

## *Blue* Stereo Remote Module

The *Blue* Stereo Remote Module reads IR codes sent from a universal remote (set to code 0380).

The user interface is designed for universal remotes with the up/down/left/right controls arranged in a circle. That way volume is up/down, and balance is left/right. It's an intuitive interface. The center button toggles locking the channels together, in case you don't want to set left/right channels separately. If they're already panned to one side or the other, then both channels are set to the average value, the "middle" level. When channels are locked, only up/down work. Toggle it to set that mode on or off.

The "power" button selects power on/off. Buttons one through five select the corresponding input channel. Pressing "input" or "select" will also select channels in a round-robin fashion, incrementing the channel each time it's pushed. The "mute" button sets volume to zero first time it's pressed, then back to normal volume the next time.

When the processor is powered up, the remote is monitored and digipots can be modified. But input selectors can't until "power" is pressed. This turns on the power pin (5V, 40mA max), which can be used to drive a relay and LED. Once power is on, the channel selection can be made as well. It is initially set to channel one, and the corresponding pin is set (again, 5V, 40mA). If another channel is selected, the channel one pin turns off, and the other selected channel pin turns on. When power is tuned off, all channel pins go off.

The digipot and channel selections are volatile, meaning the settings are lost if processor power is removed. However, it is assumed that power to the processor chip will always be applied (so it can listen to the remote for commands). Power to the preamp circuits can be switched by the power relay, but power to the processor should always be present.

When power is first applied to the processor, it sets the digipots to zero (lowest volume) and sets channel to one. However, until "power" is pressed, the channel select pins are off. Once power is pressed, the channel one pin turns on and channel selection can be changed, as described above.

Relays should not be connected directly to the processor, but instead powered using a 2N2222 or similar transistor. An LED can also be safely connected, but current should probably be limited to about 20mA. The maximum rating is 40mA per output pin. A schematic for a suggested drive circuit is attached.

Input pins are provided to sense front-panel buttons. That way the device can be controlled without the remote control. There are pins for power, up, down, left, right and (channel) select. These are all selected by connection to ground. There's an internal pullup resistor, so no other components are necessary - just an SPST pushbutton to ground.

## *Red* Six-Channel Remote Module

The *Red* Six-Channel Remote Module reads IR codes sent from a universal remote (set to code 0380).

The user interface is designed for universal remotes with the up/down/left/right controls arranged in a circle. That way front/back balance is up/down, and left/right balance is left/right. It's an intuitive interface. Overall volume is set with the volume buttons and channel up/down are another front/back fader control. The center button toggles locking the channels together, in case you don't want to set left/right channels separately. If they're already panned to one side or the other, then both left/right channels are set to the average value, the "middle" level. When channels are locked, only up/down work. Toggle it to set that mode on or off.

The "power" button selects power on/off. Buttons one through five select the corresponding input channel. Pressing "input" or "select" will also select channels in a round-robin fashion, incrementing the channel each time it's pushed. The "mute" button sets volume to zero first time it's pressed, then back to normal volume the next time.

When the processor is powered up, the remote is monitored and digipots can be modified. But input selectors can't until "power" is pressed. This turns on the power pin (5V, 40mA max), which can be used to drive a relay and LED. Once power is on, the channel selection can be made as well. It is initially set to channel one, and the corresponding pin is set (again, 5V, 40mA). If another channel is selected, the channel one pin turns off, and the other selected channel pin turns on. When power is tuned off, all channel pins go off.

The digipot and channel selections are volatile, meaning the settings are lost if processor power is removed. However, it is assumed that power to the processor chip will always be applied (so it can listen to the remote for commands). Power to the preamp circuits can be switched by the power relay, but power to the processor should always be present.

When power is first applied to the processor, it sets the digipots to zero (lowest volume) and sets channel to one. However, until "power" is pressed, the channel select pins are off. Once power is pressed, the channel one pin turns on and channel selection can be changed, as described above.

Relays should not be connected directly to the processor, but instead powered using a 2N2222 or similar transistor. An LED can also be safely connected, but current should probably be limited to about 20mA. The maximum rating is 40mA per output pin. A schematic for a suggested drive circuit is attached.

Input pins are provided to sense front-panel buttons. That way the device can be controlled without the remote control. There are pins for power, up, down, left, right and (channel) select. These are all selected by connection to ground. There's an internal pullup resistor, so no other components are necessary - just an SPST pushbutton to ground.

