



Test Report No.: FM190730N005

# 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**

Tested by Andy Zhu  
Project Engineer / EMC Department

Approved by Glyn He  
Assistant Manager / EMC Department

Date: Nov. 04, 2019

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**VERITAS**

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## RELEASE CONTROL RECORD

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

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## 1. CERTIFICATION

<b>FCC ID:</b>	JVPWDC20TR
<b>PRODUCT:</b>	InstaShow S Host
<b>BRAND NAME:</b>	BenQ
<b>MODEL NO.:</b>	WDC20R
<b>ADDITIONAL NO.:</b>	N/A
<b>TEST SAMPLE:</b>	Engineering Sample
<b>APPLICANT:</b>	Benq Corporation
<b>STANDARDS:</b>	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 <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 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



<b>FREQUENCY BAND (MHz)</b>	<b>MAX AVERAGE POWER (dBm)</b>	<b>ANTENNA GAIN (dBi)</b>	<b>DISTANCE (cm)</b>	<b>POWER DENSITY (mW/cm<sup>2</sup>)</b>	<b>LIMIT (mW/cm<sup>2</sup>)</b>
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 + .....etc. < 1**

**CPD = Calculation power density**

**LPD = Limit of power density**

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

--- END ---