RF EXPOSURE
Test Report

Report No.:	MTi230805003-01E4
Date of issue:	2023-08-19
Applicant:	Beijing Cozyla Technology ltd.
Product:	Cozyla Frame
Model(s):	Cozyla CD-3X341F
FCC ID:	2BCES-CD3X341F

Shenzhen Microtest Co., Ltd.

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Test Result Certification	
Applicant:	Beijing Cozyla Technology ltd.
Address:	Room A419 Building1, No. 12 Shangdi Information Road, Haidian District, Beijing PRC 100080
Manufacturer:	Beijing Cozyla Technology ltd.
Address:	Room A419 Building1, No. 12 Shangdi Information Road, Haidian District, Beijing PRC 100080
Product description	
Product name:	Cozyla Frame
Trademark:	Cozyla
Model name:	Cozyla CD-3X341F
Serial Model:	N/A
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
Date of Test	
Date of test:	2023-08-14 to 2023-08-19
Test result:	Pass

Test Engineer : David. Lee

(David Lee)

Reviewed By: : Leon Chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

BT/BLE:

Operation Frequency: 2402-2480MHz

ANT Gain: 2.93 dBi

Power density limited: 1mW/ cm^2

BR+EDR:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	7.06	7±1	8	6.310	2.93	1.96	0.0025	1
2441		7.16	7±1	8	6.310	2.93	1.96	0.0025	1
2480		6.88	7±1	8	6.310	2.93	1.96	0.0025	1
2402	π/4-DQPSK	8.93	9±1	10	10.000	2.93	1.96	0.0039	1
2441		9.14	9±1	10	10.000	2.93	1.96	0.0039	1
2480		8.14	9±1	10	10.000	2.93	1.96	0.0039	1
2402	8DPSK	8.68	9±1	10	10.000	2.93	1.96	0.0039	1
2441		9.43	9±1	10	10.000	2.93	1.96	0.0039	1
2480		8.49	9±1	10	10.000	2.93	1.96	0.0039	1

BLE:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK-1M	5.4	5±1	6	3.981	2.93	1.96	0.0016	1
2441		5.38	5±1	6	3.981	2.93	1.96	0.0016	1
2480		5.07	5±1	6	3.981	2.93	1.96	0.0016	1

2.4G WIFI:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

802.11n HT40: 2422-2452MHz,

ANT Gain: 2.93 dBi

Power density limited: 1mW/ cm^2

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm^2)	(mW/cm^2)
				(dBm)	(mW)	Numeric		
2412	802.11b	17.57	17±1	18	63.096	1.96	0.02465	1
2437		17.79	17±1	18	63.096	1.96	0.02465	1
2462		17.66	17±1	18	63.096	1.96	0.02465	1
2412	802.11g	15.75	16±1	17	50.119	1.96	0.01958	1
2437		16.21	16±1	17	50.119	1.96	0.01958	1
2462		15.95	16±1	17	50.119	1.96	0.01958	1
2412	802.11n H20	14.70	15±1	16	39.811	1.96	0.01555	1
2437		15.14	15±1	16	39.811	1.96	0.01555	1
2462		14.71	15±1	16	39.811	1.96	0.01555	1
2422	802.11n H40	14.78	15±1	16	39.811	1.96	0.01555	1
2437		15.25	15±1	16	39.811	1.96	0.01555	1
2452		15.07	15±1	16	39.811	1.96	0.01555	1

Conclusion:

SIMULTANEOUS TRANSMISSIONS

When a number of sources at different frequencies, and/or broadband sources, contribute to the total exposure, it becomes necessary to weigh each contribution relative to the MPE. To comply with the MPE, the fraction of the MPE in terms of E2, H2 (or power density) incurred within each frequency interval should be determined and the sum of all such fractions should not exceed unity. In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^{n} \frac{S_i}{MPE_i} \leq 1$$

Simultaneous transmit:

Operating Band	The MPE ratio
BR&EDR	0.0039
BLE	0.0016
2.4G WIFI	0.02465

So the simultaneous transmitting antenna pairs as below:

BR&EDR +2.4G WIFI= 0.0039+ 0.02465=0.02855

BLE+ 2.4G WIFI= 0.0016+ 0.02465= 0.02625

For the max result: 0.02855≤ 1.0 SAR, No SAR is required.

----END OF REPORT----