



**FCC Part 1 Subpart I
FCC Part 2 Subpart J
INDUSTRY CANADA RSS-102 ISSUE 5**

RF EXPOSURE REPORT

FOR

In Ear Headset ISM 900MHz

MODEL NUMBER: WH500-XD1

**FCC ID: AL8-WH500XD1
IC ID: 457A-WH500XD1**

REPORT NUMBER: 11879810-S1V3

ISSUE DATE: 12/5/2017

Prepared for
**PLANTRONICS INC
345 ENCINAL ST
SANTA CRUZ, CA 95060**

Prepared by
**UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000**



NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V1	9/15/2017	Original issue	
V2	10/10/2017	Updated Target Power	Dave Weaver
V3	12/5/2017	Updated model number	Dave Weaver

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
2. TEST METHODOLOGY	5
3. REFERENCES	5
4. FACILITIES AND ACCREDITATION	5
5. Device under test	5
5.1. <i>Maximum Output Power</i>	5
5.2. <i>Duty Cycle Power Correction</i>	5
6. STANDALONE SAR TEST EXCLUSION CONSIDERATIONS	6
6.1. <i>FCC</i>	6
6.2. <i>INDUSTRY CANADA</i>	7

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Plantronics Inc
345 Encinal St
Santa Cruz, CA 95060

EUT DESCRIPTION: In Ear Headset ISM 900MHz

MODEL NUMBER: WH500-XD1

SERIAL NUMBER: N/A

DATE TESTED: 8/15/2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 1 SUBPART I & PART 2 SUBPART J	Pass
INDUSTRY CANADA RSS-102 ISSUE 5	Pass

UL Verification Services Inc. calculated the RF Exposure of the above equipment in accordance with the requirements set forth in the above standards, using test results reported in the test report documents referenced below and/or documentation furnished by the applicant. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc., based on interpretations of these calculations. The results show that the equipment is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:



Dave Weaver
Program Manager
UL Verification Services Inc.

2. TEST METHODOLOGY

All calculations were made in accordance with FCC KDB 447498 and IC RSS-102 issue 5.

3. REFERENCES

Output power, Duty cycle and Antenna gain data is excerpted from the applicable test reports or client declarations.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

5. Device under test

The DUT is an ISM device (frequency range 902 to 928MHz) and the user to antenna separation distance 0mm. Refer to Theory of Operation for device functionality and specifications.

5.1. Maximum Output Power

The maximum output power of the device is 18dBm (63mW).

5.2. Duty Cycle Power Correction

Duty cycle minimum is 3.9% (normal mode), maximum is 6.7% (wide band mode) for the transmitter during a voice link. When the system is not in a voice link, the base unit maintains the transmission of a shorter-length beacon at the same 10mS frame rate. The headset maintains synchronization with the base unit by monitoring this beacon. Refer to the Theory of Operation Duty Cycle analysis.

6. STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

6.1. FCC

SAR test exclusion in accordance with KDB 447498 D01 v06.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [f(\text{GHz})] \leq 3.0$, for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

This test exclusion is applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

SAR Exclusion Calculation Table for Portable Devices (separation distance < 50 mm)

Tx	Frequency (MHz)	Max Output power		Duty Cycle	Max Output Power with Duty factor correction (mW)	Separation distances (mm)	Calculated Threshold Value
		dBm	mW				
IMS	928	18.0	63	6.70%	4	0	0.8

Conclusion:

The device operates with a maximum Duty Cycle of 6.7%. The Calculated Threshold with duty cycle applied is ≤ 3 ; therefore, this device qualifies for Standalone SAR test exclusion. Refer to the Theory of Operation Duty Cycle analysis.

6.2. INDUSTRY CANADA

The SAR exclusion table from RSS-102 issue 5 is reproduced below:

Table 1: SAR evaluation - exemption limits for routine evaluation based on frequency and separation distance.

Frequency MHz	Exemption Limits (mW)				
	At separation distance of ≤5mm	At separation distance of 10mm	At separation distance of 15mm	At separation distance of 20mm	At separation distance of 25mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency MHz	Exemption Limits (mW)				
	At separation distance of 30mm	At separation distance of 35mm	At separation distance of 40mm	At separation distance of 45mm	At separation distance of ≥50mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

The minimum antenna to user distance that will be encountered in normal use is 0mm. This results in an exemption limit of 16mW at 928MHz.

Notes:

Exemption Limit for 928MHz was calculated using linear interpolation per RSS 102 Issue 5 §2.5.1.

Tx	Frequency (MHz)	Maximum Avg Power	Antenna Gain	2.2 dBi	Duty Cycle	Maximum Avg Power with Duty factor correction (mW)
			(dBm)	(mW)		
ISM	928	Conducted	18.0	63	6.70%	4
		E.I.R.P.	20.2	105	6.70%	7

As the maximum output power with Duty factor correction applied is 4mW conducted and 7mW EIRP, this device qualifies for SAR test exclusion per RSS 102 Issue 5 §2.5.1. Refer to the Theory of Operation Duty Cycle analysis.

END OF REPORT