TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15.249

TEST REPORT

For

Fujian Sanan Sino-Science Photobiotech Co., Ltd.

Photoelectric Industrical Park, Hengshan Village, Hutou Town, Anxi County, Quanzhou City, Fujian, China

FCC ID: 2APLO-ZK2-A600-W600

Report Type:	**Product Name:**
Original Report	Hi-Power Growth Light

Report Number:	RXM180410050-00A
Report Date:	2018-05-23
Reviewed By:	Dean Lau RF Supervisor
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	Hi-Power Growth Light
EUT Model:	ZK2-A600-SR01/A, ZK2-W600-SR01/A
FCC ID:	2APLO-ZK2-A600-W600
Rated Input Voltage:	100-277 Vac
External Dimension:	ZK2-A600-SR01/A: 51.2mm(L)*29.2mm(W)*17.8mm(H) ZK2-W600-SR01/A: 52.2mm(L)*26.9mm(W)*10.5mm(H)
Serial Number:	180410050
EUT Received Date:	2018.04.13

Note: The series product, models ZK2-A600-SR01/A, ZK2-W600-SR01/A are electrically identical, The difference between them please refer to the declaration letter for details. For marketing purpose, we selected ZK2-A600-SR01/A, ZK2-W600-SR01/A for fully test.

Objective

This type approval report is prepared on behalf of ***Fujian Sanan Sino-Science Photobiotech Co., Ltd.*** in accordance with Part 2-Subpart J, and Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Rules Part 15, Subpart C, and section 15.203, 15.205, 15.215, 15.209 and 15.249 rules.

Related Submittal(s)/Grant(s)

N/A

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB,1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

The system was configured for testing in 2418MHz, which was provided by manufacturer.

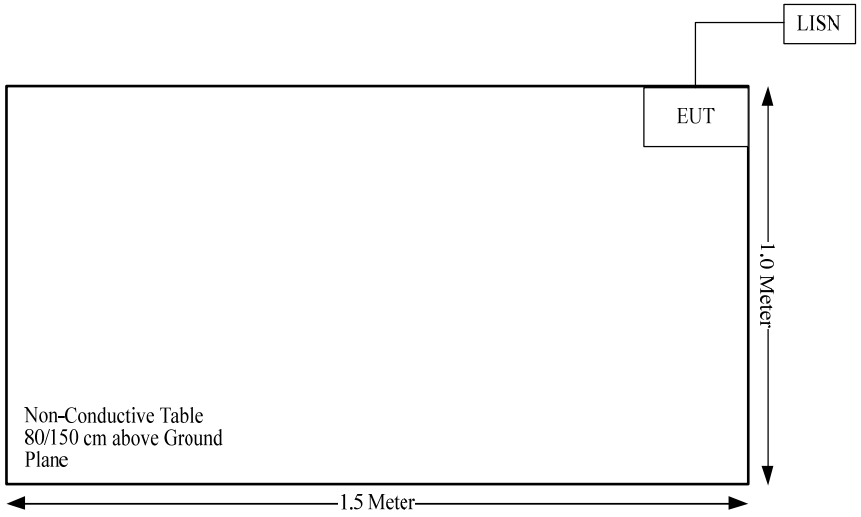
EUT Exercise Software

No software was used in test, the device was configured to engineer mode by manufacturer, test channel switched by keys.

Equipment Modifications

No modifications were made to the EUT.

Block Diagram of Test Setup



Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Power line	no	no	1.1	LISN	EUT

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207(a)	Conducted Emissions	Compliance
15.205, §15.209, §15.249	Radiated Emissions	Compliance
§15.215 (c)	20 dB Bandwidth	Compliance

FCC§15.203 - ANTENNA REQUIREMENT

Applicable Standard

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

Antenna Connector Construction

The EUT has one PCB antenna arrangement, and the antenna gain is 1 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

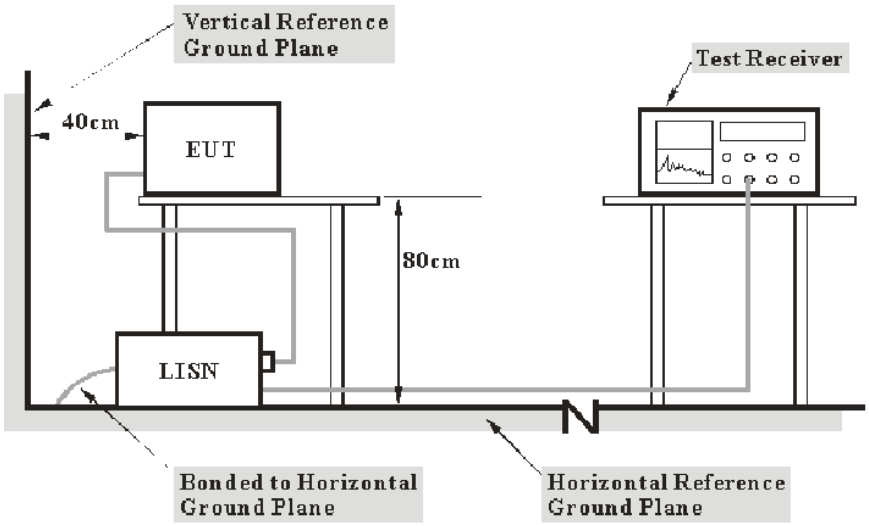
Result: Compliant.

FCC §15.207 (a)– AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207(a)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207.

The spacing between the peripherals was 10 cm.

The adapter was connected to the main LISN with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2017-12-11	2018-12-11
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2017-09-05	2018-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	Two-line V-network	ENV 216	101614	2017-12-08	2018-12-08
R&S	L.I.S.N	ESH2-Z5	892107/021	2017-09-25	2018-09-25

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

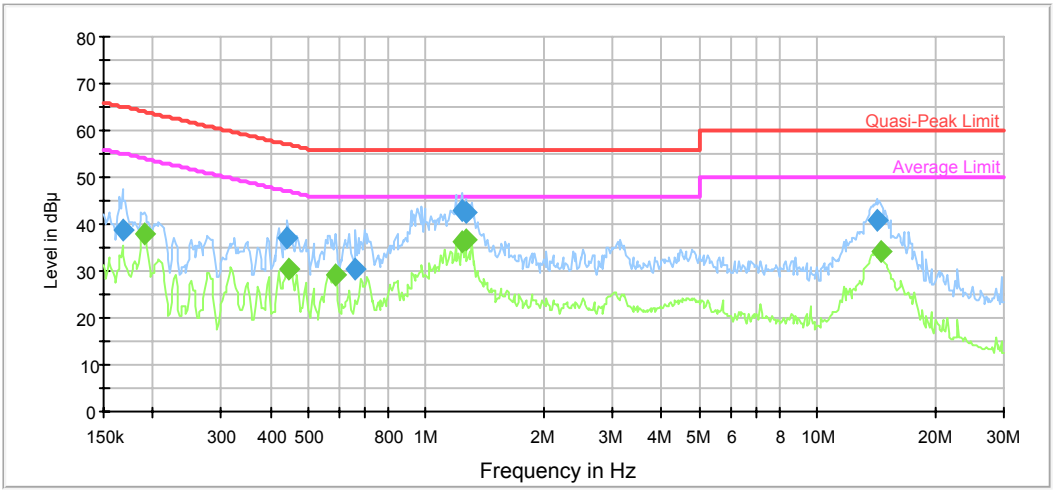
Temperature:	25.8 °C
Relative Humidity:	61 %
ATM Pressure:	101.2 kPa

The testing was performed by Ade Xiao on 2018-04-18.

Test Mode: *Transmitting*

ZK2-A600-SR01/A:

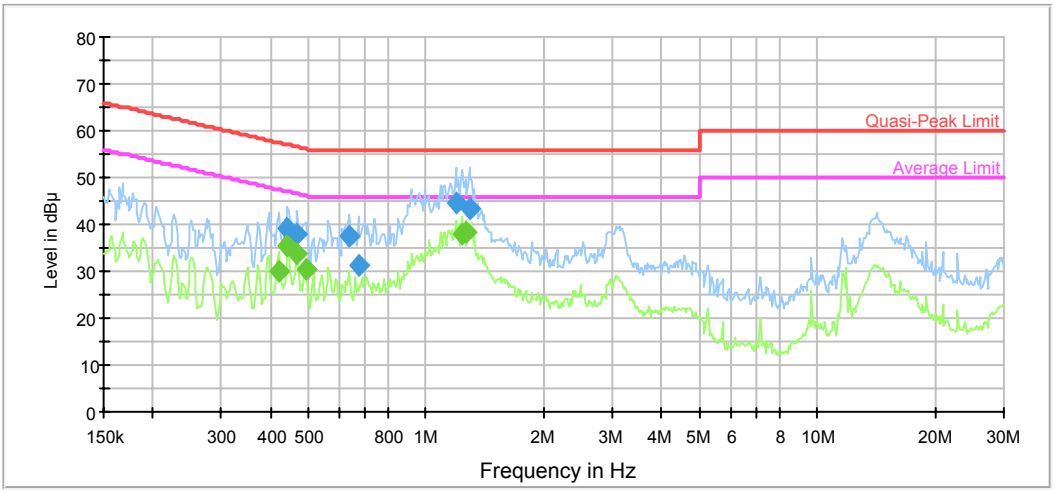
AC120V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.167702	38.7	9.000	L1	10.9	26.4	65.1	Compliance
0.443327	37.0	9.000	L1	9.9	20.0	57.0	Compliance
0.660314	30.5	9.000	L1	9.8	25.5	56.0	Compliance
1.239175	43.0	9.000	L1	9.8	13.0	56.0	Compliance
1.259081	42.4	9.000	L1	9.8	13.6	56.0	Compliance
14.192385	40.9	9.000	L1	9.9	19.1	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.190505	38.1	9.000	L1	10.7	15.9	54.0	Compliance
0.446873	30.5	9.000	L1	9.9	16.4	46.9	Compliance
0.585926	29.0	9.000	L1	9.8	17.0	46.0	Compliance
1.239175	36.0	9.000	L1	9.8	10.0	46.0	Compliance
1.259081	36.6	9.000	L1	9.8	9.4	46.0	Compliance
14.535734	34.1	9.000	L1	9.9	15.9	50.0	Compliance

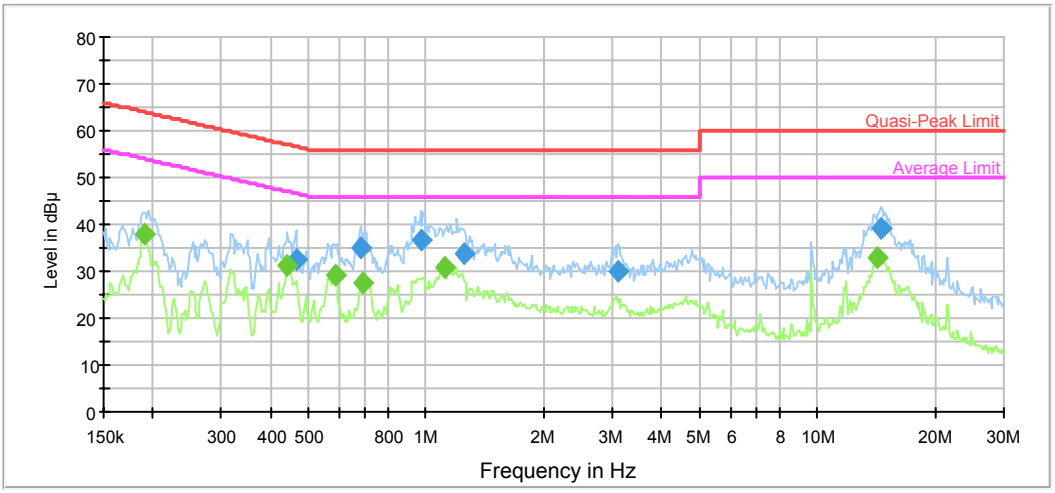
AC120V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.443327	39.2	9.000	N	9.9	17.8	57.0	Compliance
0.468757	37.9	9.000	N	9.9	18.6	56.5	Compliance
0.639600	37.5	9.000	N	9.8	18.5	56.0	Compliance
0.670921	31.2	9.000	N	9.8	24.8	56.0	Compliance
1.190776	44.4	9.000	N	9.8	11.6	56.0	Compliance
1.289541	43.1	9.000	N	9.8	12.9	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.419276	30.1	9.000	N	10.0	17.4	47.5	Compliance
0.443327	35.6	9.000	N	9.9	11.4	47.0	Compliance
0.468757	33.6	9.000	N	9.9	13.0	46.5	Compliance
0.491712	30.6	9.000	N	9.9	15.5	46.1	Compliance
1.239175	38.0	9.000	N	9.8	8.0	46.0	Compliance
1.259081	38.4	9.000	N	9.8	7.6	46.0	Compliance

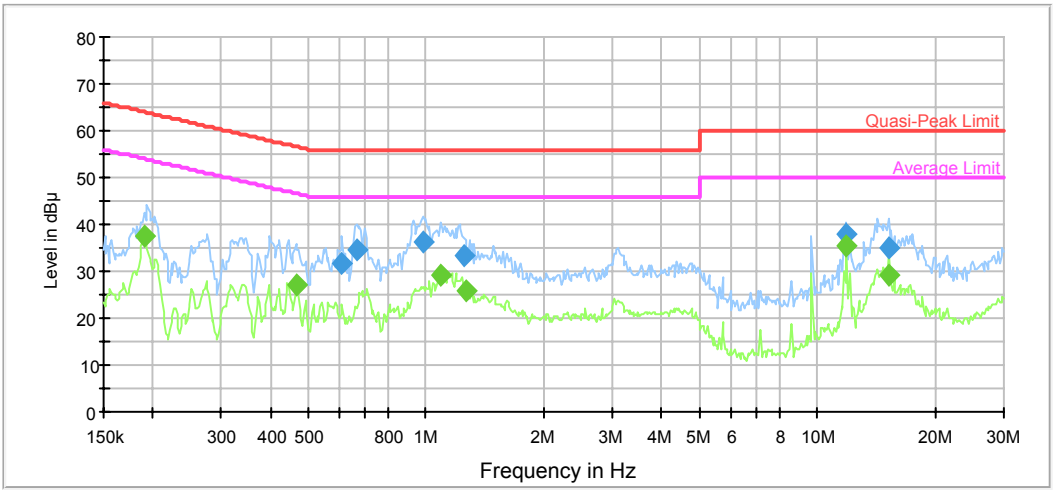
AC277V, 50 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.465037	32.6	9.000	L1	9.9	24.0	56.6	Compliance
0.681699	34.9	9.000	L1	9.8	21.1	56.0	Compliance
0.967957	36.5	9.000	L1	9.8	19.5	56.0	Compliance
1.249088	33.8	9.000	L1	9.8	22.2	56.0	Compliance
3.098088	30.2	9.000	L1	9.8	25.8	56.0	Compliance
14.535734	39.3	9.000	L1	9.9	20.7	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.190505	37.8	9.000	L1	10.7	16.2	54.0	Compliance
0.443327	31.3	9.000	L1	9.9	15.7	47.0	Compliance
0.585926	29.3	9.000	L1	9.8	16.7	46.0	Compliance
0.687153	27.5	9.000	L1	9.8	18.5	46.0	Compliance
1.117238	30.7	9.000	L1	9.8	15.3	46.0	Compliance
14.305924	32.7	9.000	L1	9.9	17.3	50.0	Compliance

AC277V, 50 Hz, Neutral:

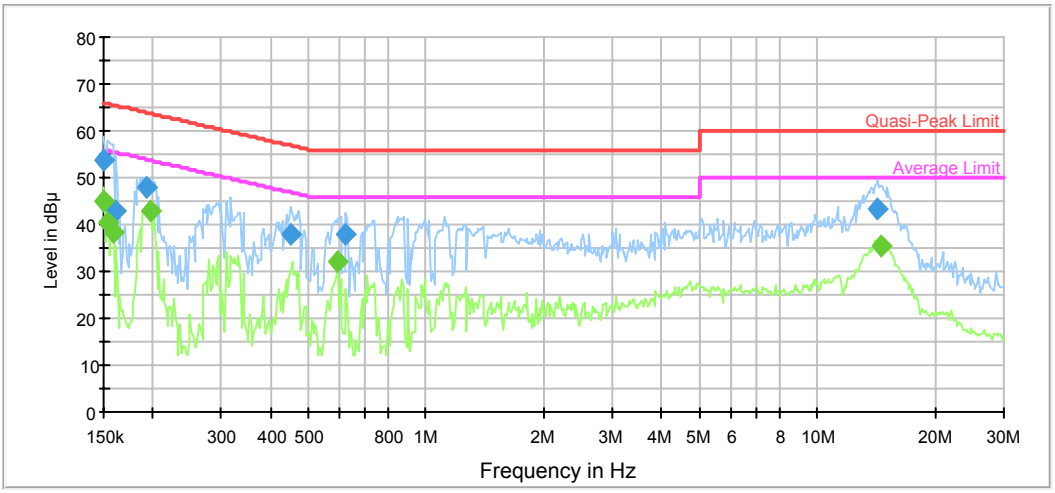


Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.609741	31.6	9.000	N	9.8	24.4	56.0	Compliance
0.665597	34.5	9.000	N	9.8	21.5	56.0	Compliance
0.983506	36.2	9.000	N	9.8	19.8	56.0	Compliance
1.249088	33.2	9.000	N	9.8	22.8	56.0	Compliance
11.910327	38.1	9.000	N	9.9	21.9	60.0	Compliance
15.247554	35.0	9.000	N	9.9	25.0	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.190505	37.3	9.000	N	10.7	16.7	54.0	Compliance
0.468757	27.3	9.000	N	9.9	19.3	46.5	Compliance
1.090848	29.3	9.000	N	9.8	16.7	46.0	Compliance
1.259081	25.7	9.000	N	9.8	20.3	46.0	Compliance
11.910327	35.6	9.000	N	9.9	14.4	50.0	Compliance
15.247554	29.1	9.000	N	9.9	20.9	50.0	Compliance

ZK2-W600-SR01/A:

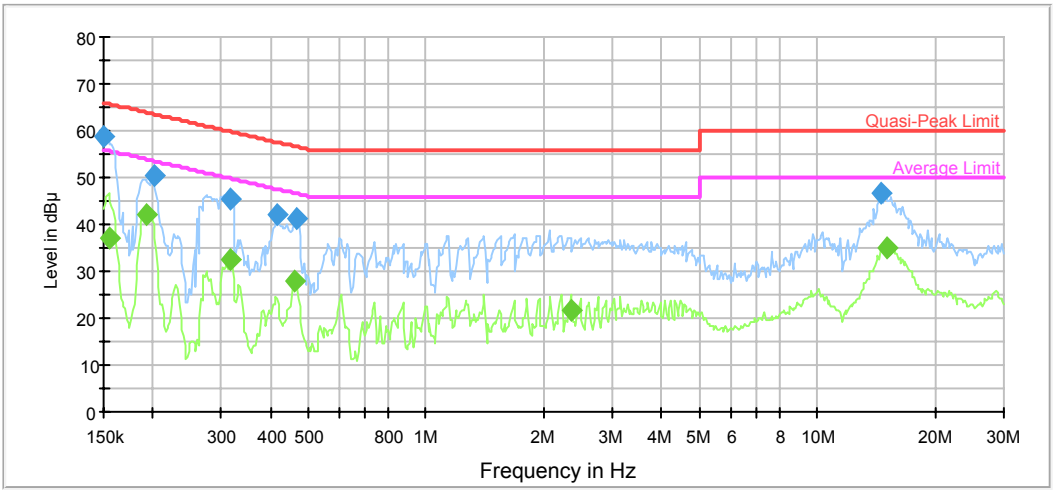
AC120V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	53.9	9.000	L1	11.2	12.1	66.0	Compliance
0.161152	43.0	9.000	L1	11.0	22.4	65.4	Compliance
0.193566	47.7	9.000	L1	10.7	16.2	63.9	Compliance
0.450448	38.0	9.000	L1	9.9	18.9	56.9	Compliance
0.624492	37.8	9.000	L1	9.8	18.2	56.0	Compliance
14.305924	43.5	9.000	L1	9.9	16.5	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	45.1	9.000	L1	11.2	10.9	56.0	Compliance
0.153629	40.4	9.000	L1	11.1	15.4	55.8	Compliance
0.158604	38.4	9.000	L1	11.1	17.1	55.5	Compliance
0.196675	43.0	9.000	L1	10.7	10.7	53.7	Compliance
0.595338	32.3	9.000	L1	9.8	13.7	46.0	Compliance
14.535734	35.5	9.000	L1	9.9	14.5	50.0	Compliance

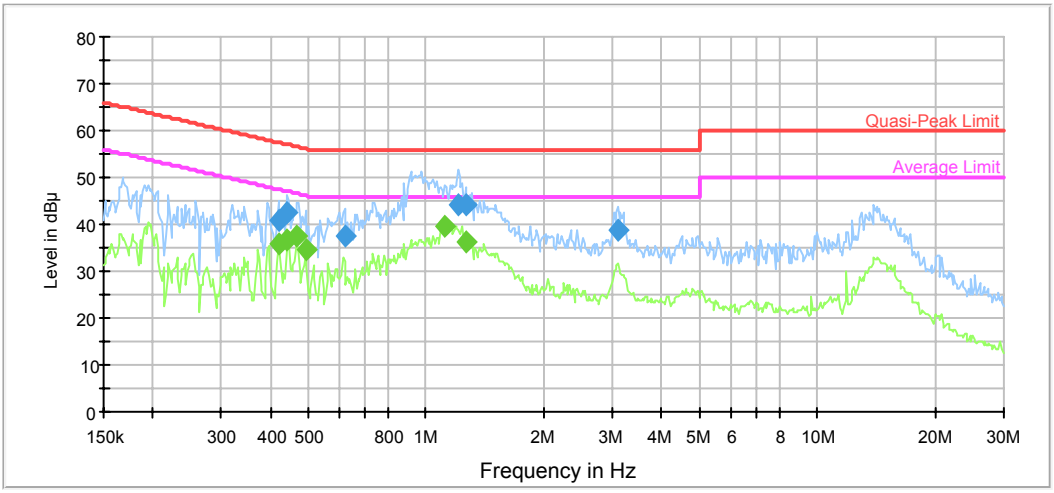
AC120V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	58.7	9.000	N	11.2	7.3	66.0	Compliance
0.201433	50.3	9.000	N	10.6	13.3	63.6	Compliance
0.317235	45.4	9.000	N	10.1	8.4	59.8	Compliance
0.415949	42.1	9.000	N	10.0	15.4	57.5	Compliance
0.468757	41.1	9.000	N	9.9	15.4	56.5	Compliance
14.535734	46.8	9.000	N	9.9	13.2	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.154858	37.1	9.000	N	11.1	18.6	55.7	Compliance
0.192030	42.0	9.000	N	10.7	11.9	53.9	Compliance
0.314718	32.5	9.000	N	10.1	17.3	49.8	Compliance
0.461346	27.7	9.000	N	9.9	19.0	46.7	Compliance
2.344095	21.8	9.000	N	9.8	24.2	46.0	Compliance
15.006489	35.1	9.000	N	9.9	14.9	50.0	Compliance

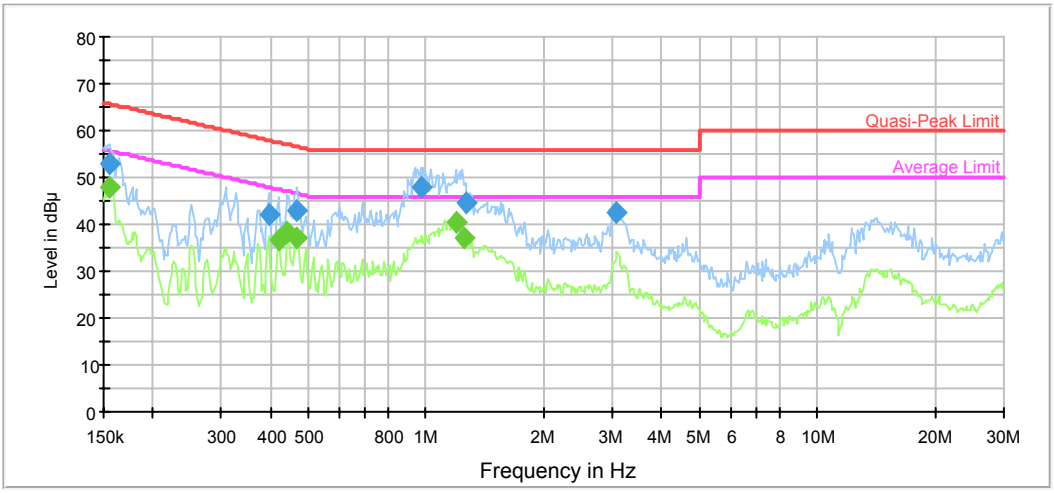
AC277V, 50 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.419276	40.9	9.000	L1	10.0	16.6	57.5	Compliance
0.443327	42.4	9.000	L1	9.9	14.6	57.0	Compliance
0.619536	37.7	9.000	L1	9.8	18.3	56.0	Compliance
1.209904	44.1	9.000	L1	9.8	11.9	56.0	Compliance
1.259081	44.1	9.000	L1	9.8	11.9	56.0	Compliance
3.098088	38.7	9.000	L1	9.8	17.3	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.419276	35.8	9.000	L1	10.0	11.7	47.5	Compliance
0.443327	36.5	9.000	L1	9.9	10.5	47.0	Compliance
0.468757	37.6	9.000	L1	9.9	8.9	46.5	Compliance
0.491712	34.8	9.000	L1	9.9	11.4	46.1	Compliance
1.117238	39.4	9.000	L1	9.8	6.6	46.0	Compliance
1.259081	36.4	9.000	L1	9.8	9.6	46.0	Compliance

AC277V, 50 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.156097	53.0	9.000	N	11.1	12.7	65.7	Compliance
0.396530	42.1	9.000	N	10.0	15.8	57.9	Compliance
0.468757	42.8	9.000	N	9.9	13.7	56.5	Compliance
0.967957	48.0	9.000	N	9.8	8.0	56.0	Compliance
1.259081	44.5	9.000	N	9.8	11.5	56.0	Compliance
3.073500	42.6	9.000	N	9.8	13.4	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.156097	47.8	9.000	N	11.1	7.9	55.7	Compliance
0.419276	36.5	9.000	N	10.0	11.0	47.5	Compliance
0.443327	38.5	9.000	N	9.9	8.5	47.0	Compliance
0.468757	37.1	9.000	N	9.9	9.4	46.5	Compliance
1.190776	40.5	9.000	N	9.8	5.5	46.0	Compliance
1.249088	37.2	9.000	N	9.8	8.8	46.0	Compliance

FCC§15.205, §15.209&§15.249- RADIATED EMISSIONS

Applicable Standard

As per FCC§15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

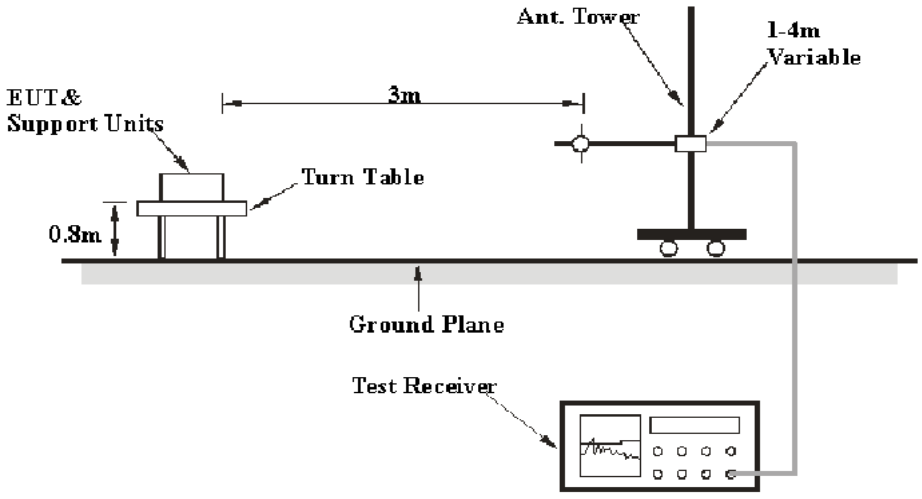
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.

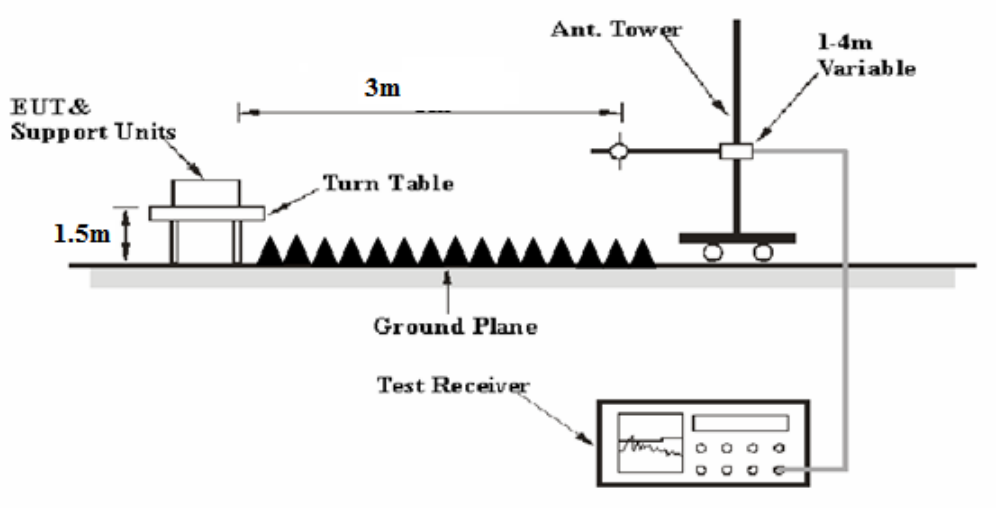
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209/15.205 and FCC 15.249 limits.

Test Equipment Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	AV

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1GHz, peak detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit –Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2017-12-11	2018-12-11
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2017-09-05	2018-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2018-01-04	2019-01-04
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2016-11-18	2019-11-18
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2017-09-05	2018-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-06-27	2018-06-27
E-Microwave	Band-stop Filters	OBSF-2400-2483.5-S	OE01601525	2017-06-16	2018-06-16
Micro-tronics	High Pass Filter	HPM50111	S/N-G217	2017-06-16	2018-06-16
Pro instrument	DC Power Supply	pps3300	3300012	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2017-09-05	2018-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2017-09-05	2018-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2017-09-05	2018-09-05
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2017-09-05	2018-09-05
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2017-06-27	2018-06-27
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25.8~27.1 °C
Relative Humidity:	39~45 %
ATM Pressure:	100.8 kPa

The testing was performed by Blake Yang & Sunny Cen from 2018-05-16 to 2018-05-17.

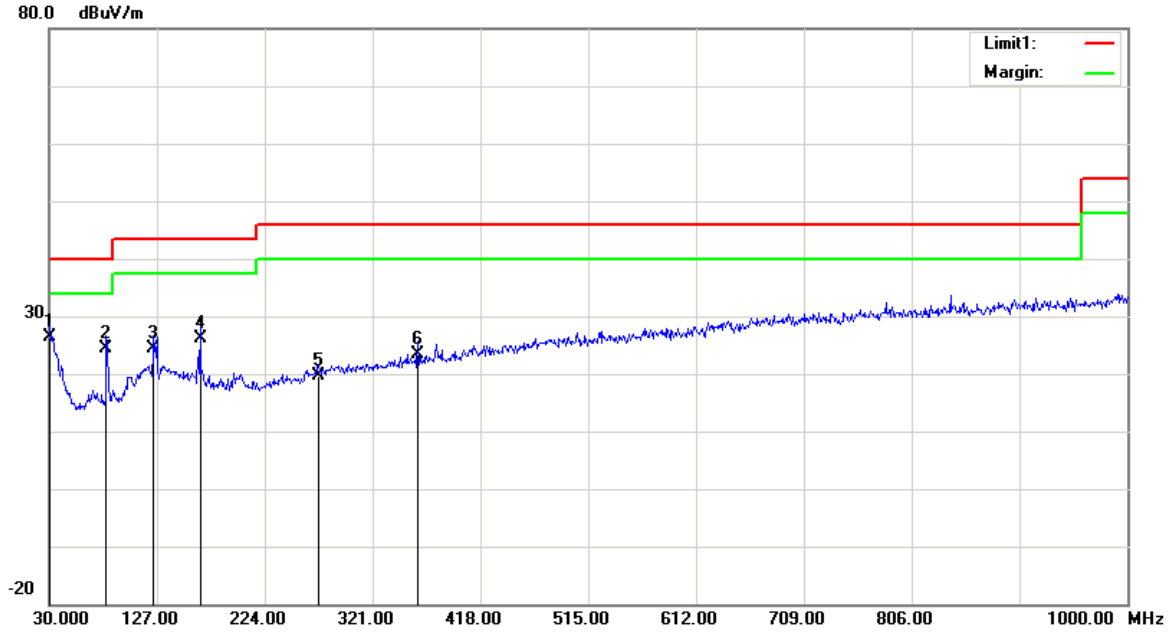
Test Mode: Transmitting

ZK2-A600-SR01/A:

1) 30MHz-1GHz

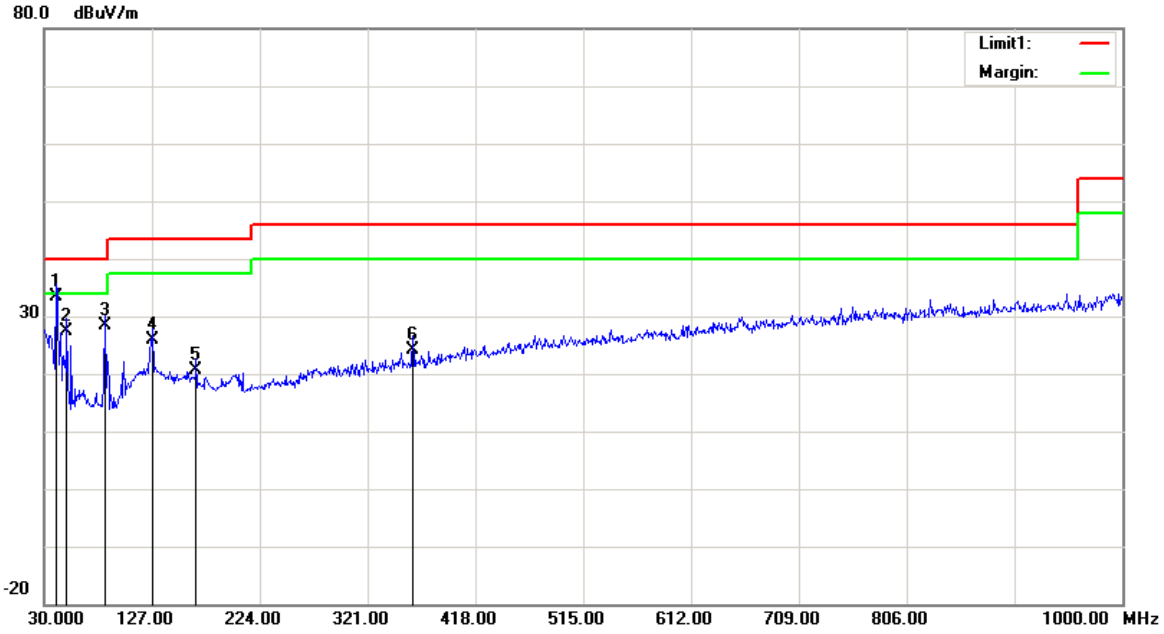
AC 120V:

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.0000	24.96	QP	1.54	26.50	40.00	13.50
81.4100	35.68	QP	-11.38	24.30	40.00	15.70
124.0900	29.26	QP	-4.76	24.50	43.50	19.00
165.8000	32.52	QP	-6.42	26.10	43.50	17.40
272.5000	23.76	QP	-4.16	19.60	46.00	26.40
361.7400	26.32	QP	-2.82	23.50	46.00	22.50

Vertical:



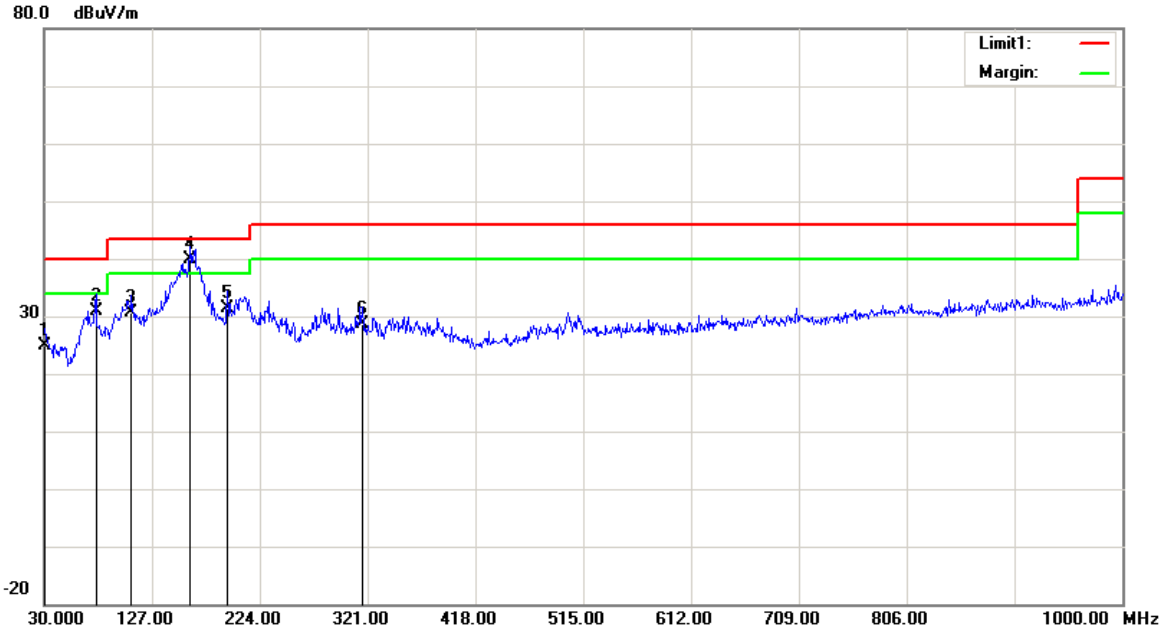
Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
40.6700	39.75	QP	-6.35	33.40	40.00	6.60
50.3700	38.84	QP	-11.34	27.50	40.00	12.50
84.3200	39.76	QP	-11.46	28.30	40.00	11.70
127.9700	30.66	QP	-4.86	25.80	43.50	17.70
166.7700	27.09	QP	-6.49	20.60	43.50	22.90
361.7400	27.02	QP	-2.82	24.20	46.00	21.80

ZK2-A600-SR01/A:

1) 30MHz-1GHz

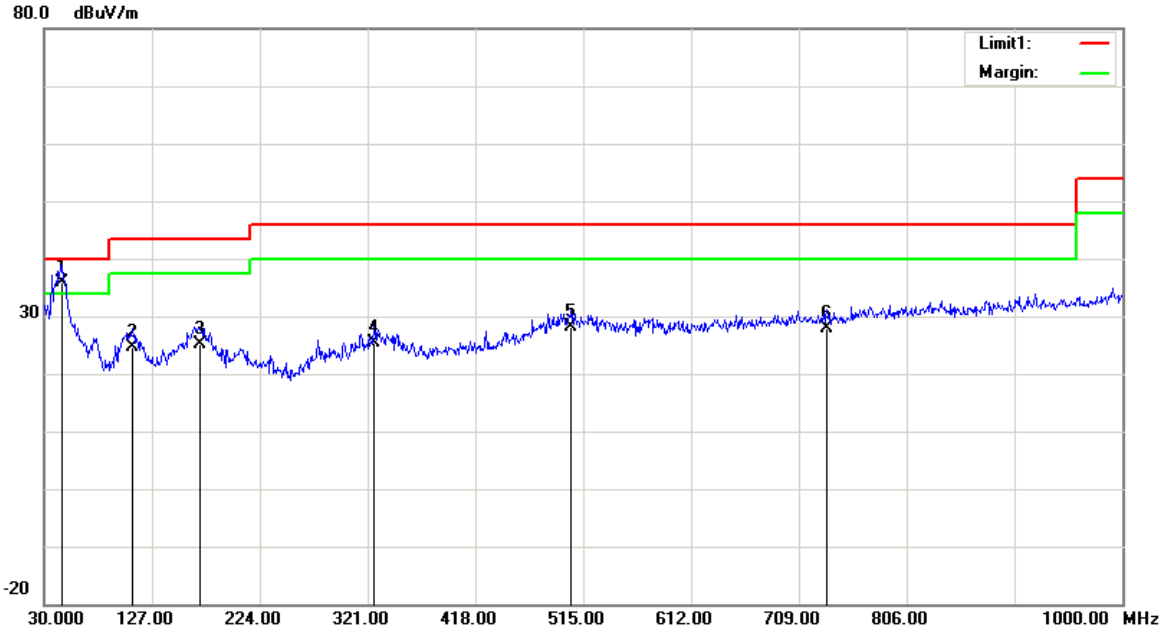
AC 277V:

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.0000	23.36	QP	1.54	24.90	40.00	15.10
76.5600	42.13	QP	-11.23	30.90	40.00	9.10
108.5700	37.37	QP	-6.77	30.60	43.50	12.90
160.9500	46.10	QP	-6.10	40.00	43.50	3.50
194.9000	38.13	QP	-6.83	31.30	43.50	12.20
316.1500	32.22	QP	-3.62	28.60	46.00	17.40

Vertical:

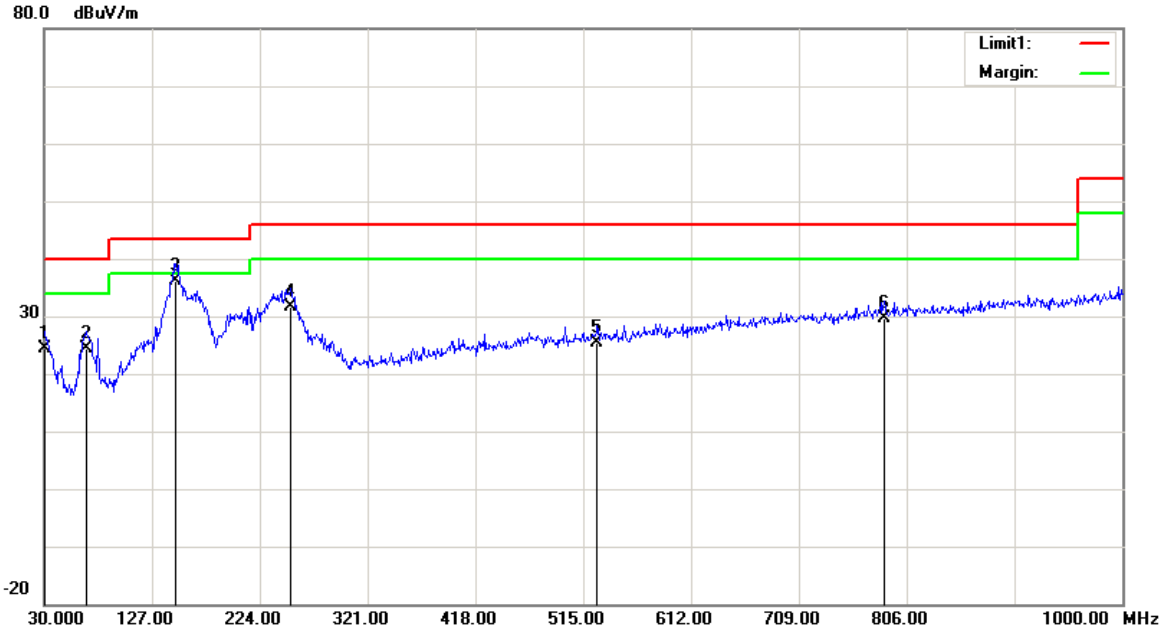


Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
46.4900	45.70	QP	-9.90	35.80	40.00	4.20
109.5400	31.25	QP	-6.55	24.70	43.50	18.80
169.6800	31.99	QP	-6.79	25.20	43.50	18.30
326.8200	28.76	QP	-3.46	25.30	46.00	20.70
504.3300	28.31	QP	-0.21	28.10	46.00	17.90
734.2200	24.70	QP	3.30	28.00	46.00	18.00

ZK2-W600-SR01/A:

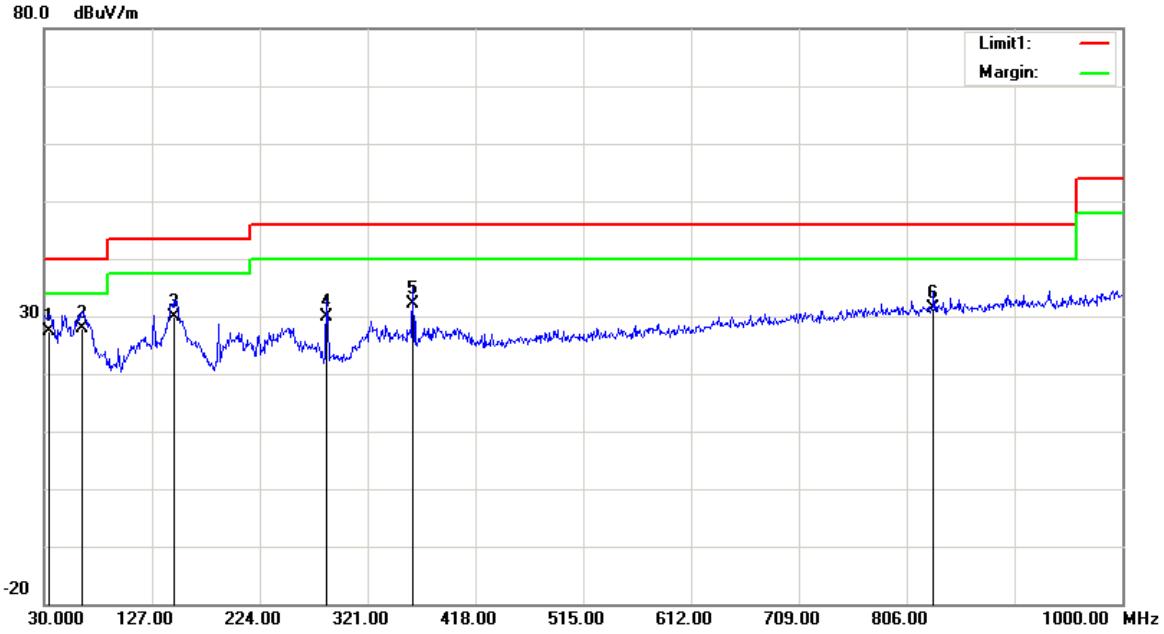
AC 120V:

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.0000	22.86	QP	1.54	24.40	40.00	15.60
67.8300	35.90	QP	-11.60	24.30	40.00	15.70
148.3400	42.14	QP	-6.04	36.10	43.50	7.40
252.1300	37.85	QP	-6.15	31.70	46.00	14.30
527.6100	25.08	QP	0.22	25.30	46.00	20.70
785.6300	25.05	QP	4.55	29.60	46.00	16.40

Vertical:

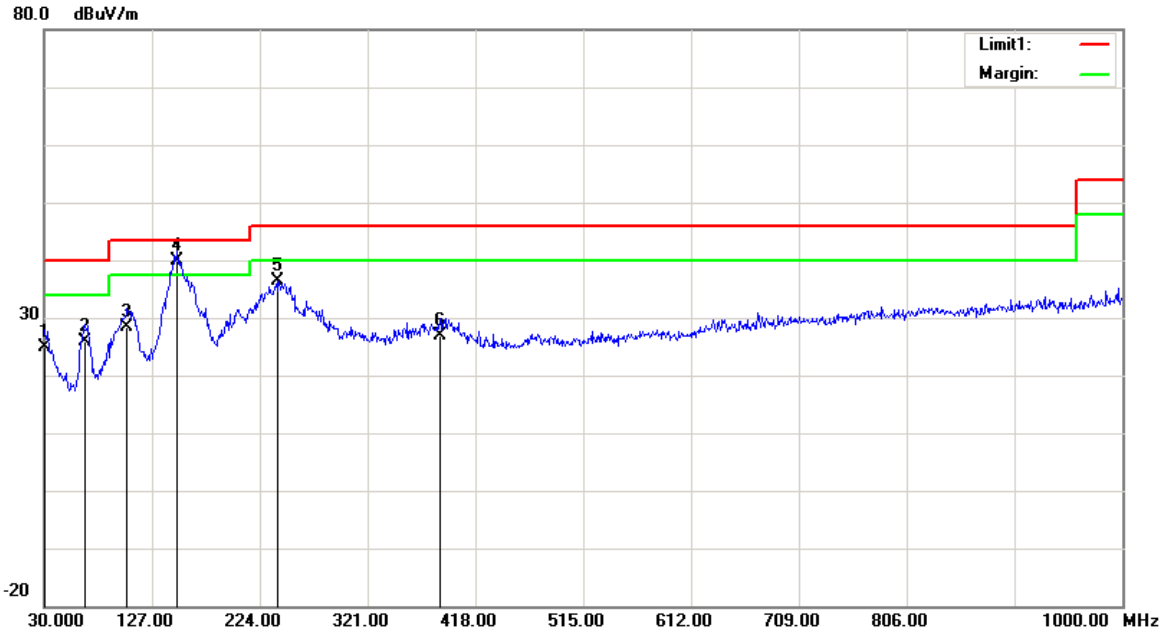


Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
34.8500	29.44	QP	-2.04	27.40	40.00	12.60
63.9500	39.69	QP	-11.89	27.80	40.00	12.20
146.4000	35.94	QP	-6.04	29.90	43.50	13.60
284.1400	33.88	QP	-4.08	29.80	46.00	16.20
361.7400	35.02	QP	-2.82	32.20	46.00	13.80
830.2500	25.93	QP	5.37	31.30	46.00	14.70

ZK2-W600-SR01/A:

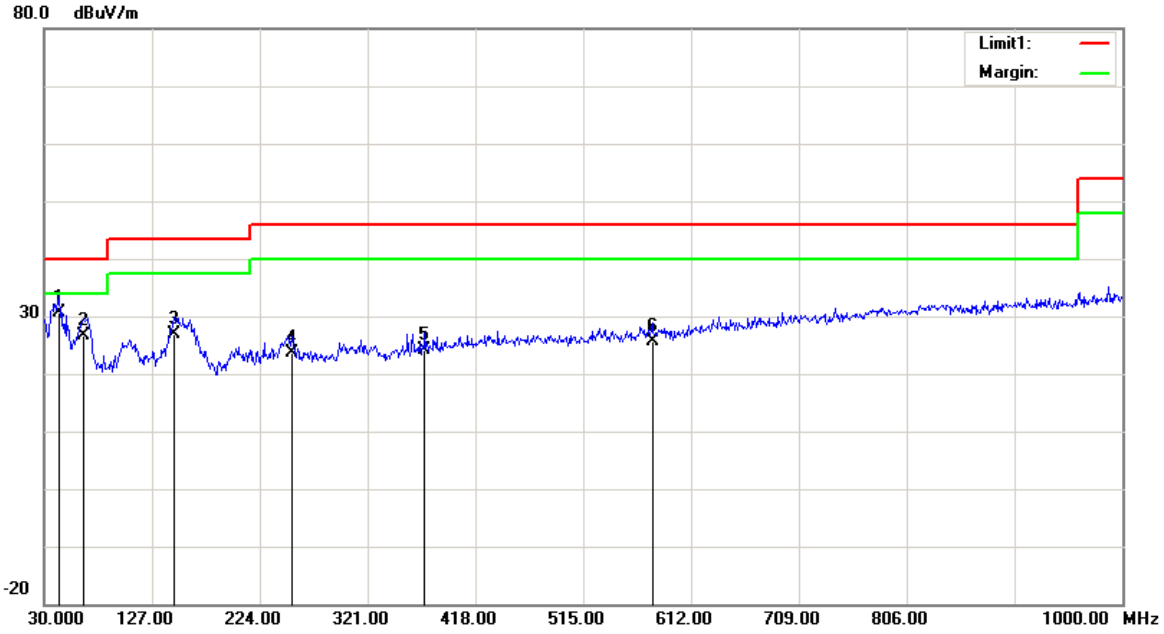
AC 277V:

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.0000	23.46	QP	1.54	25.00	40.00	15.00
66.8600	37.47	QP	-11.67	25.80	40.00	14.20
104.6900	36.17	QP	-7.67	28.50	43.50	15.00
149.3100	45.89	QP	-5.99	39.90	43.50	3.60
240.4900	42.50	QP	-6.10	36.40	46.00	9.60
385.9900	29.34	QP	-2.44	26.90	46.00	19.10

Vertical:



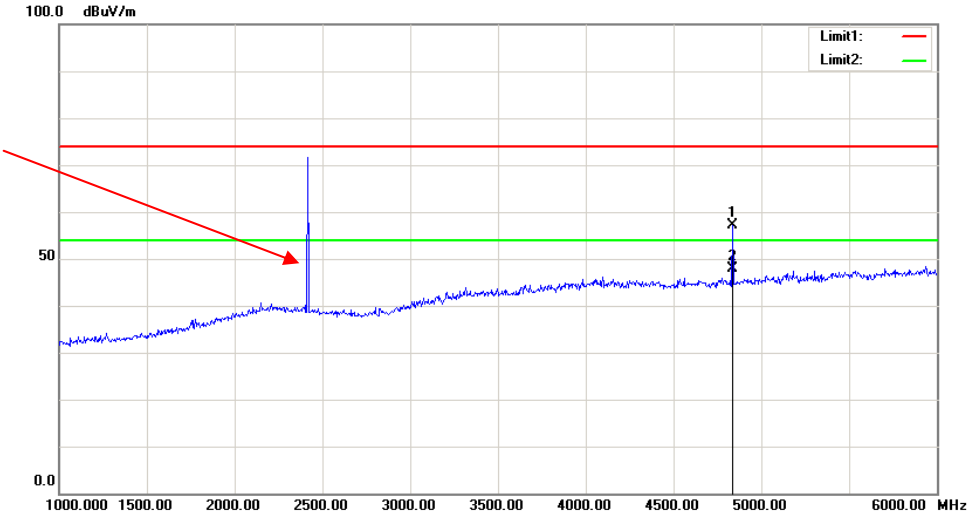
Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
43.5800	39.06	QP	-8.36	30.70	40.00	9.30
65.8900	38.37	QP	-11.77	26.60	40.00	13.40
147.3700	32.94	QP	-6.04	26.90	43.50	16.60
253.1000	29.83	QP	-6.13	23.70	46.00	22.30
372.4100	26.83	QP	-2.73	24.10	46.00	21.90
577.0800	24.74	QP	0.96	25.70	46.00	20.30

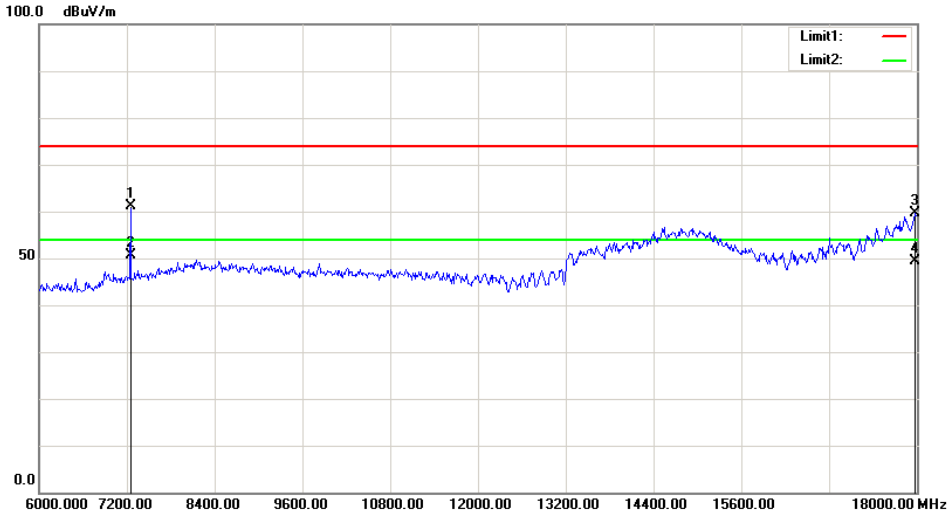
2) 1GHz-25GHz:

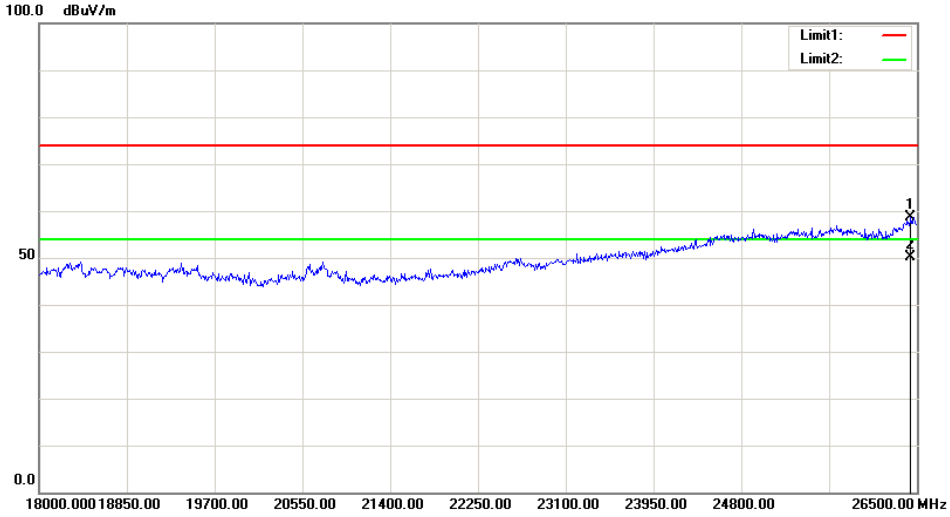
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
ZK2-A600-SR01/A: Channel: 2418 MHz									
2418.00	63.20	PK	H	28.14	1.81	0.00	93.15	113.98	20.83
2418.00	57.96	AV	H	28.14	1.81	0.00	87.91	93.98	6.07
2418.00	52.33	PK	V	28.14	1.81	0.00	82.28	113.98	31.70
2418.00	47.21	AV	V	28.14	1.81	0.00	77.16	93.98	16.82
2400.00	25.47	PK	H	28.10	1.80	0.00	55.37	74.00	18.63
2400.00	13.35	AV	H	28.10	1.80	0.00	43.25	54.00	10.75
2483.50	27.63	PK	H	28.27	1.84	0.00	57.74	74.00	16.26
2483.50	13.98	AV	H	28.27	1.84	0.00	44.09	54.00	9.91
4836.00	58.24	PK	H	32.97	3.21	37.20	57.22	74.00	16.78
4836.00	48.86	AV	H	32.97	3.21	37.20	47.84	54.00	6.16
7254.00	57.87	PK	H	35.86	4.74	37.29	61.18	74.00	12.82
7254.00	47.42	AV	H	35.86	4.74	37.29	50.73	54.00	3.27
ZK2-W600-SR01/A: Channel: 2418 MHz									
2418.00	63.21	PK	H	28.14	1.81	0.00	93.16	113.98	20.82
2418.00	58.01	AV	H	28.14	1.81	0.00	87.96	93.98	6.02
2418.00	52.26	PK	V	28.14	1.81	0.00	82.21	113.98	31.77
2418.00	47.25	AV	V	28.14	1.81	0.00	77.20	93.98	16.78
2400.00	25.51	PK	H	28.10	1.80	0.00	55.41	74.00	18.59
2400.00	13.29	AV	H	28.10	1.80	0.00	43.19	54.00	10.81
2483.50	28.02	PK	H	28.27	1.84	0.00	58.13	74.00	15.87
2483.50	14.01	AV	H	28.27	1.84	0.00	44.12	54.00	9.88
4836.00	58.34	PK	H	32.97	3.21	37.20	57.32	74.00	16.68
4836.00	48.85	AV	H	32.97	3.21	37.20	47.83	54.00	6.17
7254.00	57.86	PK	H	35.86	4.74	37.29	61.17	74.00	12.83
7254.00	47.73	AV	H	35.86	4.74	37.29	51.04	54.00	2.96

ZK2-A600-SR01/A:
Pre-scan plots
Horizontal

Fundamental Test with Band Rejection Filter

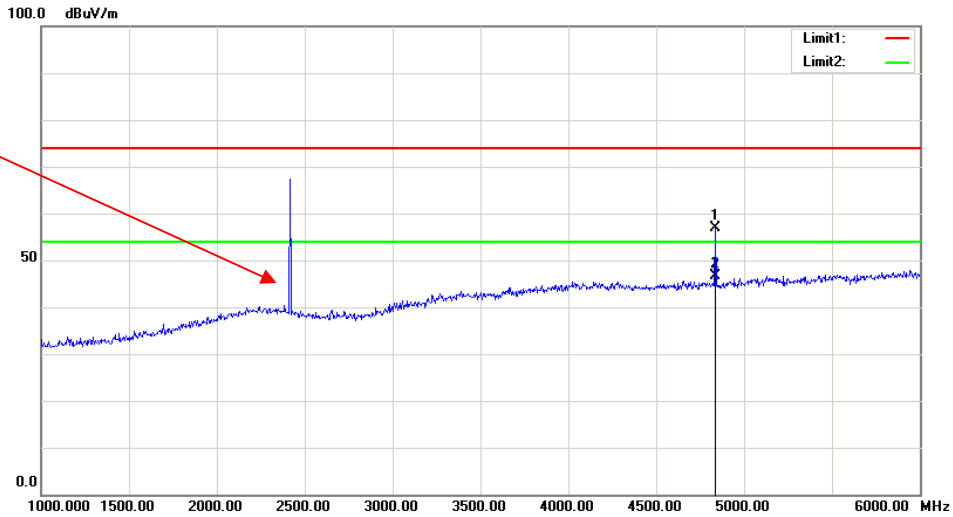


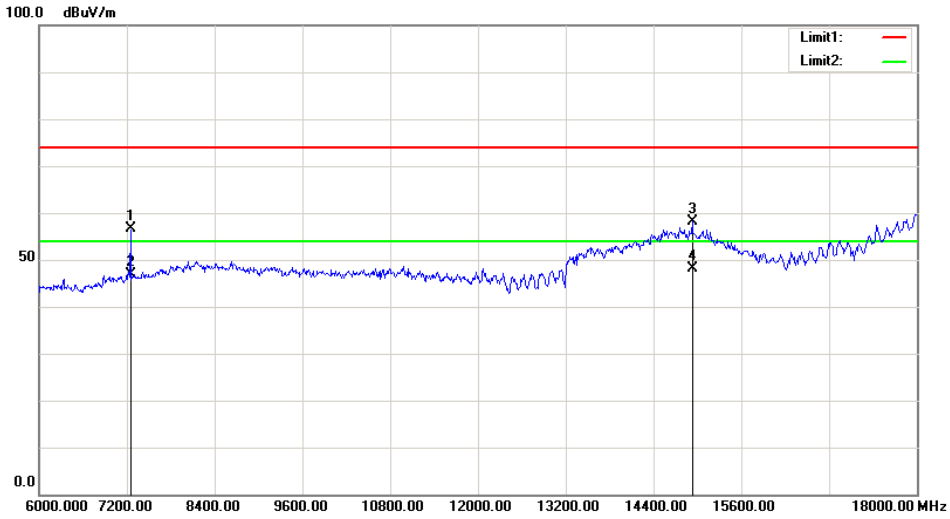


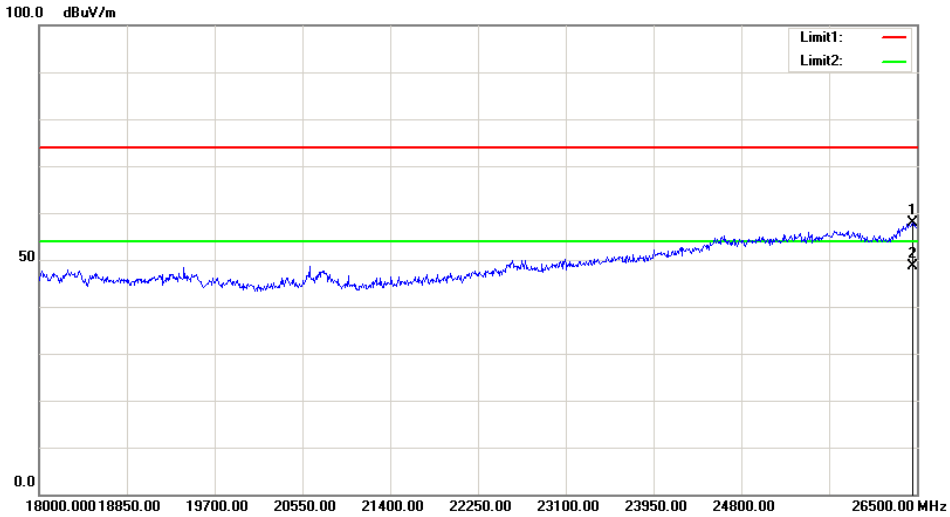


Vertical

Fundamental Test with Band Rejection Filter

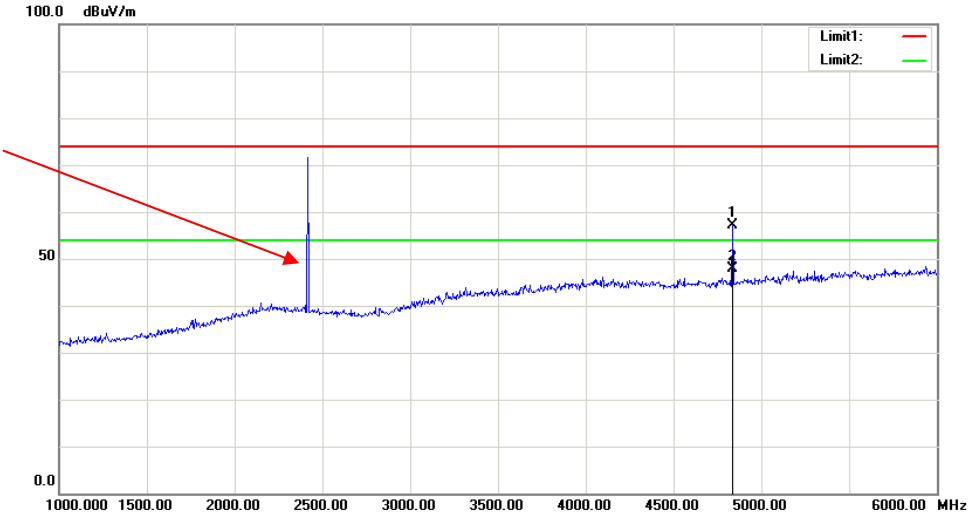


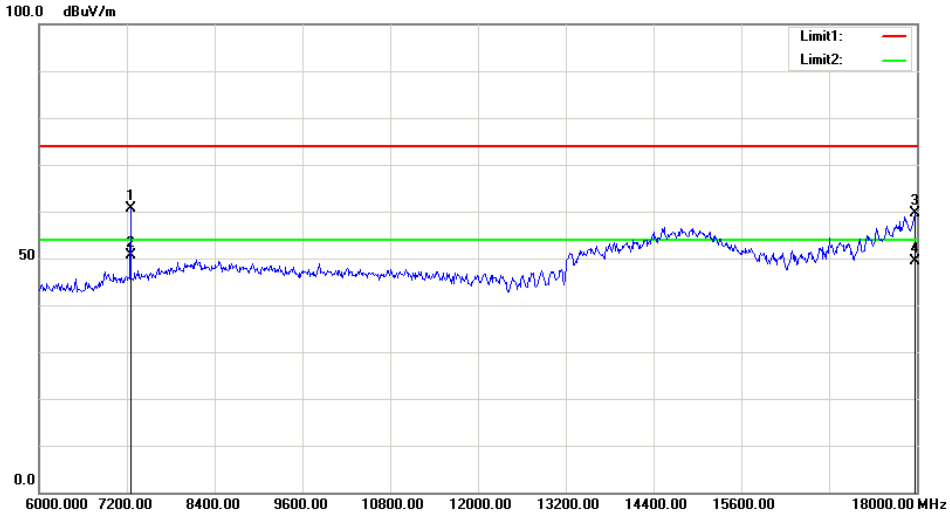


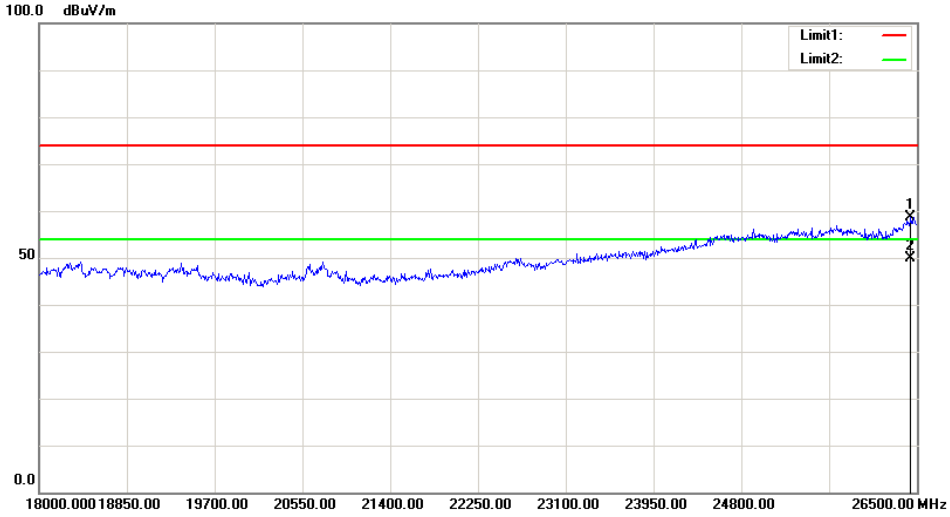


ZK2-W600-SR01/A:
Pre-scan plots
Horizontal

Fundamental Test with Band Rejection Filter

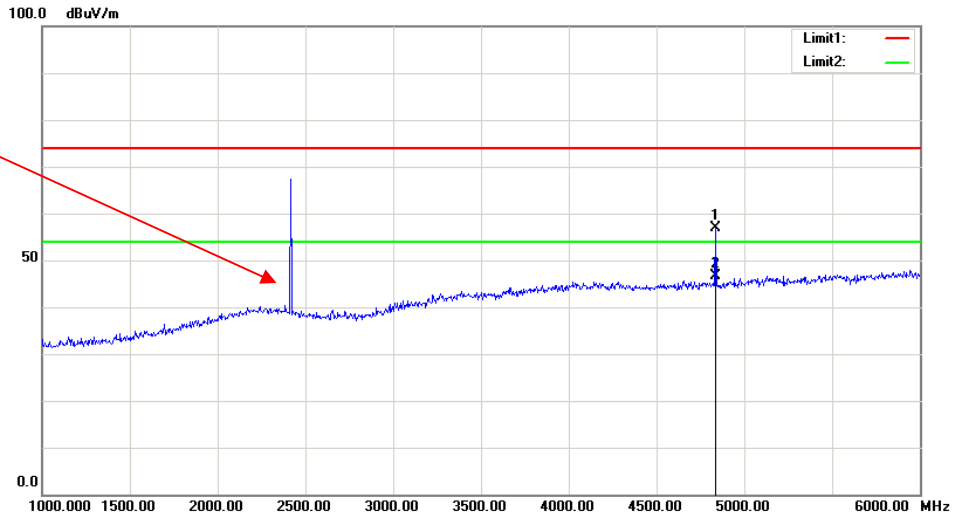


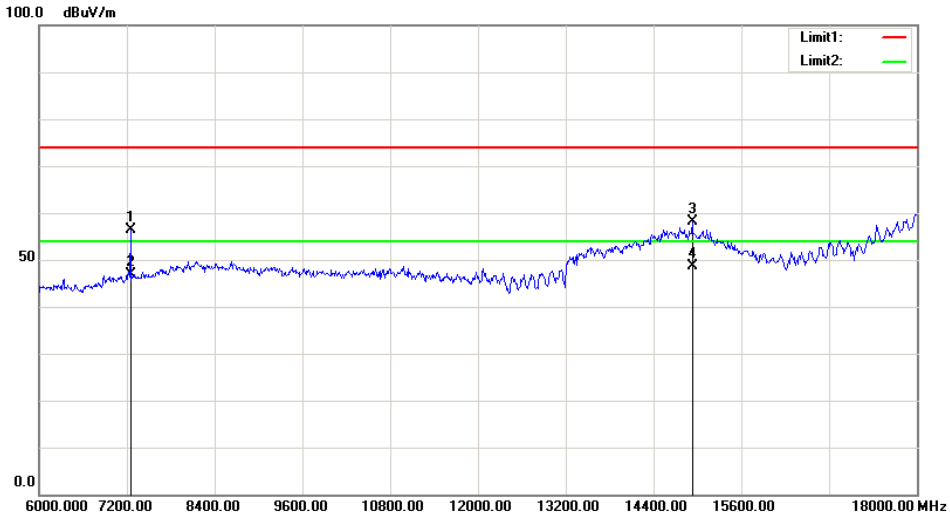


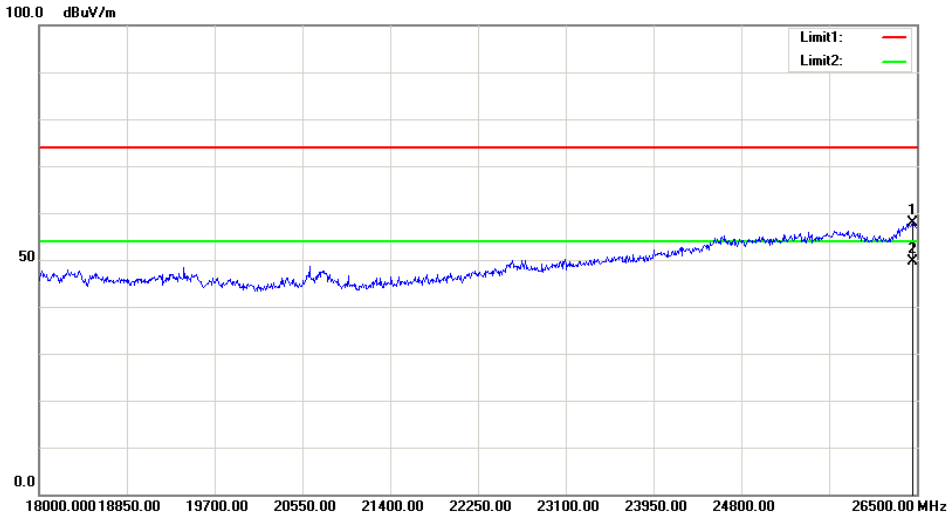


Vertical

Fundamental Test with Band Rejection Filter







FCC §15.215(c) – 20 dB BANDWIDTH TESTING

Applicable Standard

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
3. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	101121	2018-03-23	2019-03-23
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	/
E-Microwave	Blocking Control	EMDCB-00036	0E01201047	2018-05-06	2019-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	28.1 °C
Relative Humidity:	57 %
ATM Pressure:	101.2 kPa

The testing was performed by Costa Dong on 2018-05-19.

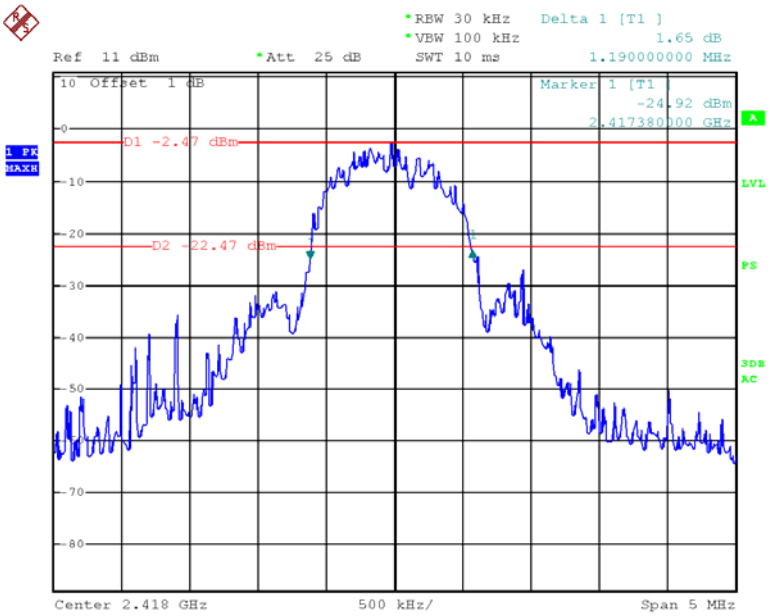
Test Result: Compliant.

Please refer to following tables and plots

Test Mode: Transmitting

Frequency (MHz)	20 dB Bandwidth (MHz)
2418	1.190

2418 MHz



******* END OF REPORT *******