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FCC RF Exposure

Applicant	:	Jiangsu Fulian Communication Technology Co.,Ltd
Address	:	Yongan Community, the south of Lanling Road, Danyang Development District, Jiangsu Province, China.
Product Name	:	FLC8720FRA-B
Brand Mark	:	Fulian
Model	:	FLC8720FRA-B
FCC ID	:	2AXS5-FLC8720FRA-B
Report Number	:	BLA-EMC-202503-A2705
Date of Receipt	:	Mar. 7, 2025
Date of Test	:	Mar. 7, 2025 to Apr. 2, 2025
Test Standard	:	KDB447498D04 General RF Exposure Guidance v01
Test Result	:	Pass

Compiled by: Hugh **Review by:** Sweely **Approved by:** Blue Zheng

Issued Date: Apr. 2, 2025

BlueAsia of Technical Services(Shenzhen) Co.,Ltd.
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Revise Record

Version No.	Date	Description
01	Apr. 2, 2025	Original

1 General information

1.1 General information

Applicant	Jiangsu Fulian Communication Technology Co.,Ltd
Address	Yongan Community, the south of Lanling Road, Danyang Development District, Jiangsu Province, China.
Manufacturer	Jiangsu Fulian Communication Technology Co.,Ltd
Address	Yongan Community, the south of Lanling Road, Danyang Development District, Jiangsu Province, China.
Factory	Jiangsu Fulian Communication Technology Co.,Ltd
Address	Yongan Community, the south of Lanling Road, Danyang Development District, Jiangsu Province, China.

1.2 General description of EUT

Product name	FLC8720FRA-B
Model no.	FLC8720FRA-B
Series model	N/A

BLE:

Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK
Rate data:	1Mbps; 2Mbps
Channel Spacing:	2MHz
Number of Channels:	40
Antenna Type:	External antenna
Antenna Gain:	2.63dBi(Provided by customer)

2.4GWiFi:

Operation Frequency:	2412MHz-2462MHz
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20): 11 802.11n(HT40):7
Antenna Type:	External antenna
Antenna Gain:	2.63dBi(Provided by customer)

5G WIFI:

Operation Frequency	Band 1: 5180MHz-5240MHz; Band 2: 5260MHz~5320MHz; Band 3: 5500MHz~5700MHz; Band 4: 5745MHz-5825MHz.
Channel numbers	Band 1: 802.11a/802.11n(HT20): 4, 802.11n(HT40):2
	Band 2: 802.11a/802.11n(HT20): 4, 802.11n(HT40):2
	Band 3: 802.11a/802.11n(HT20): 11, 802.11n(HT40):5
	Band 4: 802.11a/802.11(HT20): 5, 802.11n(HT40): 2,
Modulation Type	BPSK, QPSK,16-QAM, 64-QAM, 256QAM
Channel Spacing	802.11a/n: 20MHz, 802.11n: 40MHz
Data speed	6Mbps, 9Mbps,12Mbps,18Mbps, 24Mbps,36Mbps,48Mbps, 54Mbps, Up to 433 Mbps
DFS type	Slave
Antenna Type:	External antenna
Antenna Gain:	Band1: 3.67dBi, Band2: 3.67 dBi Band3: 3.67dBi, Band4: 3.23 dBi(Provided by customer)

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

BLE

Directional antennaGain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW/cm²)	Test Result
2.63dBi(1.832)	-2.219	0.600 (2402 BLE 1M)	3060	Compiles

ERP=-2.219+2.63-2.15=0.670 mW

2.4G WIFI

Directional antennaGain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW/cm²)	Test Result
2.63dBi(1.832)	15.511	35.571 (802.11B 2412)	3060	Compiles

ERP=15.511+2.63-2.15=39.728 mW

5.1G WIFI

Directional antennaGain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW/cm²)	Test Result
3.67dBi(2.328)	14.776	30.033 (802.11a 5240)	3060	Compiles

ERP=14.776+3.67-2.15=42.619 mW

5.2G WIFI

Directional antennaGain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW/cm²)	Test Result
3.67dBi(2.328)	16.382	43.471 (802.11a 5280)	3060	Compiles

ERP=16.382+3.67-2.15=61.688 mW

5.3G WIFI

Directional antennaGain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW/cm²)	Test Result
3.67dBi(2.328)	17.363	54.488 (802.11a 5500)	3060	Compiles

ERP=17.363+3.67-2.15=77.321 mW

5.8G WIFI

Directional antennaGain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (mW/cm²)	Test Result
3.23dBi(2.104)	16.99	50.003 (802.11a 5745)	3060	Compiles

ERP=16.99+3.23-2.15=64.121 mW

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}$$ =0.600/3060+35.571/3060+30.033/3060+43.471/3060+54.488/3060+50.003/3060=0.0699889<1

$$\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}$$

=(0.670+39.728+42.619+61.688+77.321+64.121)/3060 =0.0935121<1

----END OF REPORT----

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