



SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

JANUARY 2012

COMMUNICATION IS THE NAME OF THE GAME

Meeting The first meeting of the new year was well attended. Errol, ZS6KED, gave us a talk and demo on LED lighting that he has installed at his QTH. This is an ongoing project so I'm sure we will get more updates as time passes. Thanks Errol. Also discussed was the upcoming Hobbitech exhibition which takes place over the weekend 12 & 13 May at the usual venue. Feedback on the Repeater meeting was also given.

Welcome to Bert, ZS6VDP, who has joined the club.

ZS6SSC Social Club The next get together takes place on the 17 March at Rex's qth.

Brain Study

F1gur471v3ly 5p34k1ng?

Good example of a Brain Study: If you can read this you have a strong mind:

7H15 M3554G3 53RV35 7O PR0V3

H0W 0UR M1ND5 C4N D0 4M4Z1NG 7H1NG5!

1MPR3551V3 7H1NG5! 1N 7H3 B3G1NN1NG

17 WA5 H4RD BU7 N0W, 0N 7H15 LIN3

Y0UR M1ND 1S R34D1NG 17

4U70M471C4LLY W17H 0U7 3V3N

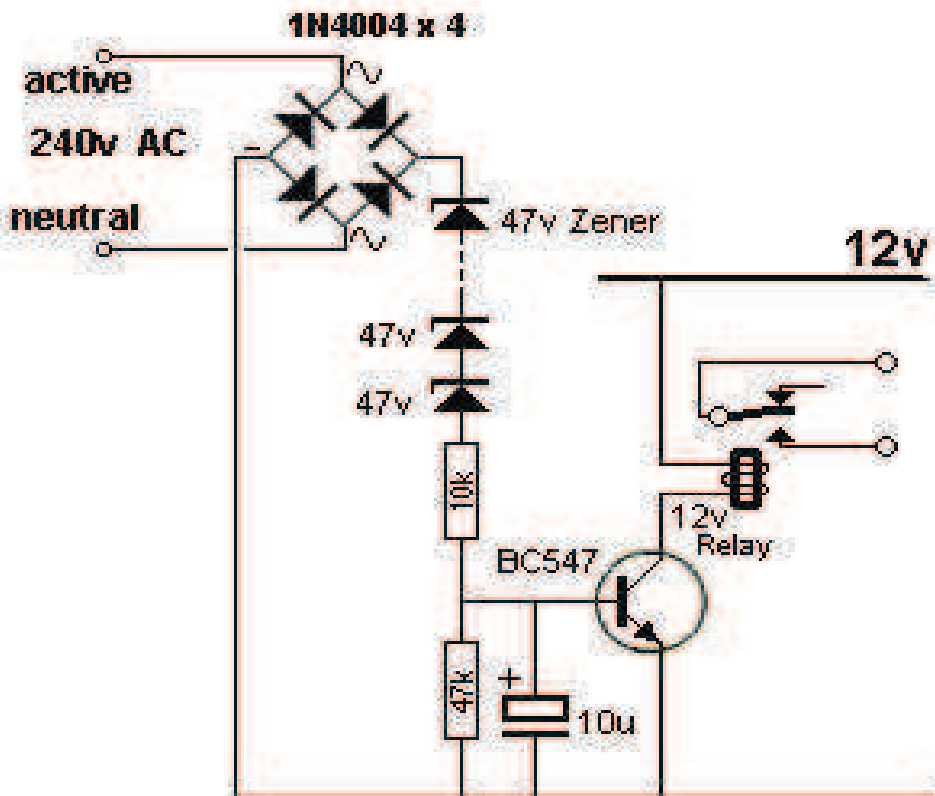
7H1NK1NG 4B0U7 17, B3 PROUD! 0NLY

C3R741N P30PL3 C4N R3AD 7H15.

PL3453 F0RW4RD 1F

U C4N R34D 7H15.

LOW MAINS DROPOUT



This circuit will turn off a device if the main drops by a say 15v. The actual voltage is adjustable. The first thing to remember is this: The circuit detects the PEAK voltage and this is the voltage of the zener diodes. For 240v mains, the peak is 338v.

For a voltage drop of about 12v(RMS), the zener diodes need to have a combined voltage of 320v (you will need 6 x 47v + 1 x 20v + 1 x 18v).

The 10k resistor will have about 18v across it and the current will be nearly 2mA. The wattage will be for a voltage drop of about 27v(RMS), you will need zeners for a total of 300v by using 6 x 47v + 1 x 18v. The voltage across the 10k resistor will be 38v and the current will be nearly 4mA. The wattage dissipated by the 10k resistor will be 150mW.

The 10u prevents very sharp dips or drops from activating the circuit. As the voltage drops, this drop in voltage will be passed directly to the top of the 10k resistor and as the voltage drops, the current into the base of the transistor will reduce. This current is amplified by the transistor and when it is not sufficient to keep the relay activated, it will drop-out.

Confucius says:

Man who wants pretty nurse, must be patient.

Passionate kiss, like spider web, leads to undoing of fly.

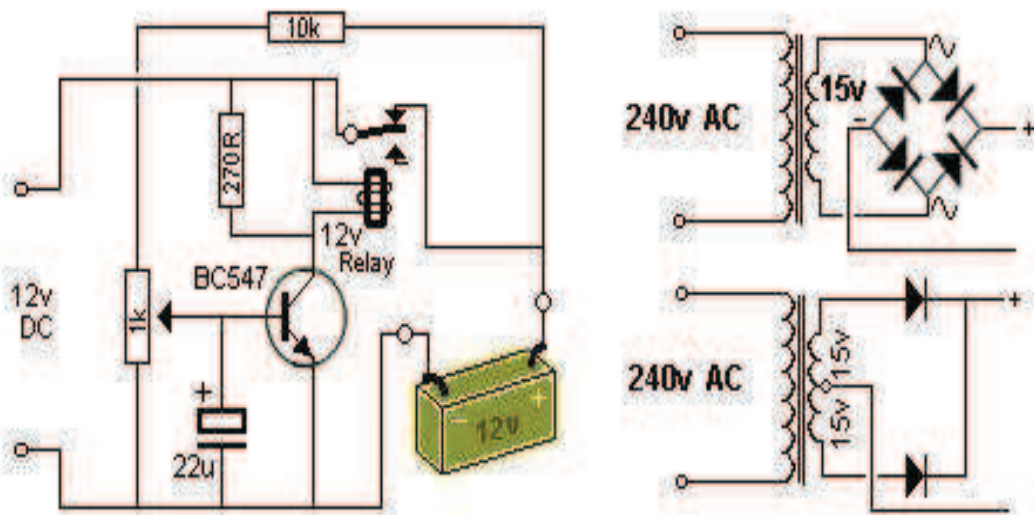
Lady who goes camping must beware of evil intent.

Man who keep feet firmly on ground have trouble putting on pants.

Man who leap off cliff jump to conclusion.

Man who run in front of car gets tired; man who run behind car gets exhausted.

BATTERY CHARGER - A simple automatic charger for gel type batteries eg. Alarm



This is the world's simplest automatic battery charger.

It consists of 6 components, when connected to a 12v DC supply. The psu must produce more than 15v on no-load. An alternative 15v transformer and a centre-tapped transformer is also shown. A centre-tapped transformer is referred to as: 15v-CT-15v or 15-0-15 The relay and transistor are not critical as the 1k pot is adjusted so the relay drops-out at 13.7v.

The psu can be 300mA, 500mA or 1A and its current rating will depend on the size of the 12v battery you are charging.

For a 1.2AH gel cell, the charging current should be 100mA. However, this charger is designed to keep the battery topped-up and it will deliver current in such short bursts, that the charging current is not important.

This applies if you are keeping the battery connected while it is being used. In this case the charger will add to the output and deliver some current to the load while charging the battery. If you are charging a flat cell, the current should not be more than 100mA.

For a 7AH battery, the current can be 500mA. And for a larger battery, the current can be 1Amp.

SETTING UP

Connect the charger to a battery and place a digital meter across the battery. Adjust the 1k pot so the relay drops out as soon as the voltage rises to 13.7v.

Place a 100R 2watt resistor across the battery and watch the voltage drop.

The charger should turn on when the voltage drops to about 12.5v. This voltage is not important.

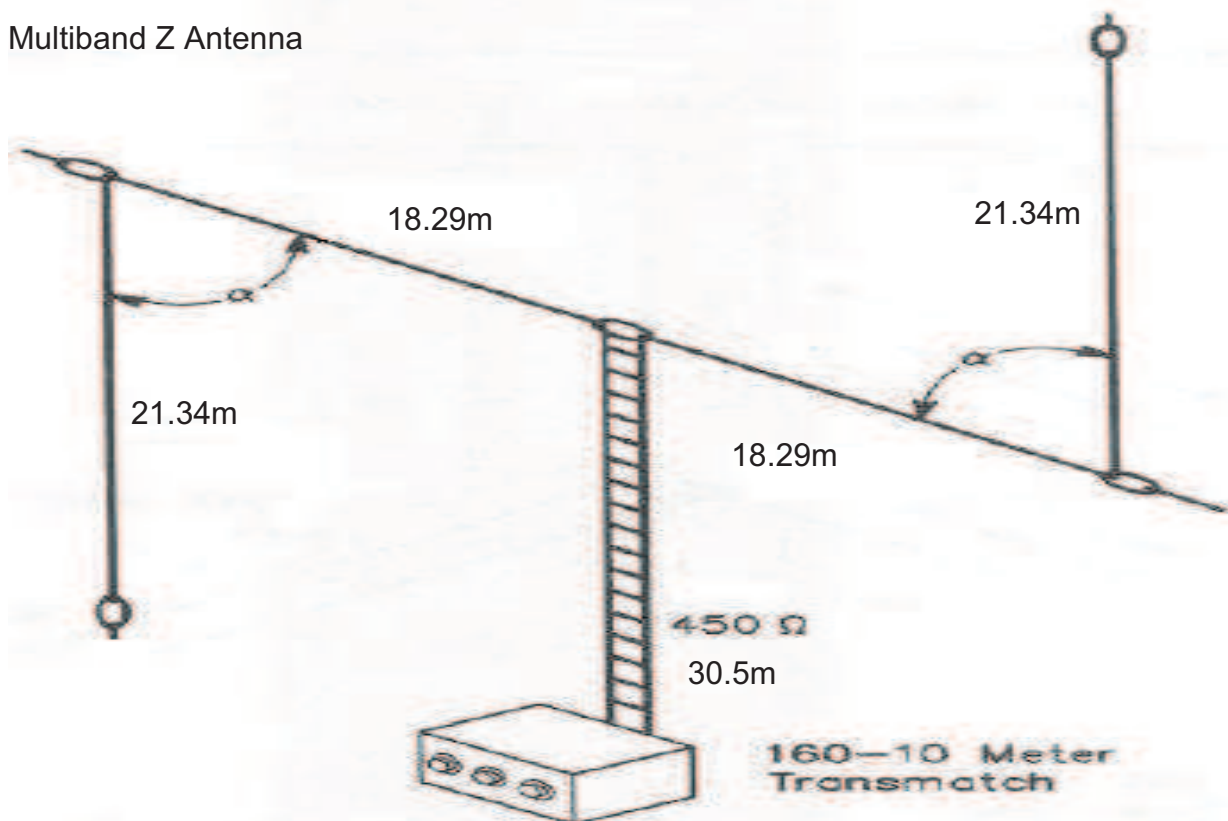
The 22uF capacitor stops the relay "squealing" or "hunting" when a load is connected to the battery and the charger is charging. As the battery voltage rises, the charging current reduces and just before the relay drops out, it squeals as the voltage rises and falls due to the action of the relay. The 22uF capacitor prevents this "chattering".

To increase the Hysteresis: In other words, decrease the voltage where the circuit cuts-in, add a 270R across the coil of the relay. This will increase the current required by the transistor to activate the relay and thus increase the gap between the two activation points. The pull-in point on the pot will be higher and you will have re-adjust the pot, but the drop-out point will be the same and thus the gap will be wider.

In this circuit, the cut-in voltage was 11.5v with a 270R across the relay.

Note: No diode is needed across the relay because the transistor is never fully turned off and no back EMF (spike) is produced by the relay.

Multiband Z Antenna



CLUB INFORMATION

Postal address PO Box 19937 Sunward Park 1470

Website <http://www.zs6hvb.za.net>

Back Issues of Shacknews available on the club website

e-mail zs6hvb@zs6hvb.za.net

Repeater 145.1875 MHz input - 145.7875 MHz output

Linked to 70 cm - 438.850 Mhz (Sunday bulletins)

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
Relay - 80M - 3662KHz

Monthly meeting venue

Germiston Methodist Church
Room at back of the offices
Lady Duncan Rd
Germiston

3rd Saturday of the month at 14:30

Committee

Chairman	Ton van Dijk	ZS6ANA	011-432-5494
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
Repeater	Ton van Dijk	ZS6ANA	011-432-5494
Shacknews Editor	Berridge Emmett	ZS6BFL	011-893-1291
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Assistant Webmaster	Marianne Treyvellan	ZR6JMT	079-519-8808

Club bank details

First National Bank - Current Account 62116557309. Branch Code for EFT 250655
Branch Code 201209 - Sunward Park

2012

ZS6HVB Meeting

ZS6SSC Meeting

January 2012

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February 2012

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

March 2012

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April 2012

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May 2012

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
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20	21	22	23	24	25	26
27	28	29	30	31		

June 2012

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

HOBBITECH

July 2012

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August 2012

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

September 2012

Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

October 2012

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November 2012

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December 2012

Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					