

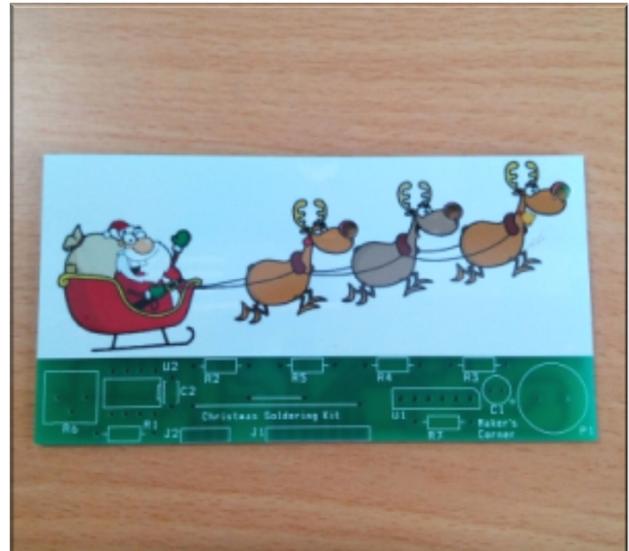
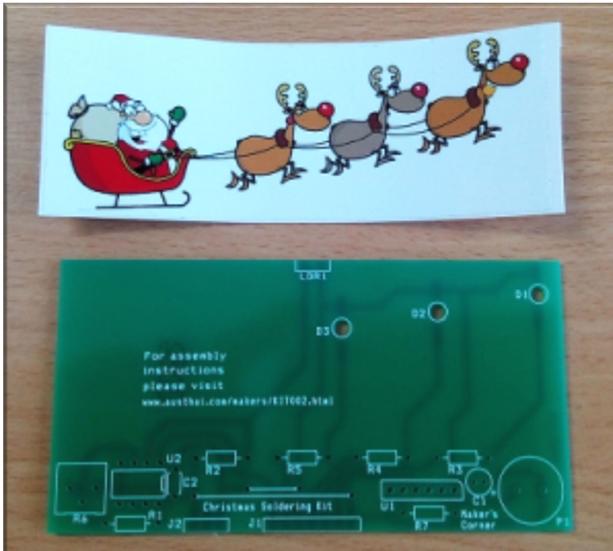
Christmas Soldering Kit

Assembly Instructions for Raspberry Pi Version

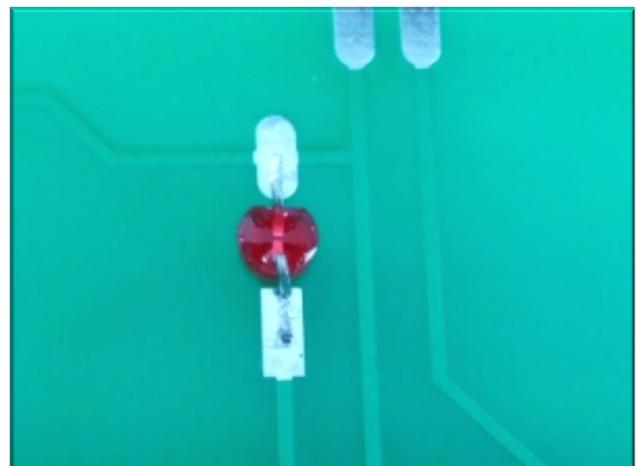
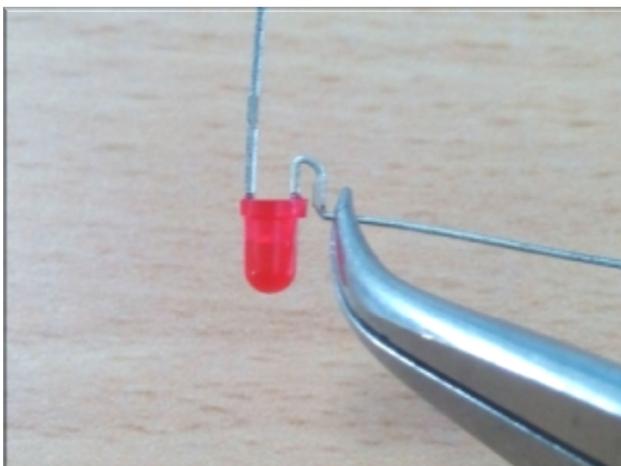
1. Check that all parts are present.

QTY	Part(s)	Description	QTY	Part(s)	Description
1	C1	22 μ F Capacitor	1	R6	10k Ω Trimpot
1	C2	100nF Capacitor	1	R7	500 Ω Resistor
3	D1,D2,D3	Red LED (3mm)	1	U1	Sound Chip
1	J1	7 Pin Female Header	1	U2	LM393 Comparator
1	LDR1	Light Dependant Resistor	1	PCB	KIT1546 board
1	P1	Piezo Speaker	1		Sticker
2	R1,R2	10k Ω Resistor	1		Green Link wire
3	R3,R4,R5	470 Ω Resistor			

2. Attach the Sticker so that the noses of the three reindeer line up with the holes for the three LEDs. Trim the sticker as required.

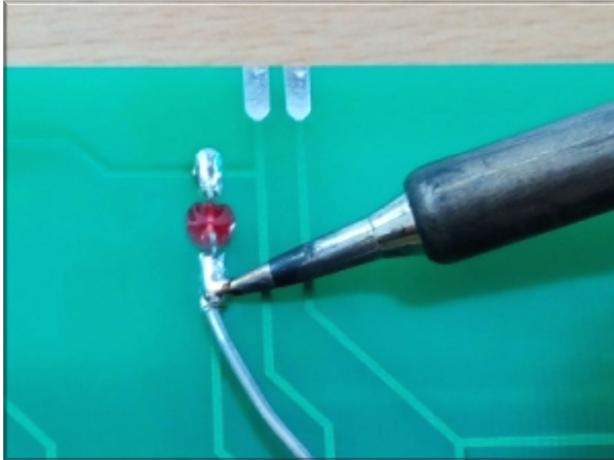


3. Bend the legs of the LEDs into a 'U' shape as shown. Trim the legs and place onto the board. *Note the orientation of the LED: flat part is facing up (away from the rectangular pad).*

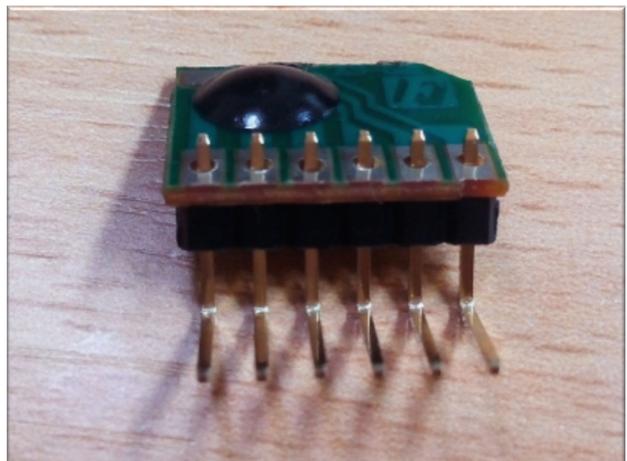


Assembly Instructions for Christmas Soldering Kit - Raspberry Pi Version

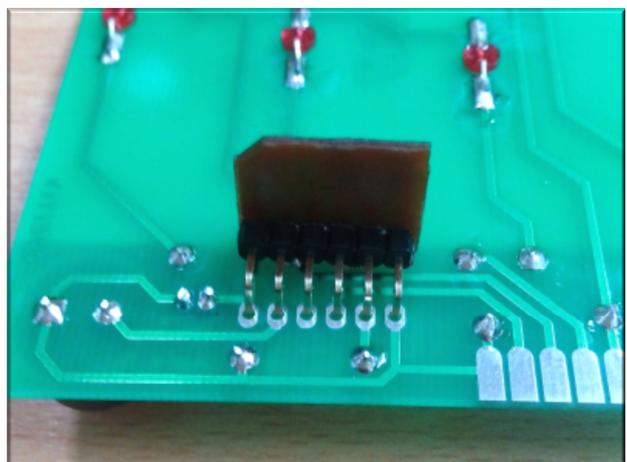
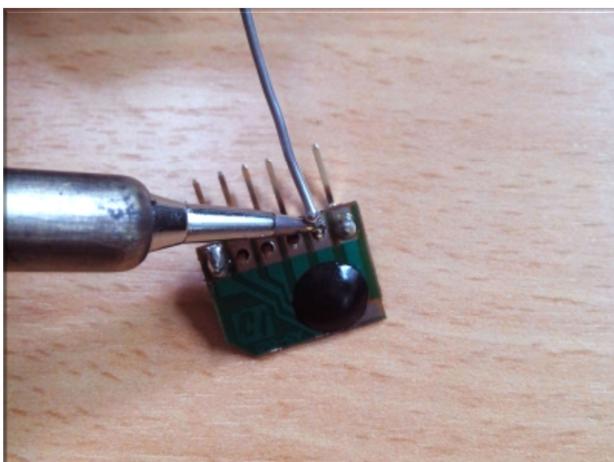
- Solder the legs of the LED onto the PCB. In a similar fashion solder the LDR onto the back of the board as shown.



- Solder all other parts on top of the board except J1 and U1. (Note that J2 is not used in the Raspberry Pi version.) Assemble the right angle connector and the sound chip as shown.

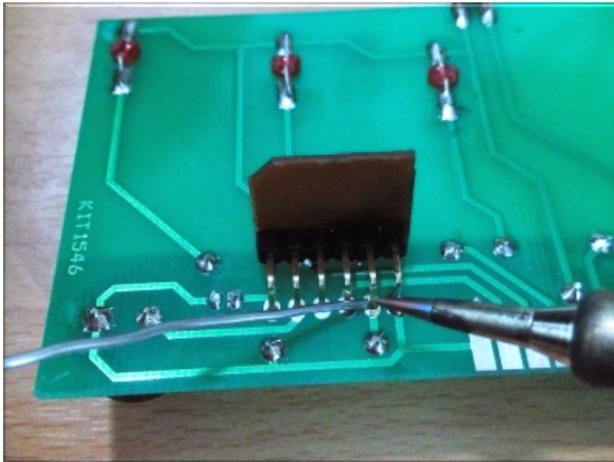


- Solder the right angle connector to the sound chip and mount the whole assembly on the back of the board as shown.

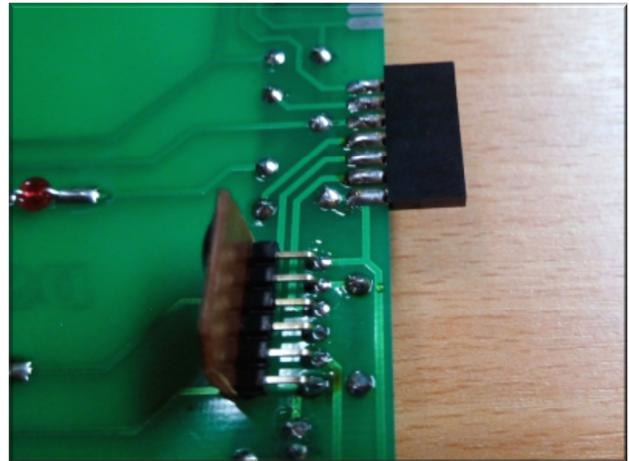
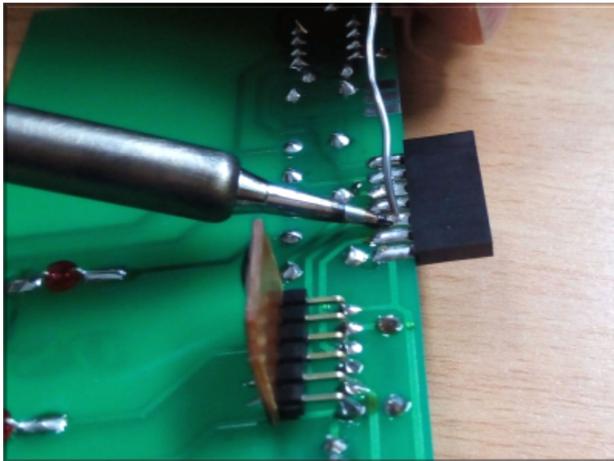


Assembly Instructions for Christmas Soldering Kit - Raspberry Pi Version

7. Solder the sound chip to the back of the board as shown. Then trim the pins on the front of the board.



8. Solder the 7 pin female header to the back of board in the J1 position.



9. Attach the Christmas Soldering Kit to the Raspberry Pi GPIO pins 1-13 as shown below. *Be very careful to mount the kit in the correct position.*



Assembly Instructions for Christmas Soldering Kit - Raspberry Pi Version

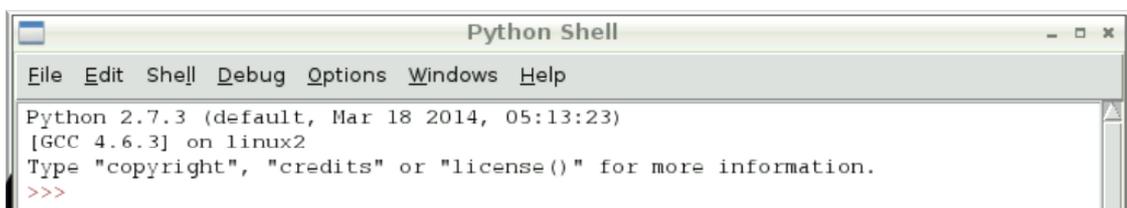
- Now you are ready to power up the Raspberry Pi and run the Python script. Start the Raspberry Pi and download the Python script from our website: www.austhai.com/makers/KIT002.html

Note: When power is applied to the Raspberry Pi, before a Python script is running, the default value of most GPIO pins is low. However, two pins have a default value of high. This causes one LED to be on and the music to play continuously until you run the Python script. We are working on a way to fix this.

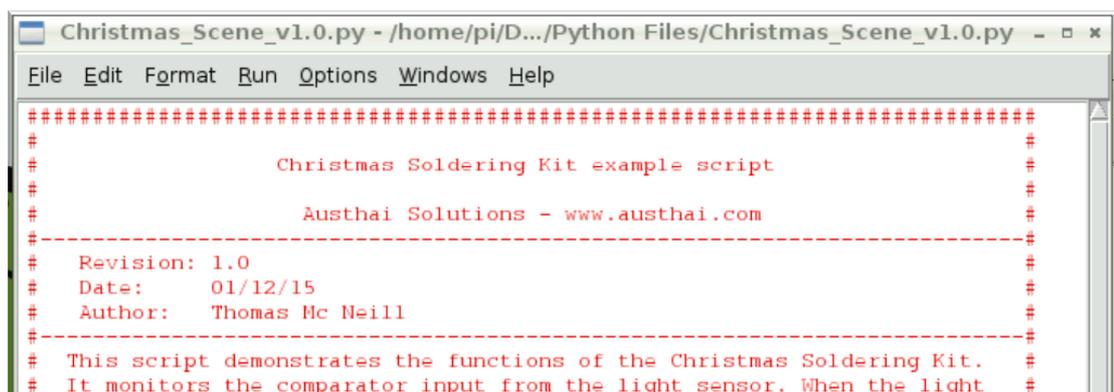
- Save the Python script in a convenient place in your Raspberry Pi. To access the GPIO pins you need to run Python in super user mode. Open LXTerminal and type the following (Don't forget the '&').

```
sudo idle &
```

After a short time the Python Shell will open.



Use the File menu to open the script.



Use the Run menu in the script window to run the script.

- Once the script is running you may need to adjust the trimpot to set the light level that will trigger the sequence. If the setting is too sensitive the music and light show will keep repeating. If it is not sensitive enough then you will not be able to start the sequence with a wave of your hand.
- The operation of the script should be easy to follow, even if you are not an experienced Python programmer. Feel free to change the timing and light sequence.

If you have any queries or if you would like to give us some feedback feel free to contact us at support@austhai.com We would love to hear from you.

