

# Replacing the 74LS461 with GAL's

The PAL20X8 is a one time programmable direct replacement device.

The GAL20XV10 is a direct replacement flash device but difficult to buy in DIP24.

**Now the Rule 2 entries in the GAL table can be used!**

**So no modification of the chip pins or the printed circuit board is needed!**

**For Rule 1 continue reading.**

The product terms of the PAL's are limited so it is only possible by swapping the outputs Q7 and Q5. That means you have to modify the print, the socket or the way you put the chip in the socket.

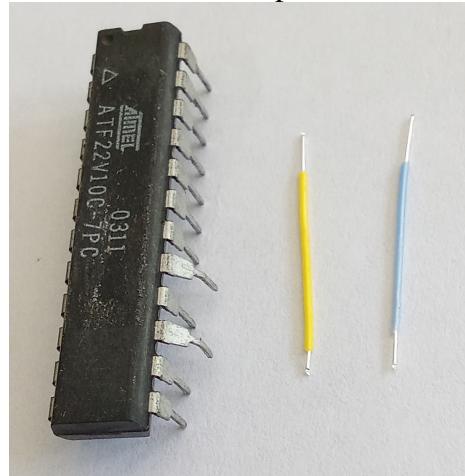
The 1st method is easy change the chip, the print stays compatible with the 74LS461.

The 2nd method is a conversion socket, the print stays compatible with the 74LS461.

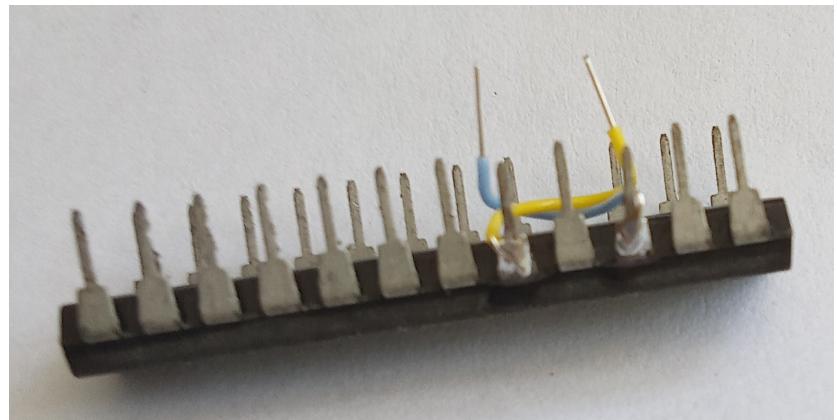
The 3rd method is change the print, you can not use the 74LS461.

1:

Bend the pins 15 and 17.



Solder 2 short wires on the pins



Push the 2 wires crossed in the socket.



Push the chip in the socket.

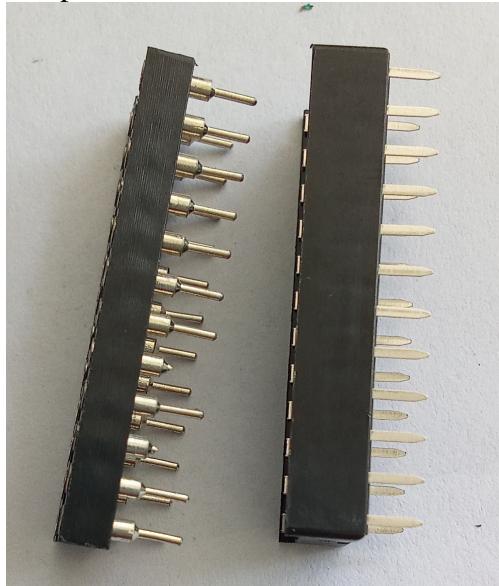


Ready.

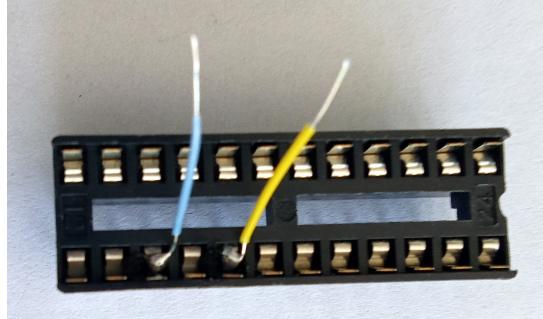
2:

Use a round and a normal socket.

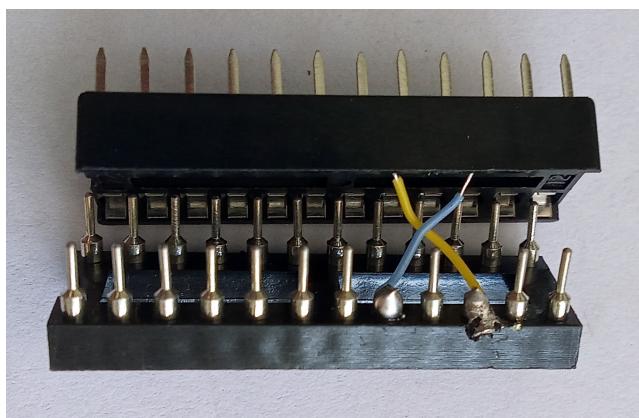
Cut pin 15 and 17 from the round one.



Solder 2 small wires in the normal socket



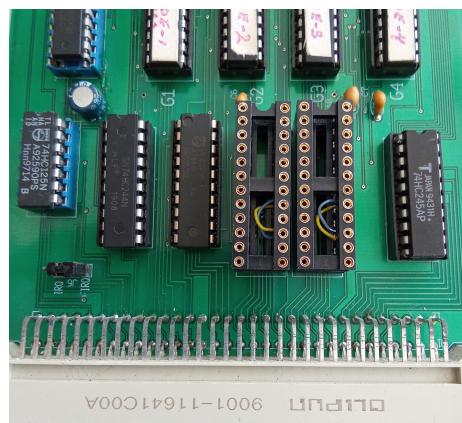
Solder the 2 wires crossed to the round one.



Put isolation at pin 15 & 17, push sockets together.



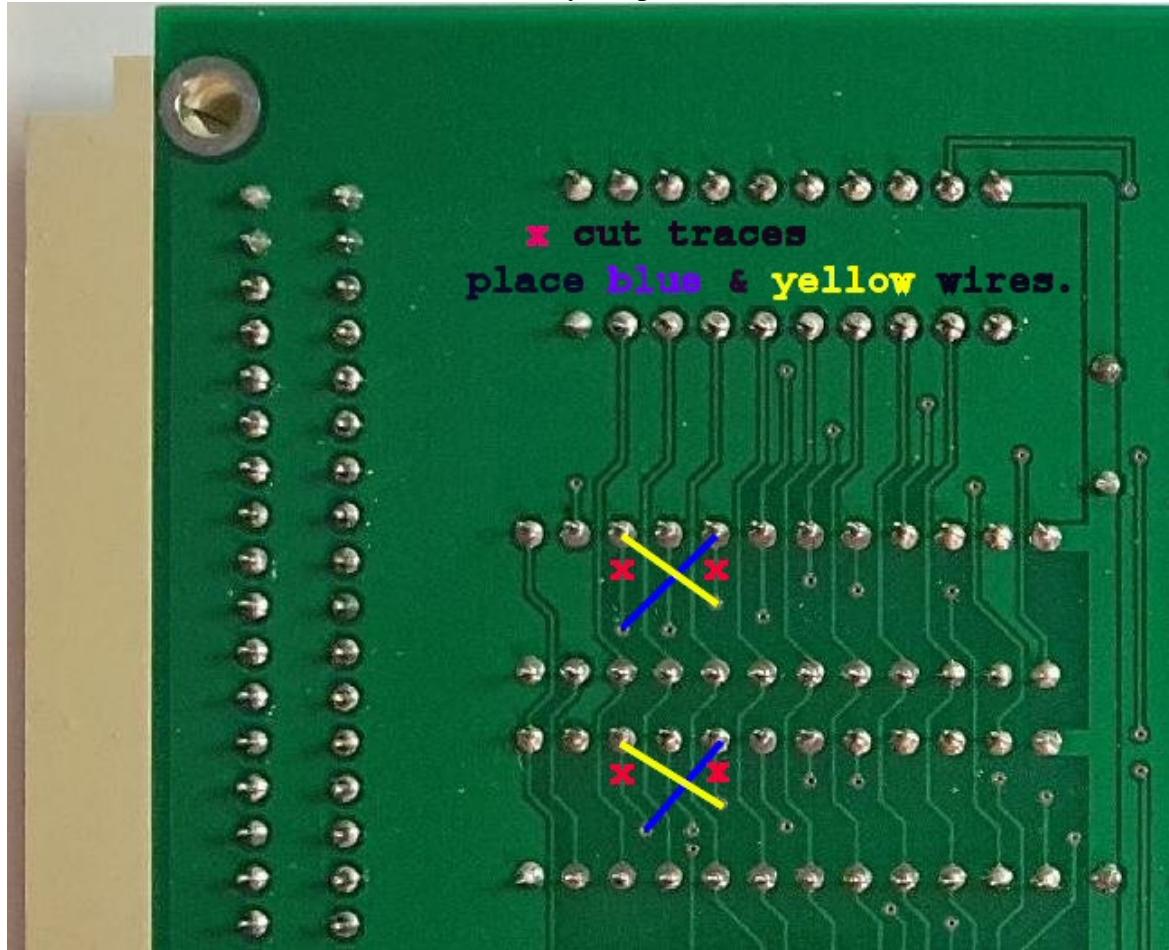
The print with the socket plus chip will fit in the system.



Ready.

3:

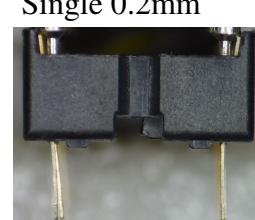
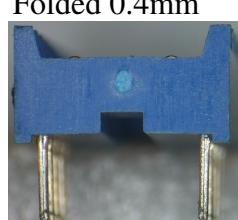
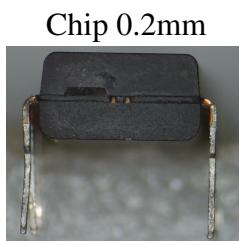
Modify the print.



Ready.

About sockets:

PIN TICKNES rounded values.



IF you put a socket NOT permanently into a other one THEN

Never put an R socket into an R, F or S socket.

Never put an F socket into an R, F or S socket.

Only put a Chip or S socket in any of the sockets otherwise the socket will loose its spring's capacity.

CdeJ