

TIMCO ENGINEERING INC.
25355 WEST NEWBERRY ROAD
PO BOX 370
NEWBERRY, FLORIDA 32669
888-472-2424 OR 352-472-5500
FAX 352-472-2030
email:sid2s@timcoengr.com

20 August 1998

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TO: MR. GREGORY CZUMAK FROM: SID SANDERS
Federal Communications Commission
Office of Science & Technology
7435 Oakland Mills Road
Columbia, MD 21046

FAX #: 1-301-344-2050

SUBJECT: FCCID: GH3HD-800

REFERENCE: 731 CONFIRMATION #EA89870 CORRESPONDANCE ID: 2341

THE FACTORY SENT ME ANOTHER SAMPLE AND THE POWER WAS IN LINE WITH
THE ORIGINAL. I RETESTED THE UNIT AND THE DATA IS ATTACHED HERE.

IF YOU HAVE ANY OTHER QUESTIONS PLEASE LET ME KNOW.

REGARDS,

SID SANDERS
F:\CUS\H\HANCHANG\HAN128G8.RPT

APPLICANT: HANCHANG CORPORATION

FCC ID: GH3HD-800

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.207

MINIMUM REQUIREMENTS:	FREQUENCY <u>MHz</u>	LEVEL <u>dBuV</u>
	0.450-30	48 dBuV

TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 20.63 uV @ 800kHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 12.15 uV @ 800kHz.

THE ATTACHED GRAPHS REPRESENT THE EMISSIONS READ FOR POWERLINE CONDUCTED FOR THIS DEVICE.

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

PERFORMED BY: S. S. SANDERS

DATE: 18 August 1998

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APPLICANT: HANCHANG CORPORATION
FCC ID: GH3HD-800
NAME OF TEST: OCCUPIED BANDWIDTH
RULES PART NUMBER: 15.247

15.247(a)(2)

6dB bandwidth shall be at least 500 kHz. The 6dB points for both the base is 1.5MHz and handset is 1.58MHz. As shown in the accompanying plots. The bandwidth was measured at three places in the band and the narrowest is reported below.

Base 6dB Bandwidth = 1.5MHz

Handset 6 dB Bandwidth = 1.58MHz

15.247(B)

The maximum peak output power shall not exceed 1 watt (30 dBm). If directional transmitting antennas with a gain of more than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Both the base and handsets have a maximum power output of less than 10 mW. Power was measured by disconnecting the antennas and measuring across a 50 ohm load as recommended by the manufacturer into a HP peak power meter Model 8900C. The antennas are non directional and do not exceed 6 dBi gain. The power output was measured at three places in the band highest is reported below.

POWER OUTPUT - LIMIT 30 dBm

BASE PEAK POWER OUTPUT = 17.0dBm
HANDSET PEAK POWER OUTPUT = +17.5dBm

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APPLICANT: HANCHANG CORPORATION

FCC ID: GH3HD-800

NAME OF TEST: ANTENNA CONDUCTED SPURIOUS EMISSIONS

RULES PART NUMBER: 15.247(c)

FREQUENCY MHz	ATTENUATION dBc
BASE	
906.8	00.00
1813.67	-53.50
2720.4	-58.10
3672.2	-57.50
4534.0	-67.40
7254.4	-70.30
916.4	00.00
1832.8	-67.50
2749.2	-37.40
3665.6	-41.30
4582.0	-43.00
5498.4	-58.20
923.6	00.00
1847.2	-48.60
2770.8	-59.90
3694.4	-62.10
5541.6	-<65.20
HANDSET	
903.8	00.00
1807.4	-54.80
2709.6	-54.50
3614.3	-57.20
5421.4	-72.30
910.0	00.00
1820.0	-55.30
2730.0	-56.40
3640.0	-62.10
5460.0	-73.20
923.3	00.00
1846.6	-52.60
2769.9	-54.80
3693.2	-55.20
5539.8	-69.40

The searches were made to the tenth harmonic.

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APPLICANT: HANCHANG CORPORATION

FCC ID: GH3HD-800

NAME OF TEST: RADIATED SPURIOUS EMISSIONS - BASE

RULES PART NUMBER: 15.247(c)

REQUIREMENTS: Emissions that fall in the restricted bands (15.205). These emissions must be less than or equal to 500 uV/m (54 dBuV/m).

TEST DATA:

EMISSION FREQUENCY MHz	METER READING AT 3m dBuV	COAX LOSS dB	ACF dB	FIELD STRENGTH dBuV/m @ 3m	ANTENNA
BASE					
906.80	83.10	2.90	24.17	110.17	V
1813.67	15.80	1.00	27.25	44.06	H
2720.40R	16.40	1.14	29.80	47.34	H
3672.20R	12.50	1.28	32.18	45.96	H
4534.00R	11.20	1.41	33.60	46.21	H
7254.40R	9.80	1.82	36.66	48.28	H
916.00	84.50	2.90	24.14	111.54	V
1832.00	16.80	1.00	27.33	45.13	H
2748.00R	15.20	1.14	29.87	46.21	H
4580.00R	16.20	1.42	33.65	51.27	H
5496.00	12.10	1.55	34.68	48.34	H
923.40	82.10	2.90	24.11	109.11	V
1846.80	15.60	1.01	27.39	43.99	H
2770.20R	13.20	1.15	29.93	44.27	H
3693.56R	12.50	1.28	32.23	46.02	H
4617.10R	8.50	1.42	33.69	43.62	H
5540.50	11.10	1.56	34.73	47.39	H

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

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was scanned from 30 MHz to 10 GHz using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard model 85650A Quasi-Peak Adaptor, an Eaton model 94455-1 Biconical Antenna, and an Electrometrics RGA-180 Horn Antenna. Low loss coax was used above 1 GHz, At the higher frequencies, the measuring antenna was moved to within 1m of the UUT to search for emissions. Measurements were made at Timco Engineering, Inc. 6051 NW 19TH Lane Gainesville, FL.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: S. S. SANDERS

DATE: 18 August 1998

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APPLICANT: HANCHANG CORPORATION
 FCC ID: GH3HD-800
 NAME OF TEST: RADIATED SPURIOUS EMISSIONS - HANDSET
 RULES PART NUMBER: 15.247(c)
 REQUIREMENTS: Emissions that fall in the restricted bands (15.205). These emissions must be less than or equal to 500 uV/m (54 dBuV/m).

TEST DATA:

EMISSION FREQUENCY MHZ AT 3m	METER READING dBuV	COAX LOSS dB	ACF dB	FIELD STRENGTH dBuV/m @ 3m	ANTENNA
HANDSET					
903.60	79.90	2.90	24.19	106.99	V
1807.20	14.90	1.00	27.23	43.13	H
2710.80R	15.20	1.14	29.78	46.11	H
3614.40R	14.30	1.27	32.04	47.61	H
4518.00R	6.90	1.41	33.58	41.89	H
6325.20	7.20	1.68	35.62	44.50	H
910.00	78.70	2.90	24.16	105.76	V
1820.00	14.80	1.00	27.28	43.08	V
2730.00R	15.10	1.14	29.83	46.06	H
3640.00R	14.50	1.28	32.10	47.88	H
5460.00R	10.40	1.55	34.64	46.59	H
923.20	79.20	2.90	24.11	106.21	V
1846.40	13.80	1.01	27.39	42.19	H
2769.60R	14.90	1.15	29.92	45.97	H
3693.00R	12.80	1.28	32.23	46.32	H
5538.70	11.60	1.56	34.73	47.89	H

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

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was scanned from 30 MHz to 10 GHz using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard model 85650A Quasi-Peak Adaptor, an Eaton model 94455-1 Biconical Antenna, and an Electrometrics RGA-180 Horn Antenna. Low loss coax was used above 1 GHz, At the higher frequencies, the measuring antenna was moved to within 1m of the UUT to search for emissions. Measurements were made at Timco Engineering, Inc. 6051 NW 19th Lane Gainesville, FL.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY: S. S. SANDERS DATE: 18 August 1998

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APPLICANT: HANCHANG CORPORATION

FCC ID: GH3HD-800

NAME OF TEST: TRANSMITTED POWER DENSITY

RULES PART NUMBER: 15.247(d)

REQUIREMENTS: The transmitted power density averaged over any 1 second interval shall not be greater than 8 dBm in any 3 kHz bandwidth within these bands.

TEST DATA:

The spectrum line spacing could not be resolved so the noise power density was measured;

	FREQUENCY	METER READING
HANDSET:	908.68MHZ	-75.87dBm + 35dB = -40.87dBm
	911.28MHZ	-81.47dBm + 35dB = -46.47dBm
	925.97MHZ	-81.57dBm + 35dB = -46.57dBm
BASE:	907.680MHZ	-78.97dBm + 35dB = -43.97dBm
	909.31MHZ	-79.17dBm + 35dB = -44.17dBm
	920.71MHZ	-86.37dBm + 35dB = -51.37dBm

Measurement Method:

Starting from the settings that were used for the 6Db bandwidth the peak signal was located and the span was reduced and the sweep time increased in a manner to maintain calibration and to keep the peak emission in the display, then once the sweep time reached 300seconds at 900KHz span the spectrum analyzer was put into the noise power mode and the plots made.

SEE ATTACHED PLOTS

NAME OF TEST: PROCESSING GAIN

RULES PART NUMBER: 15.247(e)

REQUIREMENTS: The processing gain shall be at least 10 dB.

TEST DATA:

The processing gain of this unit is 11.2dB . This information was provided by the manufacturer.

PERFORMED BY: S. S. SANDERS

DATE: 18 August 1998

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