



FCC Test Report

FCC ID: 2ANLH-XPA125B

Product: Linear Power Amplifier
Trade Mark: XIEGU
Model Number: XPA125B
Serial Model: N/A
Report No.: SER180628801001E

Prepared for

Chongqing Xiegu Technology Co.,Ltd.
7-6,Incubator Building, No.256,Fangzheng Avenue,Shuitu High High-tech
Park,Beibei District,Chongqing,China.

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name : Chongqing Xiegu Technology Co.,Ltd.

Address..... : 7-6,Incubator Bui1ding, No.256,Fangzheng Avenue,Shuitu High
High-tech Park,Beibei District,Chongqing,China.

Manufacturer's Name : Chongqing Xiegu Technology Co.,Ltd.

Address..... : 7-6,Incubator Bui1ding, No.256,Fangzheng Avenue,Shuitu High
High-tech Park,Beibei District,Chongqing,China.

Product description

Product name..... : Linear Power Amplifier

Model and/or type reference : XPA125B

FCC Part15B

Standards : ANSI C63.4:2014

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

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Date of Test :

Date (s) of performance of tests..... : 28 Jun. 2018 ~ 12 Jul. 2018

Date of Issue : 12 Jul. 2018

Test Result..... : **Pass**

Testing Engineer :



(Eileen Liu)

Technical Manager :



(Jason Chen)

Authorized Signatory :



(Sam Chen)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part15B ANSI C63.4: 2014	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

1.1 FACILITIES AND ACCREDITATIONS

FACILITIES

All measurement facilities used to collect the measurement data are located at
1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

CNAS-Lab. : The Laboratory has been assessed and proved to be in compliance with
CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)

The Certificate Registration Number is L5516.

IC-Registration The Certificate Registration Number is 9270A-1.

FCC- Accredited Test Firm Registration Number: 463705.

Designation Number: CN1184

A2LA-Lab. The Certificate Registration Number is 4298.01

This laboratory is accredited in accordance with the recognized
International Standard ISO/IEC 17025:2005 General requirements for
the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined
scope and the operation of a laboratory quality management system
(refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Name of Firm : Shenzhen NTEK Testing Technology Co., Ltd.

Site Location : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang
Street, Bao'an District, Shenzhen 518126 P.R. China.

1.3 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 %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Linear Power Amplifier	
Trade Mark	XIEGU	
Model Name	XPA125B	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a Linear Power Amplifier.	
	Connecting I/O port:	DC in, Antenna interface, ACC interface, TRX interface, COM interface,
	Operation Frequency:	receive: 1MHz-55MHz
	Modulation Type:	SSB, AM, FM, CW
Power Source	DC13.8V $\pm$ 15% V	
Adapter	N/A	
Battery	N/A	
HW Version	N/A	
SW Version	N/A	

2.1.1 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

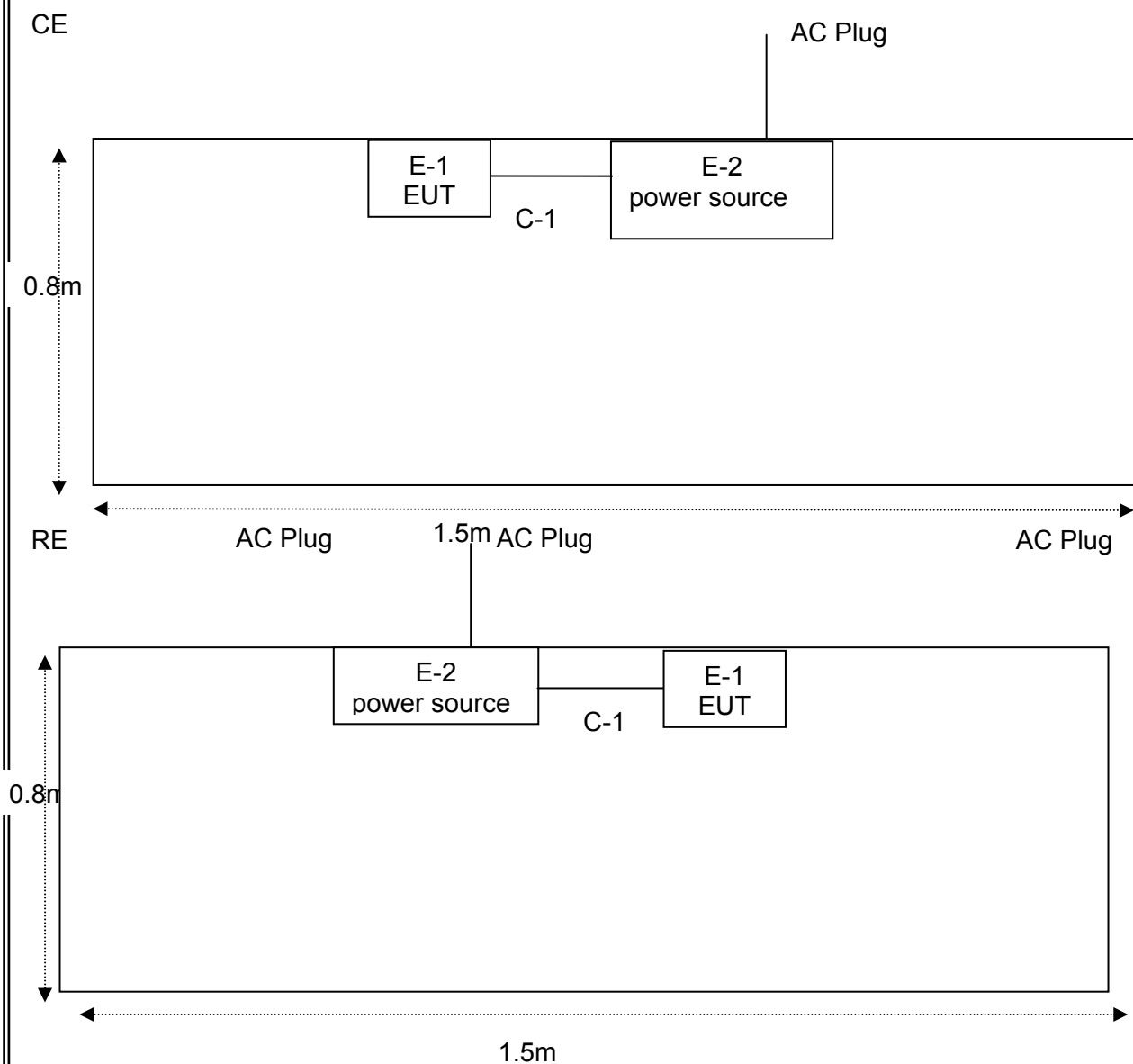
Pretest Mode	Description
Mode 1	Working

For Conducted Test	
Final Test Mode	Description
Mode 1	Working

For Radiated Test	
Final Test Mode	Description
Mode 1	Working

Note: Final Test Mode: Through Pre-scan, find the mode 1 is the worst case.
Only the worst case mode is recorded in the report.

2.2 DESCRIPTION OF TEST SETUP



2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

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	Brand	Model/Type No.	Series No.	Note
E-1	Linear Power Amplifier	XIEGU	XPA125B	N/A	EUT
E-2	Personal computer	MAISHENG	power source	MS-303D	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	Power Cable	NO	NO	1.2m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” “with core”; “NO” means “unshielded” “without core”.

2.4 MEASUREMENT INSTRUMENTS LIST

Radiation Test equipment

	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2018.05.19	2019.05.18	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2017.10.26	2018.10.25	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2017.10.26	2018.10.25	1 year
4	Test Receiver	R&S	ESPI7	101318	2018.05.19	2019.05.18	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2018.04.08	2019.04.07	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2018.05.19	2020.05.18	3 year
7	Horn Antenna	EM	EM-AH-10180	2011071402	2018.04.08	2019.04.07	1 year
8	Amplifier	EMC	EMC051835SE	980246	2017.08.09	2018.08.08	1 year
9	Active Loop Antenna	SCHWARZBECK	FMZB 1519B	055	2017.12.06	2018.12.06	1 year
10	Power Meter	DARE	RPR3006W	15100041SN084	2017.08.07	2018.08.06	1 year
11	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2017.04.21	2020.04.20	3 year
12	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
13	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2017.04.21	2020.04.20	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2017.04.21	2020.04.20	3 year
15	Filter	TRILTHIC	2400MHz	29	2017.04.19	2020.04.18	3 year
16	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2018.05.19	2019.05.18	1 year
2	LISN	R&S	ENV216	101313	2018.04.18	2019.04.19	1 year
3	LISN	SCHWARZBECK	NNLK 8129	8129245	2018.05.19	2019.05.18	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2018.05.19	2020.05.18	3 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2017.04.21	2020.04.20	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2017.04.21	2020.04.20	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2017.04.21	2020.04.20	3 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	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.

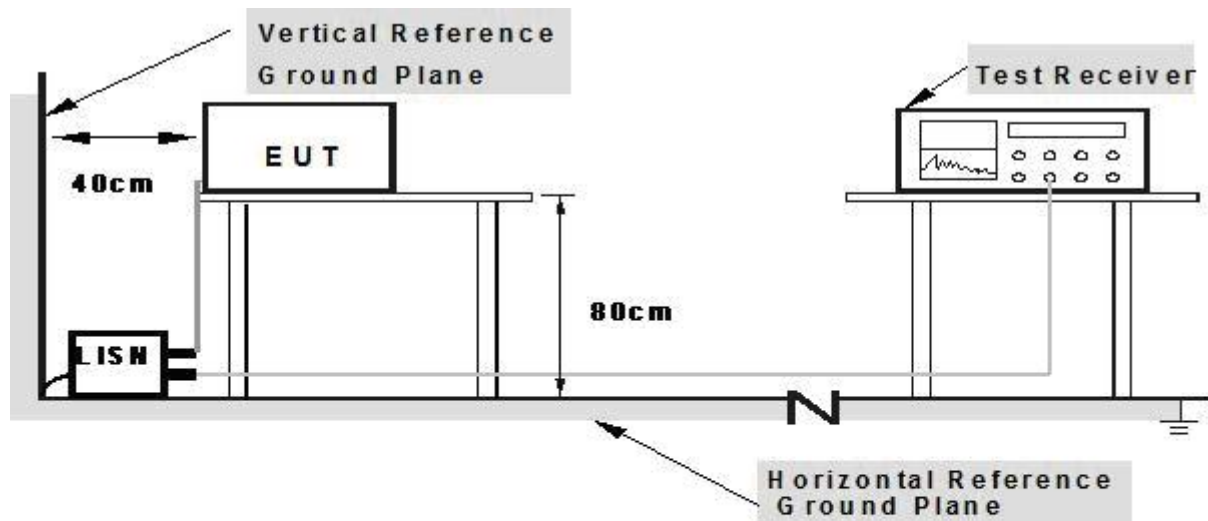
The following table is the setting of the receiver

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 was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 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 at least 80 cm from 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 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

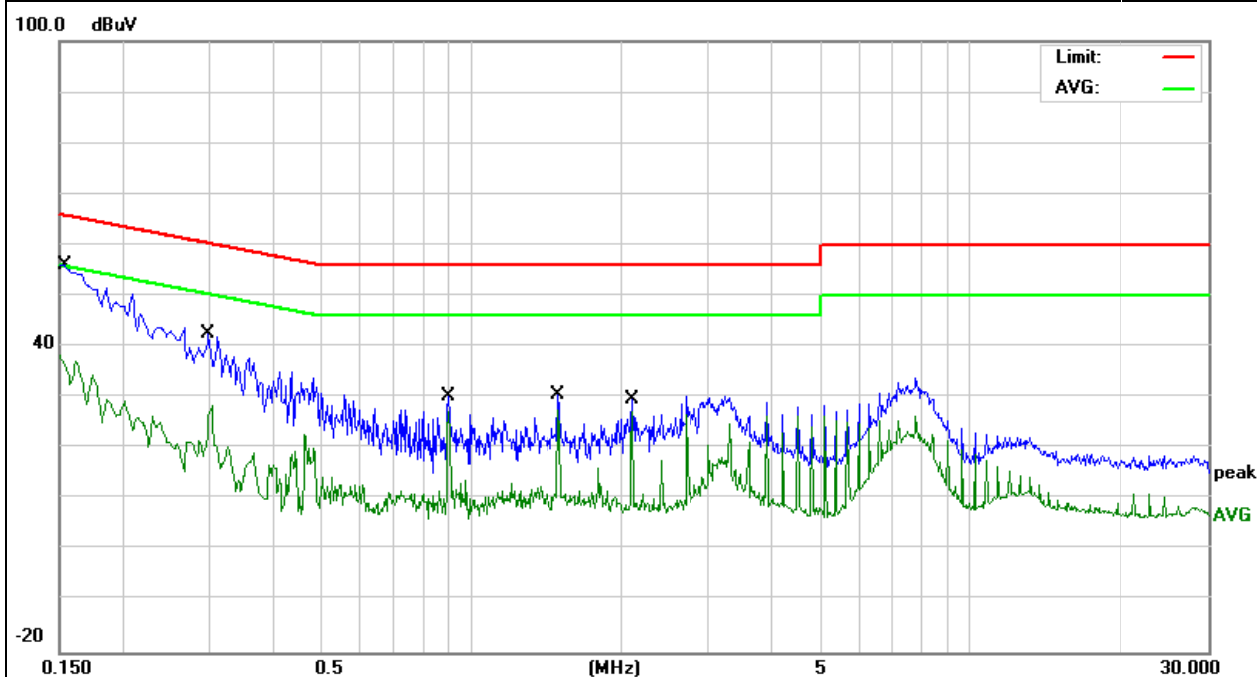
3.1.5 TEST RESULTS

EUT:	Linear Power Amplifier	Model Name. :	XPA125B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-05
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 13.8V from Power source AC120V/60Hz		

Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Measure-ment (dBμV)	Limits (dBμV)	Margin (dB)	Remark
0.1539	46.35	9.75	56.10	65.78	-9.68	QP
0.1539	28.49	9.75	38.24	55.78	-17.54	AVG
0.2977	32.93	9.74	42.67	60.30	-17.63	QP
0.2979	32.93	9.74	42.67	60.30	-17.63	QP
0.2979	18.58	9.74	28.32	50.30	-21.98	AVG
0.9020	20.47	9.74	30.21	56.00	-25.79	QP
0.9020	17.63	9.74	27.37	46.00	-18.63	AVG
1.5020	20.68	9.77	30.45	56.00	-25.55	QP
1.5020	17.89	9.77	27.66	46.00	-18.34	AVG
2.1018	19.77	9.78	29.55	56.00	-26.45	QP
2.1018	17.53	9.78	27.31	46.00	-18.69	AVG
0.1539	46.35	9.75	56.10	65.78	-9.68	QP

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

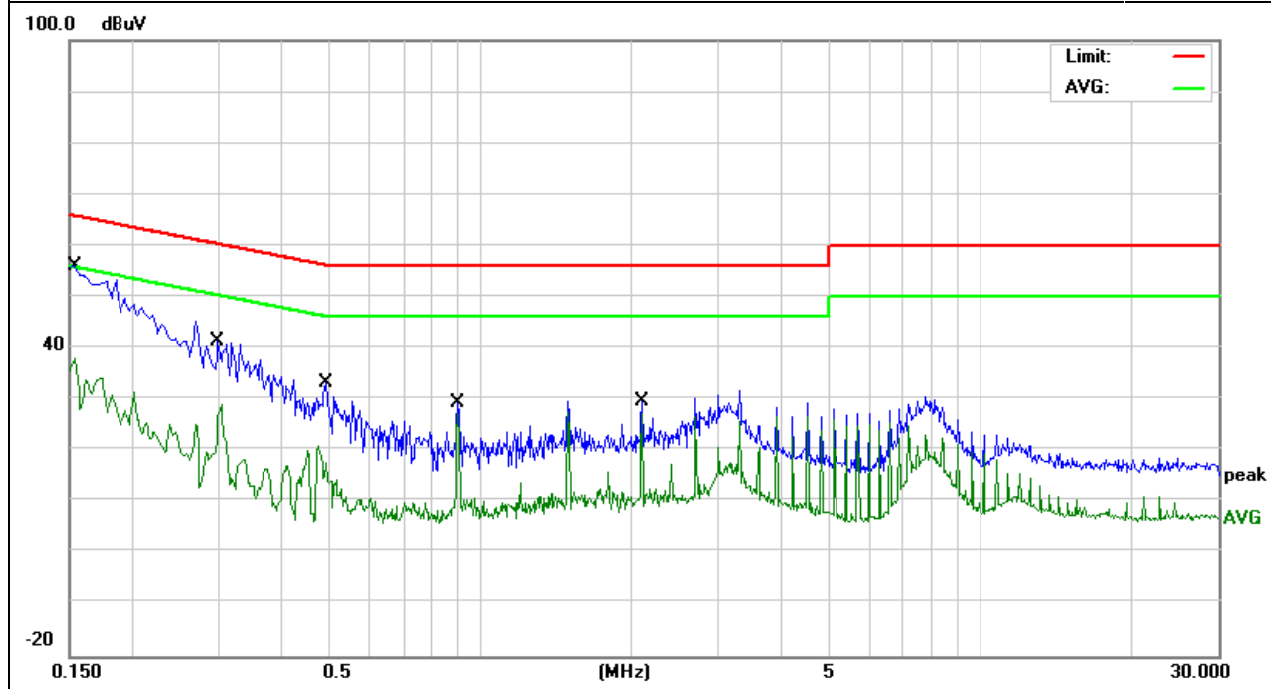


EUT:	Linear Power Amplifier	Model Name. :	XPA125B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-05
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 13.8V from Power source AC120V/60Hz		

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1539	46.39	9.74	56.13	65.78	-9.65	QP
0.1539	28.24	9.74	37.98	55.78	-17.80	AVG
0.2979	31.73	9.74	41.47	60.30	-18.83	QP
0.2979	19.36	9.74	29.10	50.30	-21.20	AVG
0.4899	23.45	9.75	33.20	56.17	-22.97	QP
0.4899	11.12	9.75	20.87	46.17	-25.30	AVG
0.9020	19.67	9.75	29.42	56.00	-26.58	QP
0.9020	17.52	9.75	27.27	46.00	-18.73	AVG
2.1018	19.78	9.80	29.58	56.00	-26.42	QP
2.1018	17.44	9.80	27.24	46.00	-18.76	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

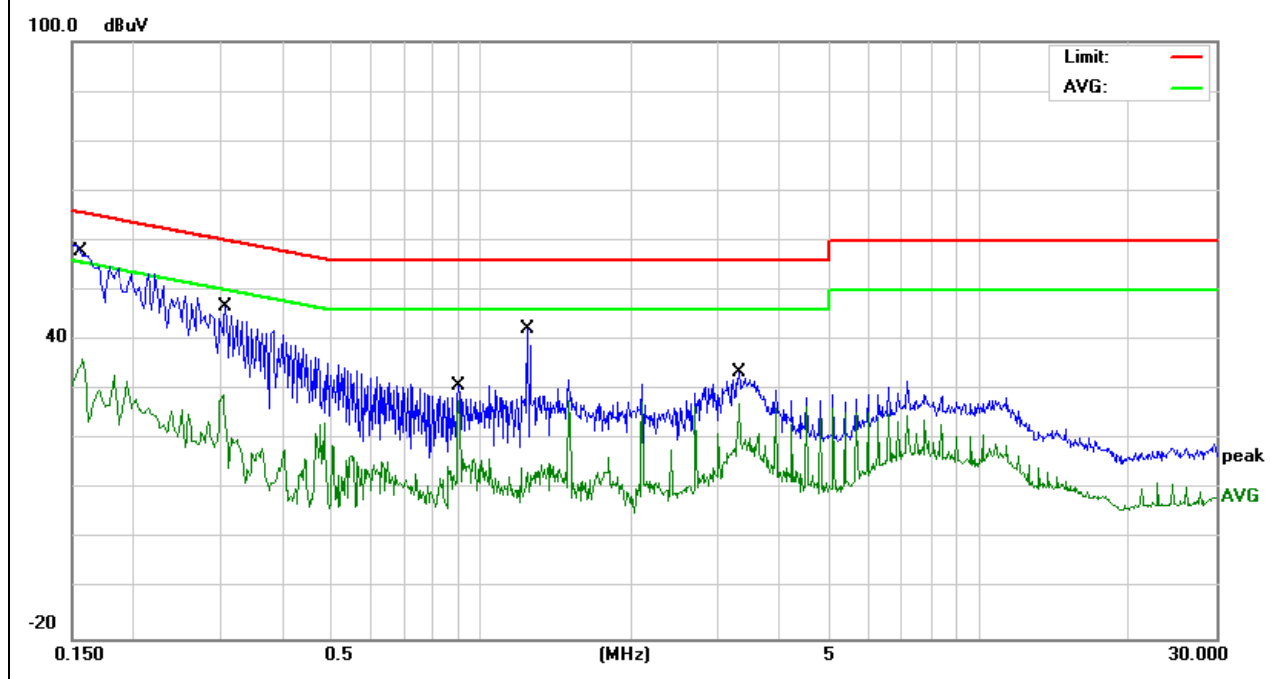


EUT:	Linear Power Amplifier	Model Name. :	XPA125B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-05
Test Mode:	Mode 1	Phase :	L
Test Voltage:	DC 13.8V from Power source AC240V/60Hz		

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	49.38	9.75	59.13	65.56	-6.43	QP
0.1580	26.48	9.75	36.23	55.56	-19.33	AVG
0.3059	36.96	9.74	46.70	60.08	-13.38	QP
0.3059	19.37	9.74	29.11	50.08	-20.97	AVG
0.9020	21.15	9.74	30.89	56.00	-25.11	QP
0.9020	18.00	9.74	27.74	46.00	-18.26	AVG
1.2419	32.42	9.74	42.16	56.00	-13.84	QP
1.2419	4.53	9.74	14.27	46.00	-31.73	AVG
3.3060	23.70	9.84	33.54	56.00	-22.46	QP
3.3060	17.48	9.84	27.32	46.00	-18.68	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

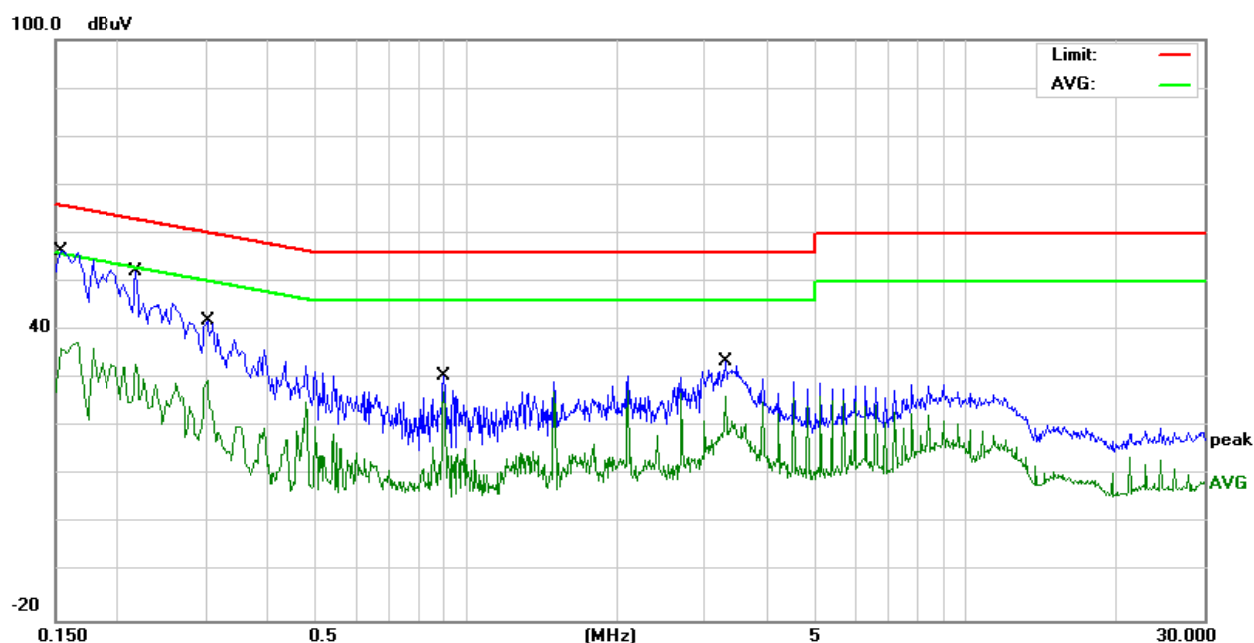


EUT:	Linear Power Amplifier	Model Name. :	XPA125B
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	1010hPa	Test Date:	2018-7-05
Test Mode:	Mode 1	Phase :	N
Test Voltage:	DC 13.8V from Power source AC240V/60Hz		

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1539	46.74	9.74	56.48	65.78	-9.30	QP
0.1539	27.29	9.74	37.03	55.78	-18.75	AVG
0.2179	42.48	9.73	52.21	62.89	-10.68	QP
0.2179	23.25	9.73	32.98	52.89	-19.91	AVG
0.3019	32.15	9.74	41.89	60.19	-18.30	QP
0.3019	19.98	9.74	29.72	50.19	-20.47	AVG
0.9020	20.82	9.75	30.57	56.00	-25.43	QP
0.9020	17.65	9.75	27.40	46.00	-18.60	AVG
3.3060	23.72	9.89	33.61	56.00	-22.39	QP
3.3060	16.60	9.89	26.49	46.00	-19.51	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

- (1) The limit for radiated test was performed according to as following:
FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. 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.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. 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 height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

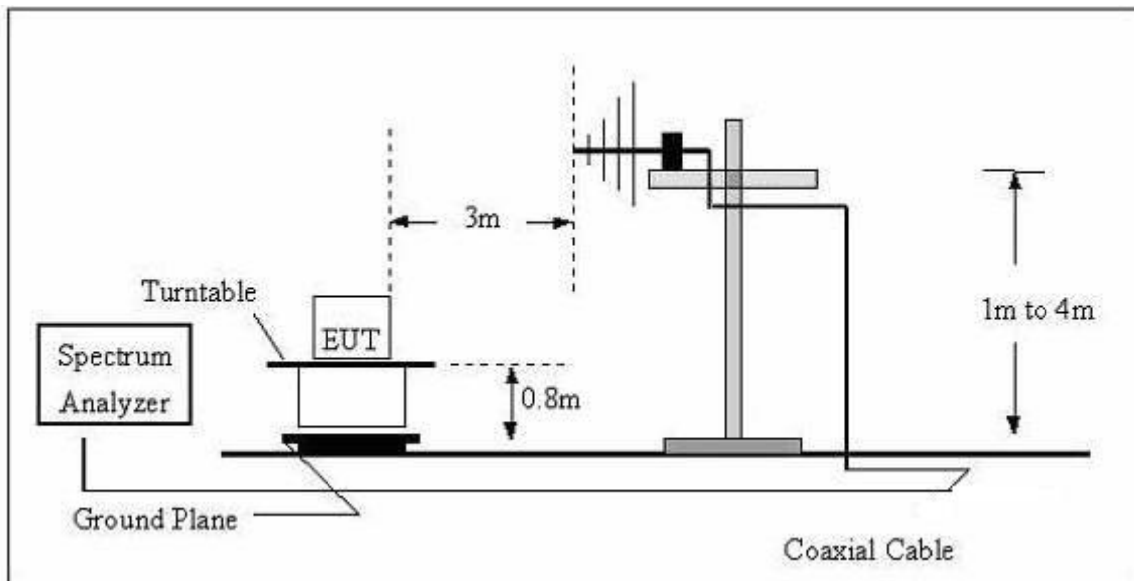
Note: For the hand-held device, the EUT should be measured for all 3 axes and only the worst case is recorded in the report

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

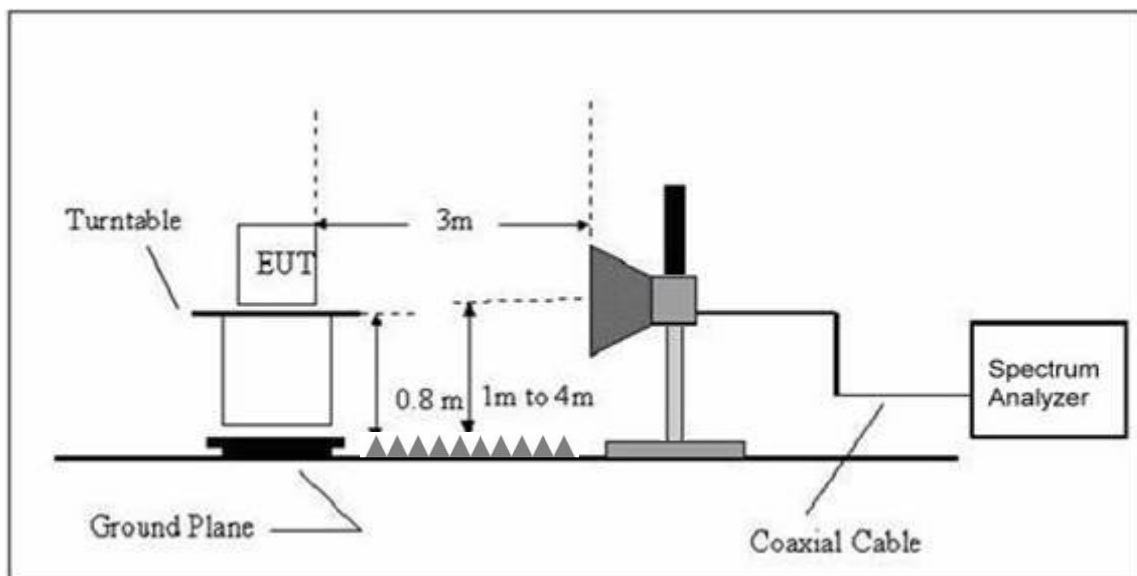
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Avg	1 MHz	10 Hz

3.2.3 TEST SETUP

For Radiated Emission 30~1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



3.2.4 TEST RESULTS

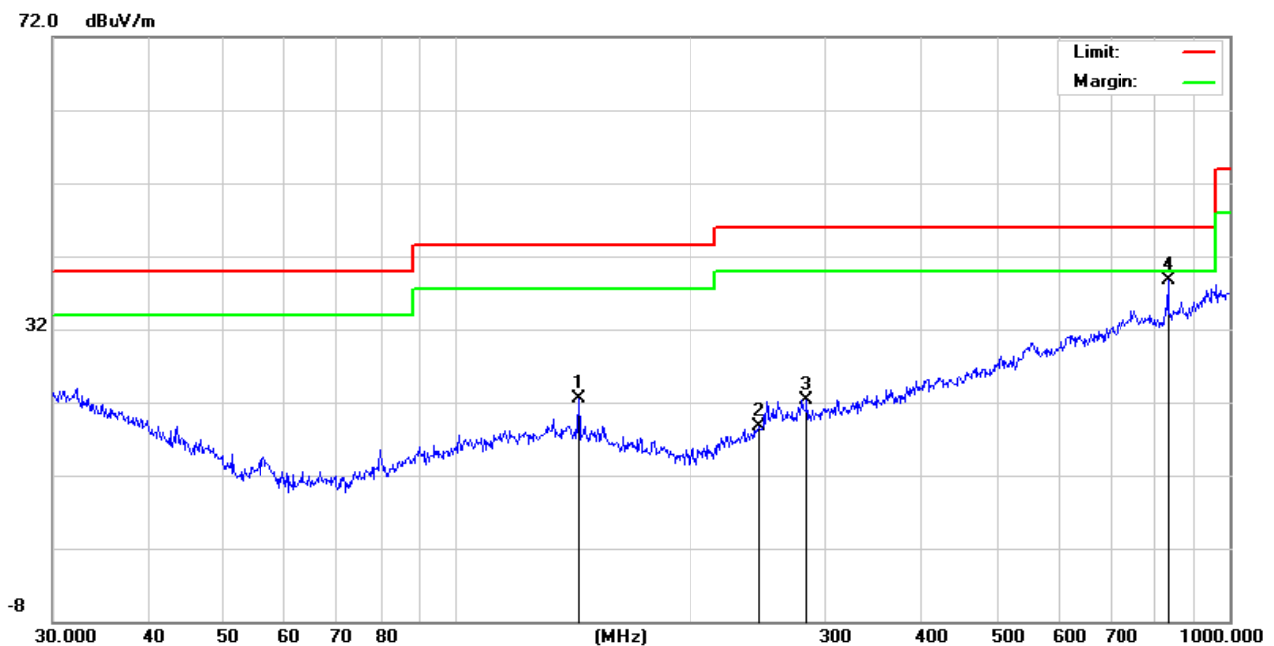
TEST RESULTS (30~1000 MHz)

EUT:	Linear Power Amplifier	Model Name:	XPA125B
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-7-07
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC 13.8V from Power source AC120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	143.8295	9.27	13.18	22.45	43.50	-21.05	QP
H	245.9509	4.52	14.18	18.70	46.00	-27.30	QP
H	283.9791	6.48	15.89	22.37	46.00	-23.63	QP
H	833.3171	10.24	28.42	38.66	46.00	-7.34	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.

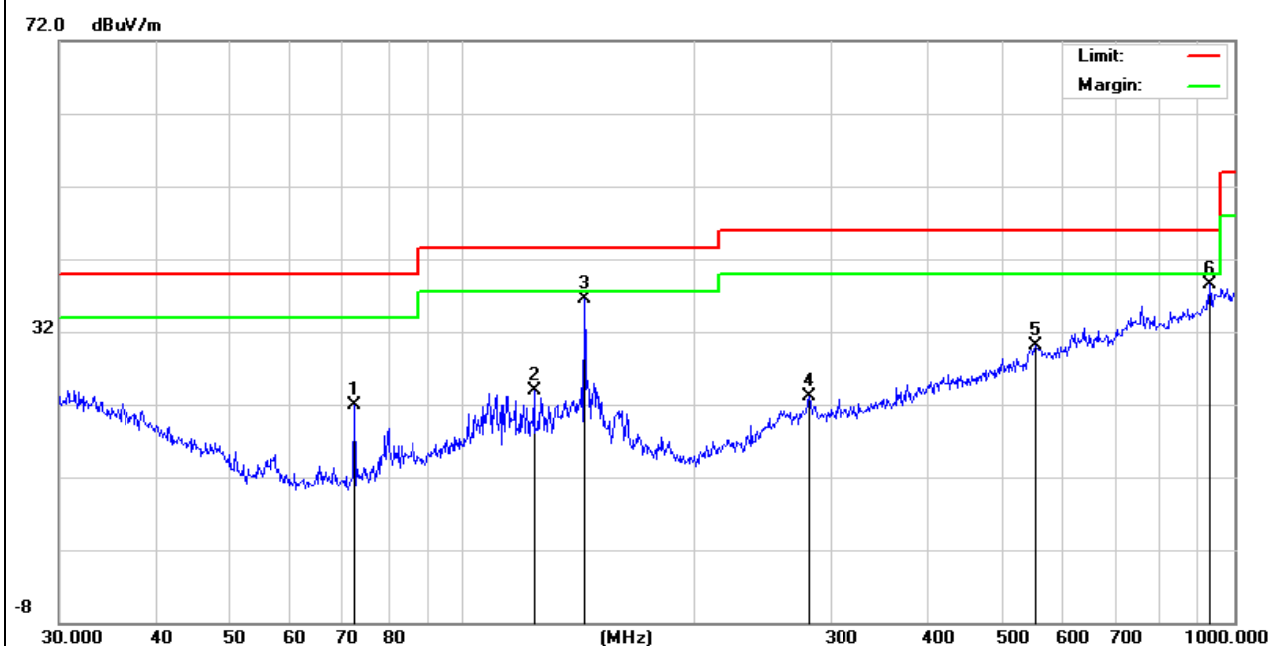


EUT:	Linear Power Amplifier	Model Name :	XPA125B
Temperature:	24 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Test Date :	2018-7-07
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC 13.8V from Power source AC120V/60Hz		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	72.3376	15.00	6.91	21.91	40.00	-18.09	QP
V	123.6984	10.55	13.28	23.83	43.50	-19.67	QP
V	143.8295	23.40	13.18	36.58	43.50	-6.92	QP
V	281.0074	6.15	17.00	23.15	46.00	-22.85	QP
V	552.8832	5.52	24.51	30.03	46.00	-15.97	QP
V	929.0081	7.88	30.57	38.45	46.00	-7.55	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.



END OF REPORT