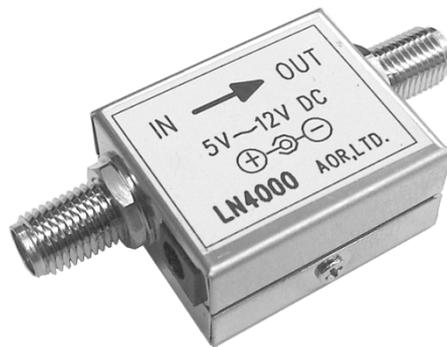




LOW NOISE AMPLIFIER
LN4000
OPERATING MANUAL



**THIS AMPLIFIER IS FOR RECEIVER ONLY.
DO NOT USE WITH TRANSMITTER!**

1. INTRODUCTION

The LN4000 is a high-performance, low-noise wide-band preamplifier for 100MHz to 3000MHz
The LN4000 is a general purpose amplifier that can be used with scanner receivers as well as with other devices such as frequency counter, spectrum analyzer etc...

SPECIFICATIONS

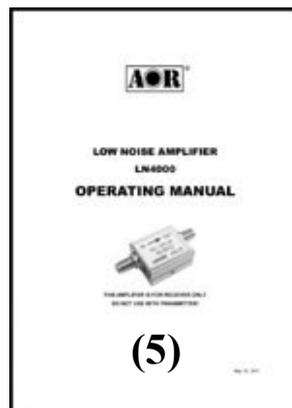
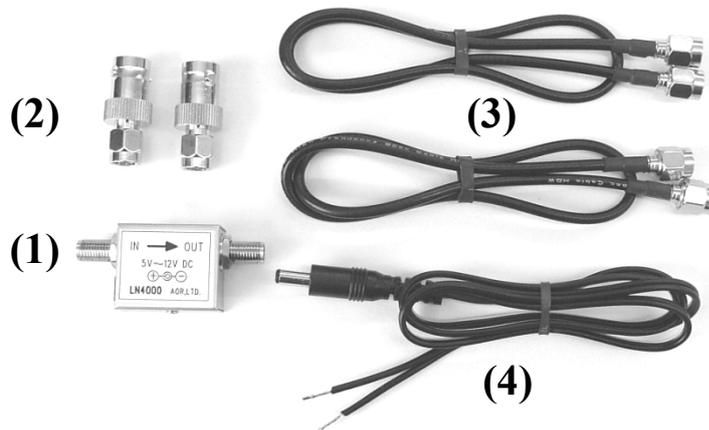
MODEL	LN4000 Wide-band low-noise pre-amplifier
Frequency coverage	100MHz to 3000MHz
Maximum usable frequency	4000MHz (3dB less gain compared with the gain at 100MHz)
Gain	20dB±2dB
Noise figure	4.5dB
Device	Silicon Monolithic IC
Input / Output impedance	50Ω
Input / Output connector type	SMA-J
Operating temperature range	-40 degree C to +85 degree C
Power Requirements	5.0 to 12VDC
Power Consumption	Approx. 26mA @ 8VDC
Size	25.5mm(W) x 21mm(D) x 13mm(H)
Weight	Approx. 15g

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE FOR PRODUCT IMPROVEMENT.

3. INCLUDED IN THIS PACKAGE

The following items are provided in this package.

Picture No.	Description / Item	Part Number	Quantity
(1)	LN4000 Main Unit	LN4000	1
(2)	BNC-SMA Adapter	SMAP-BNCJ	2
(3)	Coaxial Cable with SMA-P	CC-SMA-4000	2
(4)	DC Power Cable	DC-4000	1
(5)	Operating manual (this booklet)	INS-4000-DOC	1



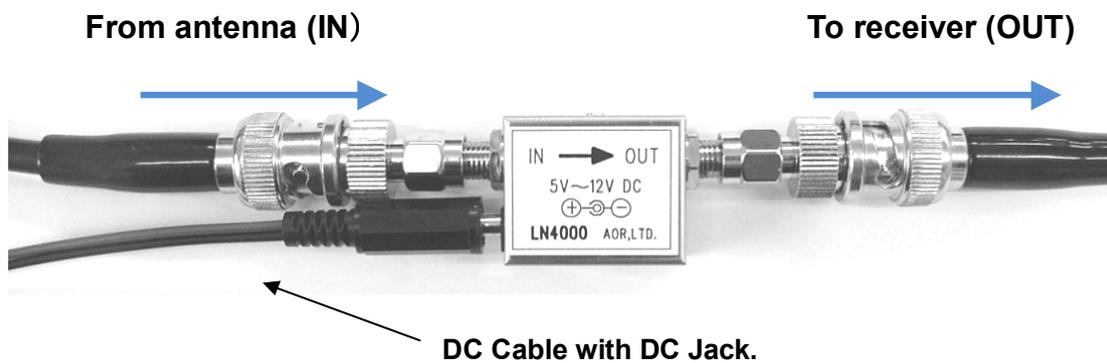
NOTE: Pre-assembled coaxial cable with SMA plugs (3) is provided for convenience when installing the LN4000 in the receiver. The SMA-BNC adapter (2) is used for the connection of BNC cable.

4. INSTALLTION AND OPERATION

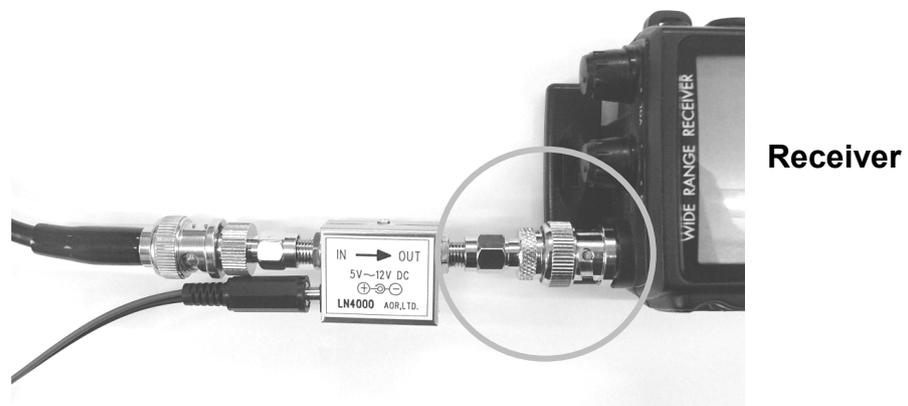
LN4000 is a pre-amplifier for receiver/scanner.

Never connect the LN4000 to a transmitter, or transceiver in transmit state.

Connect antenna (signal source) and receiver as shown below. Use supplied SMA-BNC adapter or pre-assembled coaxial cable with SMA connectors.

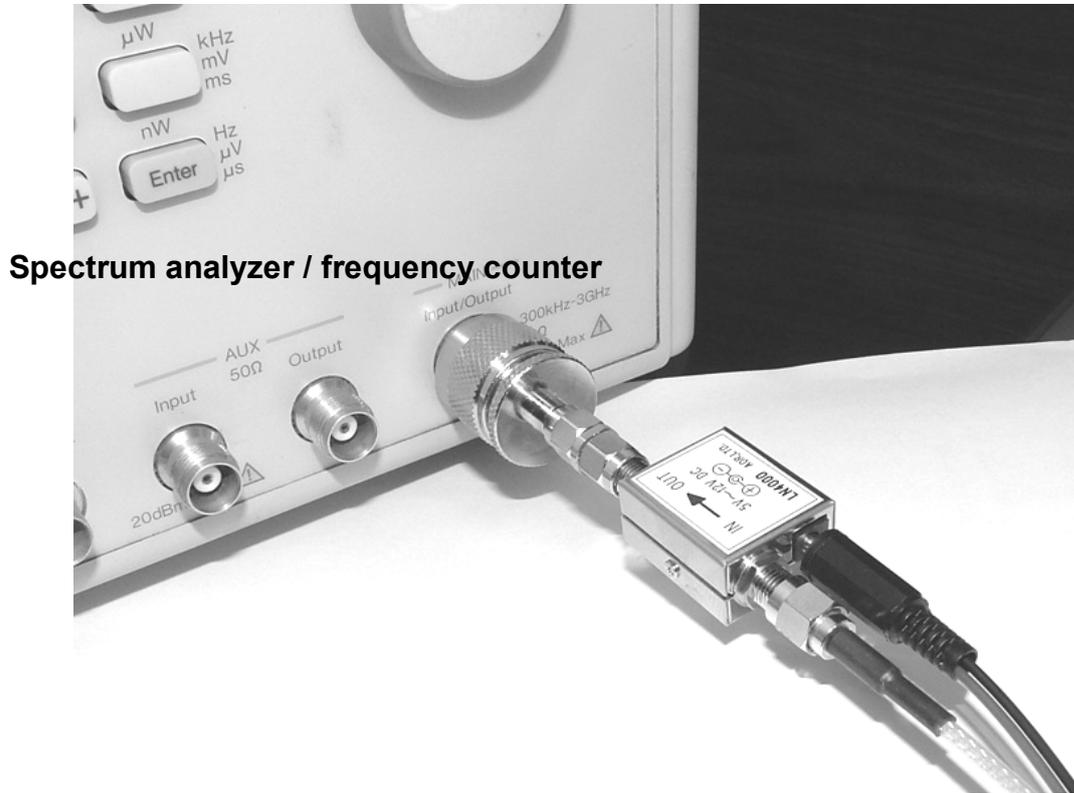


Use supplied DC cable to feed the DC power to the LN4000. Connect wires (black / black-red) to the regulated DC power supply. Black lead should be connected to the negative (-) side of the power supply, and black-red lead should be connected to the positive (+) side of the power supply. Although the LN4000 operates at 12VDC, use medium voltage (8VDC to 9VDC) if power supply is adjustable type. Excessive voltage above 12VDC may damage LN4000.



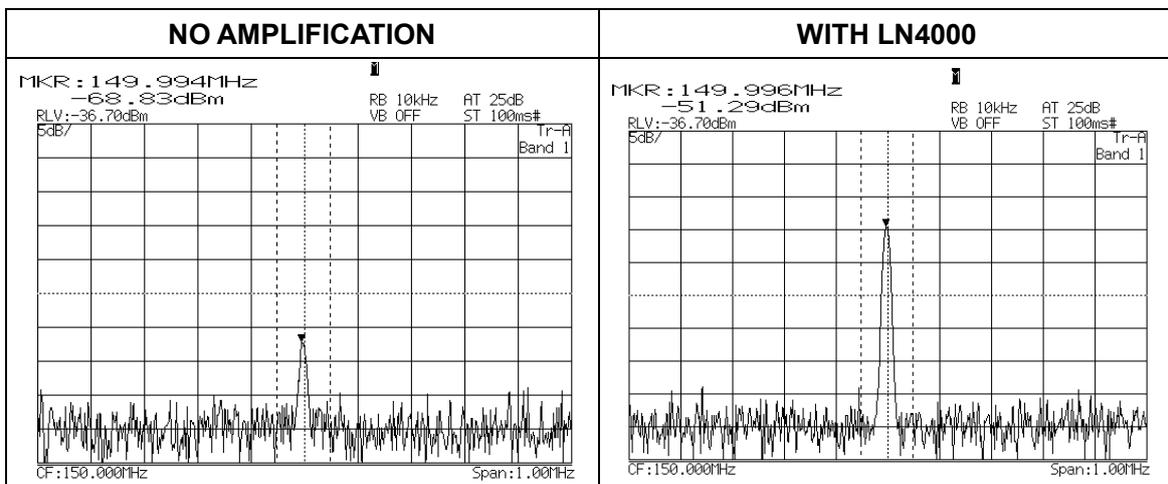
Commercially available SMA(P)-BNC(P) adapter is convenient when installing the LN4000 to a receiver with BNC Jack.

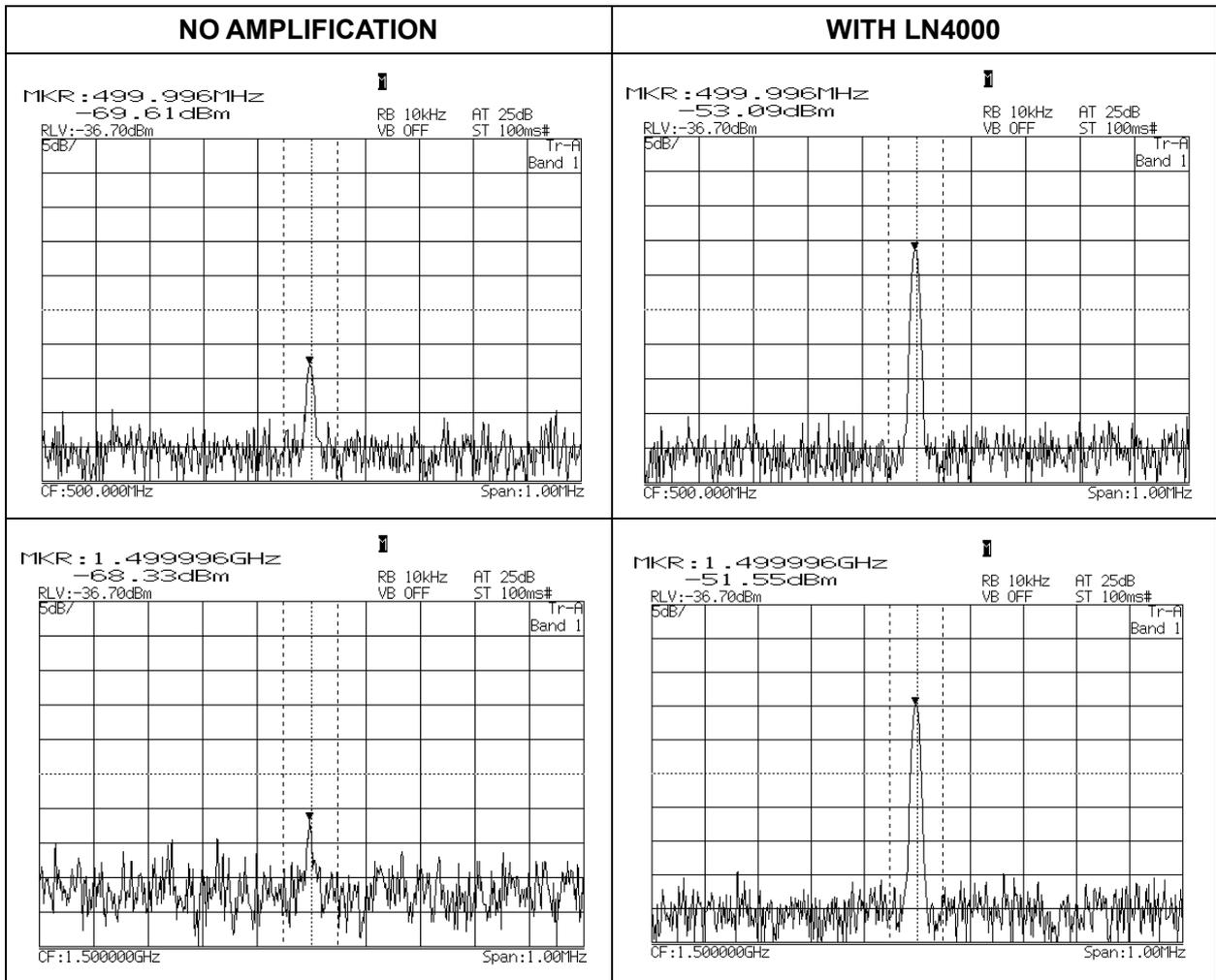
The LN4000 can be used with post-amplifier for the spectrum analyzer and frequency counter. The LN4000 can be mounted directly to those instruments with coaxial adapter as shown example below.



Spectrum analyzer / frequency counter

The following example shows sample measurement when LN4000 is used as pot-amplifier for the spectrum analyzer.





NOTE: The above sample measurements include connector and cable loss.

5. OPERATIONAL HINTS

The LN4000 is a wideband amplifier with very flat gain characteristic. This means that the LN4000 amplifies weak signals. At the same time it amplifies strong signals within a frequency range. This may degrade the receiver's front-end characteristics.

It is highly recommended to use the LN4000 with an appropriate band-pass-filter, notch-filter etc., to reject nearby strong signals. It is highly recommended to use a single frequency antenna (not a wideband antenna) if LN4000 is used to improve the reception for a selected frequency.

6. LIMITED WARRANTY (USA only)

AOR USA, Inc. (AOR) warrants its receivers as described below:

AOR will repair or exchange equipment as a result of defects in parts or workmanship for a period of one year from the date of original retail purchase from an authorized AOR dealer.

Exclusions

The following items are not covered by the AOR limited warranty:

1. Products that are damaged through accident, abuse, misuse, neglect, or user modifications.
2. Problems that arise through failure to follow directions in the owner's manual.
3. Exposure of the product to adverse or severe weather conditions, including lightening, temperature, extremes or water, including rainfall or immersion.
4. Exposure to toxic materials, biohazards, radioactive materials or other contamination.
5. Repairs attempted by parties other than AOR or its authorized personnel.
6. Damage that results from improper installation, including improper voltage and/or reversed polarity, or exposure of a receiver to signal levels exceeding specifications.
7. Damage resulting through the use of accessories from manufacturers other than AOR.
8. Equipment that has had serial numbers removed or altered in any way.
9. Damage that occurred as a result of shipment. Claims must be presented to the carrier.
10. AOR is not responsible for any costs arising from installation or reinstallation of the equipment, nor for any consequential (such as loss of use) damage claims.

Obtaining Warranty Service

1. You are responsible for shipping the product to AOR and any related costs.
2. Warranty claim must be accompanied by a legible copy of the original product purchase receipt.
3. You must include a description of the problem(s) encountered with the product.
4. You must include your name, a valid ground shipping address (including zip code) and telephone contact information.
5. AOR will ship the repaired (or replaced) product by ground transport.

Limitations

Any and all implied warranties, including those pertaining to merchantability and utility for a specific purpose are limited to the duration of this limited warranty.

AOR's limits on warranty pertain only to the repair or, at its option, replacement of defective products. AOR shall not be liable for any other damages, including consequential, incidental or otherwise, arising from any defect.

Some states do not allow limitations on how long an implied warranty lasts and may not allow the exclusion of incidental or consequential damages. As such, the above limitations may not apply in every case. This warranty gives you specific legal rights and you may have other rights that apply in your state.

If you have questions about this limited warranty, or the operation of your AOR product, contact AOR at (310) 787-8615 during normal business hours (9 am ~ 5 pm Pacific Time Zone), or write to AOR, 20655 S. Western Ave., Suite 112, Torrance, CA 90501. You may also send a fax to AOR at (310) 787-8619. Additional information is available at the AOR web site: www.aorusa.com

We suggest attaching your purchase receipt to this half of the warranty card and keeping this information in a secure location.

AOR Model Number _____

Serial Number _____

Dealer Name _____

Purchase Date _____

Manufacturer: AOR, LTD.
2-6-4, Misuji, Taito-Ku,
Tokyo, 111-0055, Japan
URL: www.aorja.com
e-mail: mail@aorja.com

US distributor: AOR USA, INC.
20655 S. Western Ave. Suite 112
Torrance, CA 90501
Phone: 310-787-8615
Fax: 310-787-8619
URL: www.aorusa.com
e-mail: info@aorusa.com