OUTCOM COMMUNICATIVE ELECTRONICS
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INSTRUCTION SHEET For OPA - 101 & OPA - 202 WIDEBAND AMPLIFIERS

Both units will operate from any 12 volt negative-grounded or positive grounded battery source. When vehicles have their engines running, the charging system increases the voltage to approximately 13.6VDC that is the operating voltage of these units.

Use number 12 wire or larger (#10, #8, etc.) to connect the battery to the amplifier. In all installations connect the positive (+) terminal of the battery to the fuse line of the amplifier. Connect the negative (—) terminal of the battery to the plain black wire of the amplifier. Next, use coax cable jumper of any length and connect the transceiver to the XMTR connector. Finally, connect the antenna to the ANT connector. Press either AM or SSB for the mode of transmission you are using - no damage will result if both buttons are depressed or if wrong button is used. A minimum of two (2) inches of air space below the bottom and both sides is recommended to allow for proper air flow; keep this in mind if unit gets hot in your operation.

SELECTABLE POWER: Levels for AM mode can be made by combinations of AM and SSB buttons.

1) Lowest Power Output — press both AM and SSB buttons.
   Approx. power: OPA-101 15 watts, OPA-202 30 watts.
2) Next Level: press SSB button only.
   Approx. power: OPA-101 30 watts, OPA-202 60 watts.
3) Higher Level: press AM button only.
   Approx. power: OPA-101 75 watts, OPA-202 100 watts.
4) Highest Power: leave both AM and SSB buttons out.
   Approx. power: OPA-101 100 to 125 watts, OPA-202 150 to 160 watts.

Selectable power is ONLY for AM operation. The above power levels are approximate with 4 watts input.

Do not attempt to change power levels while operating your transceiver in SSB mode. Just press SSB button for SSB operation.

OUTPUT METER: With Power button on and transmitting — the meter will light and indicate approximately mid-scale in normal operation, but if antenna in use has an open or no antenna is connected — the meter will read higher than usual. If antenna in use has a direct short — the meter will read lower than normal. These are coarse indications and a SWR meter should be used to check any suspected problem with the antenna. For accurate SWR reading, use a UHF double male connector between the output of amplifier and input of SWR meter. Once you know the unit is operating properly, check and remember the meter setting for the power level you're using. Then from time to time or when you suspect a problem, see if the meter is the same. If not, check your connectors and antenna for a short or open.

The white button (REC AMP) is to increase the receive range. Use this whenever a signal is weak. This does not affect the linear in any other way.

BASE USE: Both models will operate on DC power supplies if 20 amps. at 13.6VDC is available — or a car battery with a trickle charger attached will work with approximately 70% of capability. (DO NOT ATTEMPT TO USE A BATTERY CHARGER BY ITSELF, SINCE IT MAY HAVE HIGH VOLTAGE AND DESTROY THE OUTPUT TRANSISTORS).

DETAILED SPECIFICATIONS

INPUT	OPA - 101	OUTPUT
4.0		100 to 125
6.0		130 to 140
15 PEP		190 PEP
INPUT	**OPA - 202**	**OUTPUT**
4.0		150 to 160
6.0		165 to 180
15 PEP		250 PEP

Driving power:	1 thru 7.5 watts RMS in AM 25 watts PEP max. in SSB, 2 thru 10 watts RMS in CW.
Frequency range:	7 thru 30 MHz.
Input impedence:	50 ohms — less than 1.5:1 SWR at 30 MHz.
Output impedence:	50 ohms — less than 2:1 SWR7 thru 30 MHz.
Receive amplifier:	10dB minimum gain at 30 MHz.
Power requirements:	13.6VDC @ 16 amps. max. -- OPA - 101, 13.6VDC @ 20 amps. max -- OPA - 202.
Overall dimensions:	3¼" x 5½" x 7¾".
Weight:	4 lbs.

WARRANTY: Limited one year warranty covering parts and labor exclusive of shipping charges to factory. Warranty is not valid if unit has been tampered with, misused or damaged.

CAUTION: Make sure antenna being used can handle power amplifier, otherwise the antenna will burn out causing the power RF transistors to burn out.

PROBLEMS and their SOLUTIONS

1) Linear will not un-key. Solid state linears will stay keyed (meter light stays on after the microphone button is released) in some installations. To eliminate this: First, press the power button to turn unit off, the meter light will then go off; add 6 inches to 3 feet of coax to the antenna line. The exact length will vary with each installation. This problem usually occurs only in the highest power level.
2) Distortion (poor audio or modulation) in AM operation. Over driving with more than 4 watts is probably the reason. Distortion is at a minimum when there is 4 watts or less to drive the unit in any of the four power levels. If your power input to the linear is more than 4 watts, use the power level that performs well for you. You can safely use as much as 7.5 watts input, but select the power level that works best for you.
3) Meter light is slow to turn off. In SSB operation the relay must have a delay so it doesn't chatter with the voice, therefore, anytime the SSB button is pressed for AM or SSB operation, there will be a slight delay in the relay which controls the meter lamp.