FCC TEST REPORT
No. 161000467SHA-002

Applicant	:	Wuxi Kipor Power Co.,Ltd Jingyi Rd, Wangzhuang Industry Area, Wuxi High& New Tech Industry Development Zone, Wuxi, 214028, China
Manufacturer	:	Wuxi Kipor Power Co.,Ltd Jingyi Rd, Wangzhuang Industry Area, Wuxi High& New Tech Industry Development Zone, Wuxi, 214028, China
Product Name	:	Portable Gasoline Engine Driven Generator
Type/Model	:	IG2000i, IG7000E
TEST RESULT	**:**	**PASS**

SUMMARY

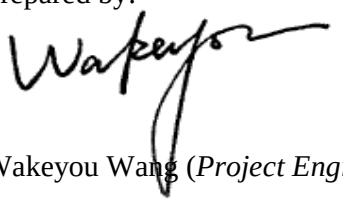
The equipment complies with the requirements according to the following standard(s) or specification:

47CFR Part 15 (2015): Radio Frequency Devices (Subpart B)

ANSI C63.4 (2014): American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

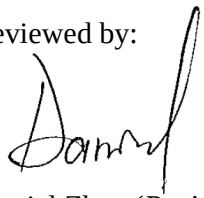
Date of issue: November 23, 2016

Prepared by:



Wakeyou Wang (*Project Engineer*)

Reviewed by:



Daniel Zhao (*Reviewer*)

Content

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product Name	:	Portable Gasoline Engine Driven Generator (receiver part)
Type/Model	:	IG2000i, IG7000E
Description of EUT	:	The EUT is the portable gasoline engine driven generator with single-phase. For IG2000i output 120~, 60Hz, DC12V,5A For IG7000E output 120/240V~, 60Hz, CosΦ =1,0 The EUT have two models which are identical with each other the RF part except that the IG7000E can be started and stop by remote controller, the IG2000i can be only stop by remote controller. During the testing, we only apply to the receiver part of EUT, Therefore we select the IG7000E to test with modulation and under its standby mode, the part of the receiver is powered by storage battery in the EUT.
Rating	:	IG2000i: 120V~, 60Hz, 1600W, CosΦ =1,0, DC12V, 5A IG7000E: 120/240V~, 5500W, 60Hz, CosΦ =1,0
Category of EUT	:	Class B
EUT type	:	☐ Table top ☒ Floor standing
Highest operating frequency	:	433.92MHz
Sample received date	:	Sep. 02, 2016
Sample identification No.	:	/
Date of test	:	Sep. 02, 2016-Oct. 23, 2016

1.2 Description of Client

Applicant	:	Wuxi Kipor Power Co.,Ltd Jingyi Rd, Wangzhuang Industry Area, Wuxi High& New Tech Industry Development Zone, Wuxi, 214028, China
Name of contact	:	Daive Yu
Tel	:	+86-510-88535144
Fax	:	+86-510-88535144
Email	:	daive_yu@163.com
Manufacturer	:	Wuxi Kipor Power Co.,Ltd Jingyi Rd, Wangzhuang Industry Area, Wuxi High& New Tech Industry Development Zone, Wuxi, 214028, China

1.3 Description of Test Facility

☒ Name	:	Intertek Testing Service Shanghai
Address	:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone	:	86 21 61278200
Telefax	:	86 21 54262353

Subcontractor:

☐ Name	:	Shanghai Institute of Measurement Technology
Address	:	716 Yishan Road, Shanghai 200233, P.R. China
Telephone	:	86 21 64700066
Telefax	:	

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2015): Radio Frequency Device: Subpart B

ANSI C63.4 (2014): Interim Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

2.2 Mode of operation during the test

Within this testing report, EUT was tested with modulation and under its standby mode, the part of the receiver is powered by storage battery in the EUT.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	ESxS-K1	R&S	V2.1.0
Radiated emission	ES-K1	R&S	V1.71

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
/	/	/	/
/	/	/	/

2.5 Instrument list

Equipment	Type	Manu.	Internal no.	Cal. Date	Due date
Test Receiver	ESCS 30	R&S	EC 2107	2015-10-21	2017-10-19
Test Receiver	ESIB 26	R&S	EC 3045	2015-10-20	2017-10-19
A.M.N.	ESH2-Z5	R&S	EC 3119	2016-1-9	2017-1-8
Bilog Antenna	CBL 6112D	TESEQ	EC 4206	2016-4-28	2017-4-27
Horn antenna	HF 906	R&S	EC 3049	2016-4-28	2017-4-27
Pre-amplifier	Pre-amp 18	R&S	EC 3222	2016-4-28	2017-4-27
Semi-anechoic chamber	-	Albatross project	EC 3048	2016-4-28	2017-4-27
High Pass Filter	WHKX 1.0/15G-10SS	Wainwright	EC4297-1	2016-1-8	2017-1-7
Power sensor / Power meter	N1911A/N1921A	Agilent	EC4318	2016-04-12	2017-04-11
Temperature Camber	SETH-E	tayasaf	EC4315	2016-4-9	2017-4-8
Spectrum analyzer	E7402A	Agilent	EC2254	2016-08-16	2017-08-15

2.6 Test Summary

This report applies to tested sample only. The test results have been compared directly with the limits, and the measurement uncertainty is recorded. This report shall not be reproduced in part without written approval of Intertek Testing Service Shanghai Limited.

TEST ITEM	FCC REFERANCE	RESULT
Conducted emission	15.107	NA
Radiated emission	15.109	Pass

Notes: 1: NA =Not Applicable

3 Conducted emission

Test result: NA

3.1 Limits

3.1.1 Limits for conducted emission of class A device

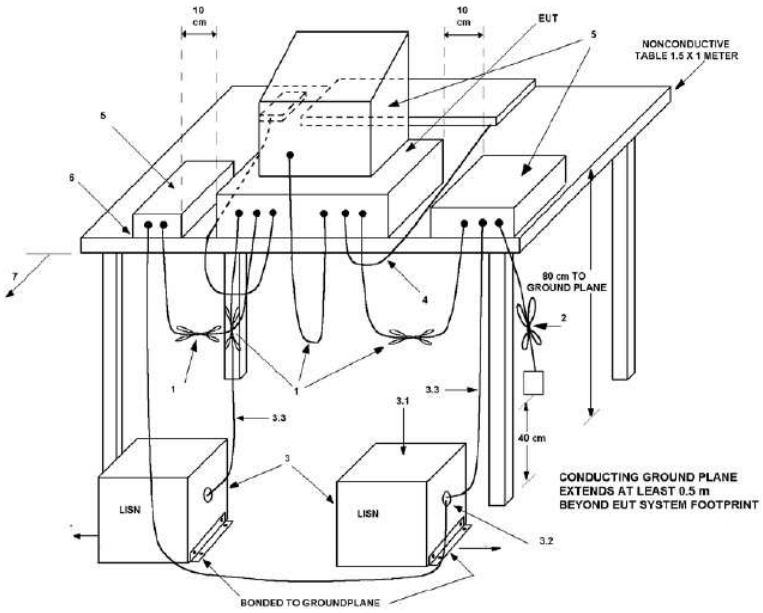
Frequency range (MHz)	Limits dB(μV) Quasi-peak	Average
0.15 ~ 0.5	79	66
0.5 ~ 30	73	60
Note: If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.		

3.1.2 Limits for conducted emission of class B device

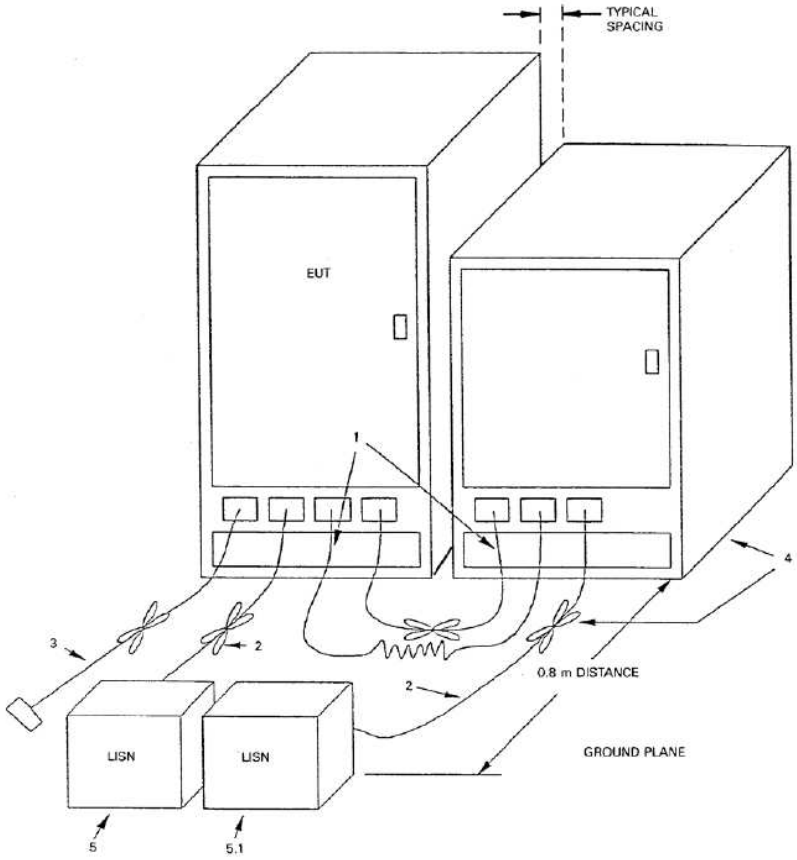
Frequency range (MHz)	Limits dB(μV) Quasi-peak	Average
0.15 ~ 0.5	66 ~ 56 *	56 ~ 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50
Note: 1. * Means the limit decreasing linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz 2. If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.		

3.2 Test setup

☐ For table top equipment



☐ For floor standing equipment



3.3 Test Setup and Test Procedure

Measurement was performed in shielded room, and instruments used were following clause 4 and clause 5 of ANSI 63.4.
Detailed test procedure was following clause 7.3 of ANSI 63.4.
EUT arrangement and operation conditions were according to clause 6 and clause 7 of ANSI 63.4.
Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

3.4 Test Protocol

NA

Temperature : °C
Relative Humidity : %

4 Radiated emission

Test result: Pass

4.1 Radiated emission limits

4.1.1 Limits for radiated emission of class A device

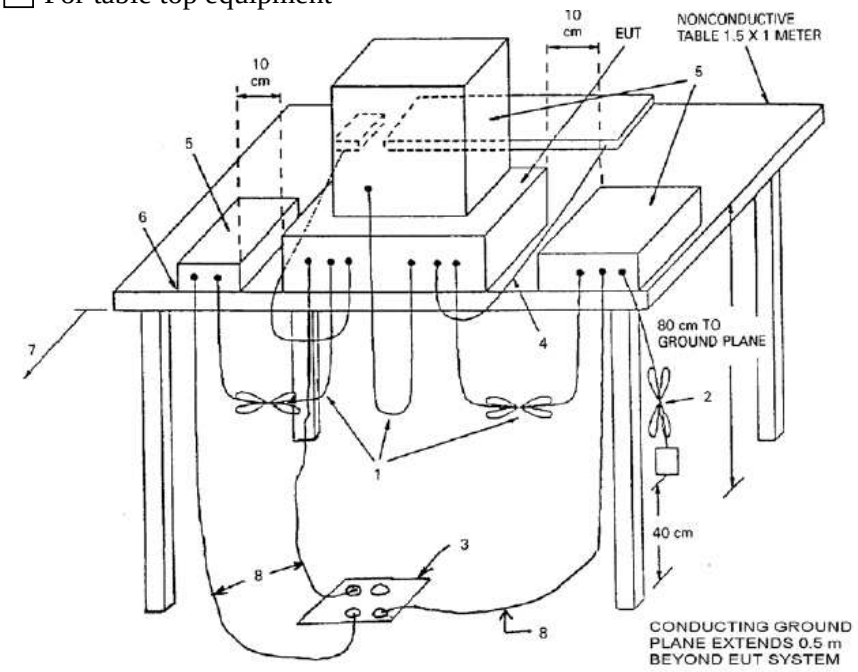
Frequency (MHz)	Permitted limit in dBμV/m (Quasi-peak) of Measurement Distance 10m
30 – 88	39
88 – 216	43.5
216 – 960	46.4
Above 960	49.5
Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.	

4.1.2 Limits for radiated emission of class B device

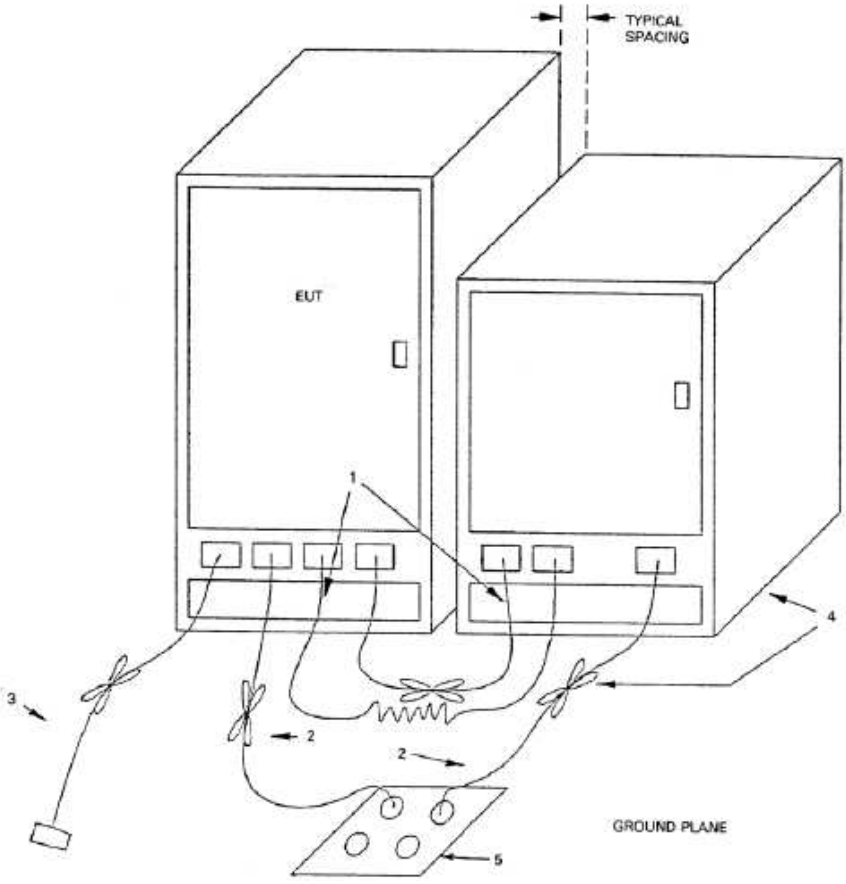
Frequency (MHz)	Permitted limit in dBμV/m (Quasi-peak) of Measurement Distance 3m
30 – 88	40.0
88 – 216	43.5
216 – 960	46.0
Above 960	54.0
Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.	

4.2 Block diagram and test set up

☐ For table top equipment



☒ For floor standing equipment



4.3 Test Setup and Test Procedure

The measurement was performed in a semi-anechoic chamber.
The distance from EUT to receiving antenna is **3** meter.
Measurement was performed according to clause 4 and clause 5 of ANSI 63.4.
Test procedure was according to clause 8.3 of ANSI 63.4.
EUT arrangement and operate condition were according to clause 6 and clause 8 of ANSI 63.4.
The bandwidth setting on R&S Test Receiver ESIB26 was 120 kHz.
The required measurement frequency range was checked.

4.4 Test Protocol

Temperature : 24 °C
Relative Humidity : 51 %

Antenna Polarization	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin	Detector
H	30.000000	23.50	21.00	40.00	16.50	PK
H	434.328657	26.30	19.20	46.00	19.70	PK
H	951.402806	32.40	25.30	46.00	13.60	PK
V	199.118236	19.50	13.3	40.00	16.3	PK
V	199.118236	21.80	12.2	43.50	21.7	PK
V	650.100200	33.30	22.1	46.00	12.7	PK
V	895.030060	34.10	24.8	46.00	11.9	PK
V	2712.20	40.90	-4.70	54.00	13.10	PK

Remark: 1.Correct Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz)
2. Corrected Reading = Original Receiver Reading + Correct Factor
3. Margin = Limit - Corrected Reading
4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB, Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV, limit = 40.00dBuV/m.
Then Correct Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m; Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m; Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.