

# FCC PART 15 SUBPART C CERTIFICATION REPORT

FOR

307KHz/433.92 MHz Transceiver

MODEL: TAG LINK FCC ID NO: HE7TGL REPORT NO: 03U2119-1

**ISSUE DATE: AUGUST 04, 2003** 

Prepared for

# EXI WIRELESS SYSTEMS INC. SUITE 100, 13551 COMMERCE PARKWAY RICHMOND, BC CANADA

Prepared by COMPLIANCE ENGINEERING SERVICES, INC. d.b.a. COMPLIANCE CERTIFICATION SERVICES 561F MONTEREY ROAD MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888

#### **TABLE OF CONTENTS**

### PAGE

| 1.  | VERIFICATION OF COMPLIANCE Error! | Bookmark : | not | defined. |
|-----|-----------------------------------|------------|-----|----------|
| 3.  | TEST FACILITY                     |            | ••• |          |
| 4.  | MEASUREMENT STANDARD              |            | ••• | 4        |
| 5.  | TEST METHODOLOGY                  |            | ••• | 4        |
| 6.  | MEASUREMENT EQUIPMENT USED        |            | ••• |          |
| 7.  | POWERLINE RFI LIMIT               |            | ••• | 5        |
| 8.  | RADIATED EMISSION LIMITS          |            | ••• | 5        |
| 9.  | SYSTEM TEST CONFIGURATION         |            | ••• | 6        |
| 10. | TEST PROCEDURE                    |            | ••• | 7        |
| 11. | EQUIPMENT MODIFICATIONS           |            | ••• | 9        |
| 12. | TEST RESULT                       |            | ••• | 10       |

#### TEST DATA

- Maximum Modulation Percentage Plot
- Emission Bandwidth Plot
- Radiated Emission Worksheet for Peak Measurement
- Radiated Emission Worksheet for Average Measurement

#### ATTACHMENT

• EUT Photographs

- Proposed FCC ID Label
- Schematics & Block Diagram
- User Manual

#### 1. VERIFICATION OF COMPLIANCE

| COMPANY NAME    | : | EXI WIRELESS SYSTEMS INC.         |
|-----------------|---|-----------------------------------|
|                 |   | SUITE 100, 13551 COMMERCE PARKWAY |
|                 |   | RICHMOND BC, V6V 2L1 CANADA       |
| EUT DESCRIPTION | : | 307KHz / 433.92 MHz TRANSCEIVER   |
| MODEL NO        | : | TAG LINK                          |
| FCC ID          | : | HE7TGL                            |
| DATE TESTED     | : | 8-04-2003                         |
|                 |   |                                   |

| TYPE OF EQUIPMENT     | RF TAGS                         |
|-----------------------|---------------------------------|
| EQUIPMENT TYPE        | 307KHz / 433.92MHz TRANSCEIVERS |
| MEASUREMENT PROCEDURE | ANSI C63.4 / 2001               |
| LIMIT TYPE            | CERTIFICATION                   |
| FCC RULE              | CFR 47, PART 15                 |

The above equipment was tested by Compliance Certification Services for compliance with the requirements set forth in the FCC CFR 47, PART 15. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. **Warning** : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification will constitute fraud and shall nullify the document.

Tested By:

Chin Pany

CHIN PANG EMC TECHNICIAN COMPLIANCE CERTIFICATION SERVICES

Approved & Released By:

THU CHAN EMC SUPERVISOR COMPLIANCE CERTIFICATION SERVICES

Page 3 of 24

#### 2. PRODUCT DESCRIPTION

| Fundamental Frequency | 307KHz / 433.92 MHz            |
|-----------------------|--------------------------------|
| Power Source          | 9V Battery                     |
| Transmitting Time     | Periodic <u>&gt;</u> 5 seconds |
| Associated Receiver   | NA                             |
| Manufacturer          | EXI Wireless Systems Inc.      |

## **3. TEST FACILITY**

The 3/10/30 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facility was submitted to the Commission on May 27,1994.

## 4. MEASUREMENT STANDARD

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/2001.

#### **5. TEST METHODOLOGY**

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

#### 6. MEASUREMENT EQUIPMENT USED

| 1                            | TEST EQUIPMENT | LIST        |            |           |
|------------------------------|----------------|-------------|------------|-----------|
| Name of Equipment            | Manufacturer   | Model No.   | Serial No. | Due Date  |
| Antenna, Loop 9 kHz ~ 30 MHz | EMCO           | 6502        | 9202-2722  | 4/23/2004 |
| SA Display Section 2         | HP             | 85662A      | 2816A16696 | 5/22/2004 |
| SA RF Section, 1.5 GHz       | HP             | 85680B      | 2732A03661 | 5/22/2004 |
| Quasi-Peak Adaptor           | HP             | 85650A      | 2811A01155 | 5/22/2004 |
| Antenna, Bilog               | Chase          | CBL6112B    | 2586       | 3/6/2004  |
| Spectrum Analyzer            | Agilent        | E4446A      | NA         | 1/13/2004 |
| Preamplifier, 1300 MHz       | HP             | 8447D       | 2944A06589 | 8/22/2003 |
| Antenna, Horn 1 ~ 18 GHz     | EMCO           | 3115        | 6717       | 2/4/2004  |
| Preamplifier, 1-26GHz MHz    | Miteq          | NSP10023988 | 63250761R  | 4/18/2004 |

Page 4 of 24

## 7. POWERLINE RFI LIMIT

| CONNECTED TO AC POWER LINE   | SECTION 15.207   |
|--|--|
| CARRIER CURRENT SYSTEM IN THE<br>FREQUENCY RANGE OF 150 KHzTO 30 MHz | SECTION 15.205 AND SECTION 15.209, 15.221, 15.223, 15.225 OR 15.227, AS APPROPRIATE. |
| BATTERY POWER  | NOT REQUIRED   |

## 8. RADIATED EMISSION LIMITS

| GENERAL REQUIREMENTS  | SECTION 15.209    |
|---|-------------------|
| RESTRICTED BANDS OF OPERATION   | SECTION 15.205    |
| PERIODIC OPERATION IN THE BAND 40.66 -<br>40.70 MHz AND ABOVE 70 MHz. | SECTION 15.231(e) |

Page 5 of 24

## 9. SYSTEM TEST CONFIGURATION

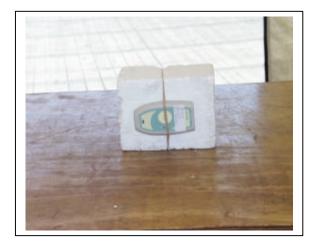
Use a block of foam and combined it with EUT wrapping rubber band around it. This way it can test X.Y, and Z axis. To activate continuous transmission, place a small plastic block between rubber band and EUT push button.



X-Axis



Y-Axis



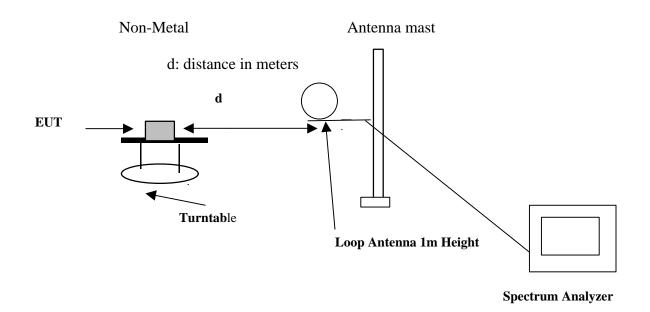
Z-Axis

Radiated Open Site Test Set-up

Page 6 of 24

## **10. TEST PROCEDURE**

## **Radiated Emissions**, 15.209



## Test Set-up for frequency range below 30 MHz

#### Test Procedure:

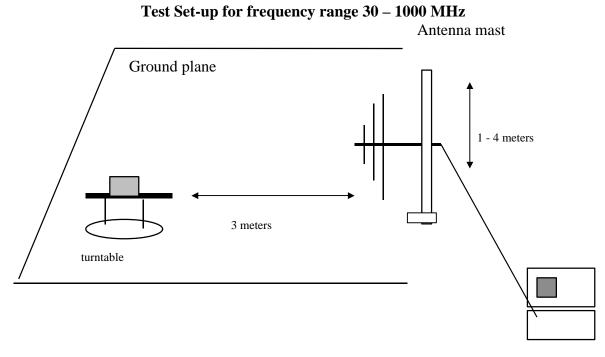
The measurement is made on open field test site, the H field produced by the EUT is measured using an active loop antenna, measurement is done at 3m distances from the EUT with an extrapolation of corrected distance factor. The loop antenna is rotated around it's axis to maximize the emission, the antenna of the EUT was placed at three different orientations, X, Y and Z to find the worst orientation, the worst orientation was found to be when the antenna of the EUT is in vertical position and the plane of the loop antenna is in parallel with the antenna of the EUT.

The RBW of the spectrum analyzer is set to 10kHz, VBW is set to 10kHz, reading on the analyzer in dBuV was added to cable loss and antenna factor in dBS/m to get the H field in dBuA/m.

COMPLIANCE CERTIFICATION SERVICESCCS DOCUMENT NO:CCSUP4020B561F MONTEREY RD., MORGAN HILL, CA 95037, USATEL:(408)463-0885 FAX:(408)463-0888This report shall not be reproduced except in full, without the written approval of CCS. This document may be<br/>altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision<br/>section of the document.

Page 7 of 24

## Radiated Emissions, 15.231(e)

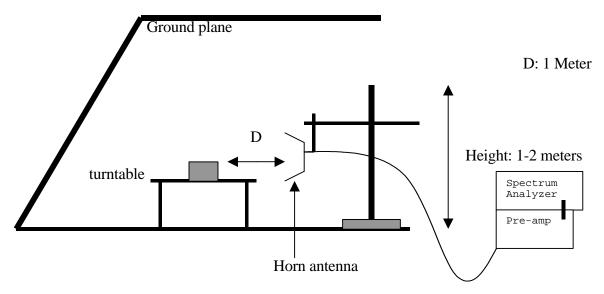


preamplifier/spectrum analyzer

- 1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3-meters from the EUT.
- 2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
- 3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

Page 8 of 24

## Test set-up for measurements above 1GHz



1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 1-meters from the EUT. The EUT antenna was mounted vertically as per normal installation.

2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.

3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

## **11. EQUIPMENT MODIFICATIONS**

To achieve compliance to FCC Section 15.231 technical limits, the following change(s) were made during compliance testing:

No changes were required in order to achieve compliance to Section 15.231 levels.

Page 9 of 24

## **12. TEST RESULT**

| Powerline RFI Class B  | Eut | Radiated Emission Limits | Eut |
|--|-----|--------------------------|-----|
| SECTION 15.207   |     | SECTION 15.209           | Х   |
| SECTION 15.205, 15.209, 15.221,<br>15.223, x 15.225 OR<br>15.227 |     | SECTION 15.205           | Х   |
| BATTERY POWER  | X   | SECTION 15.231 (e)       | X   |
|  |     |                          |     |

## 12.1 MAXIMUM MODULATION PERCENTAGE (M%)

## CALCULATION:

Average Reading = Peak Reading (dBuV/m) + 20log (Duty Cycle)

In order to determine possible Maximum Modulation percentage, alternations are made to the EUT. We measured:

| 1 Period          | = 78.5ms                                      |
|-------------------|---|
| Long pulse        | = 0.5  ms                                     |
| Short pulse       | =0.2333 ms                                    |
| No of Long pulse  | = 6   |
| No of Short pulse | = 48  |
|                   | Long pulse<br>Short pulse<br>No of Long pulse |

Duty Cycle = (N1L1+N2L2+...+Nn-1Ln-1+NnLn)/100 or T

Duty Cycle = ((6x0.500)+(48x0.2333))/78.50=0.219=.21.9%

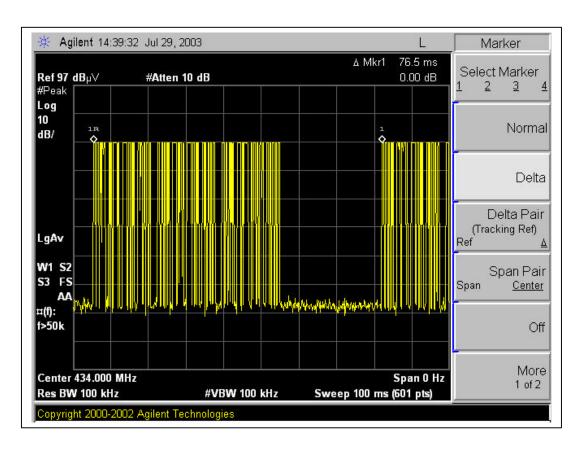
For duty cycle refer to plot #1, 2, 3,4, 5.

## **12.2 EMISSION BANDWIDTH**

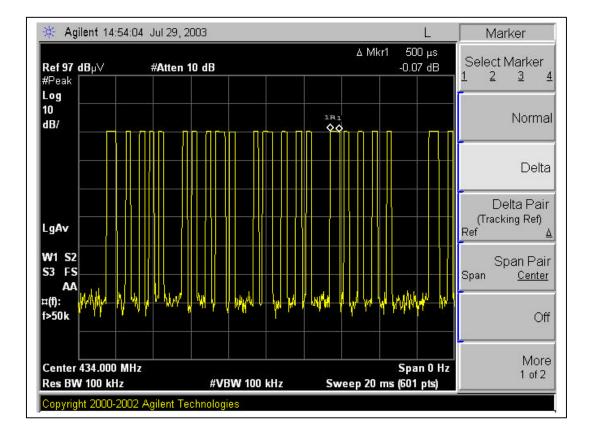
The bandwidth of the emissions were investigated per 15.231(c)

| Center Frequency | Measured        | Limits                    |
|------------------|-----------------|---------------------------|
| 433.92 MHz       | 513 KHz         | 433.92 x 0.25%= 1.0848MHz |
|                  | (refer to plot) |                           |

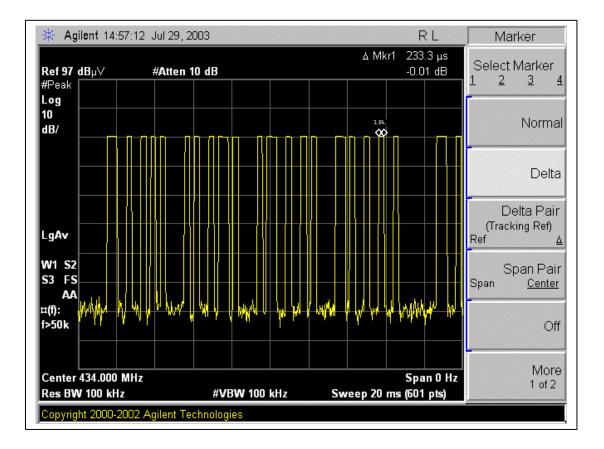
Page 10 of 24



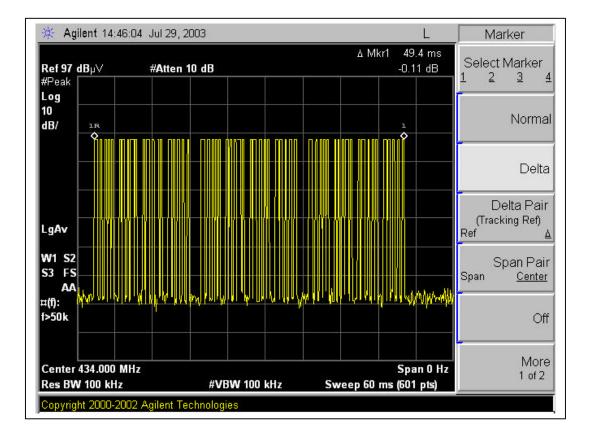
Page 11 of 24



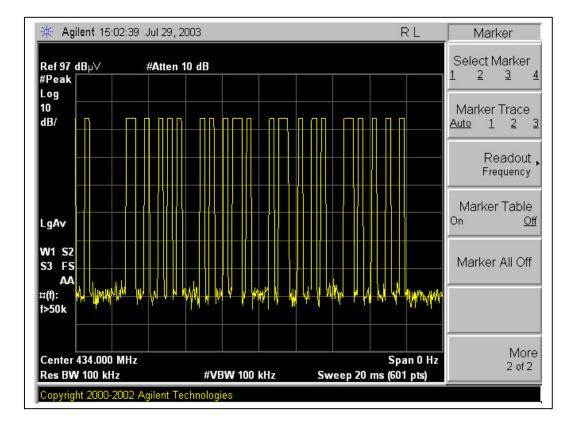
Page 12 of 24



Page 13 of 24

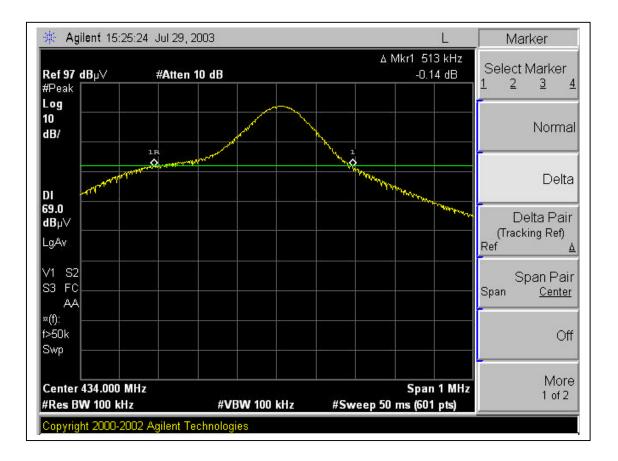


Page 14 of 24



Page 15 of 24

## EMISSION BANDWIDTH



Page 16 of 24

## RADIATED DATA

|                     | FCC<br>UL,           | C, VCCI, C<br>CSA, TUV<br>EREY RO<br>98) 463-08 | ISPR, CE,<br>/, BSMI, D<br>AD, SAN ,<br>85 F/ | AUSTEL, I<br>HHS, NVLA | NZ<br>NP<br>95037-9001                        | 1        | Proje<br>Repo<br>Date& T<br>Test E | ort #:<br>ïme: | 03u2095-<br>030715C<br>07/15/03<br>Chin Pan | 2<br>3:46 PM |         |
|---------------------|----------------------|---|---|------------------------|---|----------|------------------------------------|----------------|---|--------------|---------|
|                     | Test Con             | Type of   | tion:<br>tion:<br>Test:                       | RF Tag I<br>EUT Onl    | eless Syste<br>Reader ( 3<br>y<br>209 / 15.23 | 07KHz Tr | ansmittir                          | ng)            |   |              |         |
| C                   | A-Site               |   | B-Site  | C-:                    | Site  | C F-Site |                                    | 6 W orst Da    | ata   | Descending   |         |
|                     | Reading              | AF  | Closs   | Dist                   | Level   | Limit    | Margin                             | Pol            | Az  | Height       | Mark    |
| (KHz)<br>Test at w  | (dBuV)<br>/orst posi | (dB)<br>tion:                                   | (dB)  | (dB)                   | (dBuV/m)                                      | FCC_B    | (dB)                               | (H/V)          | (Deg)                                       | (Meter)      | (P/Q/A) |
| 307.00              | 58.70                | 10.80   | 0.30  | 80.00                  | -10.20  | 17.86    | -28.06                             | 3mV            | 0.00  | 1.00         |         |
| 614.00              | 56.40                | 10.60   | 0.30  | 40.00                  | 27.30   | 31.84    | -20.00                             | 3mV            | 0.00  | 1.00         | P       |
| 921.00              | 38.40                | 10.60   | 0.30  | 40.00                  | 9.30  | 28.32    | -19.02                             | 3mV            | 0.00  | 1.00         | Р       |
| 1228.00             | 50.80                | 10.60   | 0.30  | 40.00                  | 21.70   | 25.82    | -4.12                              | 3mV            | 0.00  | 1.00         | Р       |
| 1535.00             | 45.40                | 10.60   | 0.30  | 40.00                  | 16.30   | 23.88    | -7.58                              | 3mV            | 0.00  | 1.00         | Р       |
| 307.00              | 48.20                | 10.80   | 0.30  | 80.00                  | -20.70  | 17.86    | -38.56                             | 3mH            | 0.00  | 1.00         | Р       |
| 614.00              | 50.10                | 10.60   | 0.30  | 40.00                  | 21.00   | 31.84    | -10.84                             | 3mH            | 0.00  | 1.00         | Ρ       |
| 921.00              | 34.10                | 10.60   | 0.30  | 40.00                  | 5.00  | 28.32    | -23.32                             | 3mH            | 0.00  | 1.00         | Р       |
| 1228.00             | 48.00                | 10.60   | 0.30  | 40.00                  | 18.90   | 25.82    | -6.92                              | 3mH            | 0.00  | 1.00         | Р       |
| 1535.00<br>No other |                      | 10.60<br>is were f                              | 0.30<br>ound up                               | 40.00<br>to 30MH:      | 7.70<br>z.                                    | 23.88    | -16.18                             | 3mH            | 0.00  | 1.00         | Р       |

Page 17 of 24

|   |   | ertifi   | catio   | on Se  |  |  |   | R<br>Date 8  | oject #:<br>eport #:<br>& Time:                 | 03U2096-1<br>030722B1<br>07/22/03                           | 1:53PM  |                             |
|---|---|--|---|--|--|--|---|--|---|---|---|-----------------------------|
|   |   | VCCI, CISPR,<br>SA, TUV, BSN   |   |  |  |  |   | Tes  | t Engr:   | Chin Pang   |   |                             |
|   | 561F MONTEI<br>PHONE: (408)   |  | AN JOSE, CA   |  | 3) 463-0888  |  |   |  |   |   |   |                             |
|   |   | Test   | EUT Desci<br>t Configui   | ration :<br>of Test:                                 |  | ss Systems<br>z RFID Tag<br>1                                  |   | )7KHz/433№   | 1Hz Transc                                      | eiver )   |   |                             |
|   |   |  |   |  |  |  |   |  |   |   |   |                             |
|   | -t2+t3+…)/1<br>KHZ, VBW=  |  | %   |  |  |  | Av Reading<br>20*log(M%   | g = Pk Read<br>) = -15.65  | ling + 20*lo                                    | g(M%)   |   |                             |
| RBW=100ł<br>Freq.   | KHZ, VBŴ=<br>Pk Rdg   | 100KHz<br>Av Rdg   | AF  | Closs  | Pre-amp  | Level  | 20*log(M%<br>Limit  | ) = -15.65<br>Margin   | Pol   | Az  | Height  | Mark                        |
| RBW=100<br>Freq.<br>(MHz)   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)   | 100KHz<br>Av Rdg<br>(dBuV)   | AF<br>(dB)  | Closs<br>(dB)  | Pre-amp<br>(dB)  |  | 20*log(M%   | ) = -15.65   | 0   |   | Height<br>(Meter)                               | Mark<br>(P/Q/A)             |
| RBW=100F<br>Freq.<br>(MHz)<br>433.92Mhz   | KHZ, VBŴ=<br>Pk Rdg   | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequenc   | AF<br>(dB)  |  |  | Level  | 20*log(M%<br>Limit  | ) = -15.65<br>Margin   | Pol   | Az  |   |                             |
| RBW=100F<br>Freq.<br>(MHz)<br>433.92Mhz<br>Y-Position   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>z Fundamen   | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequenc   | AF<br>(dB)  |  |  | Level  | 20*log(M%<br>Limit  | ) = -15.65<br>Margin   | Pol   | Az  |   |                             |
| RBW=1004<br>Freq.<br>(MHz)<br>433.92Mhz<br>7-Position<br>433.92<br>433.92   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70   | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequenc<br>60.55<br>57.05   | AF<br>(dB)<br>ÿ   | (dB)   | (dB)   | Level<br>(dBuV/m)  | 20*log(M%<br>Limit<br>FCC_B   | ) = -15.65<br>Margin<br>(dB)   | Pol<br>(H/V)                                    | Az<br>(Deg)   | (Meter)   | (P/Q/A)                     |
| RBW=100<br>Freq.<br>(MHz)<br>133.92Mhz<br>7-Position<br>133.92<br>133.92<br>(-Position  | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay E   | Av Rdg<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(dBuV)<br>(d | AF<br>(dB)<br>y<br>16.22<br>16.22   | (dB)<br>5.19<br>5.19                                 | (dB)<br>28.63<br>28.63                                     | Level<br>(dBuV/m)<br>53.33<br>49.83                            | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86                                     | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03                               | Pol<br>(H/V)<br>3mV<br>3mH                      | Az<br>(Deg)<br>0.00<br>0.00                                 | (Meter)<br>1.00<br>1.00                         | (P/Q/A)<br>P<br>P           |
| RBW=100ł<br>Freq.<br>(MHz)<br>433.92Mhz<br>Y-Position<br>433.92<br>433.92<br>K-Position<br>433.92   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay E<br>75.10  | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequenc<br>60.55<br>57.05<br>Down )<br>59.45  | AF<br>(dB)<br>y<br>16.22<br>16.22<br>16.22  | (dB)<br>5.19<br>5.19<br>5.19                         | (dB)<br>28.63<br>28.63<br>28.63                            | Level<br>(dBuV/m)<br>53.33<br>49.83<br>52.23                   | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86<br>72.86                            | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03<br>-20.63                     | Pol<br>(H/V)<br>3mV<br>3mH<br>3mV               | Az<br>(Deg)<br>0.00<br>0.00<br>0.00                         | (Meter)<br>1.00<br>1.00<br>1.00                 | (P/Q/A)<br>P<br>P<br>P      |
| RBW=100ł<br>Freq.<br>(MHz)<br>433.92Mhz<br>Y-Position<br>433.92<br>433.92<br>K-Position<br>433.92<br>433.92<br>433.92   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay I<br>75.10<br>70.50                                 | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequence<br>60.55<br>57.05<br>57.05<br>Down )<br>59.45<br>54.85   | AF<br>(dB)<br>y<br>16.22<br>16.22<br>16.22<br>16.22                                       | (dB)<br>5.19<br>5.19                                 | (dB)<br>28.63<br>28.63                                     | Level<br>(dBuV/m)<br>53.33<br>49.83                            | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86                                     | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03                               | Pol<br>(H/V)<br>3mV<br>3mH                      | Az<br>(Deg)<br>0.00<br>0.00                                 | (Meter)<br>1.00<br>1.00                         | (P/Q/A)<br>P<br>P           |
| RBW=100/<br>Freq.<br>(MHz)<br>433.92Mhz<br>Y-Position<br>433.92<br>433.92<br>X-Position<br>433.92<br>433.92<br>Z-Position   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay E<br>75.10<br>70.50<br>(EUT Place                   | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequenc<br>60.55<br>57.05<br>59.45<br>59.45<br>54.85<br>side Way  | AF<br>(dB)<br>:y<br>16.22<br>16.22<br>16.22<br>16.22<br>)                                 | (dB)<br>5.19<br>5.19<br>5.19<br>5.19<br>5.19         | (dB)<br>28.63<br>28.63<br>28.63<br>28.63                   | Level<br>(dBuV/m)<br>53.33<br>49.83<br>52.23<br>47.63          | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86<br>72.86<br>72.86<br>72.86          | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03<br>-20.63<br>-25.23           | Pol<br>(H/V)<br>3mV<br>3mH<br>3mV<br>3mH        | Az<br>(Deg)<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00         | (Meter)<br>1.00<br>1.00<br>1.00<br>2.00         | (P/Q/A)<br>P<br>P<br>P<br>P |
| RBW=100/<br>Freq.<br>(MHz)<br>433.92Mhz<br>7-Position<br>433.92<br>433.92<br>433.92<br>433.92<br>433.92<br>2-Position<br>433.92                                   | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay IC<br>75.10<br>70.50<br>(EUT Place<br>75.50         | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequence<br>60.55<br>57.05<br>Down )<br>59.45<br>54.85<br>Side Way<br>59.85   | AF<br>(dB)<br>y<br>16.22<br>16.22<br>16.22<br>16.22<br>)<br>16.22                         | (dB)<br>5.19<br>5.19<br>5.19<br>5.19<br>5.19<br>5.19 | (dB)<br>28.63<br>28.63<br>28.63<br>28.63<br>28.63<br>28.63 | Level<br>(dBuV/m)<br>53.33<br>49.83<br>52.23<br>47.63<br>52.63 | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86<br>72.86<br>72.86<br>72.86<br>72.86 | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03<br>-20.63<br>-25.23<br>-20.23 | Pol<br>(H/V)<br>3mV<br>3mH<br>3mV<br>3mH<br>3mV | Az<br>(Deg)<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00         | (Meter)<br>1.00<br>1.00<br>1.00<br>2.00<br>1.00 | (P/Q/A)<br>P<br>P<br>P<br>P |
| RBW=100H<br>Freq.<br>(MHz)<br>433.92Mhz<br>7-Position<br>433.92<br>433.92<br>433.92<br>7-Position<br>433.92<br>2-Position<br>433.92<br>433.92<br>433.92<br>433.92 | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay E<br>75.10<br>70.50<br>(EUT Place<br>75.50<br>75.40 | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequence<br>60.55<br>57.05<br>59.45<br>59.45<br>54.85<br>5 Side Way<br>59.85<br>59.75   | AF<br>(dB)<br>ry<br>16.22<br>16.22<br>16.22<br>16.22<br>)<br>16.22<br>)<br>16.22<br>16.22 | (dB)<br>5.19<br>5.19<br>5.19<br>5.19<br>5.19         | (dB)<br>28.63<br>28.63<br>28.63<br>28.63                   | Level<br>(dBuV/m)<br>53.33<br>49.83<br>52.23<br>47.63          | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86<br>72.86<br>72.86<br>72.86          | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03<br>-20.63<br>-25.23           | Pol<br>(H/V)<br>3mV<br>3mH<br>3mV<br>3mH        | Az<br>(Deg)<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00         | (Meter)<br>1.00<br>1.00<br>1.00<br>2.00         | (P/Q/A)<br>P<br>P<br>P<br>P |
| RBW=100/<br>Freq.<br>(MHz)<br>433.92Mhz<br>Y-Position<br>433.92<br>433.92<br>X-Position<br>433.92<br>Z-Position<br>433.92<br>433.92                               | KHZ, VBW=<br>Pk Rdg<br>(dBuV)<br>Fundamen<br>(stand Up)<br>76.20<br>72.70<br>(EUT Lay IC<br>75.10<br>70.50<br>(EUT Place<br>75.50         | 100KHz<br>Av Rdg<br>(dBuV)<br>tal frequence<br>60.55<br>57.05<br>59.45<br>59.45<br>54.85<br>5 Side Way<br>59.85<br>59.75   | AF<br>(dB)<br>ry<br>16.22<br>16.22<br>16.22<br>16.22<br>)<br>16.22<br>)<br>16.22<br>16.22 | (dB)<br>5.19<br>5.19<br>5.19<br>5.19<br>5.19<br>5.19 | (dB)<br>28.63<br>28.63<br>28.63<br>28.63<br>28.63<br>28.63 | Level<br>(dBuV/m)<br>53.33<br>49.83<br>52.23<br>47.63<br>52.63 | 20*log(M%<br>Limit<br>FCC_B<br>72.86<br>72.86<br>72.86<br>72.86<br>72.86<br>72.86 | ) = -15.65<br>Margin<br>(dB)<br>-19.53<br>-23.03<br>-20.63<br>-25.23<br>-20.23 | Pol<br>(H/V)<br>3mV<br>3mH<br>3mV<br>3mH<br>3mV | Az<br>(Deg)<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00<br>0.00 | (Meter)<br>1.00<br>1.00<br>1.00<br>2.00<br>1.00 | (P/Q/A)<br>P<br>P<br>P<br>P |

Page 18 of 24

#### RADIATED EMISSIONS (HARMONIC)

| Test Eng   | r:Chin I   | Pang   |  |   |  |  |  |   |   |   |  |  |  |   |  |
|--|--|--|--|---|--|--|--|---|---|---|--|--|--|---|--|
|  | #:03U211   |  |  |   |  |  |  |   |   |   |  |  |  |   |  |
| Compan   | y:EXI W  | ireless Syst   | ems Inc.   |   |  |  |  |   |   |   |  |  |  |   |  |
|  |  |  | 92MHz Tran   | sceiver   |  |  |  |   |   |   |  |  |  |   |  |
|  | N:Tag L  |  |  |   |  |  |  |   |   |   |  |  |  |   |  |
|  |  | C Class B  |  |   |  |  |  |   |   |   |  |  |  |   |  |
| Mode O   | per: 1 x   |  |  |   |  |  |  |   |   |   |  |  |  |   |  |
| Test Eau   | uipment:   |  |  |   |  |  |  |   |   |   |  |  |  |   |  |
|  |  |  |  |   |  |  |  |   |   |   |  |  |  |   |  |
| ЕМСС   | ) Horn 1-1   | 8GHz   | Pre-amplife  | r 1-26GH  | Iz   | 5  | Spectrum A   | nalyzer   |   |   | Horn > 18  | RGHz   |  |   |  |
|  |  |  | T87 Miteq 9  | 24242   | _  | Agile  | ent 8564E A  | nalvzer   |   |   |  |  |  |   |  |
| T60; S/  | /N: 2238 (   | @1m 👻  | 187 Miteq 9  | 24342   | -  | Agin   |  | maryzer   |   |   |  |  | <b>•</b>   |   |  |
|  |  |  |  |   |  |  |  |   |   |   |  |  |  |   |  |
|  | quency Cab   |  |  | -   |  |  |  |   | Measureme   |   |  | leasuremen   |  |   |  |
| (2   | (ff)   | (2 ~ 3 ft)   | $(4 \sim 6 \text{ ft})$  |   |  |  |  | 1 MHz   | Resolution B  |   |  |  |  |   |  |
|  |  | a (=)  | (4.011)  | (1211)  |  |  |  | 11/11-1   |   |   |  |  | lull   |   |  |
|  |  |  |  | • (12 11)   |  | J  |  | 1MHz V  | Video Bandw   |   | 1 MHz Reso<br>10Hz Video   |  | iuui   |   |  |
| Average=   |  |  |  | (1211)  |  | J  |  | 1MHz V  |   |   |  |  | idui   |   |  |
| Average=   |  |  | Read Avg.  | AF  | CL   | Amp  | D Corr   | 1MHz V  | Video Bandw<br>Peak   | vidth<br>Avg  | 10Hz Video Pk Lim  | Bandwidth Avg Lim  | Pk Mar   | Avg Mar   | Notes  |
| Average=   | Peak-Duty  | Cycle  |  |   |  | Amp<br>dB  | D Corr<br>dB   |   | Video Bandw   | vidth   | 10Hz Video   | Bandwidth  |  | Avg Mar<br>dB   | Notes  |
| Average=<br>f<br>GHz<br>1.302  | Peak-Duty<br>Dist<br>feet<br>3.3   | Cycle<br>Read Pk<br>dBuV<br>58.3   | Read Avg.<br>dBuV<br>45.1  | AF<br>dB/m<br>25.8  | CL<br>dB<br>1.5  | dB<br>-43.4  | dB<br>-9.5   | HPF<br>0.0  | Video Bandw<br>Peak<br>dBuV/m<br>32.7   | Avg<br>dBuV/m<br>19.5   | 10Hz Video Pk Lim dBuV/m 74.0  | Bandwidth Avg Lim dBuV/m 54.0  | Pk Mar<br>dB<br>-41.3  | dB<br>-34.5   | v  |
| Average=<br>f<br>GHz<br>1.302<br>1.736   | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3  | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0   | Read Avg.<br>dBuV<br>45.1<br>41.8  | AF<br>dB/m<br>25.8<br>27.9  | CL<br>dB<br>1.5<br>1.9   | dB<br>-43.4<br>-43.3   | dB<br>-9.5<br>-9.5   | HPF<br>0.0<br>1.0   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0   | Avg<br>dBuV/m<br>19.5<br>19.8   | 10Hz Video Pk Lim dBuV/m 74.0 74.0   | Bandwidth Avg Lim dBuV/m 54.0 54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0   | dB<br>-34.5<br>-34.2  | V<br>V<br>V  |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170  | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3   | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8   | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6  | AF<br>dB/m<br>25.8<br>27.9<br>29.6  | CL<br>dB<br>1.5<br>1.9<br>2.3  | dB<br>-43.4<br>-43.3<br>-43.2  | dB<br>-9.5<br>-9.5<br>-9.5   | HPF<br>0.0<br>1.0<br>1.0  | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0   | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1  | dB<br>-34.5<br>-34.2<br>-35.3   | V<br>V<br>V<br>V   |
| Average=<br>f<br>GHz<br>1.302<br>1.736   | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3  | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0   | Read Avg.<br>dBuV<br>45.1<br>41.8  | AF<br>dB/m<br>25.8<br>27.9  | CL<br>dB<br>1.5<br>1.9   | dB<br>-43.4<br>-43.3   | dB<br>-9.5<br>-9.5   | HPF<br>0.0<br>1.0   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0   | Avg<br>dBuV/m<br>19.5<br>19.8   | 10Hz Video Pk Lim dBuV/m 74.0 74.0   | Bandwidth Avg Lim dBuV/m 54.0 54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0   | dB<br>-34.5<br>-34.2  | V<br>V<br>V  |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604   | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3                                   | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9   | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5  | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7   | dB<br>-43.4<br>-43.3<br>-43.2<br>-43.2   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5                                 | HPF<br>0.0<br>1.0<br>1.0<br>1.0   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0                                 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6   | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8  | V<br>V<br>V<br>V<br>V                                      |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736                            | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3. | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>56.0   | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9                                      | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9                      | dB<br>-43.4<br>-43.3<br>-43.2<br>-43.2<br>-43.2<br>-43.2<br>-43.4<br>-43.3   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | HPF<br>0.0<br>1.0<br>1.0<br>1.0<br>0.0<br>1.0   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>33.4<br>34.0   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0         | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-44.6<br>-40.6<br>-40.0  | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.2   | V<br>V<br>V<br>V<br>V<br>H<br>H                            |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170                   | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3. | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>556.0<br>52.4  | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>39.2  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6                              | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3               | dB<br>-43.4<br>-43.3<br>-43.2<br>-43.2<br>-43.2<br>-43.2<br>-43.4<br>-43.3<br>-43.2  | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | 0.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0  | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>33.4<br>34.0<br>32.5   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8<br>19.3   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-40.6<br>-40.0<br>-40.0<br>-41.5   | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.8<br>-33.2<br>-34.7   | V<br>V<br>V<br>V<br>V<br>H<br>H<br>H                       |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170<br>2.604          | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.               | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>56.0   | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6<br>30.5                      | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3<br>2.7        | dB<br>-43.4<br>-43.3<br>-43.2<br>-43.2<br>-43.2<br>-43.2<br>-43.4<br>-43.3<br>-43.2<br>-43.2   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | HPF<br>0.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>33.4<br>34.0   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0   | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-44.6<br>-40.6<br>-40.0<br>-41.5<br>-41.2  | dB           -34.5           -34.2           -35.3           -34.8           -37.8           -33.8           -33.2           -34.7  | V<br>V<br>V<br>V<br>H<br>H<br>H<br>H                       |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170                   | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3. | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>56.0<br>56.0<br>52.4<br>51.3   | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>39.2<br>38.1  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6                              | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3               | dB<br>-43.4<br>-43.3<br>-43.2<br>-43.2<br>-43.2<br>-43.2<br>-43.4<br>-43.3<br>-43.2  | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | 0.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0  | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>33.4<br>33.4<br>33.5<br>32.5<br>32.8   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8<br>19.3<br>19.6   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54 | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-40.6<br>-40.0<br>-40.0<br>-41.5   | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.8<br>-33.2<br>-34.7   | V<br>V<br>V<br>V<br>V<br>H<br>H<br>H                       |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038 | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.               | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>46.6<br>59.0<br>56.0<br>52.4<br>51.3<br>47.3<br>were detecta                     | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>42.8<br>39.2<br>38.1<br>34.1<br>4.1<br>4.1<br>4.1<br>4.1<br>4.1<br>4.1<br>4.1<br>4.1<br>4.1 | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>stem nois | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1 | dB<br>-43.4<br>-43.3<br>-43.2<br>-43.2<br>-43.2<br>-43.2<br>-43.2<br>-43.4<br>-43.3<br>-43.2<br>-43.2<br>-43.2   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | HPF<br>0.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0<br>1.0   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>33.4<br>33.4<br>33.5<br>32.5<br>32.8   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8<br>19.3<br>19.6   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54 | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-44.6<br>-40.6<br>-40.6<br>-40.6<br>-40.5<br>-41.2<br>-41.2<br>-43.9   | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.2<br>-33.2<br>-34.7<br>-34.4<br>-37.1   | V<br>V<br>V<br>V<br>H<br>H<br>H<br>H<br>H                  |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038 | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.               | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>46.6<br>59.0<br>56.0<br>52.4<br>51.3<br>47.3<br>were detecta                     | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>39.2<br>38.1<br>34.1  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>stem nois | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1 | dB           -43.4           -43.3           -43.2           -43.2           -43.2           -43.4           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | <b>HPF</b> <ol> <li>0.0</li> <li>1.0</li> <li>1.0</li> <li>0.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>5ain</li> </ol>                                   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>34.0<br>32.5<br>32.8<br>30.1   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>20.2<br>20.2<br>20.8<br>19.3<br>19.3<br>19.6<br>16.9   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54 | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-44.6<br>-40.6<br>-40.0<br>-41.5<br>-41.2<br>-43.9<br>-43.9  | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.2<br>-34.7<br>-34.4<br>-37.1<br>-34.4<br>-37.1  | V<br>V<br>V<br>V<br>H<br>H<br>H<br>H<br>H                  |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038 | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.               | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>46.6<br>59.0<br>56.0<br>52.4<br>51.3<br>47.3<br>were detecta                     | Read Avg.<br>dBuV<br>45.1<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>39.2<br>38.1<br>34.1<br>d above the sysent Frequency  | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>stem nois | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1 | dB           -43.4           -43.3           -43.2           -43.2           -43.2           -43.4           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | <b>HPF</b> <ol> <li>0.0</li> <li>1.0</li> <li>1.0</li> <li>0.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>5ain</li> </ol>                                   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>33.4<br>33.4<br>33.5<br>32.5<br>32.8   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>20.2<br>20.2<br>20.8<br>19.3<br>19.3<br>19.6<br>16.9   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54 | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-44.6<br>-40.6<br>-40.0<br>-41.5<br>-41.2<br>-43.9<br>-43.9  | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.2<br>-33.2<br>-34.7<br>-34.4<br>-37.1   | V<br>V<br>V<br>V<br>H<br>H<br>H<br>H<br>H                  |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038 | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3. | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>56.0<br>56.0<br>56.0<br>51.3<br>51.3<br>47.3<br>were detect<br>Measurem          | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>39.2<br>38.1<br>34.1<br>d above the system<br>Frequency<br>Antenna                          | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>stem nois | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1 | dB           -43.4           -43.3           -43.2           -43.2           -43.2           -43.4           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2           -43.2   | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | <b>HPF</b> <ol> <li>0.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>5.0</li> </ol>   | Video Bandw<br>Peak<br>dBuV/m<br>32.7<br>33.0<br>31.9<br>32.4<br>29.4<br>33.4<br>34.0<br>32.5<br>32.8<br>30.1   | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8<br>19.3<br>19.3<br>19.3<br>19.3<br>16.9   | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54 | Pk Mar<br>dB<br>-41.3<br>-41.0<br>-42.1<br>-41.6<br>-40.6<br>-40.0<br>-41.5<br>-41.5<br>-41.5<br>-43.9<br>Average I<br>Peak Field  | dB<br>-34.5<br>-34.2<br>-35.3<br>-34.8<br>-37.8<br>-33.8<br>-33.2<br>-34.7<br>-34.4<br>-37.1<br>-34.4<br>-37.1  | V<br>V<br>V<br>V<br>H<br>H<br>H<br>H<br>H                  |
| Average=<br>f<br>GHz<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038<br>1.302<br>1.736<br>2.170<br>2.604<br>3.038 | Peak-Duty<br>Dist<br>feet<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3.3<br>3. | Cycle<br>Read Pk<br>dBuV<br>58.3<br>55.0<br>51.8<br>50.9<br>46.6<br>59.0<br>56.0<br>52.4<br>51.3<br>47.3<br>47.3<br>were detecto<br>Measuremu<br>Distance to | Read Avg.<br>dBuV<br>45.1<br>41.8<br>38.6<br>37.7<br>33.4<br>45.8<br>42.8<br>39.2<br>38.1<br>34.1<br>ed above the sys<br>ent Frequency<br>o Antenna<br>Reading           | AF<br>dB/m<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>25.8<br>27.9<br>29.6<br>30.5<br>31.4<br>stem nois | CL<br>dB<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1<br>1.5<br>1.9<br>2.3<br>2.7<br>3.1 | dB           -43.4           -43.3           -43.2           -43.2           -43.2           -43.4           -43.2 | dB<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5<br>-9.5 | <b>HPF</b> <ul> <li>0.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>1.0</li> <li>5ain</li> <li>Correct</li> <li>Field S</li> </ul> | Peak           dBuV/m           32.7           33.0           31.9           32.4           29.4           33.4           34.0           32.5           32.8           30.1 | Avg<br>dBuV/m<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.2<br>20.8<br>19.3<br>19.6<br>16.9<br>20.8<br>19.3<br>19.6<br>16.9<br>20.8<br>19.3<br>19.6<br>16.9<br>20.8<br>19.3<br>19.5<br>19.5<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.8<br>19.3<br>19.5<br>19.8<br>18.7<br>19.5<br>19.8<br>18.7<br>19.5<br>19.8<br>18.7<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.8<br>19.3<br>19.3<br>19.3<br>19.5<br>19.8<br>18.7<br>19.2<br>16.2<br>20.8<br>19.3<br>19.3<br>19.3<br>19.3<br>19.3<br>19.5<br>19.8<br>19.5<br>19.8<br>19.7<br>19.2<br>16.2<br>20.8<br>19.3<br>19.3<br>19.3<br>19.3<br>19.5<br>19.8<br>19.5<br>19.8<br>19.5<br>19.8<br>19.7<br>19.7<br>19.7<br>19.7<br>19.7<br>19.7<br>19.7<br>19.7 | 10Hz Video<br>Pk Lim<br>dBuV/m<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0<br>74.0 | Bandwidth<br>Avg Lim<br>dBuV/m<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54.0<br>54 | Pk Mar           dB           -41.3           -41.0           -42.1           -41.6           -44.6           -40.0           -41.5           -41.2           -41.3           -41.2           -43.9           Average I           Peak Field           Margin vs | dB           -34.5           -34.2           -35.3           -34.8           -37.8           -33.2           -34.4           -37.1           Wield Strengt           J Strength L | V<br>V<br>V<br>V<br>H<br>H<br>H<br>H<br>h<br>Limit<br>imit |

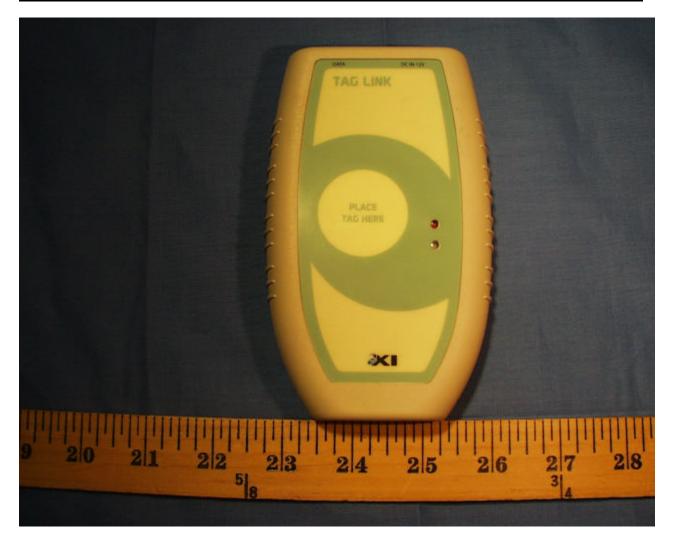
Page 19 of 24

# **EUT PHOTOGRAPHS**



Page 20 of 24

REPORT NO: 03U2119-1 EUT: 307KHz / 433.92 MHz Transceiver DATE: August 04, 2003 FCC ID: HE7TGL

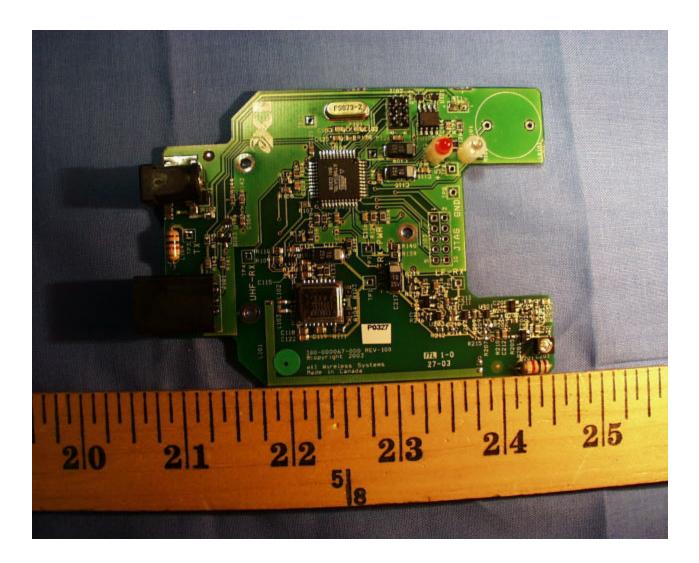


Page 21 of 24

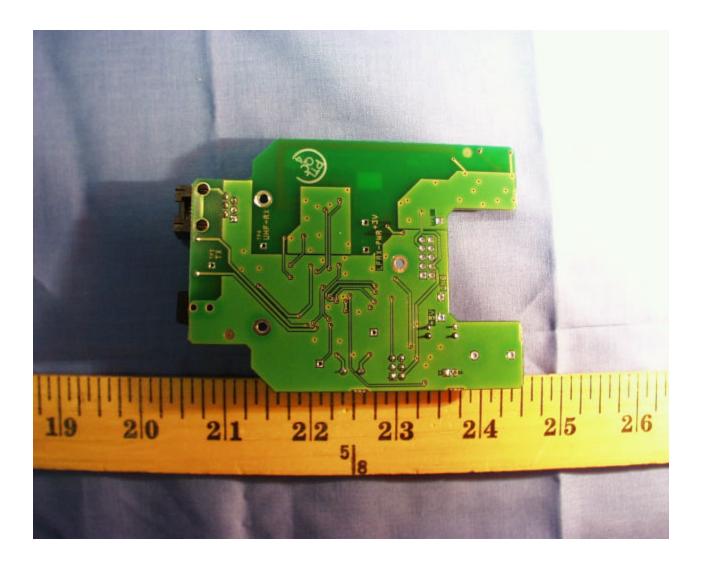
REPORT NO: 03U2119-1 EUT: 307KHz / 433.92 MHz Transceiver DATE: August 04, 2003 FCC ID: HE7TGL



Page 22 of 24



Page 23 of 24



# **END OF REPORT**

Page 24 of 24