



THE EVOLUTION OF A MAGNETIC LOOP ANTENNA

amateur radio and School

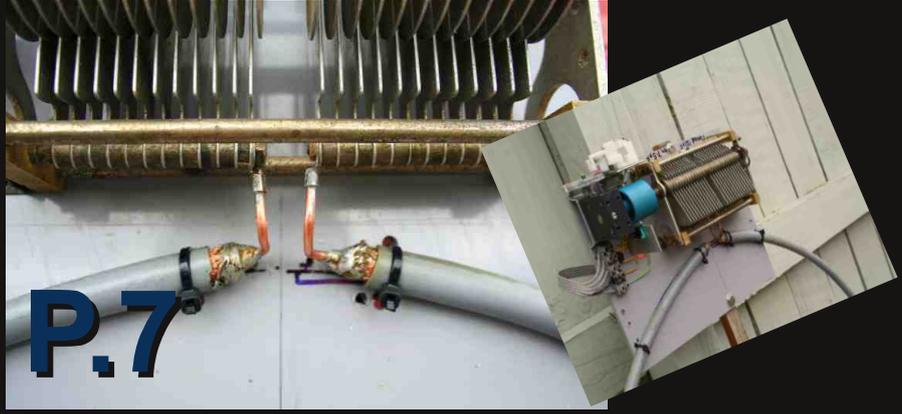


Condenser Microphone



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POST-IT !

The breaking News



A Sun with no sunspots! The quiet Sun returned --

through Thursday, April 22, there have been eight days straight with no sunspots.

A new spot began to emerge on Wednesday, but it quickly faded. For the next 10 days NOAA/USAF predict solar flux at 78, 78, 80, 80, 80, 78, 76, 80, 80 and 80. Solar flux values above 80 aren't predicted until May 20-23, with a value of 85, but that is too far into the future to predict accurately. They also predict the return of sunspot group 1061 on April 23-25; that sunspot group was previously visible on April 5-10.

Sunspot numbers for April 15-21 were 0, 0, 0, 0, 0, 0 and 0, with a mean of 0. The 10.7 cm flux was 74.5, 74.8, 73.9, 74.7, 75.4, 75.6 and 76.1, with a mean of 75. The estimated planetary A indices were 8, 4, 2, 2, 5, 5 and 6, with a mean of 4.6. The estimated mid-latitude A indices were 5, 2, 1, 1, 3, 4 and 4, with a mean of 2.9. Planetary A index for April 23-May 2 is predicted to be 8, 6, 5, 5, 5, 8, 8, 5, 5 and 5. Geophysical Institute Prague predicts quiet to unsettled conditions for April 23, then quiet April 24-26, quiet to unsettled April 27 and back to quiet for April 28-29.

CSS announces Digital Desktop/SC for Icom Radios

Muscle Shoals, AL, April 19th 2010: Creative Services Software announced today that hams can pre-order the Digital Desktop Soundcard release for Icom Radio.

The program takes advantage of the built in soundcard and CI-V interface via the USB port on the back of the IC-7200 and IC-7600. Since these radios support the TX/RX commands in CI-V interface, only one cable is needed for digital modes, the USB cable. Other Icoms that support the TX/RX commands will only need the soundcard interfaced to them, and those Icoms that don't have a soundcard or TX/RX commands can still use the program with a soundcard interface to their computer.

The Icom radios that support the TX/RX and soundcard in the radio are:

IC-7200 and IC-7600.

Icom radios that support the TX/RX commands but will need a external soundcard are:

IC-703, IC-746 (original), IC-746 Pro, IC-756 Pro, IC-756 Pro II, IC-756 Pro III, IC-7000, IC-7700 and the IC-7800.

Modes like RTTY, PSK-31 and SSTV are included with the product and the plans are to include Winmor in a future release, and more modes will be added via the snap-in dll technology created by Erik Gawtry, KC0WWC, of Timewave Technology. This open source interface allows anyone to create just the modem portion of a digital mode and by putting the DLL in the folder of the program and the mode appears on the drop down list. Company President Rick Ruhl, W4PC, said, "At the Orlando Hamcation, we found out that only CSS supported the TX/RX commands in the Icom radios. The CSS staff decided to come out with a version of the Digital Desktop for the Icom Radios. While they won't be able to get the ARQ modes like Pactor, Amtor or G-Tor without a TNC, but will be able to use their radios in the non ARQ modes with the software.

A pre-order price of 34.95 is available at the CSS online store at <http://www.cssincorp.com> which is a savings of \$5 off the retail price of \$39.95. When the product is released, those who have purchased the preview will have the option to download the program or have it sent to them on CD (or both). Icom is on the web at <http://www.icomamerica.com>

Timewave Technology is on the web at <http://www.timewave.com> Creative Services Software is on the web at <http://www.cssincorp.com>

SWR - Tester

By Gerd, DM2CDB

To test SWR instruments and indicators of FT 817 or of NWT I have invented a simple circuit me, which allows you to set an SWR 1 through 3. The precision resistor can be both larger and smaller than the standard value of 50 ohms, because the SWR value allows no unique mapping the measured value.

The development was to solve the measurement function with as few costly performance precision resistors. Of course you can create a resistive SWR, capacitive or inductive components are not included.

Can the used resistors be without major errors about 500 MHz. How big is the influence of wiring on the accuracy, must be ongoing, if appropriate instruments are available.

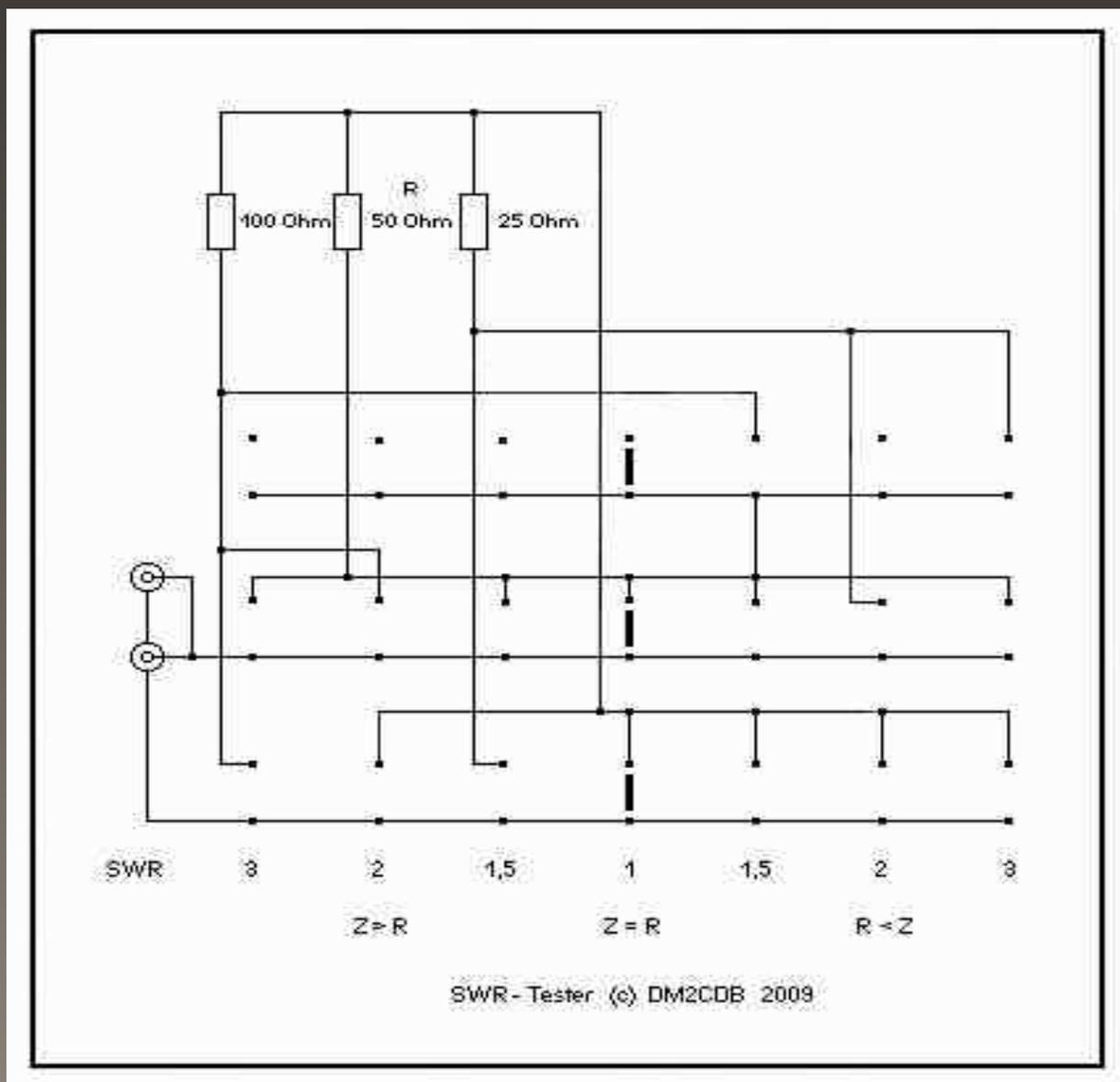
SWR - Tester was built performance precision resistors with 1% 100 W of 25 Ohms, 50 Ohms and 100 Ohms.

Maximum measurable RF performance strongly depends on the used heat sink thermal resistance. Without cooling QRP-are measurements up to 3.5 W possible.

The figure shows the circuit of SWR testers.

Who wants to use the opposition as a dummy load, should turn parallel to a second RF connector as measuring output to the RF input jack and position SWR = 1 measure performance.

73 from Gerd, DM2CDB



Quick and Easy Current Limited Emergency Battery Charger

By Art Loya - KJ4NIR

A quick and easy emergency battery charger used to charge lead acid or gel-cell type batteries from 120v AC can be quite handy. I have used this circuit many times charge my 12V-7A SLA battery I use with my Yaesu FT-857d radio until I finally got around to buying a small Battery Tender charger.

Cautions:

This is a simple unregulated charger, it can and will overcharge your batteries if left unattended. This circuit uses dangerous 120v AC and normal cautions must be adhered to prevent electrical shocks. The advantages of this current limiting circuit are that it can charge about any voltage of battery, I have charged 6, 9, and 12v. It can also assist in preventing sulfation in the battery and rejuvenate older batteries.

Materials used:

- 120v 60w Light Bulb and inexpensive(\$1.29 @ Ace Hardware) porcelain lamp holder
- 1n4004 Silicon Diode,
- 16awg wire ungrounded AC Plug
- Red and black alligator clips



Circuit:

120v 60w bulb is acting as a current limiting device connected in series with the diode. The diode's positive(+) side is connect to bulb and negative(-) side is connected to the battery's positive(+) terminal, the battery's negative(-) terminal is connected to the 120vAC return. Since this is a current limited design a battery of any voltage can be charge with up to 1/3 A. Even with a shorted battery, the maximum current flow is approximately 1/3 A. The pulsating DC current will help break up sulfation that may be present in the battery and can possibly rejuvenate an older weak or "near dead" battery.

Wiring it up:

- Connect plug to wire, I used a discarded lamp cord with two prong plug attached
- Attached BLACK alligator clip to one end of the lamp cord, this will be attached to negative (-) terminal of battery to be charged
- Connect one end of lamp cord to one side porcelain lamp base
- Connect positive(+) side of 1n4004 diode to opposite side of porcelain lamp base
- Attach wire to negative(-) side of diode
- Attach RED alligator clip to wire from diode, this will connect to the positive(+) terminal of the battery to be charged
- using electrical tape wrap diode and any exposed connections

Using the charger:

Note that the lamp is dimmer than normal. The diode allows the lamp to light at 50% duty cycle. Monitor the trickle charging, this circuit is unregulated and it can overcharge your batteries.

73's ! Art

Teach the Classics...

Amateur Radio of course!

By Matthew Murphy, KC8BEW

Most people going to school learn Math, English (add your language here), history and such. In the ninth grade we had a special science class called Space Science. Only a select number of students were able to take it. What about a class in Amateur Radio? In the local elementary school we have done just that!

Beginning in October of 2009, we started the Dresden Elementary Amateur Radio Station (D.E.A.R.S.) in Dresden, Ohio. The music teacher at the school, Jim Mayercak, WX8J, was approached by the principal of the school asking if he had an idea for a club. She had an idea to allow the 5th and 6th graders to make up clubs for different things like photography and scrapbooking and other hobbies. Jim said to her "how about ham radio?" She liked the idea a lot and asked if it was possible. "With some help of a local club we can do it" Jim said. More good news came



when she told him the PTO (Parent Teacher Organization) was behind this and to make a list of what was needed. Jim went to the members of the Muskingum Valley Ham Radio Club (of which Jim is a member) and it was greatly received

We put together a plan and made a list of what we would need to put together a small station from the ground up. With help from the club members, we were able to get most of what we needed. We still had other equipment needs that we filled with borrowed equipment till the school could get its own. On October 14, 2009, D.E.A.R.S. was on the air. Did I mention that this is not an after school club? It takes place during the school day!

We had 15 kids that signed up for our club. The principal stated that they had to limit the clubs to 15. If not, we "would have had 45!" We started with an overview of what Amateur Radio was and that we do and some rules set forth from the FCC. Jim then turned the radio on and took volunteers. A couple of the kids took right to it. In fact, Austin and Lizzy will turn into first class operators.

I will confess that for the first day we had set up a contact with a local ham, Sonny W8FHF. Everyone had a chance to talk to him. For the next meeting we had Sonny come and give each of them a QSL card. At this point they were hooked. We try to get everyone to talk on the radio at least once a meeting. Some have made several contacts while others have made only one. Each meeting, they all ask if they have gotten any more cards.

On March 10, 2009 we had a dedication of our new equipment. The club now has a Kenwood 520S with external vfo, speaker, digital display, microphone and straight key donated. The local TV station and newspaper were there. It was great to see the kids talk about ham radio and how they are having fun.

We are waiting on a club call sign to be issued, so for now we use Jim's WX8J. The club meets every other Wednesday with the next (as I write this) being April 7th. We gather at 18:30UTC and go until 19:20UTC. We mostly stay around 40 meters in the General class portion of the band.

73, Matthew Murphy, KC8BEW

A Homebrew Condenser Microphone

Build a condenser microphone that will perform like the costly commercial units...plus, you won't need an expensive equalizer. Sounds good!



With modern commercial amateur transceivers becoming increasingly difficult to work on, most ham builders have turned to other endeavors. Looking around for a fresh project, and one that had a reasonable chance of success, I decided to build a “scratch-built” condenser microphone. One of my friends had been working on piezoelectric homebrew microphones, so the condenser microphone seemed like a good choice. I know that this is 1920s technology and that you can buy a very good microphone reasonably, but it is interesting, challenging and educational to retrace some of the development processes of those “times gone by.” I set the following objectives for my new homebrew microphone:

- Sound as good or better than the Heil Goldline microphone
- Work directly into a transceiver without external equalization or processing
- Require no special tools to fabricate
- Use no manufactured microphone parts
- Use no special materials—only those found in the “junk box” or local store
- Be attractive and complementary to my station
- Be inexpensive

I'll not bore you with all the things I tried that didn't work—I will simply explain the final model that met all my objectives. The final product, pictured here, is the result—a condenser microphone with a very large diaphragm (1.6 inch diameter). The coarse screen mesh “cricket cage” serves as a combination windscreen and Faraday shield for the element. Adequate shielding is very important to ensure that no RF enters the audio stream. Because of the high gain required to amplify a condenser element, RFI can be a problem, so I shielded all the components thoroughly.

A Homebrew Condenser Microphone Build a condenser microphone that will perform like the costly commercial units...plus, you won't need an expensive equalizer. Sounds good!

Some Basic Theory

Condenser microphones use a thin lightweight conducting membrane as a diaphragm and a fixed plate closely spaced behind it. The two facing surfaces become the plates of an air dielectric condenser (or capacitor if you prefer). Sound pressure against the thin membrane causes it to move. This movement changes the spacing between the plates and therefore the capacitance. When the condenser is polarized (charged or biased) with an external voltage, it causes a changing electrical output proportional to the sound pressure. The source impedance of the condenser element is very high, several megohms being typical. A built-in field effect transistor furnishes the impedance step-down necessary to deal with input to typical solid-state amplifiers. The FET has the capability of accepting a very high impedance input and producing a reasonably low output impedance of 1-2 k Ω , while producing moderate gain

When considering commercial studio type condenser microphones, “phantom power” is the term normally used for an externally supplied bias or polarizing voltage.

A microphone of this type is said to be a “pure condenser” type as contrasted with an “electret condenser” microphone, which requires no external polarizing voltage. The homebrew microphone under discussion uses a polarizing voltage derived from a very small internal 48 V battery mounted within the microphone housing. It does not use an external phantom power system.

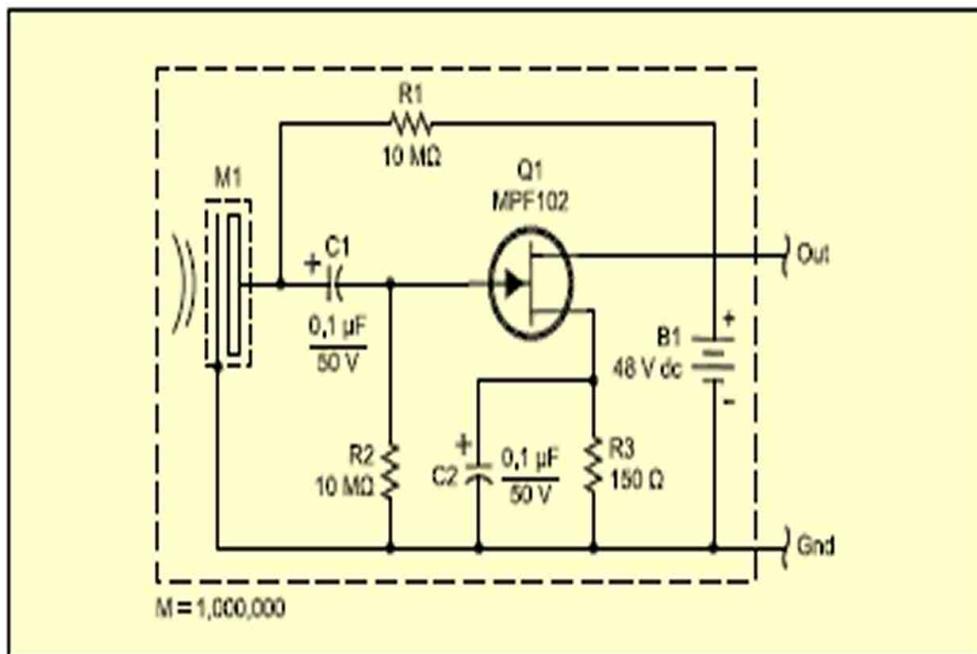


Fig.1 - The microphone amplifier schematic together with the parts required for construction. Note that the polarizing or bias battery is fabricated from multiple cells, as described in the text. R1 and R2, the 10 MΩ resistors, can be made of two 4.7 MΩ, 1/4 W resistors if 10 MΩ resistors prove difficult to locate. C1 is used to keep the microphone polarizing voltage from appearing at the FET gate and C2 is used to bypass the FET source resistor. M1 is the microphone element and its construction is described in the text.

B1—48 V battery (see text). C1, C2—0.1 μF, 50 V capacitor.
M1—Fabricated element (see text). Q1—MPF-102 JFET, RadioShack 276-2062. R1, R2—10 MΩ, 1/4 W resistor.
R3—150 Ω, 1/4 W resistor.

As is the case with an electret microphone, it does require a small voltage for the FET impedance transforming circuit inside the microphone. And, as in many electret microphones, the FET’s drain load resistor and voltage source are located downstream, in the amplifier. No specific power supply is therefore necessary when operating this microphone with an electret-compatible circuit, such as that used by ICOM. As an example, this operating mode provides adequate microphone drive to satisfy the IC-756PRO transceiver.

Figure 1 is the schematic of the microphone amplifier and the parts required. In critical sound applications, the condenser microphone is often preferred for its uniform frequency response and its accurate response to transient sounds. The natural design of a condenser microphone ensures an outstanding low-frequency response, and the low mass and high tension of the diaphragm allows a smooth high-frequency response. This results in a clean, natural and clear sound. It is said to produce outstanding “transparency and detail.” These characteristics make the condenser microphone a natural choice for professional use or other demanding applications.

Some manufacturers produce condenser microphones with diaphragms that are less than 1/10,000th of an inch thick.

For amateur service use, not all of these characteristics are relevant. Since most amateur transmitters roll off most audio frequencies above 3 kHz, the high frequency characteristic of the microphone is not overly important. Condenser microphone design does provide the opportunity to shape the audio response without the use of external equalizers and processors.

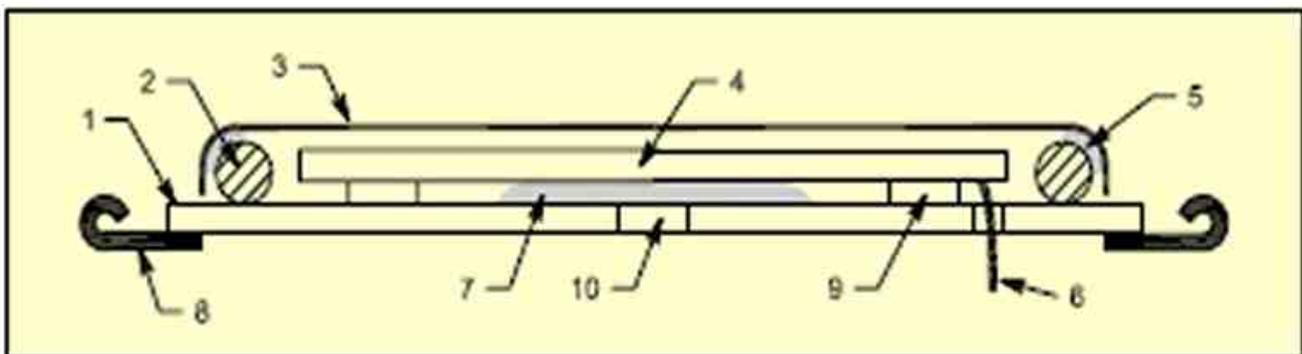
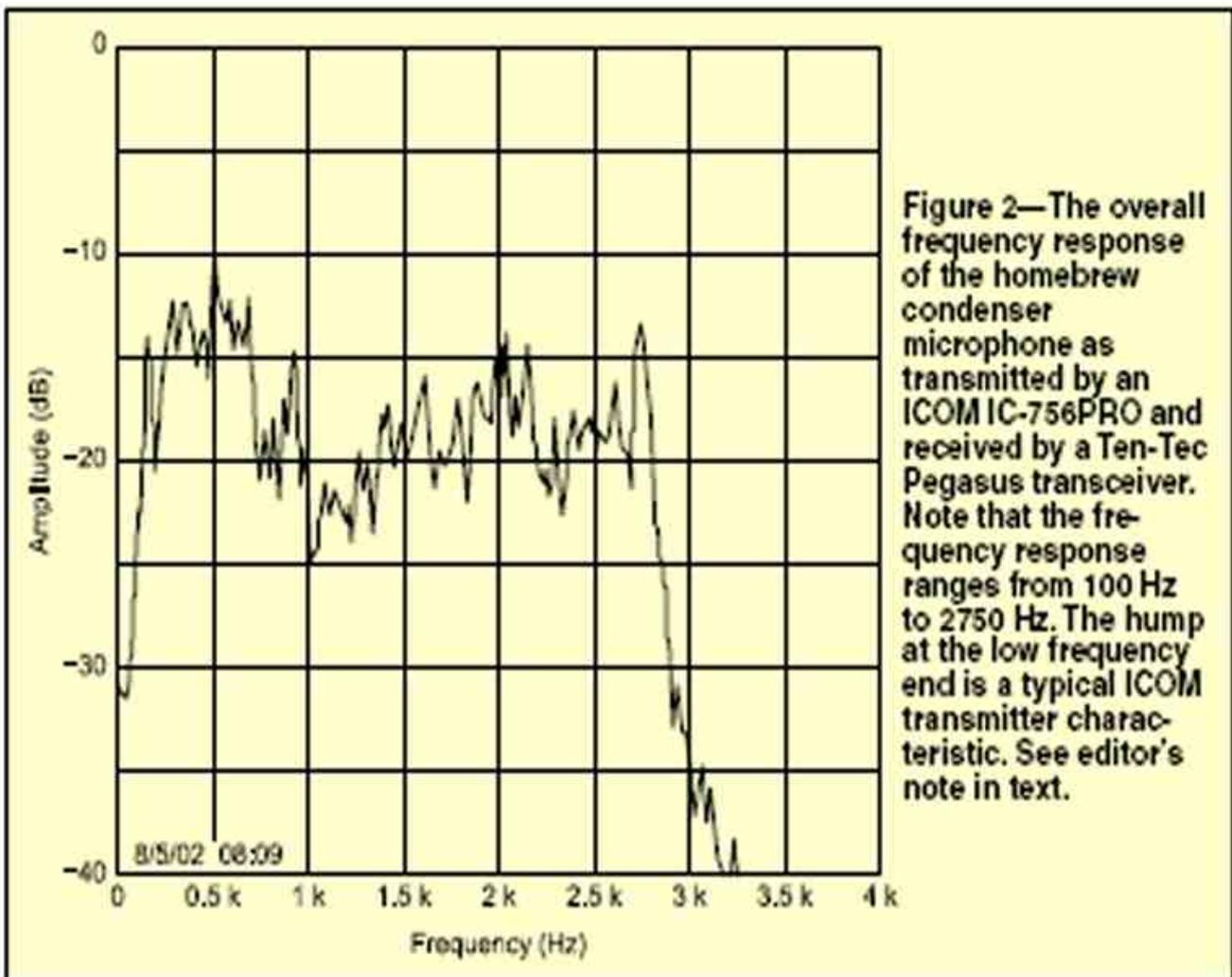


Figure 3—The microphone element mechanical details and basic construction steps. More detail can be found in the text.

1. The microphone base is made of a round disk of 1/16 inch double-sided PC board.
2. The spacer ring is made of 1/8 inch brazing rod, bent into a 1.6 inch diameter circle and soldered to surface of the base.
3. The diaphragm is 0.001 inch aluminum foil (lightweight household foil).
4. The condenser plate (inner) consists of 1/16 inch double side PC board and positioned 0.005 inch below the diaphragm.
5. The diaphragm is attached to spacer ring with epoxy cement. Stretch foil as tightly as possible without tearing.
6. Flexible wire is connected to front surface of the condenser plate. Connects to the input coupling capacitor and to the JFET transistor and the polarizing voltage (bias) resistor.
7. Epoxy mix holds inner condenser plate in position.
8. Dress hooks soldered in place for elastic band suspension of the microphone element (4 hooks soldered with 90° spacing around element perimeter).
9. Foam rubber doughnut (see text).
10. Pour hole, 1/4 inch, for pouring epoxy mix into cavity to hold the condenser back plate in position.

In the case of the homebrew microphone under discussion, a very large diaphragm (1.6 inches) is made of 0.001 inch thickness aluminum foil. The large diaphragm increases the low frequency response and the thickness of the material does limit the high frequency response, but the microphone operates very well within the frequency range we are concerned with.

Transmitted Spectral Content

Using a HamAlyzer3 FFT audio spectrum analyzer on my notebook computer, I was able to test for frequency response and to “tweak” the microphone to achieve best results. Figure 2 shows a HamAlyzer trace of the microphone’s over-the-air response when used with my ICOM IC-756PRO transceiver. This trace was captured by W5TOM, using his Ten-Tec Pegasus.

After extensive testing, I discovered that this microphone had the best “presence” and overall sound quality when the element was suspended in air with no enclosure other than the element itself.

It produces a cardioid pattern over the whole frequency range, but the pattern is less pronounced at low frequencies. It does pick up room noise and it shows less “proximity” effect than other microphones I have used. I did not concern myself with frequencies above 4 kHz, in that my transmitter cuts off everything above about 3 kHz anyway.

Building the Element

By referring to Figures 3, 4 and 5 you can see that the element is constructed by building four main subassemblies, then combining them. These are:

1. The base plate, a circular, 1.7 inch diameter disk of double sided 1/16 inch printed circuit board. I used a school-type compass for layout and sawed the base plate out using a small jigsaw. Note that a 1/8 inch hole is drilled into this part. This serves two purposes. One is to furnish an exit path for the wire that connects to the inner condenser plate and the second is to relieve some of the acoustical back-pressure. It is important that the element is vented to atmospheric pressure to avoid an internal pressure differential and thus distort the diaphragm. The hole in the center of the back plate is 1/4 inch in diameter. This hole is for pouring in epoxy behind the condenser back plate and is filled in later.

2. A 1.6 inch diameter brass ring is made of 1/8 inch brazing rod. It is formed into a circle by wrapping it around a 3/4 inch schedule 40 PVC pipe coupling which is clamped in a vise. The coupling is only 1.3 inch OD, but the rod springs back to form a somewhat larger circle. It is formed around the coupling for about a turn and a half and then adjusted so that it forms a 1.6 inch circle. The brazing rod behaves much better if you anneal it by heating it with a propane torch to discoloration and then letting it air cool. After the bending operation, clamp the loop in a vise and cut the both ends at the same time with a hacksaw. Solder it together being very careful to align the two ends to ensure a smooth circle.



Figure 4—The main parts of the microphone element.



Figure 5—The assembled microphone element.

3. The back plate of the condenser is a circular 1.25 inch diameter disk made of double sided 1/16 inch printed circuit board. The layout for this was also done with a simple school-type compass and then the back plate was sawed out using a small jigsaw. Since most of the diaphragm motion is in the center, there is very little advantage realized by using all the outer space under the diaphragm. The 1.25 inch diameter leaves plenty of room around the edges for assembly and alignment.

4. A foam rubber doughnut the same OD as the back plate is required. While not critical, the doughnut's center hole should leave about 1/4 inch of foam and the height should be about 1/4 inch. This will allow it to be compressed to approximately 1/8 inch in the final assembly. This doughnut, or "O-ring," serves to contain the epoxy poured in from the back and produces pressure on the back plate so that it will align with the brass ring when clamped to a hard smooth surface. Smooth the edges and the flat surfaces with 400 grit wet-dry sandpaper. Place the sandpaper on a firm, flat surface and lap the surfaces carefully to make certain they are flat and have no rough spots or burrs.



Figure 6—Applying the aluminum foil diaphragm to the element using a homebrew test fixture. Notice the bead of epoxy cement around the edge of the spacer ring. The diaphragm is held in this position until the glue dries fast. It is then trimmed, close to the ring.



Figure 7—The 48 V polarizing (bias) battery assembly and parts list. 2 each, 12-V packs (RadioShack Keyless Entry System, RS 23-279 [GP27A]). Each pack contains two batteries for a total of four). 1 each, fiberglass board, 1.25x1.75x1/16 inches. 1 each, Velcro patch 3/4x3/4 inch. Apply to back of board for mounting. Misc Short length of very small gauge stranded hookup wire for interconnects and external leads. Small quantity of 5 minute epoxy to affix the batteries to the board and to clear coat the finished unit for insulation. Small section (0.5 inch) of shrink tubing to contain the two battery wires.



Figure 8—An example of a typical microphone housing, with parts and fixtures.

The following steps are necessary to assemble the element:

1. Solder a small, flexible insulated wire to the condenser back plate. This connection must be made to the front surface of the disk in such a manner so as to avoid disturbing the flatness of the front surface. I drilled a 1/16 inch hole from the back but not all the way through the front copper. Then press a dimple in the copper over the hole and drill a hole through the copper large enough to terminate the small connecting wire. Carefully sand the surface to make certain the solder does not protrude above the back plate front surface.
2. Solder the brass ring to the base plate (large disk) in three places. Use a large soldering iron and a minimum amount of solder and make sure that the solder flows to both ring and plate. See Figure 6 for the proper position of the ring.
3. The most critical operation of the entire project is mounting the condenser back plate so that it is 0.005 inch below the plane of the lip formed by the brass ring. This is done by temporarily pasting a piece of heavy paper (0.004 to 0.005 inch thick) onto the front surface of the condenser back plate. This shims the surface of the plate a controlled distance behind the plane of the lip. When both surfaces are pressed firmly onto a flat surface and glued in place, the proper spacing will have been established. The objective of this operation is to establish the minimum spacing possible while ensuring enough clearance, to avoid shorting of the condenser plates when stimulated with high sound pressure levels. The closer the spacing, the higher the microphone's output level and the better the signal to noise ratio.

Application of the Diaphragm

Initially, I had difficulty applying the aluminum foil diaphragm to the base ring of the element. Figure 6 illustrates a fixture I built to make the task easy. Remember that the foil must be tensioned to the maximum extent possible without bursting. The following procedures will make this critical operation easy. Note that it is not essential to use a special fixture. A drill press that can be locked into position or a similar device will work equally well.

The fixture allows a larger than needed piece of foil (lightweight aluminum foil from the kitchen) to be held smoothly and tightly while the element is pressed into it. A large-mouth plastic jar with a threaded top is used to hold the foil. The center portion of the jar top is removed with a sharp pocket knife. With a little care and experimentation, it becomes a very simple operation to form a "drum head" with the jar. The foil need not be tensioned, just clamped into place smoothly with no ripples. Lubricate the threads on the jar and the lid with a very light application of nonstaining oil or petrolatum. This makes it much easier to

get the foil in place. Make certain that the lubricant does not get on the foil in the center area or it will interfere with the cementing operation.

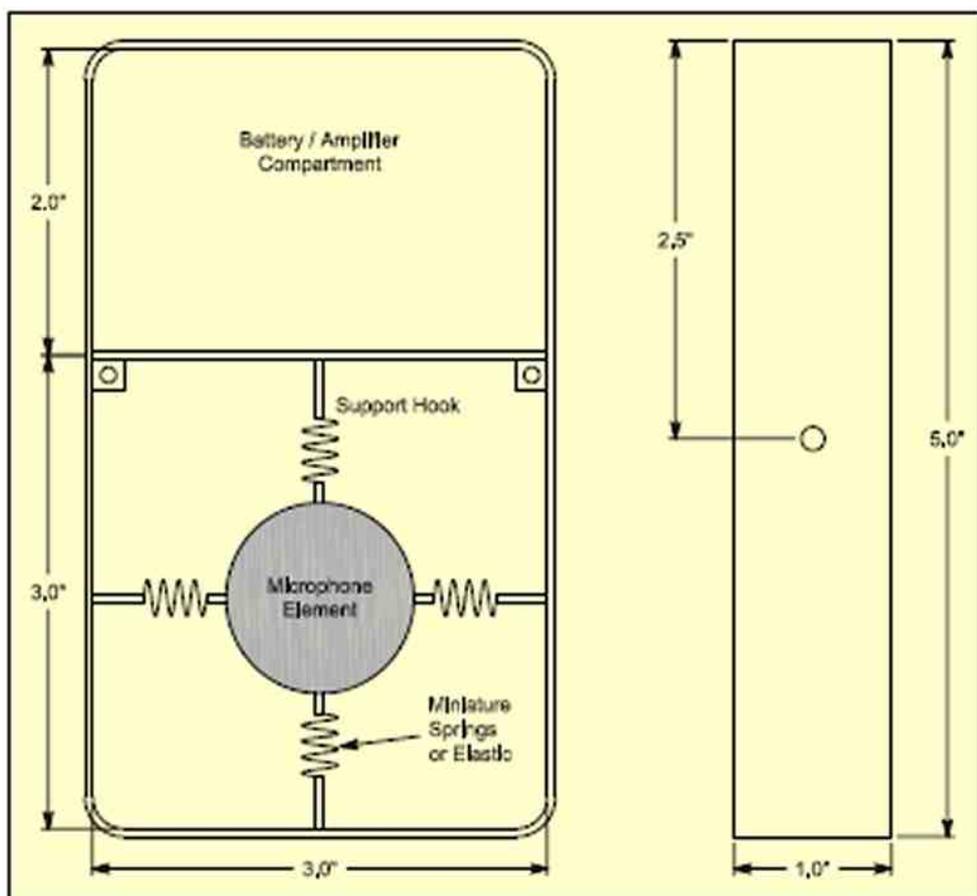


Figure 9—The dimensions of the microphone housing example. Note that the element is suspended by hooks and elastic.

Once the element is pressed into the center of the “drum head,” apply a light coat of epoxy cement around the edge with a small brush. Just a few bristles of an old brush held together with a piece of masking tape works fine and can be discarded when finished. Allow the epoxy to set (I used fast set epoxy but you may need more working time to avoid rushing) and then remove the excess foil by simply rough-cutting the excess foil from around the element. When it’s removed, carefully trim the edges, being careful not to injure the tensioned diaphragm.

Verify that the foil has a stable electrical contact with the ground portion of the element and that it does not make contact with the back plate of the condenser. Polarizing (Bias) Battery The 48 V battery assembly is made up of four 12 V batteries wired in series and mounted on a small fiberglass board.

Since the condenser microphone uses this voltage to furnish only element bias, there is no current drawn from the battery and you should expect many years of full output potential—essentially the normal shelf life of the battery. The internal battery was used rather than an external power supply for economy and simplicity.

Figure 7 shows the wired battery assembly. The Microphone Housing Because everyone has different mechanical capabilities and facilities at their disposal, I have not attempted to furnish exact mechanical details for construction of a housing. A number of satisfactory designs are possible. The housing shown in Figure 8 was constructed by W5TOM, using no more than simple hand tools and equipment. Figure 9 gives the overall dimensions for the housing. While I didn’t intend to furnish exact construction details for the microphone housing, these photos and notes should provide some basic ideas for the construction techniques used to make a suitable housing. Since I use a boom microphone, my construction followed that path. A very nice desk mount could probably be constructed without much difficulty. So, sitback and enjoy your new condenser microphone— you’ll be proud to say, “The mic here is totally homebrew!”

Sam Kennedy, KT4QW, has been interested in radio since the age of 7 (70 years ago) but was actually first licensed in the 1950s as K4DEP. Relicensed in 1996, when he was assigned his current call, he earned the Amateur Extra ticket shortly thereafter. Sam has attended both commercial and US Navy electronics schools and has worked with military radio, radar and navigation equipment.

He enjoys the technical aspects of ham radio and, as can be seen from this article, he has a special interest in microphones. You can contact him at 57 Huxley Pl, Newport News, VA 23606



THE EVOLUTION OF A MAGNETIC LOOP ANTENNA

Ever since I wrote a short article reporting on a Magnetic Loop Antenna made by Pieter ZL1PDT and Frank ZL1QRM in our Rotorua Amateur Radio Club Newsletter , no.6, Sept. 2009, I have been trolling the internet and reading every publication I could find on the subject.

Having sifted the serious from the dubious, (believe me, if you trust every article and piece of technical information you read, you will spend a lot of time following dead ends), I decided to build a 1-meter diameter loop. I figured that this diameter, recommended by so many experts, should easily cover the HF bands from 80m up to 10m.

It then became a matter of obtaining a transmitting type ganged variable capacitor as a starting point. Thanks to a club member, I became the owner of a suitable unit at a Ham rates price and it then became a matter of sifting through my junk box(es) and devising a suitable reduction drive system using a 12volt DC electric motor. Further fossicking produced 2 limit switches and another old and small 90:1 worm drive gearbox. By using a roller from the underside of a cheap plastic storage bin as a final pinned coupling to the capacitor and gearbox, I was able to screw in a couple of PK screws in suitable locations on this drum type coupling to actuate the limit switches. I used a thin flexible S/S strip between the rotating limit screws and the switches to avoid catching the screws. The whole assembly fastens to a PVC sheet cut to shape.

My variable capacitor measured 7pF open and 125pF closed. However, in the configuration I am using, it gave me a range of 3.5pF to 63pF. This configuration using a split stator capacitor, effectively eliminates any resistance from wiper/bearing contacts. Each end of the loop is connected to a stator and the rotor forms the coupling path between both stators. This of course divides the total value of capacitance by two, but an upside is that it does double the voltage rating!

Having built and tested the 1-meter dia. prototype loop, it became painfully obvious that I had insufficient capacity to tune it for the required band and with the voltages calculated at the capacitor with 100w drive, switching in additional capacitance to a remotely located loop was not going to be a practical solution.

"On Air" tests carried out by switching between my wire 80 dipole with tuner and the 1m dia. loop, showed the dipole clearly superior by 2 to 3 'S' points on 80m and 40m, about equal on 20m. The loop was clearly superior on each successive band up to 10m where the loop gave an approx. 4 'S'point advantage.

At this point, to suit my requirements, I decided to rebuild the loop to a smaller diameter, one which would work with the variable capacitor I had. A whole series of calculations were made, using different configurations, with the Loop Calculator obtained from the web at:

www.standpipe.com/w2bri/software.htm

This calculator is the KI6GD Magnetic Loop Calculator V1.4

©2009



My prototype 1m dia. Mag. Loop

I ended up with a loop dia. of 625mm from 12mm dia. heavy coax and a 125mm dia. coupling loop made from 50 ohm RG58a/u coax. cable in the form of a 'Faraday' loop. The figures suggested that this size Magnetic Loop would cover the bands from 20m to 10m with my capacitor. Here are the calculated figures:

mHz.	Bandwidth.	Cap. value.	Cap voltage.	Efficiency.
14.000	10kHz	56.3pF	5kV	21.7%
14.300	10.3kHz	53.7pF	5.1kV	23.0%
18.068	14.9kHz	31.2pF	5.3kV	40.4%
18.168	15.1kHz	30.8pF	5.3kV	40.8%
21.000	20.6kHz	21.4pF	5.3kV	53.4%
21.450	21.7kHz	20.3pF	5,2kV	55.2%
24.890	32.1 kHz	13.4pF	5.0kV	67.5%
24.990	32.5kHz	13.3pF	5.0kV	67.8%
28.000	45.8kHz	9.3pF	4.7kV	75.8%
29.700	55.4kHz	7.5pF	4.5kV	79.45%



The Final 625mm dia. Loop.

This new 625mm diameter loop was duly built and coupled to the motorized tuning capacitor.



Home brewed 12v geared remote control, var. cap. drive system.



Connection of loop ends to capacitor.

Coupling the RARC's "MFJ Antenna Analyzer" to the small coupling loop coax resulted in the following figures:

From 14.000mHz to 14.300mHz showed a 1.1swr @ between 40 and 42 ohms.

" 18.068mHz to 18.168mHz	" 1.4swr	" 50 ohms
" 21.000mHz to 21.450mHz	" 1.7swr	" 50ohms
" 24.890mHz to 24.990mHz	" 1.4swr	" 47ohms
" 28.000mHz to 29.700mHz	" 1.4swr	" 50ohms

With the variable capacitor fully opened on the limit switches, the loop tuned up to 33.600MHz and with the capacitor fully closed on the limit switch it tuned down to 13.2MHz. Thus the present loop dia. and this variable capacitor combination appears to be about right for my needs. The actual bandwidth figures have not been checked yet, but they appear to be in line with the calculated figures, i.e. narrow at 20m and extremely narrow at 10m! This of course is the downside of using a Magnetic Loop, very critical tuning and narrow bandwidth.

Whilst testing the first (1m dia.) version of the loop, my initial version of the remote Motor Control Box had a switching system with an extra switch allowing the limit switches to be over ruled. Yes, that anti-ham fellow, 'Murphy,' struck and during a short period where my attention was focused on watching the MFJ antenna analyzer, I effectively wrecked the motor drive reduction system.

Suffice to say, that after rebuilding the motor drive reduction system, I redesigned and rebuilt the control box 3 times and the final version used the "Kiss" principle. As long as the limit switches do their job it is foolproof.

The final configuration is pictured as is the circuit diagram.

I used a commercial small switched Power supply, picked up very cheaply at a recent Amateur Junk Sale. This was built into the box and gives a switched output dc voltage of 12v, 9v, or 6v DC at a max. of 400mA, more than required. This feature allows very good speed control of the motor drive. The last requirement was to roll up a few turns of the coax feedline to form a choke close to the input.



Remote Tuning Control Box

The final details have yet to be realized, that revolves around where to install the completed Loop without it becoming like 'Cape Canaveral' as my XYL calls any antenna setup at my QTH. I have hoisted it up from and alongside my only Pole, a guyed rectangular PVC downpipe fastened on to the end of my shack, which supports the center and 300ohm feed to my wire dipole and has my VHF/UHF combination 'J'pole on the top. The Loop performs very well here but has to come down every day to keep the peace. The answer will be to install it, hidden under my iron roof, but positioned in the ceiling space at a gabled end, where it will radiate towards the east. Ham Radio has to incorporate many compromises!

73's ! Ian, ZL1TXZ.



Getting Started with Digital Sound Card Modes with the Yaesu FT-817 Transceiver

Abstract This paper describes the steps taken to interface the Yaesu FT-817 transceiver to a computer sound card system to operate in one of the digital sound card modes such as BPSK31, QPSK31, BPSK63, MFSK16, RTTY, CW, Hellschreiber, SSTV, MT63, Throb, Packet and others. Covered are the hardware interfacing requirements, the software control methods, the setup of the FT-817 menus, and operating procedures to use these modes.



Introduction

The Digital Sound Card Modes are well suited to QRP operation with rigs like the FT 817. In one week of testing with the interfaced rig, solid 20 meter DX contacts were made to Mexico, Thailand, Hawaii, Alaska, New Zealand, Fiji, New Caledonia, and Argentina as well as US stations in the South East, Mid West and South West. The antenna used was a G5RV up 45 feet. Power for all these contacts was done at one watt peak output. Modes used included BPSK31, MFSK16 and RTTY. The station (KK7UQ) is located in Port Townsend, Washington, USA.

A typical operating station consists of the FT-817 rig, a laptop PC and the interface. A picture of this setup, ready for portable operation in the travel trailer, is shown above. One optional accessory is the family Schnauzer, Flora, peering over the computer in the background.

Test Setup The following equipment and software was used during testing. Web references (in blue) are included to find more information about these products.

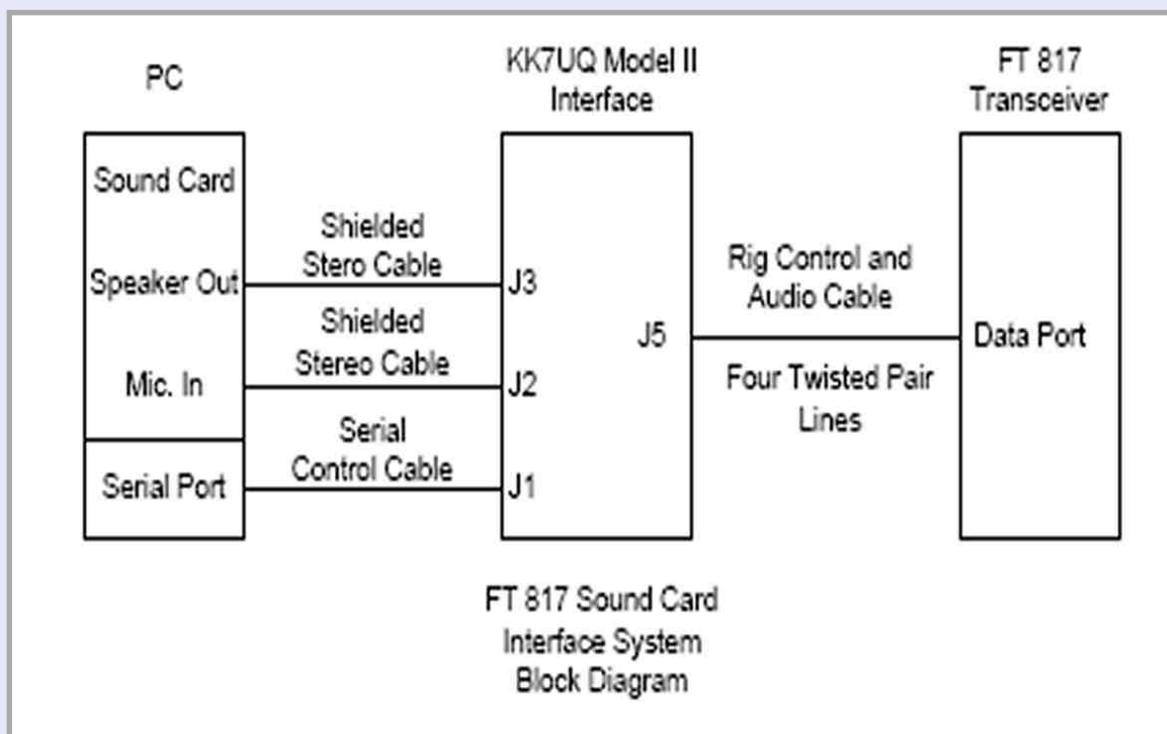
- * Rig Yaesu FT-817 Transceiver
- * Interface KK7UQ Model II Interface kk7uq.hfradio.org/index.htm
- * Computer Desktop or Laptop PC with Sound Blaster 16 compatible
- * Sound card and one serial interface port

Software MixW32 Ver. 2.08
 PSK Deluxe
 Hamscope
 Digipan

www.nvbb.net/~jaffejim/downloads.htm
hrd.ham-radio.ch/downloads.html
www.qsl.net/hamscope/
www.digipan.net

Interconnections

The FT-817 Transceiver is connected to the PC Sound Card and Serial Port via the Sound Card Interface System. A block diagram is shown below. Modulated audio from the PC is delivered to the interface via a shielded stereo audio cable, transformer isolated and attenuated to appropriate levels, and then connected to the FT-817 Data Port via a twisted pair line. Audio from the FT-817 is sent to the interface via another twisted pair line, transformer isolated, attenuated and then connected to the Sound Card microphone input via a shielded stereo cable. PTT control for the rig originates in the serial port RTS line and connects via a serial control cable to the interface. It is isolated with an opto-isolator whose output is used to drive the PTT line of the FT 817 via another twisted pair line.



Interface

The schematic diagram of the KK7UQ Model II interface is shown next page. Features of this interface include: Full isolation between the transceiver and the PC using transformers on the audio path and opto-isolators on the control path.

Level control of transmit and receive audio using audio taper potentiometers with external knobs for easy control of level when operating. The 10:1 Output signal level reduction to ensure that the signal level does not exceed the maximum level 1.0v p-p specified by Yaesu.

Built in audio monitor with speaker so you can hear the signal being transmitted. No external power supply required - all power needed for the audio amplifier is derived from the RS232 control signals.

Small, lightweight design - ideal for portable use, the entire circuit fits inside an Altoids (c) box.

Rig Control Cable

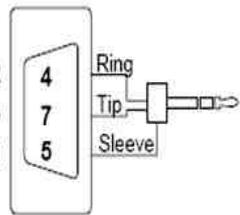
The Rig Control Cable connects the interface to the FT 817 Data (6 pin mini-DIN) connector. The connector used to mate with the Data Port of the FT 817 is a 6 pin mini-DIN with solder cup contacts, Mouser part number: 171-2606. A CAT 5 jumper cable, cut in half is used to build this cable. The color coding of the wires in these cables comes in two versions: those that start with an Orange pair, and one that starts with a Green pair. Both are shown next page. Check the cable before wiring.

To
Sound Card
Line In

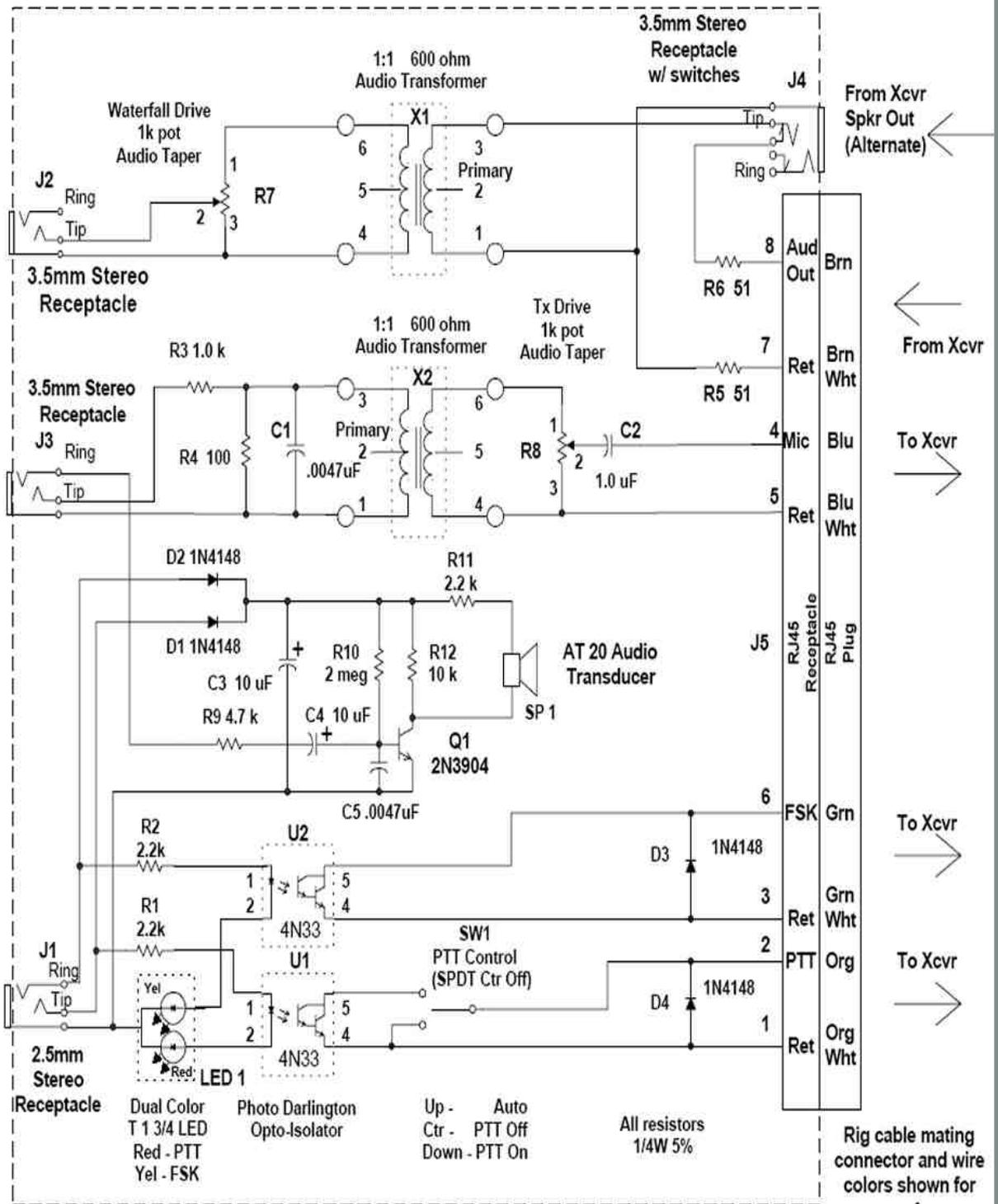
From
Sound Card
Spkr Out

Note: Return path for
audio to monitor amplifier
is made through the cable
shields to the ground
point at the PC.

DTR
RTS
Gnd

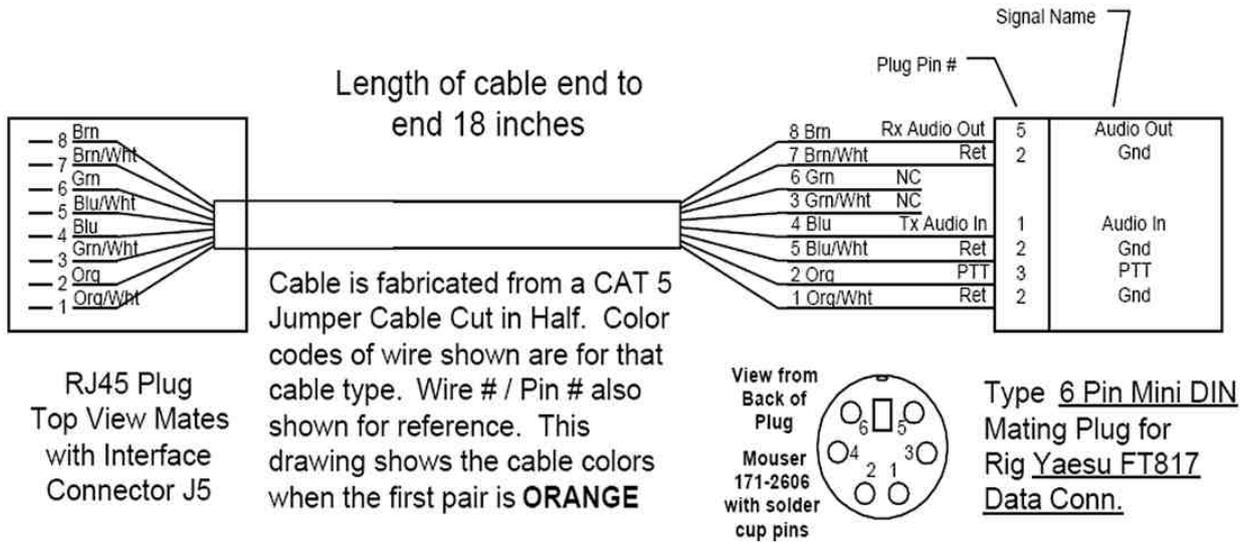


External Cable w/ DB9
female serial port
conn shown for ref.



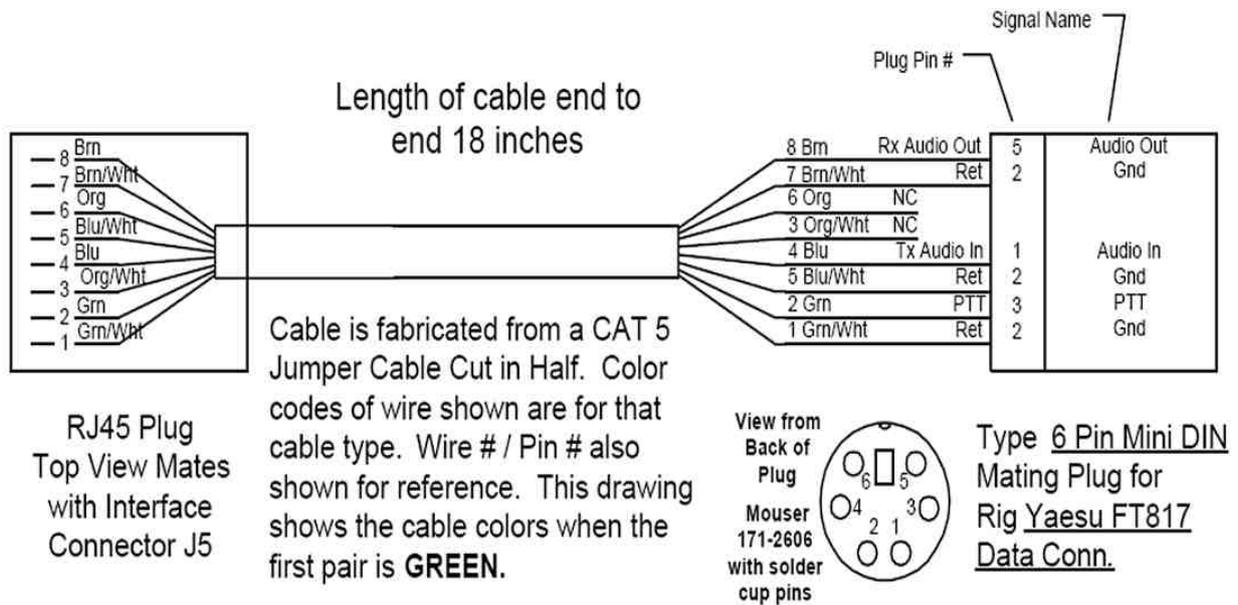
kk7uq Interface Model II - Schematic Diagram

FT-817 Rig Control Cable (Cat 5 Cable Starting with Orange pair)



Interface Control Cable for Yaesu FT817 DATA Connector

FT-817 Rig Control Cable (Cat 5 Cable Starting with Green pair)



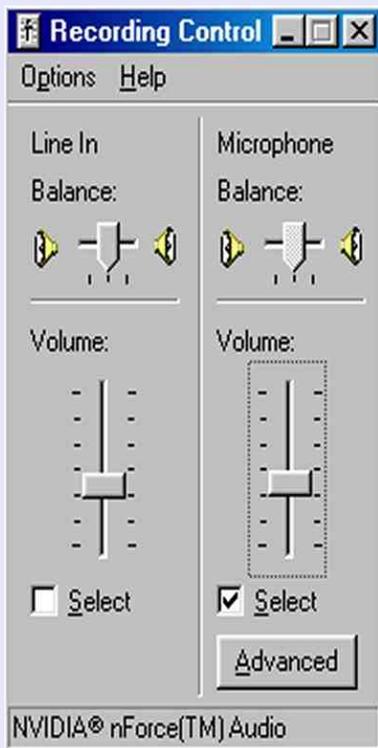
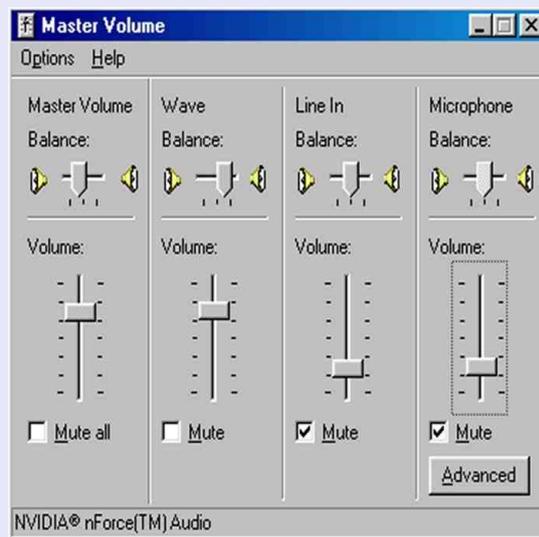
Interface Control Cable for Yaesu FT817 DATA Connector

Menu Setups in the FT-817 The FT-817 menu system must be accessed to set appropriate values for functions used for Digital Sound Card modes. These are enumerated below:

Menu 26	Dig Mode	PSK31-U Sets to USB	change from default
Menu 25	Dig Mic	50 Sets dig mic gain to 50%	default
Menu 24	Dig Disp	0 0 Hz offset	default
Menu 27	Dig Shift	0 0 Hz shift	default
Menu 38	Op Filter	OFF Turn off any filters	default
Menu 55	USB CAR	0 USB Carrier offset to 0	default
Op row 9 sw A	PWR MET		Set Power output FULL (no icon)
Op row 9 sw B	PWR MET	pwr	Set meter to display power
Op row 8	NB AGC sw B	fast	Set AGC to fast
Op row 8	NB AGC sw A		Set NB off
Clarifier	(RIT) OFF	(0 offset)	

PC Output

Volume Control Panel The PC Sound Card controls are used to set the level out of the PC for the audio output sent to the rig. Select this panel from your operating software Configure/Output Volume menu. The software control panel should look like the figure below. The Sound Card WAVE function is used to generate the signal to be sent to the rig. ONLY the WAVE and Master Volume control are used - all others should be muted. Under Options on this panel, view Properties, and check all sources to verify that ONLY the microphone input is selected, then reduce the size of the panel to display the Master Volume, Wave, Line In and Microphone. The Line In and Microphone are kept in view so that you can easily check that they are muted, since other programs may change the value of these controls when used. An example of this panel is shown below.

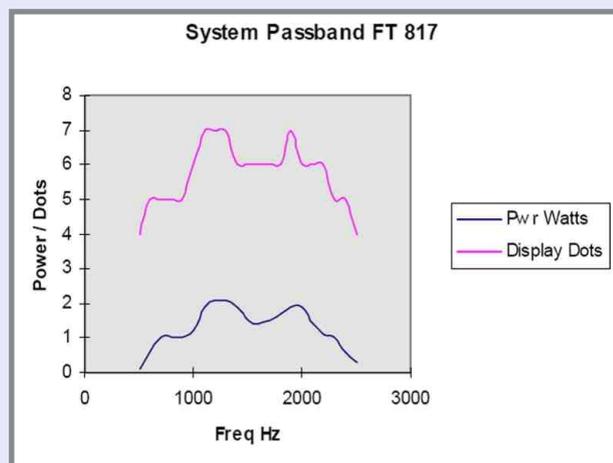


Input (waterfall) Control Panel

The PC Sound Card Recording Control is used to set the internal level of the audio received from the transceiver. Select this panel from your operating software Configure/Waterfall Volume menu. The example uses the microphone input as the waterfall port for this application. Select ONLY the microphone for input. Under Options on this panel, view Properties, and check all sources to verify that ONLY the microphone input is selected, then reduce the size of the panel to display the Line In and Microphone as shown below.

Operating Passband - Transmit

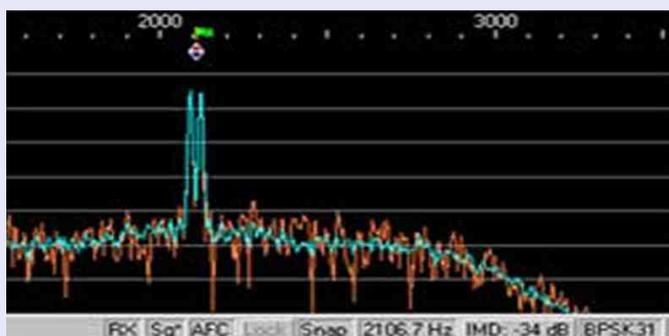
The pass band of the transmit audio system is shown in the chart below. The data for this chart was taken with a fixed value of the output potentiometer on the interface, and fixed values of gain on the sound card output and digital microphone gain within the transceiver. The chart shows that the effective pass band extends from about 700 to 2200 Hz. Substantial roll off occurs above and below these frequencies. In addition, the shape of the pass band curve in the operating range is anything but flat. When switching from band to another, the audio level required to produce a given power output will also vary substantially. The output level control knob on the interface allows quick and accurate adjustment to control the output power to your particular requirements when operating in all of the digital modes. It is very important to keep this chart in mind. If you try to operate in the area above or below the pass band, you may have to increase the drive level substantially to get the desired power output - this will result in a audio overdrive condition - causing distortion of the output. See the following sections for a discussion of proper level setting. If the station that you want to contact is outside the pass band, move the transceiver frequency control up or down 1 KHz (or more) to bring the station inside the operating area. The two lines on the chart show power output represented in two ways. Pwr Watts is output measured on a power meter, measured in watts. Display Dots shows the number of dots displayed on the FT 817 PO display at the corresponding power level.



Caution Against Overdriving the Audio to the Rig

When operating in digital sound card modes, and PSK31 in particular, it is important that the audio drive level be such that it is operating in a linear range inside the FT-817. Too much drive will activate the ALC system which is highly non-linear; the resulting non-linearity will cause severe distortion of the output signal with excessive output power in unwanted harmonics of the fundamental signal. Two pictures are presented below. One is of a system properly adjusted for audio level, with a very clean PSK31 signal occupying about 31 Hz of band width. The other, is an example of an overdriven signal, causing harmonics at band widths of 93 Hz and beyond. The measurement system used to obtain these readings is a second rig and computer, operating the MixW ver. 2.08 software in Spectrum display mode. The test FT-817 is operated at 2.5 watt peak output power, and is connected to a G5RV antenna using an MFJ 969 tuner. The Inter Modulation Distortion (IMD) measurement is done by the MixW software on the second receiver. The IMD measurement is taken by measuring the energy of the signal at the fundamental of ± 15.63 Hz and comparing it to the level at the third harmonic ± 46.88 Hz. The IMD value is in -dB comparing the fundamental to the third harmonic. For example, an IMD of -34 means that energy of the harmonic at ± 46.88 Hz is 34 dB down from the fundamental at ± 15.63 . In this case it is near the noise level of the system. If the IMD were at -15 dB, the energy at the third harmonic is only 15 dB below the fundamental. A good operating number to shoot for is 24 dB down or more. 24 dB represents about 4 S units on the rig. A properly adjusted FT817 PSK system should produce IMD of -30dB or better.

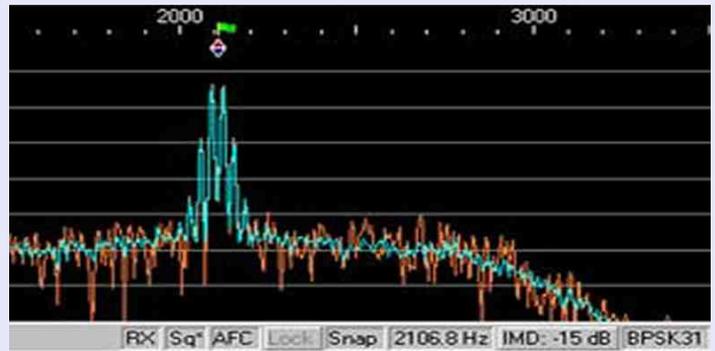
Example 1 - Properly Adjusted Audio Level



This example is of an FT-817 operating in PSK31 mode. The signal is Idling (no typing, output buffer empty) at 2.5 watt peak output power. FT-817 Power menu setting is FULL. PO reading is at 5 dots. ALC is showing few (0 to 2). Measured IMD of -34db (excellent) and no visible side harmonics on the signal. The blue trace on the display is a smoothed (averaged) version of the orange (non smoothed) trace. The horizontal lines are 10 dB apart.

Example 2 - Overdriven Audio Level

This example shows the FT 817 PSK31 in Idle at 2.5 watt output. Power out setting is Liii. PO reading at 5 dots. ALC showing at 5 dots. Note IMD of -15db (bad) and two visible side lobes of signal on each side of the main signal. The problem with using the Liii level setting is that the output peaks near 2.5 watts with no ALC showing. Continued increase of the drive level does not increase the power output very much, but the



ALC levels start to rise, causing non linearity in the audio path of the FT 817 and degradation of the radiated signal. When overdriving the audio, the useful part at ± 15.63 Hz is somewhat reduced, while some of the energy is shifted into the harmonics. This also causes interference to other stations on the band by increasing the used bandwidth from 31 Hz to 93 Hz or more. It is better operating practice to set the rig power output control to FULL, and control the actual output level by using the Transmit Level control on the interface to set the actual power output to 2.5 watts or less. That way, you can monitor one display on the rig and still be operating in the linear range. It is a good idea, however, to periodically check the ALC level to be sure that you are not activating that system.

If you need to operate at Liii, because you are on battery, or you just want to be sure that you are not running your rig with too much power, an alternative is to monitor your IMD with an instrument such as the IMD Meter (<http://kk7uq.com/>) or a PSK Meter (www.ssiserver.com/info/pskmeter/) while you are transmitting to ensure that your system is clean.

Recommended Operating Procedure

As shown in the previous discussion, the system audio must be operated in the linear area when transmitting. Use your power meter to ensure that you are operating at no more than $\frac{1}{2}$ of the rated CW output - in this case at 2.5 watts or less. This will ensure that you are in the linear area of the audio system. This also ensures that the rig is not being operated at too high a power level which may damage the rig output amplifier. When observing power, use the PEAK number shown - either on the rig power display (dots) or on a meter. PSK operates at about 80% duty cycle when sending data. A bit lower when idling. Other modes such as RTTY, MFSK and others operate at 100% duty cycle.

During testing, for all contacts done with the FT 817, the rig was operated at about 1 watt peak output power with good success on finding and maintaining contacts on 20 meters.

It is a good idea, especially when first operating in PSK mode, to ask the station you have contacted for an IMD reading. A well adjusted station will have IMD numbers of 24db down or more. One note of caution about IMD readings: The method used in the software compares the energy at the fundamental at ± 15.63 Hz to the third harmonic at ± 46.88 Hz. If your signal is being received at levels near the noise level the number reported to you will be lower than the "real" number. Try to get reports from stations where you have reasonable signal level, say S5 or better. IMD measurement can only be taken when you are in IDLE mode when transmitting. IDLE is defined as no typing, and an empty buffer. This produces a 31.25 Hz wide signal on the system. One other note about IMD, if you are giving a report to another station. If it is really strong - above S9, the number displayed on your screen may not be accurate. Reduce the RF level control of the signal until the signal level on the waterfall display starts to drop. The value of IMD will probably improve because you have removed the possibility of flat topping in the front end of the FT817, or the Sound Card input A/D converter.

Modes of Operation

Most of the discussion to this point has been on the BPSK31 mode. Many other modes are available to you with software available off the Web. The same setup that you use for BPSK31 is used for these modes. Follow these rules when operating other modes (except for 80 and 40 meter SSTV see note next page):

Use a peak output level of 2.5 watts or less on all of these modes. Stay within the operating pass band (700Hz to 2200Hz) Operate with NO ALC showing. Use the DIG mode on your FT-817 (PSK USB)

RTTY - When operating RTTY, the Yaesu manual recommends that you use RTTY - Lower. Don't do that. Use PSK Upper for this mode. All of the software used for RTTY with sound cards is set up for USB operation. Also, you don't have to operate at the "normal" offsets of 2100 Hz for RTTY, you can set the offset at around 1200 Hz and the resulting signal will be the same. The frequency that you are actually transmitting will be the base frequency set on your FT-817 display plus the audio offset (1200 Hz). MFSK16 - this mode is a very effective mode for QRP work. It excels on contacts at low Signal to Noise ratios, and on connections with Multi Path distortion such as long DX or polar paths.

SSTV - Slow Scan TV is a special case for digital work. SSTV contacts are normally initiated with a voice contact, identifying the station and the mode to be used. The SSTV data is sent after this voice setup. The SSTV areas are in the phone part of the band, and follow the normal rules for USB or LSB operation which are band sensitive for phone. (80 and 40 are LSB, others are USB). The design of the FT-817 is such that if you are using the microphone, you must be in either LSB or USB mode for the mic to be active. When you transmit using the Data Port, you must be in DIG mode. Hence you must switch modes on the panel of the FT-817 between phone and DIG. If you are operating on 80 or 40, then set DIG to PSK-L and phone on LSB. On other bands, use PSK-U and USB. The frequency chart on the next page shows the assigned frequencies for SSTV operation.

CW from the computer - the rig can be operated in CW mode using the sound card to generate the signal. Set up your operating software to "CW Out Using Soundcard" set the cursor on the waterfall at 1000 Hz. This will generate signals at the rig base frequency plus 1 KHz, and produce a side tone when listening of 1 KHz. Use your waterfall display and move the frequency dial on your rig to bring desired signals to the 1000 Hz point on the display. Your transmitted signal will be right on frequency. The CW data detection of the software is "fair" - use it on strong signals with an operator with a good fist. You will not be operating in break in mode - the receiver is off until you return to the RX mode.

CW modes using the key or paddle - some operators prefer to use the key or paddle when transmitting, and use only the computer in receive mode as a tuning aid, and as a back up for copying CW. If this is your mode of operation, set the mode to CW. You can still see the signal on your waterfall display. You just won't be able to transmit code under computer control.

Optional Filter Use - If you have the optional 500 Hz filter available, set it for use in the SSB mode and use the Pass Band Tuning on the rig to center the filter over the signal of interest on the waterfall. For PSK operations, the filter is normally not needed and you are better off with the full bandwidth display. For CW operation, since you are probably copying the code from the audio, the filter can be very useful.

Web Links Listed below are links to useful web pages having to do with Amateur Radio.

See also : www.kk7uq.com for updates to this list.

URL Author Comment

www.psk31.com K1VY Neil Rosenburg's website for psk31

www.qsl.net/wm2u/interface.html WM2U Ernie Mills very complete psk31 site

www.K1DWU.net/ham-links K1DWU 4500 Ham-Links

www.teleport.com/~nb6z/ NB6Z Griff's Digital and Antenna pages

www.ssiserver.com/info/psk31 KF6VSG "PSK-31 101", Excellent presentation given to Pacificon

www.kv7x.com KV7X Station set up for Digital Use with excellent section on Pegasus/Jupiter

www.ham-radio.ch/ PE1MHO Interface and Software for FT817 Applications

Frequencies for Various Digital Modes

Band	BPSK31 BPSK63 MFSK16,	Throb, Helleschreiber QPSK31 MT63
80 meter	3.580 MHz USB	3.580 MHz USB
40 meter	7.070 MHz USB	7.037 MHz & 7.080 MHz USB
30 meter	10.139 MHz USB	10.147 MHz USB
20 meter	14.070 MHz USB	14.080 MHz USB
17 meter	18.095 MHz USB	18.104 MHz USB
15 meter	21.070 MHz USB	21.080 MHz USB
12 meter	24.920 MHz USB	24.929 MHz USB
10 meter	28.120 MHz USB	28.080 MHz USB

SSTV

80 meter	3.845 MHz LSB (voice & SSTV) use LSB for voice DIG-L for SSTV
40 meter	7.228 MHz LSB (voice & SSTV) use LSB for voice DIG-L for SSTV
20 meter 1	14.230 MHz USB (voice & SSTV) use USB for voice DIG-U for SSTV
20 meter 2	14.233 MHz USB (voice & SSTV) use USB for voice DIG-U for SSTV
15 meter	21.340 MHz USB (voice & SSTV) use USB for voice DIG-U for SSTV
10 meter	28.680 MHz USB (voice & SSTV) use USB for voice DIG-U for SSTV

Modes are listed here:

Program	Web URL	Modes supported
Digipan	www.digipan.net/	PSK31, PSK63
Hamscope	www.qsl.net/hamscope/	PSK31, MFSK16, RTTY & CW
Stream	iz8bly.sysonline.it/Stream/streamsetup.exe	PSK31, MFSK8, MFSK16
MixW	www.mixw.net/	FSK31, PSK31, PSK63, MFSK, RTTY, CW, Throb, SSTV, Packet, Pactor, Amtor, MT63, Helleschreiber, Fax

Note: *MixW is the only software with a user fee (\$50 one time). It is a very complete package, covering all the digital modes in one package.*

MMSSTV	www.qsl.net/mmhamsoft/mmsstv/	SSTV
--------	----------------------------------------------------------------------------------	------

MMTTY	www.qsl.net/mmhamsoft/mmtty/	RTTY
-------	--------------------------------------------------------------------------------	------

The RTTY engine used in MMTTY is also used in Hamscope and other software PSK Deluxe
www.ham-radio.ch/

HB9DRV PSK31, PSK63 Also integrated FT-817 CAT & PSK31/63 packages available

WinPSK	www.qsl.net/ae4jy/	PSK31
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Winwarbler	www.qsl.net/winwarbler/	PSK31, RTTY
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W1SQLPSK	www.w1sql.com/	PSK31
----------	----------------------------------------------------	-------

Zakanaka	www.qsl.net/kc4elo/	PSK31
----------	--------------------------------------------------------------	-------

The popular Logger program is integrated with the Zakanaka software

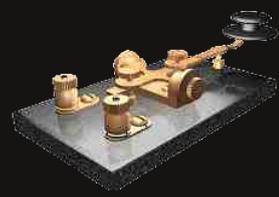
Acknowledgments: Thanks to Chris Jones, N7ZW, for loan of equipment, elmering on operation of the FT-817, and getting me hooked on QRP/PSK with the FT817.

Best 73's ! KK7UQ



DX NEWS

From the Web (opdx)



4M200/YV200/YW200, VENEZUELA (Special Event)

Look for several different stations to be active until December 31st, to celebrate the 200th anniversary of Venezuela's Independence. Some of the stations that have been active are:

4M200AJ - Operator Manuel; Activity mainly on PSK on 40/30/20/15/10m; QSL via YV5AJ.

YV200D - Operator Paolo; Activity mainly on RTTY on 30m; QSL via YV1DIG.

YW200A - Operator Alfredo; Activity on PSK and SSB on 20/15m; QSL via YV5SSF.

YW200ER - Operator Elvis; Activity on SSB on 40/20/15m; QSL via YV8ER.

YW200L - Operator Frank; Activity on RTTY and PSK, on 30/15m; QSL via YV5LI.

YW200T - Operator Juan; Activity on SSB, RTTY and PSK, on 40/30/20/15m; QSL via YV5JBI.

A "Bicentenary of Venezuelan Independence Award" is available by working all the 6 special callsign: 4M200AJ, YV200D, YW200A, YW200ER, YW200L and YW200T. More information is expected to be available at: <http://www.radioclubvenezolano.org/concurso.htm>



8Q, MALDIVES

Ron, DL5JAG, will be active as 8Q7SR and on holiday from Embudu Island, South Male Atoll (AS-013), between May 8-23rd. No other details were provided. QSL via his home callsign, direct w/SAE and proper postage for return. Log will be uploaded to LoTW 1-2 months after his holiday, and for eQSL.cc about 1 month. Also, he does mention to visit the following Web page: <http://www.protectthemaldives.de>



AFRICAN TOUR

Operators Les/W2LPL and his son Daniel/W2DBL will be active as ZS6/homecall from South Africa between August 11-15th. Activity will be on the HF bands, mainly SSB. They will also be active as A25/homecall from the Tuli Bloc, Botswana, between August 16-19th. Activity will be the same as above. QSL via their home callsign (QRZ.com address).



BW, TAIWAN

Yoshihiro, JK2VOC, will be active as BW2/JK2VOC between June 18-20th. No other details were provided. QSL direct to his home callsign.



CO, CUBA

Members of the Cubans Amateur Radio Federation (CO2FRC) will be active during the Volta Contest (May 8-9th) as a Multi-Multi entry. Operators mentioned are: Gustavo/CO2NO, Lazaro/CO2WL, Jesus/CO2IZ and Winston/CO2WF.



HS8, THAILAND

Wut, HS8JYX, will be active during the CQWW WPX CW Contest (May 29-30th) as a Single-Op/Low-Power entry. QSL via HS8JYX, direct, by LoTW and eQSL. Visit his Web page at: <http://www.hs8jyx.com>



HB0, LIECHTENSTEIN

David, OK1FJD/OK6DJ, will be active as HB0/OK6DJ/P between June 3-6th. His activity will include the IARU Region 1 Fieldday Contest. He will use a Kenwood TS480hx into a G5RV and dipole antennas. QSL via OK1DRQ, by the Bureau or direct. Also QSL via LoTW.



S7, SEYCHELLES (AF-024)

Marq, CT1BWW, has announced that he will be active as S79BWW between July 17-31st. He states that the main purpose of this activity is to be the first official WFF (World Flora Fauna) DXpedition on Seychelles -- reference number WFF004. Activity will be on 80-10 meters (operating split) using CW, SSB and RTTY. Suggested frequencies are:

CW - 3507/3527, 7050/7055, 10117/10119, 14006/14054, 18084, 21021/ 21054, 24897 and 28007/28027 - SSB - 7060 (listen above 7200 for NA), 14145/14260, 18140, 21260 and 28477

RTTY - 10137, 14080, 21080 and 24977 kHz

QSL via, CT1BWW, by the Bureau or direct. This operation will be valid for DXCC, WAZ, WAC, WPX, IOTA, WFF, ZONE 39 and the BWW Award. For more details, look at: <http://www.ct1bww.com/s79bww>



TK9, CORSICA

Members of the the Valle Brembana DX and Contest Team will be active as TK9E between May 26-31st. Operators mentioned are: Enzo/IZ2GLU, Fabio/IZ2GMT, Andrea/IZ2AJE, Diego/IW2MZX and Claudio/IK2AEO. Activity will be on 80-10 meters including 30/17/12 meters. QSL via IZ2GLU. For more details, see their Web page at:

http://www.radioamatori.vallebrembana.org/vbtxc/Spedizioni/Corsica_2010/TK9E.htm



TL, CENTRAL AFRICAN REPUBLIC (Also News About 5U)

Jan, DJ8NK, informs OPDX that Paul, F6EXV, and he will be active as guest operators from Christian's, TLOA, station between May 13-26th. They plan to have 2 stations on the air simultaneously. Look for Jan to focus his activities on RTTY, while Paul will be on CW. Chris will continue his SSB operation and CW/RTTY from time to time after May 26th. Bands of activity will be on 40-6 meters, maybe some 160/80m (it is late in the season for the low bands, plus it is the rainy season in TL with daily storms). Operators will use standard DX frequencies, and always run "SPLIT".



TM24, FRANCE (Special Event)

Look for TM24H to be active between May 30th and June 13th, to celebrate the 78th edition of the "Le Mans 24 Hours" car race. Activity will be on the HF, VHF and 50 MHz bands using CW, SSB, PSK and RTTY modes. A special QSL card will be printed. QSL Manager is F6KFI. Take a look at the interesting collection of QSL cards for this event at: <http://pagesperso-orange.fr/bruno.martineau/radio/24h00.htm>



VK4, AUSTRALIA (WFF Op!)

Operators Gary/VK4FD and Dale/VK4DMC will activate Undara Volcanic National Park (WFF VKFF-506, GL: QH21HS) from Australian Mainland as VK4YN between 0000-2359z, May 21-23rd. Suggested frequencies are per the WFF website +/- QRM. Antennas are: a 4 element tri-band Yagi 10/15/20m, double extended zepp 40m, and G5RV for 80m and the WARC bands. QSL Manager is VK4FW, fastest way is via OQRS at: <http://www.odxg.org>



ZA, ALBANIA

Chris, HG5XA, will be active as ZA/HA5X from the town of Orikum and a beach on the Bay of Vlora between June 10-24th. Activity will be holiday style, but he plans to activate some lighthouses and/or WFF locations. Please listen to the operator's comments for possible Lighthouse and WFF references, if any. Chris will also focus on some 6 meters and portable battery operations. Also, please remember that this is not a DXpedition, but a family holiday with his XYL Marta, ZA/HA9WM, and twin 5 year old daughters. Operating times will be limited and of lower priority. QSL via LoTW and eQSL. If possible, please DO NOT send QSL cards. Paper QSLs will be available both direct and by the Bureau using the OQRS (Online QSL Request System) to be launched and announced later. Bureau cards will be sent out using GlobalQSL.



THE DXCALENDAR

1/5 - 27/5 GREENLAND; OX/KØKU NA-018

from Thule by NØRC. Activity will be limited as work permits, but he plans to be on every other day and try to get on the air for contest weekends, but he cannot guarantee this. Look for the log to be uploaded to LoTW and EQLS. QSL direct to NØRC or by the Bureau.

2/5 - 7/5 OGASAWARA; JD1BLY AAS-031

from Chichijima Island by JI5RPT. Activity will be on 40-6 meters (No 6m EME) using CW, SSB, Digital and the Satellites. QSL via his home callsign JI5RPT. A log search will be available on his Web site at <http://www.ji5rpt.com/jd1/>

2/5 - 14/5 OGASAWARA; JD1BMH AS-031

from Chichijima Island by JG7PSJ. Activity will be on 40-10 meters (possibly 80m) using CW, SSB and the Digital modes. QSL via his home callsign. Visit his Web page for more details at <http://sapphire.es.tohoku.ac.jp/jd1bmh/index.html>

13/5 - 16/5 NEW CALEDONIA; FK/W3HQ OC-033

from Lifou, Loyalty Islands by W3HQ and VK2DON. Their activity will be on 40/30/20 meters using CW only. QSL via W3HQ.

18/5 - 19/5 SAMOA; 5WØOX OC-097

by UX0HX, RK3FA, UR3HR, US7UX, UT1HF and UT5UY. They will operate CW, SSB and digital modes on 160-10 metres. QSL via UR3HR, direct or bureau. More information, including details on how contribute to the expedition, at <http://www.uz1hz.com/pacificodyssey.html>

19/5 - 23/5 ST. PIERRE & MIQUELON; TO2FH

by a team of Brazilian operators. More details are forthcoming.

20/5 - 23/5 TURKS & CAICOS; VP5/PY2WAS NA-002

from Providenciales. He might be joined by PY1YB. Expect activity in 80-10 metres CW and SSB. QSL via PY2WAS, direct or bureau.

22/5 - 1/6 C. KIRIBATI; T31X and T31UR OC-043

by UX0HX, RK3FA, UR3HR, US7UX, UT1HF and UT5UY. They will operate CW, SSB and digital modes on 160-10 metres. QSL via UR3HR, direct or bureau. More information, including details on how contribute to the expedition, at <http://www.uz1hz.com/pacificodyssey.html>

24/5 - 31/5 LORD HOWE I; VK9CLH

by VK2CCC (LY1F). Activity will be limited to his spare time on 160/80 meters, and he plans to participate in CQ WPX CW Contest (May 29-30th). QSL cards will be available via an "Online QSL Request System" at the following Web page. QSL by other methods such as LoTW and by the Bureau or direct are via VK2CCC. For updates and possibly more details, visit <http://www.qrz.lt/ly1df/vk9clh.htm>

27/5 - 31/5 NICARAGUA; YN2GY

by K9GY from YN2N, QTH in Grenada, during the 2010 CQ WPX CW Contest (May 29-30th) as a Single-Op/All-Band/Low-Power entry. Outside of the contest, look for CW activity on 30/17/12 meters. Also look for him on 6 meters. QSL via LoTW or to his home callsign, direct or by the bureau.

28/5 - 6/6 PALESTINE; E4X

by EA5RM and the Tifariti Gang (EA2RY, EA5FX, EA7AJR, EA7KW, F5CWU, F6ENO, F9IE, IN3ZNR and UT7CR). They plan to operate CW, SSB and RTTY on 160-6 metres, with at least three stations active at the same time on different bands and modes. QSL via EA5RM. The website for the expedition is at <http://www.dxfriends.com/e4x/>

2/6 - 6/6 TOKELAU IS; ZK3X OC-048

by UX0HX, RK3FA, UR3HR, US7UX, UT1HF and UT5UY. They will operate CW, SSB and digital modes on 160-10 metres. QSL via UR3HR, direct or bureau. More information, including details on how contribute to the expedition, at <http://www.uz1hz.com/pacificodyssey.html>

3/6 - 9/6 WESTERN KIRIBATI; T30XG or T30/T32XG

by JA1XGI/W8XGI. Activity will be on 40-6 meters, including 30/17/12m, using CW and the Digital modes. QSL via JA1XGI, direct or by the Bureau.

5/6 - 25/6 MALDIVES; 8Q7TB

from Embudu by PF4T. Activity will be on 40 and 20 meters using SSB, RTTY and BPSK31. He will also try 17/15/10 meters and says "Working conditions will be very simple consisting of 100 watts PEP from an Yaesu FT897d transceiver. The antenna will be a Windom FD4 80-40-20-17-15-10 meters and an Inverted V G5RV 40-20 meters. The Inverted V will be 20m suspended from the top of the coconut palms approximately 10 meters from the sea." QSL via PF4T direct for a quick reply or by the Bureau via PA0LEY or PF4T. Visit his Web page at <http://8q7tb.pf4t.nl/>

9/6 - 18/6 BRAZIL; PW8J and PW8L SA-041 SA-016

from Ilha dos Lençois and the island of Sao Luis by PY7ZY, PY2XB, PY7XC and PY0FF. They plan to have three stations with two amplifiers, verticals and wire antennas. On 16-18 June they will operate as PW8L from the island of Sao Luis. QSL to P.O. Box 152, Joao Pessoa - PB, 58010-970, Brazil. The website for the expedition is at <http://www.pw8j.com/>

10/6 - 17/6 TURKS & CAICOS IS; VP5/WB2REM and VP5/KD2JA NA-002

from Providenciales Island (Grid FL31VS) by WB2REM and KD2JA will be operating with the special callsign VQ5M during the ARRL June VHF Contest (June 11-13th). Operation for the contest will be on 6 meters CW and SSB only. Outside contest, look for them to operate on 160-6 meters using CW and SSB. QSL via KD2JA.

July RUSSIA; WRTC 2010

WRTC Championship Competition is being held in Moscow, Russia, this coming July 2010. This time, teams will be set up in tents with generators supplying the power. Special new rules will allow both operators to make contacts in a modified form of SO2R with interlocked radios - meaning only one signal at a time is permitted on the air.

5/7 -14/7 ST. PIERRE & MIQUELON; FP/homecall NA-032

from Miquelon Island by K9OT and KB9LIE. Activity will include the IARU HF Championship Contest (July 10-11th) as two Single-Operator entries. They will operate CW and SSB on 80-10 meters with a possibility of 160m and 6m. Visit their Web site at <http://www.hamradio.pnppfarms.com/> QSL via their home callsigns, direct (w/return postage), by the Bureau or LoTW.

7/7 - 22/7 MONGOLIA; JT1/IW5ELA

from Ulaanbaatar by IW5ELA and I5NOC. They plan to operate for one week from the radio club station in Ulaanbaatar. The following week, they will be operating mobile. QSL via his home callsign.

21/7 - 26/7 CANADA; VE3ZZ/VY2 NA-029

from Prince Edward Island (CISA PE-001, WLOTA 0523, WW Loc: FN76vs). He will operate from the VY2TT superstation during the RSGB IOTA Contest (July 24-25th) as VY2X, and outside of the contest. QSL both callsigns to VE3ZZ, direct or by the Bureau.

23/7 - 24/7 UNITED STATES of America; N8B or maybe N8B/P

from North Bass Island between 1200z Saturday, July 23rd and 1600z Sunday, July 24th. Suggested frequencies (on or near) are:

CW - 3530, 7025, 14040, 18098 and 21040 kHz.

SSB - 7250, 14250-260 and 28450.

Listen for QSL information by the operator.

18/8 - 1/9 ALASKA; KL7RRC and N6PYN/KL7 NA-235 and NA-239

Chirikof Island (NA-235) and Seal Islands (NA-239) by RV3ACA, N6PYN, N3QQ and UA9OBA. QSL via UA9OBA (Russia and Europe) and N7RO (rest of the world). Bookmark <http://www.na-234.com/> for updates.

16/9 - 20/9 GREENLAND; OX6YL

from Kangerlussuaq by six international YLs. Activity will be on the HF bands using CW and SSB. Operators mentioned at this time: Inger/OZ7AGR, Unni/LA6RHA, Ingrid/LA8FOA, Ruth/IT9ESZ, Evelyne/F5RPB and Waltraud/DJ6US. A Web site is currently under construction at <http://www.qsl.net/la6rha/greenland/>

OCTOBER MOZAMBIQUE; C9

GI4FUM is planning a DXpedition to Mozambique in October 2010, to operate in the CQWW DX SSB Contest and also possibly the JOTA. Watch his Web page for updates at <http://www.3da0ss.net/>

OCTOBER GABON; TR

I2YSB, and a team of Italian operators will activate Gabon during the first half of October. The team also intends to activate an IOTA in the Estuaire Province Group (AF-043) during this DXpedition. An opened survey on I2YSB's Web page is now available to list your wants for bands and modes at <http://www.i2ysb.com/joomla5/> More details should be forthcoming.

NOVEMBER SENEGAL; 6W/EI6DX

will once again be active from Somone, which is located 70 km southeast of Dakar. He will concentrate on the lower bands and CW and take part in the CQ WW DX CW Contest (November 27-28th) as a Single-Op/All-Band/Low-Power entry. QSL via RX3RC, by the Bureau or direct. Look for updates at <http://www.ei6dx.com/>

19/11 - 5/12 KERMADEC IS; ZL8X OC-039

from Raoul Island by the core team of the very successful DXpeditions to Norfolk Island in 2007 (VK9DNX) and Willis Island in 2008 (VK9DWX), plus a few high experienced operators, will be active in November. According to the preliminary schedule, thirteen operators, DJ5IW, DJ7EO, DJ9RR, DK1II, DL1MGB, DL3DXX, DL5CW, DL5LYM, DL5XL, DL6FBL, DL8OH, DL8WPX and SP5XVY expect to be QRV with seven high power stations on 160-10 metres CW, SSB and RTTY. Further information, including log search and an Online QSL Request System (OQRS) for either bureau and direct cards, can be found at <http://www.kermadec.de>

- 1/5 WILLIS I.; VK9WBM

HF and 6 meter with 2 ele quad. QRV as time permits. QSL via VK4DMC.

- 11/5 KENYA; 5Z4/LA9PF

He plans to operate on all bands and modes running 100 watts into a 3-element beam or a loop. He also expects to operate as 7Q7PF from Malawi during that time frame. QSLing information at qrz.com under LA9PF.

- 15/5 PERU; OA4/DL5YWM

He plans to operate in his free time from Lima. Side trips to different call areas are possible, as well as a "last minute" operation from an island.

- 18/5 MALDIVES; 8Q7IAAS-013

by UX4UL. He operates CW, SSB and BPSK on 40, 20 and 17 metres. QSL via UY5ZZ.

- May PHILIPPINES; DU9/DL5SDF OC-130

expects to be QRV from Mindanao Island. He operates CW only. QSL direct to Hans Bohnet, Purok 5, Lower Bon-Bon, Libertad, Butuan City 8600, Philippines or via the DARC bureau to DL5SDF (bureau card requests will have to wait until June 2010, when he will go back to Germany).

- 12/7 SOUTH AFRICA; ZS1ØWCS

The next FIFA Soccer World Cup will take place in South Africa in 2010. Operations through May 31st will be only on the air over weekends. However, operations between June 1st and July 12th, will be on the air 7 days a week. Frequency band selections and times will be dependent on propagation conditions. Preferred frequencies are:

CW - 3510, 7010, 14010, 21010 and 28010 - SSB - 3780, 7080, 14180, 21280 and 28480 kHz

Electronic QSL cards must be sent to: wcs@sarl.org.za

All stations logged will get a special QSL card via the Bureau. Direct QSL can be sent to: PO Box 1721, Strubensvallei, 1735, South Africa. Please include a self-addressed envelope (DL size) and 1 IRC or 1 USD.

- 31/10 CANADA; VA7PX NA-075

from Mayne Island. QSL via VE7AXU via bureau or direct.

- 2010 LEBANON; OD5/DL6SN

He plans to be active on 40-10 meters mainly on CW. Activity over the past week has been on 20/17/12 meters CW. QSL via DO8LA.

- 2010 MARSHALL IS.; V73NS OC-028

from the Kwajalein atoll by WD8CRT, who will have to work here for two years starting on Jan 5, 2009. He will work mostly in CW on 160-6m. QSL via bureau or direct to Neil Schwanitz, PO Box 8341, APO, AP 96557, USA. His website is <http://www.qsl.net/v73ns/>

- 2010 ANTARCTICA; R1ANP AN-016

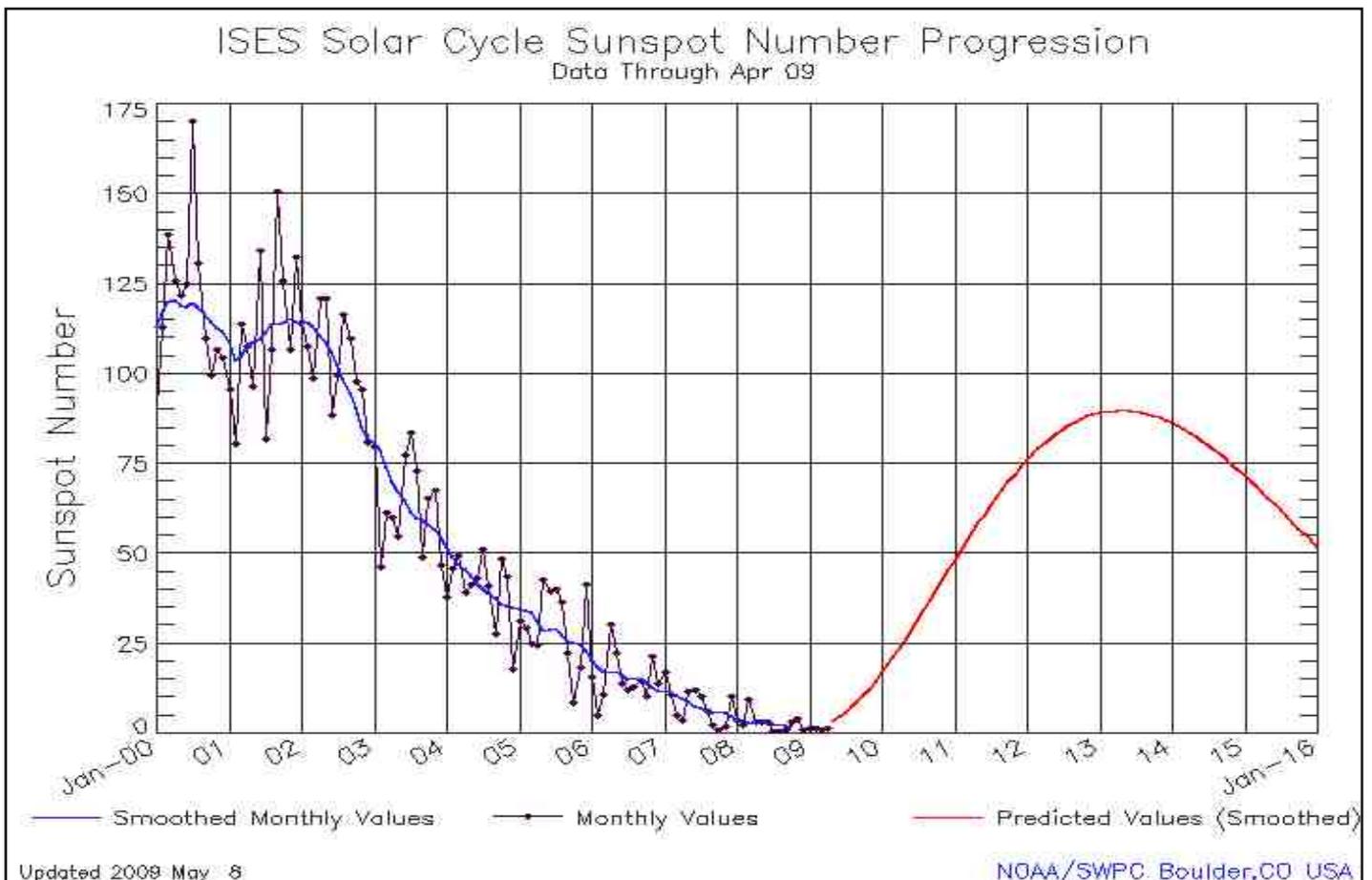
by RW1AI. He will be active from the clubstation R1ANP. QSLs for this operation via RW1AI.

- 2010 MEXICO; 4A1B

Two hundred years of Mexican independence and the 100th anniversary of the Mexican revolution are celebrated by the Radio Club Queretaro (XE1RCQ). The special call sign 4A1B will be activated throughout the whole year 2010. The QSL manager is LZ3HI. The logs will be uploaded to the LoTW as well.

CONTESTS OF MAY

From	To	Contest	Mode
01-05-2010 00:00	02-05-2010 24:00	VERON SLP - Part 4	SWL
01-05-2010 00:01	02-05-2010 23:59	10-10 Int. Spring QSO Party	CW
01-05-2010 13:00	01-05-2010 19:00	AGCW QRP/QRP Party	CW
01-05-2010 13:00	02-05-2010 07:00	7th Call Area QSO Party	CW/SSB/Digital
01-05-2010 16:00	02-05-2010 04:00	Indiana QSO Party	CW/SSB
01-05-2010 20:00	02-05-2010 19:59	ARI International DX Contest	CW/SSB/RTTY
01-05-2010 20:00	02-05-2010 05:00	New England QSO Party	CW/SSB/Digital
08-05-2010 10:00	08-05-2010 12:00	EUCW Fraternizing QSO Party-1	CW
08-05-2010 12:00	09-05-2010 11:59	CQ-M International DX Contest	CW/SSB
08-05-2010 12:00	09-05-2010 12:00	Alessandro Volta DX Contest	RTTY
08-05-2010 17:00	08-05-2010 21:00	FISTS Spring Sprint	CW
09-05-2010 18:00	09-05-2010 20:00	EUCW Fraternizing QSO Party 2	CW
13-05-2010 19:00	13-05-2010 23:00	QRP - Min. Art Sess.QRPMAS	CW
15-05-2010 12:00	16-05-2010 12:00	H.M. The King of Spain	CW
15-05-2010 15:00	16-05-2010 15:00	Day of the Portuguese Navy	SSB/CW
17-05-2010 00:00	21-05-2010 24:00	AGCW Activity Week	CW
22-05-2010 12:00	23-05-2010 12:00	European PSK DX Contest	BPSK63
22-05-2010 15:00	23-05-2010 15:00	Day of the Portuguese Navy	DIGI
22-05-2010 21:00	23-05-2010 02:00	Baltic Contest	CW/SSB
29-05-2010 00:00	30-05-2010 23:59	CQ WW WPX Contest	CW



GO SW - SOME OF NEWS BY OZ6OM

Barbuda & Antigua, V2. Randy, WD8MGZ, will be active as V25WV from Codrington Village on Barbuda between April 24th and May 1st. For frequencies and schedules, use Twitter.com and search WD8MGZ. Also contact Randy via echolink (V21RW-R). He will be using a Icom 706 and a Yaseu 2 meter mobile. For more information, use the Web site: <http://home.comcast.net/~randylwilliams/site>

Tunesia, 3V. Following their activity from Morocco, Alfredo, IK7JWX, will lead a team of operators to activate two IOTA islands between April 27th and May 4th. Operators mentioned are: Alfredo/IK7JWX, Leo/I8LWL, Raul/IC8ATA, Titti/IK8GQY (YL), Armando/IK8BPY, Ampelio/IS0AGY, AntoNello/IK2DUW, Rosy/IW2NLC (YL), Michele/IK2GPQ, Simon/IZ7ATN, Ruggero/IK2PZC and Stanislav/IZ2GRG. The team will air (no specific dates were provided) Djerba Island and Kuriat Island. They will use the callsigns TS8P and TS8P/p (3V8SM). Activity will be on all HF bands and 6 meters, using CW, SSB, RTTY and PSK31. QSL via IK7JWY.

Ogasawara, JD1. JD1BLY (JI5RPT) will be active from Chichijima Island Ogasawara on 40m to 6m (No 6m EME) + Satellite CW/DIGI/SSB from 2 to 7 May 2010. QSL via my home callsign JI5RPT. Logsearch will be on my website. <http://www.ji5rpt.com/jd1/>

Ethiopia, ET. ET3BN is Peter, DM2BBN, who will stay in Addis Abeba for the next years. He is working in CW/SSB and uses a wire pyramid for 80m, Quad antennas for 30m/17m/12m/20m/15m/10m and a logperiodic for 6m. He is not active on 40m and 160m right now. Please send your QSL cards direct to: Dr. Peter Haferkorn, PO Box 150194, Addis Ababa, Ethiopia.

Denmark, OZ. Hello Guys, I (OZ6OM) will be QRV in the Nordic Activity Contest Thursday evening (May 13 th.) between 17 and 21 UT.

I intend to be QRV from JO55EJ at an alternate QTH running 100 w. into a 5 or 6 element Yagi.

In any case I intend to keep activity round 50.173 MHz (SSB/CW) and 50.230 MHz / 50.236 (JT6m).

I'm open for skeds at CW/SSB the first 2 hours, and JT6m the last 2 hours. I can be reached at email [oz6om\(at\)uksmg.net](mailto:oz6om(at)uksmg.net) prior to the contest and SMS +45 2066 7388 during the contest.

(One of the reasons I'm operating this way is, my attempt at setting up reasonable antennas at my QTH due to neighbor complaints have so far ended in a law suit)

Hope to see You down the log ... vy 73 de Matt OZ6OM - 13 May 2010

Scotland, GM. GS3PYE/p qrv from IO66NT during may 1st until 14th may 2010 We will be active on 6m (100w & 6ele YU7EF) and 4m (150w & 7ele YU7EF) with X-band for those who can not yet TX on 4m. We probably won't activate 2m MS or SSB much as last year it was very poor with limited QSOs but we do plan setup a reasonable satellite station with 2m (16ele) and 70cm (30ele) Hygain OSCAR antennas with 100w on 2m and 75w on 70cm. We may also bring a 23cm antenna but will probably leave the [heavy] 500w 2m amp at home as there will be little call for it, sorry. We will also run 2 HF voice and 1 HF data station throughout the 2 weeks.

Nicaragua, YN. Eric, K9GY, will once again be active as YN2GY from Octavio's, YN2N, QTH in Grenada, during the 2010 CQ WPX CW Contest (May 29-30th) as a Single-Op/All-Band/Low-Power entry. He will be there between May 27-31st. Outside of the contest, look for CW activity on 30/17/12 meters. Also look for him on 6 meters. QSL via LoTW or to his home callsign, direct or by the bureau.

Sardinia, IS0. Members of the F6KOP Team will be active as IS0R from Isola Rossa, Sardinia (Loc. JN41KA), between May 7-15th. Activity will be on 160-6 meters, using 3 stations on HF and 1 station on 6 meters. They plan to use CW, SSB and RTTY. Each station will be a FT450 with an Acom 1010 using Micro Ham and PC. Antennas include 6m Yagi Beam, Spider Beam for 30-10m, 4 square for 40m, vertical for 80m (K9AY) and an Inverted L for 160m plus a beverage. Operators mentioned are: Team leader Thierry/F4TTR (SSB), Sebastien/F5UFX (SSB), John/F5VHQ (SSB), Sergio/IS0AWZ (SSB), Norbert/F6AXX (CW), Maurice/F5NQL (CW), Bruno/F5AGB (CW), Jean-Paul/F8BJI (Digi), Henri/F1HRE (Digi) and Frank/F4AJQ (Digi). QSL route TBA.

Contest, Open / WW.

What to do on a tuesday evening ?

- Well the 4th. Tuesday in the month brings You "The 50 MHz Open"
- This month thats Tuesday - the 25 th. 17 - 21 UT.
- You could help participants out with some QSO's
- or participate Your self ...

You may find the rules for "The 50 MHz Open" here and check out the standings here.

- so are You keen to give "The 50 MHz Open" a try ?

Hope to see You down the log - and Your log ...

Vy 73 de Bjørn/"Matt" OZ6OM 25 May 2010

Aaland Isl., OH0. From May 15th. till May 28th. a DXpedition to Aland Island OH0, Eckero Island will take place. QRV on all HF bands special on the WARC bands in CW, SSB and RTTY. We are running 3 or 4 stations. We will also be QRV on 6m EME (WSJT) from the locator JP90SF. Calls are OH0/PA2AM, OH0/PA0VHA, OH0/PA3ALK, OH0/PA3BAG, OH0/PA2VMA, OH0/PA2A, OH0/PB5A. QSL direct or via home calls. More info on website www.pi4cc.nl - hope to work you from OH0. Best 73 de Wim PA2AM.

U.S.A., K. Peanut Isl. & JFK's Bunker - W4K - Scheduled for May 29th and 30th, 2010, on John F Kennedy's birthday members of the Jupiter Tequesta Repeater Group (W4JUP) will be activating for the first time Peanut Island (WW Loc. EL96XS, Palm Beach County) JFK's old Cuban missile crisis bunker, Florida. They will use the special event callsign W4K for the full 2 days. QRV on HF, 50MHz and 2 meters, using SSB and CW. 6m frequency 50.210 MHz SSB/CW; 2m 144.210 MHz; 20m, 40m to be determined at start of event by the HF team CW ops on K3's). QSL via operators' instructions. Further information can be found at: jtrg.org/DXpedition.shtml (Andy N8OFS).

Willis Isl., VK9w. [Update]. Dave, VK9WBM has been on Willis Island for a while and is experiencing unexpected problems. "I am slowly getting on HF", he says, "but I am not there yet. I cannot erect a mast, the soil s coral rubble and sand and will not hold a guy peg. The soil is a bone dry insulator and I have been unable to get any viable earth. The ongwire has worked 2 stations and is to be removed and replaced with a balanced antenna. This will take a bit of work as I have no ATU except the Icom AH4, an unbalanced only auto ATU. On 6m I am unable to mount the beam anywhere useful. It can only point out to the ocean. I have built a 300ohm slim jim and worked about 40 stations, mainly VK2 but with some VK3, 4, 5 and one ZL2. Listen for me in the afternoons on 6m, between 0400z and 0900z. When he is "reliably on HF", he anticipates it "will be 40m and harmonics only"

Willis Isl., VK9w. David A. Burton, VK9WBM will be working at the weather station on Willis Island for the next six months. He plans to operate on the HF bands and 6 metres in his spare time. QSL via VK4DMC.

Mongolia, JT. UA9YAB, Alex, plans to arrive in Mongolia on May 25th and will be operating as JT9YAB from a car using simple antennas until June 2nd. While there he will also put an emphasis on 50 MHz. If all works out as planned he will be find a location for a second trip for the coming autumn for a focused 160 and 80 meter operation. QSL via UA9YAB direct or via LOTW. No bureau requests.

Surface mount devices and differential amplifiers

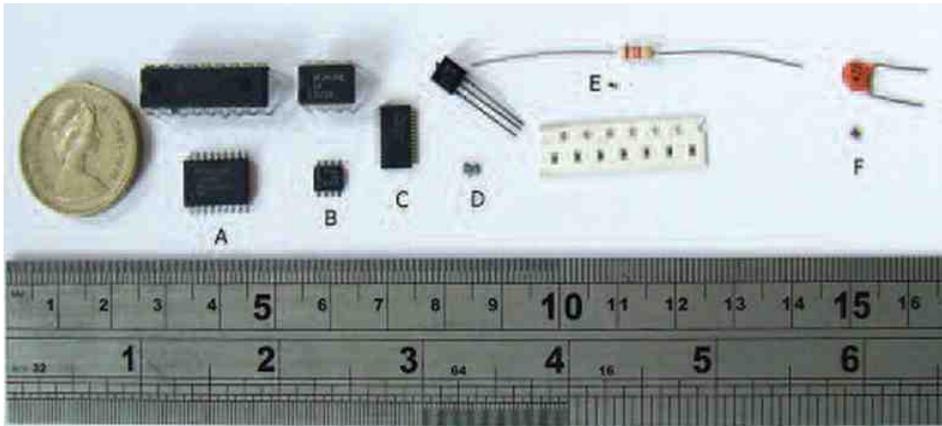


PHOTO 1: Traditional leaded components and their surface mount equivalents (see text).

IT'S NOT THAT NEW.

Surface mount technology, or SMT, is well established as the most common form of circuit construction in use today. Most commercial equipment makers have been using SM components for more than 20 years. For various reasons, many amateurs have been reluctant to use this method of construction. Ordinary through-hole components are still readily available and will probably remain so for many years. Many of us are well equipped for handling through-hole components and see little reason to change to the newer technology. However, SMT offers some advantages for the home constructor. SMT tends to have superior performance at VHF, UHF and microwave frequencies. Because of their small package size and lack of connecting leads, SM packages have lower stray inductance and capacitance than other package types. Some surface mount components are just as easy to use as their through-hole equivalents. SM chip capacitors and resistors are particularly easy to use. The smallest components are not so easy to work with, but larger devices like the 1206 series of chip capacitors and resistors are very easy to handle. These components are particularly well suited to Veroboard, deadbug, Manhattan and other styles of point-to-point wiring. SM components are usually cheaper than through-hole components. SM component kits are available at extremely low cost. SM resistors typically cost a fraction of a penny each.

Any discussion about SMT should start with a few words about the terminology used. 'SMT' generally applies to the entire technology and not just individual components. SMD is a surface mount device like a resistor, transistor or IC. The term PTH (plated through hole) is often used to refer to conventional through-hole PCB construction that uses a drilled PCB and leaded components. This often leads to confusion because many single sided PCBs don't have plated-through holes. Most double sided and all multi-layer SMT PCBs do use plated through holes. To avoid confusion, I will use the term through-hole in place of PTH.

Photo 1 shows a selection of SM components and their through-hole equivalents. A is an 18 pin PIC microcontroller in a standard DIP package with the same device in a SOIC-W package below. B is an 8 pin op-amp in DIL and SOIC packages. C is a 28 pin AD9851 DDS in a SSOP (shrink small outline package). D is a TO92 transistor with a SM SOT23 transistor below. E is a standard 0.25W resistor with a tiny 0603 chip resistor below. F is a ceramic disc capacitor with an 0805 chip capacitor below. The SM components usually occupy a much smaller PCB area than throughhole components. The size, volume and weight reduction is even greater than the photograph would suggest because SM components also have a far lower profile than other component types.

Figure 1 shows the PCB footprint for a 28 pin DIP IC, a SOIC-Wide (small-outline integrated circuit, wide version), a standard SOIC package and finally the 28 pin SSOP package as used for the AD9851 DDS IC. The DIP package has 10 pins to the inch, a pin spacing of 2.54mm.

Standard SM packages like the SOIC have a pin spacing of exactly half this value. Smaller SM packages have 40 (TSSOP) or even 50 pins to the inch! As a gentle introduction to SMT construction techniques, we will build a couple of simple circuits using SM components. The first project, a 6-pole SSB crystal ladder filter, uses only passive SM components on a simple single sided PCB layout. I used 9.216MHz crystals in a low profile HC49/SMT package. This was as near as I could get to the popular IF of 9.0MHz using low cost off-the-shelf crystals. (9.216MHz is a standard baud rate generator clock frequency). The filter was designed using the methods described in Homebrew for March and April 2006.

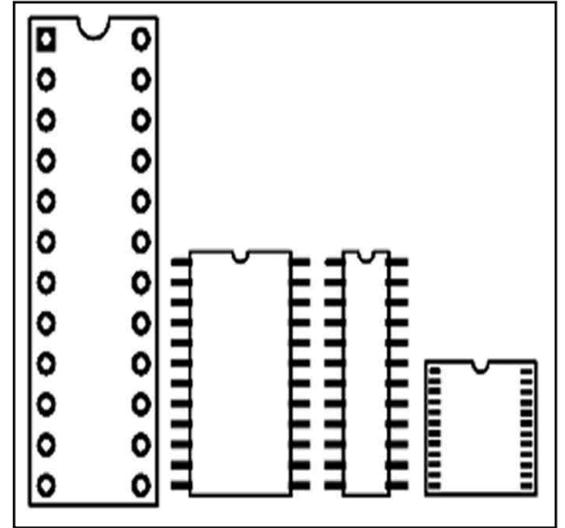


FIGURE 1: PCB footprints for 28 pin ICs (L-R) DIP, SOIC-Wide, standard SOIC and SSOP

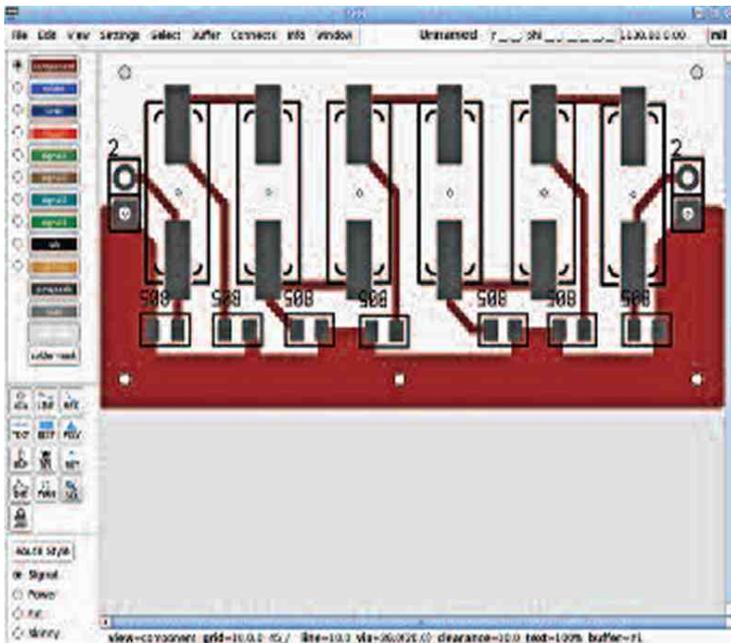


FIGURE 2: Typical PCB CAD software, in this instance 'pcb' running under Linux

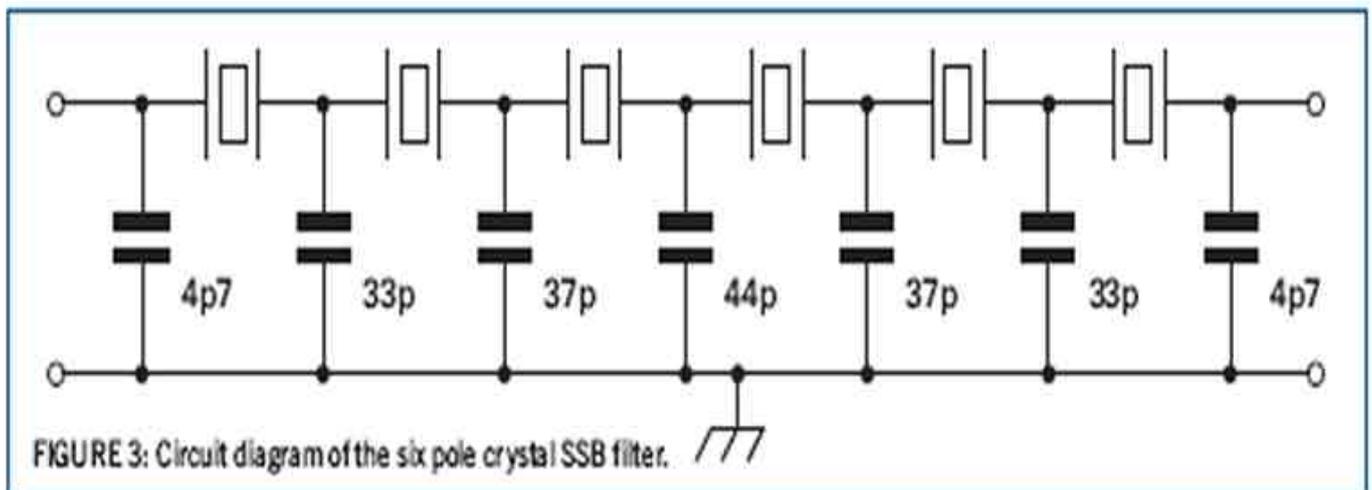


FIGURE 3: Circuit diagram of the six pole crystal SSB filter.

I used a spreadsheet [1] to simplify the design process. Joachim Köppen, F/DF3GJ, has written a handy Javascript calculator [2] based on the same formulae. As this is not a PCB making or filter design tutorial, I won't go into much detail about how the filter was designed or how the PCBs were made. If you want more information then you could do worse than refer to the most recent edition of the Radio Communication Handbook.

PCB LAYOUT DESIGN AND ARTWORK

It is just about possible to draw very simple PCB layouts for some of the larger SM components by hand, but a computer and PCB CAD software is really the only practical way of creating PCB layouts for SM ICs and smaller components. Suitable software is available at little or no cost. Beware of some of the 'free' PCB CAD software that is available on the internet. The price might seem attractive, but some of these software tools are only capable of producing layouts in a proprietary file format instead of industry-standard formats. This effectively means that you have to pay the software provider to make the PCB for you. I use 'pcb' running on a Linux PC. This is a good combination for the homebrewer: home-made CAD software and home-made operating system. You can use a home-made PC too if you like. The freeware version of Eagle CAD [3] is a good alternative. Eagle CAD is available for Windows, Mac and Linux. PCB layouts for SM components are created in much the same way as layouts for through-hole components. SM components are usually much smaller and track widths are narrower. Due to the small pin spacing of SM ICs, PCB tracks are not usually run between IC pins as is common practice with DIP. It would be difficult to do this with SOIC packages and impossible with SSOP and smaller packages. This limits the designers' options for designing complicated layouts on single-sided boards. It is possible to run a single track between the pads of some SM resistor packages. It is quite common to see zero ohm resistors where two copper tracks cross on SMT PCBs. This is less unsightly than wire links on through-hole PCBs. As the copper tracks are on the same side of the board as the components, there is no need to 'mentally reverse' the IC pins when looking at the track side of the board. Most commercially made SMT boards are double sided or multi layer. Double sided is not too difficult for the home constructor, but multi layer with plated-through holes would be a major challenge.



PHOTO 2: My not-so-high-tech PCB exposure system

Figure 2 shows a screen capture of the PCB CAD software. Apart from the two pin connectors for input/output connections, the only components used are the six SM crystals and seven 0805 chip capacitors. PCB track widths are usually measured in mils (1 mil = 0.001 inch, or 0.0254mm). The 'pcb' software has three default track widths: Signal = 10 mils, Power = 25 mils and Fat = 40 mils. I used the Signal track width option, but since this is not a particularly small or cramped layout, I manually increased the track width by one step to 15 mils. There isn't much to be said about the layout. I left a lot of copper at the bottom edge, which makes an effective ground connection for the I/O terminals and the shunt coupling capacitors between each crystal resonator. If an even smaller circuit was required, it would be possible to bunch the crystals closer together and trim off the unused top edge of the board.



PHOTO 3: The completed SMT filter

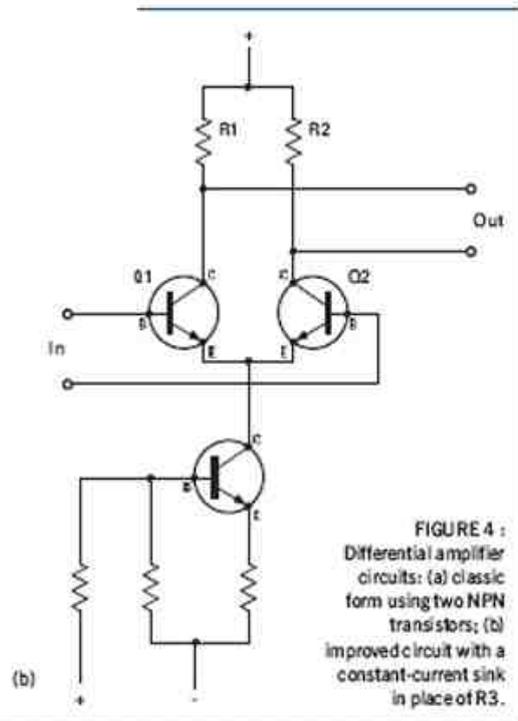
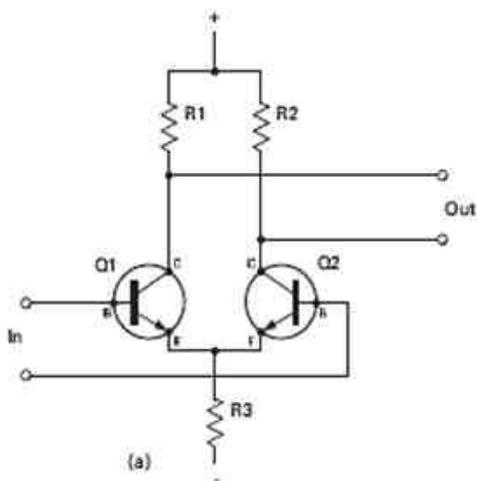
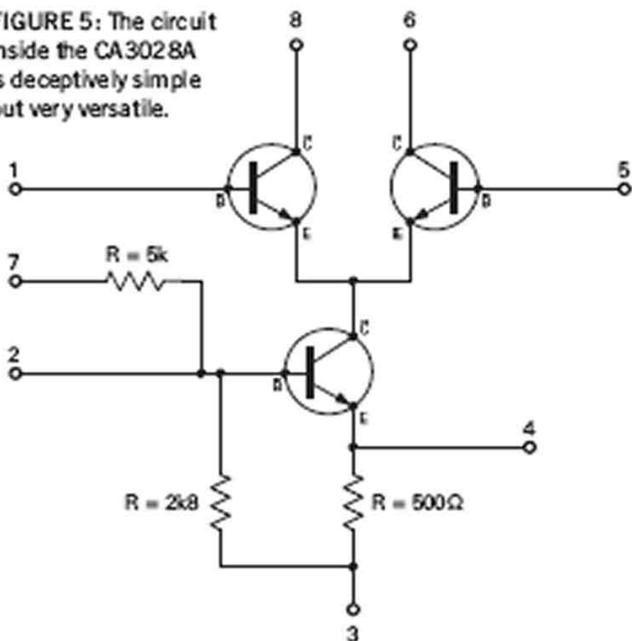


FIGURE 4 : Differential amplifier circuits: (a) classic form using two NPN transistors; (b) improved circuit with a constant-current sink in place of R3.

FIGURE 5: The circuit inside the CA3028A is deceptively simple but very versatile.



The filter schematic is shown in Figure 3.

Once the layout was finished, it was printed onto a sheet of Staedtler overhead projection film using an ordinary laser printer. This was used as a positive artwork for the UV exposure process. I used a 500W halogen lamp as the UV source and a small picture frame to keep the PCB and film in contact – see Photo 2. The PCB is standard single sided, pre-coated photosensitive PCB laminate (Maplin JP56 or similar). After the board was exposed to the UV source for 10 minutes, it was removed from the frame and developed in sodium metasilicate photoresist developer (a weak solution of sodium hydroxide also works). Finally, the board was etched in a ferric chloride bath.

After rinsing, the remaining photoresist was cleaned off with some fine steel wool. Please be careful if you make your own PCBs as some of the chemicals mentioned here are toxic, caustic or at least cause nasty stains – read the materials safety data sheets from the chemical suppliers before use.

Soldering the crystals to the PCB is a very easy job. The SM crystal PCB pads are quite large. I used a pointed soldering iron tip for soldering the 0805 chip capacitors. These are not the smallest type of SM capacitor, but they are small enough that a good illuminated magnifier will make the soldering job a lot easier. As the capacitors are small and very light, they tend to stick to the tip of iron and lift away from the PCB when you extract the iron from the solder joint. Commercial PCB makers usually glue the components to the PCB so that they remain in place during soldering. One of the recommended ways of preventing this problem is to use a wooden toothpick to hold the SM component steady while you are soldering it in place. This is easy to do if you are one of the lucky few who has three hands. You will need one hand to hold the toothpick, another hand to hold the cored solder and the third hand to hold the soldering iron. I have found that the best approach is to tin just one of the component pads on the PCB very lightly and then tack one component terminal to this pad using a tiny blob of solder on the tip of the iron.

I have found that the best approach is to tin just one of the component pads on the PCB very lightly and then tack one component terminal to this pad using a tiny blob of solder on the tip of the iron. This won't make a satisfactory solder joint, but it will be good enough to hold the component in place while you solder the other lead(s). The first pad is easily re-soldered once the other pad(s) are done. This method is not recommended for commercial PCBs where there is a requirement for good quality control.

The very hard ceramic materials in chip capacitors and resistors can crack because one side of the device is soldered firmly in place and remains relatively cool while the opposite end is heated by the soldering iron. However, this method is perfectly adequate for home made PCBs. I have had very few failures using this technique over a period of many years.

Photo 3 shows the finished SSB filter. One advantage of SM chip components that is rarely exploited on commercial PCBs is the way that they are easily stacked one above the other to make a parallel connection. As 37pF is not a standard value, I used 22pF and 15pF in parallel – see the inlay at the top left of the photo. The standard textbook advice for soldering chip components is to use just enough solder to make a small, slightly concave 'fillet' of solder between the PCB pad and the component terminals. As you can see in the photo, I usually end up using far too much solder.

DIFFERENTIAL AMPLIFIERS.

One of the most useful and widely used circuits in the history of electronics is the differential amplifier. Figure 4a shows the classic form of differential amplifier based on a pair of identical NPN transistors. This circuit is often referred to as a 'long tailed pair'. This example has a pair of differential inputs and a pair of differential outputs. The circuit is extremely flexible in that it can be used as a single-ended input by simply using one input and grounding the other. If a single-ended output is required, you can just use just one of the outputs and ignore the other. The operation of the circuit is quite easy to understand. A signal applied to either of the two inputs will produce an amplified signal at both outputs. If we consider the case of a rising signal applied to the base of Q1 only, an inverted and amplified version of this signal will appear at the collector of Q1. This is the standard behaviour for a common-emitter transistor amplifier. A non-inverted output will appear at the emitter of Q1. This is the standard behaviour for a common-collector amplifier (also known as an emitter follower). The output at the emitter of Q1 is directly coupled to the emitter of Q2, which acts as a common-base amplifier. As the commonbase is a non-inverting type of amplifier, the output at the collector of Q2 is 180° out of phase with the output of Q1. This circuit is known as a differential amplifier because the magnitude of the output depends on the magnitude of the difference between the two inputs and not on the absolute level of the input signals. If a signal is applied equally to both inputs, a perfect differential amplifier will produce no change at the output. As one transistor is an inverting amplifier and the other is a non-inverting amplifier, the equal currents of opposite polarity will develop equal voltages of opposite polarity across the identical pair of collector load resistors R1 and R2.

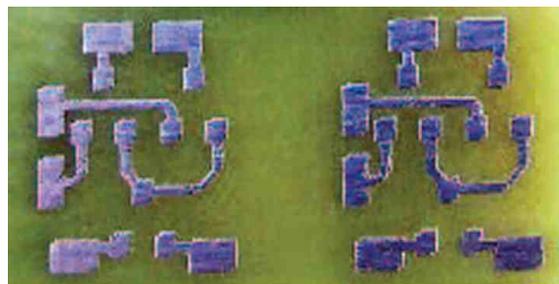


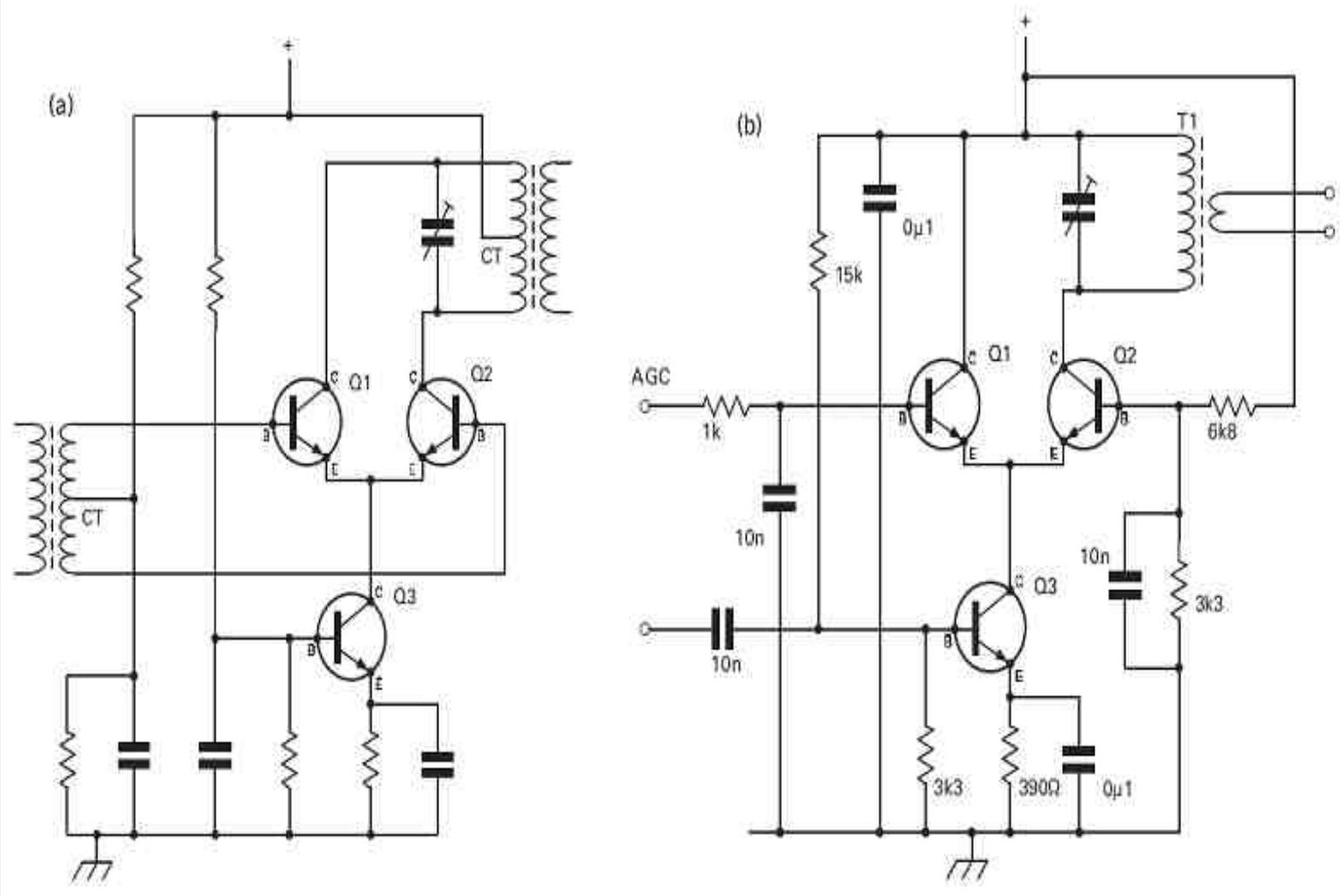
PHOTO 4: Making many boards at once on the same panel means they can be handled more easily



PHOTO 5: Soldering surface mount devices is often more easily accomplished with the aid of a strong magnifying glass

This ability to reject common-mode inputs makes the differential amplifier ideally suited to amplifying weak signals in a noisy environment. If the input is driven from a balanced circuit, for instance a twisted pair of wires with a microphone at the other end, any electrical noise picked up along the cable run will be of equal amplitude and phase on both wires of the twisted pair. This common-mode signal will not be amplified by the differential amplifier, which will only respond to the differential voltages from the balanced microphone.

FIGURE 6: Two applications for the differential amplifier board that will be discussed in a future edition. (a) IF amplifier, (b) Cascode amplifier.



The extent to which the amplifier can discriminate between common-mode and 'normal-mode' balanced signals is defined by its common-mode rejection ratio, or CMRR. In order to achieve a high CMRR, there should be good current balance between the two transistors. The best balance is achieved when the value of R3 is high relative to the value of R1/R2. This usually means that R3 will be several thousand ohms. This is not an ideal situation, especially at relatively low supply voltages. Current in Q1/Q2 would be very low and dynamic range would be limited. The performance of the circuit can be greatly improved by replacing R3 with a constant-current source (or sink, for the pedantic). A high gain transistor with a fixed voltage on the base and a resistor in the emitter circuit makes a good constant-current source.

The current through this transistor is largely determined by the base voltage and the voltage drop across the emitter resistor. This current will tend to remain constant regardless of the collector voltage. Figure 4b shows the improved circuit.

This is the standard differential amplifier circuit which is so widely used in just about every op-amp IC.

Transistors, JFETs, MOSFETs and valves have all been used in this configuration. One of the all-time favourite devices of the radio constructor was the RCA CA3028A differential amplifier IC. This simple IC consists of just three transistors and a few resistors in an 8 pin package. Figure 5 shows the internal configuration of the CA3028A.

It can be used as a differential amplifier at frequencies from DC to VHF. It can also be used in 'cascode' configuration where the lower transistor is configured as a commonemitter amplifier and one of the differential pair is used as a second stage in the common-base mode. The remaining transistor can be left unused or it may be used for gain control of the amplifier. This circuit can be used in many different configurations as an RF amplifier, mixer, IF amplifier with AGC, balanced-modulator, product detector, audio amplifier, limiter...in short, just about every stage of a radio receiver or transmitter!

The bad news is that the CA3028A is no longer in production and has recently become very expensive – typically over £10 each.

MINIATURE DIFFERENTIAL AMPLIFIER.

Our second project this month is a miniature differential amplifier consisting of three surface mount MMBT3904 NPN transistors on a small PCB. To save on consumables, and to avoid having to make very tiny PCBs, my artwork has 28 identical copies of the PCB layout. This means I can make 28 boards at the same time, then cut them up as required.

Photo 4 shows a section of the 28 board panel. The MMBT3904 is the surface mount version of the popular 2N3904. Given the very small dimensions of the board and, particularly, the components, I use whatever aids I can to assist in assembly.

Photo 5 shows how I assembled the prototypes using a bench magnifier: if you look closely you'll see that the PCB is held by a pair of croc clips attached to a 'helping hands' mount.

Photo 6 shows the finished amplifier module, which is about the same size as the IC it replaces. It's sometimes useful to make more than one differential amplifier at the same time and to keep them attached. I have made a few pairs, which will be used as a two stage IF amplifier in a future project.

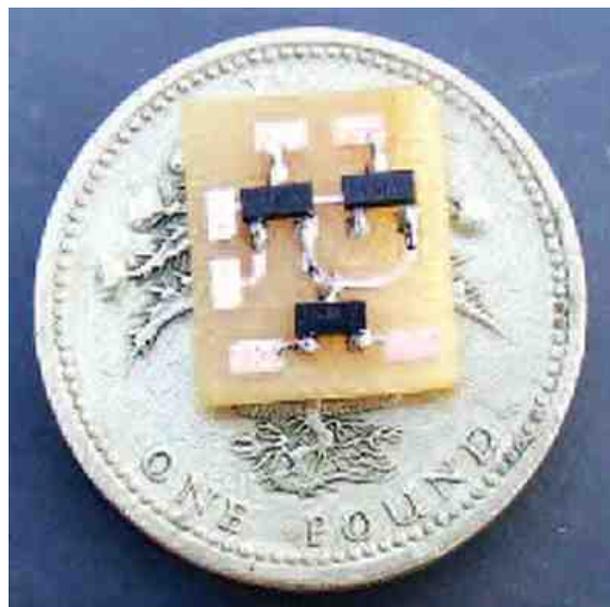


PHOTO 6: The finished differential amplifier module is quite tiny

Best 73 ! EI9GQ

REFERENCES:

- [1] <http://tinyurl.com/nvkymw>
- [2] <http://tinyurl.com/lme7bm>
- [3] www.cadsoft.de/

The History of Torre Bert From Astrosurf



PART 3

Some years later, and up to 90's many other magazines published the story like the Italian newspaper "Il Giornale". This article was reprinted in other newspapers like the one displayed at right that describes in its column "Chi è l'esperto, He is the expert", the Judica-Cordiglia brothers' adventure, entitled their article "The man that I investigated on the Shroud and the space disasters", mixing the Shroud of Turin affair with Torre Bert. In quest of a scoop, paparazzi are always at first place !

In all cases, on April 7, 1965, irritated, at the request of the Russian general Kamarin, Radio Moscow did a comment about these allegedly distress messages received by Torre Bert : *"The article is based upon statements made by the Judica-Judica-Cordiglia brothers, who allegedly received signals and recorded conversations in space by a number of Soviet cosmonauts who did not return from their flights... two years ago the same nonsense could be found in the pages of the "Washington Post"...a few organs of the bourgeois press, in an attempt to give their cosmic lies an appearance of truthfulness, mention data provided by the American information services. These services would have provided in confidence to the journalists information about these dead cosmonauts. However, such data do not reflect the truth. And with this statement we could close the whole matter"*.

Among all data gathered by the two brothers, that they are partly false or not, there is a fact that using amateur equipments, Judica-Cordiglia brothers were able to capture space communications, deduce the launch of new missions, and to shake the Russian empire. Thanks to their work, NASA was also aware of the fact that smart people can easily identify space frequencies, even if they are under embargo.

For an obscure reason always not explained, Torre Bert and Zeus network were dismantled around 1966. Several reasons can be advanced. First, the recent new family life of their main investigators has probably heavily contributed to this abandon; then the bad publicity made around their claims, and the flop of the Zeus network added probably other harassments to their frustration. In all cases the two brothers began their professional life around that time too what could explain this final withdrawal.

New developments

Whatever the explanations, as we will explain in another article dedicated to the history of amateur radio, slowly amateurs were preparing their entry in the world of space communication. Radio amateurs launched their first ham satellite in 1961 with OSCAR 1, and in 1969 they set up the Radio Amateur Satellite Corporation, AMSAT. The Judica-Cordiglia brothers didn't ever belong to this famous organization.

Today Achille is a cardiologist and a past president of the Lyons' Club Italy while Gian Battista is a forensic scientist who took the first color picture of the Shroud of Turin in 1969. Recently he was also involved in the successful "scientific" defense of Mr Berlusconi's former Defense Minister, although I am not sure that this second argument is relevant knowing the character. Anyway, the two brothers are today highly respected and successful persons.

Their last book : disappointed

In 2004, I was informed by Giovanni Abrate from "Lost Cosmonauts", that the Judica-Cordiglia brothers finished writing a book with an accurate chronicle of their activities. The book was submitted to various prospective publishers. We were all impatiently waiting for what new facts and evidences this book could learn us about their activities and alleged claims.

The book would describe in detail the techniques used by the Judica-Cordiglia brothers, the frequencies, the Zeus network, the leads provided by US Intelligence and many other facts, including the statements by many personalities of science, technology and the press, who were present at the time of the intercepts and who have stated their support for the Judica-Cordiglia brothers. Wait and see...

In 2007, James Oberg read this article that he qualified of "excellent technical analysis", as well as the last book written by the Judica-Cordiglia brothers. Unfortunately their book is far to confirm their allegations. Here are the comments that Jim accepted to share with us about this so-long-awaited book : "I read [Cordiglia brothers] new book. It is an immense disappointment [...] There is no credible evidence to believe any of their claims--

not about 'missing cosmonauts' (we knew this thirty years ago)

not about receiving a photo of the Moon from the Luna-4 probe

not about receiving voice signals from Vostok-1

not about receiving telemetry and voice from MA-7 (Glenn)

not even about meeting top NASA officials (the only photograph in the book shows them standing on the street in front of the NASA headquarters and its sign). [...]

I gave them credit for inspiring other people to attempt amateur radio listening of space events (exactly as you wrote in your own article), but I insisted that nothing that they claimed to discover has ever been verified by any other radio amateur or by the massive disclosures of 'glasnost' and post-Soviet revelations. Rien." Jim.

Unfortunately Jim's conclusions confirm what we expected : all Cordiglia's claims are based on very few real facts. Their story looks to a huge hoax or almost. Don't waste your time in reading their book, you will lost your money for nothing.

About the Torre Bert affair

The information published on Giovanni and Mario Abrate's Lost Cosmonauts website is protected by copyright that will be probably enforced after the publication of the Judica-Cordiglia brothers' book. It was impossible for me, like for anyone else, to reproduce their document, even for educational purposes or for a non-profit amateur website. Therefore I decided to redrawn myself the original pictures and to display these sketches in this article. These sketched are not copyrighted.

On March 3, 2004, I contacted Giovanni Abrate to get some additional information. I thank him for his courtesy in reading this review that not necessary converges to his opinion and the talks that he holds on his website. As expected, by return of mail he corrected in fact all of my arguments going against his claims.

With sympathy he probably accepted the deal as a good critical is better than rumor but he didn't answer to all my questions. He stoned on his positions and didn't accept any of my arguments, like he refused the ones of the other inquirers, considering all them, including those linked below, as "anti-Cordiglia brothers". He accepted however to discuss.



In 2003 and 2004, I contacted my friend Valentin Strashinski, from TsNIIMash and leader of ISS project ET Shadow to ask him to confirm with Sergey Samburov from the Rocket Space Corporation "Energia" (RSCE), the history of Vostok/Voskod and alleged "black programs".

None of them confirmed me the existence of these black programs.

None of them confirmed me the existence of these black programs. According to RSCE archive (public) here are the sole cosmonauts who died since the beginning of the Soviet space program. This information is well-known :

- 1961, Valentin Bondarenko burned in a pressurized chamber during a pre-flight training
- August 5, 1966 accident of Soyuz-1. Death of Vladimir Komarov
- June 30, 1971, accident Georgy Dobrovolsky, Vladislav Volkov and Victor Patsaev

On April 25, 2004 I contacted again Giovanni Abrate so that he sends me some documents about these first soviet accidents. Here is an extract of his answer :

"Hi Tierry! Thanks for your kind message. The events that you mentioned are now well known, including the terrible fire that killed young trainee Bondarenko.

I know and respect the Judica Cordiglia brothers and I know, at least by reputation, many of the journalists and scientists who were present at the time of the intercepts.

I have had unofficial confirmation of the veracity of these facts from two different and independent former members of the U.S. Government who were in a position of knowledge.

I should note that this does not apply to the alleged flight of Vladimir Ilyushin, as the Judica Cordiglia brothers never received any signals on the day of the purported flight.

I do believe, based also on the interviews held by a journalist from FOX television with prominent ex-cosmonauts, that the Soviet Union had TWO space programs: a public one, led by Korolev and a "black" one, where clearly more daring missions were attempted.

I hope, if that is the case, that one day we will know for sure.

Please note that the Chinese space agency made a statement recently mentioning dead soviet cosmonauts who perished "at the beginning" of the soviet space program. If you read the Ilyushin story, you can see that the Chinese would be in a very good position to know, since Ilyushin purportedly crash landed in China".

On another side I tried on several occasions since 1990 or so to enter in contact with the Cordiglia brother in Italy. Up to now this is the complete radio silent as if there was a blackout on all this story for an undisclosed or shameful reason.

By way of conclusion

Beside the alleged claims of cosmonauts in distress and the other recordings made by the Judica-Cordiglia brothers, we can conclude that the two brothers did track satellites; they were pioneers in their field like James Oberg was another one for the Russian Space Agency. Unfortunately the comparison stops here because the Judica-Cordiglia brothers are far to be so objective and straightforward than James Oberg.

Some radio amateurs and so-called specialists who investigated the Torre Bert affair were, prior to their investigations, anti-Judica-Cordiglia brothers simply because of their reputation. You will recognize with me that this is not either a very scientific attitude nor a positive way of analyzing their claims.

After investigation, I have demonstrated in this analysis that the Judica-Cordiglia claims are almost all false; they were never confirmed by the authors nor by any private investigator or institution. To my deepest disappointment, this story ends sadly; my dream of kid has been broken. But another dream is always alive : I won my amateur radio license !



This file is closed.



COMIC'S HAM

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Signal to the Moon



HAM-MAG N.16 - MAY 2010

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