

MPE Analysis Report

The Equipment Under Test (EUT) is a Remote Control Digital Mixer, equipped with multi-channel XLR/line input/output, headphone output, WiFi, LAN and USB Interface. Its operation can be controlled by a Smartphone/Notebook over WiFi link. The EUT has only 802.11b mode that occupies a frequency range from 2412MHz to 2462MHz (11 channels with channel spacing of 5MHz). The EUT is powered by an external AC/DC adaptor (18VDC output). The adaptor accepts 100-240VAC. HDMI function is not implemented for this product.

Antenna Type: external, detachable, with reverse-SMA connector
Antenna Gain: 2dBi

Operating mode	Nominal Conducted Power	Production Tolerance	Modulation Type
WiFi 802.11b	10.34 dBm	+/- 3dB	DSSS

For Maximum Permissible Exposure (MPE) evaluation of the Ui12, the maximum power density at 20 cm from this mobile transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65.

For the WiFi 802.11b, maximum conducted power measured within its production tolerance was 13.34dBm (maximum). The antenna gain is 2 dBi = 1.58 (num gain) and the maximum source-based time-averaging duty factor is 100%. From these data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:

The conducted power = 13.34dBm (21.58mW)

The radiated (EIRP) source-based time-averaging output power
= (21.58 * 1.58) mW
= 34.10 mW

The power density at 20 cm from the antenna
= EIRP / 4πR²
= 0.0068 mW cm⁻²

In the frequency range of 1,500 - 100,000MHz, the MPE limit is 1.0 mWcm⁻² for general population and uncontrolled exposure. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structures and body of the user or nearby persons. The following RF exposure statement is proposed to be included in the user manual:

“FCC RF Radiation Exposure Statement

Caution: To maintain compliance with the FCC’s RF exposure guidelines, place the product at least 20cm from nearby persons.”