

**Addendum to Assembly and Operations Manual
Z10000 Broadband Buffer Amplifier
Elecrafft K2 & Universal Versions
Manual Version 2.1, October 2006**

30 March 2008

This addendum documents changes made during the second run of the Z10000 Broadband Buffer Amplifier.

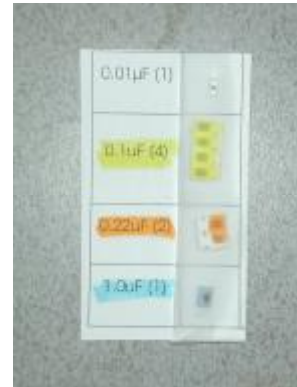
1. The kit contents are packaged differently. The kit options and parts packaging are:
 - a. Base Kit:
 - i. Printed circuit board, AD8007 and 78L09
 - ii. All resistors to build the Universal version (one package)
 - iii. Capacitors necessary to build the Universal version
 - b. K2 Frequency Shaped Option:
 - i. Capacitors and inductors needed to provide a shaped frequency response, rolling off on both sides of 4900 KHz.
 - ii. 8-pin female header socket, 3 pin female header socket and 3 pin male header to be used when installing the Z10000 in a K2. Note: The Internal Installation Option is also required when installing the Z10000 in an Elecrafft K2 transceiver.
 - c. Internal Installation Option:
 - i. Hardware to mount the PCB, standoff, screw and nut
 - ii. Assembled SMA bulkhead female connector with RG-178 Teflon coaxial cable pigtail
 - iii. Wire and heat shrink tubing.
 - d. SMA-BNC Jumper Cable Option. Approximately 3 ft long, RG174 with male SMA on one end and male BNC connector on the other end. Intended to go between the SMA female bulkhead connector and the equipment to which the Z10000 is to be connected.

The "IF OUTPUT" decal is not included in the second kit run, nor is a printed manual. The manual should be downloaded from www.cliftonlaboratories.com.

2. All resistors are supplied in a single bag, not in staged envelopes. Since the resistors are identified with their resistance value, there should be little trouble matching them against the parts list.



3. Capacitors are supplied color coded and taped to an index card. Surface mount capacitors of the type supplied do not have component values or other identifying marks. A similar packaging system is used for the inductors and capacitors in the K2 shaped response option. If you mix up the capacitors, you will have to determine their value using test equipment, so please work carefully!



4. The AD8007 is rated at 12 V maximum operating voltage and Z10000 runs it at 9V via a 78L09 regulator. It is possible to somewhat improve the Z10000's intermodulation intercept by operating it at 12V, such as substituting a 78L12 regulator and increasing the supply voltage to 15-16V. (No other parts changes are required.) However, this runs the AD8007 at its maximum permitted rating and will void Clifton Laboratories warranty.
5. Although the Z10000 has a relatively high input impedance, the shunting effect of connecting it with coaxial cable must be considered when selecting a mounting location and tap-off point in the receiver. The RG-178 coaxial cable supplied has a capacitance of approximately 2.4 pF/inch (0.93 pF/cm). At 10 MHz, therefore, one inch of coaxial cable represents a shunt impedance of 6.6K Ω . This may or may represent a significant shunting impedance to your receiver. In the Elecraft K2, for example, the recommended IF tap point is low impedance and several inches of RG178 between the tap point and the Z10000's input have not proven to be a problem.
6. The silk screen error identifying R907 as R807 has been corrected in the second PCB run.

7. The input, output and power pads are spaced 0.1" so that they may be used with standard 0.1" spaced header connectors if so desired. Header connectors are not supplied with the Z10000 kit, however, and should be obtained locally.
8. If you wish to mount the Z10000 in an enclosure, I recommend a Hammond 1590A die-cast enclosure. The PCB may be mounted using a standoff on the enclosure bottom, or on the lid, depending on how you wish to route the connectors. As a matter of good design practice, the +12V should be supplied through a feed-through bypass cap and an RFC of 100 μ H or so. The Z10000's PCB is a close fit in the 1590A enclosure, so apply the old carpenter's rule of "measure twice, cut once."