTICAL A	T 3 M	-	
NO.	FREQ. EMISSION LIMIT MARGIN ANTENNA TABLE RAW CORRECTION								
1	*5785.00	91.5 PK			1.00 V	196	80.01	11.49	
2	*5785.00	78.6 AV			1.00 V	196	67.11	11.49	
3	11570.00	55.4 PK	74.0	-18.6	1.00 V	207	36.92	18.48	
4	11570.00	41.6 AV	54.0	-12.4	1.00 V	207	23.12	18.48	

## **REMARKS:**

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

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CHANNEL	TX Channel 165	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

		ANTENNA	POLARITY 8	& TEST DIS	TANCE: HO	RIZONTAL	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	*5825.00	100.3 PK			1.00 H	115	88.75	11.55
2	*5825.00	87.8 AV			1.00 H	115	76.25	11.55
3	#5850.00	59.0 PK	78.3	-19.3	1.00 H	115	47.41	11.59
4	#5860.00	57.1 PK	68.3	-11.2	1.00 H	115	45.50	11.60
5	11650.00	55.0 PK	74.0	-19.0	1.00 H	123	36.58	18.42
6	11650.00	40.6 AV	54.0	-13.4	1.00 H	123	22.18	18.42
		ANTENNA	POLARITY	& TEST DI	STANCE: V	ERTICAL A	T 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	*5825.00	95.0 PK			1.00 V	198	83.45	11.55
2	*5825.00	82.4 AV			1.00 V	198	70.85	11.55
3	#5850.00	56.7 PK	78.3	-21.6	1.00 V	198	45.11	11.59
4	#5860.00	57.3 PK	68.3	-11.0	1.00 V	198	45.70	11.60
5	11650.00	54.7 PK	74.0	-19.3	1.00 V	210	36.28	18.42
6	11650.00	40.5 AV	54.0	-13.5	1.00 V	210	22.08	18.42

## **REMARKS:**

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

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Report Version 1



#### 4.2 CONDUCTED EMISSION MEASUREMENT

#### 4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTE	D LIMIT (dBμV)
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

**NOTE**: 1. The lower limit shall apply at the transition frequencies.

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

## 4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCI	100340	May 17,14	May 16,15
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 13,14	May 12,15
<b>Artificial Mains Network</b>	Rohde&Schwarz	ESH3-Z5	100317	May 13,14	May 12,15
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

## NOTE:

- 1. The test was performed in shielded room 553.
- 2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

#### 4.2.3 TEST PROCEDURES

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

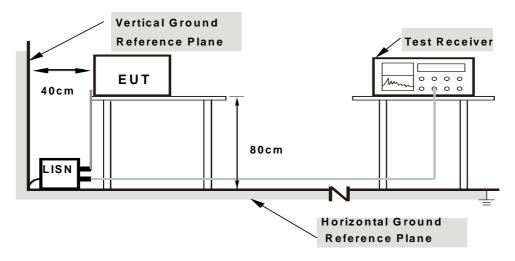
NOTE: All modes of operation were investigated and the worst-case emissions are reported.



## 4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

## 4.2.5 TEST SETUP



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

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

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

## 4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



## 4.2.7 TEST RESULTS

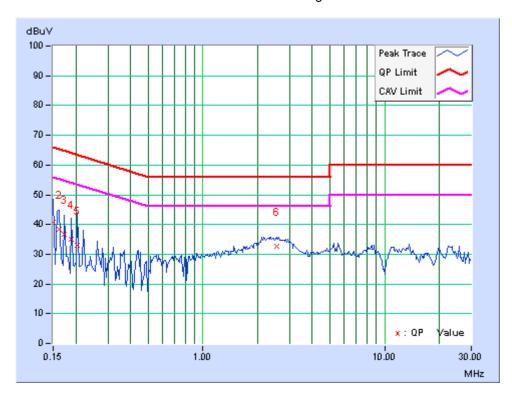
#### **CONDUCTED WORST-CASE DATA: 802.11a**

PHASE	Line	6dB BANDWIDTH	9kHz
CHANNEL	Channel 149		

No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]			on Level (uV)]		nit (uV)]	Maı (d	rgin B)
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.84	29.74	6.55	40.58	17.39	66.00	56.00	-25.42	-38.61
2	0.16172	10.80	27.52	10.59	38.32	21.39	65.38	55.38	-27.06	-33.99
3	0.17344	10.75	25.87	8.64	36.62	19.39	64.79	54.79	-28.17	-35.40
4	0.18906	10.69	24.46	4.71	35.15	15.40	64.08	54.08	-28.93	-38.68
5	0.20469	10.65	22.44	8.74	33.09	19.39	63.42	53.42	-30.33	-34.03
6	2.54297	10.03	22.79	15.40	32.82	25.43	56.00	46.00	-23.18	-20.57

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

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



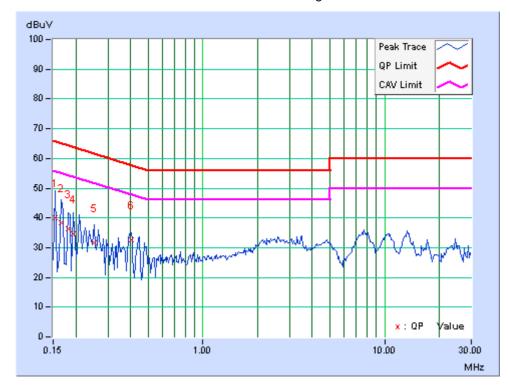


PHASE	Neutral	6dB BANDWIDTH	9kHz
CHANNEL	Channel 149		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]			on Level (uV)]		nit (uV)]	Maı (d	rgin B)
		(ub)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.63	29.27	4.03	39.90	14.66	65.79	55.79	-25.88	-41.12
2	0.16562	10.61	27.78	4.81	38.39	15.42	65.18	55.18	-26.79	-39.76
3	0.18125	10.58	25.72	5.06	36.30	15.64	64.43	54.43	-28.12	-38.78
4	0.19297	10.56	24.06	6.19	34.62	16.75	63.91	53.91	-29.29	-37.16
5	0.25156	10.54	21.04	9.74	31.58	20.28	61.71	51.71	-30.12	-31.42
6	0.40391	10.59	22.20	17.87	32.79	28.46	57.77	47.77	-24.98	-19.31

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

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





#### 4.3 PEAK TRANSMIT POWER MEASUREMENT

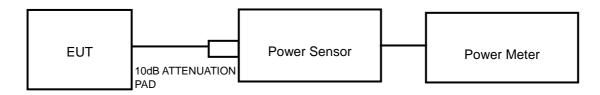
## 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Operation Band		EUT Category	LIMIT
		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≤ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
U-NII-1		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	$\sqrt{}$	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3			1 Watt (30 dBm)

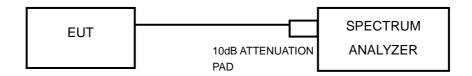
NOTE: Where B is the 26dB emission bandwidth in MHz.

## 4.3.2 TEST SETUP

#### FOR POWER OUTPUT MEASUREMENT



## **FOR 26dB BANDWIDTH**



## 4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.



#### 4.3.4 TEST PROCEDURE

#### FOR POWER MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

#### FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

- 1. Set center frequency to the nominal EUT channel center frequency.
- 2. Set span = 1.5 times to 5.0 times the OBW.
- 3. Set RBW = 1% to 5% of the OBW
- 4. Set VBW ≥ 3 · RBW
- 5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- 6. Use the 99 % power bandwidth function of the instrument (if available).
- 7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

## FOR 6dB BANDWIDTH

- 1. Set RBW = 100 kHz.
- 2. Set the video bandwidth (VBW) ≥ 3 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 frequencies) 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 specific channel frequencies individually.

## 4.3.7 TEST RESULTS

## **OUTPUT POWER:**

#### 802.11a

CHANNEL	CHANNEL FREQUENCY	MAX. OUTPUT POWER (mW)		TOTAL POWER	OWER POWER		PASS/FAI
	(MHz)	CHAIN 0	CHAIN 1	(mW)	(dBm)	(dBm)	L
149	5745	84.333	90.782	175.115	22.43	30	PASS
157	5785	79.068	73.451	152.519	21.83	30	PASS
165	5825	79.983	67.920	147.903	21.70	30	PASS

## 802.11n (20MHz)

CHANNEL	CHANNEL   POWER				TOTAL POWER	TOTAL POWER	POWER LIMIT	PASS/FAI L	
	(MHz)	CHAIN 0 CHAIN 1		(mW)	(dBm)	(dBm)			
149	5745	47.424	58.479	105.903	20.25	30	PASS		
157	5785	48.641	48.529	97.170	19.88	30	PASS		
165	5825	51.642	44.771	96.413	19.84	30	PASS		

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## 99% OCCUPIED BANDWIDTH & 6dB BANDWIDTH

#### 802.11a

CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH		6dB BAND	PASS / FAIL	
	(IVITIZ)	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	
149	5745	16.83	17.13	16.02	15.81	PASS
157	5785	17.04	17.16	16.09	15.40	PASS
165	5825	17.28	17.34	15.20	15.81	PASS

## 802.11n (20MHz)

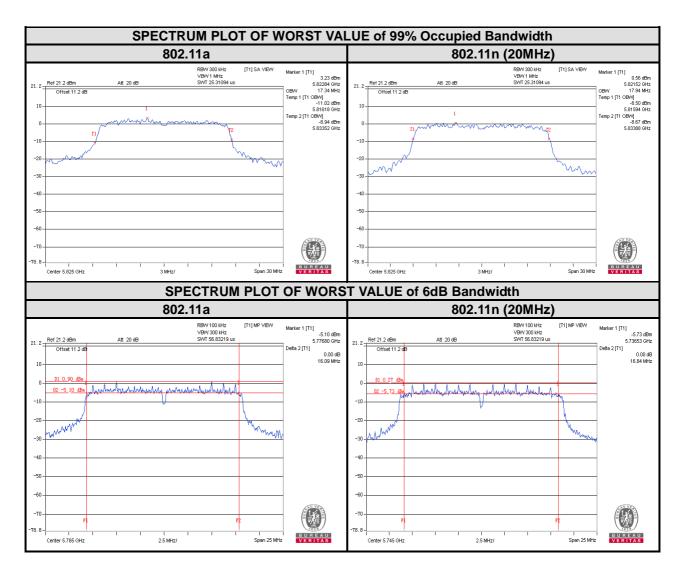
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH		6dBBANDV	PASS / FAIL	
	(IVITIZ)	CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1	
149	5745	17.88	17.94	16.79	16.84	PASS
157	5785	17.82	17.94	16.81	16.81	PASS
165	5825	17.82	17.94	16.01	16.02	PASS

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## 4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

#### 4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Operation Band		EUT Category	LIMIT
		Outdoor Access Point	
U-NII-1		Fixed point-to-point Access Point	17dBm/ MHz
O-INII-1		Indoor Access Point	
	$\sqrt{}$	Mobile and Portable client device	11dBm/ MHz
U-NII-2A			11dBm/ MHz
U-NII-2C			11dBm/ MHz
U-NII-3			30dBm/ 500kHz

## 4.4.2 TEST SETUP



#### 4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

### 4.4.4 TEST PROCEDURES

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 KHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

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## 4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

## 4.4.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

## 4.4.7 TEST RESULTS

## For U-NII-3:

#### 802.11a

CHANNEL	FREQUENCY (MHz)	/ III // CO. I I I		TOTAL POWER DENSITY (dBm)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	1.04	2.13	4.60	11.59	0.11	11.70	30	PASS
157	5785	1.09	1.67	4.39	11.38	0.11	11.49	30	PASS
165	5825	1.23	0.86	4.06	11.05	0.11	11.16	30	PASS

## 802.11n (20M)

CHANNEL	FREQUENCY (MHz)	/ // /		TOTAL POWER DENSITY (dBm)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-1.48	0.08	2.31	9.30	0.10	9.40	30	PASS
157	5785	-1.28	-0.08	2.33	9.32	0.10	9.42	30	PASS
165	5825	-1.23	-1.18	1.81	8.80	0.10	8.90	30	PASS

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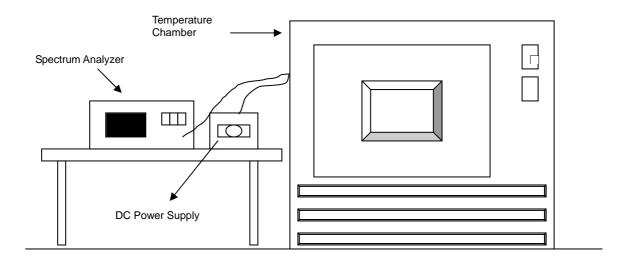


## 4.5 FREQUENCY STABILITY

## 4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

## 4.5.2 TEST SETUP



## 4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

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#### 4.5.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

#### 4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

#### 4.5.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

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## 4.5.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.											
OPERATING FREQUENCY: 5785MHz											
	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE			
<b>TEMP.</b> (℃)		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)		
50	3.8	5784.9686	-5.428	5784.9674	-5.635	5784.9689	-5.376	5784.9703	-5.134		
40	3.8	5785.0015	0.259	5784.9949	-0.882	5784.9936	-1.106	5785.0021	0.363		
30	3.8	5784.9912	-1.521	5784.9862	-2.385	5784.9907	-1.608	5784.9868	-2.282		
20	3.8	5785.0232	4.010	5785.0284	4.909	5785.027	4.667	5785.0252	4.356		
10	3.8	5785.0101	1.746	5785.0029	0.501	5785.0109	1.884	5785.0115	1.988		
0	3.8	5785.0187	3.232	5785.0196	3.388	5785.0215	3.717	5785.0125	2.161		
-10	3.8	5784.9811	-3.267	5784.984	-2.766	5784.9842	-2.731	5784.9833	-2.887		
-20	3.8	5785.0317	5.480	5785.0225	3.889	5785.0229	3.959	5785.0237	4.097		
-30	3.8	5784.9878	-2.109	5784.9843	-2.714	5784.9837	-2.818	5784.9879	-2.092		

FREQUEMCY STABILITY VERSUS VOLTAGE												
OPERATING FREQUENCY: 5785MHz												
<b>TEMP</b> . (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE				
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)			
20	4.35	5785.023	3.976	5785.0276	4.771	5785.0272	4.702	5785.026	4.494			
	3.8	5785.0232	4.010	5785.0284	4.909	5785.027	4.667	5785.0252	4.356			
	3.5	5785.0252	4.356	5785.0266	4.598	5785.0282	4.875	5785.0254	4.391			



## 5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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## 6 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---

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