



BUREAU
VERITAS

Test Report No.: RF120625N003

TEST REPORT

Applicant	TP-LINK TECHNOLOGIES CO.,LTD.
Address	Building 24 (floors 1,3,4,5) and 28 (floors 1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

Manufacturer or Supplier	TP-LINK TECHNOLOGIES CO.,LTD.
Address	Building 24 (floors 1,3,4,5) and 28 (floors 1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China
Product	5GHz 150Mbps Indoor / Outdoor Wireless Access Point
Brand Name	TP-LINK
Model	TL-WA7510N
Additional Model & Model Difference	N/A
Date of tests:	Nov. 06 ~ Nov. 15, 2012

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **FCC Part 15, Subpart C (Section 15.247)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Kent Liu Project Engineer / EMC Department	Approved by Sam Tung Manager / EMC Department
	 Date: Nov. 26, 2012

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Test Report No.: RF120625N003

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120625N003	Original release	Nov. 26, 2012



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -16.51dB at 0.15MHz.
15.205 15.209	Restricted bands of operation. & Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.4dB at 5460MHz.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted output power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.247(d)	Out of Band Emission Measurement	PASS	Meet the requirement of limit.

2 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	2.94dB
Radiated emissions	30MHz ~1000MHz	3.64dB
	1GHz ~ 18GHz	2.20dB
	18GHz ~ 40GHz	1.94dB

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



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	5GHz 150Mbps Indoor / Outdoor Wireless Access Point
MODEL NO.	TL-WA7510N
FCC ID	TE7WA7510N
NOMINAL VOLTAGE	DC 12V From Adapter and PoE Box
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 802.11n: up to 150.0Mbps
OPERATING FREQUENCY	5745 ~ 5825MHz
NUMBER OF CHANNEL	5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
OUTPUT POWER	40.738mW
ANTENNA TYPE	Refer to NOTE as below
ANTENNA CONNECTER	Refer to NOTE as below
DATA CABLE	Refer to user's manual
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to user's manual

NOTE:

1. The EUT incorporates a MIMO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	1TX
802.11n (40MHz)	1TX

2. The EUT was powered by the following adapter and PoE Box:

ADAPTER 1	
BRAND:	TP-LINK TECHNOLOGIES CO.,LTD.
MODEL:	T120100-2B1
INPUT:	AC 100-240V ~ 50/60HZ 0.3A
OUTPUT:	12V/1A
DC LINE:	UNSHIELDED UNDETACHABLE 1.6 m.



3. There are three antennas provided to this EUT. The information about those antennas is listed in below table:

NO.	ANTENNA TYPE	GAIN (dBi)
		5GHz
1. Internal	Directivity	15 dBi
2. Internal	Directivity	15 dBi
3. External	Dipole	2 dBi

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

3.2 DESCRIPTION OF TEST MODES

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

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

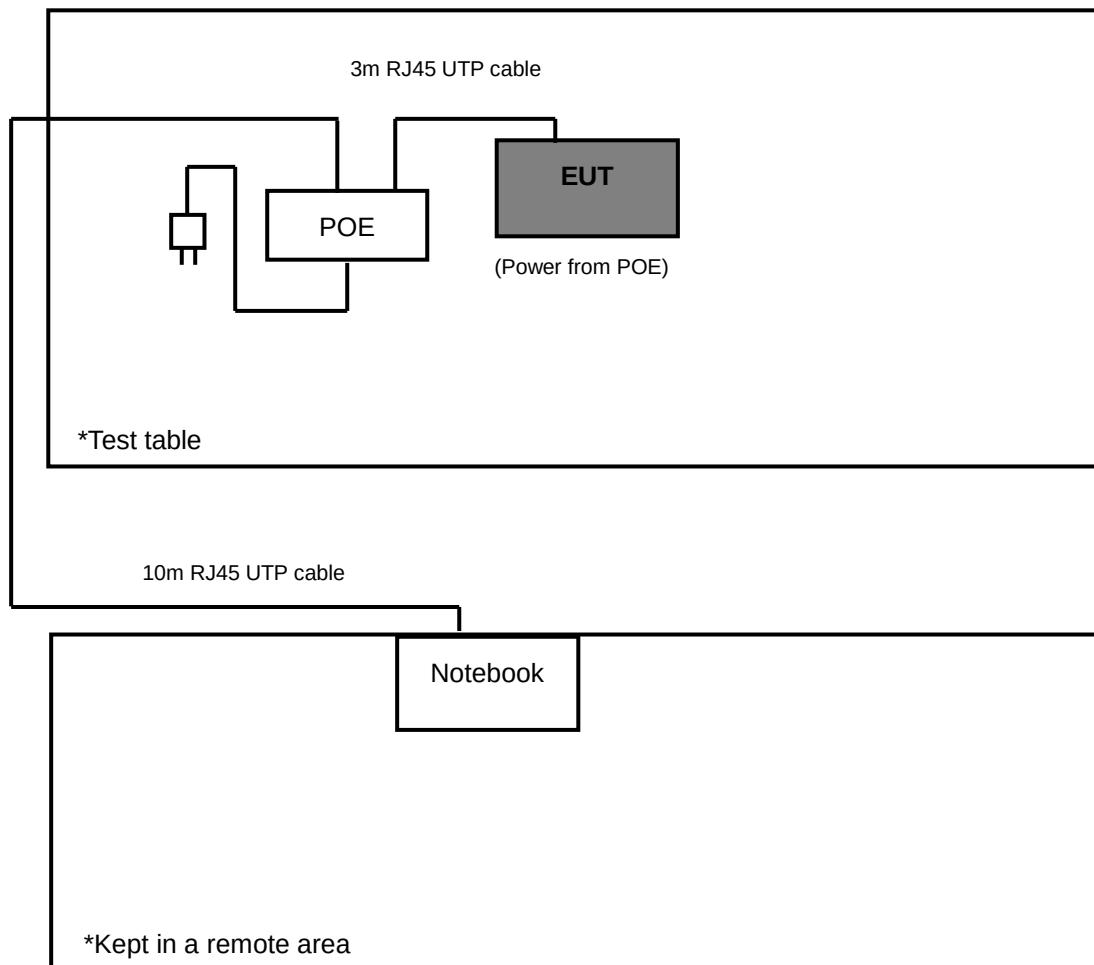
3 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz



3.2.1. CONFIGURATION OF SYSTEM UNDER TEST

Test Mode





3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Internal Antenna 1
B	√	√			Internal Antenna 2
C	√	√			External Antenna

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

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B, C	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A, B, C	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
A, B, C	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	149 to 165	157	OFDM	BPSK	6.0

**AC POWER CONDUCTED EMISSION TEST:**

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	149 to 165	157	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 (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
A	802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	15.0

**TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 55%RH	120Vac, 60Hz	Venless long
RE<1G	25deg. C, 55%RH	120Vac, 60Hz	Venless long
PLC	25deg. C, 56%RH	120Vac, 60Hz	Venless long
APCM	25deg. C, 56%RH	120Vac, 60Hz	Venless long

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C (15.247)

558074 D01 DTS Meas Guidance

662911 D01 Multiple Transmitter Output

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 A. The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK	DELL	5P2PM2X	12400120329	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	3m RJ45 UTP cable. 10m RJ45 UTP cable.



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
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.

4.1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU 26	100005	May 15,12	May 14,13
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 15,12	May 14,13
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	May 15,12	May 14,13
Impedance Stabilization Network	TESEQ	ISN T800	27957	Oct.10,12	Oct. 09,13
Test software	ADT	ADT_Conc_ V7.3.7	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 and NIM/CHINA.
2. The test was performed in shielded room 553.

4.1.2 TEST PROCEDURES

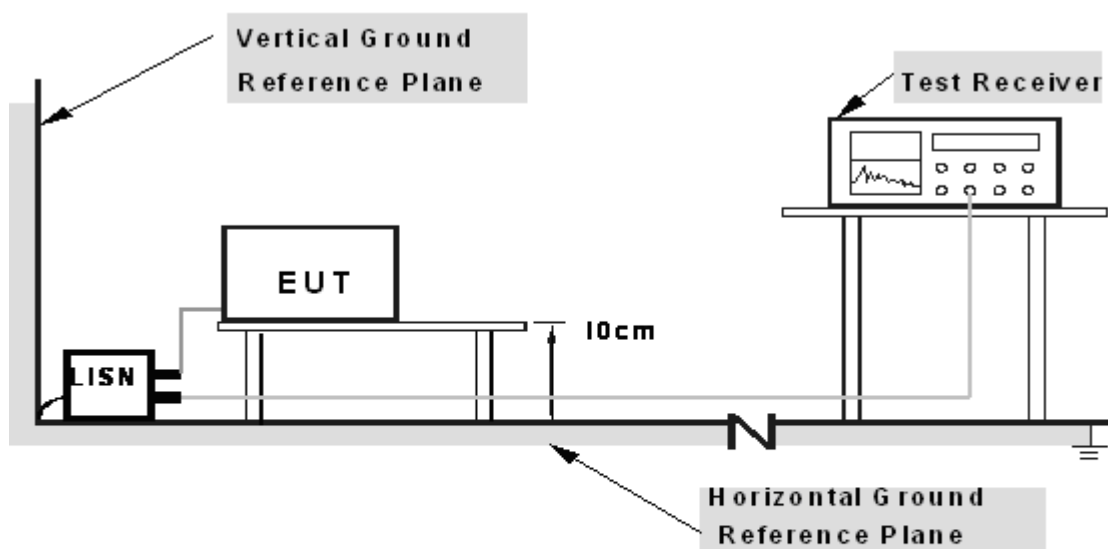
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

4.1.3 DEVIATION FROM TEST STANDARD

No deviation.

4.1.4 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).

4.1.5 EUT OPERATING CONDITIONS

- Turned on the power and connected of all equipment.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.



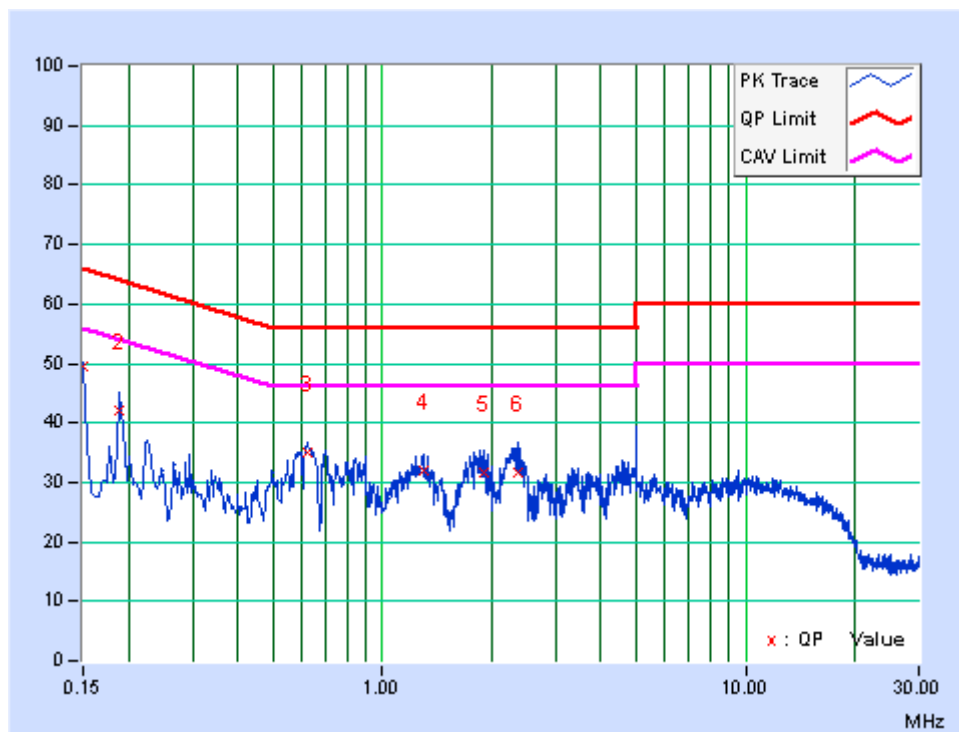
4.1.6 TEST RESULTS

CONDUCTED WORST-CASE DATA:

PHASE	Line	6dB BANDWIDTH	9kHz
-------	------	---------------	------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15	9.92	39.57	23.2	49.49	33.12	66	56	-16.51	-22.88
2	0.1891	9.81	32.14	17.56	41.95	27.37	64.08	54.08	-22.13	-26.71
3	0.62031	9.81	25.21	11.83	35.02	21.64	56	46	-20.98	-24.36
4	1.29954	9.8	22.33	9.9	32.13	19.7	56	46	-23.87	-26.3
5	1.9095	9.85	21.72	7.99	31.57	17.84	56	46	-24.43	-28.16
6	2.37479	9.87	21.91	7.69	31.78	17.56	56	46	-24.22	-28.44

- 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.





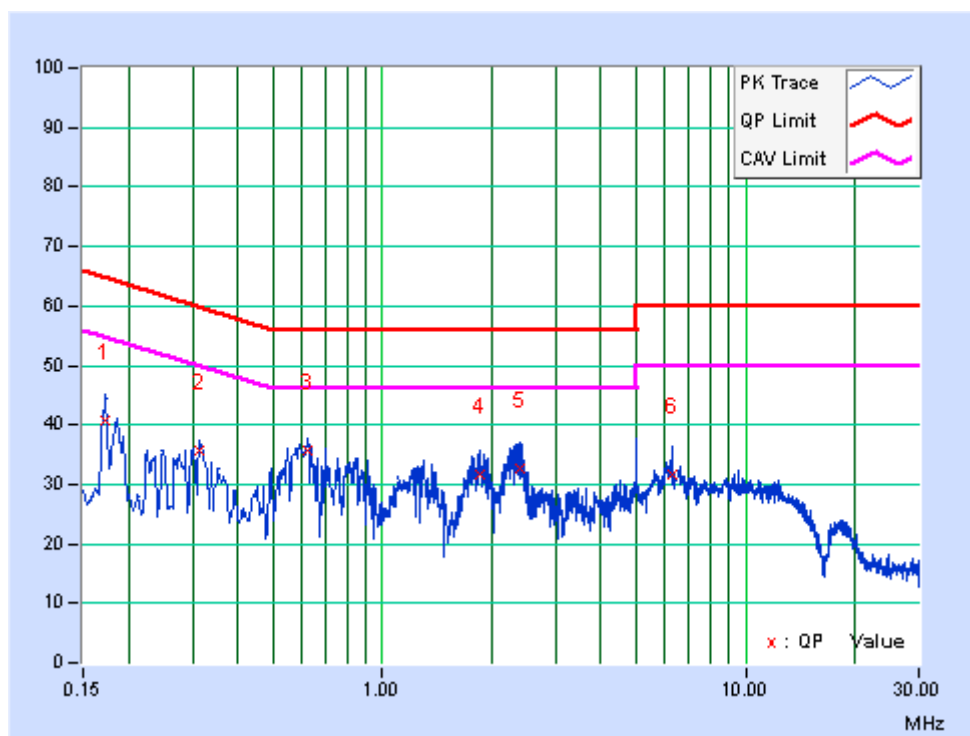
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Test Report No.: RF120625N003

PHASE	Neutral	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17329	9.8	31.05	17.36	40.85	27.16	64.8	54.8	-23.95	-27.64
2	0.31432	9.77	25.89	13.7	35.66	23.47	59.86	49.86	-24.2	-26.39
3	0.62031	9.8	25.78	12.4	35.58	22.2	56	46	-20.42	-23.8
4	1.86649	9.86	21.75	8.17	31.61	18.03	56	46	-24.39	-27.97
5	2.38261	9.89	22.79	7.47	32.68	17.36	56	46	-23.32	-28.64
6	6.2496	10.03	21.61	13.21	31.64	23.24	60	50	-28.36	-26.76

- 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.



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4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E4446A	MY46180622	May 02,12	May 01,13
EMI Test Receiver	Rohde&Schwarz	ESVD	847398/003	May 15,12	May 14,13
Bilog Antenna (25MHz-2GHz)	Teseq	CBL 6111D	27089	Jul. 16,12	Jul. 15,13
Horn Antenna (1GHz -18GHz)	EMCO	3117	00062558	Oct.18,12	Oct.17,13
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA91701 47	Feb. 18,11	Feb. 18,13
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,12	Nov. 03,13
Pre-Amplifier (20MHz-3GHz)	EMCI	EMC 330	980095	Nov. 02,12	Nov.01,13
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 31,12	May 30,13
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8 .8m	NSEMC006	Mar. 24,12	Mar. 23,13
Digital Multimeter	FLUKE	15B	A1220010D G	Jan. 14,12	Jan. 13,13
Test Software	ADT	ADT_Radiated _V7.6.15	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 and NIM/CHINA.

2. The test was performed in 10m Chamber



4.2.2 TEST PROCEDURES

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

NOTE:

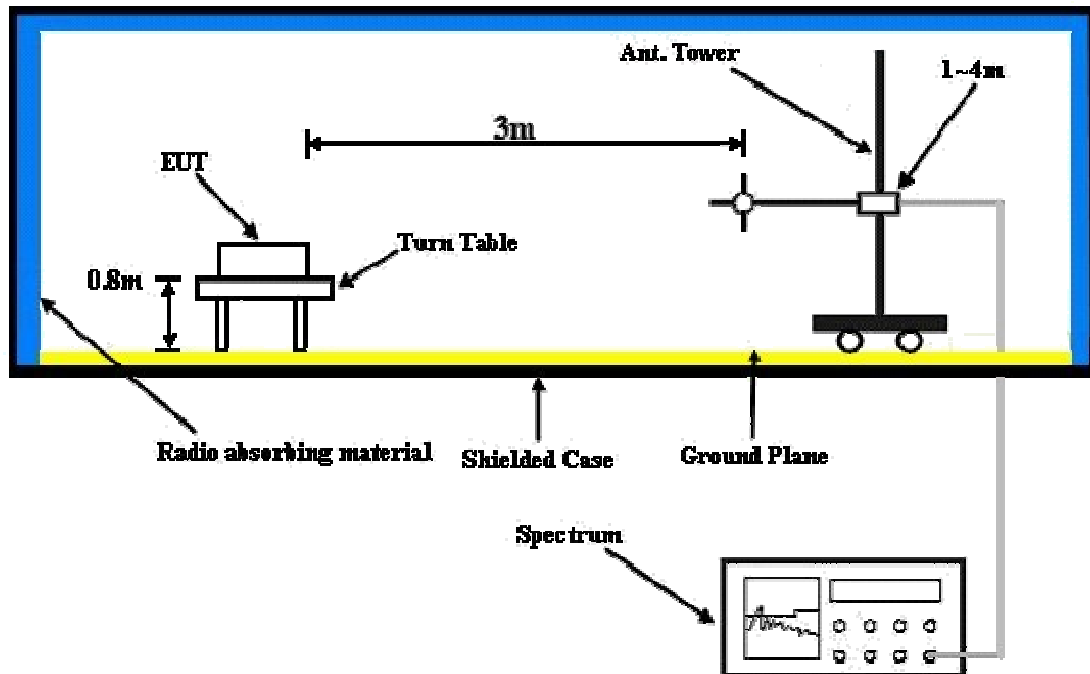
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

4.2.3 DEVIATION FROM TEST STANDARD

No deviation



4.2.4 TEST SETUP



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

4.2.5 EUT OPERATING CONDITIONS

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.



4.2.6 TEST RESULTS

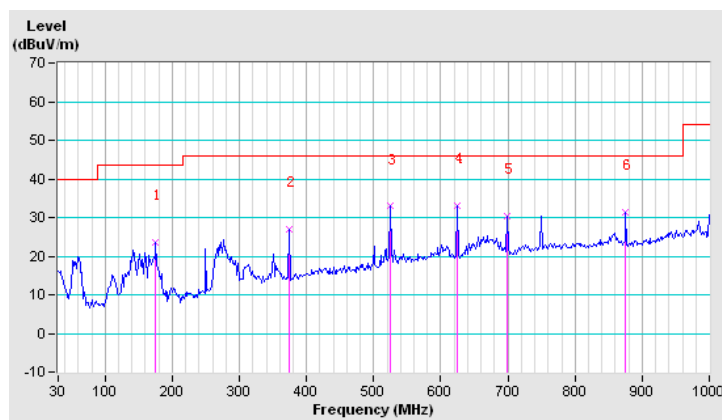
BELOW 1GHz WORST-CASE DATA:

EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak

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	175.50	23.6 QP	43.5	-19.9	3.68 H	139	12.53	11.04
2	374.35	27.1 QP	46.0	-18.9	3.54 H	158	9.66	17.44
3	524.70	32.9 QP	46.0	-13.1	3.36 H	24	11.75	21.19
4	624.93	33.1 QP	46.0	-12.9	2.75 H	106	9.35	23.73
5	699.30	30.4 QP	46.0	-15.6	3.12 H	57	6.28	24.14
6	875.52	31.4 QP	46.0	-14.6	2.96 H	78	4.45	26.92

REMARKS:

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



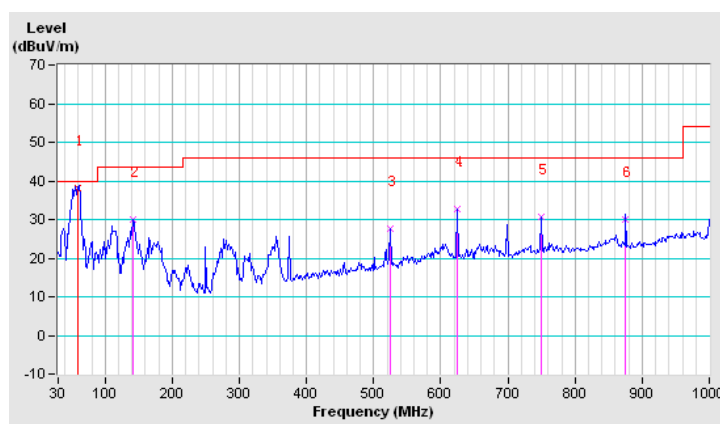


EUT TEST CONDITION		MEASUREMENT DETAIL	
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak

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	60.22	38.3 QP	40.0	-1.8	1.00 V	135	29.80	8.45
2	141.55	30.0 QP	43.5	-13.5	1.58 V	16	17.01	12.97
3	524.70	27.7 QP	46.0	-18.3	2.56 V	276	6.53	21.19
4	624.93	32.8 QP	46.0	-13.2	2.88 V	122	9.10	23.73
5	749.42	30.7 QP	46.0	-15.3	3.55 V	0	4.66	26.02
6	875.52	30.1 QP	46.0	-16.0	4.00 V	286	3.13	26.92

REMARKS:

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





802.11a

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	57.3 PK	74.0	-16.7	1.05 H	20	6.84	50.46
2	5460.00	46.3 AV	54.0	-7.7	1.05 H	20	-4.16	50.46
3	*5745.00	103.0 PK			1.00 H	216	53.20	49.80
4	*5745.00	93.9 AV			1.00 H	216	44.10	49.80
5	11490.00	60.3 PK	74.0	-13.7	1.00 H	241	10.18	50.12
6	11490.00	48.2 AV	54.0	-5.8	1.00 H	241	-1.92	50.12
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	5460.00	64.1 PK	74.0	-9.9	1.05 V	215	13.64	50.46
2	5460.00	52.6 AV	54.0	-1.4	1.05 V	215	2.14	50.46
3	*5745.00	115.6 PK			1.00 V	0	65.80	49.80
4	*5745.00	105.9 AV			1.00 V	0	56.10	49.80
5	11490.00	57.5 PK	74.0	-16.5	1.00 V	20	7.38	50.12
6	11490.00	46.1 AV	54.0	-7.9	1.00 V	20	-4.02	50.12

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 limit value is defined as per 15.247.



CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	57.6 PK	74.0	-16.4	1.04 H	30	7.14	50.46
2	5460.00	46.6 AV	54.0	-7.4	1.04 H	30	-3.86	50.46
3	*5785.00	103.6 PK			1.03 H	23	53.92	49.68
4	*5785.00	94.2 AV			1.03 H	23	44.52	49.68
5	11570.00	60.9 PK	74.0	-13.1	1.00 H	13	10.52	50.38
6	11570.00	48.7 AV	54.0	-5.3	1.00 H	13	-1.68	50.38
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	5460.00	63.6 PK	74.0	-10.4	1.00 V	140	13.14	50.46
2	5460.00	52.2 AV	54.0	-1.8	1.00 V	140	1.74	50.46
3	*5785.00	116.2 PK			1.04 V	10	66.52	49.68
4	*5785.00	106.2 AV			1.04 V	10	56.52	49.68
5	11570.00	57.6 PK	74.0	-16.4	1.04 V	230	7.22	50.38
6	11570.00	46.1 AV	54.0	-7.9	1.04 V	230	-4.28	50.38

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 limit value is defined as per 15.247.



CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	57.0 PK	74.0	-17.0	1.04 H	32	6.54	50.46
2	5460.00	46.3 AV	54.0	-7.7	1.04 H	32	-4.16	50.46
3	*5825.00	104.1 PK			1.04 H	10	54.55	49.55
4	*5825.00	94.5 AV			1.04 H	10	44.95	49.55
5	11650.00	60.4 PK	74.0	-13.6	1.05 H	230	9.74	50.66
6	11650.00	48.3 AV	54.0	-5.7	1.05 H	230	-2.36	50.66
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	5460.00	63.4 PK	74.0	-10.6	1.00 V	220	12.94	50.46
2	5460.00	52.2 AV	54.0	-1.8	1.00 V	220	1.74	50.46
3	*5825.00	113.2 PK			1.00 V	0	63.65	49.55
4	*5825.00	104.7 AV			1.00 V	0	55.15	49.55
5	11650.00	57.1 PK	74.0	-16.9	1.00 V	236	6.44	50.66
6	11650.00	46.2 AV	54.0	-7.8	1.00 V	236	-4.46	50.66

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 limit value is defined as per 15.247.



802.11n (20MHz)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	57.0 PK	74.0	-17.0	1.06 H	12	6.54	50.46
2	5460.00	46.2 AV	54.0	-7.8	1.06 H	12	-4.26	50.46
3	*5745.00	103.9 PK			1.09 H	25	54.10	49.80
4	*5745.00	94.5 AV			1.09 H	25	44.70	49.80
5	11490.00	60.6 PK	74.0	-13.4	1.09 H	20	10.48	50.12
6	11490.00	48.3 AV	54.0	-5.7	1.09 H	20	-1.82	50.12
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	5460.00	62.7 PK	74.0	-11.3	1.00 V	250	12.24	50.46
2	5460.00	51.5 AV	54.0	-2.5	1.00 V	250	1.04	50.46
3	*5745.00	114.7 PK			1.00 V	0	64.90	49.80
4	*5745.00	105.3 AV			1.00 V	0	55.50	49.80
5	11490.00	57.5 PK	74.0	-16.5	1.00 V	250	7.38	50.12
6	11490.00	46.0 AV	54.0	-8.0	1.00 V	250	-4.12	50.12

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 limit value is defined as per 15.247.



CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	57.5 PK	74.0	-16.5	1.04 H	236	7.04	50.46
2	5460.00	46.5 AV	54.0	-7.5	1.04 H	236	-3.96	50.46
3	*5785.00	103.9 PK			1.13 H	25	54.22	49.68
4	*5785.00	94.3 AV			1.13 H	25	44.62	49.68
5	11570.00	61.0 PK	74.0	-13.0	1.11 H	240	10.62	50.38
6	11570.00	48.5 AV	54.0	-5.5	1.11 H	240	-1.88	50.38
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	5460.00	62.8 PK	74.0	-11.2	1.01 V	15	12.34	50.46
2	5460.00	51.8 AV	54.0	-2.2	1.01 V	15	1.34	50.46
3	*5785.00	113.2 PK			1.06 V	10	63.52	49.68
4	*5785.00	104.2 AV			1.06 V	10	54.52	49.68
5	11570.00	58.3 PK	74.0	-15.7	1.05 V	258	7.92	50.38
6	11570.00	45.9 AV	54.0	-8.1	1.05 V	258	-4.48	50.38

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 limit value is defined as per 15.247.



CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	56.9 PK	74.0	-17.1	1.00 H	0	6.44	50.46
2	5460.00	45.9 AV	54.0	-8.1	1.00 H	0	-4.56	50.46
3	*5825.00	103.0 PK			1.00 H	31	53.45	49.55
4	*5825.00	93.7 AV			1.00 H	31	44.15	49.55
5	11650.00	60.1 PK	74.0	-13.9	1.03 H	210	9.44	50.66
6	11650.00	48.1 AV	54.0	-5.9	1.03 H	210	-2.56	50.66
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	5460.00	62.6 PK	74.0	-11.4	1.40 V	214	12.14	50.46
2	5460.00	51.8 AV	54.0	-2.2	1.40 V	214	1.34	50.46
3	*5825.00	113.9 PK			1.00 V	0	64.35	49.55
4	*5825.00	104.6 AV			1.00 V	0	55.05	49.55
5	11650.00	58.4 PK	74.0	-15.6	1.00 V	230	7.74	50.66
6	11650.00	45.8 AV	54.0	-8.2	1.00 V	230	-4.86	50.66

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 limit value is defined as per 15.247.



802.11n (40MHz)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	56.6 PK	74.0	-17.4	1.05 H	254	6.14	50.46
2	5460.00	45.5 AV	54.0	-8.5	1.05 H	254	-4.96	50.46
3	*5755.00	102.9 PK			1.04 H	23	53.13	49.77
4	*5755.00	93.5 AV			1.04 H	23	43.73	49.77
5	11510.00	59.6 PK	74.0	-14.4	1.10 H	20	9.43	50.17
6	11510.00	47.8 AV	54.0	-6.2	1.10 H	20	-2.37	50.17
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	5460.00	64.1 PK	74.0	-9.9	1.05 V	20	13.64	50.46
2	5460.00	52.4 AV	54.0	-1.6	1.05 V	20	1.94	50.46
3	*5755.00	111.4 PK			1.00 V	0	61.63	49.77
4	*5755.00	102.4 AV			1.00 V	0	52.63	49.77
5	11510.00	57.7 PK	74.0	-16.3	1.00 V	250	7.53	50.17
6	11510.00	45.5 AV	54.0	-8.5	1.00 V	250	-4.67	50.17

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 limit value is defined as per 15.247.



CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	5460.00	57.4 PK	74.0	-16.6	1.00 H	360	6.94	50.46
2	5460.00	46.0 AV	54.0	-8.0	1.00 H	360	-4.46	50.46
3	*5795.00	102.4 PK			1.00 H	250	52.76	49.64
4	*5795.00	93.2 AV			1.00 H	250	43.56	49.64
5	11590.00	59.4 PK	74.0	-14.6	1.08 H	50	8.95	50.45
6	11590.00	47.8 AV	54.0	-6.2	1.08 H	50	-2.65	50.45
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	5460.00	63.4 PK	74.0	-10.6	1.06 V	235	12.94	50.46
2	5460.00	52.2 AV	54.0	-1.8	1.06 V	235	1.74	50.46
3	*5795.00	110.6 PK			1.00 V	230	60.96	49.64
4	*5795.00	102.0 AV			1.00 V	230	52.36	49.64
5	11590.00	57.5 PK	74.0	-16.5	1.07 V	140	7.05	50.45
6	11590.00	45.2 AV	54.0	-8.8	1.07 V	140	-5.25	50.45

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 limit value is defined as per 15.247.



4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer (9KHz–40GHz)	Agilent	E4446A	MY46180622	May 02,12	May 01,13

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA
2. The test was performed in Oven room.

4.3.3 TEST PROCEDURE

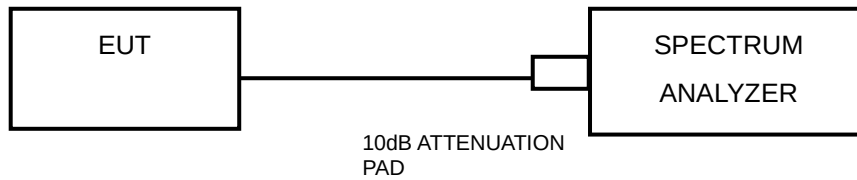
1. Set resolution bandwidth (RBW) = 100KHz
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower)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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.



4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.62	0.5	PASS
157	5785	16.49	0.5	PASS
165	5825	16.53	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.77	0.5	PASS
157	5785	17.71	0.5	PASS
165	5825	17.74	0.5	PASS

802.11n (40MHz)

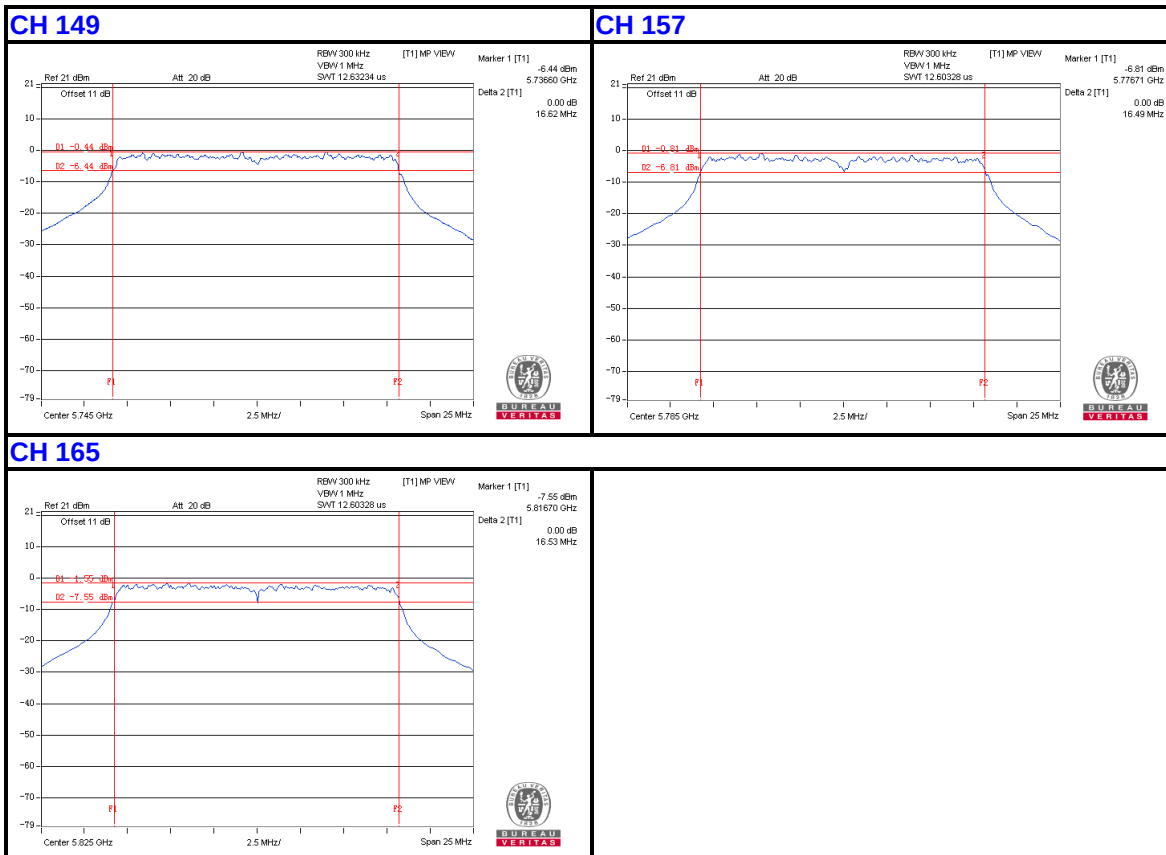
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	36.50	0.5	PASS
159	5795	36.62	0.5	PASS



BUREAU
VERITAS

Test Report No.: RF120625N003

802.11a



Bureau Veritas Shenzhen Co., Ltd.
Dongguan Branch

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Guangdong 523942, China

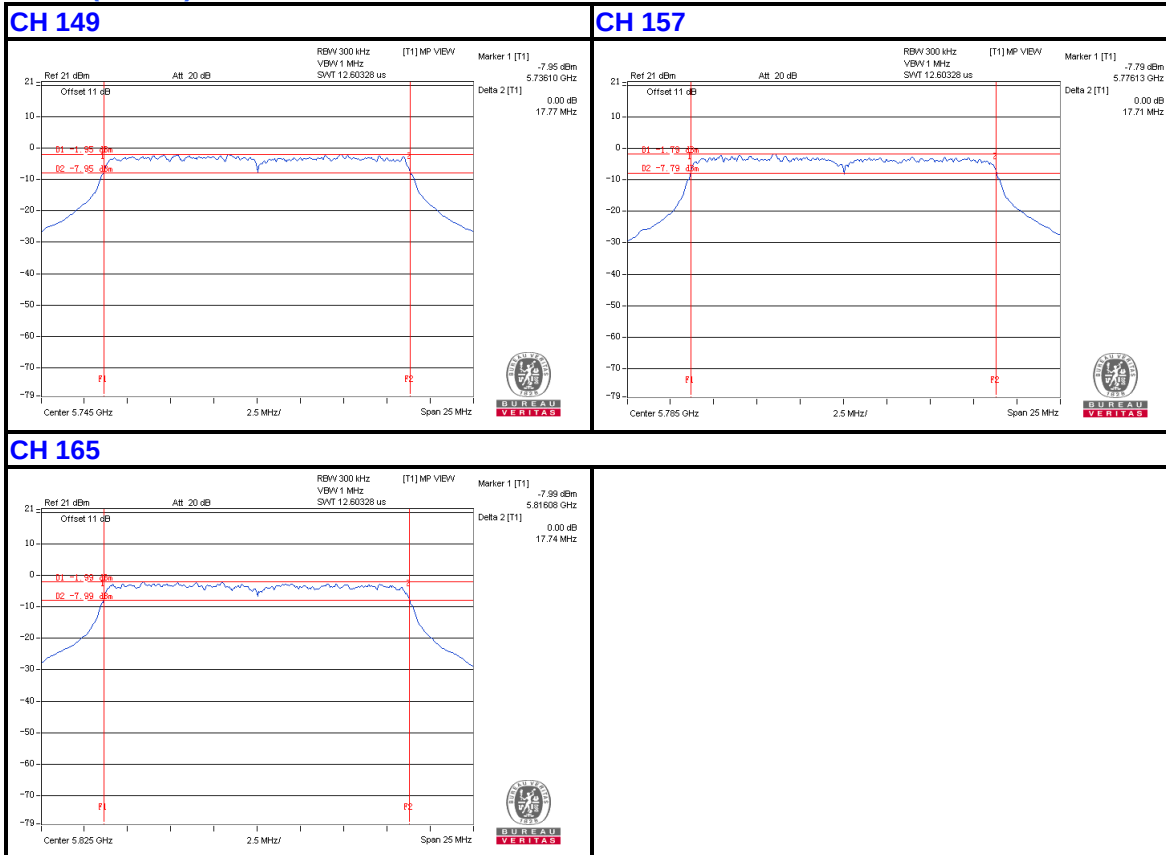
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Test Report No.: RF120625N003

802.11n (20MHz)



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Dongguan Branch

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Guangdong 523942, China

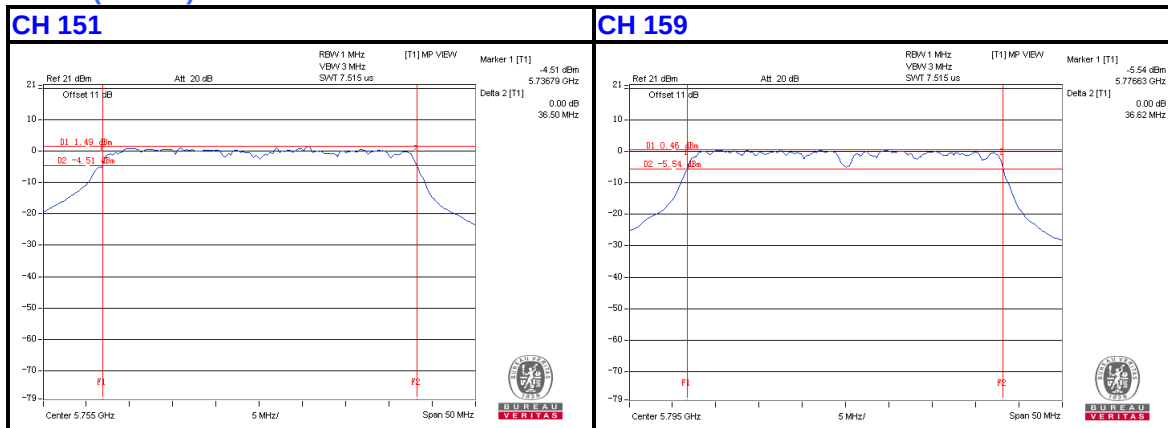
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802.11n (40MHz)



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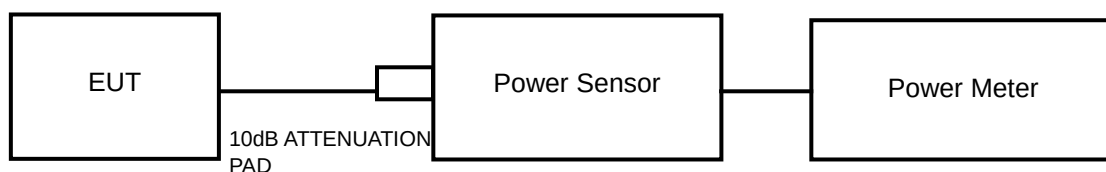


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 5725 - 5850 MHz band: 1 Watt (30dBm)

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	Anritsu	ML2495A	1139001	Nov. 4,12	Nov. 3,13

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.

2. The test was performed in Oven room

4.4.4 TEST PROCEDURES

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.



4.4.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
149	5745	15.10	32.359	30	PASS
157	5785	16.10	40.738	30	PASS
165	5825	15.52	35.645	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
149	5745	15.00	31.623	30	PASS
157	5785	15.04	31.915	30	PASS
165	5825	15.52	35.645	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
151	5755	14.96	31.333	30	PASS
159	5795	14.90	30.903	30	PASS

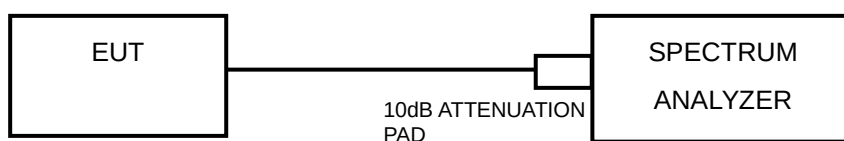


4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.5.4 TEST PROCEDURE

1. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3 \text{ kHz}/100\text{kHz})$

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6



4.5.7 TEST RESULTS

802.11a

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-3.55	-18.78	8.00	PASS
157	5785	-3.89	-19.12	8.00	PASS
165	5825	-3.85	-19.08	8.00	PASS

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-3.75	-18.98	8.00	PASS
157	5785	-4.42	-19.65	8.00	PASS
165	5825	-4.56	-19.79	8.00	PASS

802.11n (40MHz)

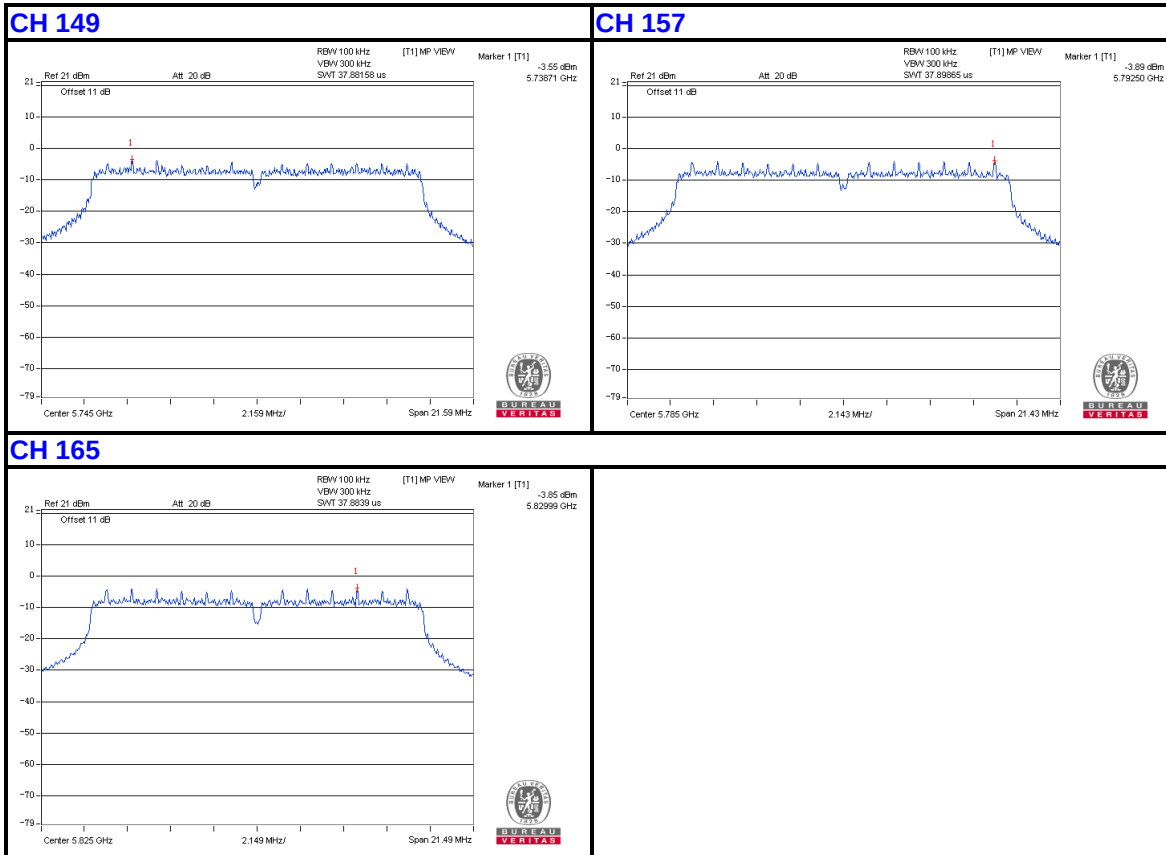
Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
151	5755	-7.20	-22.43	8.00	PASS
159	5795	-6.86	-22.09	8.00	PASS



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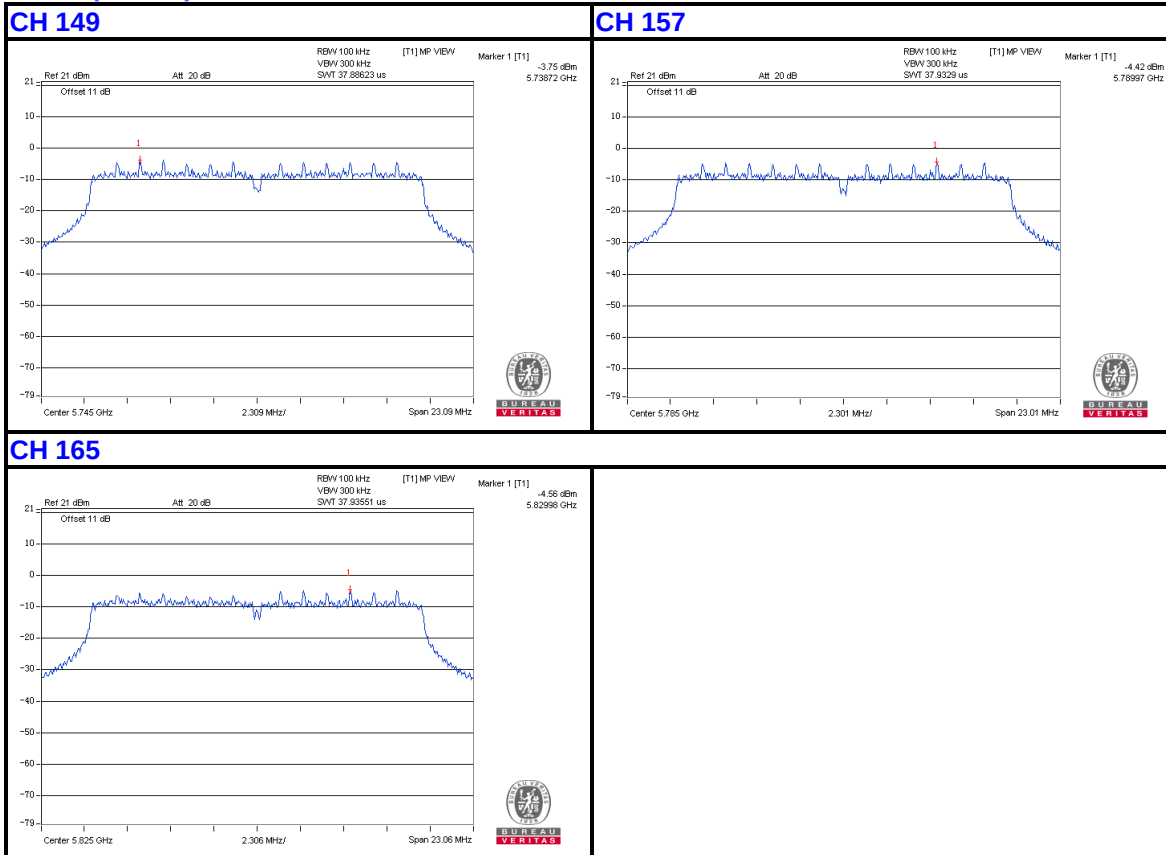
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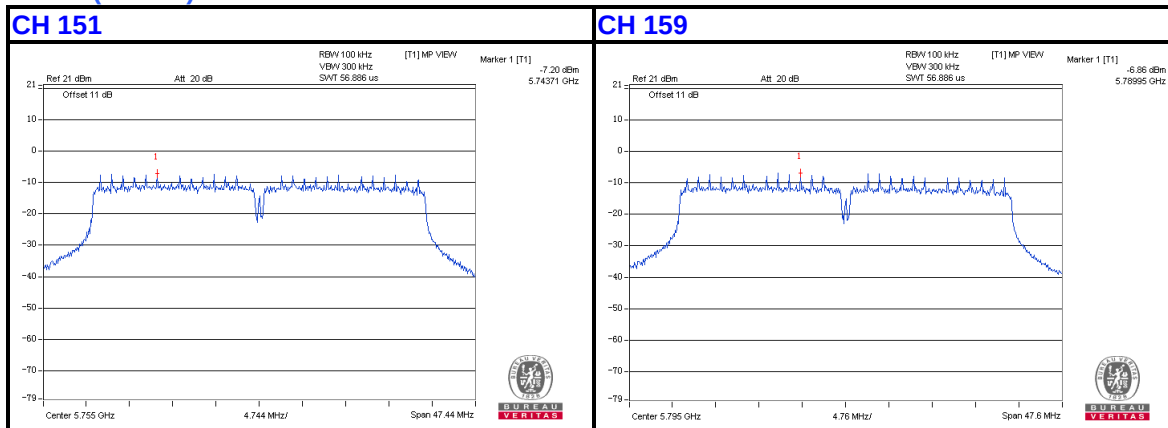
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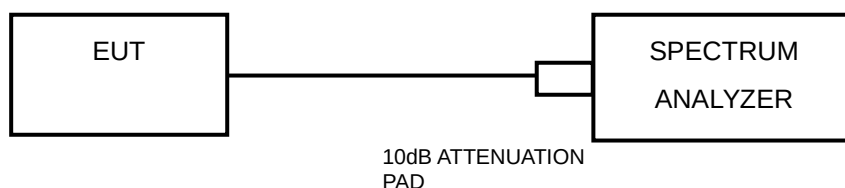


4.6 OUT OF BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Set span to encompass the spectrum to be examined.
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6



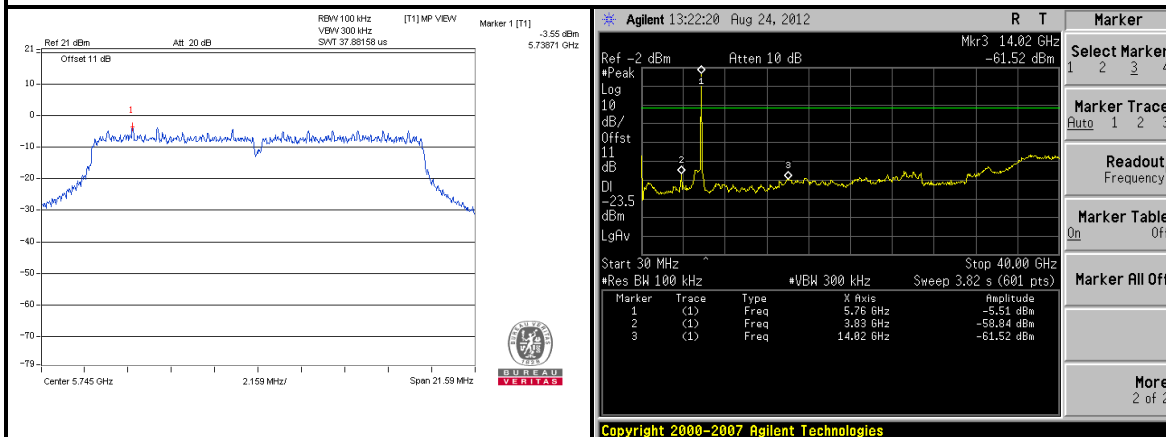
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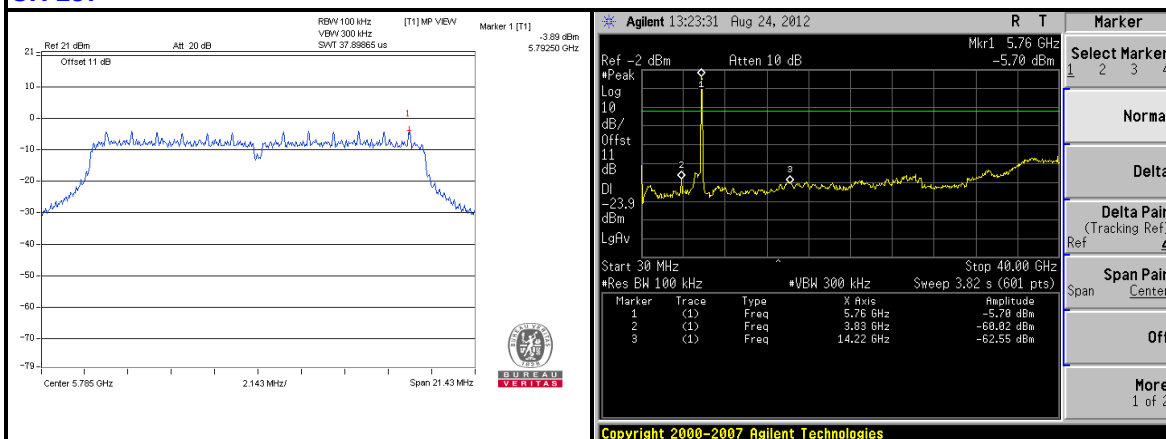
4.6.7 TEST RESULTS

802.11a

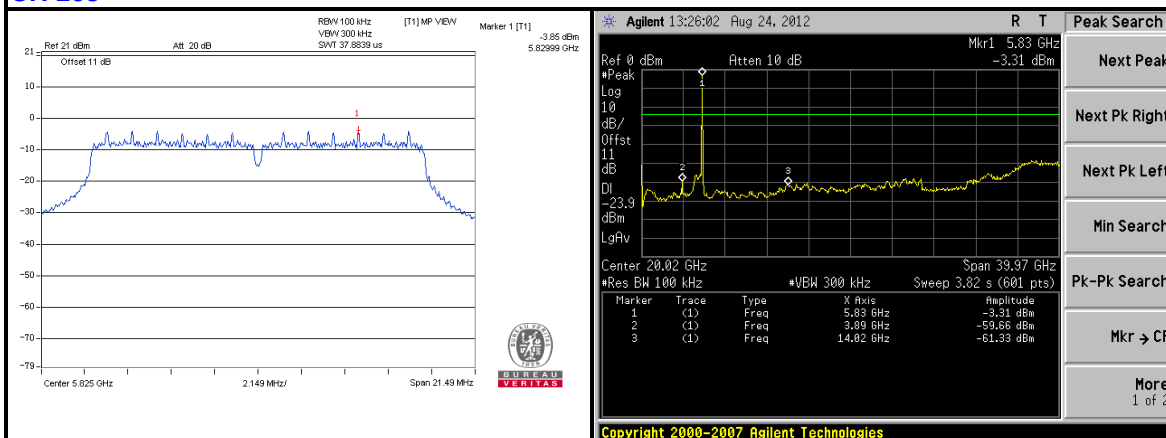
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CH 157



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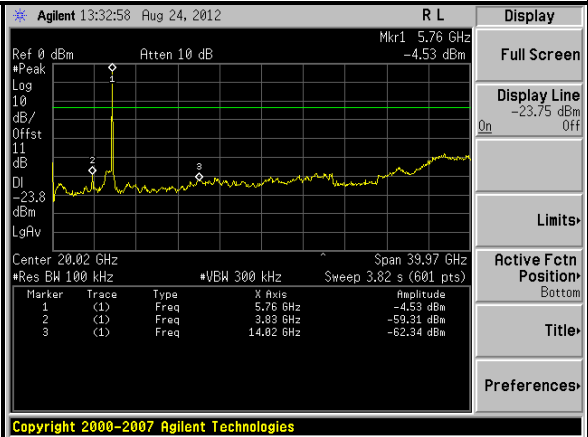
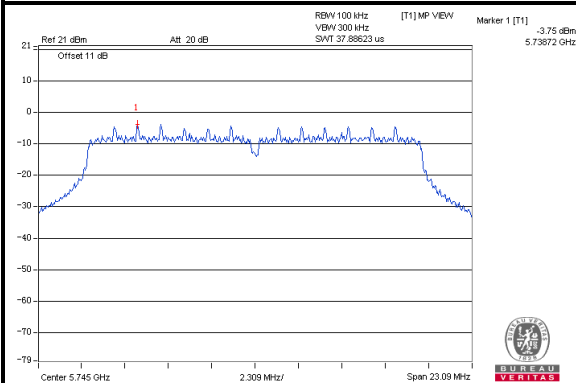


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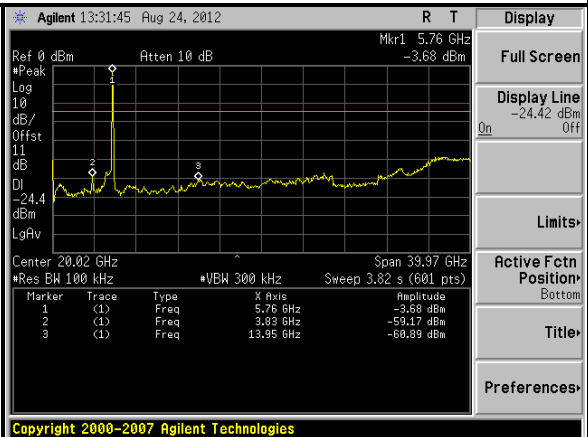
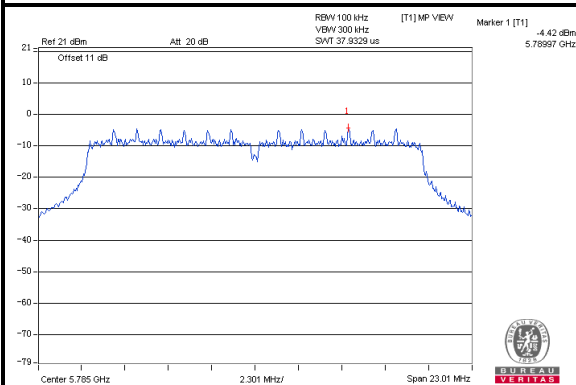
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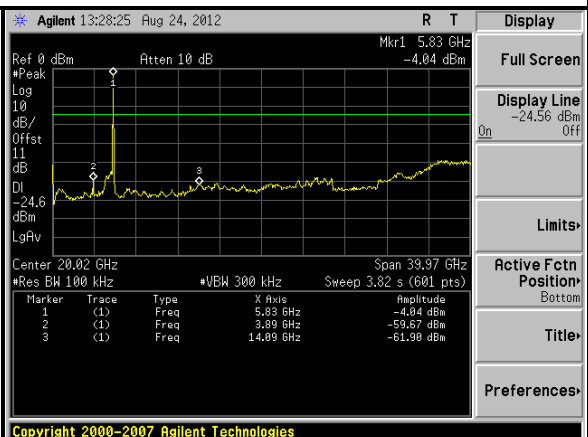
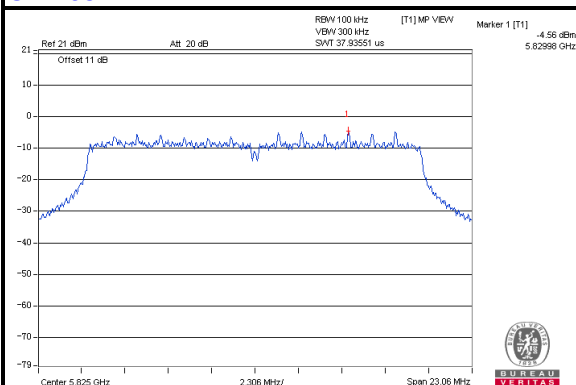
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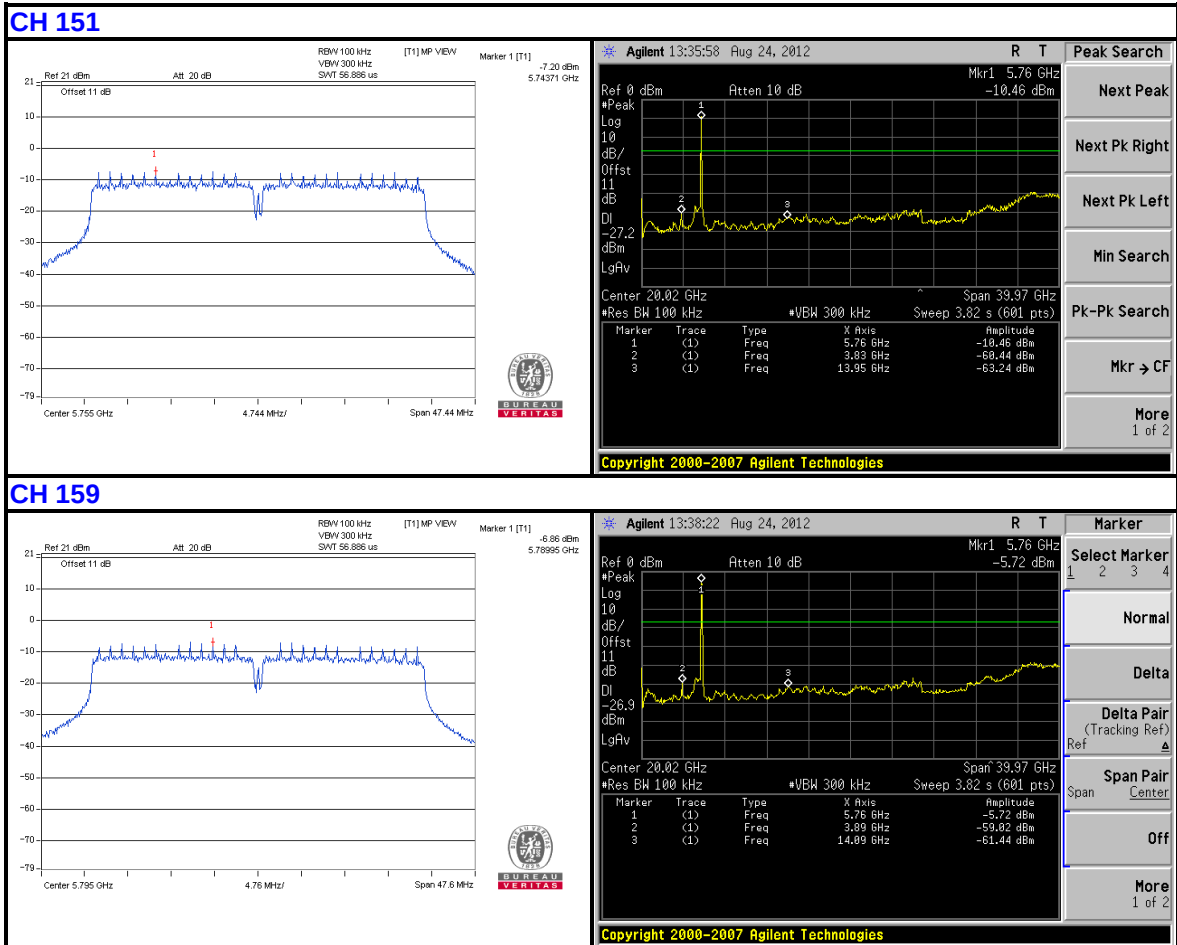
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5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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 any modifications are made to the EUT by the lab during the test.

---END---