
JAMPRO ANTENNAS, INC.

SCMS INC.

FALLS MEDIA

RCCS-312-2.5HB

97.5 & 100.9 MHZ

JUNE 19, 2018

SERIAL NUMBER 19254-B





INTRODUCTION

Jampro Antennas, Inc. is proud to present the RCCS-312-2.5HB Starpoint Combiner System. State-of-the-art design and manufacturing techniques have been used in the production and testing of the RCCS-312-2.5HB combining system. System performance has been verified and documented prior to shipment; copies of the factory data are provided as evidence of testing.

This manual will assist in the set up of the combining system. Completely read this manual prior to installation. The first section contains installation and set up instructions. This is then followed by factory performance data. The third section of this document contains Jampro's Limited Warranty and Terms of Sale. If there are any questions regarding the combiner or this document, please contact Jampro's local representative or contact us directly at our factory in the USA.



SYSTEM SPECIFICATIONS

MODEL: RCCS-312-2.5HB **SERIAL NO:** 19254-B

ELECTRICAL SPECIFICATIONS

COMBINER TYPE: STARPOINT

CENTER FREQUENCY (Fc): 97.5 & 100.9 MHz

BANDWIDTH (BW): $F_c \pm .150$ MHz

INPUT POWER: 11 kW per channel

INSERTION LOSS: 0.30 dB

VSWR: 1.08:1

ISOLATION: 34 dB

INPUT CONNECTORS: 1-5/8" Unflanged

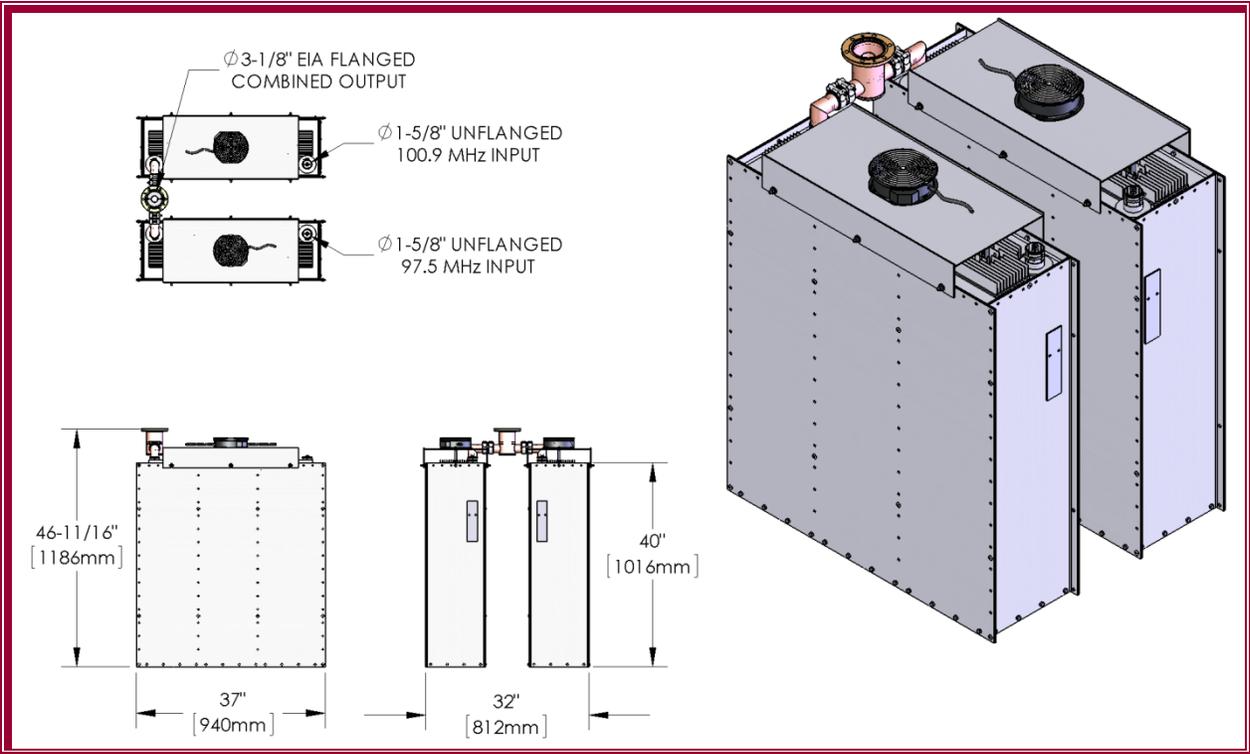
OUTPUT CONNECTOR: 3-1/8" EIA Flanged

HEAT SINKS: Yes

BLOWER: 110 VAC



RCCS-312-2.5HB





6340 Sky Creek Drive, Sacramento, California 95828
P.O. Box 292880, Sacramento, California 95829-2880

(916) 383-1177 FAX (916) 383-1182

PACKING LIST



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Date: 19-Jun-18

PACKING LIST
19254-B
RCCS-312-2.5HB
SCMS

ITEM #	QTY <small>(req spare)</small>	MODEL #	DESCRIPTION	BOX #	Q/A
1	1	npr	Instruction Manual	1	MM DN
2	1	001-90055-08	RCBC-213-FMHB Filter	1	
3	1	001-90055-58	RCBC-213-FMHB Filter	1	
4	1	19254-B-011	Starpoint "T"	1	
5	6/1	206-00014-00	SS Bolt, 3/8" x 1-1/2"	1	
6	6/1	224-00001-00	SS LW, 3/8"	1	
7	6/1	235-00001-00	SS Nut, 3/8"	1	

6-19-18



UNPACKING AND INSTALLATION

1. Clear the area needed to install the combiner of all debris and ensure there is ample headroom to allow for the height of the system.
2. Prior to moving the combiner system to its final location, the system should be inspected for damage. If damage is found, report it to the shipping company immediately. Jampro will not bear the responsibility or liability for any damage to the combiner incurred during the shipping and installation processes.
3. Attach Tee junction as shown in the drawing. Line lengths are critical to the performance of the combiner and should not be modified.
4. Wire the AC fans to an appropriate power supply. Fans must be operational when combiner is in use.
5. At this point the combiner is ready for operation. Attach each input line to its corresponding combiner-input connector and the output line to its corresponding combiner output connector.



PLANT PERFORMANCE DATA

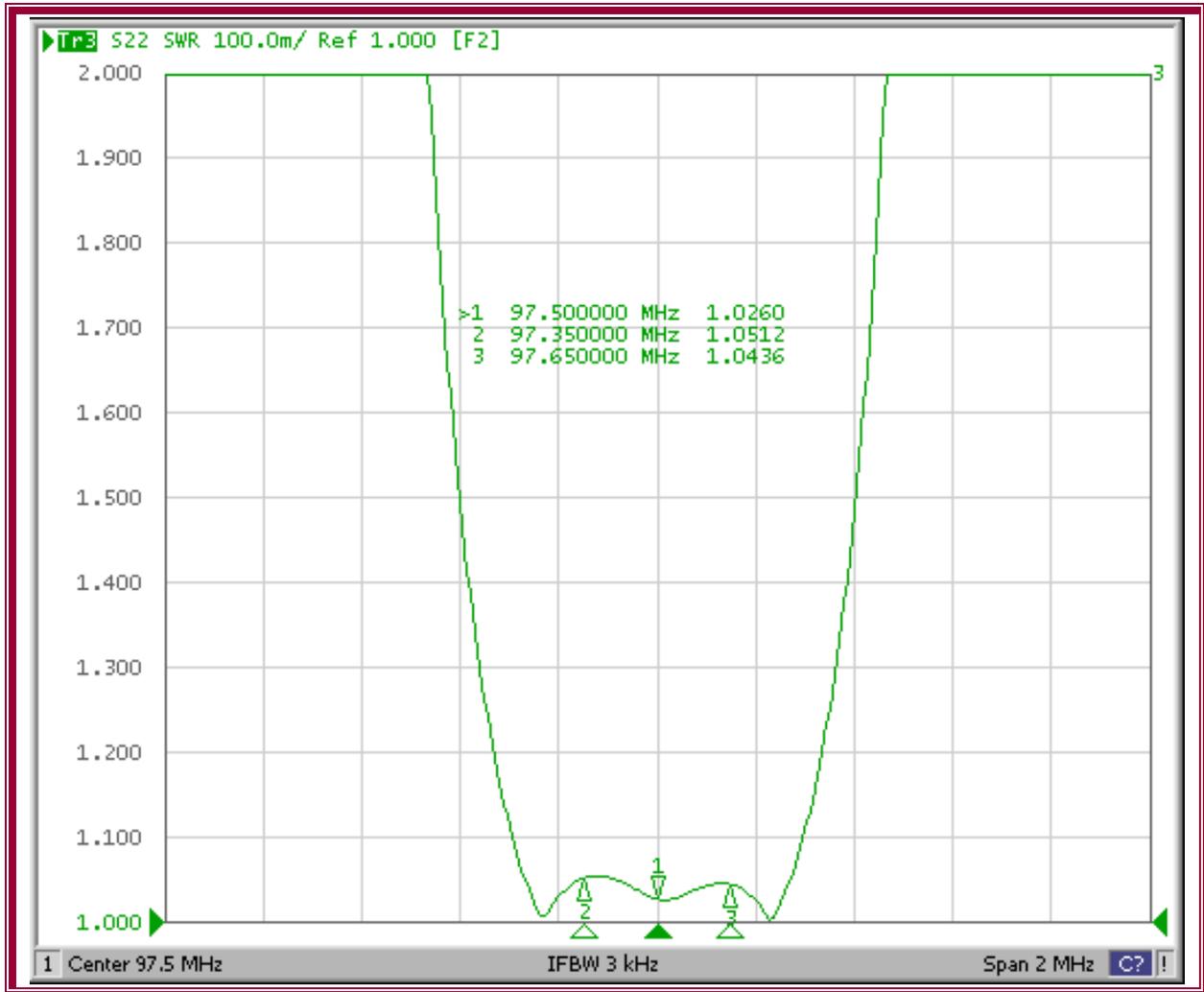
All plots were recorded at Jampro RF Systems' manufacturing facility using an Agilent Vector Network Analyzer, calibrated to a 50 Ω Standard using eighteen point error correction. All test equipment is returned annually to a certified Agilent service center for recalibration.

The plots are individually labeled above each plot; a table is given below for your convenience.

- 97.5 MHz VSWR
- 97.5 MHz Impedance
- 97.5 MHz Insertion Loss
- 97.5 MHz Rejection
- 100.9 MHz VSWR
- 100.9 MHz Impedance
- 100.9 MHz Insertion Loss
- 100.9 MHz Rejection
- 97.5 MHz & 100.9 MHz Isolation

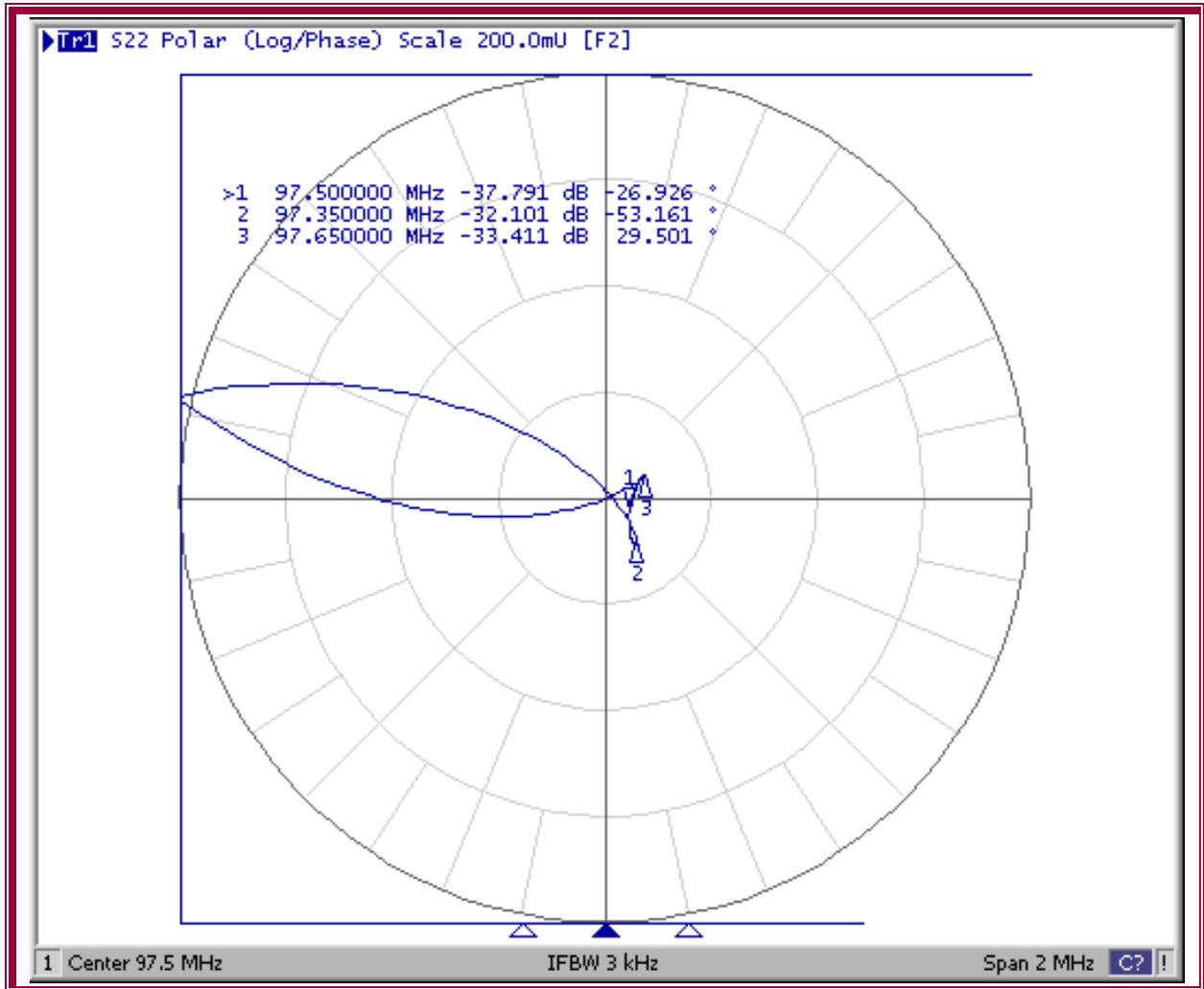


97.5 MHZ VSWR



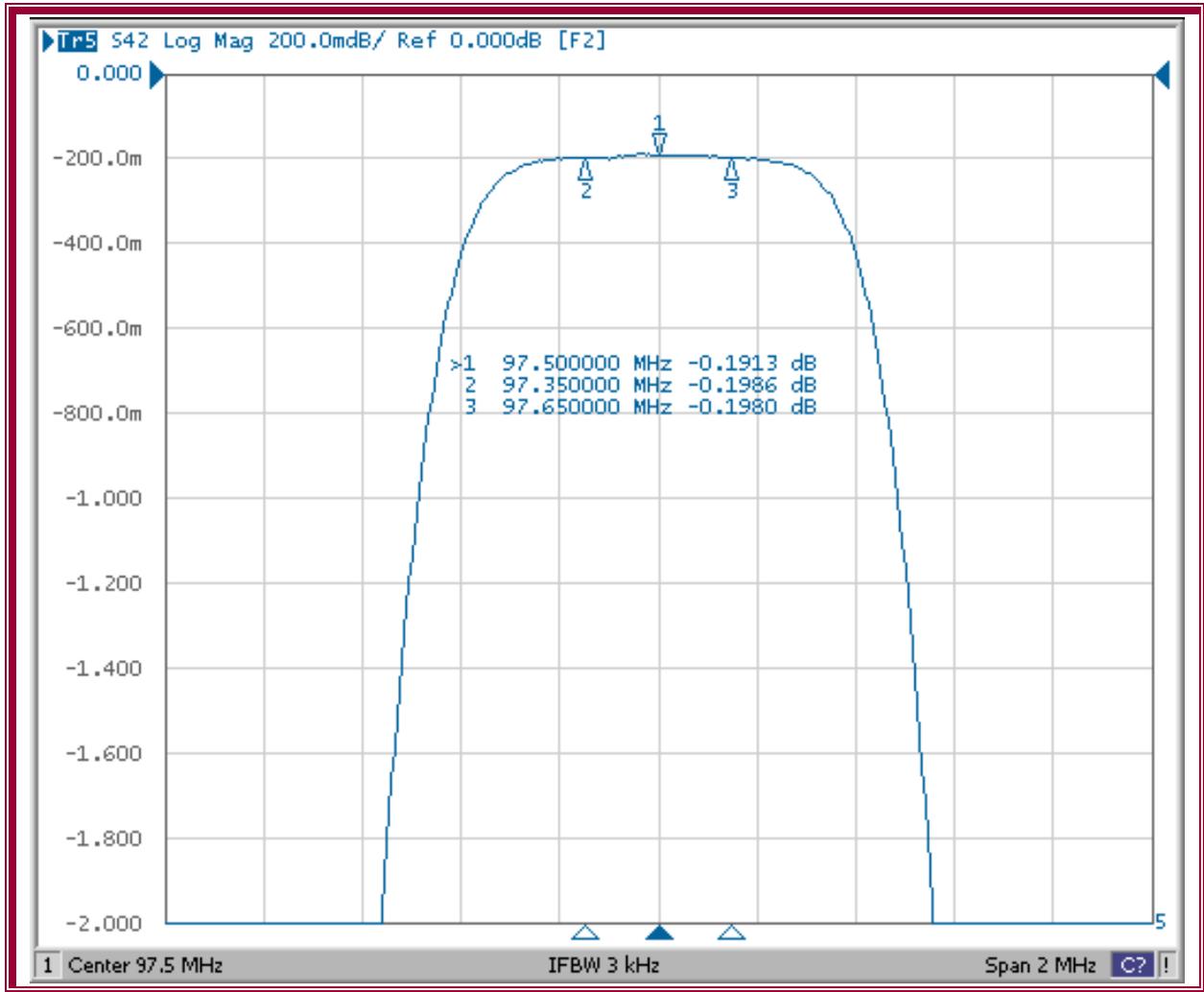


97.5 MHZ IMPEDANCE



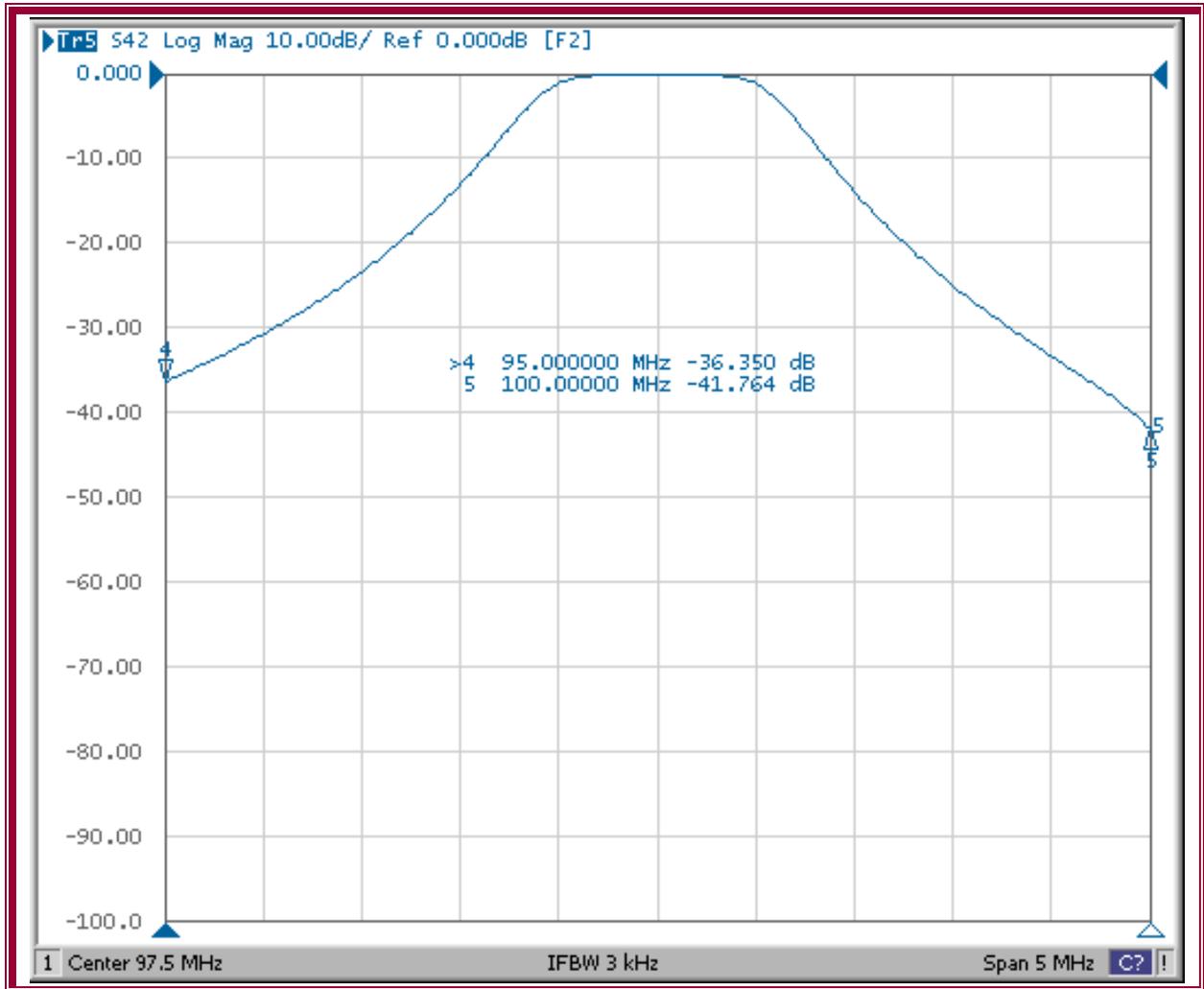


97.5 MHZ INSERTION LOSS



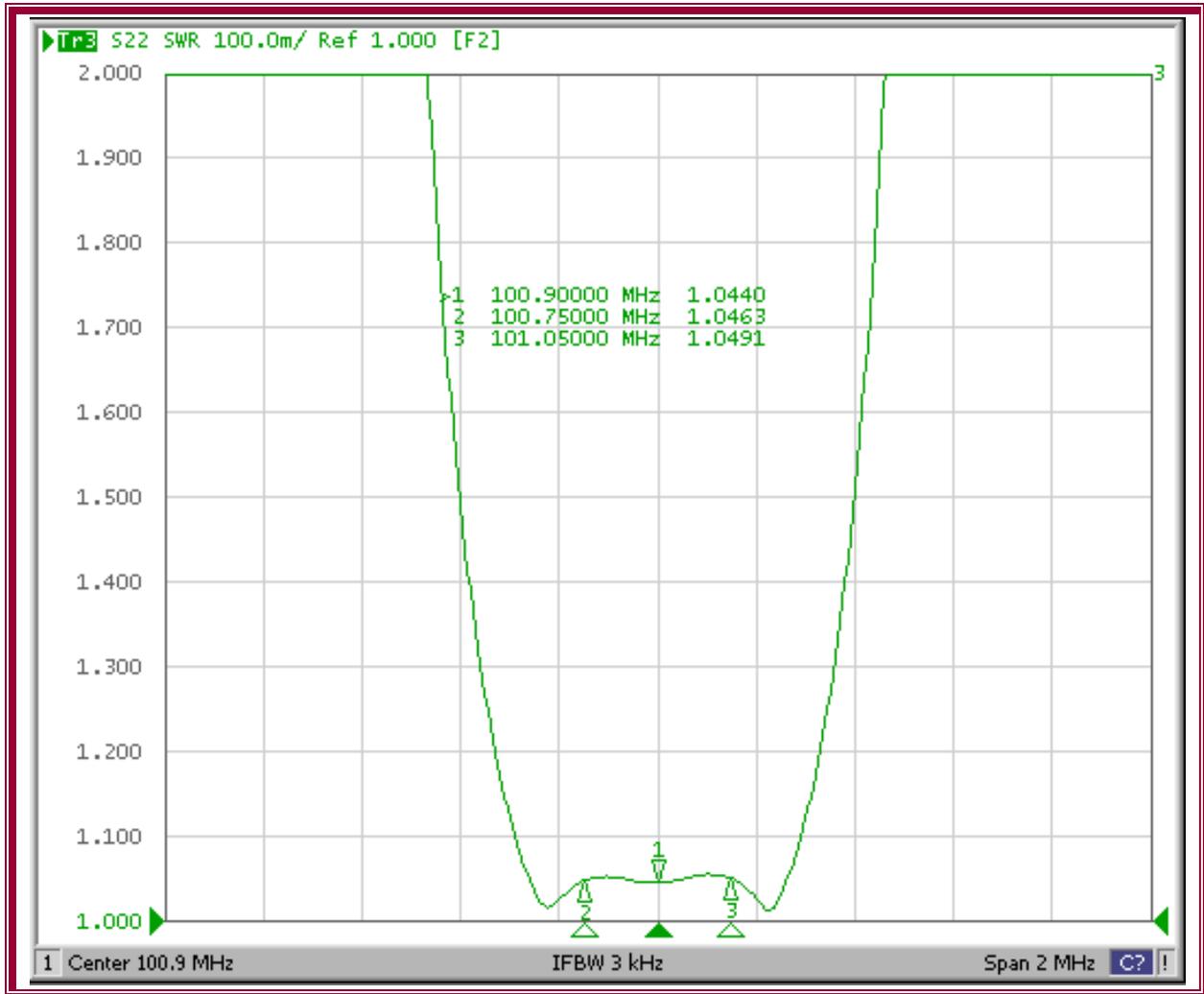


97.5 MHZ REJECTION



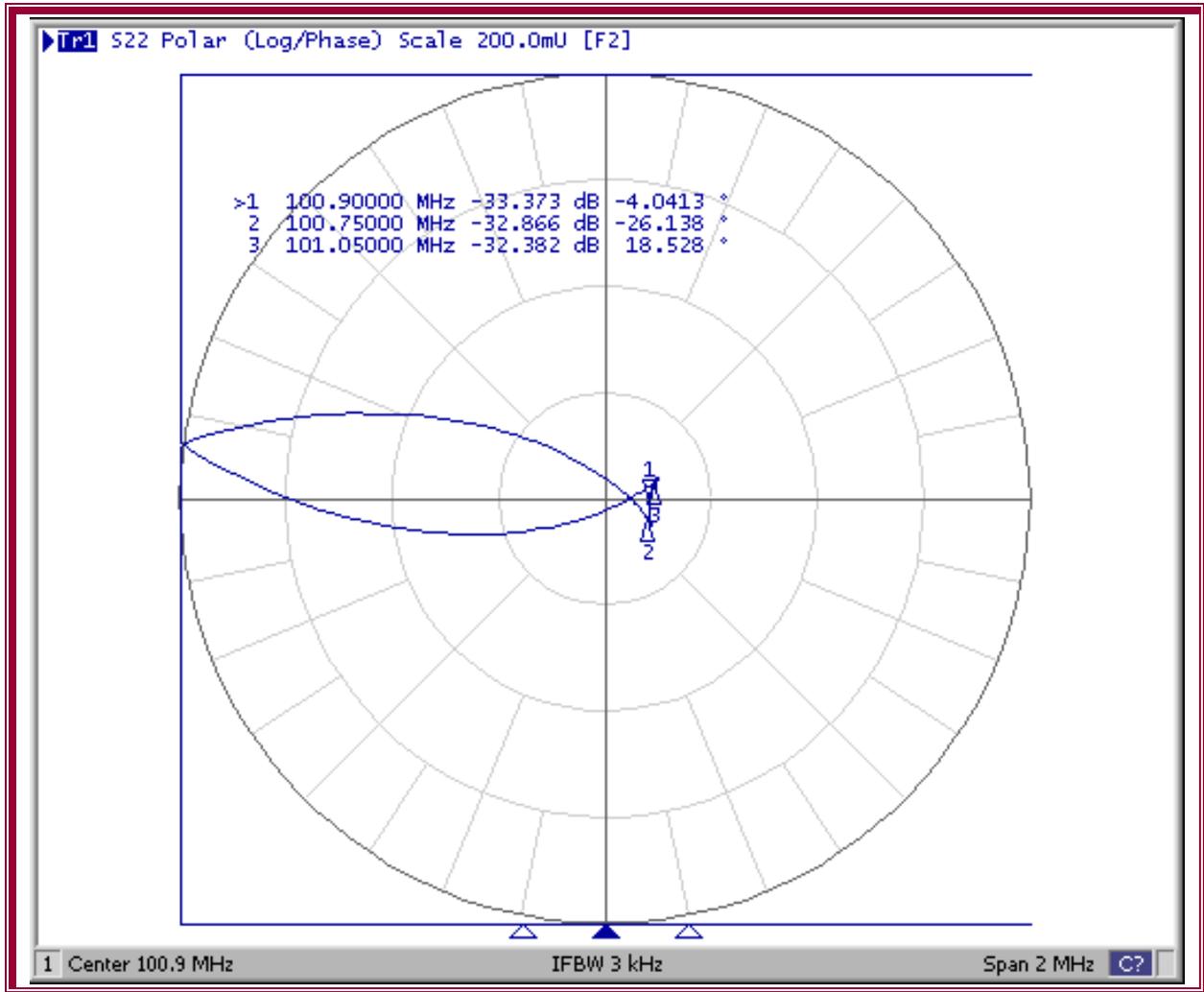


100.9 MHz VSWR



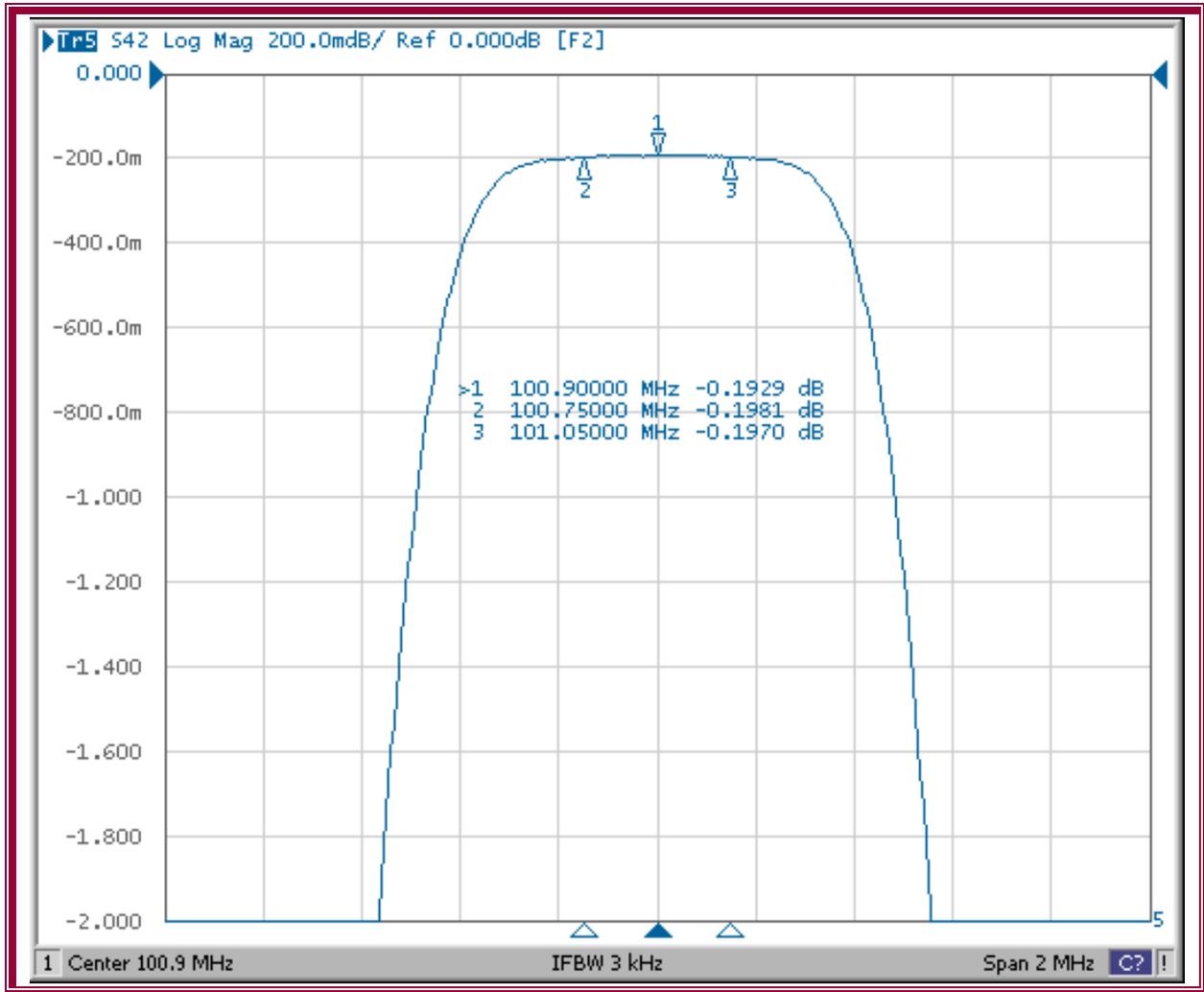


100.9 MHZ IMPEDANCE



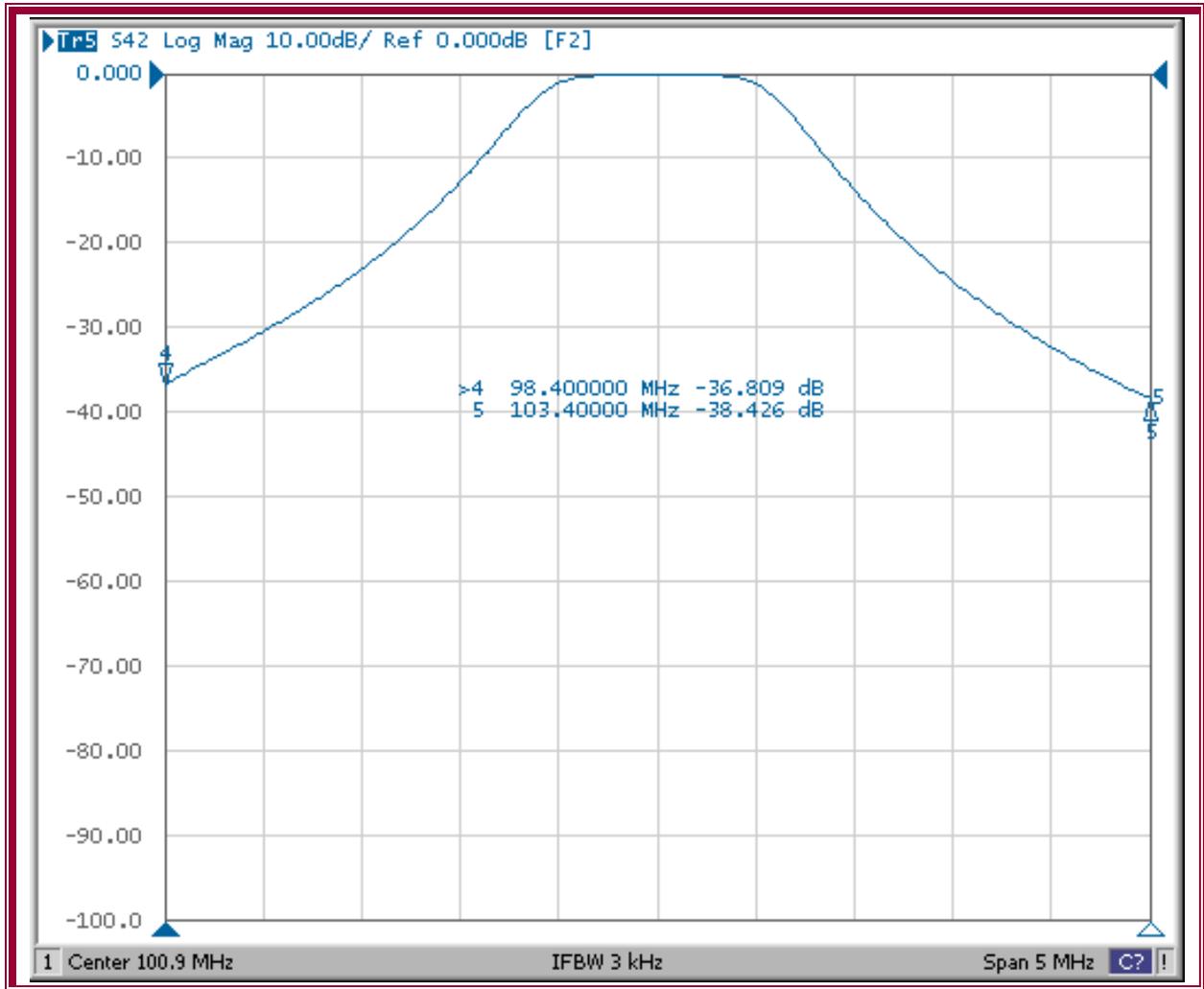


100.9 MHZ INSERTION LOSS



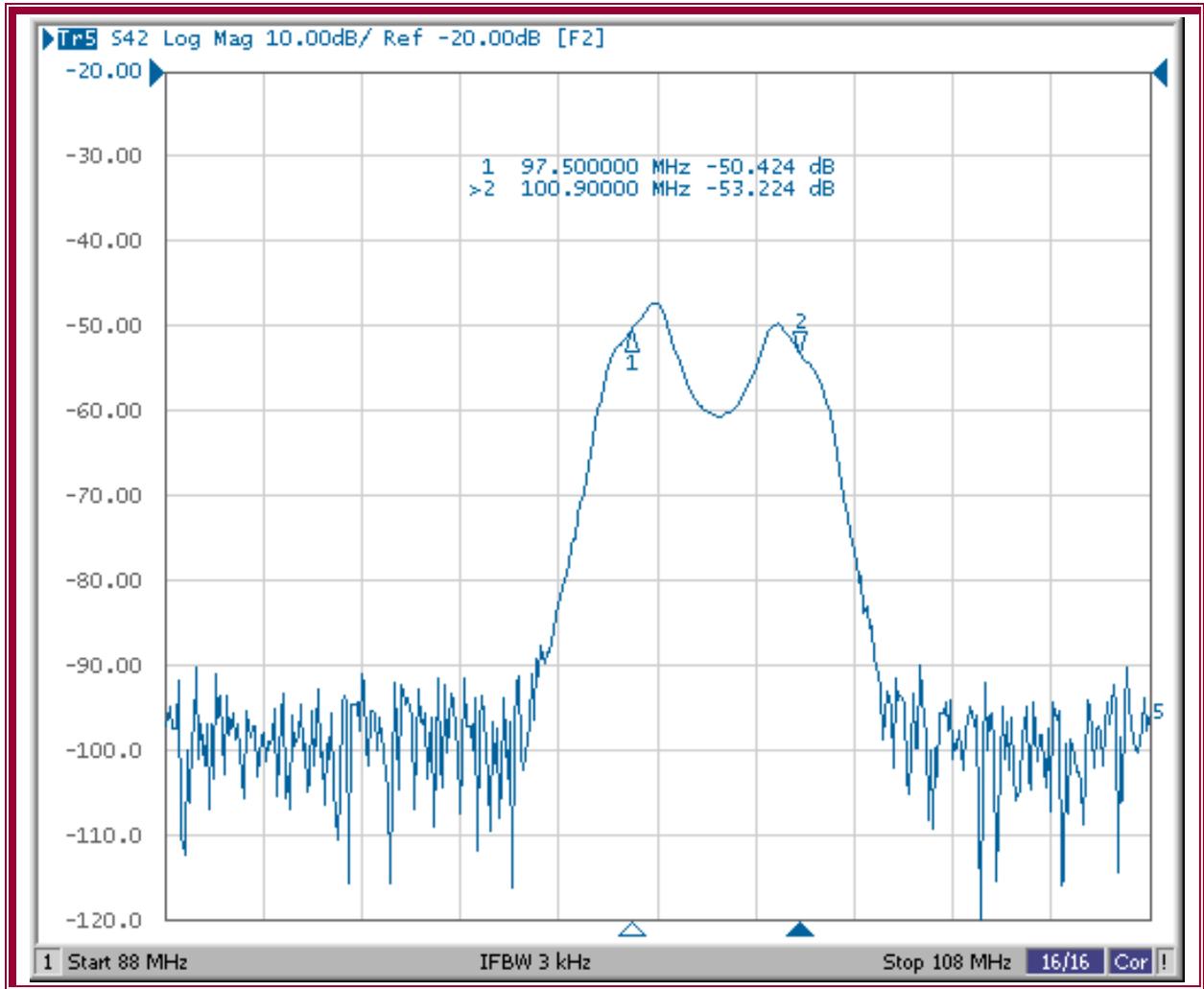


100.9 MHZ REJECTION





97.5 MHZ & 100.9 MHZ ISOLATION





WARRANTY

Jampro Antennas, Inc. LIMITED WARRANTY AND LIMITATION ON DAMAGES

All implied warranties have been excluded – see section 5

There are conditions precedent to any warranty obligations – See sections 6 and 7

There are limitations on damages – See section 8

Definition of Jampro represents the combined business efforts of Jampro Antennas, Inc. and Jampro RF Systems, Inc., each a separate business entity.

1. LIMITED WARRANTY

- 1.1 Jampro warrants to all original purchasers of Jampro products that all new parts, products, and equipment manufactured and sold by Jampro shall be free from defects in material and workmanship for twenty-four (24) months from date of shipment. If any part, product, or equipment becomes defective, malfunctions, or fails to conform to this written Limited Warranty under normal use and service, and if the original purchase complies with Sections 5 and 6 of this Limited Warranty, then Jampro will, without charge, at its option, either repair, or replace the defective or non-conforming part, product, or equipment subject to the provisions of Sections 3 and 4 of this Limited Warranty.
- 1.2 FCC Directional Antenna and Pattern Optimization: Jampro Antennas, Inc. warrants to those customers who have purchased FCC directional antennas or pattern optimization service that the radiation pattern requested by the customer will be reproducible under controlled conditions at the Jampro Antennas, Inc. test site in Sacramento, California. It is the sole responsibility of the customer to determine, evaluate, and compensate for any terrain, structural, climate controls, or other conditions or effects which may cause the radiation pattern at the customer's actual broadcast site to vary from controlled conditions at the Jampro Antennas, Inc. test site in Sacramento, California. No warranty is made regarding the radiation pattern at the customer's actual broadcast site.

2. PRODUCTS COVERED BY THIS WARRANTY



WARRANTY

This Limited Warranty shall extend to all parts, products, and equipment manufactured and sold by Jampro Antennas, Inc. but shall not extend to equipment supplied from other manufacturers, which shall be warranted only for the period, purposes, and conditions extended by such manufacturers to Jampro Antennas, Inc. Services provided by Jampro Antennas, Inc. and related warranties only extend to those customers who have purchased and paid for such services separate and apart from the purchase of any antenna or RF system.

3. AUTOMATIC TERMINATION OF WARRANTY OBLIGATIONS

Any obligation of Jampro Antennas, Inc., under this Limited Warranty will automatically and immediately terminate, without notice from any further action by Jampro Antennas, Inc. and Jampro Antennas, Inc. shall have no responsibility for damages of any kind, as a result of the occurrence of any of the following:

- A. Warranties are null and void if customers account is not current.
- B. Accident, misuse, or negligent use of any equipment.
- C. Repairs or alterations made to any part, product, or equipment outside Jampro's factory except by an employee of Jampro Antennas, Inc.
- D. Improper installation or operation (including both mechanical and electrical) or any equipment.
- E. Failure to provide normal maintenance for any parts, products, or equipment.
- F. Use of more transmitter power than specified in the rating for the equipment sold by Jampro Antennas, Inc.
- G. Failure to wire or use any safety interlocking device.

4. EXCLUSIONS

This Limited Warranty shall not extend to, nor shall Jampro Antennas, Inc. be responsible for damages of any kind resulting from:

- A. Signal coverage, penetration of signal, multipath effects, reduction or distortion in FM stereo operation, and signal coverage or ghosting in TV antenna systems. The sole obligation of Jampro Antennas, Inc. is to provide the part, product, or equipment specified by the customer. If the customer has ordered FCC directional antenna or pattern optimization service, then the extent of the obligation of Jampro Antennas, Inc.



WARRANTY

is limited as set forth in sections 1.2 and 2 of this Limited Warranty and in the “FCC DIRECTIONAL ANTENNA AND PATTERN OPTIMIZATION SERVICE DISCLAIMER”. In no event shall Jampro Antennas, Inc. be liable to the customer for damages of any kind nor shall Jampro Antennas, Inc. be obligated to alter, adjust, or correct the radiation pattern at the customers actual broadcast site, provided the radiation pattern requested was achieved under controlled conditions at Jampro’s test range in Sacramento, California.

- B. Failure of transmitter reflectometer trip-out circuitry to protect the antenna system or other parts, products, or equipment sold Jampro Antennas, Inc. when the VSWR exceeds 1.2:1.
- C. Lightning, weather conditions or acts of God.

5. IMPLIED WARRANTIES EXCLUDED

All implied warranties of merchantability and fitness for any particular purpose are excluded. The sole warranty obligation of Jampro Antennas, Inc. is the Limited Warranty set forth in Section 1 above. Under no circumstance will Jampro Antennas, Inc. have any liability to any customer (A) as a result of the customer relying, or claiming to have relied on the skill or judgment of Jampro Antennas, Inc. to select or furnish suitable parts, products, or equipment, or (B) in the event Jampro Antennas, Inc. knows, or has reason to know, any specific needs or requirements of the customer or regarding any matters concerning the customers broadcast site or the customers intended use or application of the parts, products, or equipment.

6. CONDITION PRECEDENT TO ENFORCEMENT OF THIS LIMITED WARRANTY

As a condition precedent to enforcement of this Limited Warranty, the original purchaser must within ten days from the date of receipt of the part, product, or equipment, execute and return to Jampro Antennas, Inc. by registered mail the Limited Warranty Registration Card attached to the part, product, or equipment, or included in the Instruction Book.

7. ENFORCEMENT OF LIMITED WARRANTY

Any defective Jampro Antennas, Inc. part, product, or equipment to be repaired or replaced pursuant to Section 1 of this Limited Warranty shall be returned with transportation charges prepaid to Jampro Antennas, Inc. 6340 Sky Creek Drive,



WARRANTY

Sacramento, California 95828 USA. All return shipments shall be made Cash on Delivery (COD) to the customer.

8. LIMITATION ON DAMAGES (CONSEQUENTIAL DAMAGES EXCLUDED)

Jampro Antennas, Inc. shall not be responsible or liable for, nor does this Limited Warranty extend to any consequential or incidental damages or expenses of any kind or nature, and regardless of the cause thereof or any knowledge which Jampro Antennas, Inc. may have regarding the probability of the occurrence of such damages or expenses, including without limitation, injury to persons or property, loss of use of the product, riggers costs (including without limitation standby fees, move-on and move-off charges, and seasonal or overtime differentials), costs of installation of any tower or related equipment, loss of broadcast revenue, loss of station license or loss of goodwill. In addition, Jampro Antennas, Inc. shall not be liable to the customer for any cost or expenses incurred in removing or reinstalling the antenna, or for engineers, consultants, or other parties hired or engaged by the customer to evaluate, test or analyze the products supplied by Jampro Antennas, Inc. or their performance.

Jampro Antennas, Inc. shall not be liable for incidental exemplary, special, or consequential damages in any action based on tortuous acts or omissions by Jampro Antennas, Inc. in any way related to this agreement.

Jampro Antennas, Inc. and customer acknowledge that such lack of liability, without limiting the generality of the foregoing, includes lack of liability for any loss of actual or anticipated revenue or profits, loss of air time, loss of actual or anticipated value of the business of both parties and damages to the business reputation of either party to this agreement.

9. NO OTHER WARRANTIES MADE

This Limited Warranty is in lieu of all other expressed or implied warranties of Jampro Antennas, Inc. and Jampro does not assume, nor does it authorize any person to assume on its behalf, any other obligation or liability, either verbally or in writing.

10. OTHER RIGHTS

This Limited Warranty gives you specific legal rights. You may also have other rights, which may vary from state to state or country to country.



WARRANTY

By affixing their signature below, customer warrants that he or she has read and understood this agreement and agrees that Jampro Antennas, Inc. will not be liable to Customer for the failure of the FCC directional antenna and pattern optimization service to achieve the radiation pattern desired at the Customer's broadcast site. Customer further understands that this document is intended to limit Jampro Antennas, Inc.'s obligations and liability to customer and to delineate the mutual obligations and expectations of customer and Jampro Antennas, Inc.

Date: _____

Customer Name: _____

Company _____

Title _____