



DIGITAL DISPATCH

A publication of the
West River Radio Club



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Volume VII—#X

VITAL STATISTICS

The West River Radio Club, an ARRL Special Service Club, was founded in 2004 through the efforts of KA1ZQX, Tim Bell, and N1JSG, Richard Pierce.

Our 51 members pride themselves on belonging to an active and productive organization with involvement in many aspects of this great hobby: public service, special events, Field Day, repeaters, emergency communications, contesting and chasing DX.

Current officers are:

N1TOX, John Borichevsky; President

W1CWB, Chas Baker; VP

KD6MPY, Sean Sanderson/WK1L, Bro Frank Hagerty
ED/VE Liaison

K1KU, Darrel Daley; Secretary/Treasurer

KA1ZQX, Tim Bell; Public Relations/ARES

PREZ KORNER

Why can I not control my radio with my software?

(NOTE: All Pictures referenced within this document can be found at the end of this month's issue of the *Digital Dispatch*)

This is a question that I get often. I cannot control my radio frequencies from my PC. I cannot transmit via my PC using Ham Radio Deluxe (HRD). What am I missing? The one answer to these questions is that the computer cannot communicate with the radio as you have programmed it. So how can I fix this?

Communications is a two way street. One must understand what one is speaking about. In the means of your PC to the radio, it is the speed of the communications one sends and to the speed of communications the receiver expects to hear it at. In simple terms, let's say that I send CW to you at 20 WPM (I wish!!!) and you as a beginner can only understand (receive) at 7 WPM. What happens? It all goes in one ear and out the other as you try to process it. Basically you give up and then just hear noise.

Because there are Serial Ports, USB ports, and Modems on many of PC's, we need to first understand which software COM Port designation controls which hardware COM Port. With this understanding, you must know which communication port you are using. Typically, a standard Serial port (a 9 Pin D-Sub Connector) uses COM1 and/or COM2 which are usually labeled COM 1 or 2, or maybe with a Letter A or B. An internal modem can be COM3 or

COM4. Now depending upon your USB device you might or have attached to your PC/Laptop, these COM ports will be above that and can change depending upon which USB port you put your adapter into.

So, let's look at the PC via the software level. First, you need to go to the Device Manager of your PC, this is the place to start. Right Click on the "My Computer" icon on your desktop (or in the Start Menu) and select "Manage" (or you can go to the Control Panel and double click on the "System" icon). Then select "Device Manger" which will show you all of your software hardware configurations in regards to your PC or laptop. (See *Picture 1*)

The point we are going to focus on is the line item "Ports". If you double click on the word "Ports", select the communication port you wish to use. (See *Picture 2*) Then click on the "Port Settings" tab. This is where we will set the "speed" of the communication rate to talk to your hardware device can understand what information it is being sent. (See *Picture 3*)

Now we need to look at the owner's manual of your radio, Pactor Modem, or whatever you wish to control and research the port speed of the device which your PC needs to communicate with. In the manual will be the communication settings. For my Yaesu FT-1000MP Mk V, the manual states "Serial data is passed via the CAT jack in the rear panel of the transceiver at 4800 bits/sec." When you look at the port settings on your PC, you will notice that the port speed is defaulted to 9600. In this case, I need to change this number to 4800. Then my PC will be able to communicate with the radio correctly. For your radio, this setting could be 9600, or even faster or slower. Please refer to your manual for more details. (See *Picture 4*)

Now if you are using applications like AirMail, Ham Radio Deluxe, SSTV or whatever, you also have to make sure the port speed settings within the software application are the same for your PC as well as your radio. Most of the software applications have built in settings which will be correctly applied once you select your unit. But always double check to make sure all your settings are correct. Look in the menus for key words like Options or Settings to find these settings. Each application will be different. (See *Picture 5*)

Now, each PC configuration will be different, each radio will be different, and every piece of software

is also different. So by taking your time and by using these quick tips along with reading all of the instructions which came with the software will help you setup the software package you choose. Another word of assistance would be when you setup a modem, send the data as fast as the modem will allow, maybe as high as 115,200 Bits per second. This will increase the speed of the information being presented on your screen. This setting should be detailed in the instructions of the equipment. If not, you can experiment just to see how fast you can go. It will either work or not work.

I hope you have good results in making your PC talk to your radio! Just remember that the speed of the information being sent must match the speed which the receiving equipment expects it to be coming towards it.

Until next month!

73

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de N1TOX

John Borichevsky - President WRRRC



THE WRRRC ARES NET

WHEN: Every Monday evening at 19:30L

WHERE: The Marlboro Repeater—147.015 MHz. Positive offset and a 100 Hz PL

WHAT: The net varies between rag chewing on some Mondays and a bit of training on others. Often there is a combination of some training and rag chewing.

The NCS lineup through October follows:

- 2—Darrel—K1KU
- 11—Chas—W1CWB
- 18—Ed—KB1KSR
- 25—Rich—KB1J



All are welcome and encouraged to check in.

You'll get in some rag chew time with a little training thrown in now and then.

Want to be a Net Control Station? Contact N1TOX, John at n1tox@comcast.net



RUNNIN' ON EMPTY

The Great Land

That would be Alaska, or, as the natives called it before "we" came along, Aleyska. After living there for over twenty years Marion and I can testify to the fact that it truly is **THE GREAT LAND**. Want some proof?

Size: It is 1/5 the size of the continental US - 586,412 square miles, or about 365,000,000 acres, (A fact I NEVER mention when we visit our son and family in Texas is that if Alaska were cut in half Texas would become the 3rd

largest state in the union.)

Coastline: 6,640 miles, point to point; as measured on the most detailed maps available, including islands, Alaska has 33,904 miles of shoreline. Estimated tidal shoreline, including islands, inlets and shoreline to head of tidewater, is 47,300 miles.

Mountains: The tallest mountain in North America is Mount McKinley, at 20,320 feet. Alaska has 39 mountain ranges containing 17 of the 20 highest peaks in the United States.

Lakes: The largest natural freshwater lake in the USA is Iliamna, with 1,150 square miles. Alaska has 94 lakes with surface areas of more than 10 square miles among Alaska's more than 3 million lakes.

Rivers: The longest is the Yukon, with 1,875 miles in Alaska and 2,298 total. There are more than 3,000 rivers in the state. The Yukon River ranks third in length of U.S. rivers, behind the Mississippi and Missouri rivers.

Islands: The largest is Kodiak, in the Gulf of Alaska, with 3,588 square miles. There are 1,800 named islands in the state, 1,000 of which are located in Southeast Alaska. I met my first wife here in 1955. Like Macarthur we plan on visiting there again on our next Alaska trip.

Glaciers: The Bering Glacier complex, with 2,250 square miles, includes the Bagley Ice field. Ice fields cover about 5 percent of the state, or 29,000 square miles.

Cheap: Secretary of State William H. Seward arranged for the United States to purchase Alaska from Russia in 1867 for 7.2 million dollars, or 2 cents per acre."

Now this list could go on and on, but I'm not one to beat a dead horse.

After visiting Alaska people have often asked, "Why would you ever want to leave all that beauty?" That's a good question. And to answer it I have to mention some of the negatives...

Do you like cold weather? Marion and I actually do and dread those hot and humid days of summer we endure each year - BUT, when one gets older, as we all do, several week long cold snaps each winter of 40-50 below can get tiresome.

Those who have been to this QTH may have noticed that the footprint of our attached garage is larger than that of the house. That was not by accident. After 21 years of living in Alaska without a garage qualified me as an expert at starting cars in -40F temperatures. I wanted to spend my twilight years hearing a car crank over in ease in a heated garage.

I see that I'm starting to meander, but that's OK. After all, I'm the editor. Next month I'll fill you in on Ham activities in the Great Land. Or, if some other topic excites me in the interim, I'll write on that. I'll bet that you can hardly wait to see what the subject will be.

Turn the page for some pictures of some of the fantastic scenery up there.



Plenty of ice for that after or pre dinner cocktail



A summer shot of Mount McKinley



Lakes, lakes and more lakes



More small planes per capita than any other state

QUOTE OF QUOTE OF THE MONTH

"I have not failed. I've just found 10,000 ways that won't work."

Thomas Edison (1847-1931) - inventor, businessman

Center-fed Dipole Calculations

Bro. Frank Hagerty, SSE WK1L

By far, the most common wire antenna for HF has been the center-fed dipole. It is relatively inexpensive, easy to home-brew, and can be quite effective. In my previous write-up on NVIS antennas, I used the formula for a half-wavelength antenna as **Length (ft) = 468 ÷ frequency in MHz**. An excellent article in the September 2010 QST (pp. 53-54) traced the origins of this formula, which has been in antenna books and articles for over eight decades, as well as appearing on Ham Radio licensure

exams. The formula was derived from experiments done in the 1920's by commercial radio stations on half-wave dipoles 1/8 to 1/4 λ above ground. This formula is perfect for an NVIS, which is 1/8 λ or less high. But, as many hams know, the formula comes up short (literally) when the antenna is raised to 1/2 λ for effective DX with a low angle of radiation. The two major factors at play here are **the length to diameter ratio** of the antenna conductor and, most importantly, the **antenna's height above ground**. (Insulation on the wire also has a minor effect.)

The "468 formula" yields results very close to the formula for a half-wave dipole in meters, using a velocity factor for the antenna wire: **Length (m) = (300 X vf) ÷ (f [MHz] X 2)**. With a velocity factor of 0.95, the formula is **Length (m) = 142.5 ÷ f (MHz)**. Since there are 3.28 feet in a meter, that translates to **Length (ft) = 467.4 ÷ f (MHz)**. So that formula, too, comes up short for a dipole at 1/2 λ, and, for an inverted-V dipole, even shorter.

So what's the best approach to calculating the length of a 1/2 λ dipole? When assembling a flat-top or sloper antenna, cut the wire 2 to 3% longer than the calculated length. For an inverted-V, it is recommended that we make the wire for an inverted-V antenna 4% to 5% longer. (Well, there goes the velocity factor!) Record the length of your dipole and raise it to the working height and check the SWR at several frequencies. Multiply the frequency at which the SWR was at minimum by the antenna length and divide the result by the desired frequency. What you get is the finished length; trim both ends equally to reach that length and you're done. Here are revised formulas: for a flat-top or sloper dipole, cut the wire using the formula **Length (ft) = 481 ÷ f (MHz)**, and, for an Inverted-V, **Length (ft) = 492 ÷ f (MHz)**. Then prune the antenna for resonance. Most dipoles require a little pruning to reach the desired resonant frequency. Here's a technique to speed the adjustment:

f (swr minimum) X antenna length ÷ desired f = finished length

Subtract the finished length from the original length and divide that number by 2. That gives the length by which each side of the dipole should be shortened to make the antenna resonant at the desired frequency: **(original length—finished length) ÷ 2 = amount to be pruned from each side.**

Let's say we want a **flat-top dipole for 7.255 MHz**. **The length = 481 ÷ 7.255 = 66.3 ft.** (66 ft. 3 1/2 in.). When the antenna is built and hoisted to 66 ft. (1/2 λ), we find the **lowest SWR occurs at 7.15 MHz.**

7.15 MHz X 66.3 ft. ÷ 7.255 MHz = 65.34 ft.
66.3 ft. – 65.34 ft. = 0.96 ft. or 11 1/2 in.

11.5 in. ÷ 2 = 5.75 in. Shorten each leg of the dipole by 5 3/4 in. and the antenna will be resonant.

Here are two on-line articles that I used as resources:

[http://www.gsl.net/ta1dx/amator/](http://www.gsl.net/ta1dx/amator/practical_dipole_antenna.htm)

[practical_dipole_antenna.htm](http://www.gsl.net/ta1dx/amator/practical_dipole_antenna.htm)

http://folk.uio.no/tomvs/la4ln/dipole_en.pdf

UPCOMING EVENTS & LOOKING AHEAD

Ongoing: WRRRC ARES net...19:30L, 147.015, positive offset and 100 Hz PL tone.

October 12: Regularly scheduled meeting of the WRRRC in the EMT room of Grace Cottage Hospital at 19:00L.

October 30: The monthly Board Meeting will be held at the House of Pizza in Brattleboro next to Staples. Gather at 11:30

November 6: RACES conference at the Vermont Police Academy in Pittsfield, VT.

November 9: Regularly scheduled meeting of the WRRRC in the EMT room of Grace Cottage Hospital at 19:00L.

November 27: There will be NO monthly Board meeting because of the Thanksgiving weekend. A word of advice—masticate thoroughly and don't overdo it.

December 5: CVARC VE session in the community room of the Sugar River Savings Bank in Claremont, NH. Time is 08:30 AM. For further information contact N1RX, Bruce—n1rx@arrl.net

Also check out WRRRC events on the club calendar at <http://www.westriverradio.org/> and scroll down the page a bit.

ARE YOU READY?

For what, you ask?

- The flood?
- A cataclysmic earthquake?
- Armageddon
- The price of gas to go down?
- Winning an E-bay bid on an Icom top of the line rig for \$19.95?

Well, actually, none of the above. Let me back up a bit. This month I accompanied my first wife into the depths of rural Jaffrey, NH to inventory a ham station that belonged to one of her friend's husbands who had recently become a SK. It was not a large station by any standard and didn't prove to be too much of a chore.

Brother Frank, WK1L, also had a sad experience when Fr. Bechard, W1DNM, a member of the Society of Saint Edmund, became a SK. A listing of his ham gear and test equipment will be attached with this newsletter. Frank is asking for a donation to the WRRRC for anything that you might want. Let Frank, WK1L, know if you'd like some of this gear.

The above events did get me to thinking.....

What will happen when and if my wife, the first one, of course, is staring at a room full of gear and has no idea at all of what it is worth or how to get rid of it? I don't want to be too morbid, but, friends, that day will eventually get here for all of us. And even if you're not married, someone, a child, sister, SO, or brother, or whatever will be stuck with the task of disposing, not just of you, but your treasured station.

Let's assume that you don't want to impose any more hardship than normal on your survivors. You can help accomplish this by creating an inventory of your station:

- ◆ Rig(s) - Base/mobile & HTs
- ◆ Tuners
- ◆ Computer(s)
- ◆ Antennas
- ◆ Rotator(s)
- ◆ Amplifier(s)
- ◆ Receipts and manuals that you have for all of the above
- ◆ Keys. Some of you will know what I'm talking about.
- ◆ Rig/PC interfaces
- ◆ Anything I've forgotten to mention

While in the process of making that inventory it would help to note the date purchased and how much each item cost. You do keep receipts, don't you? Or, at least, make a note in the front of the manual.

As a collector of quotes one of my most cherished ones came from the mouth of the author William Saroyan. If you've never read his book *The Human Comedy* I envy you because you still have that experience to look forward to.

On his death bed he is alleged to have said, "All my life I knew that this day would eventually come, but I kept thinking that they'd make an exception in my case." May I suggest to you that there will be no exceptions?



HIS OTHER HOBBY

This short write up will reveal one of Windham County's best kept secrets, namely, the Guilford Fair. In keeping alive a habit of many years my first wife and I were once more in attendance on September 5. Held each year on the Labor Day weekend, it has a lot going for it, to wit:

- Small crowds
- Small fair atmosphere
- Cheap to attend
- Lots of kids and their animals. Were you ever in 4H? I was.
- The greatest sheep shearing demonstration in the universe.
- A chance to see lots of people you know.

Speaking of which, guess who we ran into at the fair? KB1J, Rich, was right where we've seen him before, under the bingo tent, spinning the basket and calling out the numbers loud and clear - B3, etc. Let's all

plan on showing up in 2011 for some Bingo and harassment of the caller.

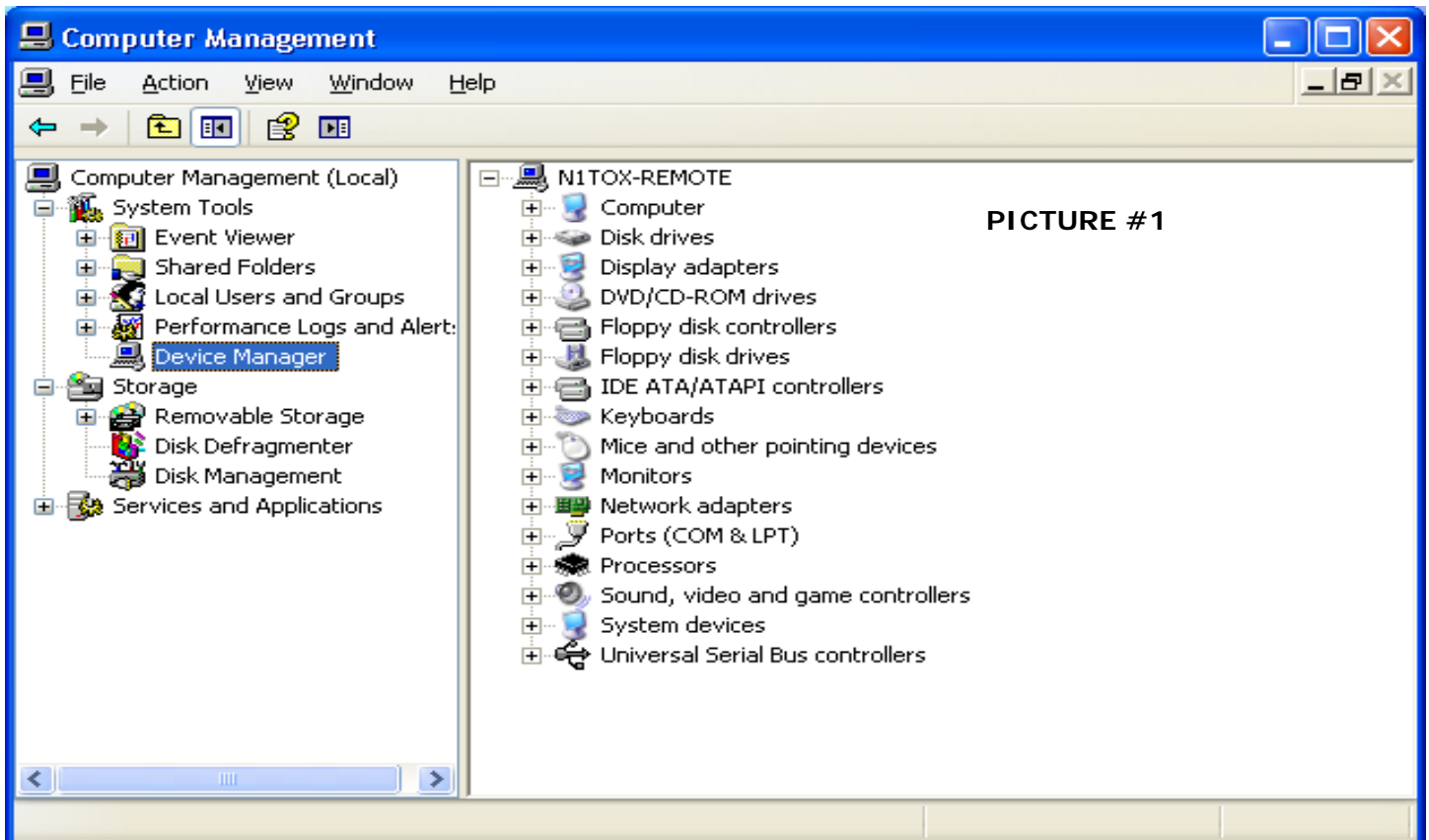
Every Ham radio operator should have at least one other hobby. What's yours? Mine is carrying a small digital camera with me wherever I go so that I'm always ready to capture WRRRC members doing non Ham things at the Guilford Fair.

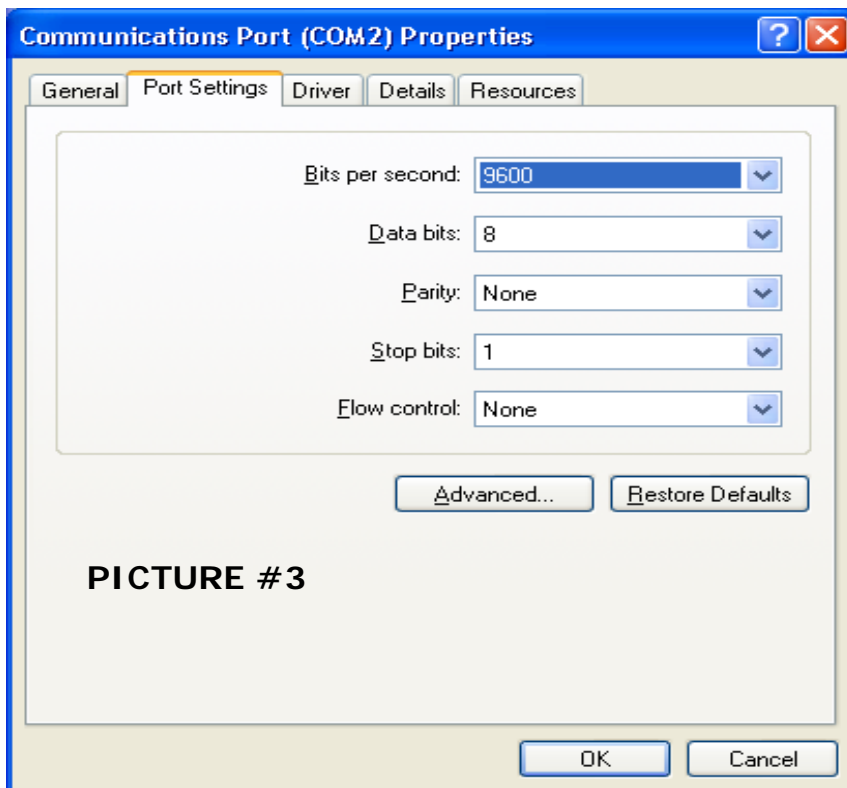
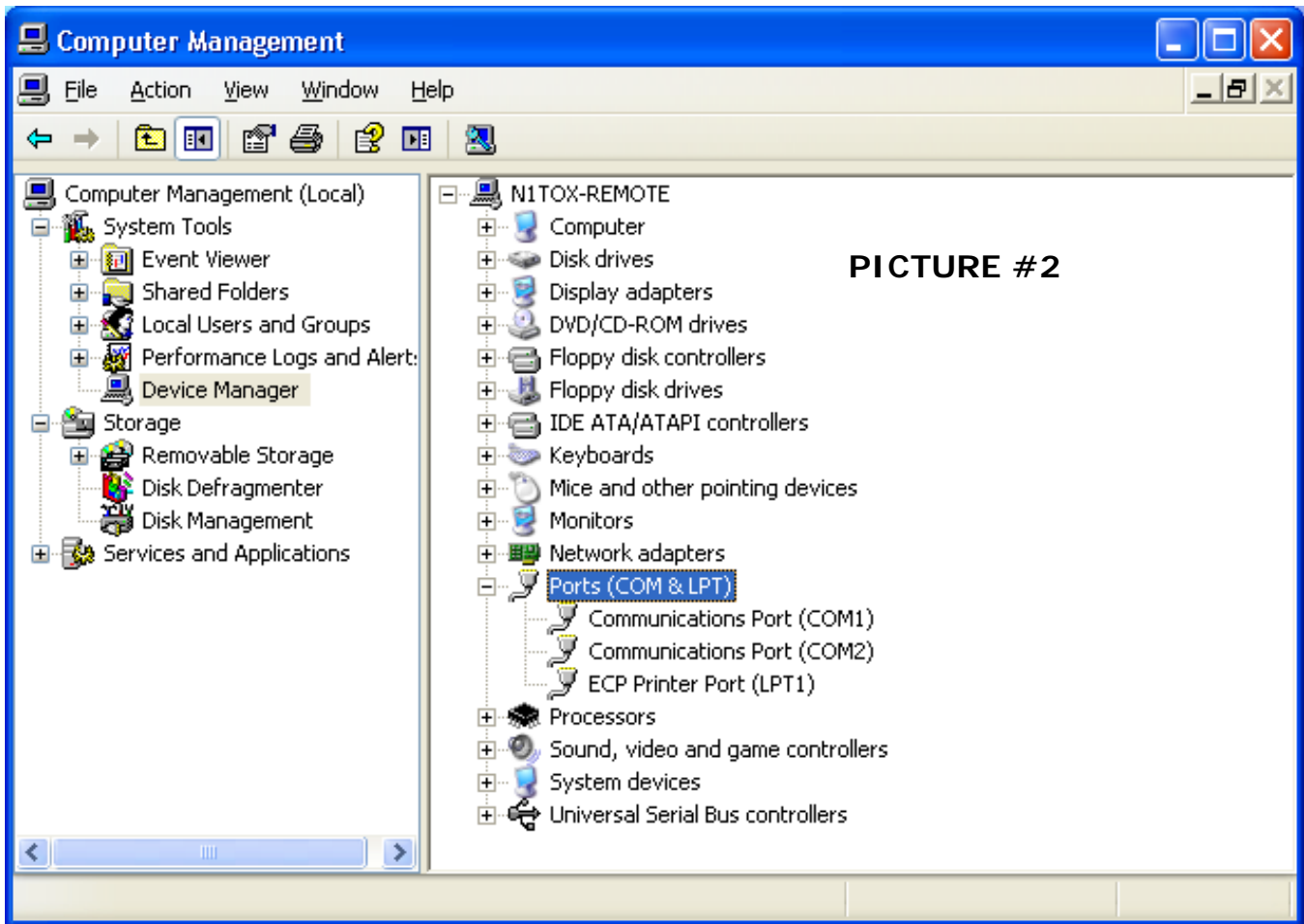


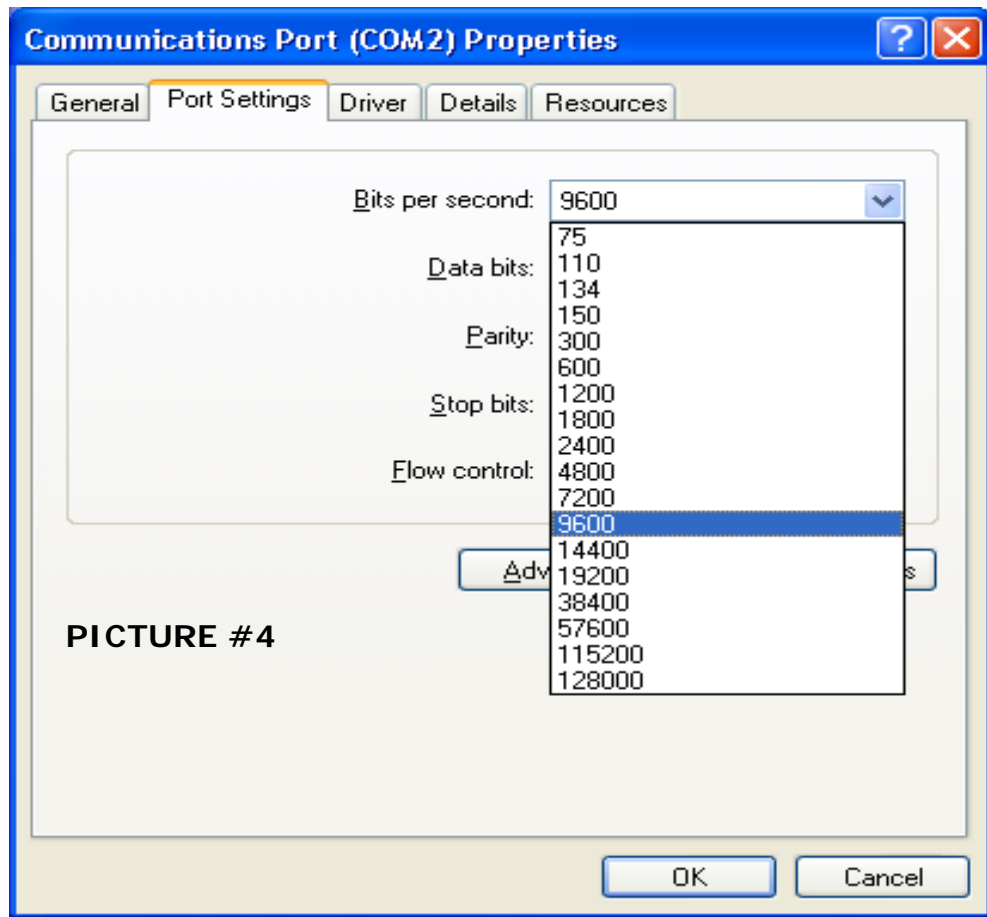
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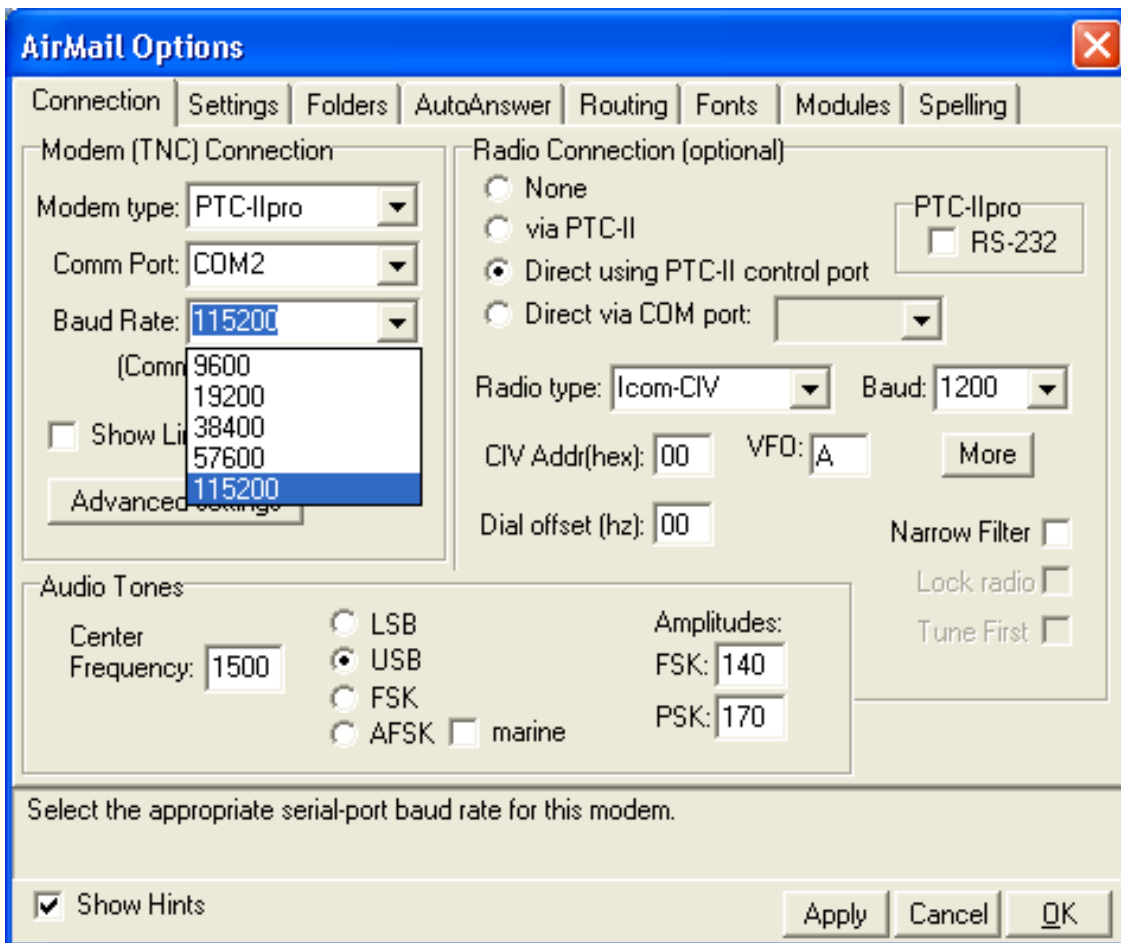
Below and on the next page are the pictures referenced by John, N1TOX in his front page write up.







PICTURE #4



PICTURE #5