EN 62311 EMF REPORT

For

Active Power Filter

Model No.: APF-400-50A-4L, APF-400-10A-4L, APF-400-15A-4L, APF-400-20A-4L, APF-400-30A-4L, APF-400-50A-4L, APF-400-75A-4L, APF-400-100A-4L, APF-400-150A-4L

Prepared for	:	Cook Cooper Electric (shanghai) Co., Ltd.
Address	:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai

Prepared By	:	Guangdong KAIXU Testing Technology Co., Ltd.
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Report Number	:	KTi251119E919
Date of Receipt	:	Nov. 19, 2025
Date of Test	:	Nov. 19-25, 2025
Date of Report	:	Dec. 01, 2025

Contents

DECLARATION

Applicant's name:	Cook Cooper Electric (shanghai) Co., Ltd.
Address:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai
Manufacture's name:	Cook Cooper Electric (shanghai) Co., Ltd.
Address:	Room A56, 4th Floor, Block B 505 Xinbei Road Minhang District Shanghai
Product name:	Active Power Filter
Trademark:	Cooke kolb
Model name:	APF-400-50A-4L, APF-400-10A-4L, APF-400-15A-4L, APF-400-20A-4L, APF-400-30A-4L, APF-400-50A-4L, APF-400-75A-4L, APF-400-100A-4L, APF-400-150A-4L
Standards:	EN IEC 62311:2020

This device described above has been tested by Guangdong KAIXU Testing Technology Co., Ltd.. and the test results show that the equipment under test (EUT) is in compliance with the Radio equipment requirements. And it is applicable only to the tested sample identified in the report.

Tested by:	Kevin Yang	
	Kevin Yang	Dec. 01, 2025
Reviewed by:	Terry Huang	
	Terry Huang	Dec. 01, 2025
Approved by:	Store Chu	
	Store Chu	Dec. 01, 2025

GUANGDONG KAIXU TESTING TECHNOLOGY CO., LTD. KTi APPROVAL

1. General description

1.1. Feature of equipment under test (EUT)

Product name:	Active Power Filter
Model name:	APF-400-50A-4L
Series Model:	APF-400-10A-4L, APF-400-15A-4L, APF-400-20A-4L, APF-400-30A-4L, APF-400-50A-4L, APF-400-75A-4L, APF-400-100A-4L, APF-400-150A-4L
Different of series model:	All models are identical for each other except the model number.
TX/RX frequency range:	**WiFi:** 2412MHz~2472MHz for 802.11b/g/n(HT20); 2422MHz ~ 2452MHz for 802.11
Modulation type:	**Wifi: 802.11 b/g/n(HT20)/n(HT40)**
Power source:	AC220-240V, 50/60Hz, 50A, 35kW
Antenna designation:	PCB antenna (Antenna Gain: 0dBi)

2. Testing site

Test laboratory:	Guangdong KAIXU Testing Technology Co., Ltd.
Laboratory location:	Room 215, Building 2, No. 123, Dongcheng Section, Guanlong Road, Dongcheng Street, Dongguan City, Guangdong Province, China
Telephone:	(86-755)85254458
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3. Limit

3.1. BASIC RESTRICTIONS REFERENCE LEVELS

Council Recommendation 99/519/EC Annex II

Basic restrictions for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Frequency range	Magnetic flux density (mT)	Current density (Ma/m2) (rms)	Whole body average SAR (W/kg)	Localised SAR (head and trunk) (W/kg)	Localised SAR (limbs) (W/kg)	Power density (W/m2)
0Hz	40	-	-	-	-	-
>0-1Hz	-	8	-	-	-	-
1-4Hz	-	8/f	-	-	-	-
4-1000Hz	-	2	-	-	-	-
1000Hz-100kHz	-	f/500	-	-	-	-
100kHz-10MHz	-	f/500	0.08	2	4	-
10MHz-10GHz	-	-	0.08	2	4	-
10-300GHz	-	-	-	-	-	10

Note:

1. f is the frequency in Hz.
2. The basic restriction on the current density is intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body and includes a safety factor. The basic restrictions for ELF fields are based on established adverse effects on the central nervous system. Such acute effects are essentially instantaneous and there is no scientific justification to modify the basic restrictions for exposure of short duration. However, since the basic restriction refers to adverse effects on the central nervous system, this basic restriction may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.
3. Because of electrical inhomogeneity of the body, current densities should be averaged over a cross section of 1cm2 perpendicular to the current direction.
4. For frequencies up to 100 kHz, peak current density values can be obtained by multiplying the rms value by √2(=1.414). For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp)
5. For frequencies up to 100kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.
6. All SAR values are to be averaged over any six-minute period.
7. Localised SAR averaging mass is any 10g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure. These 10g of tissue are intended to be a mass of contiguous tissue with nearly homogeneous electrical properties. In specifying a contiguous mass of tissue, it is recognised that this concept can be used in computational dosimeter but may present difficulties for direct physical measurements. A simple geometry such as cubic tissue mass can be used provided that the calculated dissymmetric quantities have conservation values relative to the exposure guidelines.
8. For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated

as=1/(2tp). Additionally, for pulsed exposures, in the frequency range 0,3 to 10GHz and for localised exposure of the head, in order to limit and avoid auditory effects caused by thermoplastic expansion, an additional basic restriction is recommended. This is that SA should not exceed 2mJ kg-1 averaged over 10g of tissue.

3.2. REFERENCE LEVELS

Council Recommendation 99/519/EC Annex III

Reference levels for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m2)
0-1Hz	-	$3,2\times10^4$	4×10^4	-
1-8Hz	1000	$3,2\times10^4/f^2$	$4\times10^4/f^2$	-
8-25Hz	1000	4000/f	5000/f	-
0.025Hz-0,8kHz	250/f	4/f	5/f6,25	-
0,8-3kHz	250/f	5	6,25	-
3-150kHz	87	5	6,25	-
0,15-1MHz	87	0.73/f	0,92/f	-
1-10MHz	$87/f^{1/2}$	0.73/f	0,92/f	-
10-400MHz	28	0.073	0,092	2
400-2000MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046f^{1/2}$	f/200
2-300GHz	61	0,16	0,20	10

Note:

1. As indicated in the frequency range column.
2. For frequencies between 100kHz and 10GHz, Seq, E2, H2 and B2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10GHz, Seq, E2, H2 and B2 are to be averaged over any 68/.1.05-minute period (.in GHz).
4. No E-field value is provided for frequencies <1Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 20kV/m. Spark discharges causing stress or annoyance should be avoided.

3.3. LIMIT CALCULATIONS FOR RADIATED ELECTRIC FIELD STRENGTH MEASUREMENT

For the calculation of the limits, the near field proportionality factor 1/d3 has been used. For ten times the distance, the level is decreased by the cubical, giving 60 dB.

Frequency range	EMF Limit V/m at 0.3m	Limit V/m at 3m	Limit (add. span)
30MHz 400MHz	28V/m(149dBuV/m)	89dBuV/m	69dBuV/m
400MHz – 2GHz	27.5V/m- 61.5V/m	89dBuV/m-----	69dBuV/m-------

	149dBuV/m – 155dBuV/m	95dBuV/m	75dBuV/m
2GHz – 300GHz	61V/m(155dBuV/m)	95dBuV/m	75dBuV/m

To deal with reflexions, other effects due to the measurement in 3 m distance and to deal with a measurement uncertainty of at least 5 dB, an additional span of 20 dB has been added.

For additional three times the distance, the level is decreased by additional 30 dB.

Frequency range	Limit V/m at 0.3m	Limit V/m at 3m	Limit (add. span)
30MHz 400MHz	28V/m(149dBuV/m)	69dBuV/m	39dBuV/m
400MHz – 2GHz	27.5V/m- 61.5V/m	69dBuV/m	39dBuV/m
	149dBuV/m – 155dBuV/m	75dBuV/m	45dBuV/m
2GHz – 300GHz	61V/m(155dBuV/m)	75dBuV/m	45dBuV/m

Limits for radiated field according to EN 55032 / CISPR 32 for a class B appliance:

Frequecncy Range	Limit dBuV/m at 3m Peak	Limit dBuV/m at 3m QP or Average
30MHz – 230MHz		40dBuV/m quasi-peak
230MHz -1GHz		47dBuV/m quasi-peak
1GHz-3GHz	70dBuV/m peak	50dBuV/m average
3GHz-6GHz	74dBuV/m peak	54dBuV/m average

4. Assess Result

For 2.4GHz WiFi

Channel	Channel Frequency (MHz)	Maximum antenna gain (dBi)	Maximum antenna gain (numeric)	E.I.R.P (mW)	Power density (W/m2)	Limit of power density (W/m2)
1	2442	0	1	16.03	0.0319	10

-------END OF THE REPORT-------