



Radio Test Report

Report No.:STS2506034W01

Issued for

Shenzhen GMK Technology Co., Ltd.

4-5/F, #9 Bldg, HuaLian Industrial Park, XinShi Community,
Dalang St, Longhua Dist, 518109, Shenzhen, China

Product Name: Mini PC

Brand Name: GMKtec

Model Name: G10

Series Model(s): G10 PLUS, G10 Pro, G11, G11 PLUS,
G11 Pro, G12, G13, G14, G15, G16

FCC ID: 2AXUD-G10

Test Standards: FCC Part15.247

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name: Shenzhen GMK Technology Co., Ltd.
Address: 4-5/F, #9 Bldg, HuaLian Industrial Park, XinShi Community, Dalang St, Longhua Dist, 518109, Shenzhen, China
Manufacturer's Name: Shenzhen GMK Technology Co., Ltd.
Address: 4-5/F, #9 Bldg, HuaLian Industrial Park, XinShi Community, Dalang St, Longhua Dist, 518109, Shenzhen, China

Product Description

Product Name: Mini PC
Brand Name: GMKtec
Model Name: G10
Series Model(s): G10 PLUS, G10 Pro, G11, G11 PLUS, G11 Pro, G12, G13, G14, G15, G16
Standards: FCC Part 15.247
Test Procedure: ANSI C63.10-2020

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test

Date of receipt of test item: 06 June 2025
Date (s) of performance of tests: 06 June 2025~12 June 2025
Date of Issue: 12 June 2025
Test Result: **Pass**

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Skylar Li)

Authorized Signatory :

(Bovey Yang)





Table of Contents	Page
1. SUMMARY OF TEST RESULTS	6
1.1 TEST FACTORY	7
1.2 MEASUREMENT UNCERTAINTY	7
2. GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF THE EUT	8
2.2 DESCRIPTION OF THE TEST MODES	10
2.3 TEST SOFTWARE AND POWER LEVEL	11
2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	12
2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS	13
3. EMC EMISSION TEST	14
3.1 CONDUCTED EMISSION MEASUREMENT	14
3.2 RADIATED EMISSION MEASUREMENT	18
4. CONDUCTED SPURIOUS & BAND EDGE EMISSION	30
4.1 LIMIT	30
4.2 TEST PROCEDURE	30
4.3 DEVIATION FROM STANDARD	30
4.4 TEST SETUP	30
4.5 EUT OPERATION CONDITIONS	30
4.6 TEST RESULTS	30
5. POWER SPECTRAL DENSITY TEST	31
5.1 LIMIT	31
5.2 TEST PROCEDURE	31
5.3 DEVIATION FROM STANDARD	31
5.4 TEST SETUP	31
5.5 EUT OPERATION CONDITIONS	31
5.6 TEST RESULTS	31
6. BANDWIDTH TEST	32
6.1 LIMIT	32
6.2 TEST PROCEDURE	32
6.3 DEVIATION FROM STANDARD	32
6.4 TEST SETUP	32
6.5 EUT OPERATION CONDITIONS	32



Table of Contents	Page
6.6 TEST RESULTS	32
7. PEAK OUTPUT POWER TEST	33
7.1 LIMIT	33
7.2 TEST PROCEDURE	33
7.3 DEVIATION FROM STANDARD	34
7.4 TEST SETUP	34
7.5 EUT OPERATION CONDITIONS	34
7.6 TEST RESULTS	34
8. ANTENNA REQUIREMENT	35
8.1 STANDARD REQUIREMENT	35
8.2 EUT ANTENNA	35
APPENDIX 1-TEST DATA	36
DUTY CYCLE	36
MAXIMUM AVERAGE CONDUCTED OUTPUT POWER	49
MAXIMUM PEAK CONDUCTED OUTPUT POWER	68
-6DB BANDWIDTH	69
MAXIMUM POWER SPECTRAL DENSITY LEVEL	88
BAND EDGE	107
CONDUCTED RF SPURIOUS EMISSION	132
APPENDIX 2-PHOTOS OF TEST SETUP	169

**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 June 2025	STS2506034W01	ALL	Initial Issue



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
KDB 558074 D01 15.247 Meas Guidance v05r02.

FCC Part 15.247, Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247 (a)(2)	6dB Bandwidth	PASS	--
15.247 (b)(3)	Output Power	PASS	--
15.209	Radiated Spurious Emission	PASS	--
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	--
15.247 (e)	Power Spectral Density	PASS	--
15.205	Restricted Band Edge Emission	PASS	--
Part 15.247(d)/ part 15.209(a)	Band Edge Emission	PASS	--
15.203	Antenna Requirement	PASS	--

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2020.



1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.755\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.874\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 3.80\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.18\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 4.90\text{dB}$
6	All emissions, radiated >6G	$\pm 5.24\text{dB}$
7	Conducted Emission (9KHz-150KHz)	$\pm 2.19\text{dB}$
8	Conducted Emission (150KHz-30MHz)	$\pm 2.53\text{dB}$
9	Occupied Channel Bandwidth	$\pm 3.5\%$
10	Power Spectral Density, conducted	$\pm 1.245\text{dB}$
11	Duty Cycle	$\pm 3.2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Mini PC												
Brand Name	GMKtec												
Model Name	G10												
Series Model(s)	G10 PLUS, G10 Pro, G11, G11 PLUS, G11 Pro, G12, G13, G14, G15, G16												
Model Difference	Only the model is different, the motherboard and the circuit are the same												
Product Description	The EUT is a Mini PC <table><tr><td>Operation Frequency:</td><td>802.11b/g/n/ax 20: 2412~2462 MHz 802.11n/ax40:2422~2452MHz</td></tr><tr><td>Modulation Type:</td><td>802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11ax(OFDM, OFDMA): BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM</td></tr><tr><td>Bit Rate of Transmitter:</td><td>802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20MHz): 65/58.5/52/39/26/19.5/13/6.5Mbps 802.11n(40MHz): 135/121.5/108/81/54/40.5/37/13.5Mbps 802.11ax(HE20): 135/65/58.5/52/39/26/19.5/13/6.5Mbps 802.11ax(HE40): 270/135/121.5/108/81/54/40.5/37/13.5Mbps</td></tr><tr><td>Number of Channel:</td><td>802.11b/g/n/ax20: 11CH 802.11n/ax 40: 7CH</td></tr><tr><td>Antenna Type:</td><td>PIFA</td></tr><tr><td>Antenna Gain:</td><td>ANT 1: 1.65 dBi ANT 2: 1.65 dBi MIMO: 4.66 dBi</td></tr></table>	Operation Frequency:	802.11b/g/n/ax 20: 2412~2462 MHz 802.11n/ax40:2422~2452MHz	Modulation Type:	802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11ax(OFDM, OFDMA): BPSK,QPSK,16-QAM,64-QAM,256-QAM, 1024QAM	Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n(20MHz): 65/58.5/52/39/26/19.5/13/6.5Mbps 802.11n(40MHz): 135/121.5/108/81/54/40.5/37/13.5Mbps 802.11ax(HE20): 135/65/58.5/52/39/26/19.5/13/6.5Mbps 802.11ax(HE40): 270/135/121.5/108/81/54/40.5/37/13.5Mbps	Number of Channel:	802.11b/g/n/ax20: 11CH 802.11n/ax 40: 7CH	Antenna Type:	PIFA	Antenna Gain:	ANT 1: 1.65 dBi ANT 2: 1.65 dBi MIMO: 4.66 dBi
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Number of Channel:	802.11b/g/n/ax20: 11CH 802.11n/ax 40: 7CH												
Antenna Type:	PIFA												
Antenna Gain:	ANT 1: 1.65 dBi ANT 2: 1.65 dBi MIMO: 4.66 dBi												
Channel List	Please refer to the Note 2.												
Power Rating	Input: DC 19.0V 3.42A 64.98W												
Adapter	Input: 100-240V~ 50/60Hz 1.5A Output: DC 19V 3.42A 64.98W												
Battery	N/A												
Hardware version number	ADB55												
Software version number	Windows11 24H2												
Connecting I/O Port(s)	Please refer to the Note 1.												

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.



2. The antenna details in this report are based on the manufacturer provided antenna specification documents and apply only to the tested sample identified herein.
Any discrepancies in the antenna information may affect the accuracy of the test results, and the customer assumes responsibility for any related issues..

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Carrier Frequency Channel

2.4GHz Test Frequency:

For 802.11b/g/n/ax (HT20)		For 802.11n/ax (HT40)	
Channel	Freq.(MHz)	Channel	Freq.(MHz)
01	2412	03	2422
06	2437	06	2437
11	2462	09	2452

3. KDB 662911 D01 Multiple Transmitter Output v02r01

2) Directional Gain Calculations for In-Band Measurements

a) Basic methodology with NANT transmit antennas, each with the same directional gain GANT dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed as follows:

(i) If any transmit signals are correlated with each other,
Directional gain = GANT + 10 log(NANT) dBi

(ii) If all transmit signals are completely uncorrelated with each other,
Directional gain = GANT

ANT 1: 1.65 dBi

ANT 2: 1.65 dBi

MIMO: 4.66 dBi

GANT + 10 log(NANT) dBi

4.66dBi



2.2 DESCRIPTION OF THE TEST MODES

Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11b CH1	1 Mbps
Mode 2	TX IEEE 802.11b CH6	1 Mbps
Mode 3	TX IEEE 802.11 b CH11	1 Mbps
Mode 4	TX IEEE 802.11g CH1	6 Mbps
Mode 5	TX IEEE 802.11g CH6	6 Mbps
Mode 6	TX IEEE 802.11g CH11	6 Mbps
Mode 7	TX IEEE 802.11n HT20 CH1	MCS 0
Mode 8	TX IEEE 802.11n HT20 CH6	MCS 0
Mode 9	TX IEEE 802.11n HT20 CH11	MCS 0
Mode 10	TX IEEE 802.11n HT40 CH3	MCS 0
Mode 11	TX IEEE 802.11n HT40 CH6	MCS 0
Mode 12	TX IEEE 802.11n HT40 CH9	MCS 0
Mode 13	TX IEEE 802.11ax HE20 CH1	NSS1 MCS0
Mode 14	TX IEEE 802.11ax HE20 CH6	NSS1 MCS0
Mode 15	TX IEEE 802.11ax HE20 CH11	NSS1 MCS0
Mode 16	TX IEEE 802.11ax HE40 CH3	NSS1 MCS0
Mode 17	TX IEEE 802.11ax HE40 CH6	NSS1 MCS0
Mode 18	TX IEEE 802.11ax HE40 CH9	NSS1 MCS0

Note:

- (1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
- (2) We have be tested for all available U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V /60Hz is shown in the report.
- (3)The 802.11ax mode is investigated among different tones(26/52/106/242-tone RU channel), full resource units (RU), partial resourceunits. The partial RU has no higher power than full RU's, thus the full RU is chosen as main testconfiguration.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode19: Keeping TX + WLAN Link



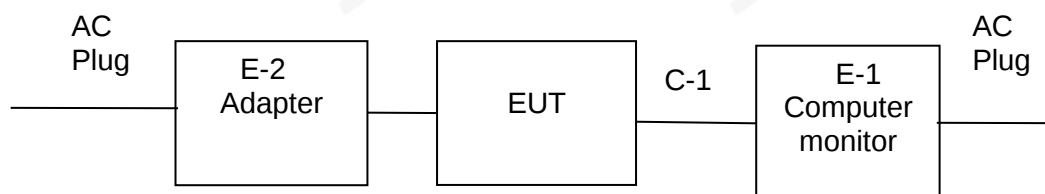
2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

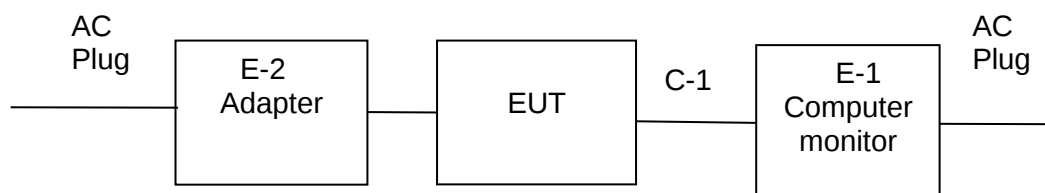
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	ANT_1 Power Class	ANT_2 Power Class
WIFI(2.4G)	2.4G WIFI	802.11b	ANT 1: 1.65 ANT 2: 1.65 MIMO:4.66	14	14
		802.11g		12	12
		802.11n(HT20)		12	12
		802.11n(HT40)		10	10
		802.11ax(HE20)		10	10
		802.11ax(HE40)		10	10

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

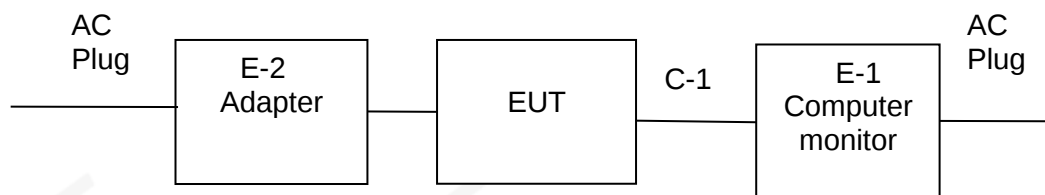
Radiated Spurious Emission Test



AC Conducted Emission Test



RF Conducted Test





2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
C-1	HDMI Cable	GMKtec	EVO-X2	N/A
E-1	Computer monitor	PHILIPS	FASTIPS	N/A
E-2	Adapter	JHD-AD066C6-190342BA-A	N/A	N/A

Item	Equipment	Mfr/Brand	Length	Note
C-1	Shielded	NO	100cm	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” is means “with core”; “NO” is means “without core”.



2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

RF Radiation Test Equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2025.02.22	2026.02.21
Pre-Amplifier(1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2024.09.23	2025.09.22
Pre-Amplifier(18G-40GHz)	SKET	LNPA_1840-50	SK2018101801	2025.02.22	2026.02.21
Active loop Antenna	ZHINAN	ZN30900C	16035	2025.02.25	2026.02.24
Bilog Antenna	TESEQ	CBL6111D	34678	2024.09.30	2025.09.29
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2023.09.24	2025.09.23
Horn Antenna	A-INFOMW	LB-180400-KF	J211020657	2023.10.10	2025.10.09
Positioning Controller	MF	MF-7802	MF-780208587	N/A	N/A
Signal Analyzer	R&S	FSV 40-N	101823	2024.09.23	2025.09.22
Switch Control Box	N/A	N/A	N/A	N/A	N/A
Filter Box	BALUN Technology	SU319E	BL-SZ1530051	N/A	N/A
Antenna Mast	MF	MFA-440H	N/A	N/A	N/A
Turn Table	MF	SC100_1	60531	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N/A	N/A
DC power supply	HONGSHENGFE NG	DPS-305AF	17064939	2024.09.23	2025.09.22
Test SW	EZ-EMC	Ver.STSLAB-03A1 RE			
Conduction Test Equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2024.09.24	2025.09.23
Limtter	CYBERTEK	EM5010	N/A	2024.09.24	2025.09.23
LISN	R&S	ENV216	101242	2024.09.24	2025.09.23
LISN	EMCO	3810/2NM	23625	2024.09.24	2025.09.23
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Test SW	EZ-EMC	Ver.STSLAB-03A1 CE			
RF Connected Test					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Analyzer	Agilent	N9020A	MY51510623	2025.02.22	2026.02.21
Power detector group	Keysight	NW2021031	N/A	2024.09.23	2025.09.22
Switch control box	MW	MW100-RFCB	N/A	N/A	N/A
Temperature& Humidity test chamber	Safety test	AG80L	171200018	2025.02.22	2026.02.21
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Test SW	MW	MTS 8310_2.0.0.0			



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of “ * ” marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

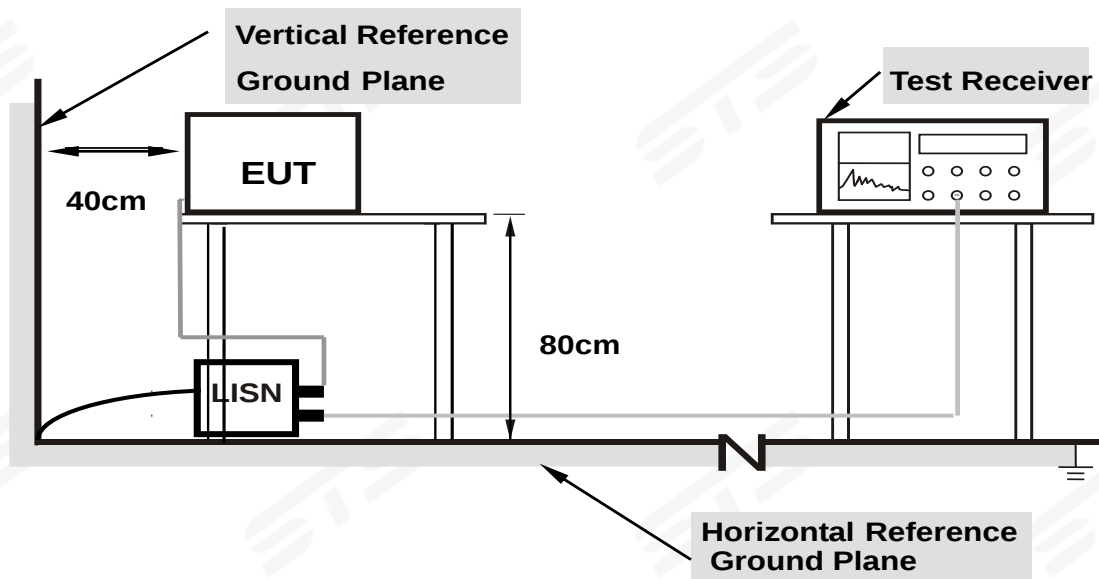
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

- The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN is at least 80 cm from the nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 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 cm from other units and other metal planes support units.

3.1.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



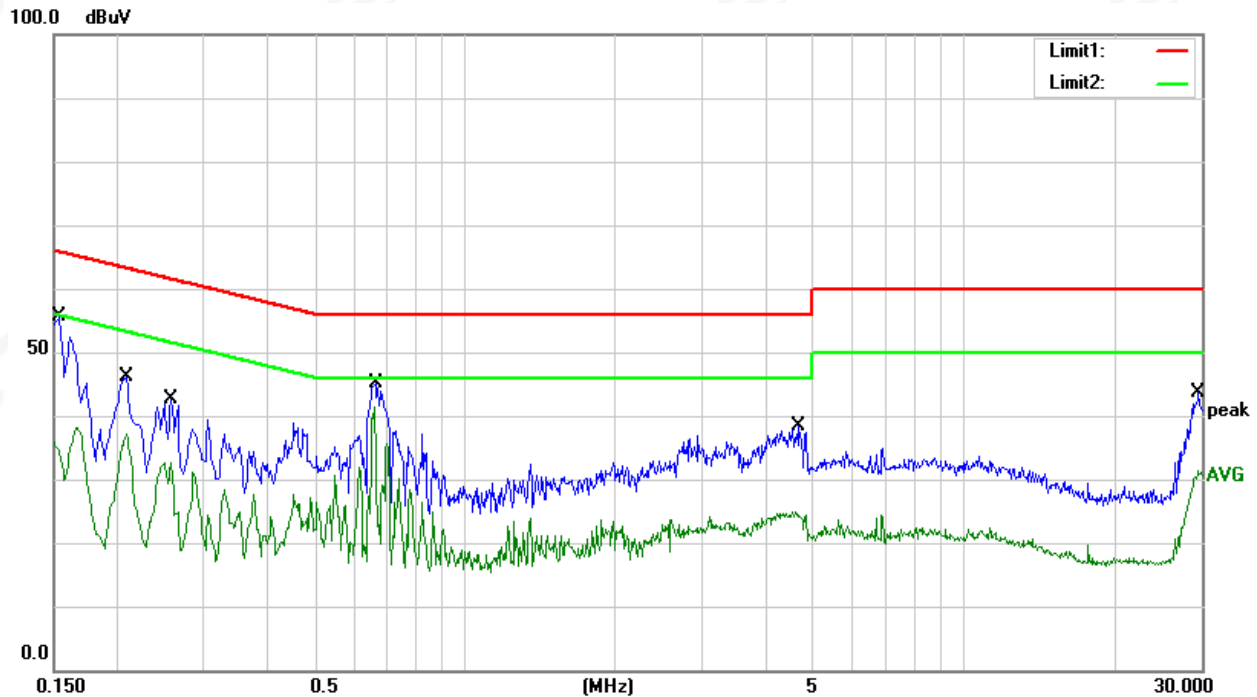
3.1.5 TEST RESULT

Temperature:	25.1°C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 19		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1540	35.73	19.78	55.51	65.78	-10.27	QP
2	0.1540	18.41	19.78	38.19	55.78	-17.59	AVG
3	0.2100	26.26	19.81	46.07	63.21	-17.14	QP
4	0.2100	17.30	19.81	37.11	53.21	-16.10	AVG
5	0.2580	22.52	20.03	42.55	61.50	-18.95	QP
6	0.2580	12.69	20.03	32.72	51.50	-18.78	AVG
7	0.6620	25.37	19.86	45.23	56.00	-10.77	QP
8	0.6620	21.44	19.86	41.30	46.00	-4.70	AVG
9	4.6740	18.63	19.83	38.46	56.00	-17.54	QP
10	4.6740	5.14	19.83	24.97	46.00	-21.03	AVG
11	29.5900	23.36	20.20	43.56	60.00	-16.44	QP
12	29.5900	11.28	20.20	31.48	50.00	-18.52	AVG

Remark:

1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result = Reading + Factor) – Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



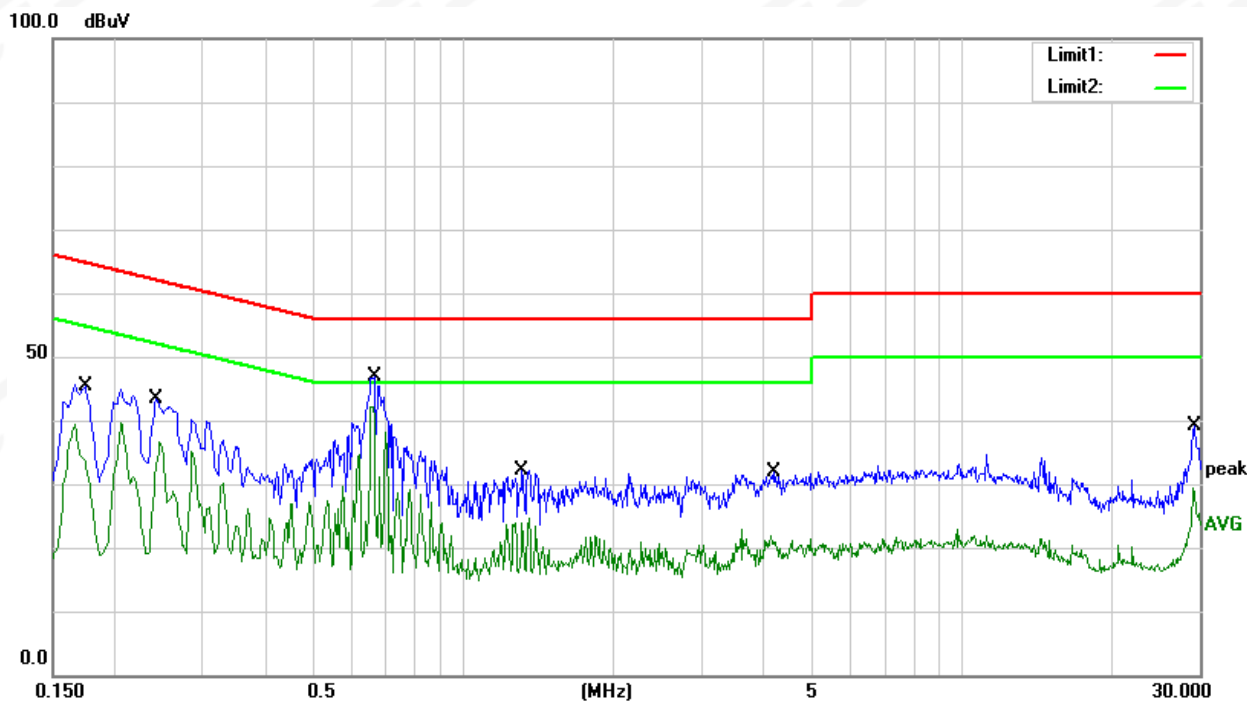


Temperature:	25.1°C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 19		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1740	25.65	19.80	45.45	64.77	-19.32	QP
2	0.1740	19.75	19.80	39.55	54.77	-15.22	AVG
3	0.2420	23.46	20.03	43.49	62.03	-18.54	QP
4	0.2420	16.68	20.03	36.71	52.03	-15.32	AVG
5	0.6620	26.93	19.86	46.79	56.00	-9.21	QP
6	0.6620	22.34	19.86	42.20	46.00	-3.80	AVG
7	1.3140	12.30	19.80	32.10	56.00	-23.90	QP
8	1.3140	4.83	19.80	24.63	46.00	-21.37	AVG
9	4.2060	11.86	19.93	31.79	56.00	-24.21	QP
10	4.2060	2.93	19.93	22.86	46.00	-23.14	AVG
11	29.2300	18.65	20.41	39.06	60.00	-20.94	QP
12	29.2300	9.08	20.41	29.49	50.00	-20.51	AVG

Remark:

1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result = Reading + Factor) – Limit
3. Factor = LISN factor + Cable loss + Limiter (10dB)





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2020 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

Frequencies (MHz)	Field Strength (micorvolts/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

LIMITS OF RADIATED EMISSION MEASUREMENT (1000MHz-25GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			



For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz); 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 KHz / 300 KHz

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

For Restricted band

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	Lower Band Edge: 2310 to 2430 MHz Upper Band Edge: 2445 to 2500 MHz
RB / VB	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)



Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

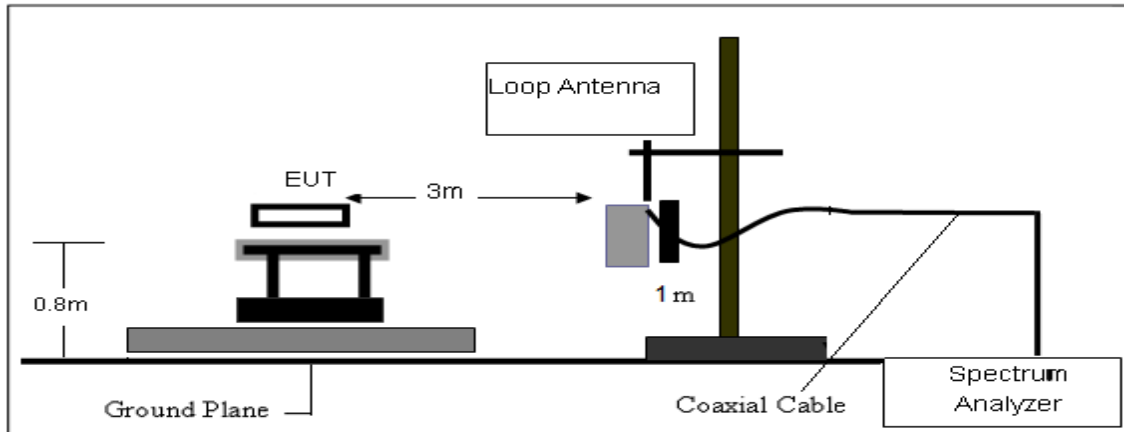
- The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
- If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

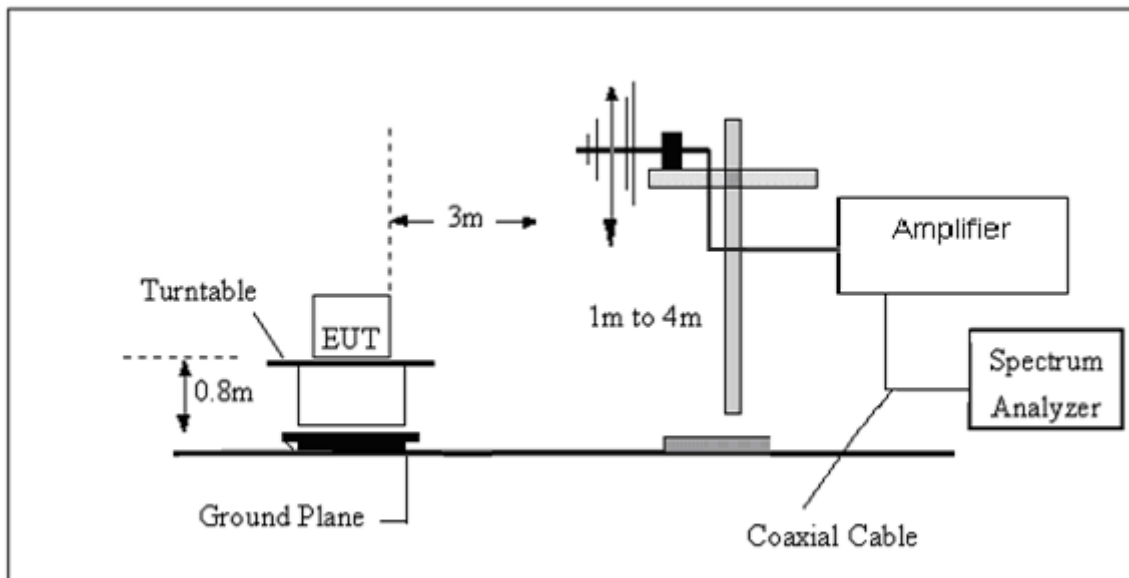
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 TEST SETUP

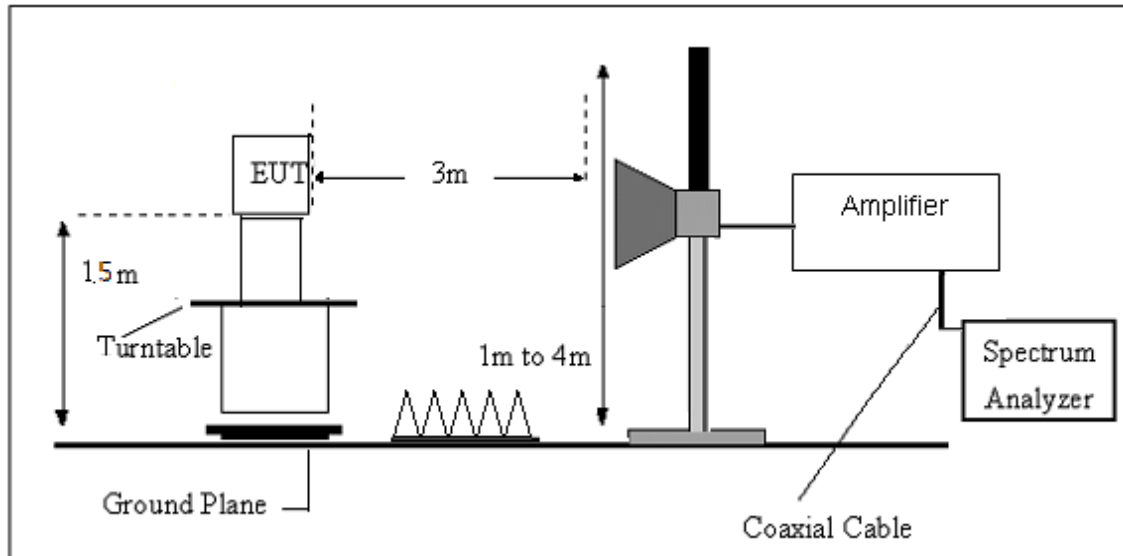
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.1.4 of this report.



3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$



3.2.6 TEST RESULT

9KHz-30MHz

Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Polarization:	--
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State	Test Result
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F	
--	--	--	--	--	PASS
--	--	--	--	--	PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



(30MHz - 1000MHz)

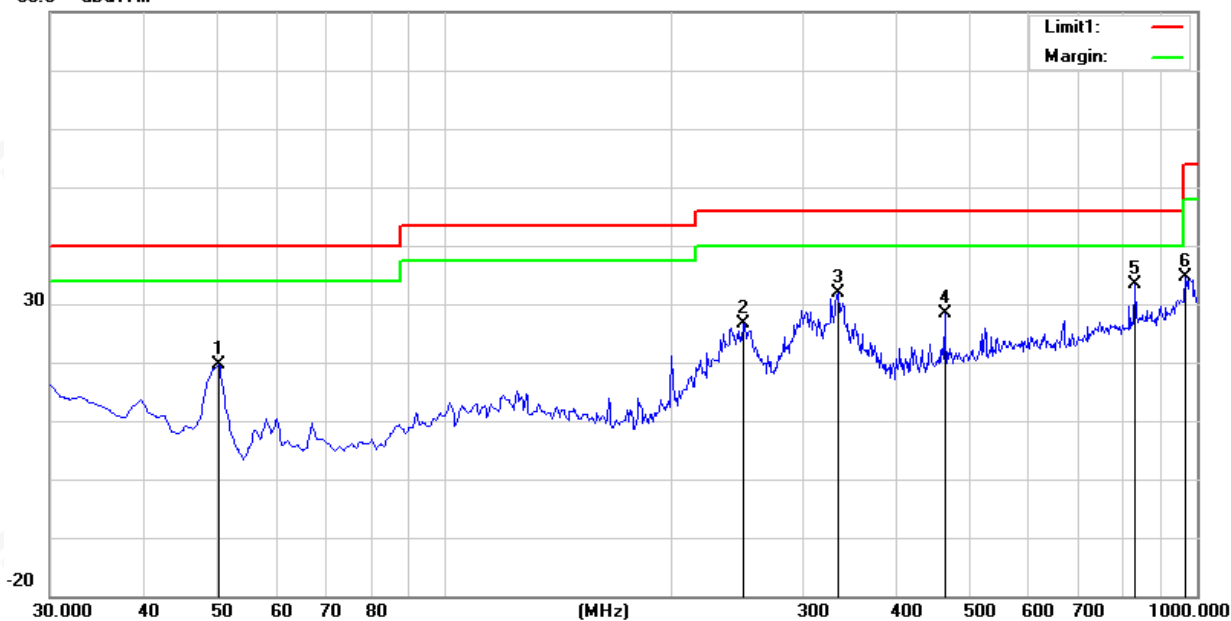
Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	Mode 1-18(Mode 11 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/ m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	50.3700	43.11	-23.42	19.69	40.00	-20.31	peak
2	251.1600	42.63	-15.95	26.68	46.00	-19.32	peak
3	334.5800	45.39	-13.56	31.83	46.00	-14.17	peak
4	462.6200	37.75	-9.34	28.41	46.00	-17.59	peak
5	830.2500	34.14	-0.74	33.40	46.00	-12.60	peak
6	967.0200	32.60	1.93	34.53	54.00	-19.47	peak

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit
2. Factor = Antenna factor + Cable attenuation factor (cable loss) - Amplifier gain
3. All modes have been tested, only show the worst case.

80.0 dBuV/m



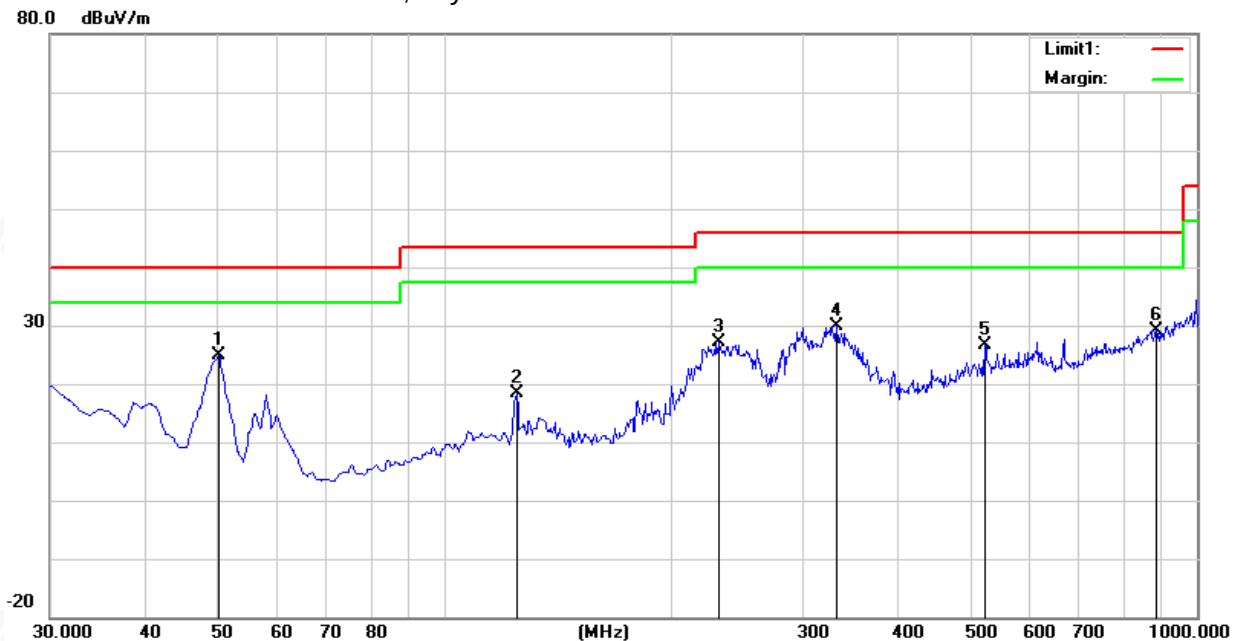


Temperature:	23.4℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	Mode 1-18(Mode 11 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/ m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	50.3700	48.22	-23.42	24.80	40.00	-15.20	peak
2	125.0600	36.53	-18.22	18.31	43.50	-25.19	peak
3	231.7600	46.08	-18.97	27.11	46.00	-18.89	peak
4	332.6400	43.53	-13.62	29.91	46.00	-16.09	peak
5	523.7300	34.42	-7.68	26.74	46.00	-19.26	peak
6	883.6000	29.73	-0.67	29.06	46.00	-16.94	peak

Remark:.

1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All modes have been tested,only show the worst case.





(1000MHz-25GHz) Spurious emission Requirements

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
Low Channel (802.11n40/2422 MHz)										
3264.69	62.04	44.70	6.70	28.20	-9.80	52.24	74.00	-21.76	PK	Vertical
3264.69	50.74	44.70	6.70	28.20	-9.80	40.94	54.00	-13.06	AV	Vertical
3264.67	62.27	44.70	6.70	28.20	-9.80	52.47	74.00	-21.53	PK	Horizontal
3264.67	50.70	44.70	6.70	28.20	-9.80	40.90	54.00	-13.10	AV	Horizontal
4824.45	58.11	44.20	9.04	31.60	-3.56	54.55	74.00	-19.45	PK	Vertical
4824.45	49.40	44.20	9.04	31.60	-3.56	45.84	54.00	-8.16	AV	Vertical
4824.44	59.33	44.20	9.04	31.60	-3.56	55.77	74.00	-18.23	PK	Horizontal
4824.44	49.12	44.20	9.04	31.60	-3.56	45.56	54.00	-8.44	AV	Horizontal
5359.74	49.25	44.20	9.86	32.00	-2.34	46.91	74.00	-27.09	PK	Vertical
5359.74	39.41	44.20	9.86	32.00	-2.34	37.07	54.00	-16.93	AV	Vertical
5359.58	47.47	44.20	9.86	32.00	-2.34	45.13	74.00	-28.87	PK	Horizontal
5359.58	38.20	44.20	9.86	32.00	-2.34	35.86	54.00	-18.14	AV	Horizontal
7235.98	53.80	43.50	11.40	35.50	3.40	57.20	74.00	-16.80	PK	Vertical
7235.98	44.13	43.50	11.40	35.50	3.40	47.53	54.00	-6.47	AV	Vertical
7235.79	53.84	43.50	11.40	35.50	3.40	57.24	74.00	-16.76	PK	Horizontal
7235.79	44.95	43.50	11.40	35.50	3.40	48.35	54.00	-5.65	AV	Horizontal
Middle Channel (802.11n40/2437 MHz)										
3264.71	61.41	44.70	6.70	28.20	-9.80	51.61	74.00	-22.39	PK	Vertical
3264.71	51.21	44.70	6.70	28.20	-9.80	41.41	54.00	-12.59	AV	Vertical
3264.58	61.14	44.70	6.70	28.20	-9.80	51.34	74.00	-22.66	PK	Horizontal
3264.58	50.70	44.70	6.70	28.20	-9.80	40.90	54.00	-13.10	AV	Horizontal
4874.44	58.22	44.20	9.04	31.60	-3.56	54.66	74.00	-19.34	PK	Vertical
4874.44	50.07	44.20	9.04	31.60	-3.56	46.51	54.00	-7.49	AV	Vertical
4874.53	58.61	44.20	9.04	31.60	-3.56	55.05	74.00	-18.95	PK	Horizontal
4874.53	49.30	44.20	9.04	31.60	-3.56	45.74	54.00	-8.26	AV	Horizontal
5359.73	48.42	44.20	9.86	32.00	-2.34	46.08	74.00	-27.92	PK	Vertical
5359.73	39.06	44.20	9.86	32.00	-2.34	36.72	54.00	-17.28	AV	Vertical
5359.68	48.48	44.20	9.86	32.00	-2.34	46.14	74.00	-27.86	PK	Horizontal
5359.68	38.26	44.20	9.86	32.00	-2.34	35.92	54.00	-18.08	AV	Horizontal
7310.79	54.47	43.50	11.40	35.50	3.40	57.87	74.00	-16.13	PK	Vertical
7310.79	44.74	43.50	11.40	35.50	3.40	48.14	54.00	-5.86	AV	Vertical
7310.95	53.92	43.50	11.40	35.50	3.40	57.32	74.00	-16.68	PK	Horizontal
7310.95	44.86	43.50	11.40	35.50	3.40	48.26	54.00	-5.74	AV	Horizontal