

APPLICANT: VTECH TELECOMMUNICATIONS LTD.

FCC ID: EW789-5005-00

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SECURITY CODING INFORMATION

15.214(d) - THIS DEVICE COMPLIES WITH THE SECURITY CODE REQUIREMENTS OF 15.214(d)(1)(2) AND (3) BY MEANS OF THE FOLLOWING:

SEE EXHIBIT #: 16

TEST EQUIPMENT LIST

1. X Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 85650A, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372 Cal. 10/17/99
2. X Biconnical Antenna: Eaton Model 94455-1, S/N 1057
3.    Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
4. X Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
5.    Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
6. X Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319
7.    18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
8.    Horn 40-60GHz: ATM Part #19-443-6R
9.    Line Impedance Stabilization Network: Electro-Metrics Model ANS-25/2, S/N 2604 Cal. 2/9/00
10.    Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
11.    Frequency Counter: HP Model 5385A, S/N 3242A07460 Cal 10/6/99
12.    Peak Power Meter: HP Model 8900C, S/N 2131A00545
13. X Open Area Test Site #1-3meters Cal. 12/22/99
14.    Signal Generator: HP 8640B, S/N 2308A21464 Cal. 9/23/99
15.    Signal Generator: HP 8614A, S/N 2015A07428
16.    Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211 Cal. 6/10/00
17.    Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153 Cal. 11/24/99
18.    AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 9/21/99
19.    Digital Multimeter: Fluke Model 8012A, S/N 4810047 Cal 9/21/99
20.    Digital Multimeter: Fluke Model 77, S/N 43850817 Cal 9/21/99
21.    Oscilloscope: Tektronix Model 2230, S/N 300572 Cal 9/23/99

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#### TEST PROCEDURE

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

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz. Above 1.0GHz the RBW = 1.0MHz and the VBW=3.0MHz. The ambient temperature of the UUT was 53oF with a humidity of 70%.

ANSI STANDARD C63.4-1992 10.1.7 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The UUT was placed flush with the back of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

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#### TEST PROCEDURE CONTINUED

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSIC63.4-1992 with the EUT 40 cm from the vertical ground wall.

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

#### Example:

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

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 53oF with a humidity of 70%.

#### ANTENNA AND GROUND CIRCUITRY

This unit makes use of a short, antenna. The antenna is inductively coupled. The antenna is self contained, no provision is made for an external antenna.

No ground connection is provided. The unit relies on the ground tract of the printed circuit board.

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APPLICANT: VTECH TELECOMMUNICATIONS LTD.

FCC ID: EW789-5005-00 (BASE)

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.249

REQUIREMENTS: Carrier frequency will not exceed 94.0 dBuV/m

FREQUENCY	LEVEL
MHz	dBuV/M
902- 928 MHz:	54.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

BASE FREQUENCY RANGE: 902.10-905.00 MHz

TEST DATA:

EMISSION FREQUENCY MHz	METER READING AT 3 METERS dBuV	COAX LOSS dB	ANTENNA CORRECTION FACTOR dB	FIELD STRENGTH dBuV/m@3m	MARGIN dB	ANT. POL.
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BASE - TUNED FREQUENCY 902.30

902.30	55.10	2.90	24.19	82.19	11.81	H
1804.60	6.90	1.00	27.22	35.12	18.88	V

BASE - TUNED FREQUENCY 904.00

904.00	56.70	2.90	24.18	83.78	10.22	H
1808.00	6.80	1.00	27.23	35.03	18.97	V

SAMPLE CALCULATION:  $FS_{dBuV/m} = MR_{(dBuV)} + ACF_{dB}$ .

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD. Measurements were made at Timco Engineering, Inc. 849 N.W. State Road 45, Newberry, FL 32669.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: MARIO R. DE ARANZETA

DATE: AUGUST 31, 2000

APPLICANT: VTECH TELECOMMUNICATIONS LTD.

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APPLICANT: VTECH TELECOMMUNICATIONS LTD.

FCC ID: EW789-5005-00 (HANDSET)

NAME OF TEST: RADIATION INTERFERENCE PAGE 1 OF 1

RULES PART NO.: 15.249

REQUIREMENTS: Carrier frequency will not exceed 94.0 dBuV/m

FREQUENCY	LEVEL
<u>MHz</u>	<u>dBuV/M</u>
902- 928 MHz:	54.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

HANDSET FREQUENCY RANGE: 924.00-927.00 MHz

TEST DATA:

EMISSION FREQUENCY MHz	METER READING AT 3 METERS dBuV	COAX LOSS dB	ANTENNA CORRECTION FACTOR dB	FIELD STRENGTH dBuV/m@3m	MARGIN dB	ANT. POL.
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HANDSET TUNED FREQUENCY 926.20 MHz

926.20	53.30	2.90	24.11	80.31	13.69	V
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HANDSET TUNED FREQUENCY 927.50 MHz

927.50	52.60	2.90	24.12	79.62	14.38	V
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SAMPLE CALCULATION:  $FS_{dBuV/m} = MR_{dBuV} + ACF_{dB}$ .

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992 with the following exception: the unit was operated into its own antenna with the antenna at a height of four feet. Measurements were made at Timco Engineering, Inc. 849 N.W. State Road 45, Newberry, FL 32669.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: \_\_\_\_\_ DATE: AUGUST 31, 2000

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APPLICANT: VTECH TELECOMMUNICATIONS LTD.  
FCC ID: EW789-5005-00  
NAME OF TEST: Occupied Bandwidth  
RULES PART NO.: 15.233  
REQUIREMENTS: The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits of 15.209, whichever permits the higher emission levels.

THE GRAPHS IN EXHIBITS 17,18 REPRESENT THE EMISSIONS TAKEN FOR THIS DEVICE.

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

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: \_\_\_\_\_ AUGUST 31, 2000

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APPLICANT: VTECH TELECOMMUNICATIONS LTD.  
FCC ID: EW789-5005-00  
NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE  
RULES PART NUMBER: 15.207

MINIMUM REQUIREMENTS:	FREQUENCY <u>MHz</u>	LEVEL <u>uV</u>
	0.450-30	250

TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 60.3 uV @ 570 KHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 14.5 uV @ 4.00 MHz.

THE GRAPHS IN EXHIBITS 19,20 REPRESENT THE EMISSIONS READ FOR POWERLINE CONDUCTED FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

PERFORMED BY: MARIO R. DE ARANZETA

DATE: AUGUST 31, 2000

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