Application Guide

ZON Infrared (IR) Guidelines

1. Visible IR flashers are not recommended for use with the ZON system. Use only bugs with real IR LED emitters. IR emitters that have visible feedback often contain only a red LED which functions as both the flasher and IR emitter. Products such as this tend to be very finicky with respect to their placement and can cause inconsistent performance if not positioned just right. The output level of these emitters is typically very low, in respect to those that contain actual IR LEDs. Also, the use of IR emitters that have visible feedback can work great with one type and/or brand of equipment or remote - but not at all with another.

2. For best power output, use an emitter with a single IR LED on the cable, as opposed to multiple emitters. It is possible to obtain acceptable results with some "dual bug" emitters, however if you are having trouble, and use dual bug emitters, you should check this first.

3. Make sure that the IR signal is actually reaching the emitter. Look at the status LED on the ZIM-4 input module. The status indicator will flash red when an IR signal is being transmitted. If the ZIM-4 indicator flashes red and you do not have a response from the equipment, try changing the emitter to be sure that there is not a break in the cable or a defective emitter.

4. Carefully position IR emitters on the equipment to be controlled. Place the LED portion of the bug directly over the IR receiver on the equipment. This can be tricky since the designers of many consumer electronics products go to great lengths to hide IR receivers on their equipment. Sometimes, it is helpful to use a flashlight held close to the front panel to find the actual receiver chip hidden beneath a smoked glass panel before mounting the bug. Another method is to "scan" around the front panel with the original equipment remote held closely to the panel while pressing the power button. When you see a reaction from the equipment, you are getting close. Forms are available at www.remotecontrols.com that can help with IR emitter placement.

5. Be aware that it is possible for IR emitter's signal to "bleed" over to another piece of equipment, thus producing odd results. If this is a problem, use black electrician's tape over and around the emitter to mask off the interference from another bug or from an in-room remote control.

6. IR in the ZON system is "routed", so one must select an input on the ZAC-60 to control the source equipment connected to that input. This feature makes it permissible to use two identical pieces of equipment in a ZON system (i.e., two Sony model XYZ CD changers). If you plan to do this, place identical hardware on all even or all odd numbered inputs. ZIM-4 input modules connect to the ZON router in pairs, thus inputs 1 and 2 would share the same cable and the same IR line to the router. The IR output on the ZON router is a "summed" output that includes IR signals from all ZAC-60s connected to that router. This is helpful when you need to send IR that is not input specific to another device via the ZAC-60's IR receiver.

7. The ZON ZIR-232 Device Commander module can control a wide variety of devices and contains an extensive library of IR commands. It can also control most devices that use the RS-232 serial protocol. This protocol is usually available from the device manufacturer. The ZIR-232 allows the creation of simple on-screen icons that are displayed on a ZAC-60 display. These icons represent commands that directly control source equipment.

8. Pass-through IR signals in the ZON system are routed in their base-band digital form and then re-modulated at a fixed carrier frequency inside the ZR-98 router. The router's default carrier frequency is 38 kHz since most consumer electronics devices use this frequency. However, some manufacturers have chosen to use IR receivers centered at different frequencies. Most commonly, these are 47 kHz, 50 kHz and 57 kHz. Cable TV boxes and satellite receivers often use one of these frequencies rather than the more common 38 kHz. ZON router firmware beyond Rev 1.55 includes the ability to set the default IR carrier to any frequency in use with your system. Lower frequency IR devices will often work with a higher carrier setting but the reverse is seldom true. With a proper bug as described in item one, the ZON system can usually be configured to work with a variety of IR carrier frequencies.

9. Make sure, when pointing an IR remote control at a ZAC-60, that no more than one ZAC-60 controller can "see" the IR signal. When two or more controllers placed in close proximity to one another both will pick up the IR signal and these signals can "step on" one another when passing through the system. This situation is unlikely unless the ZAC-60s are in the same room. One way to think of this problem is like two people taking at the same time.