



**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

TEST REPORT

FOR

900 MHz ANALOG PHONE – BASE UNIT

FCC ID: HOLCL906

MODEL NO: CL906

REPORT NO: 02U1137-1

ISSUE DATE: JUNE 11, 2002

Prepared for

**CIDCO COMMUNICATIONS CORPORATION
105 COCHRANE CIRCLE
MORGAN HILL, CA 95035
U.S.A.**

Prepared by

**COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD
MORGAN HILL, CA 95037, U.S.A.
TEL: (408) 463-0885
FAX: (408) 463-0888**

NVLAP[®]
LAB CODE:200065-0

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1. VERIFICATION OF COMPLIANCE

COMPANY NAME: CIDCO COMMUNICATIONS CORPORATION
105 COCHRANE CIRCLE
MORGAN HILL, CA 95035 U.S.A.

CONTACT PERSON: RON ANGLIKOWSKI

TELEPHONE NUMBER: (408) 782 - 8200

EUT DESCRIPTION: 900 MHz ANALOG PHONE – BASE UNIT

MODEL NAME: CL906

DATE TESTED: 6/4/2002, 6/5/2002

LIMITS APPLY TO: FCC PART 15 SECTION 15.249

TECHNICAL LIMITS	TEST RESULT
Radiated Emission of Fundamental Frequency	No non-compliance found
Radiated Emission of Harmonic Frequencies	No non-compliance found
Radiated Emission Outside the Band	No non-compliance found

LIMITS APPLY TO: FCC PART 15 SECTION 15.209

Radiated Emission Digital Device	No non-compliance found
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LIMITS APPLY TO: FCC PART 15 SECTION 15.207

AC Line Conducted Emission	No non-compliance found
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The above equipment was tested by Compliance Certification Services Inc. for compliance with the requirements set forth in CFR 47 PART 15 SUBPART C. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.



Tested by:
Frank Ibrahim / EMC Engineer
Compliance Certification Services



Approved & Reviewed by:
Thu Chan / EMC Senior Engineer
Compliance Certification Services

Warning : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

This is a Wireless Battery Pack.

CHASSIS TYPE	PLASTIC
Frequency Range	902.8 – 904.8 MHz
Number of Channels	40
Type of Emission	CONTINUOUS
Antenna Requirement	PERMANENTLY ATTACHED
Antenna Gain	0 dbi
No of External Connectors and Types	RJ11 Connector, and Power Jack for the charger
Power requirement	9VDC 300 mA AC/DC adapter

3. TEST LOCATION

All emissions tests were performed at:

Compliance Certification Services
561F Monterey Road
Morgan Hill, CA 95037

CCS has site descriptions on file with the FCC for 10 and 3 meter site configurations.
CCS is a NVLAP accredited facility.

4. EQUIPMENT MODIFICATIONS

To achieve compliance Levels, the following change(s) were made during compliance testing:

No changes were required in order to achieve compliance to class B levels.

5. TEST EQUIPMENT LIST

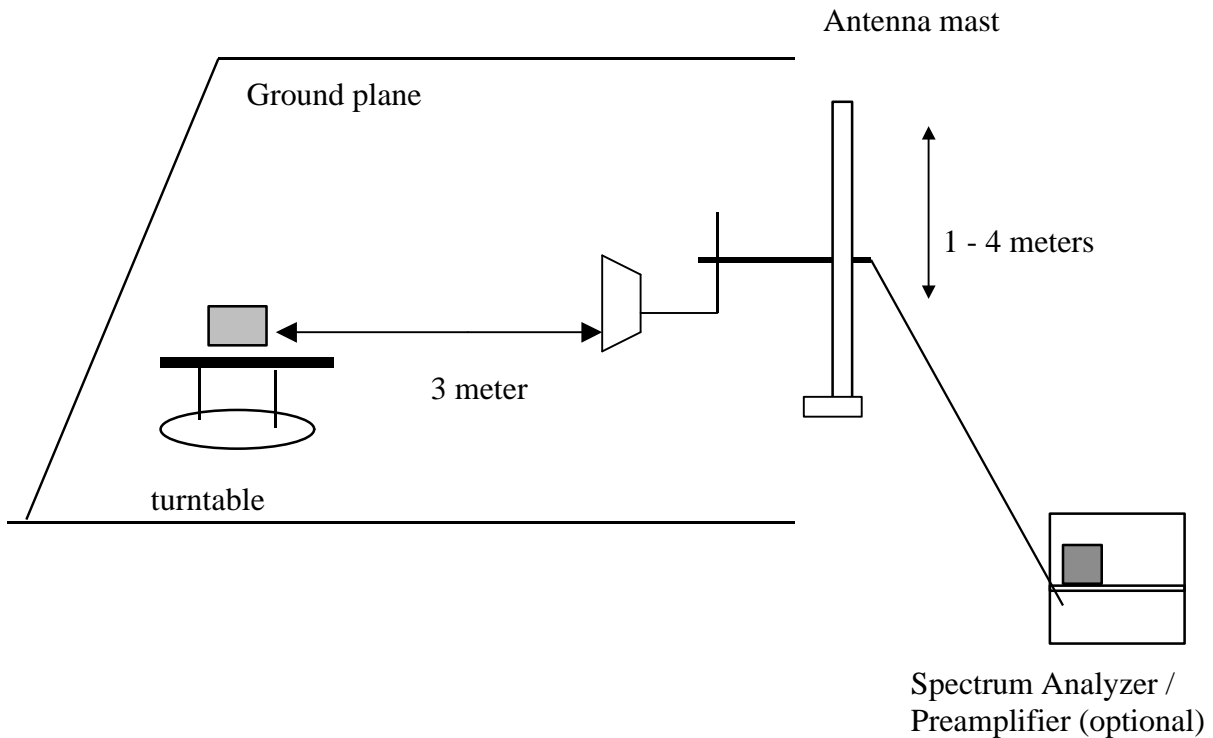
TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Spectrum Analyzer	HP 0.1K - 1.5GHz	8568B	2732A03661	5/16/03
Spectrum Display	HP	85662A	2816A16696	5/16/03
Quasi Peak Adapter	HP9K - 1GHz	85650A	2811A01155	5/16/03
Pre-Amplifier, 25 dB	HP 0.1 - 1300MHz	8447D (P_1M)	2944A06833	8/21/02
Antenna, Bicon	Eaton30 - 200MHz	94455-1	1197	3/30/03
Antenna, LP	EMCO200 - 2000MHz	3146	9107-3163	3/30/03
Spectrum Analyzer	HP100Hz - 22GHz	8566B	2140A01296	5/23/03
Quasi-Peak Detector	HP9K - 1GHz	85650A	2811A01335	5/23/03
Spectrum Display	HP	85662A	3026A19146	5/23/03
Pre-Amplifier 35.5 Db	HP	8449B	3008A00369	5/30/03
Horn Antenna(1 - 18GHz)	EMCO	3115	2238	6/20/02
Horn Antenna(1 - 18GHz)	EMCO	3115	6739	6/20/02
EMI Receiver	Rohde & Schwarz	ESHS 20	827129/006	4/17/03
LISN	Fischer	FCC-LISN-50/250-25-2	114	4/22/03
LISN	Solar Elec	8012-50-R-24-BNC	837990	4/23/03
Line Filter	Lindgren	LMF-3489	497	N.C.R
AC Power Source	Advanced Central System	AFC-10K-AFC2	J1568	N.C.R

6. TEST RESULT SUMMARY

Radiated Emissions

Test Requirement: 15.249(A)(B)(C)

TEST SETUP FOR MEASUREMENT OF FUNDAMENTAL FREQUENCY & HARMONIC



Test Procedures

- 1) Place the EUT on the turntable as shown. The EUT was placed as close as possible to the center of the turntable with the axis of rotation going through the EUT antenna when in vertical or horizontal polarization. Activated Eut to transmit.
- 2) The Horn search antenna was place at a distance of 3 meters. The antenna was raised and lowered and the EUT rotated on the turntable to produce maximum emission levels on the spectrum analyzer.

Setup Photo & Test Results:

High Frequency Data: (CH1 & CH40)**COMPLIANCE CERTIFICATION SERVICES, INC.**

Radiated Emissions

FCC 15.249(a)(d)

6/5/02

Frank Ibrahim

B-site (1.0 Meter)

CIDCO COMMUNICATION, LLC.

900 MHz WIRELESS ANALOG TELEPHONE (M/N: CL906)

BASE UNIT**fo = 904.8 MHz (high channel)****TX mode**

FREQ (MHz)	READING (dBuV)		AF (dB)	CL (dB)	AMP (dB)	DIST (dB)	HPF (dB)	TOTAL (dBuV/m)		LIMIT (dBuV/m)		MARGIN (dB)	
	Pk	Avg						Pk	Avg	Pk	Avg	Pk	Avg
1809.6V	64.9	64.5	27	2.34	36.4	9.54	1	49.3	48.9	74	54	-24.7	-5.1
1809.6H	63.3	62.8	27	2.34	36.4	9.54	1	47.7	47.2	74	54	-26.3	-6.8
2714.4V	62.1	61.3	29.8	2.73	36.3	9.54	1	49.79	48.99	74	54	-24.2	-5.01
2714.4H	60.5	59.3	29.8	2.73	36.3	9.54	1	48.19	46.99	74	54	-25.8	-7.01
3619.2V	53.1	51.2	32.6	3.25	36.1	9.54	1	44.31	42.41	74	54	-29.7	-11.6
3619.2H	55.9	54.8	32.6	3.25	36.1	9.54	1	47.11	46.01	74	54	-26.9	-7.99
4524V	45.6	38.9	33	3.9	36	9.54	1	37.96	31.26	74	54	-36	-22.7
4524H	46	40	33	3.9	36	9.54	1	38.36	32.36	74	54	-35.6	-21.6
5428.8V	39.9	31.2	35.3	4.2	36.3	9.54	1	34.56	25.86	74	54	-39.4	-28.1
5428.8H	42.5	32.6	35.3	4.2	36.3	9.54	1	37.16	27.26	74	54	-36.8	-26.7
6333.6*	46.1	36.1	35.5	4.5	36.5	9.54	1	41.06	31.06	74	54	-32.9	-22.9
7238.4*	45.3	35.8	37.5	4.8	36.3	9.54	1	42.76	33.26	74	54	-31.2	-20.7
8143.2*	45.8	35.9	37.9	5.3	35.8	9.54	1	44.66	34.76	74	54	-29.3	-19.2
9048*	46.3	36.6	38.4	5.8	35.2	9.54	1	46.76	37.06	74	54	-27.2	-16.9

SPOT CHECK X axis and Y axis; WORSE CASE X axis**NOTE: * Measured noise floor (worse case vertical), horizontal (H) and vertical (V)****DIST:** extrapolate reading from 3m specification distance to 1m measurement distance = **-9.54dB****AF:** Antenna Factor (EMCO 3115, S/N: 6739)**AMP:** Pre-amp gain (MITEQ NSP2600-44)**CL:** SMA cable loss (13ft)**HPF:** FSY High pass filter insertion loss (1.8GHz; S/N:003)**ANALYZER SETTINGS****RES BW AVG BW****HP 8566B**

Peak(Pk): 1MHz 1MHz
Average(Avg): 1MHz 10Hz

COMPLIANCE CERTIFICATION SERVICES, INC.

Radiated Emissions

FCC 15.249(a)(d)

6/5/02

Frank Ibrahim

B-site (1.0 Meter)

CIDCO COMMUNICATION, LLC.

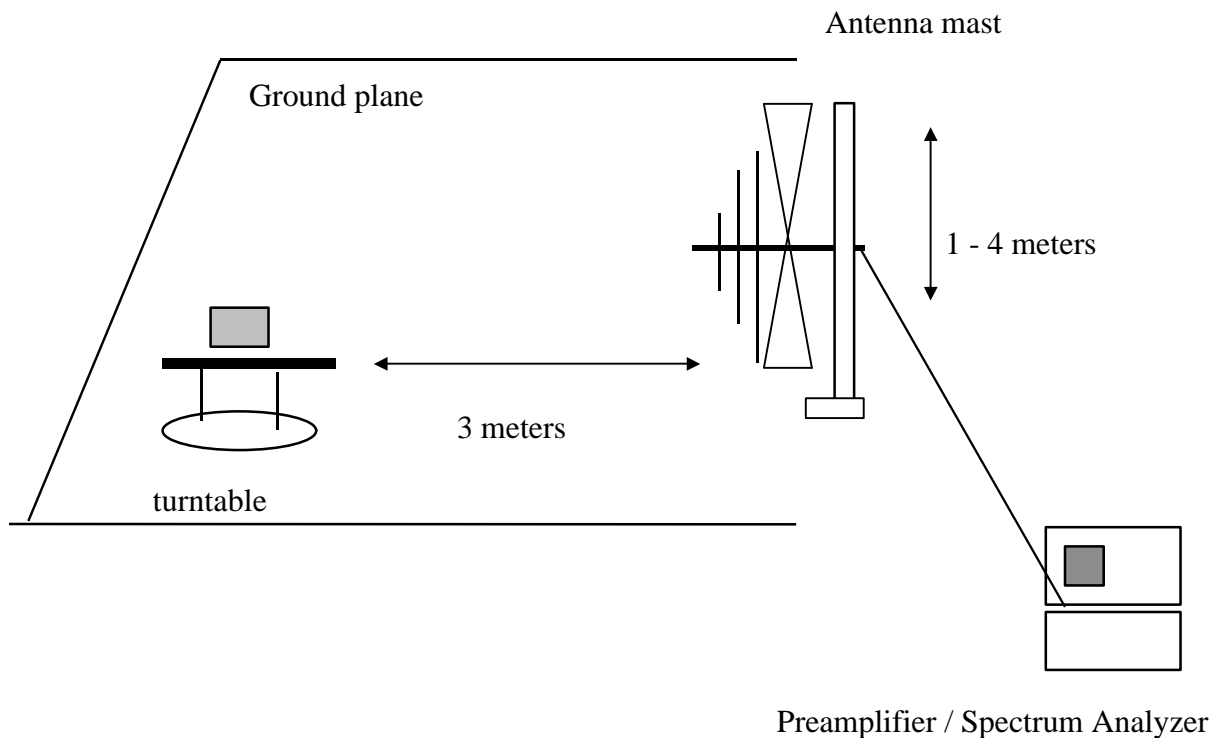
900 MHz WIRELESS ANALOG TELEPHONE (M/N: CL906)

BASE UNIT**fo = 902.85 MHz (low channel)****TX mode**

FREQ (MHz)	READING (dBuV)		AF (dB)	CL (dB)	AMP (dB)	DIST (dB)	HPF (dB)	TOTAL (dBuV/m)		LIMIT (dBuV/m)		MARGIN (dB)	
	Pk	Avg						Pk	Avg	Pk	Avg	Pk	Avg
1805.7V	64.2	64.2	27	2.34	36.4	9.54	1	48.6	48.6	74	54	-25.4	-5.4
1805.7H	63.4	62.9	27	2.34	36.4	9.54	1	47.8	47.3	74	54	-26.2	-6.7
2708.55V	62.2	61.7	29.8	2.73	36.3	9.54	1	49.89	49.39	74	54	-24.1	-4.61
2708.55H	62.3	61.8	29.8	2.73	36.3	9.54	1	49.99	49.49	74	54	-24	-4.51
3611.4V	52.5	50.9	32.6	3.25	36.1	9.54	1	43.71	42.11	74	54	-30.3	-11.9
3611.4H	54.9	53.9	32.6	3.25	36.1	9.54	1	46.11	45.11	74	54	-27.9	-8.89
4514.25V	46.4	39	33	3.9	36	9.54	1	38.76	31.36	74	54	-35.2	-22.6
4514.25H	44.4	37.5	33	3.9	36	9.54	1	36.76	29.86	74	54	-37.2	-24.1
5417.1V*	39.6	31.3	35.3	4.2	36.3	9.54	1	34.26	25.96	74	54	-39.7	-28
5417.1H*	41.2	32.1	35.3	4.2	36.3	9.54	1	35.86	26.76	74	54	-38.1	-27.2
6319.95*	46.1	36.1	35.5	4.5	36.5	9.54	1	41.06	31.06	74	54	-32.9	-22.9
7222.8*	45.3	35.8	37.5	4.8	36.3	9.54	1	42.76	33.26	74	54	-31.2	-20.7
8125.65*	45.8	35.9	37.9	5.3	35.8	9.54	1	44.66	34.76	74	54	-29.3	-19.2
9028.5*	46.3	36.6	38.4	5.8	35.2	9.54	1	46.76	37.06	74	54	-27.2	-16.9

SPOT CHECK X axis and Y axis; WORSE CASE X axis**NOTE: * Measured noise floor (worse case vertical), horizontal (H) and vertical (V)****DIST:** extrapolate reading from 3m specification distance to 1m measurement distance = **-9.54dB****AF:** Antenna Factor (EMCO 3115, S/N: 6739)**AMP:** Pre-amp gain (MITEQ NSP2600-44)**CL:** SMA cable loss (13ft)**HPF:** FSY High pass filter insertion loss (1.8GHz; S/N:003)**ANALYZER SETTINGS****RES BW AVG BW****HP 8566B**

Peak(Pk): 1MHz 1MHz
Average(Avg): 1MHz 10Hz

Radiated Emissions**Test Requirement: 15.209****TEST SETUP FOR MEASUREMENT OF DIGITAL DEVICE****Test Procedures**

- 1) Place the EUT on the turntable as shown. The EUT was placed as close as possible to the center of the turntable with the axis of rotation going through the EUT antenna when in vertical or horizontal polarization. Activated Eut to transmit.
- 2) The Bilog search antenna was place at a distance of 3 meters. The antenna was raised and lowered and the EUT rotated on the turntable to produce maximum emission levels on the spectrum analyzer.

Test Setup Photos & Results:



FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001
PHONE: (408) 463-0885 FAX: (408) 463-0888

Project #: 02U1137-1
Report #: 020607A02
Date & Time: 06/07/02 11:01 AM
Test Engr: Frank Ibrahim

Company: Cidco Communications
EUT Description: 900 MHz Analog Phone, Model: CL906
Test Configuration : Stand alone EUT (Base unit)
Type of Test: FCC 15.249
Mode of Operation: EUT transmitting at CH1

[<< Main Sheet](#)

Freq.	Reading	AF	Cross	Pre-amp	Level	Limit	Margin	Pol	Az	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	FCC B	(dB)	(H/V)	(Deg)	(Meter)	(P/Q/A)
936.06	44.80	22.99	5.17	28.34	44.61	46.00	-1.39	3mH	0.00	1.00	QP
902.85	83.20	22.54	5.04	28.43	82.35	94.00	-11.65	3mV	0.00	2.00	P
150.00	40.00	16.46	1.93	27.40	30.99	43.50	-12.51	3mH	0.00	1.00	P
902.85	82.10	22.54	5.04	28.43	81.25	94.00	-12.75	3mH	0.00	1.00	P
38.00	39.80	12.87	0.94	27.64	25.97	40.00	-14.03	3mH	0.00	1.00	P
171.50	37.30	16.08	2.05	27.34	28.09	43.50	-15.41	3mV	0.00	1.00	P
6 Worst Data											



FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

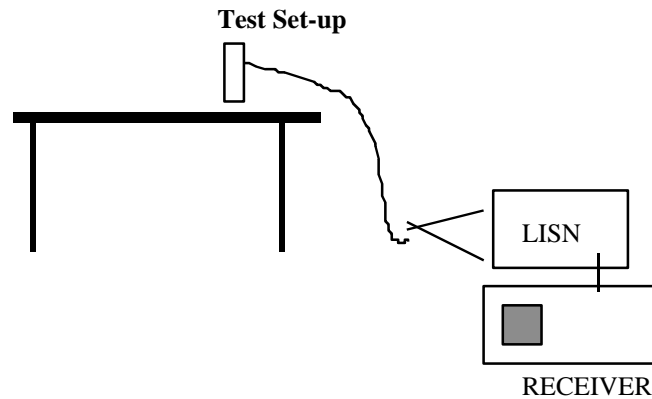
561F MONTEREY ROAD, SAN JOSE, CA 95037-9001
PHONE: (408) 463-0885 FAX: (408) 463-0888

Project #: 02U1137-1
Report #: 020607A03
Date & Time: 06/07/02 2:06 PM
Test Engr: Frank Ibrahim

Company: Cidco Communications
EUT Description: 900 MHz Analog Phone, Model: CL906
Test Configuration: Stand alone EUT (Base unit)
Type of Test: FCC 15.249
Mode of Operation: EUT transmitting at CH40

[<< Main Sheet](#)

Freq.	Reading	AF	Closs	Pre-amp	Level	Limit	Margin	Pol	Az	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	FCC B	(dB)	(H/V)	(Deg)	(Meter)	(P/Q/A)
38.00	42.00	12.87	0.94	27.64	28.17	40.00	-11.83	3mV	0.00	1.00	P
190.00	40.80	15.68	2.18	27.28	31.38	43.50	-12.13	3mH	0.00	1.00	P
904.80	81.30	22.56	5.05	28.43	80.49	94.00	-13.51	3mV	0.00	1.00	P
166.00	38.50	16.51	2.01	27.36	29.66	43.50	-13.84	3mV	0.00	1.00	P
46.00	40.70	11.90	1.05	27.63	26.02	40.00	-13.98	3mH	0.00	1.00	P
904.80	78.50	22.56	5.05	28.43	77.69	94.00	-16.31	3mH	0.00	1.00	P
6 Worst Data											

AC Line Conducted Emissions**Test Requirement: 15.207****Test Procedure**

1. The DC is supplied by a AC adapter. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a normal tone and charge the battery at the same time.
2. Line conducted data was recorded for both NEUTRAL and HOT lines.

Test Setup Photos & Results:

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC B	Margin		Remark
(MHz)	PK (dBuV)	OP (dBuV)	AV (dBuV)	(dB)	OP	AV	OP (dB)	AV (dB)	L1 / L2
1.24	22.00	--	--	0.00	48.00	--	-26.00	--	L1
10.79	20.83	--	--	0.00	48.00	--	-27.17	--	L1
21.63	20.17	--	--	0.00	48.00	--	-27.83	--	L1
3.50	23.67	--	--	0.00	48.00	--	-24.33	--	L2
15.08	22.00	--	--	0.00	48.00	--	-26.00	--	L2
23.70	20.17	--	--	0.00	48.00	--	-27.83	--	L2
6 Worst Data									

CH1

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC B	Margin		Remark
(MHz)	PK (dBuV)	OP (dBuV)	AV (dBuV)	(dB)	OP	AV	OP (dB)	AV (dB)	L1 / L2
0.45	22.00	--	--	0.00	48.00	--	-26.00	--	L1
19.83	15.42	--	--	0.00	48.00	--	-32.58	--	L1
26.70	19.67	--	--	0.00	48.00	--	-28.33	--	L1
0.45	24.17	--	--	0.00	48.00	--	-23.83	--	L2
10.79	21.00	--	--	0.00	48.00	--	-27.00	--	L2
19.07	20.17	--	--	0.00	48.00	--	-27.83	--	L2
6 Worst Data									

CH40

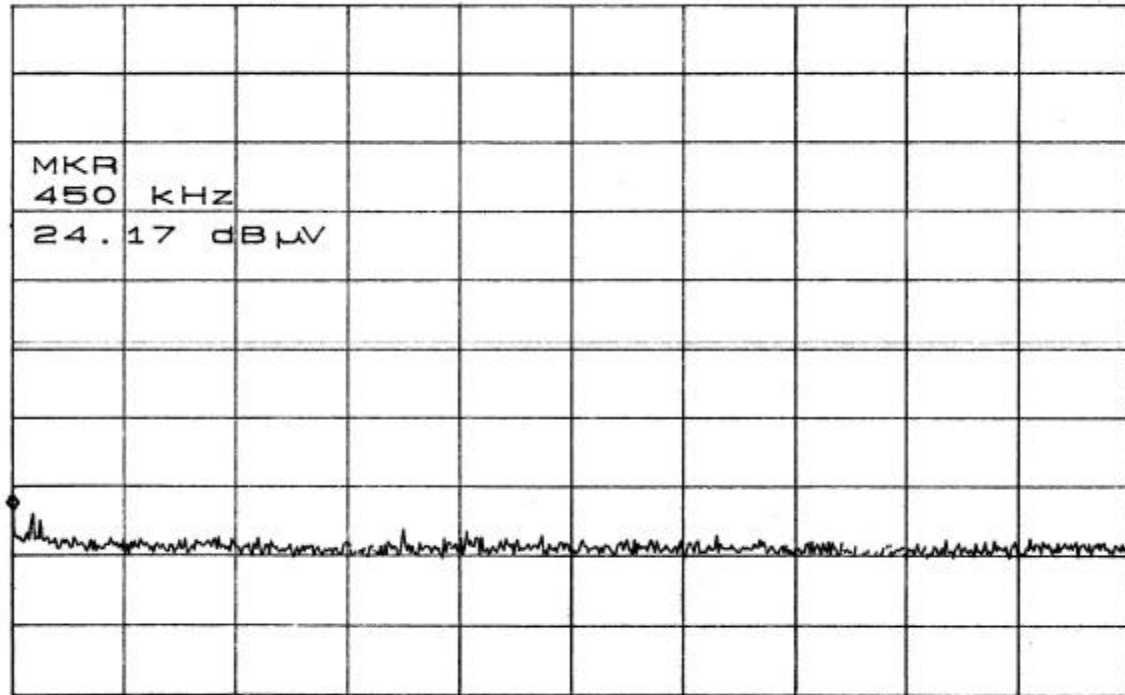
L2, CH40

ATTEN 10dB

MKR 24.17dB μ VRL 97.0dB μ V

10dB/

450kHz



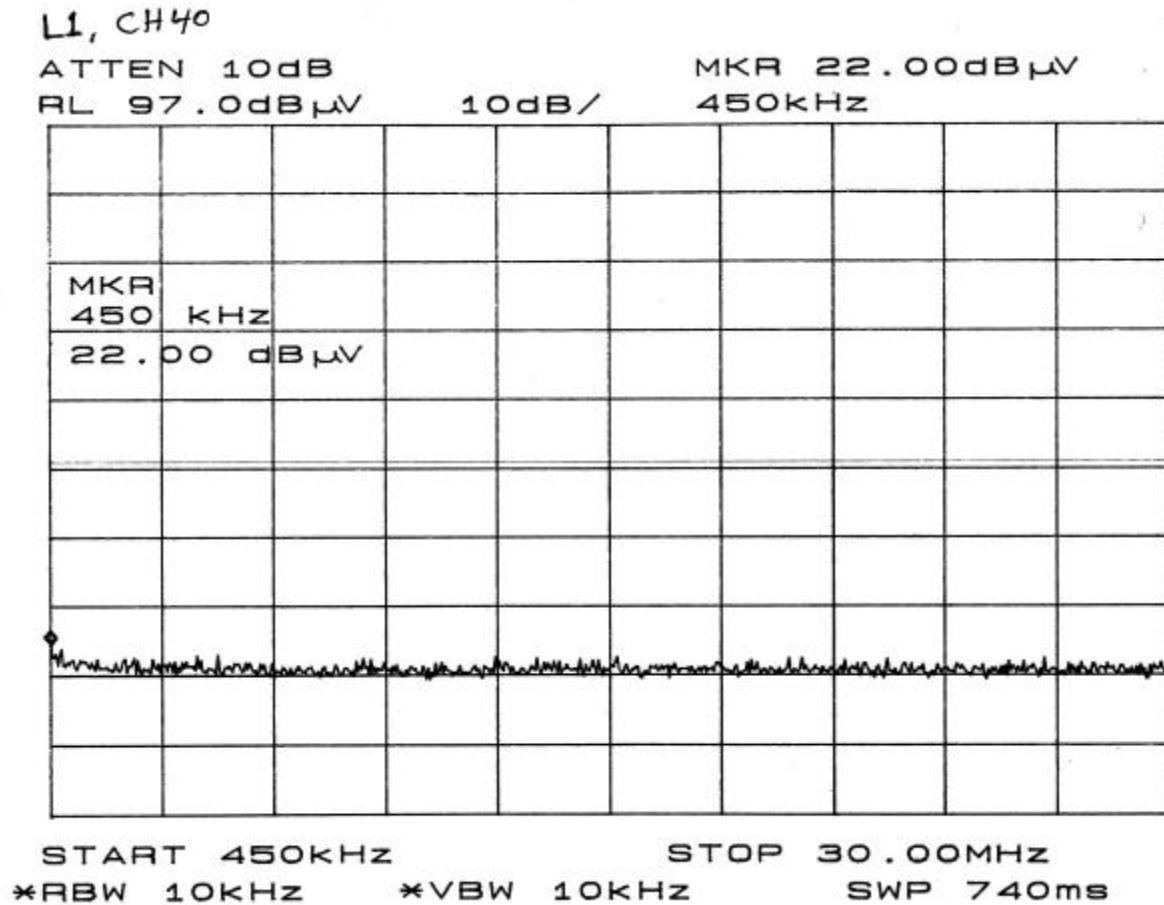
START 450kHz

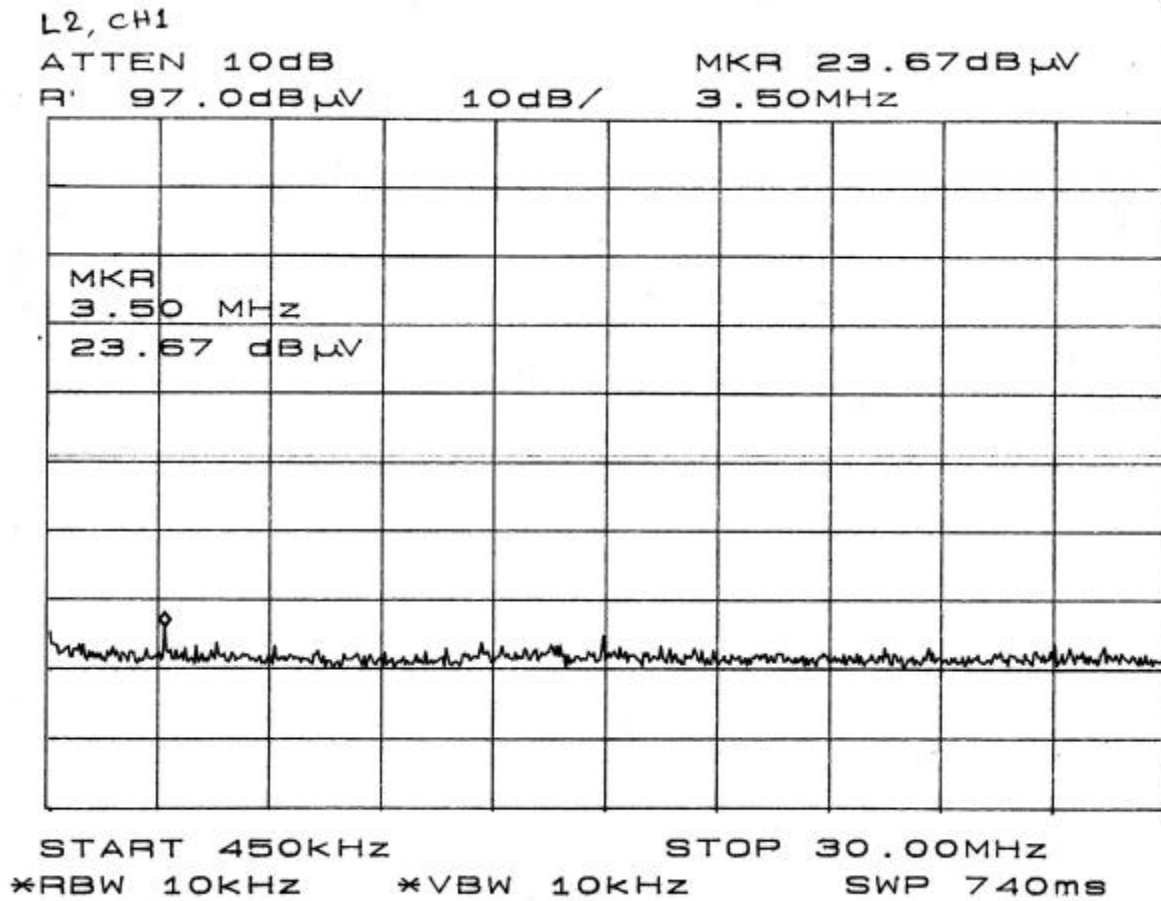
STOP 30.00MHz

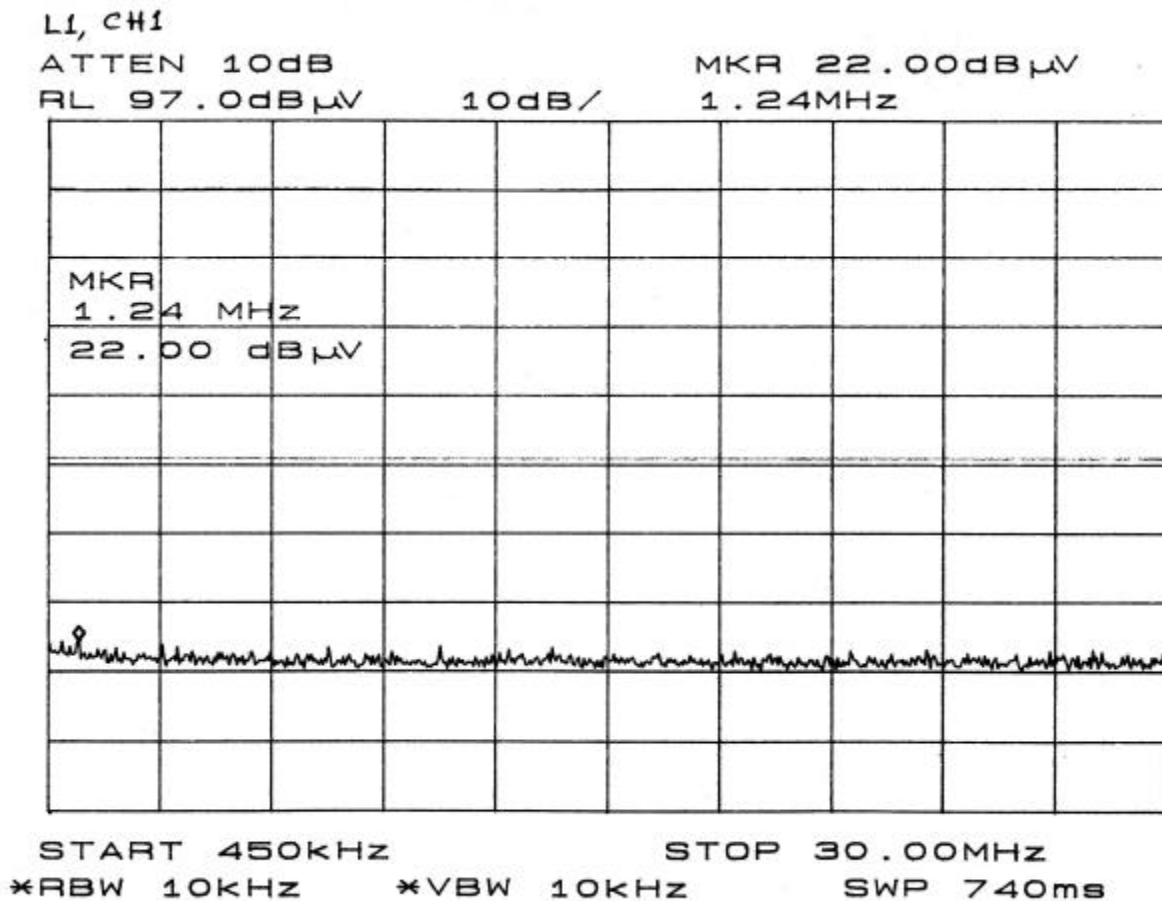
*RBW 10kHz

*VBW 10kHz

SWP 740ms







END OF REPORT