



SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

MARCH 2009

COMMUNICATION IS THE NAME OF THE GAME

Meeting Jaap Lourens from SENTECH, gave a very interesting talk on interference problems he has had to deal with. He also told us about the new digital TV coming our way which was most enlightening. Some interesting info is available on the web at the addresses below.

The next meeting will held on 4 April 2009 at the usual venue. A talk on "WiFi in the Radio Amateur Environment"

http://www2.rohde-schwarz.com/en/products/broadcasting/tv_transmitters/tv_transmitter_power/

http://en.wikipedia.org/wiki/Digital_terrestrial_television

http://en.wikipedia.org/wiki/H.264/MPEG-4_AVC

<http://www.digitaltv.com.au/why.html>

SSC Meeting There is no meeting this month. The next meeting will on Sunday 12 April 2009 at the home of Rex & Ingrid. It will be a bring and braai. Please bring along all the necessary

---oooOOOooo---

The mother and father had just given their teenage daughter family-car privileges. On Saturday night she returned home very late from a party.

The next morning her father went out to the driveway to get the newspaper and came back into the house frowning. At 11:30 AM the girl sleepily walked into the kitchen, and her father asked her, "Sweetheart, what time did you get in last night?"

"Not too late, Dad." she replied nervously.

Dead-panned, her father said, "Then, my precious one, I'll have to talk with the paperboy about putting my paper under the front tire of the car."

Two boys were arguing when the teacher entered the room. The teacher asked, "Why are you arguing?"

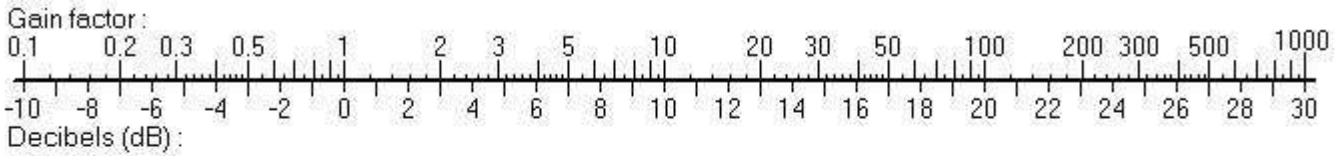
One boy answered, "We found a ten-dollar bill and decided to give it to whoever tells the biggest lie."

"You should be ashamed of yourselves," said the teacher. "When I was your age, I didn't even know what a lie was."

The boys gave the ten dollars to the teacher.

Decibels - Decibels (dB) are commonly used to describe gain or loss in circuits. The number of decibels is found from:

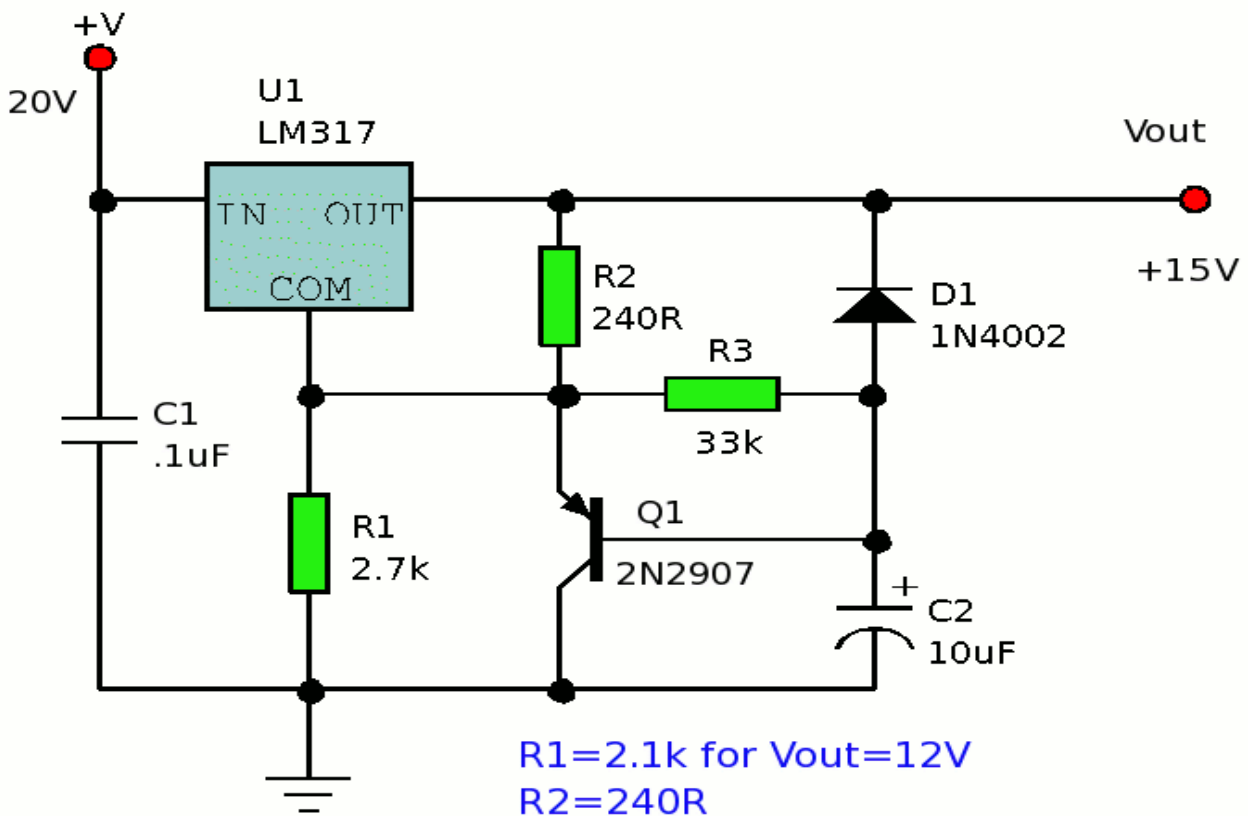
$$\text{Gain in dB} = 10 \cdot \log(\text{gain factor}) \quad \text{or}$$



In some situations this is more complicated than using gain or loss factors. But in many situations, decibels are simpler. For example, suppose 10 feet of cable loses 1 dB of signal. To figure the loss in a longer cable, just add 1 dB for every 10 feet. In general, decibels let you add or subtract instead of multiply or divide. There are some special numbers you might want to memorize:

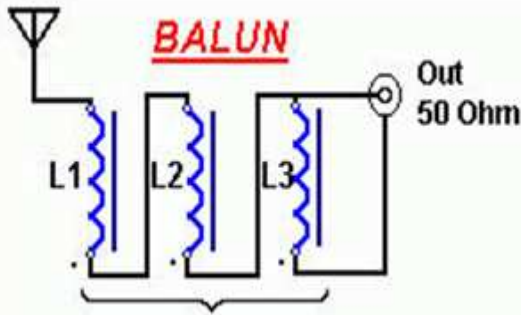
- 20 dB = gain factor of 100
- 10 dB = gain factor of 10
- 3 dB = gain factor of 2 (actually 1.995)**
- 0 dB = no gain or loss
- 1 dB = a 20% loss of signal
- 3 dB = a 50% loss of signal
- 10 dB = a 90% loss of signal

Soft start for power supplies Two soft start power supplies. The output voltage slowly increases to the desired output.



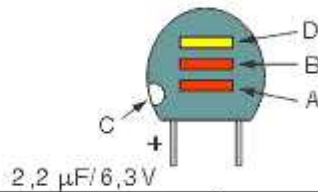
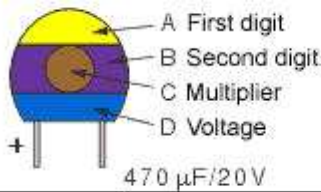
More on page 4

A longwire balun

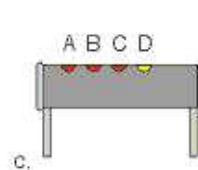
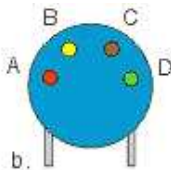
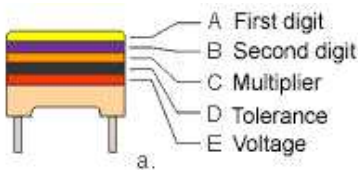


A good receiving antenna system

You will need three lengths of insulated wire of 0.8mm diameter and between 50 to 60cm long depending on the size of the torid core. Besure that you cover the core evenly and that the wires are close to each other. Connect the wires as per the diagram. Install in a weather proof container of you choice.



COLOR	DIGIT	MULTIPLIER	VOLTAGE
Black	0	$\times 1 \mu\text{F}$	10V
Brown	1	$\times 10 \mu\text{F}$	
Red	2	$\times 100 \mu\text{F}$	
Orange	3		
Yellow	4		6.3V
Green	5		16V
Blue	6		20V
Violet	7		
Grey	8	$\times .01 \mu\text{F}$	25V
White	9	$\times .1 \mu\text{F}$	3V
Pink			35V



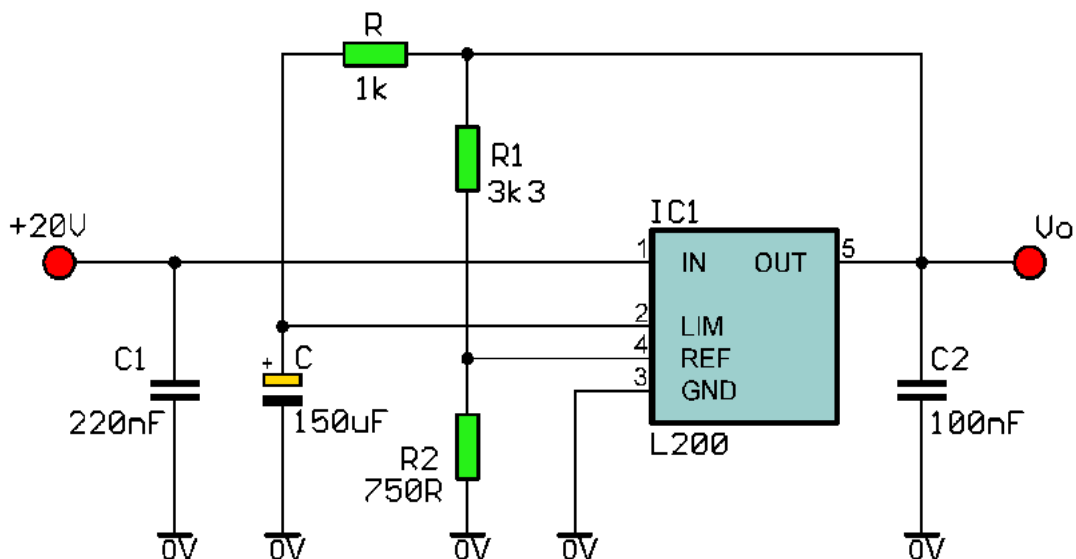
COLOR	DIGIT	MULTIPLIER	TOLERANCE	VOLTAGE
Black	0	$\times 1 \text{ pF}$	$\pm 20\%$	
Brown	1	$\times 10 \text{ pF}$	$\pm 1\%$	
Red	2	$\times 100 \text{ pF}$	$\pm 2\%$	250V
Orange	3	$\times 1 \text{ nF}$	$\pm 2.5\%$	
Yellow	4	$\times 10 \text{ nF}$		400V
Green	5	$\times 100 \text{ nF}$	$\pm 5\%$	
Blue	6	$\times 1 \mu\text{F}$		
Violet	7	$\times 10 \mu\text{F}$		
Grey	8	$\times 100 \mu\text{F}$		
White	9	$\times 1000 \mu\text{F}$	$\pm 10\%$	

EXAMPLES

C=47·1nF=47nF/20%/250V

C=39·10pF=390pF/5%

C=22·100pF=2200pF/5%



$$U_o = 2.77 * (1 + R1/R2)$$

$$0.5 < R2 < 1k5$$

$$T = (RC/0.45) * (U_o - 0.45)$$

The output voltage rises slowly and reaches 15 V in 5 seconds.

In order to perform this soft-start function, the LM317 voltage regulator IC requires an external universal PNP transistor and the L200 uses its internal comparator (pin 2). After switch-on, the rising voltage on the positive side of the charging electrolytic capacitor slowly turns the (initially conducting) transistor off, thus raising the voltage (relative to ground) on the adjustment pin of the LM317. In the L200 circuit, the corresponding electrolytic capacitor's rising voltage gradually relaxes the current-regulation loop inside the L200.

CLUB INFORMATION

Postal address PO Box 19937 Sunward Park 1470

Monthly meeting venue

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

e-mail zs6hvb@gmail.com

Repeater 145.1875 MHz input - 145.7875 MHz output

Linked to 70 cm - 438.850 MHz

Witwatersrand Rifles HQ

Cnr Barlow and Cavaleros Str

Industries West

Germiston

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.

Relay - 80M - 3662KHz

First Saturday of the month at 14:30

Committee

Chairman	Frank van Wensveen	ZS6TMV	082-294-2648
Vice Chairman	Frank Mercier	ZS6MER	011-845-1146
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
Assistant Secretary	Marianne Treyvellan	ZR6JMT	084-403-3355
Repeater/Packet/Technical	Ton van Dijk	ZS6ANA	011-432-5494
Shacknews Editor	Berridge Emmett	ZS6BFL	011-893-1291
Shacknews Printing	Harry Lautenbach	ZS6LT	011-888-5362
Webmaster	Yvonne van Dijk	ZR6TBL	011-432-5494
Assistant Webmaster	Marianne Treyvellan	ZR6JMT	084-403-3355

Club bank details

First National Bank - Current Account 62116557309

Branch Code 201209 - Sunward Park