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FCC RF Exposure

Applicant	:	Nanjing Udexreal Intelligent Technology Co., Ltd.
Address	:	No. 78, Bancang Street, Xuanwu District, Nanjing, Jiangsu Province, China
Product Name	:	USB Dongle
Brand Mark	:	UDCAP
Model	:	UDCAP-USB-C1
Series model	:	N/A
FCC ID	:	2BOHE-UDCAP-USB-C1
Report Number	:	BLA-EMC-202503-A9602
Date of Receipt	:	Mar. 25, 2025
Date of Test	:	Mar. 25, 2025 to Apr. 01, 2025
Test Standard	:	47 CFR Part 15, Part1.1307 47 CFR Part 15, Part2.1093 KDB447498D04 General RF Exposure Guidance v01
Test Result	:	Pass

Compiled by: Mark Chen **Review by:** Sweets **Approved by:** Blue Zheng

Issued Date: Apr. 02, 2025

BlueAsia of Technical Services(Shenzhen) Co.,Ltd. BLA

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Revise Record

Version No.	Date	Description
01	Apr. 02, 2025	Original

1 General information

1.1 General information

Applicant	Nanjing Udexreal Intelligent Technology Co., Ltd.
Address	No. 78, Bancang Street, Xuanwu District, Nanjing, Jiangsu Province, China
Manufacturer	Shenzhen Udexreal Intelligent Technology Co., Ltd.
Address	Room 512, 5/F, Building B, Hangcheng Intelligent Security Technology Park, Hangcheng Street, Sanwei Community, Bao'an District, Shenzhen, China
Factory	Shenzhen Udexreal Intelligent Technology Co., Ltd.
Address	Room 512, 5/F, Building B, Hangcheng Intelligent Security Technology Park, Hangcheng Street, Sanwei Community, Bao'an District, Shenzhen, China

1.2 General description of EUT

Product name	USB Dongle
Model no.	UDCAP-USB-C1
Operation Frequency	2402MHz-2480MHz
Modulation Type	GFSK
Number of Channels	40
Antenna Type	Chip antenna
Antenna Gain	4.3dBi (Provided by customer)
Power supply	DC 5V from PC
Hardware Version	NRF52832-Dongle-V2.3
Software Version	direct_test_mode_pca10040.hex

2 RF Exposure Compliance Requirement

2.1 Standard Requirement

According to 447498 D04 Interim General RF Exposure Guidance v01

Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.2 Limits

$$P_{\text{th}}\,(\text{mW}) = \begin{cases} ERP_{20\,\text{cm}}(d/20\,\text{cm})^{x} & d \le 20\,\text{cm} \\ ERP_{20\,\text{cm}} & 20\,\text{cm} < d \le 40\,\text{cm} \end{cases} \quad \text{(B.2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

$$P_{\text{th}}\,(\text{mW}) = ERP_{20\,\text{cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\,\text{GHz} \le f < 1.5\,\text{GHz} \\ 3060 & 1.5\,\text{GHz} \le f \le 6\,\text{GHz} \end{cases} \quad \text{(B.1)}$$

2.3 Result

EIRP = pt x gt = (E X d)2/30

Where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m,

d = measurement distance in meters (m)

Spot = (EXd)2/30 x gt
Separation distance= 0.5cm
2.4G Ant gain = 4.3dBi

For 2.4G(Worst):

Max Output power = -2.237dBm @ 2442MHz
EIRP = -2.237dBm + 4.3dBi=2.063dBm,
ERP = 2.063-2.15= -0.087dBm=0.98mW< 2.751mW
Comply with RF exposure exemption limit.

----END OF REPORT----