



**BUREAU
VERITAS**

Test Report No.: RF140314N018-1



Test Lab
Cert 2951.01

TEST REPORT

Applicant	Hewlett-Packard Company
Address	1501 Page Mill Road, M/S 1419, Palo Alto, CA 94304, USA

Manufacturer or Supplier	Huizhou BYD Electronic Co.,Ltd
Address	C4 and C6 Building, BYD Industrial Park, Xiangshui River, Economic Development Zone, Daya Bay, Huizhou, Guangdong, P R China
Product	Voice Tablet
Brand Name	HP
Model	HSTNH-B19C
Additional Model & Model Difference	N/A
Date of tests	Mar. 14, 2014 ~ Mar. 31, 2014

the tests have been carried out 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

Tested by Glyn He Project Engineer/ EMC Department	Approved by Sam Tung Manager / EMC Department
	 Date: Apr. 01 2014

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Test Report No.: RF140314N018-1

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140314N018-1	Original release	Apr. 01 2014



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 -8.54dB at 0.47453MHz.
15.205 15.209	Restricted bands of operation & Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.7dB at 4924MHz
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	2.67dB
Radiated emissions	30MHz ~ 1GMHz	4.81dB
	1GHz ~ 18GHz	4.3dB
	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	Voice Tablet
MODEL NO.	HSTNH-B19C
FCC ID	B94HHB19C
NOMINAL VOLTAGE	5.0VDC (adapter or host equipment) ; 3.8VDC (battery)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM,
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20) 2422-2452MHz for 11n(HT40)
PEAK POWER	22.12 dBm (Maximum)
ANTENNA TYPE	PIFA antenna with 2.0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB Cable: Shielded, Detachable,1m

NOTE:

1. The EUT was powered by the following adapters:

ADAPTER1	
BRAND:	hp
MODEL:	8395-V001-1080
INPUT:	AC 100-240V, 50/60Hz, 0.3A
OUTPUT:	DC 5.3V, 2A
DC LINE:	N/A

ADAPTER2	
BRAND:	chicony
MODEL:	W12-010M3A
INPUT:	AC 100-240V, 50/60Hz, 0.3A
OUTPUT:	DC 5V, 2A
DC LINE:	N/A

2. 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. The EUT provides one transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX/1RX
802.11g	1TX/1RX
802.11n (HT20)	1TX/1RX
802.11n (HT40)	1TX/1RX

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

5. Spurious emission of the simultaneous operation (WLAN& BT&WWAN) has been evaluated and no non-compliance was found.



3.2 DESCRIPTION OF TEST MODES

11 channels are provided for 802.11b, 802.11g and 802.11n(HT20):

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

7 channels are provided for 802.11n (HT40):

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

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST

Please see section 5 photographs of the test configuration for reference.



3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

The worst case was found when positioned on X axis for radiated emission. Following test modes were selected for the final test, and the final worst case is marked in boldface and recorded in the report:

EUT CONFIGURE MODE	APPLICABLE TO				MODE
	RE<1G	RE≥1G	PLC	APCM	
A	√	√	√	-	Adapter mode with WIFI function on
B	-	-	-	√	Battery mode with WIFI function on

Where **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

RE≥1G: Radiated Emission above 1GHz
APCM: Antenna Port Conducted Measurement

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)	AXIS
A	802.11g	1 to 11	1	OFDM	BPSK	6.0	X

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)	AXIS
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	X
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	X
A	802.11n HT20	1 to 11	1, 6, 11	OFDM	BPSK	6.5	X
A	802.11n HT40	3 to 9	3, 6, 9	OFDM	BPSK	13.5	X

**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, 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)	AXIS
A	802.11g	1 to 11	1	OFDM	BPSK	6.0	X

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)
B	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
B	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
B	802.11n HT20	1 to 11	1, 11	OFDM	BPSK	6.5
B	802.11n HT40	3 to 9	3, 9	OFDM	BPSK	13.5



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)
B	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
B	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
B	802.11n HT20	1 to 11	1,6, 11	OFDM	BPSK	6.5
B	802.11n HT40	3 to 9	3,6, 9	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	22deg. C, 55%RH	120Vac, 60Hz	Peng ou
RE≥1G	22deg. C, 55%RH	120Vac, 60Hz	Peng ou
PLC	20deg. C, 50%RH	120Vac, 60Hz	Eric.Yu
APCM	25deg. C, 60%RH	DC 3.8V from battery	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 v03 r01

ANSI C63.10-2009

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

3.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A				

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A



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.

4.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU 26	100005	May 14,13	May 13,14
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 14,13	May 13,14
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	May 14,13	May 13,14
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, GRGT/CHINA and NIM/CHINA.

2. The test was performed in Shielding Room 553.



4.1.3 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.

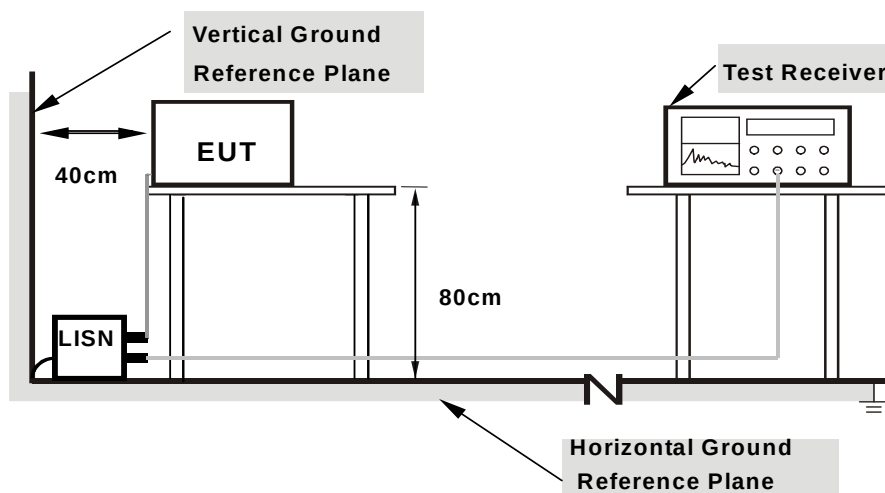
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.



4.1.5 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).

4.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power and connected of all equipment.
- b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



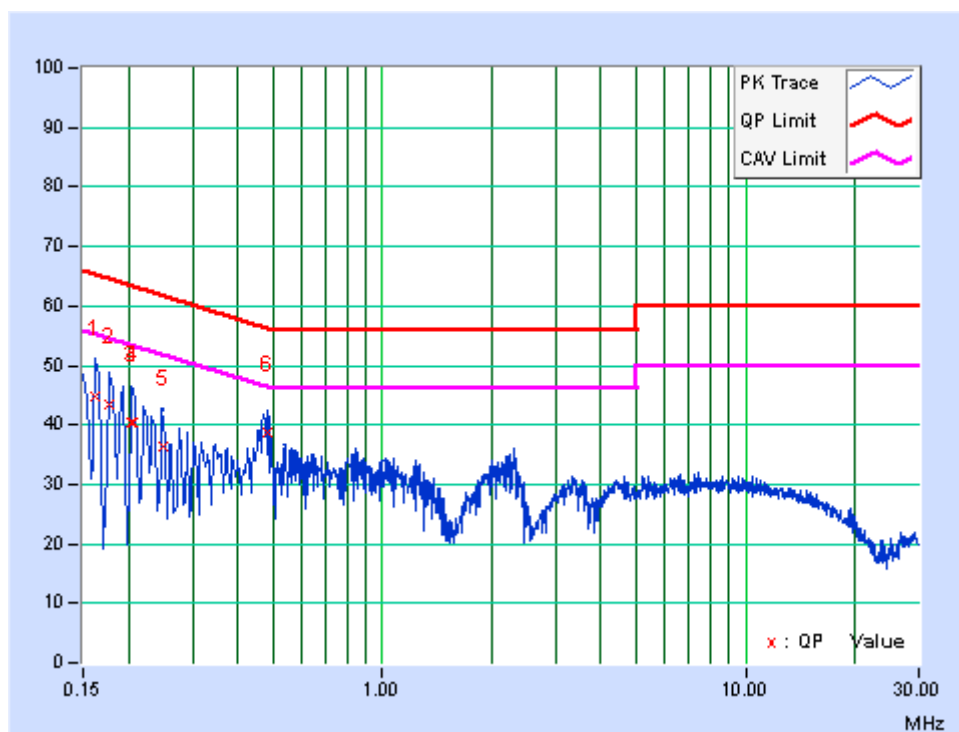
4.1.7 TEST RESULTS

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	0.16181	10.58	34.19	17.92	44.77	28.5	65.37	55.37	-20.6	-26.87
2	0.17744	10.52	32.9	17.07	43.42	27.59	64.6	54.6	-21.18	-27.01
3	0.20474	10.43	29.86	15.49	40.29	25.92	63.42	53.42	-23.13	-27.5
4	0.20512	10.43	29.81	15.23	40.24	25.66	63.4	53.4	-23.16	-27.74
5	0.24796	10.39	26.13	10.71	36.52	21.1	61.83	51.83	-25.3	-30.72
6	0.48295	10.26	28.4	18.89	38.66	29.15	56.29	46.29	-17.63	-17.14

- 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.

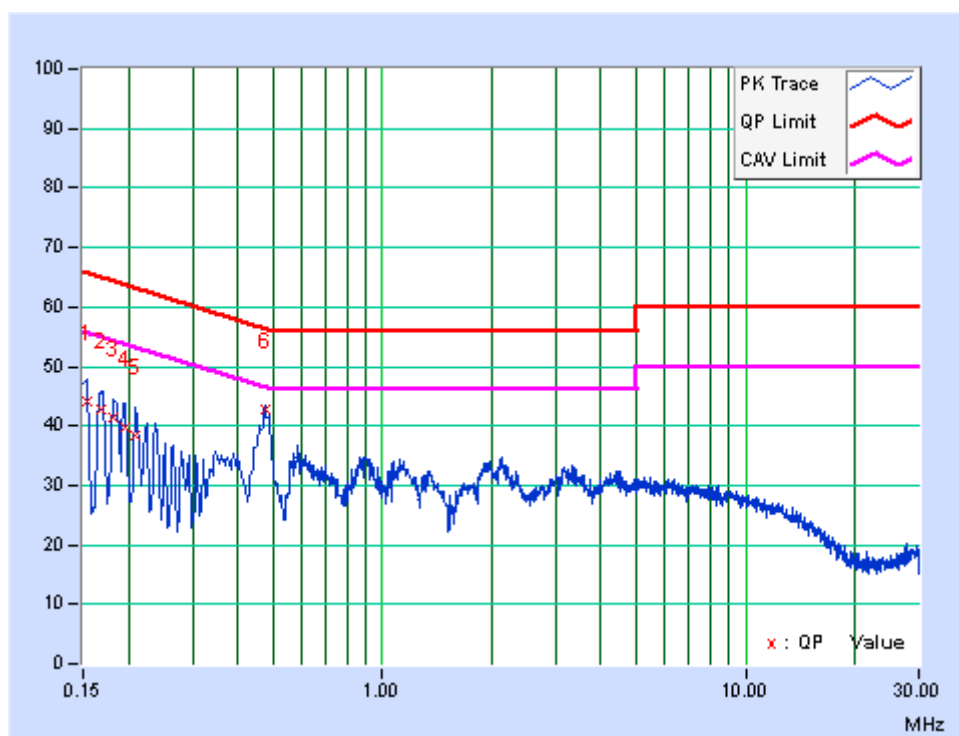




PHASE	Neutral	6dB BANDWIDTH	9kHz
-------	---------	---------------	------

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	0.15391	10.51	33.66	18.32	44.17	28.83	65.79	55.79	-21.61	-26.95
2	0.16833	10.45	32.15	17.51	42.6	27.96	65.04	55.04	-22.44	-27.08
3	0.18122	10.4	31.08	17.39	41.48	27.79	64.43	54.43	-22.95	-26.64
4	0.19692	10.33	29.38	16.65	39.71	26.98	63.74	53.74	-24.03	-26.76
5	0.20865	10.32	28.12	16.03	38.44	26.35	63.26	53.26	-24.82	-26.91
6	0.47453	10.45	32.19	27.45	42.64	37.9	56.43	46.43	-13.8	-8.54

- 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.





4.2 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.



4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E4446A	MY46180622	Apr. 24,13	Apr. 23,14
EMI Test Receiver	Rohde&Schwarz	ESVD	847398/003	May 14,13	May 13,14
Bilog Antenna	Teseq	CBL 6111D	27089	Jul. 27, 13	Jul. 26, 14
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	Oct. 19, 12	Oct. 18, 14
Pre-Amplifier (9kHz~1GHz)	SONOMA	310D	186955	Mar. 05,14	Mar. 04,15
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 14,13	May 13,14
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8 .8m	NSEMC006	Jun. 11, 13	Jun. 10, 14
Digital Multimeter	FLUKE	15B	A1220010D G	Oct. 30, 13	Oct. 29, 14
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA91702 42	Feb. 13,14	Feb. 12,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,13	Nov. 03,14
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, GREGT/CHINA and NIM/CHINA.

2. The test was performed in Chamber 10m.

3. The FCC Site Registration No. is 502831.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

NOTE:

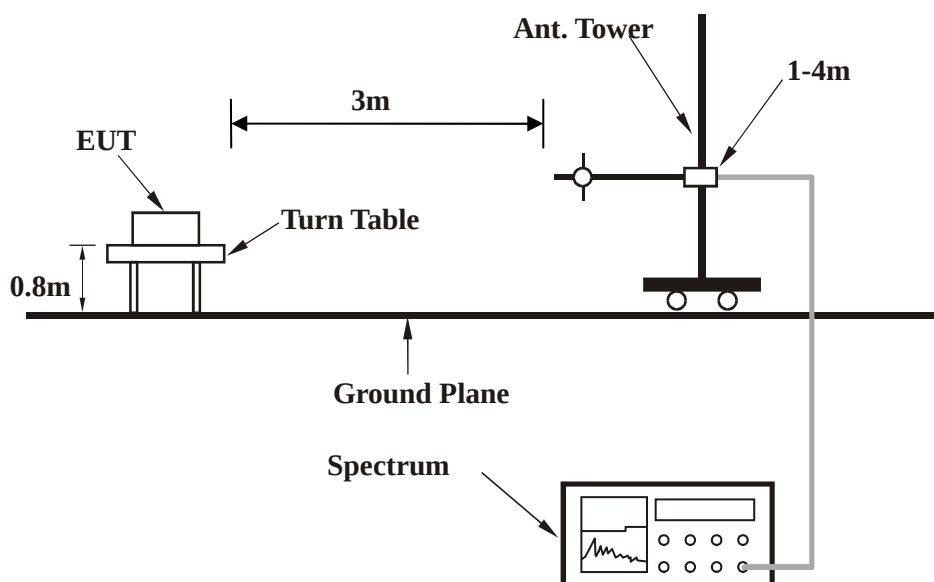
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution 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.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation



4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

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



4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

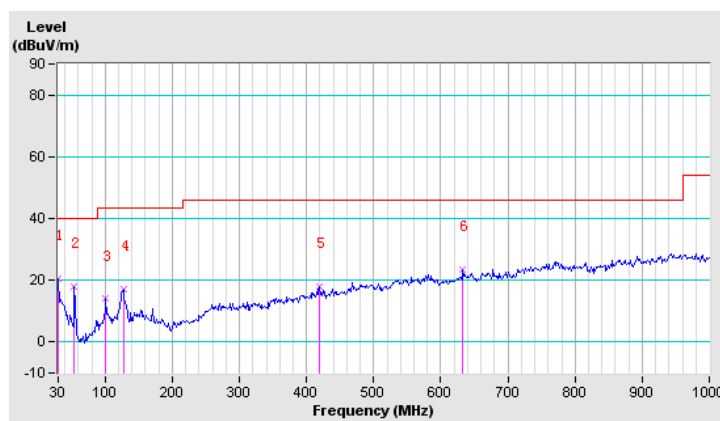
802.11g

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

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	30.00	20.5 QP	40.0	-19.5	1.00 H	72	0.69	19.84
2	54.25	18.1 QP	40.0	-21.9	1.00 H	56	10.21	7.89
3	101.13	14.0 QP	43.5	-29.5	1.00 H	86	2.27	11.70
4	127.00	17.3 QP	43.5	-26.2	1.00 H	98	3.76	13.54
5	419.62	18.1 QP	46.0	-28.0	1.00 H	116	-2.83	20.88
6	633.02	23.4 QP	46.0	-22.6	1.00 H	131	-2.26	25.65

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.



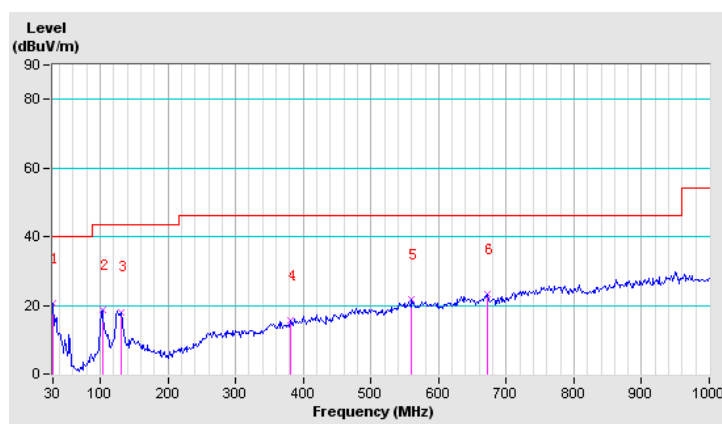


CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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	30.00	20.4 QP	40.0	-19.6	1.00 V	187	0.58	19.84
2	102.75	18.7 QP	43.5	-24.8	1.00 V	200	6.79	11.90
3	130.23	18.1 QP	43.5	-25.4	1.00 V	214	4.57	13.53
4	380.82	15.6 QP	46.0	-30.4	1.00 V	158	-3.00	18.64
5	560.27	21.6 QP	46.0	-24.4	1.00 V	247	-3.77	25.38
6	671.82	23.2 QP	46.0	-22.9	1.00 V	232	-3.00	26.15

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.





BUREAU VERITAS Test Report No.: RF140314N018-1

ABOVE 1GHz DATA

802.11b

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	53.1 PK	74.0	-20.9	1.00 H	47	14.66	38.44
2	2390.00	40.3 AV	54.0	-13.7	1.00 H	47	1.86	38.44
3	#2400.00	56.2 PK	85.6	-29.4	1.00 H	47	17.74	38.46
4	#2400.00	44.2 AV	77.3	-33.1	1.00 H	47	5.74	38.46
5	*2412.00	105.6 PK			1.00 H	47	67.11	38.49
6	*2412.00	97.3 AV			1.00 H	47	58.81	38.49
7	4824.00	52.7 PK	74.0	-21.3	1.00 H	166	9.21	43.49
8	4824.00	40.8 AV	54.0	-13.2	1.00 H	166	-2.69	43.49
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.5 PK	74.0	-13.5	1.00 V	142	22.06	38.44
2	2390.00	47.8 AV	54.0	-6.2	1.00 V	142	9.36	38.44
3	#2400.00	62.3 PK	88.0	-25.7	1.00 V	142	23.84	38.46
4	#2400.00	51.2 AV	71.6	-20.4	1.00 V	142	12.74	38.46
5	*2412.00	108.0 PK			1.00 V	142	69.51	38.49
6	*2412.00	91.6 AV			1.00 V	142	53.11	38.49
7	4824.00	60.2 PK	74.0	-13.8	1.00 V	205	16.71	43.49
8	4824.00	46.3 AV	54.0	-7.7	1.00 V	205	2.81	43.49

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.9 PK			1.00 H	48	66.36	38.54
2	*2437.00	96.4 AV			1.00 H	48	57.86	38.54
3	4874.00	56.2 PK	74.0	-17.8	1.00 H	102	12.66	43.54
4	4874.00	43.3 AV	54.0	-10.7	1.00 H	102	-0.24	43.54
5	7311.00	56.6 PK	74.0	-17.4	1.00 H	189	8.54	48.06
6	7311.00	44.1 AV	54.0	-9.9	1.00 H	189	-3.96	48.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	109.1 PK			1.00 V	140	70.56	38.54
2	*2437.00	100.6 AV			1.00 V	140	62.06	38.54
3	4874.00	54.3 PK	74.0	-19.7	1.00 V	266	10.76	43.54
4	4874.00	42.8 AV	54.0	-11.2	1.00 V	266	-0.74	43.54
5	7311.00	57.2 PK	74.0	-16.8	1.00 V	82	9.14	48.06
6	7311.00	45.1 AV	54.0	-8.9	1.00 V	82	-2.96	48.06

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.3 PK			1.00 H	40	64.71	38.59
2	*2462.00	96.5 AV			1.00 H	40	57.91	38.59
3	2483.50	52.3 PK	74.0	-21.7	1.00 H	40	13.66	38.64
4	2483.50	40.1 AV	54.0	-13.9	1.00 H	40	1.46	38.64
5	4924.00	59.1 PK	74.0	-14.9	1.00 H	189	15.51	43.59
6	4924.00	45.3 AV	54.0	-8.7	1.00 H	189	1.71	43.59
7	7386.00	67.9 PK	74.0	-6.1	1.00 H	102	19.79	48.11
8	7386.00	48.6 AV	54.0	-5.4	1.00 H	102	0.49	48.11
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.2 PK			1.00 V	142	70.61	38.59
2	*2462.00	100.3 AV			1.00 V	142	61.71	38.59
3	2483.50	60.7 PK	74.0	-13.3	1.00 V	142	22.06	38.64
4	2483.50	47.8 AV	54.0	-6.2	1.00 V	142	9.16	38.64
5	4924.00	63.1 PK	74.0	-10.9	1.00 V	340	19.51	43.59
6	4924.00	50.3 AV	54.0	-3.7	1.00 V	340	6.71	43.59
7	7386.00	67.2 PK	74.0	-6.8	1.00 V	277	19.09	48.11
8	7386.00	48.1 AV	54.0	-5.9	1.00 V	277	-0.01	48.11

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.



802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	49.5 PK	74.0	-24.5	1.00 H	46	11.06	38.44
2	2390.00	37.4 AV	54.0	-16.6	1.00 H	46	-1.04	38.44
3	#2400.00	52.9 PK	77.5	-24.6	1.00 H	46	14.44	38.46
4	#2400.00	41.3 AV	66.3	-25.0	1.00 H	46	2.84	38.46
5	*2412.00	97.5 PK			1.00 H	46	59.01	38.49
6	*2412.00	86.3 AV			1.00 H	46	47.81	38.49
7	4824.00	52.3 PK	74.0	-21.7	1.00 H	212	8.81	43.49
8	4824.00	40.6 AV	54.0	-13.4	1.00 H	212	-2.89	43.49
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	52.2 PK	74.0	-21.8	1.00 V	146	13.76	38.44
2	2390.00	38.6 AV	54.0	-15.4	1.00 V	146	0.16	38.44
3	#2400.00	54.4 PK	78.5	-24.1	1.00 V	146	15.94	38.46
4	#2400.00	41.9 AV	68.6	-26.7	1.00 V	146	3.44	38.46
5	*2412.00	98.5 PK			1.00 V	146	60.01	38.49
6	*2412.00	88.6 AV			1.00 V	146	50.11	38.49
7	4824.00	53.1 PK	74.0	-20.9	1.00 V	176	9.61	43.49
8	4824.00	40.1 AV	54.0	-13.9	1.00 V	176	-3.39	43.49

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	97.9 PK			1.00 H	48	59.36	38.54
2	*2437.00	87.2 AV			1.00 H	48	48.66	38.54
3	4874.00	52.6 PK	74.0	-21.4	1.00 H	75	9.06	43.54
4	4874.00	41.3 AV	54.0	-12.7	1.00 H	75	-2.24	43.54
5	7311.00	56.6 PK	74.0	-17.4	1.00 H	163	8.54	48.06
6	7311.00	42.8 AV	54.0	-11.2	1.00 H	163	-5.26	48.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.5 PK			1.00 V	143	62.96	38.54
2	*2437.00	92.3 AV			1.00 V	143	53.76	38.54
3	4874.00	51.7 PK	74.0	-22.3	1.00 V	145	8.16	43.54
4	4874.00	38.6 AV	54.0	-15.4	1.00 V	145	-4.94	43.54
5	7311.00	57.1 PK	74.0	-16.9	1.00 V	233	9.04	48.06
6	7311.00	45.3 AV	54.0	-8.7	1.00 V	233	-2.76	48.06

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	95.7 PK			1.00 H	40	57.11	38.59
2	*2462.00	84.7 AV			1.00 H	40	46.11	38.59
3	2483.50	47.6 PK	74.0	-26.4	1.00 H	40	8.96	38.64
4	2483.50	35.9 AV	54.0	-18.1	1.00 H	40	-2.74	38.64
5	4924.00	52.6 PK	74.0	-21.4	1.00 H	144	9.01	43.59
6	4924.00	39.8 AV	54.0	-14.2	1.00 H	144	-3.79	43.59
7	7386.00	57.5 PK	74.0	-16.5	1.00 H	102	9.39	48.11
8	7386.00	44.3 AV	54.0	-9.7	1.00 H	102	-3.81	48.11
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.7 PK			1.00 V	140	63.11	38.59
2	*2462.00	90.8 AV			1.00 V	140	52.21	38.59
3	2483.50	53.2 PK	74.0	-20.8	1.00 V	140	14.56	38.64
4	2483.50	41.5 AV	54.0	-12.5	1.00 V	140	2.86	38.64
5	4924.00	53.3 PK	74.0	-20.7	1.00 V	130	9.71	43.59
6	4924.00	41.5 AV	54.0	-12.5	1.00 V	130	-2.09	43.59
7	7386.00	57.4 PK	74.0	-16.6	1.00 V	253	9.29	48.11
8	7386.00	45.3 AV	54.0	-8.7	1.00 V	253	-2.81	48.11

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.



BUREAU VERITAS Test Report No.: RF140314N018-1

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	48.3 PK	74.0	-25.7	1.00 H	46	9.86	38.44
2	2390.00	37.9 AV	54.0	-16.1	1.00 H	46	-0.54	38.44
3	#2400.00	52.5 PK	76.2	-23.7	1.00 H	46	14.04	38.46
4	#2400.00	40.6 AV	65.4	-24.8	1.00 H	46	2.14	38.46
5	*2412.00	96.2 PK			1.00 H	46	57.71	38.49
6	*2412.00	85.4 AV			1.00 H	46	46.91	38.49
7	4824.00	52.8 PK	74.0	-21.2	1.00 H	78	9.31	43.49
8	4824.00	41.3 AV	54.0	-12.7	1.00 H	78	-2.19	43.49
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	49.7 PK	74.0	-24.3	1.00 V	143	11.26	38.44
2	2390.00	37.5 AV	54.0	-16.5	1.00 V	143	-0.94	38.44
3	#2400.00	53.1 PK	78.6	-25.5	1.00 V	143	14.64	38.46
4	#2400.00	41.8 AV	67.2	-25.4	1.00 V	143	3.34	38.46
5	*2412.00	98.6 PK			1.00 V	143	60.11	38.49
6	*2412.00	87.2 AV			1.00 V	143	48.71	38.49
7	4824.00	52.8 PK	74.0	-21.2	1.00 V	165	9.31	43.49
8	4824.00	40.8 AV	54.0	-13.2	1.00 V	165	-2.69	43.49

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.7 PK			1.00 H	47	58.16	38.54
2	*2437.00	85.2 AV			1.00 H	47	46.66	38.54
3	4874.00	53.7 PK	74.0	-20.3	1.00 H	66	10.16	43.54
4	4874.00	40.8 AV	54.0	-13.2	1.00 H	66	-2.74	43.54
5	7311.00	59.6 PK	74.0	-14.4	1.00 H	310	11.54	48.06
6	7311.00	46.2 AV	54.0	-7.8	1.00 H	310	-1.86	48.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.4 PK			1.00 V	141	61.86	38.54
2	*2437.00	89.6 AV			1.00 V	141	51.06	38.54
3	4874.00	54.3 PK	74.0	-19.7	1.00 V	82	10.76	43.54
4	4874.00	42.8 AV	54.0	-11.2	1.00 V	82	-0.74	43.54
5	7311.00	59.5 PK	74.0	-14.5	1.00 V	246	11.44	48.06
6	7311.00	45.8 AV	54.0	-8.2	1.00 V	246	-2.26	48.06

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	95.2 PK			1.00 H	40	56.61	38.59
2	*2462.00	84.3 AV			1.00 H	40	45.71	38.59
3	2483.50	49.6 PK	74.0	-24.4	1.00 H	40	10.96	38.64
4	2483.50	37.8 AV	54.0	-16.2	1.00 H	40	-0.84	38.64
5	4924.00	53.8 PK	74.0	-20.2	1.00 H	109	10.21	43.59
6	4924.00	41.7 AV	54.0	-12.3	1.00 H	109	-1.89	43.59
7	7386.00	59.2 PK	74.0	-14.8	1.00 H	212	11.09	48.11
8	7386.00	44.7 AV	54.0	-9.3	1.00 H	212	-3.41	48.11
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.5 PK			1.00 V	142	61.91	38.59
2	*2462.00	91.4 AV			1.00 V	142	52.81	38.59
3	2483.50	52.8 PK	74.0	-21.2	1.00 V	78	14.16	38.64
4	2483.50	41.3 AV	54.0	-12.7	1.00 V	78	2.66	38.64
5	4924.00	53.2 PK	74.0	-20.8	1.00 V	185	9.61	43.59
6	4924.00	40.8 AV	54.0	-13.2	1.00 V	185	-2.79	43.59
7	7386.00	59.8 PK	74.0	-14.2	1.00 V	342	11.69	48.11
8	7386.00	45.3 AV	54.0	-8.7	1.00 V	342	-2.81	48.11

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.



802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	49.5 PK	74.0	-24.5	1.00 H	46	11.06	38.44
2	2390.00	38.7 AV	54.0	-15.3	1.00 H	46	0.26	38.44
3	#2400.00	58.1 PK	74.9	-16.8	1.00 H	46	19.64	38.46
4	#2400.00	46.3 AV	63.9	-17.6	1.00 H	46	7.84	38.46
5	*2422.00	94.9 PK			1.00 H	46	56.39	38.51
6	*2422.00	83.9 AV			1.00 H	46	45.39	38.51
7	4884.00	54.2 PK	74.0	-19.8	1.00 H	88	10.65	43.55
8	4884.00	41.6 AV	54.0	-12.4	1.00 H	88	-1.95	43.55
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	51.1 PK	74.0	-22.9	1.00 V	149	12.66	38.44
2	2390.00	39.6 AV	54.0	-14.4	1.00 V	149	1.16	38.44
3	#2400.00	56.1 PK	77.5	-21.4	1.00 V	149	17.64	38.46
4	#2400.00	43.6 AV	65.9	-22.3	1.00 V	149	5.14	38.46
5	*2422.00	97.5 PK			1.00 V	149	58.99	38.51
6	*2422.00	85.9 AV			1.00 V	149	47.39	38.51
7	4844.00	53.5 PK	74.0	-20.5	1.00 V	352	9.99	43.51
8	4844.00	42.8 AV	54.0	-11.2	1.00 V	352	-0.71	43.51

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	94.3 PK			1.00 H	48	55.76	38.54
2	*2437.00	83.7 AV			1.00 H	48	45.16	38.54
3	4874.00	53.6 PK	74.0	-20.4	1.00 H	65	10.06	43.54
4	4874.00	40.8 AV	54.0	-13.2	1.00 H	65	-2.74	43.54
5	7311.00	59.1 PK	74.0	-14.9	1.00 H	203	11.04	48.06
6	7311.00	46.3 AV	54.0	-7.7	1.00 H	203	-1.76	48.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	97.9 PK			1.00 V	145	59.36	38.54
2	*2437.00	86.9 AV			1.00 V	145	48.36	38.54
3	4874.00	53.9 PK	74.0	-20.1	1.00 V	168	10.36	43.54
4	4874.00	41.2 AV	54.0	-12.8	1.00 V	168	-2.34	43.54
5	7311.00	58.1 PK	74.0	-15.9	1.00 V	302	10.04	48.06
6	7311.00	44.6 AV	54.0	-9.4	1.00 V	302	-3.46	48.06

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.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	92.6 PK			1.00 H	40	54.03	38.57
2	*2452.00	81.2 AV			1.00 H	40	42.63	38.57
3	2483.50	49.2 PK	74.0	-24.8	1.00 H	40	10.56	38.64
4	2483.50	38.6 AV	54.0	-15.4	1.00 H	40	-0.04	38.64
5	4904.00	54.1 PK	74.0	-19.9	1.00 H	266	10.53	43.57
6	4904.00	42.6 AV	54.0	-11.4	1.00 H	266	-0.97	43.57
7	7356.00	56.9 PK	74.0	-17.1	1.00 H	106	8.81	48.09
8	7356.00	42.3 AV	54.0	-11.7	1.00 H	106	-5.79	48.09
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	97.6 PK			1.00 V	142	59.03	38.57
2	*2452.00	86.5 AV			1.00 V	142	47.93	38.57
3	2483.50	52.8 PK	74.0	-21.2	1.00 V	142	14.16	38.64
4	2483.50	40.6 AV	54.0	-13.4	1.00 V	142	1.96	38.64
5	4904.00	54.9 PK	74.0	-19.1	1.00 V	195	11.33	43.57
6	4904.00	41.3 AV	54.0	-12.7	1.00 V	195	-2.27	43.57
7	7356.00	59.6 PK	74.0	-14.4	1.00 V	328	11.51	48.09
8	7356.00	46.7 AV	54.0	-7.3	1.00 V	328	-1.39	48.09

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.



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	Apr. 24,13	Apr. 23,14
Spectrum Analyzer (9KHz-25GHz)	Agilent	E7405A	MY45118807	May 14,13	May 13,14
Power Meter	Anritsu	ML2495A	1139001	Feb. 21,14	Feb. 20,15
Power Sensor	Anritsu	MA2411B	1126068	Feb. 21,14	Feb. 20,15
Digital Multimeter	FLUKE	15B	A1220010D G	Oct. 30, 13	Oct. 29, 14

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

2. The test was performed in Oven room

4.3.3 TEST PROCEDURE

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

4.3.4 .DEVIATION FROM TEST STANDARD

No deviation.



4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	9.56	0.5	PASS
6	2437	9.56	0.5	PASS
11	2462	9.55	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.56	0.5	PASS
6	2437	16.54	0.5	PASS
11	2462	16.55	0.5	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.83	0.5	PASS
6	2437	17.83	0.5	PASS
11	2462	17.85	0.5	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	36.57	0.5	PASS
6	2437	36.58	0.5	PASS
9	2452	36.59	0.5	PASS

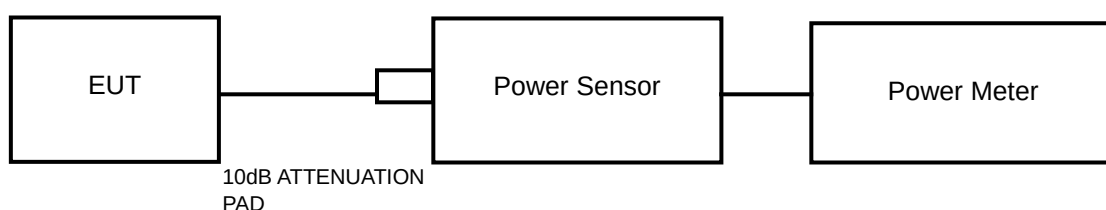


4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.3.2 to get information of above instrument.

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****4.4.7.1 MAXIMUM PEAK OUTPUT POWER****802.11b**

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.92	30	PASS
6	2437	19.42	30	PASS
11	2462	19.21	30	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	22.12	30	PASS
6	2437	21.72	30	PASS
11	2462	20.43	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
1	2412	21.46	30	PASS
6	2437	21.41	30	PASS
11	2462	20.26	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
3	2422	21.14	30	PASS
6	2437	20.66	30	PASS
9	2452	19.96	30	PASS



4.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

The average 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.

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	16.56	N/A
6	2437	17.03	N/A
11	2462	16.95	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.63	N/A
6	2437	14.83	N/A
11	2462	13.48	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	13.85	N/A
6	2437	14.23	N/A
11	2462	12.77	N/A

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
3	2422	14.02	N/A
6	2437	13.06	N/A
9	2452	12.69	N/A



Test Report No.: RF140314N018-1

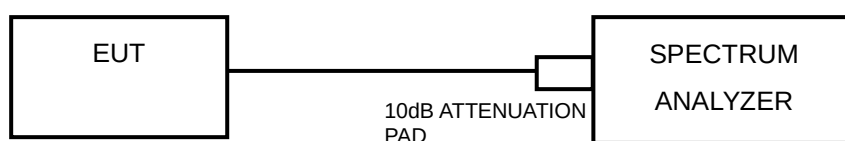


4.5 POWER SPECTRAL DENSITY MEASUREMENT

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 span to 1.5 times the DTS bandwidth
2. Set the RBW = 100 kHz, VBW $\geq 3 \times$ RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

Same as item 4.3.6



4.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	7.36	8	PASS
6	2437	7.75	8	PASS
11	2462	7.45	8	PASS

802.11g

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	3.12	8	PASS
6	2437	3.39	8	PASS
11	2462	2.02	8	PASS

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-0.68	8	PASS
6	2437	-0.36	8	PASS
11	2462	-0.51	8	PASS

802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/100kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-1.40	8	PASS
6	2437	-2.02	8	PASS
9	2452	-2.36	8	PASS

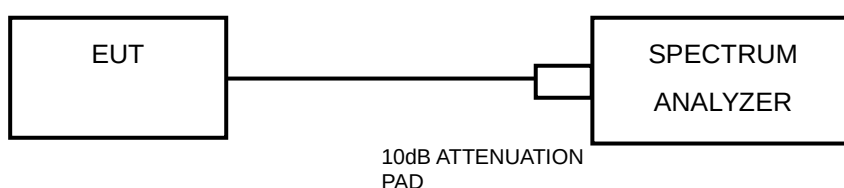


4.6 OUT OF BAND EMISSION MEASUREMENT

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

MEASUREMENT PROCEDURE REF

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



MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Ensure that the number of measurement points $\geq$ span/RBW
4. According to measurement points to set differ measurement span.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

Same as item 4.3.6



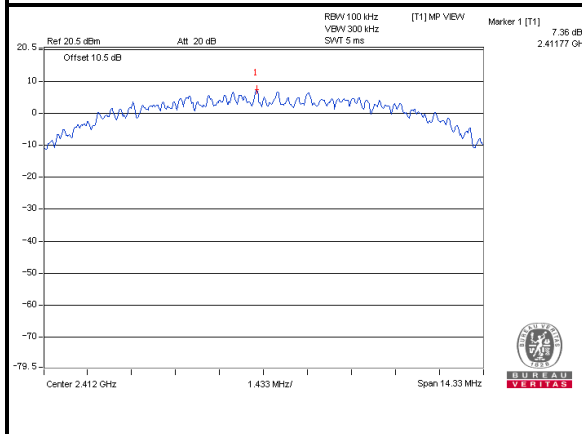
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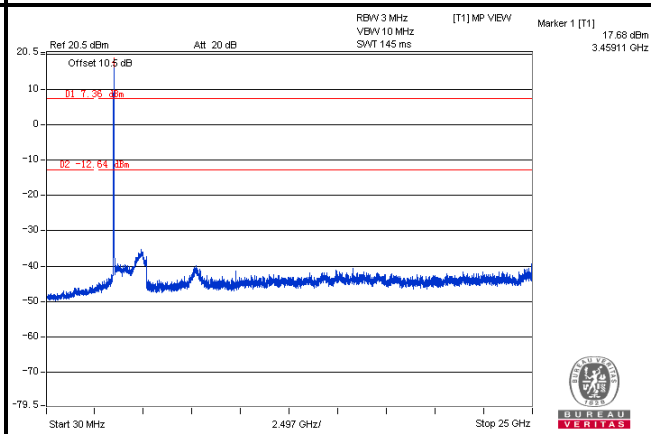
4.6.7 TEST RESULTS

802.11b

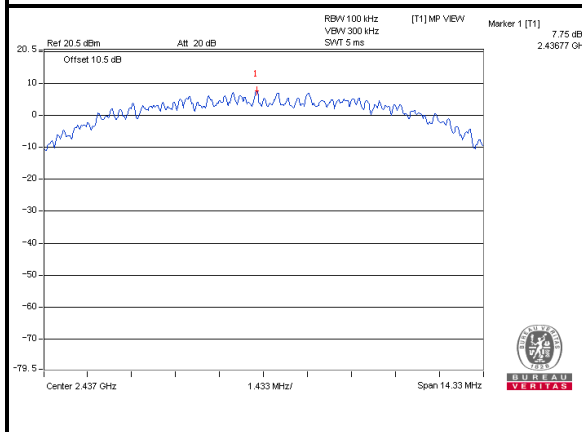
CH 1 – Reference level



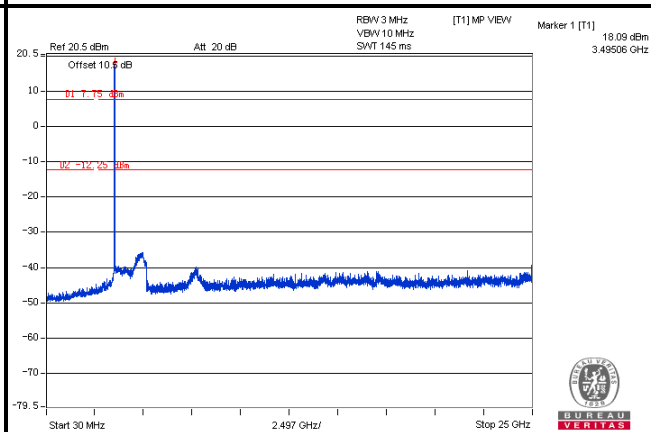
CH 1 – Unwanted emission level



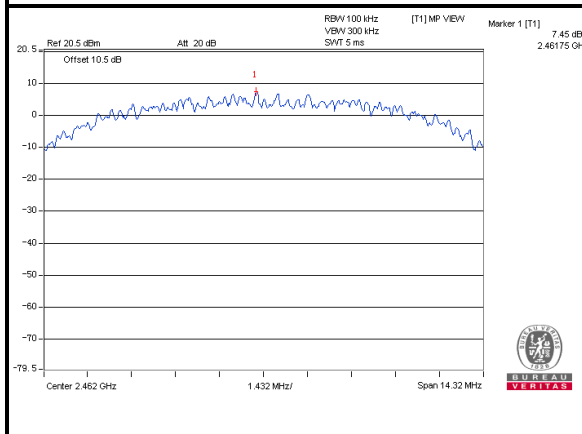
CH 6 – Reference level



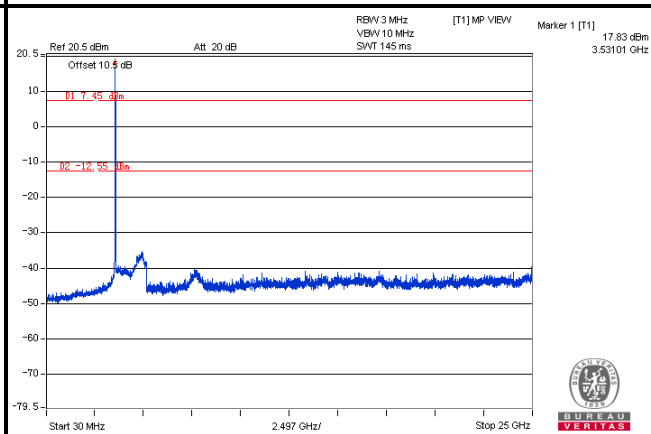
CH 6 – Unwanted emission level



CH 11 – Reference level



CH 11 –Unwanted emission level



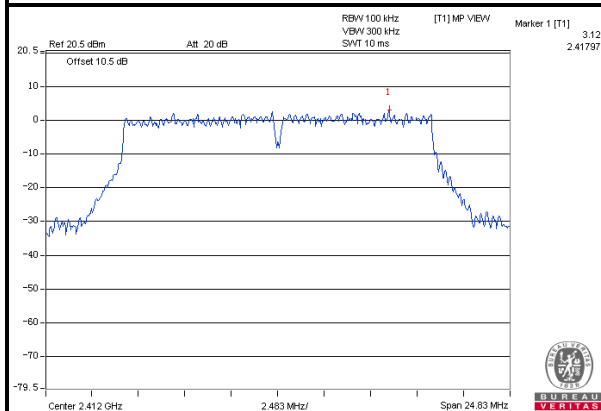


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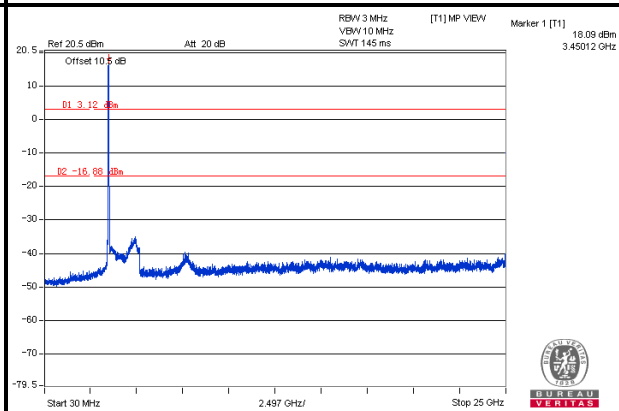
Test Report No.: RF140314N018-1

802.11g

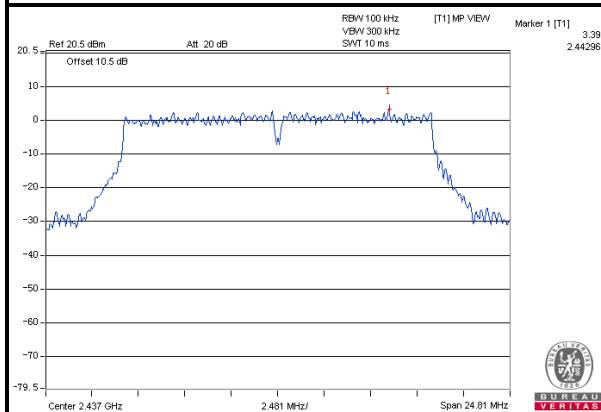
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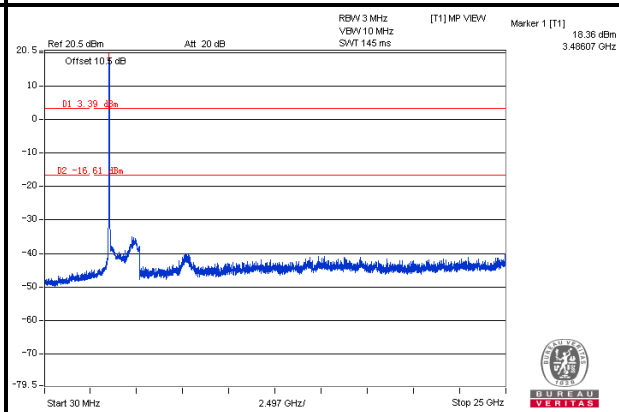
CH 1 – Unwanted emission level



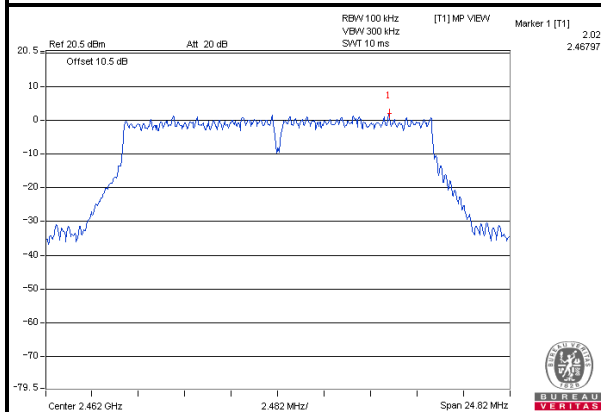
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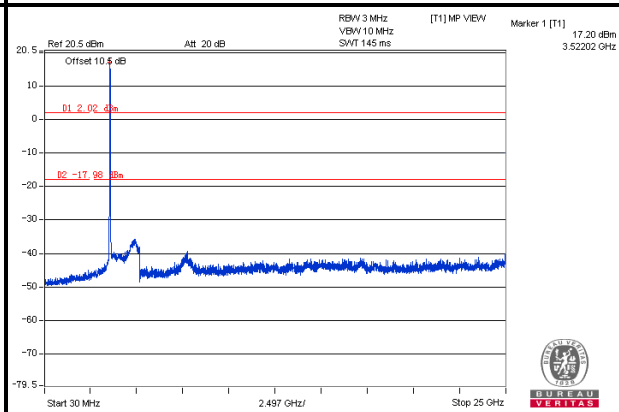
CH 6 – Unwanted emission level



CH 11 – Reference level



CH 11 –Unwanted emission level



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Dongguan Branch

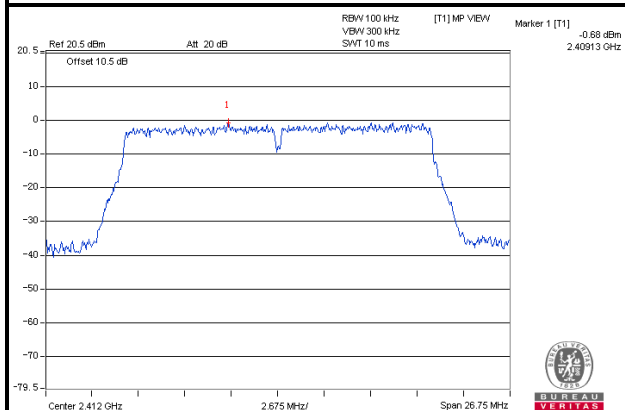
No. 34, Chenwulu Section, Guantai Rd., Houjie
Town, Dongguan City,
Guangdong 523942, China

Tel: +86 769 8593 5656
Fax: +86 769 8593 1080
Email: customerservice.dg@cn.bureauveritas.com

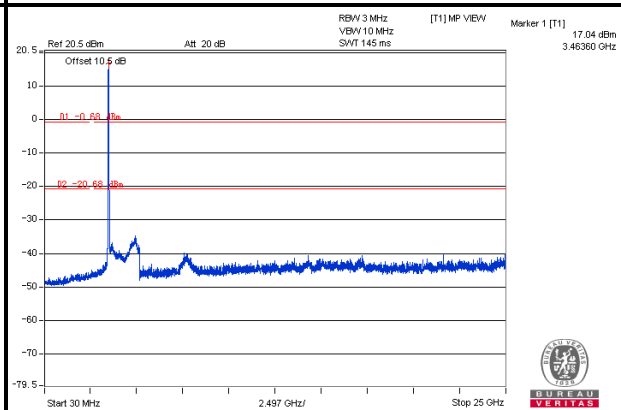


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802.11n (20MHz)

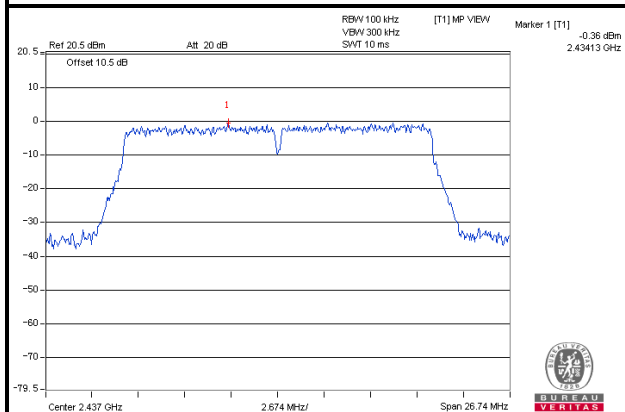
CH 1 – Reference level



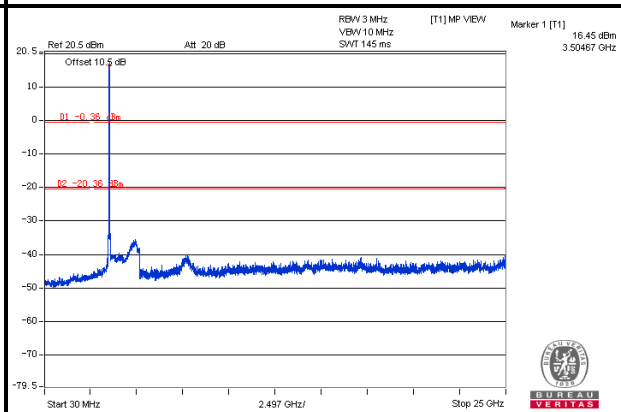
CH 1 – Unwanted emission level



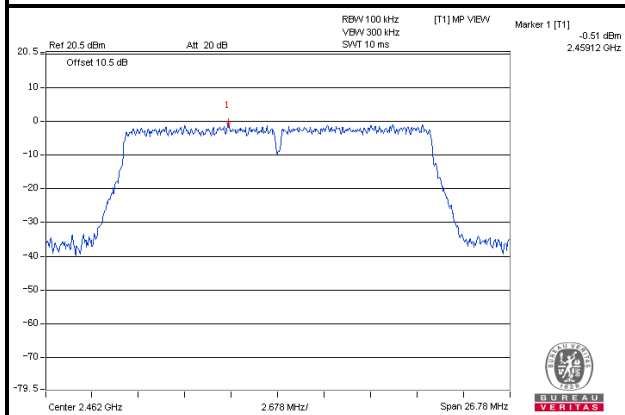
CH 6 – Reference level



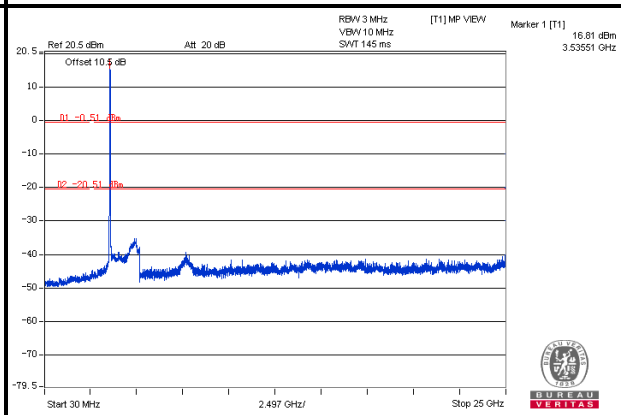
CH 6 – Unwanted emission level



CH 11 – Reference level



CH 11 –Unwanted emission level



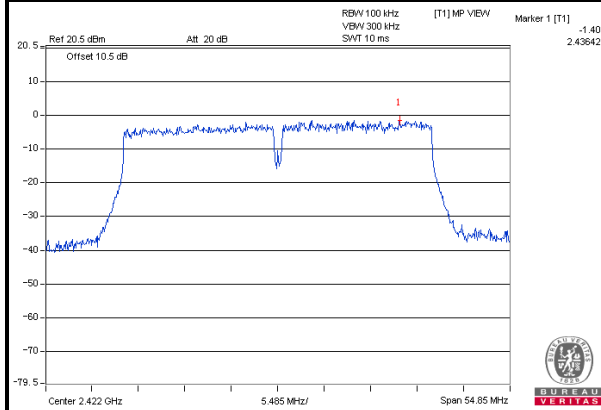


BUREAU
VERITAS

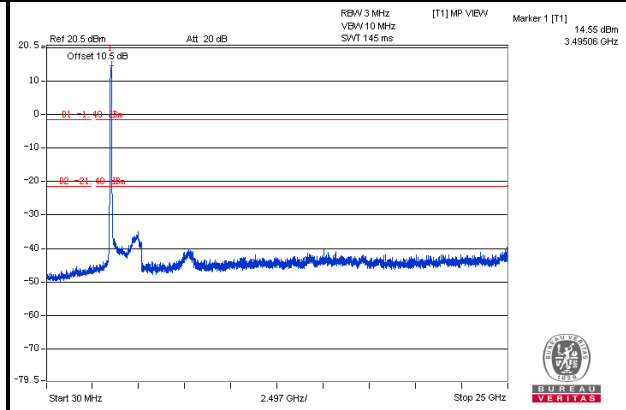
Test Report No.: RF140314N018-1

802.11n (40MHz)

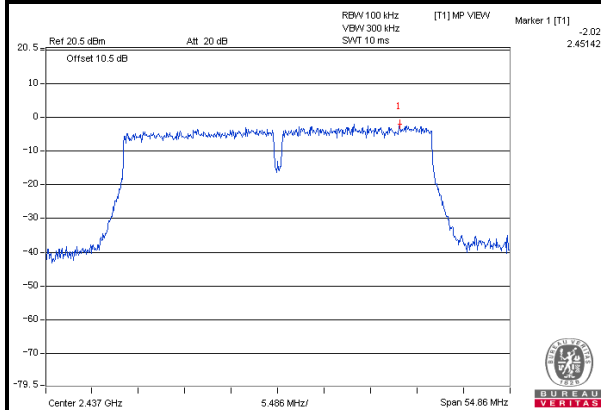
CH 3 – Reference level



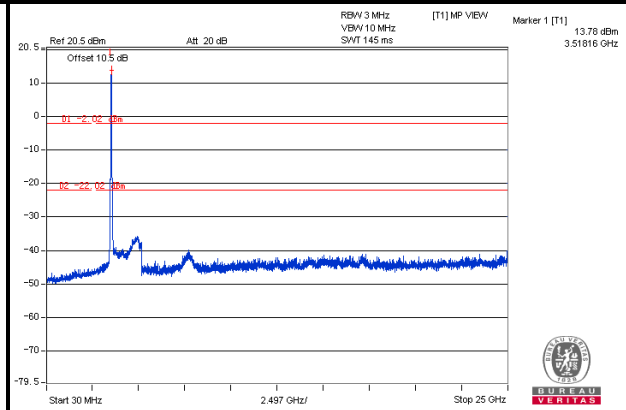
CH 3 – Unwanted emission level



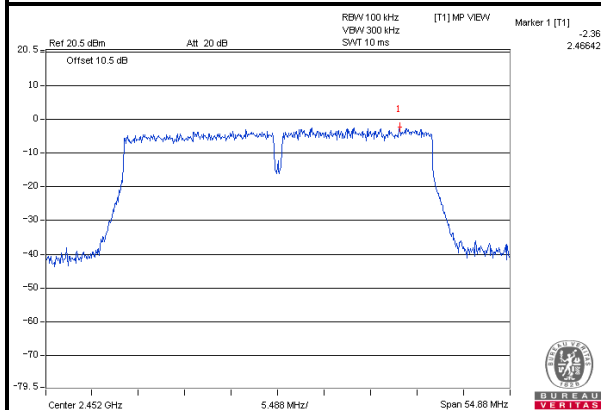
CH 6 – Reference level



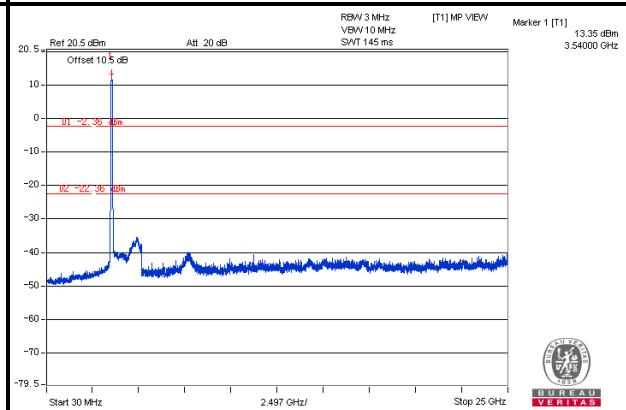
CH 6 – Unwanted emission level



CH 9 – Reference level



CH 9 – Unwanted emission level





Test Report No.: RF140314N018-1

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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---