

## **Instructions for Replacing the firmware EPROM in the RC3050.**

Software and Hardware in the RC3050 is subject to constant improvements and modifications to specific customer requirements. It is often possible to install new operational features in a fielded RC3050 without shipping it back to the factory. Occasionally in these cases, it will be necessary to replace the firmware, stored in an EPROM device on the digital board with a new EPROM containing an updated program.

Often, firmware modifications are keyed to individual serial numbered RC3050 controllers and their specific hardware configuration. Be sure that you are replacing the firmware in the correct controller!

Below are the steps required to safely replace the operating software of an RC3050 controller.

It is expected that this work will be carried out by a qualified electronics technician who is familiar with the RC3050 hardware and RC3050 operating firmware.

The tools that are required for an EPROM replacement are: a #2 Phillips-Head Screwdriver, a 28-pin DIP chip-puller, and a static-free workstation.

- 1) Turn on antenna controller. Enter the Programming Mode Group.
- 2) Enter into each screen of the Programming Mode Group by punching the MODE key. Record the data in the Table Below. The first three voltage screens have the Reference Data displayed on the top line and the current measured value on the bottom line. There are just 4 data items in the RC3050 Configuration.

AZIM VOLT: \_\_\_\_\_

ELEV VOLT: \_\_\_\_\_

POL VOLT: \_\_\_\_\_

ELEV SF: \_\_\_\_\_

It is unlikely that you will need to re-enter this data after the EPROM change. This action is meant as an insurance measure. (see Section 3 of the RC3050 manual)

- 3) Turn off the RC3050 Antenna Controller at the front panel switch.

- 4) Remove the controller from the rack and disconnect all cables, make sure that the cables are properly marked for re-attachment.
- 5) Move the controller to a static-free workstation.
- 6) Remove the 11 lid screws (8 on top and 3 on back panel) with a #2 phillips screwdriver. Remove the lid by sliding back about 1 cm and then lifting off.
- 7) Locate the system EPROM, U1 on the Digital Board. See the accompanying diagram, 3Kdig1bpcb.pdf. U1 lies in the lower right corner of the picture near the board name (3KDIG1B) and the copyright statement. This lies on the right-hand-side of the chassis near the front panel when the board is installed in the RC3000 chassis.
- 8) Remove the original EPROM using an approved DIP chip pulling tool.
- 9) Install the new EPROM. Note the position of pin 1 is near the reference designator "U1" on the silkscreen. Normally, the device will have a "scallop" in the body on the pin 1 end. Verify that all pins are in their respective sockets. A common fault is for a pin to fold under the DIP device while it is being inserted.
- 10) Install a line cord into the AC power inlet of the RC3050 while it is still on the test bench. Verify that the RC3050 Startup banner is displayed upon power up. This indicates that the software is working. Power the unit down and remove the line cord.
- 11) Re-install the lid. Reverse of Step 6, above.
- 12) Re-install the RC3050 controller into the vehicle. reverse of Step 3 and 4 above.
- 13) Verify the integrity of the Configuration items logged in Step 2. above. If any items are incorrect or corrupted, re-enter the data. See the Installation section of the Manual for steps.
- 14) Contact the technical support line with any questions.