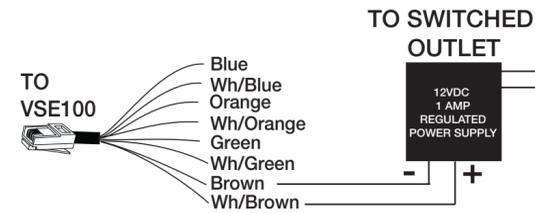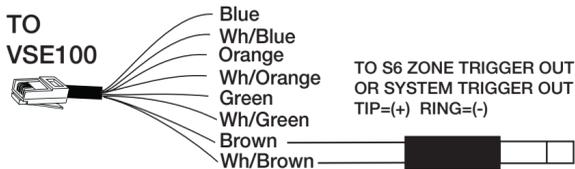## SENSE CONNECTIONS

If the SENSE feature is being used, the VSE100 will Mute when voltage is absent but does not Un-Mute when voltage is present. The VSE100 will turn on in a Muted state. This allows the system or zone to be turned on without the VSE100(s) playing audio. Stand-alone applications can simply use a power supply plugged into to a switched outlet and connected to the SENSE wire (Br/White) and Ground (Brown). When connecting to an ELAN S6 or HD system, either zone-specific or system-wide sensing is possible. ELAN Z systems will provide system ON/OFF only.
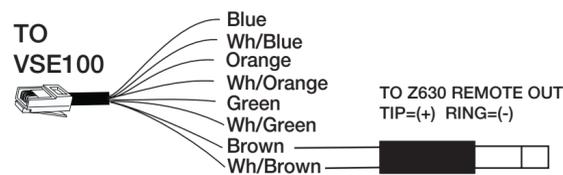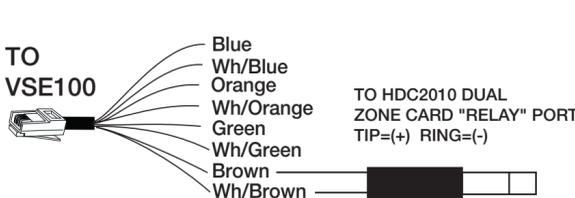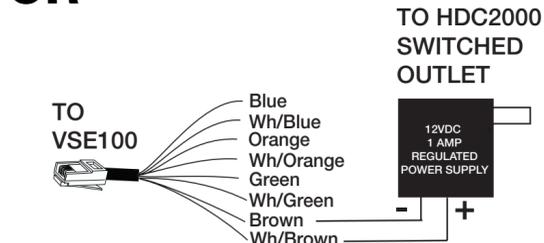
STAND-ALONE

TO VSE100 — Blue / Wh/Blue / Orange / Wh/Orange / Green / Wh/Green / Brown / Wh/Brown

TO SWITCHED OUTLET
12VDC 1 AMP REGULATED POWER SUPPLY − +

ELAN S6

TO VSE100 — Blue / Wh/Blue / Orange / Wh/Orange / Green / Wh/Green / Brown / Wh/Brown

TO S6 ZONE TRIGGER OUT OR SYSTEM TRIGGER OUT TIP=(+) RING=(-)

ELAN Z

TO VSE100 — Blue / Wh/Blue / Orange / Wh/Orange / Green / Wh/Green / Brown / Wh/Brown

TO Z630 REMOTE OUT TIP=(+) RING=(-)

ELAN HD

TO VSE100 — Blue / Wh/Blue / Orange / Wh/Orange / Green / Wh/Green / Brown / Wh/Brown

TO HDC2010 DUAL ZONE CARD "RELAY" PORT TIP=(+) RING=(-)

OR

TO VSE100 — Blue / Wh/Blue / Orange / Wh/Orange / Green / Wh/Green / Brown / Wh/Brown

TO HDC2000 SWITCHED OUTLET
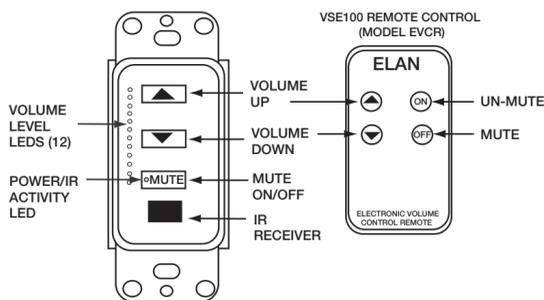12VDC 1 AMP REGULATED POWER SUPPLY − +

NOTE: HDC2010 Jumpers must be set correctly

CONFIGURING OVERRIDE VOLUME LEVEL

1. Use the VOLUME UP/DOWN buttons to find a suitable level for the Page and Doorbell Override signal.
2. Press and hold the MUTE button. While continuing to press the MUTE button, press and hold the VOLUME UP button.
3. When the POWER SENSE LED starts to blink, the OVERRIDE level is set.

VSE100 REMOTE CONTROL (MODEL EVCR)

VOLUME LEVEL LEDS (12)
POWER/IR ACTIVITY LED

VOLUME UP
VOLUME DOWN
MUTE ON/OFF
IR RECEIVER

ELAN
ON — UN-MUTE
OFF — MUTE
ELECTRONIC VOLUME CONTROL REMOTE

OPERATION

1. **NINE WAYS TO TURN THE VSE100 ON** (The VSE100 Volume level LEDs are OFF.)
   a. Press the MUTE button on the VSE100.
   b. Press ON on the supplied remote.
   c. Issue any ELAN Source Select IR command.

NOTE: When the VSE100 is turned ON using any of the above methods, the Volume level is restored to the last setting before the VSE100 was turned OFF.

   d. Press the VOLUME UP button on the VSE100.
   e. Press VOLUME UP on the supplied remote.
   f. Issue any ELAN VOLUME UP IR command.

NOTE: When the VSE100 is turned ON using any of the above methods, the Volume level is restored to the last setting before the VSE100 was OFF but no higher than the OVERRIDE Volume level setting.

   g. Press the VOLUME DOWN button on the VSE100
   h. Press VOLUME DOWN on the supplied remote.
   i. Issue any ELAN VOLUME DOWN command.

NOTE: When the VSE100 is turned ON using any of the above methods, the Volume level is set to the lowest audible level.

2. **THREE WAYS TO TURN THE VSE100 OFF** (The VSE100 Volume level LEDs are ON.)
   a. Press the MUTE button on the VSE100.
   b. Press OFF button on the supplied remote.
   c. Issue any ELAN SYSTEM OFF command.

3. **THREE WAYS TO CONTROL VOLUME USING THE VSE100**
   a. Press VOLUME UP or VOLUME DOWN buttons on the VSE100.
   b. Press VOLUME UP or VOLUME DOWN buttons on an ELAN remote control.
   c. Issue any ELAN VOLUME UP or VOLUME DOWN command.

NOTE: The VSE100 will respond to any ELAN VOLUME UP/DOWN commands found in the VIA!®TOOLS IR Library, EVCR remote, and other ELAN remotes (Z030 and EVCR.) The EVCR remote can be used to teach other learning remotes when necessary. Remember, ELAN VOLUME UP/DOWN commands will control the VSE100, but the VSE100 VOLUME UP/DOWN commands will NOT control other ELAN equipment.

MAXIMUM NUMBER OF VSE100s PER ELAN SYSTEM CONTROLLER

S6		Z630		HD	
# OF ZPADS	# VSE100s PER S6	# OF ZPADS	# VSE100s PER Z630	# OF ZPADS	# VSE100s PER Z630
6	12	3	9	1	4
8	9	4	6	2	1
10	6	5	3	3	0
12	3	6	0	4	0

SPECIFICATIONS

Power Rating--Nominal	100 Watts RMS per Channel
Frequency Response	20-20KHz +/- 0.5dB @ 8 Ohms
Total Harmonic Distortion	< 1%
Imedance Settings	Variable 1X/2X/4X
Minimum Speaker Load	4 Ohms
Dynamic Range	49 dB (max to min audible)
Override Current Draw	0.75 mA (Logic only)
Sense Current Draw	25 mA
Maximum Current Draw	40 mA
Operating Voltage	12 Volts DC
Sense Voltage	9-12 Volts DC
Override Voltage	9-12 Volts DC
Colors	White, Ivory, Almond, Black, and Brown

WARRANTY

ELAN HOME SYSTEMS, L.L.C. ("ELAN") warrants the VSE100 Electronic Stereo Volume Control to be free from defects in materials and workmanship for two years (2 years) from the date of purchase. If within the applicable warranty period above purchaser discovers such item was not as warranted above and promptly notifies ELAN in writing, ELAN shall repair or replace the items at the company's option. This warranty shall not apply (a) to equipment not manufactured by ELAN,(b) to equipment found to have been installed by other than an authorized ELAN installer, (C) to installed equipment which is not installed to ELAN's specifications, (d) to equipment found to have been repaired or altered by others than ELAN, (e) to equipment found to have been subject to negligence, accident, or damage by circumstances beyond ELAN's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or any other catastrophic events beyond ELAN's control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by ELAN, the warranty obligations of ELAN shall in all respects conform and be limited to the warranty actually extended to ELAN by its suppliers. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation, or other expenses which may be incurred in connection with repair or replacement. Except as may be provided and authorized in writing by ELAN, ELAN shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by ELAN or services rendered by ELAN.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

WARNING TO OUR VALUED CUSTOMERS

To ensure that consumers obtain quality pre-sale and after sale support and service, ELAN Home Systems™ products are sold exclusively through authorized dealers. ELAN products are not sold online. The warranties on ELAN products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer. To determine if your ELAN re-seller is authorized, please call ELAN Home Systems at (859)269-7760.

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ELAN
HOME SYSTEMS
V SERIES
VSE100 HIGH POWER ELECTRONIC STEREO VOLUME CONTROL W/ OVERRIDE and IR

INTRODUCTION

ELAN's VSE100 is an electronic 12 step stereo Volume Control with Variable Impedance Match settings of 1X, 2X, and 4X designed for use with amplifiers of up to 100 Watts output. The VSE100 features an IR receiver which passes IR data to other sources as well as accepting IR information from remote controls or other IR devices. The VSE100 also features an IR input so that external controllers (Z•Pad® Keypads, VIA!® Color LCD Touchpanels, etc.) can be hard wired to this device without using an IR emitter. Additionally, the VSE100 features ELAN's patented Page/Doorbell Override to work with ELAN communication equipment. Impedance Match adjustments allow multiple pairs of speakers to be connected to the same amplifier channels without damaging the amplifier.

FEATURES

High-Power Capability: Handles up to 100 Watts RMS.

Override: Allows Page/Doorbell signals to override the music at a preset level even with volume turned all the way down or with the VSE100 in Mute.

Impedance Matching: Allows multiple speaker pairs to be connected to a single pair of amplifier channels.

IR In/Out: A built-in IR receiver allows the VSE100 to be controlled from, universal remotes, keypads, VIA! Color LCD Touch Screen, or outboard IR receiver. IR can be sent to the VSE100 using an IR emitter or through the RJ45 jack on the rear of the unit. IR can be sent from the IR output to source equipment, IR distribution networks or whole-house controllers.

SENSE: Detects absence or presence of voltage. When voltage is absent, the VSE100 goes into Mute. The presence of voltage DOES NOT un-mute the VSE100, however. A physical button press is required to un-Mute this device. This allows the system or zone to be turned on without all of the VSE100s in the system playing audio. Each VSE100 will turn on when the Zone or System turns on, but they will all be in Mute. When connecting to ELAN S or HD systems, the SENSE feature can be used for either zone-specific or system-wide detection. ELAN Z systems provide system On/Off detection only.

ROUGH-IN

The VSE100 fits into most 18 cu. in. rough-in boxes and P-rings. P-rings allow the best access and depth and should be used where local building codes allow. DO NOT install the VSE100 in the same electrical box as high-voltage (110VAC) devices such as dimmers, light switches, etc. as these devices will cause harmful interference and create buzzing, humming, or other audio interference. Close proximity to high-voltage devices can also cause undesired IR operation.

Like any IR device, the VSE100's IR receiver is susceptible to interference from ambient light, sunlight, or plasma television radiation. Please do not mount the unit in locations susceptible to these conditions.

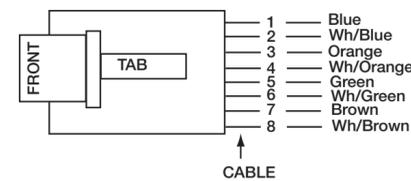*NOTE: The VSE100 is not warranted for outdoor installation.*

WIRING

Speaker wire and CAT5 cable should be run from the main equipment location where the system's amplifier is located to the mounting location for each VSE100. The speaker terminals on this unit will accommodate 14 to 24 AWG stranded copper speaker wire. Runs that exceed 150 feet should use heavier gauge wire, but 16 or 18 AWG is usually sufficient. Check local building codes for specific guidelines regarding in-wall wire runs. CAT5 cable is required when installing this unit to provide Power, Override, Sense, IR In, and IR Out. This unit must be connected to power in order to function.
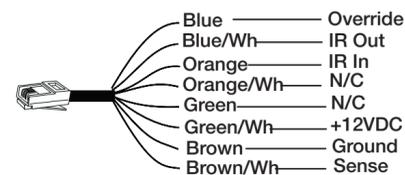
RJ45 CONNECTIONS

1. Use ELAN C45P pre-terminated RJ45 cables or crimp your own using the ELAN standard color code and pin-out.
2. Consult the following diagrams for specific CAT5 wiring requirements for stand-alone or ELAN system operation.
3. Once proper connections are made at the head-end, plug the RJ45 connector into the jack on the rear of the VSE100.
4. Install the unit in the wall using the provided screws. Be careful not to place tension on the CAT5 cable.
5. Test and adjust.

STANDARD ELAN RJ45 PINOUT

FRONT TAB
1 — Blue
2 — Wh/Blue
3 — Orange
4 — Wh/Orange
5 — Green
6 — Wh/Green
7 — Brown
8 — Wh/Brown
CABLE

VSE100 PIN ASSIGNMENT

Blue — Override
Blue/Wh — IR Out
Orange — IR In
Orange/Wh — N/C
Green — N/C
Green/Wh — +12VDC
Brown — Ground
Brown/Wh — Sense

SPEAKER CONNECTIONS

1. Verify that the amplifier is powered down. Do not connect the RJ45 conector of the VSE100 at this point.
2. Strip back 1/4" of the insulation from each conductor of the speaker wire. Twist and verifythat there are no frayed ends.
3. Remove the AMPLIFIER and SPEAKER connectors from the volume control. Connect the L+, L-, R+, R- conductors from the amplifier to the appropriate terminal on the AMPLIFIER connector. Make sure to maintain proper +/- polarity!
4. Connect the wires from the speakers to the appropriate terminals on the SPEAKER connetor, again ensuring proper +/- polarity.
5. Replace the AMPLIFIER and SPEAKER connectors.

TO SPEAKERS
CAT-5
FROM AMPLIFIER
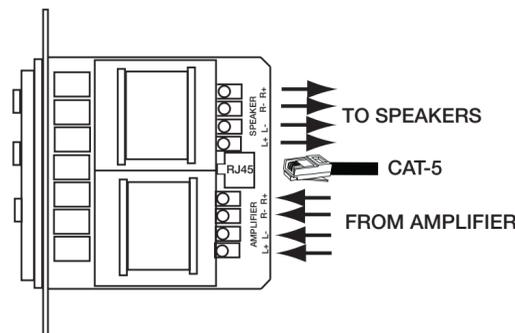
DO NOT REVERSE AMPLIFIER AND SPEAKER CONNECTIONS!!

DESIGN/CONFIGURATION

STAND-ALONE CONFIGURATION

The VSE100 can be used in stand-alone configuations without using an ELAN whole-house controller. Each stand-alone scenario will be slightly different, but all will connect the same way as the following diagram explains.

VSE100 STAND-ALONE APPLICATION
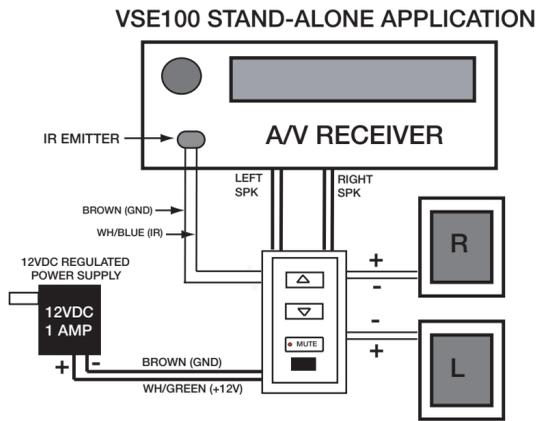
The basic connections for stand-alone systems are as follows:

1. **Amplifier Input:** Speaker wires from the amplifier (L+/-, R+/-)
2. **Speaker Output:** Speaker wires to speakers (L+/-, R+/-)
3. **Power:** +12 Volts DC & Ground (RJ45 +12VDC=Gr/Wh,GND=Br)
4. **IR:** IR Output and Ground (RJ45 IR=Wh/BI, GND=Br)

STAND-ALONE PINOUT

ELAN SYSTEM CONFIGURATIONS

The VSE100 is ideally suited for many ELAN whole-house audio distribution applications. Features such as Volume Control Override, Impedance Matching, SENSE, and the built-in IR receiver allow this unit to seamlessly integrate into the most basic or complex ELAN systems that the installer can imagine. Following are diagrams showing typical applications using the VSE100 in ELAN S, Z, and HD system designs.

NOTE: Zones vs. Sub-Zones
A "Zone" is defined as an area of a whole-house audio system that has separate source control/selection capabilities.
A "Sub-Zone" is a room or area that shares source selection/control with another area, but typically has separate ability to control volume for the sub-zone.
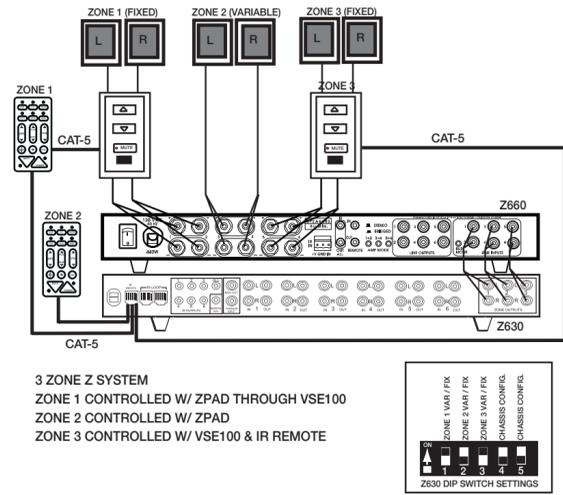
ELAN S6 SYSTEM DIAGRAM
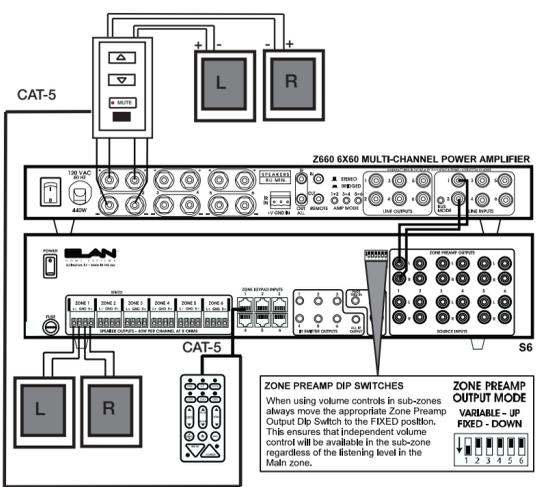
ELAN S6 SYSTEM CONNECTIONS W/ Z600 AND VSE100
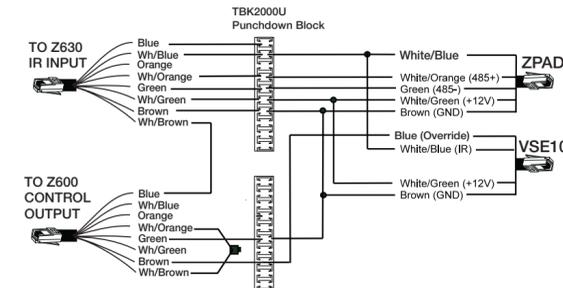**Using Internal Power of Z600 for Override**
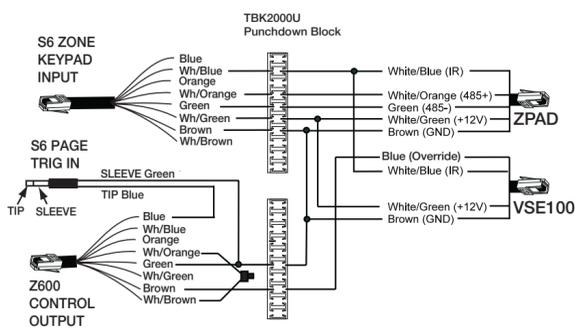
ELAN S6 SYSTEM CONNECTIONS W/ Z600 AND VSE100
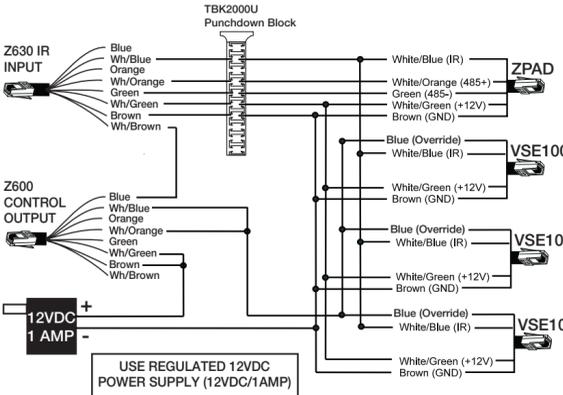**Using an External Power Supply for Override**
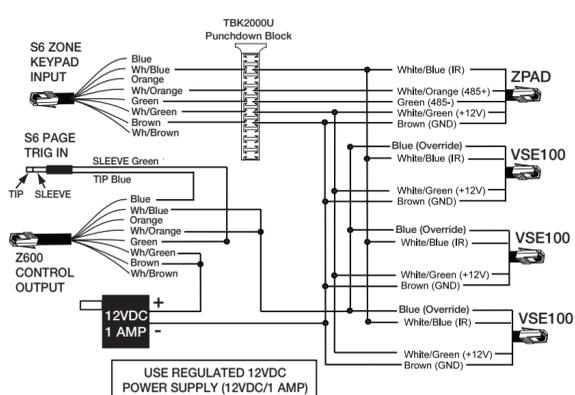
ELAN Z SYSTEM DIAGRAM

3 ZONE Z SYSTEM
ZONE 1 CONTROLLED W/ ZPAD THROUGH VSE100
ZONE 2 CONTROLLED W/ ZPAD
ZONE 3 CONTROLLED W/ VSE100 & IR REMOTE

ELAN Z SYSTEM CONNECTIONS W/ Z600 AND VSE100
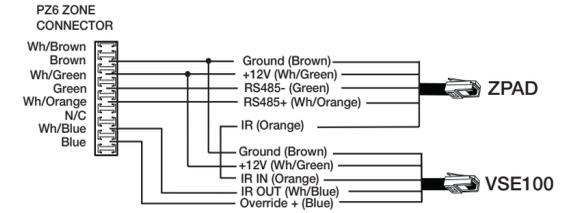**Using Internal Power of Z600 for Override**

ELAN Z SYSTEM CONNECTIONS W/ Z600 AND VSE100
Using an External Power Supply for Override
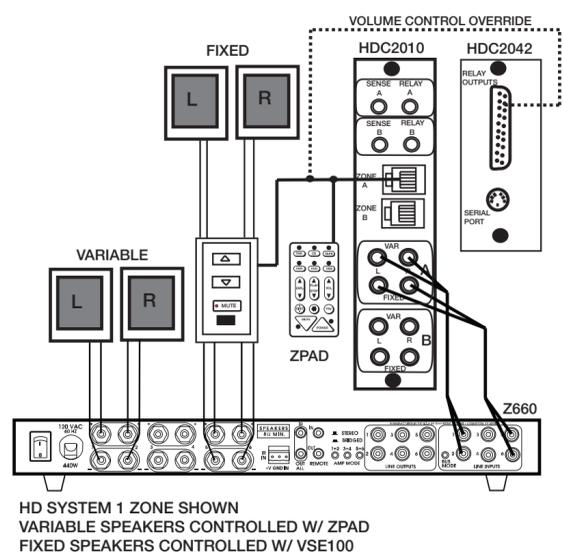

ELAN Z SYSTEM CONNECTIONS
Using a PZ6 Precision Panel (VSE100 Located in Zone)
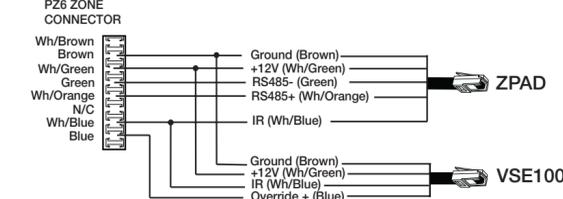
ELAN Z SYSTEM CONNECTIONS
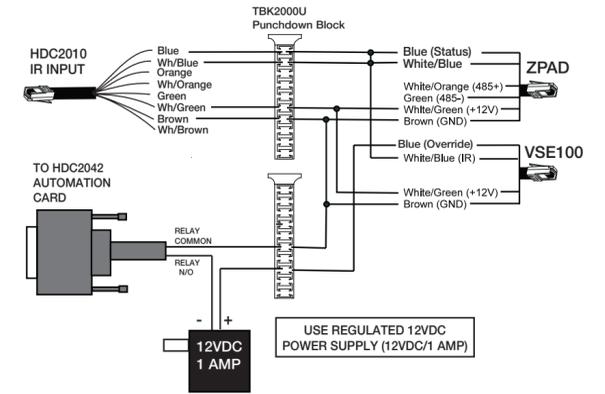**Using a PZ6 Precision Panel (VSE100 Located at Head-End Controlled w/ ZPAD)**
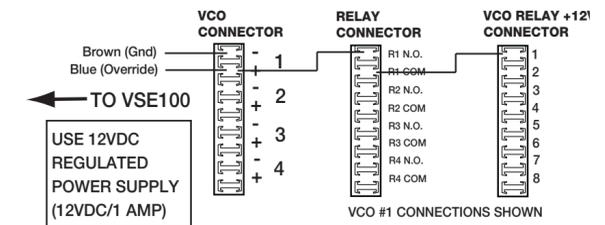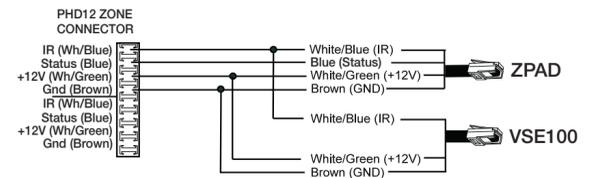

ELAN HD SYSTEM DIAGRAM

HD SYSTEM 1 ZONE SHOWN
VARIABLE SPEAKERS CONTROLLED W/ ZPAD
FIXED SPEAKERS CONTROLLED W/ VSE100

### ELAN HD SYSTEM CONNECTIONS W/ VSE100

ELAN HD SYSTEM CONNECTIONS W/ VSE100
**Using A PHD12 Precision Panel**

IR INPUT

The VSE100 has an IR Output (utilizing the built-in IR receiver) and an IR Input (to control the VSE100 from another device.) When designing systems with sub-zones, this IR Input will allow individual sub-zone control (including Volume) from a keypad without having to use a separate Volume Control mounted in the wall.

IR INPUT DIAGRAM

1 ZONE SHOWN
ZPADS CONTROL SUB-ZONE VOLUME THROUGH VSE100s
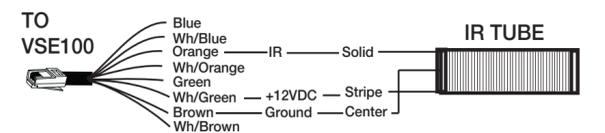EACH SUB-ZONE HAS SEPARATE CONTROL
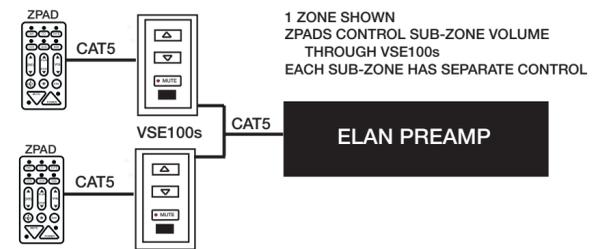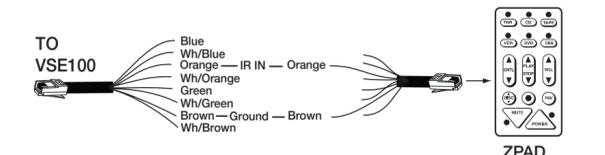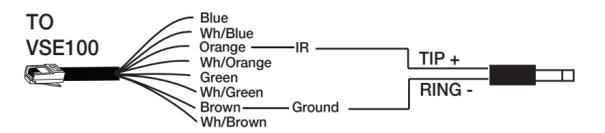
CONNECTIONS
w/ZPAD

- Connect IR Output (Orange) from ZPAD to IR Input (Orange) of VSE100.
- Connect Ground (Brown) from ZPAD to Ground (Brown) of VSE100.

w/IR TUBE

- Connect IR Input (Orange) of VSE100 to Solid (non-center) wire of IR Tube.
- Connect 12VDC (Wh/Green) of VSE100 to Striped wire of IR Tube.
- Connect Ground (Brown) to center wire of IR Tube.

w/ MINI-PLUG

- Connect IR Input (Orange) of VSE100 to IR Output of device sending IR (ELAN pre-amp, for example.)
- Connect Ground (Brown) of VSE100 to Ground of device sending IR.