

APPLICANT: KCL TECHNOLOGY LTD.

FCC ID: EMW025288

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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:

TEST EQUIPMENT LIST

1. 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
2. Biconnical Antenna: Eaton Model 94455-1, S/N 1057,
3. Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
4. Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
5. Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
6. 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 EM-7820, w/NEMA Adapter S/N 2682
10. Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
11. Frequency Counter: HP Model 5385A, S/N 3242A07460
12. Peak Power Meter: HP Model 8900C, S/N 2131A00545,
13. Open Area Test Site #1-3meters
14. Signal Generator: HP 8640B, S/N 2308A21464 Cal. 11/21/00
15. Signal Generator: HP 8614A, S/N 2015A07428
16. Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211
17. Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153
18. AC Voltmeter: HP Model 400FL, S/N 2213A14499
19. Digital Multimeter: Fluke Model 8012A, S/N 4810047
20. Digital Multimeter: Fluke Model 77, S/N 43850817
21. Oscilloscope: Tektronix Model 2230, S/N 300572

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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 98°F with a humidity of 25%.

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.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI C63.4-1992 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 78°F with a humidity of 40%.

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FCC ID: EMW025288 (BASE)

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.249

REQUIREMENTS: Carrier frequency will not exceed 94.0 dBuV/m

FREQUENCY MHz	LEVEL 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:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuv	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuv/m	Margin dB
902.70	902.70	61.2	V	4.50	24.60	90.30	3.70
902.70	1,805.40	10.4	V	3.70	28.55	42.65	11.35
902.70	2,708.10	11.1	V	3.70	30.78	45.58	8.42
904.70	904.70	63.2	V	4.50	24.60	92.30	1.70
904.70	1,809.40	10.9	V	3.70	28.55	43.15	10.85
904.70	2,714.10	11.4	V	3.70	30.78	45.88	8.12

Emissions were scanned to the 10th Harmonic.

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

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: JOSEPH SCOGLIO

DATE: 6/25/01

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APPLICANT: KCL TECHNOLOGY LTD.
FCC ID: EMW025288 (HANDSET)
NAME OF TEST: RADIATION INTERFERENCE
RULES PART NO.: 15.249
REQUIREMENTS: Carrier frequency will not exceed 94.0 dBuV/m

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

HANDSET FREQUENCY RANGE: 924.00-927.00 MHz

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuv	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuv/m	Margin dB
925.20	925.20	62.7	H	4.50	23.09	90.29	3.71
927.10	927.10	64.1	H	4.50	23.09	91.69	2.31

Emissions were scanned to the 10th harmonic.

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

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 80 centimeters. 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: JOSEPH SCOGLIO

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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 ON THE FOLLOWING PAGES REPRESENT THE EMISSIONS TAKEN FOR THIS DEVICE.

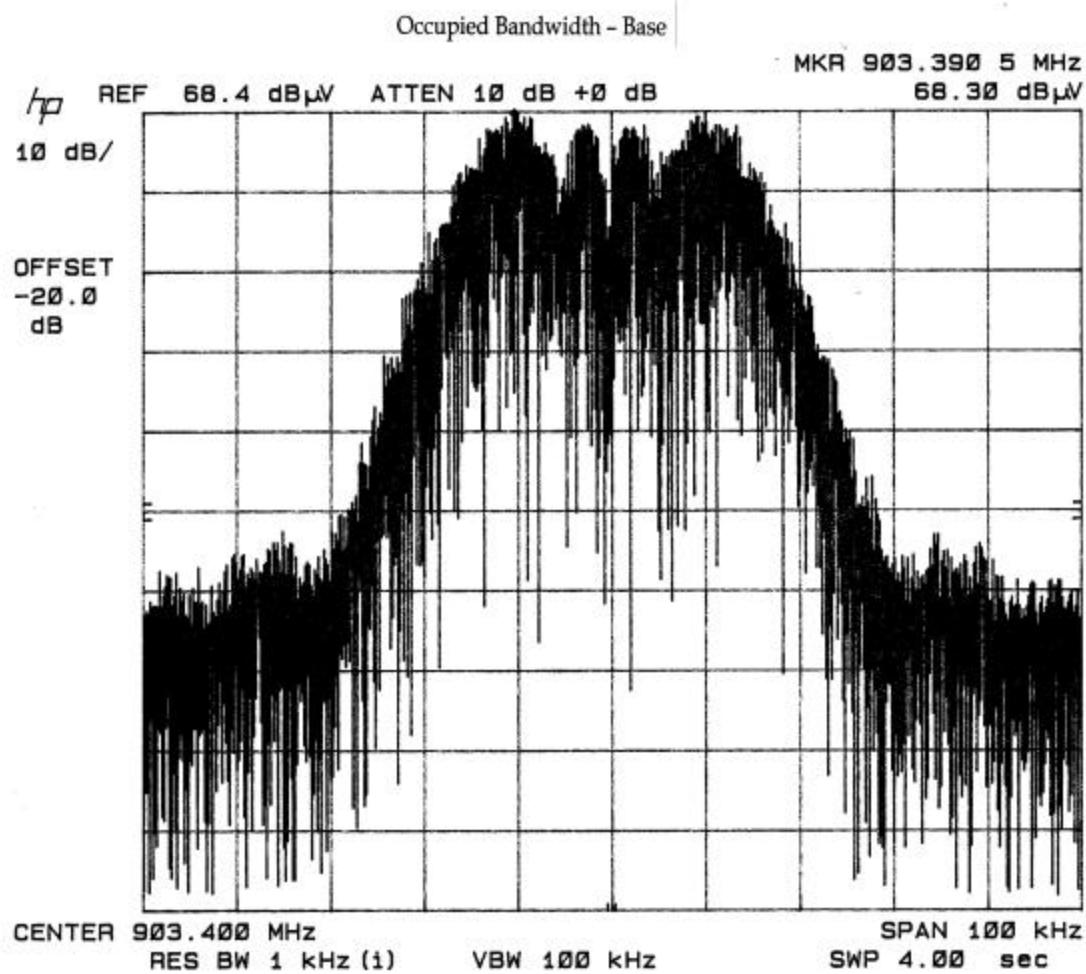
METHOD OF MEASUREMENT: A small sample of the transmitter output was fed into the spectrum analyzer and the above photo was taken. The vertical scale is set to -10 dBm per division. The horizontal scale is set to 10 kHz per division.

TEST RESULTS: The unit DOES meet the FCC requirements.

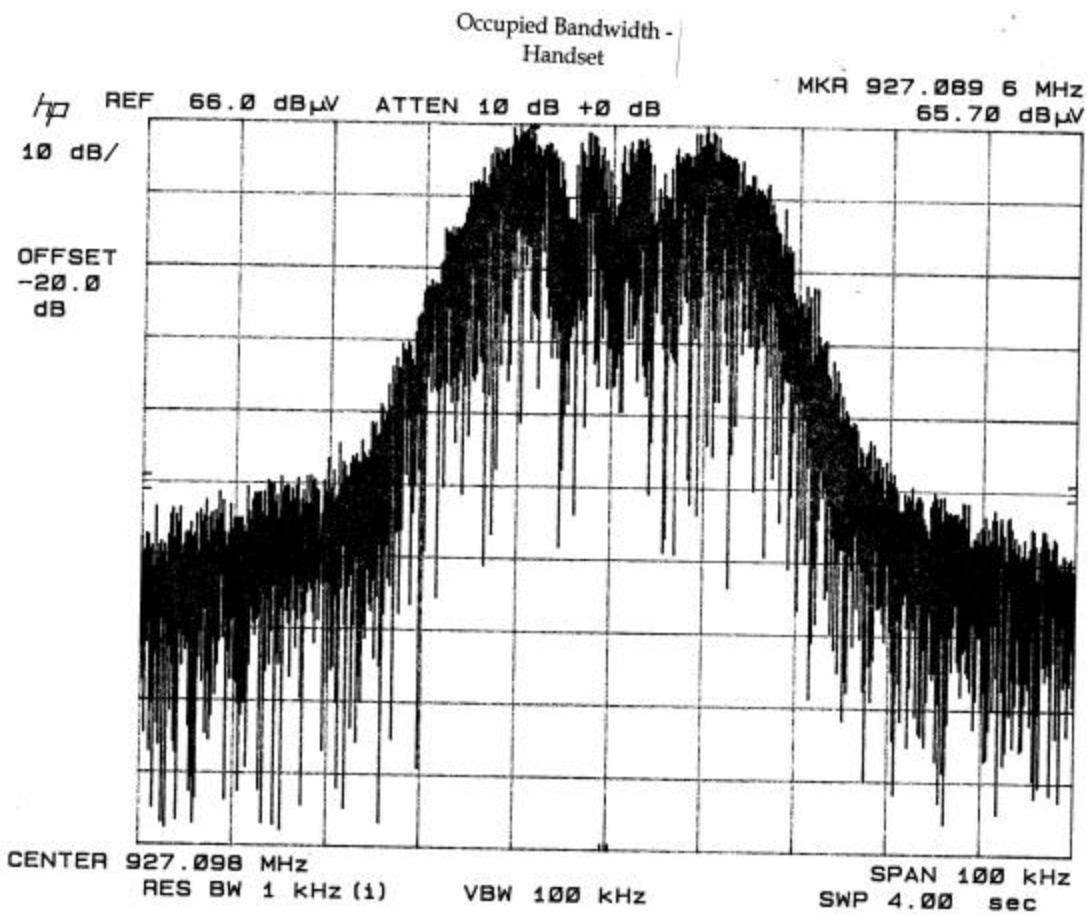
PERFORMED BY: JOSEPH SCOGLIO

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APPLICANT: KCL TECHNOLOGY LTD.

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NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.207

MINIMUM REQUIREMENTS: FREQUENCY LEVEL
MHz uV

0.450-30	250
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TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 45.131 uV @ 450 kHz.

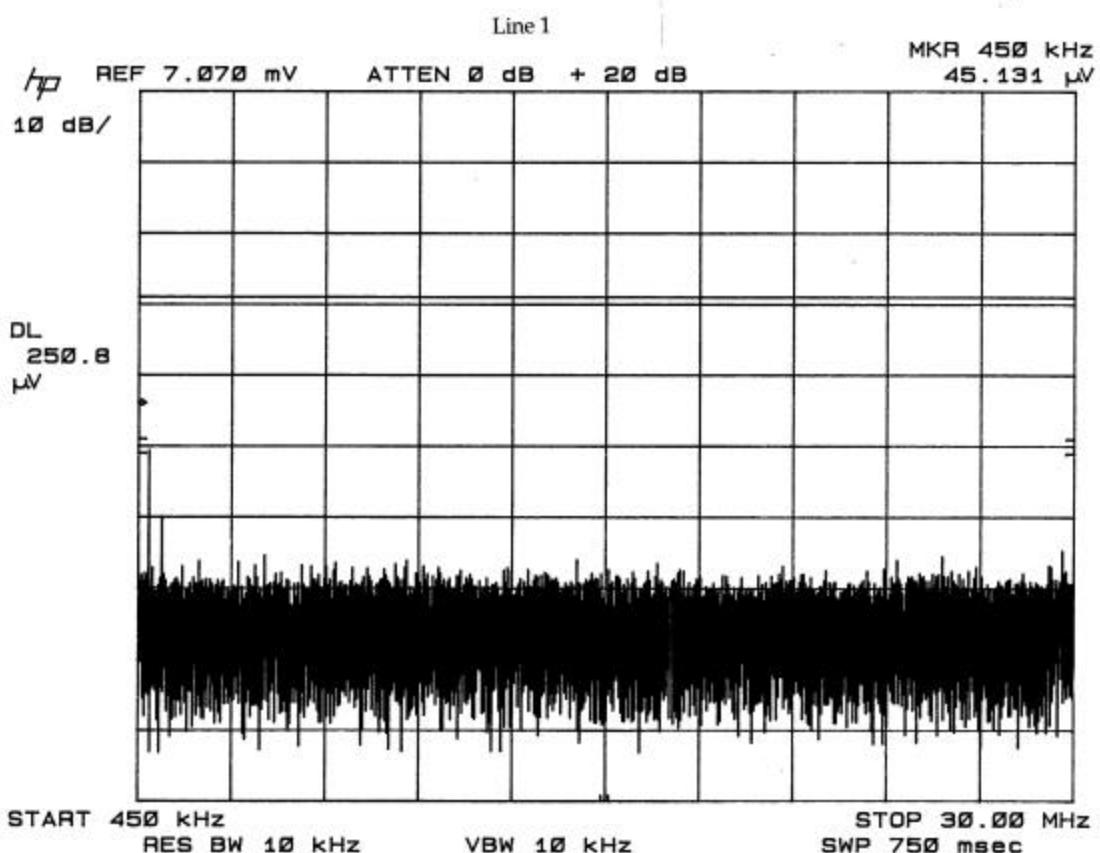
THE HIGHEST EMISSION READ FOR LINE 2 WAS 42.606 uV @ 690 kHz.

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

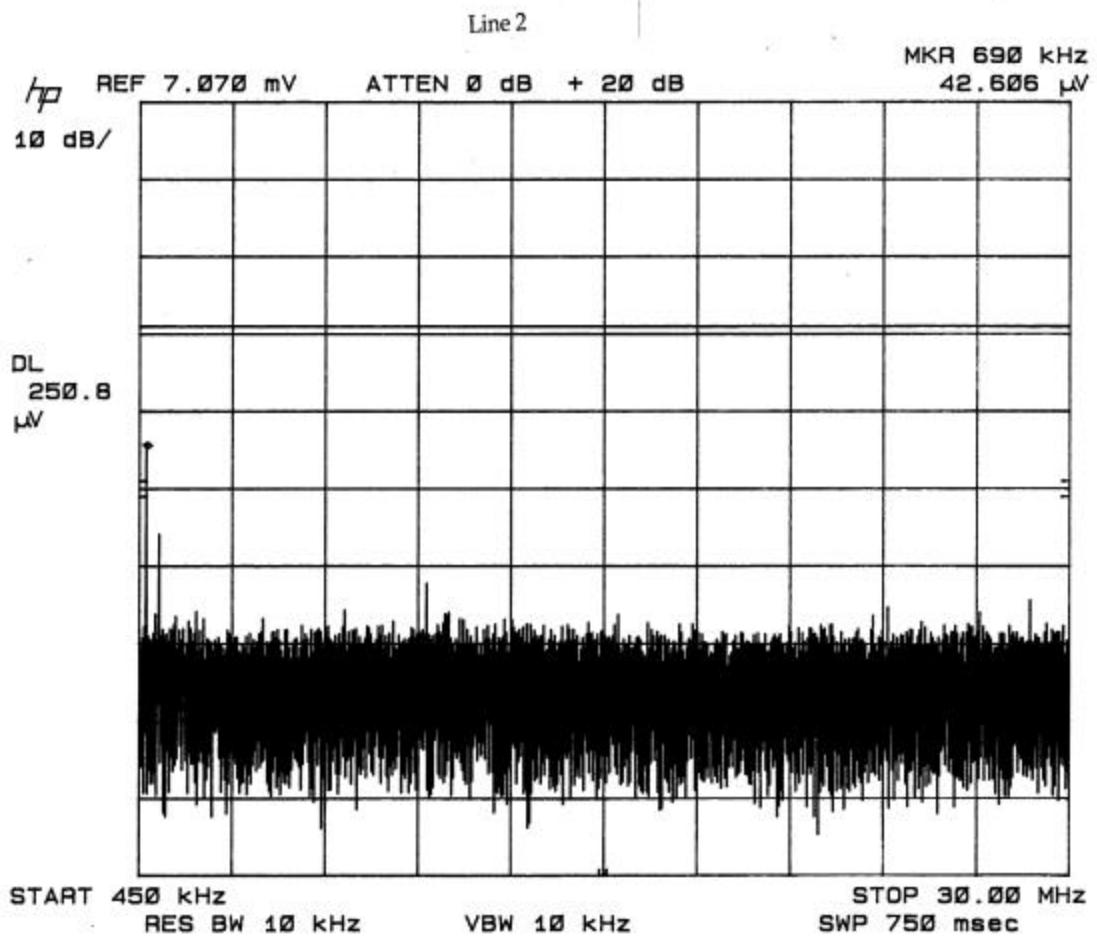
TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

PERFORMED BY: JOSEPH SCOGLIO DATE: 6/25/01

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