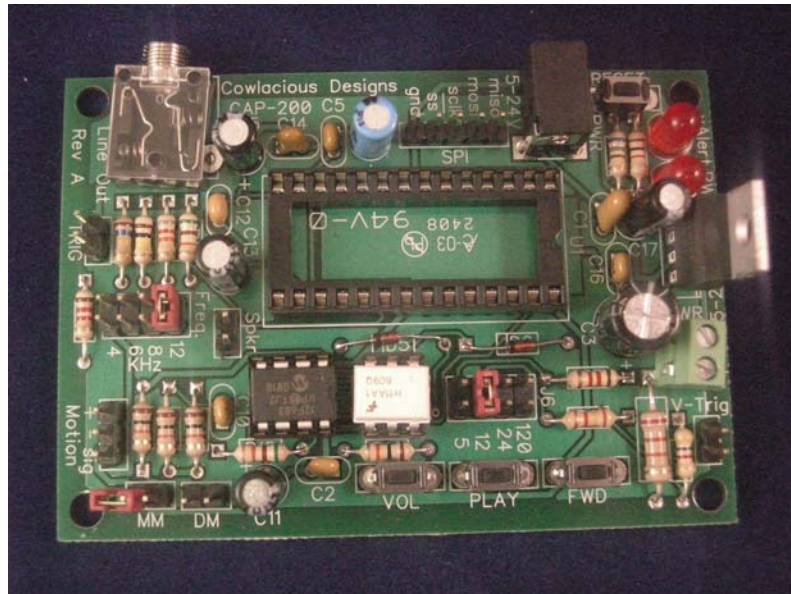# Cowlacious ISD® 17xxx
Player Board
CAP-200 Rev. B

Model: CAP 200 Rev. B

Computer & Electronic Services
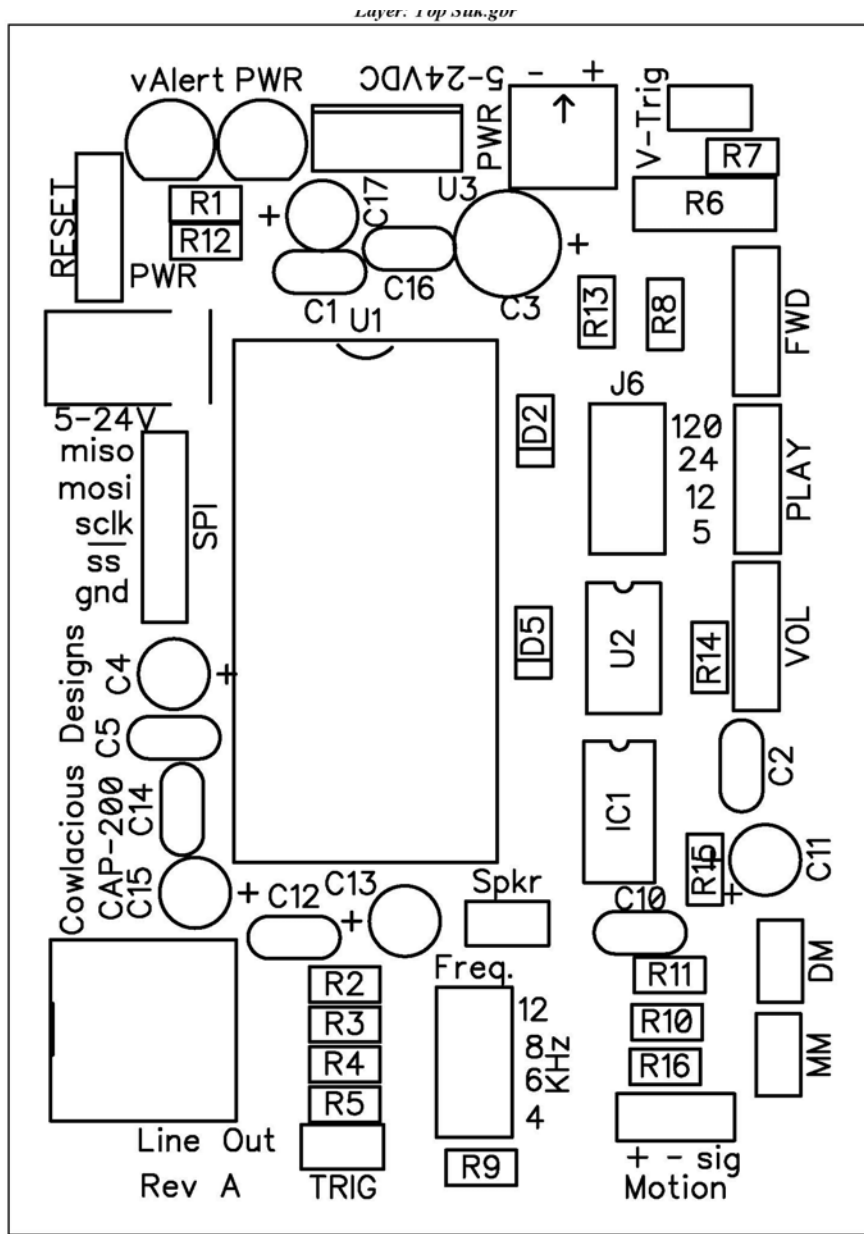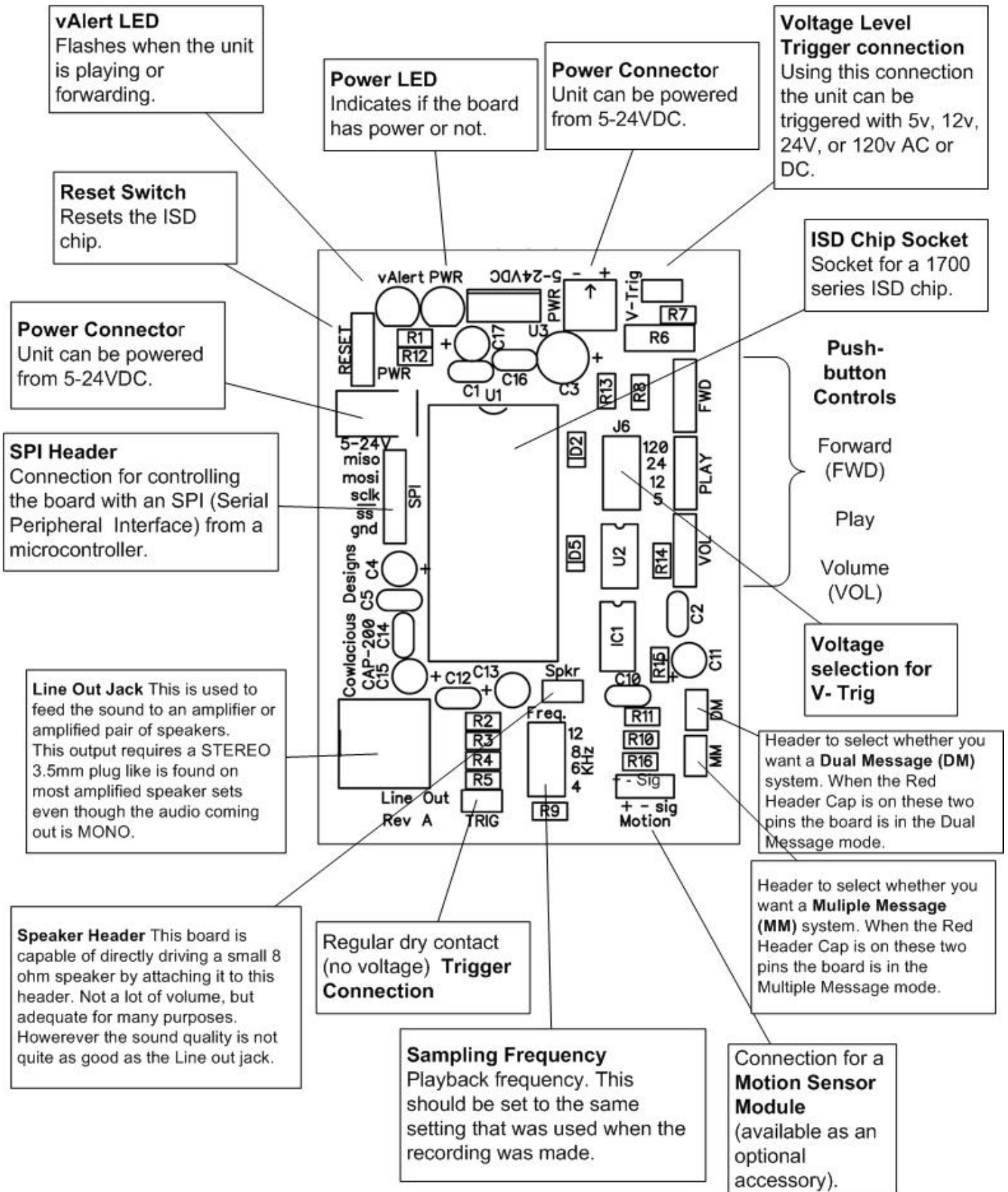# Cowlacious Designs

Cowlacious ChipCorder® Player Board

Figure 1: Top Layer (Component Side) of the circuit board.

Summary:

The Cowlacious Audio Player 200 (CAP 200) allows you to easily play back sound on an ISD 17xxx series chip. The board can be used in push-button mode, triggered mode, or SPI mode.

Board Features:

vAlert LED
Flashes when the unit is playing or forwarding.

Reset Switch
Resets the ISD chip.

Power Connector
Unit can be powered from 5-24VDC.

SPI Header
Connection for controlling the board with an SPI (Serial Peripheral Interface) from a microcontroller.

Line Out Jack This is used to feed the sound to an amplifier or amplified pair of speakers. This output requires a STEREO 3.5mm plug like is found on most amplified speaker sets even though the audio coming out is MONO.

Speaker Header This board is capable of directly driving a small 8 ohm speaker by attaching it to this header. Not a lot of volume, but adequate for many purposes. Howerever the sound quality is not quite as good as the Line out jack.

Power LED
Indicates if the board has power or not.

Power Connector
Unit can be powered from 5-24VDC.

Voltage Level Trigger connection
Using this connection the unit can be triggered with 5v, 12v, 24V, or 120v AC or DC.

ISD Chip Socket
Socket for a 1700 series ISD chip.

Push-button Controls

Forward (FWD)

Play

Volume (VOL)

Voltage selection for V- Trig

Header to select whether you want a **Dual Message (DM)** system. When the Red Header Cap is on these two pins the board is in the Dual Message mode.

Header to select whether you want a **Muliple Message (MM)** system. When the Red Header Cap is on these two pins the board is in the Multiple Message mode.

Regular dry contact (no voltage) **Trigger Connection**

Sampling Frequency
Playback frequency. This should be set to the same setting that was used when the recording was made.

Connection for a **Motion Sensor Module** (available as an optional accessory).

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Operation

Making the power and audio connections:

☐ Place a 17xxx series ISD Chipcorder chip into the socket. Make sure the notch on the chip is facing the same way as the notch on the socket.

☐ Connect power to the POWER terminal block being careful to observe the polarity as marked on the circuit board. You can use any DC power source from 5VDC to 24VDC, though you may need to attach a heat sink to U1 if you are using a voltage over 9VDC, depending on how hot the regulator is getting. Plug a pair of amplified computer speakers into the LINE OUT jack.

IMPORTANT!!!!
The Line Out jack should use a stereo plug as pictured above.

Push Button Controls:

VOL (Volume)

Every time the volume button is pressed and released it changes the Line-Out and SPKR volume to one of eight volume levels. The volume levels go down and then back up in a loop, i.e. if you are on the highest volume setting (#8), the next time you press the button it will go down to the next highest volume setting (#7). Each press will take the volume down until you hit level #1, then it will start working its way back.

PLAY

Pressing the play button will begin to play the sound that has been recorded. If you press the button during playback, it will pause the sound and wait to be pressed again to resume. It will resume at the start of the recording it was currently playing. The vAlert LED will flash during playback.

Note: This is not the same as the TRIG connection or the Motion connection. They are both controlled by the microprocessor that is on the circuit board.

FWD (Forward)

Briefly pressing the forward button will forward the message pointer to the next message. The forward button works in a loop. If the unit is currently on the last message and you press FWD, then it will forward to the first message (if there are multiple messages). If you press play it will play the current message. If you press FWD while the current message is playing it will skip to the next message (if there is one) and begin to play it. If you press REC after pressing the FWD button, it will record a new message that follows the last message that was recorded.

Triggering Sound Playback:

This unit can be triggered to playback recorded sounds through three different input triggers.

TRIG.

The TRIG input allows the unit to be triggered by any switch like device, such as, a switch, relay contacts, a mat switch, etc. It is not designed to have any voltage go to the trigger pins. The provided white and black wire with the two pin header plug allows the user to easily connect their device to the TRIG header pins.

V-Trig

The V-Trig input allows the unit to be triggered by a voltage level trigger such as, a 5v output from a microcontroller, a 12 volt battery, a 24 volt power source, or 120V outlet or output from a 120V motion sensor.

The trigger voltage can be AC or DC. The polarity (which pin is positive or which is negative) does not matter to the trigger connection.

YOU MUST set the jumper on red shorting jumper at J6 to the voltage level you are going to use. The 12V setting will also work for 9V AC/DC.

Motion

The motion detector pins are designed to be used with any of the optional motion detectors we offer for sale. This connection also provides power to our motion sensors.

Trigger Message Modes

Regular Mode
   No red shorting jumper on the DM or MM header pins.

   The unit will play the current sound when it is triggered via the Trig, V-Trig, or Motion trigger connections. If the trigger is still active when it reaches the end of the message the unit will stop playing and wait for the trigger to become inactive before it will allow itself to be triggered again.

Dual Message Mode (DM header)
   Red shorting jumper is on the DM header and no shorting jumper is on the MM header.

   This mode allows the unit to play the first message continually until the unit receives a trigger. As soon as a trigger is received it skips to the next message on the chip and plays it. When the trigger is over it goes back to playing the first message on the chip. You can only have two messages recorded on the chip for this mode to work properly.

   This mode can also be used if you want a **single message to continually repeat**. Use a chip that only has one message recorded on it and don't connect any triggering devices. The unit will continually play the message.

Multiple Message Mode (MM header)
   Red Shorting jumper is on the MM header and no shorting jumper is on the DM header.

   This mode will loop through all the messages that are recorded on the ISD chip. One message will be played each time it is triggered. After it plays the last message it will jump back to the first message. If the trigger is continually pressed it will play one message after another, though, we have programmed a 3 second delay between each message playback.

Special Connections:

SPI (Serial Peripheral Interface) Connections:
    This board is equipped with an SPI connection header that allows all chip functions and registers to be controlled by a microcontroller feeding it commands over the SPI connection. The manual for controlling the board through the SPI header connection is available on our web site at:

www.cowlacious.com/Support.htm

Thank you for buying a Cowlacious Designs product!
Please don't hesitate to contact us if you have any questions.

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