



**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C REQUIREMENT**

**TEST REPORT  
*FOR***

**903MHz RF WIRELESS BELT CLIP BASE STATION**

**FCC ID: NQ2AM1032**

**MODEL NO: AM1032**

**REPORT NO: 01U1110-1**

**DECEMBER 28, 2001**

*Prepared for*  
**ADVANCED MOBILE SOLUTIONS, INC.  
375 RHEEM BLVD.,  
MORAGA, CA 94556, U.S.A.**

*Prepared by*  
**COMPLIANCE CERTIFICATION SERVICES  
561F MONTEREY ROAD  
MORGAN HILL, CA 95037, U.S.A.  
TEL: (408) 463-0885  
FAX: (408) 463-0888**

**NVLAQ<sup>®</sup>**  
**LAB CODE:200065-0**

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**1. VERIFICATION OF COMPLIANCE**

COMPANY NAME : ADVANCED MOBILE SOLUTIONS, INC.  
375 RHEEM BLVD.,  
MORAGA, CA 94556, U.S.A.


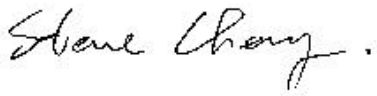
CONTACT PERSON : SEAN KIM / DIRECTOR OF RETAIL SALES

TELEPHONE NO : (925) 377-3200

EUT DESCRIPTION : 903MHz RF WIRELESS BELT CLIP BASE STATION

MODEL NAME : AM1032

DATE TESTED : DECEMBER 28, 2001

| LIMITS APPLY TO: FCC PART 15 SECTION 15.249  |                         |
|--|-------------------------|
| TECHNICAL LIMITS   | TEST RESULT             |
| Radiated Emission of fundamental Frequency   | No non-compliance found |
| Radiated Emission of Harmonic Frequency  | No non-compliance found |
| Radiated Emission Outside the Band   | No non-compliance found |
| LIMITS APPLY TO: FCC PART 15 SECTION 15.209  |                         |
| Radiated Emission Digital Device   | No non-compliance found |
| LIMITS APPLY TO: FCC PART 15 SECTION 15.207  |                         |
| AC Line Conducted Emission   | N/A                     |
| <p>The above equipment was tested by Compliance Certification Services Inc. for compliance with the requirements set forth in CFR 47 PART 15 SUBPART C. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.</p> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <br/> <hr/> Test by:<br/> THU CHAN / EMC SENIORE ENGINEER<br/> COMPLIANCE CERTIFICATION SERVICES </div> <div style="text-align: center;"> <br/> <hr/> Review by:<br/> STEVE CHENG / ENGINEERING MANAGER<br/> COMPLIANCE CERTIFICATIONS SERVICES </div> </div> <p><b>Warning:</b> 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 revision section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.</p> |                         |

**2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)**

|                     |                             |
|---------------------|-----------------------------|
| CHASSIS TYPE        | <b>PLASTIC</b>              |
| Frequency Range     | <b>903 MHz</b>              |
| Antenna Requirement | <b>Permanently Built-in</b> |
| Power requirement   | <b>1.5Vdc AAA battery</b>   |

**3. TEST LOCATION**

All emissions tests were performed at:

Compliance Consulting Services  
561F Monterey Road  
Morgan Hill, CA 95087

CCS has site descriptions on file with the FCC for 10 and 3 meter site configurations. CCS is a NVLAP accredited facility.

**4. EQUIPMENT MODIFICATIONS**

To achieve compliance Levels, the following change(s) were made during compliance testing:

**No changes were required in order to achieve compliance to class B levels.**

## 5. TEST RESULT SUMMARY

### Radiated Emissions (Fundamental Emission Filed Strength)

Test Requirement: 15.249(A)(B)

#### Measurement Equipment Used:

HP Spectrum Analyzer / 8566B (Cal Due: 5/4/02)

HP Spectrum Display / 85662A (Cal Due: 5/4/02)

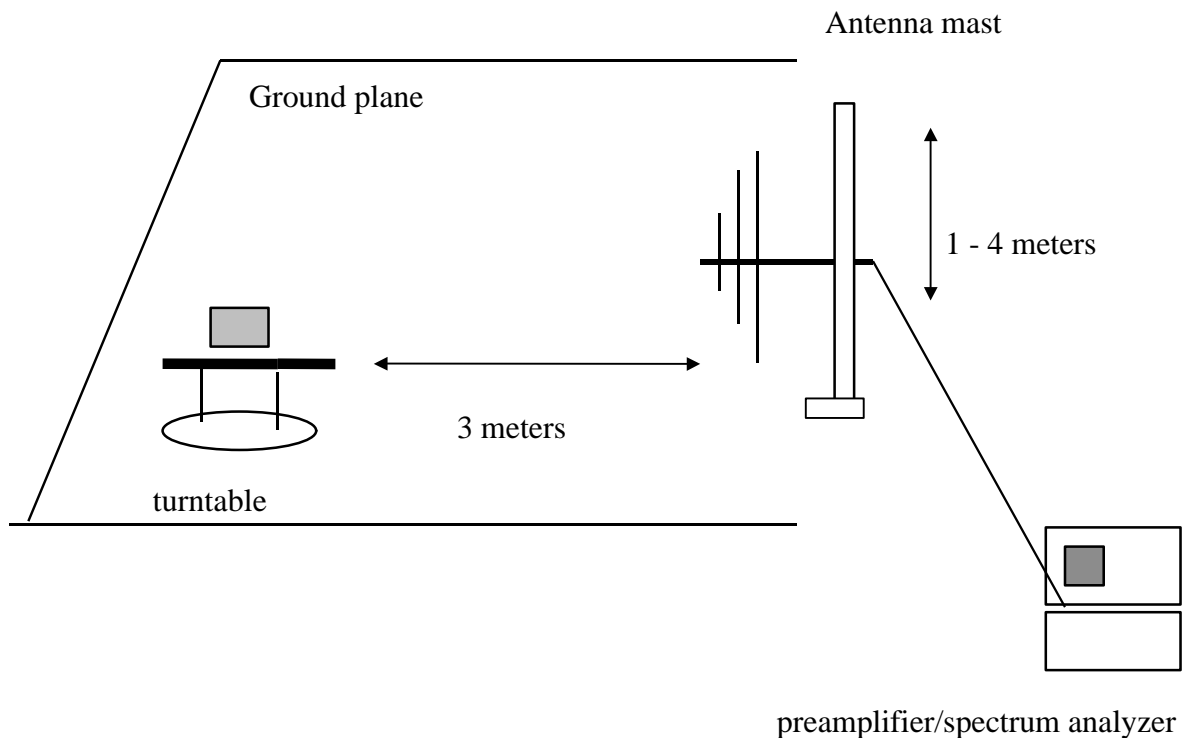
HP Quasi-Peak Detector / 85650A (Cal Due: 5/4/02)

HP Pre-Amp (P5) / 8447D (Cal Due: 8/10/02)

EMCO LP Antenna / 3146 (Cal Due: 8/2/02)

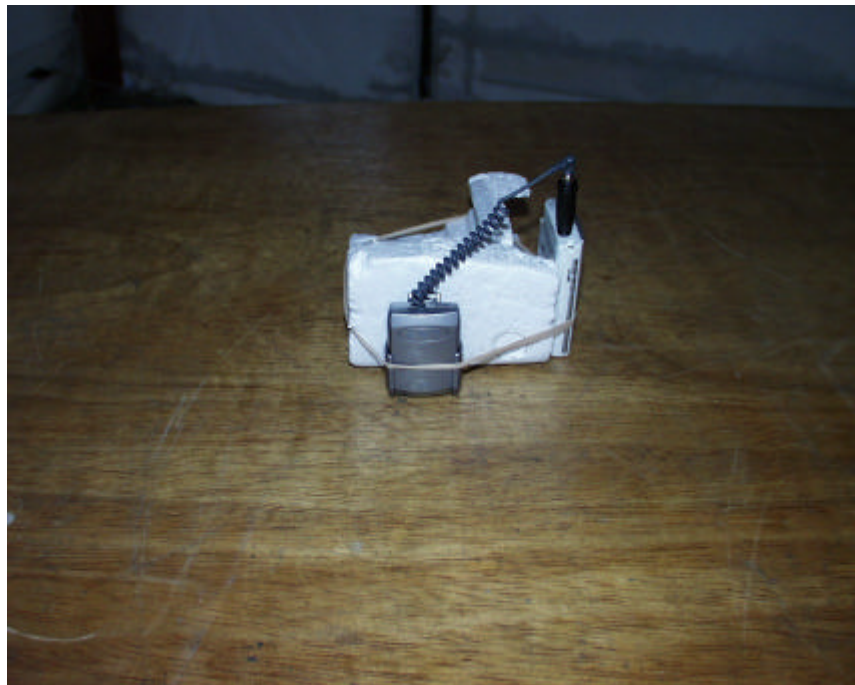
EATON Biconical Antenna / 94455-1 (Cal Due: 8/2/02)

#### TEST SETUP FOR MEASUREMENT OF FUNDAMENTAL FREQUENCY



**Test Procedures**

- 1) Place the EUT on the turntable as shown. The EUT was placed as close as possible to the center of the turntable with the axis of rotation going through the EUT antenna when in vertical or horizontal polarization. Activated Eut to transmit.
- 2) The Bilog search antenna was place at a distance of 3 meters. The antenna was raised and lowered and the EUT rotated on the turntable to produce maximum emission levels on the spectrum analyzer.
- 3) The EUT (Belt-Clip) was placed standing-up (x-axis), laying down right side (y-axis) and laying down facing up (z-axis). Step (1) and (2) were repeated for each orientation.

**Test Setup Photo & Results:**

**X-Position**



**Y-Position**



**Z-Position**



FCC, VCCI, CISPR, CE, AUSTEL, NZ  
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001  
PHONE: (408) 463-0885 FAX: (408) 463-0888

**Project #:** 01U1111-1  
**Report #:** 011219C1  
**Date & Time:** 12/19/01 12:24 PM  
**Test Engr:** Thu Chan

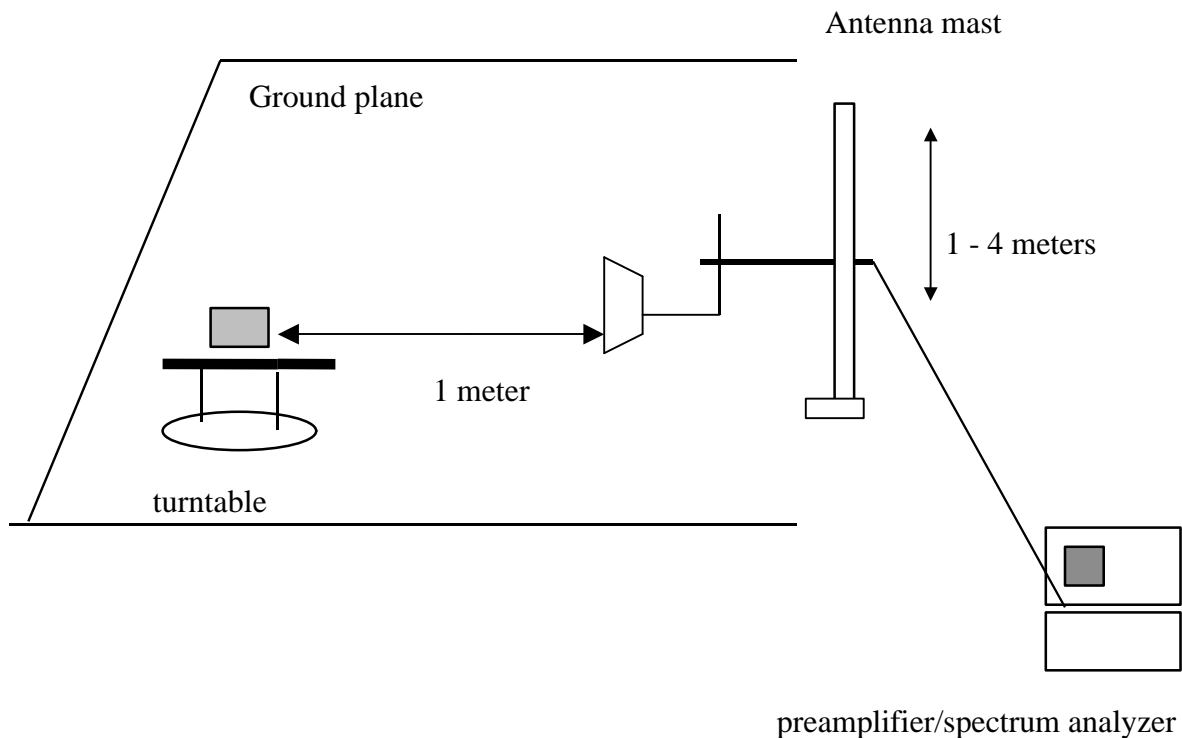
**Company:** Advanced Mobile Solutions  
**EUT Description:** 903MHz / 927MHz RF Wireless Hands-Free Headset  
**Test Configuration :** EUTs only (Belt-Clip & Headset)  
**Type of Test:** FCC 15.249  
**Mode of Operation:** Continued communication between two units

☐ A-Site ☐ B-Site ☒ C-Site ☐ F-Site

| Freq.<br>(MHz)            | Reading<br>(dBuV) | AF<br>(dB) | Closs<br>(dB) | Pre-amp<br>(dB) | Level<br>(dBuV/m) | Limit<br>FCC B | Margin<br>(dB) | Pol<br>(H/V) | Az<br>(Deg) | Height<br>(Meter) | Mark<br>(P/Q/A) |
|---------------------------|-------------------|------------|---------------|-----------------|-------------------|----------------|----------------|--------------|-------------|-------------------|-----------------|
| X-Position Standup:       |                   |            |               |                 |                   |                |                |              |             |                   |                 |
| 903.07                    | 86.20             | 21.75      | 4.96          | 27.52           | 85.39             | 93.98          | -8.58          | 3mV          | 180.00      | 1.20              | P               |
| 927.06                    | 80.50             | 22.05      | 5.00          | 27.43           | 80.12             | 93.98          | -13.85         | 3mV          | 180.00      | 1.00              | P               |
| 927.06                    | 69.00             | 22.84      | 5.00          | 27.43           | 69.41             | 93.98          | -24.57         | 3mH          | 180.00      | 1.30              | P               |
| 903.07                    | 74.20             | 22.50      | 4.96          | 27.52           | 74.15             | 93.98          | -19.83         | 3mH          | 180.00      | 1.20              | P               |
| Y-Position Side Lay down: |                   |            |               |                 |                   |                |                |              |             |                   |                 |
| 903.07                    | 77.00             | 22.50      | 4.96          | 27.52           | 76.95             | 93.98          | -17.03         | 3mH          | 180.00      | 1.00              | P               |
| 927.06                    | 74.50             | 22.84      | 5.00          | 27.43           | 74.91             | 93.98          | -19.07         | 3mH          | 180.00      | 1.00              | P               |
| 927.06                    | 66.00             | 22.05      | 5.00          | 27.43           | 65.62             | 93.98          | -28.36         | 3mV          | 180.00      | 1.00              | P               |
| 903.07                    | 79.00             | 21.75      | 4.96          | 27.52           | 78.19             | 93.98          | -15.78         | 3mV          | 180.00      | 1.20              | P               |
| Z-Position Back Lay Down: |                   |            |               |                 |                   |                |                |              |             |                   |                 |
| 903.07                    | 74.00             | 21.75      | 4.96          | 27.52           | 73.19             | 93.98          | -20.78         | 3mV          | 180.00      | 2.00              | P               |
| 927.05                    | 66.00             | 22.05      | 5.00          | 27.43           | 65.62             | 93.98          | -28.36         | 3mV          | 180.00      | 1.00              | P               |
| 927.05                    | 74.00             | 22.84      | 5.00          | 27.43           | 74.41             | 93.98          | -19.57         | 3mH          | 180.00      | 1.50              | P               |
| 903.07                    | 81.50             | 22.50      | 4.96          | 27.52           | 81.45             | 93.98          | -12.53         | 3mH          | 180.00      | 1.00              | P               |
| Total data # 12<br>V.2c   |                   |            |               |                 |                   |                |                |              |             |                   |                 |

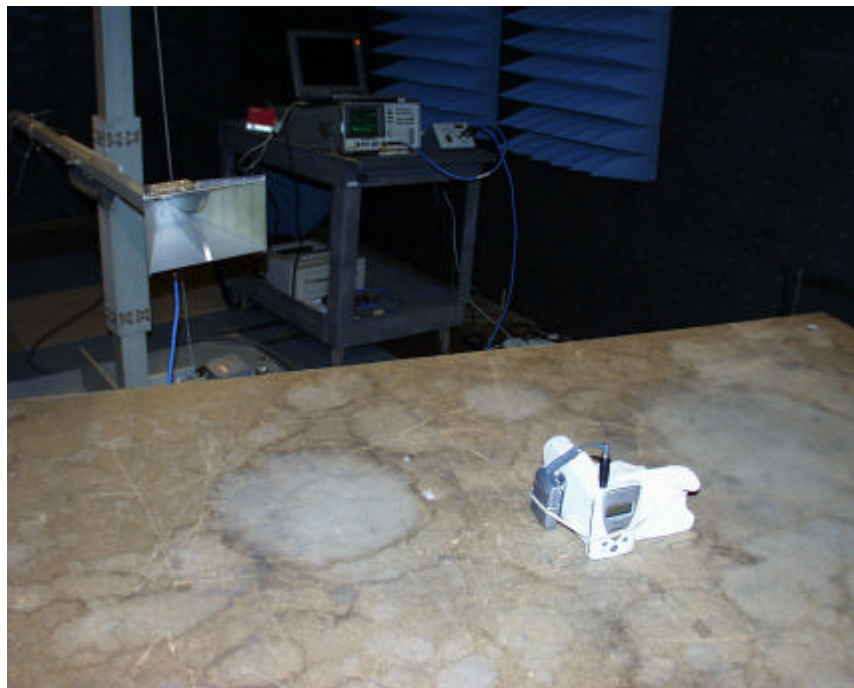
**Radiated Emissions (Harmonics and Spurious Emission)****Test Requirement: 15.249(A)(B)(C)****Measurement Equipment Used:****HP EMC Receiver / 8593EM (Cal Due: 6/20/02)****EMCO Horn Antenna / 3115 (Cal Due: 5/4/02)****MITEQ Pre-Amp (1 – 26GHz) / NSP2600-44 (Cal Due: 4/12/02)****FLEXCO SMA cable / 20761; 16ft. Cable (loss: .9dB/ft @ 26GHz)**

TEST SETUP FOR MEASUREMENT OF FUNDAMENTAL HARMONICS  
& OUT-OF-BAND ABOVE 1GHz



**Test Procedures**

1. The EUT was placed on a wooden turntable. The search antenna was placed at 1 meter from the EUT.
2. The turntable was slowly rotated to locate the direction of maximum emission. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations.
3. The EUT was placed standing-up (x-axis), laying down right side (y-axis) and laying down facing up (z-axis). Step (1) and (2) were repeated for each orientation.

**Test Setup Photo & Results:**

12/27/01 FCC Measurement  
Compliance Certification Services, Morgan Hill Open Field Site

Company: Advanced Mobile Solutions  
EUT: 903MHz RF Wireless Hands-Free Headset  
M/N: AM1032 (Belt-Clip)

Equipment for 1-26.5 GHz

HP8593EM EMC Receiver  
MROq NSP2600-44 Preamp  
EMCO 3115 Antenna  
Cable: 16.0 feet

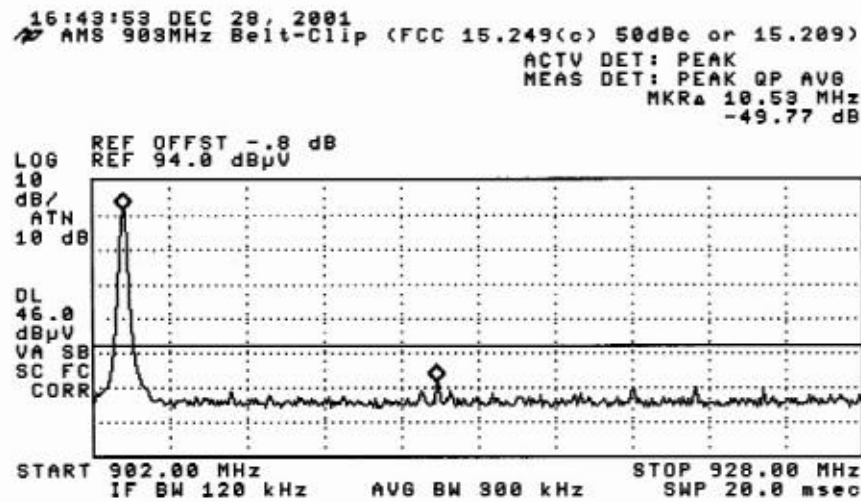
Average Measurements:  
1 MHz Resolution Bandwidth  
10Hz Video Bandwidth

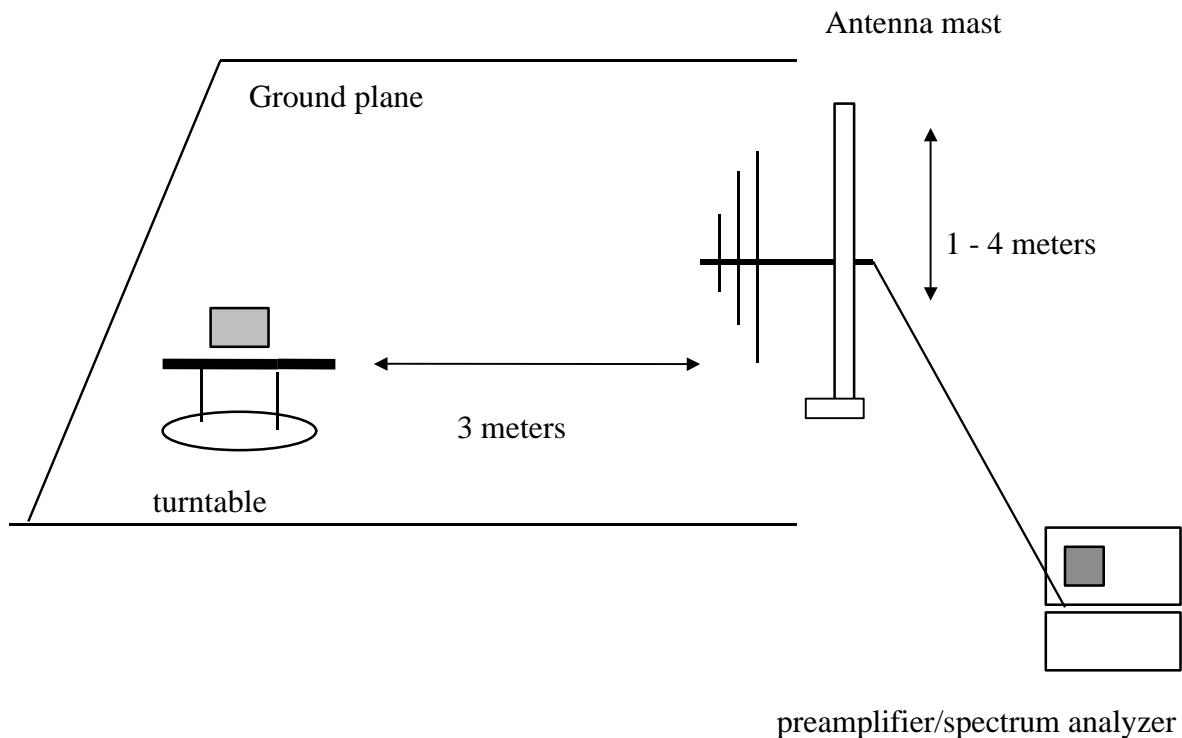
Peak Measurements:  
1MHz Resolution Bandwidth  
1MHz Video Bandwidth

| f     | Dist | Read Peak | Read Avg | AF   | CL  | Amp   | D Corr | HPF | Peak  | Avg   | Peak Lim | Avg Lim | Peak Mar | Avg Mar | Notes       |
|-------|------|-----------|----------|------|-----|-------|--------|-----|-------|-------|----------|---------|----------|---------|-------------|
| GHz   | feet | dBV       | dBV      | dBm  | dB  | dB    | dB     |     | dBV/m | dBV/m | dBV/m    | dBV/m   | dB       | dB      |             |
| 1.805 | 3.3  | 56.3      | 54.3     | 26.2 | 3.6 | -42.5 | -9.5   | 0.0 | 34.0  | 32.0  | 114.0    | 94.0    | -80.0    | -62.0   | V           |
| 1.805 | 3.3  | 47.0      | 39.6     | 26.2 | 3.6 | -42.5 | -9.5   | 0.0 | 24.7  | 17.3  | 114.0    | 94.0    | -89.3    | -76.7   | H           |
| 2.709 | 3.3  | 55.0      | 51.5     | 28.9 | 4.3 | -42.3 | -9.5   | 0.0 | 38.4  | 32.9  | 74.0     | 64.0    | -37.8    | -21.1   | V           |
| 2.709 | 3.3  | 56.0      | 54.0     | 28.9 | 4.3 | -42.3 | -9.5   | 0.0 | 37.4  | 35.4  | 74.0     | 64.0    | -36.6    | -18.6   | H           |
| 3.612 | 3.3  | 46.5      | 38.5     | 31.8 | 5.1 | -42.0 | -9.5   | 0.0 | 31.9  | 23.9  | 74.0     | 64.0    | -42.1    | -30.1   | V           |
| 3.612 | 3.3  | 45.6      | 38.0     | 31.9 | 5.1 | -42.0 | -9.5   | 0.0 | 20.9  | 23.4  | 74.0     | 64.0    | -43.1    | -30.6   | H           |
| 4.515 | 3.3  | 44.0      | 34.0     | 32.0 | 5.9 | -41.9 | -9.5   | 0.0 | 30.5  | 20.5  | 74.0     | 64.0    | -43.5    | -33.5   | V           |
| 4.515 | 3.3  | 44.3      | 34.4     | 32.0 | 5.9 | -41.9 | -9.5   | 0.0 | 30.8  | 20.9  | 74.0     | 64.0    | -43.2    | -33.1   | H           |
| 5.419 | 3.3  | 42.5      | 31.5     | 34.0 | 6.6 | -41.7 | -9.5   | 0.0 | 21.9  | 20.9  | 74.0     | 64.0    | -42.1    | -33.1   | V           |
| 5.419 | 3.3  | 43.0      | 32.0     | 34.0 | 6.6 | -41.7 | -9.5   | 0.0 | 32.4  | 21.4  | 74.0     | 64.0    | -41.6    | -32.6   | H           |
| 6.321 | 3.3  | 42.5      | 32.0     | 34.2 | 7.2 | -41.5 | -9.5   | 0.0 | 32.8  | 22.3  | 74.0     | 64.0    | -41.2    | -31.7   | Noise Floor |
| 7.224 | 3.3  | 44.6      | 34.5     | 36.5 | 7.7 | -41.2 | -9.5   | 0.0 | 39.1  | 28.1  | 74.0     | 64.0    | -35.9    | -26.9   | Noise Floor |
| 8.127 | 3.3  | 45.2      | 34.5     | 37.0 | 8.2 | -40.3 | -9.5   | 0.0 | 40.5  | 28.9  | 74.0     | 64.0    | -33.4    | -24.1   | Noise Floor |
| 9.030 | 3.3  | 45.2      | 34.5     | 37.9 | 8.7 | -39.4 | -9.5   | 0.0 | 43.0  | 32.3  | 74.0     | 64.0    | -31.0    | -21.7   | Noise Floor |

| f    | Measurement Frequency | Amp    | Preamp Gain                    | Avg Lim | Average Field Strength Limit |
|------|-----------------------|--------|--------------------------------|---------|------------------------------|
| Dist | Distance to Antenna   | D Corr | Distance Correct to 3 meters   | Pk Lim  | Peak Field Strength Limit    |
| Read | Analyzer Reading      | Avg    | Average Field Strength @ 3 m   | Avg Mar | Margin vs. Average Limit     |
| AF   | Antenna Factor        | Peak   | Calculated Peak Field Strength | Pk Mar  | Margin vs. Peak Limit        |
| CL   | Cable Loss            | HPF    | High Pass Filter               |         |                              |

### Belt-Clip Harmonic & Spurious Emissions

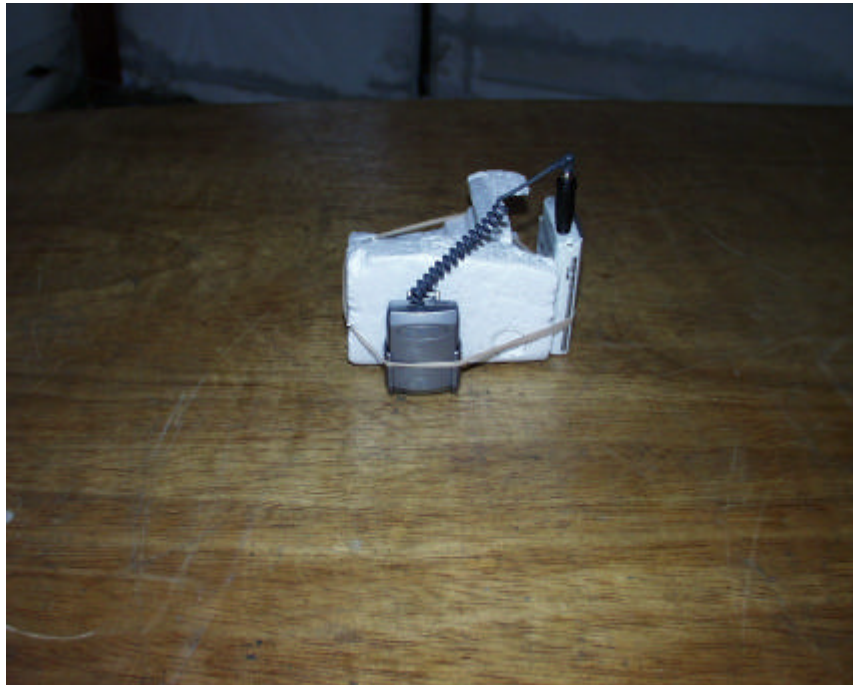


**Radiated Emissions****Test Requirement: 15.209****Measurement Equipment Used:****HP Spectrum Analyzer / 8566B (Cal Due: 5/4/02)****HP Spectrum Display / 85662A (Cal Due: 5/4/02)****HP Quasi-Peak Detector / 85650A (Cal Due: 5/4/02)****HP Pre-Amp (P5) / 8447D (Cal Due: 8/10/02)****EMCO LP Antenna / 3146 (Cal Due: 8/2/02)****EATON Biconical Antenna / 94455-1 (Cal Due: 8/2/02)****TEST SETUP FOR MEASUREMENT OF DIGITAL DEVICE**

**Test Procedures**

- 1) Place the EUT on the turntable as shown. The EUT was placed as close as possible to the center of the turntable with the axis of rotation going through the EUT antenna when in vertical or horizontal polarization. Activated Eut to transmit.
- 2) The Bilog search antenna was place at a distance of 3 meters. The antenna was raised and lowered and the EUT rotated on the turntable to produce maximum emission levels on the spectrum analyzer.

The EUT was placed standing-up (x-axis, worst position).

**Test Setup Photo & Results:**



FCC, VCCI, CISPR, CE, AUSTEL, NZ  
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001  
PHONE: (408) 463-0885 FAX: (408) 463-0888

**Project #:** 01U1111-1  
**Report #:** 011219C1  
**Date & Time:** 12/19/01 12:24 PM  
**Test Engr:** Thu Chan

**Company:** Advanced Mobile Solutions  
**EUT Description:** 903MHz / 927Mhz RF Wireless Hands-Free Headset  
**Test Configuration :** EUT only  
**Type of Test:** FCC Class B  
**Mode of Operation:** Continued communication between two units

☐ A-Site ☐ B-Site ☒ C-Site ☐ F-Site **6 Worst Data** **Descending**

| Freq.<br>(MHz)  | Reading<br>(dBuV) | AF<br>(dB) | Closs<br>(dB) | Pre-amp<br>(dB) | Level<br>(dBuV/m) | Limit<br>FCC_B | Margin<br>(dB) | Pol<br>(H/V) | Az<br>(Deg) | Height<br>(Meter) | Mark<br>(P/Q/A) |
|---|-------------------|------------|---------------|-----------------|-------------------|----------------|----------------|--------------|-------------|-------------------|-----------------|
| 912.55  | 44.00             | 21.87      | 4.98          | 27.48           | 43.36             | 46.00          | -2.64          | 3mV          | 180.00      | 1.00              | P               |
| 941.55  | 39.00             | 22.23      | 5.03          | 27.38           | 38.88             | 46.00          | -7.12          | 3mV          | 180.00      | 1.00              | P               |
| 912.63  | 40.00             | 22.64      | 4.98          | 27.48           | 40.13             | 46.00          | -5.87          | 3mH          | 180.00      | 1.00              | QP              |
| 36.75   | 49.00             | 11.37      | 0.82          | 27.55           | 33.65             | 40.00          | -6.36          | 3mV          | 180.00      | 1.00              | P               |
| 36.75   | 42.00             | 15.33      | 0.82          | 27.55           | 30.61             | 40.00          | -9.39          | 3mH          | 180.00      | 3.20              | P               |
| 46.78   | 42.00             | 14.05      | 0.88          | 27.51           | 29.42             | 40.00          | -10.58         | 3mH          | 180.00      | 3.20              | P               |
| No other emission were found within 20dB FCC class B limits up to 1GHz. |                   |            |               |                 |                   |                |                |              |             |                   |                 |
| Total data # 6  |                   |            |               |                 |                   |                |                |              |             |                   |                 |
| V.2c  |                   |            |               |                 |                   |                |                |              |             |                   |                 |

**AC Line Conducted Emissions**

**Test Requirement: 15.207**

**Not applicable. DC battery operating only.**