

RF Exposure Evaluation Report

Product : Receiver assembly
Trade mark : Kohler
Model/Type reference : 1371930
Serial Number : N/A
Report Number : EED32N80606102
FCC ID : N82-KOHLER041
Date of Issue : Jul. 22, 2021
: 47 CFR Part 1.1307
Test Standards : 47 CFR Part 2.1093
: KDB447498D01 General RF
: Exposure Guidance v06
Test result : PASS

Prepared for:

Kohler Co.

444 Highland Drive, Kohler, WI 53044 USA

Prepared by:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District,

Shenzhen, Guangdong, China

TEL: +86-755-3368 3668

FAX: +86-755-3368 3385



Compiled by:

Tom Chen

Tom Chen

Approved by:

David Wang

David Wang

Reviewed by:

Aaron Ma

Aaron Ma

Date:

Jul. 22, 2021

Check No.:5048160721

2 Version

Version No.	Date	Description
00	Jul. 22, 2021	Original

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 GENERAL INFORMATION	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT.....	4
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD.....	4
4.4 TEST LOCATION.....	5
4.5 DEVIATION FROM STANDARDS.....	5
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	5
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER.....	5
5 RF EXPOSURE EVALUATION	6
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	6
5.2 MAXIMUM PERMISSIBLE EXPOSURE.....	7
PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	8

4 General Information

4.1 Client Information

Applicant:	Kohler Co.
Address of Applicant:	444 Highland Drive, Kohler, WI 53044 USA
Manufacturer:	Kohler Co.
Address of Manufacturer:	444 Highland Drive, Kohler, WI 53044 USA
Factory:	VTech (Dongguan) Communications Ltd.
Address of Factory:	Xia Ling Bei Management Zone, Liaobu Town, Dongguan City ,Guangdong province, China.

4.2 General Description of EUT

Product Name:	Receiver assembly
Model No.:	1371930
Trade Mark:	Kohler
EUT Supports Radios application:	BT 4.2 Single module 2402MHz to 2480MHz

4.3 Product Specification subjective to this standard

Frequency Range:	BT 4.2 Single module 2402MHz to 2480MHz		
Modulation Type:	GFSK		
Test Power Grade:	Default		
Test Software of EUT:	BlueNRG GUI		
Antenna Type:	Chip Antenna		
Antenna Gain:	2dBi		
Power Supply:	Battery	DC 1.5V*4 SIZE +AA	
Antenna Specification	Bluetooth :	Antenna Gain :	2.00 dBi (Numeric gain: 1.58)
Maximum tune up power	Bluetooth:	-2.00 dBm	(0.631 mW)
Sample Received Date:	May 22, 2020		
Sample tested Date:	May 22, 2020 to Jun. 02, 2020		
Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.			

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 20$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

Bluetooth:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
0	2402	0.666	1.58	20	0.0002	1

Note: Refer to report No. EED32L00366301.

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32N80606101 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***