



RF Exposure Evaluation Declaration

FCC ID: 2AQJT-U1
APPLICANT: Actions Microelectronics Co., Ltd.

Application Type: Certification
Product: EZCast Ultra Wireless Display Receiver
Model No.: EZCast Ultra U1
Serial Model No.: EZCast Ultra U2, MagicUltra U1, MagicUltra U2
Brand Name: EZCast Ultra, Magic Ultra
FCC Classification: Digital Transmission System (DTS)
Unlicensed National Information Infrastructure (UNII)
Test Procedure(s): KDB 447498 D01v06

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The test results relate only to the samples tested.

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

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Revision History

Report No.	Version	Description	Issue Date	Note
1911RSU009-U4	Rev. 01	Initial Report	12-20-2019	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	EZCast Ultra Wireless Display Receiver
Model No.:	EZCast Ultra U1
Serial Model No.:	EZCast Ultra U2, MagicUltra U1, MagicUltra U2
Brand Name:	EZCast Ultra, Magic Ultra
Wi-Fi Specification:	802.11a/b/g/n/ac
Bluetooth Version:	V5.0 single mode (Bluetooth-LE Only)
Power Supply:	5V $\overline{=}$ 2A

1.2. Product Specification Subjective

For Bluetooth-LE

Frequency Range:	2402 ~ 2480MHz
Channel Number:	40
Type of modulation:	GFSK
Data Rate:	1Mbps
Antenna Type:	Shrapnel Antenna
Antenna Gain:	0.56dBi

For 2.4G Wi-Fi

Frequency Range:	802.11b/g/n-HT20: 2412 ~ 2462MHz 802.11n-HT40: 2422 ~ 2452MHz
Channel Number:	802.11b/g/n-HT20: 11 802.11n-HT40: 7
Type of Modulation:	802.11b: DSSS 802.11g/n: OFDM
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps
Antenna Type:	Shrapnel Antenna
Antenna Gain:	1.68dBi

For 5G Wi-Fi

Frequency Range:	For 802.11a/n-HT20/ac-VHT20: 5180~5240MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40: 5190~5230MHz, 5755~5795MHz For 802.11ac-VHT80: 5210MHz, 5775MHz
Type of Modulation:	802.11a/n/ac: OFDM
Data Rate:	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Antenna Type:	Shrapnel Antenna
Antenna Gain:	1.52dBi

2. RF Exposure Evaluation

2.1. 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)	Averaging Time (minutes)
(A) Limits for Occupational / Controlled Exposure				
300-1500	--	--	f/300	6
1500-100000	--	--	5	6
(B) Limits for General Population / Uncontrolled Exposure				
300-1500	--	--	f/1500	6
1500-100000	--	--	1	30

f= Frequency in MHz

Calculation 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

Pi = 3.1416

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

P_d is the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	EZCast Ultra Wireless Display Receiver
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.2.

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
802.11a/n/ac	5180 ~ 5240	14.83	0.0086	1
	5745 ~ 5825			
802.11b/g/n	2412 ~ 2462	24.44	0.0814	1
Bluetooth-LE	2402 ~ 2480	9.91	0.0022	1

CONCLUSION:

The Minimum Safety Distance R = 20 cm.

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