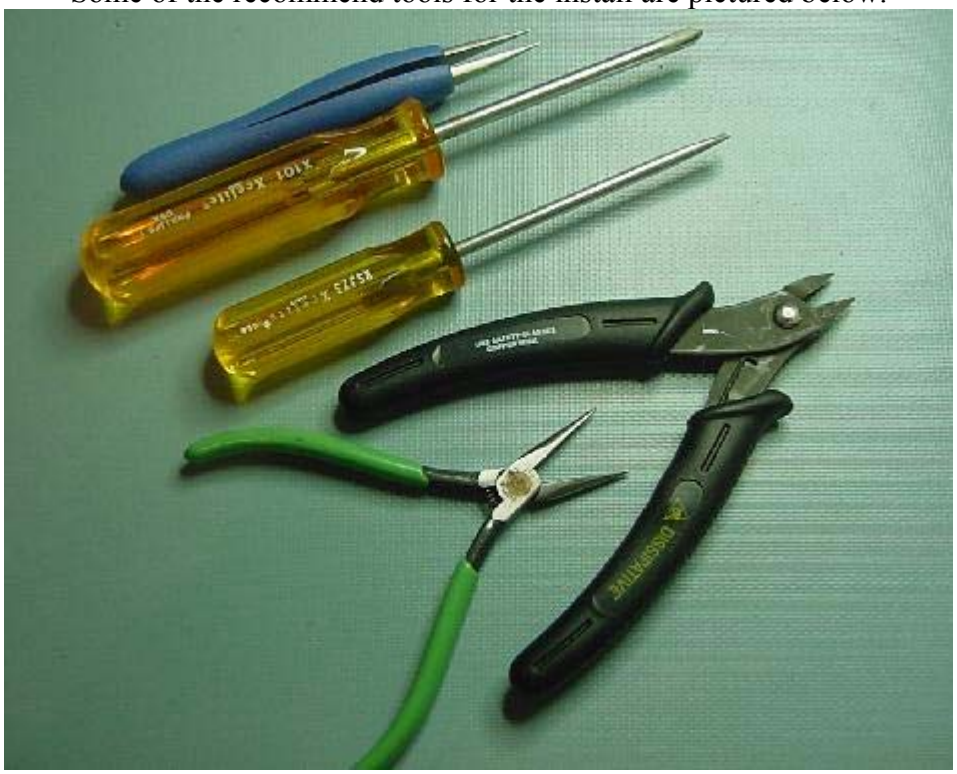
G80 MULTIGAME/SPEECH/SOUND INSTALL GUIDE

The G80 MultiGame kit includes the items pictured above.

1. Main PWA
2. Spinner PWA
3. Wire Harness Interface PWA
4. 48” 34 conductor ribbon cable
5. 3 pin connector cable
6. 6 pin connector cable
7. 8 pin sound interface cable
8. Resistor

Some of the recommend tools for the install are pictured below.



IMPORTANT INFORMATION PLEASE READ AND UNDERSTAND FULLY

(1.) Because the Sega/Gremlin game Star Trek has the most buttons and a spinner it is the best suited for the G80 MultiGame. You can install it in a Tac/Scan but you will need to add the extra buttons to play Star Trek. If you install in a Space Fury or Eliminator you will need to add extra buttons and a spinner to play Star Trek & Tac/Scan.

(2.) Whatever cabinet you install the G80 MultiGame into must be a FULLY FUNCTIONAL game before installing. The G80 MultiGame will not "fix" a pre-existing problem with your game. Also make sure that your power supply outputs the proper voltages to the card cage. (+5v –5v +12v and –12v) +/- 5%.

(3.) Your G80 MultiGame will output speech for all games that use speech (Space Fury, Zektor & Star Trek). Eliminator & Tac/Scan were not designed to use speech so those games do not have it.

(4.) You no longer need the EPROM & SPEECH boards in your card cage so please remove it before starting the install. However you will need to remove 2 chips from the speech board and plug them into the G80 MultiGame. The instructions to do that are contained in the next section.

(5.) Until the Vector Labs MultiSound card is available you will need all three of the Sega/Gremlin boards to have all sounds for all games. The table below describes which sound boards are used on which games.

Space Fury	Star Trek	Eliminator	Tac/ Scan	Zektor
Battlestar	Universal	Eliminator	Universal	Eliminator

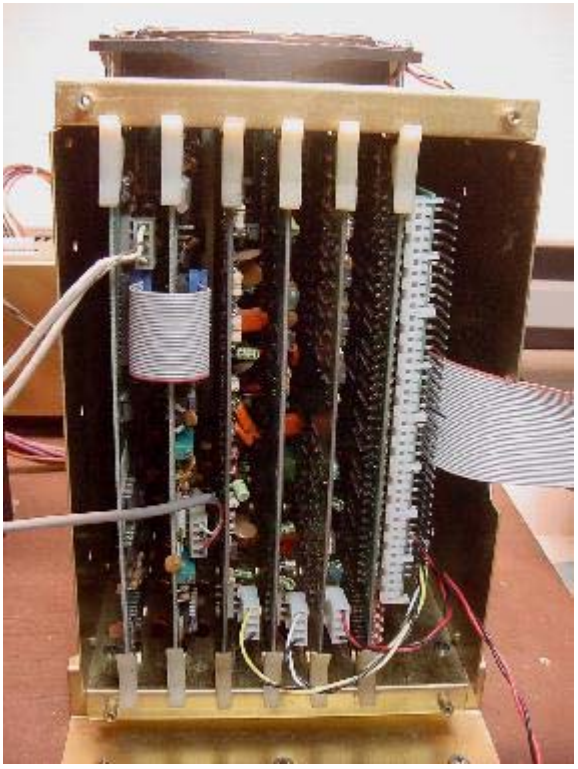
The Sega MiltiGame automatically switches the sound board & speech audio depending on which game is selected. All three sound boards can be in the card cage at the same time*. So if for instance you are going to install the G80 MultiGame in a Star Trek and only have the Universal sound card then you will only have sounds for Star Trek & Tac/Scan like the table above shows.

(*each board requires a single cut & jumper)

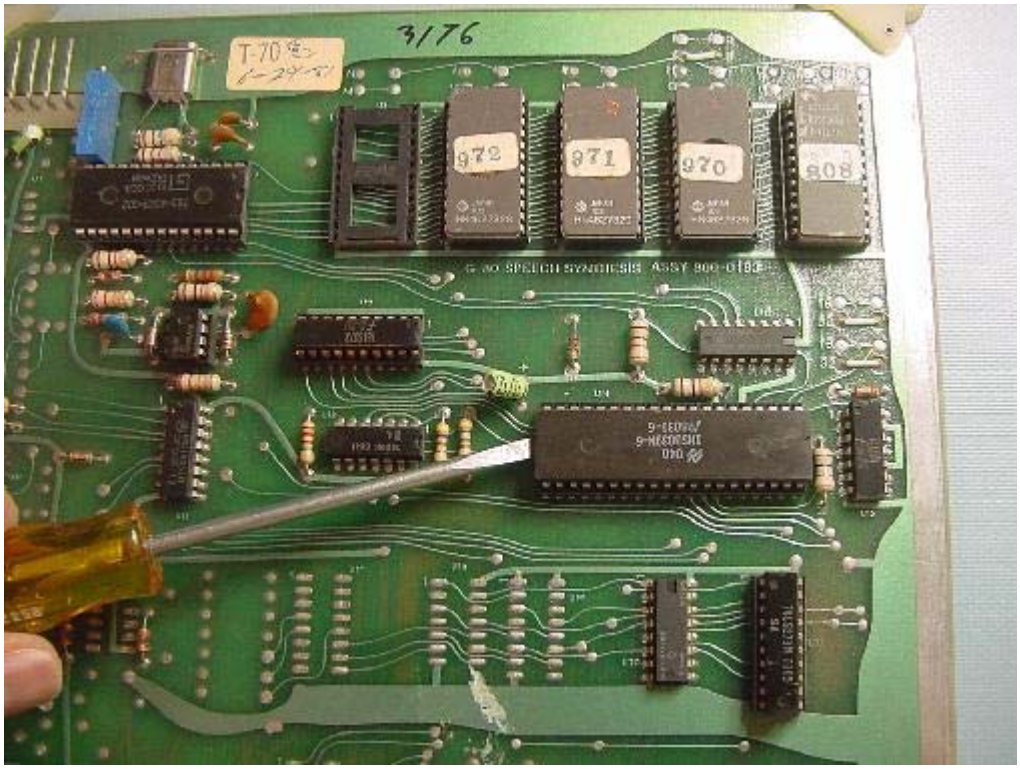
(6.) Before removing any boards or unplugging any connectors take a few pictures of the connectors that plug into the CPU board and XY boards to document where they plug in and how they are oriented. You will need to re-connect them later in the install procedure, don't depend on memory DOCUMENT it in pictures.

(7.) To make the install as easy as possible you will need to re-arrange the boards in the card cage in the following order from left to right as shown below.

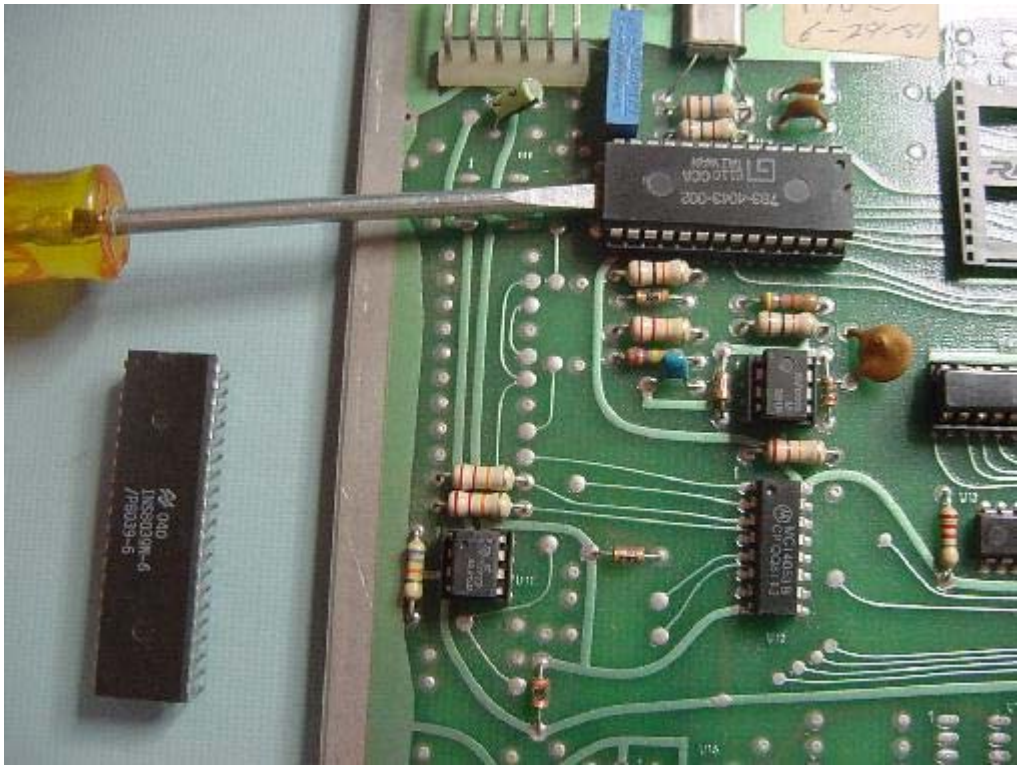
XY CONTROL–XY TIMING–BATTLESTAR–ELIMINATOR–UNIVERSAL-CPU



To begin the install insert the XY CONTROL & XY TIMING boards in their slots. For now leave all other cards out of the cage. The following sections will describe how to modify the other cards for proper operation.

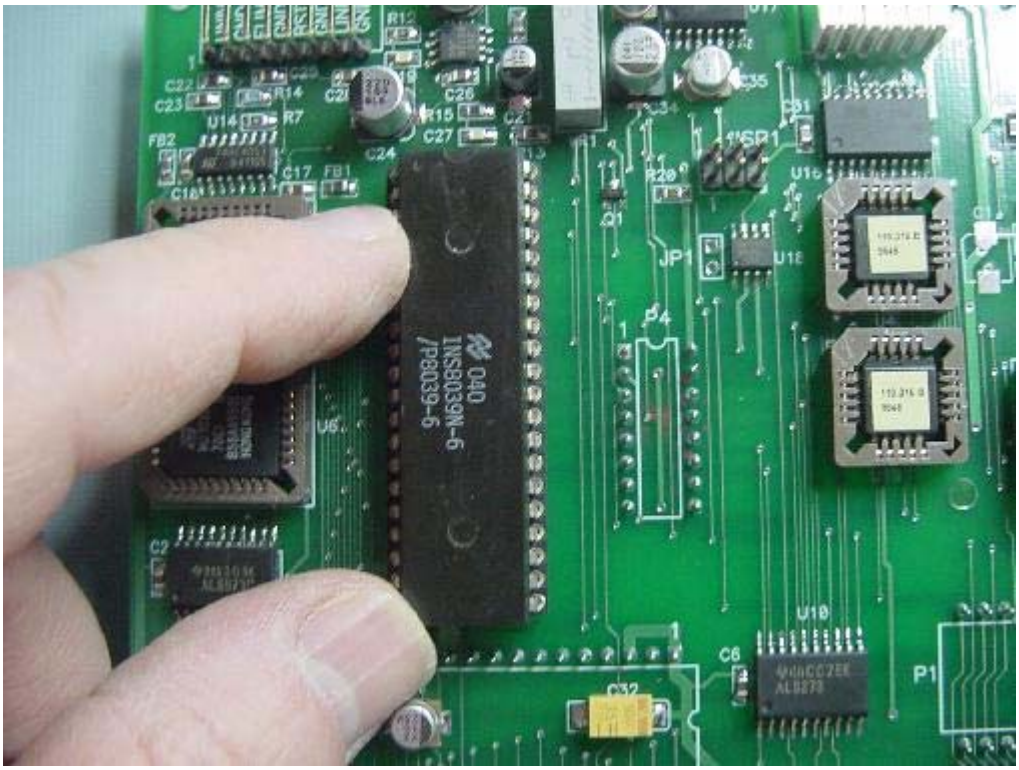


REMOVE SPEECH BOARD CPU AS SHOWN ABOVE.

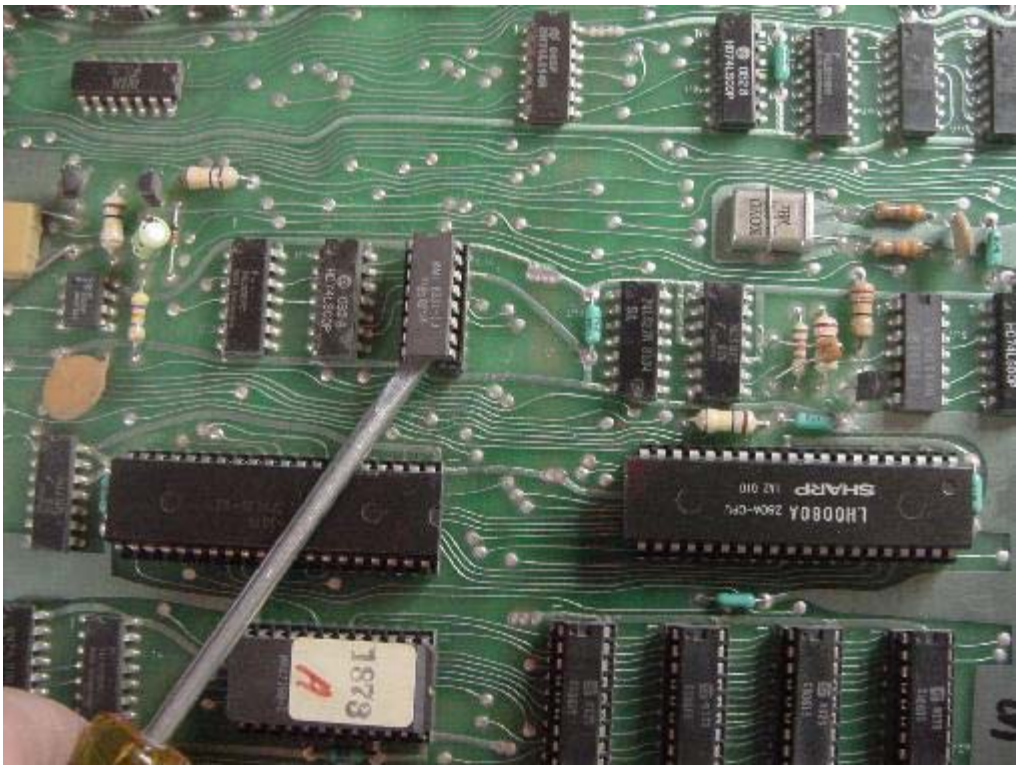


REMOVE SPEECH CHIP AS SHOWN ABOVE.

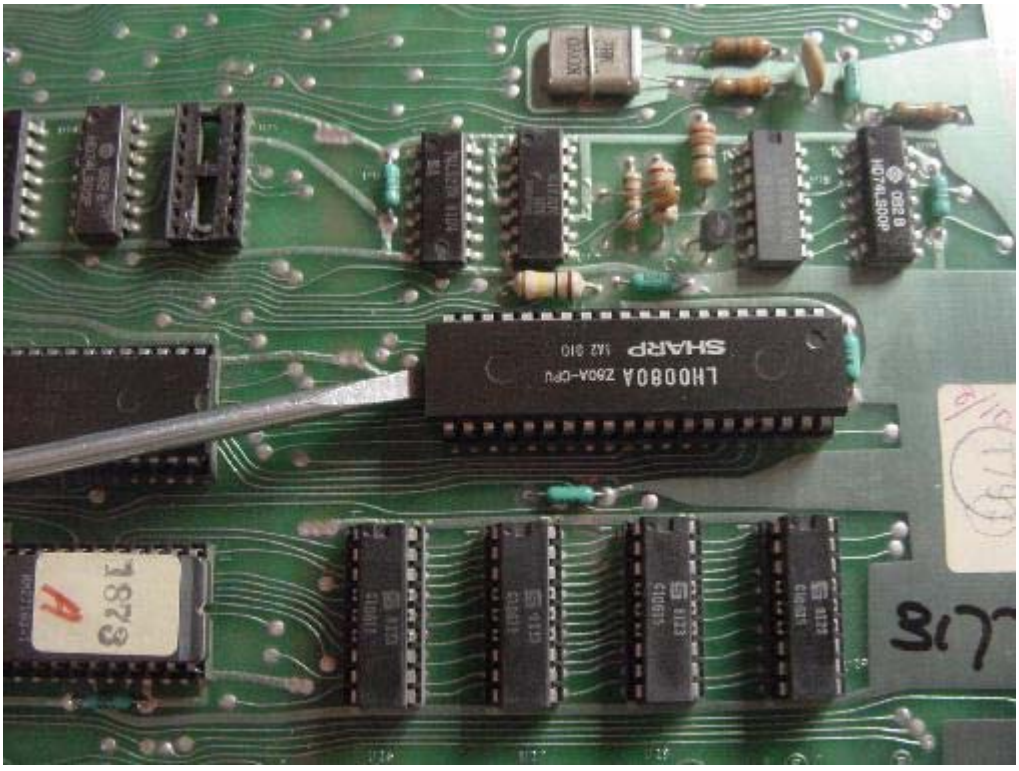
RE-INSTALL SPEECH CHIP INTO MULTIGAME BOARD AS SHOWN ABOVE.



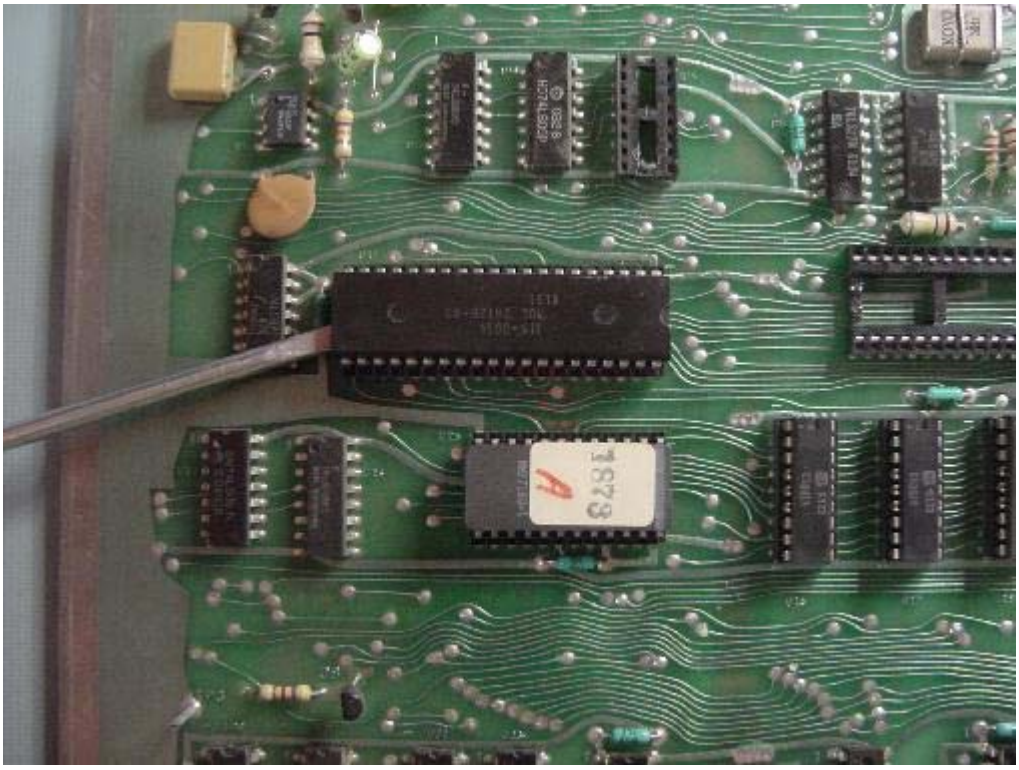
RE-INSTALL SPEECH CPU INTO MULTIGAME BOARD AS SHOWN ABOVE.



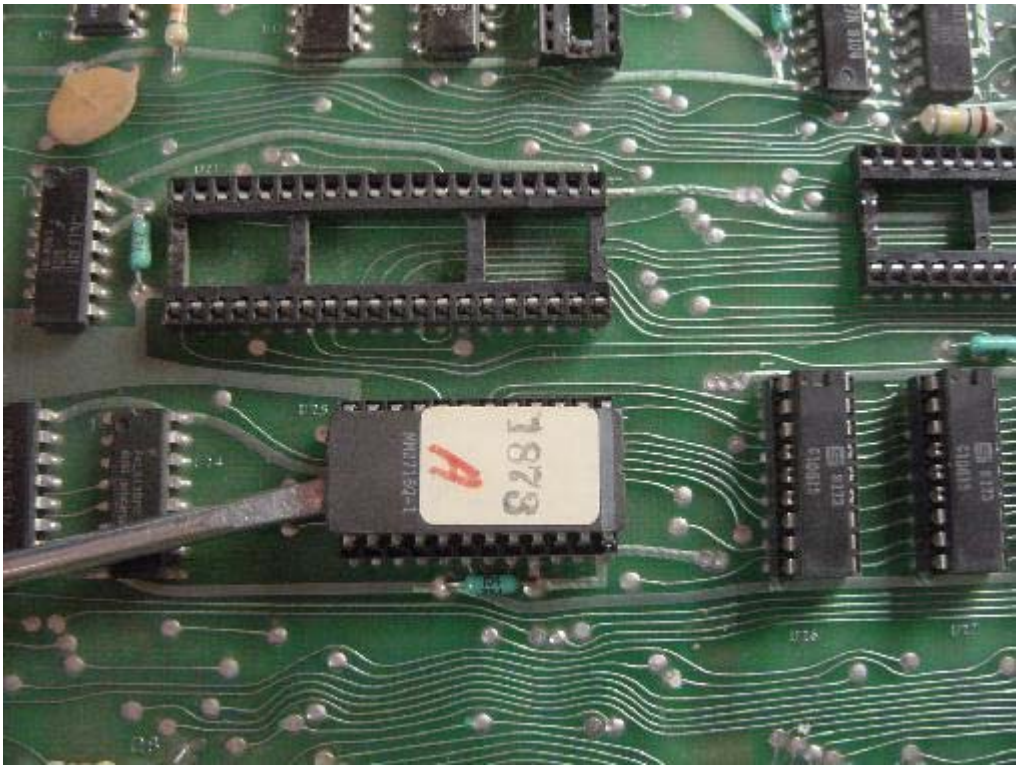
REMOVE PROM CHIP U15 AS SHOWN ABOVE.



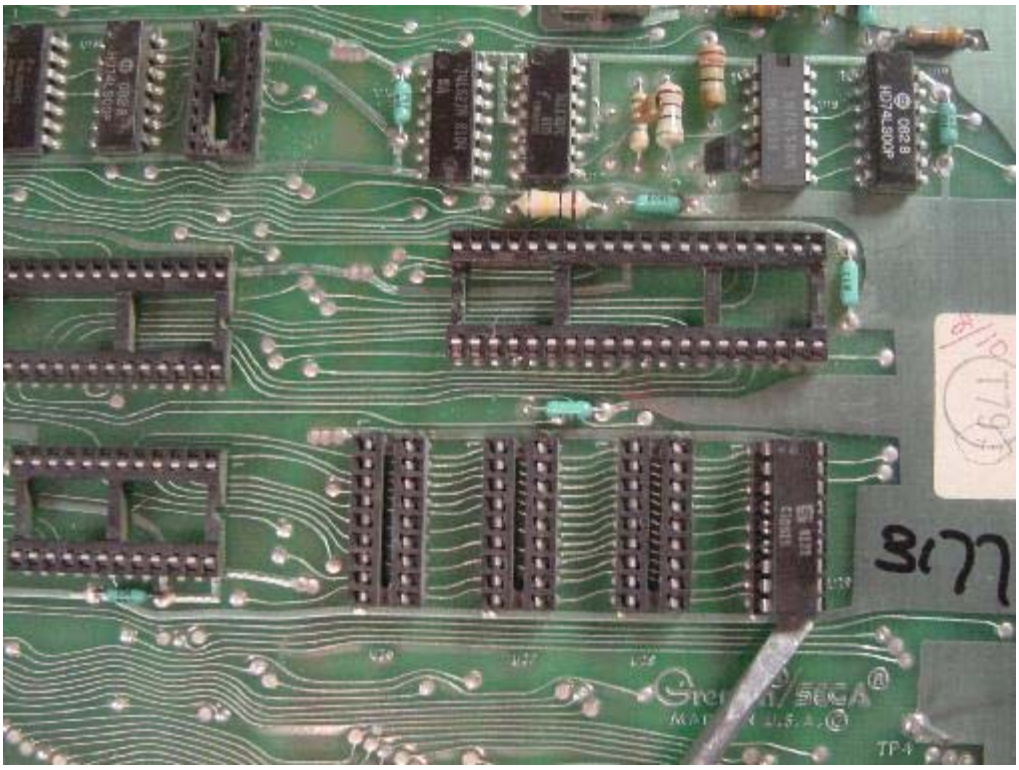
REMOVE Z-80 CHIP U2 AS SHOWN ABOVE.



REMOVE SECURITY CHIP U21 AS SHOWN ABOVE.

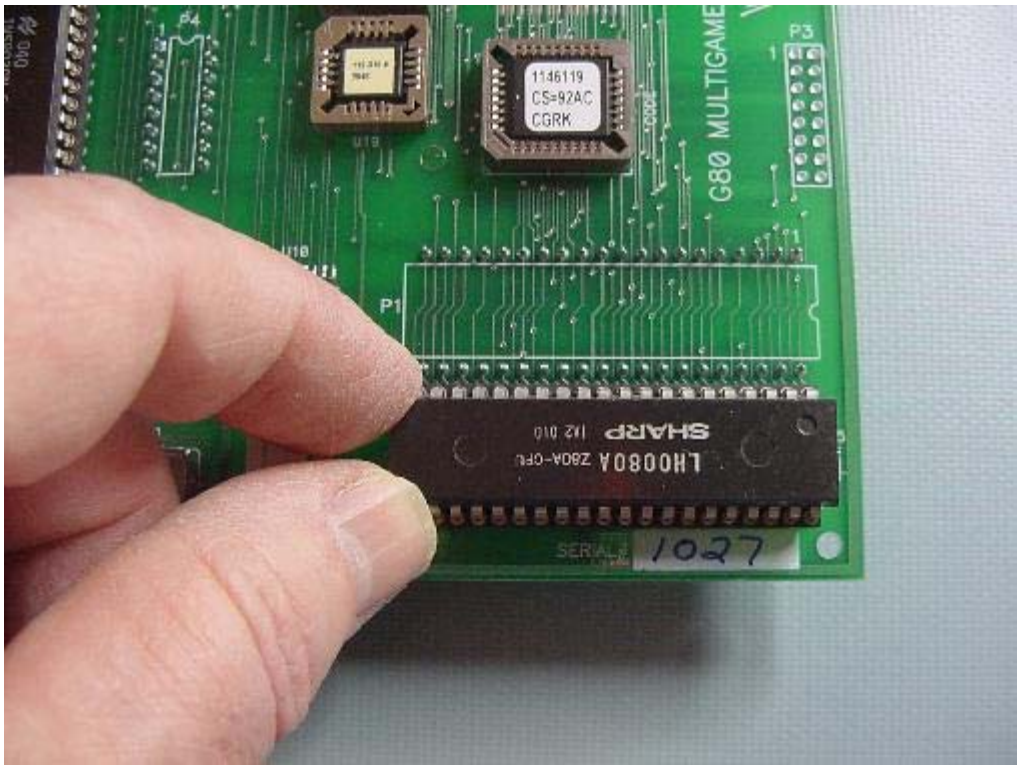


REMOVE EPROM CHIP U25 AS SHOWN ABOVE.



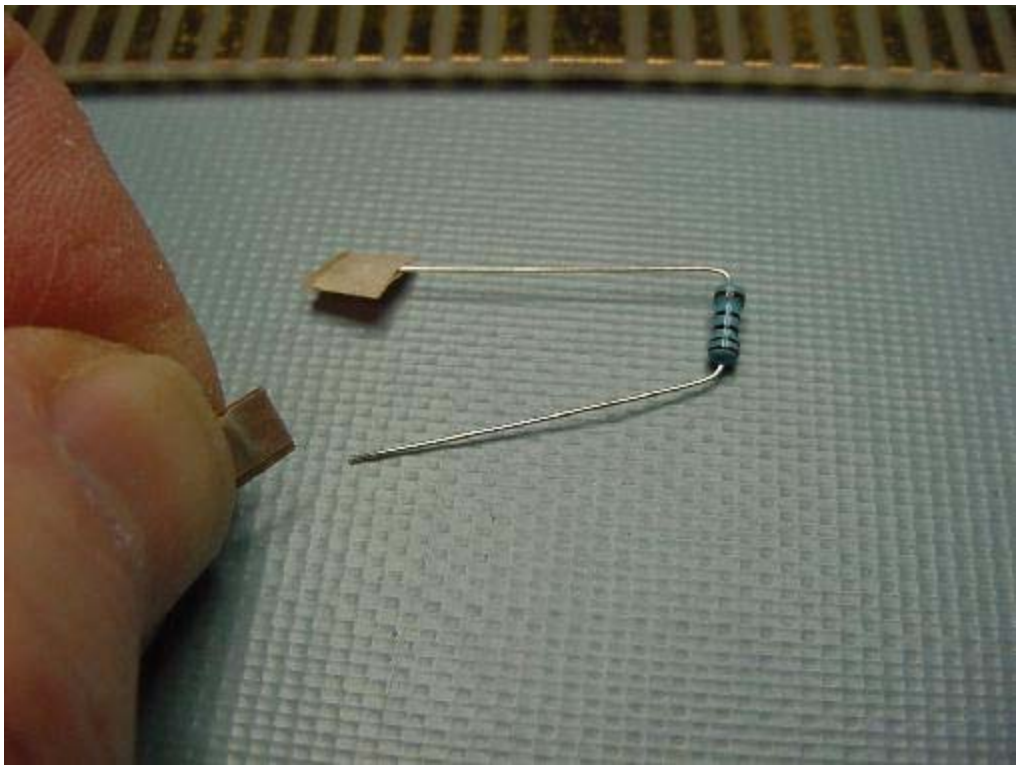
REMOVE SRAM CHIPS U26, U27, U28, U29 AS SHOWN ABOVE.

YOUR CPU BOARD SHOULD HAVE THE CHIPS REMOVED AS SHOWN ABOVE.

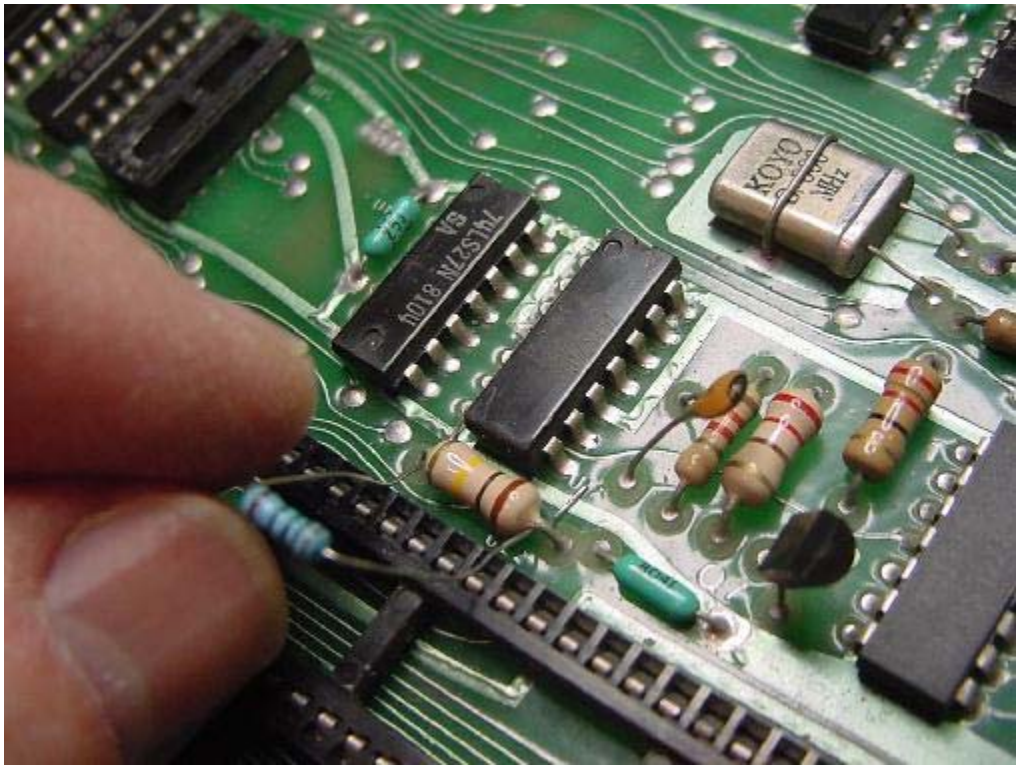


RE-INSTALL Z-80 CPU INTO MULTIGAME BOARD AS SHOWN ABOVE.

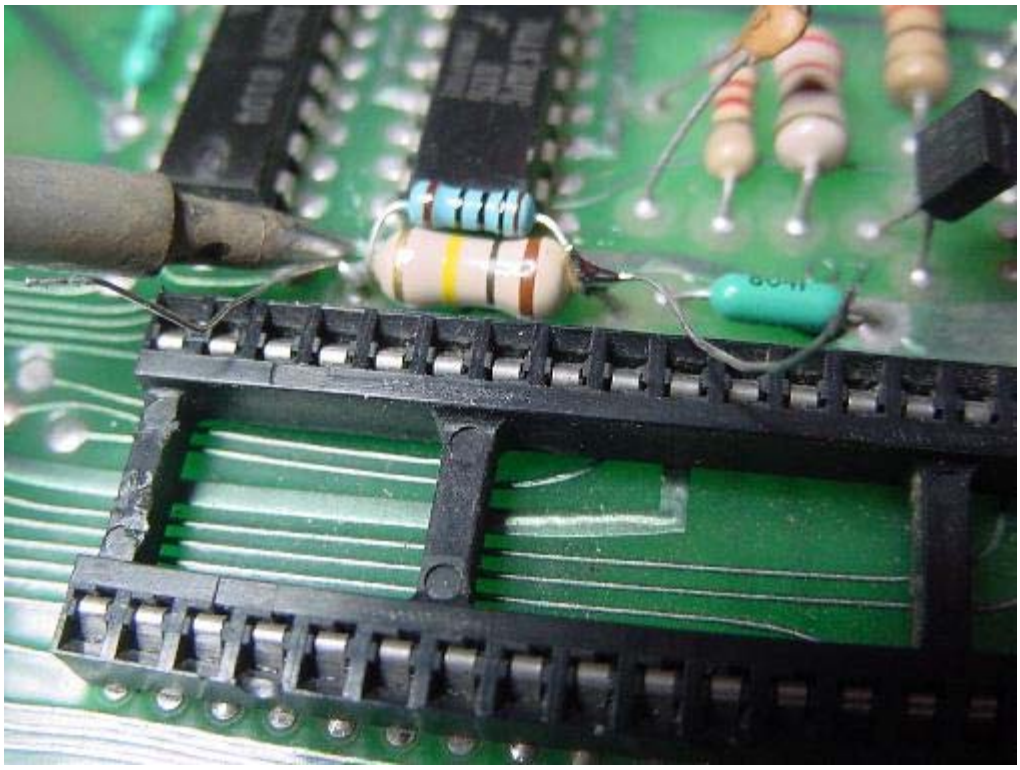
YOU MULTIGAME BOARD SHOULD NOW LOOK LIKE THE ONE ABOVE.
THE ARROWS SHOW THE PIN(1) ORIENTATION FOR EACH CHIP.



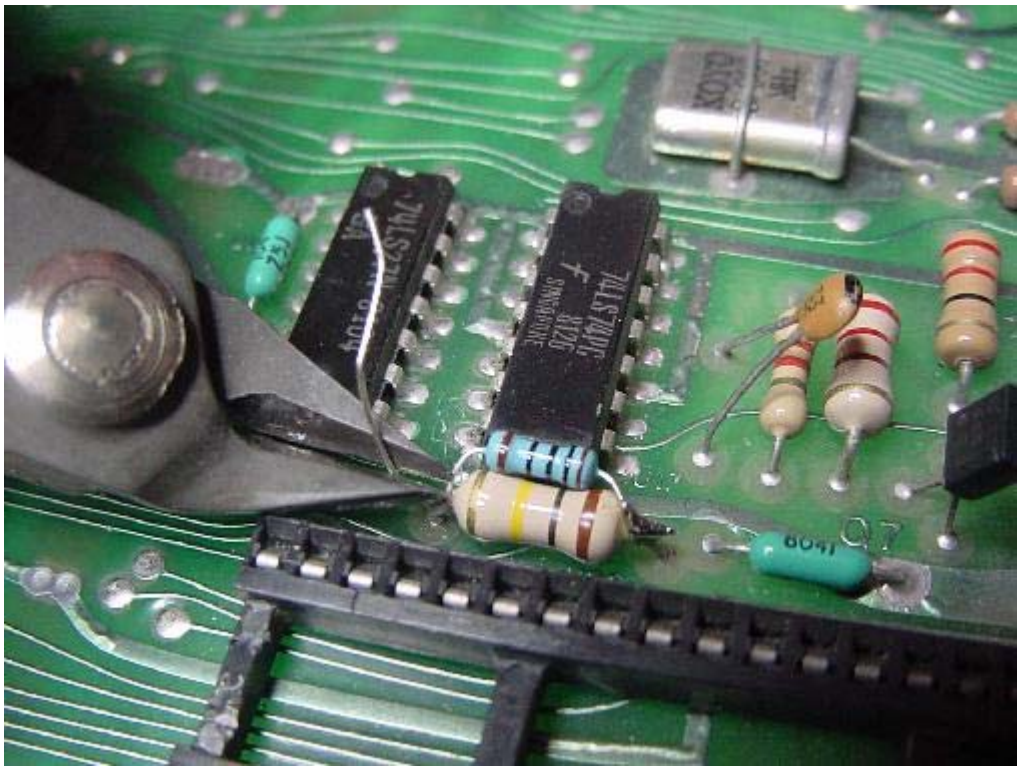
REMOVE TAPE FROM RESISTOR.



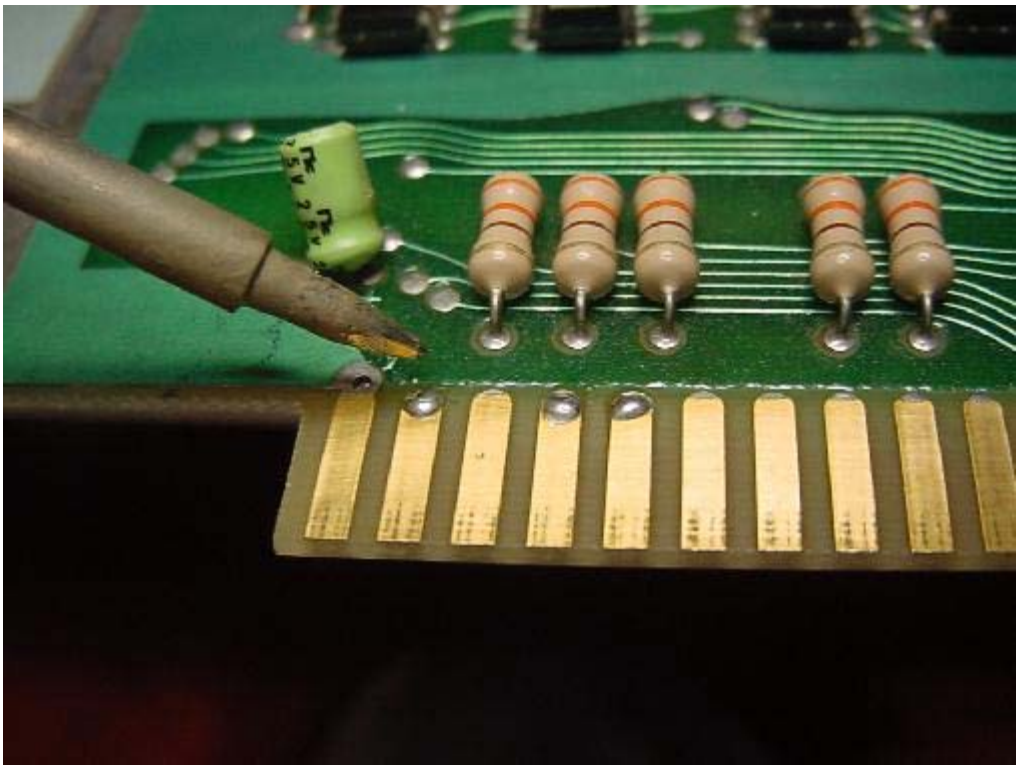
BEND LEADS AT AN ANGLE TO ALLOW INSERTION UNDER 100K RESISTOR



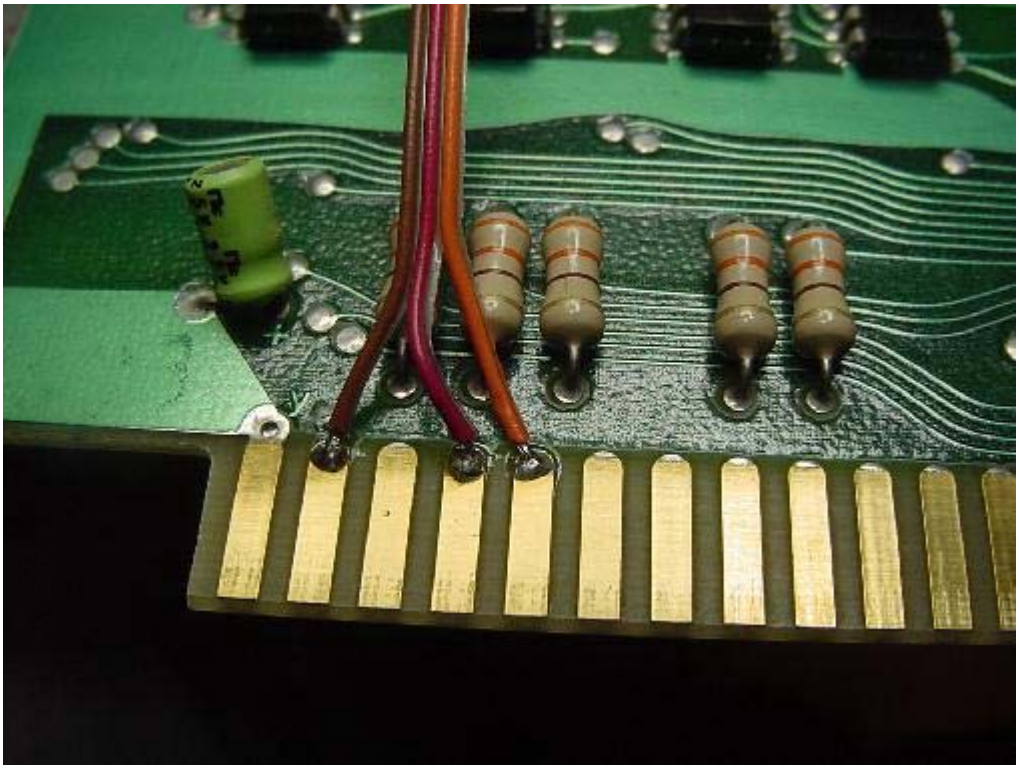
LOOP LEADS AROUND AND SOLDER AS SHOWN ABOVE.



CLIP OFF EXCESS WIRE AS SWOUN ABOVE.

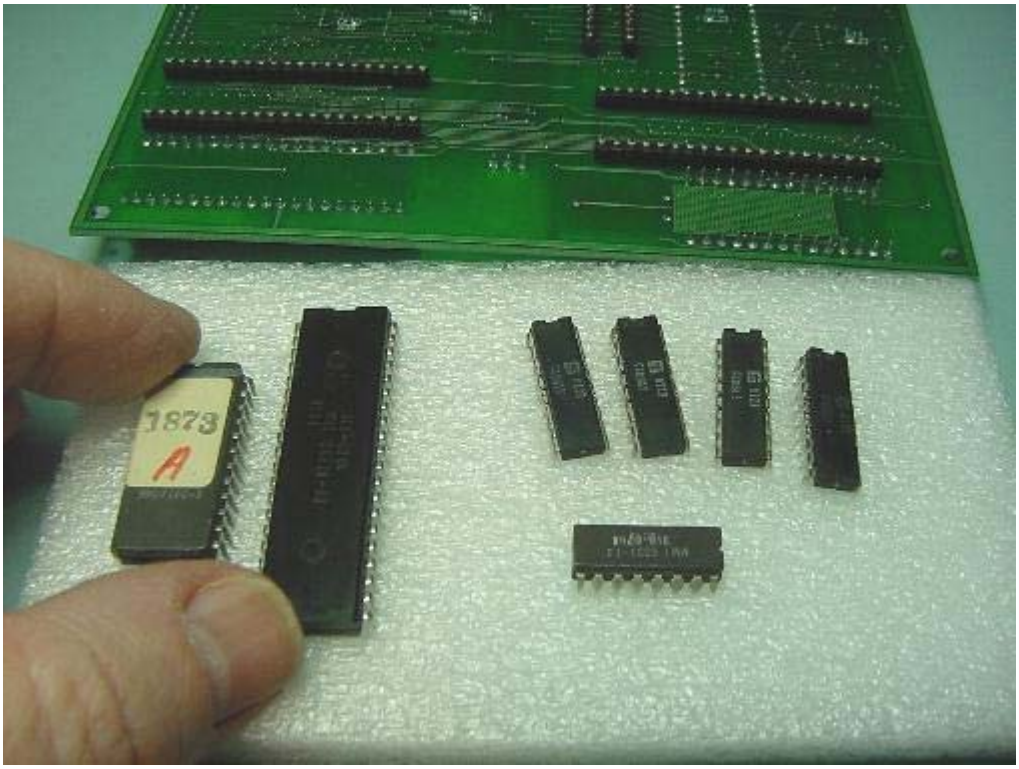


PRE-TIN PADS ON LOWER LEFT OF CPU BOARD AS SHOWN.



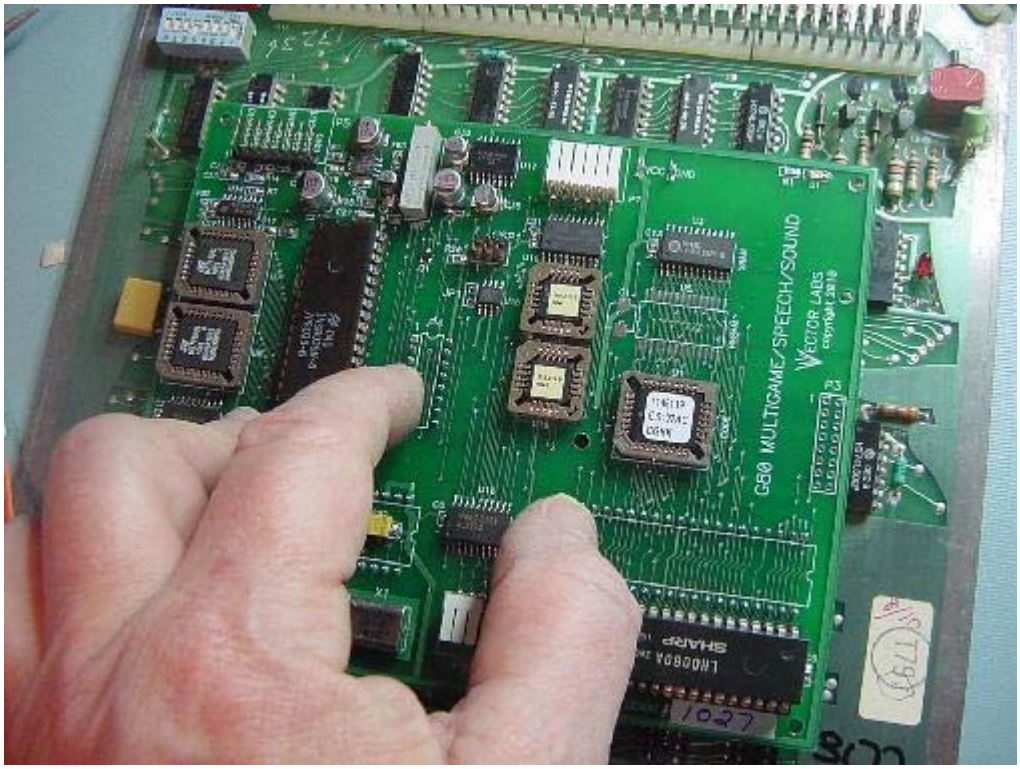
SOLDER BROWN, RED & ORANGE WIRES AS SHOWN ABOVE.

REMOVE PROTECTIVE FOAM FROM MULTIGAME BOARD.

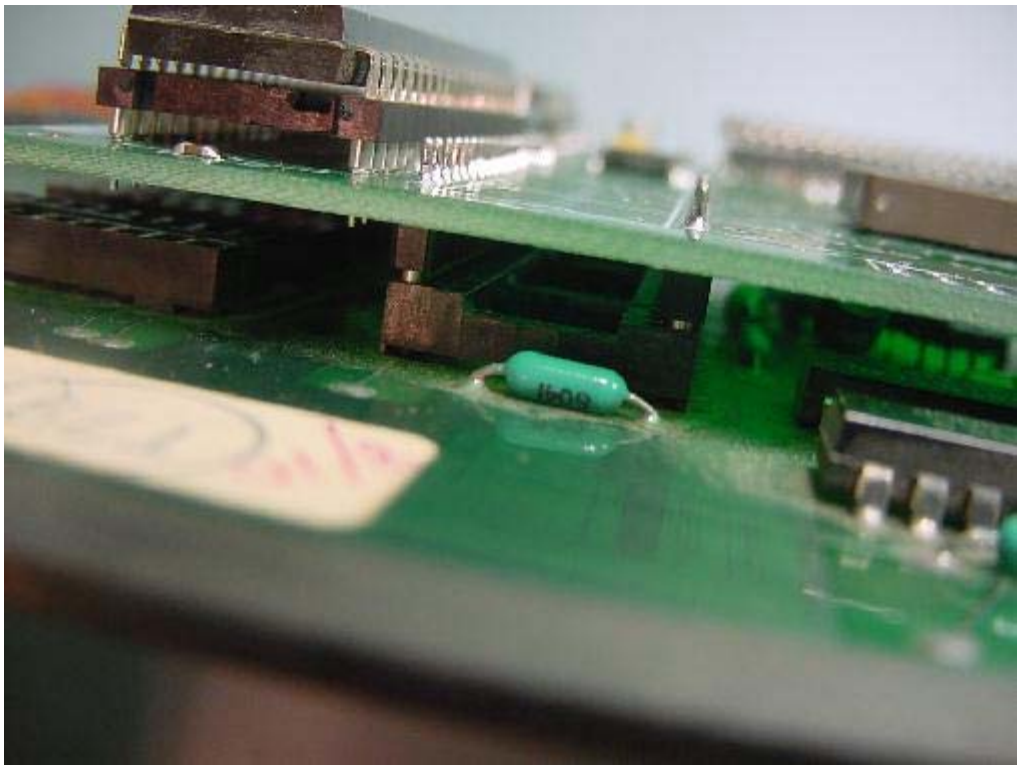


YOU CAN USE THE FOAM TO STORE SOME OF THE CHIPS YOU REMOVED FROM THE CPU BOARD.

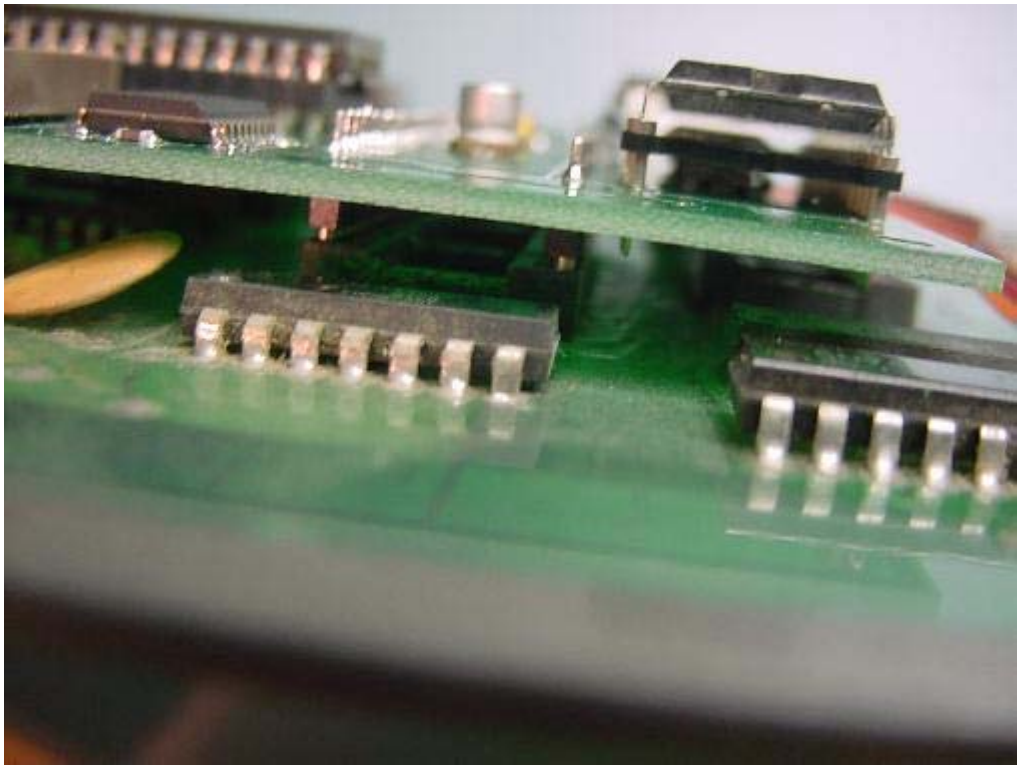
ALIGN THE PINS INTO THE CPU SOCKET ON THE RIGHT SIDE BY THE BOARD AND ON THE LEFT SIDE BY THE SECURITY CHIP SOCKET.



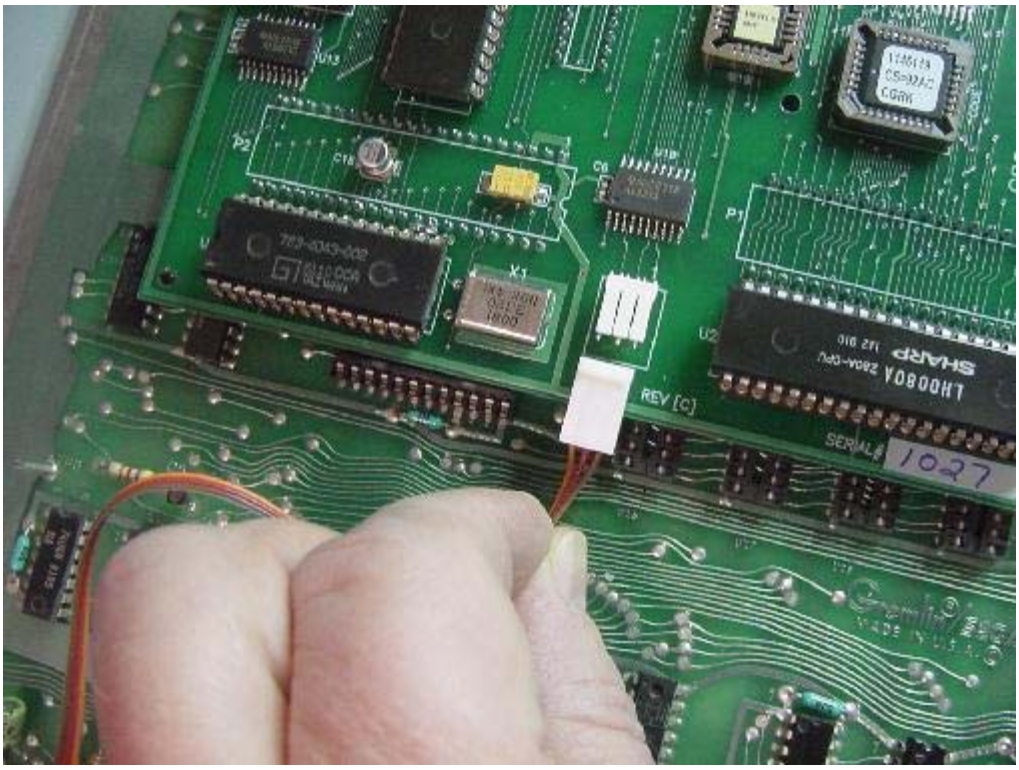
PRESS DOWN WITH EQUAL PRESSURE ON ALL THREE SETS OF PINS.



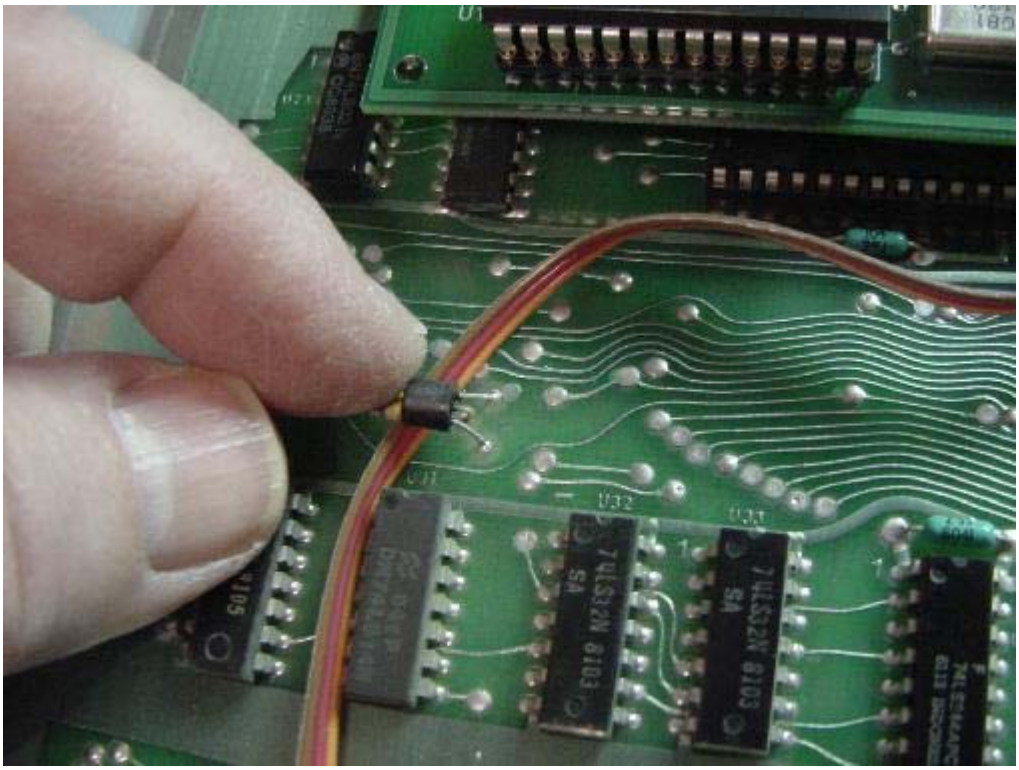
RE-CHECK THE RIGHT SIDE TO MAKE SURE THE PINS ARE ALIGNED PROPERLY.



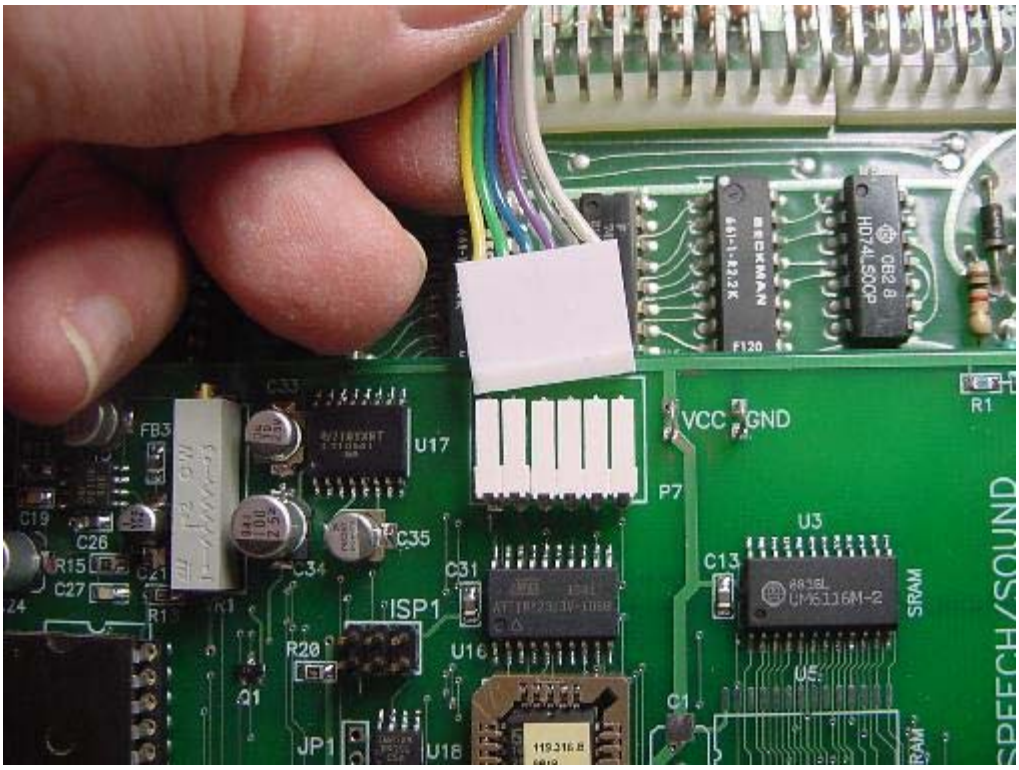
RE-CHECK THE LEFT SIDE TO MAKE SURE THE PINS ARE ALIGNED PROPERLY.



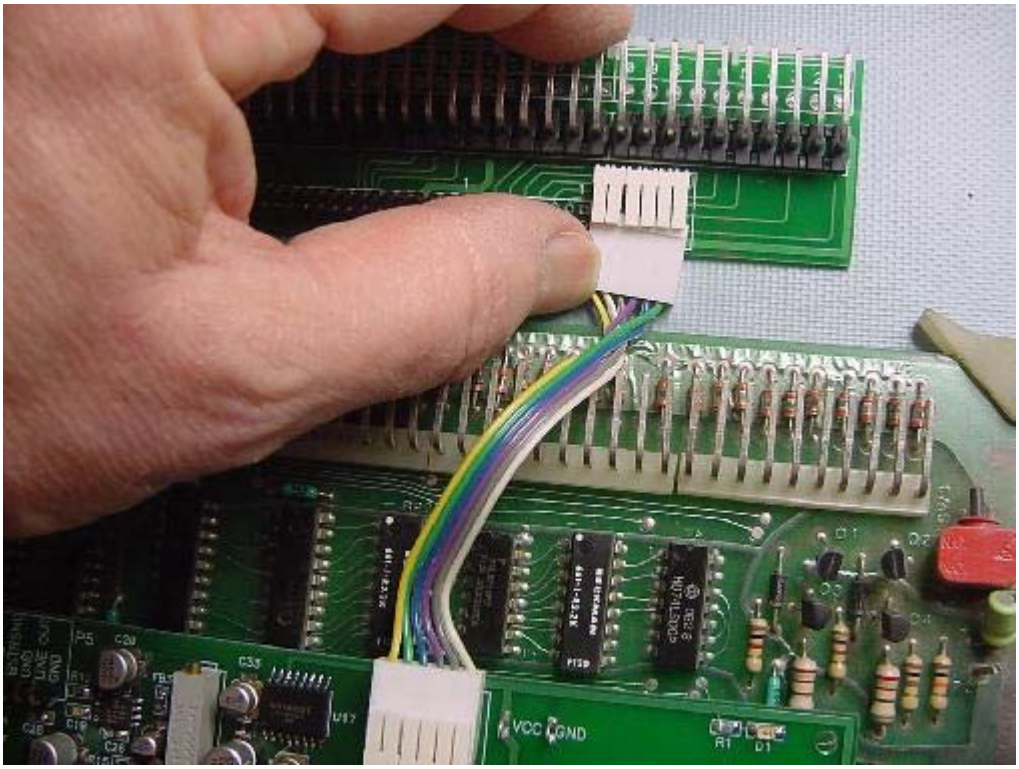
INSERT THE 3 PIN CONNECTOR INTO THE HEADER AS SHOWN ABOVE.



IF YOU WANT YOU CAN BEND THE TRANSISTOR OVER TO HOLD THE WIRE INTO PLACE AS SHOWN ABOVE.

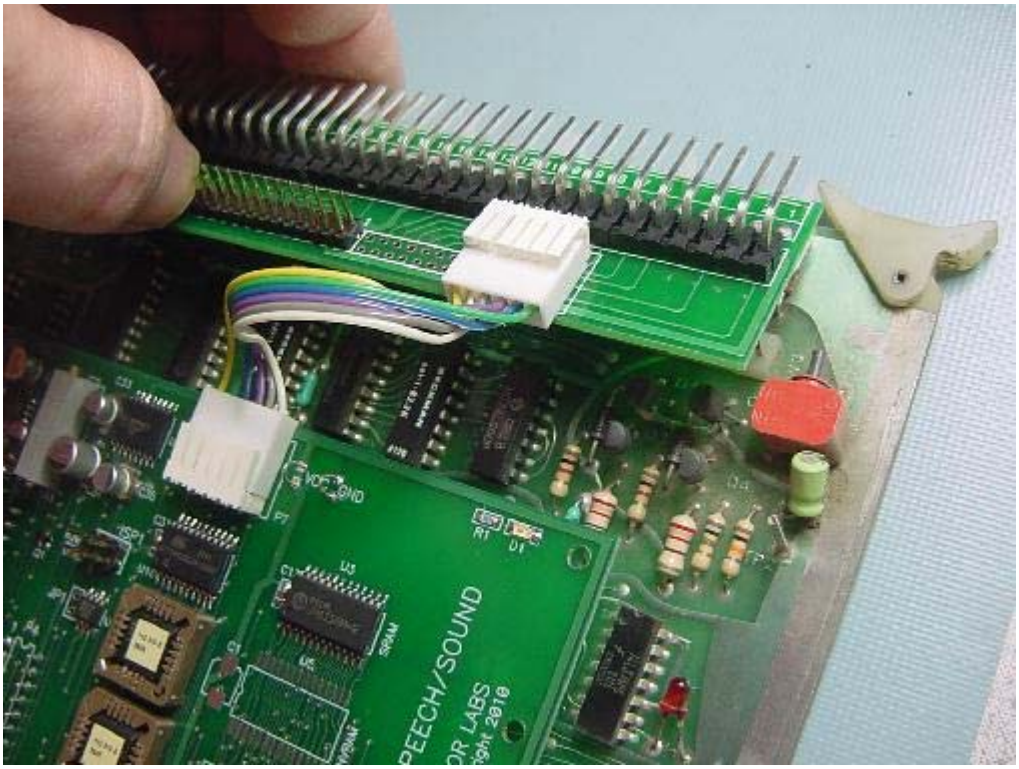


INSERT THE 6 PIN CONNECTOR INTO THE HEADER AS SHOWN ABOVE.
EACH END OF THE CONNECTOR IS DIFFERENT SO CHECK THE COLORS.

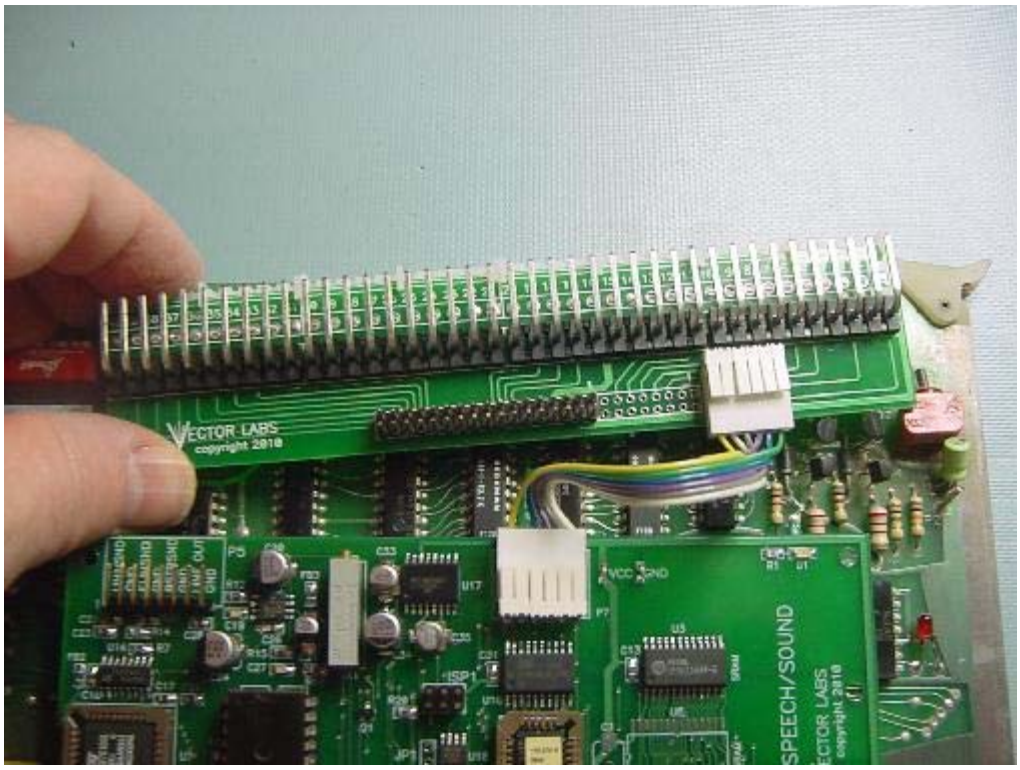


INSERT THE OTHER END INTO THE WIRE HARNESS INTERFACE BOARD.

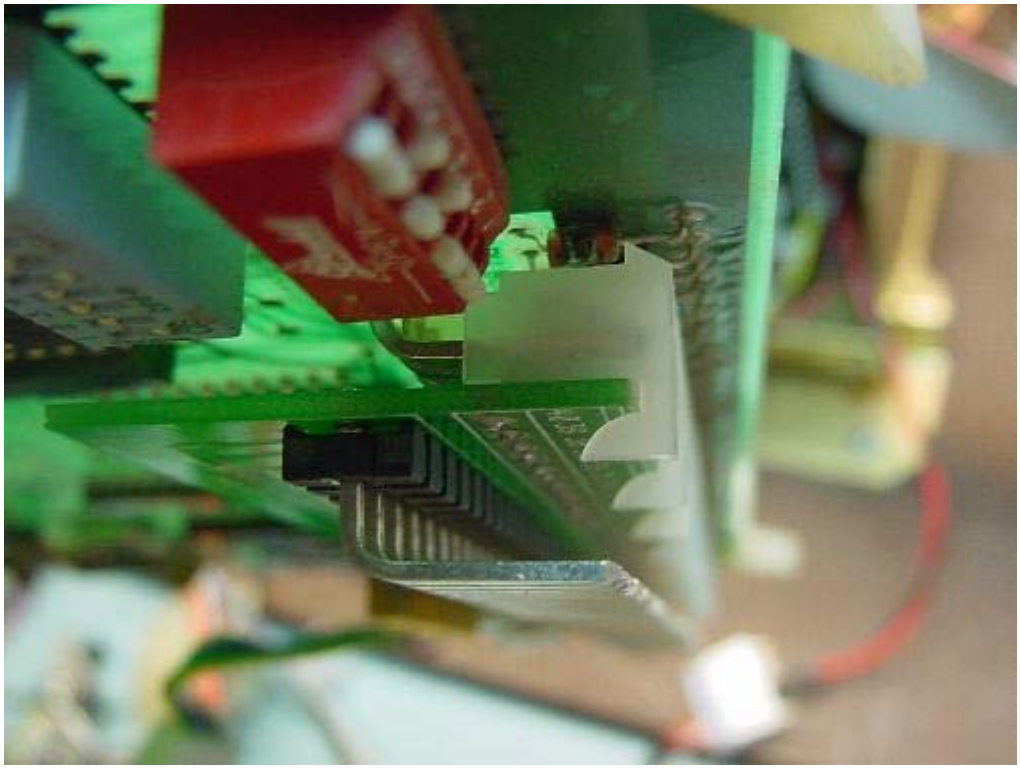
MAKE SURE THE COLORS ON EACH END OF THE CONNECTORS MATCH THE PICTURE ABOVE.



INSERT THE BOARD OVER THE PINS ON THE CPU BOARD AS SHOWN ABOVE.



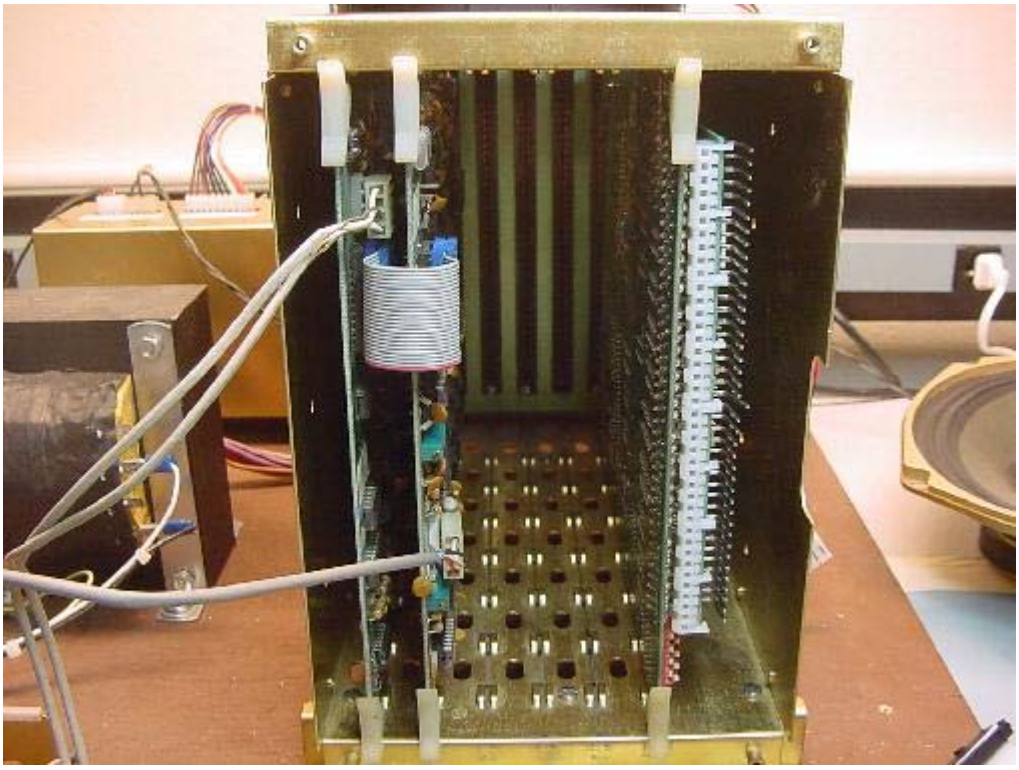
INSERT THE LEFT SIDE FIRST AND THEN THE RIGHT AS SHOWN.
IT REQUIRES BOTH HANDS AND SIGNIFICANT FORCE TO
ENSURE THAT THE BOARD IS INSERTED PROPERLY.



INSPECT BOTH SIDES UNDERNEATH THE INTERFACE BOARD
THE PINS SHOULD BE INSERTED APPROX. 90% AS SHOWN ABOVE.

YOU HAVE COMPLETED THE CPU PORTION OF THE INSTALL.
YOU BOARD SHOULD LOOK SIMILAR TO THE ONE PICTURED BELOW.

THE NEXT STEP IS TO PLUG THE CPU BOARD INTO THE CARD CAGE WITH THE TWO XY BOARDS AS SHOWN BELOW.



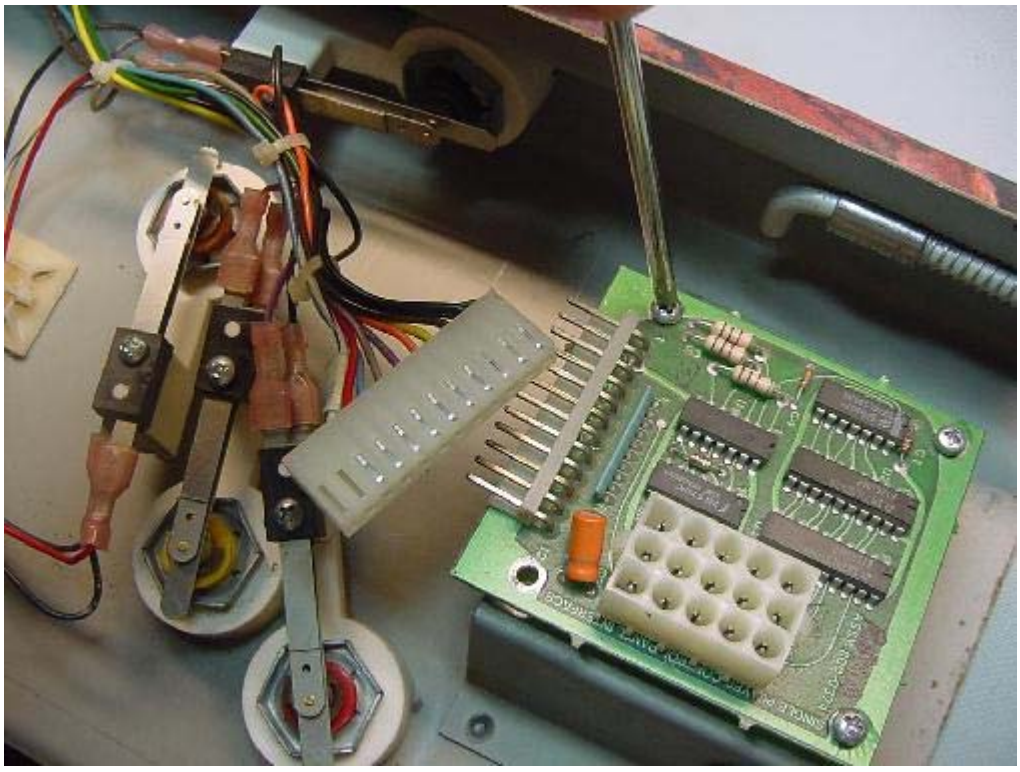
DO A QUICK POWER UP TEST TO MAKE SURE THE CPU BOARD AND MULTIGAME BOARD WERE PROPERLY INSTALLED. YOU SHOULD SEE THE STAR TREK STARTUP SCREENS ON THE MONITOR.

POWER DOWN THE GAME AND AFTER 10-15 SECONDS REMOVE THE CPU BOARD FROM THE CARD CAGE AND SET ASIDE.

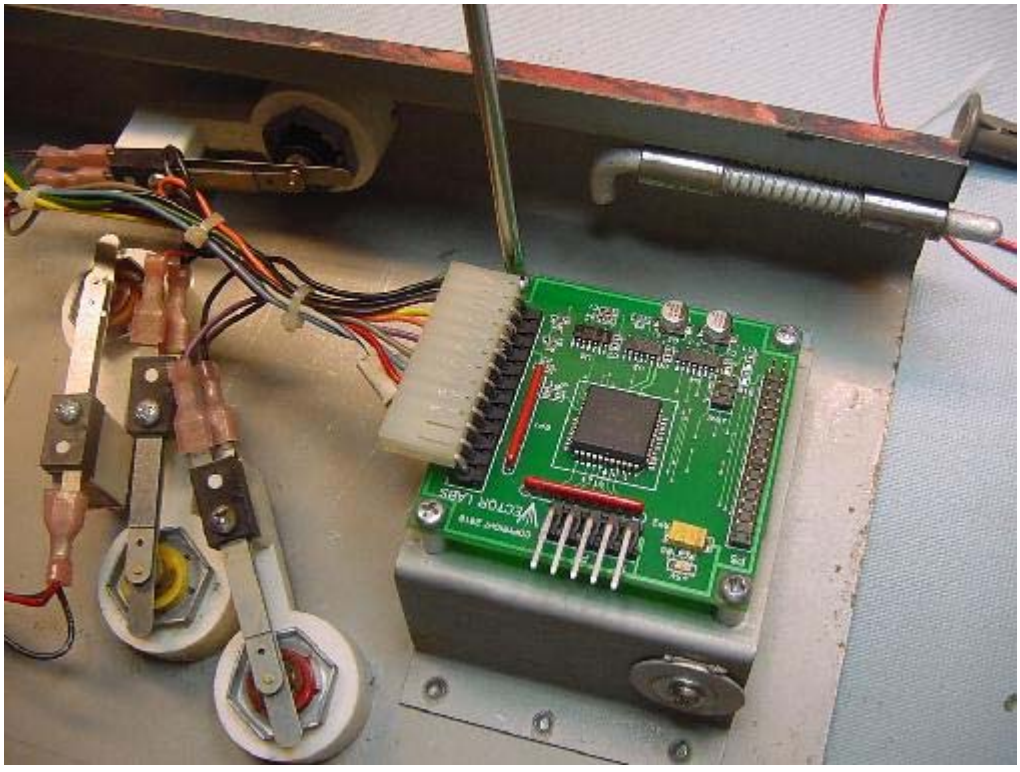
NEXT IS INSTALLING THE NEW SPINNER BOARD INTO THE CONTROL PANEL.

THE STAR TREK PANEL BELOW IS FROM A CONVERT-A-CAB.
YOURS MAY LOOK A LITTLE DIFFERENT BUT THE WIRING IS THE SAME.

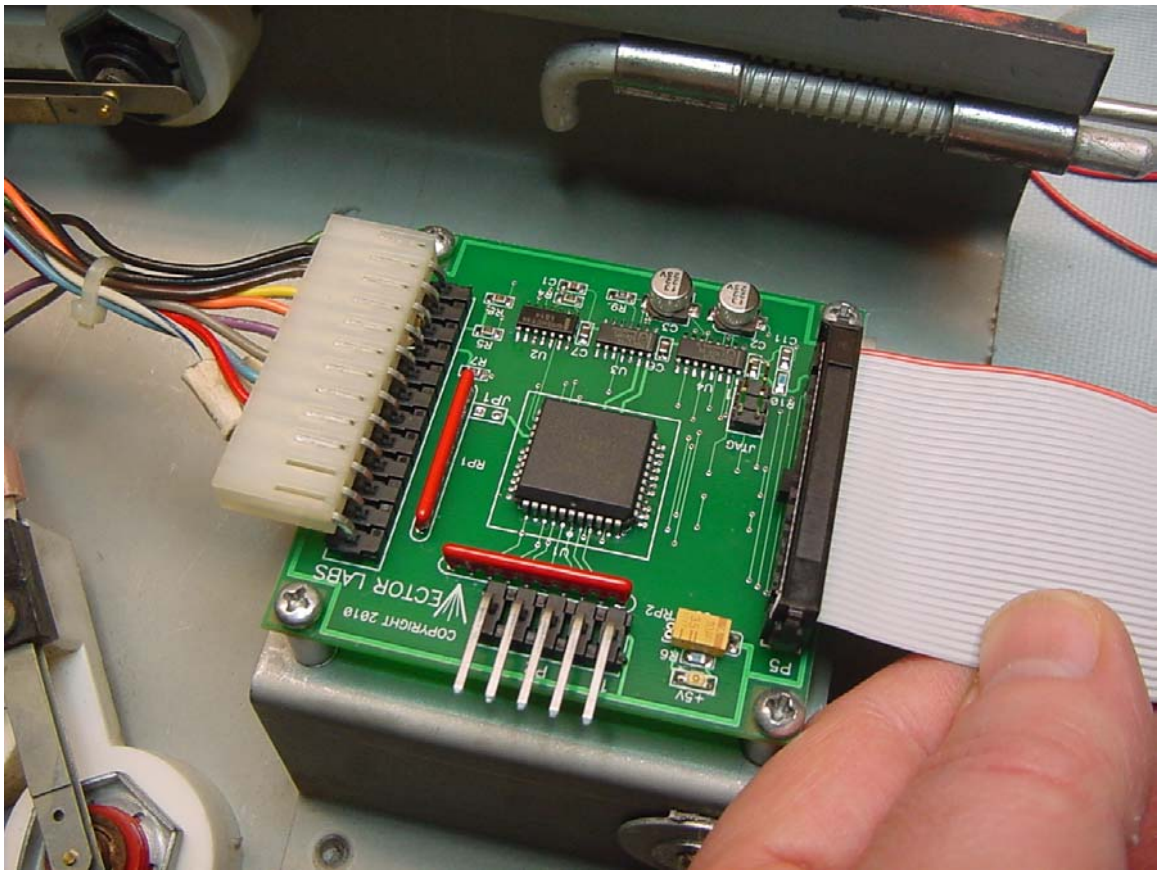
TURN THE CONTROL PANEL OVER AND UN-PLUG THE 12 PIN CONNECTOR AND REMOVE THE 4 SCREWS AND SPACERS FROM THE OLD SPINNER BOARD.



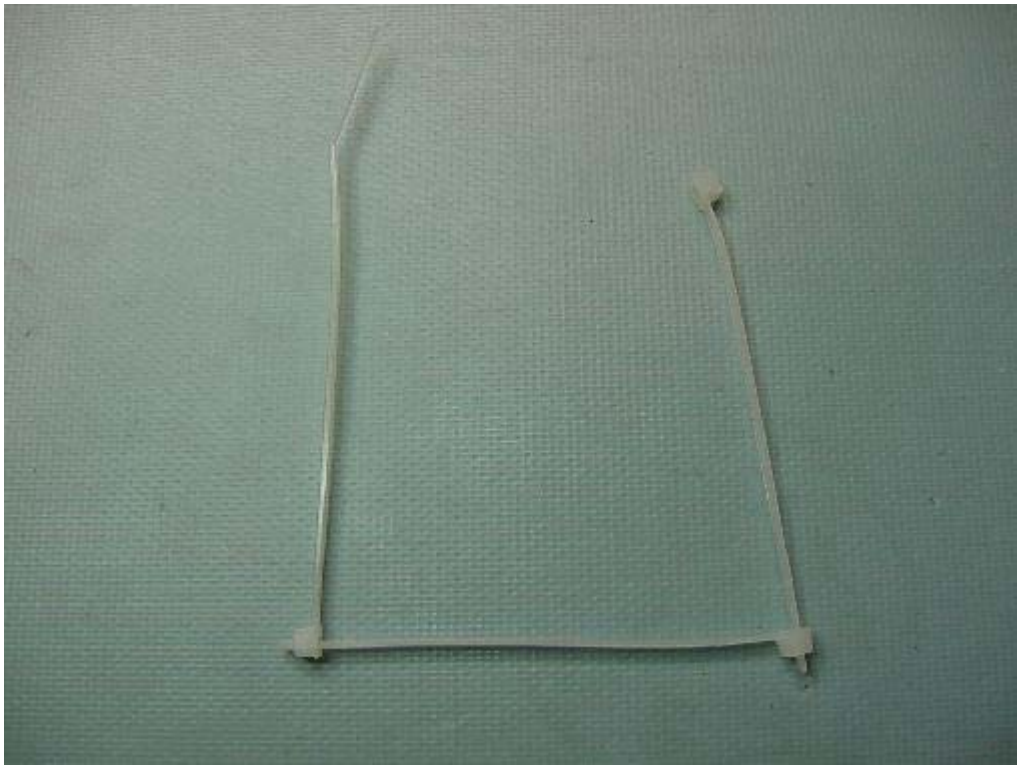
PLACE THE 4 SCREWS & SPACERS INTO THE NEW SPINNER BOARD AND PLUG IN THE 12 PIN CONNECTOR AS SHOWN BELOW.



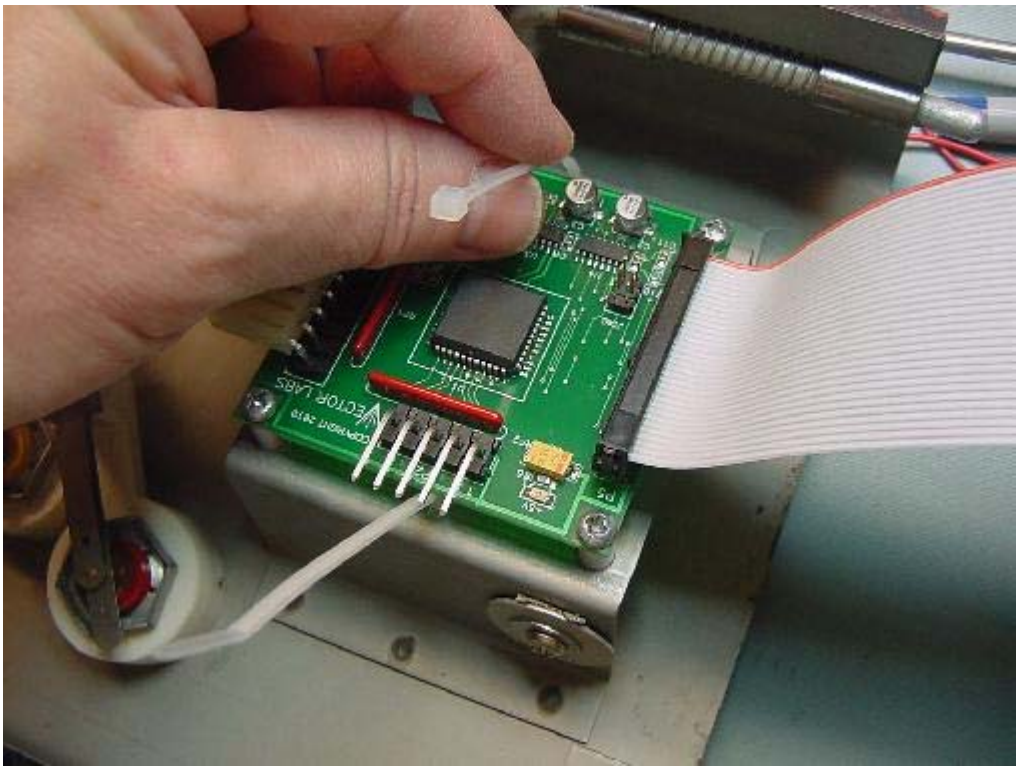
PLUG IN THE 34 PIN RIBBON CABLE AS SHOWN BELOW.



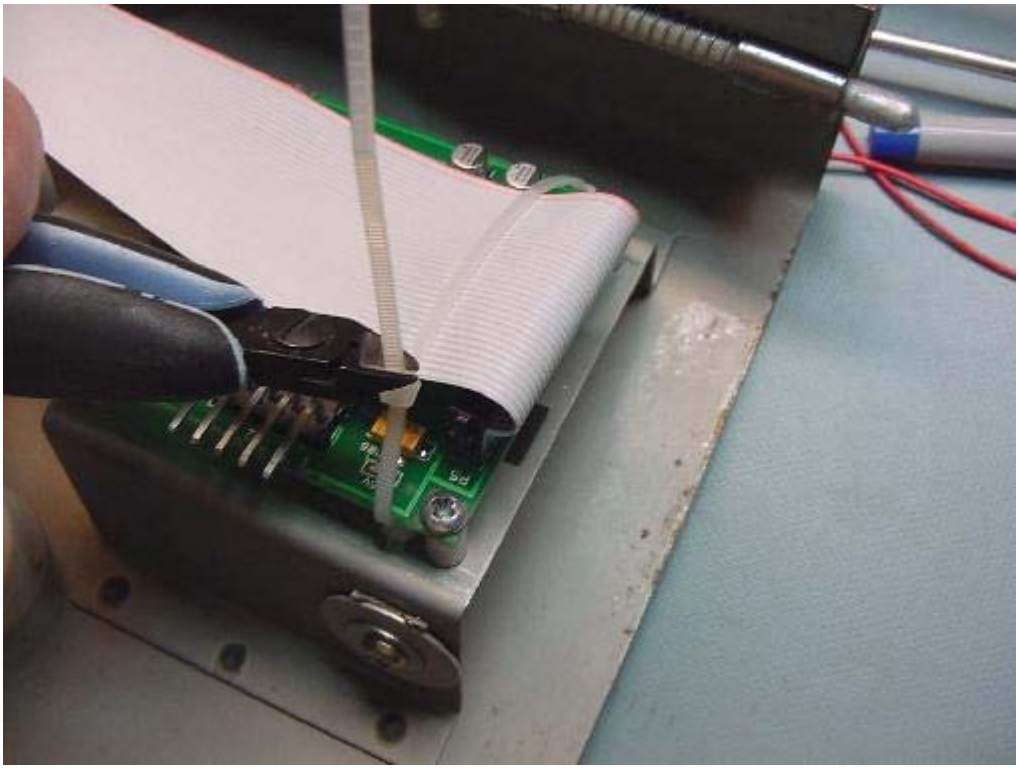
USING THREE TY-WRAPS MAKE A U SHAPED FIXTURE AS SHOWN BELOW.



PLACE THE TY-WRAPS UNDER THE SPINNER BOARD AS SHOWN BELOW.

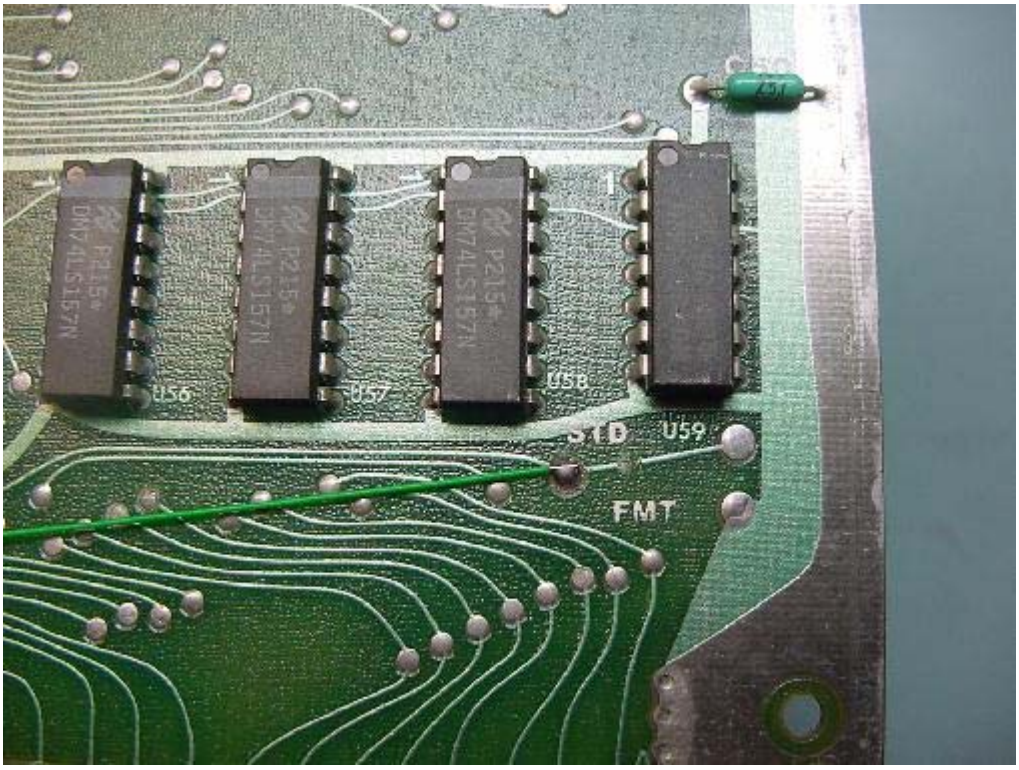


FOLD THE RIBBON CABLE OVER AND SECURE WITH TY-WRAP AND TRIM OFF EXCESS AS SHOWN.

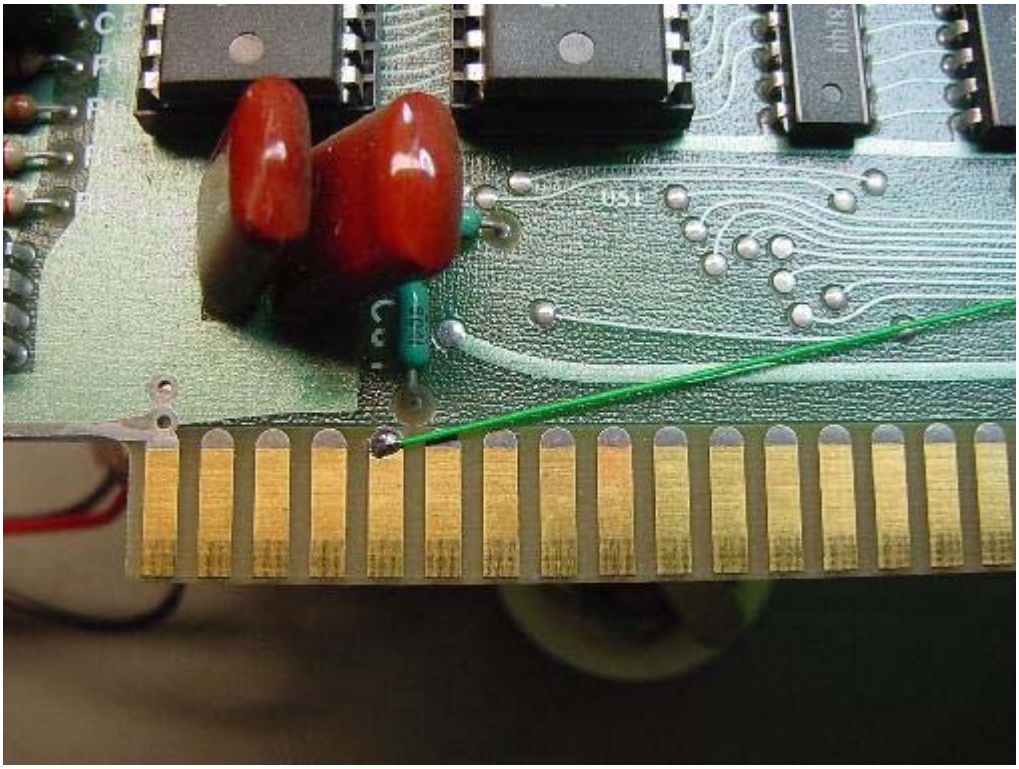


THE OTHER 5 PIN CONNECTOR IS FOR THE SECOND PLAYER ON ELIMINATOR. CONTACT VECTOR LABS FOR HOOKUP INFO.

IF YOU HAVE A UNIVERSAL SOUND BOARD FOLLOW THE THREE STEPS BELOW TO MOD THE BOARD FOR MULTISOUND.

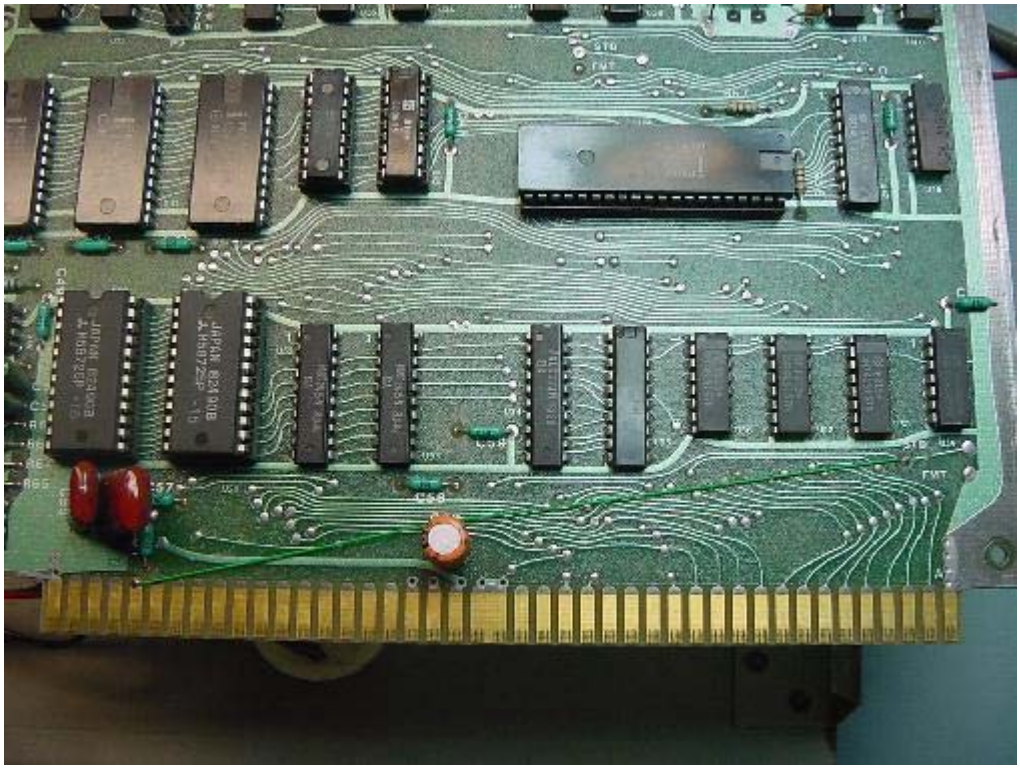


CUT THE TRACE BETWEEN "STD" AND "FMT" AS SHOWN ABOVE.
CONNECT ONE END OF A JUMPER WIRE TO THE PAD SHOWN ABOVE.

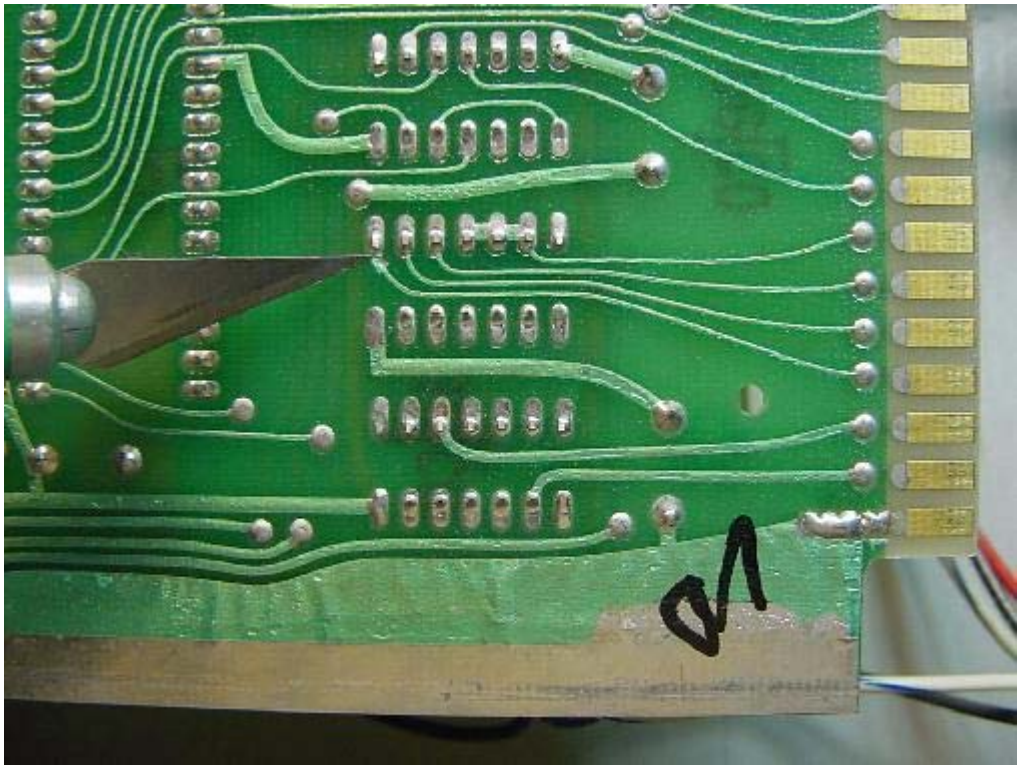


CONNECT THE OTHER END OF THE JUMPER TO THE PAD SHOWN ABOVE.

YOUR UNIVERSAL SOUND MOD SHOULD LOOK LIKE THE ONE PICTURED BELOW.

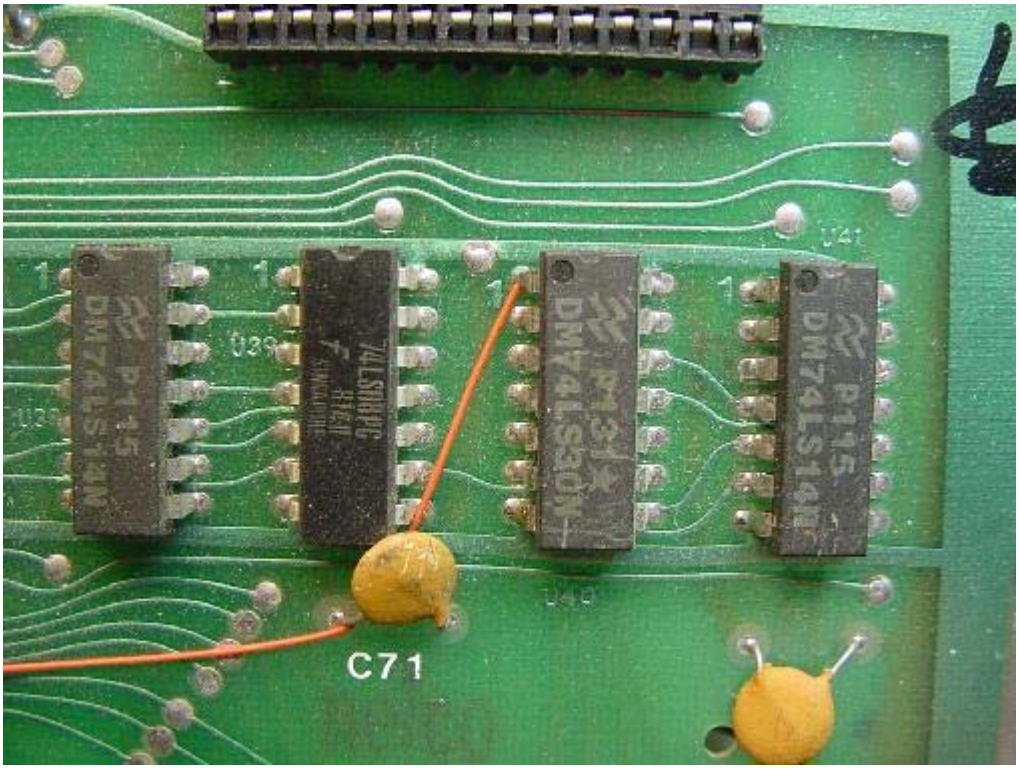


IF YOU HAVE A ELIMINATOR SOUND BOARD FOLLOW THE THREE STEPS BELOW TO MOD THE BOARD FOR MULTISOUND.

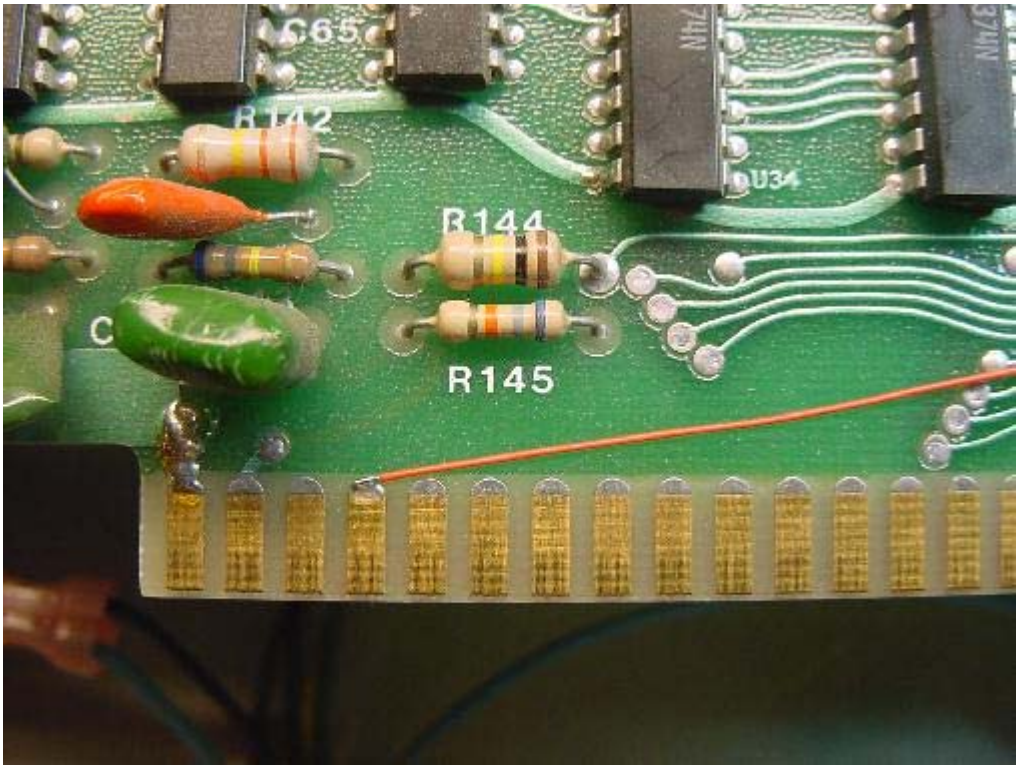


CUT TRACE GOING TO U40 PIN1 AS SHOWN ABOVE.

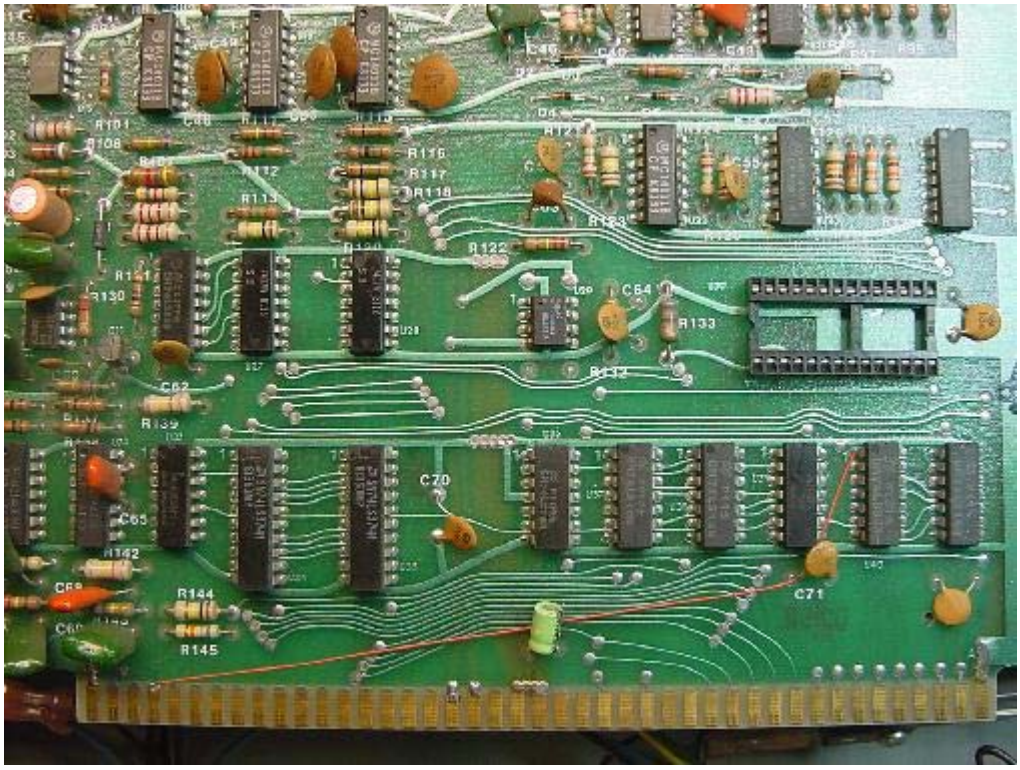
CONNECT ONE END OF A JUMPER WIRE TO U40 PIN1 AS SHOWN BELOW.



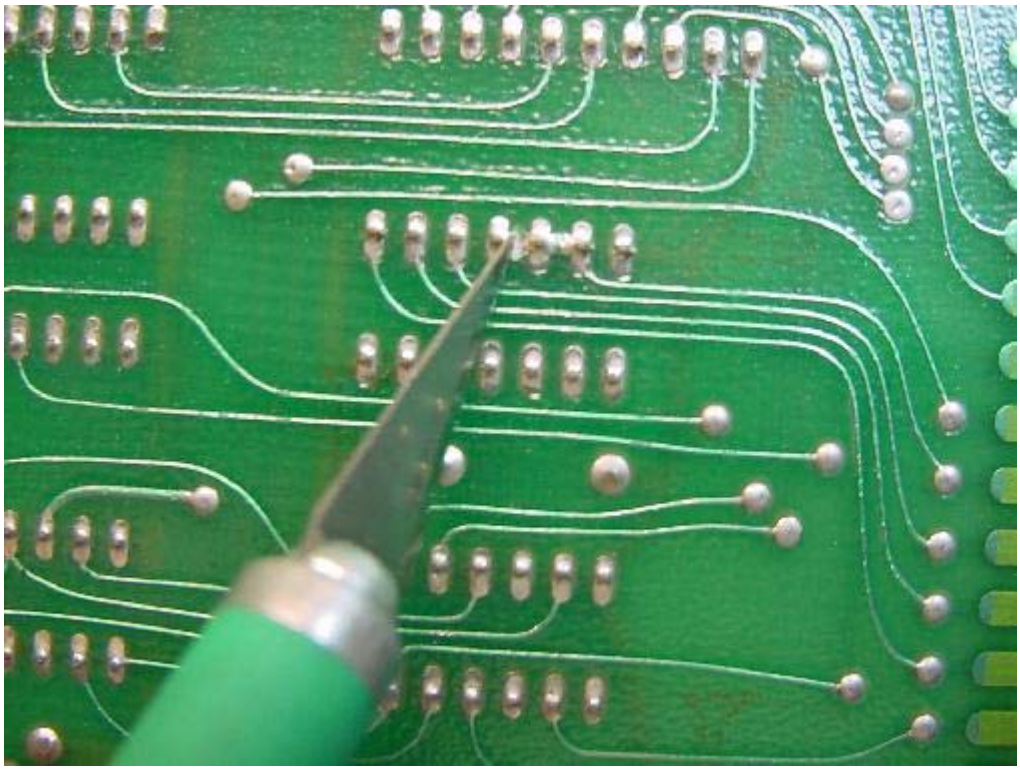
CONNECT THE OTHER END OF THE JUMPER TO THE PAD SHOWN BELOW.



YOUR ELIMINATOR SOUND MOD SHOULD LOOK LIKE THE ONE PICTURED BELOW.

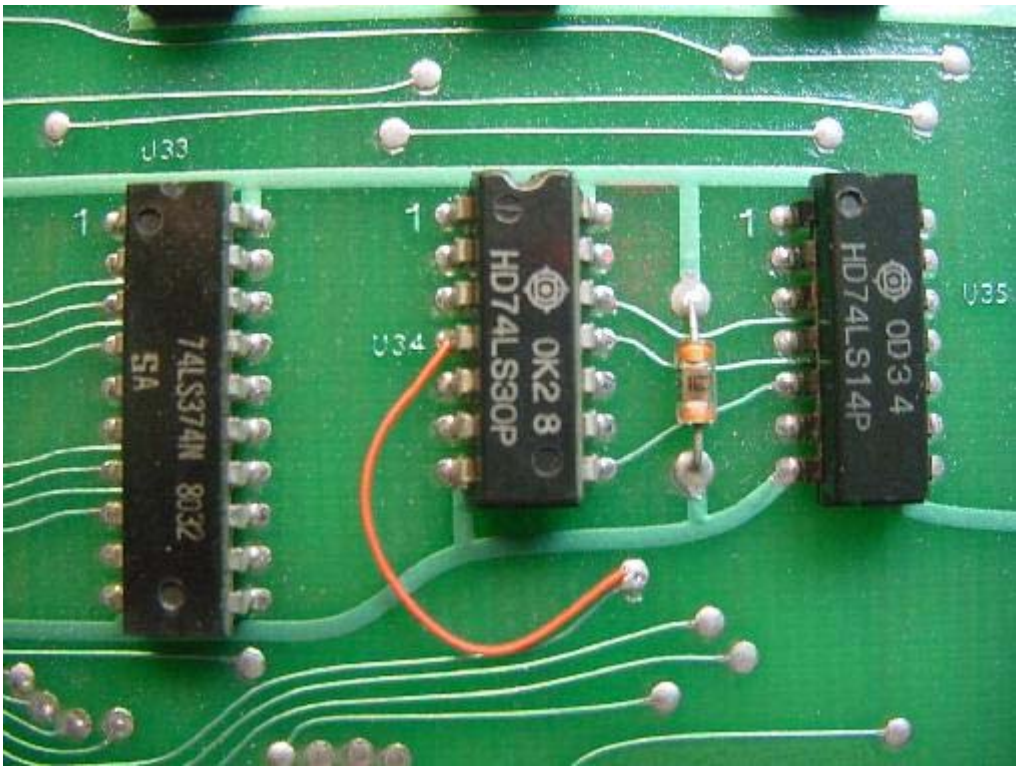


IF YOU HAVE A BATTLESTAR SOUND BOARD FOLLOW THE THREE STEPS BELOW TO MOD THE BOARD FOR MULTISOUND

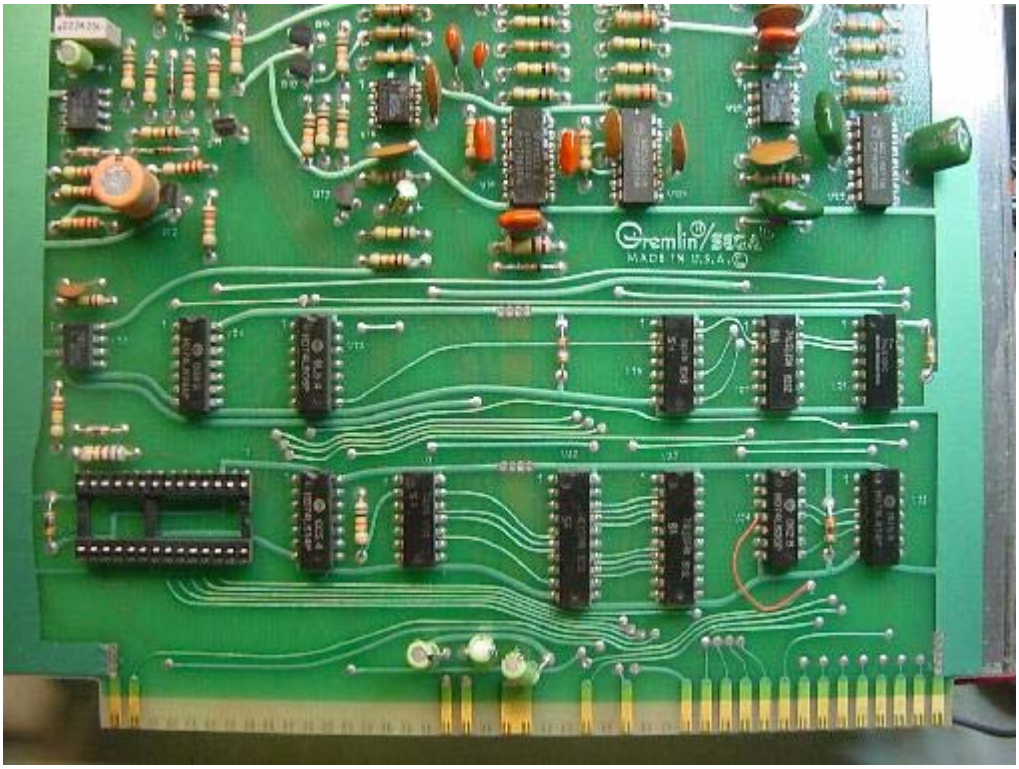


CUT TRACE ON U34 PIN4 AS SHOWN ABOVE.

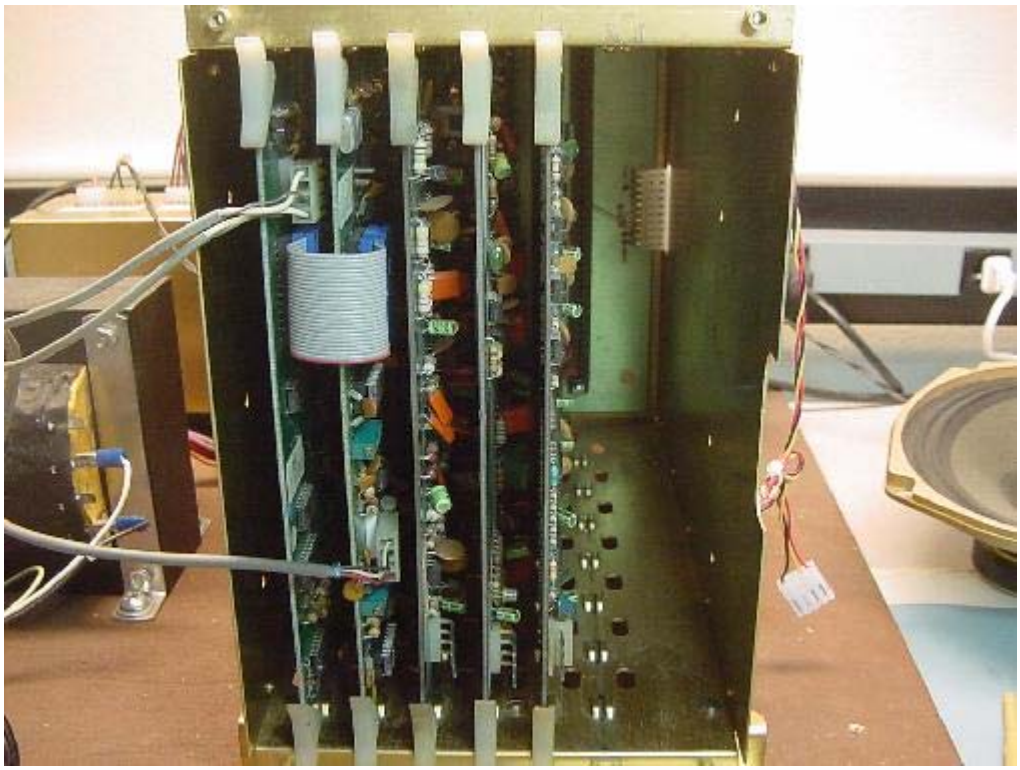
CONNECT JUMPER WIRE FROM U34 PIN4 TO THE PAD SHOWN BELOW.



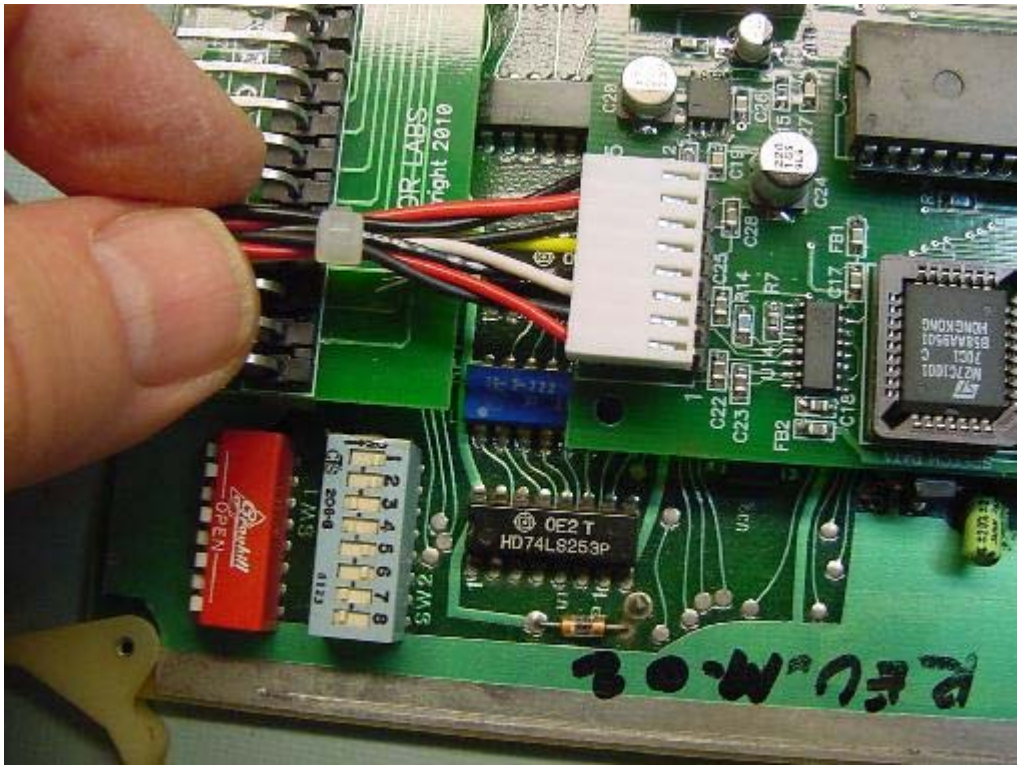
YOUR BATTLESTAR SOUND MOD SHOULD LOOK LIKE THE ONE PICTURED BELOW.



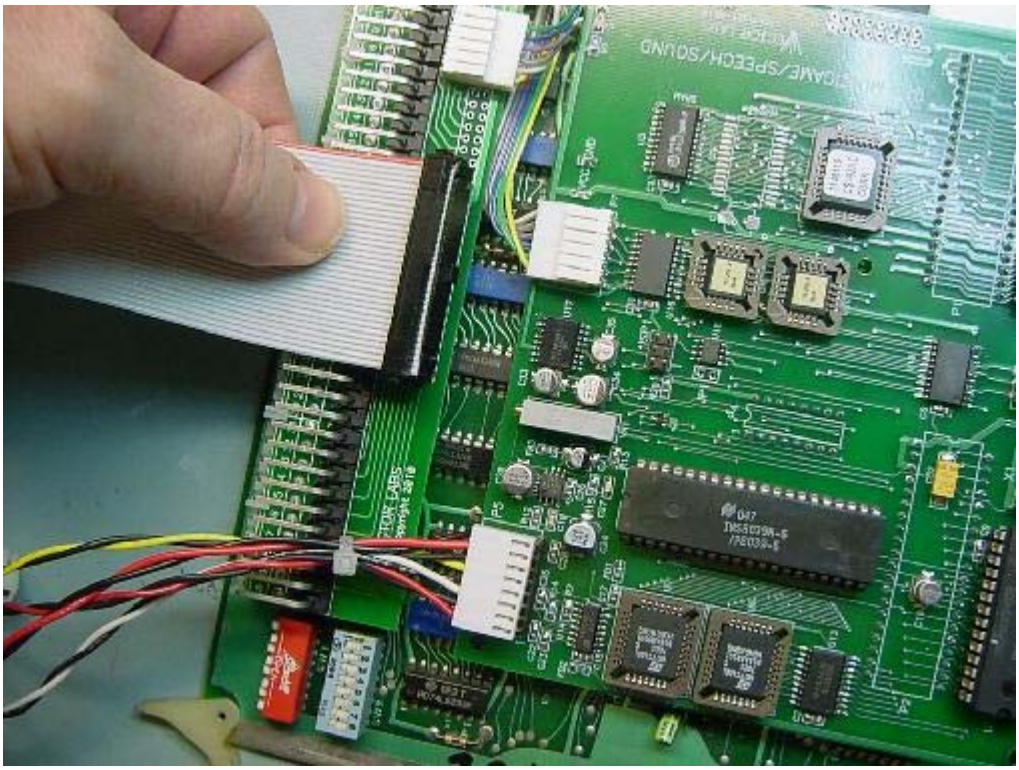
INSTALL THE 1,2,OR 3 MODDED SOUND BOARDS INTO THE CARD CAGE AS INDICATED.
XY CONTROL–XY TIMING–BATTLESTAR–ELIMINATOR–UNIVERSAL- EMPTY



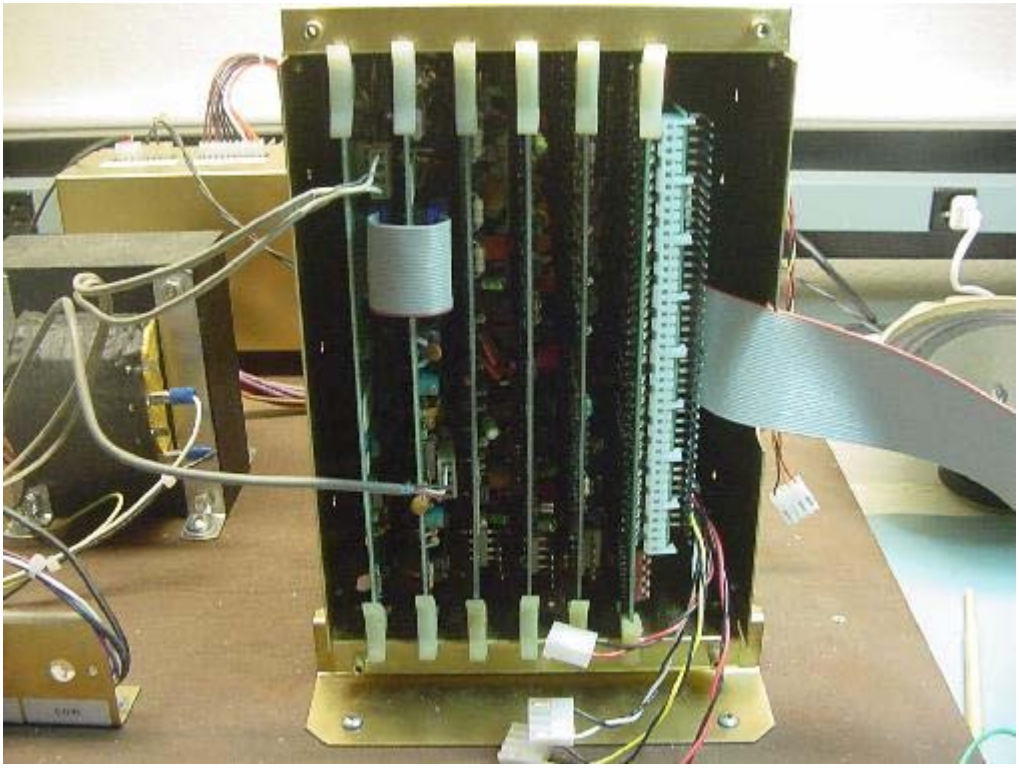
INSERT THE 8 PIN SOUND INTERFACE CABLE INTO HEADER P5 ON THE G80 MULTIGAME BOARD AS SHOWN BELOW.



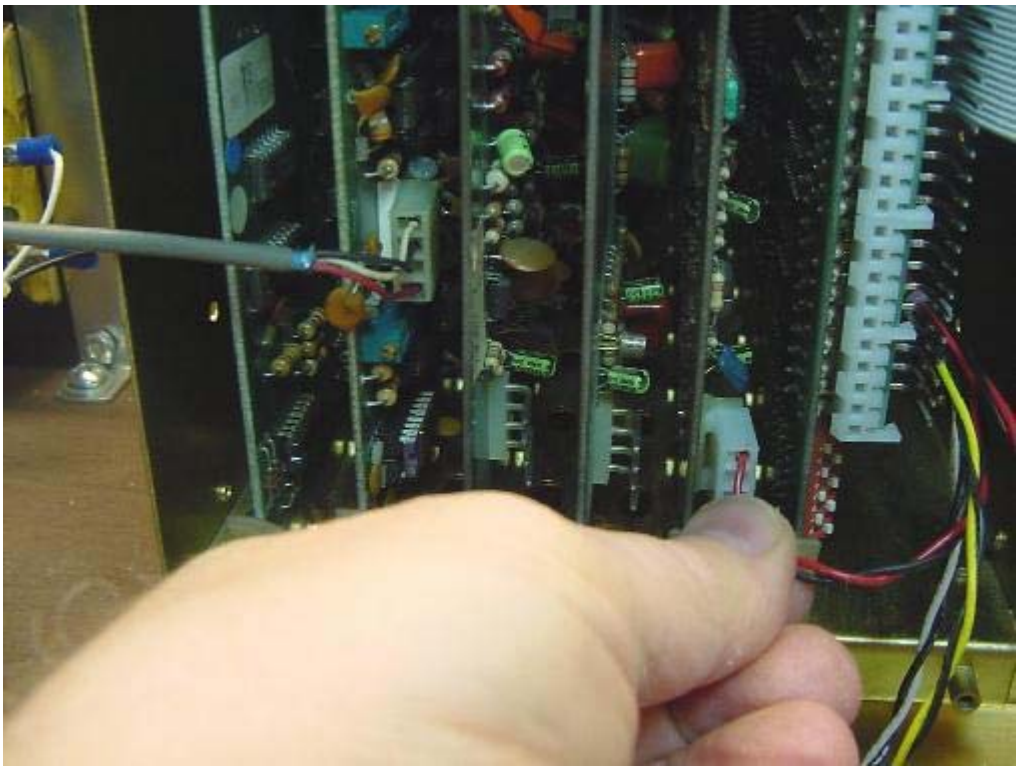
CONNECT THE OTHER END OF THE 34 PIN RIBBON CABLE FROM THE SPINNER BOARD/CONTROL PANEL INTO THE WIRE HARNESS PWA AS SHOWN BELOW.



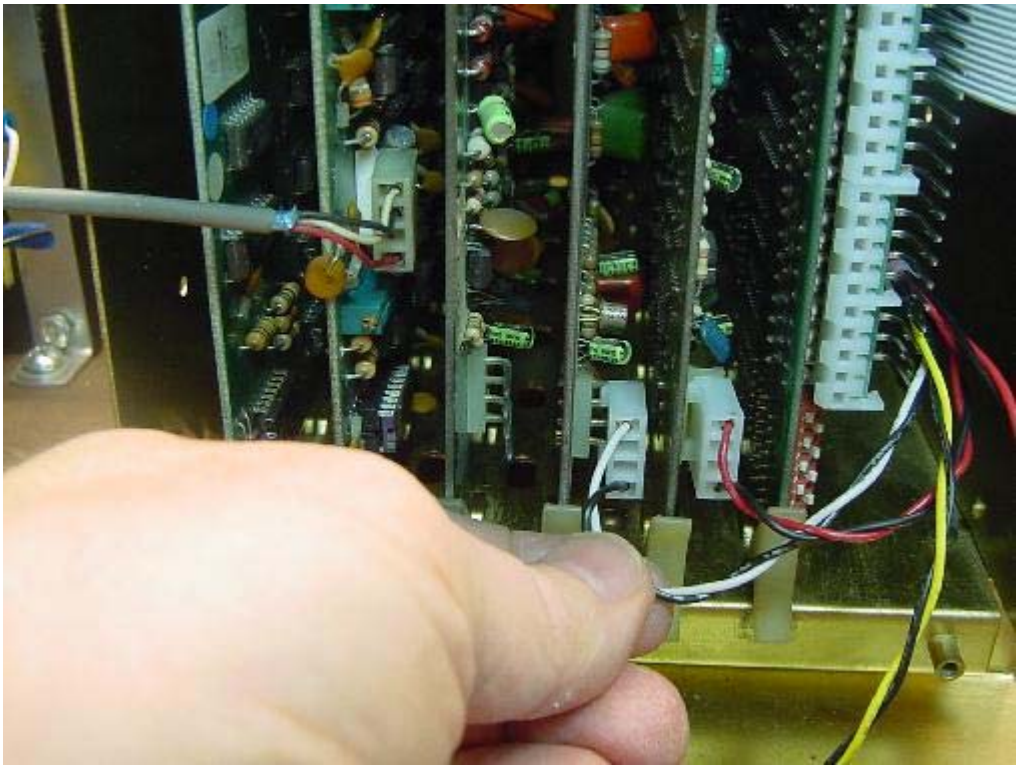
INSERT THE CPU BOARD INTO THE FAR RIGHT EMPTY SLOT IN THE CARD CAGE AS SHOWN BELOW



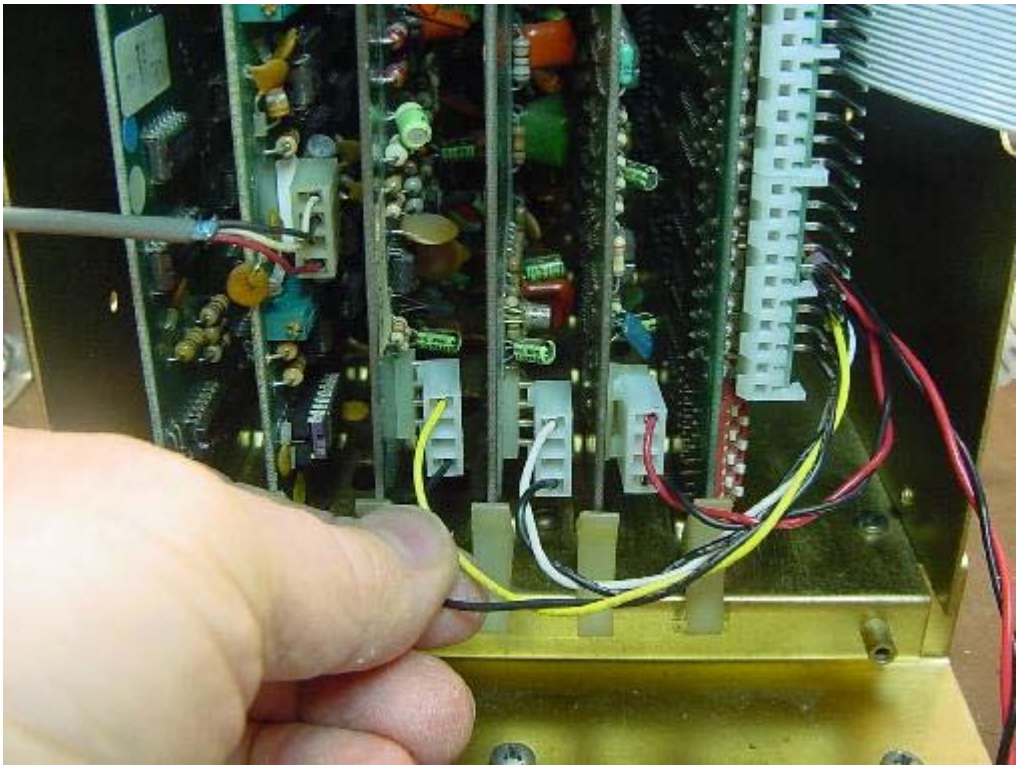
PLUG IN THE RED/BLK CONNECTOR INTO THE UNIVERSAL SOUND BOARD.



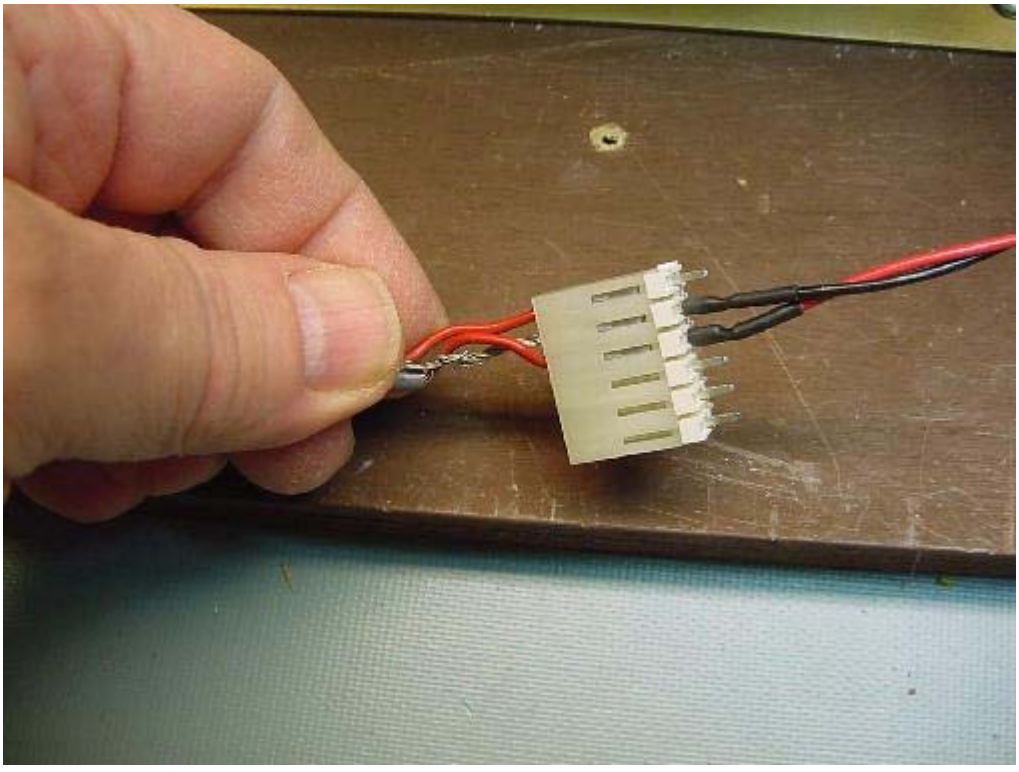
PLUG IN THE WHITE/BLK CONNECTOR INTO THE ELIMINATOR SOUND BOARD AS SHOWN BELOW.



PLUG IN THE YELLOW/BLK CONNECTOR INTO THE BATTLESTAR SOUND BOARD AS SHOWN BELOW.



CONNECT THE 6 PIN HEADER INTO THE 6 PIN RECEPTACLE WHICH PREVIOUSLY PLUGGED INTO THE SPEECH BOARD AS SHOWN BELOW.



NOW PLUG THE ORIGIONAL HARNESS BACK INTO THE CPU BOARD
AS DOCUMENTED BEFORE STARTING THE INSTALL.

THE INSTALL IS NOW COMPLETE!!!

POWER UP AND OBSERVE THAT THE GAME
IS RUNNING. THE POWER UP DEFAULT IS STAR TREK.

TO CHANGE GAMES SIMPLY HOLD DOWN THE PLAYER 2 BUTTON THEN
PRESS PLAYER 1 TO CYCLE THROUGH THE GAMES.

THE ORIGIONAL COIN , SERVICE, AND RESET SWITCHS WORK AS BEFORE.

IF YOU HAVE AND PROBLEMS OR SUGGESTIONS ON HOW TO IMPROVE
THIS INSTALL GUIDE PLEASE CONTACT VECTOR-LABS@TX.RR.COM

THANK YOU FOR YOUR PURCHASE
AND LOOK FOR OUR MULTISOUND BOARD COMING IN 2011.