

# KXAT1 REV 1.2 FIRMWARE UPGRADE

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## New Feature Summary

Revision 1.2 of the KXAT1 firmware includes one new feature: manual signal peaking in receive mode. There are 32 manual L-C settings, which appear as **G00 - G31** in the **ATU** menu entry. The **G** is a reminder that manual signal peaking can be used even in the **General-coverage (SWL)** portions of the KX1's tuning range, where transmit is disabled.

## Installing the New Firmware

- Turn the KX1 off.
- Place the KX1 upside-down on a soft cloth or mat, preferably an anti-static mat.
- Touch a grounded metal surface (repeat this often during new firmware installation; this will prevent electrostatic discharge that could damage the KX1). Or, put on an anti-static wrist strap, grounded through a 1-megohm resistor. **Failure to observe this precaution could result in a damaged DDS IC or other components.**
- Remove the KX1 bottom cover.
- Unplug the KXAT1 module from the KX1 PC board.
- Remove the KXAT1's old microcontroller (MCU), U1.
- Remove the new MCU from its anti-static bag or tube.
- Carefully straighten the pins on the new MCU (review Figure 5 in the KX1 manual).
- Install the new MCU at U1, orienting the notched end with the pin 1 end of the component outline.
- Re-install the KXAT1 module.
- Re-install the bottom cover.
- Turn the KX1 on, and locate the **ATU** menu entry.
- Hold **EDIT** to access the ATU's parameter. If you see "--" as the parameter, you probably have the KXAT1 MCU installed incorrectly, possibly backward or with a pin bent.
- Connect an antenna and headphones and test manual signal peaking (see details below).

## Using Manual Signal Peaking

To use manual peaking, **EDIT** the **ATU** menu parameter and slowly go through the **G00 - G31** settings to see which setting provides the strongest signal. Then exit the menu.

The selected **Gxx** value will persist even if power is turned off. These settings are not stored on a per-band basis. If you return the ATU to **TUN** mode, the original network settings from the last auto-tune on each band will be restored.

**NOTE: Do not use manual signal peaking as a way to tune up the antenna for transmitting.** The KXAT1's normal auto-tune function provides 128 network combinations, and will find a better SWR.