FCC PART 15.247

EMI MEASUREMENT AND TEST REPORT

For

Newcont Ele Co., Ltd.

Unit D, 40/F., Block C, Electronics Science & Technology Bldg
Shennan Middle Road, Futian District, Shenzhen, Guangdong Province, P.R.China

FCC ID: QFENTP-3422

This Report Concerns:	Equipment Type:
☒ Original	2.4GHz Digital Cordless Telephone with CD Player

Test Engineer:	Jerry Wang
Report No.:	R0505237
Report Date:	2005-06-16
Reviewed By:	Daniel Deng
Prepared By:	Bay Area Compliance Laboratory Corporation (BACL) 230 Commercial Street Sunnyvale, CA 94085 Tel: (408) 732-9162 Fax: (408) 732 9164

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Newcont Ele Co., Ltd.*, FCC ID: *QFENTP-3422*, model: *NTP-3422*, or the "EUT" as referred to in this report is the base part of a 2.4GHz Digital Cordless Telephone with Audio, which measures approximately 26.0cmL x 17.0cm W x 17.0cm for Base, and 15.0cmL x 3.5cm W x 5.0cm H for Handset.

** The test data gathered are from a production sample, S/N: 1007573, provided by the manufacturer.*

Objective

This type approval report is prepared on behalf of *Newcont Ele Co., Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A, B, C.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003.

Test Facility

The Open Area Test site used by BACL to collect radiated and conducted emission measurement data is located in the back parking lot of the building at 230 Commercial Street, Sunnyvale, California, USA.

Test site at BACL has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1300F2 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200167-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2001670.htm

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to ANSI C63.4-2003.

The EUT was tested in the normal (native) operating mode to represent *worst*-case results during the final qualification test.

Special Accessories

As shown in following test block diagram, all interface cables used for compliance testing are shielded.

Schematics / Block Diagram

Please refer to Appendix A.

Equipment Modifications

No modifications were made to the EUT.

Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
Southern Telecom	Telephone	None	None	None
Teltone Corp	Simulator	TLS-3B-01	80071	None

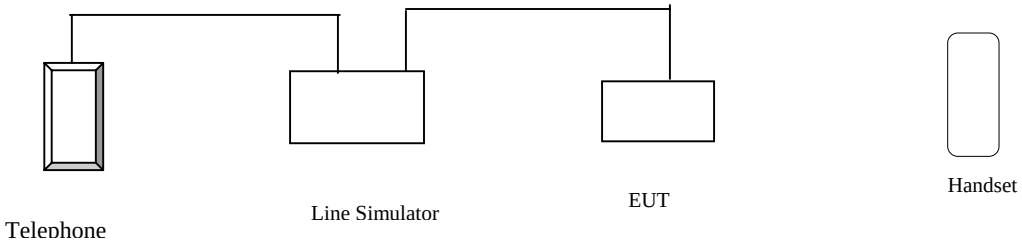
External I/O Cabling List and Details

Cable Description	Length (M)	Port/From	To
None-Shielded RJ-11 Cable	1.5	RJ-11 Port/EUT	Simulator RJ11Port
None-Shielded RJ-11 Cable	1.5	Support telephone	Simulator RJ11Port

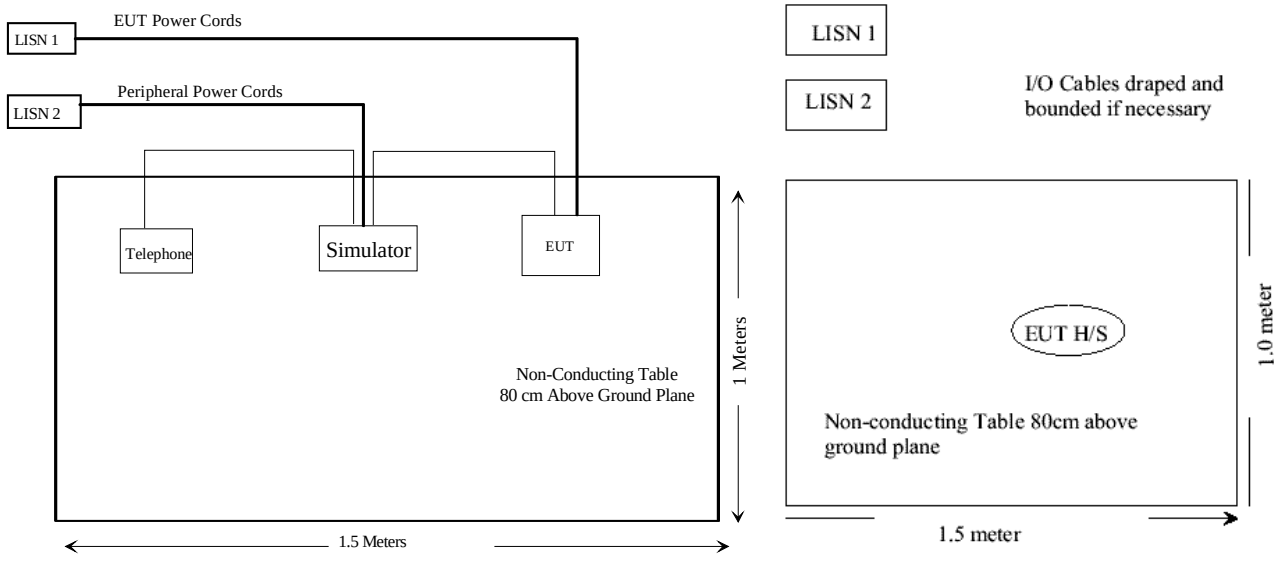
Power Supply Information

Manufacturer	Description	Model	Serial Number	FCC ID
N/A	AC Adaptor	U120150DA4	N/A	None

Configuration of Test System



Test Setup Block Diagram



SUMMARY OF TEST RESULTS FOR FCC PART 15

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§ 15.205	Restricted Bands	Compliant
§15.207 (a)	Conducted Emission	Compliant
§15.209	Radiated Emission	Compliant
§15.247 (a) (1)	Hopping Channel Separation	Compliant
§15.247 (a) (1)	Channel Bandwidth	Compliant
§15.247 (a) (1) (iii)	Number of Hopping Frequencies Used	Compliant
§15.247 (a) (1) (iii)	Dwell Time of Each Frequency within a 30 Second Period of time	Compliant
§15.247 (b) (1)	Maximum Peak Output Power	Compliant
§ 15.247 (b)(5) § 2.1091	RF Safety Requirements	Compliant
§ 15.247 (d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§ 2.1051	Spurious Emission at Antenna Port	Compliant

ANTENNA REQUIREMENT

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to § 15.247 (1), if transmitting antennas of directional gain greater 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.

The gain of antenna used for transmitting is 0 dBi by default, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

§15.207(a) - CONDUCTED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at BACL is ±2.4 dB.

Test Setup

The measurement was performed at shield room, using the same setup per ANSI C63.4 – 2003 measurement procedure. The specification used was FCC Class B limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The EUT was connected with LISN-1.

Receiver Setup

The EMI receiver was set to investigate the spectrum from 150 kHz to 30MHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
R&S	Receiver, EMI Test	ESCS30	100176	2004-09-15
R&S	Artificial Mains Network	ESH2-Z5	871884/039	2004-08-16
Fluke	Calibrated Voltmeter	189	18485-38	2004-07-18

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Procedure

During the conducted emission test, the power cord of the host system was connected to the mains outlet of the LISN-1.

Maximizing procedure were performed on the six (6) highest emissions of the EUT.

All data was recorded in the peak detection mode, quasi-peak and average. Qusi-Peak readings are distinguished with an "QP". Average readings are distinguished with an "Ave".

Environmental Conditions

Temperature:	23° C
Relative Humidity:	45%
ATM Pressure:	1021 mbar

**The testing was performed by Jerry Wang on 2005-06-03.*

Summary of Test Results

According to the recorded data in following table, the EUT complied with the FCC Conducted limit for a Class B device, with the *worst* margin reading of:

-13.9 dB at **0.150 MHz** in the **Line** conductor

Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC CLASS B	
Frequency MHz	Amplitude dBμV	Detector Qp/Ave/Peak	Phase Line/Neutral	Limit dBμV	Margin dB
0.150	52.1	QP	Line	66.00	-13.9
21.500	30.2	Ave	Line	50.00	-19.8
0.150	45.8	QP	Neutral	66.00	-20.2
21.500	27.5	Ave	Neutral	50.00	-22.5
25.600	25.1	Ave	Line	50.00	-24.9
27.500	21.3	Ave	Neutral	50.00	-28.7
27.500	31.1	QP	Neutral	60.00	-28.9
25.600	31.0	QP	Line	60.00	-29.0
21.500	29.4	QP	Line	60.00	-30.6
21.500	26.4	QP	Neutral	60.00	-33.6
0.150	20.4	Ave	Line	56.00	-35.6
0.150	16.5	Ave	Neutral	56.00	-39.5

Plot of Conducted Emissions Test Data

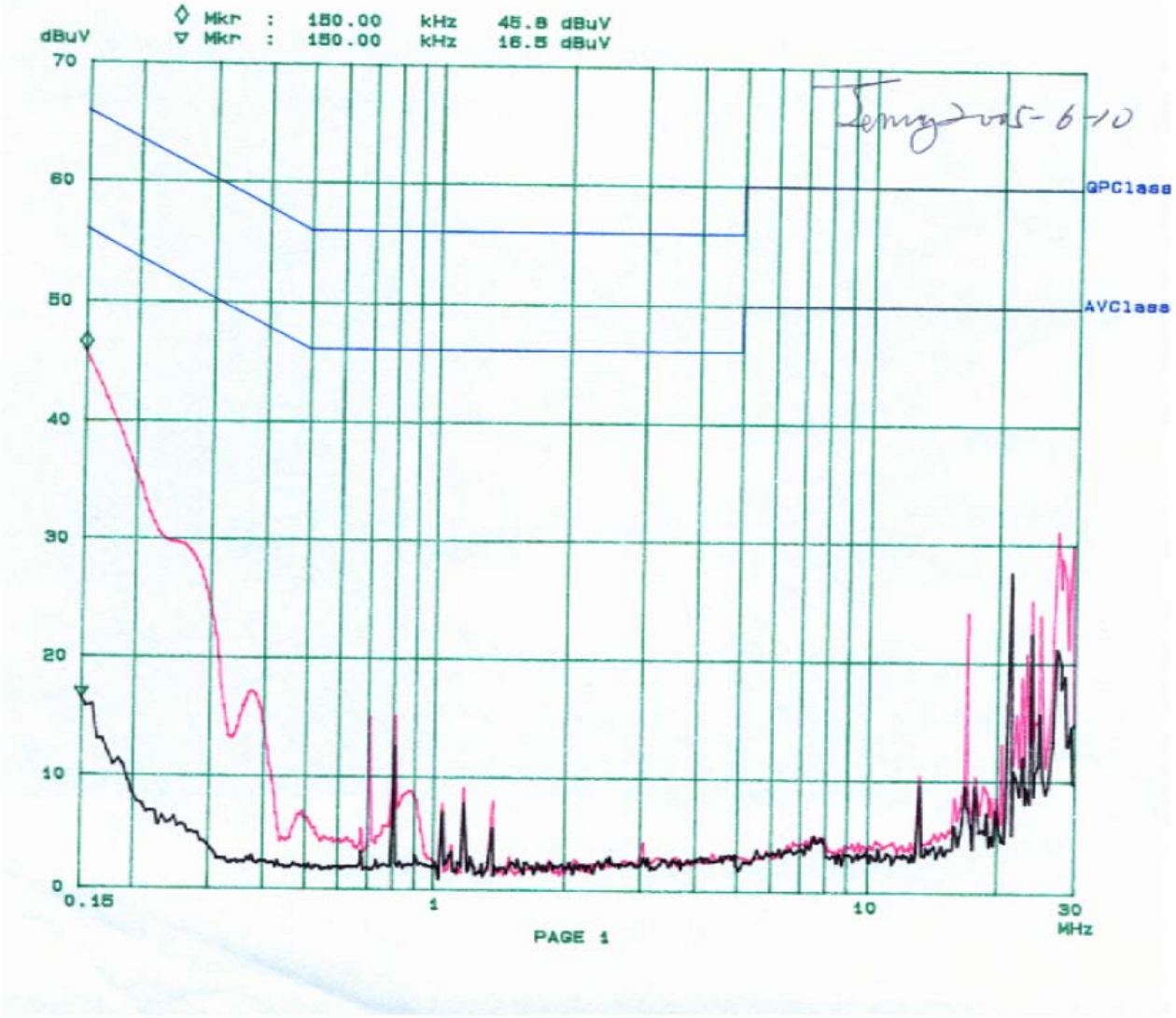
Plot(s) of Conducted Emissions Test Data is presented in the following page as reference.

Bay Area Compliance Laboratory Corp 03. Jun 05 09:07
Class B

EUT: NTP-3422
Manuf: New Cont Ele.Co
Op Cond: Normal
Operator: Jerry
Comment: N
120V

Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	5k	9k	QP+AV	20ms	15dBLN	OFF
1M	5M	10k	9k	QP+AV	1ms	15dBLN	OFF
5M	30M	100k	9k	QP+AV	1ms	15dBLN	OFF

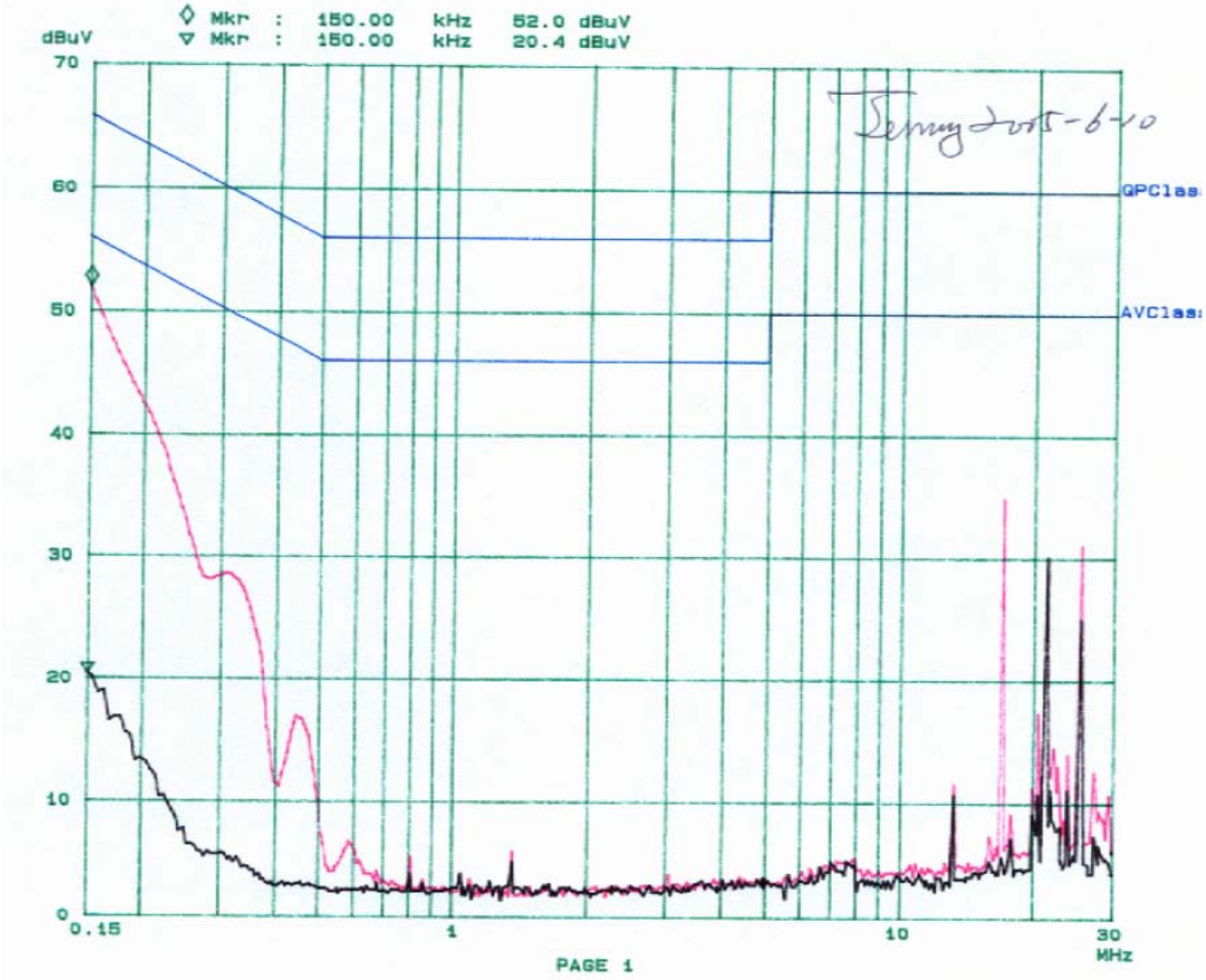


Bay Area Compliance Laboratory Corp 03. Jun 05 09:24
Class B

EUT: NTP-3422
Manuf: New Cont Ele.Co
Op Cond: Normal
Operator: Jerry
Comment: L
120V

Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	5k	9k	QP+AV	20ms	15dBLN	OFF
1M	5M	10k	9k	QP+AV	1ms	15dBLN	OFF
5M	30M	100k	9k	QP+AV	1ms	15dBLN	OFF



§15.205, §15.209 &§15.247 (d) - RADIATED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at BACL is ±4.0 dB.

Test Setup

The radiated emission tests were performed in the open area 3-meter test site, using the setup in accordance with ANSI C63.4-2003. The specification used was the FCC 15 Subpart C limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The EUT was connected with 120Vac/60Hz power source.

Spectrum Analyzer Setup

According to FCC Rules, 47 CFR §15.33 (a) (1), the system was tested to 40GHz.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

Frequency Range	***RBW***	***Video B/W***
Below 30MHz	10kHz	10kHz
30 – 1000MHz	100kHz	100kHz
Above 1000MHz	1MHz	1MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
Hp	Plotter	7475A	2517A05739	N/R
HP	Amplifier, Pre, Microwave	8449B	3147A05739	2004-06-14
Sunol Science	Antenna	JB1	A013105-3	2005-02-11
Agilent	Analyzer, Spectrum	8564E	3943A01781	2004-10-04
Sunol Science	System Controller	SC99V	122303-1	N/R
HP	Pre, Amplifier	8447D	2944A10198	2004-08-20
Metric	Antenna, Horn, Std	SAS-200/571	261	2005-04-12
Rohde & Schwarz	Receiver, EMI Test	ESCI1166.595 0K03	100044	2004-09-29

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Environmental Conditions

Temperature:	24° C
Relative Humidity:	56%
ATM Pressure:	1022 mbar

**The testing was performed by Jerry Wang on 2005-06-07.*

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limits), and are distinguished with a "**Qp**" in the data table.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. - Class B Limit

Summary of Test Results

According to the recorded data in following table, the EUT complied with the FCC 15.247, with the *worst* margin reading of:

Base: **-14.5 dB** at **7205.4000 MHz** in the **Horizontal** polarization, Low Channel, 3 meters

-12.8 dB at **4880.3160 MHz** in the **Vertical** polarization, Middle Channel, 3 meters

-14.6 dB at **4958.8000 MHz** in the **Vertical** polarization, High Channel, 3 meters

-6.5 dB at **124.43 MHz** in the **Horizontal** polarization, Unintentional Emission, 3 meters

Handset: **-13.4 dB** at **4803.6000 MHz** in the **Vertical** polarization, Low Channel, 3 meters

-12.0 dB at **4880.3160 MHz** in the **Horizontal** polarization, Middle Channel, 3 meters

-11.1 dB at **4958.8000 MHz** in the **Vertical** polarization, High Channel, 3 meters

-10.7 dB at **125.00 MHz** in the **Horizontal** polarization, Unintentional Emission, 3 meters

3 Meters Radiated Emission Test Data for Base

Indicated			Antenna	Antenna		Correction Factor			FCC 15.247		
Freqency	Ampl.	Direction	Height	Polar	Antenna	Cable Loss	Amp.	Corr. Ampl.	Limit	Margin	Comments
MHz	dBμV/m	Degree	Meter	H/V	dB	dB	dB	dBμV/m	dBμV/m	dB	
Low Channel											
7205.4000	33.6	200	2.3	H	36.3	4.3	34.7	39.5	54	-14.5	Ave
7205.4000	32.1	200	1.5	V	36.3	4.3	34.7	38.0	54	-16.0	Ave
4803.6000	36.1	270	2.4	V	32.5	3.1	34.8	36.9	54	-17.1	Ave
4803.6000	35.9	180	2.2	H	32.5	3.1	34.8	36.7	54	-17.3	Ave
4803.6000	55.5	300	1.5	V	32.5	3.1	34.8	56.3	74	-17.7	Peak
4803.6000	54.8	180	2.2	H	32.5	3.1	34.8	55.6	74	-18.4	Peak
7205.4000	46.3	200	2.3	H	36.3	4.3	34.7	52.2	74	-21.8	Peak
7205.4000	45.8	300	1.2	V	36.3	4.3	34.7	51.7	74	-22.3	Peak
2401.8000	114.6	45	1.5	H	28.1	2.0	35.8	108.9			Fund/Peak
2401.8000	113.7	45	1.2	V	28.1	2.0	35.8	108.0			Fund/Peak
2401.8000	67.8	90	1.2	V	28.1	2.0	35.8	62.1			Ave
2401.8000	69.6	30	1.5	H	28.1	2.0	35.8	63.9			Ave
Middle Channel											
4880.3160	40.4	270	1.2	V	32.5	3.1	34.8	41.2	54	-12.8	Ave
4880.3160	39.7	180	1.2	H	32.5	3.1	34.8	40.5	54	-13.5	Ave
7320.4740	33.6	180	1.2	H	36.3	4.3	34.7	39.5	54	-14.5	Ave
7320.4740	32.5	180	1.5	V	36.3	4.3	34.7	38.4	54	-15.6	Ave
7320.4740	50.1	270	1.2	V	36.3	4.3	34.7	56.0	74	-18.0	Peak
7320.4740	48.9	180	1.5	H	36.3	4.3	34.7	54.8	74	-19.2	Peak
4880.3160	53.2	200	1.5	V	32.5	3.1	34.8	54.0	74	-20.0	Peak
4880.3160	52.9	180	1.5	H	32.5	3.1	34.8	53.7	74	-20.3	Peak
2440.1580	109.9	45	1.2	H	28.1	2.0	35.8	104.2			Fund/Peak
2440.1580	110.9	30	1.5	V	28.1	2.0	35.8	105.2			Fund/Peak
2440.1580	58.4	100	1.2	V	28.1	2.0	35.8	52.7			Ave
2440.1580	54.1	30	1.5	H	28.1	2.0	35.8	48.4			Ave
High Channel											
4958.8000	58.6	270	1.6	V	32.5	3.1	34.8	59.4	74	-14.6	Peak
7438.2000	33.4	270	1.6	V	36.3	4.3	34.7	39.3	54	-14.7	Ave
4958.8000	38.1	180	1.5	H	32.5	3.1	34.8	38.9	54	-15.1	Ave
7438.2000	32.7	180	1.5	H	36.3	4.3	34.7	38.6	54	-15.4	Ave
4958.8000	57.5	180	1.5	H	32.5	3.1	34.8	58.3	74	-15.7	Peak
4958.8000	36.7	300	1.5	V	32.5	3.1	34.8	37.5	54	-16.5	Ave
7438.2000	49.7	270	1.2	V	36.3	4.3	34.7	55.6	74	-18.4	Peak
7438.2000	47.9	180	1.5	H	36.3	4.3	34.7	53.8	74	-20.2	Peak
2479.4000	110.7	180	1.2	V	28.1	2.0	35.8	105.0			Fund/Peak
2479.4000	112.2	180	1.2	H	28.1	2.0	35.8	106.5			Fund/Peak
2479.4000	59.8	180	1.2	V	28.1	2.0	35.8	54.1			Ave
2479.4000	60.1	180	1.5	H	28.1	2.0	35.8	54.4			Ave

Note:

FUND: Fundemental
AVG: Average

Unintentional Emission

Indicated			Antenna	Antenna		Correction Factor			FCC 15.247	
Frequency	Ampl.	Direction	Height	Polar	Antenna	Cable Loss	Amp.	Corr. Ampl.	Limit	Margin
MHz	dBμV/m	Degree	Meter	H/V	dB	dB	dB	dBμV/m	dBμV/m	dB
124.43	52.3	200	1.5	H	11.7	1.6	28.6	37.0	43.5	-6.5
248.85	51.2	180	1.5	H	13.8	2.2	28.0	39.1	46.0	-6.9
165.90	48.9	180	1.5	H	13.0	1.8	28.4	35.3	43.5	-8.2
179.74	48.6	200	1.2	V	13.1	1.9	28.3	35.3	43.5	-8.2
124.43	50.1	200	1.2	V	11.7	1.6	28.6	34.8	43.5	-8.7
248.85	48.6	200	1.2	V	13.8	2.2	28.0	36.5	46.0	-9.5
69.14	48.5	200	1.2	V	9.3	1.2	28.7	30.3	40.0	-9.7
124.43	48.9	100	1.2	V	11.7	1.6	28.6	33.6	43.5	-9.9
179.73	45.6	270	1.5	H	13.1	1.9	28.3	32.3	43.5	-11.2
345.62	38.9	180	1.5	H	15.4	2.3	28.0	28.6	46.0	-17.4

3 Meters Radiated Emission Test Data for Handset

Indicated			Antenna	Antenna		Correction Factor			FCC 15.247		
Freqency	Ampl.	Direction	Height	Polar	Antenna	Cable Loss	Amp.	Corr. Ampl.	Limit	Margin	Comments
MHz	dBμV/m	Degree	Meter	H/V	dB	dB	dB	dBμV/m	dBμV/m	dB	
Low Channel											
4803.6000	39.8	270	2.4	V	32.5	3.1	34.8	40.6	54	-13.4	Ave
7205.4000	34.6	200	1.5	V	36.3	4.3	34.7	40.5	54	-13.5	Ave
4803.6000	38.6	180	2.2	H	32.5	3.1	34.8	39.4	54	-14.6	Ave
4803.6000	57.4	300	1.5	V	32.5	3.1	34.8	58.2	74	-15.8	Peak
7205.4000	31.3	200	2.3	H	36.3	4.3	34.7	37.2	54	-16.8	Ave
4803.6000	53.8	180	2.2	H	32.5	3.1	34.8	54.6	74	-19.4	Peak
7205.4000	47.8	300	1.2	V	36.3	4.3	34.7	53.7	74	-20.3	Peak
7205.4000	43.2	200	2.3	H	36.3	4.3	34.7	49.1	74	-24.9	Peak
2401.8000	119.9	30	1.5	H	28.1	2.0	35.8	114.1			Fund/Peak
2401.8000	120.2	30	1.5	V	28.1	2.0	35.8	114.5			Fund/Peak
2401.8000	70.4	100	1.2	V	28.1	2.0	35.8	64.7			Ave
2401.8000	69.6	30	1.5	H	28.1	2.0	35.8	63.9			Ave
Middle Channel											
4880.3160	61.2	180	1.5	H	32.5	3.1	34.8	62.0	74	-12.0	Peak
7320.4740	34.8	180	1.5	H	36.3	4.3	34.7	40.7	54	-13.3	Ave
4880.3160	59.6	270	1.6	V	32.5	3.1	34.8	60.4	74	-13.6	Peak
7320.4740	33.5	270	1.6	V	36.3	4.3	34.7	39.4	54	-14.6	Ave
4880.3160	34.2	180	1.5	H	32.5	3.1	34.8	35.0	54	-19.0	Ave
4880.3160	32.2	300	1.5	V	32.5	3.1	34.8	33.0	54	-21.0	Ave
7320.4740	46.1	180	1.5	H	36.3	4.3	34.7	52.0	74	-22.0	Peak
7320.4740	45.7	270	1.2	V	36.3	4.3	34.7	51.6	74	-22.4	Peak
2440.1580	122.0	200	1.2	V	28.1	2.0	35.8	116.3			Fund/Peak
2440.1580	119.6	180	1.2	H	28.1	2.0	35.8	113.9			Fund/Peak
2440.1580	68.9	180	1.2	V	28.1	2.0	35.8	63.2			Ave
2440.1580	67.4	200	1.5	H	28.1	2.0	35.8	61.7			Ave
High Channel											
4958.8000	62.1	270	1.2	V	32.5	3.1	34.8	62.9	74	-11.1	Peak
4958.8000	60.7	180	1.5	H	32.5	3.1	34.8	61.5	74	-12.5	Peak
7438.2000	35.6	200	1.2	V	36.3	4.3	34.7	41.5	54	-12.5	Ave
7438.2000	34.9	180	1.5	H	36.3	4.3	34.7	40.8	54	-13.2	Ave
4958.8000	34.6	270	1.2	V	32.5	3.1	34.8	35.4	54	-18.6	Ave
7438.2000	48.2	180	1.5	H	36.3	4.3	34.7	54.1	74	-19.9	Peak
7438.2000	47.8	300	1.2	V	36.3	4.3	34.7	53.7	74	-20.3	Peak
4958.8000	32.5	200	1.5	H	32.5	3.1	34.8	33.3	54	-20.7	Ave
2479.4000	121.4	180	1.2	V	28.1	2.0	35.8	115.7			Fund/Peak
2479.4000	119.6	180	1.2	H	28.1	2.0	35.8	113.9			Fund/Peak
2479.4000	70.5	180	1.2	V	28.1	2.0	35.8	64.8			Ave
2479.4000	67.4	200	1.5	H	28.1	2.0	35.8	61.7			Ave

Note:

FUND: Fundemental
AVG: Average

Unintentional Emission

Indicated			Antenna	Antenna		Correction Factor			FCC 15.247	
Frequency	Ampl.	Direction	Height	Polar	Antenna	Cable Loss	Amp.	Corr. Ampl.	Limit	Margin
MHz	dBμV/m	Degree	Meter	H/V	dB	dB	dB	dBμV/m	dBμV/m	dB
125	47.9	200	1.2	H	11.9	1.6	28.5	32.8	43.5	-10.7
250	47.3	180	1.5	H	13.3	2.2	28.0	34.8	46.0	-11.2
172	45.7	200	1.2	V	13.0	1.9	28.3	32.2	43.5	-11.3
166	45.3	180	1.5	H	13.0	1.8	28.4	31.7	43.5	-11.8
250	46.4	200	1.2	V	13.3	2.2	28.0	33.9	46.0	-12.1
72	45.3	200	1.2	V	9.2	1.2	28.8	26.9	40.0	-13.1
125	45.3	200	1.5	H	11.9	1.6	28.5	30.2	43.5	-13.3

§15.247 (a) (1) - HOPPING CHANNEL SEPARATION

Standard Applicable

According to §15.247(a)(1), frequency hopping system shall have, hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies.

Measurement Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on a bench without connection to measurement instrument Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range.
3. By using the Max-Hold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARK function, and then plot the result on SA screen.
5. Repeat above procedures until all frequencies measured were complete.

Test Equipment

Manufacturer	Description	Model No.	Serial No.	Calibration Date
HP	Spectrum Analyzer	8565EC	3946A00131	2004-08-06
HP	Plotter	7475A	2517A05739	N/R

*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Environmental Conditions

Temperature:	22° C
Relative Humidity:	59%
ATM Pressure:	1020 mbar

**The testing was performed by Jerry Wang on 2005-06-08.*

Measurement Results

Base

Channel	Frequency MHz	Channel Separation KHz
Low	2401.808	905
Mid	2440.159	910
High	2479.401	890

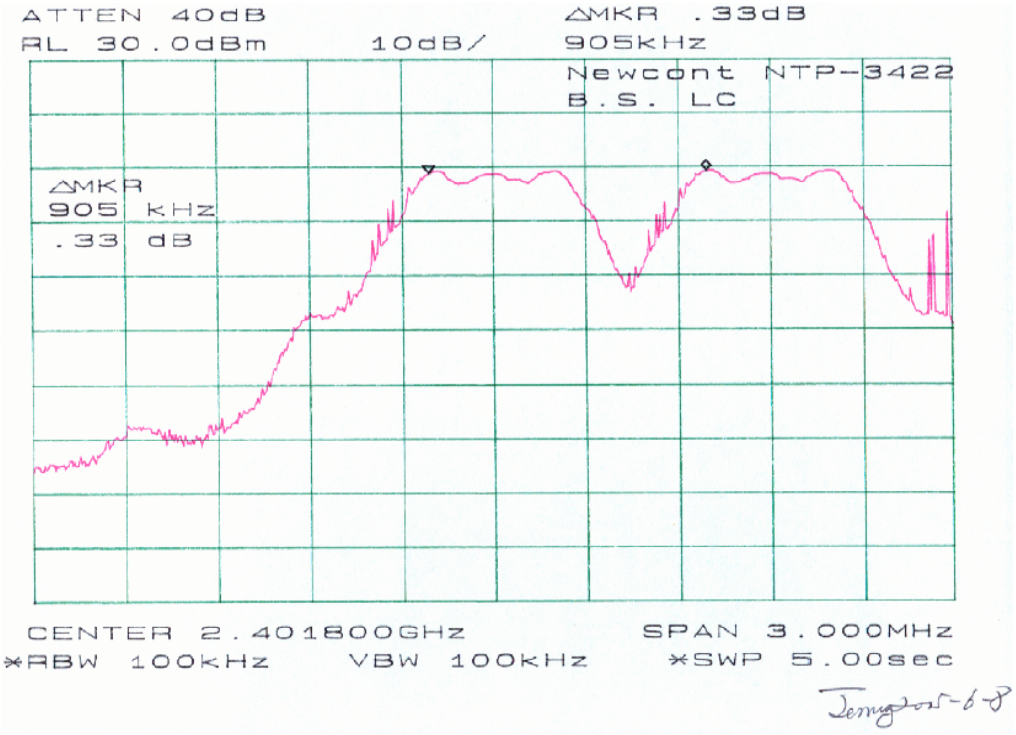
Handset

Channel	Frequency MHz	Channel Separation KHz
Low	2401.808	945
Mid	2440.159	880
High	2479.401	905

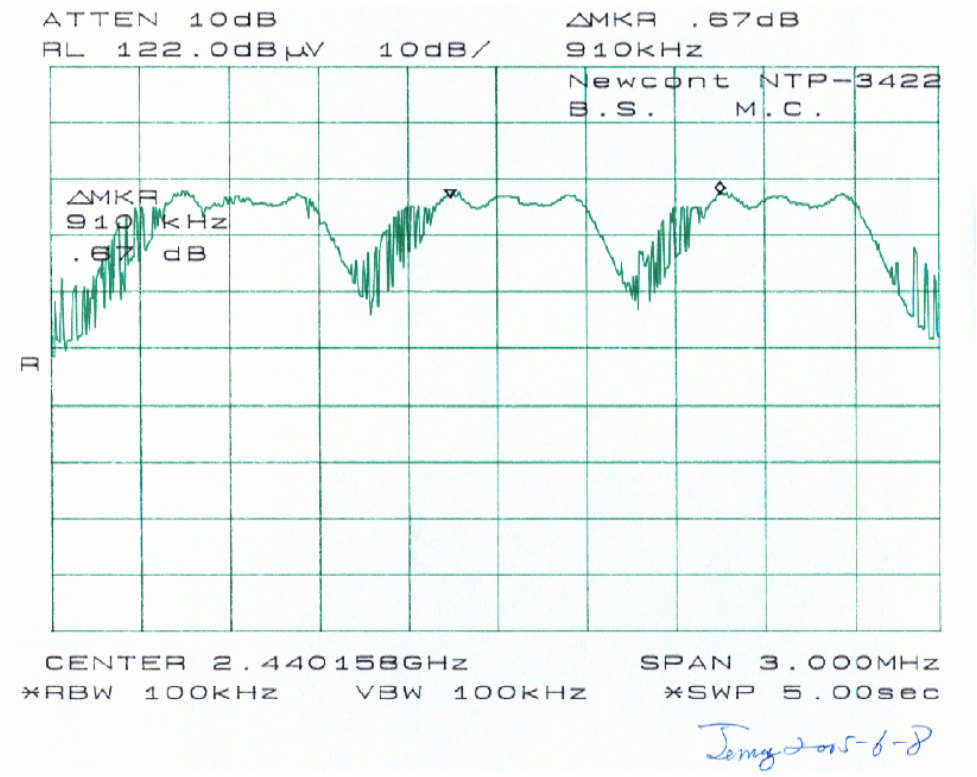
Plots of Hopping Channel Separation

Please see the following plots

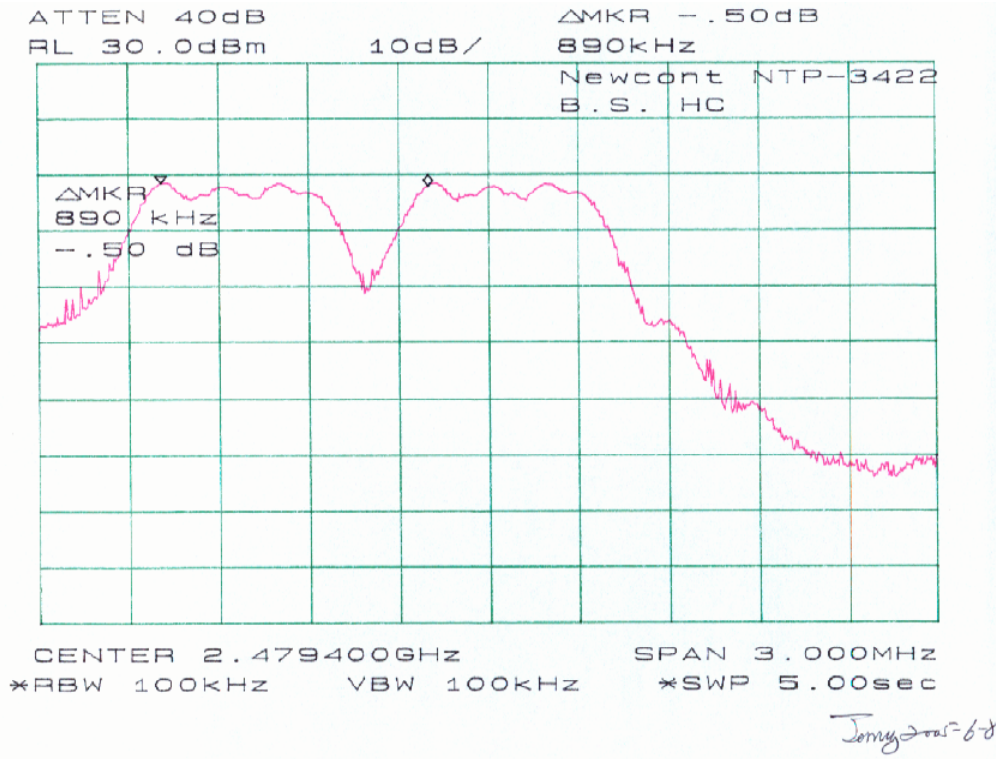
Base: Low Channel



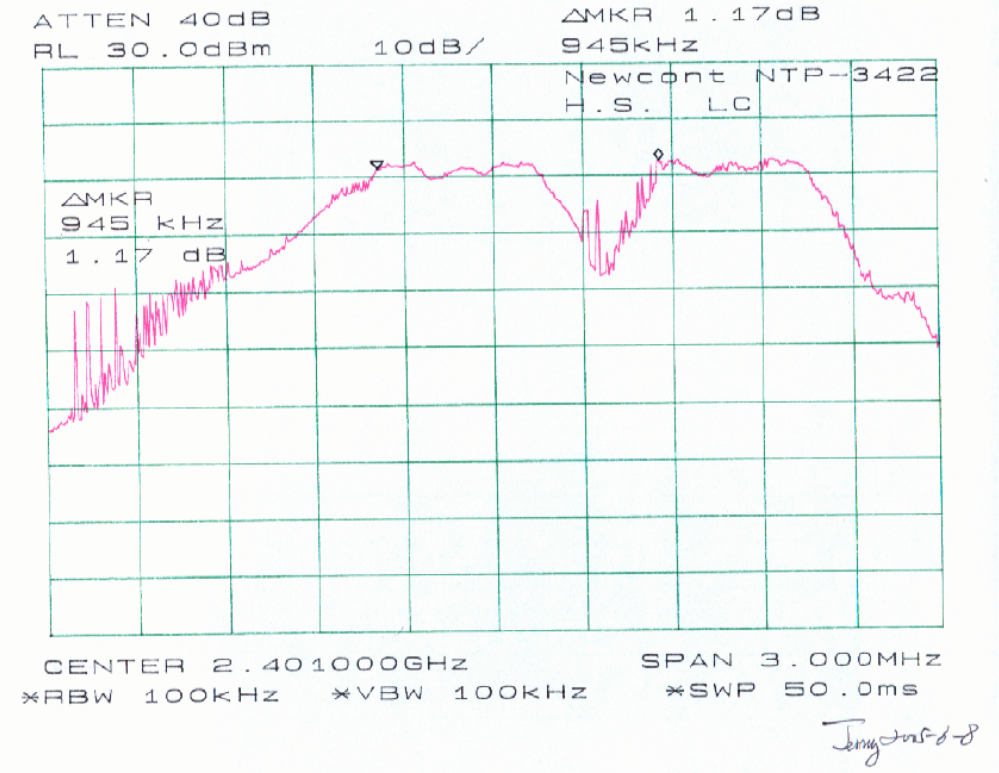
Middle Channel



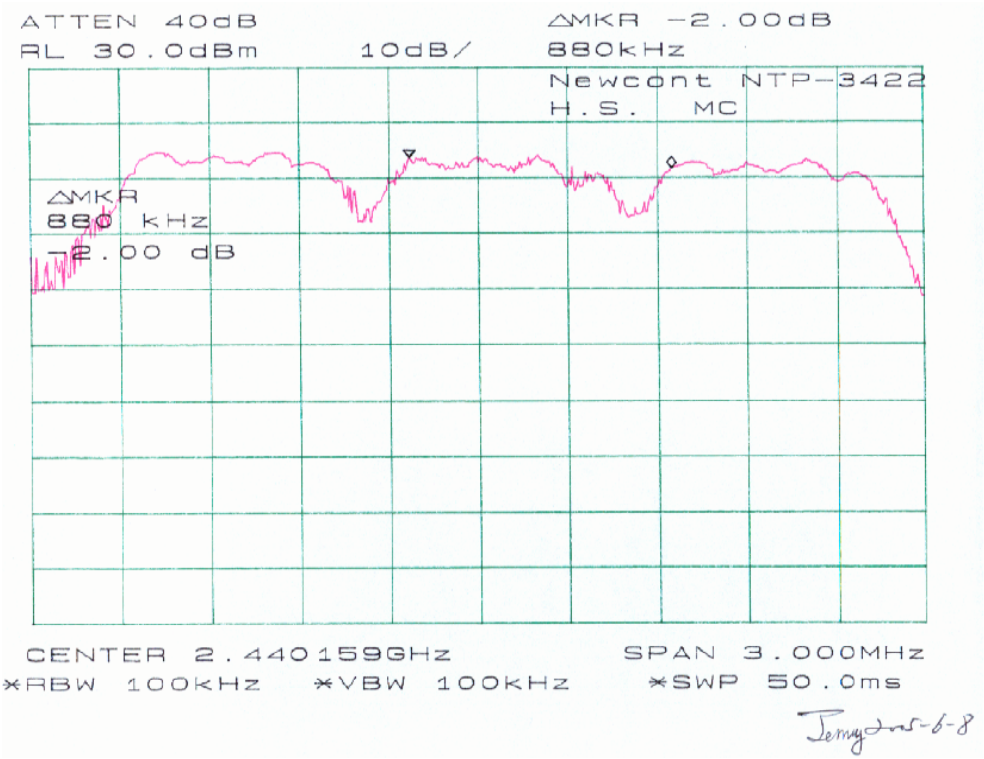
High Channel



Handset: Low Channel



Middle Channel



High Channel