

The Most Powerful Antennas Under the Sun



NEW REDESIGNED

For the CLEAN SIGNAL!

Hy-gain

Power Meter and Transmitter Tester
Now with RF Toroid Transformer!



**READS MODULATION
PEAKS!**

For the top signal you want... the Hy-Gain 421A Power Meter and Transmitter Tester. All the functions needed to analyze your transmitted signal. Now, with an RF Toroid Transformer for super-accurate power sampling. *Accurate to 150 MHz!*

Watt meter reads in three power scales: 10, 100 and 500 watts forward! Forward/Reverse SWR Scale reads directly without interpolation charts. Check your modulation quickly and accurately... make sure you get top modulation for top readability.

Sampler/Coupler installs remotely... no need for a bulky coax to clutter your desk. In-line coupler stays in line without power loss! Classic wood grain panel and professional styling enhance your CB rig. Interconnection cables included.

ORDER NO. 421A

\$41.95

Can be used mobile with mobile bracket. NO. 424

Write...

HY-GAIN ELECTRONICS CORPORATION

P.O. Box 5407-DA, Lincoln, Nebraska 68505

packing 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 with transportation costs collected by the carrier on arrival.

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. The shipment will arrive with only transportation costs collected by the carrier on arrival.

3.---Or upon your written authorization, we will ship C.O.D. for any charges not covered by warranty; then the carrier will collect these charges, and the transportation costs on arrival. Unclaimed or refused C.O.D. 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 \$200.00 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. C.O.D. shipments cannot be made to APO-FPO addresses.

REPLACEMENT OF PARTS ORDERING:

All replacement parts orders must be prepaid or C.O.D. only.

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

WARRANTY

Hy-Gain Electronics Corporation warranty 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.

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.

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 remedy of any defect for ninety days. Hy-Gain Electronics Corporation is not responsible

for personal injury or property damage resulting from improper or careless installation or usage 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.

All claims of defect or shortage should be addressed to:

Hy-Gain Electronics Corporation
Attention: Customer Service Department
R.R. #3
Lincoln, Nebraska 68505

You must furnish model number, date, place and proof of purchase, such as a copy of the sales receipt to establish warranty. Your letter should include all pertinent details along with part or item numbers involved. Do Not return anything until requested to do so. No warranty card is furnished. You must supply the above information.

Any returned items must have prior authorization. Unexpected returns are greatly delayed in handling. These delays can be avoided by writing in advance furnishing the above information.

ALIGNMENT:

All internal adjustments of the 421A were made at the factory prior to shipment. The accuracy of the meter is dependent upon the adjustment of these controls and do not require any further adjustment. No attempt should be made to disturb the settings unless precision test equipment is used. If internal adjustments are to be attempted the following test equipment must be used.

A 50 ohm resistive dummy load capable of 500 watts continuous duty, an accurate RF voltmeter equivalent to the Hewlett Packard 410-B or 410-C, a transmitter with variable output to at least 500 watts on 30 MHz, and an insulated alignment tool.

Remove the covers from the indicator and sensor units.

NULL ADJUSTMENT:

Connect the short length of cable from the sensor unit to the transmitter. Using a piece of coaxial 50 ohm cable, connect the dummy load to the SO-239 socket on the sensor.

Switch the indicator unit to FWD, key the transmitter and adjust the Calibrate control for full scale, switch to SWR and if any reflected power is present, adjust the piston trimmer, in the sensor, for a minimum. Unkey.

POWER ADJUSTMENT:

Switch the 421A to the 10 watt position. With the RF volt meter connected across the dummy load, apply power and increase it until exactly 22 volts RMS is across the load. Adjust the small trimmer pot (R1), see reverse side of circuit board, so that the 421A reads exactly 10 watts.

Switch to the 100 watt range and increase power until the volt meter reads 70 volts RMS. Adjust the center pot (R2) until the 421A reads 100 watts.

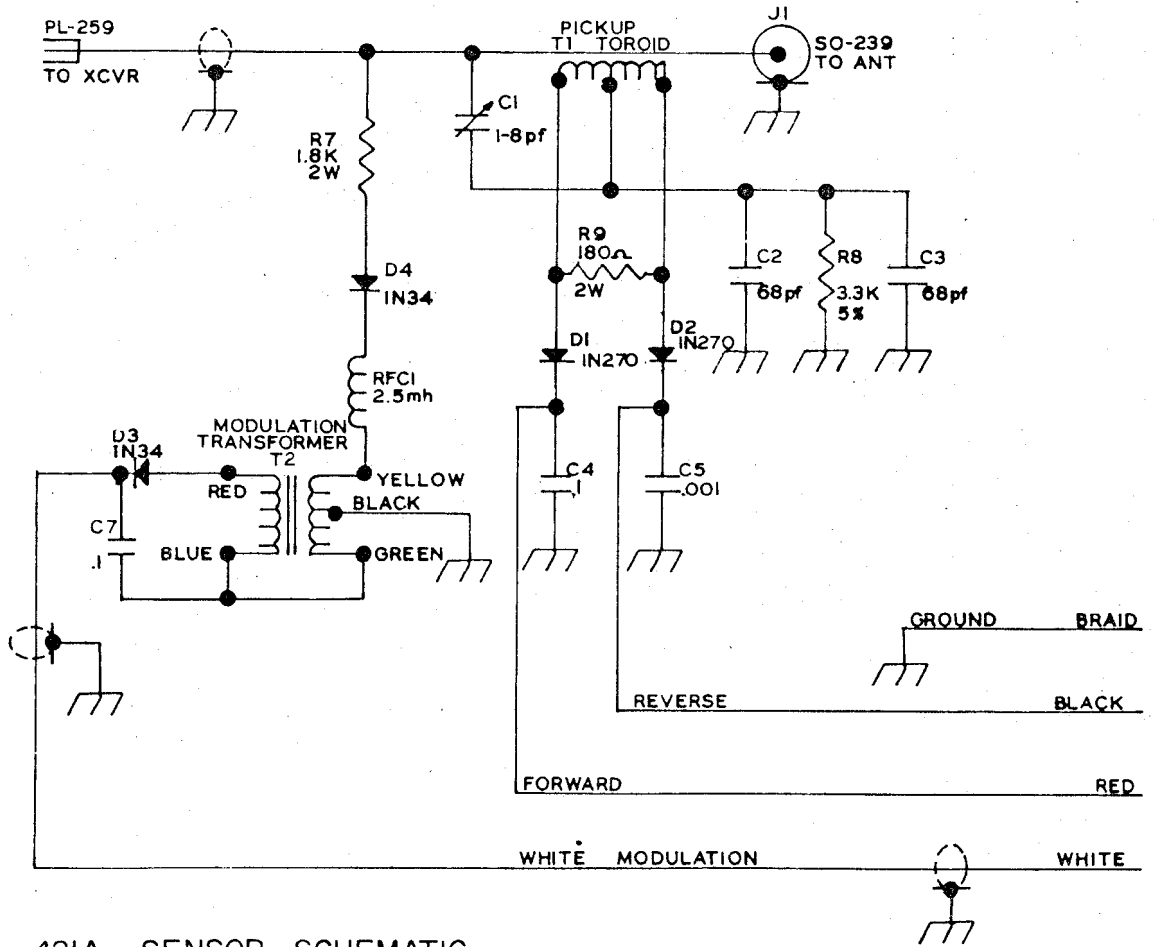
Switch to the 500 watt range and increase the power until the volt meter reads 158 volts RMS. Adjust the trimmer pot (R3) until the 421A reads 500 watts.

PARTS LIST

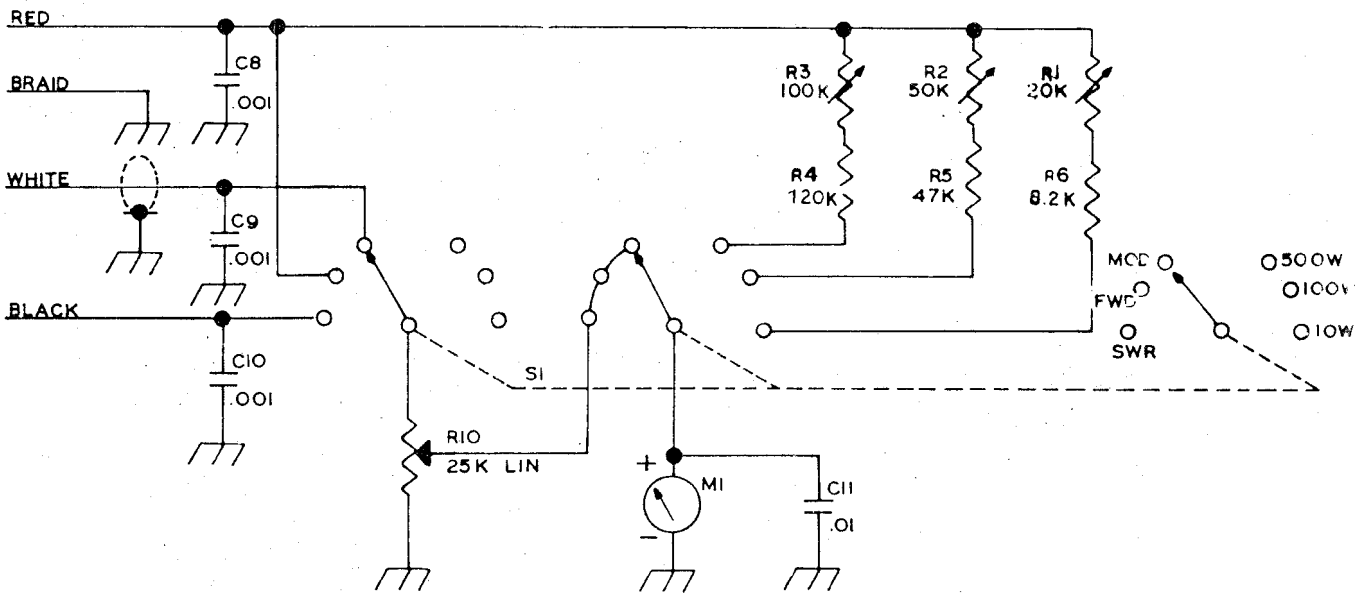
| Item | Description | Part No. |
|------|---------------------------|----------|
| R1 | 20K PCM Trimmer | 721483 |
| R2 | 50K PCM Trimmer | 721487 |
| R3 | 100K PCM Trimmer | 720042 |
| R4 | 120K 1/2w 10% Resistor | 721335 |
| R5 | 47K 1/2w 10% Resistor | 721291 |
| R6 | 8.2K 1/2w 10% Resistor | 721345 |
| R7 | 1.8K 2w 10% Resistor | 721104 |
| R8 | 3.3K 5% Resistor | 721321 |
| R9 | 180 2w 10% Resistor | 722223 |
| R10 | 25K Lin Variable Resistor | 705720 |
| | | |
| D1 | 1N270 Diode | 765722 |
| D2 | 1N270 Diode | 765722 |
| D3 | 1N34 Diode | 765668 |
| D4 | 1N34 Diode | 765668 |
| | | |
| C1 | 1- 8 Pf Piston Trimmer | 721861 |
| C2 | 68 Pf Disc Ceramic | 721601 |
| C3 | 68 Pf Disc Ceramic | 721601 |
| C4 | .1 Film Cap | 721574 |
| C5 | .001 Disc Ceramic | 721158 |
| | | |
| C7 | .1 Film Capacitor | 721574 |
| C8 | .001 Disc Ceramic | 721158 |
| C9 | .001 Disc Ceramic | 721158 |
| C10 | .001 Disc Ceramic | 721158 |
| C11 | .01 Disc Ceramic | 721550 |
| | | |
| M1 | Multifunction Meter | 795643 |
| | | |
| S1 | Function Switch | 700309 |
| | | |
| T1 | Sensing Toroid | 722077 |
| T2 | Modulation Transformer | 735623 |
| | | |
| RFC1 | 2.5 mh Choke | 721907 |

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PN 800472



421A. SENSOR SCHEMATIC



421A INDICATOR SCHEMATIC