

RF EXPOSURE REPORT

Applicant	BenQ Corporation
Address	16 Jihu Road, Neihsu, Taipei 114, Taiwan

Manufacturer or Supplier	BenQ Corporation
Address	16 Jihu Road, Neihsu, Taipei 114, Taiwan
Product	Integrated Video Conference Terminal
Brand Name	BenQ
Model	VC01A
Additional Model & Model Difference	VC01A*(* means 0~9, A~Z)
Date of tests	Oct. 14, 2021 ~ Dec. 31, 2021

☒ FCC Part 2 (Section 2.1091)

☒ KDB 447498 D01

☒ IEEE C95.1

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Jan. 29, 2022

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Test Report No.: FM2201WDG0200

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2201WDG0200	Original release	Jan. 29, 2021

1. CERTIFICATION

PRODUCT: Integrated Video Conference Terminal

BRAND NAME: BenQ

MODEL NO.: VC01A

ADDITIONAL MODEL: VC01A*(* means 0~9, A~Z)

FCC ID: JVP-VC01A

TEST SAMPLE: ENGINEERING SAMPLE

APPLICANT: BenQ Corporation

TESTED DATES: Oct. 14, 2021 ~ Dec. 31, 2021

STANDARDS: FCC Part 2 (Section 2.1091)
KDB 447498 D01
IEEE C95.1

NOTES:

- EUT integrates two wireless modules, AIC8800 and RTL8822CU-CG respectively. For details about supported RF functions, see the following list:

Module	Supported RF functions	Remark
AIC8800	BT2.1+EDR	2.4GHz Wi-Fi & 5GHz Wi-Fi can't transmit at same time.
	BT-LE	
	2.4GHz Wi-Fi	
	5GHz Wi-Fi (U-NII-1/ U-NII-2A/ U-NII-2C)	
	5GHz Wi-Fi (U-NII-3)	
RTL8822CU-CG	5GHz Wi-Fi (U-NII-1)	
	5GHz Wi-Fi (U-NII-3)	

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm ²)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Module	Mode/ Frequency Band	Antenna Gain (dBi)	Antenna Type
AIC8800	BR/EDR	2.5	FPC
	BT-LE	2.5	FPC
	2.4GHz Wi-Fi	2.5	FPC
	5GHz Wi-Fi (U-NII-1)	3.85	FPC
	5GHz Wi-Fi (U-NII-2A)	3.96	FPC
	5GHz Wi-Fi (U-NII-2C)	4.05	FPC
	5GHz Wi-Fi (U-NII-3)	5.42	FPC
RTL8822CU-CG	5GHz Wi-Fi (U-NII-1)	4.19	PCB
	5GHz Wi-Fi (U-NII-3)	4.50	PCB

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Module	Mode	Frequency Band (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
AIC8800	BR/DER	2402 ~ 2480	4	+1	3	5
	BT-LE	2402 ~ 2480	4	+1	3	5
	2.4GHz Wi-Fi	2412 ~ 2472	15	+2	13	17
	5GHz Wi-Fi (U-NII-1)	5150 ~ 5250	11	+2	9	13
	5GHz Wi-Fi (U-NII-2A)	5250 ~ 5350	10	+2	8	12
	5GHz Wi-Fi (U-NII-2C)	5470 ~ 5725	12	+2	10	14
	5GHz Wi-Fi (U-NII-3)	5725 ~ 5850	11	+2	9	13
RTL8822CU-CG	5GHz Wi-Fi (U-NII-1)	5150 ~ 5250	10	+2	8	12
	5GHz Wi-Fi (U-NII-3)	5725 ~ 5850	10	+2	8	12



The measured conducted Average Power

Module	Mode	Frequency (MHz)	Averaged Power (dBm)
AIC8800	BR/DER	2441	4.52
	BT-LE	2440	4.55
	2.4GHz Wi-Fi	2462	15.63
	5GHz Wi-Fi (U-NII-1)	5180	11.26
	5GHz Wi-Fi (U-NII-2A)	5320	10.80
	5GHz Wi-Fi (U-NII-2C)	5580	12.50
	5GHz Wi-Fi (U-NII-3)	5745	11.46
RTL8822CU-CG	5GHz Wi-Fi (U-NII-1)	5240	9.10
	5GHz Wi-Fi (U-NII-3)	5745	10.26

FREQUENCY BAND (MHz)	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
BT	5	2.5	20	0.00112	1.0
Wi-Fi 2.4GHz(AIC8800)	17	2.5	20	0.01773	1.0
Wi-Fi 5GHz(AIC8800)	14	5.42	20	0.01741	1.0
Wi-Fi 5GHz (RTL8822CU-CG)	12	4.50	20	0.00889	1.0

CONCLUSION:

The Module AIC8800 and module RTL8822CU-CG can transmit simultaneously, but Module AIC8800's Wi-Fi 2.4GHz and Wi-Fi 5GHz can not transmit simultaneously, the formula of calculated the MPE is:

$$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Worst situation is $(0.00112/1) + (0.01773/1) + (0.00889/1) = 0.02774 < 1$, which is less than the "1" limit.

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