

Nemko Canada, Inc.
303 River Road, Ottawa
Ontario K1V1H2
Canada

Re: Letter of Explanation for Audio Technica Model ATW-T1002 SAR Exemption

FCC ID: JFZT1002
Product Type: 2.4 GHz Digital Handheld Wireless Microphone

To Whom It May Concern

2.4 GHz Digital Handheld Wireless Microphone SAR Exemption for FCC TCB Certification under Part 15.247

This handheld wireless microphone is exempted from routine SAR evaluation according to FCC part 2.1093(c).

Operational Description

The equipment is a digital handheld wireless microphone that operates in the 2.4 GHz frequency band. When registered to a ATW-R1100 Receiver the transmitter transmits continuously a digitized audio signal. The bitrate, modulation and duty cycle is constant. The system automatically selects the least disturbed channel from the 40 available system channels.

RF Exposure Conditions

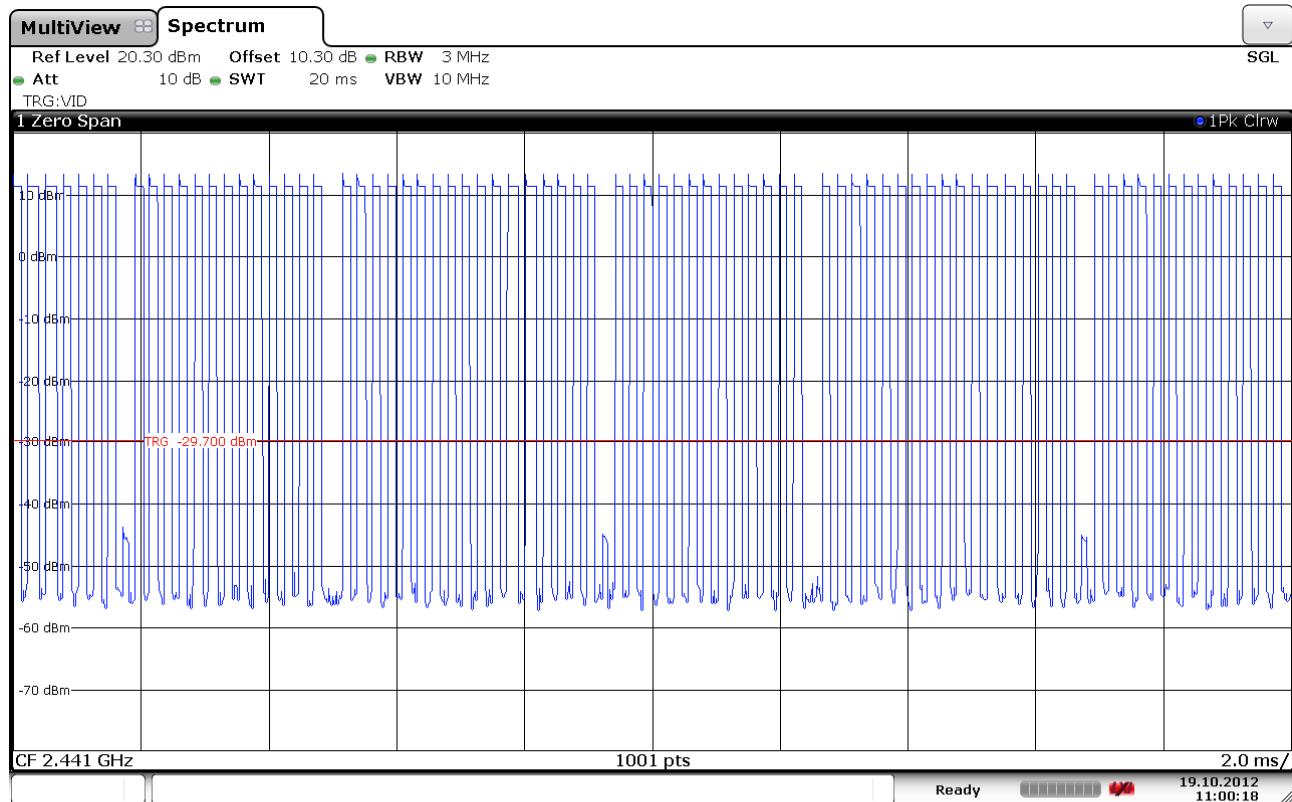
The transmitter is intended for use in the portable exposure condition and General Population/ Uncontrolled exposure environment.

Transmission Mode

The transmitter uses DECT technology but slot length and frame length is proprietary. When registered to a Receiver, the EUT transmits continuously with a duty cycle of 50.0 %.



Duty Cycle



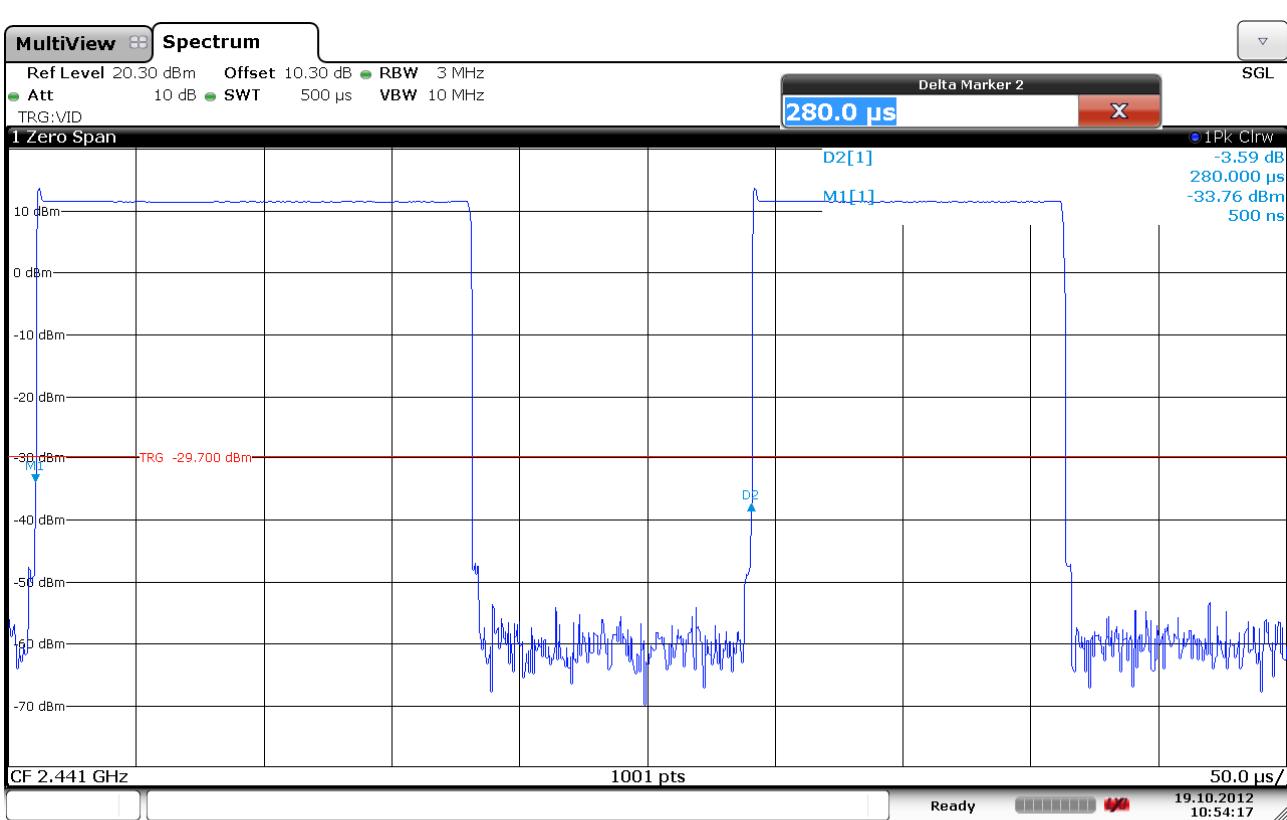
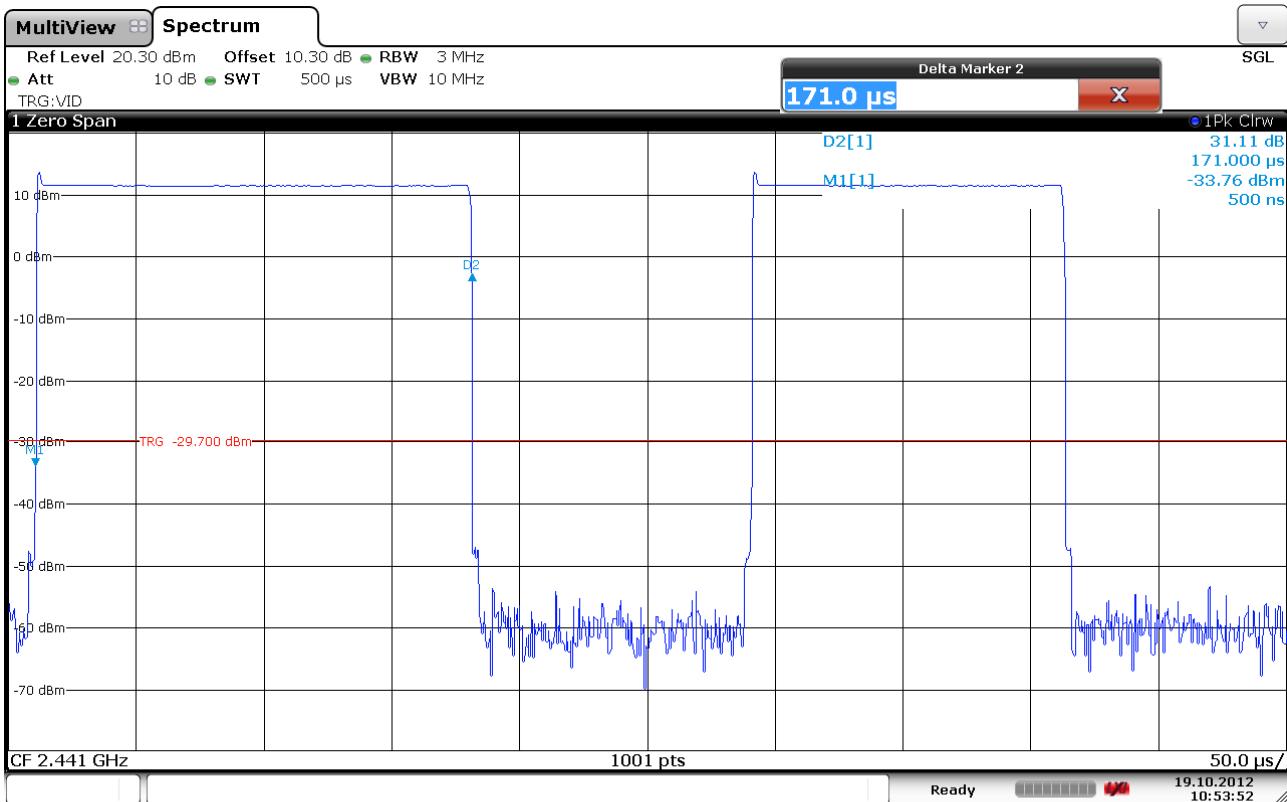
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The EUT transmits a sequence of 15 short slots and 2 longer slots, then pauses for the Receiver to transmit and then transmits 13 short slots before pausing again.

$$\text{Duty Cycle} = (28 \times 122\mu\text{s} + 2 \times 171\mu\text{s}) / (26 \times 234\mu\text{s} + 2 \times 281\mu\text{s} + 2 \times 437\mu\text{s}) = 3758\mu\text{s} / 7520\mu\text{s} = 49.97\%$$



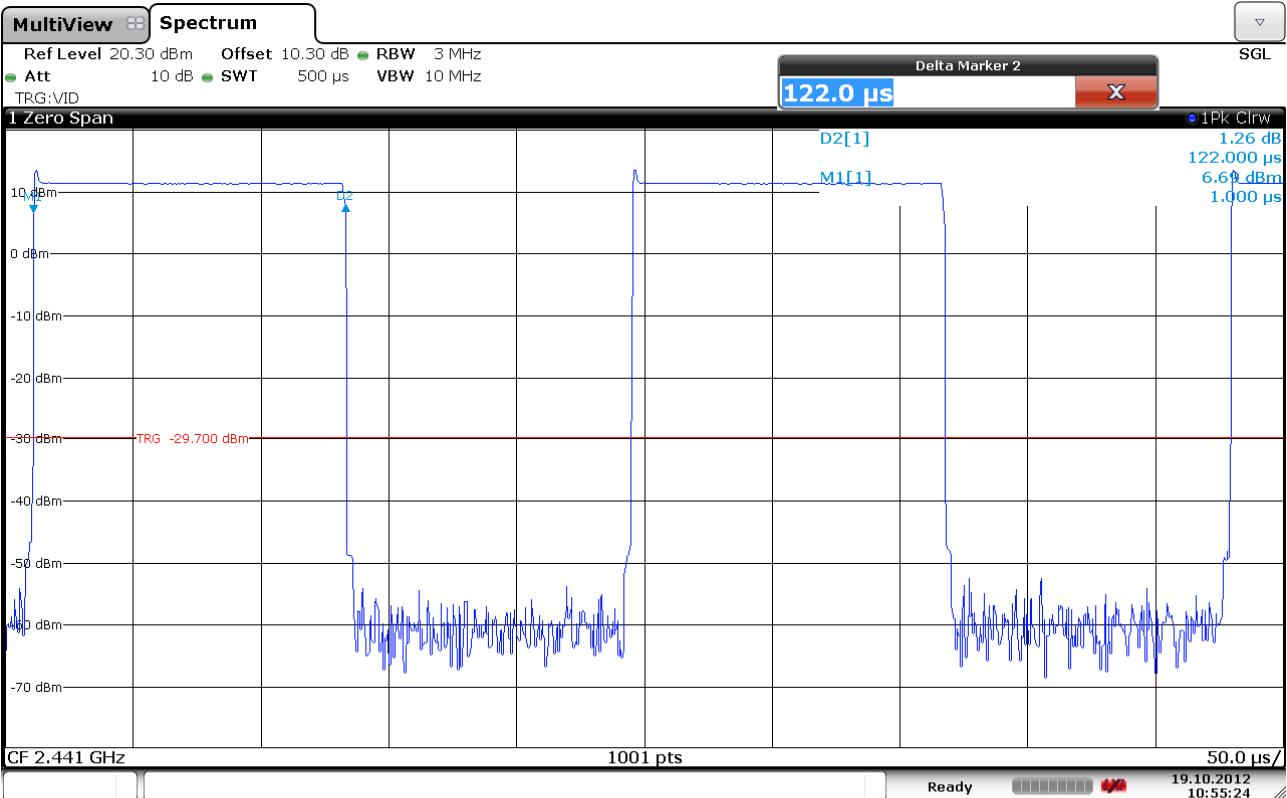
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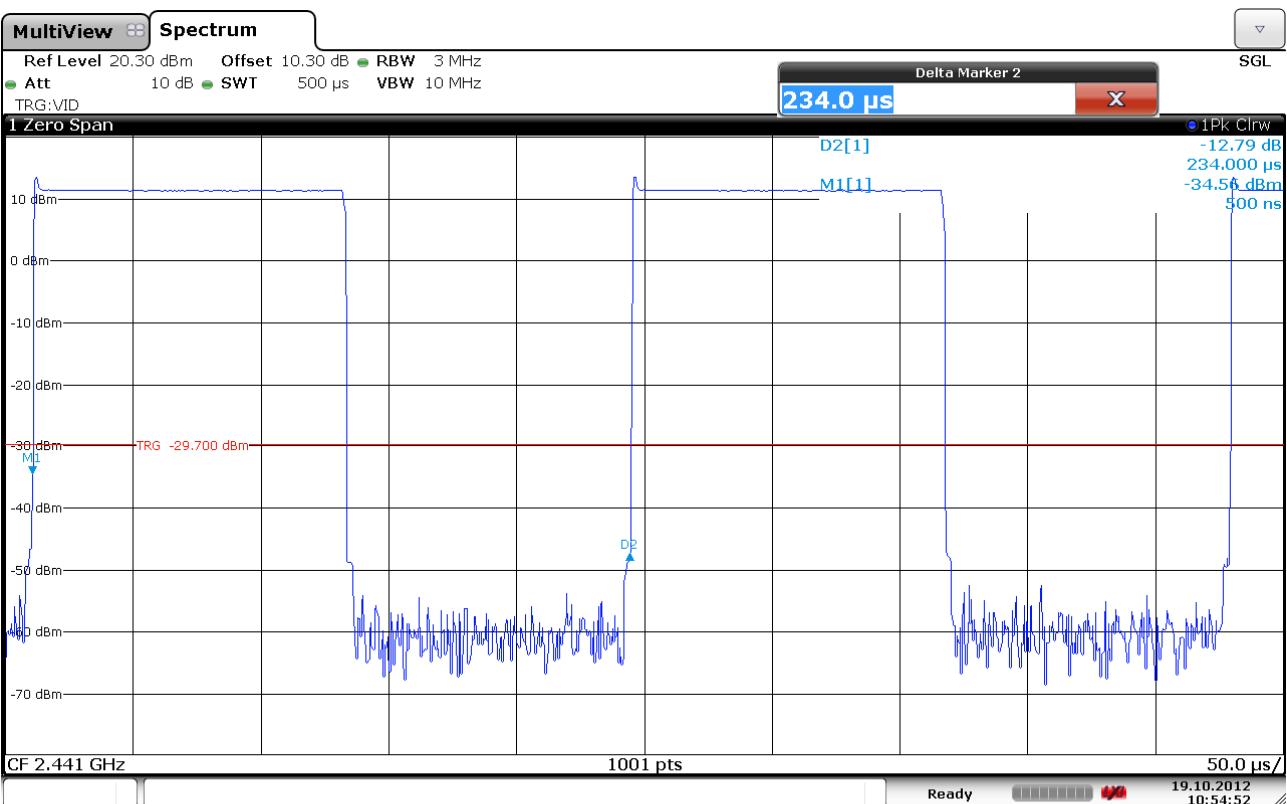
Long Slot



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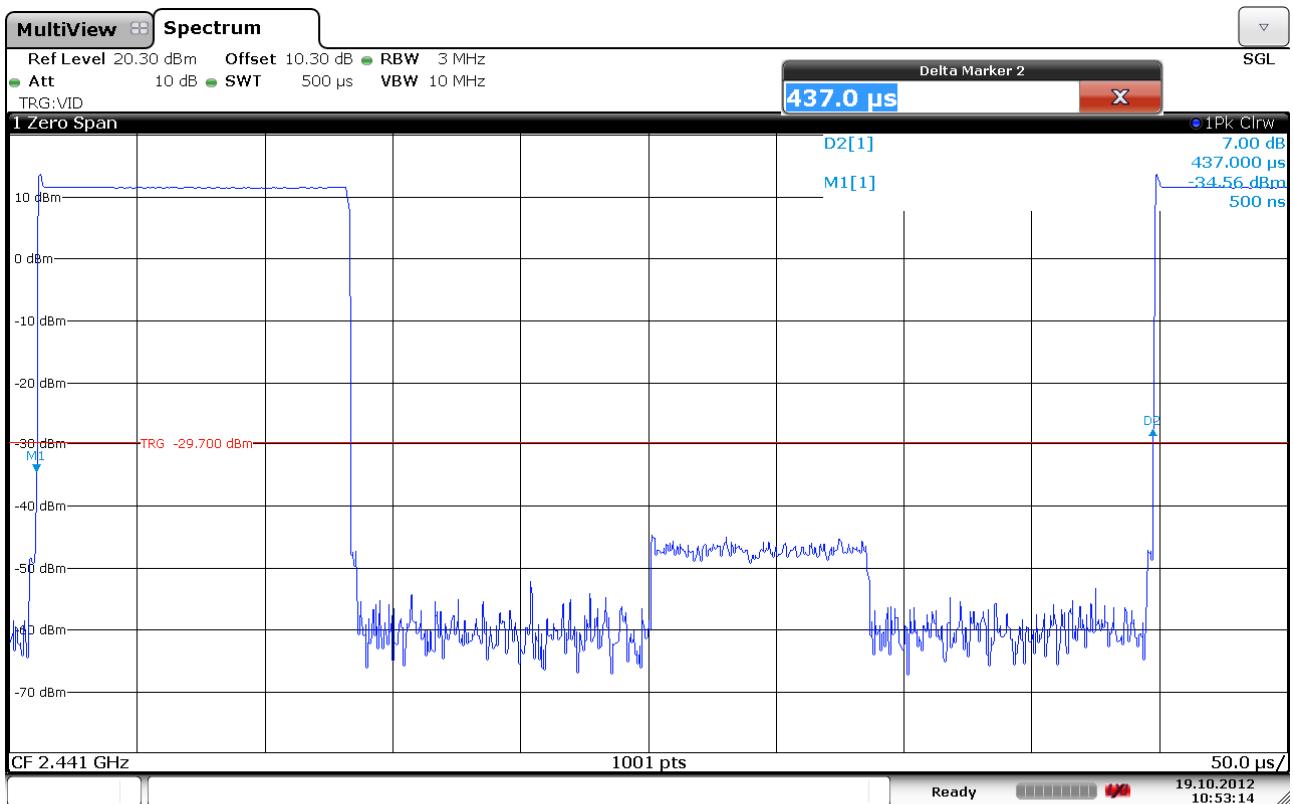


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Short Slot



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Short Slot with Pause



RF Output Power

| | |
|-------------------------------------|---------------------------|
| TX Frequency Range: | 2403 – 2481 MHz |
| Maximum Time Averaged Output Power: | 0.00832 Watts (Conducted) |
| Antenna Gain: | 4.1 dBi |
| Maximum Time Averaged Output Power: | 0.0213 Watts (Radiated) |
| Maximum Duty Factor: | 50.0 % |
| 60 / f (GHz) mW: | 24.58 mW |

Time Averaged RMS Power is measured with the TD Power measurement function of a R&S FSW Spectrum Analyzer.

Frode Sveinsen

Frode Sveinsen

Chief Engineer

Nemko AS

Kjeller, 19-Oct-2012