



LS RESEARCH LLC

Wireless Product Development



TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

SAR Test Exclusion Exhibit For:

Yurbuds In-The-Ear Headphones

FCC ID: S9WITEV1

Prepared by:

Khairul Aidi Zainal, Senior EMC Engineer

9/6/2013



LS RESEARCH LLC

Wireless Product Development



TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

Contents

Product Description:	3
Associated Antenna(s):	3
Statement of compliance:.....	3
Separation Distance:	3
SAR Test Exclusion Threshold:	4
Data and calculation:	5



LS RESEARCH LLC

Wireless Product Development



TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

Product Description:

The In The Ear sport ear-buds are designed for a customer to stream music and take phone calls through a wireless connection. They are designed for active users such as runners, bikers, etc. The unique molding of the ear piece prevents the ear bud from falling out. The ear buds are designed to work with smartphones such as the Windows phone, iPhone, and Android systems.

Associated Antenna(s):

The antenna used is a bent 'L monopole' antenna.

Statement of compliance:

The EUT was evaluated against the SAR test exclusion threshold listed in KDB 447498 D01 General RF Exposure Guidance v05r01. Based on the measurements of the output power and the peak antenna gain of the antenna, the EUT is excluded from SAR testing.

Separation Distance:

The EUT is a headphone and will be used in the ear therefore the separation distance will be less than 5mm.



LS RESEARCH LLC

Wireless Product Development



TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

SAR Test Exclusion Threshold:

SAR test exclusion threshold for 100MHz to 6GHz at minimum separation distance of $\leq 50\text{mm}$.

1-g SAR test exclusion threshold equation:

$$[(\text{maximum power of channel including tune-up tolerance}) / (\text{minimum separation distance})] * [\sqrt{f_{(\text{GHz})}}] \leq 3.0$$

10-g SAR test exclusion threshold equation:

$$[(\text{maximum power of channel including tune-up tolerance}) / (\text{minimum separation distance})] * [\sqrt{f_{(\text{GHz})}}] \leq 7.5$$



LS RESEARCH LLC
Wireless Product Development



TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

Data and calculation:

Maximum Peak Conducted Output Power:

i. GFSK

Channel (MHz)	Power (dBm)	Power (mW)
2402	6.0	3.98
2440	7.6	5.69
2480	8.2	6.65

ii. EDR2

Channel (MHz)	Power (dBm)	Power (mW)
2402	4.7	2.94
2440	6.7	4.68
2480	7.5	5.61

iii. EDR3

Channel (MHz)	Power (dBm)	Power (mW)
2402	4.9	3.08
2440	6.9	4.94
2480	7.7	5.86



LS RESEARCH LLC
Wireless Product Development



TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

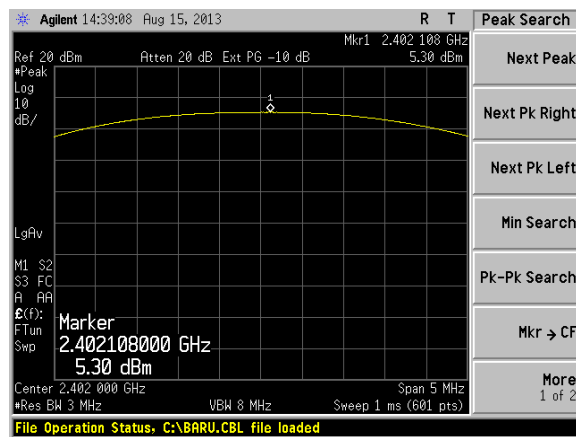
Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

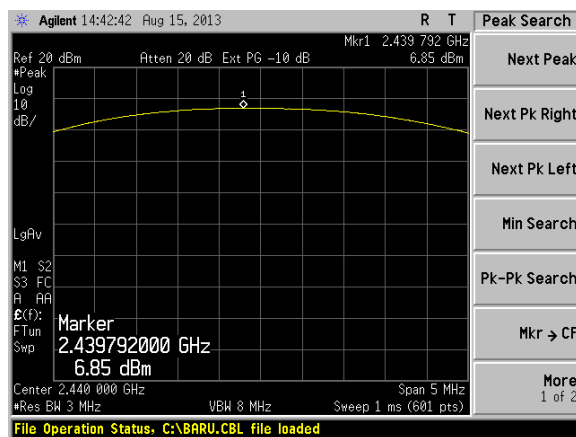
Screen Captures

Screen captures are for the GFSK mode only.

Lowest Channel, MHz



Middle Channel, MHz





LS RESEARCH LLC

Wireless Product Development



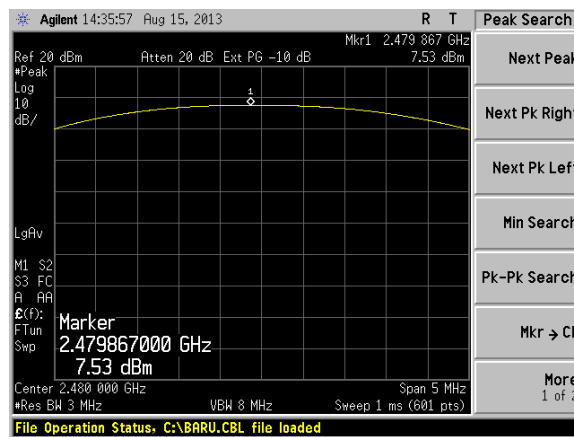
TESTING CERT #1255.01

W66 N220 Commerce Court • Cedarburg, WI 53012

Phone: 262.375.4400 • Fax: 262.375.4248

www.lsr.com

Highest Channel, MHz



Comparison to SAR threshold:

Frequency = 2.480 GHz

Antenna gain = 1.0 dBi

EIRP (dBm) = 8.2 dBm + 1.0 dBi = 9.2 dBm

EIRP (mW) = 8.32 milliwatt

Minimum separation distance = less than 5 mm

$$[8.32 \text{ mW} / 5 \text{ mm}] * [\sqrt{2.48 \text{ GHz}}] = 1.33 * 1.57 = \underline{\underline{2.62}}$$