*FCC PART 15, SUBPART B AND C*
*TEST METHOD: ANSI C63.4-1992*

*for*

# 900 MHz HALF DUPLEX TRANSCEIVER

## Model: M90SXCRN1

Prepared for

VTECH WIRELESS, INC.
1 CORPORATE PARK DRIVE, SUITE 100
IRVINE, CALIFORNIA 92606-5113

Prepared by: Kyle Fujimoto
KYLE FUJIMOTO

Approved by: Scott McCutchan
SCOTT McCUTCHAN

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: JULY 6, 1999

| | REPORT BODY | APPENDICES | | | | TOTAL |
|---|---|---|---|---|---|---|
| | | *A* | *B* | *C* | *D* | |
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# GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full with the written permission of Compatible Electronics.

This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

| | |
|---|---|
| Device Tested: | 900 MHz Half Duplex Transceiver<br>Model: M90SXCRN1<br>S/N: 01 |
| Product Description: | See Expository Statement. |
| Modifications: | The EUT was not modified during the testing. |
| Manufacturer: | VTech Wireless, Inc.<br>1 Corporate Park Drive, Suite 100<br>Irvine, California 92606-5113 |
| Test Date: | June 29, 1999 |
| IC File # for Canada | IC2154-D |
| Test Specifications: | EMI requirements<br>FCC Title 47, Part 15 Subpart C, Sections 15.205 and 15.249 |
| Test Procedure: | ANSI C63.4: 1992 |
| Test Deviations: | The test procedure was not deviated from during the testing. |

# SUMMARY OF TEST RESULTS

| TEST | DESCRIPTION | RESULTS |
|---|---|---|
| 1 | Conducted RF Emissions, 450 kHz - 30 MHz | Complies with the **Class B** limits of FCC Title 47, Part 15 Subpart B; and Subpart C, section 15.207 |
| 2 | Radiated RF Emissions, 10 kHz - 9300 MHz | Complies with the limits of FCC Title 47, Part 15, Subpart B and Subpart C, sections 15.205 and 15.249 |

# 1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the 900 MHz Half Duplex Transceiver Model: M90SXCRN1. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 1992. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the specification limits defined by FCC Title 47, Part 15, Subpart B and Subpart C, sections 15.205 and 15.249.

# 2. ADMINISTRATIVE DATA

## 2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

## 2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

## 2.3 Cognizant Personnel

VTech Wireless, Inc.

| | |
|---|---|
| Terry Flach | Engineering |
| Thomas Craft | President |

Compatible Electronics Inc.

| | |
|---|---|
| Kyle Fujimoto | Test Engineer |
| Scott McCutchan | Lab Manager |

## 2.4 Date Test Sample was Received

The test sample was received on June 29, 1999

## 2.5 Disposition of the Test Sample

The test sample was returned to VTech Wireless, Inc. on July 7, 1999.

## 2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

| | |
|---|---|
| RF | Radio Frequency |
| EMI | Electromagnetic Interference |
| EUT | Equipment Under Test |
| P/N | Part Number |
| S/N | Serial Number |
| HP | Hewlett Packard |
| ITE | Information Technology Equipment |
| CML | Corrected Meter Limit |
| LISN | Line Impedance Stabilization Network |

## 3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

| SPEC | TITLE |
|---|---|
| FCC Title 47, Subpart C. | FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators |
| ANSI C63.4 1992 | Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz. |
| FCC Title 47, Subpart B. | FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators |

# 4. DESCRIPTION OF TEST CONFIGURATION

## 4.1 Description of Test Configuration - EMI

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The 900 MHz Half Duplex Transceiver Model: M90SXCRN1 (EUT) was connected to the laptop computer and antenna via its RS-232 and RF output ports, respectively. The laptop computer was also connected to a printer and power supply via its parallel and power ports, respectively. The EUT was continuously receiving and transmitting.

Three different antennas were used for the testing. For the fundamental and harmonics, the data was taken with all three antennas. Each of the antennas was investigated in three orthogonal axis during the initial scan. The final fundamental and harmonics data was taken in the worst case axis for each of the antennas as follows:

| Antenna | Worst Case Axis |
|---|---|
| ½ wave dipole | Y |
| 1.625 inch vertical whip | Y |
| Monolithic Chip Multilayer | X |

For the spurious and conducted emissions, the ½ wave dipole was the worst case scenario and produced the highest emissions. The final spurious and conducted data was taken with this antenna.

Please see Appendix D for the data sheets. Please see the special antenna information exhibit for more details on each of the antennas.

### 4.1.1 Cable Construction and Termination

Cable 1 — This is a 1 foot unshielded cable connecting the EUT to the laptop computer. It has a terminal block connected to the data pins (3 through 10) at the EUT end and a D-9 pin connector at the laptop computer end.

Cable 2 — This is a 1 foot unshielded cable connecting the EUT to the laptop computer. It has a terminal block connected to the power pins (1 and 2) at the EUT end and a 6 pin mini DIN at the laptop computer end.

Cable 3 — (for the ½ wave dipole antenna only) This is a 1 foot braid shielded cable connecting the EUT to the ½ wave dipole antenna. It has a metallic MMCX connector at the EUT end and a reverse TNC metallic connector at the antenna end. The shield of the cable was grounded to the chassis via the connectors.

Cable 4 — This is a 6 foot unshielded cable connecting the EUT to the AC Adapter. It has a 1/8 inch power connector at the EUT end and a two pin power connector at the AC Adapter end.

Cable 5 — This is a 5 foot braid and foil shielded cable connecting the printer to the laptop computer. It has a Centronics metallic type connector at the printer end and a D-25 pin metallic connector at the laptop computer end. The cable was bundled to a length of bundled to a length of 1 meter. The shield of the cable was grounded to the chassis via the connectors.

Cable 6 — (for the 1.625 inch vertical whip only) This is a 1 foot braid shielded cable connecting the EUT to the antenna. It has a metallic MMCX miniature coax connector at each end. The shield of the cable was grounded to the chassis via the connectors.

Cable 7 — (for the Monolithic Chip Multilayer Antenna only) This is an 8 inch braid shielded cable connecting the EUT to the antenna. It has a metallic MMCX miniature coax connector at the EUT end and a reverse TNC metallic connector at the antenna end. The shield of the cable was grounded to the chassis via the connectors.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

## 5.1 EUT and Accessory List

| EQUIPMENT | MANUFACTURER | MODEL NUMBER | SERIAL NUMBER | FCC ID |
|---|---|---|---|---|
| 900 MHz HALF DUPLEX TRANSCEIVER (EUT) | VTECH WIRELESS, INC. | M90SXCRN1 | 01 | **NRLM90SXCRN1** |
| LAPTOP COMPUTER | TOSHIBA | PA124OU VCD | X7345171-1 | **DoC** |
| AC ADAPTER | TOSHIBA | PA245UV | N/A | **N/A** |
| PRINTER | CITIZEN | LSP-10 | 1130060-73 | **DLK66TLSP-10** |
| COAXIAL ½ WAVE DIPOLE ANTENNA (EUT) | CENTURION INT. INC. | N/A | N/A | **N/A** |
| 1.625 INCH VERTICAL WHIP (EUT) | VTECH WIRELESS, INC. | N/A | N/A | **N/A** |
| MONOLITHIC CHIP MULTILAYER ANTENNA (EUT) | MURATA | P/N: LDA46D0950A | N/A | **N/A** |

## 5.2 EMI Test Equipment

| EQUIPMENT TYPE | MANU-FACTURER | MODEL NUMBER | SERIAL NUMBER | CAL. DATE | CAL. DUE DATE |
|---|---|---|---|---|---|
| Spectrum Analyzer | Hewlett Packard | 8566B | 3638A08768 | Dec. 11, 1998 | Dec. 11, 1999 |
| Preamplifier | Com Power | PA-102 | 01414 | Jan. 16, 1999 | Jan. 16, 2000 |
| Quasi-Peak Adapter | Hewlett Packard | 85650A | 2811A01362 | April 9, 1999 | April 9, 2000 |
| Biconical Antenna | Com Power | AB-100 | 01543 | Oct. 15, 1998 | Oct. 15, 1999 |
| Log Periodic Antenna | Com Power | AL-100 | 01011 | Oct. 15, 1998 | Oct. 15, 1999 |
| Antenna Mast | Com Power | AM-100 | N/A | N/A | N/A |
| Turntable | Com Power | TT-100 | N/A | N/A | N/A |
| Computer | Hewlett Packard | HP98561A | 2522A05178 | N/A | N/A |
| Printer | Hewlett Packard | 2225A | 2925S33268 | N/A | N/A |
| Plotter | Hewlett Packard | 7440A | 8726K38417 | N/A | N/A |
| Microwave Preamplifier | Hewlett Packard | 8449B | 3008A008766 | Jan. 30, 1999 | Jan. 30, 2000 |
| Horn Antenna | Antenna Research | DRG-118/A | 1053 | Dec. 8, 1995 | N/A |
| Loop Antenna | Com-Power | AL-130 | 25309 | April 13, 1999 | April 13, 2000 |

# 6. TEST SITE DESCRIPTION

## 6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI test location.

## 6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.

# 7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

## 7.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter along with the quasi-peak adapter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak detector was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage, and the spectrum analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 1992. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The initial test data was taken in manual mode while scanning the frequency ranges of 0.45 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the spectrum analyzer span adjusted to 1 MHz.

The final data was collected under program control by the HP 9000/300 in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave.

## 7.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer was used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz, and the Hewlett Packard Microwave Preamplifier Model: 8449B was used for frequencies above 1 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps. The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets. The frequencies above 1 GHz were averaged manually by narrowing the video filter down to 1 Hz and slowing the sweep time to keep the amplitude reading calibrated. The measurement bandwidths and transducers used for the radiated emissions test were:

| FREQUENCY RANGE | EFFECTIVE MEASUREMENT BANDWIDTH | TRANSDUCER |
|---|---|---|
| 10 kHz to 150 kHz | 200 Hz | Active Loop Antenna |
| 150 kHz to 30 MHz | 9 kHz | Active Loop Antenna |
| 30 MHz to 300 MHz | 120 kHz | Biconical Antenna |
| 300 MHz to 1 GHz | 120 kHz | Log Periodic Antenna |
| 1 GHz to 9.3 GHz | 1 MHz | Horn Antenna |

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 1992. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance to obtain final test data.

## 7.3 RF Band Edges

Spectral plots of both the low and high channels were taken of the EUT to show that the emissions at the band edges (902 and 928 MHz) were attenuated by at least 50 dB below the level of the fundamental or to the general radiated emissions limits in FCC Title 47, Subpart C, section 15.209, whichever is the lesser attenuation. The spectral plots are located in Appendix D.

## 8. CONCLUSIONS

The 900 MHz Half Duplex Transceiver Model: M90SXCRN1 meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B and Subpart C, sections 15.205 and 15.249.

# APPENDIX A

## *MODIFICATIONS TO THE EUT*

# MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.249 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

Modifications:

No modifications were made to the EUT.

# APPENDIX B

# *ADDITIONAL MODELS COVERED UNDER THIS REPORT*

# ADDITIONAL MODELS COVERED UNDER THIS REPORT

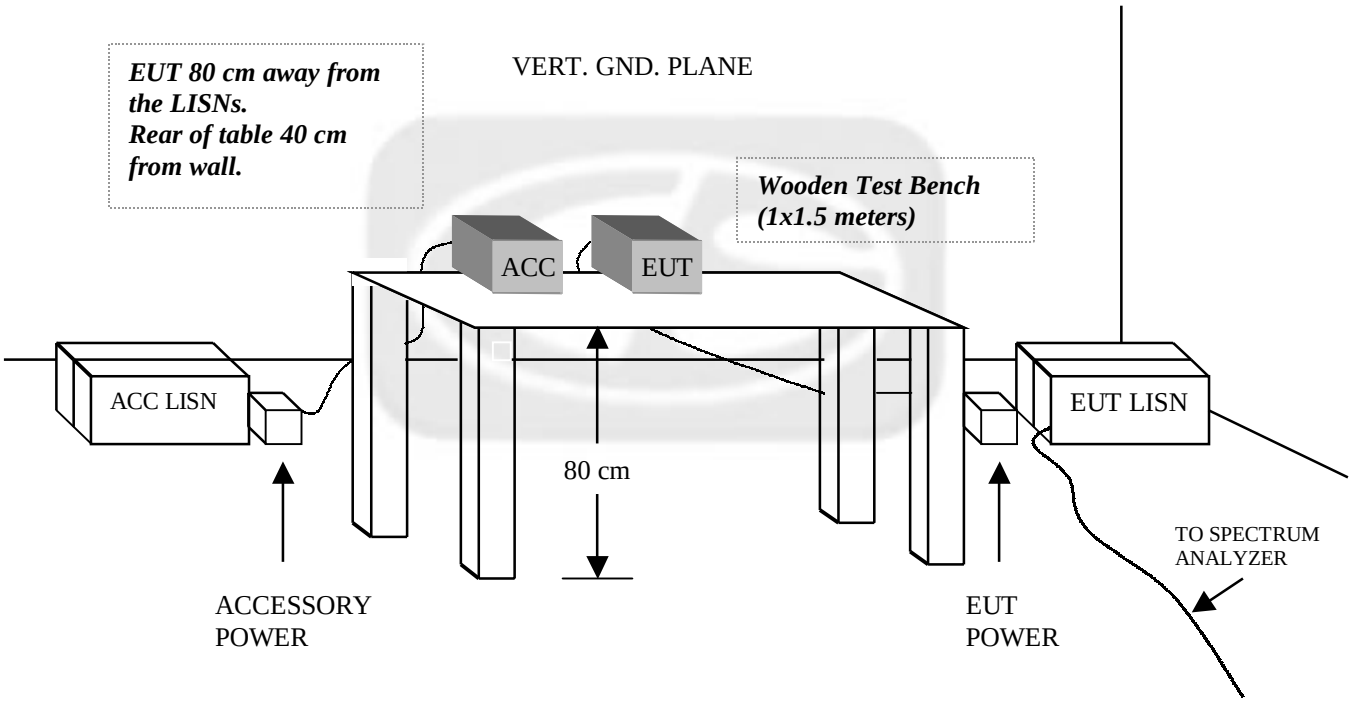
| | |
|---|---|
| USED FOR THE PRIMARY TEST | 900 MHz Half Duplex Transceiver<br>Model: M90SXCRN1<br>S/N: N/A |

There were no additional models covered under this report.

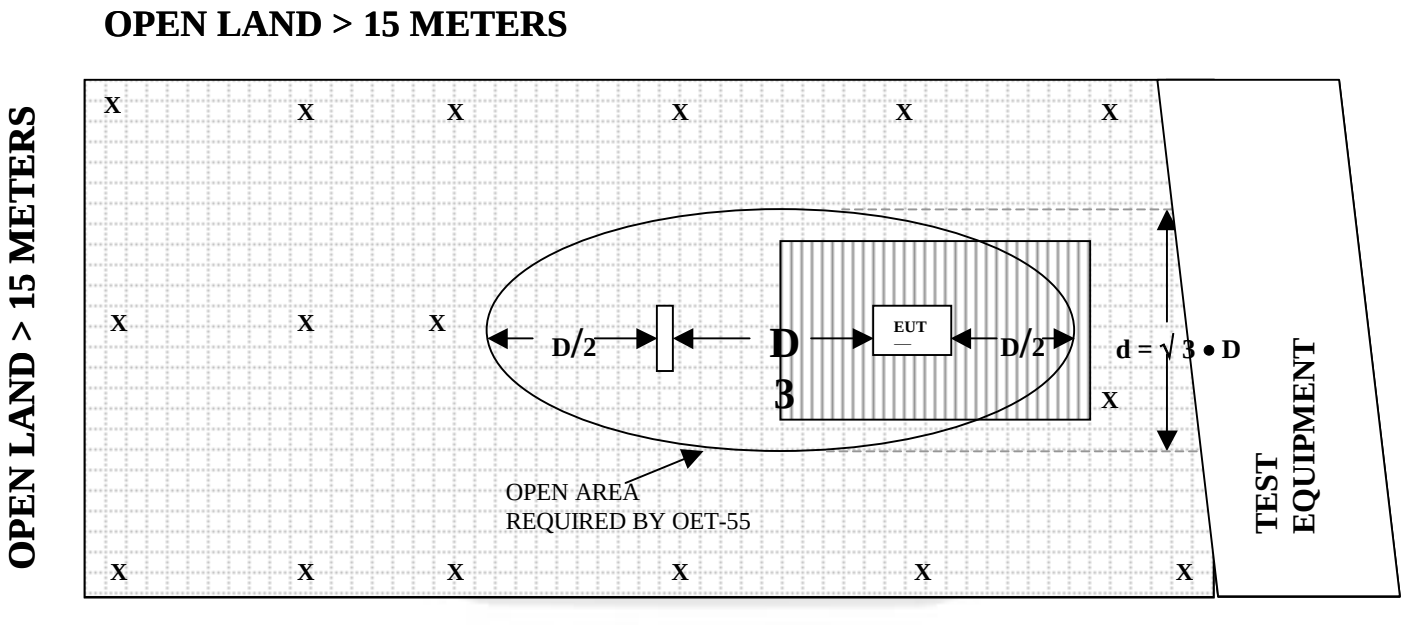
# APPENDIX C

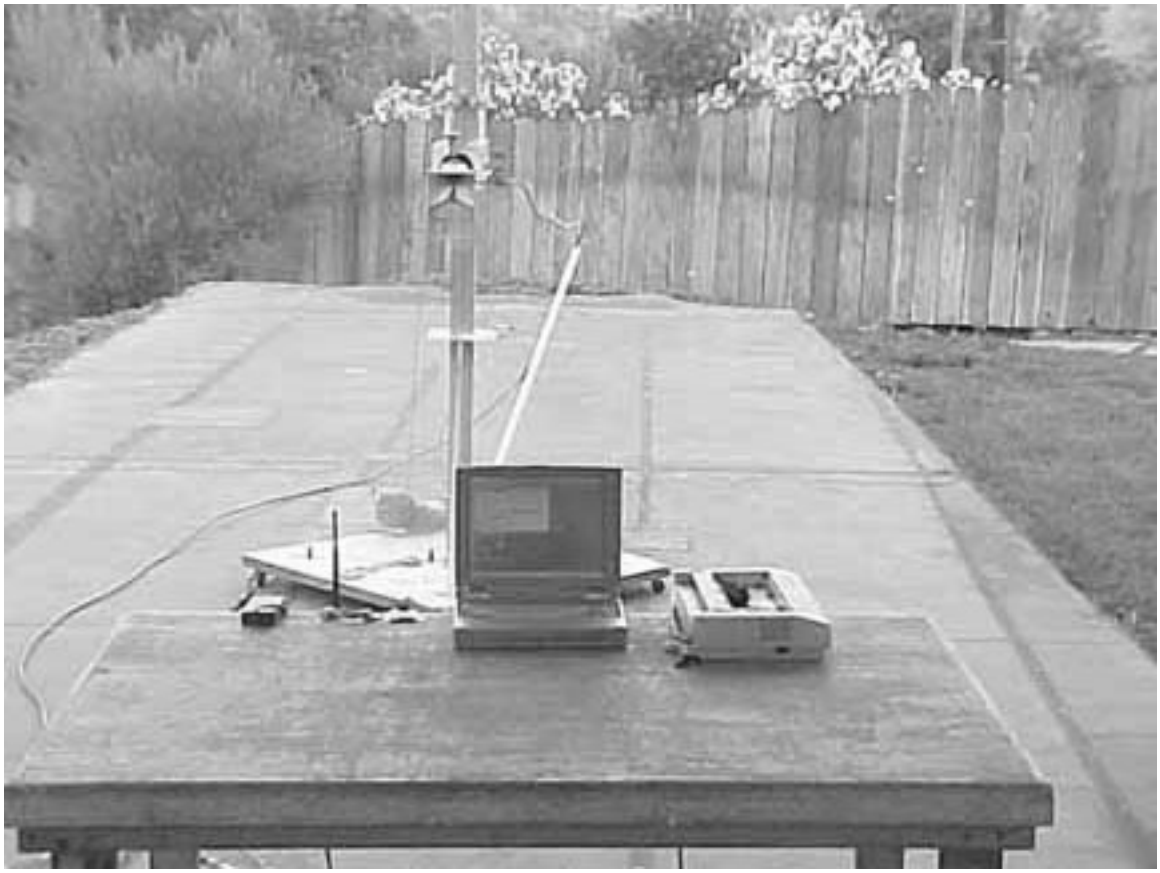
## *DIAGRAMS, CHARTS AND PHOTOS*

# *FIGURE 1: CONDUCTED EMISSIONS TEST SETUP*



# *FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE*

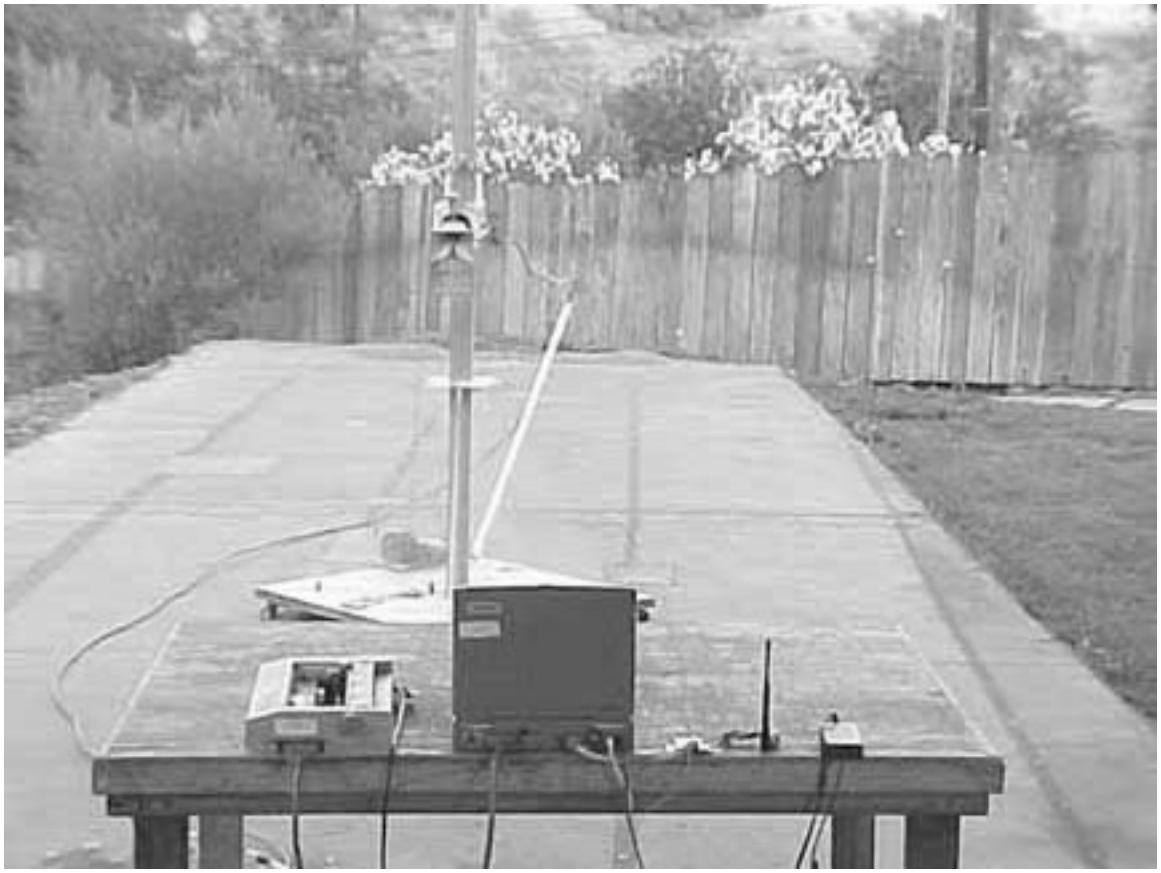




**FRONT VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER (1/2 WAVE DIPOLE)
Model: M90SXCRN1
FCC SUBPART B AND C - RADIATED EMISSIONS – 6-29-99

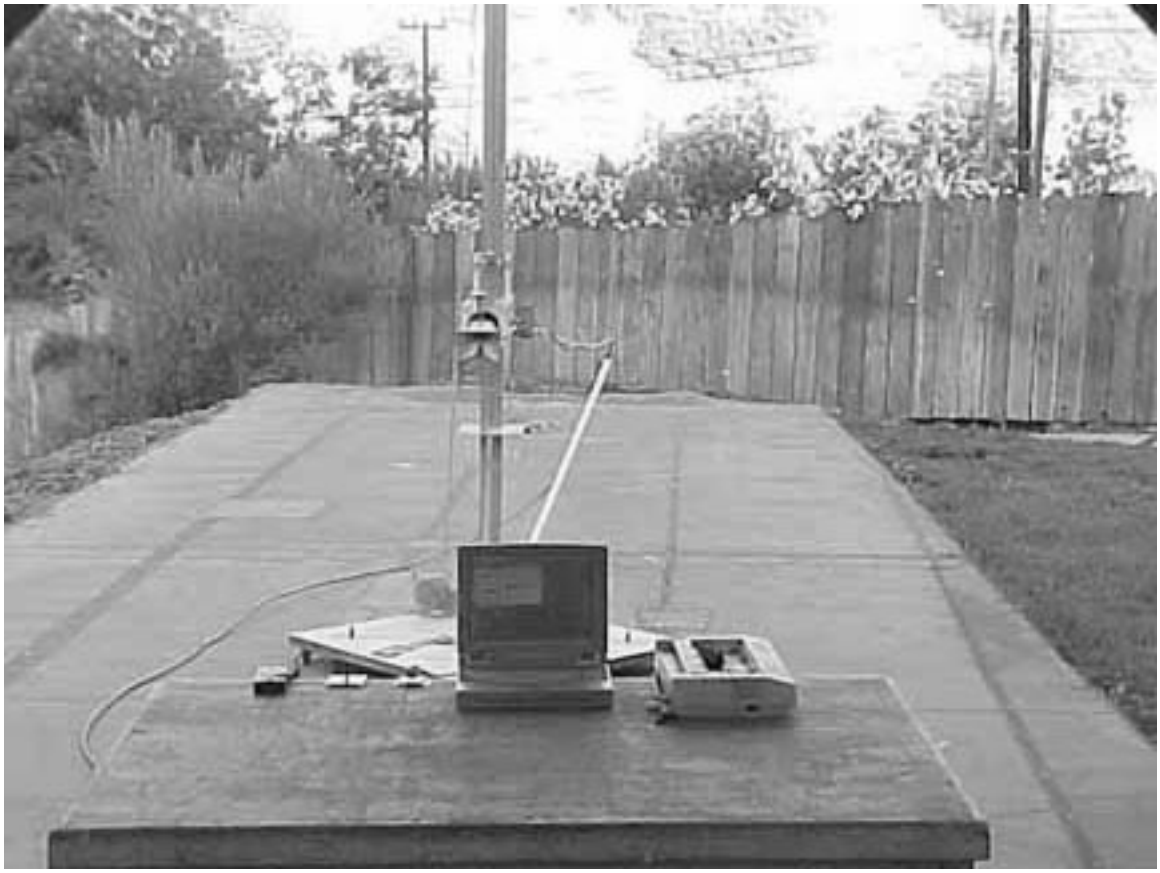
## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



**REAR VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER (1/2 WAVE DIPOLE)
Model: M90SXCRN1
FCC SUBPART B AND C - RADIATED EMISSIONS – 6-29-99

## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



**FRONT VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER (1.625 INCH VERTICAL WHIP)
Model: M90SXCRN1
FCC SUBPART B AND C - RADIATED EMISSIONS – 6-29-99

## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

**REAR VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER (1.625 INCH VERTICAL WHIP)
Model: M90SXCRN1
FCC SUBPART B AND C - RADIATED EMISSIONS – 6-29-99

## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

**FRONT VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER (MONOLITHIC CHIP MULTILAYER ANT.)
Model: M90SXCRN1
FCC SUBPART B AND C - RADIATED EMISSIONS – 6-29-99

## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

**REAR VIEW**

VTECH WIRELESS, INC.
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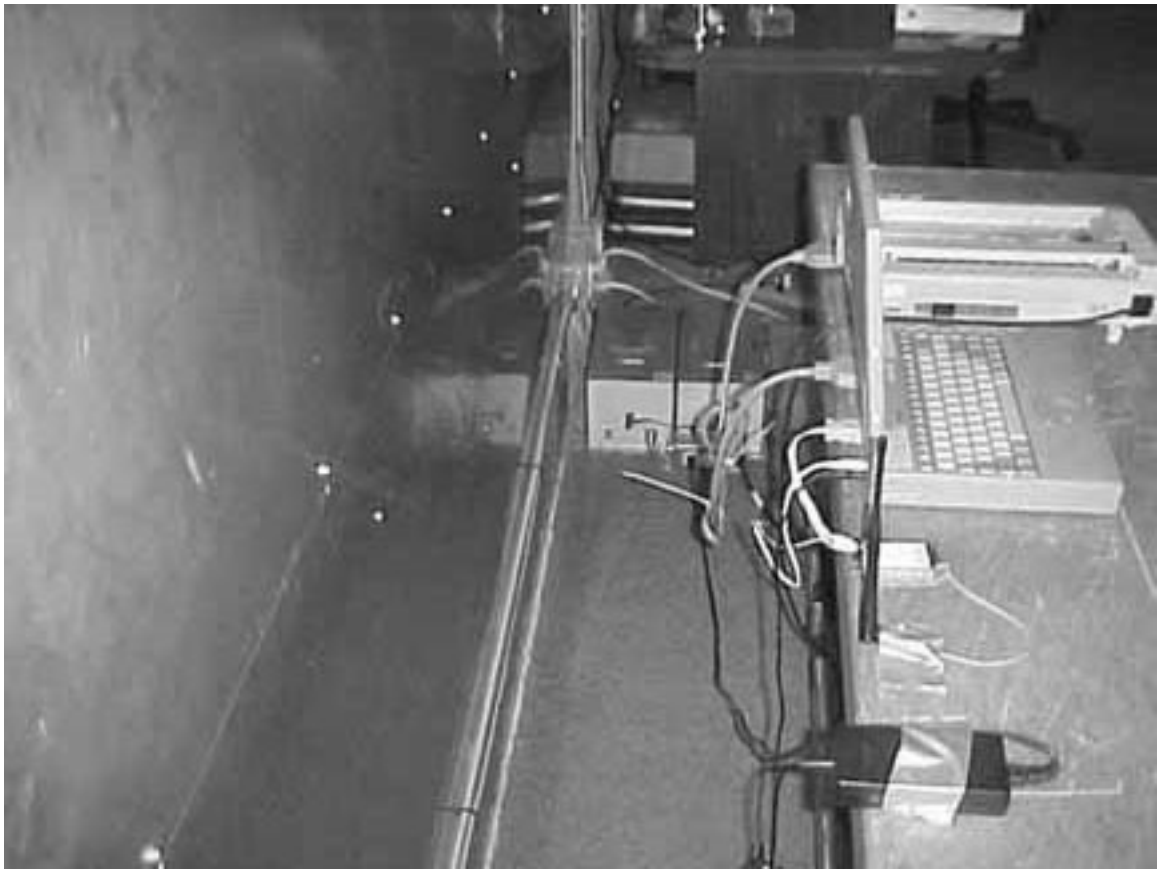
## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

**FRONT VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER
Model: M90SXCRN1
FCC SUBPART B AND C - CONDUCTED EMISSIONS – 6-29-99

## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



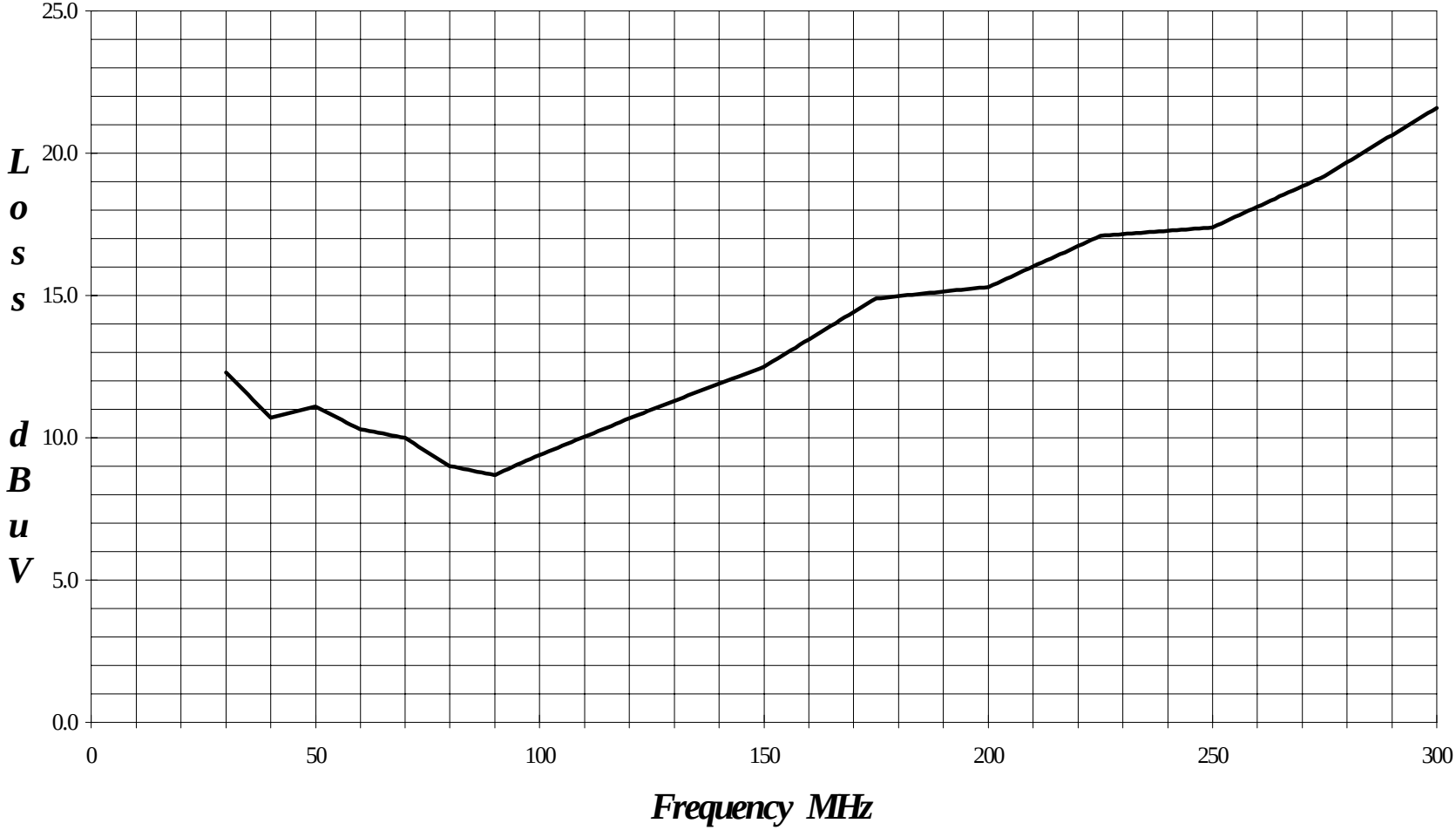
**REAR VIEW**

VTECH WIRELESS, INC.
900 MHZ HALF DUPLEX TRANSCEIVER
Model: M90SXCRN1
FCC SUBPART B AND C - CONDUCTED EMISSIONS – 6-29-99

## PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

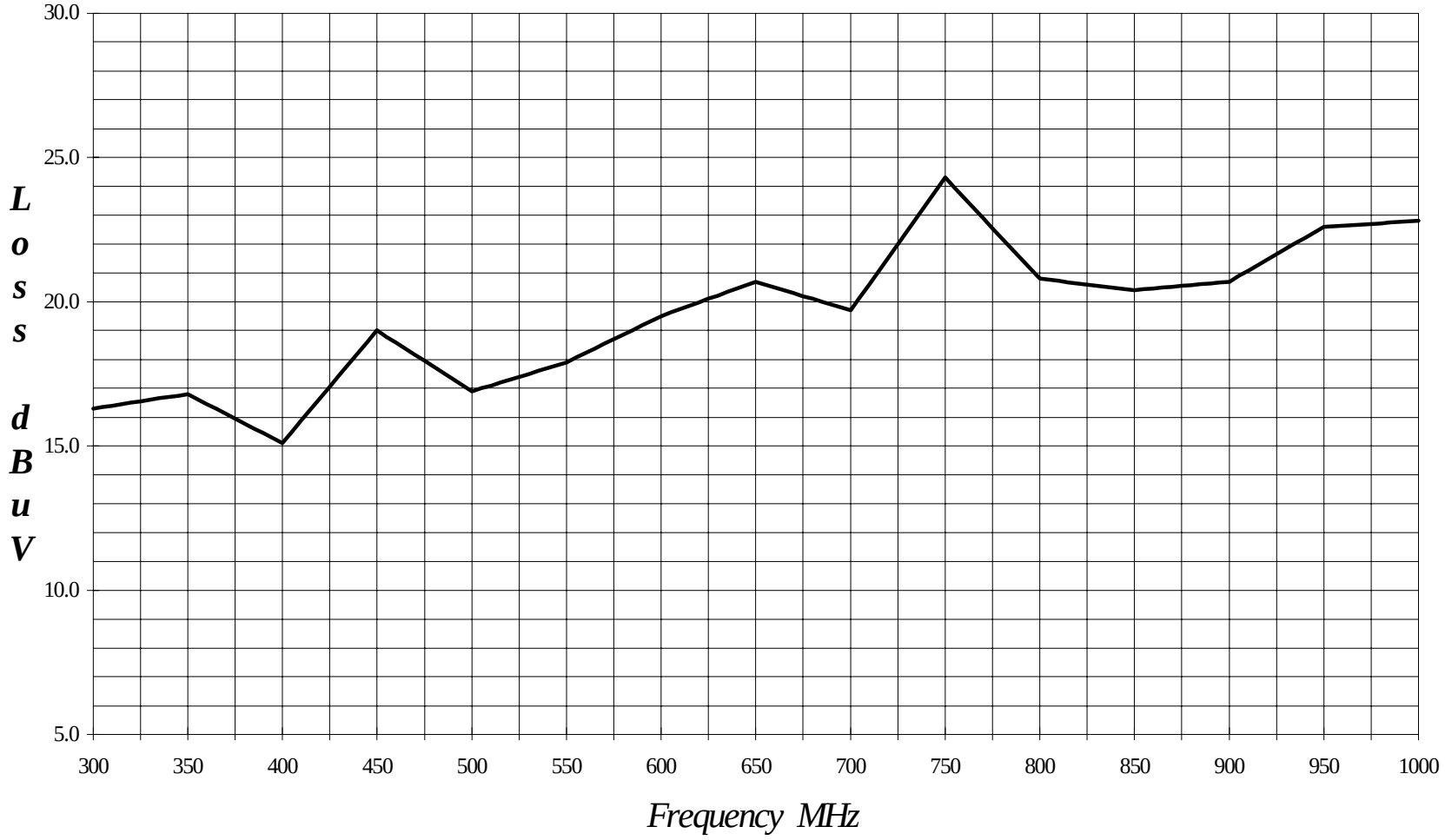
***Cal*: 10/15/98**

# *LAB "D" BICONICAL ANTENNA AB-100 S/N 01548*

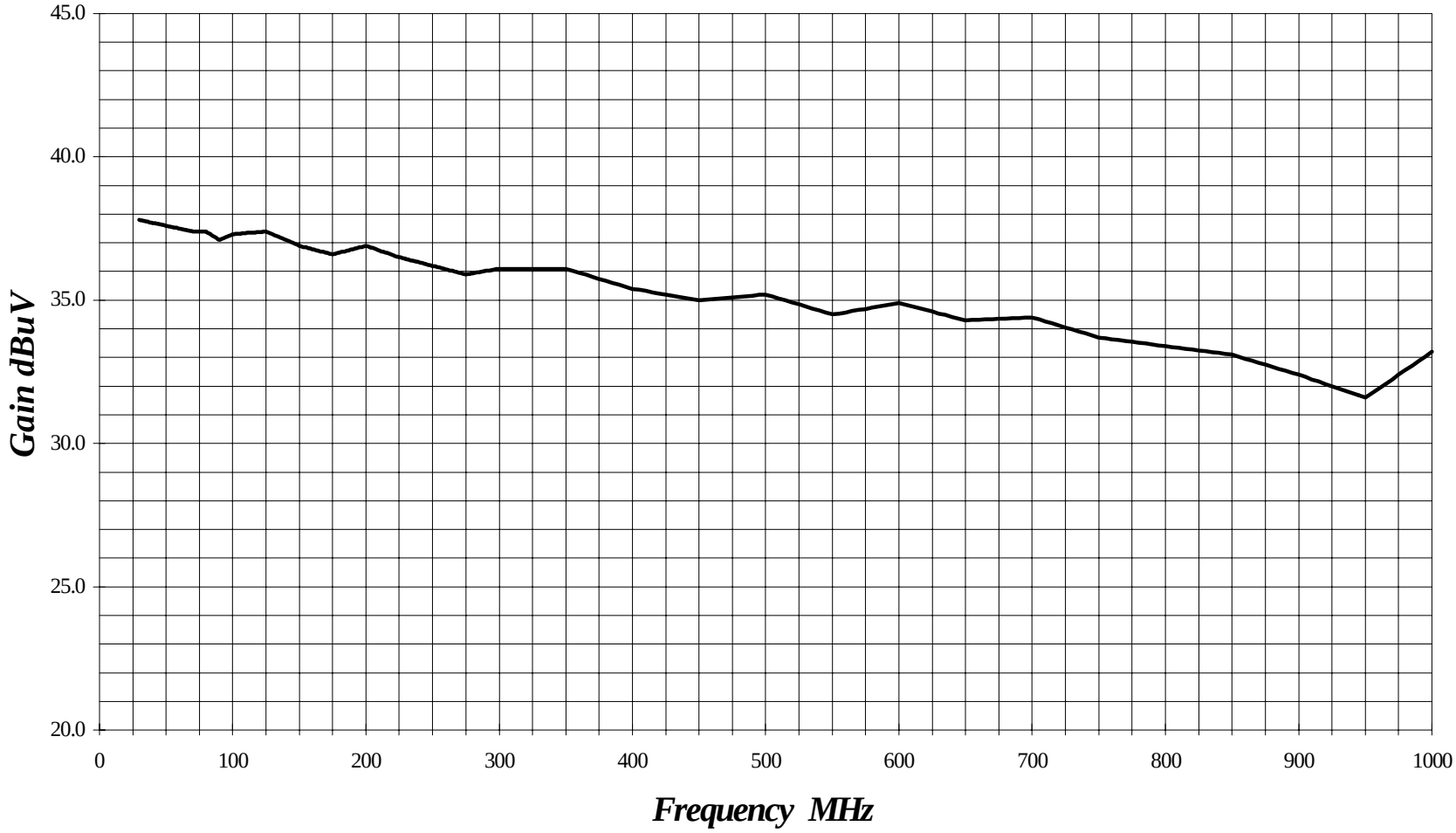


***Cal*: 10/15/98**

# *LAB "D" LOG PERIODIC ANTENNA AL-100 S/N 01117*



# *PREAMPLIFIER EFFECTIVE GAIN AT 3 METERS PA-102 S/N: 1017*



# HEWLETT PACKARD 8449B

# MICROWAVE PREAMPLIFIER

## S/N: 3008A008766

## CALIBRATION DATE: JANUARY 30, 1999

| FREQUENCY (GHz) | FACTOR (dB) | FREQUENCY (GHz) | FACTOR (dB) |
|---|---|---|---|
| 1.0 | 36.9 | 9.5 | 34.3 |
| 1.1 | 36.3 | 10.0 | 33.7 |
| 1.2 | 36.4 | 10.5 | 34.1 |
| 1.3 | 36.2 | 11.0 | 33.7 |
| 1.4 | 36.3 | 11.5 | 34.0 |
| 1.5 | 35.7 | 12.0 | 33.9 |
| 1.6 | 35.9 | 12.5 | 34.4 |
| 1.7 | 35.7 | 13.0 | 32.9 |
| 1.8 | 35.6 | 13.5 | 31.6 |
| 1.9 | 35.5 | 14.0 | 31.8 |
| 2.0 | 35.4 | 14.5 | 31.9 |
| 2.5 | 35.6 | 15.0 | 32.2 |
| 3.0 | 35.2 | 15.5 | 32.8 |
| 3.5 | 35.2 | 16.0 | 32.4 |
| 4.0 | 34.3 | 16.5 | 32.1 |
| 4.5 | 34.1 | 17.0 | 32.3 |
| 5.0 | 34.3 | 17.5 | 30.3 |
| 5.5 | 33.0 | 18.0 | 31.5 |
| 6.0 | 34.1 | 18.5 | 31.2 |
| 6.5 | 34.5 | 19.0 | 32.2 |
| 7.0 | 34.3 | 19.5 | 32.0 |
| 7.5 | 33.9 | 20.0 | 32.0 |
| 8.0 | 34.5 | 20.5 | 33.2 |
| 8.5 | 34.5 | 21.0 | 30.9 |
| 9.0 | 34.4 | 22.0 | 32.1 |

ANTENNA RESEARCH ASSOCIATES, INC.
11317 Frederick Avenue, Beltsville, MD 20705

## E-FIELD ANTENNA FACTOR CALIBRATION

**E(dB V/m) = Vo(dB V) + AFE(dB/m)**

**Model number : DRG-118/A**

| Frequency GHz | AFE dB/m | Gain dBi |
|---|---|---|
| 1 | 22.3 | 8.0 |
| 2 | 26.7 | 9.5 |
| 3 | 29.7 | 10.1 |
| 4 | 29.5 | 12.8 |
| 5 | 32.3 | 12.0 |
| 6 | 32.4 | 13.4 |
| 7 | 36.1 | 11.0 |
| 8 | 37.4 | 10.9 |
| 9 | 36.8 | 12.5 |
| 10 | 39.5 | 10.7 |
| 11 | 39.6 | 11.5 |
| 12 | 39.8 | 12.0 |
| 13 | 39.7 | 12.8 |
| 14 | 41.8 | 11.3 |
| 15 | 41.9 | 11.9 |
| 16 | 38.1 | 16.3 |
| 17 | 41.0 | 13.9 |
| 18 | 46.5 | 8.9 |

Serial number : 1053
Job number : 96-092
Remarks : 3 meter calibration
Standards : LPD-118/A, TE-1000

Temperature : 72° F
Humidity : 56 %
Traceability : A01887
Date : December 08, 1995

*Calibrated By*

# Com-Power Corporation

(949) 587-9800

**Antenna Calibration**

| | |
|---|---|
| Antenna Type: | Loop Antenna |
| Model: | AL-130 |
| Serial Number: | 25309 |
| Calibration Date: | 4/13/99 |

| Frequency MHz | Magnetic (dB/m) | Electric dB/m |
|---|---|---|
| | | |
| 0.01 | -40.6 | 10.9 |
| 0.02 | -41.5 | 10.0 |
| 0.03 | -39.9 | 11.6 |
| 0.04 | -40.2 | 11.3 |
| 0.05 | -41.5 | 10.0 |
| 0.06 | -41.1 | 10.4 |
| 0.07 | -41.3 | 10.2 |
| 0.08 | -41.6 | 9.9 |
| 0.09 | -41.7 | 9.8 |
| 0.1 | -41.7 | 9.8 |
| 0.2 | -44.0 | 7.5 |
| 0.3 | -41.6 | 9.9 |
| 0.4 | -41.6 | 9.9 |
| 0.5 | -41.7 | 9.8 |
| 0.6 | -41.5 | 10.0 |
| 0.7 | -41.4 | 10.1 |
| 0.8 | -41.5 | 10.0 |
| 0.9 | -41.6 | 9.9 |
| 1 | -41.2 | 10.3 |
| 2 | -40.5 | 11.0 |
| 3 | -40.8 | 10.7 |
| 4 | -41.0 | 10.5 |
| 5 | -40.5 | 11.0 |
| 6 | -40.5 | 11.0 |
| 7 | -40.7 | 10.8 |
| 8 | -40.8 | 10.7 |
| 9 | -40.1 | 11.4 |
| 10 | -40.4 | 11.1 |
| 12 | -41.0 | 10.5 |
| 14 | -42.1 | 9.4 |
| 15 | -42.3 | 9.2 |
| 16 | -42.7 | 8.8 |
| 18 | -41.0 | 10.5 |
| 20 | -41.1 | 10.4 |
| 25 | -43.4 | 8.1 |
| 30 | -45.3 | 6.2 |

| | |
|---|---|
| Trans. Antenna Height | 2 meter |
| Receiving Antenna Height | 2 meter |

# APPENDIX D

# *DATA SHEETS*

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **902.4000** | 59.6 | 59.5 QP | H | 1.0 | 90 | Y | LOW | 21.3 | 5.0 | 0.0 | **85.8** | **-8.2** | **94.0** | |
| **902.4000** | 67.2 | 67.1 QP | V | 1.0 | 180 | Y | LOW | 21.3 | 5.0 | 0.0 | **93.4** | **-0.6** | **94.0** | |
| **915.0000** | 58.2 | 58.1 QP | H | 1.0 | 90 | Y | MID | 20.8 | 5.0 | 0.0 | **83.9** | **-10.1** | **94.0** | |
| **915.0000** | 64.7 | 64.6 QP | V | 1.0 | 180 | Y | MID | 20.8 | 5.0 | 0.0 | **90.4** | **-3.6** | **94.0** | |
| **927.4000** | 54.8 | 54.7 QP | H | 1.0 | 90 | Y | HIGH | 21.8 | 4.9 | 0.0 | **81.4** | **-12.6** | **94.0** | |
| **927.4000** | 62.8 | 62.7 QP | V | 1.0 | 180 | Y | HIGH | 21.8 | 4.9 | 0.0 | **89.4** | **-4.6** | **94.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1804.8000 | 40.3 | 32.7 A | H | 1.0 | 90 | Y | LOW | 24.5 | 3.5 | 35.6 | 25.1 | -28.9 | 54.0 | |
| 1804.8000 | 51.7 | 45.4 A | V | 2.0 | 180 | Y | LOW | 24.5 | 3.5 | 35.6 | 37.8 | -16.2 | 54.0 | |
| 1830.0000 | 41.2 | 33.0 A | H | 1.0 | 180 | Y | MID | 24.5 | 3.5 | 35.6 | 25.4 | -28.6 | 54.0 | |
| 1830.0000 | 49.0 | 42.9 A | V | 1.5 | 180 | Y | MID | 24.5 | 3.5 | 35.6 | 35.3 | -18.7 | 54.0 | |
| 1854.8000 | 43.7 | 33.2 A | H | 1.0 | 180 | Y | HIGH | 24.5 | 3.7 | 35.5 | 25.9 | -28.1 | 54.0 | |
| 1854.8000 | 50.8 | 43.5 A | V | 2.0 | 180 | Y | HIGH | 24.5 | 3.7 | 35.5 | 36.2 | -17.8 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2707.2000 | 39.8 | 32.6 A | H | 1.0 | 180 | Y | LOW | 28.2 | 4.5 | 35.6 | 29.7 | -24.3 | 54.0 | |
| 2707.2000 | 53.5 | 50.8 A | V | 1.0 | 180 | Y | LOW | 28.2 | 4.5 | 35.6 | 47.9 | -6.1 | 54.0 | |
| 2745.0000 | 43.4 | 33.0 A | H | 1.0 | 90 | Y | MID | 28.2 | 4.5 | 35.6 | 30.1 | -23.9 | 54.0 | |
| 2745.0000 | 53.5 | 51.5 A | V | 1.5 | 180 | Y | MID | 28.2 | 4.5 | 35.6 | 48.6 | -5.4 | 54.0 | |
| 2782.2000 | 41.3 | 32.2 A | H | 1.0 | 180 | Y | HIGH | 29.7 | 4.6 | 35.2 | 31.3 | -22.7 | 54.0 | |
| 2782.2000 | 53.6 | 51.5 A | V | 2.0 | 0 | Y | HIGH | 29.7 | 4.6 | 35.2 | 50.6 | -3.4 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3609.6000 | 41.6 | 30.5 A | H | 1.0 | 180 | Y | LOW | 29.6 | 5.0 | 35.2 | 29.9 | -24.1 | 54.0 | |
| 3609.6000 | 47.5 | 42.6 A | V | 1.5 | 180 | Y | LOW | 29.6 | 5.0 | 35.2 | 42.0 | -12.0 | 54.0 | |
| 3660.0000 | 43.3 | 33.8 A | H | 1.0 | 90 | Y | MID | 29.6 | 5.0 | 35.2 | 33.2 | -20.8 | 54.0 | |
| 3660.0000 | 48.5 | 44.5 A | V | 1.0 | 180 | Y | MID | 29.6 | 5.0 | 35.2 | 43.9 | -10.1 | 54.0 | |
| 3709.6000 | 43.9 | 36.4 A | H | 1.5 | 180 | Y | HIGH | 29.6 | 5.0 | 35.2 | 35.8 | -18.2 | 54.0 | |
| 3709.6000 | 47.3 | 41.1 A | V | 2.0 | 180 | Y | HIGH | 29.6 | 5.0 | 35.2 | 40.5 | -13.5 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4512.0000** | 39.7 | 31.8 A | H | 1.0 | 90 | Y | LOW | 30.9 | 5.6 | 34.1 | **34.2** | **-19.8** | **54.0** | |
| **4512.0000** | 49.0 | 45.3 A | V | 2.5 | 180 | Y | LOW | 30.9 | 5.6 | 34.1 | **47.7** | **-6.3** | **54.0** | |
| **4575.0000** | 39.1 | 31.2 A | H | 1.0 | 90 | Y | MID | 30.9 | 5.6 | 34.1 | **33.6** | **-20.4** | **54.0** | |
| **4575.0000** | 49.8 | 45.9 A | V | 1.0 | 180 | Y | MID | 30.9 | 5.6 | 34.1 | **48.3** | **-5.7** | **54.0** | |
| **4637.0000** | 42.0 | 31.3 A | H | 1.0 | 180 | Y | HIGH | 30.9 | 5.6 | 34.1 | **33.7** | **-20.3** | **54.0** | |
| **4637.0000** | 49.4 | 46.1 A | V | 2.5 | 180 | Y | HIGH | 30.9 | 5.6 | 34.1 | **48.5** | **-5.5** | **54.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5414.4000 | 37.5 | 29.0 A | H | 1.0 | 90 | Y | LOW | 32.4 | 6.0 | 33.0 | 34.4 | -19.6 | 54.0 | |
| 5414.4000 | 45.2 | 38.6 A | V | 1.0 | 180 | Y | LOW | 32.4 | 6.0 | 33.0 | 44.0 | -10.0 | 54.0 | |
| 5490.0000 | 38.3 | 29.2 A | H | 1.0 | 180 | Y | MID | 32.4 | 6.0 | 33.0 | 34.6 | -19.4 | 54.0 | |
| 5490.0000 | 46.3 | 41.9 A | V | 1.0 | 90 | Y | MID | 32.4 | 6.0 | 33.0 | 47.3 | -6.7 | 54.0 | |
| 5564.4000 | 41.0 | 29.9 A | H | 1.0 | 180 | Y | HIGH | 32.4 | 6.0 | 33.0 | 35.3 | -18.7 | 54.0 | |
| 5564.4000 | 45.4 | 39.7 A | V | 1.0 | 180 | Y | HIGH | 32.4 | 6.0 | 33.0 | 45.1 | -8.9 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6316.8000 | 40.6 | 31.9 A | H | 1.0 | 180 | Y | LOW | 34.3 | 6.9 | 34.5 | 38.6 | -15.4 | 54.0 | |
| 6316.8000 | 47.4 | 40.4 A | V | 1.5 | 180 | Y | LOW | 34.3 | 6.9 | 34.5 | 47.1 | -6.9 | 54.0 | |
| 6405.0000 | 40.5 | 32.2 A | H | 1.0 | 90 | Y | MID | 34.3 | 6.9 | 34.5 | 38.9 | -15.1 | 54.0 | |
| 6405.0000 | 48.0 | 42.4 A | V | 1.5 | 180 | Y | MID | 34.3 | 6.9 | 34.5 | 49.1 | -4.9 | 54.0 | |
| 6491.8000 | 40.0 | 31.7 A | H | 1.0 | 180 | Y | HIGH | 34.3 | 6.9 | 34.5 | 38.4 | -15.6 | 54.0 | |
| 6491.8000 | 48.8 | 44.3 A | V | 2.0 | 180 | Y | HIGH | 34.3 | 6.9 | 34.5 | 51.0 | -3.0 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7219.2000 | *** | *** | A | H | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 7219.2000 | *** | *** | A | V | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 7320.0000 | *** | *** | A | H | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 7320.0000 | *** | *** | A | V | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 7419.2000 | *** | *** | A | H | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 7419.2000 | *** | *** | A | V | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8121.6000 | *** | *** | A | H | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8121.6000 | *** | *** | A | V | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8235.0000 | *** | *** | A | H | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8235.0000 | *** | *** | A | V | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8346.6000 | *** | *** | A | H | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8346.6000 | *** | *** | A | V | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with COAXIAL 1/2 WAVE DIPOLE | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9024.0000 | *** | *** A | H | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9024.0000 | *** | *** A | V | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9150.0000 | *** | *** A | H | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9150.0000 | *** | *** A | V | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9274.0000 | *** | *** A | H | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9274.0000 | *** | *** A | V | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **902.4000** | 61.0 | 60.9 QP | H | 1.0 | 180 | Y | LOW | 21.3 | 5.0 | 0.0 | **87.2** | **-6.8** | **94.0** | |
| **902.4000** | 62.3 | 62.2 QP | V | 1.5 | 0 | Y | LOW | 21.3 | 5.0 | 0.0 | **88.5** | **-5.5** | **94.0** | |
| **915.0000** | 60.6 | 60.5 QP | H | 1.0 | 180 | Y | MID | 20.8 | 5.0 | 0.0 | **86.3** | **-7.7** | **94.0** | |
| **915.0000** | 60.9 | 60.8 QP | V | 1.5 | 0 | Y | MID | 20.8 | 5.0 | 0.0 | **86.6** | **-7.4** | **94.0** | |
| **927.4000** | 58.2 | 58.1 QP | H | 1.0 | 180 | Y | HIGH | 21.8 | 4.9 | 0.0 | **84.8** | **-9.2** | **94.0** | |
| **927.4000** | 60.1 | 60.0 QP | V | 1.0 | 0 | Y | HIGH | 21.8 | 4.9 | 0.0 | **86.7** | **-7.3** | **94.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1804.8000 | 42.0 | 32.7 A | H | 1.0 | 180 | Y | LOW | 24.5 | 3.5 | 35.6 | 25.1 | -28.9 | 54.0 | |
| 1804.8000 | 49.3 | 43.5 A | V | 1.0 | 90 | Y | LOW | 24.5 | 3.5 | 35.6 | 35.9 | -18.1 | 54.0 | |
| 1830.0000 | 41.5 | 33.0 A | H | 1.0 | 180 | Y | MID | 24.5 | 3.5 | 35.6 | 25.4 | -28.6 | 54.0 | |
| 1830.0000 | 48.7 | 41.5 A | V | 1.0 | 90 | Y | MID | 24.5 | 3.5 | 35.6 | 33.9 | -20.1 | 54.0 | |
| 1854.8000 | 40.3 | 32.7 A | H | 1.0 | 180 | Y | HIGH | 24.5 | 3.7 | 35.5 | 25.4 | -28.6 | 54.0 | |
| 1854.8000 | 45.3 | 35.1 A | V | 1.0 | 90 | Y | HIGH | 24.5 | 3.7 | 35.5 | 27.8 | -26.2 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2707.2000 | 43.6 | 32.9 A | H | 1.0 | 0 | Y | LOW | 28.2 | 4.5 | 35.6 | 30.0 | -24.0 | 54.0 | |
| 2707.2000 | 44.4 | 32.4 A | V | 1.0 | 90 | Y | LOW | 28.2 | 4.5 | 35.6 | 29.5 | -24.5 | 54.0 | |
| 2745.0000 | 44.9 | 33.5 A | H | 1.0 | 90 | Y | MID | 28.2 | 4.5 | 35.6 | 30.6 | -23.4 | 54.0 | |
| 2745.0000 | 43.8 | 33.4 A | V | 1.0 | 180 | Y | MID | 28.2 | 4.5 | 35.6 | 30.5 | -23.5 | 54.0 | |
| 2782.2000 | 42.2 | 32.1 A | H | 1.0 | 180 | Y | HIGH | 29.7 | 4.6 | 35.2 | 31.2 | -22.8 | 54.0 | |
| 2782.2000 | 43.6 | 32.0 A | V | 1.0 | 90 | Y | HIGH | 29.7 | 4.6 | 35.2 | 31.1 | -22.9 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3609.6000 | 41.1 | 30.3 A | H | 1.0 | 90 | Y | LOW | 29.6 | 5.0 | 35.2 | 29.7 | -24.3 | 54.0 | |
| 3609.6000 | 39.1 | 31.2 A | V | 1.0 | 90 | Y | LOW | 29.6 | 5.0 | 35.2 | 30.6 | -23.4 | 54.0 | |
| 3660.0000 | 42.4 | 35.5 A | H | 1.0 | 180 | Y | MID | 29.6 | 5.0 | 35.2 | 34.9 | -19.1 | 54.0 | |
| 3660.0000 | 44.7 | 32.2 A | V | 1.0 | 90 | Y | MID | 29.6 | 5.0 | 35.2 | 31.6 | -22.4 | 54.0 | |
| 3709.6000 | 42.5 | 36.8 A | H | 1.0 | 180 | Y | HIGH | 29.6 | 5.0 | 35.2 | 36.2 | -17.8 | 54.0 | |
| 3709.6000 | 45.6 | 38.3 A | V | 1.0 | 90 | Y | HIGH | 29.6 | 5.0 | 35.2 | 37.7 | -16.3 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4512.0000 | 42.0 | 31.6 A | H | 1.0 | 270 | Y | LOW | 30.9 | 5.6 | 34.1 | **34.0** | **-20.0** | **54.0** | |
| 4512.0000 | 42.9 | 31.6 A | V | 1.0 | 90 | Y | LOW | 30.9 | 5.6 | 34.1 | **34.0** | **-20.0** | **54.0** | |
| 4575.0000 | 42.4 | 32.3 A | H | 1.0 | 180 | Y | MID | 30.9 | 5.6 | 34.1 | **34.7** | **-19.3** | **54.0** | |
| 4575.0000 | 43.5 | 32.1 A | V | 1.0 | 90 | Y | MID | 30.9 | 5.6 | 34.1 | **34.5** | **-19.5** | **54.0** | |
| 4637.0000 | 41.9 | 32.0 A | H | 1.0 | 270 | Y | HIGH | 30.9 | 5.6 | 34.1 | **34.4** | **-19.6** | **54.0** | |
| 4637.0000 | 42.7 | 31.6 A | V | 1.0 | 90 | Y | HIGH | 30.9 | 5.6 | 34.1 | **34.0** | **-20.0** | **54.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5414.4000** | 39.1 | 29.8 A | H | 1.0 | 180 | Y | LOW | 32.4 | 6.0 | 33.0 | **35.2** | **-18.8** | **54.0** | |
| **5414.4000** | 42.7 | 31.3 A | V | 1.0 | 180 | Y | LOW | 32.4 | 6.0 | 33.0 | **36.7** | **-17.3** | **54.0** | |
| **5490.0000** | 41.9 | 30.4 A | H | 1.0 | 180 | Y | MID | 32.4 | 6.0 | 33.0 | **35.8** | **-18.2** | **54.0** | |
| **5490.0000** | 41.4 | 29.2 A | V | 1.0 | 90 | Y | MID | 32.4 | 6.0 | 33.0 | **34.6** | **-19.4** | **54.0** | |
| **5564.4000** | 39.6 | 30.0 A | H | 1.0 | 180 | Y | HIGH | 32.4 | 6.0 | 33.0 | **35.4** | **-18.6** | **54.0** | |
| **5564.4000** | 40.4 | 30.8 A | V | 1.0 | 180 | Y | HIGH | 32.4 | 6.0 | 33.0 | **36.2** | **-17.8** | **54.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6316.8000 | 43.8 | 33.0 A | H | 1.0 | 180 | Y | LOW | 34.3 | 6.9 | 34.5 | 39.7 | -14.3 | 54.0 | |
| 6316.8000 | 41.5 | 33.6 A | V | 1.0 | 180 | Y | LOW | 34.3 | 6.9 | 34.5 | 40.3 | -13.7 | 54.0 | |
| 6405.0000 | 43.5 | 32.5 A | H | 1.0 | 180 | Y | MID | 34.3 | 6.9 | 34.5 | 39.2 | -14.8 | 54.0 | |
| 6405.0000 | 43.8 | 32.1 A | V | 1.0 | 180 | Y | MID | 34.3 | 6.9 | 34.5 | 38.8 | -15.2 | 54.0 | |
| 6491.8000 | 41.9 | 31.5 A | H | 1.0 | 90 | Y | HIGH | 34.3 | 6.9 | 34.5 | 38.2 | -15.8 | 54.0 | |
| 6491.8000 | 43.4 | 32.1 A | V | 1.0 | 90 | Y | HIGH | 34.3 | 6.9 | 34.5 | 38.8 | -15.2 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7219.2000 | *** | *** | A | H | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7219.2000 | *** | *** | A | V | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7320.0000 | *** | *** | A | H | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7320.0000 | *** | *** | A | V | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7419.2000 | *** | *** | A | H | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7419.2000 | *** | *** | A | V | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8121.6000 | *** | *** A | H | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8121.6000 | *** | *** A | V | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8235.0000 | *** | *** A | H | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8235.0000 | *** | *** A | V | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8346.6000 | *** | *** A | H | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8346.6000 | *** | *** A | V | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with 1.625 INCH VERTICAL WHIP ANTENNA | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9024.0000 | *** | *** A | H | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9024.0000 | *** | *** A | V | *** | *** | Y | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9150.0000 | *** | *** A | H | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9150.0000 | *** | *** A | V | *** | *** | Y | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9274.0000 | *** | *** A | H | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9274.0000 | *** | *** A | V | *** | *** | Y | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 902.4000 | 62.6 | 62.5 QP | H | 2.0 | 90 | X | LOW | 21.3 | 5.0 | 0.0 | 88.8 | -5.2 | 94.0 | |
| 902.4000 | 57.5 | 57.3 QP | V | 2.5 | 90 | X | LOW | 21.3 | 5.0 | 0.0 | 83.6 | -10.4 | 94.0 | |
| 915.0000 | 63.5 | 63.4 QP | H | 2.5 | 180 | X | MID | 20.8 | 5.0 | 0.0 | 89.2 | -4.8 | 94.0 | |
| 915.0000 | 59.5 | 59.4 QP | V | 1.5 | 90 | X | MID | 20.8 | 5.0 | 0.0 | 85.2 | -8.8 | 94.0 | |
| 927.4000 | 63.7 | 63.6 QP | H | 1.0 | 90 | X | HIGH | 21.8 | 4.9 | 0.0 | 90.3 | -3.7 | 94.0 | |
| 927.4000 | 60.5 | 60.4 QP | V | 1.5 | 90 | X | HIGH | 21.8 | 4.9 | 0.0 | 87.1 | -6.9 | 94.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1804.8000 | 43.5 | 32.8 A | H | 1.0 | 180 | X | LOW | 24.5 | 3.5 | 35.6 | 25.2 | -28.8 | 54.0 | |
| 1804.8000 | 42.7 | 33.0 A | V | 1.0 | 180 | X | LOW | 24.5 | 3.5 | 35.6 | 25.4 | -28.6 | 54.0 | |
| 1830.0000 | 43.6 | 33.2 A | H | 1.0 | 180 | X | MID | 24.5 | 3.5 | 35.6 | 25.6 | -28.4 | 54.0 | |
| 1830.0000 | 44.8 | 32.9 A | V | 1.5 | 90 | X | MID | 24.5 | 3.5 | 35.6 | 25.3 | -28.7 | 54.0 | |
| 1854.8000 | 48.8 | 43.7 A | H | 1.5 | 90 | X | HIGH | 24.5 | 3.7 | 35.5 | 36.4 | -17.6 | 54.0 | |
| 1854.8000 | 42.0 | 33.5 A | V | 1.0 | 180 | X | HIGH | 24.5 | 3.7 | 35.5 | 26.2 | -27.8 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2707.2000 | 40.5 | 33.4 A | H | 1.0 | 180 | X | LOW | 28.2 | 4.5 | 35.6 | 30.5 | -23.5 | 54.0 | |
| 2707.2000 | 45.7 | 35.7 A | V | 1.5 | 180 | X | LOW | 28.2 | 4.5 | 35.6 | 32.8 | -21.2 | 54.0 | |
| 2745.0000 | 40.9 | 33.2 A | H | 1.0 | 180 | X | MID | 28.2 | 4.5 | 35.6 | 30.3 | -23.7 | 54.0 | |
| 2745.0000 | 44.0 | 33.1 A | V | 1.0 | 90 | X | MID | 28.2 | 4.5 | 35.6 | 30.2 | -23.8 | 54.0 | |
| 2782.2000 | 43.3 | 32.0 A | H | 1.0 | 90 | X | HIGH | 29.7 | 4.6 | 35.2 | 31.1 | -22.9 | 54.0 | |
| 2782.2000 | 41.8 | 31.7 A | V | 1.0 | 180 | X | HIGH | 29.7 | 4.6 | 35.2 | 30.8 | -23.2 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3609.6000 | 42.5 | 33.2 A | H | 2.0 | 90 | X | LOW | 29.6 | 5.0 | 35.2 | 32.6 | -21.4 | 54.0 | |
| 3609.6000 | 42.4 | 33.4 A | V | 2.5 | 180 | X | LOW | 29.6 | 5.0 | 35.2 | 32.8 | -21.2 | 54.0 | |
| 3660.0000 | 42.7 | 34.6 A | H | 1.0 | 180 | X | MID | 29.6 | 5.0 | 35.2 | 34.0 | -20.0 | 54.0 | |
| 3660.0000 | 40.3 | 32.0 A | V | 1.0 | 180 | X | MID | 29.6 | 5.0 | 35.2 | 31.4 | -22.6 | 54.0 | |
| 3709.6000 | 40.9 | 33.1 A | H | 1.0 | 90 | X | HIGH | 29.6 | 5.0 | 35.2 | 32.5 | -21.5 | 54.0 | |
| 3709.6000 | 41.8 | 33.0 A | V | 1.5 | 180 | X | HIGH | 29.6 | 5.0 | 35.2 | 32.4 | -21.6 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4512.0000** | 43.7 | 31.5 A | H | 2.0 | 180 | X | LOW | 30.9 | 5.6 | 34.1 | **33.9** | **-20.1** | **54.0** | |
| **4512.0000** | 42.7 | 31.4 A | V | 2.0 | 0 | X | LOW | 30.9 | 5.6 | 34.1 | **33.8** | **-20.2** | **54.0** | |
| **4575.0000** | 41.8 | 32.0 A | H | 2.0 | 180 | X | MID | 30.9 | 5.6 | 34.1 | **34.4** | **-19.6** | **54.0** | |
| **4575.0000** | 42.0 | 31.1 A | V | 1.0 | 180 | X | MID | 30.9 | 5.6 | 34.1 | **33.5** | **-20.5** | **54.0** | |
| **4637.0000** | 42.3 | 31.6 A | H | 1.0 | 90 | X | HIGH | 30.9 | 5.6 | 34.1 | **34.0** | **-20.0** | **54.0** | |
| **4637.0000** | 42.8 | 32.1 A | V | 1.0 | 180 | X | HIGH | 30.9 | 5.6 | 34.1 | **34.5** | **-19.5** | **54.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5414.4000** | 38.0 | 29.3 A | H | 1.0 | 90 | X | LOW | 32.4 | 6.0 | 33.0 | **34.7** | **-19.3** | **54.0** | |
| **5414.4000** | 42.3 | 33.3 A | V | 1.5 | 180 | X | LOW | 32.4 | 6.0 | 33.0 | **38.7** | **-15.3** | **54.0** | |
| **5490.0000** | 40.6 | 29.9 A | H | 1.0 | 180 | X | MID | 32.4 | 6.0 | 33.0 | **35.3** | **-18.7** | **54.0** | |
| **5490.0000** | 40.5 | 30.8 A | V | 1.0 | 180 | X | MID | 32.4 | 6.0 | 33.0 | **36.2** | **-17.8** | **54.0** | |
| **5564.4000** | 38.2 | 30.8 A | H | 1.0 | 180 | X | HIGH | 32.4 | 6.0 | 33.0 | **36.2** | **-17.8** | **54.0** | |
| **5564.4000** | 41.9 | 30.6 A | V | 1.0 | 180 | X | HIGH | 32.4 | 6.0 | 33.0 | **36.0** | **-18.0** | **54.0** | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6316.8000 | 44.5 | 32.9 A | H | 1.5 | 180 | X | LOW | 34.3 | 6.9 | 34.5 | 39.6 | -14.4 | 54.0 | |
| 6316.8000 | 43.9 | 33.5 A | V | 1.0 | 180 | X | LOW | 34.3 | 6.9 | 34.5 | 40.2 | -13.8 | 54.0 | |
| 6405.0000 | 43.4 | 32.6 A | H | 1.0 | 180 | X | MID | 34.3 | 6.9 | 34.5 | 39.3 | -14.7 | 54.0 | |
| 6405.0000 | 42.8 | 33.7 A | V | 1.0 | 180 | X | MID | 34.3 | 6.9 | 34.5 | 40.4 | -13.6 | 54.0 | |
| 6491.8000 | 43.3 | 31.7 A | H | 1.0 | 90 | X | HIGH | 34.3 | 6.9 | 34.5 | 38.4 | -15.6 | 54.0 | |
| 6491.8000 | 41.4 | 32.0 A | V | 1.0 | 180 | X | HIGH | 34.3 | 6.9 | 34.5 | 38.7 | -15.3 | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7219.2000 | *** | *** | A | H | *** | *** | X | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7219.2000 | *** | *** | A | V | *** | *** | X | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7320.0000 | *** | *** | A | H | *** | *** | X | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7320.0000 | *** | *** | A | V | *** | *** | X | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7419.2000 | *** | *** | A | H | *** | *** | X | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 7419.2000 | *** | *** | A | V | *** | *** | X | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8121.6000 | *** | *** A | H | *** | *** | X | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8121.6000 | *** | *** A | V | *** | *** | X | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8235.0000 | *** | *** A | H | *** | *** | X | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8235.0000 | *** | *** A | V | *** | *** | X | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8346.6000 | *** | *** A | H | *** | *** | X | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 8346.6000 | *** | *** A | V | *** | *** | X | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY



COMPATIBLE ELECTRONICS

# RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

| | | | |
|---|---|---|---|
| COMPANY | VTECH WIRELESS, INC. | DATE | 6/29/99 |
| EUT | 900 MHz HALF DUPLEX TRANSCEIVER with MONOLITHIC CHIP MULTILAYER ANT. | DUTY CYCLE | 100.00 % |
| MODEL | M90SXCRN1 | PEAK TO AVG | 0.00 dB |
| S/N | 1 | TEST DIST. | 3 METERS |
| TEST ENGINEER | KYLE FUJIMOTO | LAB | D |

| Frequency MHz | Peak Reading (dBuV) | Average (A) or Quasi-Peak (QP) | | Antenna Polar. (V or H) | Antenna Height (meters) | EUT Azimuth (degrees) | EUT Axis (X,Y,Z) | EUT Tx Channel | Antenna Factor (dB) | Cable Loss (dB) | Amplifier Gain (dB) | *Corrected Reading (dBuV/m) | Delta ** (dB) | Spec Limit (dBuV/m) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9024.0000 | *** | *** | A | H | *** | *** | X | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9024.0000 | *** | *** | A | V | *** | *** | X | LOW | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9150.0000 | *** | *** | A | H | *** | *** | X | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9150.0000 | *** | *** | A | V | *** | *** | X | MID | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9274.0000 | *** | *** | A | H | *** | *** | X | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |
| 9274.0000 | *** | *** | A | V | *** | *** | X | HIGH | 0.0 | 0.0 | 0.0 | *** | *** | 54.0 | |

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

*** NO EMISSIONS FOUND AT THIS FREQUENCY

Test location: Compatible Electronics
Customer : VTECH WIRELESS, INC. Date : 6/29/1999
Manufacturer : SAME Time : 17.54
EUT name : 900 MHz HALF DUPLEX TRANSCEIVER Model: M90SXCRN1
Specification: Fcc_B Test distance: 3.0 mtrs Lab: D
Distance correction factor(20*log(test/spec)) : 0.00
Test Mode :
SPURIOUS EMISSIONS - VERTICAL - 30 TO 300 MHz
TEMPERATURE 80 DEGREES, RELATIVE HUMIDITY 47%
TESTED BY: Kyle Fujimoto
KYLE FUJIMOTO

| Pol | Freq MHz | Rdng dBuV | Cable loss dB | Ant factor dB | Amp gain dB | Cor'd rdg = R dBuV | limit = L dBuV/m | Delta R-L dB |
|---|---|---|---|---|---|---|---|---|
| 1V | 45.21 | 40.90 | 0.90 | 10.91 | 38.60 | 14.11 | 40.00 | -25.89 |
| 2V | 50.09 | 42.50 | 0.90 | 11.09 | 38.60 | 15.89 | 40.00 | -24.11 |
| 3V | 60.11 | 50.40 | 1.00 | 10.30 | 38.60 | 23.10 | 40.00 | -16.90 |
| 4V | 75.09 | 45.60 | 1.20 | 9.49 | 38.60 | 17.69 | 40.00 | -22.31 |
| 5V | 110.08 | 48.20 | 1.44 | 10.05 | 38.68 | 21.00 | 43.50 | -22.50 |
| 6V | 195.10 | 49.30 | 1.94 | 15.22 | 38.72 | 27.74 | 43.50 | -15.76 |
| 7V | 232.13 | 52.90 | 2.19 | 17.19 | 38.33 | 33.94 | 46.00 | -12.06 |

Test location: Compatible Electronics
Customer : VTECH WIRELESS, INC. Date : 6/29/1999
Manufacturer : SAME Time : 18.12
EUT name : 900 MHz HALF DUPLEX TRANSCEIVER Model: M90SXCRN1
Specification: Fcc_B Test distance: 3.0 mtrs Lab: D
Distance correction factor(20*log(test/spec)) : 0.00
Test Mode :
SPURIOUS EMISSIONS - HORIZONTAL - 30 TO 300 MHz
TEMPERATURE 80 DEGREES, RELATIVE HUMIDITY 47%
TESTED BY: Kyle Fujimoto
KYLE FUJIMOTO

| Pol | Freq MHz | Rdng dBuV | Cable loss dB | Ant factor dB | Amp gain dB | Cor'd rdg = R dBuV | limit = L dBuV/m | Delta R-L dB |
|---|---|---|---|---|---|---|---|---|
| 1H | 45.16 | 39.70 | 0.90 | 10.91 | 38.60 | 12.91 | 40.00 | -27.09 |
| 2H | 70.12 | 47.80 | 1.20 | 9.99 | 38.60 | 20.39 | 40.00 | -19.61 |
| 3H | 75.14 | 44.80 | 1.20 | 9.49 | 38.60 | 16.89 | 40.00 | -23.11 |
| 4H | 100.06 | 62.70 | 1.40 | 9.40 | 38.60 | 34.90 | 43.50 | -8.60 |
| 5H | 110.07 | 55.20 | 1.44 | 10.04 | 38.68 | 28.00 | 43.50 | -15.50 |
| 6H | 120.08 | 57.00 | 1.48 | 10.68 | 38.76 | 30.40 | 43.50 | -13.10 |
| 7H | 152.07 | 53.80 | 1.70 | 12.70 | 38.49 | 29.71 | 43.50 | -13.79 |
| 8H | 216.07 | 48.10 | 2.06 | 16.46 | 38.48 | 28.14 | 46.00 | -17.86 |
| 9H | 232.15 | 62.70 | 2.19 | 17.19 | 38.33 | 43.74 | 46.00 | -2.26 |
| 10H | 232.15 | 62.46 | 2.19 | 17.19 | 38.33 | 43.50Qp | 46.00 | -2.50 |
| 11H | 298.46 | 50.60 | 2.49 | 21.45 | 38.49 | 36.05 | 46.00 | -9.95 |

Test location: Compatible Electronics
Customer : VTECH WIRELESS, INC. Date : 6/29/1999
Manufacturer : SAME Time : 17.43
EUT name : 900 MHz HALF DUPLEX TRANSCEIVER Model: M90SXCRN1
Specification: Fcc_B Test distance: 3.0 mtrs Lab: D
Distance correction factor(20*log(test/spec)) : 0.00
Test Mode :
SPURIOUS EMISSIONS - VERTICAL - 300 TO 1000 MHz
TEMPERATURE 80 DEGREES, RELATIVE HUMIDITY 47%
TESTED BY: Kyle Fujimoto
KYLE FUJIMOTO

| Pol | Freq MHz | Rdng dBuV | Cable loss dB | Ant factor dB | Amp gain dB | Cor'd rdg = R dBuV | limit = L dBuV/m | Delta R-L dB |
|---|---|---|---|---|---|---|---|---|
| 1V | 397.92 | 59.30 | 3.09 | 15.17 | 38.22 | 39.34 | 46.00 | -6.66 |
| 2V | 331.63 | 58.10 | 2.69 | 16.62 | 38.56 | 38.84 | 46.00 | -7.16 |
| 3V | 364.79 | 61.60 | 2.89 | 16.30 | 38.48 | 42.30 | 46.00 | -3.70 |
| 4V | 401.01 | 49.20 | 3.10 | 15.18 | 38.19 | 29.29 | 46.00 | -16.71 |
| 5V | 408.12 | 53.80 | 3.12 | 15.73 | 38.14 | 34.51 | 46.00 | -11.49 |
| 6V | 425.07 | 43.90 | 3.15 | 17.06 | 38.00 | 26.11 | 46.00 | -19.89 |
| 7V | 431.15 | 57.40 | 3.16 | 17.53 | 37.95 | 40.14 | 46.00 | -5.86 |
| 8V | 464.30 | 62.40 | 3.29 | 18.40 | 37.94 | 46.14 | 46.00 | 0.14 |
| 9V | 464.30 | 60.79 | 3.29 | 18.40 | 37.94 | 44.53Qp | 46.00 | -1.47 |
| 10V | 497.45 | 57.00 | 3.48 | 17.01 | 38.27 | 39.22 | 46.00 | -6.78 |
| 11V | 530.55 | 58.20 | 3.68 | 17.51 | 38.06 | 41.34 | 46.00 | -4.66 |
| 12V | 596.86 | 60.00 | 3.80 | 19.40 | 38.37 | 44.83 | 46.00 | -1.17 |
| 13V | 596.86 | 59.27 | 3.80 | 19.40 | 38.37 | 44.10Qp | 46.00 | -1.90 |
| 14V | 663.19 | 54.80 | 3.95 | 20.44 | 38.05 | 41.14 | 46.00 | -4.86 |
| 15V | 795.77 | 53.50 | 4.42 | 21.10 | 37.52 | 41.50 | 46.00 | -4.50 |
| 16V | 828.95 | 44.40 | 4.69 | 20.57 | 37.50 | 32.16 | 46.00 | -13.84 |
| 17V | 928.46 | 51.90 | 4.77 | 21.78 | 36.89 | 41.57 | 46.00 | -4.43 |

Test location: Compatible Electronics
Customer : VTECH WIRELESS, INC.
Manufacturer : SAME
EUT name : 900 MHz HALF DUPLEX TRANSCEIVER
Specification: Fcc_B Test distance: 3.0 mtrs
Distance correction factor(20*log(test/spec)) :
Test Mode :

Date : 6/29/1999
Time : 17.16
Model: M90SXCRN1
Lab: D
: 0.00

SPURIOUS EMISSIONS - HORIZONTAL - 300 TO 1000 MHz
TEMPERATURE 80 DEGREES, RELATIVE HUMIDITY 47%
TESTED BY: Kyle Fujimoto
KYLE FUJIMOTO

| Pol | Freq MHz | Rdng dBuV | Cable loss dB | Ant factor dB | Amp gain dB | Cor'd rdg = R dBuV | limit = L dBuV/m | Delta R-L dB |
|---|---|---|---|---|---|---|---|---|
| 1H | 364.80 | 58.10 | 2.89 | 16.30 | 38.48 | 38.80 | 46.00 | -7.20 |
| 2H | 384.94 | 47.60 | 3.01 | 15.61 | 38.32 | 27.90 | 46.00 | -18.10 |
| 3H | 397.94 | 64.00 | 3.09 | 15.17 | 38.22 | 44.04 | 46.00 | -1.96 |
| 4H | 397.94 | 62.95 | 3.09 | 15.17 | 38.22 | 42.99Qp | 46.00 | -3.01 |
| 5H | 400.92 | 54.40 | 3.10 | 15.17 | 38.19 | 34.48 | 46.00 | -11.52 |
| 6H | 431.12 | 55.50 | 3.16 | 17.53 | 37.95 | 38.24 | 46.00 | -7.76 |
| 7H | 432.99 | 53.10 | 3.17 | 17.67 | 37.94 | 36.00 | 46.00 | -10.00 |
| 8H | 456.10 | 52.80 | 3.24 | 18.74 | 37.86 | 36.92 | 46.00 | -9.08 |
| 9H | 464.20 | 53.50 | 3.29 | 18.40 | 37.94 | 37.25 | 46.00 | -8.75 |
| 10H | 481.10 | 48.50 | 3.39 | 17.69 | 38.11 | 31.47 | 46.00 | -14.53 |
| 11H | 497.36 | 51.50 | 3.48 | 17.01 | 38.27 | 33.72 | 46.00 | -12.28 |
| 12H | 530.54 | 60.40 | 3.68 | 17.51 | 38.06 | 43.54 | 46.00 | -2.46 |
| 13H | 530.54 | 60.07 | 3.68 | 17.51 | 38.06 | 43.21Qp | 46.00 | -2.79 |
| 14H | 596.87 | 56.50 | 3.80 | 19.40 | 38.37 | 41.33 | 46.00 | -4.67 |
| 15H | 795.87 | 50.30 | 4.42 | 21.09 | 37.52 | 38.29 | 46.00 | -7.71 |
| 16H | 829.00 | 44.10 | 4.69 | 20.57 | 37.50 | 31.86 | 46.00 | -14.14 |
| 17H | 928.42 | 51.10 | 4.77 | 21.78 | 36.89 | 40.76 | 46.00 | -5.24 |

Test location: Compatible Electronics
Customer : VTECH WIRELESS, INC. Date : 6/29/1999
Manufacturer : SAME Time : 19.28
EUT name : 900 MHz HALF DUPLEX TRANSCEIVER Model: M90SXCRN1
Specification: Fcc_B Test distance: 3.0 mtrs Lab: D
Distance correction factor(20*log(test/spec)) : 0.00
Test Mode :
SPURIOUS EMISSIONS - 10 kHz to 30 MHz
TEMPERATURE 80 DEGREES, RELATIVE HUMIDITY 47%
TESTED BY: Kyle Fujimoto
KYLE FUJIMOTO

NO EMISSIONS FOUND FROM 10 kHz TO 30 MHz IN EITHER POLARIZATION FOR THE EUT.

COMPATIBLE ELECTRONICS

6/29/1999 19:59:11

VTECH WIRELESS, INC.
900 MHz HALF DUPLEX TRANS.
MODEL: M90SXCRN1
FCC C - BLACK LEAD
TEST ENGINEER : Kyle Fujimoto
KYLE FUJIMOTO

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25 highest peaks above -50.00 dB of CLASS B limit line
Peak criteria : 0.10 dB, Curve : Peak

| Peak# | Freq(MHz) | Amp(dBuV) | Limit(dB) | Delta(dB) |
|---|---|---|---|---|
| 1 | 5.186 | 40.59 | 48.00 | -7.41 |
| 2 | 3.706 | 40.58 | 48.00 | -7.42 |
| 3 | 0.655 | 39.27 | 48.00 | -8.73 |
| 4 | 0.496 | 39.17 | 48.00 | -8.83 |
| 5 | 0.470 | 39.17 | 48.00 | -8.83 |
| 6 | 2.968 | 38.88 | 48.00 | -9.12 |
| 7 | 0.462 | 38.87 | 48.00 | -9.13 |
| 8 | 5.690 | 38.79 | 48.00 | -9.21 |
| 9 | 0.482 | 38.67 | 48.00 | -9.33 |
| 10 | 6.188 | 38.29 | 48.00 | -9.71 |
| 11 | 0.539 | 38.17 | 48.00 | -9.83 |
| 12 | 0.500 | 37.77 | 48.00 | -10.23 |
| 13 | 0.515 | 37.67 | 48.00 | -10.33 |
| 14 | 0.456 | 37.57 | 48.00 | -10.43 |
| 15 | 0.572 | 37.47 | 48.00 | -10.53 |
| 16 | 0.485 | 37.47 | 48.00 | -10.53 |
| 17 | 0.630 | 37.27 | 48.00 | -10.73 |
| 18 | 0.524 | 37.27 | 48.00 | -10.73 |
| 19 | 0.492 | 37.27 | 48.00 | -10.73 |
| 20 | 0.530 | 36.97 | 48.00 | -11.03 |
| 21 | 0.466 | 36.97 | 48.00 | -11.03 |
| 22 | 4.934 | 36.88 | 48.00 | -11.12 |
| 23 | 0.609 | 36.87 | 48.00 | -11.13 |
| 24 | 0.544 | 36.87 | 48.00 | -11.13 |
| 25 | 0.504 | 36.87 | 48.00 | -11.13 |

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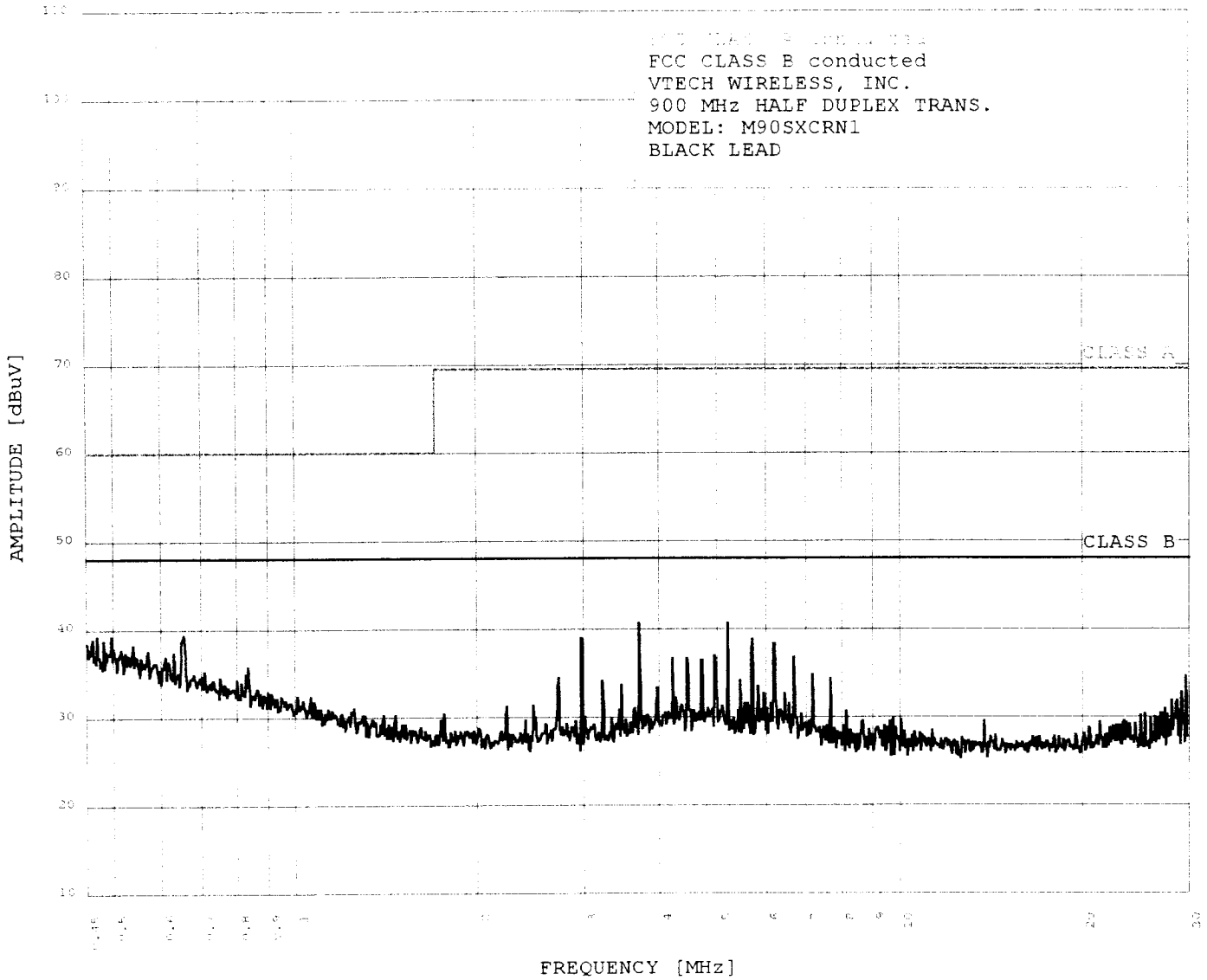
EMISSION LEVEL [dBuV] PEAK
Graph for Peak

6/29/1999 19:59:11




COMPATIBLE ELECTRONICS

COMPATIBLE ELECTRONICS

6/29/1999 20:09:24

VTECH WIRELESS, INC.
900 MHz HALF DUPLEX TRANS.
MODEL: M90SXCRN1
FCC C - WHITE LEAD
TEST ENGINEER : KYLE FUJIMOTO

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25 highest peaks above -50.00 dB of CLASS B limit line
Peak criteria : 0.10 dB, Curve : Peak

| Peak# | Freq(MHz) | Amp(dBuV) | Limit(dB) | Delta(dB) |
|---|---|---|---|---|
| 1 | 0.655 | 40.28 | 48.00 | -7.72 |
| 2 | 3.706 | 37.98 | 48.00 | -10.02 |
| 3 | 5.690 | 36.88 | 48.00 | -11.12 |
| 4 | 5.186 | 36.68 | 48.00 | -11.32 |
| 5 | 2.968 | 36.28 | 48.00 | -11.72 |
| 6 | 4.461 | 35.98 | 48.00 | -12.02 |
| 7 | 6.162 | 35.48 | 48.00 | -12.52 |
| 8 | 4.206 | 35.38 | 48.00 | -12.62 |
| 9 | 4.708 | 34.98 | 48.00 | -13.02 |
| 10 | 4.955 | 34.88 | 48.00 | -13.12 |
| 11 | 7.165 | 33.98 | 48.00 | -14.02 |
| 12 | 5.984 | 33.18 | 48.00 | -14.82 |
| 13 | 3.215 | 32.98 | 48.00 | -15.02 |
| 14 | 5.935 | 32.88 | 48.00 | -15.12 |
| 15 | 3.964 | 32.88 | 48.00 | -15.12 |
| 16 | 6.428 | 32.78 | 48.00 | -15.22 |
| 17 | 2.478 | 32.68 | 48.00 | -15.32 |
| 18 | 6.673 | 32.48 | 48.00 | -15.52 |
| 19 | 7.667 | 31.98 | 48.00 | -16.02 |
| 20 | 5.569 | 31.88 | 48.00 | -16.12 |
| 21 | 5.059 | 31.68 | 48.00 | -16.32 |
| 22 | 29.154 | 31.55 | 48.00 | -16.45 |
| 23 | 4.346 | 31.48 | 48.00 | -16.52 |
| 24 | 6.615 | 31.28 | 48.00 | -16.72 |
| 25 | 7.447 | 31.08 | 48.00 | -16.92 |

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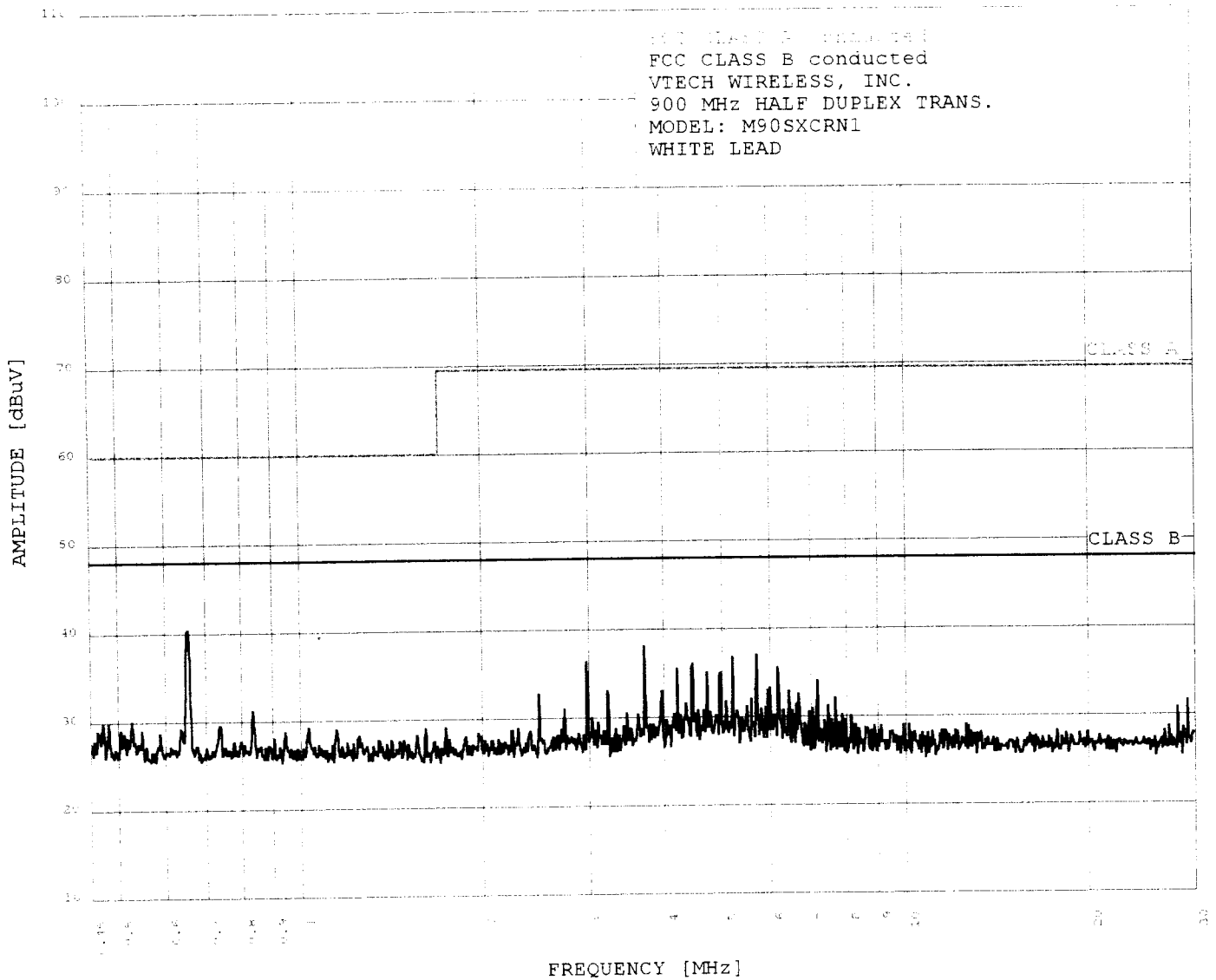
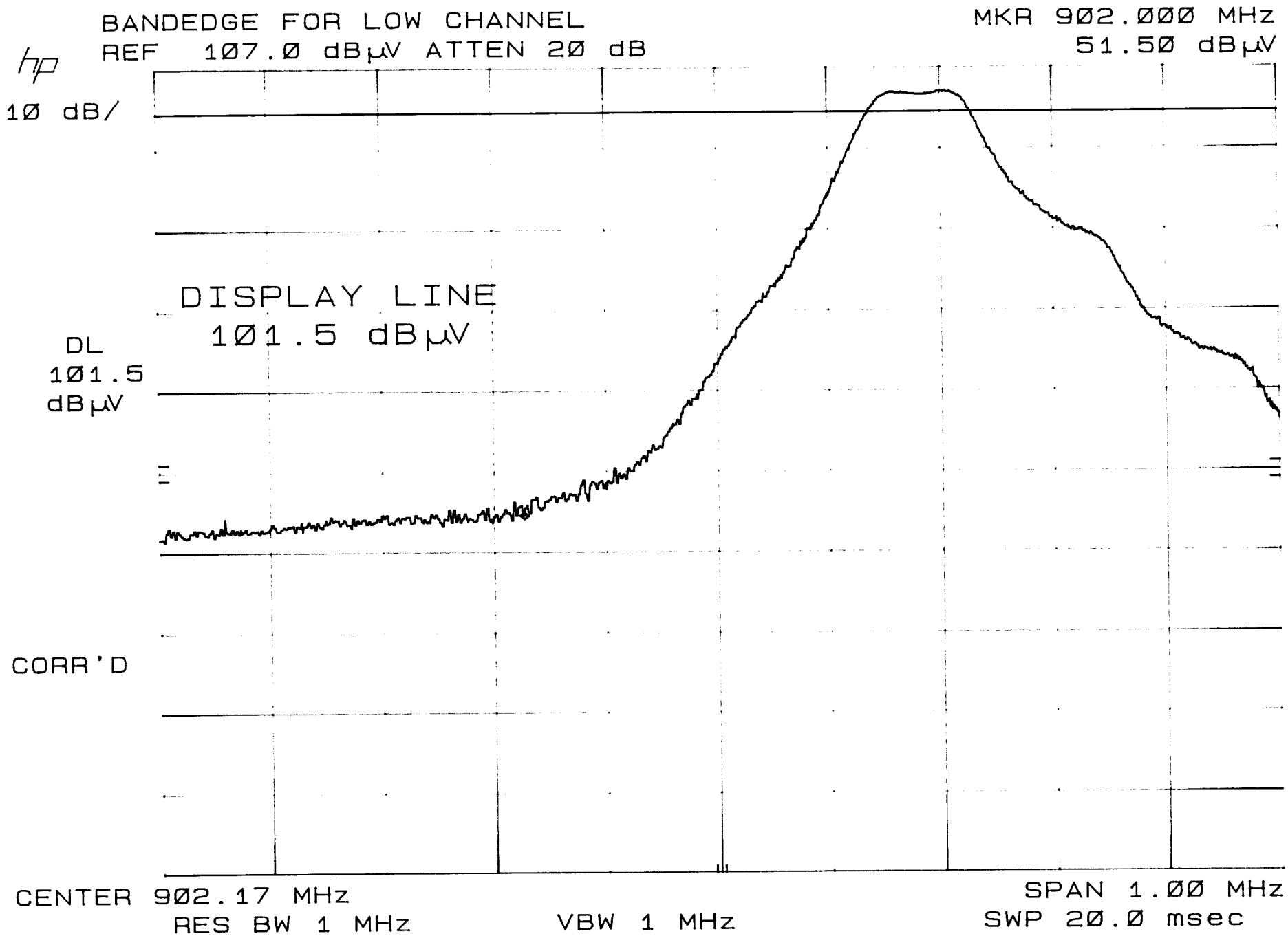
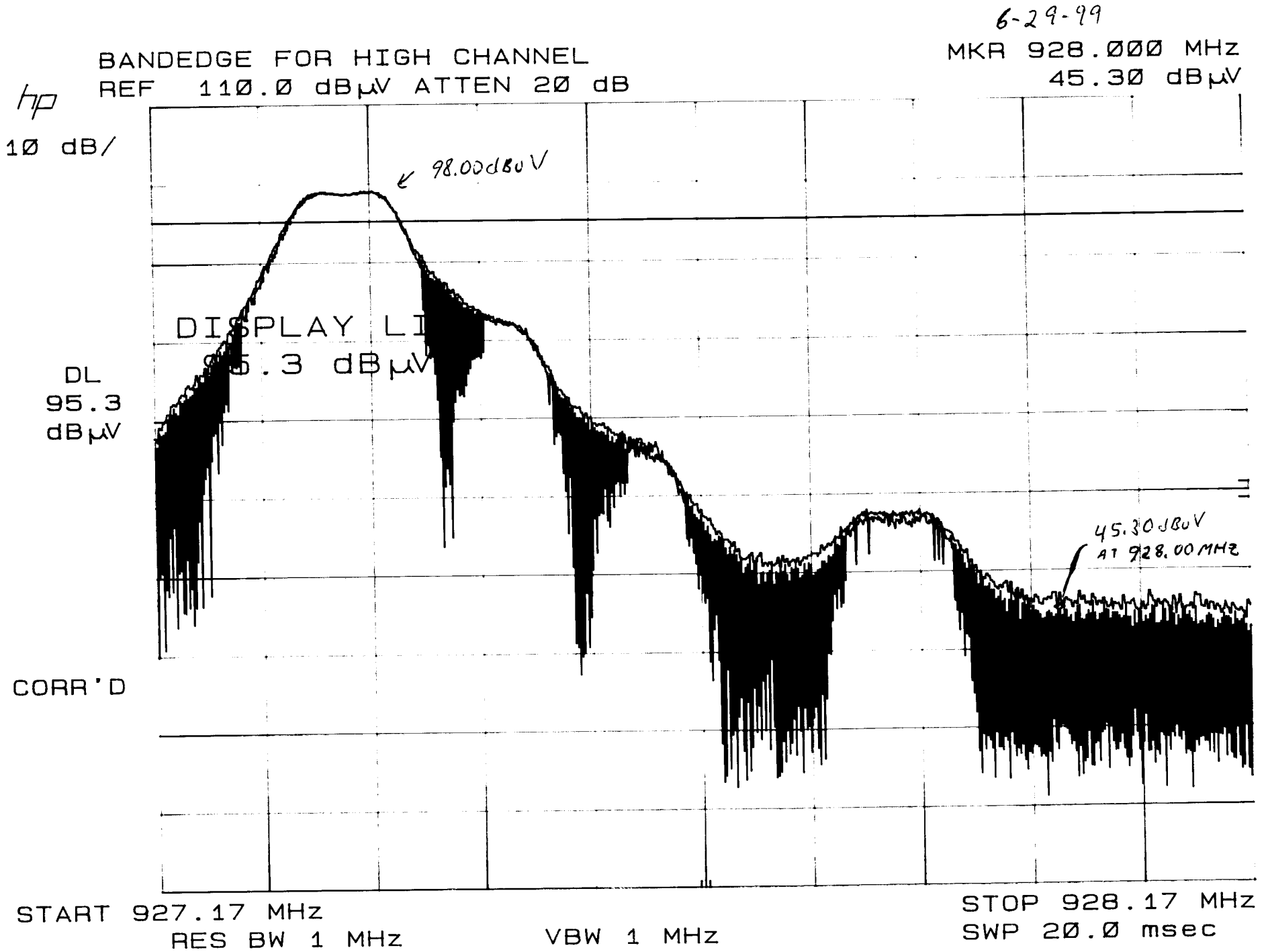
EMISSION LEVEL [dBuV] PEAK
Graph for Peak

6/29/1999 20:09:24




COMPATIBLE ELECTRONICS


BANDEDGE FOR LOW CHANNEL
REF 107.0 dBµV ATTEN 20 dB
MKR 902.000 MHz
51.50 dBµV
10 dB/
DISPLAY LINE
101.5 dBµV
DL
101.5
dBµV
CORR'D
CENTER 902.17 MHz
RES BW 1 MHz
VBW 1 MHz
SPAN 1.00 MHz
SWP 20.0 msec


6-29-99
BANDEDGE FOR HIGH CHANNEL
REF 110.0 dBµV ATTEN 20 dB
MKR 928.000 MHz
45.30 dBµV
10 dB/
98.00dBuV
DISPLAY LI
95.3 dBµV
DL
95.3
dBµV
45.30dBuV
AT 928.00MHz
CORR'D
START 927.17 MHz
RES BW 1 MHz
VBW 1 MHz
STOP 928.17 MHz
SWP 20.0 msec