



## RF Exposure Evaluation Declaration

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**FCC ID:** DD4ULXD6X52

**APPLICANT:** Shure Incorporated

**Application Type:** Certification

**Product:** Wireless Boundary Transmitter

**Model No.:** ULXD6/C X52, ULXD6/O X52

**Brand Name:** SHURE

**FCC Classification:** Digital Transmission System (DTS)

Low Power Communication Device Transmitter (DXX)

Reviewed By  
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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
1608RSU00403	Rev. 01	Initial report	10-23-2016	Valid

## 1. PRODUCT INFORMATION

Product Name	Wireless Boundary Transmitter
Model No.	ULXD6/C X52, ULXD6/O X52
Frequency Range	X52 Band: 902 ~ 928 MHz
Working Mode	Normal Mode and HD Mode
Power Level	0.25mW & 10mW & 20mW
Antenna Type	PIFA
Antenna Gain	Max 0.97dBi
<b>Components</b>	
Rechargeable Li-ion Battery	Model: SB900A OUTPUT: 3.7Vdc, 1320mAh,4.88Wh

Note 1: The EUT has two working modes (Normal Mode & HD Mode) and two modes can be switched from the digital wireless receiver.

Note 2: Normal mode has three power levels (0.25mW & 10mW & 20mW). Power levels are switchable among these power levels. HD mode means high density mode and it only has 0.25mW power level.

Note 3: The EUT is capable of operating with AA alkaline batteries or with the Shure SB900A rechargeable battery pack.

Note 4: The difference between ULXD6/C and ULXD6/O is that the EUT has different built-in MIC.

## 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 <sup>2</sup> )	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

Calculation Formula:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = 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

Pd is the limit of MPE, 1mW/cm<sup>2</sup>. 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	Wireless Boundary Transmitter
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to Clause 1 of antenna description.

### For X52 Band:

Test Mode	Frequency Band (MHz)	Maximum Average Output Power (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
Normal Mode HD Mode	902.4 ~ 927.6	13.35	0.0054	0.6016

### CONCLUSION:

Therefore, the Max Power Density at R (20 cm) = 0.0054mW/cm<sup>2</sup> < 0.6016mW/cm<sup>2</sup>.

So the EUT complies with the requirement.

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