# Programming the Remote Control Receiver on the PGA2311 Preamp

The new preamp for the relay boxes allows using any remote control you might have laying around. Instead of programming the remote, the preamp allows you to accept any remote control signal and map the key codes from the remote to the preamp functions. This is somewhat “backwards” in that we are used to seeing programmable remotes rather than programmable devices. But this approach has the benefit of making sure all of the preamp functions are available and that they map to a set of keys that make more sense to the user.

Here is the background you need to keep in mind:

1. The pushbutton knob on the preamp has 3 functions. Press it once and it will go to the next field. Press it and hold it longer than 1 second and it will go to the previous field. Press it and hold longer than 10 seconds and it will bring up the remote control programming menu.
2. The preamp normally has 4 fields on 3 screens: volume, input, speaker, and speaker offset. The remote control programming screen has two more fields: the preamp function and the associated remote control key value
3. The preamp right now has 10 functions. The older preamps like yours and Ken’s have 12 functions, and eventually the extra two functions will be added to the new preamp.
   1. Left – cycles through the fields
   2. Right – cycles through the fields in reverse order
   3. Up – increases the value of the data in the current field
   4. Down – decreases the value
   5. 0 – turns off all speakers
   6. 1 – selects speaker #1
   7. 2 – selects speaker #2
   8. 3 – selects speaker #3
   9. 4 – selects speaker #4
   10. Mute – sets the volume to -90db
   11. Toggle (new function not available on the new preamp yet): switches between speaker 1 and 2
   12. Power (new function): Mutes the volume, turns off the speakers, and turns off the LCD backlight
4. The NEC remote control has a “repeat” function. That is, if you keep a key depressed on an NEC remote, it will send out the same key over and over. So sometimes it will look like there is “keybounce” if you aren’t careful about pressing the keys. Make sure you get a good feel for pressing each long enough but not so long that the remote starts sending out repeat codes.

With that background the following steps might make more sense:

1. Select the remote control programming screen by pressing the rotary encoder pushbutton for more than 10 seconds. When you release the pushbutton, the screen should be the IR remote programming screen.
2. Select the function that you are trying to program, using the rotary encoder.
3. Push the rotary encode pushbutton once to go to the next field, which is the keycode field
4. When you are in the keycode field (4 hex digits), turn the rotary encoder one click to the right. This will “arm” the remote control receiver.
5. Press the button on the remote control that you want to use with that preamp function. For example, press the “channel up” button for the “Left” function, or press the “1” button for the “1” function
6. You might have to turn the knob one more time and press the key again to see the new key code, and you can do that as many times as you like. Eventually you will see the new key code on the display
7. The next step saves some time: Press the rotary encoder pushbutton for more than 1 second but less than 10 seconds. This will move the cursor (that little arrow) back to the function field. Then you can select the next function. If you don’t use the “previous field” feature of the rotary encoder, you will have to hold the button down again for more than 10 seconds to get back to the IR remote programming screen
8. Repeat the previous steps until all 10 functions have been programmed. When you are done, just use the rotary encoder pushbutton to get back to the three main screens (volume, input, and speaker selection). All of the remote buttons should now work properly.

OK, I know this is a bit difficult, but I’ve programmed a number of remotes in just a couple of minutes, so mostly it’s getting the hang of the process. You really can’t mess it up completely, because you are using the actual values coming from your remote control, and saving those values.