

## More on MT-63

- [General MT63 Info](#)
- [Sound-card Interface](#)
- [MT63 software](#)
- [IZ8BLY MT63 Terminal Set-up](#)
- [Tuning the sound-card](#)
- [Transmit Tips](#)
- [Sound-card calibration](#)
- [Text Capture](#)
- [MT63 without wires](#)
- [Help for slower computers](#)
- [Back to Sound-Card Page](#)

**MT-63** is a Forward Error Correcting (FEC) mode for use with your transceiver and computer's sound card. MT63 seems to be the (unofficial) emerging sound-card mode of preference for MARS net traffic. It is considerably faster than AMTOR and clearly more reliable/error free, particularly under poor conditions. Region One did some rather extensive testing of this mode and has a presentation of the results on the national web page;  [<www.navymars.org/national/sound%20cards/default.htm >](http://www.navymars.org/national/sound%20cards/default.htm)

Some advantages include;

- [Hookup](#) is easy and inexpensive. (You can try MT63 with no interface at all. [Click Here](#) to see how.)
- MT 63, especially at 2000Hz, is much faster than AMTOR or Pactor FEC.
- Works very well under low power and poor conditions.
- Very resistant to interference. (We can actually send MT63

during a voice communication with solid copy of both the voice and MT63 by the receiving stations.)

- Tuning is not critical. Within 100Hz seems to work fine.
- IZ8BLY MT63 Freeware is available for [DOWNLOAD](#)

### Other Software Options for MT-63

[HR Deluxe](#)

[FLDIGI](#)

[MultiPSK](#)

**(Also, a trial version of MixW shareware can be downloaded from <http://www.mixw.net/>. MixW is a multi-featured software package, which includes MT63 and many other digital modes.)**

- Setup is easy. [Click Here](#) for step-by-step instructions.

Disadvantages include:

- This is NOT a linked (ARQ) mode. AMTOR or PACTOR is still needed for access to the MARS Data System (MDS).
- This program requires a computer with a Pentium 166MHz or faster processor. (If your computer is slower, [Click Here](#) for possible fix.
- MT63 requires fairly accurate sound-card clock speed. If you have trouble copying MT63, [click here](#) for steps to calibrate your soundcard.

[\(Top\)](#)

## Set-up Instructions for IZ8BLY MT63 Terminal

**STEP-BY-STEP** here's all you need to do;

1. Download the MT63 freeware from [DOWNLOAD](#)
2. Install the software. [Simply run the *.exe file* and it will install itself] [Click on ***File>Preferences*** and hit the ***General*** tab. Fill in your call sign]
3. Plug in your [interface](#) cable. (or see [Try MT63 With No Interface](#))
4. Open the MT63 program
5. Click on mode then set it to 1000Hz Bandwidth and Long interleave.
6. Set the receive volume of the soundcard to a comfortable listening level by clicking on.



See '[Tuning your Soundcard](#)' below for more details.

7. Make sure the '***Paper***' button is on to receive. When you see the received signal (on the right hand side of the screen), adjust your VFO to place it between the blue lines. (A little off does not seem to be a problem.) (If you are on the same frequency as the sending station, you should not have to tune at all.) (Your precise frequency offset is shown down at the bottom of the screen)
8. That's it. You will hear/see the signal well before the text starts printing, and it will continue to print after the signal stops. Don't worry, that's just the program doing its thing. (Sending stations should send a long enough idle to allow you to tune if needed.)

If you have a slower machine, or it may not work right. [Click here](#) for a possible remedy. (For me MixW worked on a P166 computer, but I had to apply this remedy to use the IZ8BLY software on it.)

If you want to get a feel for MT63, change mode to 1000Hz

bandwidth/long interleave and tune to 14109.5 USB. You may have to wait for a while, but sooner or later you should copy someone's CQ. If you are already set up to transmit PSK/AMTOR or other soundcard modes, go ahead and answer the CQ, or send your own. You'll enjoy this mode.

## **TRANSMIT TIPS**

There are various ways to transmit MT63 (using IZ8BLY MT63 Terminal).

- Key F12. (Key F12 again to end transmission at the end of the buffered text.
- Just begin typing in the TX window. If you want to type ahead for later transmission, type in an "\*" and then your text. Control-T sends the type-ahead text.
- Click on 'Transmit' on the tool bar and select item needed.

When sending a text file you should hit F12 to start transmitting an idle signal, and then go to 'Transmit'/'Send Text File' to select the file to be sent. By starting transmit first, the receiving stations will have time to synch to your signal. If you just click on the file and begin to send immediately you may not allow time enough for all stations to synchronize. This can cause the first part of the message to be missed.

First time users of soundcard digital programs seem to have the most difficulty with [Sound Card Settings](#). [Chick here for instructions on setting up your soundcard.](#)

**IZ8BLY' software has a concise well written help file which is well worth the time to read.**

[\(Top\)](#)

## MT63 Soundcard Calibration

If you are having difficulty copying MT63, your soundcard clock frequency may be slightly off. Don't shoot your computer, you can compensate for this by adjusting the MT63 sample rate. Here's how;

1. Download MMSSTV (an excellent freeware Slow Scan TV program) from <http://www.qsl.net/mmhamsoft/mmsstv/>
2. Install and open MMSSTV.
3. In MMSSTV, go to Option, Setup MMSSTV, Misc page, and click Adj button in the 'Clock' box.
4. Tune your radio to WWV.
5. Tune into the tick sound.
6. Continue listening to the sound for a while. You will have a vertical line.
7. Click the upper point of the line.
8. Click the lower point of the line.
9. You have now calibrated the MMSSTV software. (Please note that this did not change anything on the soundcard, only in the software.) Make a note of the frequency that is now displayed in the box.

10. Close MMSSTV and open the IZ8BLY MT63 Terminal.

11. Divide the frequency from #9 by 11,025 and applying the resulting factor to 8000 Hz.) (Example:  $11037/11025 = 1.00109$ .  $8000 \times 1.00109 = 8008.7$ )

12. Click on File/Preferences/General and then type this frequency into the 'Sample Rate' box.

By the way, you just added Slow Scan TV capability to your station. Open MMSSTV, tune your radio to 14230 and watch the images start rolling in. Who says there is no free lunch? If you want to know more about SSTV, start at this site....

<http://www.qsl.net/mmhamsoft/mmsstv/primer.htm> or [SSTV for Alabama NAVMARCORMARS](#)

[\(Top\)](#)

## Capturing Text

There are various ways to capture text received by the IZ8BLY MT63 Terminal.

- First, we recommend turning on the automatic capture option. This will allow you to capture and later retrieve all received and sent text for the session. This is accomplished by clicking on 'Receive' (at the top of the screen) then clicking on 'Log to File' in the drop down box.

This feature will remain on (checked) for future sessions until you turn it off. Each new session appends the new received and transmitted text to the file.

The file is named 'mt63log.txt' and is in the sub-folder where you loaded the program. It can be opened with Notepad or any text editor. Use normal Windows routines of copy and paste to place in another file which may, in turn, be edited and printed etc.

- In the receive window, you can highlight text you wish to copy, and then click on the camera icon to place in your system's clipboard, then paste it into another text file. Clicking on the icon to the right of the camera icon, pastes text from the clipboard to the TX buffer. Text will be "quoted" by adding a ">" character at beginning of each line, as is done in e-mails. This feature is useful for repeating what has written by another radio operator (e.g. in a net, when stations don't copy each other).

[\(Top\)](#)

### **Try MT63 With No Interface**

MT63 works well even with no interface at all. To Receive, just put your computer microphone in the vicinity of your radio speaker. To Transmit, just hold your radio microphone near (but far enough away so you get little or no ALC reading on your meter) your computer speaker. It takes a little practice, but it works quite well.

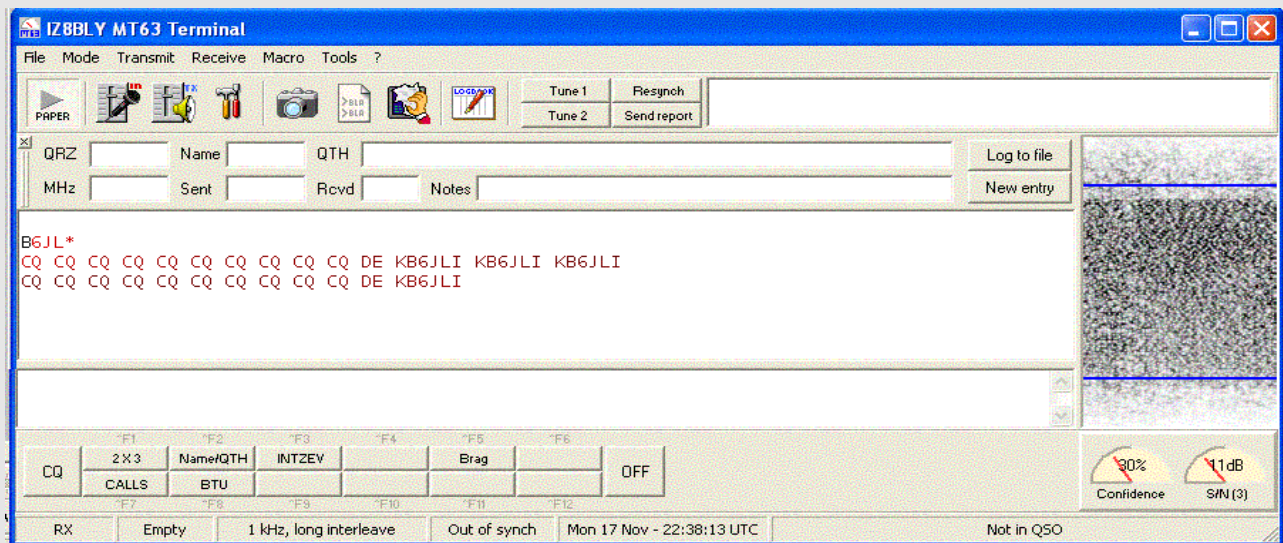
We have one member who's computer is away from his operating location. He has successfully tape recorded the received MT63 signal and played it back to his computer for perfect copy. He reverses the process to send a file.

[\(Top\)](#)

## **Tuning your sound Card**

**Setting Audio Levels:**

**Adjust the sound card audio INPUT level such that a nominal signal tuned in on the transceiver will be seen prominently in the program signal display window without overdriving the sound card input. (See MT63 Screen Shot for an example of how this might look.)**



**Use the MASTER control to adjust the sound to the PC speakers (if you use them) and then re-adjust the other levels as needed. Note that other windows applications you run on your PC that provide sound card adjustment controls may change your settings! You may have to re-adjust these levels. Generally, once these levels have been set, you will not need to change them.**

**Adjust the sound card audio OUTPUT level to the transceiver such that a small amount of ALC voltage is detected at the transceiver while transmitting into a proper antenna load (50 ohms) with the MIC Gain control at a nominal setting. After this adjustment, you can reduce the MIC gain control slightly to achieve full output power with no ALC deflection.**

by [Richard B. Griffin, N6BZ](#)

**You'll probably find that the transmitter output seems a little low, and you may want a higher transmit audio level - but don't overdo it, as linearity is highly important. There should be no ALC activity indicated (NONE AT ALL) and an**

**indicated output of 25W is entirely appropriate, as the average 100W rig won't provide linear performance with much more power. Remember that MT63 consists of 64 sinewave signals all at once, (very high peak to average ratio) and linearity is paramount. Remember that any station you can work with 100W of RTTY can be worked with 1W of MT63 (and probably still be better copy!)**

[By Murry Greenwood - ZL1BPU](#)

**Several of the software packages help files have good detailed instructions on sound card tuning. There are many approaches to this, as you will see, but just remember that once you have found settings that work for you they should work with any of the programs.**

**Speech processors should be OFF.**

Also see *The Ins and Outs of a Sound Card* by K1UHF - October 2003 QST

---

**Here's a little utility program that's a "MUST HAVE"! It allows you to store and retrieve your sound card settings, avoiding the process of readjusting each time another program changes them. [QuickMix](#) is freeware and can be downloaded from [here](#).**

**[\(Top\)](#)**

### **For Slower Computers:**

If your computer is too slow to run MT63 Terminal please open the file IZ8BLY.INI and add/modify the following lines:

BlockLenMultiplier=1

WaterfallEnabled=on

First try with values up to 20 of the "BlockLenMultiplier", this will make the waterfall flicker more but is less CPU intensive. If still does not work try "WaterfallEnabled=off" which will completely skip the plot of the waterfall display. You can still use the "offset" information reported on the status bar for a perfect tuning.

In my own experience, IZ8BLY's software would run on my P166 laptop only with the above mods. MixW was OK with no modifications.

As you will not have a waterfall to view, you can go to another soundcard program that works on your computer, such as Digipan or any PSK program, tune to 14070.0KHz, and adjust your soundcard for PSK31. Remember your settings or save them using [QuickMix](#). These settings will work fine for MT63.

[\(Top\)](#)