SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

July - September 2015
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COMMUNICATION IS THE NAME OF THE GAME

The AGM has come and gone and there are no changes.
Subs have been decided on at R80.00 for this year 2015-2016.
It was decided to move the Sunday morning bulletin frequency on the 40M band from 7062 Khz to 7162 Khz. This is due to many other club stations operating on the lower part of the band. The move has proved to be successful as it is much quieter there.

The September social meeting will take place on the 19th September at the home of Doug & Merle. 29 Anson street, Robertsham. 14:00 for 14:30.
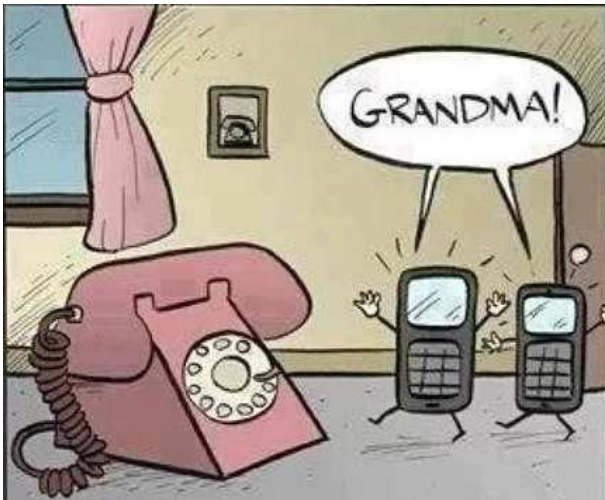
An engineer was crossing a road one day, when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess."
He bent over, picked up the frog and put it in his pocket.
The frog spoke up again and said, "If you kiss me I'll turn back into a beautiful princess and stay with you for one week."
The engineer took the frog out of his pocket, smiled at it and returned it to the pocket.
The frog then cried out, "If you kiss me and turn me back into a princess, I'll stay with you for one week and do ANYTHING you want."
Again, the engineer took the frog out, smiled at it and put it back into his pocket. Finally, the frog asked, "What is the matter? I've told you I'm a beautiful princess and that I'll stay with you for one week and do anything you want. Why won't you kiss me?"
The engineer said, "Look, I'm an engineer. I don't have time for a girlfriend, but a talking frog, now that's cool."

While open line ("chicken ladder") is arguably the best way to feed a balanced dipole antenna (lowest loss, lowest TVI, needs no balun at antenna feed point) it can be quite awkward to mount, and often this means that we revert to coax which, although it does not have a chicken ladder's outstanding RF properties, can at least be run out of a window or through a small hole in the wall. However, there is an alternative.

The UTP (unshielded twisted pair) cable used in computer networks can also be used as an antenna feeder. Modern data transmission rates use high frequency signaling, and modern (CAT5) UTP cable can easily handle RF signals up to 30MHz and even higher.

Inside a UTP cable we find four twisted pairs of two wires each. Every twisted pair has an impedance of 100 ohms. We use one of the four pairs to feed the antenna and ignore the other three.

UTP cable is light, which means less weight on the antenna feed point (and less sagging of the antenna if the feedpoint is not suspended rom a mast or tower). It is easy to run through a hole block. It is cheap, and its 100 ohms impedance is fairly close to the 75 ohms feedpoint impedance of a theoretically ideal open dipole.

The main drawback of UTP is that it does not have the same low loss as a "proper" chicken ladder. However it is no worse than the RG58 which is often used instead anyway, and which is then generally mismatched to the dipole's feedpoint in addition to that.

So for your next antenna installation, why not consider UTP over RG58?

To test a remote control

1. Obtain a remote control with a visible LED on it. Make sure it has batteries in it and that they are not out of power.

  2. Grab a digital camera, video camera, camera phone, web cam or any other piece of camera equipment with an LCD screen.

  3. Turn the camera on, making sure it is in capture mode, and look through the LCD screen.

  4. Point the LED on the remote directly at the camera lens.

  5. Hit any button on the remote, except for mode-change buttons such as TV, as those do not send an infra-red signal.

  6. You should now see a bluish-white light emitting from the dark panel of the remote, as in the image below. This is infra-red light!

What is the difference between mechanical engineers and civil engineers?
Mechanical engineers build weapons and civil engineers build targets.

EFFECTIVE RADIATED POWER

ERP CHART. Use the handy chart and information to estimate your ERP

EXAMPLE: Your running 100 watts into a 6 db gain antenna.

What is your ERP?

Refer to the chart below.

Antenna Gain in dB	Watts Multiplier	100 Watts input ERP
1	1.2	120
2	1.6	160
3	2.1	210
4	2.5	250
5	3.2	320
6	4.0	400
7	5.1	510
8	6.3	630
9	8.0	800
10	10.2	1020
11	12.6	1260
12	15.9	1590
13	20.0	2000
14	25.1	2510
15	31.6	3160
16	39.9	3990
17	50.2	5020
18	63.3	6330
19	79.5	7950
20	100.0	10000

It uses 100 watts as an example.
Go down the left column and find the gain of your antenna.
This would be 6 db in our example.
Read across to get the watts multiplier....4.....in this example.
Read across to the right of the column and find your answer of 400 watts ERP!
These figures are assuming that you are getting 100 watts to the antenna from the end of your feedlilne
and do not reflect any loses in it or the antenna and you know the gain figures for the antenna.

You should see that with every 3db increase, your effectively doubling the ERP.

You can calculate any power input to your antenna by just using the watts multiplier to get your answer.

HERE'S ANOTHER SIMPLE EXAMPLE

10 watts into a 3db gain, 2 meter 5/8 wave mag mount on the roof of your mobile.

10 watts verified on a 2 meter rig. Antenna gain of 3 db.
Read down the chart in left column, find 3db.
Get multiplier of 2.1 in next column to right.
Multiply 2.1 times your 10 watts going to that 3db gain 2.1 x 10 = 21 watts ERP!

Interesting shack

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Club Information

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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

Bulletins   Sunday morning - 145.7875 MHz & 7162 KHz @ 08h45.

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	Vacant		
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
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