

RF Exposure Evaluation Report

Product Name : InstaShow X Host
Model No. : WDC30R,WDC30SER,WDC30+R,WDC31R
FCC ID : JVPWDC30R

Applicant : BenQ Corporation
Address : 16 Jihu Road, 11492 Neihu, Taipei, TAIWAN

Date of Receipt : Sep. 08, 2021
Date of Declaration : Mar. 11, 2022
Report No. : 2190300R-RFUSMPEV02-A
Report Version : V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF or any agency of the government.

The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Issued Date: Mar. 11, 2022

Report No.: 2190300R-RFUSMPEV02-A



Product Name	InstaShow X Host	
Applicant	BenQ Corporation	
Address	16 Jihu Road, 11492 Neihu, Taipei, TAIWAN	
Manufacturer	Shuttle Inc.	
Model No.	WDC30R, WDC30SER, WDC30+R, WDC31R	
FCC ID.	JVPWDC30R	
Trade Name	BenQ	
Applicable Standard	KDB 447498 D01 v06	<input checked="" type="checkbox"/> Minimum test separation distance ≥ 20 cm <input type="checkbox"/> For low power devices
Test Result	Complied	

Documented By : Genie Chang
 (Senior Project Specialist / Genie Chang)

Tested By : Jack Hsu
 (Senior Engineer / Jack Hsu)

Approved By : Tim Sung
 (Manager / Tim Sung)

Revision History

Report No.	Version	Description	Issued Date
2190300R-RFUSMPEV02-A	V1.0	Initial issue of report.	2022-03-11

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	InstaShow X Host
Trade Name	BenQ
Model No.	WDC30R, WDC30SER, WDC30+R, WDC31R
FCC ID.	JVPWDC30R
Frequency Range	2412-2462MHz for 802.11b/g/n/ac/ax-20BW 2422-2452MHz for 802.11n/ac/ax-40BW 802.11a/n/ac/ax-20MHz: 5180-5240MHz, 5745-5825MHz 802.11n/ac/ax-40MHz: 5190-5230, 5755-5795MHz 802.11ac-80MHz: 5210MHz, 5775MHz
Number of Channels	802.11b/g/n/ac/ax-20MHz: 11, n/ac/ax-40MHz: 7 802.11a/n/ac/ax-20MHz: 9; 802.11n/ac/ax-40MHz: 4, 802.11ac-80MHz: 2
Data Rate	802.11b: 1-11Mbps, 802.11a/g: 6-54Mbps, 802.11n/ac/ax: up to 1201Mbps
Type of Modulation	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11a/g/n/ac/ax: OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Antenna Type	Dipole Antenna
Channel Control	Auto
Antenna Gain	Refer to the table "Antenna List"

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WHA YU	N/A	Dipole Antenna	3.5dBi for 2.4 GHz 4.3dBi for 5150~5250 GHz 4.5dBi for 5725~5850 GHz

Note: The antenna of EUT is conforming to FCC 15.203.

1.2. Test Facility

USA : FCC Registration Number: TW0031

Canada : IC Registration Number: 26443

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 5-22, Ruishukeng Linkou District, New Taipei City,
24451, Taiwan

Performed Location : No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City
333411, Taiwan, R.O.C.

Phone number : +886-3-275-7255

Fax number : +866-3-327-8031

Email address : info.tw@dekra.com

Website : <http://www.dekra.com.tw>

2. RF Exposure Evaluation

2.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

2.2. Limits

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)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

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

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

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0

2.3. Test Result of RF Exposure Evaluation

Product : InstaShow X Host
 Test Item : RF Exposure Evaluation

WLAN 2.4G Peak Gain: 3.5dBi

Band	Frequency (MHz)	Conducted maximum Peak Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Pass/Fail
2.4G	2462	28.84	1713.96	0.3409802	1	Pass

Note: The Maximum conducted output power is refer to report No.: 2190300R- RFUSWL2V01-A from the DEKRA.

WLAN 5G Peak Gain: 4.5dBi

Band	Frequency (MHz)	Conducted maximum Peak Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Pass/Fail
5G	5795	25.241	334.272	0.1874	1	Pass

Note: The Maximum conducted output power is refer to report No.: 2190300R- RFUSWL5V01-A from the DEKRA.

2.1. Calculations for Multi-Transmitter

Mode	Ratios	result	Limit
2.4G	0.340982	0.528382	1
5G	0.1874		

Ratios = Power Density / Power Density Limit

Results	PASS
---------	------