

Intradin (Shanghai) Machinery Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

CR400, GUR052, GUR053, GUR054

REPORT NUMBER:

200800320SHA-003

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Dec 10, 2020

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Applicant: Intradin (Shanghai) Machinery Co., Ltd.
No. 118, Duhui Road, Minhang District, Shanghai, China.

Manufacturer: Intradin (Shanghai) Machinery Co., Ltd.
No. 118, Duhui Road, Minhang District, Shanghai, China.

Factory: Intradin (HuZhou) Precision Technology Co., Ltd.
1088 GanShan Road, Wuxing District, HuZhou, Zhejiang Province,
313005 China.

FCC ID: 2AW8RCR400

SUMMARY:

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

KDB447498 D01 General RF Exposure Guidance v06
FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:



Project Engineer
Colin Sun

REVIEWED BY:



Reviewer
Daniel Zhao

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Revision History

Report No.	Version	Description	Issued Date
200800320SHA-003	Rev. 01	Initial issue of report	December 10, 2020

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Portable Intelligent Cable Reel
Type/Model:	CR400, GUR052, GUR053, GUR054
Description of EUT:	EUT is portable intelligent cable reel with WiFi and 433 function, and there are three models, they are same except Brand name & Model No. We test CR400 as representative and list the worst results in this report.
Rating:	120V~, 60Hz, 15A
Category of EUT:	Class B
EUT type:	<input type="checkbox"/> Table top <input checked="" type="checkbox"/> Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	September 10, 2020
Date of test:	September 12, 2020 ~ November 25, 2020

1.2 Technical Specification

Frequency Range:	2412MHz ~ 2462MHz for 802.11 b, g, n(HT20) 2422MHz ~ 2452MHz for 802.11 n(HT40)
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20), IEEE 802.11n(HT40)
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT40): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20) 7 Channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna Information:	PCB Antenna Antenna gain: 2.5dBi

Frequency Range:	433.92MHz
Type of Modulation:	ASK
Channel Number:	1 Channel
Antenna Designation:	Integral PCB antenna, non-user removable
Gain of Antenna:	0dBi max (Declared by manufacturer)

1.3 Description of Test Facility

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

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	A2LA Accreditation Lab Certificate Number: 3309.02

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2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

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2.2 Assessment Results

Power density (S) is calculated according to the formula:

$$S = P / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

As we can see from the test report 200702555SHA-001 and 200702555SHA-002:

Function	EIRP P	Distance R (cm)	Power density S (mW/cm ²)
Wi-Fi	22.25 dBm	20	0.0224
SRD	92.70 dBuV/m	20	0.0002

The device supports simultaneous transmission, and the sum of the MPE ratios = 0.0224 + 0.0002 = 0.0226 < 1

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Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

***** END *****