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FCC ID: OKP4022

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## Equipment List

|   | DEVICE                                                                                                                | MFGR             | MODEL         | SERNO                    | CAL/CHAR<br>DATE   | DUE DATE<br>or STATUS |
|---|-----------------------------------------------------------------------------------------------------------------------|------------------|---------------|--------------------------|--------------------|-----------------------|
| X | 3-Meter<br>OATS                                                                                                       | TEI              | N/A           | N/A                      | Listed<br>12/22/99 | 12/22/02              |
|   | 3/10-Meter<br>OATS                                                                                                    | TEI              | N/A           | N/A                      | Listed<br>3/26/01  | 3/26/04               |
| X | Receiver, Beige Tower<br>Spectrum Analyzer<br>(Tan)<br><br>RF Preselector<br>(Tan)<br><br>Quasi-Peak Adapter<br>(Tan) | HP               | 8566B Opt 462 | 3138A07786<br>3144A20661 | CAL<br>8/31/01     | 8/31/02               |
| X |                                                                                                                       | HP               | 85685A        | 3221A01400               | CAL<br>8/31/01     | 8/31/02               |
| X |                                                                                                                       | HP               | 85650A        | 3303A01690               | CAL<br>8/31/01     | 8/31/02               |
|   |                                                                                                                       |                  |               |                          |                    |                       |
|   | Receiver, Blue Tower<br>Spectrum Analyzer<br>(Blue)                                                                   | HP               | 8568B         | 2928A04729<br>2848A18049 | CHAR<br>10/22/01   | 10/22/02              |
|   | RF Preselector<br>(Blue)                                                                                              | HP               | 85685A        | 2926A00983               | CHAR<br>10/22/01   | 10/22/02              |
|   | Quasi-Peak Adapter<br>(Blue)                                                                                          | HP               | 85650A        | 2811A01279               | CHAR<br>10/22/01   | 10/22/02              |
|   | Biconnical Antenna                                                                                                    | Electro-Metrics  | BIA-25        | 1171                     | CAL<br>4/26/01     | 4/26/03               |
| X | Biconnical Antenna                                                                                                    | Eaton            | 94455-1       | 1096                     | CAL<br>10/1/01     | 10/1/02               |
|   | Biconnical Antenna                                                                                                    | Eaton            | 94455-1       | 1057                     | CHAR<br>3/15/00    | 3/15/01               |
|   | BiconiLog Antenna                                                                                                     | EMCO             | 3143          | 9409-1043                |                    |                       |
| X | Log-Periodic<br>Antenna                                                                                               | Electro-Metrics  | LPA-25        | 1122                     | CAL<br>10/2/01     | 10/2/02               |
|   | Log-Periodic<br>Antenna                                                                                               | Electro-Metrics  | EM-6950       | 632                      | CHAR<br>10/15/01   | 10/15/02              |
|   | Log-Periodic<br>Antenna                                                                                               | Electro-Metrics  | LPA-30        | 409                      | CHAR<br>10/16/01   | 10/16/02              |
|   | Dipole Antenna<br>Kit                                                                                                 | Electro-Metrics  | TDA-30/1-4    | 152                      | CAL<br>3/21/01     | 3/21/02               |
|   | Dipole Antenna<br>Kit                                                                                                 | Electro-Metrics  | TDA-30/1-4    | 153                      | CHAR<br>11/24/00   | 11/24/01              |
|   | Double-Ridged Horn<br>Antenna                                                                                         | Electro-Metrics  | RGA -180      | 2319                     | CAL<br>12/19/01    | 12/19/02              |
|   | Horn Antenna                                                                                                          | Electro-Metrics  | EM-6961       | 6246                     | CAL<br>3/21/01     | 3/21/02               |
|   | Horn Antenna                                                                                                          | ATM              | 19-443-6R     | None                     | No Cal<br>Required |                       |
|   | Passive Loop Antenna                                                                                                  | EMC Test Systems | EMCO 6512     | 9706-1211                | CHAR<br>7/10/01    | 7/10/02               |

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|   | DEVICE                                | MFGR                             | MODEL       | SERNO      | CAL/CHAR<br>DATE | DUE DATE<br>or STATUS |
|---|---------------------------------------|----------------------------------|-------------|------------|------------------|-----------------------|
|   | Line Impedance<br>Stabilization . . . | Electro-Metrics                  | ANS-25/2    | 2604       | CAL<br>10/9/01   | 10/9/02               |
|   | Line Impedance<br>Stabilization . . . | Electro-Metrics                  | EM-7820     | 2682       | CAL<br>3/16/01   | 3/16/02               |
|   | Termaline Wattmeter                   | Bird Electronic<br>Corporation   | 611         | 16405      | CAL<br>5/25/99   | (5/25/00)             |
|   | Termaline Wattmeter                   | Bird Electronic<br>Corporation   | 6104        | 1926       | CAL<br>12/12/01  | 12/12/02              |
|   | Oscilloscope                          | Tektronix                        | 2230        | 300572     | CHAR<br>2/1/01   | 2/1/02                |
|   | Temperature Chamber                   | Tenney Engineering               | TTRC        | 11717-7    | CHAR<br>1/22/02  | 1/22/03               |
|   | AC Voltmeter                          | HP                               | 400FL       | 2213A14499 | CAL<br>10/9/01   | 10/9/02               |
|   | AC Voltmeter                          | HP                               | 400FL       | 2213A14261 | CHAR<br>10/15/01 | 10/15/02              |
|   | AC Voltmeter                          | HP                               | 400FL       | 2213A14728 | CHAR<br>10/15/01 | 10/15/02              |
| X | Digital Multimeter                    | Fluke                            | 77          | 35053830   | CHAR<br>1/8/02   | 1/8/03                |
|   | Digital Multimeter                    | Fluke                            | 77          | 43850817   | CHAR<br>1/8/02   | 1/8/03                |
|   | Digital Multimeter                    | HP                               | E2377A      | 2927J05849 | CHAR<br>1/8/02   | 1/8/03                |
|   | Multimeter                            | Fluke                            | FLUKE-77-3  | 79510405   | CAL<br>9/26/01   | 9/26/02               |
|   | Peak Power Meter                      | HP                               | 8900C       | 2131A00545 | CHAR<br>1/26/01  | 1/26/02               |
|   | Digital Thermometer                   | Fluke                            | 2166A       | 42032      | CAL<br>1/16/02   | 1/16/03               |
|   | Thermometer                           | Traulsen                         | SK-128      |            | CHAR<br>1/22/02  | 1/22/03               |
| X | Temp/Humidity gauge                   | EXTech                           | 44577F      | E000901    | CHAR<br>1/22/02  | 1/22/03               |
|   | Frequency Counter                     | HP                               | 5352B       | 2632A00165 | CAL<br>11/28/01  | 11/28/02              |
|   | Power Sensor                          | Agilent<br>Technologies          | 84811A      | 2551A02705 | CAL<br>1/26/01   | 1/26/02               |
|   | Injection Probe                       | Fischer Custom<br>Communications | F-120-9A    | 270        | CAL<br>6/1/01    | 6/1/02                |
|   | Service Monitor                       | IFR                              | FM/AM 500A  | 5182       | CAL<br>11/22/00  | 11/22/01              |
|   | Comm. Serv. Monitor                   | IFR                              | FM/AM 1200S | 6593       | CAL<br>11/12/99  | 11/12/00              |
|   | Signal Generator                      | HP                               | 8640B       | 2308A21464 | CAL<br>11/15/01  | 11/15/02              |
|   | Modulation Analyzer                   | HP                               | 8901A       | 3435A06868 | CAL<br>9/5/01    | 9/5/02                |

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|  | DEVICE                                     | MFGR                             | MODEL                    | SERNO         | CAL/CHAR<br>DATE   | DUE DATE<br>or STATUS |
|--|--------------------------------------------|----------------------------------|--------------------------|---------------|--------------------|-----------------------|
|  | Power Line Coupling/<br>Decoupling Network | Fischer Custom<br>Communications | FCC-801-M2-<br>16A       | 01048         | CAL<br>8/29/01     | 8/29/02               |
|  | Power Line Coupling/<br>Decoupling Network | Fischer Custom<br>Communications | FCC-801-M3-<br>16A       | 01060         | CAL<br>8/29/01     | 8/29/02               |
|  | VHF/UHF Current Probe                      | Fischer Custom<br>Communications | F-52                     | 130           | CAL<br>8/30/01     | 8/30/02               |
|  | Passive Impedance Adapter                  | Fischer Custom<br>Communications | FCC-801-150-<br>50-CDN   | 01117 & 01118 | CAL<br>8/29/01     | 8/29/02               |
|  | Radiating Field Coil                       | Fischer Custom<br>Communications | F-1000-4-<br>8/9/10-L-1M | 9859          | CAL<br>10/15/98    | 10/15/99              |
|  | Near Field Probe                           | HP                               | HP11940A                 | 2650A02748    | CHAR<br>2/1/01     | 2/1/02                |
|  | BandReject Filter                          | Lorch Microwave                  | 5BR4-2400/<br>60-N       | Z1            | CHAR<br>3/2/01     | 3/2/02                |
|  | BandReject Filter                          | Lorch<br>Microwave               | 6BR6-2442/<br>300-N      | Z1            | CHAR<br>3/2/01     | 3/2/02                |
|  | BandReject Filter                          | Lorch<br>Microwave               | 5BR4-10525/<br>900-S     | Z1            | CHAR<br>3/2/01     | 3/2/02                |
|  | High Pas Filter                            | Microlab                         | HA-10N                   |               | CHAR<br>10/4/01    | 10/4/02               |
|  | Audio Oscillator                           | HP                               | 653A                     | 832-00260     | CHAR<br>3/1/01     | 3/1/02                |
|  | Frequency Counter                          | HP                               | 5382A                    | 1620A03535    | CHAR<br>3/2/01     | 3/2/02                |
|  | Frequency Counter                          | HP                               | 5385A                    | 3242A07460    | CHAR<br>12/11/01   | 12/11/02              |
|  | Preamplifier                               | HP                               | 8449B-H02                | 3008A00372    | CHAR<br>3/4/01     | 3/4/02                |
|  | Amplifier                                  | HP                               | 11975A                   | 2738A01969    | CHAR<br>3/1/01     | 3/1/02                |
|  | Egg Timer                                  | Unk                              |                          |               | CHAR<br>2/28/01    | 2/28/02               |
|  | Measuring Tape, 20M                        | Kraftixx                         | 0631-20                  |               | CHAR<br>2/28/01    | 2/28/02               |
|  | Measuring Tape, 7.5M                       | Kraftixx                         | 7.5M PROFI               |               | CHAR<br>2/28/01    | 2/28/02               |
|  | EMC Immunity Test<br>System                | Keytek                           | CEMASTER                 | 9810210       |                    |                       |
|  | AC Power Source                            | California<br>Instruments        | 1251RP                   | L05865        |                    |                       |
|  | AC Power Source                            | California<br>Instruments        | PACS-1                   | X71484        |                    |                       |
|  | Isotropic Field Probe                      | Amplifier Research               | FP5000                   | 22839         |                    |                       |
|  | Isotropic Field Probe                      | Amplifier Research               | FP5000                   | 300103        |                    |                       |
|  | Capacitor Clamp                            | Keytek                           | CM-CCL                   | 9811359       | No Cal<br>Required |                       |

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|  | <b>DEVICE</b>      | <b>MFGR</b>           | <b>MODEL</b>  | <b>SERNO</b>   | <b>CAL/CHAR<br/>DATE</b> | <b>DUE DATE<br/>or STATUS</b> |
|--|--------------------|-----------------------|---------------|----------------|--------------------------|-------------------------------|
|  | Amplifier          | Amplifier Research    | 10W1000B      | 23117          | No Cal<br>Required       |                               |
|  | Field Monitor      | Amplifier<br>Research | FM5004        | 22288          | No Cal<br>Required       |                               |
|  | ELF Meter          | F. W. Bell            | 4060          | Not serialized |                          |                               |
|  | Coaxial Cable #51  | Insulated Wire Inc.   | NPS 2251-2880 | Timco #51      | CHAR<br>1/23/02          | 1/23/03                       |
|  | Coaxial Cable #64  | Semflex Inc.          | 60637         | Timco #64      | CHAR<br>1/24/02          | 1/24/03                       |
|  | Coaxial Cable #65  | General Cable Co.     | E9917 RG233/U | Timco #65      | CHAR<br>1/23/02          | 1/23/03                       |
|  | Coaxial Cable #106 | Unknown               | Unknown       | Timco #106     | CHAR<br>1/23/02          | 1/23/03                       |

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## TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above microvolt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz. The ambient temperature of the UUT was 72° with a humidity of 75%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

|            |                                        |
|------------|----------------------------------------|
| Freq (MHz) | METER READING + ACF = FS               |
| 33         | 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m |

ANTENNA - 15.203: In accordance with FCC Rule 15.203 the antenna on this EUT is permanently attached to the EUT.

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NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.227

REQUIREMENTS: CARRIER FREQUENCY WILL NOT EXCEED 80 dBuV/m AT 3M.  
OUT-OF-BAND EMISSIONS SHALL NOT EXCEED:

30 - 88 MHz 40.0 dBuV/M MEASURED AT 3 METERS  
88 - 216 MHz 43.5 dBuV/M  
216 - 960 MHz 46.0 dBuV/M  
ABOVE 960 MHz 54.0 dBuV/M

TEST DATA:

| Emission<br>Frequency<br>MHz | Meter<br>Reading<br>dBuV | Ant.<br>Polarity | Coax<br>Loss<br>dB | Correction<br>Factor<br>dB | Field<br>Strength<br>dBuV/m | Margin<br>dB |
|------------------------------|--------------------------|------------------|--------------------|----------------------------|-----------------------------|--------------|
| 27.15                        | 40.0                     | H                | 0.45               | 11.75                      | 52.06                       | 27.94        |
| 27.15                        | 65.0                     | V                | 0.45               | 11.75                      | 77.06                       | 2.94         |
| 54.30                        | 24.8                     | V                | 0.90               | 9.60                       | 35.24                       | 4.76         |
| 81.40                        | 22.6                     | V                | 1.10               | 12.13                      | 35.79                       | 4.21         |
| 108.60                       | 22.5                     | V                | 1.30               | 9.32                       | 33.05                       | 10.45        |
| 108.60                       | 15.8                     | V                | 1.30               | 9.32                       | 26.35                       | 17.15        |
| 135.70                       | 14.0                     | H                | 1.40               | 13.73                      | 29.07                       | 14.43        |
| 135.70                       | 15.0                     | V                | 1.40               | 13.73                      | 30.07                       | 13.43        |
| 162.80                       | 15.0                     | V                | 1.60               | 16.78                      | 33.28                       | 10.22        |
| 162.80                       | 12.9                     | H                | 1.60               | 16.78                      | 31.18                       | 12.32        |
| 190.00                       | 13.2                     | H                | 1.80               | 14.23                      | 29.15                       | 14.35        |
| 190.00                       | 16.1                     | V                | 1.80               | 14.23                      | 32.05                       | 11.45        |
| 217.10                       | 12.0                     | V                | 2.00               | 11.39                      | 25.26                       | 20.74        |
| 217.10                       | 7.9                      | H                | 2.00               | 11.39                      | 21.16                       | 24.84        |
| 244.30                       | 16.5                     | V                | 2.00               | 11.82                      | 30.30                       | 15.70        |
| 244.30                       | 7.1                      | H                | 2.00               | 11.82                      | 20.90                       | 25.10        |
| 271.40                       | 9.4                      | H                | 2.20               | 13.75                      | 25.24                       | 20.76        |
| 271.40                       | 12.2                     | V                | 2.20               | 13.75                      | 28.04                       | 17.96        |

SAMPLE CALCULATION:  $FSdBuV/m = MR(dBuV) + ACFdB$ .

TEST PROCEDURE: The procedure used was ANSI STANDARD C63.4-1992. The spectrum was scanned from 30 MHz to 1000 MHz. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The UUT was tested in 3 orthogonal planes.

TEST RESULTS: THE UNIT DOES MEET THE FCC REQUIREMENTS.

PERFORMED BY: MARIO deARANZETA

DATE: MAY 13, 2002

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APPLICANT: WOW WEE LIMITED  
FCC ID: OKP4022  
NAME OF TEST: Occupied Bandwidth  
RULES PART NO.: 15.227  
REQUIREMENTS: The field strength of any emissions appearing outside the 26.96-27.28 MHz band shall not exceed the general radiated emission limits in (15.209).

THE GRAPH ON THE FOLLOWING PAGE REPRESENTS THE WORSE CASE OCCUPIED BANDWIDTH EMISSIONS FOR THIS DEVICE.

METHOD OF MEASUREMENT: A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was taken. The vertical scale is set to 10 dB per division. The horizontal scale is set to 5 kHz per division.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: MARIO deARANZETA

