Zoner™ System Instructions

Hot Link XL™ Zoner™ combines outputs from 6 Hot Link™ XL Remote Control Booster Systems into shared and individually zoned emitter outputs. For each zone, see Hot Link™ XL Zoner™ Use Instructions.

System:
The Zoner system has 6 RJ45 ports for the entry of cables from Hot Link XL units from other locations. It has one port for shared emitters which can be added to using emitter expansion kits that have 6 emitters each up to 24 total. Another port is for individually zoned emitters. The emitters that plug into this port are numbered to correspond to the separate zone inputs from the Hot Link XL units. Additional Zoned Emitter kit can increase zoned emitters to 2 emitters for each zone. If additional emitters for a zone are needed, use a standard Emitter Expansion Kit and an RG45 "Y" to add at an XL input port. The Zoner could be placed in a utility closet, with cables from each Hot Link XL and the two Cat5 cables to drive the emitters up to equipment. All XL units are powered from the Zoner and do not need additional power supplies.

Zones:
A zone is driven by one Hot Link XL. For seperate equipment that serves each zone, use individual emitters. For equipment shared by all zones use shared emitters. Additional Eyes can be added to each XL unit to cover additional rooms for a zone. Additional RG6 cable from additional Eyes to one Hot Link XL system can reduce Eye sensitivity. Keep added lengths below 30 additional feet total when possible.

Wiring:
Cat5 and Cat6 cable with RJ45-8 pin connectors. Hot Link XL and the Shared Emitters use only the four center conductors of an RJ45. The Individually Zoned Emitter Output requires all 8 conductors. Prevent large coils of unused cable by shortening cable where needed. Keep Zoner Cat5 cables at least 6 inches from parallel runs with AC wires or HDMI signals that run on Cat5. Inducted RF noise from these sources will prevent the system from working properly. Cross wires at a fortyfive degree angle when possible.
Limit runs to 200 feet or less. Cat3 or phone wire with RJ11 connectors will work even though these cables are reversed. The two center conductors can be driven either way and the next outer pair are power for which each Hot Link XL unit has a full wave bridge rectifier to maintain correct polarity.
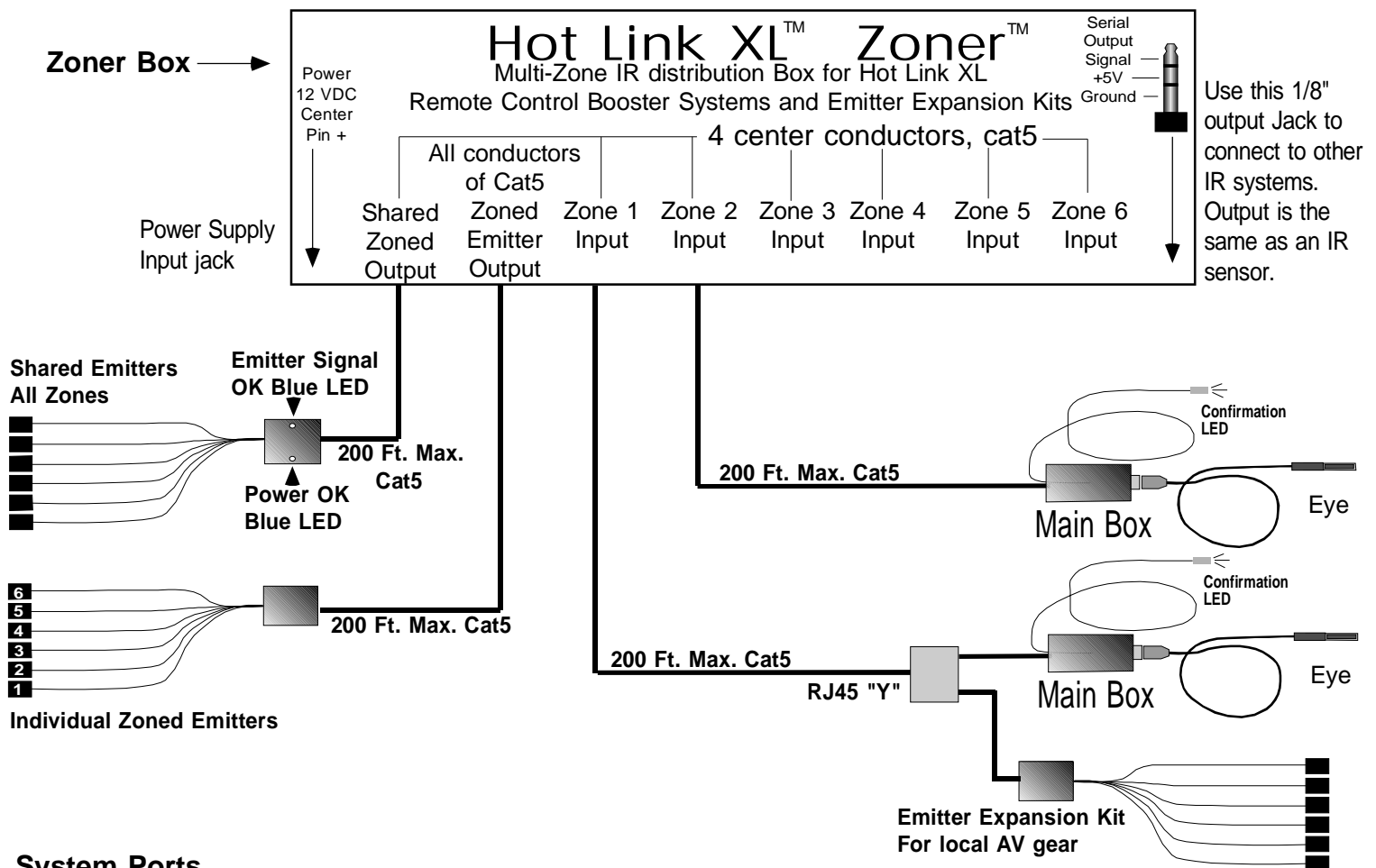
Hot Link XL:
Hot Link XL is a broadband Infrared, IR, remote control repeater with a Super Sensitive Receiver Eye that is designed to be hidden behind a TV, cabinet, speaker grill or other discrete location. Because it is four times as sensitive as a standard IR sensor, it does not need direct line of sight. The main box and Eye is connected to the Zoner input which provides power to the Hot Link XL and distributes the signal from the Hot Link XL to the Emitter outputs. Follow the Hot Link XL instruction manual for each zone.

Indicators and Safety Features:
The Zoner system has 8 internal fuses, one main fuse of 500ma and seven 100ma fuses, one for the power status LED on the shared emitter bundle box and one for each zone-located Hot Link XL. Green LEDs on the 6 input and shared emitter outputs indicate all 8 fuses and there associated ports are powered. The individual emitter port does not use either the green or the yellow LED. The yellow LEDs on the six input ports indicate signal received. The yellow LED on the shared emitter ouput port indicate signal ouput. One blue LED on the shared emitter box indicates power, the other indicates signal. Viewing the shared emitter box from the RJ45 connector end, the power LED is on the left, the signal received LED is on the right.

System configurations:
This system does not use ethernet in any way and should not be connected to any other system. Hot Link XL boxes cannot be Y-ed together before entering the zoner. Emitter expansion kits can be added at any point along the Cat5 cable to control AV gear in other locations.

Zoner Box →

Hot Link XL™ Zoner™
Multi-Zone IR distribution Box for Hot Link XL
Remote Control Booster Systems and Emitter Expansion Kits

Power
12 VDC
Center
Pin +

Serial
Output
Signal
+5V
Ground

4 center conductors, cat5

All conductors
of Cat5

Power Supply
Input jack

Shared
Zoned
Output

Zoned
Emitter
Output

Zone 1
Input

Zone 2
Input

Zone 3
Input

Zone 4
Input

Zone 5
Input

Zone 6
Input

Use this 1/8"
output Jack to
connect to other
IR systems.
Output is the
same as an IR
sensor.

**Shared Emitters
All Zones**

**Emitter Signal
OK Blue LED**

**Confirmation
LED**

**200 Ft. Max.
Cat5**

**Power OK
Blue LED**

200 Ft. Max. Cat5

Main Box

Eye

6
5
4
3
2
1

200 Ft. Max. Cat5

Individual Zoned Emitters

200 Ft. Max. Cat5

**Confirmation
LED**

RJ45 "Y"

Main Box

Eye

**Emitter Expansion Kit
For local AV gear**

System Ports
**Zone Inputs can have additional Emitter Expansion Kits at either end of the Cat5 cable to accommodate local AV gear.
Shared output can have additional Emitter Expansion Kits. Individual zone emitter port can only accept Zoned
Emitter Expansion Kits. If a single zone needs more emitters, attach a standard Emitter Expansion Kit to zone input
port. Emitter Expansion Kits come with RJ45. "Y" adapters and a short Cat5 cable.
The Serial output port is the equivalent of an IR sensor to plug into the Eye port of other branded whole house
systems.**

Emitters
**Locate the IR eye of your equipment, using a flashlight to look *through* the faceplate (front) to find the eye, which
may look like a small circle, see examples. Or check the equipment owners' manual for the location of the remote
control window. When best position is located, apply IR Emitter to front with sticky side on equipment. The Shared
Emitter Box has a blue power OK LED and a blue signal OK LED so that system operation can be confirmed from
equipment location if the Zoner box is located in a different place.**

Power Supply
**Hook up the Plug-in Power Supply by simply plugging in the connector at the end of the cord into the power input
connector on the left side of the front panel, then plug Power Supply into suitable 110-120 Volt standard wall outlet.
Fuses are replaced by removing the two screws on the bottom of the Zoner Box and removing just the top cover.**

Accessories
► **Additional Receiver Eye for connecting to other rooms, supplied with "Y" RCA adapter**
► **Coax Extender Cable, 25 feet. (Reduces remote-to-eye distance to about 35 feet.)**
► **Emitter Expansion Kit to add 6 more Individual emitters**
► **Emitter Expansion Kit to add 6 more Shared emitters**
► **Replacement adhesive tape, free for the asking**

► **For indoor use only.**
► **Liability of product limited to cost of product replacement.**
► **Non-specified use is the responsibility of the user.**
► **DO NOT OPEN Power Supply or Hot Link XL Box: No user serviceable parts inside.**
► **Do not expose Hot Link products to water, moisture or rain.**
► **Connect only to 110-120 VAC.**
► **Refer servicing to qualified personnel. Read all instructions before use, retain for future reference.**

Microsmith
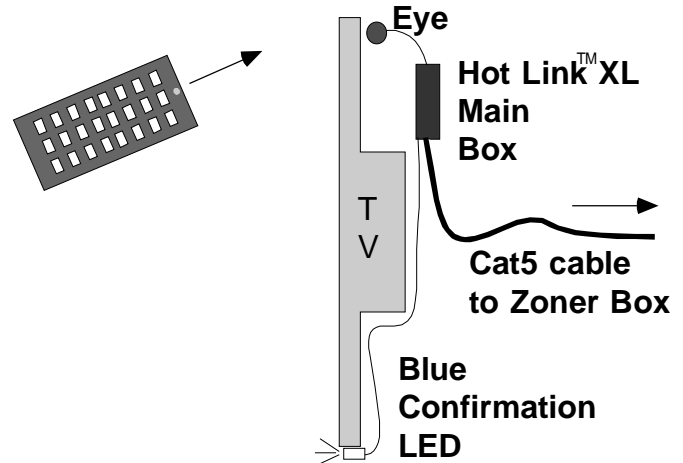**WWW.HOT-LINK.COM   INC.**

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HOT LINK™ XL
Zoner™ Use Instructions

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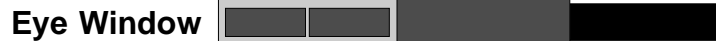**This guide is for setup of individual Hot Link XL Eye and Main Box components for use with Zoner system.**

Quick Setup Guide

1. Mount Receiver Eye horizontally on back of TV, 1 inch down from the top, centered from left to right. Plug Eye Cable into Main Box.
2. Mount confirmation LED using adhesive tab.
3. Mount the Repeater Box with Velcro tabs.
4. Plug in Cat5 with RJ45 connector from Zoner™ System Box
5. Plug power supply into Zoner™ and 120VAC standard outlet.
6. Rotate Eye toward wall to mitigate IR noise indicated by the confirmation LED when not using the remote.

Eye

Hot Link™ XL Main Box

Cat5 cable to Zoner Box

TV

Blue Confirmation LED

Detailed Guide

Eye Window

Receiver Eye

Because the Receiver Eye is so sensitive, it can be located in a slot behind a cabinet door on the front or mounted on an exposed part of the cabinet top, an exposed shelf, behind a speaker grill, behind a cabinet "looking" out into the room or mounted in the toe-kick facing the floor. For Plasma and LCD TVs mounting the Eye on the back side, center of the set top or bottom is recommended. It can often work at the back of the room where equipment may be installed. Eye Window should not be facing direct sunlight, high powered flood lamps, or High-efficiency screw-in type fluorescent lamps. These items may emit too much Pulsed IR or too much ambient light. If used in conjunction with other IR repeaters, verify they are not emitting spurious IR. Mount Eye at least one foot from CRT televisions, if possible. The Hot Link Pro is excellent at blocking LF RF from TV sets but can sometimes receive interference from larger sets. The Receiver eye may need to be shielded from direct view of Plasma Discharge and LCD TVs that emit pulsed IR. The Best location for the Eye on LCD or Plasma TVs is the center top or bottom on the back side of the set. Rotate the Eye in the velcro™ until Blue LED turns off. Noise activity is indicated when the Blue LED glows with no remote control activity. Find source of noise and eliminate or move Receiver Eye away from noise until LED is off. Addition of non-qualified RCA extension cables may introduce noise. 25 foot Extension cables are available. If a different length is desired, use RG6 or RG59 Coax Cable. These typically come with "F" connectors already mounted on the ends. Use F to RCA adapters to complete the cable. Use only all metal adapters.

Blue Confirmation LED

Mount the Blue LED in a very discrete slot using the adhesive tab. When functioning properly, the LED is off when not receiving a remote command, blinks when activated by a remote control, or blinks once upon unplugging the Receiving Eye's RCA connector at the Hot Link XL Main Box. The LED lights inadvertently if detecting spurious IR or LF RF entering the Receiver Eye. See Receiver Eye details for tips on eliminating noise.

Hot Link™ XL Main Box

Mount the Main Box on the back of the TV or other convenient location with the velcro™ provided. Apply Cat5 cable to end of Hot Link™ XL main Box and the other end to a zone input on Zoner™ Box
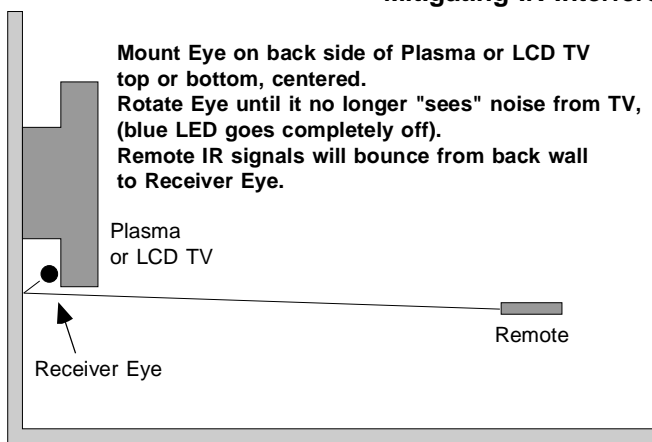
System Check

Verify operation by first turning your system on with the remote control. Verify further by testing various remote commands with the equipment hidden. Next try aiming remote control at furniture, walls, floor and ceiling, etc. to find infrared light reflecting objects to bounce commands to the Hot Link XL Remote Control Booster and your home theater system. On Zoner™ Box, check yellow LED on zone input and shared emitter output as well as the blue LED On the shared Emitter Box.

Operating Tips

The Hot Link™ XL automatically extends its range as ambient light decreases, and hence has more sensitivity the darker the surrounding light. It may perform slightly differently in the day than at night. Hot Link™ XL receives remote commands even if your equipment is behind you or overhead, like projection televisions. High-efficiency screw-in type fluorescent lights and some radio-type IR repeaters can interfere with Hot Link™ XL. Some receivers use high frequency remote controls above 60Khz that are not repeatable through Hot Link™ XL. Remember to keep your remote batteries fresh.
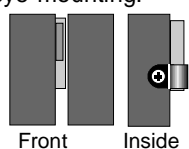
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Mitigating IR Interference from Plasma and LCD TVs

Mount Eye on back side of Plasma or LCD TV top or bottom, centered.
Rotate Eye until it no longer "sees" noise from TV, (blue LED goes completely off).
Remote IR signals will bounce from back wall to Receiver Eye.
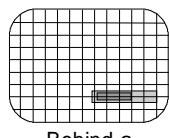
Plasma or LCD TV

Remote

Receiver Eye

This method is using brightness difference between the Infrared "spurious" light of the plasma or LCD TV and the brightness of the light from the remote controls. The IR light that comes from the TV bounces off of the room and furniture back towards the TV. Placing the Hot Link Receiving Eye on the back of the TV set, shadows the eye from these spurious emissions. The IR light from the remotes is brighter than the spurious light from the TV set. If noise persists, make certain that the Eye is not looking toward computer LCD screens, compact high-efficiency fluorescent lamps or other IR repeaters that might be producing spurious IR emissions. This method may not work with Sharp Aquos 37 inch NTSC LCD TVs. For 61 inch plasma TVs use additional Eye with Y kit.
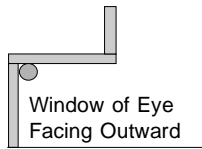
Eye Mount Suggestions

The Eye of Hot Link Pro is so sensitive it can be mounted almost anywhere. It does not have to be direct line of sight. It has built in intelligence and becomes more sensitive to pulses from the remote when it is in a darker ambient environment. So if mounted behind an LCD TV to keep it from "seeing" the spurious signals from the TV, it will actually increase it's sensitivity looking for the remote control commands. It can be mounted behind a door slot, speaker grill, TV, or Screen or cabinet facing sideways or up. It can also be mounted under a toe-kick, sub-woofer or shelf. A bezel is available for outdoor eye mounting.

Front   Inside
Mounted to Back Side of Door
Looking Through Door Slot

Behind a
Speaker Grill

Window of Eye
Facing Outward
Eye Under Toe-Kick

Emitter Location Solutions

Some equipment receiving eye locations are difficult to find. Sometimes what may seem like an IR receiver is actually an LED or IR output device. Sometimes a white or black plastic insert that may be round or square, may be the IR receiver. Sometimes it is located within a button, like the enter button on some satellite boxes.

A few known location issues include:
Motorola/Comcast Cable boxes: The Eye is actually on the left side of the dark face plate oval. Not where the "IR" symbol on the right is, which merely marks the confirmation LED.
Sony STR Series Receivers: The Eye can be on either side of the readout as they switch receiver and emitter locations between the locations on different models. Try both sides.
Harmon Kardon AVR series receivers: The Receiver Eye is to the left of the five buttons at the bottom of the black window.

Hot Link XL Zoner System Layout

MBR   Eye with Y Kit
Eye
Eye
XL
MBR Bath
Emitter Expansion Kit
MBR Closet

BDRM 2   Eye   XL

BDRM 3   Eye   XL

Kitchen
Eye
XL
Emitter Expansion Kit
Kitchen Cabinet

Family Room   Eye   XL

Zoner Box

Shared Emitters

DISH
JAZZ
DVD
WIDESCREEN
OVERDRIVE!
SURROUND 5.1
VHS

Home Theater Cabinet

Home Theater Room   XL   Eye

Zoned Emitters
Equipment Closet

1	CH 07
2	CH 08
3	CH 11
4	CH 23
5	CH 14
6	CH 34