Blue Point Engineering

Instruction I

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Pointing the Way to Solutions!

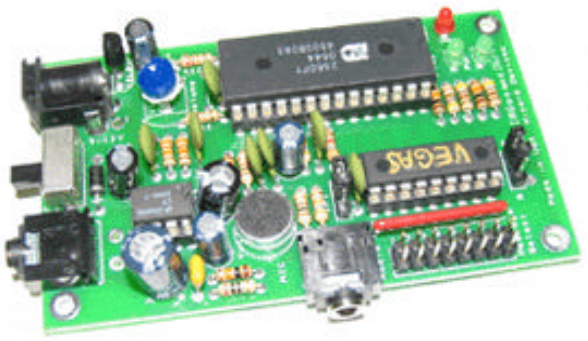
Sound Board - 60 VEGAS

VEGAS ENHANCED Controller

Ver 1.0

Introduction

The digital **Sound Board - 60 Vegas** allows the recording and **play-back** of 1 - 8 different channels of audio or 1 full length channel of audio in manual switch, relay selection mode or 1 - 8 channels in random or sequence mode from a single switch, relay or input signal. The board is intended for use in displays, exhibitions, props, costumes, model FX, animatronics or easily incorporation into projects that would benefit from audio playback.



The digital Sound Board - 60 Vegas incorporates an on-board microphone for recording audio, or audio input jack and a 250mW audio amplifier with speaker jack on board for play-back monitoring.

Connections

Connect a 4 or 8 ohm speaker to the audio speaker jack. (Minimum impedance **4 ohms**. Maximum audio power is approximately 250 mWatts into an **8 ohm** speaker).

Eight (8) pairs of duo pins may be connected to a number of remote switches. The switches should be momentary type that "Close Contact" when pressed. The switch pins towards the edge of the board is connected to electrical ground. (GND, Com) (See drawings for more details)
(Hint: Use a duo 8 pin header and wire connector for easy connection of switches, sensors, etc.)

The Sound Board requires a 6-12V DC supply to work satisfactorily. In standby mode (example; not recording or replaying a message) current consumption of the sound board is approximately 900 mA. Connect a 6-12 Vdc 1-Amp power supply to the power jack.

(Caution: observe power connection points (+/-), board could be damaged if connected with wrong polarity. Center pin on power jack is positive)

The Controls are arranged as 8 - pairs of duo pins along the board edge bottom and a mode control of 3 - pins along the board right edge

Board Description	Jumper Block Position	
R / P Mode - • Record Mode (R) • Play-Back (P)	RECORD Mode - Left Position	PLAYBACK Mode - Right Position
Pin Pairs 1- 8 (Switch Connections)	Pin 1- 8 When Pin Set is shorted, Channel playback	
Pins 7or 8 (Switch Connections)	Pin 7- 8- When Pin Set is shorted, Random or Sequence Playback Mode	
JP1 / Terminal Block	Jumper Block at Position 1 = On board mic Jumper Block at Position 2 = Line Input Jack	

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Operation

Recording - Multiple Channels (1- 8) for Manual Switch or Relay Control

The operating mode of the on board ISD sound chip is such that **all audio has to be recorded consecutively during the same recording session**. It is not possible to edit one message on its own- **all messages must be re-recorded if one message needs to be changed.**

Place JP1 - Set jumper block to the on-board Mic or Line Input position

Place the **R/P Mode jumper block** in the **R** position to enter record mode. (Jumper Installed - **Left**) Press Switch 1 connected to the switch pin pair set 1 (or place a shorting block between pin pair set 1). Hold down the connected switch or leave shorting block on pin pair-1 while speaking, or playing audio into the microphone. If you are using the Audio Input line jack and audio cable, then start the audio source your are sending sound from (Computer, CD player, iPod, ect).

The **Red** LED will turn ON and the board will continue to record while switch 1 is pressed, or the shorting block is on pin pair -1. At the end of the first audio recording, release the switch or remove the shorting block on pin pair -1.

To record the second message, press and hold switch 1 again or place a shorting block between pin pair set -1 again and speak into the microphone, or start the audio sound source. At the end of the second audio recording, release the switch or remove the shorting block on pin pair -1.

Continue adding audio as above until **8** messages have been recorded or the length of the messages exceeds the total recording time. (60 seconds total)

To end the entire recording session, remove the **R/P** Mode jumper from **R** side to the **P** terminal side.

If recording normal speech, it should be possible to obtain a good recording by speaking at a normal volume level about 30 - 50cm from the microphone. Take care to avoid mechanical switch noise from switches 1-8, this could be recorded and played back as a loud click!

Note: The volume control is not used during recording.

Recording - Single Channel (1)

In the single channel audio mode, sound is recorded as one long sound file up to 60 seconds. Channel -1 is used to record and playback the single audio only.

Place the **R/P Mode jumper block** in the **R** position to enter record mode. (Jumper Installed - **Left**) Press switch -1 (or place a shorting block between pin pair set -1). Hold down the connected switch or leave shorting block on pin pair-1 while speaking or playing audio into the microphone, or start the audio sound source. The **Red** LED will turn ON and the board will continue to record while the switch is pressed, or the shorting block is on pin pair -1. At the end of the audio recording, release the switch or remove the shorting block on pin pair -1.

To end the recording session, remove the **R/P** Mode jumper from **R** side terminals and move it over to the **P** side terminals.

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Operation - Cont.

Recording for Sequential or Random Playback Mode

Recording - Multiple Channels (1- 8) for Sequential or Random Mode

The operating mode of the on board ISD sound chip is such that **all audio has to be recorded consecutively during the same recording session**. It is not possible to edit one message on its own- **all messages must be re-recorded if one message needs to be changed.**

Note: Not all 8 channels need to be used in the Sequential or Random Mode. You can do any number of channels from 1 through 8. The controller board will playback the number of channels you record in the Sequential or Random Mode.

Make sure that the jumper block is removed from pin pair 7 or pin pair 8.

Place the **R/P Mode jumper block** in the **R** position to enter record mode. (Jumper Installed - **Left**)

Press the connected switch (1) (or place a shorting block between pin pair set -1). Hold down the connected switch or leave shorting block on pin pair-1 while speaking or playing audio into the microphone. The **Red** LED will turn ON and the board will continue to record while the switch is pressed, or the shorting block is on pin pair -1. At the end of the first audio recording, release the switch or remove the shorting block on pin pair -1.

To record the second message, press and hold switch (1) or place a shorting block between pin pair set -1 again and speak into the microphone. At the end of the second audio recording, release the switch or remove the shorting block on pin pair -1.

Continue adding audio as above until the numbe of messages needed have been recorded or the length of the messages exceeds the total recording time. (60 seconds total) or you have reached 10 Max individual recorded messages.

To end the entire recording session, remove the **R/P** Mode jumper from **R** side to the **P** terminal side.

If recording normal speech, it should be possible to obtain a good recording by speaking at a normal volume level about 30 - 50cm from the microphone. Take care to avoid mechanical switch noise from switcheh - 1 as this could be recorded and played back as a loud click!

Note: The volume control is not used during recording.

To end the recording session, remove the **R/P** Mode jumper from **R** side terminals and move it over to the **P** side terminals.

The sound board is now ready to be operated in the Random or Sequential mode.
(See playback for details)

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Troubleshooting S / R Mode

Sequential or Random Playback Mode

Recorded messages do not conform to the intended number sequence.
If you expected audio from channel - 4 and obtained audio from channel - 5 or another channel, this could be due to switch contact problem when recording. The contacts of the switch have "bounced" and introduced an additional (blank) message. Re-Record audio, taking care not to double press or bounce the switch when pressed. NOTE: The jumper block across the jumper pins can also create a false switch effect, use care when moving the jumper blocks across the pins.

In the sequence mode, there is appears to be more time between the last recorded channel playback and the start of channel 1 or the time between each channel 2 - 8.
This is probably due to switch "bounced" which introduced an additional (blank) message channel past the last channel 8.The sound board is playing those blank messages that it thought were recorded, because of the switch bounce. Re-Record audio, taking care not to double press or bounce the switch past 8.

Last message is truncated or missing
Check to see if you exceeded the total recording time for the sound chip. (60 seconds total)
Or you switched on or off the board in record mode while recording audio.

Sound / message is truncated on playback
The SB 60 VEGAS is designed with an instant ON and OFF playback mode. The sound will only playback as long as the switch is activated for that playback channel. If the switch is de-activated during playback the sound will stop immediately. Activate the switch for the length of sound neded to be played back.

I am trying to change sound channel - 8 to a new sound, but it will not record?
All channels must be recorded within the same session - it is not possible for example to change only channel - 2 as a single recorded session only. All sound channels must be recorded during the same session, starting at sound channel -1 and completing at sound channel 8 (Random or sequence Mode selection) **Note:** Not all 8 channels need to be used in the Sequential or Random Mode. You can do and number of channels from 1 through 8. The controller board will playback the number of channels you record in the Sequential or Random Mode just as long as they were recorded in the same session.

No or broken audio in Random or Sequential Playback mode
You didn't set the playback - Record jumper to the playback position before powering down. Place the jumper into the P position after recording and before powering down.

In the sequence mode, there is blank messages or sound past channel 8
This is probably due to switch "bounced" which introduced an additional (blank) message channel past the last channel 8.The sound board - 60 is playing those blank messages that were recorded, because of the switch bounce. Re-Record audio, taking care not to double press or bounce the switch past 8. NOTE: The jumper block across the jumper pins can also create a false switch effect, use care when moving the jumper blocks across the pins.

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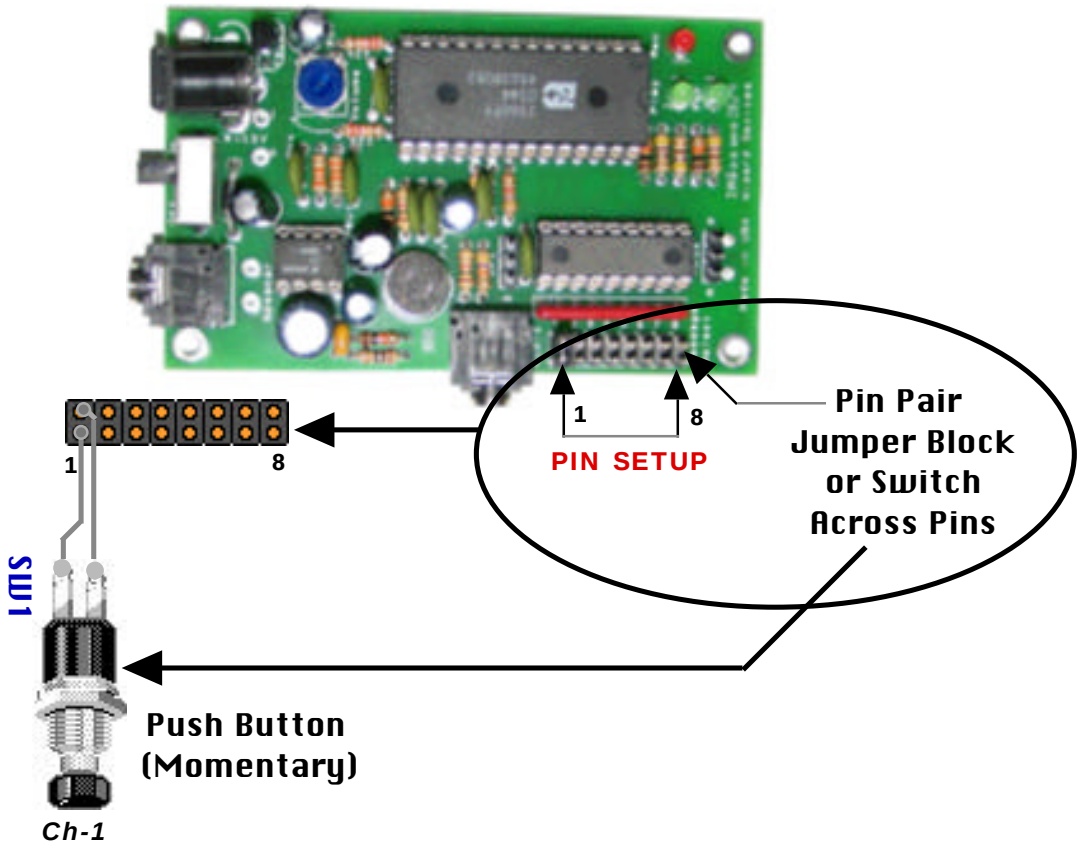
Operation Cont.

PLAY-BACK MODES

(1) Play-Back Mode

Set the on board volume control to mid-way.
Place the **R/P Mode** jumper block in the **P** position to enter playback mode.
(Jumper Installed - **Right**).
Short / activate **Pin Pair-1 (**or connected switch -1), the **Green** LED will turn ON and audio Ch-1 should be heard from the attached speaker.
Once message 1 has finished, the card will wait for further activation to be selected.
Note: Other Pin Pairs shorted / activated (or connected switches), while audio is being replayed will be disregarded.

Short / activate **Pin Pair-2** (or connected switch -2), the **Green** LED will turn ON and audio Ch-2 should be heard from the attached speaker.
Adjust the volume control to provide the required audio output level - you will probably find the output from the included amplifier is sufficient for most exhibitions / rooms. Connect the speaker output signal to a remote power amplifier for larger rooms or if greater volume if needed.



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Troubleshooting

Recorded messages do not conform to the intended number sequence.
If you expected audio from channel - 3 and obtained audio from channel - 2, this could be due to dirty switch contacts when recording- the contacts have "bounced" and introduced an additional (blank) message. Re-Record audio, taking care not to double press or bounce the switch.

Last message is truncated or missing
Check to see if you exceeded the total recording time for the sound chip. (20 seconds total)

Messages appear to contain a lot of background noise
The on-board microphone and control circuit are very sensitive - try to record under very quiet conditions, away from items that cause electrical noise, florescent lights, speaker magnets, motor, etc.

Playback volume is distorted
If you're using a small un-mounted speaker, try replacing a larger, boxed in type speaker unit.
(4 or 8 Ohm speaker)
Adjust the volume control to provide the required audio output level - you will probably find the output from the included amplifier is sufficient for most exhibitions / rooms. Connect the speaker output signal to a remote power amplifier for larger rooms or if greater volume if needed.

How can I erase the sound chip?
Recording a new set of sounds, is really the only way to full erase the chip, but you can clear the sound channels without recording over it, by trying the following:
Set the Mode jumper to R (record) the RED LED will turn ON.
Short together pin pair - 1 on and off 8 times, this will re-program the sound chip with a very quick white noise signal on each channel, if played back.

I am trying to change sound channel - 4 to a new sound, but it will not record?
All channels must be recorded within the same session - it is not possible for example to change only channel - 2 as a single recorded session only. All sound channels must be recorded during the same session, starting at sound channel -1 and completing at sound channel - 8.

HINT: Pre-organize your sound data to be recorded in sequence format for quick easy recording.

Sound / message is truncated on playback
The SB may be a modified version SB60EV with an instant ON and OFF playback mode. The sound will only playback as long as the switch is activated for that playback channel. If the switch is de-activated during playback the sound will stop immediately. Activate the switch for the length of sound neded to be played back.

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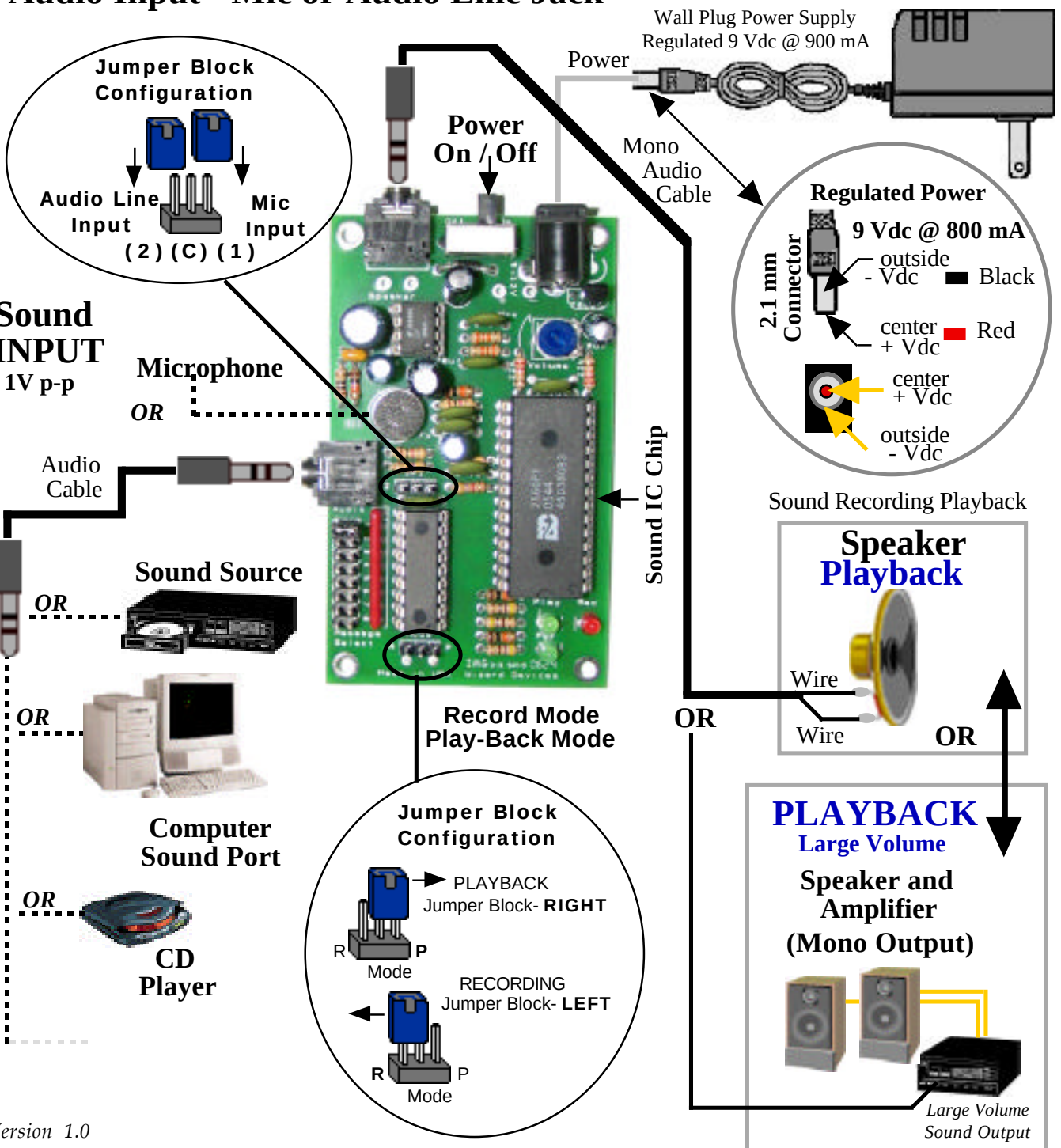
Audio Input - Mic or Audio Line Jack



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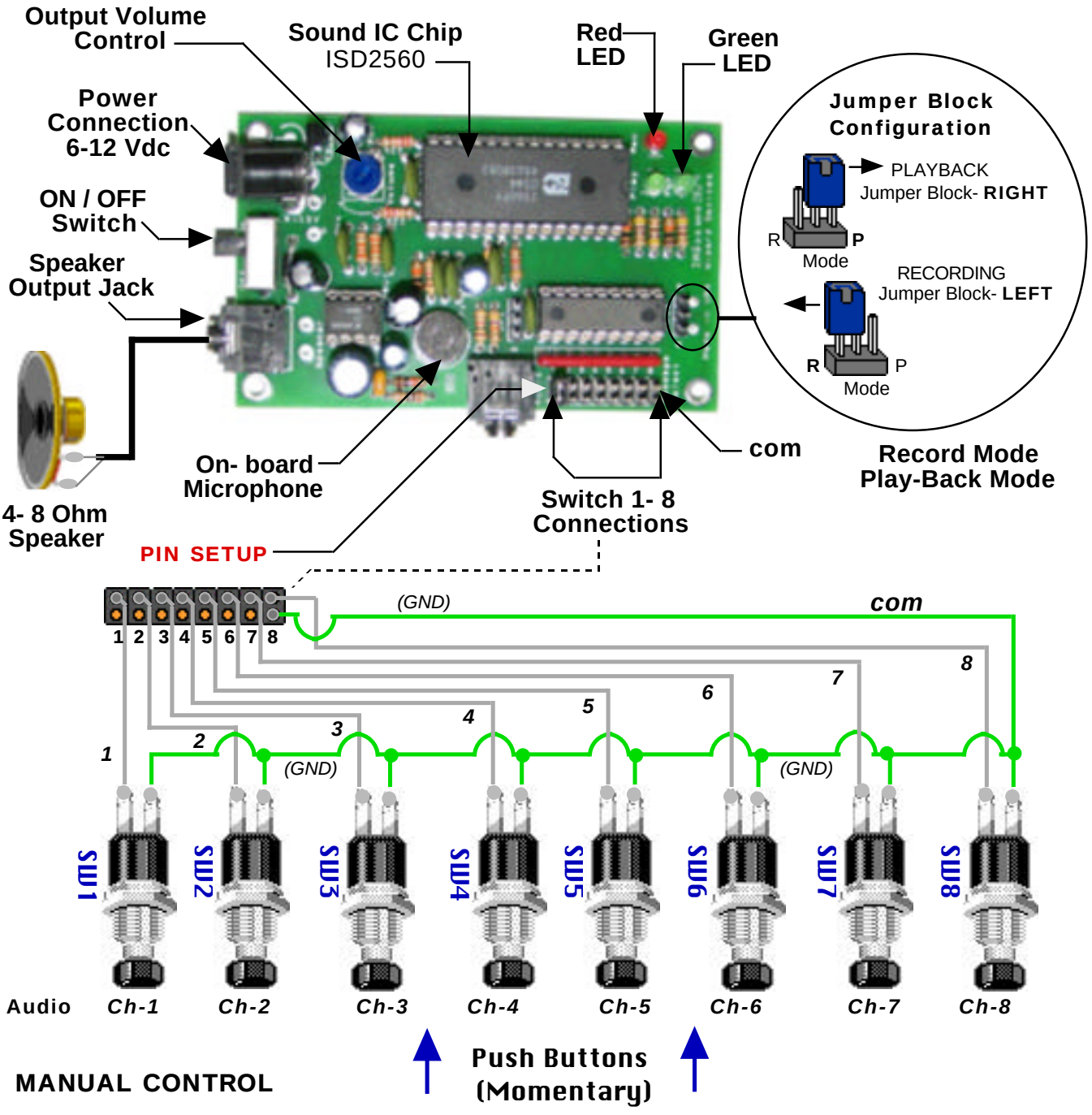

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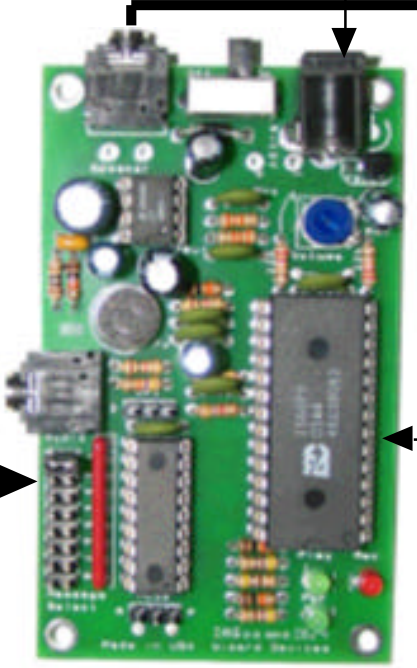
Manual / Automated Playback Example

Manual Switch

Ch - 1
Sound theme A

POWER

Audio Cable (Mono)



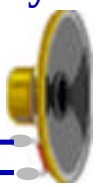
Sound IC Chip

Pin Pair Terminal
Ch-1
Ch-2
Ch-3

Wire

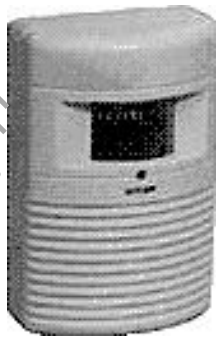
Wire

Speaker
Playback



Sound Recording Playback

IR Relay Contacts



IR Sensor
Location A
Sound theme - B

Wire

Wire

IR Relay Contacts

IR Sensor
Location B
Sound theme - C

Prop

Sound Recording
(1) 0.2 - minute playback sound theme - A
(2) 0.5 - minute playback sound theme - B
(3) 0.3 - minute playback sound theme - C

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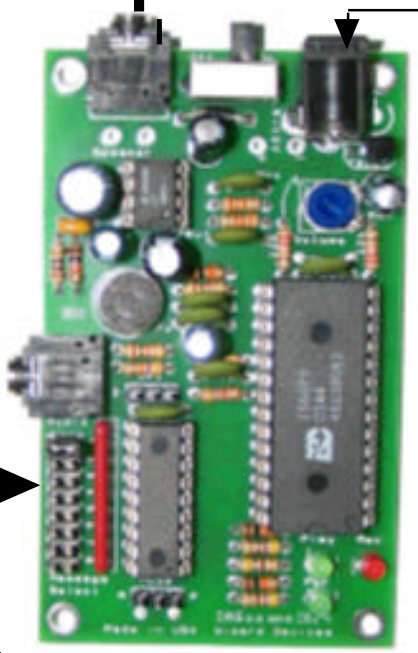
8 - Channel Automated Playback Example
6Ch - Sound and 2Ch - Prop Control

Prop

Audio Cable (Mono)

POWER



PLAYBACK

Speaker and Amplifier

Large Volume

OR

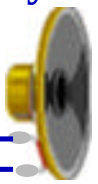
Audio Cable

Wizard -2 Board
Ch - 7 and Ch - 8
To Mechanical
Control Device
in Prop

Ch-8

Ch-7

Speaker Playback

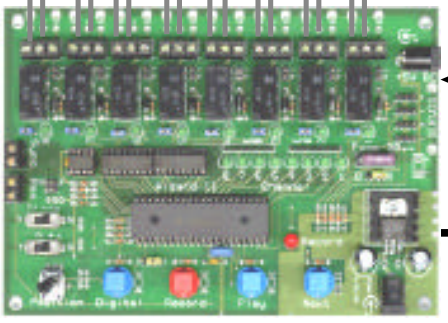


Sound Recording
Playback

Ch-1
Ch-2
Ch-3
Ch-4
Ch-5
Ch-6
Ch-7
Ch-8

Pin Pairs 1-6

Not Used



Wizard - 2 Programmable Controller Board
Or
Wizard- 4 Board (4 ch)

REMOTE SENSOR

- ***Floor Mat Switch.***
- ***PIR Sensor.***
- ***Manual Operated Switch.***
- ***Relay Contact Switch, etc.***

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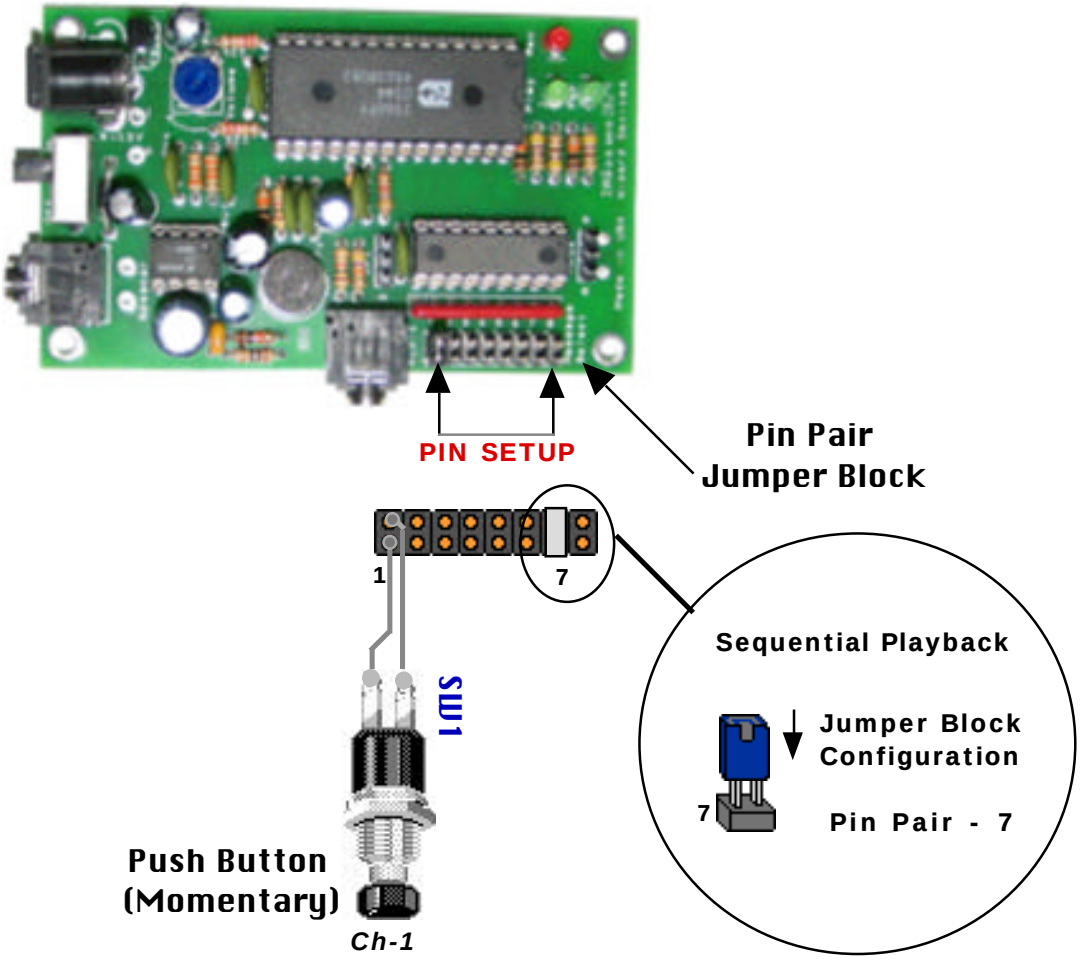
Sequential Playback Mode

Turn **OFF** power supply, or remove power connector from board.
Place a jumper block over **Pin Pair-7** (This configuration will be read at power up and will put the board into the sequential playback mode).
Power up the board (Turn **ON** power).
Short / activate **Pin Pair- 1** (or switch, relay) This will playback channel -1.
Short / activate **Pin Pair-1** again at the end of playback channel -1, the board will now playback channel- 2.
Repeat - Short / activate **Pin Pair-1** for each additional channe 3 - 8. When channel - 8 is reached, cycle will restart at channel -1.



Note: *Not all 8 channels need to be used in the Sequential or Random Mode. You can record any number of channels from 2 through 8. The controller board will playback the number of channels you record in the Sequential or Random Mode. See operation section for more details.*

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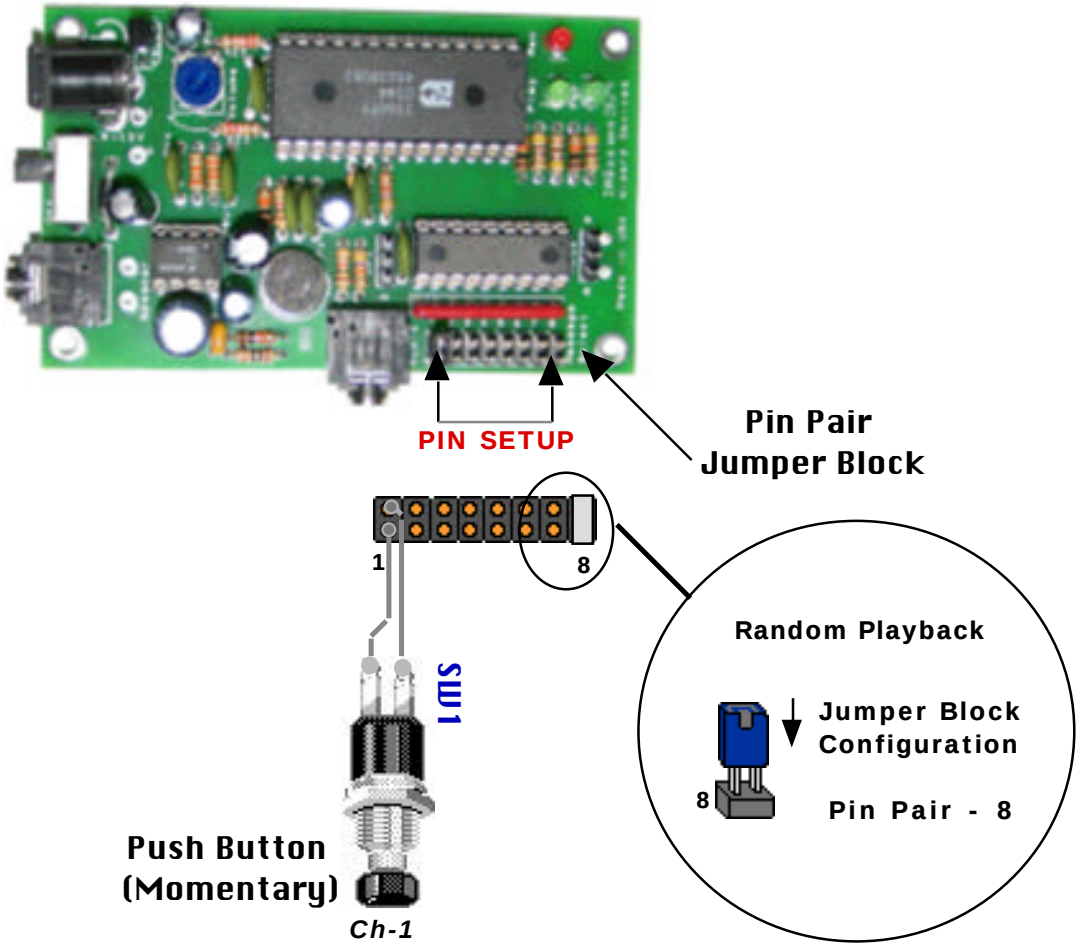
Random Playback Mode

Turn **OFF** power supply, or remove power connector from board.
Place a jumper block over **Pin Pair-8** (This configuration will be read at power up and will put the board into the random playback mode).
Power up the board (Turn **ON** power).
Short / activate **Pin Pair-1** (or switch, relay) This will randomly playback channel -1 through channel - 8
Short / activate **Pin Pair-1** again at the end of playback, the board will now randomly playback channel -1 through channel - 8 again. Repeat for random channel playback.



Note: *Not all 8 channels need to be used in the Sequential or Random Mode. You can record any number of channels from 2 through 8. The controller board will playback the number of channels you record in the Sequential or Random Mode. See operation section for more details.*

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