



TEST SERVICES

**EMC EVALUATION OF THE
M/A-COM
OPENSKY PORTABLE RADIO
MODEL P-801T
IN ACCORDANCE WITH THE
FCC PART 90 CERTIFICATION**

Prepared For:

**M/A-COM
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ATTENTION: DAVID GRIBBLE**

Prepared By:

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77 DRAGON COURT
WOBURN, MASSACHUSETTS 01888**

Date:

APRIL 17, 2000

Test Report Number:

EMI2547.US.00

Test Technician or Engineer: _____

CTS Approved Signatory: _____

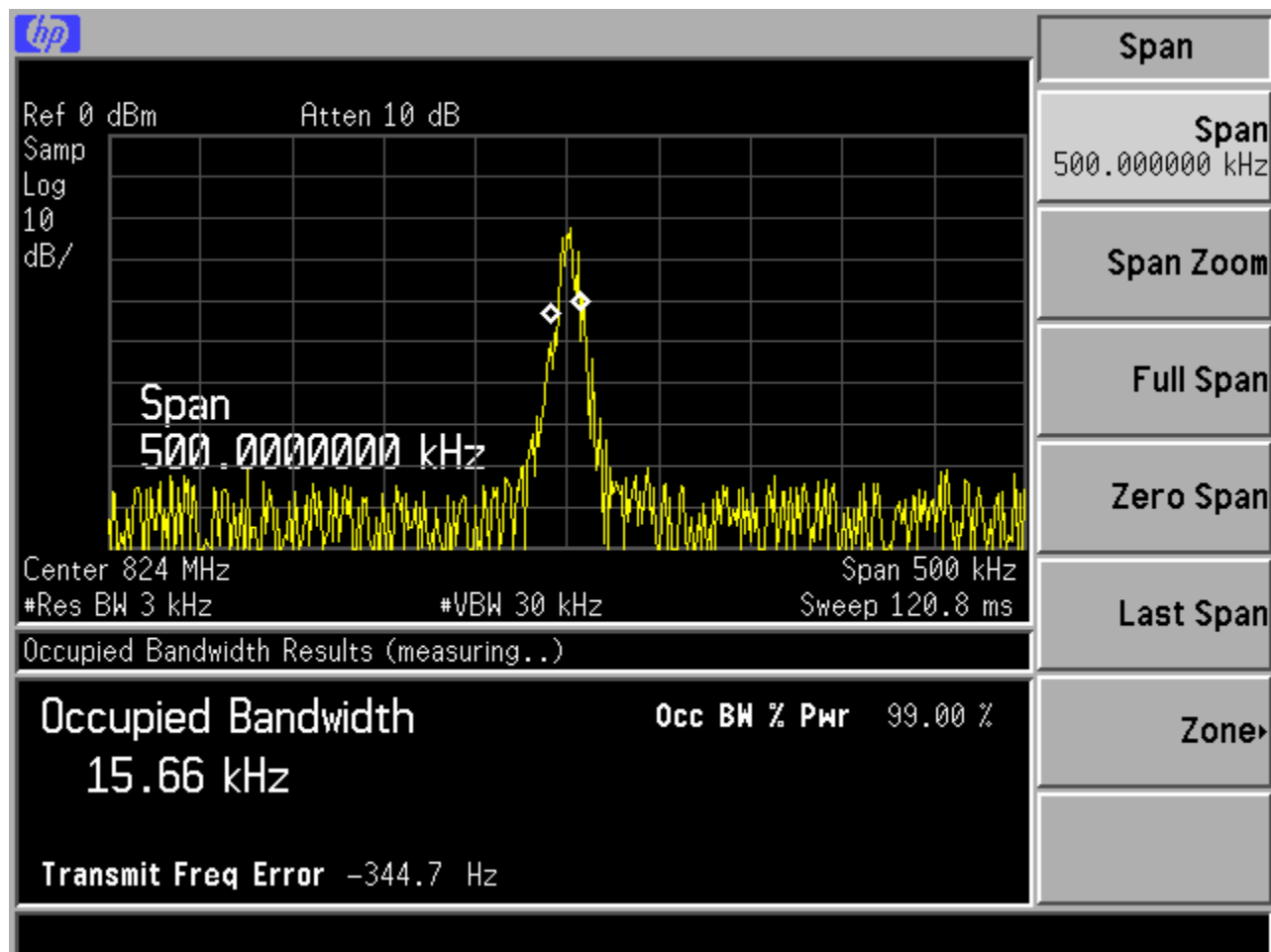
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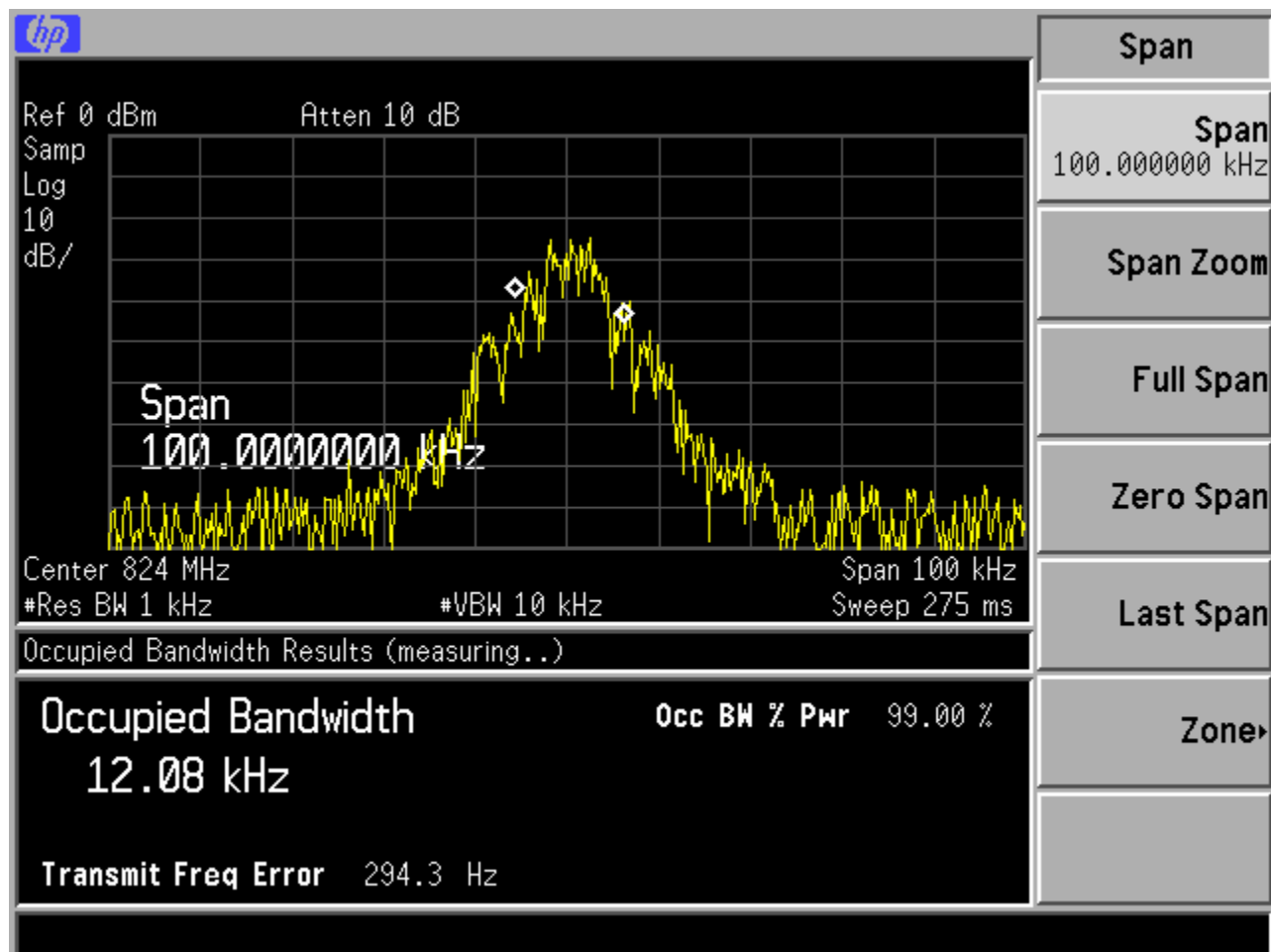
**APPENDIX A
TEST DATA**

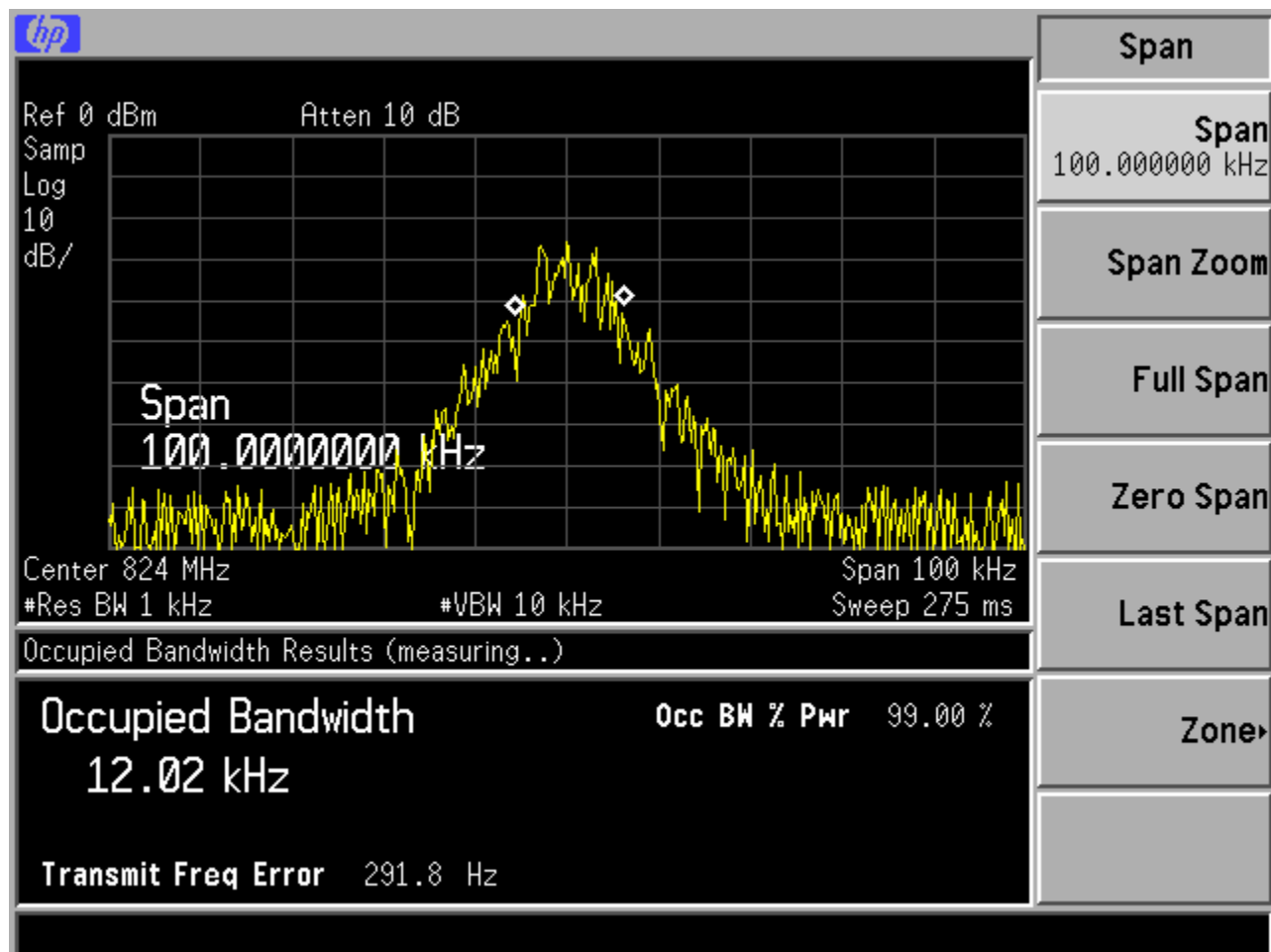
OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM
EQUIPMENT: OPENSKY P-801T PORTABLE RADIO
TESTED BY: ROBERT FOSTER

DATE: 04/13/000
TEST NUMBER: N/A
OPERATING MODE: DIGITAL CHANNEL 830



OCCUPIED BANDWIDTH**CUSTOMER: M/A-COM****EQUIPMENT: OPENSky P-801T PORTABLE RADIO****TESTED BY: ROBERT FOSTER****DATE: 04/13/000****TEST NUMBER: N/A****OPERATING MODE: ANALOG CHANNEL 830**

OCCUPIED BANDWIDTH**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P-801T PORTABLE RADIO****TESTED BY: ROBERT FOSTER****DATE: 04/13/000****TEST NUMBER: N/A****OPERATING MODE: ANALOG CHANNEL 830**

FREQUENCY STABILITY
Temperature vs. Frequency**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P-801T PORTABLE RADIO****TESTED BY: ROBERT FOSTER****TEST SPEC: PART 2.1055****DATE: 04/13/000****TEST NUMBER: N/A****OPERATING MODE: ANALOG CHANNEL 830****Center Frequency 823.9895 MHz at 20°C**

| Temperature | Frequency MHz |
|-------------|---------------|
| -30°C | 823.9894 |
| -20°C | 823.9895 |
| -10°C | 823.9894 |
| 0°C | 823.9894 |
| 10°C | 823.9895 |
| 20°C | 823.9895 |
| 30°C | 823.9896 |
| 40°C | 823.9895 |
| 50°C | 823.9895 |

Maximum Deviation 200Hz at 30°C

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P-801T PORTABLE RADIO

STAND ALAONE WITH 1/2 WAVE ANTENNA

TESTED BY: B. TORRENCE

OPERATING MODE:

BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
1MHZ (PEAK)

FREQUENCY RANGE: 30MHZ – 10 GHZ

DATE: 03/20/00

TEST NUMBER: 1

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN

TEST SPEC: FCC PART 15 & 90 OPEN FIELD

EMISSIONS

PROCEDURE: ANSI C63.4

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 30 | - | 5 | 3 | 0 | V | 2.2 | 7.2 | 40 |
| 100 | - | 5 | 2 | 0 | V | 10.1 | 15.1 | 43.5 |
| 200 | - | 7 | 2 | 0 | V | -4 | 3 | 43.5 |
| 300 | - | 7 | 1 | 0 | V | -2.1 | 4.9 | 46 |
| 400 | - | 7 | 1 | 0 | V | 3.5 | 10.5 | 46 |
| 500 | - | 7 | 1 | 0 | V | 3.7 | 10.7 | 46 |

Note: No signals detected. All signals recorded are noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P-801T PORTABLE RADIO

STAND ALAONE WITH 1/4 WAVE ANTENNA

TESTED BY: B. TORRENCE

OPERATING MODE:

BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
1MHZ (PEAK)

FREQUENCY RANGE: 30MHZ – 10 GHZ

DATE: 03/20/00

TEST NUMBER: 2

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN

TEST SPEC: FCC PART 15 & 90 OPEN FIELD

EMISSIONS

PROCEDURE: ANSI C63.4

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 30 | - | 5 | 3 | 0 | V | 2.2 | 7.2 | 40 |
| 100 | - | 5 | 2 | 0 | V | 10.1 | 15.1 | 43.5 |
| 200 | - | 7 | 2 | 0 | V | -4 | 3 | 43.5 |
| 300 | - | 7 | 1 | 0 | V | -2.1 | 4.9 | 46 |
| 400 | - | 7 | 1 | 0 | V | 3.5 | 10.5 | 46 |
| 500 | - | 7 | 1 | 0 | V | 3.7 | 10.7 | 46 |

Note: No signals detected. All signals recorded are noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

**** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)**

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM
EQUIPMENT: OPENSKY P-801T PORTABLE RADIO
 WITH 1/2 WAVE ANTENNA AND PROGRAMING CABLE
TESTED BY: B. TORRENCE
OPERATING MODE:

DATE: 03/20/00
TEST NUMBER: 3

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN
TEST SPEC: FCC PART 15 & 90 OPEN FIELD
 EMISSIONS
PROCEDURE: ANSI C63.4

BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
 1MHZ (PEAK)
FREQUENCY RANGE: 30MHZ – 10 GHZ

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 30 | - | 5 | 3 | 0 | V | 2.2 | 7.2 | 40 |
| 100 | - | 5 | 2 | 0 | V | 10.1 | 15.1 | 43.5 |
| 200 | - | 7 | 2 | 0 | V | -4 | 3 | 43.5 |
| 300 | - | 7 | 1 | 0 | V | -2.1 | 4.9 | 46 |
| 400 | - | 7 | 1 | 0 | V | 3.5 | 10.5 | 46 |
| 500 | - | 7 | 1 | 0 | V | 3.7 | 10.7 | 46 |

Note: No signals detected. All signals recorded are noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P-801T PORTABLE RADIO

1/2 WAVE ANTENNA AND EXTERNAL MICROPHONE

TESTED BY: B. TORRENCE

OPERATING MODE:

**BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
1MHZ (PEAK)**

FREQUENCY RANGE: 30MHZ – 10 GHZ

DATE: 03/20/00

TEST NUMBER: 4

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN

TEST SPEC: FCC PART 15 & 90 OPEN FIELD

EMISSIONS

PROCEDURE: ANSI C63.4

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 30 | - | 5 | 3 | 0 | V | 2.2 | 7.2 | 40 |
| 100 | - | 5 | 2 | 0 | V | 10.1 | 15.1 | 43.5 |
| 200 | - | 7 | 2 | 0 | V | -4 | 3 | 43.5 |
| 300 | - | 7 | 1 | 0 | V | -2.1 | 4.9 | 46 |
| 400 | - | 7 | 1 | 0 | V | 3.5 | 10.5 | 46 |
| 500 | - | 7 | 1 | 0 | V | 3.7 | 10.7 | 46 |

Note: No signals detected. All signals recorded are noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

**** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)**

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P-801T PORTABLE RADIO

With ½ wave antenna and external headset

TESTED BY: B. TORRENCE

OPERATING MODE:

BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
1MHZ (PEAK)

FREQUENCY RANGE: 30MHZ – 10 GHZ

DATE: 03/21/00

TEST NUMBER: 5

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN

TEST SPEC: FCC PART 15 & 90 OPEN FIELD

EMISSIONS

PROCEDURE: ANSI C63.4

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 207.7 | - | 33 | 1.5 | 190 | H | -6.2 | 26.8 | 43.5 |
| 216.2 | - | 36 | 1.5 | 180 | H | -5.8 | 30.2 | 46 |
| 228 | - | 33 | 1.5 | 188 | H | -4.9 | 28.1 | 46 |
| 288 | - | 36 | 1.5 | 201 | H | -3.1 | 32.9 | 46 |
| 294.9 | - | 36 | 1.2 | 194 | H | -2.9 | 33.1 | 46 |
| 500** | - | 8 | 1.2 | 0 | V | 3.7 | 10.7 | 46 |

Note: 500MHz is the recorded noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P-801T PORTABLE RADIO

With external microphone with built-on ¼ wave antenna

TESTED BY: B. TORRENCE

OPERATING MODE:

BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
1MHZ (PEAK)

FREQUENCY RANGE: 30MHZ – 10 GHZ

DATE: 03/21/00

TEST NUMBER: 6

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN

TEST SPEC: FCC PART 15 & 90 OPEN FIELD
EMISSIONS

PROCEDURE: ANSI C63.4

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 30 | - | 5 | 3 | 0 | V | 2.2 | 7.2 | 40 |
| 100 | - | 5 | 2 | 0 | V | 10.1 | 15.1 | 43.5 |
| 200 | - | 7 | 2 | 0 | V | -4 | 3 | 43.5 |
| 300 | - | 7 | 1 | 0 | V | -2.1 | 4.9 | 46 |
| 400 | - | 7 | 1 | 0 | V | 3.5 | 10.5 | 46 |
| 500 | - | 7 | 1 | 0 | V | 3.7 | 10.7 | 46 |

Note: No signals detected. All signals recorded are noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"

TEST SERVICES

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P-801T PORTABLE RADIO

STAND ALAONE WITH 1/2 WAVE ANTENNA

TESTED BY: R. FOSTER

OPERATING MODE:

BANDWIDTH: [X] 100 KHZ (PEAK)/120 KHZ (QP)
1MHZ (PEAK)

FREQUENCY RANGE: 30MHZ – 10 GHZ

DATE: 03/20/00

TEST NUMBER: 1

COUPLING DEVICE: EMCO 3121, 3115, EATON HORN

TEST SPEC: FCC PART 15 & 90 OPEN FIELD

EMISSIONS

PROCEDURE: ANSI C63.4

ANTENNA DISTANCE: [X] 3 METERS [] 10 METERS

| FREQUENCY MHZ | PEAK MEASURED LEVEL -dBm | QUASI-PEAK MEASURED LEVEL dBuV | ANTENNA HEIGHT (METERS) | TURNTABLE AZIMUTH (DEGREES) | ANTENNA H/V | ANTENNA FAC/CABLE LOSS dB | FIELD LEVEL dBuV/m ** | LIMIT dBuV/m (QP) |
|------------------|-----------------------------------|---|-------------------------------|-----------------------------------|----------------|---------------------------------|--------------------------|-------------------------|
| 30 | - | 5 | 3 | 0 | V | 2.2 | 7.2 | 40 |
| 100 | - | 5 | 2 | 0 | V | 10.1 | 15.1 | 43.5 |
| 200 | - | 7 | 2 | 0 | V | -4 | 3 | 43.5 |
| 300 | - | 7 | 1 | 0 | V | -2.1 | 4.9 | 46 |
| 400 | - | 7 | 1 | 0 | V | 3.5 | 10.5 | 46 |
| 500 | - | 7 | 1 | 0 | V | 3.7 | 10.7 | 46 |

Note: No signals detected. All signals recorded are noise floor of receiver.

All signals greater than 3dB from the limit are calculate to the nearest whole number.

** Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)

Ambient Temperature: 65°F

Humidity: 30%

Atmospheric Pressure: 29.8"