ZTS0025 "AVBox"

Overview.

The ZTS0025 AVBox is part of the **S:Range** (Simple, Smart, Stand Alone) family of products.

It is a simple to use 4 input stereo audio and video switcher with audio gain control, faders and EQ as well as a stereo, 17 watts RMS per channel amplifier.

It can be used completely stand-alone, receiving its instructions directly from a Joey via its inbuilt IR receiver, in conjunction with control processors or directly connected to any control panel in the CommBox range.

Like all products in the S:Range, it can also be addressed so as to allow up to 16 S:Range units to be used in the same system.

The unit operates from a 12 volt AC lighting transformer. It can also supply power via the IRBus to operate, for example, a wall mount Joey touchscreen.

The Class D digital amplifiers are very efficient and draw virtually zero power when not handling audio. This feature allows the AV Box to comply with Green Power requirements without the need for an On-Off switch.
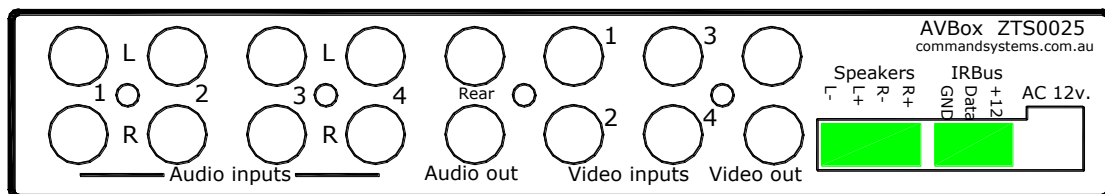

FIG.1. Rear panel view

The AVBox is very versatile.

- An AVBox can be used standalone, directly controlled by a Joey or other control panels.

- An AVBox may be used to add audio-video capabilities to a CommBox Micro or to add one or more independent output zones to the internal AV switcher in a Classic range processor. In this case you can take advantage of the fact that the IRBus input on the AVBox may be directly driven from any serial port on any CommBox processor.

- Several AVBox units can be linked together to form a multi-room AV system. Up to 15 can be driven from a single IRBus serial line, either from a control panel or from a processor serial port.

Other than setting the box address, no programming is required. See the section "Programming a Joey to control an AVBox".

![comm BOX Control — Simplifying technology]

Example 1 - a typical "standalone" installation.
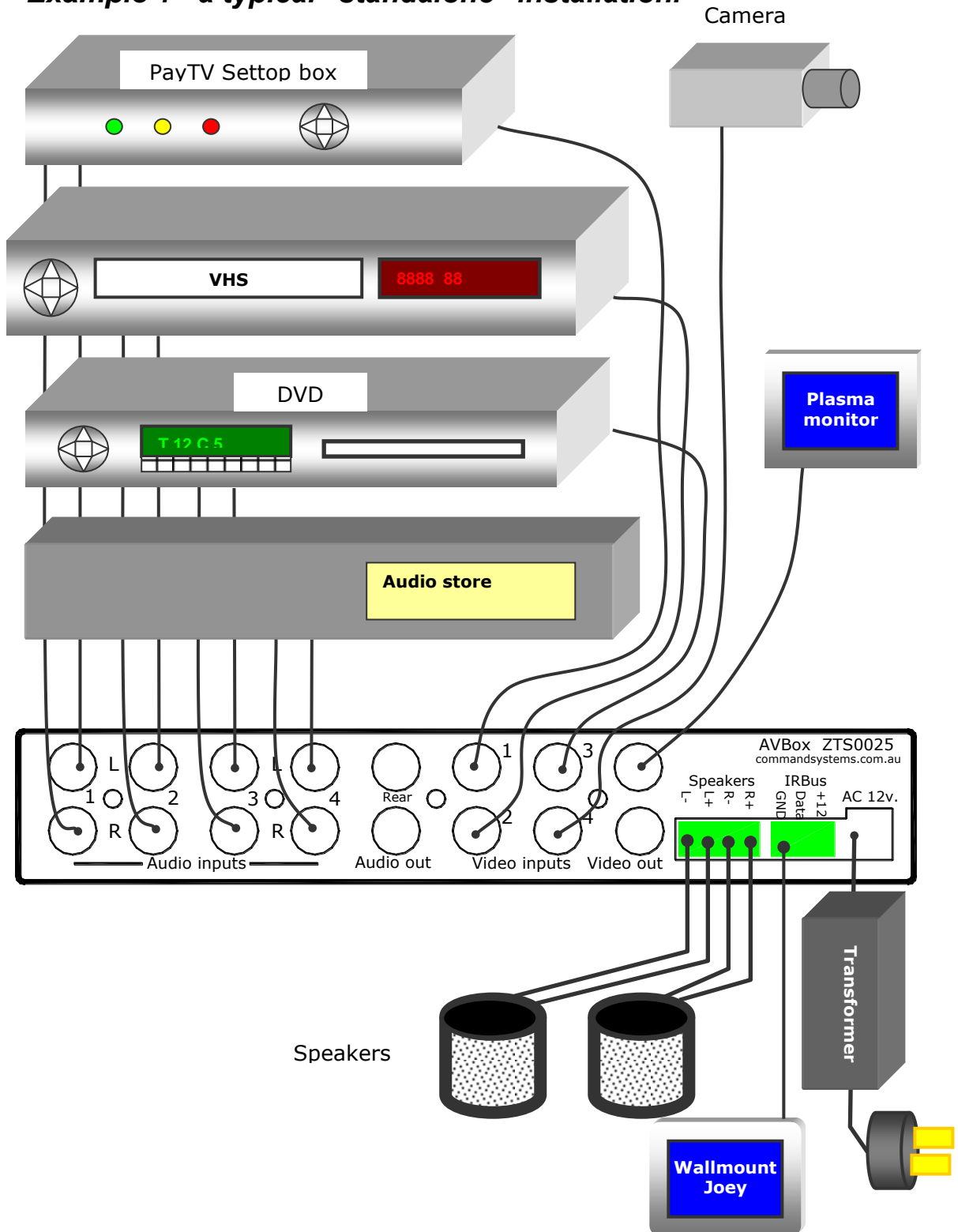
Example 2 - controlling one or more AVBox from a CommBox Micro *or other processor*

By setting two or more AVBoxes to different addresses it's possible to control them individually. This is useful for multi-room systems that are centrally controlled.

The IRBus input is compatible with signals from control panels and infra-red outputs from serial ports.

ComBox Micro
Serial ports

GND o
Data o
+12 o

AVBox ZTS0025
commandsystems.com.au

L 1 2 3 L 4   Rear   1 3 2 4
R   R

Speakers
L- L+ R- R+   IRBus
GND   SIG   +12   AC 12v.

Audio inputs   Audio out   Video inputs   Video out

AVBox ZTS0025
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L 1 2 3 L 4   Rear   1 3 2 4
R   R

Speakers
L- L+ R- R+   IRBus
GND   SIG   +12   AC 12v.

Audio inputs   Audio out   Video inputs   Video out

Control

comm BOX

Simplifying technology

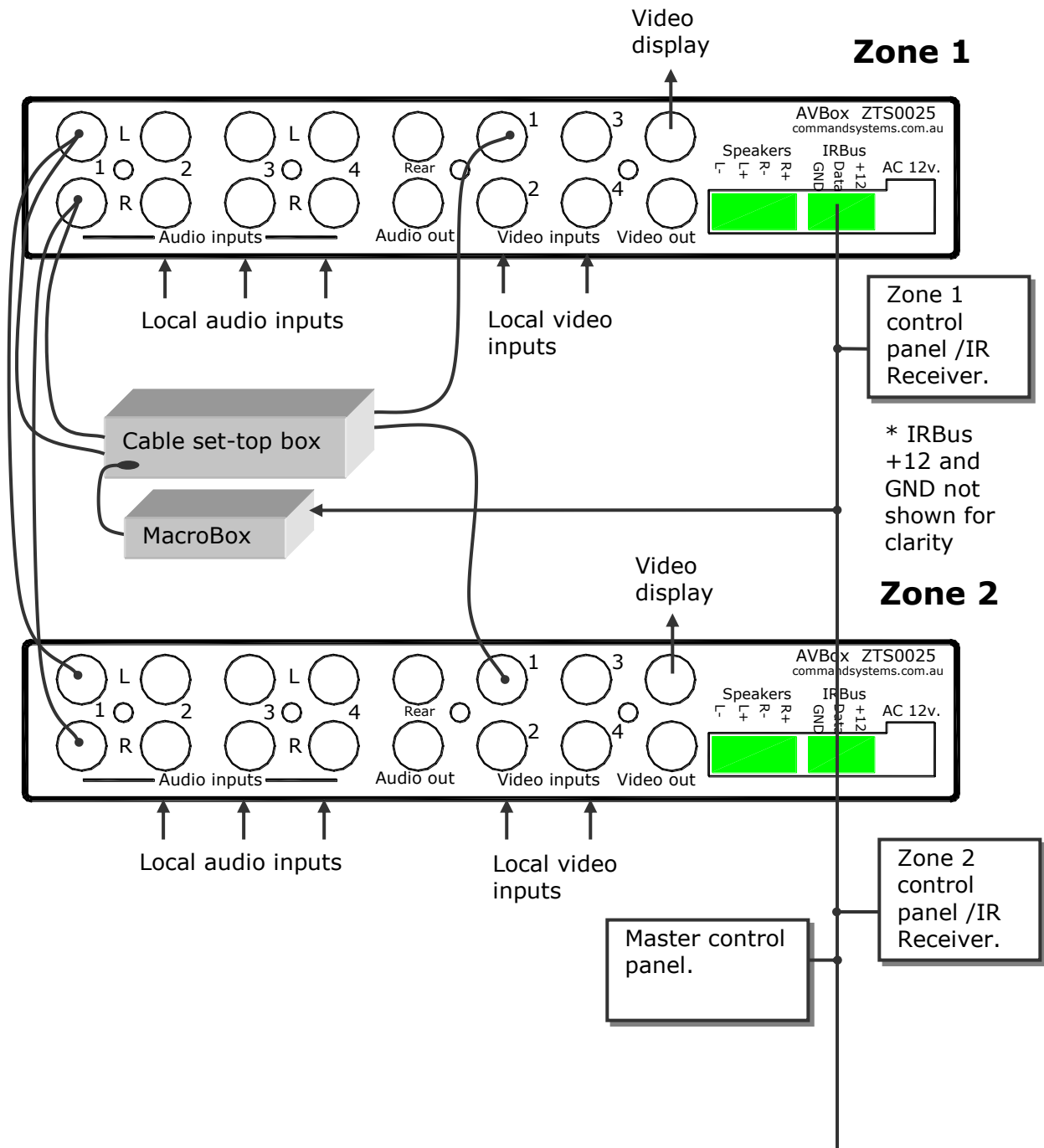***Example 3 – A multi-zone system using direct control from multiple control panels without a processor, with common and local inputs.***

Video display

Zone 1

AVBox ZTS0025
commandsystems.com.au

L 1 2 3 L 4 Rear 1 3

R Audio inputs Audio out 2 Video inputs 4 Video out

Speakers
L- L+ R- R+

IRBus
GND Data +12

AC 12v.

Local audio inputs

Local video inputs

Zone 1 control panel /IR Receiver.

Cable set-top box

* IRBus +12 and GND not shown for clarity

MacroBox

Video display

Zone 2

AVBox ZTS0025
commandsystems.com.au

L 1 2 3 L 4 Rear 1 3

R Audio inputs Audio out 2 Video inputs 4 Video out

Speakers
L- L+ R- R+

IRBus
GND Data +12

AC 12v.

Local audio inputs

Local video inputs

Zone 2 control panel /IR Receiver.

Master control panel.

comm BOX **Control**
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Example 4 – Using with a projector with an HDMI input and a Joey Micro or Lite control panel.

Stereo pairs

Speaker connections not shown

AVBox ZTS0025
commandsystems.com.au

L 1 2 3 L 4 Rear 1 3 Speakers IRBus AC 12v.
R R 2 4 L- L+ R- R+ GND Data +12
Audio inputs | Audio out | Video inputs | Video out

12v transformer

No plugpack is required for Joey – power comes from the AVBox.

DC In GND IRBus Data 12V IR Output 2 IR Output 1 Progm Port
SK9 SK4 SK3 SK2

PIR Port
Pin 4 - Sense
Pin 5 - GND
Pin 6 - +12V

RS232 Port
Pin 4 - TxD
Pin 5 - GND
Pin 6 - CTS

SK7 SK6 SK5 SK1
PIR RS232 Port 2 RS232 Port 1

Command Systems P/L PCB0241C Joey Panel

Projector audio out

Video in

RS232

Optional PIR room movement sensor

Optional IR control of DVD player

HDMI in

VGA in

Wallplate

HDMI
VGA
VGA Audio
DVD Video
DVD Audio

PC LCD ON OFF
LAPTOP PLAY UP
DVD STOP DOWN

HDMI must go through the projector, but the AVBox can accept the projector's audio output. We strongly recommended that you program the Joey so that the projector's volume control is set to maximum when the HDMI input is selected.
When programming the Joey, as well as adding the volume controls, you'll need to have the HDMI key send AV Box code "Select Input 1".
The PC input key should send AV box "Select Input 2".
The DVD key should send AV Box "Select Input 3".
See page 9 for more information.

Control
Simplifying technology

Operation.

As with all S:Range products, the AVBox is controlled by CommBox IR codes, which may be generated by CommBox processors, CommBox touch panels or 3rd party controllers.

Each module has its address assigned by DIP-switches.

A module will only respond to a command with a matching address – e.g. module "12" only responds to commands addressed to module "12". In larger systems multiple modules with the same address may be used.

> **You don't need to be concerned with addresses** if you are using a single AVBox. Just set its address to zero (4 dipswitches off) and forget about addresses.

CommBox key codes from 0 to 15 are interpreted as address codes.
CommBox key codes from 16 to 31 are interpreted as command codes.

Command format: **ADDRESS, OPERATION**

Table 1. CommBox address and operation key codes

Key code	Address	Key code	Operation
0	Address 0	16	Select input 1
1	Address 1	17	Select input 2
2	Address 2	18	Select input 3
3	Address 3	19	Select input 4
4	Address 4	20	Bass Up
5	Address 5	21	Bass Down
6	Address 6	22	Treble Up
7	Address 7	23	Treble Down
8	Address 8	24	Mute
9	Address 9	25	Volume Up
10	Address 10	26	Fade Front
11	Address 11	27	Volume Down
12	Address 12	28	Fade Rear
13	Address 13	29	Balance Left
14	Address 14	30	Balance Right
15	Address 15	31	(Not used)

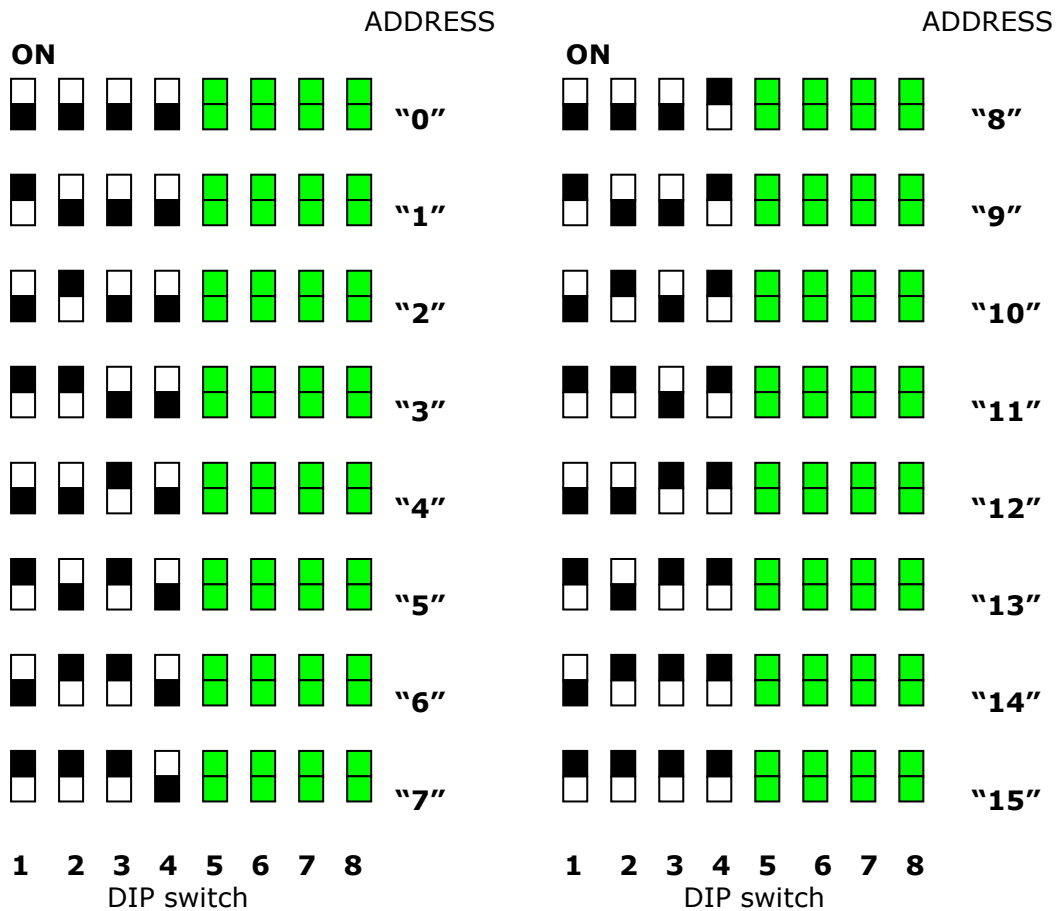**Example**: For an AVBox address set to address 5, to select input 4, send codes **5, 19.**

* If using the Joey editor, you don't need to refer to this table as it is available as a dropdown selection in the Code Sequencer.

Setting the Address DIP - switches

ADDRESS

ON

"0"
"1"
"2"
"3"
"4"
"5"
"6"
"7"

1 2 3 4 5 6 7 8
DIP switch

ADDRESS

ON

"8"
"9"
"10"
"11"
"12"
"13"
"14"
"15"

1   2   3   4   5   6   7   8
DIP switch

 - NOT USED for address

* Dipswitch 8 is used to enable or disable the internal IR receiver.

Programming a Joey to control an AVBox

In this example, we'll program the Volume Up key for an AVBox in a standalone environment. In other words, we only have one AVBox.

We'll assume you have already created the Volume Up key graphically.

1. Set the AVBox address to 0, i.e. all switches off. This way we don't need to send an address code.

2. Open the Joey Editor and the file you wish to work with.

3. Select Edit Behaviour.

4. Double-Click the Volume Up key.

5. Click "Add". The Code Sequencer window will open.

6. In the Codeset drop-down, choose AVBox. (If this choice is not available, see "Upgrading your Joey Editor" below.)

7. Choose Volume Up from the Codes list. Click OK.
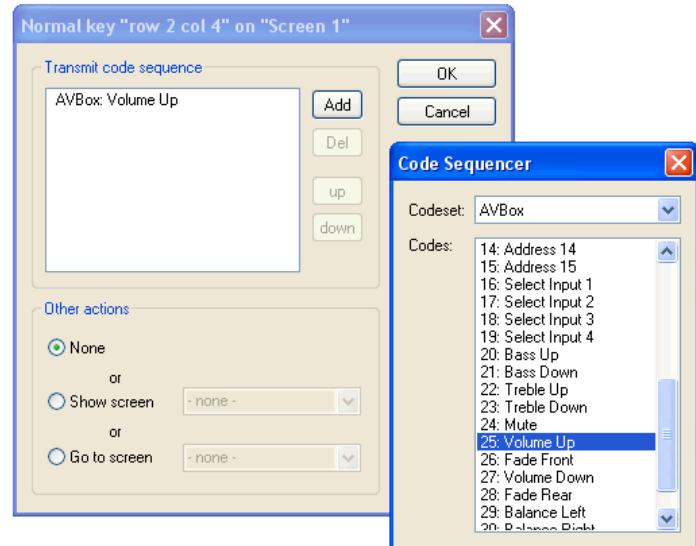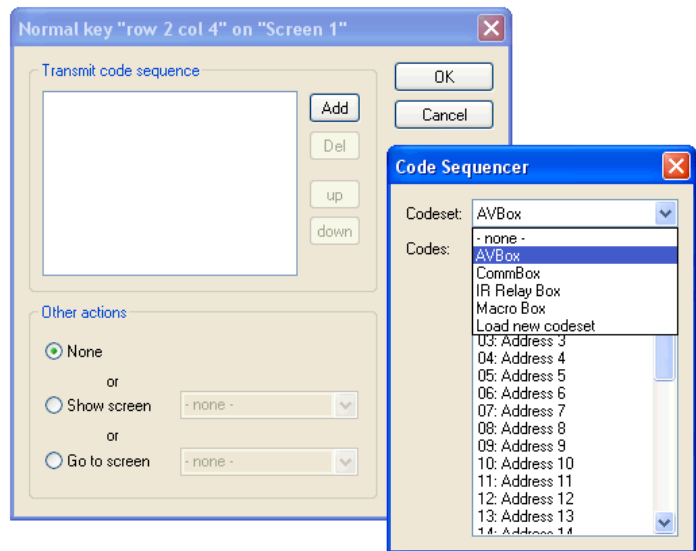
Repeat items 4, 5 and 7 for all the keys that you wish to use to control the AVBox.

Upgrading your Joey editor

If the AVBox choice fails to appear in the Code Sequencer, you can either use the CommBox code and refer to Table 1 for the code relationships or add it by adding a file "AVBox.ini" in the "ROMcode" folder in your Joey directory. This file is available for download at www.commandsystems.com.au.

Programming a system to control multiple AVBoxes

(or multiple s:range products)

All s:range products share a common code protocol. They rely on a code from 0 to 15 being sent to them to match the address set on a dipswitch and so enable the remaining codes to operate the device.

If you have just one box, you can set it to address 0 and forget about addressing and the following section. However if you are using two or more s:range boxes you will need to know about how to handle addressing.

Case 1 – *you have a separate menu/screen for the controls for each box.*

1. On the key that opens each menu, send the address code for the box that's associated with that menu. This will enable the box for commands.

2. Within the menu, just send the required command, without the preceding address code.

3. If you want to disable "accidental" control of all items within a menu, send a "0" from the Back or Close key. This will disable the control of all boxes, except of course any box that's set to address 0.

This method is preferred because it provides faster, smoother response, particularly when you are performing volume adjustments.

Case 2 – *you are controlling more than one box from the same menu.*

1. For each key in the menu, send the address code followed by the command code, as in the example shown here.

2. If you are sending a command such as a volume control, insert a **– begin loop –** after the address code. This will cause the address code to be sent when the key is first pressed, followed by the Volume Up. In this way you get smoother, more responsive volume control operation.