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RIGblaster Plug & Play **Owner's Manual**

Revision 1.5
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Thank for purchasing a RIGblaster Plug & Play. The Plug & Play is designed to be absolutely as easy as possible to set up while still providing full compatibility with each and every ham radio sound card software program.

Unlike the other RIGblasters, the Plug & Play is designed to work only through a radio's rear panel data jack or auxiliary connector. This it makes it easy to plug in but there are trade offs due to the design of various radio manufacturer's data and auxiliary jacks.

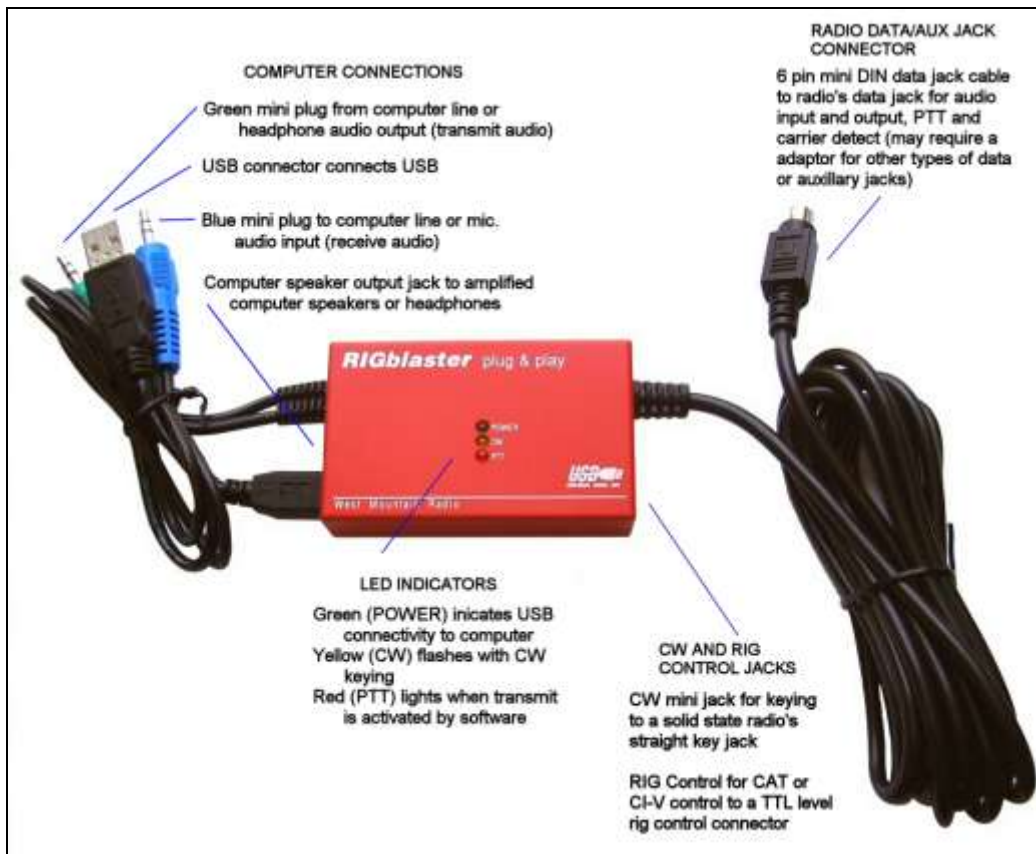
If your data jack was designed to work the way you might want, you will be pleased with the operation of the RIGblaster Plug & Play. West Mountain Radio did not design the data jack on your radio, therefore we do not control how that system operates. We only take sound in and out of the jack and control PTT through the jack.

Some jacks support operation on all modes and on all the bands that the radio may provide, some do not. Some jacks may mute the microphone whenever PTT is activated through the jack or they may leave the mic hot when using the jack. Your jack may not function at all unless you turn it on from the radio's menus or controls. Other RIGblasters connect through the mic jack so we can control switching between the mic and a computer. The RIGblaster Plug & Play cannot. If your radio's data jack does not function the way you wish a RIGblaster plus or pro is the solution.

We are sure that if your radio's rear panel jack works the way you wish, the RIGblaster Plug & Play will provide many hours of amateur radio enjoyment.

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RIGblaster Plug & Play connections and indicators

SOUND CARD OPERATION, INSTALLATION AND SETUP

(READ CAREFULLY; PROCEED IN ORDER, STEP BY STEP!)

These instructions only explain how to use and setup the RIGblaster. Refer to the manual for your radio and read the help files for your computer or third party ham radio software for the other necessary information.

Step 1: Windows[®] plug and play installation

Plug the supplied USB cable between the RIGblaster and a USB socket on your computer.

A Windows[®] Plug & Play wizard should pop up in a few seconds. Let the wizard install the software automatically and search for the best driver files. It should find the files on the Microsoft[®] driver update server if your computer is on-line and if not the wizard should find the drivers on the RIGblaster & RIGtalk CD that is in your CD drive.

Once the drivers are completely installed by Windows[®], the green "POWER" LED on the RIGblaster will illuminate.

The driver installation is complete if Windows[®] indicates "Your Hardware is Ready to Use" and the RIGblaster green LED comes on. This will not happen if you have stopped, cancelled or aborted the installation at any point for any reason.




Continue to the next step only if the driver installation completed correctly. See tip below.



Tip: To confirm that the driver installation has completed correctly first check that you have the green RIGblaster LED lit. You may then also check the Windows[®] device manager. To do this, right click "My Computer" and then left click "Properties". Click "Hardware" then "Device manager". Scroll down and click the "+" symbol next to "Universal Serial Bus controllers" and also click + for "Ports (COM and LPT)". You MUST see the WMR RIGblaster under both these categories of installed hardware. If not the RIGblaster installation was not completed successfully.

Tip: While you are looking at "Ports (COM and LPT)" note which COM port number was assigned to your RIGblaster by Windows[®]. Later when you set up your ham radio software you will need to know the COM port number for software configuration.

Step 2: Connect the computer audio cables and radio data/aux jack

Plug the RIGblaster's mini plug stereo sound card audio input and output cables into your computer's sound connectors. Usually the sound card jacks on the back of a desktop computer will be color coded correctly, so just match the colors.

If you have a desktop computer with rear panel jacks that are not color coded, plug the green RIGblaster plug into the sound card line output . Plug the blue RIGblaster plug into the sound card line input  (you may use the mic input  but it will be more difficult to adjust and may not work as well).

If you have a laptop computer, or you wish to use the front panel connectors on a desktop computer, they will not be color-coded. Plug the RIGblaster's green plug into the headphone output  and plug the RIGblaster's blue plug into the mic input.  Note it is preferable to use a line input if available.

Plug the RIGblaster's data jack cable into the correct jack of your radio. You may need to use a RIGblaster data/aux jack adaptors, if required with your radio. The Plug & Play's standard 6-pin mini-DIN plug will only work with certain radios. For example it will work with an Icom IC746 data jack but not with an IC706 data jack.

You should connect amplified (wall supplied power) computer speakers to the RIGblaster Plug & Play's "COMPUTER" "spkr" jack. Normally you must use amplified speakers so as not to load down the sound card output! If you do not have computer speakers you may use 40 ohm, or higher, computer headphones. Speakers or headphones are needed to be able to hear the computer and to tell if transmit or receive audio is present!

Continue to the next step only if all the connections were identified and connected properly.

Step 3: Receiving

From the RIGblaster CD's "Software Collection", or from a web download, install ham radio sound card software. We recommend a PSK31 program to start with, such as WinPSK.

From our CD, select "Software Collection" then select PSK31. From the PSK31 program list select and install "WinPSK", assuming you have a Windows® PC. This is an easy program and mode to use and there is a great deal of activity on the air. Other modes and programs are usually more difficult, especially, Packet, RTTY and the EchoLink® system.

Tip: From our CD select "Operating Information" and listen to the sound of PSK31 from the recorded sounds. Use the frequency table for frequencies to operate on the various modes.

Besides tuning in signals with your radio you will have tune in with the software. Read the program's help files to learn how to tune in and decode signals.

You must select and turn up the mic or line input (whichever you are using) of your sound card using the Windows® sound card "Recording Control Panel".

Tip: If you do not know how to access your "Recording Control Panel" read your Windows help and/or the Oct 2003 QST article entitled "The In's and Out's of a Sound Card". The article is available on the West Mountain Radio web page and is linked from the RIGblaster CD ROM.

Adjust your sound card input to achieve the proper receive audio signal as seen on the software's waterfall, or similar, display. To decode the signals that you are now feeding to the software, remember to consult the software's help documentation to tune in and decode signals.

Continue to the next step only if you were able to receive and decode signals correctly.

Step 4: Check transmit audio tones

Check that your software will generate transmit audio tones. Make sure that your radio is off or into a dummy load and put the software in transmit. You should hear transmit audio sound (tones) coming from the computer speakers or headphones that are connected to the RIGblaster. If you do not hear sound, check that the sound card's "Volume Control" panel has the "Volume" and "Wave" sliders up half way or more. If it is too loud from your speakers, turn down the volume on the speakers, NOT the sound card.

This is an important test of the computer and software operation. Weak or no transmit sound will make it impossible to transmit!

Tip: If you do not know how to access your "Volume Control" panel read your Windows help and/or the article in the Oct 2003 QST, entitled "The In's and Out's of a Sound Card".

Continue to the next step only after you have confirmed that you can hear transmit audio tones.

Step 5: PTT Setup

If you have not previously done so, right click the “My Computer” icon on your desktop and then left click “Properties”. Click “Hardware” then “Device manager”. Scroll down and click the + next to “Ports (COM and LPT)”. Check which COM port number was assigned to your RIGblaster by Windows®. Remember this number, you will need it to set up every ham radio sound card program.

No matter which program you are using you must setup and configure the program for PTT operation by “telling” it which COM port number that Windows® assigned to the RIGblaster.

If the program gives you a choice of using RTS or DTR for PTT: select RTS. DTR should only be used for CW keying (see CW setup later in this manual).

Turn on your radio and enable, activate, or turn on your radio’s data or aux jack, if necessary. The jack on the back of your radio may normally be disabled. If so, you must refer to your radio’s manual to enable the jack.

Be sure to have your radio on and set for data/aux jack operation. Then test PTT operation by activating transmit with the software. Set the mode to USB, assuming you are using a PSK31 program. The radio should be connected to a dummy load as you may transmit a signal upon PTT activation. The RIGblaster’s red PTT indicator should come on and your radio should indicate PTT (transmit) activation. The radio may or may not indicate power output depending on how the sound card is set, see the next section.

Continue to the next step only after you have confirmed that you have PTT activation on both the RIGblaster and the radio.

Step 6: Set the transmit audio to your radio

Check the manual for your radio to see if the microphone is disabled when the rear panel data/aux jack is used. If your mic is NOT disabled you should disconnect the mic or turn down the mic gain. If the radio’s data/aux jack is controlled by the mic gain you will have to disconnect the mic and leave the mic gain set to a normal level.

With the radio’s RF power adjustment (drive) control set to maximum power, activate the software transmit. You should hear transmit tones coming from your computer speakers or headphones. Open your sound card “Volume Control” panel and adjust the sound card master (left hand) “Volume” slider and the “Wave”, slider up or down together until your radio indicates just less than full power output.

Note: Driving to full power, and activating ALC, especially with the radio’s power control turned down will result in a distorted signal that is difficult or impossible to copy. Always set the audio drive from the computer to less than full power even though the radio’s power/drive control is set to maximum.

Tip: Once you have the audio transmit power set correctly you may then adjust your computer speaker volume knob for a comfortable level. You may find these sound adjustments are sensitive depending on your sound card and/or radio. Once you have arrived at a correct setting you may use either turn down sound card or the transmit power knob to further reduce the power. Do not turn down the radio's power setting and turn up the sound card.

Step 7: Work lots of DX and have fun

You are on the air!

CW OPERATION, INSTALLATION AND SETUP

(READ CAREFULLY; PROCEED IN ORDER, STEP BY STEP!)

Step 1a: Connect CW keying cable

You may have purchased a CW cable from West Mountain radio or you may use any shielded stereo and/or mono 1/8" mini phone plug to 1/8" or 1/4" phone plug (depending on your radio's CW jack) cable,

Connect the cable from the RIGblaster's "RADIO" "CW OUT" jack to the radio's straight key jack. A paddle input jack will NOT work! You must use a straight key jack.

Continue to the next step only if you have connected the CW cable to a straight key jack.

Step 2a: Configure the computer and radio for CW operation

Obviously you must install and use CW software and you must set the radio to the CW mode of operation. After installing CW software set it up as outlined in step 6 above. Make sure that you have configured the software for the correct COM port and it is configured for CW keying on DTR.

NOTE: If your data/aux jack does not support PTT control when the radio is in the CW mode you will have to set the radio for break-in or semi-break-in CW operation. This works great, exactly how you would want a key to work.

Test CW operation by transmitting with the CW software. The radio should transmit CW and the RIGblaster's yellow CW keying LED indicator should flash.

Step 3a: Work lots of DX and have fun

You are on the air with CW. You can now type CW with your keyboard! Keyboard CW operation is great for CW contesting but nothing beats a real key for regular CW QSOs.

RIG CONTROL CAT/CIV, INSTALLATION AND SETUP

(READ CAREFULLY; PROCEED IN ORDER, STEP BY STEP!)

Step 1b: Connecting a CAT or CIV interface

The RIGblaster Plug & Play has a built in USB to Serial converter with TTL (5 volt logic) output. It may be used with any radio that requires an RS232 to TTL level converter. This includes most Icom, Ten Tec and certain Yaesu radios. If your radio has a DB9 RS232 control jack on the back, you DO NOT need nor can you use the RIG CONTROL interface inside the RIGblaster Plug & Play.

You may order a pre-wired cable from West Mountain Radio for rig control via the RIGblaster Plug & Play's interface. If you wish to make your own cable you may look on our support page for instructions.

Assuming you have a correctly wired cable connect it between the RIGblaster's "RADIO" "RIG CONTROL" jack and the radio's jack.

Caution: When interfacing electronics between various products that are connected to the outside world you must be careful to avoid damage due to ground loops. A computer with a case grounded through its line cord and a radio grounded to an antenna system can have tremendous AC leakage between these two grounds. During a thunderstorm with a near by lightning strike, not a direct hit, several thousand volts can be induced into the loop antenna formed by this type of ground loop. It is important that every piece of equipment in your ham station is connected with a star ground system to a SINGLE POINT GROUND (NO LOOPS).

Step 2b: Setting up the radio for rig control

Most radios have settings for the rig control communications interface, which may include baud rate, parity, stop bits and CI-V addresses.

It is best to double check that the radio has all of these are set to the default or standard settings. Consult the owner's manual for your radio to be sure it is set correctly to the defaults and make a note of what these settings are.

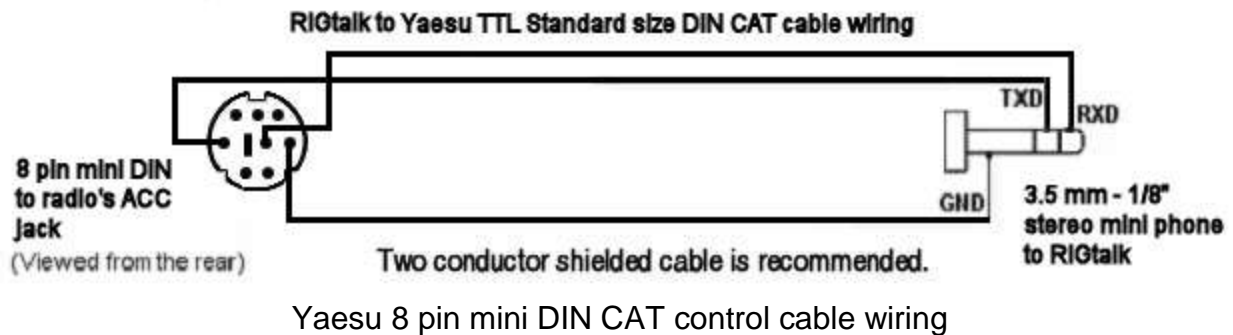
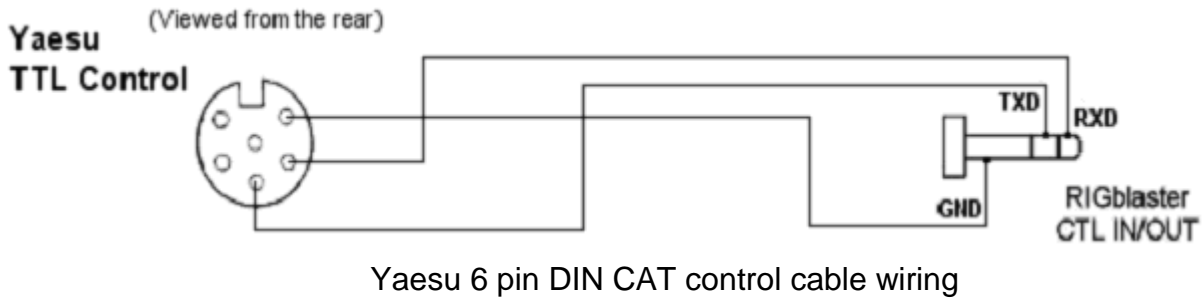
Step 3b: Setting up rig control software for rig control

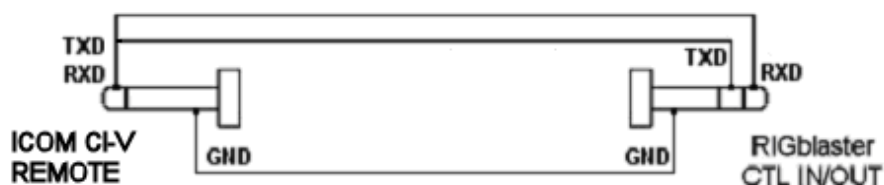
Since radios have settings for the rig control communications it makes sense that the software **MUST** be set to match those settings **EXACTLY**. Most rig control programs will use the radio default settings when you select the exact model radio. Be aware, for example, that if you have an IC706MKIIG and you set your software to an IC706MKII (NO "G") the rig control will not work, at all! This is true of other series of radio models also.

Regardless of which rig control program you have installed, you will have to "tell" the program the COM port number for the RIGblaster, and you will have to make an exact match for the communications settings.

Any one item set incorrectly will totally prevent rig control from working! You must have every communication setting in the software exactly match the settings for the radio and in the radio.

With rig control set up and modern logging software you will never have to type your frequency into your computer log again and you can jump to a DX cluster spot instantly.





Icom or Ten Tec CI-V remote cable wiring

TROUBLESHOOTING

If you have installed the RIGblaster step by step from this manual you need not go back to a previous step. The problem is isolated to the step that you found a problem on.

If you contact us for support please be sure you know which step of this manual you are stuck on before calling or writing.

Most RIGblaster Plug & Play problems usually have nothing to do with the RIGblaster or how it is connected. They are almost always software related and can only be fixed with a mouse. Make sure you have your sound card set properly and that you understand the operation of the over forty virtual controls. Also be sure that you have the COM port settings in your ham radio program correct. If you cannot get a new program to work try another program, there are over 100 ham radio programs.

TYPICAL PROBLEMS:

- 1) The software has no receive signal displayed because the sound card input is not turned on or up. Use the Windows® sound card "Recording Control" panel not the playback "Volume Control" panel, duplex sound cards cannot be adjusted for receive from the Windows® playback "Volume Control" panel.
- 2) The ham radio software is not set to the correct serial port for PTT control. All programs must be configured to control PTT, they will not work unless you do this.
- 3) The sound card wave and volume outputs are set too low because the computer speakers are too loud. Turn down or turn off your computer speakers and turn your sound card up.
- 4) The RF power / Drive control on the radio is not set to maximum causing the computer not to have enough audio to drive the radio even to half output.
- 5) Low impedance headphones or speakers are loading down the RIGblaster's audio output from the sound card. Disconnect them or replace them with computer headphones or speakers.

If you would like further help, see our support page, for the latest help and suggestions:
<http://www.westmountainradio.com/supportno.htm>

Please understand that the RIGblaster will not work if the software and computer do not work. Make sure that you have your software operating properly and your sound card adjusted properly if you expect the RIGblaster to work. You must read the documentation that comes with the software! Software instructions are not included in this manual. We did not write the software and we cannot properly support the software. The best thing to do if you have software problems is to try a different software package. If you have audio problems with two or more sound card programs you may have a problem with your Windows sound card software installation, not your sound card hardware.

For additional support information go to:
<http://www.westmountainradio.com/supportpnp.htm>

NOTE: If you contact us for support we must have the step number of this manual that you ran into a problem on. We may not be able to help you without this information.

It is best to call us while you are at your station rather than try to communicate with us by email. Our support desk is available 10 AM to 5 PM Eastern Time Zone, Monday through Friday.

RIGblaster Plug & Play Warranty

RIGblaster Plug & Play is warranted against failure due to defects in workmanship or materials for one year after the date of purchase from West Mountain Radio. Warranty does not cover damage caused by abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation, alteration, lightning, or other incidence of excessive voltage or current. If failure occurs within this period, return the *RIGblaster Plug & Play* or accessory to West Mountain Radio at your shipping expense. The device or accessory will be repaired or replaced, at our option, without charge, and returned to you at our shipping expense. Repaired or replaced items are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the *RIGblaster Plug & Play* or accessory made after the expiration of the warranty period.

The Compact Disc of Radio Amateur Software Collection is excluded from any and all warranties by West Mountain Radio. Note that the programs have been provided as shareware or freeware by the software authors to the amateur radio community for their use and enjoyment. The CD-ROM is to be used at your own risk.

West Mountain Radio shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss, or damage caused directly or indirectly by use or performance of the products or arising out of any breach of this warranty, including, but not limited to, any damages resulting from inconvenience, loss of time, data, property, revenue, or profit, or any indirect, special incidental, or consequential damages, even if West Mountain Radio has been advised of such damages.

Except as provided herein, West Mountain Radio makes no express warranties and any implied warranties, including fitness for a particular purpose, are limited in duration to the stated duration provided herein.



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