

Retlif Testing Laboratories

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FCC COMPLIANCE TEST REPORT
ON
X-10 (USA), INC.
310MHz SUPERREGENERATIVE
RECEIVER
Model: CM14A
FCC ID: B4SCM14A

CUSTOMER NAME: X-10 (USA) Inc.

CUSTOMER P.O.: Verbal Authorization

DATE OF REPORT: April 16, 1998

RETLIF TEST REPORT NO.: R-7480-1

TEST START DATE: March 24, 1998

TEST FINISH DATE: March 25, 1998

TEST TECHNICIAN: D. Cortes

TEST ENGINEER: T.J. Schneider

REPORT WRITTEN BY: L. Anderson

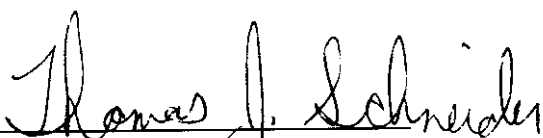
SUPERVISOR: R.J. Reitz

GOVERNMENT SOURCE INSPECTION: Not Applicable

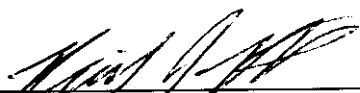
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CERTIFICATION AND SIGNATURES

We certify that this report is a true report of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



Thomas J. Schneider
EMC Test Engineer
NVLAP Approved Signatory



Richard J. Reitz
Laboratory Manager
NVLAP Approved Signatory

NON-WARRANTY PROVISION

The testing services have been performed, findings obtained, and reports prepared in accordance with generally accepted testing laboratory principles and practices. This warranty is in lieu of all other warranties, either express or implied.

NON-ENDORSEMENT

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement, or certification of the product or material tested. This test report may not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



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Test Report Number R-7480-1

FCC ID: B4SCM14A

TABLE OF EXHIBITS

Exhibit 1	FCC ID Label per 2.1033(b)(3)per 2.1033(b)(7)
Exhibit 2	Equipment Photographs per 2.1033(b)(7)
Exhibit 3	Installation and Operating Instructions per 2.1033(b)(3)
Exhibit 4	Technical Description per 2.1033(b)(4)
Exhibit 5	Block Diagram and Schematics per 2.1033(b)(5)
Exhibit 6	Report of Measurements per 2.1033(b)(6)



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EXHIBIT 6

Report of Measurements

Para. 2.1033(b)(6)



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Test Report Number R-7480-1
FCC ID: B4SCM14A

<u>APPLICANT</u>	<u>MANUFACTURER</u>
X-10 USA, Inc. 91 Ruckman Road Closter, NJ 07624	X-10 Electronics Shenzhen Co. Ltd. X-10 Building Labour Industrial District Shenzhen, Xixiang, Bao An Guang Dong, China, 518102

TEST SPECIFICATION: Part 15, Subpart B Certification

TEST PROCEDURE: ANSI C63.4:1992

TEST SAMPLE DESCRIPTION

BRANDNAME: X-10 Activehome MODEL: CM14A

TYPE: 310MHz Superregenerative Receiver

POWER REQUIREMENTS: 115VAC, 60Hz, 1ø

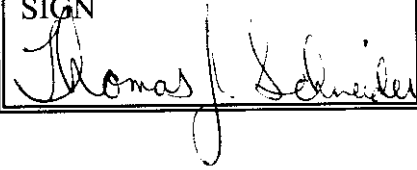
OPERATING FREQUENCY: 310MHz

TESTS PERFORMED

Para. 15.107(a), Conducted Emissions

Para. 15.109(a), Radiated Emissions

I HEREBY CERTIFY THAT: The measurements shown here were in accordance with the procedure indicated and that the energy emitted by this equipment was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.
I FURTHER CERTIFY THAT: On the basis of the measurements made, the device tested is capable of operation in compliance with the requirements of Part 15 of the FCC Rules under normal use and maintenance.

<u>SIGN</u> 	<u>PRINT</u> Thomas J. Schneider	<u>TITLE</u> EMC Test Engineer
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Test Report Number R-7480-1

FCC ID: B4SCM14A

Test Procedures Used

The test procedures used for all testing follow the guidelines specified in the applicable FCC specification and general industry practices. Although test procedures may sometimes have to be modified to address the needs of specific test samples, the following forms the basis for all testing programs:

Conducted Emissions - All testing was performed with the test sample placed 80cm above a 2.5 x 3M ground plane and 1 meter from any other grounded surface. The power cord of the test sample was connected to the Line Impedance Stabilization Networks, which in turn, had their cases mounted to the ground plane. With the equipment connected as stated, an EMI meter or spectrum analyzer was connected to the LISN and the conducted emissions were measured over the frequency range of 450KHz to 30MHz, in turn on each of the input power leads. Care was taken during testing to relocate all system components and cabling in an effort to maximize the emissions from the EUT.

Radiated Emissions - Radiated emissions testing was performed on an FCC listed 3 meter open field test site over the frequency range of 30MHz to 2000MHz. Prior to open field testing, pre-scan testing was performed inside of a shielded enclosure in order to obtain a spectrum signature of the unit and to use the data obtained as a guideline for open field testing. When the test sample is taken to the open field tests site, it is placed on an 80cm high wooden turntable. A spectrum analyzer or EMI meter is then connected to the biconilog antenna, depending on frequency range being scanned. The antenna is mounted on a remote controlled four meter antenna mast. The frequency range was then scanned and each measurement taken was maximized by performing the following: (1) Raising and lowering the measurement antenna. (2) Rotating the measurement antenna to both the horizontal and vertical polarizations. (3) Tuning the measurement antenna to the frequency of measurement. (4) Rotating the test sample, and (5) Relocating all interconnecting and input power cables. In the event that testing was extended above or below the frequency range of 30MHz to 1000MHz, loop antennas were used for all measurements below 30MHz and horn antennas were used for all measurements above 1000MHz.



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Test Report Number R-7480-1
FCC ID: B4SCM14A

REPORT OF MEASUREMENTS

RADIATED EMISSIONS

PARA. 15.109(a)



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Test Report Number R-7480-1
FCC ID: B4SCM14A

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	FCC Part 15 Radiated Emissions, 30 MHz to 1 GHz		
CUSTOMER:	X-10 (USA) Inc.	JOB No.:	R-7480-1
TEST SAMPLE:	310 Mhz Superregenerative Receiver FCC ID: B4SCM14A		
MODEL No.:	CM14A	SERIAL No.:	N/A
TEST SPECIFICATION:	FCC Part 15, Subpart B, Class B <div style="text-align: right;">PARAGRAPH: 15.109(a)</div>		
OPERATING MODE:	Continuously receiving a 310 Mhz CW Signal, receiver locked		
TECHNICIAN:	Dennis Cortes	DATE:	March 24, 1998
NOTES:	Detector Function: Quasi-Peak Test Distance: 3 Meters		

Test Frequency	Antenna Position	Turntable Position	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(H/V) - Height	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
56.50	V-1.0	113	36.3	-12.5	23.8	15.5	V
88.00							100
88.00							150
216.00							150
216.00							200
297.60	V-1.3	113	34.0	-4.8	29.2	28.8	
298.70	V-1.3	090	31.9	-4.8	27.1	22.6	
299.80	V-1.3	090	33.5	-4.7	28.8	27.5	
302.20	V-1.3	090	33.7	-4.5	29.2	28.8	
303.20	V-1.3	090	33.6	-4.4	29.2	28.8	
304.30	V-1.3	090	32.6	-4.4	28.2	25.7	
305.50	V-1.3	090	31.4	-4.3	27.1	22.6	
306.70	V-1.3	090	31.3	-4.2	27.1	22.6	
307.80	V-1.3	090	32.2	-4.2	28.0	25.1	
315.60	V-1.3	090	32.1	-3.6	28.5	26.6	
832.00	V-1.4	203	32.2	6.4	38.6	85.1	
837.80	V-1.4	203	30.2	6.5	36.7	68.4	
838.20	V-1.4	203	30.2	6.5	36.7	68.4	
839.35	V-1.4	203	33.0	6.6	39.6	95.5	
840.54	V-1.4	203	34.9	6.6	41.5	118.9	
841.60	V-1.4	203	32.0	6.6	38.6	85.1	
842.80	V-1.4	203	32.0	6.6	38.6	85.1	
844.30	V-1.4	203	34.3	6.6	40.9	110.9	
845.20	V-1.4	203	32.4	6.7	39.1	90.2	
846.70	V-1.4	203	33.3	6.7	40.0	100.0	
848.30	V-1.4	203	32.8	6.7	39.5	94.4	
849.30	V-1.4	203	32.1	6.8	38.9	88.1	
852.00	V-1.4	203	33.2	6.8	40.0	100.0	
960.00							V
960.00							200
960.00							500
The frequency range was scanned from 30 MHz to 2 GHz. All emissions not recorded were more than 10dB below the specified limit. Emissions observed from the EUT do not exceed the specified limit.							V
							500

REPORT OF MEASUREMENTS

CONDUCTED EMISSIONS

PARA. 15.107(a)

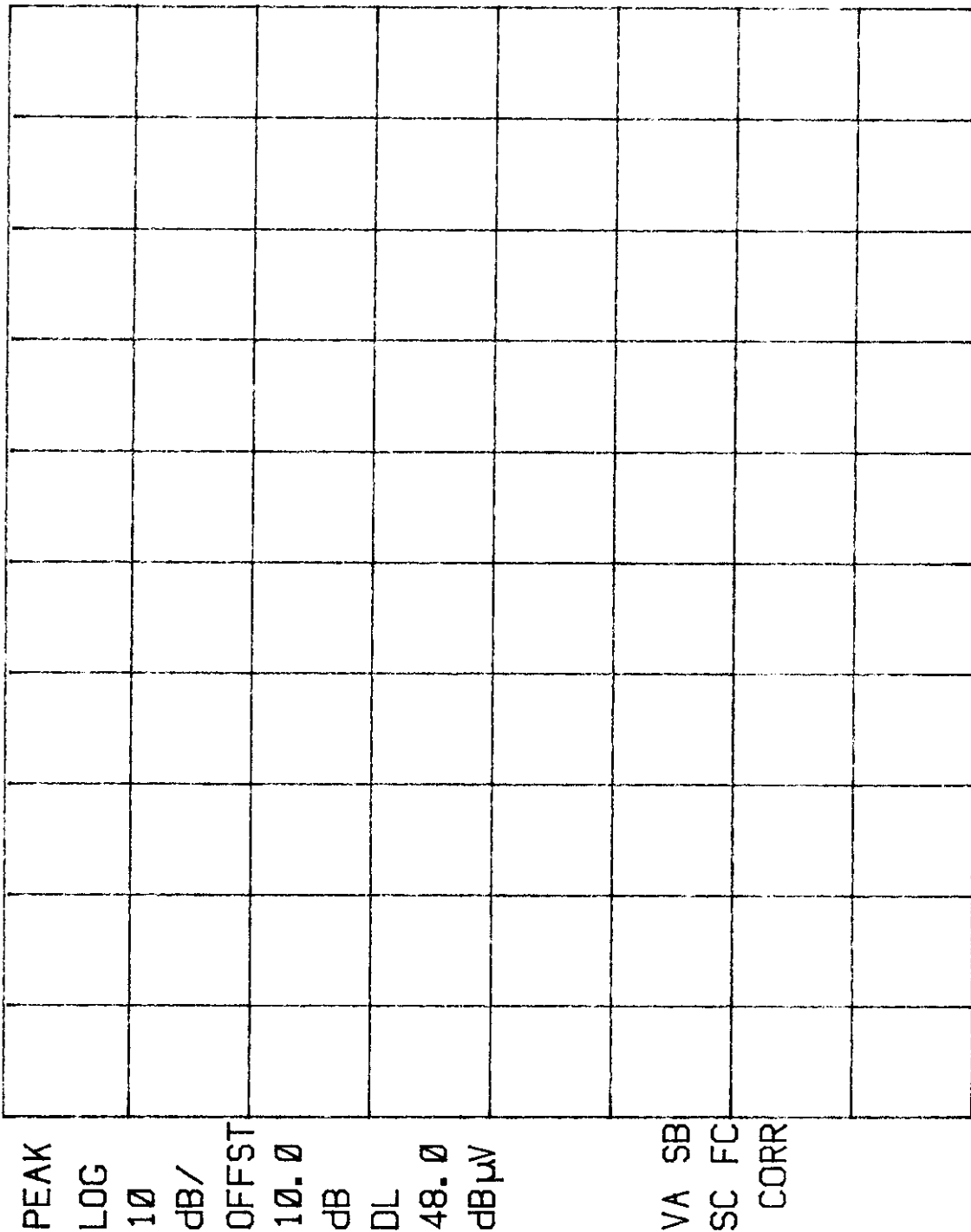


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Test Report Number R-7480-1

FCC ID: B4SCM14A

18:44:04 MAR 25, 1998
 R-7480-1 CM14A FCC15/B/B CE DC LEAD-HOT
 REF 85.0 dBμV AT 10 dB



START 450 KHz STOP 1.705 MHz
 RES BW 10 KHz VBW 30 KHz #SWP 20.0 sec

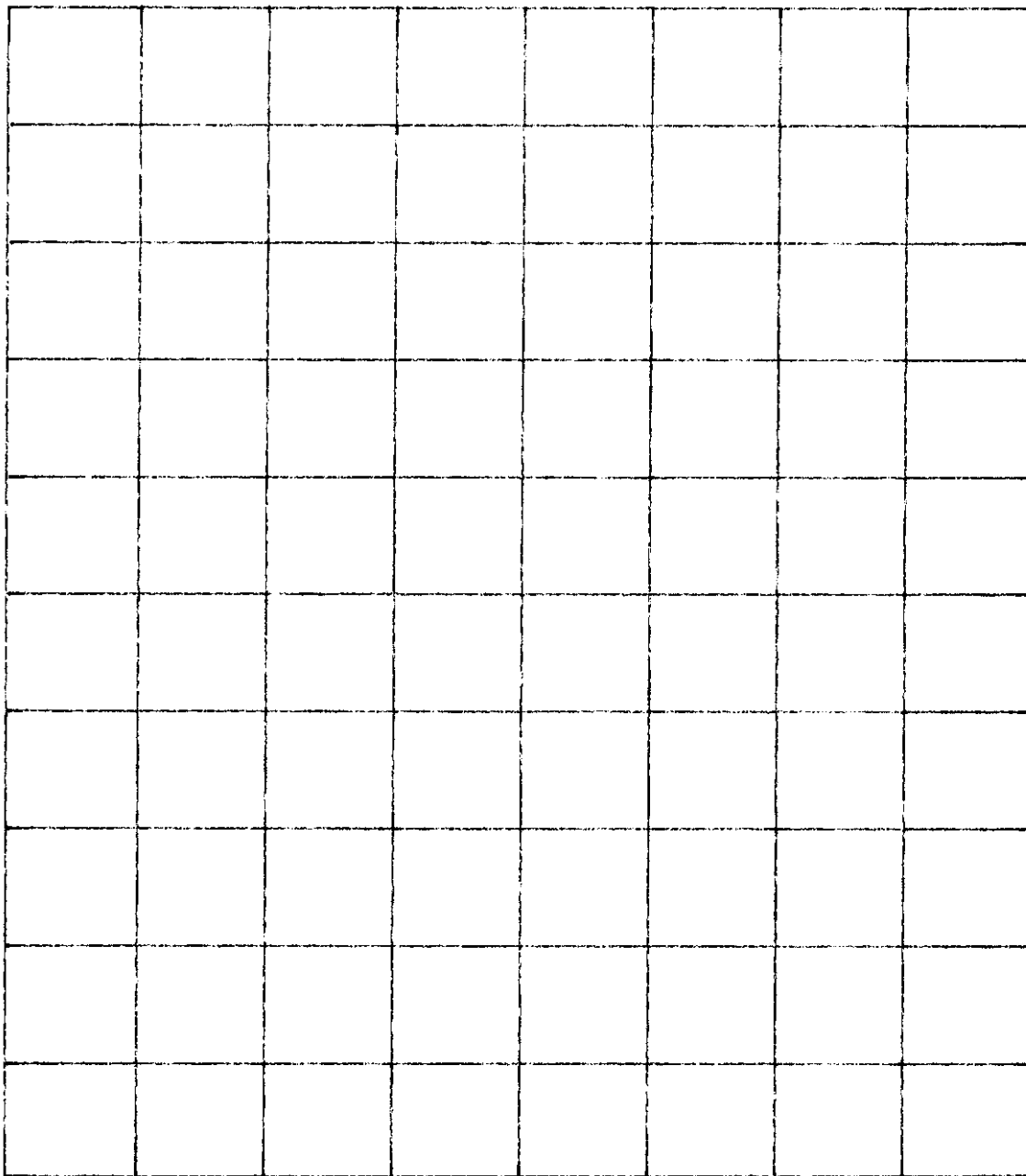
Customer:	X-10 (USA) Inc.
Test Sample:	310 Mhz Superregenerative Receiver
Model No.:	CM14A
Test Method:	FCC 15/B/B Conducted Emissions
Notes:	Lead Tested: Hot
	Detector: Peak
Date:	March 25, 1998
Tech:	Dennis Cortes
Sheet:	1 of 6



Retlif Testing Laboratories

Report No. R-7480-1

18: 46:50 MAR 25, 1998
 R-7480-1 CM14A FCC15/B/B CE DC LEAD-NEUTRAL
 REF 85.0 dB μ V AT 10 dB



PEAK
 LOG
 10
 dB/
 OFFST
 10.0
 dB
 DL
 48.0
 dB μ V
 VA SB
 SC FC
 CORR

START 450 kHz STOP 1.705 MHz
 RES BW 10 kHz #SWP 20.0 sec
 VBW 30 kHz

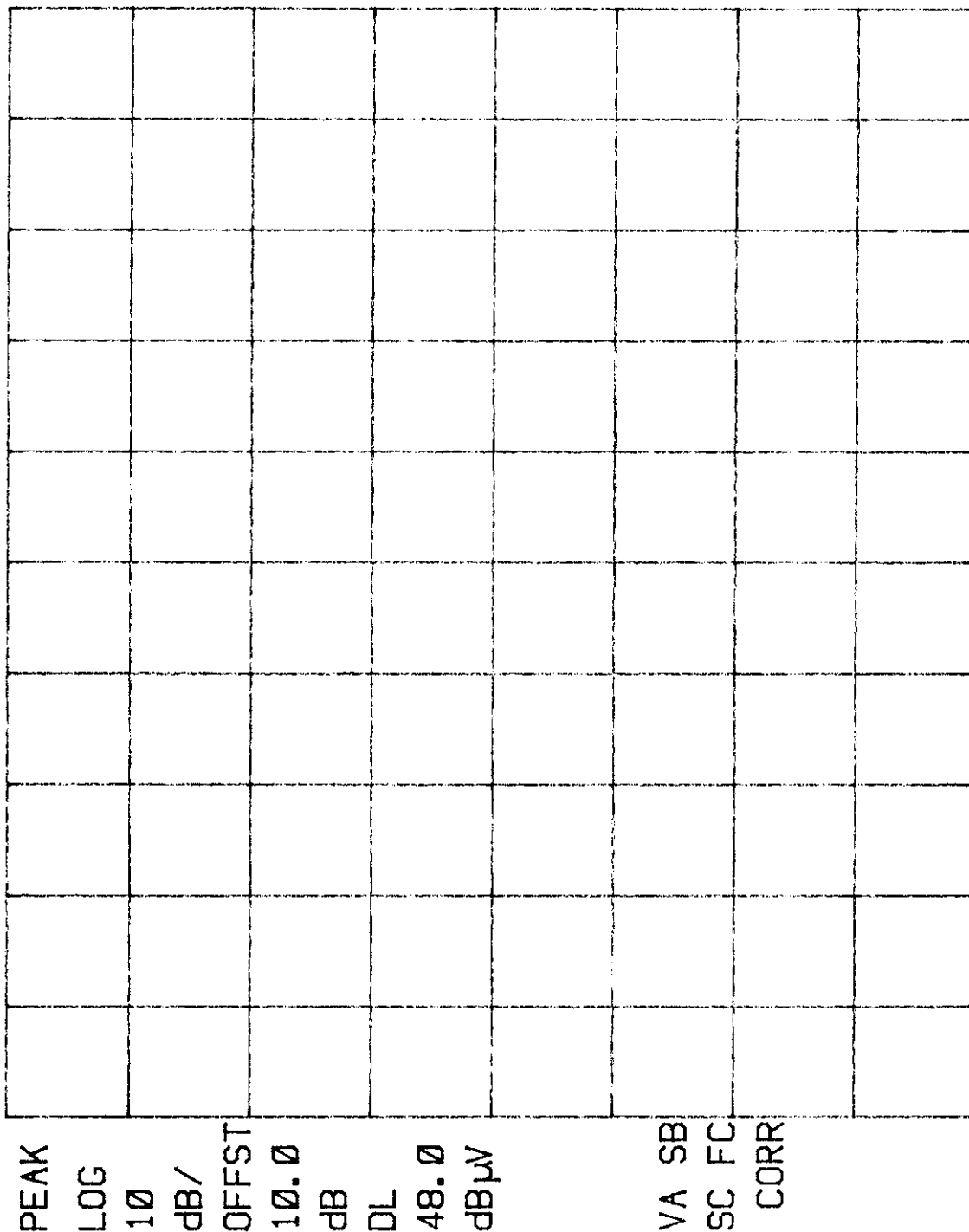
Customer:	X-10 (USA) Inc.				
Test Sample:	310 Mhz Superregenerative Receiver				
Model No:	CM14A				
Test Method:	FCC 15/B/B Conducted Emissions				
Notes:	Lead Tested: Neutral Detector: Peak				
Date:	March 25, 1998	Tech:	Dennis Cortes	Sheet	2 of 6



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Report No. R-7480-1

18:54:55 MAR 25, 1998
 R-7480-1 CM14A FCC15/B/B CE DC LEAD-HOT
 REF 85.0 dBμV AT 10 dB



START 1.705 MHz STOP 10.000 MHz
 #RES BW 10 KHz #SWP 20.0 sec
 VBW 30 KHz

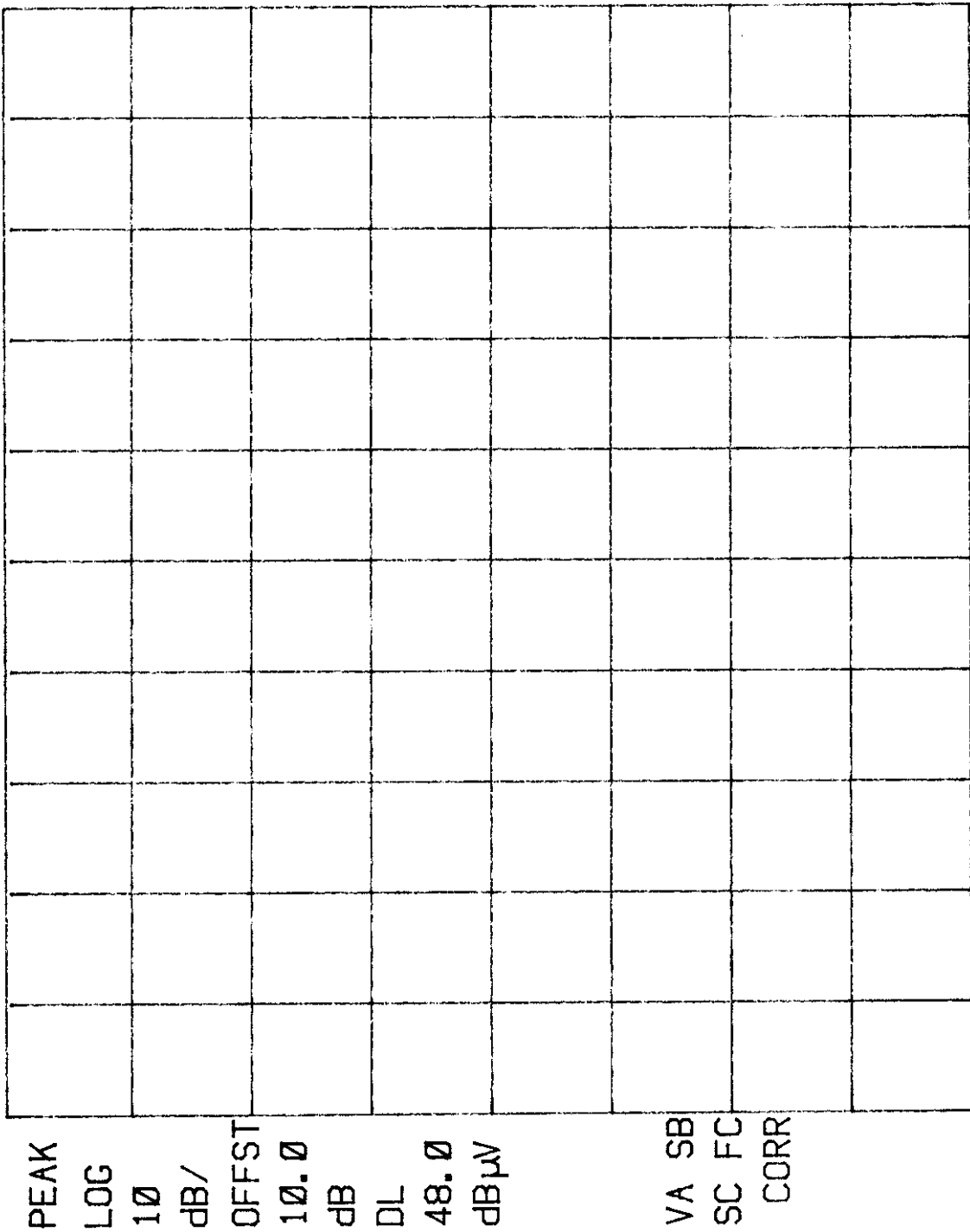
Customer:	X-10 (USA) Inc.		
Test Sample:	310 Mhz Superregenerative Receiver		
Model No:	CM14A		
Test Method:	FCC 15/B/B Conducted Emissions		
Notes:	Lead Tested: Hot		
	Detector: Peak		
Date:	March 25, 1998	Tech:	Dennis Cortes
Sheet	3	of	6



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Report No. R-7480-1

18:50:38 MAR 25, 1998
 R-7480-1 CM14A FCC15/B/B CE DC LEAD--NEUTRAL
 REF 85.0 dBμV AT 10 dB



START 1.705 MHz
 #RES BW 10 KHz
 STOP 10.000 MHz
 #SWP 20.0 sec
 VBW 30 KHz

Customer:	X-10 (USA) Inc.				
Test Sample:	310 Mhz Superregenerative Receiver				
Model No.:	CM14A				
Test Method:	FCC 15/B/B Conducted Emissions				
Notes:	Lead Tested: Neutral				
	Detector: Peak				
Date:	March 25, 1998	Tech:	Dennis Cortes	Sheet:	4 of 6



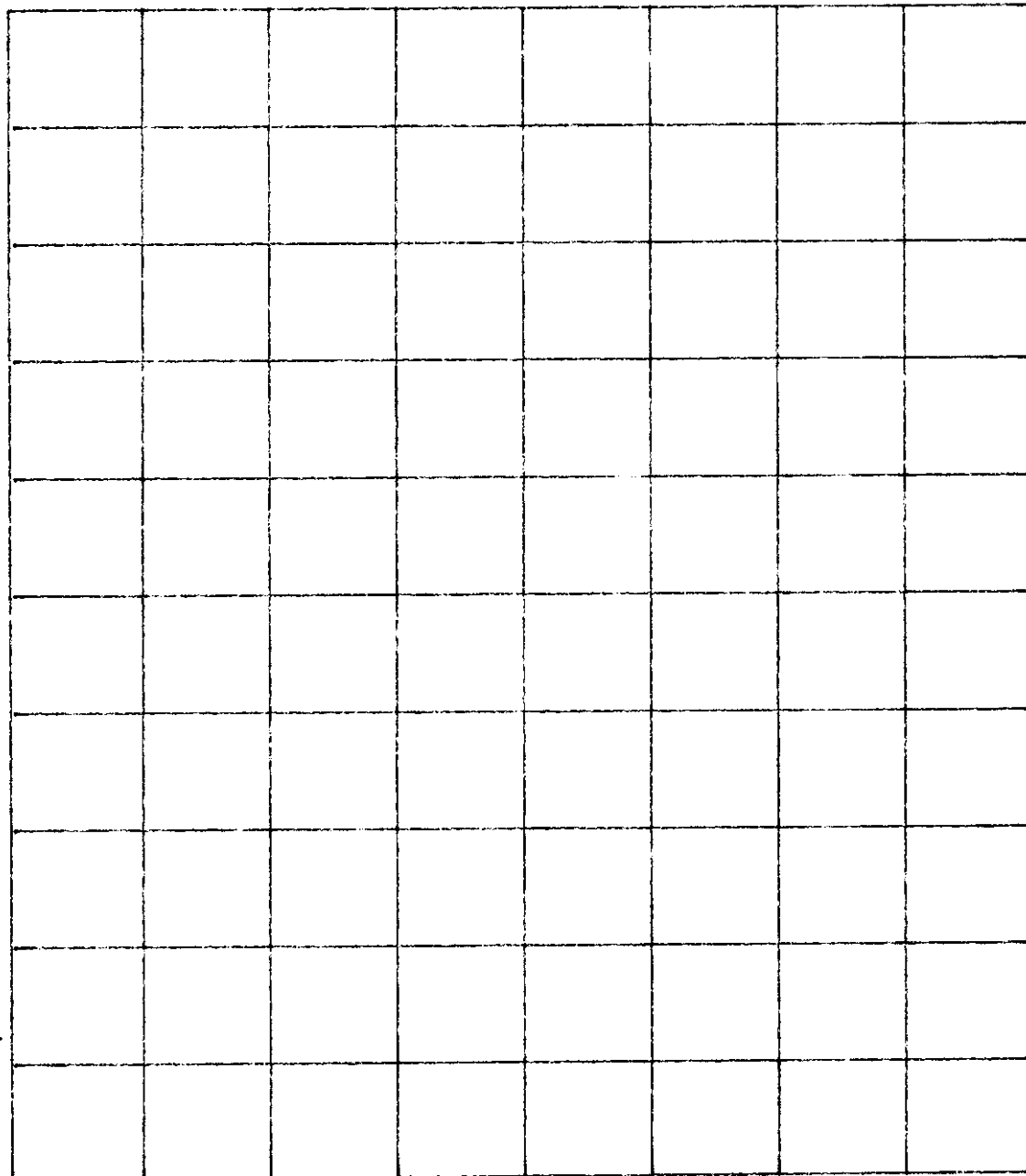
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Report No. R-7480-1

18:57:54 MAR 25, 1998

R-7480-1 CM14A FCC15/B/B CE DC LEAD-HOT

REF 85.0 dBμV AT 10 dB



PEAK

LOG

10

dB/

OFFST

10.0

dB

DL

48.0

dBμV

VA SB

SC FC

CORR

START 10.00 MHz

STOP 30.00 MHz

#RES BW 10 kHz

VBW 30 kHz

#SWP 20.0 sec

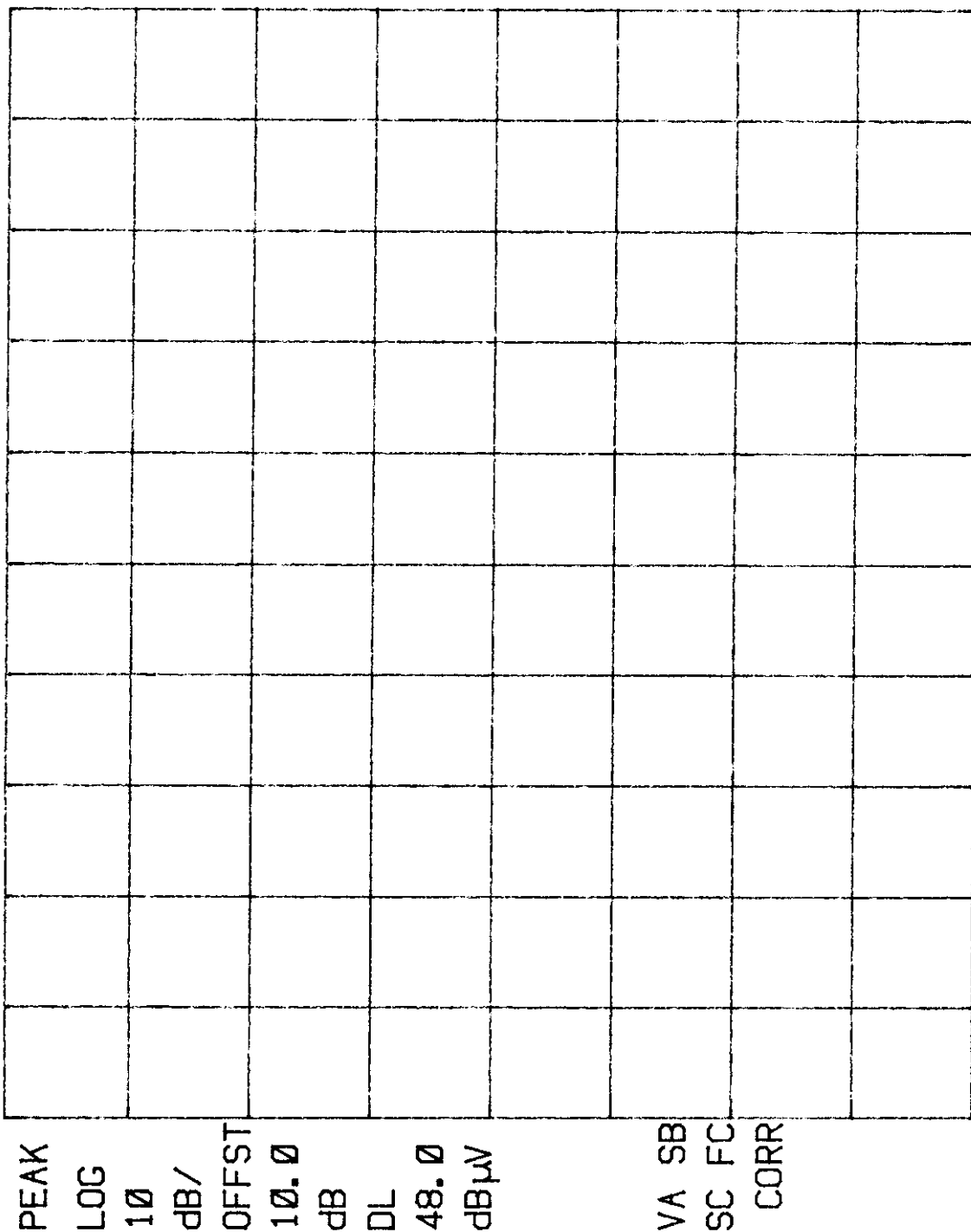
Customer:	X-10 (USA) Inc.
Test Sample:	310 Mhz Superregenerative Receiver
Model No:	CM14A
Test Method:	FCC 15/B/B Conducted Emissions
Notes:	Lead Tested: Hot Detector: Peak
Date:	March 25, 1998
Tech:	Dennis Cortes
Sheet:	5 of 6



Retlif Testing Laboratories

Report No. R-7480-1

19:01:10 MAR 25, 1998
 R-7480-1 CM14A FCC15/B/B CE DC LEAD-NEUTRAL
 REF 85.0 dBμV AT 10 dB



Customer:	X-10 (USA) Inc.
Test Sample:	310 Mhz Superregenerative Receiver
Model No.:	CM14A
Test Method:	FCC 15/B/B Conducted Emissions
Notes:	Lead Tested: Neutral
	Detector: Peak
Date:	March 25, 1998
Tech:	Dennis Cortes
Sheet:	6 of 6



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