LIGHT TRIGGERED SLAVE FLASH UNIT

Having just got a digital camera for Christmas I have been shocked at the price of accessories. So I decided to make a slave flash to compliment the camera's own inbuilt flash.

Second-hand flashguns can be picked up very cheaply. The reason is the trigger input can have over 250 volts on it. This was ok for mechanical cameras but NOT good for the digital cameras.

This circuit will detect the cameras inbuilt flash and quickly switch its 2 outputs on. Output 1 will trigger the high voltage flashgun. It uses an optocoupler to isolate the voltage from the rest of the circuit. Output 2 is designed to trigger modern flashguns where the voltage is under 30v (usually under 6v). Alternatively this output will trigger the camera if it has a remote input. As both outputs operate simultaneously the circuit can operate a flash and the camera at the same time.

To enable future changes like delays and trigger on 2nd flash, etc. I have used a 12F683. The program is very small demonstrating the use of assembly interrupts in PicBasic Pro. This program uses Interrupt On Change on a single bit of the GPIO port.

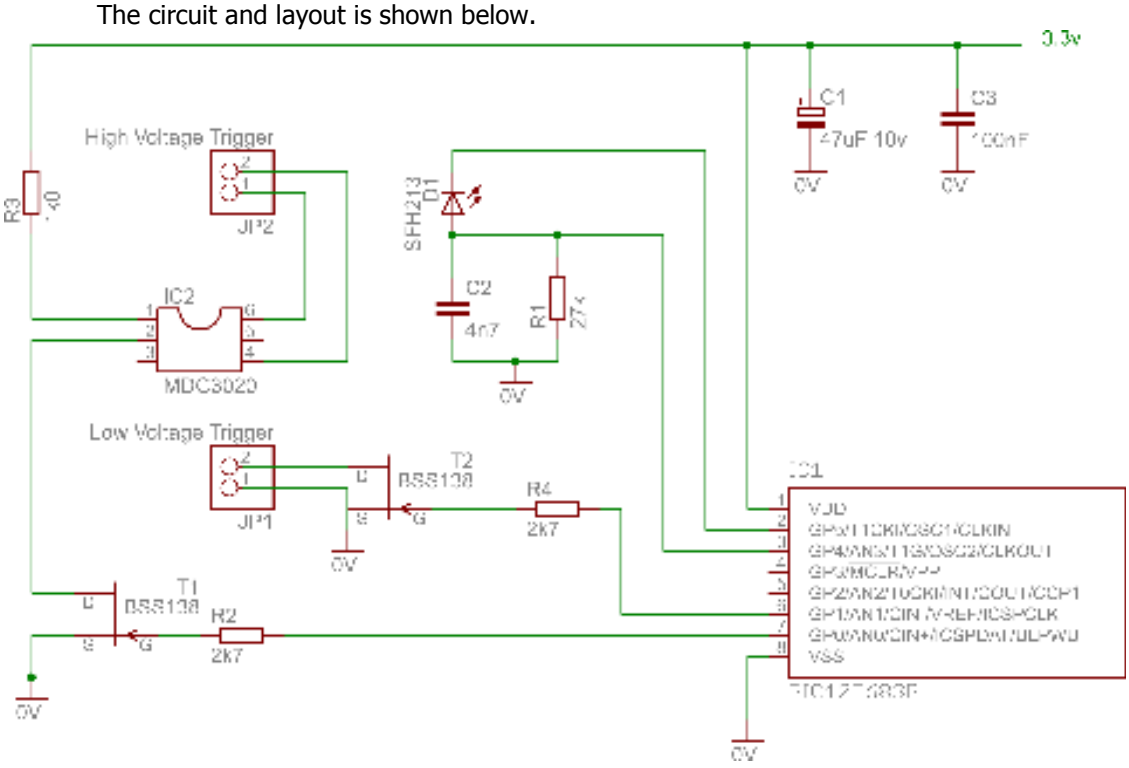
The parts were ordered from RS Components. Their web site has datasheets if you need to source alternatives.

PARTS LIST

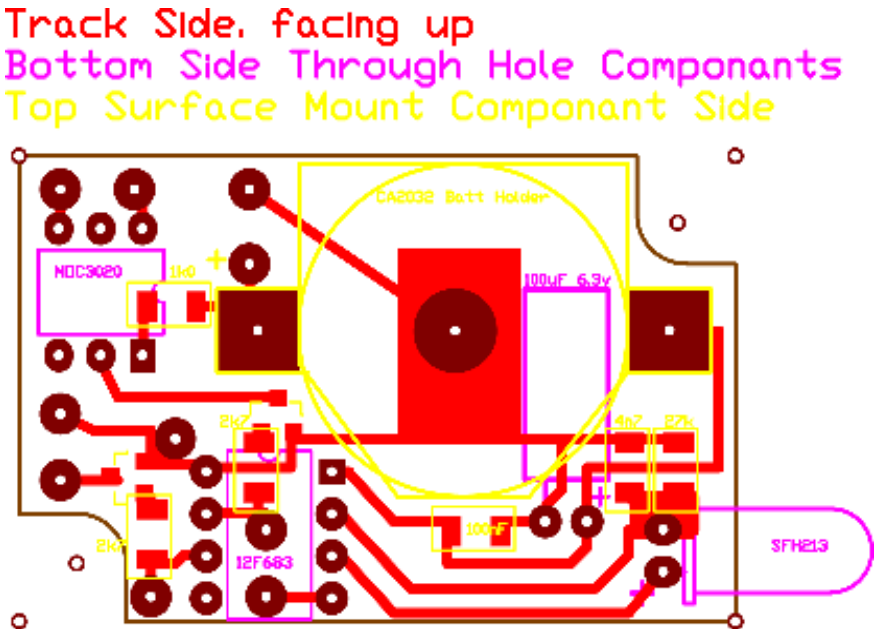
1	1k0	SMD1206	
2	2k7	SMD1206	
1	27k	SMD1206	
1	4n7	SMD1206	
1	100nF	SMD1206	
1	100uF 6.3v	Capacitor	547-2797
2	BSS138LT1G	N-Channel MOSFET	545-2529
1	12F683	DIP8	623-0178
1	SFH213	LED 5mm	654-8902
1	CA2032	Batt Holder	219-7954
1	MOC3020	Triac o/p opto-isolator	195-4116
1	Case 50 x 35mm	Plastic Case	513-5353

CIRCUIT AND BOARD LAYOUT

The circuit and layout is shown below.



The PCB that I made is shown in the 3 PDF attachments.



CONCLUSION

The unit has been used for 2 weeks now has worked faultlessly. My camera does not use the double flash to reduce 'red-eye' so at the moment I have not looked at modifying the software.

Bob Simpson