

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

4.2 Test Results

4.2.1 RF Power Output

47 CFR 2.1046

Rated RF Output Power at Antenna Terminal = +20.0 dBm

Test Conditions		Transmitter Power at Antenna Terminal (dBm)		
		Low Channel	Middle Channel	High Channel
T nominal +25C	V min -42VDC	19.48	18.20	18.59
	V nom -48VDC	19.56	18.23	18.63
	V max -56VDC	19.51	18.18	18.60
T min -35C	V min -42VDC	18.65	18.52	18.33
	V nom -48VDC	18.65	18.52	18.33
	V max -56VDC	18.66	18.52	18.33
T max +55C	V min -42VDC	18.27	18.28	18.99
	V nom -48VDC	18.26	18.27	19.01
	V max -56VDC	18.28	18.29	19.01

Base Radio Unit antenna gain is 15 dBi nominal.

Calculate EIRP (dBW) = Tx power (dBm) + antenna gain (dBi) -30 dBW/dBm.

Test Conditions		EIRP (dBW)		
		Low Channel	Middle Channel	High Channel
T nominal +25C	V min -42VDC	4.48	3.20	3.59
	V nom -48VDC	4.56	3.23	3.63
	V max -56VDC	3.51	3.18	3.60
T min -35C	V min -42VDC	3.65	3.52	3.33
	V nom -48VDC	3.65	3.52	3.33
	V max -56VDC	3.66	3.52	3.33
T max +55C	V min -42VDC	3.27	3.28	3.99
	V nom -48VDC	3.26	3.27	4.01
	V max -56VDC	3.28	3.29	4.01

Limits: 47 CFR 101.113

Maximum Mean Power – EIRP (dBW)	+55
---------------------------------	-----

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

4.2.2 Modulation Characteristics (Spectrum Mask)

47 CFR 2.1047

Test Conditions		RF Spectrum Mask (Refer to Plots)		
		Low Channel	Middle Channel	High Channel
T nominal +25C	V min -42VDC	BRU 2.987-1	BRU 2.987-2	BRU 2.987-3
	V nom -48VDC	BRU 2.987-4	BRU 2.987-5	BRU 2.987-6
	V max -56VDC	BRU 2.987-7	BRU 2.987-8	BRU 2.987-9
T min -35C	V min -42VDC	BRU 2.987-10	BRU 2.987-11	BRU 2.987-12
	V nom -48VDC	BRU 2.987-13	BRU 2.987-14	BRU 2.987-15
	V max -56VDC	BRU 2.987-16	BRU 2.987-17	BRU 2.987-18
T max +55C	V min -42VDC	BRU 2.987-19	BRU 2.987-20	BRU 2.987-21
	V nom -48VDC	BRU 2.987-22	BRU 2.987-23	BRU 2.987-24
	V max -56VDC	BRU 2.987-25	BRU 2.987-26	BRU 2.987-27

Limits: None

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

4.2.3 Occupied Bandwidth

47 CFR 2.1049

Test Conditions		99% Occupied Bandwidth (MHz) (Refer to Plots)		
		Low Channel	Middle Channel	High Channel
T nominal +25C	V nom -48VDC	14.13 MHz BRU 2.989-1	14.13 MHz BRU 2.989-2	14.13 MHz BRU 2.989-3

Limits: None

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

4.2.4 Spurious Emissions at Antenna Terminals

47 CFR 2.1051

Frequency $\leq$ +/-250% Removed from Band Center

Test Conditions		RF Spectrum Mask (Refer to Plots)		
		Low Channel	Middle Channel	High Channel
T nominal +25C	V min -42VDC	BRU 2.987-1	BRU 2.987-2	BRU 2.987-3
	V nom -48VDC	BRU 2.987-4	BRU 2.987-5	BRU 2.987-6
	V max -56VDC	BRU 2.987-7	BRU 2.987-8	BRU 2.987-9
T min -35C	V min -42VDC	BRU 2.987-10	BRU 2.987-11	BRU 2.987-12
	V nom -48VDC	BRU 2.987-13	BRU 2.987-14	BRU 2.987-15
	V max -56VDC	BRU 2.987-16	BRU 2.987-17	BRU 2.987-18
T max +55C	V min -42VDC	BRU 2.987-19	BRU 2.987-20	BRU 2.987-21
	V nom -48VDC	BRU 2.987-22	BRU 2.987-23	BRU 2.987-24
	V max -56VDC	BRU 2.987-25	BRU 2.987-26	BRU 2.987-27

Limits: 47 CFR 101.111(a)(2)(ii)

Spectrum Mask (P = % removed from carrier, B = Authorized Bandwidth = 850 MHz)	Attenuation = $11 + 0.4 * (P-50) + 10 * \text{LOG}_{10}(B)$ or Attenuation = $40.3 + 0.4*(P-50)$
--	---

Frequency $\geq$ +/-250% Removed from Band Center

Test Conditions		Spurious Emissions (Refer to Plots)		
		IF Bandwidth	Middle Channel	Pass/Fail
T nominal +25C	.030-1 GHz	100 kHz	BRU 2.991-1	Pass
	1-21.2 GHz	1 MHz	BRU 2.991-2 to -6	Pass
V nom -48VDC	21.2-27.572 GHz	1 MHz	BRU 2.991-7 to -9	Pass
	27.652-110GHz	1 MHz	BRU 2.991-10 to -28	Pass

Limits: 47 CFR 101.111(a)(2)(iii)

Attenuation in 4 kHz band, >250% B away from carrier B= Authorized Bandwidth (MHz), P _{out} = Mean Output Power in Watts	Attenuation = $43+10*\text{LOG}_{10}(P_{\text{out}})$ or 80 dB whichever is lesser Attenuation = -33 dB in 4 kHz band = -13 dBm/4 kHz
--	---

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

4.2.6 Frequency Stability

47 CFR 2.1055

Note: Frequency stability is determined by external network clock.

Test Conditions		Frequency Stability (%) (Refer to Plots)		
		Low Channel	Middle Channel	High Channel
T nominal +25C	V min -42VDC	.00004 BRU 2.995-1	.00004 BRU 2.995-2	.00004 BRU 2.995-3
	V nom -48VDC	.00004 BRU 2.995-4	.00004 BRU 2.995-5	.00004 BRU 2.995-6
	V max -56VDC	.00004 BRU 2.995-7	.00004 BRU 2.995-8	.00004 BRU 2.995-9
T min -35C	V min -42VDC	.00003 BRU 2.995-10	.00003 BRU 2.995-11	.00003 BRU 2.995-12
	V nom -48VDC	.00003 BRU 2.995-13	.00003 BRU 2.995-14	.00003 BRU 2.995-15
	V max -56VDC	.00003 BRU 2.995-16	.00003 BRU 2.995-17	.00003 BRU 2.995-18
T max +55C	V min -42VDC	.00003 BRU 2.995-19	.00003 BRU 2.995-20	.00003 BRU 2.995-21
	V nom -48VDC	.00003 BRU 2.995-22	.00003 BRU 2.995-23	.00003 BRU 2.995-24
	V max -56VDC	.00003 BRU 2.995-25	.00003 BRU 2.995-26	.00003 BRU 2.995-27

Limits: 47 CFR 101.107

Frequency Tolerance, percent	0.001
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**Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.**

Section 5. Summary of Test Results

The summary of the test results is as follows:

Transmitter Output Power	Pass
Modulation Characteristics– Spectrum Mask	N/A
Occupied Bandwidth	N/A
Spurious Emissions at Antenna Terminal	Pass
Field Strength of Spurious Emissions	Pass
Frequency Stability	Pass

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

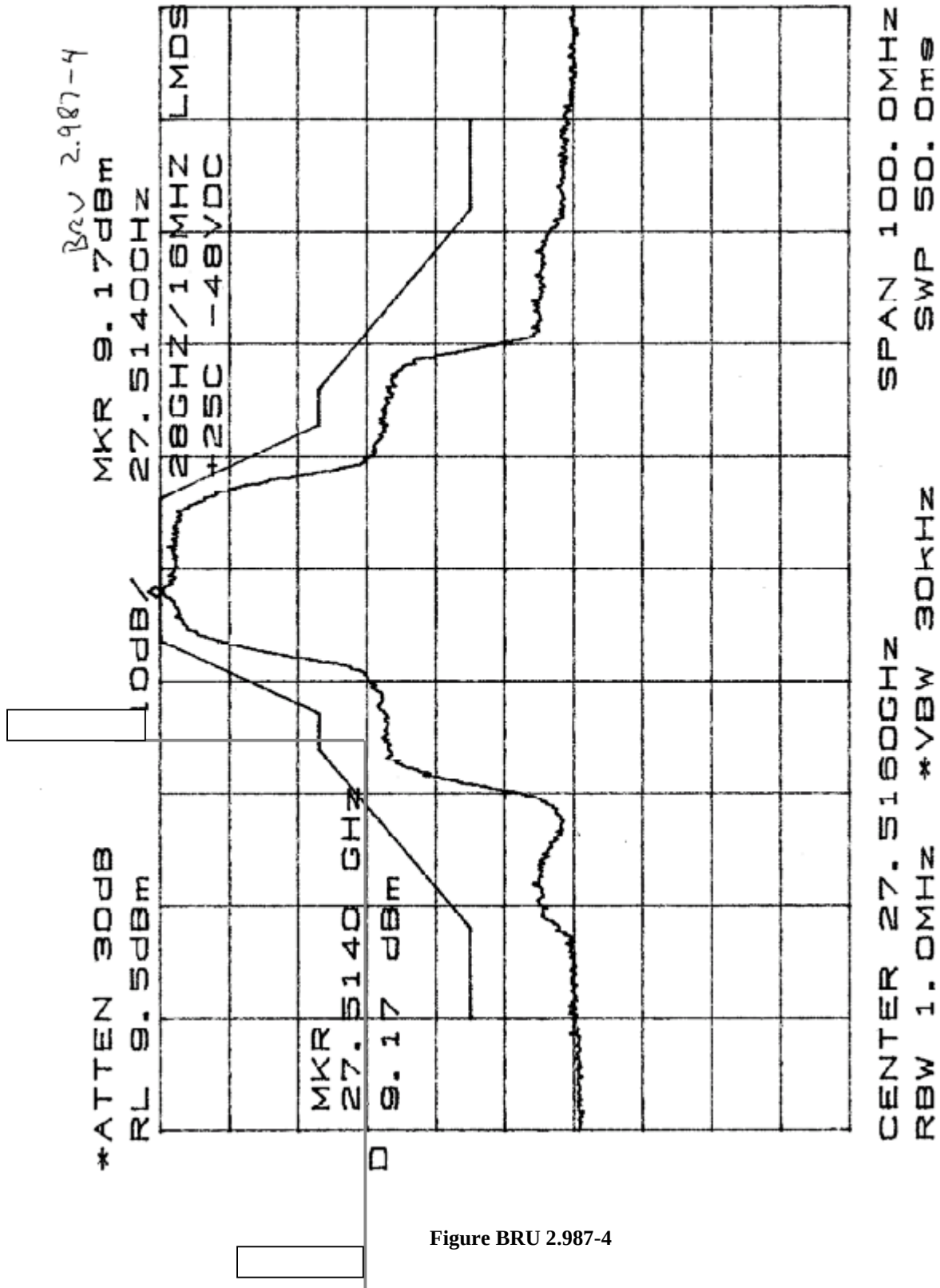


Figure BRU 2.987-4

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

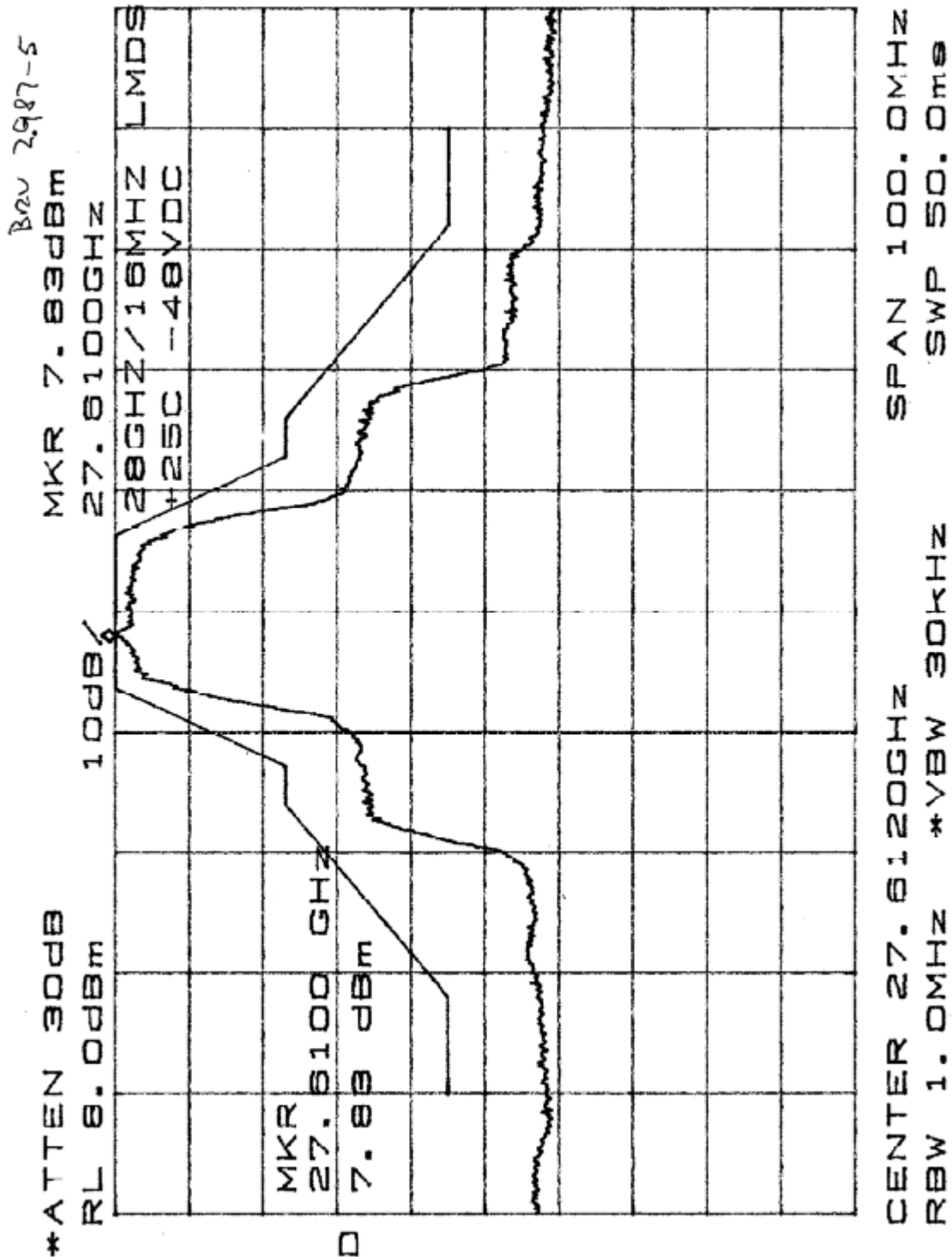


Figure BRU 2.987-5

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

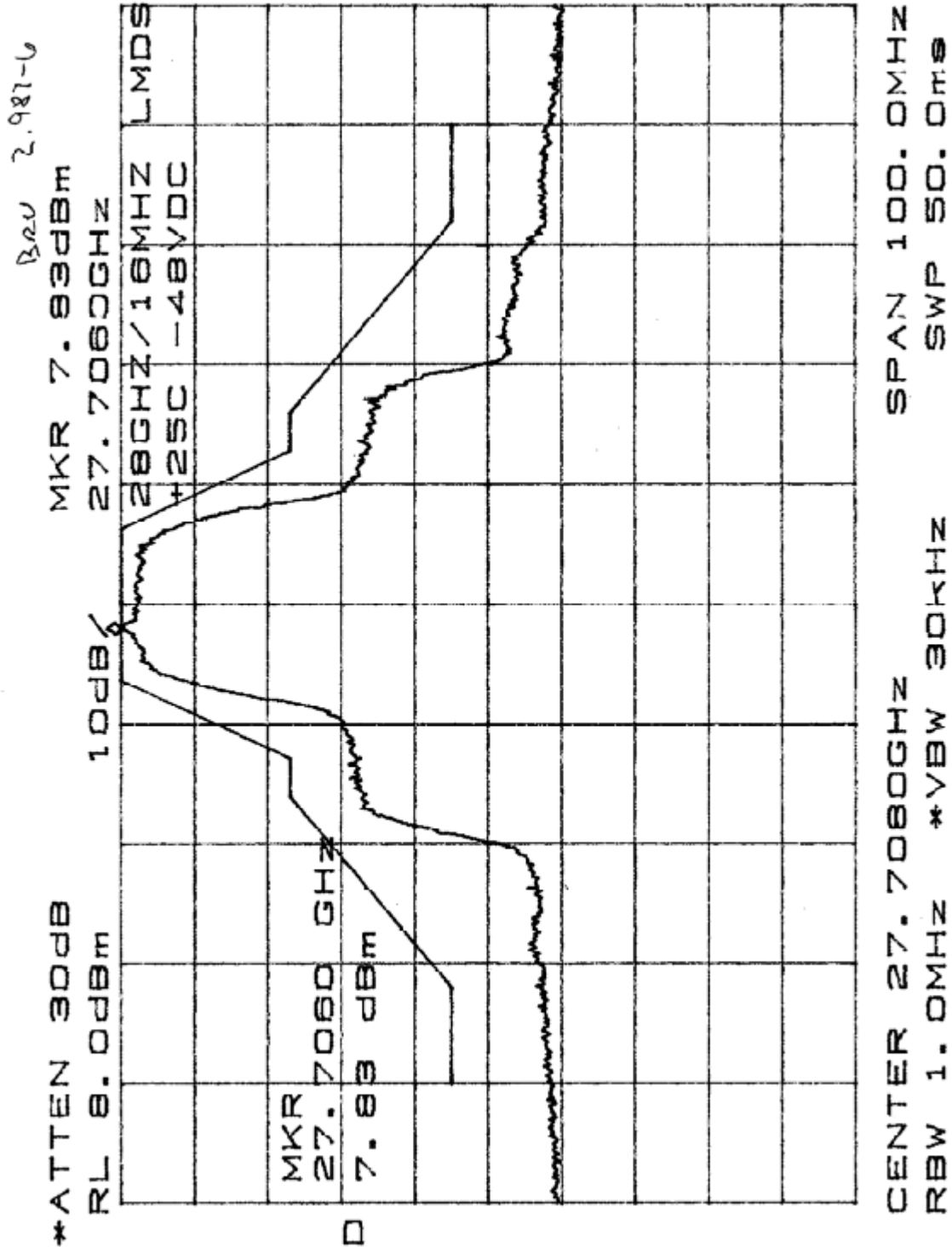


Figure BRU 2.987-6

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
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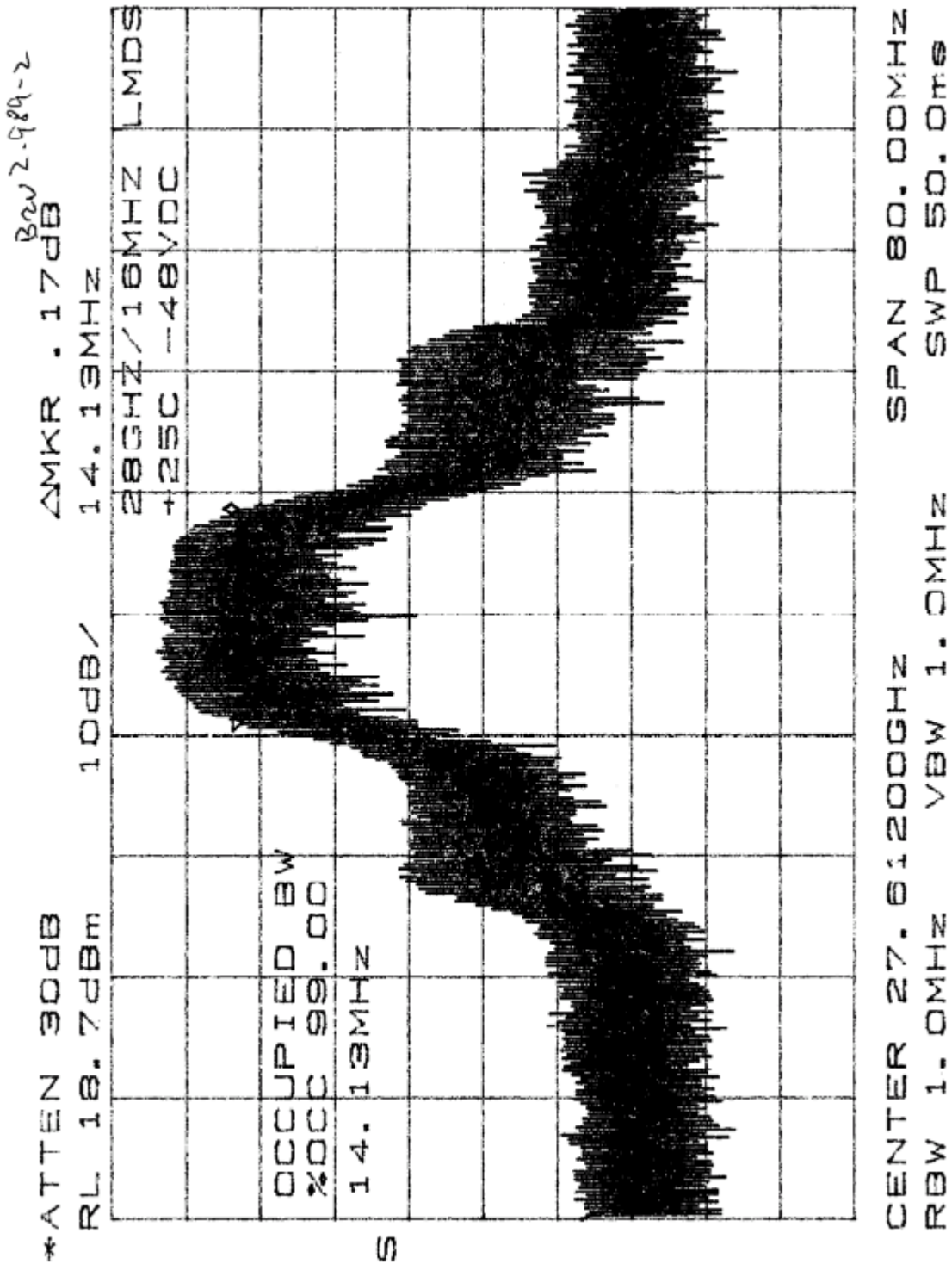


Figure BRU 2.989-2

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Appendix A – 28 GHz PMP 1 GHz – 110 GHz Radiated Emissions Test Report

Report No. A9177F02

TEST RESULT SUMMARY

UNITED STATES STANDARD 47 CFR PART 101

MANUFACTURER NAME	Netro Corporation
NAME OF EQUIPMENT	Microwave fixed link
MODEL NUMBER	AirStar PMP 28
MANUFACTURER ADDRESS	3860 N. First Street San Jose, CA 95134
TEST REPORT NUMBER	A9177F02
TEST DATE	20 April 2000

According to testing performed at BABT Product Service, the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in United States Standard 47 CFR Part 101, section 101.111

BABT Product Service reports apply only to the specific sample tested under stated test conditions. It is the manufacturer's responsibility to assure the continued compliance of production units of this model. BABT Product Service shall have no liability for any deductions, inferences or generalizations drawn by the client or others from BABT Product Service issued reports.

As the responsible EMC Project/Division Managers, we hereby declare that the equipment tested at BABT Product Service as specified above conforms to the requirements of United States Standard 47 CFR Part 101, Fixed Microwave Services.

Date: 26 April, 2000

Location: Santa Clara, California
USA



Frank Ibrahim
Engineer In Charge



Dave Wilson
EMC Manager



Certificate No: 1212-01

Not Transferable

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

EMC EMISSION - TEST REPORT

UNITED STATES STANDARD 47 CFR PART 15, SUBPART B

Test Report File No. : A9177F02 Date of Issue: 26 April, 2000

Model / Serial No. : AirStar PMP 28 / N/A

Product Type : Microwave fixed link

Applicant : Netro Corporation

Manufacturer : Netro Corporation

License holder : Netro Corporation

Address : 3860 N. First Street
San Jose, CA 95134

Test Result : ☒ Positive ☐ Negative

Test Project Number
Reference(s) : A9177F02

Total pages - Test Report : 13

BABT Product Service is a joint venture between TÜV Product Service, Inc. and BABT.

BABT Product Service reports apply only to the specific sample tested under stated test conditions. It is the manufacturer's responsibility to assure the continued compliance of production units of this model. BABT Product Service shall have no liability for any deductions, inferences or generalizations drawn by the client or others from BABT Product Service issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval.

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BABT PRODUCT SERVICE INC 4855 Patrick Henry Drive/ Santa Clara CA 95054 USA Tel: 408 748 3585 Fax: 408 919 0585 Rev. No 1.0
Building # 6

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to the following regulations:

- | | | |
|--|---|--|
| ☐ - EN 50081-1 : 1992 | | |
| ☐ - EN 55011 : 1991 | ☐ - Group 1 | ☐ - Group 2 |
| ☐ - EN 55013 : 1990 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55014-1 : 1993 | ☐ - Household appliances | |
| | ☐ - Electric tools | |
| | ☐ - Similar apparatus | |
| ☐ - EN 55014-1 : 1993 / Amendment A1 : 1997 | | |
| ☐ - EN 55015 : 1993 | | |
| ☐ - EN 55015 : 1996 | | |
| ☐ - EN 55015 : 1996 / Amendment A1 : 1997 | | |
| ☐ - EN 55022 / 1987 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55022 / 1994 | ☐ - Class A | ☐ - Class B |
| ☐ - Amendment A1 : 1995 to EN 55022 : 1994 | | |
| ☐ - Amendment A2 : 1997 to EN 55022 : 1994 | | |
| ☐ - EN 55022 : 1998 | ☐ - Class A | ☐ - Class B |
| ☐ - BS | | |
| ☐ - VCCI | ☐ - Class A ITE | ☐ - Class B ITE |
| ☒ - 47 CFR Part 101, section 101.111 | | |
| ☐ - AS/NZS 3548: 1995 | ☐ - Class A | ☐ - Class B |
| ☐ - CISPR 11 (1997) | ☐ - Group 1 | ☐ - Group 2 |
| | ☐ - Class A | ☐ - Class B |
| ☐ - CISPR 22 (1997) | ☐ - Class A | ☐ - Class B |

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BABT PRODUCT SERVICE INC 4855 Patrick Henry Drive/
Building # 6

Santa Clara CA 95054 USA

Tel: 408 748
3585Fax: 408 919
0585

Rev. No 1.0

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

Environmental Conditions In The Laboratory:

	<u>Actual</u>
Temperature:	: 23 °C
Relative Humidity:	: 50 %
Atmospheric Pressure:	: 100.0 kPa

Power Supply Utilized:

Power supply system : -48 VDC , 10 Amp

Symbol Definitions:

- - Applicable
- - Not Applicable

Description of EUT:

AirStar is a wireless point-to-multipoint telecommunication system that provides broadband local loop access. AirStar is a complete product family that is built on advanced ATM and digital microwave technology. Based on a sectorized cellular topology an AirStar Network is composed of one or more cells which may overlap. Each AirStar cell provides a point-to-multipoint wireless communications network consisting of a Base Station and a number of Subscriber Terminals. Each cell can be split into sectors to allow efficient reuse of the allocated spectrum and to increase the capacity available to Subscriber Terminals.

The AirStar system design is based on Asynchronous Transport Mode (ATM) switching technology which provides a generic transport vehicle for carrying voice, data and video with quality of services. AirStar provides local access for all types of traffic, such as analog voice, digital voice, TDM, Frame Relay, ATM, and IP.

Measurement Methods

Measurements were made in accordance with ANSI C63.4:1992. All emissions measurements are fully automated.

For conducted emissions, the receiver is swept over the frequency range 450kHz to 30MHz using detector functions as specified in CISPR 16. The measured levels from the receiver are then re-calculated taking into account the LISN and coax cable loss to derive the corrected level. This is then compared with the limits specified in FCC 47 CFR Part 15.107 to determine the compliance of the EUT.

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BABT PRODUCT SERVICE INC	4855 Patrick Henry Drive/ Building # 6	Santa Clara CA 95054 USA	Tel: 408 748 3585	Fax: 408 919 0585	Rev. No 1.0
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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz - 110 GHz were performed in a horizontal and vertical polarization at the following test location :

☐ - Test not applicable

- - Test area no. 1 – Semi - anechoic absorber – lined chamber (80' x 44' x 28')
- ☐ - Test area no. 2 – Shielded room (19' x 19' x 8')
- ☐ - Test area no. 3 – Fully – anechoic ferrite – lined chamber (24' x 16' x 11')

Testing was performed at a test distance of:

- ☐ - 1 meters
- - 3 meters
- ☐ - 10 meters

Test Equipment Used :

Model No.	Description	Manufacturer	Serial No.	Due Calib. Date
■ - 19-7025	Horn Antenna	Microwave Inc.	-----	-----
■ - 15-7025	Horn Antenna	Microwave Inc.	-----	-----
■ - 10-7025	Horn Antenna	Microwave Inc.	-----	-----
■ - 11970V	Harmonic Mixer 50-75 GHz	Hewlett Packard	-----	-----
■ - 11970A	Harmonic Mixer 26.5-40 GHz	Hewlett Packard	-----	-----
■ - 11970U	Harmonic Mixer 40-60 GHz	Hewlett Packard	-----	-----
■ - 11970W	Harmonic Mixer 75-110 GHz	Hewlett Packard	-----	-----
■ - 11970K	Harmonic Mixer 18-26.5 GHz	Hewlett Packard	-----	-----
■ - 121674G	Pre Amplifier	Miteq	-----	-----
■ - 3115	Horn Antenna	Emco	-----	-----

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BABT PRODUCT SERVICE INC 4855 Patrick Henry Drive/
Building # 6

Santa Clara CA 95054 USA

Tel: 408 748
3585

Fax: 408 919
0585

Rev. No 1.0

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

Emissions Test Results:

Conducted Emissions, 10/150/450 kHz - 30 MHz

☐ - PASS ☐ - FAIL ☒ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Radiated Emissions (Magnetic Field), 10 kHz - 30 MHz

☐ - PASS ☐ - FAIL ☒ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Radiated Emissions (Electric Field), 30 MHz - 1000 MHz

☐ - PASS ☐ - FAIL ☒ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____
This part was done previously and a separate report was issued, report number A9242F01

Interference Power at the Mains and Interface Cables, 30 MHz - 300 MHz

☐ - PASS ☐ - FAIL ☒ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: _____

Equivalent Radiated Emissions, 1 GHz - 110 GHz

☒ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: No RF noise of significant value was noticed in this range.

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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

GENERAL REMARKS:

No modifications were necessary in order for the EUT to meet the emissions requirements.

SUMMARY:

All tests according to the regulations cited on page 3 were

☒ - Performed

☐ - Not Performed

The Equipment Under Test

☒ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Statement of Measurement Uncertainty

The data and results referenced in this document are true and accurate. There may be some degree or level of measurement uncertainty. As EN 45001 does not allow recommendations to be included in the test report, the reader is encouraged to request a copy of the BABT Product Service policy concerning pass or fail judgment with respect to possible measurement uncertainties.

Equipment Received Date:	<u>On file</u>
Testing Start Date:	<u>20 April 2000</u>
Testing End Date:	<u>20 April 2000</u>

- BABT PRODUCT SERVICE -

Engineer In Charge:



Frank Ibrahim
(EMC Engineer)

Tester:



Kim Nguyen
(EMC Technician)

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Building # 6

Santa Clara CA 95054 USA

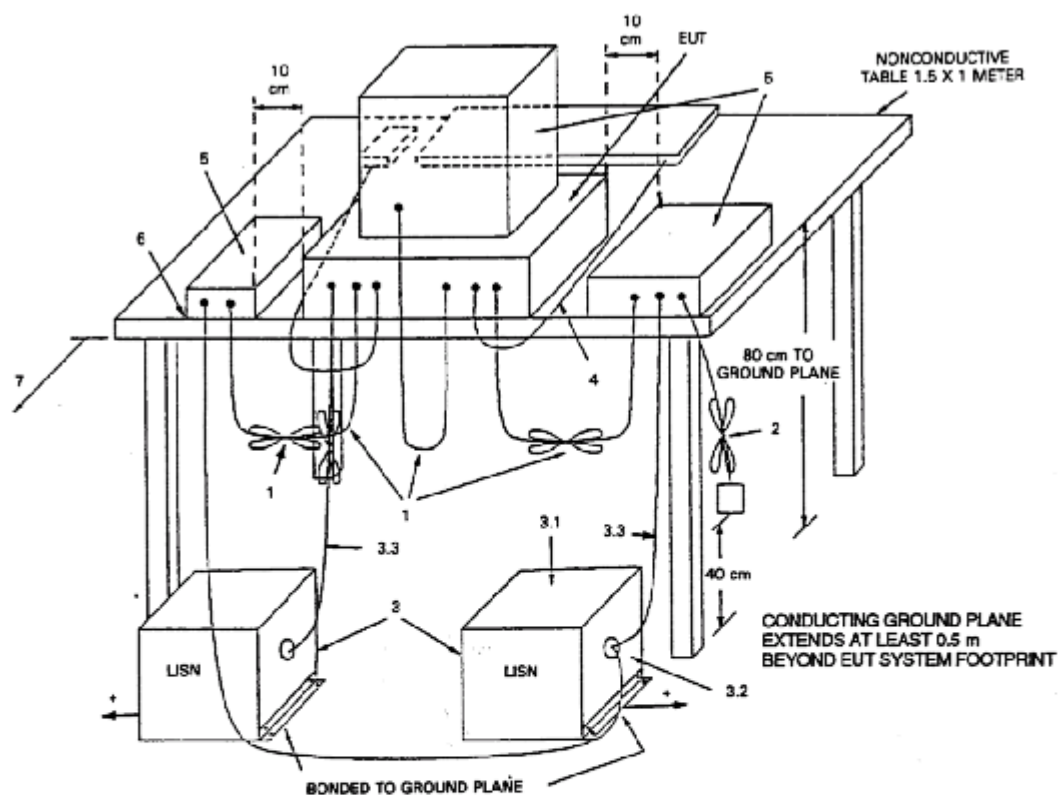
Tel: 408 748
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Rev. No 1.0

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Report No. A9177F02

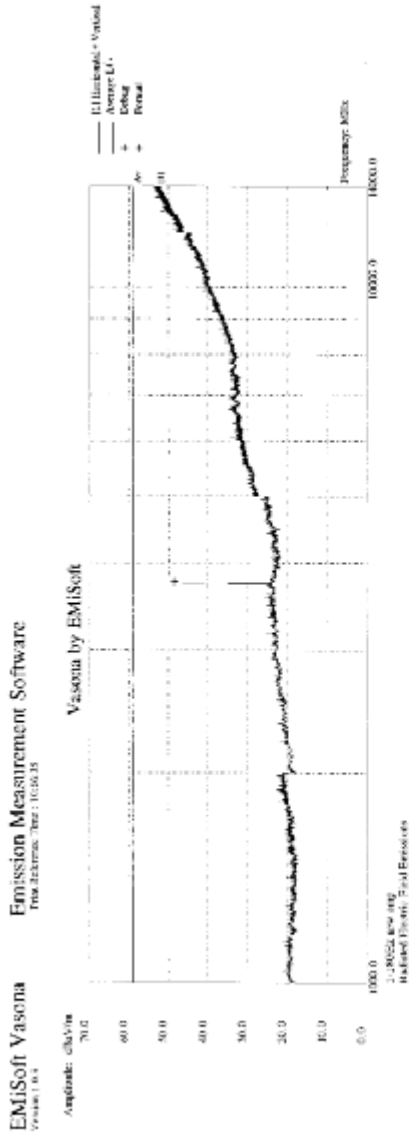


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Rev.No 1.0

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2, and 47 CFR 101.

Report No. A9177F02



Results Title: 1-18GHz new amp
Test Laboratory: R&M Product Service Sumi Cl
Engineer/Tester: Kim Nguyen
Equipment (EUT): Netro Corporation
Details:

Configuration:
AirStar PMP 28GHz
1-14GHz

Filed on: 19 Apr 00 at 10:07

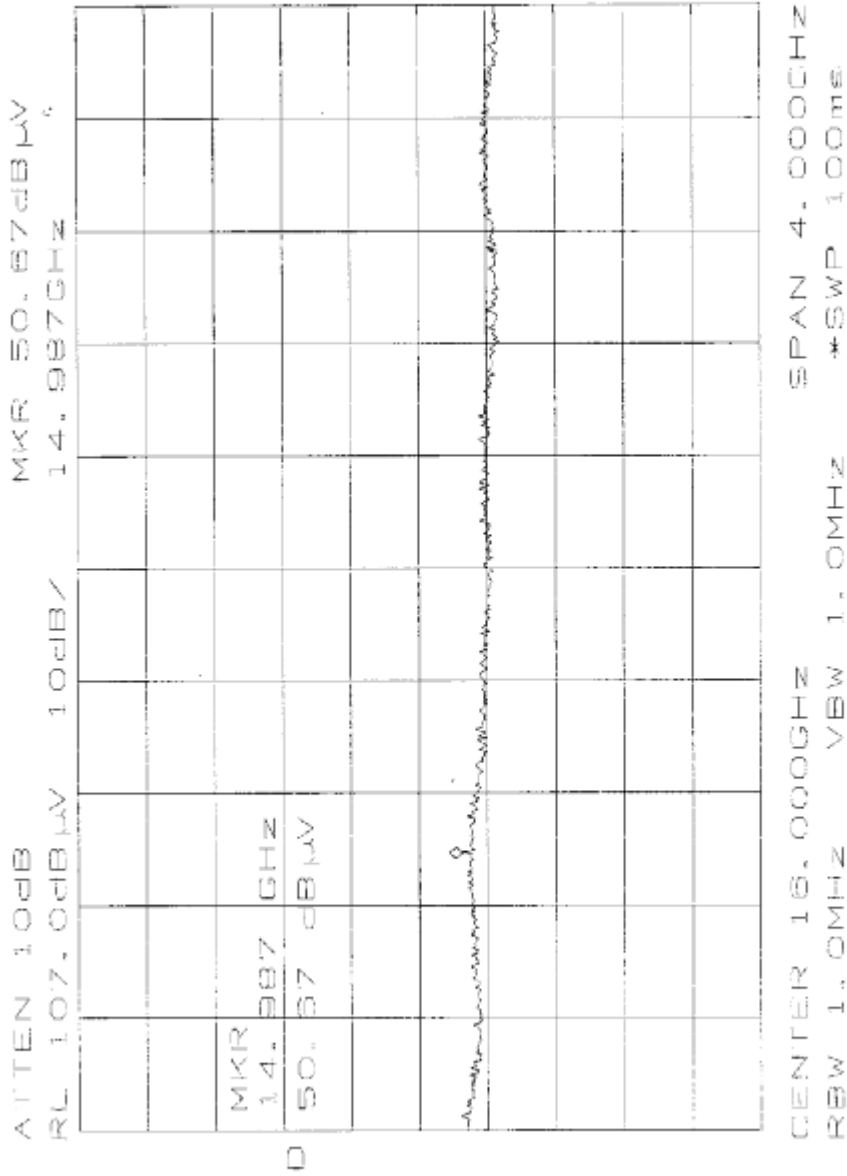
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An older test and assessment product from EMiSoft.

Debug Data

No	Frequency MHz	Band MHz	Calc. Loss dB	Level dBmV	Trans. Type	Test Type	Act Type	Limit dBmV	Margin dB	Pass Fail	Comments
1	1000	10	0	6	0	0	0	0	0	0	Pass
2	10000	10000	10.75	-13.66	44.28	Debug	IF	55	59.0	-13.74	

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

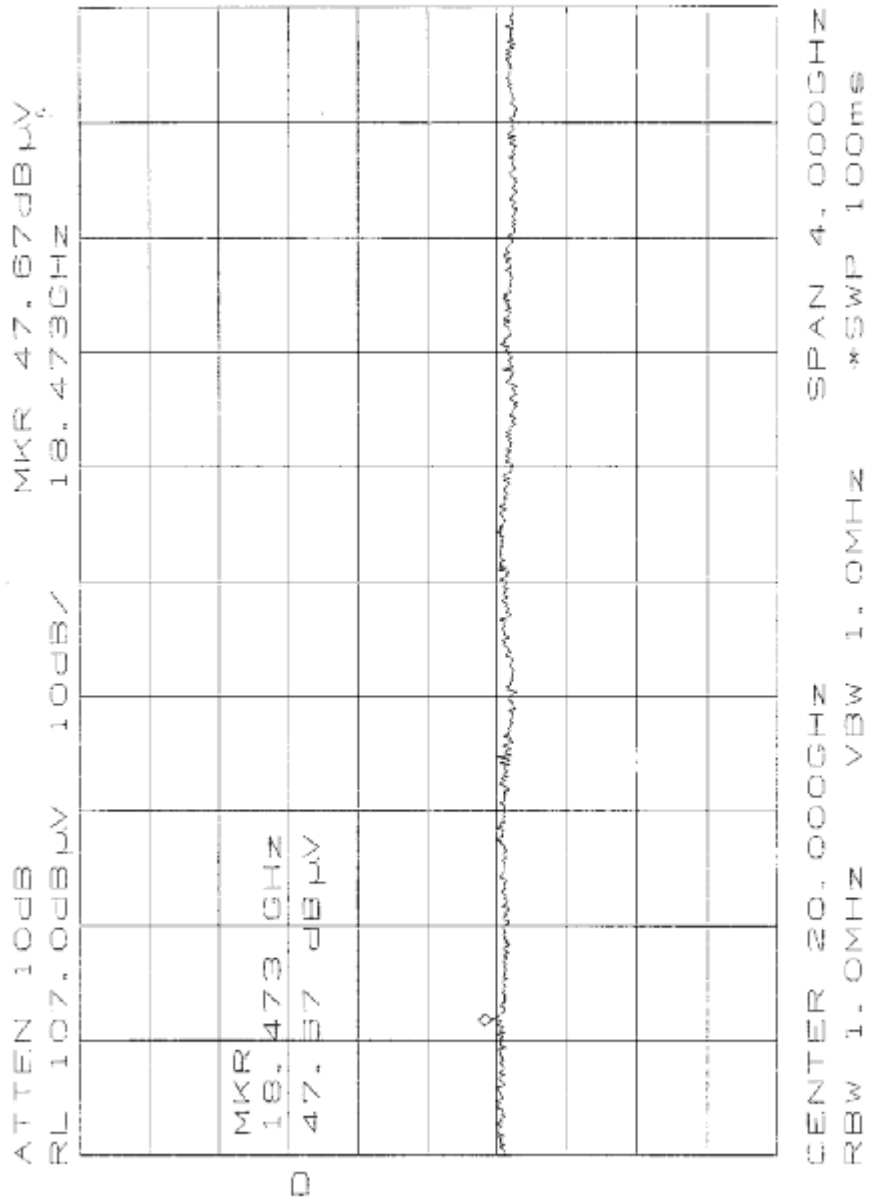
Report No. A9177F02



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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

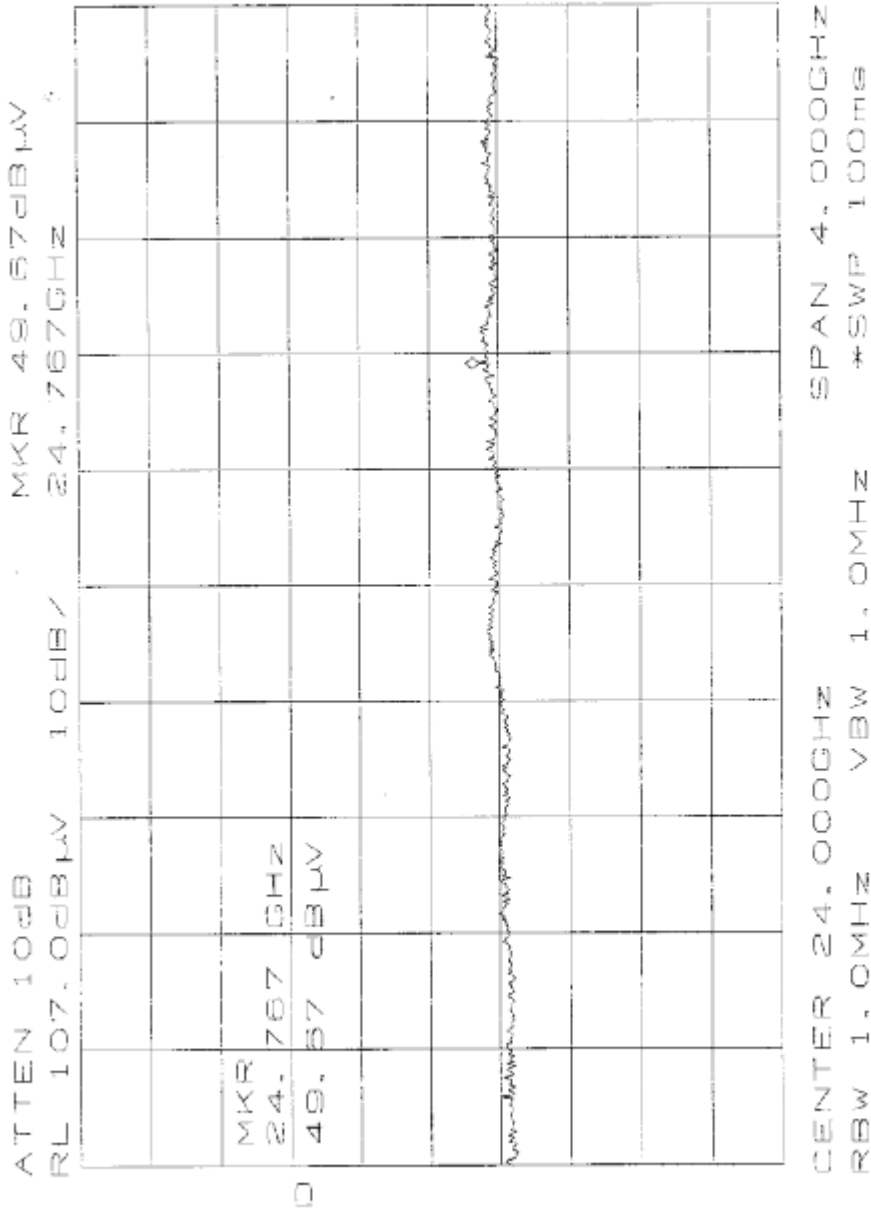


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to 47 CFR 2. and 47 CFR 101.

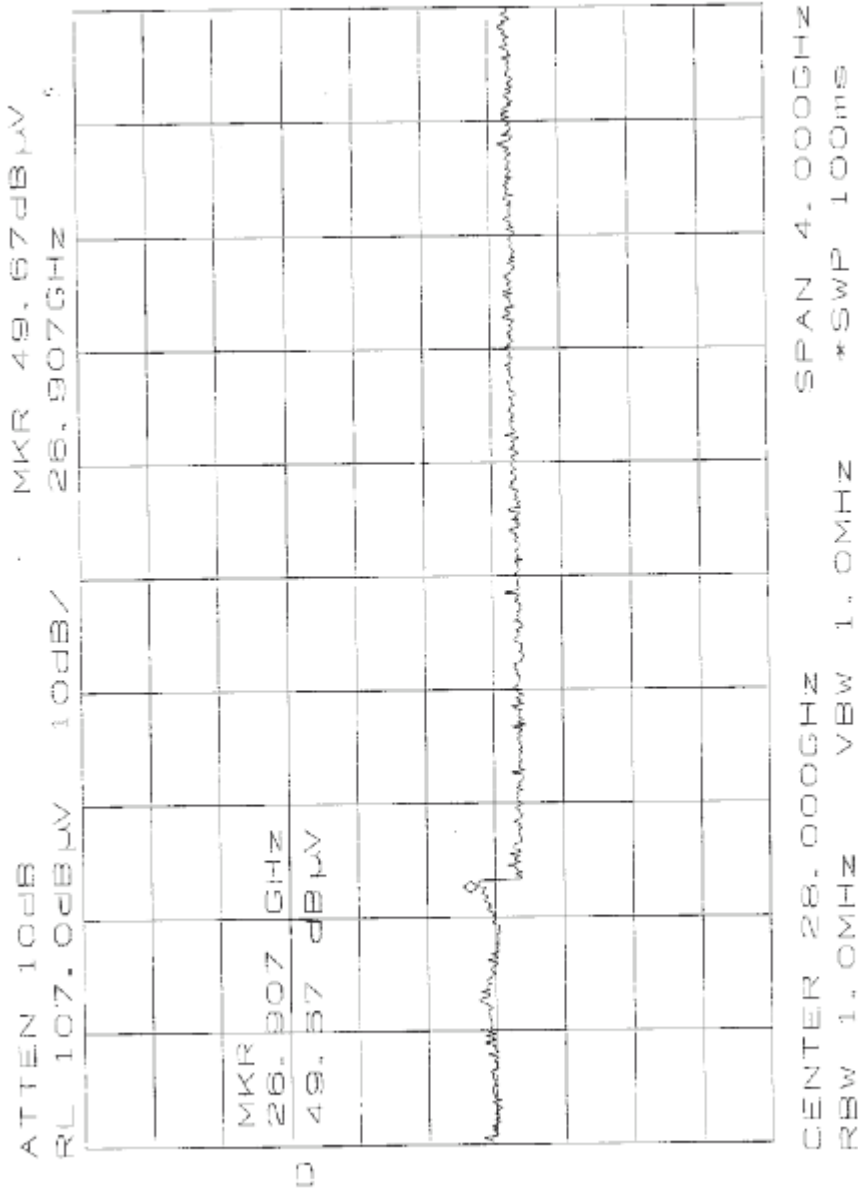
Report No. A9177F02



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Rev.No 1.0

Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

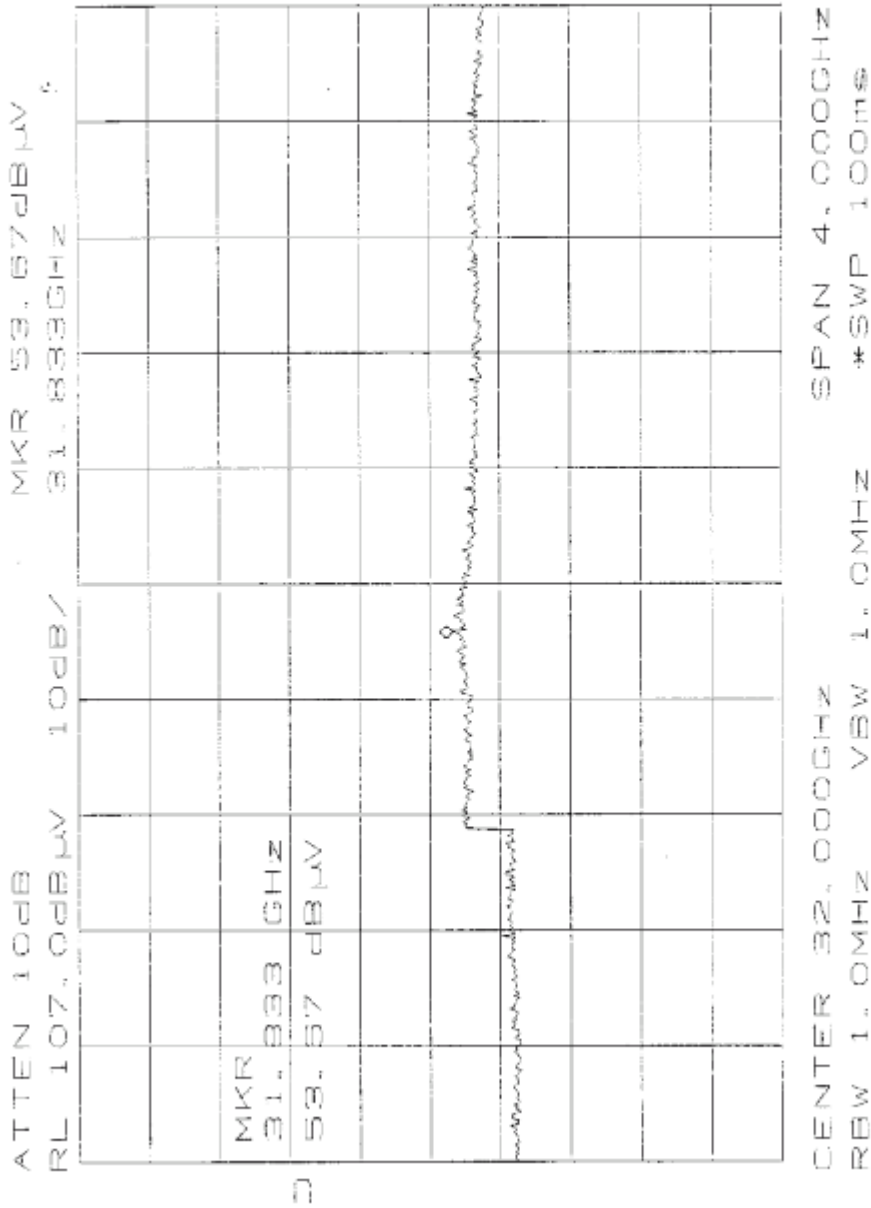


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to 47 CFR 2. and 47 CFR 101.

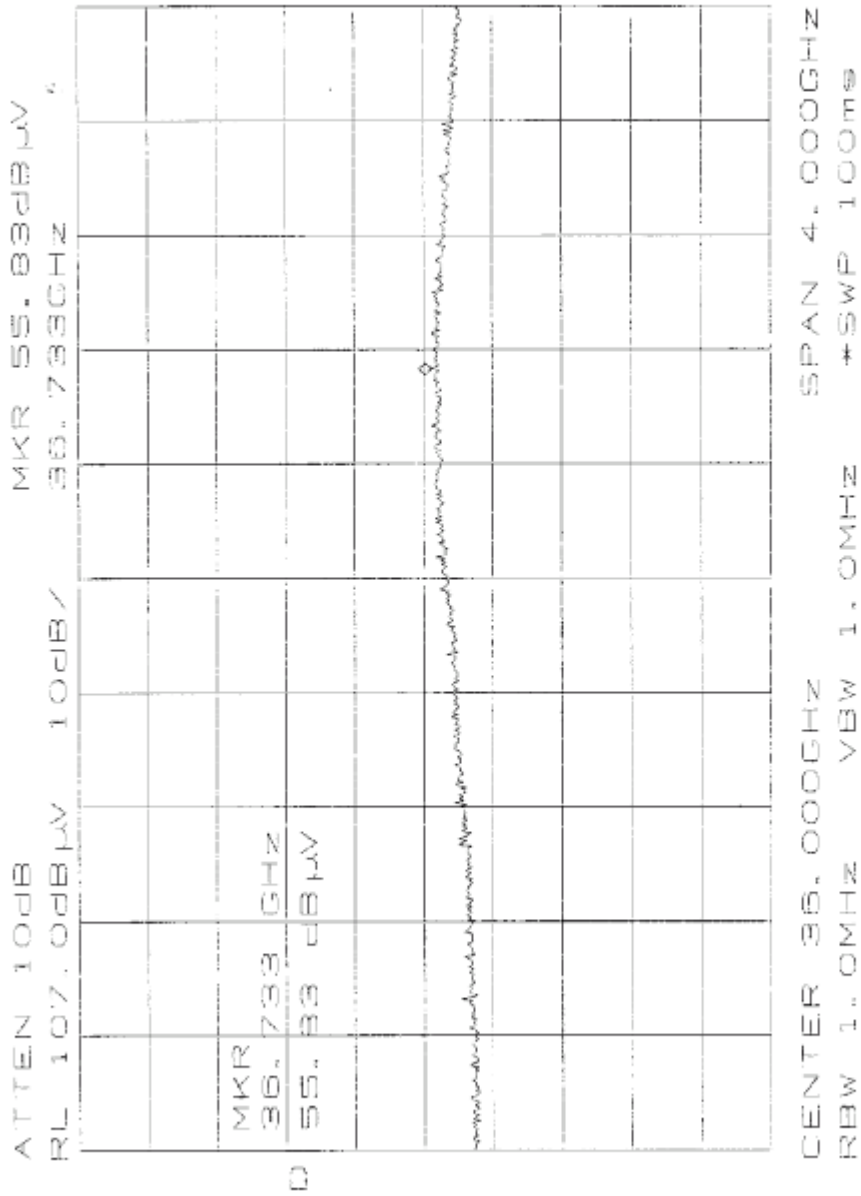
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Rev.No 1.0

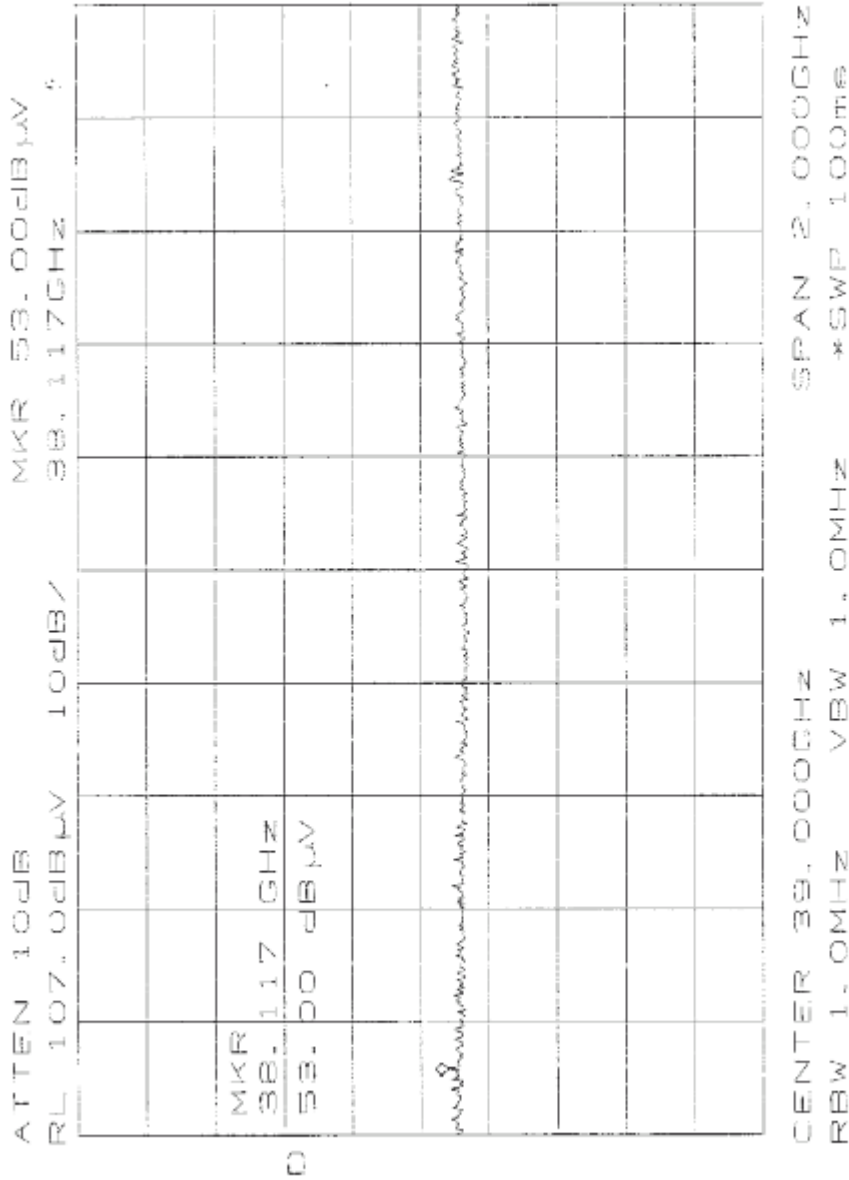
Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
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Report No. A9177F02



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Report No. A9177F02

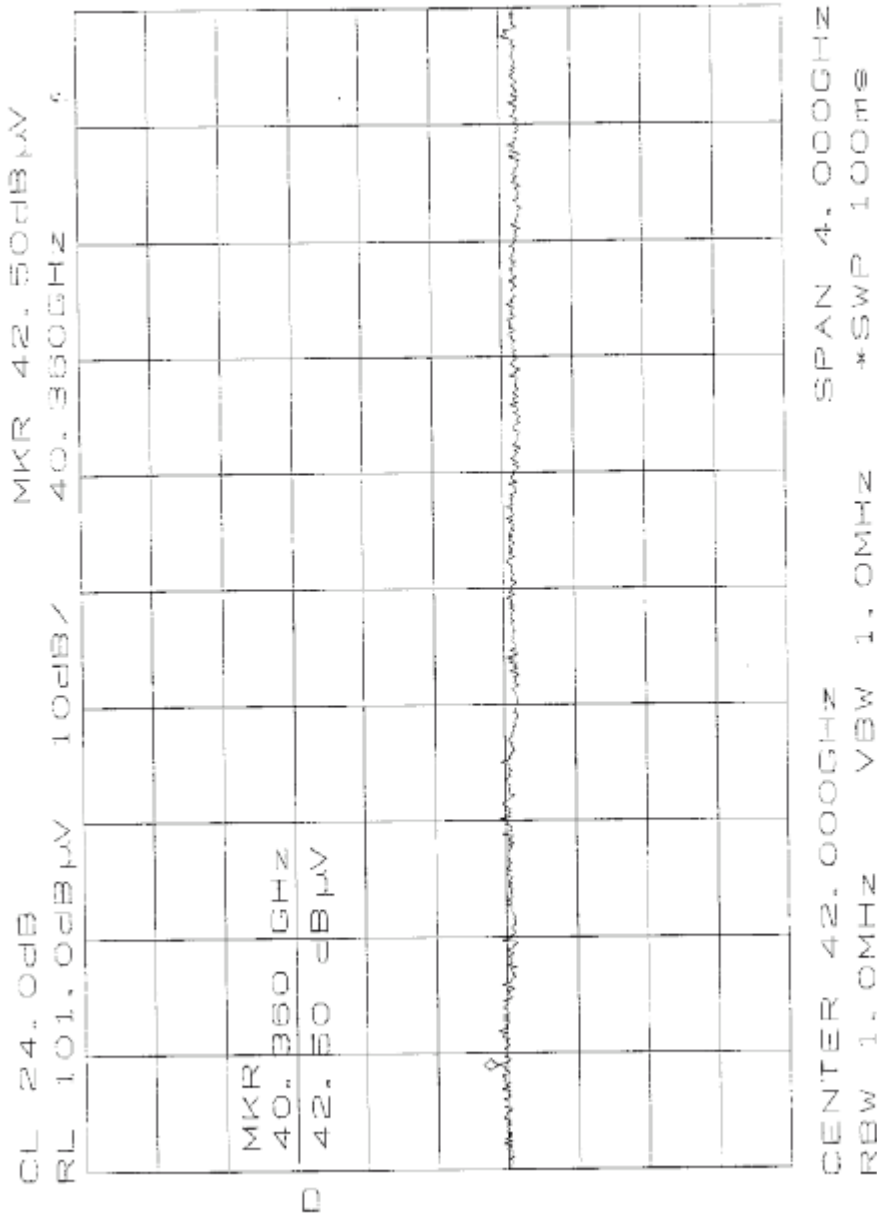


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Report No. A9177F02

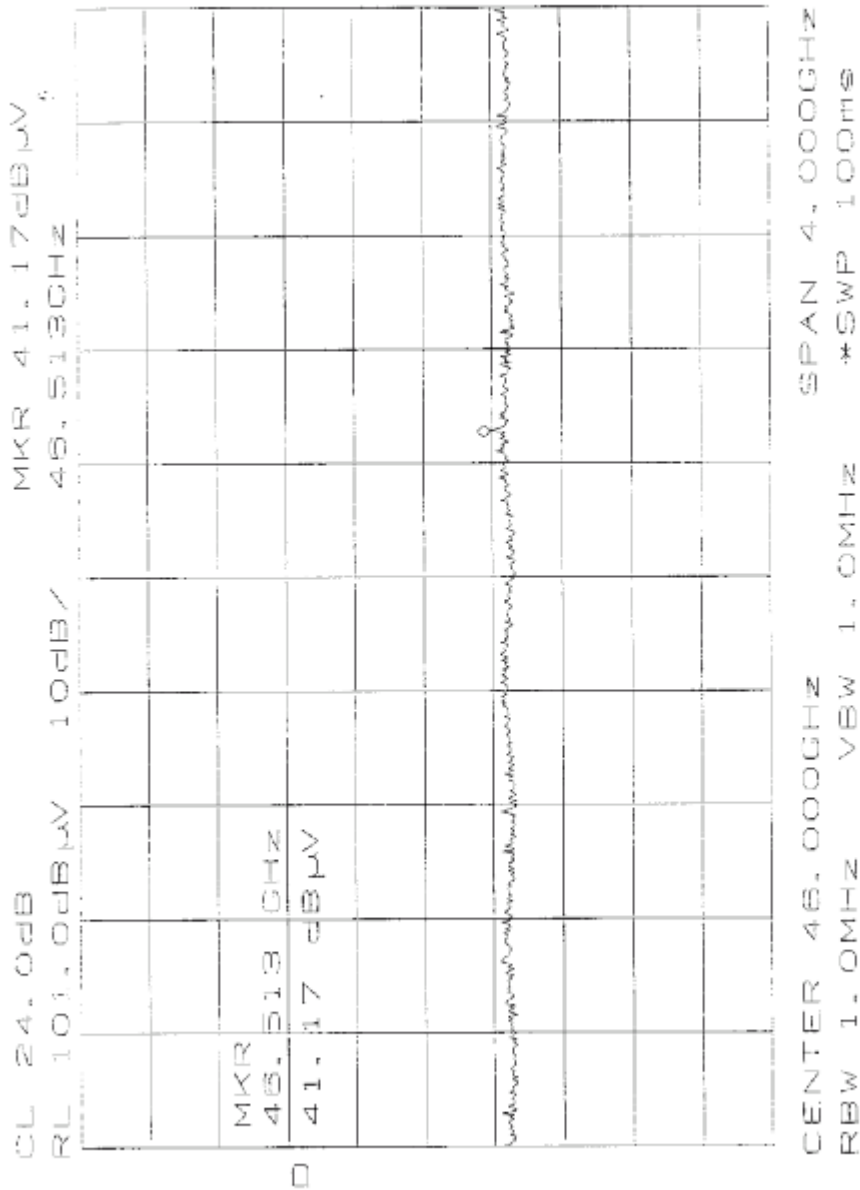


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02

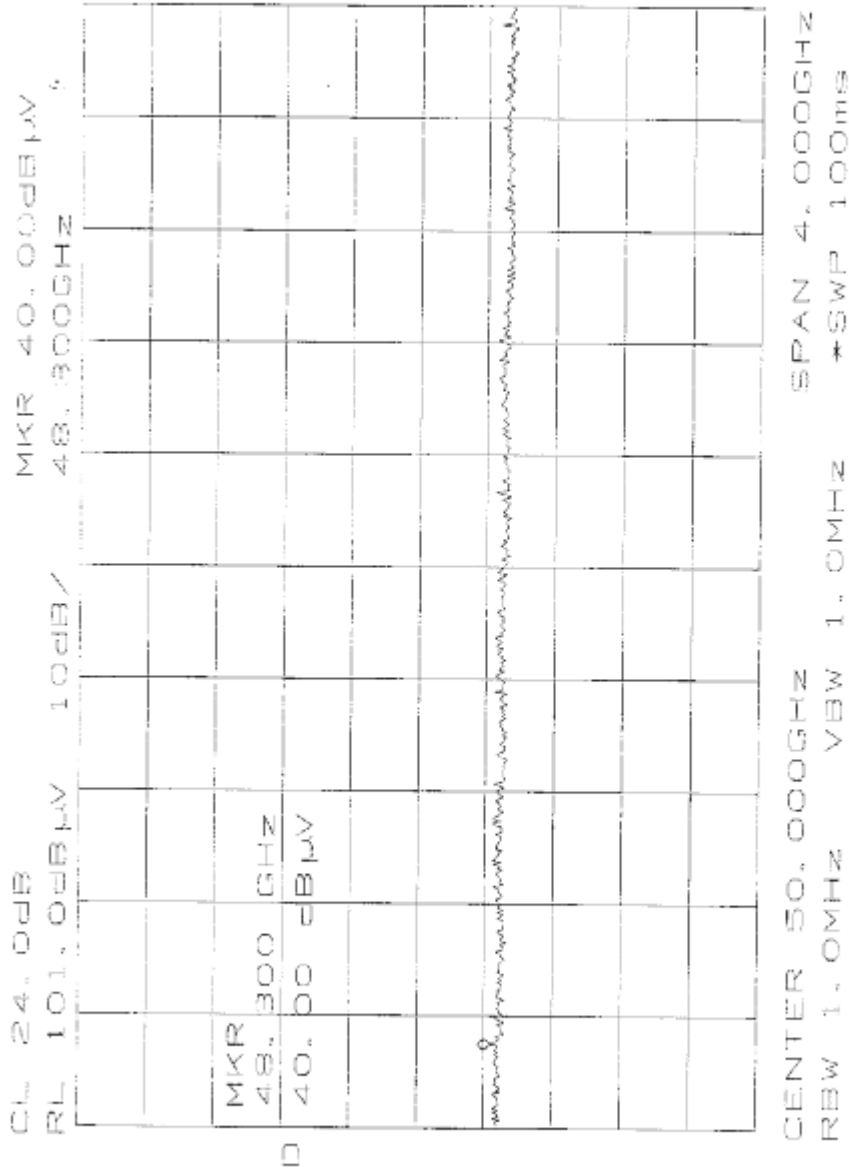


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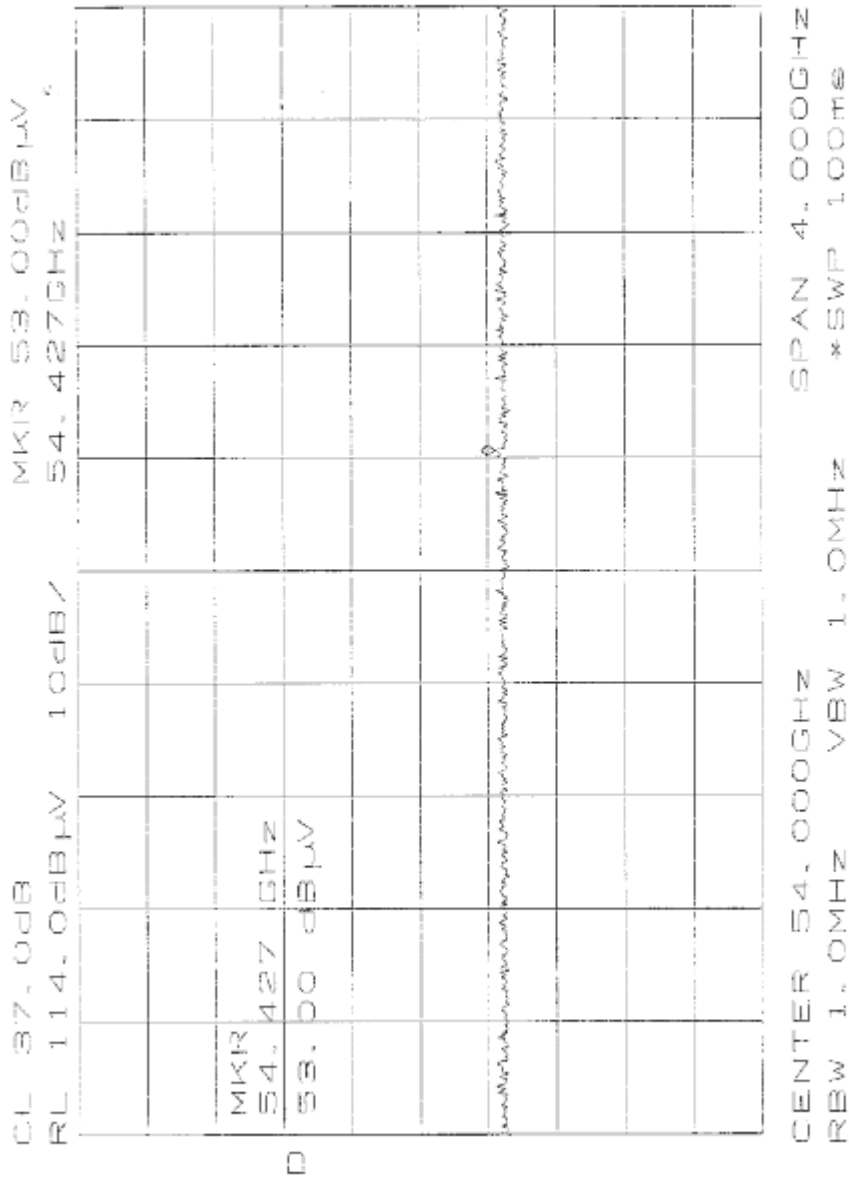


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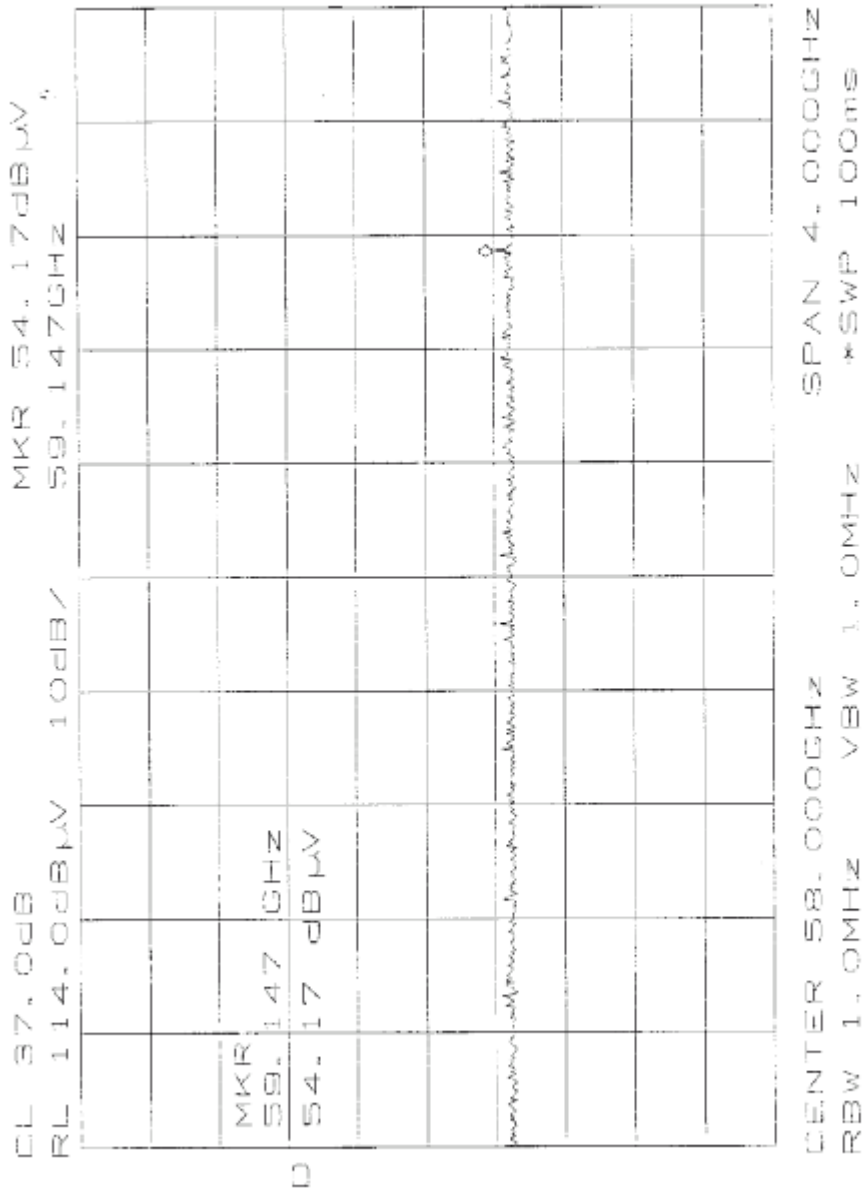


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to 47 CFR 2. and 47 CFR 101.

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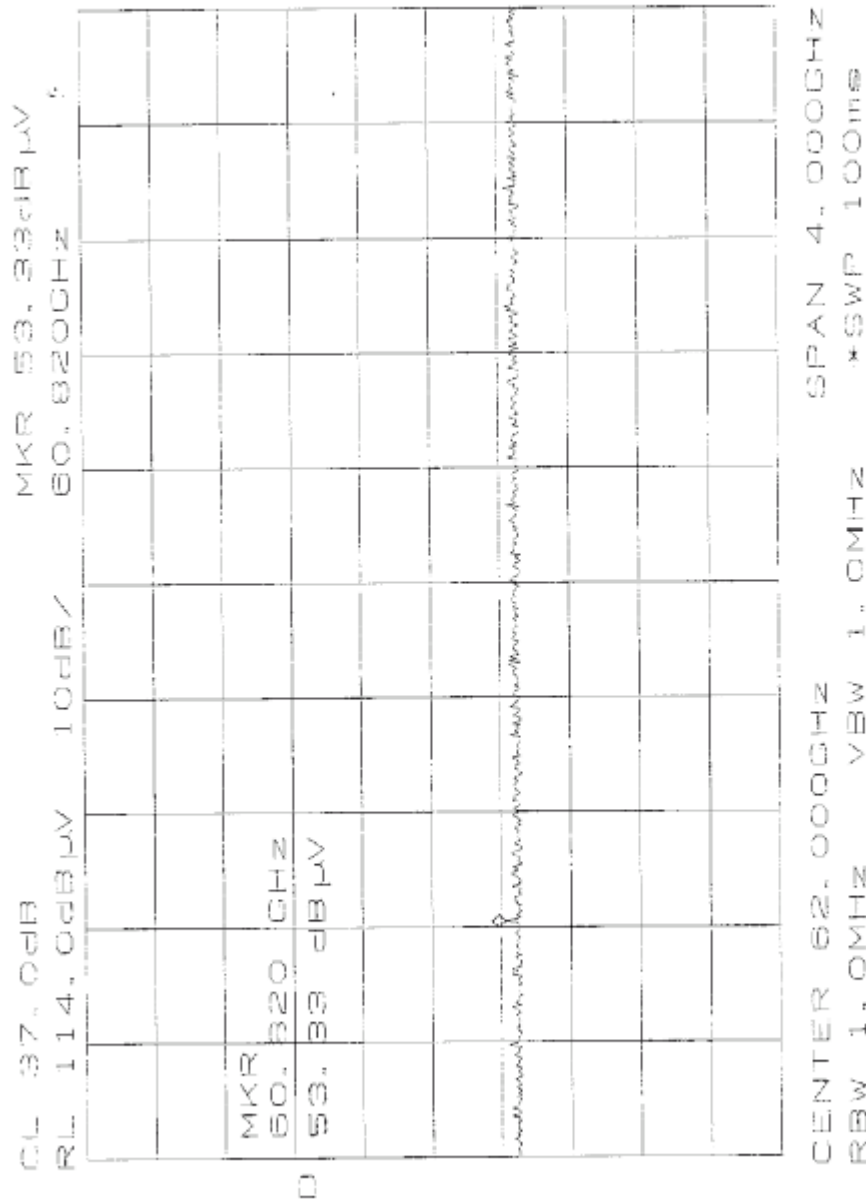


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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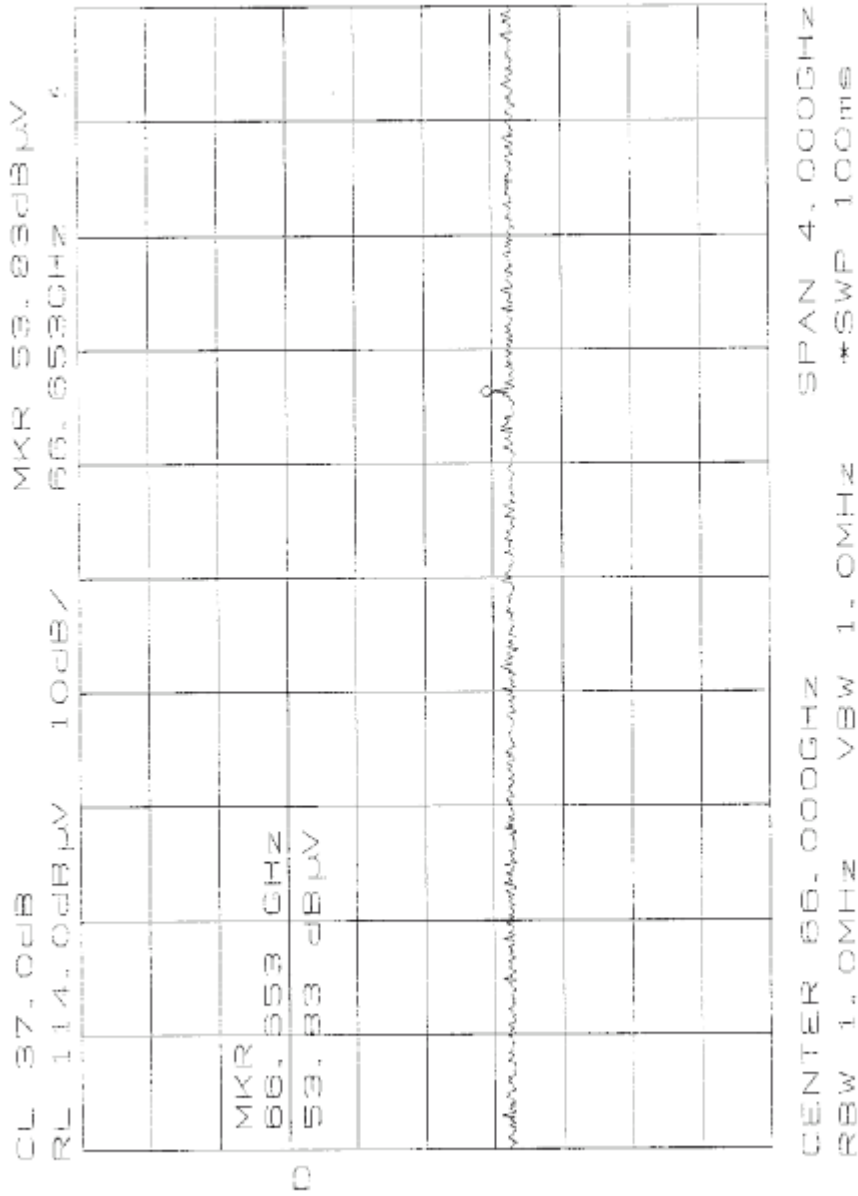


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to 47 CFR 2. and 47 CFR 101.

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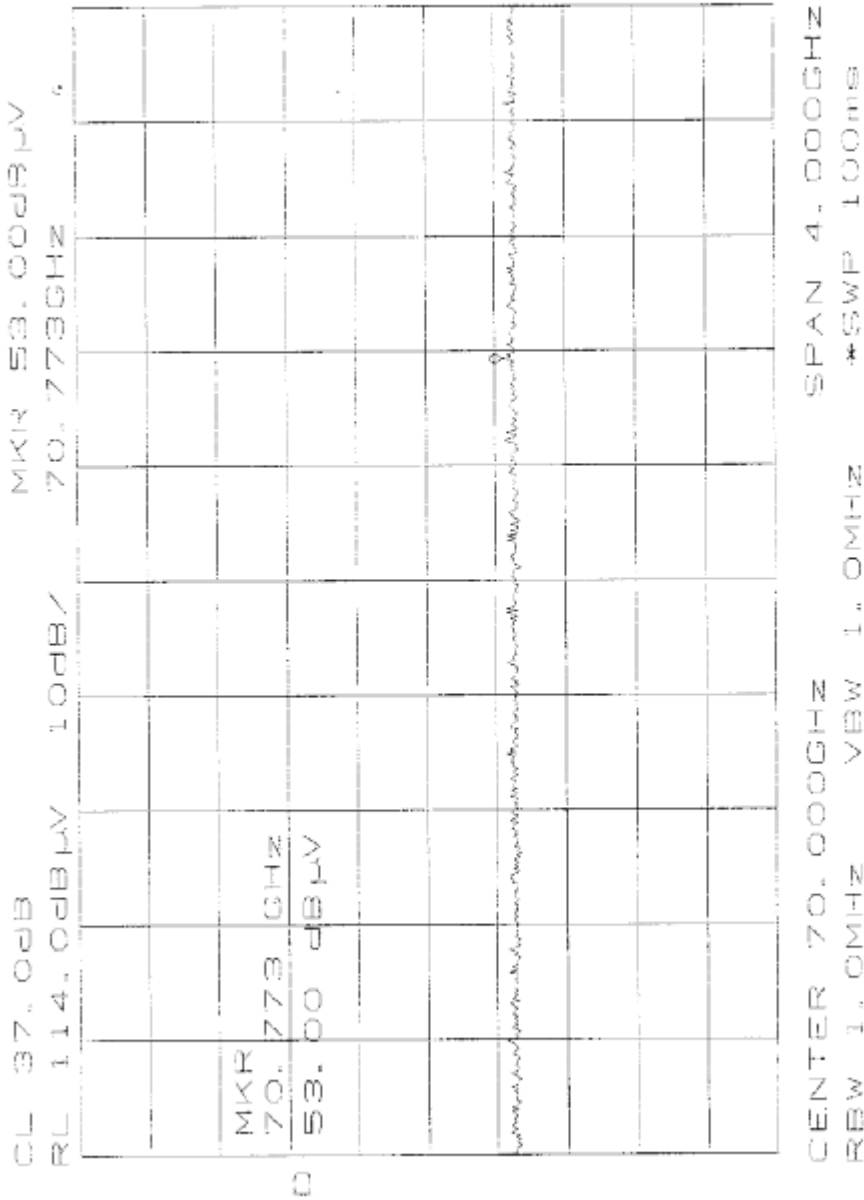


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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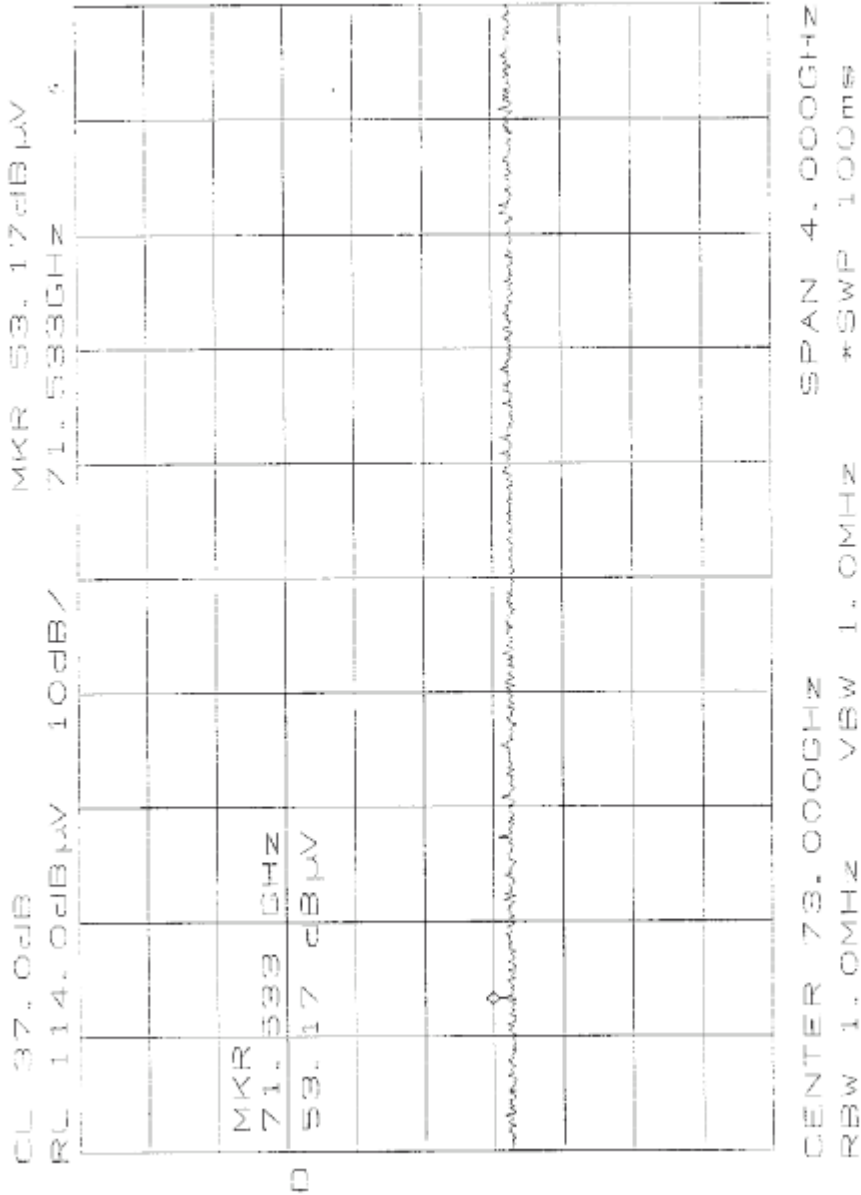


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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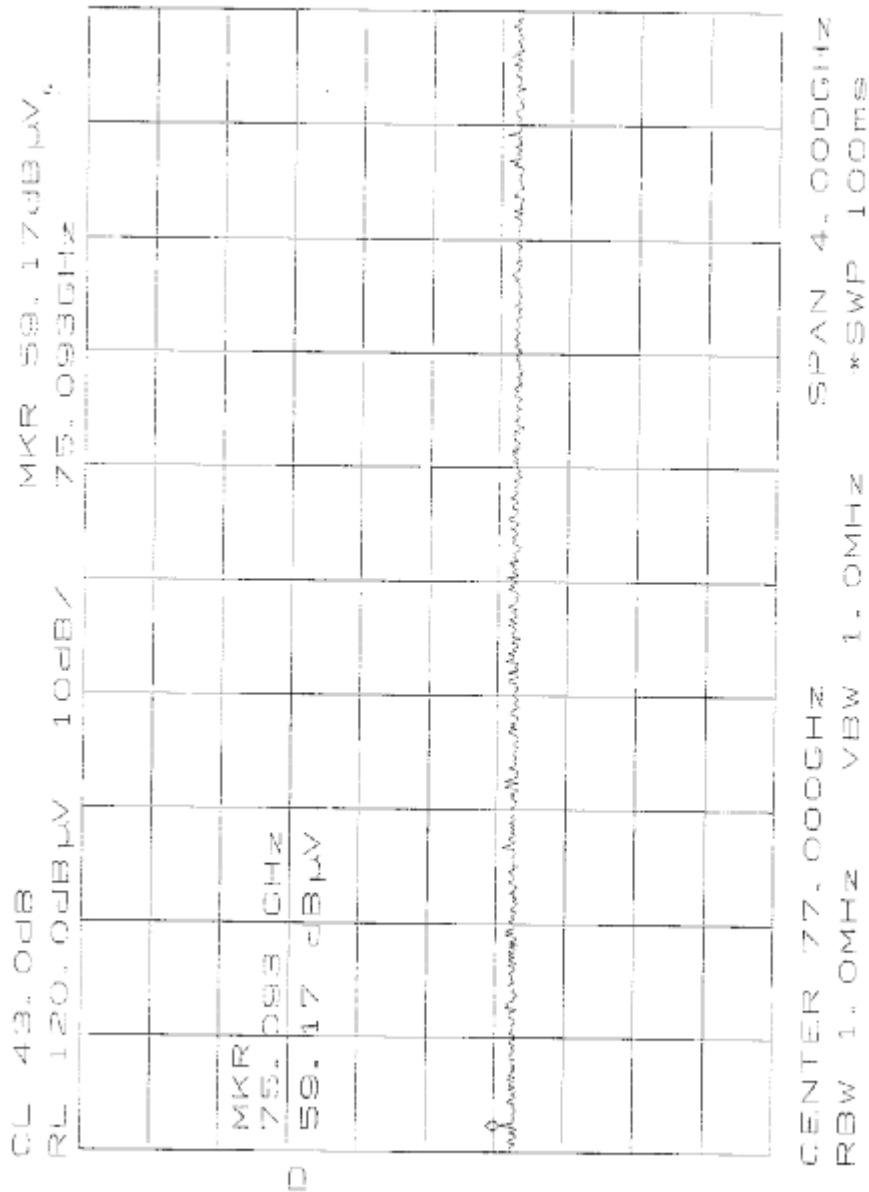


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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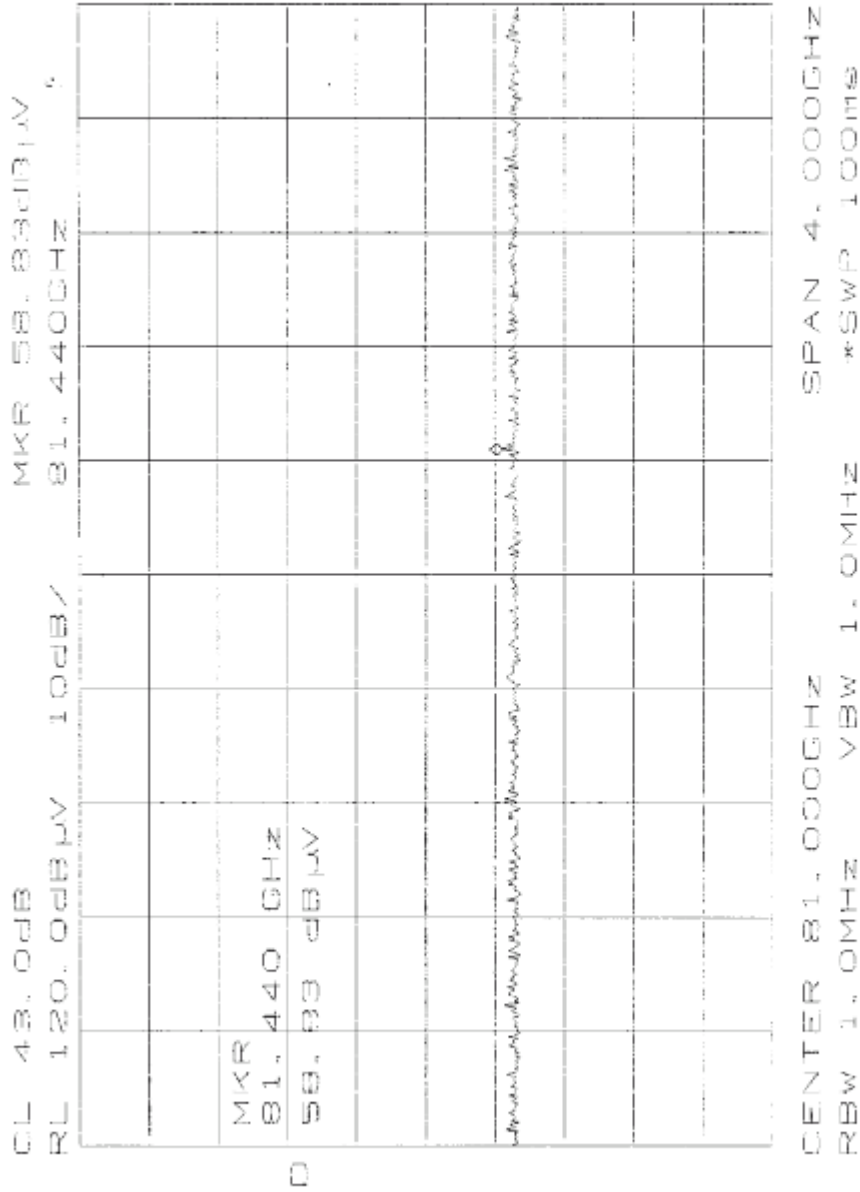


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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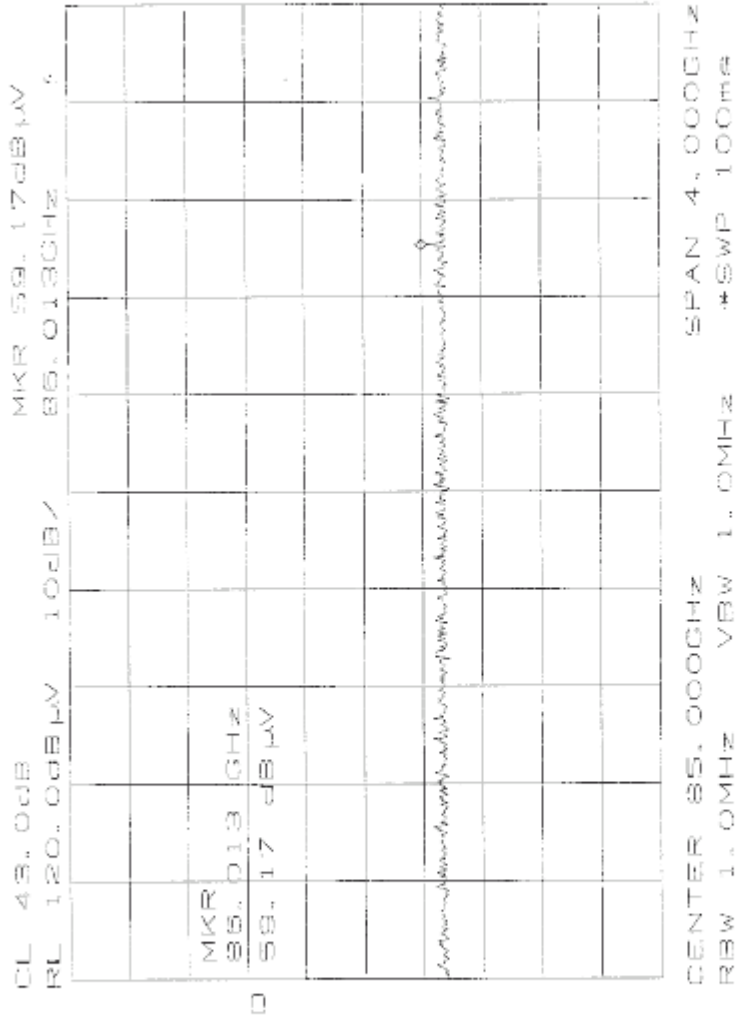


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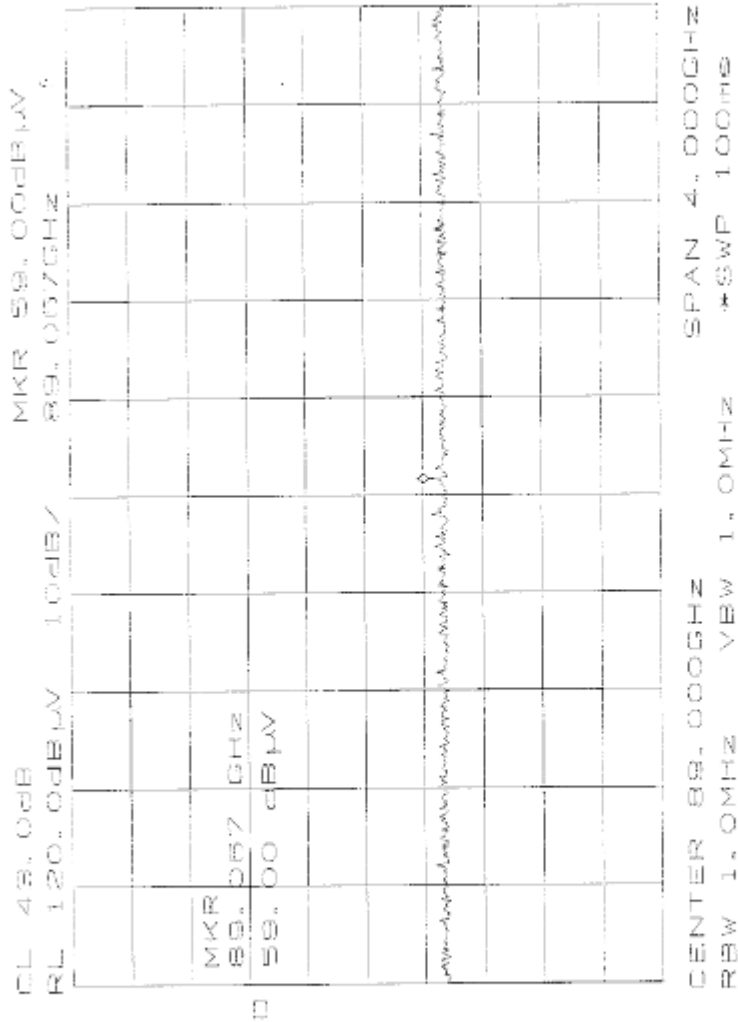
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to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02



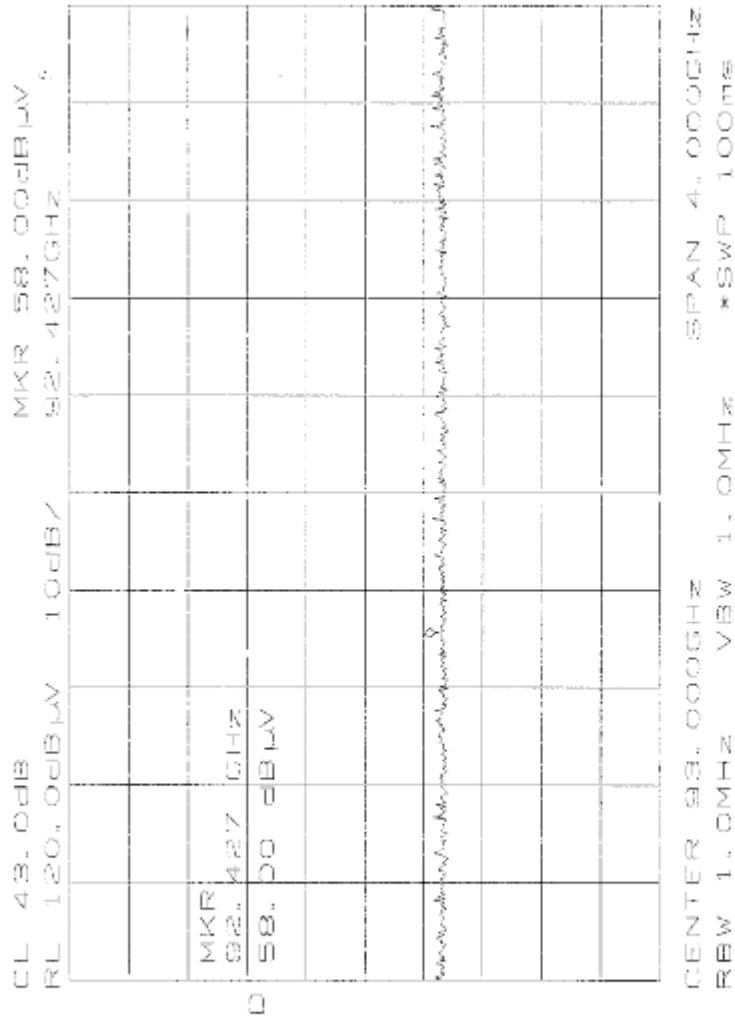
Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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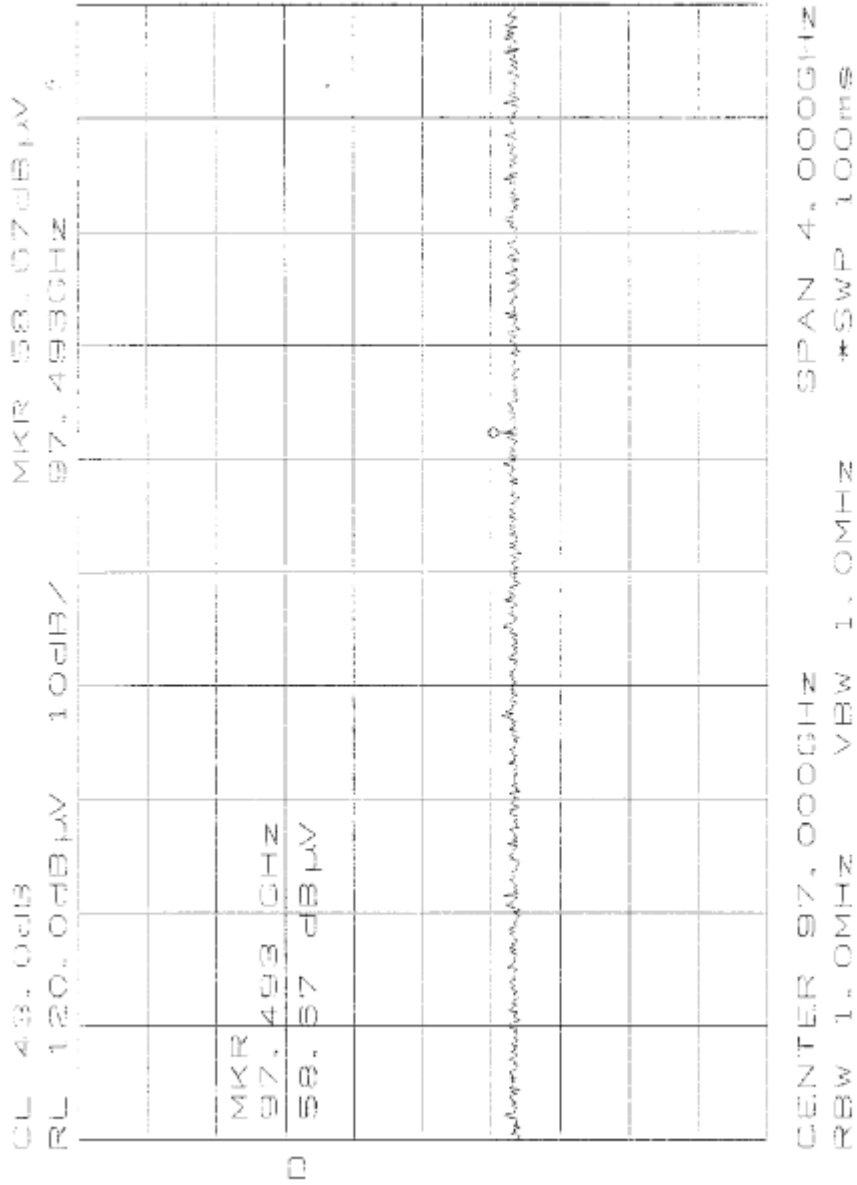
Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

Report No. A9177F02



Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
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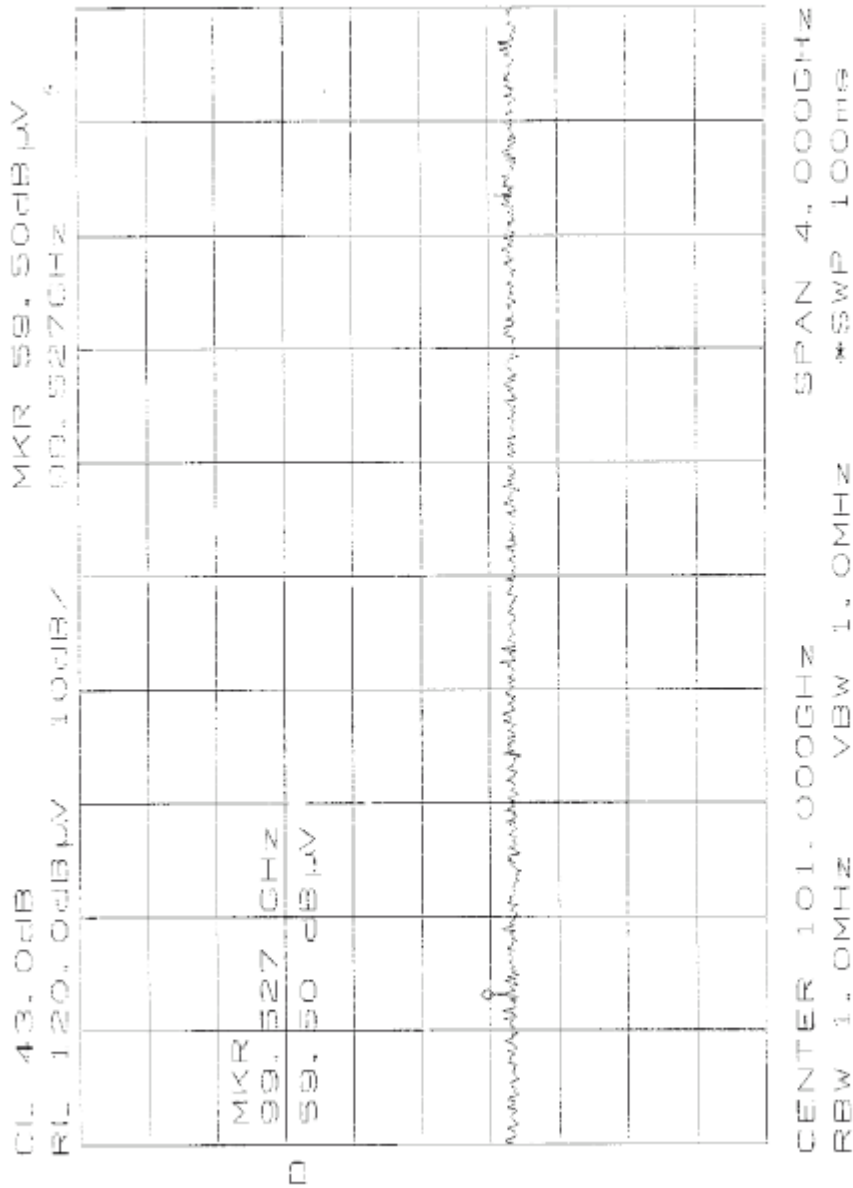


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Title: Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit
to 47 CFR 2. and 47 CFR 101.

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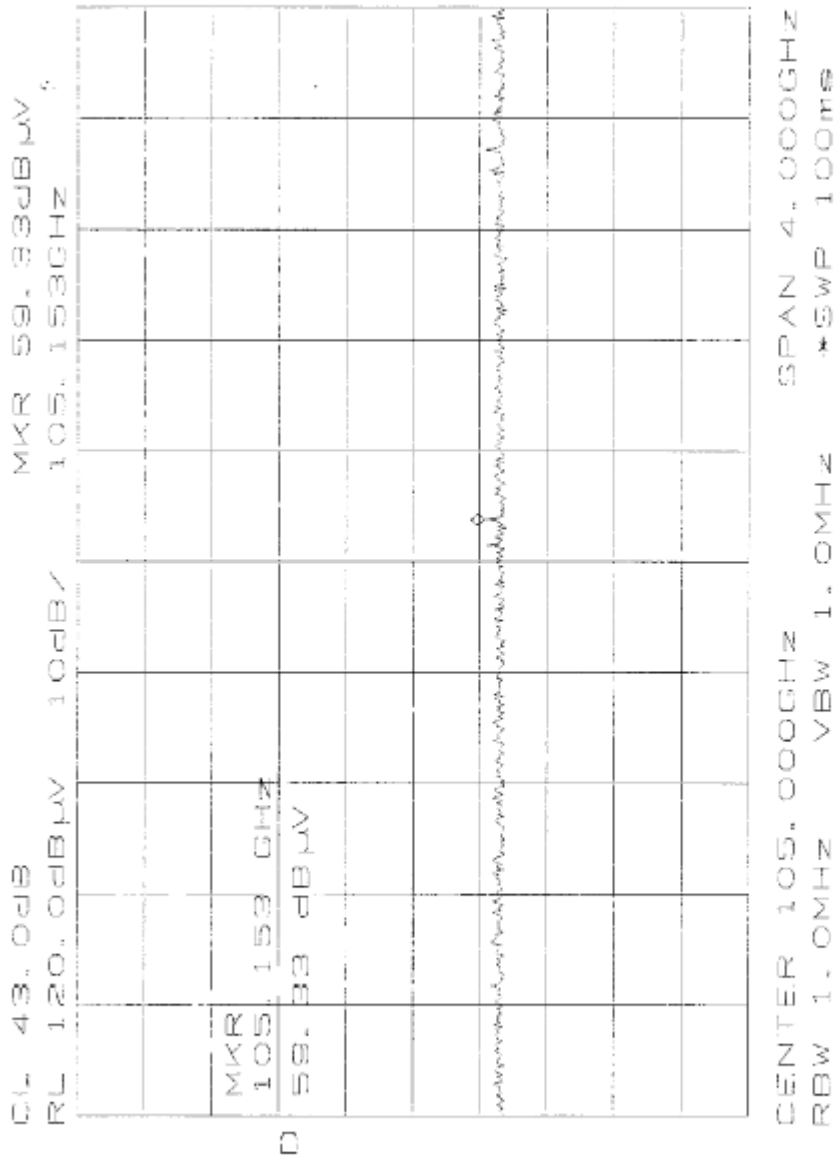


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Title: **Test of Netro Corporation AirStar 28 GHz PMP 16 MHz Base Radio Unit to 47 CFR 2, and 47 CFR 101.**

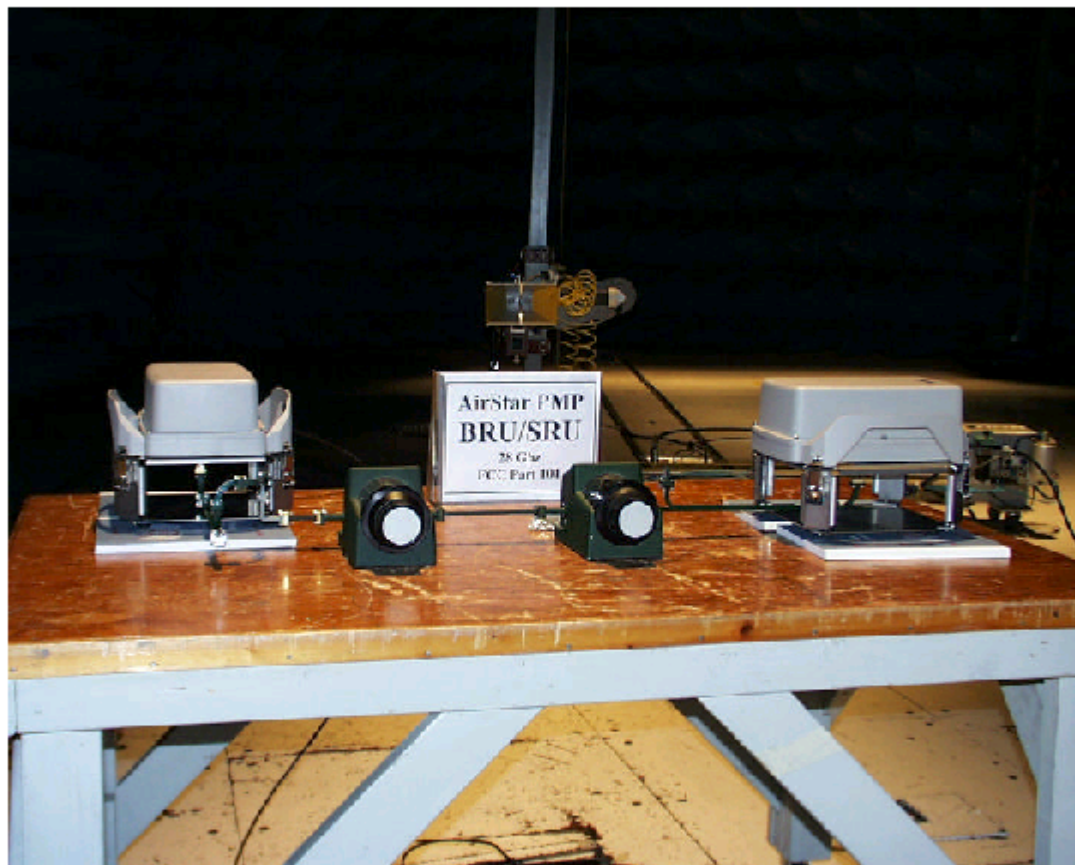
CL 43.0dB	10dB/	SPAN 4.000GHz
RL 120.0dBμV	10dB/	*SWP 100ms
MKR 58.50dBμV		
106.200 GHz		
58.50 dBμV		
www.hackpascal.com		

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Photograph of Test Setup:
Radiated Emissions 30 MHz - 1000 MHz



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Report No. A9177F02

CUSTOMER INFORMATION			
COMPANY NAME:		Netro Corporation	
COMPANY ADDRESS:		3860 N. First Street	
		San Jose, CA 95134	
PHONE NUMBER:		(408) 216-1562	
FAX NUMBER/E-MAIL ADDRESS:		(408) 216-1555	
CUSTOMER CONTACT:		Jas Dhaliwal	
PRODUCT DESCRIPTION			
NAME, MODEL, SERIAL # OF EUT:		PMP microwave fixed link , AirStar 28 GHz	
DESCRIPTION OF EUT:		AirStar is a wireless point-to-multipoint telecommunication system that provides broadband local loop access. AirStar is a complete product family that is built on advanced ATM and digital microwave technology. Based on a sectorized cellular topology an AirStar Network is composed of one or more cells which may overlap. Each AirStar cell provides a point-to-multipoint wireless communications network consisting of a Base Station and a number of Subscriber Terminals. Each cell can be split into sectors to allow efficient reuse of the allocated spectrum and to increase the capacity available to Subscriber Terminals. The AirStar system design is based on Asynchronous Transport Mode (ATM) switching technology which provides a generic transport vehicle for carrying voice, data and video with quality of services. AirStar provides local access for all types of traffic, such as analog voice, digital voice, TDM, Frame Relay, ATM, and IP.	
Components of EUT (N/A)			
Description	Model Number	Serial Number	FCC ID Number
OPERATING MODE(S):		Continuous	
I/O CABLES (N/A)			
CONNECTION	75 ohm Co-Axial		
SHIELD	Yes		
CONNECTORS	TNC		
TERMINATION TYPE	BRU		
LENGTH	5m		
REMOVABLE	Yes		
CONNECTION	75 ohm Co-Axial		
SHIELD	Yes		
CONNECTORS	TNC		
TERMINATION TYPE	BRU		
LENGTH	5m		
REMOVABLE	Yes		
CONNECTION	-48 VDC		
SHIELD	No		
CONNECTORS	Screw Lug		

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TERMINATION TYPE	BSS			
LENGTH	2m			
REMOVABLE	Yes			
CONNECTION	RS232 (LAN)			
SHIELD	No			
CONNECTORS	RS232			
TERMINATION TYPE	BSC			
LENGTH	10m			
REMOVABLE	Yes			
POWER CORDS				
UNIT:	None, -48 VDC supplied by the lab	UNIT:		
MANUFACTURER:	Beldon	MANUFACTURER:		
SHIELDED:	Unshielded	SHIELDED:		
LENGTH:	6'	LENGTH:		
POWER INTERFACE				
VOLTAGE / FREQUENCY	-48 VDC			
PHASES/CURRENT:	10 Amp			
OSCILLATOR FREQUENCIES (N/A)				
FREQUENCY	EUT LOCATION		DESCRIPTION OF USE	
POWER SUPPLY (N/A)				
DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	SWITCHING/LINEAR FREQ.
POWER LINE FILTERS (N/A)				
MANUFACTURER	MODEL NO.	QTY.	LOCATION ON EUT	
CRITICAL EMI COMPONENTS (N/A)				
DESCRIPTION	MANUFACTURER	PART # OR VALUE	QTY.	LOCATION ON EUT
DESCRIPTION OF ENCLOSURE:	BSS Shelf steel, BRU Enclosure (Aluminum casting) , SRU Enclosure (Aluminum casting)			
INTERFACING AND/OR SIMULATORS PERIPHERAL EQUIPMENT:				
DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	FCC ID
BER Tester	HP	HP 3784A (BERT)	3117U01255	-----
BLOCK DIAGRAM:	See photo in Appendix A			