hy-gain

ORDER NO. 422

INSTALLATION & OPERATION INSTRUCTIONS

RECEIVER PRE-AMP

HY-GAIN ELECTRONICS CORPORATION
Rural Route 3 Lincoln, Nebraska 68505

SECTION I

DESCRIPTION

1.1 General

The Hy-Gain model 422 Receiver Pre-Amp is designed for use with any Citizens Band Transceiver. It will improve the weak signal performance of the receiver section. The Receive Pre-Amp uses a Metal Oxide Semiconductor Dual Gate Field Effect Transistor (MOSFET) in the amplifier section. The input and output is diode protected. The model 422 also has provision for an extra auxiliary receiver, a dual AC outlet and an ON-THE-AIR indicator which automatically lights up during transmit. The Tuning Control is useful for peaking the received signal on any one of the 23 channels available for C.B. use.

1.2 Technical Specifications

Frequency..... All C.B. channels

Gain..... Variable up to 20 db (3 'S' points)

Impedance..... Input & Output 50 ohms

Power..... 117v 60 Hz AC and 12v DC

Input Drive..... Maximum input drive from transceiver is 5 watts

SECTION II

UNPACKING

2.1 Removing from Carton

Carefully remove the Receiver Pre-Amp from the packing carton. Examine it closely for signs of shipping damage. This equipment has been carefully packed for safe arrival IF PROPERLY HANDLED EN ROUTE.

2.2 In Case of Damage

The responsibility for safe delivery rests with the carrier. The responsibility in obtaining reimbursement for damage rests with YOU. Prompt action on your part will speed adjustments. Our warranty in no way covers malfunction or damage which is a result of improper handling by a carrier. Under no circumstances should you return merchandise to your dealer before instigating the necessary forms. To do so can jeopardize your investment and the costs of necessary repairs may be a burden you will have to assume.

2.3 Warranty Registration

Fill out the enclosed Warranty Registration Card and mail to insure your warranty will be on file.

2.4 Shipping Carton

Save the carton and packing material. You may need it at a later date for storage or shipment.

Printed in USA

PN 800466

SECTION III

INSTALLATION

3.1 Base Installation

Disconnect the antenna from the CB transceiver and unplug the line cord from the wall outlet. Connect the antenna to the socket, on the rear of the Receive Pre-Amp, marked ANT. Connect the short length of coax cable to the antenna socket on the CB transceiver.

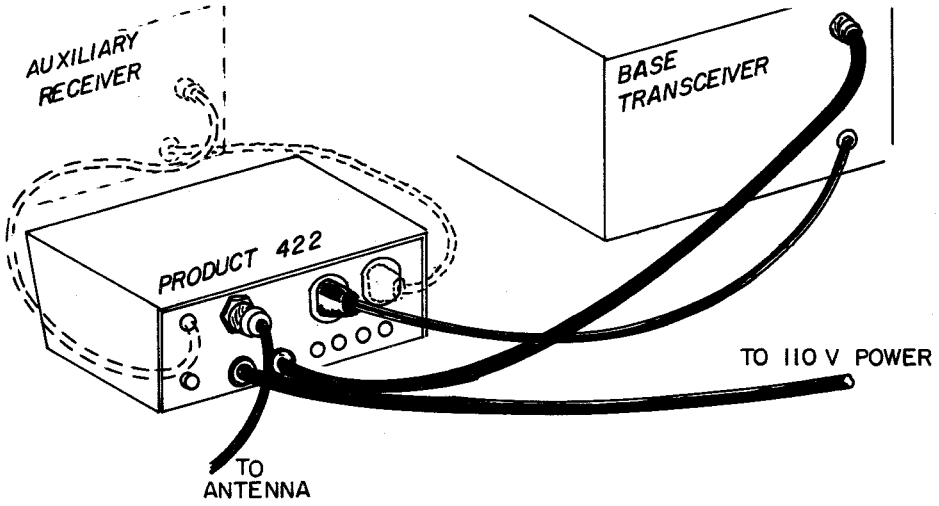
Connect the AC line cord from the CB transceiver to the AC outlet on the Receive Pre-Amp marked XCVR. The other AC outlet may be used for some other equipment such as a lamp, extra receiver, etc.

Insert the Receive Pre-Amp line cord into the AC wall outlet.

This completes the Base Station installation.

NOTE

DO NOT plug the CB transceiver into the wall outlet. It must always be connected to the XCVR outlet on the Receive Pre-Amp.



BASE INSTALLATION

3.2 Mobile Installation

Disconnect the antenna from the CB transceiver.

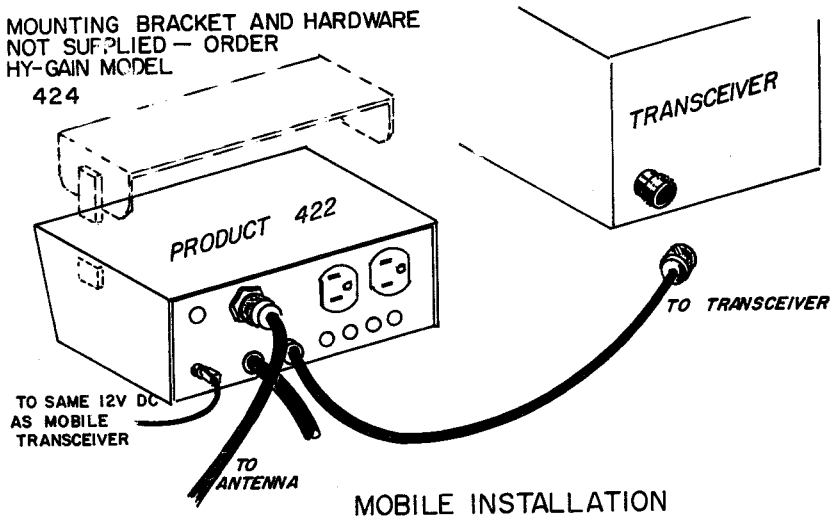
Connect the antenna to the socket marked ANT on the rear panel of the Receive Pre-amp. Connect the short length of coax cable to the antenna socket on the CB transceiver.

Connect the length of cable with the phono plug attached to the socket marked 12v DC on the rear of the Receive Pre-amp, strip the other end and splice into the 12 volt line that goes to the mobile CB transceiver.

This completes the Mobile Station installation.

NOTE

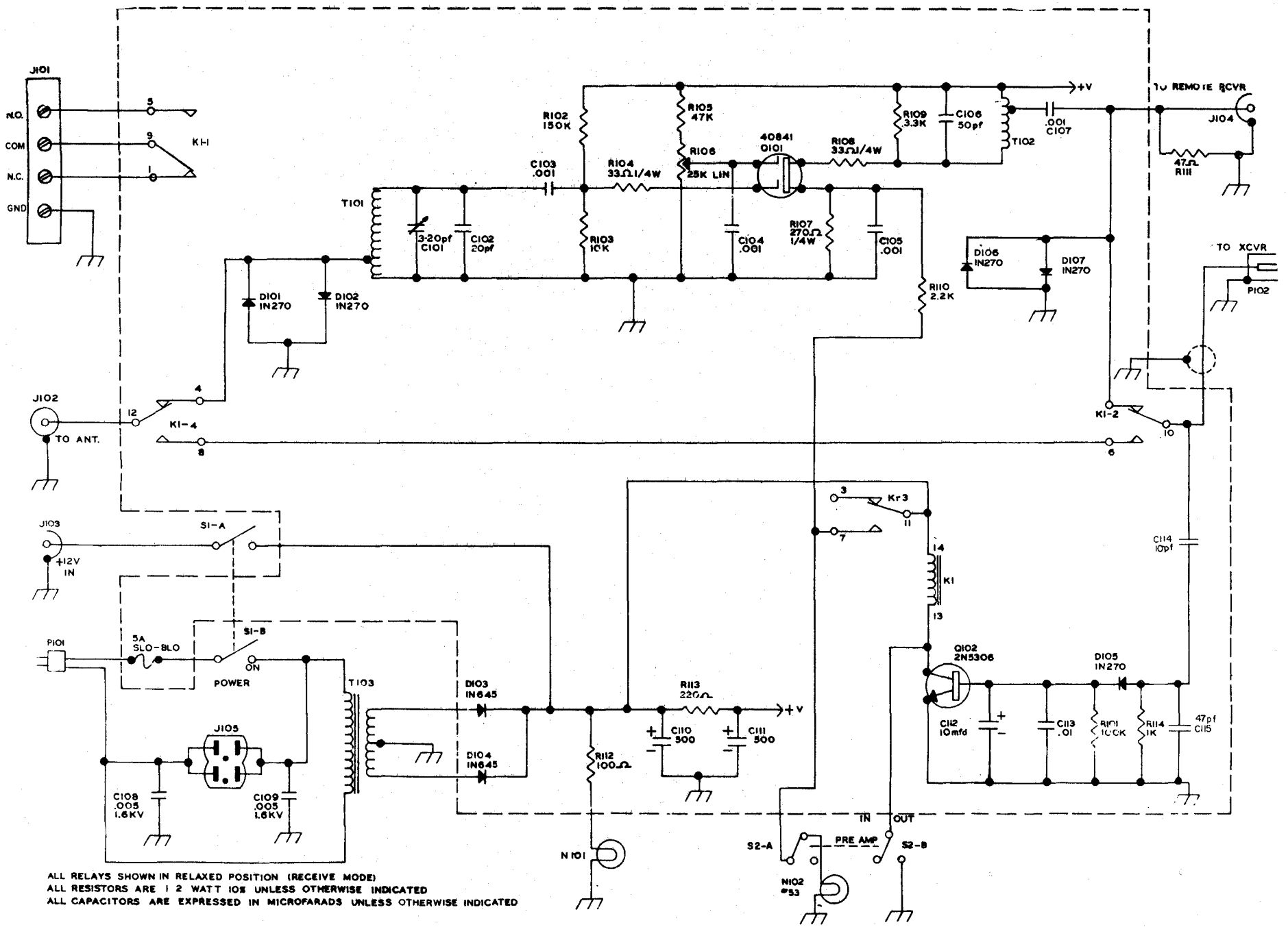
The Receive Pre-amp MUST ALWAYS be switched on before the mobile transceiver is switched on. Failure to do so could cause serious damage to the Receive Pre-amp. To help you remember this the Receive Pre-amp could be left switched on all the time. It has very little battery drain (similar to an electric clock



MOBILE INSTALLATION

PARTS LIST

Symbol	Description	Part No.
D101	1N270	765722
D102	1N270	765722
D103	1N645	761113
D104	1N645	761113
D105	1N270	765722
D106	1N270	765722
D107	1N270	765722
T101	RF Transformer	720041
T102	RF Transformer	720041
T103	Power Transformer	730012
C101	3-20pf Variable Cap	725632
C102	20pf Disc	725717
C103	.001 mfd Disc	721158
C104	.001 mfd Disc	721158
C105	.001 mfd Disc	721158
C106	50pf Disc	725718
C107	.001 mfd Disc	721158
C108	.005 mfd 1.6KV Disc	725725
C109	.005 mfd 1.6KV Disc	725725
C110	500 mfd Electrolitic	721120
C111	500 mfd Electrolitic	721120
C112	10 mfd Electrolitic	721120
C113	.01 mfd Disc	721550
C114	10pf Disc	721624
R102	150K Resistor	721283
R103	10K Resistor	721318
R104	33Ω 1/4 Resistor	721103
R105	47K Resistor	725621
R106	25K Linear Pot	700015
R107	270Ω 1/4 Resistor	721112
R108	33Ω 1/4 Resistor	721103
R109	3.3K Resistor	725652
R110	2.2K Resistor	721308
R111	47Ω Resistor	720007
R112	100Ω Resistor	720005
R113	220Ω Resistor	725740
R114	1K Resistor	725742
Q101	40841	760005
Q102	2N5306	760012
K1	4PDT Relay	730006
J101	4 Screw Terminal Board	661789
J102	SO 239	860004
J103	RCA Phono Jack	650204
J104	Auto Jack	860004
J105	110v Line Outlet	644323
P101	Line Cord	627370
P102	PL 259	650017
F1	5A Slo-Blo 3AG	710003
S1	DPDT Rocker Switch	700010
S2	DPDT Rocker Switch	700010
N101	12v Red Lens Lamp	710007
N102	#53 Bulb	715665


J101
N.O.
COM
N.C.
GND
5
9
1
K-H
R102 150K
R105 47K
R106 25K LIN
R109 3.3K
C106 50pf
.001 C107
+V
TO REMOTE RCVR
J104
47Ω R111
40841 Q101
R108 33Ω/1/4W
T102
C103 .001
R104 33Ω 1/4W
T101
3-20pf C101
C102 20pf
R103 10K
C104 .001
R107 270Ω 1/4W
C105 .001
D101 IN270
D102 IN270
D106 IN270
D107 IN270
R110 2.2K
TO XCVR
P102
J102
TO ANT.
12
4
8
K1-4
K1-2
10
6
J103
+12V IN
S1-A
3
K1-3
11
7
14
K1
13
C114 10pf
P101
5A SLO-BLO
S1-B
ON
POWER
T103
D103 IN645
D104 IN645
R113 220Ω
+V
C110 500
C111 500
R112 100Ω
Q102 2N5306
D105 IN270
C112 10mfd
C113 .01
R101 100K
R114 1K
47pf C115
J105
C108 .005 1.6KV
C109 .005 1.6KV
IN
OUT
S2-A
PRE AMP
S2-B
N101
N102 #53
ALL RELAYS SHOWN IN RELAXED POSITION (RECEIVE MODE)
ALL RESISTORS ARE 1 2 WATT 10% UNLESS OTHERWISE INDICATED
ALL CAPACITORS ARE EXPRESSED IN MICROFARADS UNLESS OTHERWISE INDICATED

SECTION IV

OPERATION

Turn on the Power switch on both the CB transceiver and the Receive Pre-amp. In a Base Station installation the CB transceiver can be left switched ON because the ON-OFF switch on the Receive Pre-amp also controls the AC power to the CB transceiver (provided the installation is as stated in Section 3.1). In mobile operation the Receive Pre-amp MUST be switched on before the CB transceiver (see Section 3.2).

The Receiver Pre-amp switch when in the OUT position allows the CB transceiver to operate normal.

When the switch is in the IN position the amplifier in the Receiver Pre-amp is connected in the circuit between the antenna and the CB transceiver and provides up to 20 db gain on the received signal. After selecting a channel to receive adjust the TUNE control for maximum signal either by ear or the transceiver's "S" meter, if it has one fitted. When changing channels retune the TUNE control for maximum performance.

The GAIN control on the Receiver Pre-amp should be turned fully clockwise for maximum gain. The gain may be reduced by rotating counter-clockwise. This may be necessary when a strong signal on another channel causes interference. The Receiver Pre-amp is most useful on weak signals, when communicating with a strong local station switch the Receiver Pre-amp to OUT since the pre-amp is not necessary.

SECTION V

OPERATION OF AN AUXILIARY RECEIVER

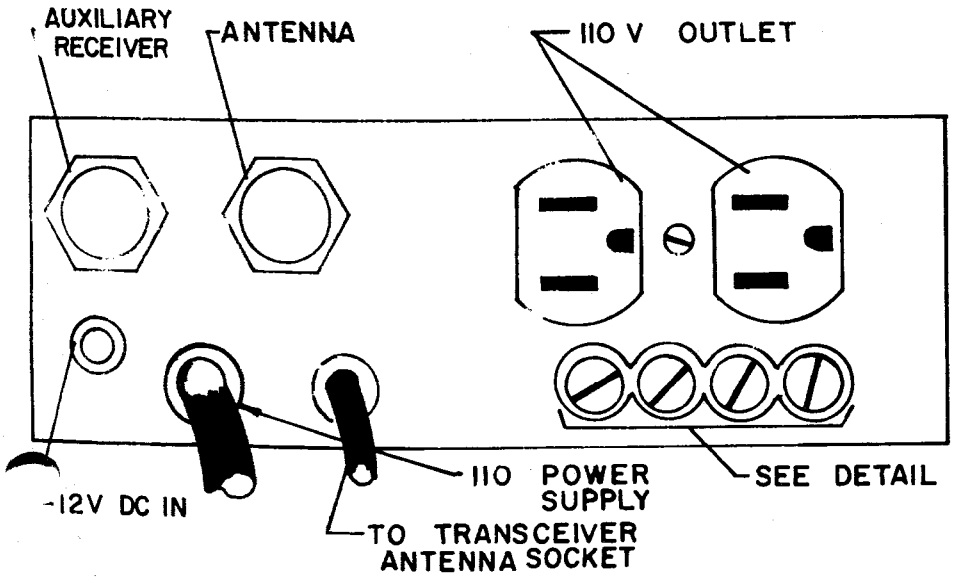
An extra feature of the Receiver Pre-amp is that provision is made so that an extra receiver can be used along with a CB transceiver. This is useful for example to monitor a channel, say 9, while working a station on another channel.

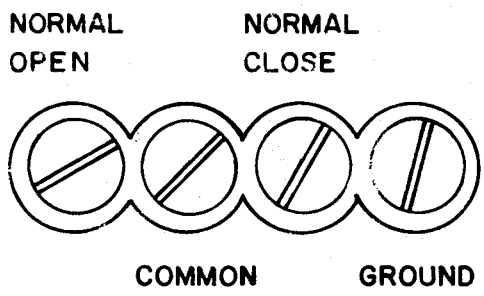
To connect an auxiliary receiver it is necessary to run a coaxial line from the AUX RCVR socket on the rear of the Receiver Pre-amp to the antenna socket on the auxiliary receiver. This will switch the antenna automatically when the CB transceiver is in transmit. To prevent unwanted feedback howls in the auxiliary receiver during a transmission on the CB transceiver it is necessary to mute (or kill) the auxiliary receiver during transmit. Provision for this has been made on the Receiver Pre-amp. On the rear panel is a terminal strip, as shown below:

Before connecting the muting terminals, it is necessary to find from the auxiliary receiver instruction manual if normally-closed or normally-opened contacts are required for reception. Receivers requiring normally closed contacts should be connected to COM and NC. Receivers requiring normally open contacts should be connected to COM and NO terminals. Most auxiliary receivers use normally closed contacts for receiving which open in transmit.

When correctly wired the auxiliary receiver should operate when the CB transceiver is in the receive mode and the receiver should go quiet when the CB transceiver is in the transmit mode.

If the auxiliary receiver does not have mute provisions the normally closed contacts (available at COM and N.C.) could be wired in series with its speaker.





SECTION VI

SERVICE INFORMATION

5.1 Returning Equipment for Service

DO NOT ship equipment to the Manufacturer without prior authorization. We prefer to send special shipping labels which will avoid the delay of unexpected shipment.

If time is extremely important, wire or call for approval and we will rush labels to you. When a shipment is expected, even the time of sending the labels is less than that lost when an unexpected shipment is received.

It is VERY IMPORTANT that the shipment be well packed and fully insured. Damage claims must be settled between you and the carrier and will greatly delay any returns. Proper paaking normally avoids this trouble.

ALL SHIPMENTS MUST BE SENT TO US PREPAID. We do not accept collect shipments. All returns should be made in our standard cartons only - so save your carton when unpacking the unit. When a shipment is returned it will be handled in one of three ways . . .

1 - Where all service is in warranty the shipment will be returned prepaid by a carrier of our choice.

2 - If there are any charges not covered by warranty we will hold the shipment and advise you of costs, which you can then send.

3 - Or, upon your written authorization, we will ship COD for any charges not covered by warranty, then the carrier will collect these charges and the transportation costs on arrival. Unclaimed or refused COD shipments will not be reshipped until payment of service and transportation charges is received. Shipment will then be made collect for reshipment transportation charges. Unclaimed equipment automatically becomes the property of the Manufacturer 60 days after date of refusal or return and will be disposed of for payment of charges due.

NOTE

We WILL NOT ship by means of a carrier that will not fully insure the shipment. Some carriers have a $200 limit. The exception to this is when there is no other means (APO-FPO-etc.) of shipment than parcel post, and then we will ship by this means with your written agreement that you assume any loss over that which the carrier will insure. COD shipments cannot be made to APO-FPO addresses

5.2 Replacement Parts Ordering

All replacement parts orders must be prepaid or COD only.

Replacement part price quotes will be furnished on request for those who desire prepaid shipment or cannot accept COD shipments.

6.3 Shipping Address

All requests, inquiries, warranty claims or equipment returns should be made to:

Hy-Gain Electronics Corporation
Rural Route 3
Lincoln, Nebraska 68505

Attn: Customer Service Department

SECTION VII

WARRANTY

Hy-Gain Electronics Corporation warrants each new product manufactured to be free from defects in material and workmanship and agrees to remedy any such defect, or to furnish a new part, in exchange for any part of any unit which under normal installation, use and service discloses such defect within ninety days from the date of purchase by original owner. The unit serial number must be registered by the original owner at the time of purchase to validate the warranty.

This warranty does not extend to any of our products which have been subjected to mis-use, neglect, accident, incorrect wiring not our own, improper installation or to use in violation of instructions furnished by us. Nor does it extend to units which have been repaired or altered outside of our factory nor to accessories used therewith not of our own manufacture, nor to any cases where the serial number has been removed, defaced, or changed.

Hy-Gain Electronics Corporation reserves the right to make any changes deemed necessary or desirable without advance notice or incurring any obligation to make like changes in units previously manufactured or sold.

This warranty does not cover transportation or installation costs that may be incurred. Hy-Gain Electronics Corporation's sole liability is the remedy of any defect for ninety days. Hy-Gain Electronics is not responsible for personal injury or property damage resulting from improper or careless installation not intended by the manufacturer.

No person is authorized to assume for us any other liability in connection with the sale of our products.

All warranties are void and terminated one year after the last unit of its type and design has been manufactured by us.