

The Alpha 9500 Amplifier Site - Ask a ham who owns an Alpha... Me!

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Alpha 9500 Software - *single-source, proprietary software*

Trust me, if you ask Alpha (RF Concepts) they will be glad to tell you that you cannot possible understand the software, even if you have worked with software for over 33 years as I have. So, keep your hands out! Box the amp up and send it in!

Fixing it Yourself:

1. **HERE***: A script to download and backup the 512 bytes of code stored in the microprocessor in your 87A! If you ever have a problem you will need the backup. Alpha has 3 times refused to furnish the code, and even canceled 3 orders for a programmed microprocessor!
2. You can then upload your backup code to a new (cheap) identical microprocessor after it is installed on the control board in your 87A ... This is more involved, but you can enter the code manually, one byte at a time to the matching locations! Just check the addresses saved by the script above.
3. Other useful information about your 87A as readers of this website share "secrets" for tweaking

and fixing your own amplifier (You do own it don't you ?) See repair of Fault 7 at end of page.

You can control you new 9600 (or 87A for that matter) from your computer....even remotely! The 9500 software was *beta* **AGAIN** at last check. ***Beta means that we are going to let you use it and tell us what is wrong. In other words, what they're saying is that you spent \$8,000 for the amplifier and we will let you be our beta-test guinea pig - and you will get to pay dearly for the privilege if anything goes wrong - especially after-warranty! OOPS!!!*** Oh, and don't forget that all shipping, very expensive for a big, heavy amplifier is on you...even warranty shipping -- both ways! See the invoice on the Alpha Service/Parts tab for **\$185 return shipping charge!**

If you have checked out the rest of this site, or any page after the first, and still want to trust this company to:

- **continue to exist**, given their "customer service" policies
- **continue to make replacement parts available at any price** - * Note that many of them are already single-sourced, and are vulnerable to discontinuance. ** And then compare their parts prices to any retail vendor.
- **provide reasonable cost service**
- **help you with your equipment problems**
- **deal with you fairly and honestly**
- **live up to their commitments**

then, by all means send in your check or credit card info. You may as well leave your credit card info on-file with them, and raise the limit on the card! You'll need the higher limit someday soon; it's been my experience.

*** Script to download the 512 bytes of code stored in the microprocessor of you Alpha 87A.** *I am not responsible for your use of the script or what you do with the code after you back it up. If you follow the steps outlined then you should have no problems in saving a file with all your processor code backed up. This assumes that you have a serial cable hooked up to your 87A and that you can communicate with it from your computer.*

1. For Windows, download a copy of ZOC Terminal from <http://www.emtec.com> (also available for MAC)
2. Copy and paste the script, beginning with **/* REXX*/** and ending with **EOF**, at the end of this article as a .txt file. Rename your file to **xxx.zrx** Then set up ZOC Terminal to communicate with your 87A.
3. Hit "Enter" once to confirm that you get "SYNTAX ERROR" (communicating). Then type EXT ON [Enter] --- [result] **FACTORY MODE = ON**

4. Now, in ZOC Terminal menu select [Script] & [Start REXX Script] and choose your saved xxx.zrx script
5. In a few minutes the script will complete. Under [View] menu, choose [Scroll Buffer to Editor] and then, in your default editor [Notepad?] save the resulting file with other backups (87A -date- processor backup.txt) Then type EXT OFF [Enter] -- [result]
FACTORY MODE = OFF You are finished with your backup.

```
/* REXX */
```

```
/* Arrays are built by appending a period and an index to a variable name */
```

```
/* Typically the size of the array is stored in index 0 */
```

```
/* Build a list of 64 HEX addresses, beginning at B600 */
```

```
/* list.ind= D2X(z) is correct. Produces HEX list incremented by 8 */
```

```
list.0= 0
```

```
z= 46592
```

```
DO WHILE list.0<64
```

```
  IF z<47104 THEN DO /* IF NOT ... THEN */
```

```
    list.0= list.0+1
```

```
    ind= list.0
```

```
    list.ind= DM D2X(z) "^M"
```

```
    /* DM D2X(z) "^M" works for output to 87A */
```

```
  END
```

```
  z= z+8
```

```
END
```

```
DO i=1 TO list.0
```

```
  CALL ZocDelay 1.5
```

```
  ZocSend list.i
```

```
END
```

```
EXIT
```

```
/* Commands for 87A are EXT ON -- EXT OFF */
```

```
/* Setup is 4800 N81 [VT102, ANSI, TTY,etc.] OFF=[XON, CTS, DSR] */
```

```
/* Read memory contents DM[B600] output=8 bytes; ---- Write ONE byte W[B604][FF] */  
/* Error response from 87A is "SYNTAX ERROR" without quotes */  
EOF
```

Latest Repair Information - July 2014

Fault 7 -- In this case caused by failure of -109 bias voltage not switching to ground on transmit - *fixed by replacing D1 (with heavier RS403L) on Low Voltage Power Supply and replacing Q2 (with IRF 9630) on the Input T/R Board.*

Troubleshooting:

1. Beginning with the Low Voltage Power Supply board, check the -109v, +36v & -36v levels. You should be able to see +36 volts (T_Bias) on pin 17 of J6 (test connector on edge of board). Upon PTT, if you have a quick digital scope, you should see -36v on pin 17.
2. If the amp trips, Fault 7, on PTT then you can ground pin 16 of J6 momentarily, in Stand-by, to "simulate" PTT (/T).
3. If, as was the case here, the -36v is low (about -29 to -30v), then look at D1, the full wave bridge rectifier and the 10,000 uF filter caps C1 & C2. **The full wave bridge rectifier they used is rated at a maximum of 35v RMS input and the 87A schematic shows 51 volts ac fed into it! CAUTION, pin numbers 1 & 4, +/-36v are REVERSED on the 87A schematic!** We replaced the RS401L with an RS403L (93 cents).
4. If the -36v on PTT (/T) is OK, then you will need to remove the bottom cover over the Input T/R board, below the tube deck. The Input T/R board is mounted vertically closest to the left side of the main chassis (as viewed from the front). Q2, the switching transistor is in a large TO-220 package. The output (Drain) that should go to ground on Tx can easily be measured on the Q2 side of R2 (62K ohm resistor). It should read about -96v on Rx and 0v on Tx. If it is not switching then you can verify the Gate (switching) voltage at the cathode end of D2 (0v on Rx and -34v on Tx). This can be done (CAREFULLY!) without removing the board.
5. If you need to replace any components, as we did, then you can remove the board by de-soldering a bare wire from the tube deck, a white wire from the (small) Input Wattmeter board and the (-109v lead) wire with 2 RF beads going to the feedthrough capacitor next to the Input Matching Network Board. That will leave the 2 pieces of coax connected and you can carefully remove the board with both coaxes intact.

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