

RF EXPOSURE REPORT

Applicant	Benq Corporation
Address	16 Jihu Road, Neihu, Taipei 114, Taiwan

Manufacturer or Supplier	Benq Corporation
Address	16 Jihu Road, Neihu, Taipei 114, Taiwan
Product	InstaShow S Host
Brand Name	BenQ
Model	WDC20R
Additional Model & Model Difference	N/A
Date of tests	Jul. 30, 2019 ~ Oct. 10, 2019

☒ **FCC Part 2 (Section 2.1091)**

☒ **KDB 447498 D01**

☒ **IEEE C95.1**

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

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Date: Nov. 04, 2019

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Test Report No.: FM190730N005

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM190730N005	Original release	Nov. 04, 2019

1. CERTIFICATION

FCC ID:	JVPWDC20TR
PRODUCT:	InstaShow S Host
BRAND NAME:	BenQ
MODEL NO.:	WDC20R
ADDITIONAL NO.:	N/A
TEST SAMPLE:	Engineering Sample
APPLICANT:	Benq Corporation
STANDARDS:	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1

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:

Frequency Band	Antenna Gain (dBi)	Antenna Type
Wi-Fi 2.4GHz	3.01	Dipole Antenna
Wi-Fi 5GHz (5150-5250MHz)	3.58	Dipole Antenna
Wi-Fi 5GHz (5725-5850MHz)	4.72	Dipole Antenna

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
802.11b	2412-2462	12	+1	11	13
802.11g	2412-2462	13	+1	12	14
802.11n(HT20)	2412-2462	13	+1	12	14
802.11n(HT40)	2422-2452	9	+1	8	10
Wi-Fi 5GHz(Band1)	5150-5250	12	+1	11	13
Wi-Fi 5GHz(Band4)	5725-5850	8	+1	7	9

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
802.11b	2462	12.41
802.11g	2462	13.24
802.11n(HT20)	2462	13.15
802.11n(HT40)	2422	9.30
Wi-Fi 5GHz(Band1)	5190	12.34
Wi-Fi 5GHz(Band4)	5795	8.18

FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
Wi-Fi 2.4GHz	14	3.01	20	0.009994	1.0
Wi-Fi 5GHz(Band1)	13	3.58	20	0.009052	1.0
Wi-Fi 5GHz(Band4)	9	4.72	20	0.004685	1.0

CONCLUSION:

The Wi-Fi 2.4GHz and Wi-Fi 5GHz can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$$(0.009994/1) + (0.009052/1) = 0.019046 < 1, \text{ which is less than the "1" limit.}$$

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