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Letter of Explanation for RØDELink TX-BELT SAR Exemption

FCC ID: 2AEAN391001
Product Type: 2.4 GHz Wireless Microphone

To Whom It May Concern

2.4GHz Wireless Microphone TX SAR Exemption for TCB Certification under Part 15.247

This Wireless Microphone Transmitter uses TDMA technology and frequency hopping and operates in the 2.4GHz frequency band.

Operational Description

The equipment is a Wireless Microphone Transmitter that operates in the frequency range of 2403 to 2481 MHz with 40 RF channels and channel separation of 2 MHz.

RF Exposure Conditions

The Wireless Microphone Transmitter is supplied with a belt-clip and is intended for use in the portable exposure condition and General Population Uncontrolled exposure environment.

Transmission Mode

Each RF frame is 7.5ms and the frame is divided into 15 transmit slots. The Wireless Microphone Transmitter transmits 15 packets of 148 bits per frame, each packet is sent on 2 frequencies for redundancy.

The duty cycle is $(15 \times 148 \times 2) / 10000 = 4440 / 10000 = 44.4 \%$

RF Output Power

TX Frequency Range: 2403 – 2481 MHz
Pmax (incl. Tune-Up tolerance): $8.5 + 2.0 + 0.5 = 11 \text{ dBm} = 12.6 \text{ mW}$
Maximum Duty Factor: $4440/10000 = 44.4 \%$
Maximum Tune-Up Tolerance 0.5 dB
Maximum source-based time-averaged output power,
including Tune-Up Tolerance: 5.59 mW

Max. power of channel: 5.59 mW
Min. separation distance: 5 mm
Max. frequency: 2.481 GHz

$[(Pwr/Dist)*\sqrt{Freq.}] = 1.8$

The result of the above SAR threshold calculation demonstrates that the result is less than the 1-g numeric threshold of 3 and the 10-g numeric threshold of 7.5.

Conclusion: The above analysis shows that the evaluated device qualifies for exemption from SAR testing.



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Kjeller, 29-May-2015