



BUREAU
VERITAS

Test Report No.: W7L-P22090012RF02



VARIANT FCC TEST REPORT

(Part 15, Subpart C)

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9,02600 Espoo,Finland

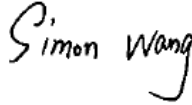

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9,02600 Espoo,Finland
Product:	Tablet PC
Brand Name:	NOKIA
Model Name:	TA-1472
FCC ID:	2AJOTTA-1472
Date of tests:	May. 15, 2022 ~ Oct. 20, 2022

The tests have been carried out according to the requirements of the following standard:

FCC Part 15, Subpart C, Section 15.247

ANSI C63.10-2013

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

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
	
Date: Oct. 20, 2022	Date: Oct. 20, 2022

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22050003RF02	Original release	Jun. 07, 2022
W7L-P22090012RF02	Based on the original product changing BT/WIFI/GPS antenna type and changing its antenna gain, So in this report re-test CE and RSE, verified the power of BLE 1M/2M/S2/S8; The 2.4G WIFI had been retested the whole test items. Other data is copied from the original report W7L-P22050003RF02.	Oct. 20, 2022



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
15.207	AC Power Conducted Emission	Compliance
15.205 15.209	Radiated Emissions	Compliance
15.247(d)	Out of band Emission Measurement	Compliance
15.247(a)(2)	6dB bandwidth	Compliance
15.247(b)	Conducted Output power	Compliance
15.247(e)	Power Spectral Density	Compliance
15.203	Antenna Requirement	Compliance

- Note :
- 1.Except RSE , other data please refer to Appendix 1 (for WIFI-2.4G) and Appendix 2 (for BLE)
 2. Only the worse data were report
 3. The power table of BLE1M/2M/S2/S8 had not update, because the verified power is the same as original power.

Test Lab Information Reference:

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

Lab Address:

No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Accredited Test Lab Cert 3939.01



1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (30MHz~1GMHz)	±4.98dB
Radiated emissions (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

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



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Tablet PC
BRAND NAME	NOKIA
MODEL NAME	TA-1472
NOMINAL VOLTAGE	3.8Vdc (Li-ion, battery) 5Vdc (adapter)
MODULATION	DSSS, OFDM, GFSK
TRANSMISSION RATE	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n20: up to 72.2 Mbps 802.11n40: up to 150 Mbps BT_LE: 0.125 Mbps /0.5 Mbps /1 Mbps/2 Mbps
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n(HT20/40) 2402-2480MHz for BT-LE(GFSK)
MAX. OUTPUT POWER	WLAN: 279.90mW (Maximum) BT-LE: 2.75mW (Maximum)
ANTENNA TYPE	MONOPOLE Antenna with -0.55dBi gain
HW VERSION	V0.2
SW VERSION	00WW_0_190
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: non-shielded cable, with w/o ferrite core, 1 meter Earphone: non-shielded cable, with w/o ferrite core, 1.5 meter



NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one transmitter and one receiver.

MODULATION MODE	TX/RX FUNCTION
802.11b	1TX /1RX
802.11g	1TX /1RX
802.11n (20MHz)	1TX /1RX
802.11n (40MHz)	1TX /1RX
BT_LE(1MHz)	1TX /1RX
BT_LE(2MHz)	1TX /1RX
BT_LE(S2)	1TX /1RX
BT_LE(S8)	1TX /1RX

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



List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	NOKIA	HUNAN GAOYUAN BATTERY CO.,LTD	WWT50	Capacity: 3.8 Vdc, 5100mAh
AC Adapter	NOKIA	ShenZhenBaiJunDaElectronic CO., LTD.	AD-010U	I/P: 110-240Vac, 0.35A, O/P: 5.0Vdc, 2.0A
Earphone	NOKIA	HUIZHOU JUWEI ELECTRONICS CO.,LTD	JWEP1237-W27H	Signal Line, 1.5meter
USB Cable	Saibao	Saibao(Jiangxi) Communication Industrial Co.,Ltd	SWT-A116A	Signal Line, 1.0meter
LCD Panel 1	HUAXIAN	China display Optoelectronics Technology (Huizhou) Company Limited	8019-3	LCD, 8",800 * 1280, Add-on, α -Si, Non-airgap, A3
LCD Panel 2	COE	CHONG QIAN COE DISPLAY TECHNOLOGY CO., LTD.	T080ET011-HD1-QT	LCD, 8",800 * 1280,
Front Camera 1	C&T	SHENZHEN C&T TECHNOLOGY CO.,LTD	BC12715 V0	2M
Rear Camera 1	C&T	SHENZHEN C&T TECHNOLOGY CO.,LTD	BB18716 V0	8M



2.2 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	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

40 channels are provided for BT-LE (GFSK):

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480



2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

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

2.2.2 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 Y 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	
-	√	√	√	√	-

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

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

RADIATED EMISSION TEST (BELOW 1GHz):

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11n HT40	3 to 9	9	OFDM	MCS0
BT-LE	0 to 39	19	GFSK	2.0



RADIATED EMISSION TEST (ABOVE 1GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
802.11n HT40	3 to 9	3,6,9	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	0.125&0.5&1&2

POWER LINE CONDUCTED EMISSION TEST

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11n HT40	3 to 9	9	OFDM	MCS0



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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
802.11n HT40	3 to 9	3,6,9	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	0.125&0.5&1&2



ANTENNA PORT CONDUCTED MEASUREMENT:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n HT20	1 to 11	1, 6, 11	OFDM	MCS0
802.11n HT40	3 to 9	3,6,9	OFDM	MCS0
BT-LE	0 to 39	0,19, 39	GFSK	0.125&0.5&1&2

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5V By Adapter	Carl Xie
RE≥1G	23deg. C, 70%RH	DC 5V By Adapter	Carl Xie
PLC	25deg. C, 52%RH	DC 5V By Adapter	Lily Zhao
APCM	25deg. C, 60%RH	DC 3.8V By Battery	Lily Zhao



2.3 Duty Cycle of Test Signal

Please Refer to Appendix1/2 Of this test report.

WORST-CASE DATA:

Measured Duty Cycle		
Mode		Duty Cycle [%]
		ANT1
WIFI 2.4GHz	11B	99.29
	11G	95.89
	11N20	95.93
	11N40	90.63
BT LE	BT4.0	87.23
	BT5.0	65.60
	BTS2	81.28
	BTS8	94.76

Note:

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



2.4 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, Section 15.247

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10-2013

Note :

1. All test items have been performed and recorded as per the above standards.
2. The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (Certification). The test report has been issued separately.

2.5 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	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thnikpad T450	PC-049PT1	N/A

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



3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:** 1.The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 15,22	Feb. 14,23
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Mar. 04,22	Mar. 03,23

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



3.1.3 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.

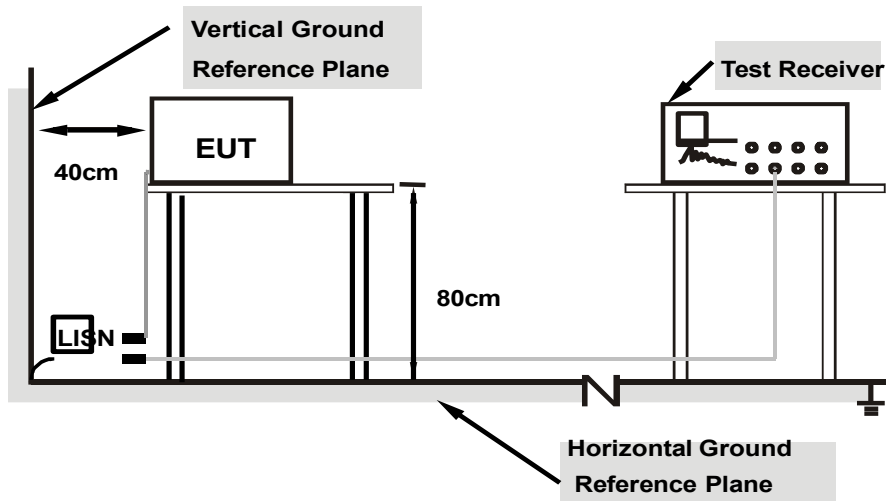
NOTE: All modes of operation were investigated and the worst-case emissions are reported.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.



3.1.5 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).

3.1.6 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.



3.1.7 TEST RESULTS

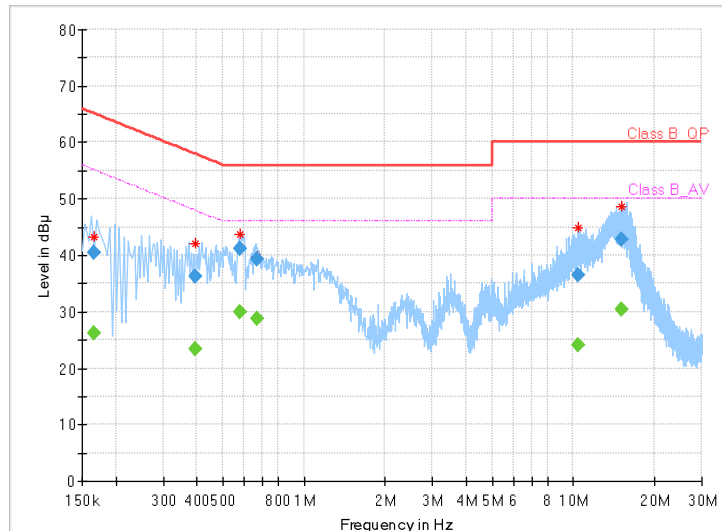
CONDUCTED WORST-CASE DATA:

Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25deg. C, 55%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.166000	---	26.14	55.16	29.02	L1	ON	9.7
0.166000	40.37	---	65.16	24.79	L1	ON	9.7
0.396000	---	23.43	47.94	24.51	L1	ON	9.7
0.396000	36.33	---	57.94	21.61	L1	ON	9.7
0.580000	---	29.83	46.00	16.17	L1	ON	9.7
0.580000	41.26	---	56.00	14.74	L1	ON	9.7
0.668000	---	28.89	46.00	17.11	L1	ON	9.7
0.668000	39.27	---	56.00	16.73	L1	ON	9.7
10.364000	---	24.11	50.00	25.89	L1	ON	9.8
10.364000	36.43	---	60.00	23.57	L1	ON	9.8
15.024000	---	30.46	50.00	19.54	L1	ON	9.8
15.024000	42.84	---	60.00	17.16	L1	ON	9.8

- 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 = Limit value -Emission level
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

Full Spectrum



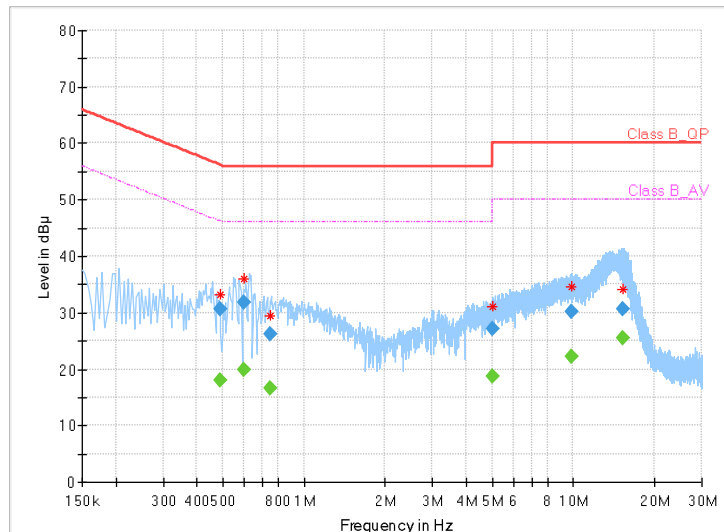


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25deg. C, 55%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBUV)	CAverage (dBUV)	Limit (dBUV)	Margin (dB)	Line	Filter	Corr. (dB)
0.488000	---	18.05	46.20	28.15	N	ON	9.7
0.488000	30.59	---	56.20	25.61	N	ON	9.7
0.596000	---	19.92	46.00	26.08	N	ON	9.7
0.596000	31.76	---	56.00	24.24	N	ON	9.7
0.748000	---	16.64	46.00	29.36	N	ON	9.7
0.748000	26.21	---	56.00	29.79	N	ON	9.7
5.016000	---	18.69	50.00	31.31	N	ON	9.8
5.016000	27.10	---	60.00	32.90	N	ON	9.8
9.848000	---	22.18	50.00	27.82	N	ON	9.8
9.848000	30.28	---	60.00	29.72	N	ON	9.8
15.284000	---	25.52	50.00	24.48	N	ON	9.8
15.284000	30.71	---	60.00	29.29	N	ON	9.8

- 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 = Limit value -Emission level
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

Full Spectrum





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 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.

**3.2.2 TEST INSTRUMENTS**

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 06,22	Mar. 05,23
Horn Antenna	ETS-LINDGREN	3117	00168692	Mar. 06,22	Mar. 05,23
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 24, 22	Aug. 23, 23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120-3	3.2.06	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 02,22	Jun. 01,23
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 18,22	Feb. 17,23
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 21,22	Feb.20,23
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 25,21	Aug. 24,22
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 24,22	Aug. 23,23
Power Meter	Anritsu	ML2495A	1506002	Feb. 22,22	Feb. 21,23
Power Sensor	Anritsu	MA2411B	1339352	May. 06,22	May. 05,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.05,21	Sep. 04,22
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep. 04,22	Sep. 03,223

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Chamber.
 3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.



3.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. 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 (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

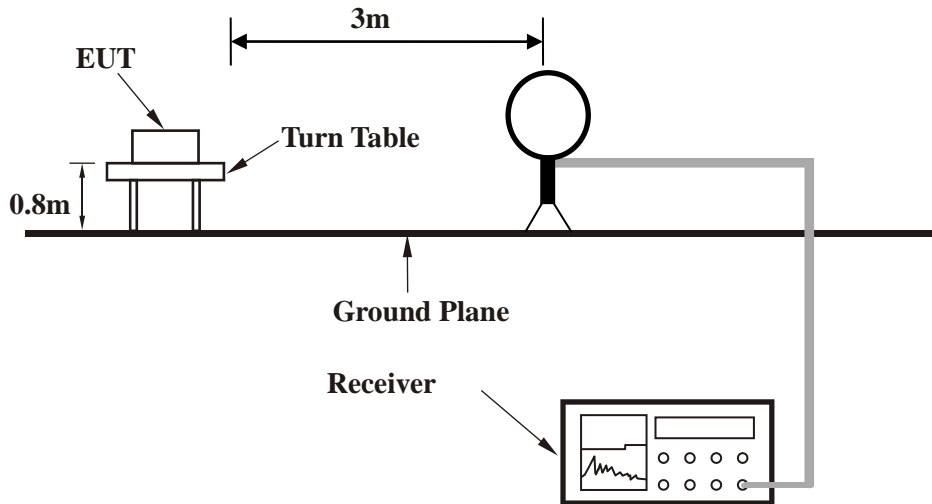
3.2.4 DEVIATION FROM TEST STANDARD

No deviation

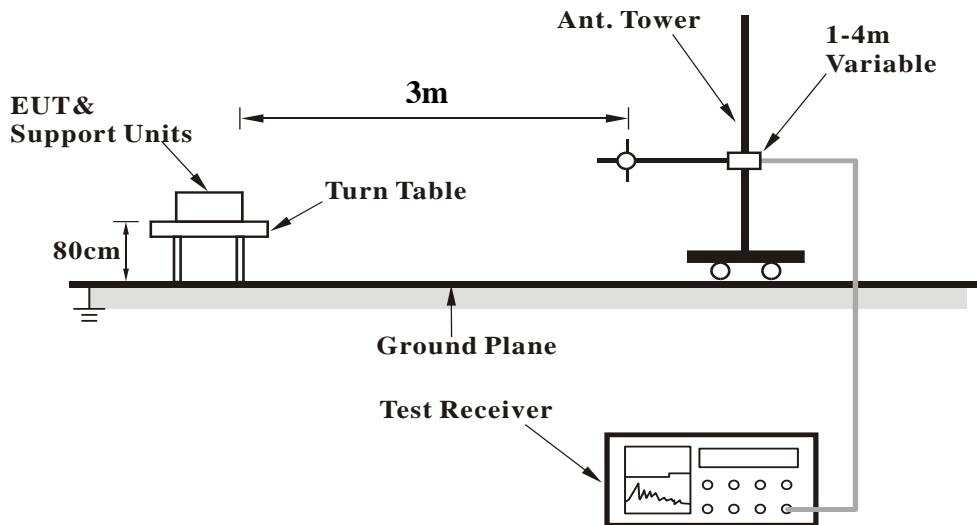


3.2.5 TEST SETUP

<Frequency Range 9KHz~30MHz >

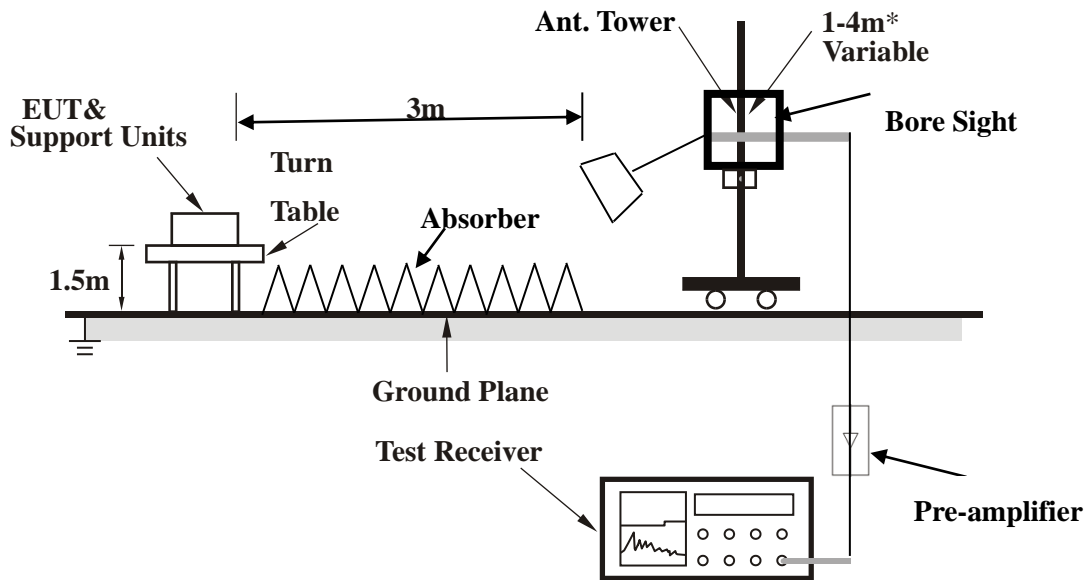


< Frequency Range 30MHz~1GHz >





<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

3.2.6 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.



3.2.7 TEST RESULTS

NOTE : The 9KHz~30MHz amplitude of spurious emissions are more than 20 dB below the limit is not record in the report.

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

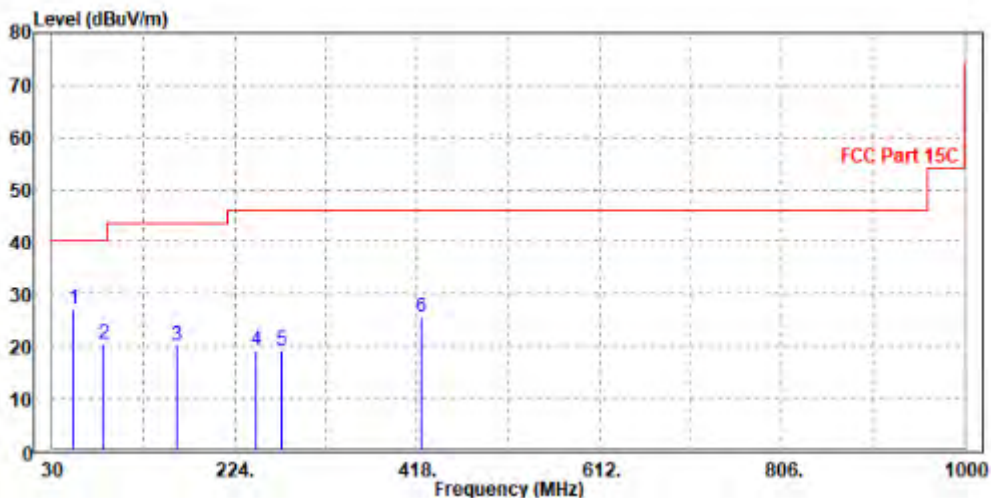
802.11n (40MHz)

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
52.31	27.02	53.63	40	-12.98	9.97	0.41	36.99	193	273	QP
85.29	20.3	48.42	40	-19.7	8.33	0.5	36.95	129	295	QP
161.92	19.94	44.81	43.5	-23.56	10.95	0.68	36.5	121	171	QP
247.28	19.27	41.34	46	-26.73	13.38	0.83	36.28	198	230	QP
274.44	19.22	40.88	46	-26.78	13.74	0.87	36.27	171	146	QP
422.85	25.59	44.32	46	-20.41	16.63	1.11	36.47	116	32	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.



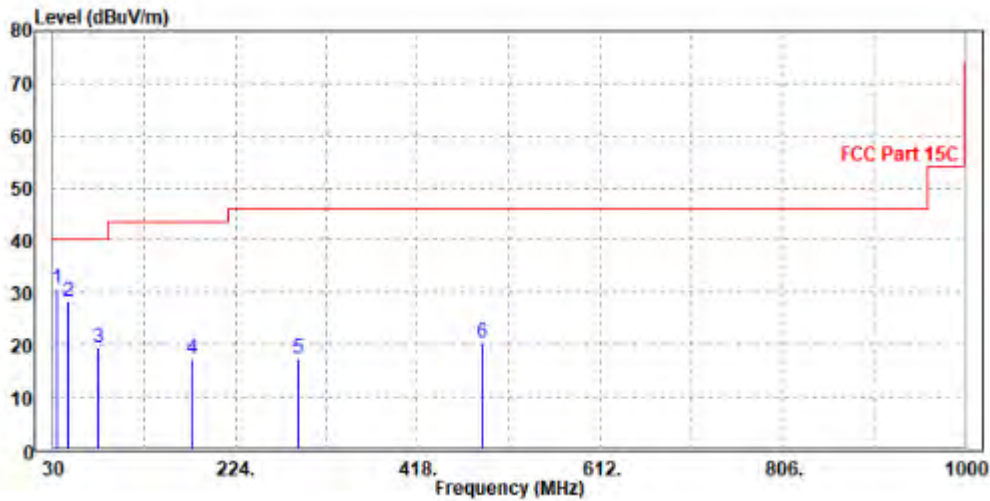


CHANNEL	TX Channel 9	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
34.85	30.6	49.74	40	-9.4	17.88	0.33	37.35	167	60	QP
46.49	28.33	54.07	40	-11.67	10.96	0.38	37.08	179	81	QP
77.53	19.53	48.3	40	-20.47	7.72	0.49	36.98	188	44	QP
178.41	17.35	41.88	43.5	-26.15	11.18	0.7	36.41	163	135	QP
290.93	17.31	38.92	46	-28.69	13.75	0.9	36.26	128	22	QP
486.87	20.32	38.28	46	-25.68	17.43	1.2	36.59	173	330	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.





ABOVE 1GHz WORST-CASE DATA:

Note: 1. For radiated emissions testing , the full testing range of different modes have been scanned , only the worst case data is reported in the sheet.

2. All other emissions were greater than 20dB below the limit was not recorded

802.11b:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.64	59.4	74	-23.36	31.75	5.86	46.37	178	318	Peak
2390	43.07	51.83	54	-10.93	31.75	5.86	46.37	178	318	Average
2412	99.73	108.39	/	/	31.82	5.89	46.37	169	20	Peak
2412	98.22	106.88	/	/	31.82	5.89	46.37	169	20	Average
2483.5	50.6	58.93	74	-23.4	32.05	5.99	46.37	183	136	Peak
2483.5	43.12	51.45	54	-10.88	32.05	5.99	46.37	183	136	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.42	58.79	74	-23.58	32.14	5.86	46.37	133	66	Peak
2390	43.48	51.85	54	-10.52	32.14	5.86	46.37	133	66	Average
2412	93.9	102.19	/	/	32.19	5.89	46.37	129	88	Peak
2412	92.72	101.01	/	/	32.19	5.89	46.37	129	88	Average
2483.5	50.92	58.94	74	-23.08	32.36	5.99	46.37	147	192	Peak
2483.5	43.01	51.03	54	-10.99	32.36	5.99	46.37	147	192	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2412MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.38	60.14	74	-22.62	31.75	5.86	46.37	148	149	Peak
2390	43.02	51.78	54	-10.98	31.75	5.86	46.37	148	149	Average
2437	100.61	109.15	/	/	31.9	5.93	46.37	159	310	Peak
2437	99.66	108.2	/	/	31.9	5.93	46.37	159	310	Average
2483.5	50.39	58.72	74	-23.61	32.05	5.99	46.37	143	212	Peak
2483.5	43.4	51.73	54	-10.6	32.05	5.99	46.37	143	212	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.86	60.23	74	-22.14	32.14	5.86	46.37	103	38	Peak
2390	43.36	51.73	54	-10.64	32.14	5.86	46.37	103	38	Average
2437	93.95	102.14	/	/	32.25	5.93	46.37	112	238	Peak
2437	92.72	100.91	/	/	32.25	5.93	46.37	112	238	Average
2483.5	51.35	59.37	74	-22.65	32.36	5.99	46.37	101	160	Peak
2483.5	43.6	51.62	54	-10.4	32.36	5.99	46.37	101	160	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2437MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50	58.76	74	-24	31.75	5.86	46.37	103	304	Peak
2390	42.57	51.33	54	-11.43	31.75	5.86	46.37	103	304	Average
2462	102.86	111.29	/	/	31.98	5.96	46.37	101	154	Peak
2462	101.83	110.26	/	/	31.98	5.96	46.37	101	154	Average
2483.5	52.3	60.63	74	-21.7	32.05	5.99	46.37	92	76	Peak
2483.5	45.23	53.56	54	-8.77	32.05	5.99	46.37	92	76	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.54	59.91	74	-22.46	32.14	5.86	46.37	117	305	Peak
2390	43.23	51.6	54	-10.77	32.14	5.86	46.37	117	305	Average
2462	98.29	106.39	/	/	32.31	5.96	46.37	132	15	Peak
2462	97.2	105.3	/	/	32.31	5.96	46.37	132	15	Average
2483.5	51.91	59.93	74	-22.09	32.36	5.99	46.37	111	185	Peak
2483.5	44.37	52.39	54	-9.63	32.36	5.99	46.37	111	185	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2462MHz: 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										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	56.58	65.34	74	-17.42	31.75	5.86	46.37	136	129	Peak
2390	47.32	56.08	54	-6.68	31.75	5.86	46.37	136	129	Average
2412	99.71	108.37	/	/	31.82	5.89	46.37	137	237	Peak
2412	92.26	100.92	/	/	31.82	5.89	46.37	137	237	Average
2483.5	50.45	58.78	74	-23.55	32.05	5.99	46.37	129	209	Peak
2483.5	43.22	51.55	54	-10.78	32.05	5.99	46.37	129	209	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.75	61.12	74	-21.25	32.14	5.86	46.37	149	125	Peak
2390	44.2	52.57	54	-9.8	32.14	5.86	46.37	149	125	Average
2412	95.35	103.64	/	/	32.19	5.89	46.37	152	245	Peak
2412	87.68	95.97	/	/	32.19	5.89	46.37	152	245	Average
2483.5	51.29	59.31	74	-22.71	32.36	5.99	46.37	151	247	Peak
2483.5	42.92	50.94	54	-11.08	32.36	5.99	46.37	151	247	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2412MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.18	58.94	74	-23.82	31.75	5.86	46.37	147	48	Peak
2390	42.93	51.69	54	-11.07	31.75	5.86	46.37	147	48	Average
2437	101.57	110.11	/	/	31.9	5.93	46.37	159	264	Peak
2437	94.33	102.87	/	/	31.9	5.93	46.37	159	264	Average
2483.5	51.14	59.47	74	-22.86	32.05	5.99	46.37	142	252	Peak
2483.5	43.76	52.09	54	-10.24	32.05	5.99	46.37	142	252	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.26	58.63	74	-23.74	32.14	5.86	46.37	122	270	Peak
2390	43.61	51.98	54	-10.39	32.14	5.86	46.37	122	270	Average
2437	94.9	103.09	/	/	32.25	5.93	46.37	121	282	Peak
2437	86.96	95.15	/	/	32.25	5.93	46.37	121	282	Average
2483.5	51.07	59.09	74	-22.93	32.36	5.99	46.37	113	197	Peak
2483.5	43.62	51.64	54	-10.38	32.36	5.99	46.37	113	197	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2437MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.81	59.57	74	-23.19	31.75	5.86	46.37	181	49	Peak
2390	42.32	51.08	54	-11.68	31.75	5.86	46.37	181	49	Average
2462	99.19	107.62	/	/	31.98	5.96	46.37	183	256	Peak
2462	90.76	99.19	/	/	31.98	5.96	46.37	183	256	Average
2483.5	62.12	70.45	74	-11.88	32.05	5.99	46.37	189	166	Peak
2483.5	50.79	59.12	54	-3.21	32.05	5.99	46.37	189	166	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.37	58.74	74	-23.63	32.14	5.86	46.37	146	19	Peak
2390	42.49	50.86	54	-11.51	32.14	5.86	46.37	146	19	Average
2462	93.11	101.21	/	/	32.31	5.96	46.37	150	52	Peak
2462	85.69	93.79	/	/	32.31	5.96	46.37	150	52	Average
2483.5	58.13	66.15	74	-15.87	32.36	5.99	46.37	152	308	Peak
2483.5	46.68	54.7	54	-7.32	32.36	5.99	46.37	152	308	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2462MHz: Fundamental frequency.



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										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	60.87	69.63	74	-13.13	31.75	5.86	46.37	128	172	Peak
2390	48.68	57.44	54	-5.32	31.75	5.86	46.37	128	172	Average
2412	101.99	110.65	/	/	31.82	5.89	46.37	131	177	Peak
2412	93.37	102.03	/	/	31.82	5.89	46.37	131	177	Average
2483.5	51.11	59.44	74	-22.89	32.05	5.99	46.37	128	360	Peak
2483.5	43.22	51.55	54	-10.78	32.05	5.99	46.37	128	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.39	60.76	74	-21.61	32.14	5.86	46.37	145	24	Peak
2390	44	52.37	54	-10	32.14	5.86	46.37	145	24	Average
2412	95.5	103.79	/	/	32.19	5.89	46.37	144	139	Peak
2412	87.22	95.51	/	/	32.19	5.89	46.37	144	139	Average
2483.5	51.67	59.69	74	-22.33	32.36	5.99	46.37	142	292	Peak
2483.5	43.58	51.6	54	-10.42	32.36	5.99	46.37	142	292	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2412MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.88	59.64	74	-23.12	31.75	5.86	46.37	169	72	Peak
2390	42.63	51.39	54	-11.37	31.75	5.86	46.37	169	72	Average
2437	101.32	109.86	/	/	31.9	5.93	46.37	174	58	Peak
2437	92.7	101.24	/	/	31.9	5.93	46.37	174	58	Average
2483.5	50.82	59.15	74	-23.18	32.05	5.99	46.37	160	159	Peak
2483.5	43.56	51.89	54	-10.44	32.05	5.99	46.37	160	159	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.76	58.13	74	-24.24	32.14	5.86	46.37	158	204	Peak
2390	43.44	51.81	54	-10.56	32.14	5.86	46.37	158	204	Average
2437	93.98	102.17	/	/	32.25	5.93	46.37	163	207	Peak
2437	85.33	93.52	/	/	32.25	5.93	46.37	163	207	Average
2483.5	51.32	59.34	74	-22.68	32.36	5.99	46.37	166	24	Peak
2483.5	43.82	51.84	54	-10.18	32.36	5.99	46.37	166	24	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2437MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.82	58.58	74	-24.18	31.75	5.86	46.37	191	14	Peak
2390	41.73	50.49	54	-12.27	31.75	5.86	46.37	191	14	Average
2462	98.74	107.17	/	/	31.98	5.96	46.37	185	54	Peak
2462	90.09	98.52	/	/	31.98	5.96	46.37	185	54	Average
2483.5	64.61	72.94	74	-9.39	32.05	5.99	46.37	198	49	Peak
2483.5	50.8	59.13	54	-3.2	32.05	5.99	46.37	198	49	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.91	58.28	74	-24.09	32.14	5.86	46.37	190	202	Peak
2390	41.82	50.19	54	-12.18	32.14	5.86	46.37	190	202	Average
2462	93.4	101.5	/	/	32.31	5.96	46.37	172	337	Peak
2462	84.91	93.01	/	/	32.31	5.96	46.37	172	337	Average
2483.5	58.5	66.52	74	-15.5	32.36	5.99	46.37	200	27	Peak
2483.5	47.24	55.26	54	-6.76	32.36	5.99	46.37	200	27	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2462MHz: 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

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	58.03	66.79	74	-15.97	31.75	5.86	46.37	152	7	Peak
2390	50	58.76	54	-4	31.75	5.86	46.37	152	7	Average
2422	101.73	110.34	/	/	31.85	5.91	46.37	165	85	Peak
2422	93.65	102.26	/	/	31.85	5.91	46.37	165	85	Average
2483.5	52.58	60.91	74	-21.42	32.05	5.99	46.37	144	194	Peak
2483.5	44.38	52.71	54	-9.62	32.05	5.99	46.37	144	194	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.25	60.62	74	-21.75	32.14	5.86	46.37	125	349	Peak
2390	45.44	53.81	54	-8.56	32.14	5.86	46.37	125	349	Average
2422	94.98	103.23	/	/	32.21	5.91	46.37	125	282	Peak
2422	86.98	95.23	/	/	32.21	5.91	46.37	125	282	Average
2483.5	51.56	59.58	74	-22.44	32.36	5.99	46.37	136	305	Peak
2483.5	43.25	51.27	54	-10.75	32.36	5.99	46.37	136	305	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2422MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	53.4	62.16	74	-20.6	31.75	5.86	46.37	101	156	Peak
2390	45.47	54.23	54	-8.53	31.75	5.86	46.37	101	156	Average
2437	98.99	107.53	/	/	31.9	5.93	46.37	97	92	Peak
2437	90.71	99.25	/	/	31.9	5.93	46.37	97	92	Average
2483.5	55.17	63.5	74	-18.83	32.05	5.99	46.37	105	123	Peak
2483.5	47.21	55.54	54	-6.79	32.05	5.99	46.37	105	123	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	52.59	60.96	74	-21.41	32.14	5.86	46.37	181	93	Peak
2390	43.61	51.98	54	-10.39	32.14	5.86	46.37	181	93	Average
2437	92.69	100.88	/	/	32.25	5.93	46.37	189	264	Peak
2437	84.38	92.57	/	/	32.25	5.93	46.37	189	264	Average
2483.5	52.68	60.7	74	-21.32	32.36	5.99	46.37	173	24	Peak
2483.5	44.31	52.33	54	-9.69	32.36	5.99	46.37	173	24	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2437MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50	58.76	74	-24	31.75	5.86	46.37	144	192	Peak
2390	41.93	50.69	54	-12.07	31.75	5.86	46.37	144	192	Average
2452	96.26	104.73	/	/	31.95	5.95	46.37	134	112	Peak
2452	87.72	96.19	/	/	31.95	5.95	46.37	134	112	Average
2483.5	62.32	70.65	74	-11.68	32.05	5.99	46.37	156	278	Peak
2483.5	50.95	59.28	54	-3.05	32.05	5.99	46.37	156	278	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	49.55	57.92	74	-24.45	32.14	5.86	46.37	199	284	Peak
2390	42.3	50.67	54	-11.7	32.14	5.86	46.37	199	284	Average
2452	91.29	99.43	/	/	32.28	5.95	46.37	202	277	Peak
2452	82.68	90.82	/	/	32.28	5.95	46.37	202	277	Average
2483.5	60.32	68.34	74	-13.68	32.36	5.99	46.37	195	82	Peak
2483.5	46.74	54.76	54	-7.26	32.36	5.99	46.37	195	82	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2452MHz: Fundamental frequency.



BUREAU VERITAS Test Report No.: W7L-P22090012RF02

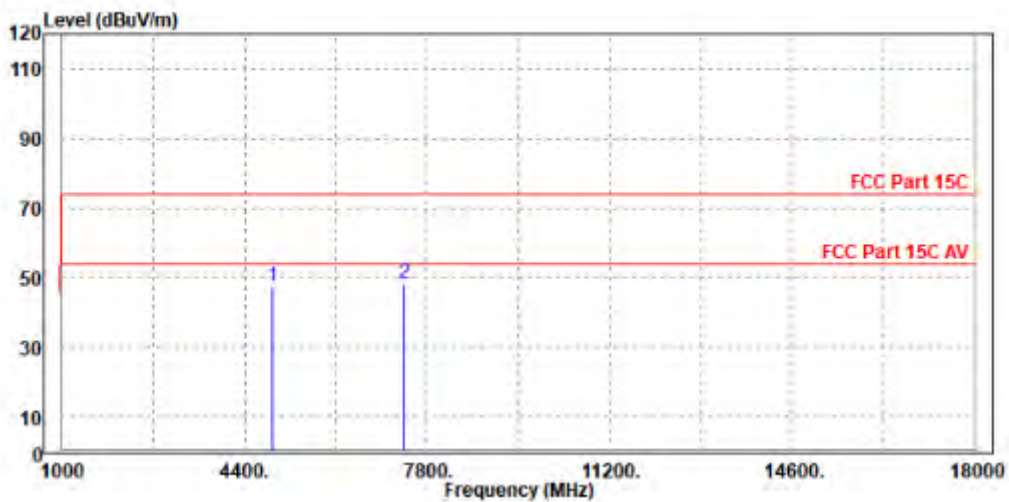
Worst case harmonic:

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

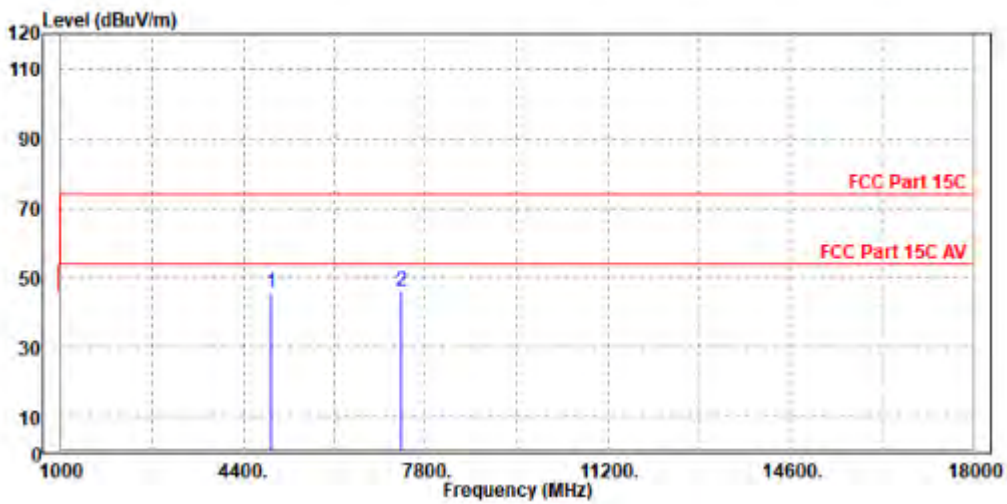
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4904.000	47.54	46.26	74.00	-26.46	1.28	Peak	Horizontal
2 PP	7358.000	48.48	44.04	74.00	-25.52	4.44	Peak	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4910.000	45.71	46.07	74.00	-28.29	-0.36	Peak	Vertical
2 PP	7356.000	46.25	42.87	74.00	-27.75	3.38	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2452MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

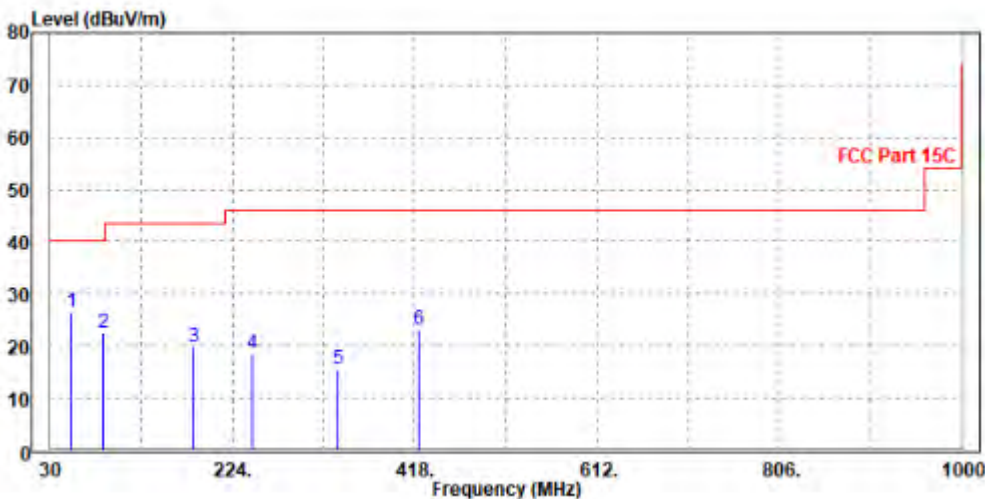
BT-LE_1M

CHANNEL	TX Channel 39	ODETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
52.31	26.42	53.03	40	-13.58	9.97	0.41	36.99	188	290	QP
86.26	22.44	50.43	40	-17.56	8.45	0.5	36.94	122	129	QP
183.26	19.85	44.14	43.5	-23.65	11.38	0.71	36.38	165	43	QP
245.34	18.45	40.62	46	-27.55	13.29	0.82	36.28	134	113	QP
335.55	15.41	35.98	46	-30.59	14.78	0.97	36.32	121	83	QP
422.85	23.02	41.75	46	-22.98	16.63	1.11	36.47	106	126	QP

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value



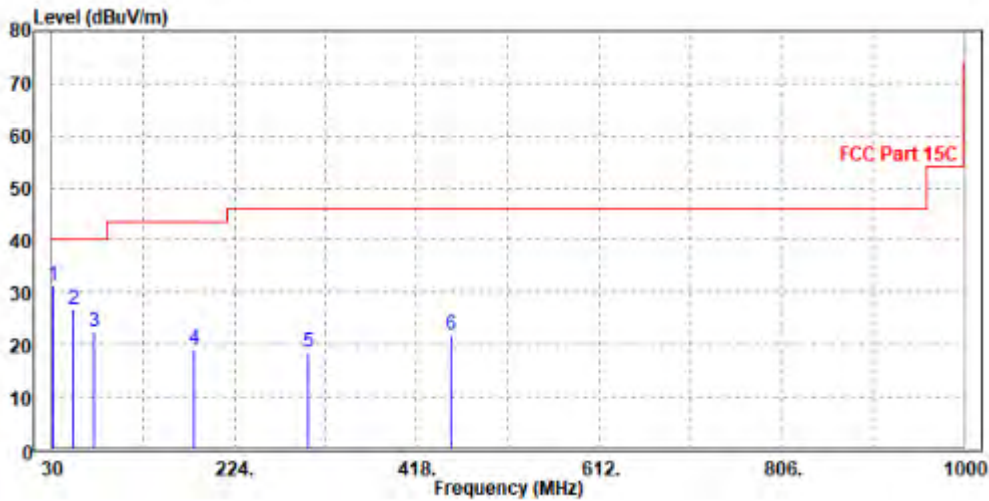


CHANNEL	TX Channel 39	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
30.97	31.48	48.8	40	-8.52	19.81	0.32	37.45	122	256	QP
52.31	26.92	54.05	40	-13.08	9.45	0.41	36.99	109	81	QP
74.62	22.38	51	40	-17.62	7.87	0.48	36.97	183	181	QP
181.32	19.02	43.48	43.5	-24.48	11.22	0.71	36.39	166	349	QP
302.57	18.62	39.91	46	-27.38	14.06	0.91	36.26	139	240	QP
454.86	21.88	40.24	46	-24.12	17.01	1.16	36.53	183	187	QP

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value





ABOVE 1GHz TEST DATA

Note: 1. For radiated emissions testing , the full testing range of different modes have been scanned , only the worst case harmonic data is reported in the sheet.

2. All other emissions were greater than 20dB below the limit was not recorded

BT-LE_1M

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.64	59.4	74	-23.36	31.75	5.86	46.37	171	147	Peak
2390	43.29	52.05	54	-10.71	31.75	5.86	46.37	171	147	Average
2402	88.68	97.38	/	/	31.79	5.88	46.37	156	350	Peak
2402	88.33	97.03	/	/	31.79	5.88	46.37	156	350	Average
2483.5	50.9	59.23	74	-23.1	32.05	5.99	46.37	181	171	Peak
2483.5	43.4	51.73	54	-10.6	32.05	5.99	46.37	181	171	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.29	59.66	74	-22.71	32.14	5.86	46.37	192	26	Peak
2390	44.16	52.53	54	-9.84	32.14	5.86	46.37	192	26	Average
2402	85.08	93.41	/	/	32.16	5.88	46.37	198	243	Peak
2402	84.74	93.07	/	/	32.16	5.88	46.37	198	243	Average
2483.5	52.54	60.56	74	-21.46	32.36	5.99	46.37	191	328	Peak
2483.5	44.18	52.2	54	-9.82	32.36	5.99	46.37	191	328	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2402MHz: Fundamental frequency.



CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.08	59.84	74	-22.92	31.75	5.86	46.37	199	246	Peak
2390	42.82	51.58	54	-11.18	31.75	5.86	46.37	199	246	Average
2440	91.59	100.12	/	/	31.91	5.93	46.37	206	101	Peak
2440	91.25	99.78	/	/	31.91	5.93	46.37	206	101	Average
2483.5	52.1	60.43	74	-21.9	32.05	5.99	46.37	200	289	Peak
2483.5	43.33	51.66	54	-10.67	32.05	5.99	46.37	200	289	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.72	59.09	74	-23.28	32.14	5.86	46.37	100	324	Peak
2390	43.44	51.81	54	-10.56	32.14	5.86	46.37	100	324	Average
2440	87.02	95.2	/	/	32.26	5.93	46.37	91	75	Peak
2440	86.78	94.96	/	/	32.26	5.93	46.37	91	75	Average
2483.5	51.65	59.67	74	-22.35	32.36	5.99	46.37	105	222	Peak
2483.5	43.9	51.92	54	-10.1	32.36	5.99	46.37	105	222	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2440MHz: Fundamental frequency.



CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.12	58.88	74	-23.88	31.75	5.86	46.37	164	309	Peak
2390	42.91	51.67	54	-11.09	31.75	5.86	46.37	164	309	Average
2480	92.93	101.28	/	/	32.04	5.98	46.37	155	35	Peak
2480	92.63	100.98	/	/	32.04	5.98	46.37	155	35	Average
2483.5	52.17	60.5	74	-21.83	32.05	5.99	46.37	156	56	Peak
2483.5	44.22	52.55	54	-9.78	32.05	5.99	46.37	156	56	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.78	59.15	74	-23.22	32.14	5.86	46.37	196	200	Peak
2390	43.57	51.94	54	-10.43	32.14	5.86	46.37	196	200	Average
2480	87.12	95.16	/	/	32.35	5.98	46.37	198	168	Peak
2480	86.78	94.82	/	/	32.35	5.98	46.37	198	168	Average
2483.5	52.8	60.82	74	-21.2	32.36	5.99	46.37	214	223	Peak
2483.5	44.1	52.12	54	-9.9	32.36	5.99	46.37	214	223	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.

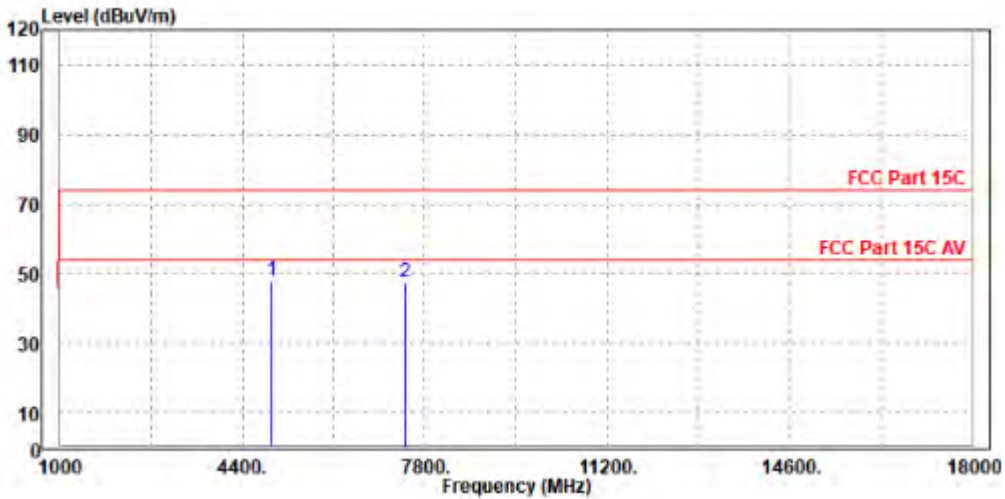


Worst case harmonic:

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

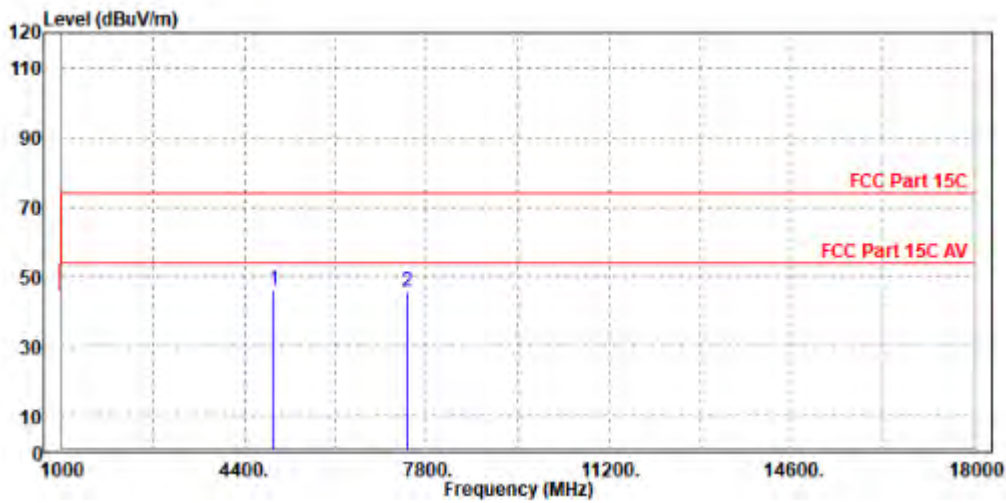
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP 4961.000	48.00	46.66	74.00	-26.00	1.34	Peak	Horizontal
2	7440.000	47.34	42.78	74.00	-26.66	4.56	Peak	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP 4960.000	46.19	46.53	74.00	-27.81	-0.34	Peak	Vertical
2	7443.000	45.49	41.95	74.00	-28.51	3.54	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



BT-LE_2M

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.54	59.3	74	-23.46	31.75	5.86	46.37	149	150	Peak
2390	42.81	51.57	54	-11.19	31.75	5.86	46.37	149	150	Average
2402	88.58	97.28	/	/	31.79	5.88	46.37	150	98	Peak
2402	88.27	96.97	/	/	31.79	5.88	46.37	150	98	Average
2483.5	50.87	59.2	74	-23.13	32.05	5.99	46.37	159	214	Peak
2483.5	43.48	51.81	54	-10.52	32.05	5.99	46.37	159	214	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	43.55	51.92	74	-30.45	32.14	5.86	46.37	200	74	Peak
2390	43.57	51.94	54	-10.43	32.14	5.86	46.37	200	74	Average
2402	84.64	92.97	/	/	32.16	5.88	46.37	215	345	Peak
2402	84.61	92.94	/	/	32.16	5.88	46.37	215	345	Average
2483.5	43.52	51.54	74	-30.48	32.36	5.99	46.37	188	135	Peak
2483.5	43.57	51.59	54	-10.43	32.36	5.99	46.37	188	135	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2402MHz: Fundamental frequency.



CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.12	58.88	74	-23.88	31.75	5.86	46.37	155	137	Peak
2390	44.08	52.84	54	-9.92	31.75	5.86	46.37	155	137	Average
2440	91.71	100.24	/	/	31.91	5.93	46.37	172	20	Peak
2440	91.33	99.86	/	/	31.91	5.93	46.37	172	20	Average
2483.5	51.48	59.81	74	-22.52	32.05	5.99	46.37	164	117	Peak
2483.5	43.79	52.12	54	-10.21	32.05	5.99	46.37	164	117	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.74	59.11	74	-23.26	32.14	5.86	46.37	183	195	Peak
2390	43.56	51.93	54	-10.44	32.14	5.86	46.37	183	195	Average
2440	87.08	95.26	/	/	32.26	5.93	46.37	177	303	Peak
2440	86.69	94.87	/	/	32.26	5.93	46.37	177	303	Average
2483.5	51.01	59.03	74	-22.99	32.36	5.99	46.37	197	120	Peak
2483.5	43.92	51.94	54	-10.08	32.36	5.99	46.37	197	120	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2440MHz: Fundamental frequency.



CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.06	58.82	74	-23.94	31.75	5.86	46.37	188	196	Peak
2390	42.72	51.48	54	-11.28	31.75	5.86	46.37	188	196	Average
2480	93.02	101.37	/	/	32.04	5.98	46.37	178	222	Peak
2480	93	101.35	/	/	32.04	5.98	46.37	178	222	Average
2483.5	53.18	61.51	74	-20.82	32.05	5.99	46.37	191	290	Peak
2483.5	44.4	52.73	54	-9.6	32.05	5.99	46.37	191	290	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.3	59.67	74	-22.7	32.14	5.86	46.37	163	2	Peak
2390	43.96	52.33	54	-10.04	32.14	5.86	46.37	163	2	Average
2480	86.95	94.99	/	/	32.35	5.98	46.37	179	248	Peak
2480	86.48	94.52	/	/	32.35	5.98	46.37	179	248	Average
2483.5	52.86	60.88	74	-21.14	32.36	5.99	46.37	160	186	Peak
2483.5	44.18	52.2	54	-9.82	32.36	5.99	46.37	160	186	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 2480MHz: Fundamental frequency.



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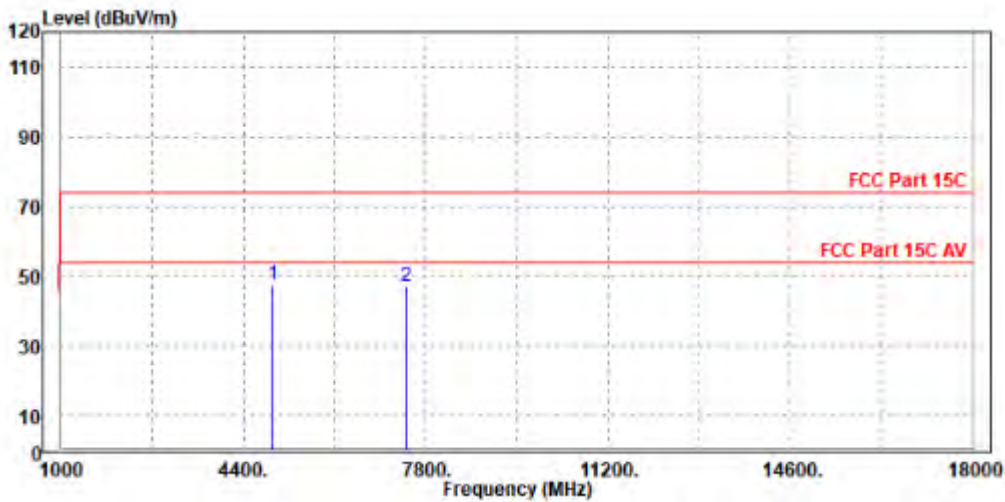
Test Report No.: W7L-P22090012RF02

Worst case harmonic:

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Poi/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP 4961.000	47.30	45.96	74.00	-26.70	1.34	Peak	Horizontal
2	7440.000	47.04	42.48	74.00	-26.96	4.56	Peak	Horizontal



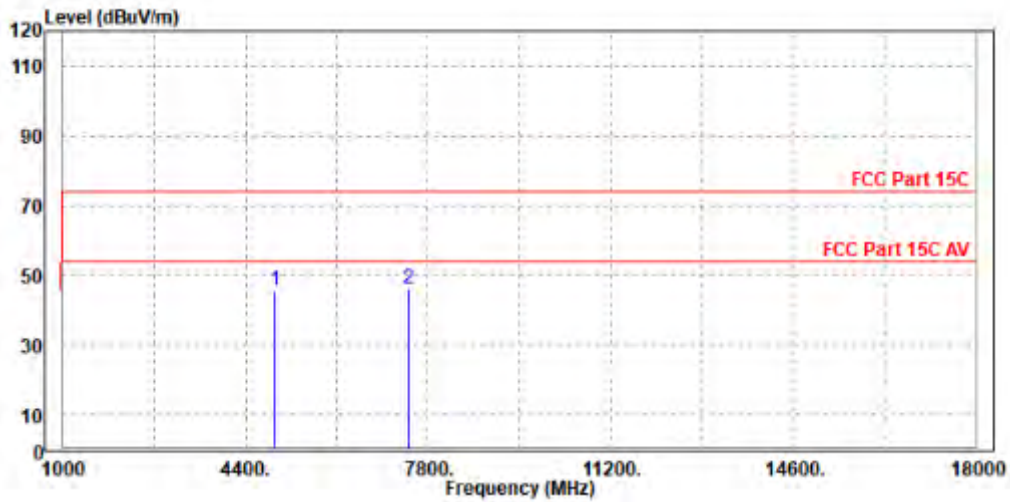


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Test Report No.: W7L-P22090012RF02

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	4960.000	45.62	45.96	74.00	-28.38	-0.34	Peak	Vertical
2 PP	7443.000	45.92	42.38	74.00	-28.08	3.54	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



BT-LE_S2

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.99	59.75	74	-23.01	31.75	5.86	46.37	113	105	Peak
2390	43.1	51.86	54	-10.9	31.75	5.86	46.37	113	105	Average
2402	88.76	97.46	/	/	31.79	5.88	46.37	99	84	Peak
2402	88.18	96.88	/	/	31.79	5.88	46.37	99	84	Average
2483.5	50.68	59.01	74	-23.32	32.05	5.99	46.37	120	353	Peak
2483.5	43.09	51.42	54	-10.91	32.05	5.99	46.37	120	353	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.82	59.19	74	-23.18	32.14	5.86	46.37	124	139	Peak
2390	43.58	51.95	54	-10.42	32.14	5.86	46.37	124	139	Average
2402	85.14	93.47	/	/	32.16	5.88	46.37	142	229	Peak
2402	84.56	92.89	/	/	32.16	5.88	46.37	142	229	Average
2483.5	50.92	58.94	74	-23.08	32.36	5.99	46.37	139	196	Peak
2483.5	43.93	51.95	54	-10.07	32.36	5.99	46.37	139	196	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2402MHz: Fundamental frequency.



CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.27	59.03	74	-23.73	31.75	5.86	46.37	184	148	Peak
2390	42.84	51.6	54	-11.16	31.75	5.86	46.37	184	148	Average
2440	91.67	100.2	/	/	31.91	5.93	46.37	190	299	Peak
2440	91.18	99.71	/	/	31.91	5.93	46.37	190	299	Average
2483.5	50.7	59.03	74	-23.3	32.05	5.99	46.37	184	24	Peak
2483.5	43.54	51.87	54	-10.46	32.05	5.99	46.37	184	24	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.82	60.19	74	-22.18	32.14	5.86	46.37	181	319	Peak
2390	43.76	52.13	54	-10.24	32.14	5.86	46.37	181	319	Average
2440	87.08	95.26	/	/	32.26	5.93	46.37	180	253	Peak
2440	86.58	94.76	/	/	32.26	5.93	46.37	180	253	Average
2483.5	51.16	59.18	74	-22.84	32.36	5.99	46.37	180	251	Peak
2483.5	43.71	51.73	54	-10.29	32.36	5.99	46.37	180	251	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2440MHz: Fundamental frequency.



CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.2	58.96	74	-23.8	31.75	5.86	46.37	200	303	Peak
2390	43.49	52.25	54	-10.51	31.75	5.86	46.37	200	303	Average
2480	93.38	101.73	/	/	32.04	5.98	46.37	204	133	Peak
2480	92.83	101.18	/	/	32.04	5.98	46.37	204	133	Average
2483.5	51.41	59.74	74	-22.59	32.05	5.99	46.37	197	19	Peak
2483.5	43.82	52.15	54	-10.18	32.05	5.99	46.37	197	19	Average

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.34	59.71	74	-22.66	32.14	5.86	46.37	198	355	Peak
2390	43.58	51.95	54	-10.42	32.14	5.86	46.37	198	355	Average
2480	87.26	95.3	/	/	32.35	5.98	46.37	200	69	Peak
2480	86.68	94.72	/	/	32.35	5.98	46.37	200	69	Average
2483.5	51.02	59.04	74	-22.98	32.36	5.99	46.37	202	330	Peak
2483.5	43.94	51.96	54	-10.06	32.36	5.99	46.37	202	330	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2480MHz: Fundamental frequency.



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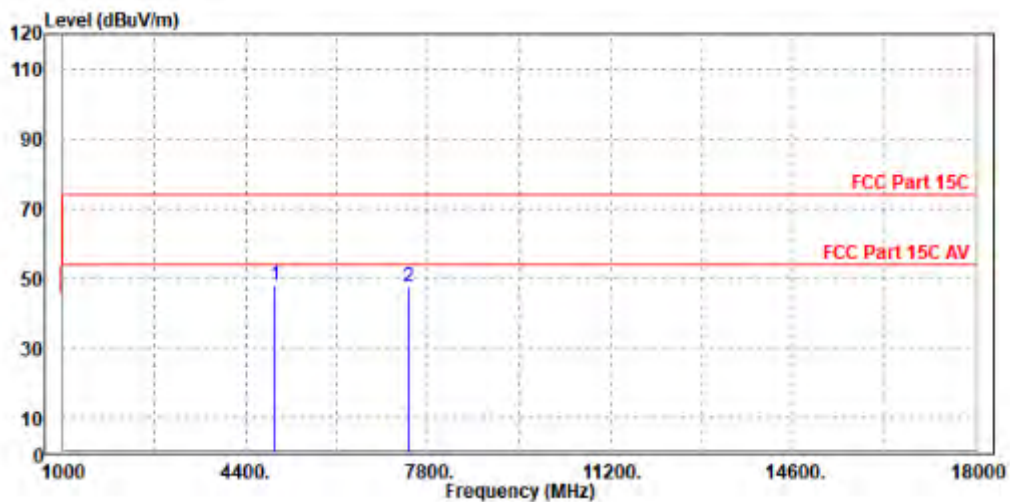
Test Report No.: W7L-P22090012RF02

Worst case harmonic:

CHANNEL	TX Channel 39	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

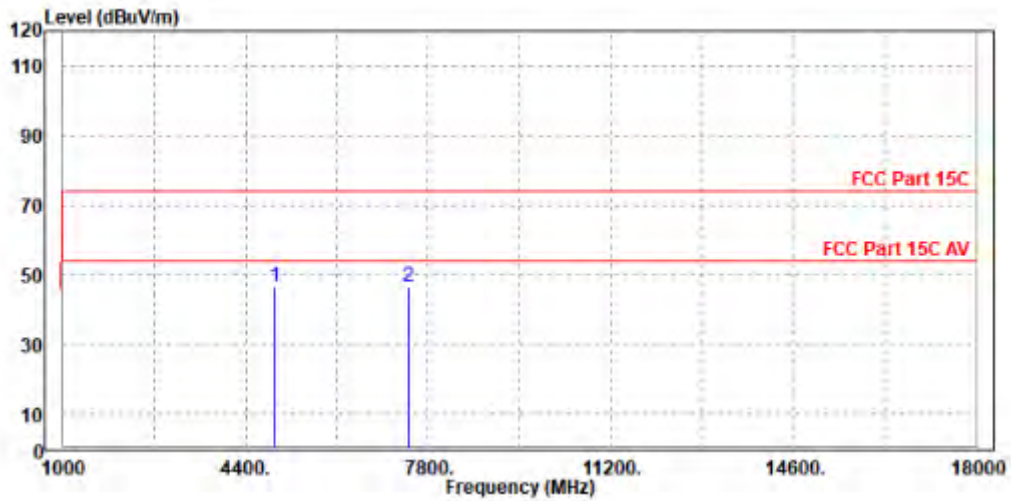
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP 4960.000	47.98	46.64	74.00	-26.02	1.34	Peak	Horizontal
2	7443.000	47.33	42.77	74.00	-26.67	4.56	Peak	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	PP 4961.000	46.69	47.03	74.00	-27.31	-0.34	Peak	Vertical
2	7440.000	46.67	43.14	74.00	-27.33	3.53	Peak	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



BT-LE_S8

CHANNEL	TX Channel 0	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.94	59.7	74	-23.06	31.75	5.86	46.37	191	151	Peak
2390	42.85	51.61	54	-11.15	31.75	5.86	46.37	191	151	Average
2402	88.71	97.41	/	/	31.79	5.88	46.37	185	311	Peak
2402	87.84	96.54	/	/	31.79	5.88	46.37	185	311	Average
2483.5	52.05	60.38	74	-21.95	32.05	5.99	46.37	185	187	Peak
2483.5	43.07	51.4	54	-10.93	32.05	5.99	46.37	185	187	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.93	59.3	74	-23.07	32.14	5.86	46.37	121	43	Peak
2390	43.15	51.52	54	-10.85	32.14	5.86	46.37	121	43	Average
2402	85.32	93.65	/	/	32.16	5.88	46.37	129	177	Peak
2402	84.49	92.82	/	/	32.16	5.88	46.37	129	177	Average
2483.5	50.84	58.86	74	-23.16	32.36	5.99	46.37	121	9	Peak
2483.5	43.71	51.73	54	-10.29	32.36	5.99	46.37	121	9	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2402MHz: Fundamental frequency.



CHANNEL	TX Channel 19	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	51.24	60	74	-22.76	31.75	5.86	46.37	107	93	Peak
2390	43.2	51.96	54	-10.8	31.75	5.86	46.37	107	93	Average
2440	91.52	100.05	/	/	31.91	5.93	46.37	123	211	Peak
2440	90.81	99.34	/	/	31.91	5.93	46.37	123	211	Average
2483.5	51.2	59.53	74	-22.8	32.05	5.99	46.37	107	246	Peak
2483.5	43.09	51.42	54	-10.91	32.05	5.99	46.37	107	246	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
2390	50.5	58.87	74	-23.5	32.14	5.86	46.37	134	112	Peak
2390	43.13	51.5	54	-10.87	32.14	5.86	46.37	134	112	Average
2440	86.97	95.15	/	/	32.26	5.93	46.37	119	4	Peak
2440	86.17	94.35	/	/	32.26	5.93	46.37	119	4	Average
2483.5	51.35	59.37	74	-22.65	32.36	5.99	46.37	124	345	Peak
2483.5	43.89	51.91	54	-10.11	32.36	5.99	46.37	124	345	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 2440MHz: Fundamental frequency.