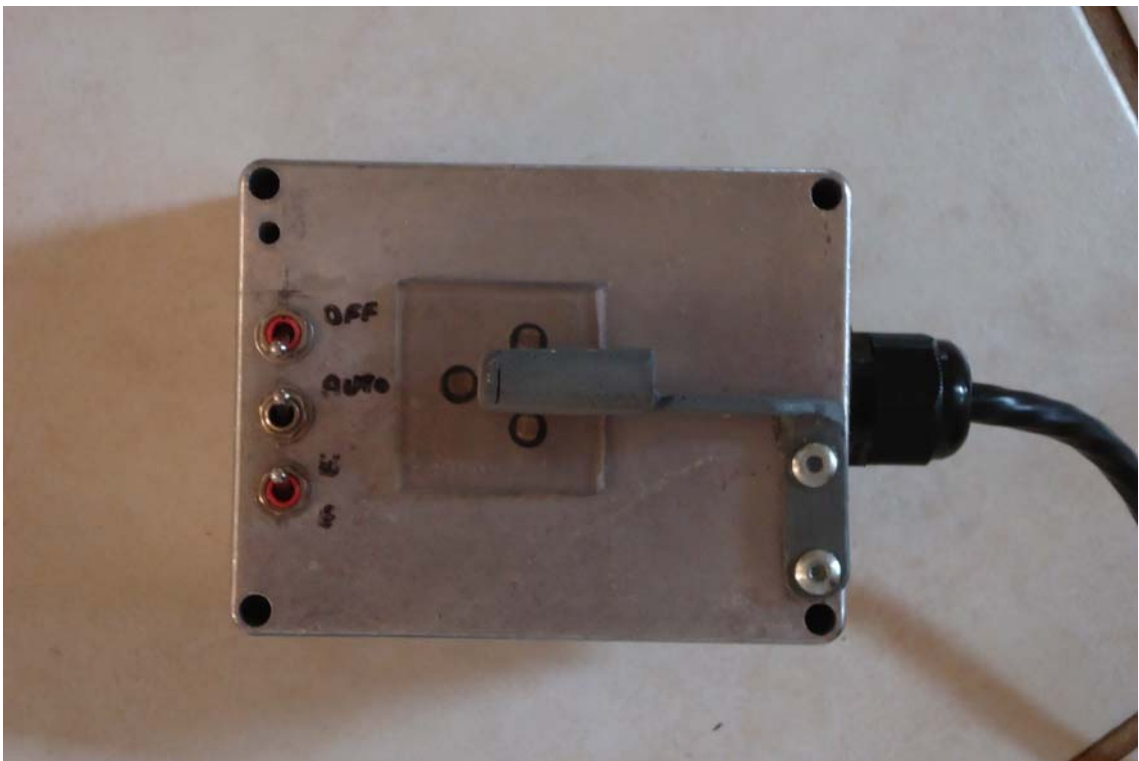




Bill of Materials

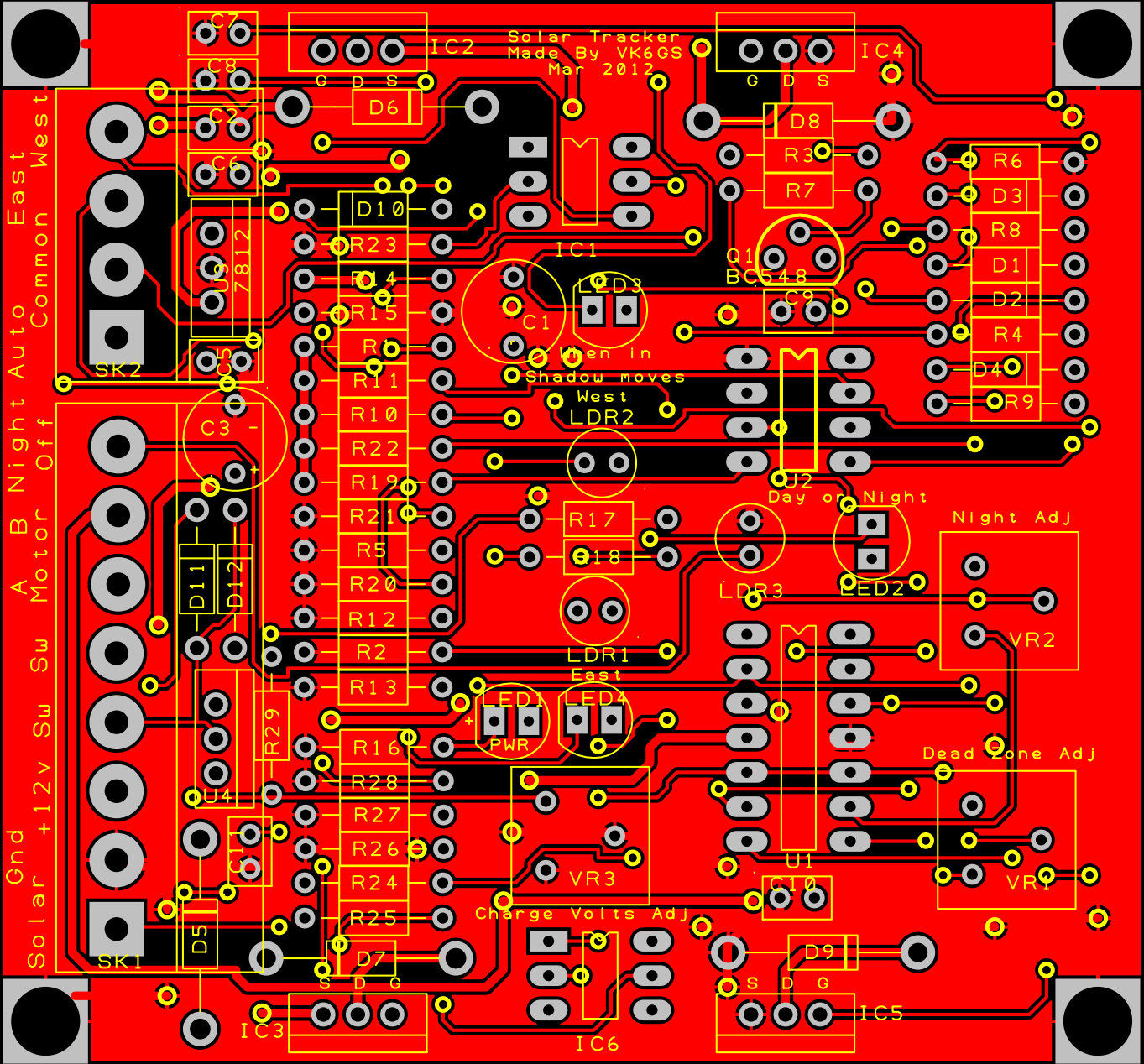
Component.....	Jaycar..	Qty	Names		Approx
7812...Pos Reg...	ZV-1512...	1..	U3.....	Page 204	.. 1.45
LM317T.Pos Reg...	ZV-1615...	1..	U4.....	Page 204	.. 2.75
BC548...NPN.....	ZT-2154...	1..	Q1 or BC549	Page 202	.. 0.23
CAP....0.1uF.....	RC-5490...	8..	C5 C6 C2 C7 C8 C9 C10 C11 ..	Page 187	.. 2.70
CAP....47uF.....	RL-6434...	1..	C1	Page 189	.. 0.36
CAP....1uF.....	RL-6414...	1..	C3	Page 189	.. 1.20
4 pin Header.....	HM-3114...	1..	SK2	Page 181	.. 1.95
8 pin Header.....	HM-3118...	1..	SK1	Page 181	.. 3.95
4 pin Plug.....	HM-3124...	1..	SK2	Page 181	.. 4.95
8 pin Plug.....	HM-3128...	1..	SK1	Page 181	.. 9.20
1N914...Sig Diode..	ZR-1100...	5..	D4 D1 D2 D3 D10	Page 205	.. 0.24
1N4004...Diode....	ZR-1004...	2..	D11 D12 or 1N4001	Page 205	.. 0.12
1N5404...Diode....	ZR-1015...	1..	D5	Page 205	.. 0.16
1N5822...Diode....	ZR-1023...	4..	D6 D7 D8 D9	Page 205	.. 4.00
LM324... op amp...	ZL-3324...	1..	U1	Page 207	.. 1.95
14 pin DIL Skt...	PI-6454...	1..	U1	Page 210	.. 1.45
NE555P...Timer....	ZL-3555...	1..	U2	Page 207	.. 1.25
8 pin DIL Skt...	PI-6452...	1..	U2	Page 210	.. 1.25
4n33 Opto cplr...	xx-xxxx...	2..	IC1 IC6		
I used the above or use					
4n28 Opto cplr...	ZD-1928...	2..	IC1 IC6	Page 218	.. 4.00
6 pin DIL skt...	PI-6450...	2..	IC1 IC6	Page 210	.. 1.00
ORP12...LDR.....	RD-3480...	3..	LDR3 LDR1 LDR2	Page 194	.. 12.00
LED Red.....	ZD-0150...	1..	.....	Page 213	.. 0.25
LED orange.....	ZD-0169...	1..	.....	Page 213	.. 0.25
LED Green.....	ZD-0170...	1..	.....	Page 213	.. 0.25
LED Yellow.....	ZD-0160...	1..	.....	Page 213	.. 0.25
Res-¼w...82R.....	RR-0546...	1..	R29	Page 193	.. 0.06
Res-¼w...560R....	RR-0566...	2..	R12 R11	Page 193	.. 0.12
Res-¼w...1k.....	RR-0572...	7..	R4 R3 R22 R23 R26 R27 R28 ..	Page 193	.. 0.42
Res-¼w...1k2....	RR-0574...	4..	R13 R16 R20 R21	Page 193	.. 0.24
Res-¼w...2K2....	RR-0580...	2..	R17 R18	Page 193	.. 0.12
Res-¼w...4K7....	RR-0588...	2..	R14 R15	Page 193	.. 0.12
Res-¼w...10k....	RR-0596...	5..	R1 R2 R19 R24 R25	Page 193	.. 0.40
Res-¼w...18k....	RR-0602...	1..	R8	Page 193	.. 0.06
Res-¼w...22k....	RR-0604...	1..	R7	Page 193	.. 0.06
Res-¼w...100k....	RR-0620...	3..	R9 R5 R6	Page 193	.. 0.06
Res-¼w...1M.....	RR-0644...	1..	R10	Page 193	.. 0.06
Trip Pot...1k.....	RT-4354...	1..	VR3	Page 194	.. 1.00
Trip Pot...20k....	RT-4362...	1..	VR1 VR2	Page 194	.. 2.00
STP16NE06.P FET..	ZT-2277...	2..	IC5 IC4	Page 194	.. 5.30
IRF9540.N Ch FET..	ZT-2467...	2..	IC2 IC3Page xxx ..		
or TIP32 & TIP33 for 3A					
switching.. bit cheaper					
T0220 insulators	HP-1155...	1..	.....	Page 203	.. 0.10
M3x12mm Bolts...	HP-0140...	1..	.....	Page 156	.. 0.15
M3 Nuts	HP-0146...	1..	.....	Page 156	.. 1.00
M3 Washers.....	HP-0148...	1..	.....	Page 156	.. 1.00
SPDT C0	ST-0554...	1..	.....	Page 118	.. 3.00
DPDT C0	ST-0555...	1..	.....	Page 118	.. 3.00
IP65 Alum Box...	HB-5042...	1..	.....	Page 115	.. 21.95
Cable Glands.....	HP-0732...	1..	.....	Page 154	.. 6.45
.....Approx Total .. \$104					

Bill of Materials

Component	Qty	Names

7812...Pos Reg	1	U3
LM317T.Pos Reg	1	U4
BC548..NPN	1	Q1 or BC549
CAP....0.1uF	8	C5 C6 C2 C7 C8 C9 C10 C11
CAP....47uF	1	C1
CAP....1uF	1	C3
4 pin Header	1	SK2
8 pin Header	1	SK1
4 pin Plug	1	SK2
8 pin Plug	1	SK1
1N914..Sig Diode	5	D4 D1 D2 D3 D10
1N4004..Diode	2	D11 D12 or 1N4001
1N5404..Diode	1	D5
1N5822..Diode	4	D6 D7 D8 D9
LM324.. op amp	1	U1
14 pin DIL Skt	1	U1
NE555P....Timer	1	U2
8 pin DIL Skt	1	U2
4n33 Opto cplr	2	IC1 IC6
I used the above or use		
4n28 Opto cplr	2	IC1 IC6
6 pin DIL skt	2	IC1 IC6
ORP12...LDR	3	LDR3 LDR1 LDR2
LED Red	1	
LED orange	1	
LED Green	1	
LED Yellow	1	
Res-1/4w..82R	1	R29
Res-1/4w..560R	2	R12 R11
Res-1/4w..1k	7	R4 R3 R23 R26 R27 R28
Res-1/4w..1k2	4	R13 R16 R20 R21
Res-1/4w..2K2	2	R17 R18
Res-1/4w..4K7	2	R14 R15
Res-1/4w..10k	5	R1 R2 R19 R24 R25 R22
Res-1/4w..18k	1	R8
Res-1/4w..22k	1	R7
Res-1/4w..100k	3	R9 R5 R6
Res-1/4w..1M	1	R10
Trip Pot...1k	1	VR3
Trip Pot...20k	1	VR1 VR2
STP16NE06.P FET	2	IC5 IC4
IRF9540.N Ch FET	2	IC2 IC3 Cheaper at RS components
or TIP32 & TIP33 for 3A switching.. bit cheaper		
TO220 insulators	1	
M3x12mm Bolts	1	
M3 Nuts	1	
M3 Washers	1	
SPDT CO	1	
DPDT CO	1	
IP65 Alum Box	1	
Cable Glands	1	

Gnd +12v Sw Motor Off Common West



Silk screen orientation
incorrect, rotate 180 degrees

Change to 82R

Change resistor
connections

Change to 1K2

Change to 2K2

Change to 20K

Change to 10K

Move diode
D2 to here

Change gate
connections

Connect this
point to pin 4
of the NE555

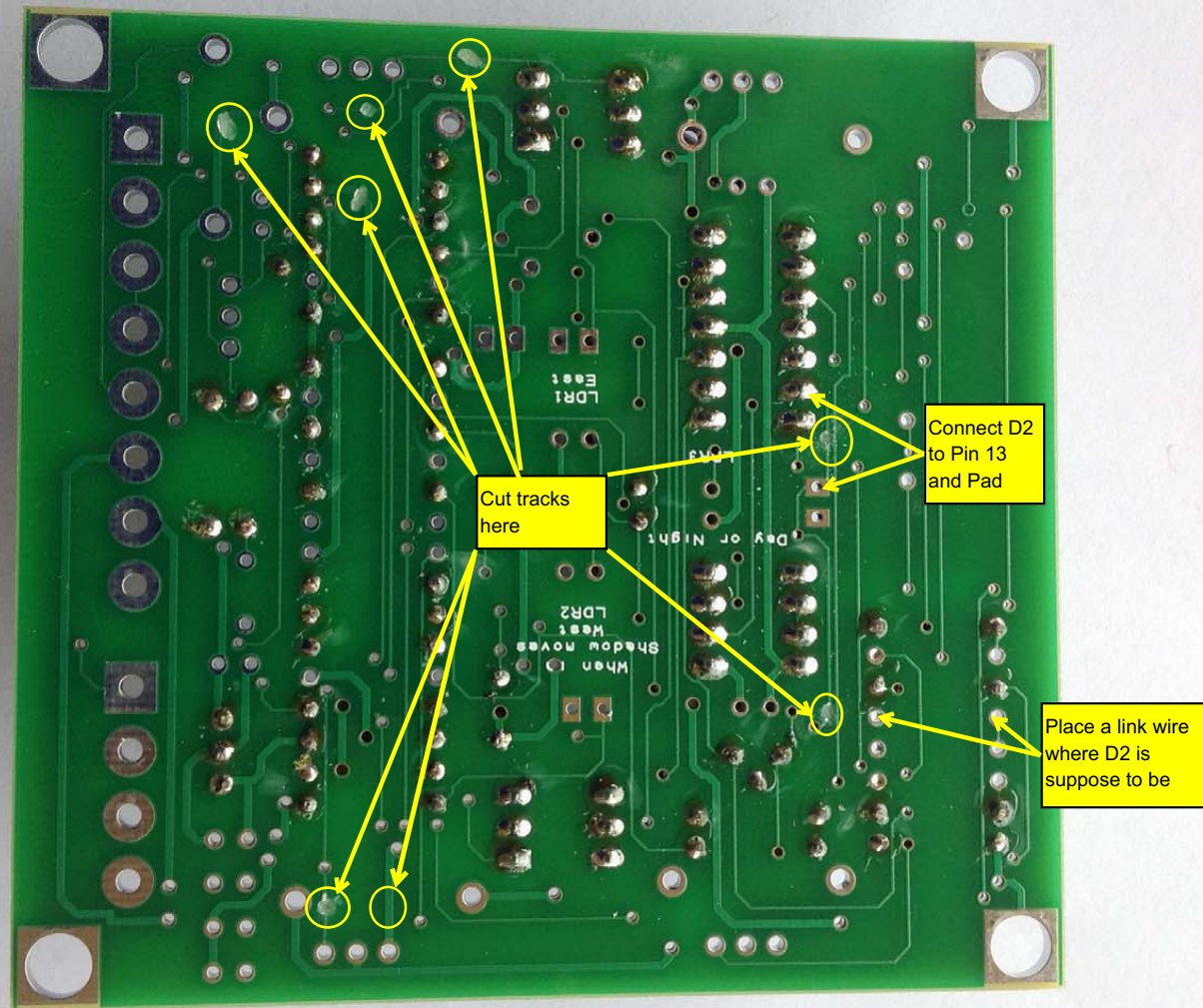
Component.....	Jaycar..	Qty
7812	Pos Reg...	ZV-1512...1
LM317	Pos Reg...	ZV-1615...1
BC548	NPN.....	ZT-2154...1
CAP	0.1uF.....	RC-5490...8
CAP	47uF.....	RL-6434...1
CAP	1uF.....	RL-6414...1
4 pin Header		HM-3114...1
8 pin Header		HM-3118...1
4 pin Plug		HM-3124...1
8 pin Plug		HM-3128...1
1N914	Sig Diode	ZR-1100...5
1N4004	Diode.....	ZR-1004...2
1N5404	Diode.....	ZR-1015...1
1N5822	Diode.....	ZR-1023...4
LM324	op amp...	ZL-3324...1
14 pin DIL Skt.		PI-6454...1
NE555P	Timer.....	ZL-3555...1
8 pin DIL Skt.		PI-6452...1
4n33 Opto cplr		xx-xxxx...2
I used the above or use		
4n28 Opto cplr		ZD-1628...2
6 pin DIL skt.		PI-6450...2
ORP12	LDR.....	RD-3480...3
LED Red		ZD-0150...1
LED orange		ZD-0169...1
LED Green		ZD-0170...1
LED Yellow		ZD-0160...1
Res-1/4W	560R.....	RR-0566...2
Res-1/4W	100R.....	RR-0548...1
Res-1/4W	1k.....	RR-0572...9
Res-1/4W	1k2.....	RR-0574...1
Res-1/4W	2K2.....	RR-0580...3
Res-1/4W	4K7.....	RR-0588...2
Res-1/4W	10k.....	RR-0596...5
Res-1/4W	18k.....	RR-0602...1
Res-1/4W	22k.....	RR-0604...1
Res-1/4W	100k.....	RR-0620...3
Res-1/4W	1M.....	RR-0644...1
Trip Pot	1k.....	RT-4354...1
Trip Pot	10k.....	RT-4360...1
Trip Pot	20k.....	RT-4362...1
STP16NE06	P FET.....	ZT-2277...2
IRF9540	N Ch FET	ZT-2467...2
or TIP32 & TIP33 for 1A switching.. bit cheaper		
TO220 insulators		HP-1155...1
M3x12mm Bolts		HP-0140...1
M3 Nuts		HP-0146...1
M3 Washers		HP-0148...1
DPDT CO		ST-0554...2
DPDT CO		ST-0555...1
IP65 Alum Box		HB-5042...1
Cable Glands		HP-0732...1

Solar Panel Tracker Control

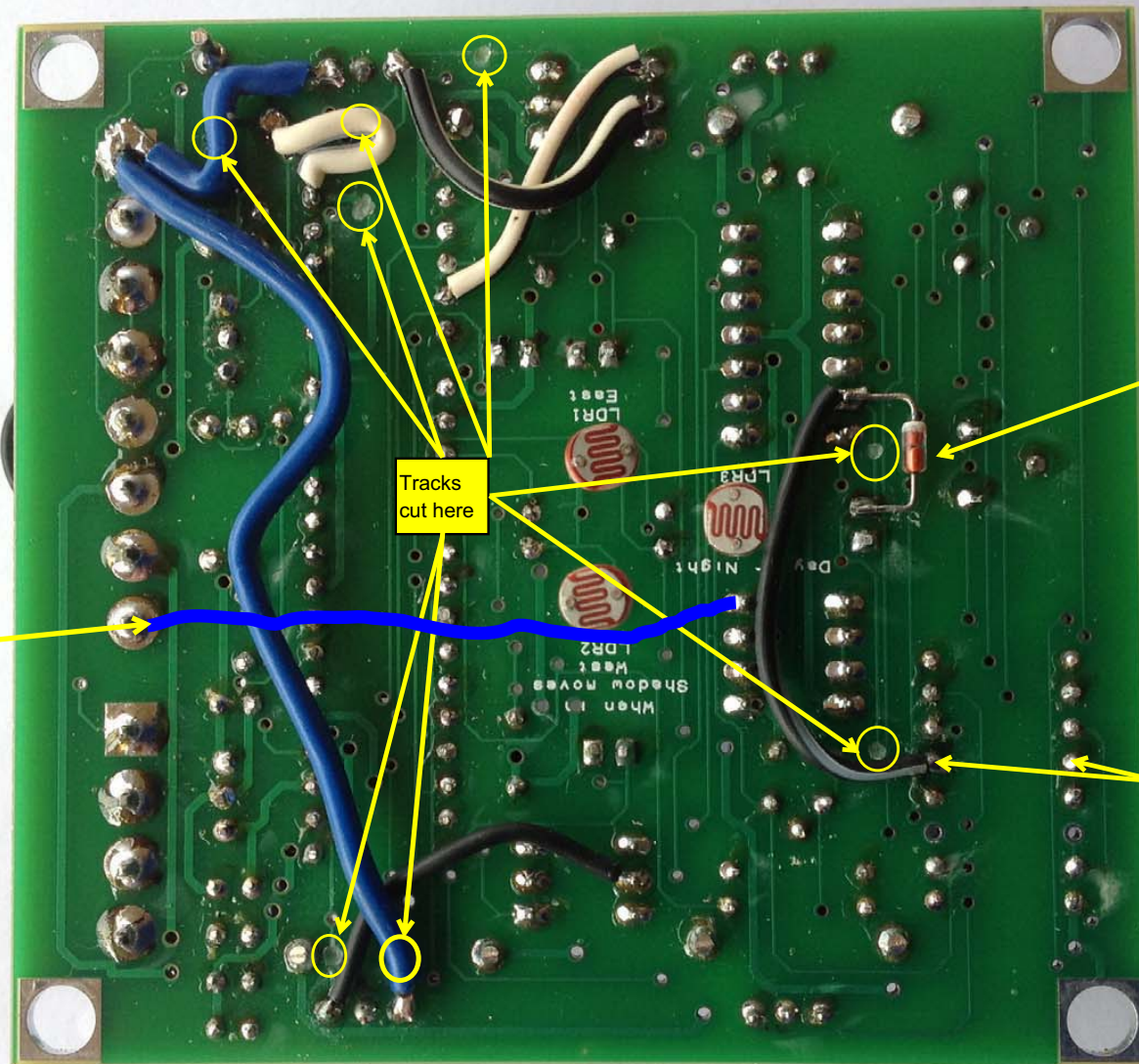
Date :- 5 Feb 2012

Version 16

Sheet 1
of 1



Add this strap from terminal 8 to pin 4 of NE555



Tracks cut here

Diode D2 moved to here

S/C Link on top where D2 suppose to be

Rotate 7812 by 180
as silk screen is
shown wrong

Diode D2
Mounted
underneath
and S/C link
is placed in
the top

LDR'S
mounted
underside

Cut this track
somewhere to
LDR3

