RIGblaster Blue
with Bluetooth® Wireless Technology

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Introduction to the RIGblaster Blue

We understand you have a choice when buying Amateur Radio products and we would like to take a moment to thank you for choosing West Mountain Radio.

We think the RIGblaster Blue is a revolutionary and innovative product which integrates the flexibility and convenience of Bluetooth® with a solid and trusted platform of Amateur Radio interfaces.   Whether you are interested in digital modes or hands-free phone operation, the RIG-blaster Blue has been designed to give you the most flexible approach to leveraging Bluetooth® technology for use in Amateur Radio. It has many outstanding features which will at the same time enhance and simplify your operating.

RIGblaster Blue Features

- Pair with a traditional PC*, smart phone or tablet for untethered digital mode operating.
- Pair with a Bluetooth® headset for untethered hands-free phone.
- Provides a sound device and serial port to Windows, Linux or Mac which can be used with existing Amateur Radio software.
- Audio level controls (both RX & TX) on the front panel.
- Pre-wired Instant Setup Connectors – no more complex jumper wiring!
- TTL rig-control (CAT/CI-V) with RS-232C externalization.*
- VOX push-to-talk with adjustable delay.
- Separate audio jacks for received and transmitted audio.
- Headset discovery and audio level adjustment without the use of a computer.
- Foot-switch PTT input.
- TX inhibit switch (listen-only mode).
- Fully isolated transmit and receive audio. Bluetooth® connection gives extra degree of isolation.

Please read through this manual first (especially the Bluetooth® installation section) and you will find the RIGblaster Blue will provide you with many years of reliable service and enjoyment.

* Rig control is only available on certain transceivers.

About The Supplied Flash Drive

The supplied flash drive is mostly a collection of various digital-mode software programs for use with sound card interfaces such as the RIG-blaster Blue. The programs contained on the disc were not written by West Mountain Radio. Some are completely free while others are com-mercial. We have however tested our products on the majority of them. Amateur radio software is constantly evolving and we encourage you to visit the various authors' websites to check for updates for software you wish to use.

We maintain a list of website addresses for the software we place onto the flash drive (as best we can) and you can access this page from http://www.westmountainradio.com/links

The necessary drivers for the Bluetooth 4.0 Dongle Micro Wireless Adapter for PC that may be purchased from West Mountain Radio can be found on the RIGblaster flash drive, online, or on the flash drive supplied with the dongle.

Introduction To Digital Mode Operating

Most modern digital-modes can be operated on the RIGblaster Blue. Some of these may already be familiar to you. For instance PSK31, JT65 & RTTY are very commonly heard on the bands. If you have the abil-ity try tuning to 14.070MHz (usb) and chances are you will hear multiple PSK31 QSOs taking place.

Moving up to 14.073MHz you may hear the tones of the MFSK modes such as Olivia, Contestia, Thor and MFSK-16. You will also find the "cricket-like" chirping of Feld Hell. Tune to 14.076MHz and you will hear JT65 signals. Going up another 10KHz lands you right in a very popular RTTY segment.

Moving up through 14.100MHz you should hear packet networks, Win-MOR and the wider band digital modes signals such as MT63, ALE and Pactor.

14.230MHz (usb) yields a very active SSTV (Slow Scan TV) frequency. This is traditional analog SSTV. Another 3KHz up (14.233MHz) is the main watering-hole of digital SSTV enthusiasts.
14.236MHz is currently very popular with the digital voice experimenters using FreeDV software.
It is worth noting there are some modes in use which cannot be used with the RIGblaster Blue (nor any "sound-card" based interface). These

are the arq modes Pactor, G-TOR, Amtor and Clover. These modes require very precise timing cycles which Windows is unable to deliver. Amtor, G-TOR and Clover are very seldom used these days but Pactor is commonly employed for mail messaging using the Winlink 2000 system.

In practice this is not much of a limitation as the RMS Express software (using WinMOR) makes mail/e-mail messaging simple using the RIG-blaster Blue.

Many digital-modes (such as PSK31) will work far down into the noise level. It is not uncommon to see copy on your screen even when you have difficulty hearing the signal on your speaker.

This also implies you do not need to run high power levels during normal conditions and for most digital-modes you will find 20-40W ample. In fact, running close to maximum output on your radio is self-defeating. In this case you stand a very good chance of having a spread-out badly distorted signal (think QRM!) and you may even damage your rig on long overs as many transceivers are not designed to run high duty-cycle transmissions for extended periods.

At the back of this manual you will find a simple chart of digital-modes, software and frequencies to try. These are just suggestions but will help you get started navigating the world of HF digital-modes.

Package Contents

The following is a list of the contents for the RIGblaster Blue. Verify that all the following items were included:
   1 — RIGblaster Blue Unit
        Note: Cover is loose so you may easily remove it to
        install jumpers)
   1 — Accessory ZipLock® bag. Contains the following:
        8 — Single pin jumper wires
        5 — Mini blue shunts
        4 — #6 black sheet metal screws (for cover)
        4 — Adhesive pads and Rubber Feet
   1 — Baggie of Instant Setup Connectors
   1 — Microphone cable (RJ-45 to 8 pin screw-on)
   1 — 1/8 inch stereo mini plug cable
   1 — RIGblaster & RIGtalk DVD
   1 — 9V DC Adapter
   1 — Bluetooth® Wireless Antenna
   1 — Owner's manual

Controls, Connections And Features
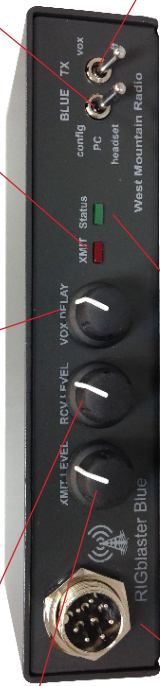
Bluetooth Mode Switch:
Top: "Config " - Allows for software configuration from a PC and Blue unit into discoverable mode
Middle: "PC" - Allows for pairing with PC, smartphone or tablet
Botton: "Headset" - Allows for pairing with a Bluetooth headset
Toggling: See manual section on "Pairing to a headset without a PC"

TX Mode Switch:
Top: "VOX" - VOX PTT is enabled. A TX signal (from a paired device) will cause the radio to transmit
Bottom: "OFF" - Transmit inhibit (listen-only mode)

XMIT LED
(lights when PTT is active)

Receive audio level: increase/decrease TX audio (e.g. waterfall brightness, headset receive audio)

Transmit audio level: increase/ decrease TX audio (drive)

Microphone input for 8 pin round mic (Mic output with RJ45 connector radio)

VOX Delay: increases/decrease PTT release time

Bluetooth status LED
Solid: Bluetooth is paired and connected with computer, tablet, smartphone or headset
Slow Blink (1Hz): Bluetooth not connected
Short Flash followed by long delay (2 sec): Discovering and automatically pairing with a headset (when no PC is available)

SPKR OUT: Connect speaker for RX audio monitoring
(only if LINE IN is connected to the external speaker jack of transceiver)

PTT in/out RCA Connector (used with footswitch or other PTT switch or connection.

RJ-45 Microphone Jack

LINE IN: connects to RX audio from transceiver

CAT RIG Control at RS232 Levels

CTL IN/OUT rig control jack - for connection to a radio with TTL CAT

Bluetooth Antenna Jack

Audio Monitor Jack

DC Power Jack
(Accepts 7-20VDC @ 200 mA center positive. Connection to a RIGrunner available with SKU#58257-1069. 2.1mm plug, center positive.)

Choosing The Correct ISC

Configuring the RIGblaster Blue with a transceiver is very simple by use of the Instant Setup Connectors (ISC). These take the place of jumper wiring for many common radios. They can be regarded as a "personality module" for a particular radio.

Each ISC is respectively identified: Icom Round Metal, Icom RJ45 Modular, Yaesu Round Metal, Yaesu Round Metal – Isolated, Yaesu RJ45 Modular, Kenwood Round Metal and Kenwood RJ45 Modular. Depending on the transceiver in use, one of these ISCs will need to be installed inside the RIGblaster Blue before use. They take care of all the microphone connection wiring that previously was done by installing jumper wires and shunts. If using a non-standard microphone wiring, jumper wires and blue shunts have been provided in the package contents. The ISCs cover most popular brands and models of radios.

Observe the microphone connector on the radio. Typically it will be one of two types – either an 8-pin round metal connector or an RJ- 45 "square" modular jack. The RIGblaster Blue is designed to interface the transceiver through the microphone jack. Be sure to select the ISC that matches the connector on the radio. Refer to the back of this manual for a chart of common radios and the correct ISC to use.

Installing The ISC

Locate the correct ISC for the radio and install it on the ISC header (2 rows of 13 pins) located inside the RIGblaster Blue ensuring pin 1 on the ISC matches pin 1 on the header.

Some radios use a 4-pin round microphone connector, these include older Kenwood and Yaesu transceivers and some Ten-Tec radios. An adapter will be needed to use the RIGblaster Blue with these radios. The correct adapter is SKU 58136-1000 and available online for purchase.
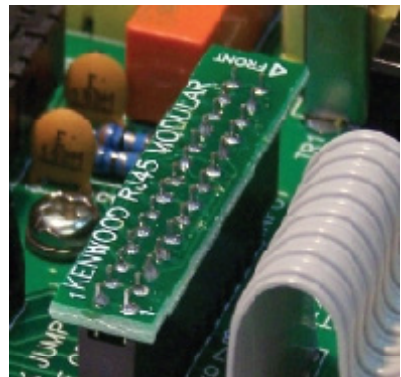

Figure shows installation of a Kenwood RJ45 Modular ISC inside the RIGblaster Blue. Notice the orientation of the ISC and the location of pin 1.

Radios with 6 pin microphone connectors such as the Yaesu FT-100D

will require our optional "Yaesu Modular 6" cable (SKU 58118-982). This cable comes with a jumper diagram and a resistor for correct operation.

Bluetooth® Wireless Technology

If you are planning on using the RIGblaster Blue on a Windows PC, then you will require a USB Bluetooth® Adapter if your computer does not already have one. Suitable adapters (SKU #58140-1505) are available from West Mountain Radio.

Follow the Bluetooth® Adapter installation instructions. Note there are no specific RIGblaster Blue drivers required. We recommend you fully install the Bluetooth® Protocol Stack (The flash drive software) that accompanies your Bluetooth® Adapter.
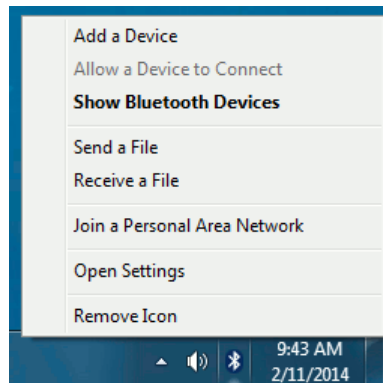
Your installation may differ slightly from what's documented below due to different versions of Windows or different versions of Bluetooth® stack. For definitive directions refer to the manual that came with your PC or Bluetooth® adapter.

Pairing RIGblaster Blue to your Windows PC with a Broadcom or Microsoft stack

The Microsoft and Broadcom stack work and operate very similar. The differences between them will be detailed during the documentation of the pairing process.

1. Make sure the 'BLUE' switch on the RIGblaster Blue is in the 'Config' position. The RIGblaster Blue will not be discoverable if it is not in this position.
2. On the PC, open the Bluetooth® Devices window. You should be able to get this by double click-ing on the Bluetooth® icon in the system tray on the bottom right of Windows (near the clock).

   If you do not have a Bluetooth® icon in your status bar, you can open Bluetooth® Devices from the Windows Control panel. To get to the Windows Control panel, press the Start button and select 'Control Panel' from the start menu.
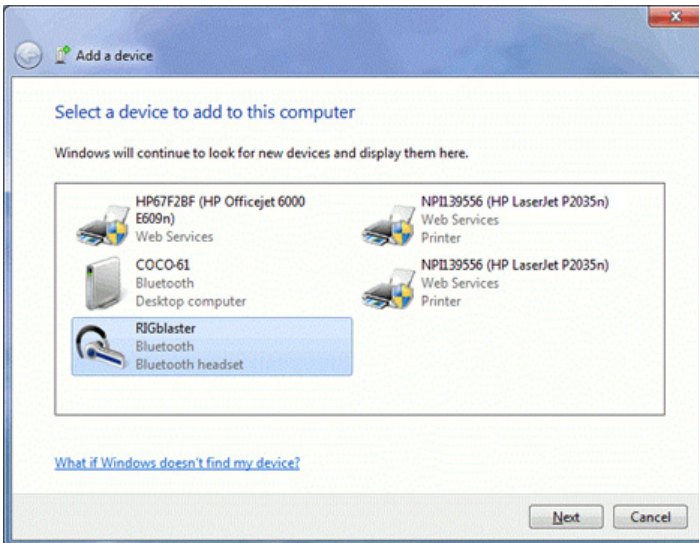
On Windows 8, best way to get the control panel is to type "control
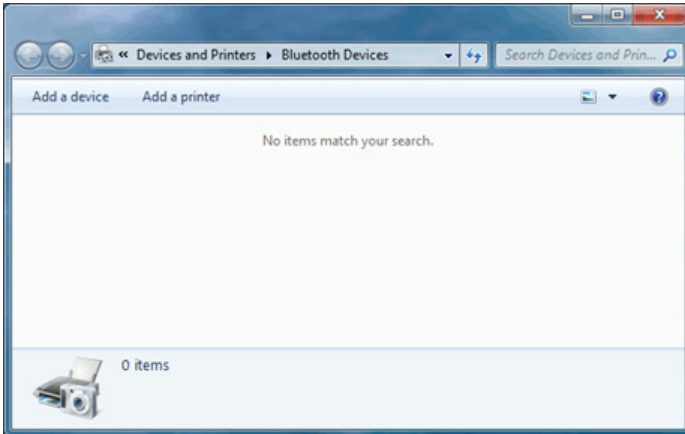
panel" from the main tile Start screen.

3. On the PC's Bluetooth® Devices window, press the 'Add Device' but-

ton.

4. The PC will search for and discoverable Bluetooth® devices. Eventu-

ally it should find the RIGblaster. Highlight/select the RIGblaster and press the 'Next' button.
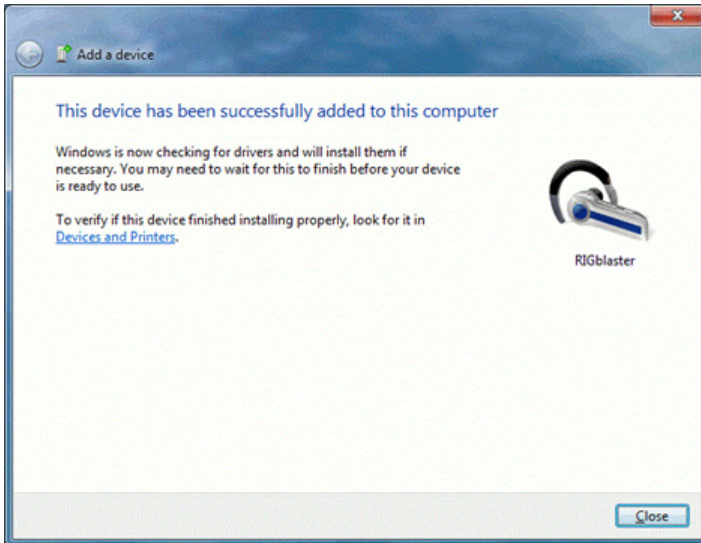
5. Windows should display a success message, press 'Close' to exit
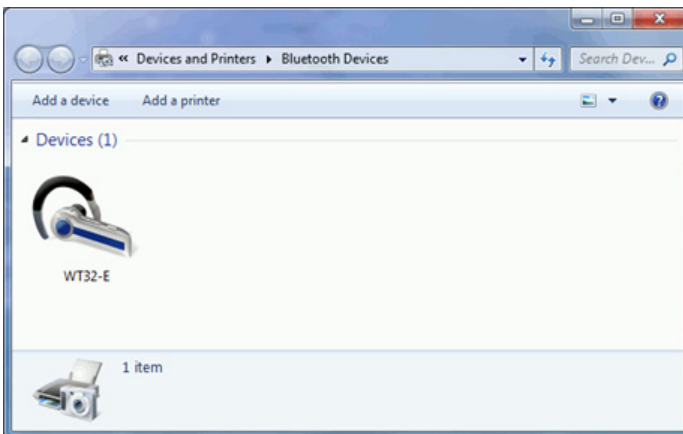
this message.

6. The RIGblaster Blue should now be shown in the Bluetooth® Devices window.

7. Double click on the RIGblaster icon in the Bluetooth® Devices window. If it opens a RIGblaster Device control window, then you have the Broadcom stack installed.

When using this stack, sometimes you have to go to this Window and press the 'Connect' button to connect either the headset (audio) or serial port (COMx) functionality. The Microsoft stack does this automatically.

8. The serial port (COMx) functionality does not always get enabled when you pair with the device.
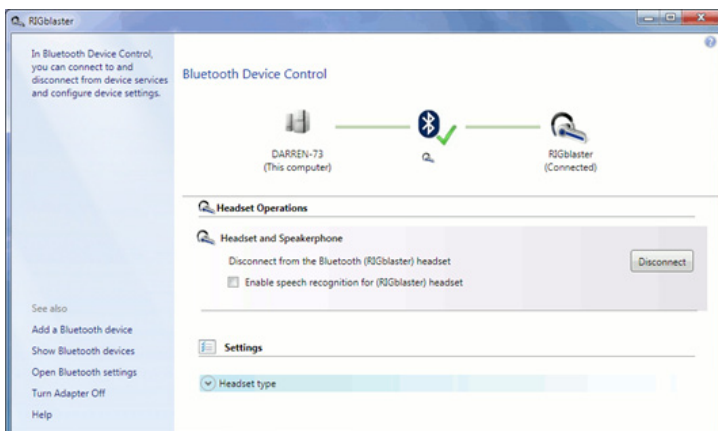   To enable it or configure it, select the 'Settings' or 'Config' menu option when you click on the Bluetooth® icon on the Windows system tray. If you do not have the Bluetooth® icon on the system tray, it can be found in the Bluetooth® Devices window (usually as a
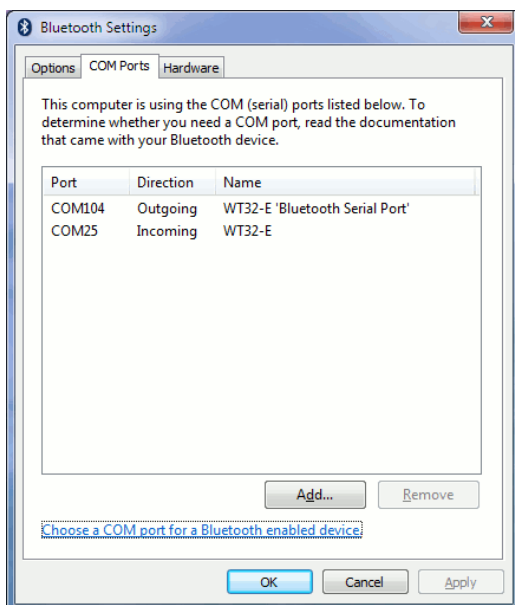
right-click option or as a menu option on the right). The Bluetooth® settings window will often have several settings that can be made or changed, the serial port (COMx) functionality is on its own tab:
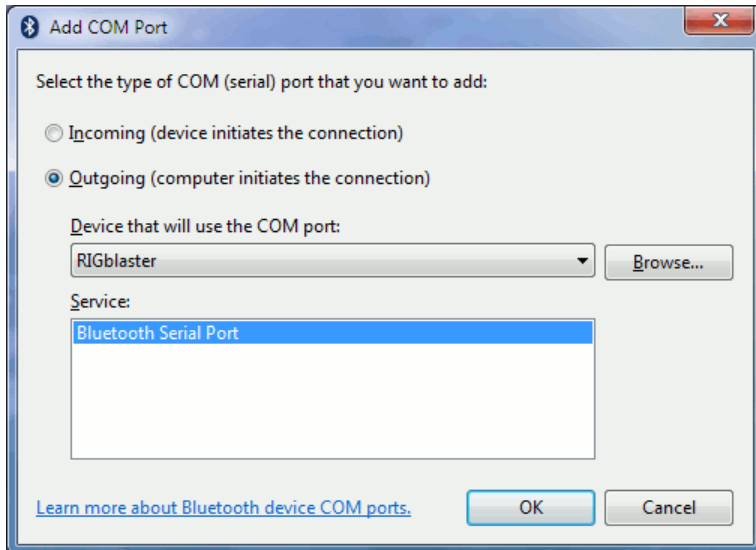
9. The COMx port used for RIGblaster Blue configuration or RIG control (using the RIGblaster's DB9 or CIV port) is the COM port in the 'Outgoing' direction. If you do not have an outgoing COM port, press the 'Add' button to make one:

   From this dialog window, you want to create an Outgoing port, and make sure the device selected is the RIGblaster.

Pairing RIGblaster Blue to your Windows PC with a CSR stack

1. Make sure the 'BLUE' switch on the RIGblaster Blue is in the 'Config' position. The RIGblaster Blue will not be discoverable if it's not in this position.
2. On the PC, open the My Bluetooth® Devices window. You should be able to get this by double clicking on the Bluetooth® icon in the system tray on the bottom right of Windows (near the clock). If you do not have a Bluetooth icon in your status bar, you can open Bluetooth® Devices from the Windows Control panel. To get to the Windows Control panel, press the Start button and select 'Control Panel' from the start menu. On Windows 8, best way to get the con-

trol panel is to type "control panel" from the main tile Start screen.
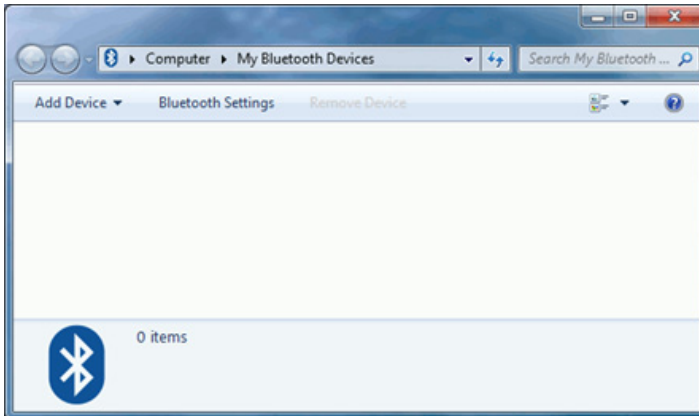
3. In the My Bluetooth® Devices, press the 'Add Device' button and select 'All' or 'Audio/Video Device'.
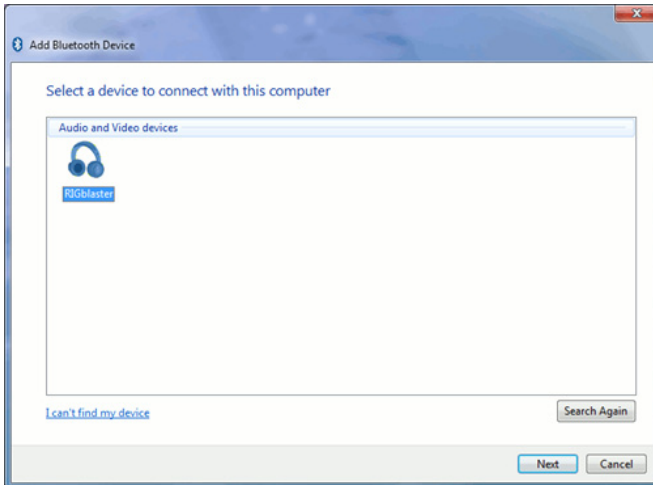
4. The PC will search for and discoverable Bluetooth® devices. Eventually it should find the RIGblaster. Highlight/select the RIGblaster and
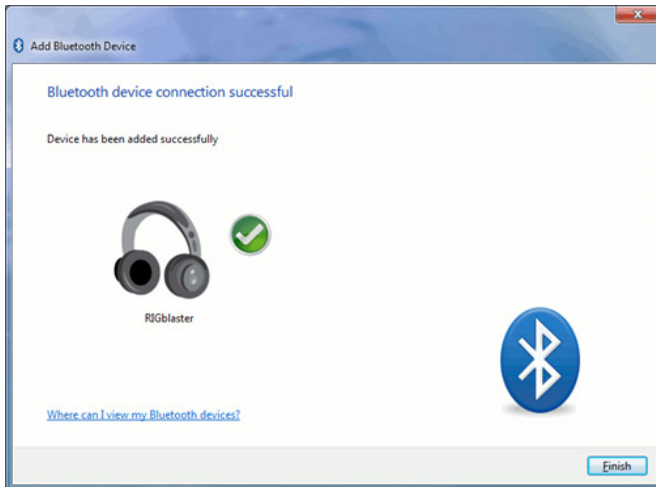
press the 'Next' button.

5. Windows should display a success message, press 'Finish' to exit
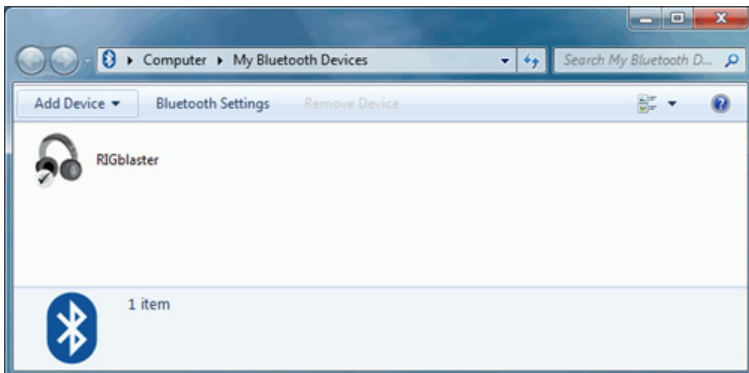

this message.
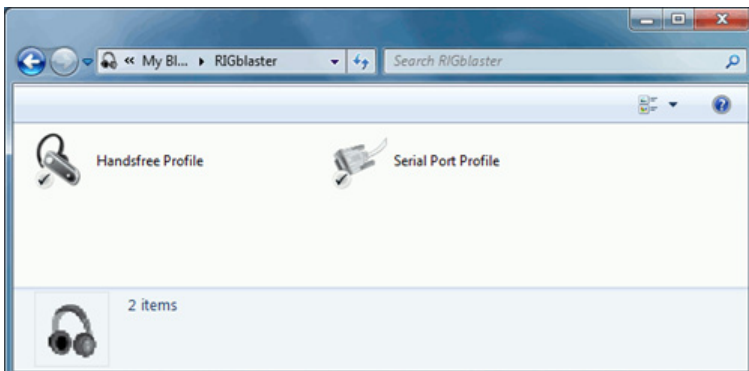
6. The RIGblaster Blue should now be shown in the Bluetooth® Devices window.
7. Double click on the 'RIGblaster' in the My Bluetooth® Devices window to open the control panel for this device:

    Usually Windows will automatically reconnect to the audio (headset profile) and serial COMx port (serial port profile) – but if this doesn't happen then double-click on those items and Windows will connect them and make them available to the system.

8. To find the COMx port assigned to the RIGblaster Blue, open the Bluetooth® Settings window. This can be opened by pressing the
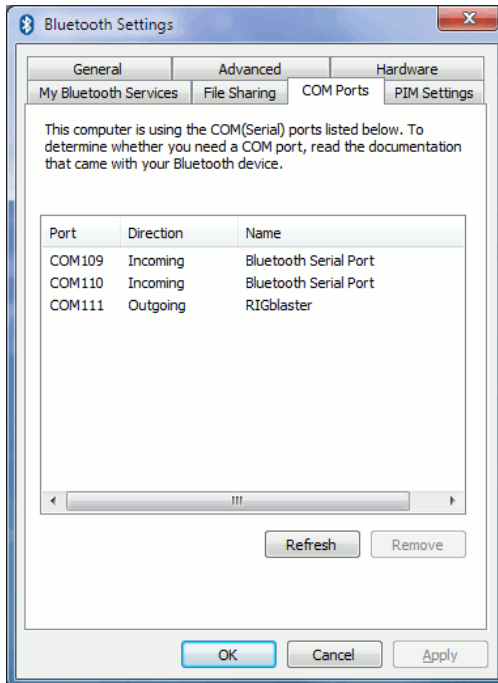
'Bluetooth® Settings' button on the My Bluetooth® Devices window. On XP this button is not there, but can be found in the Windows Control Panel (see Step 2 (above) for directions on finding the Windows Control Panel).
The COMx port used for RIGblaster Blue configuration or RIG control (using the RIGblaster's DB9 or CIV port) is the COM port in the 'Outgoing' direction. If you do not have an outgoing COM port, go back to the control panel for the Bluetooth® device (see previous step) and double click on the 'Serial Port Profile' to create the COMx port.

Using the WMR Diagnostic software to configure the RIGblaster Blue

The WMR Diagnostic software provided by West Mountain Radio can be used to configure several parameters of the RIGblaster Blue. For most people many of those configurations don't need to be changed. This software can be used to pair the RIGblaster Blue with a Bluetooth® headset for voice modes. If you do not have Windows (using a Mac, Linux or tablet), the Bluetooth® SPP COM port can be used in 'config' mode to
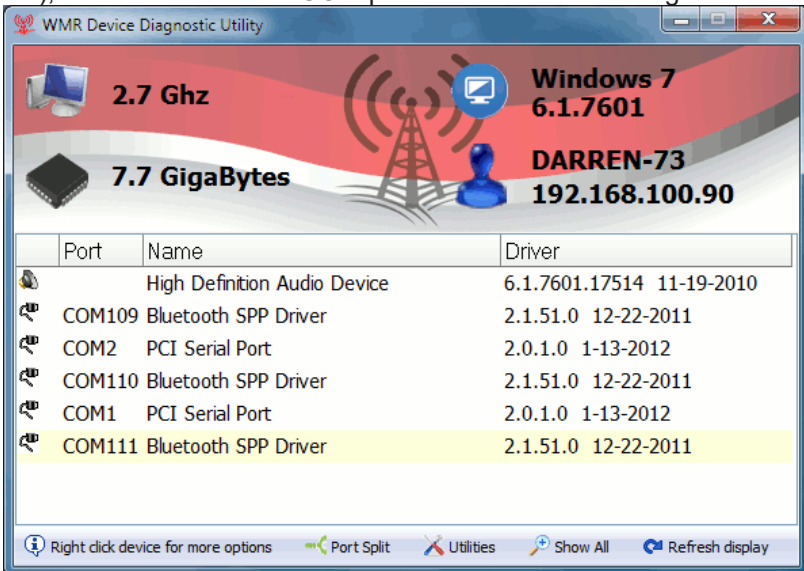
accept AT commands to configure the device instead. This is what the main screen of the WMR diagnostic software looks like:

To launch the Bluetooth® configuration portion of the WMR Diagnostic software, right click on the COMx port assigned to the outgoing SPP port of the RIGblaster Blue and select 'Configure RIGblaster Blue'. To find the
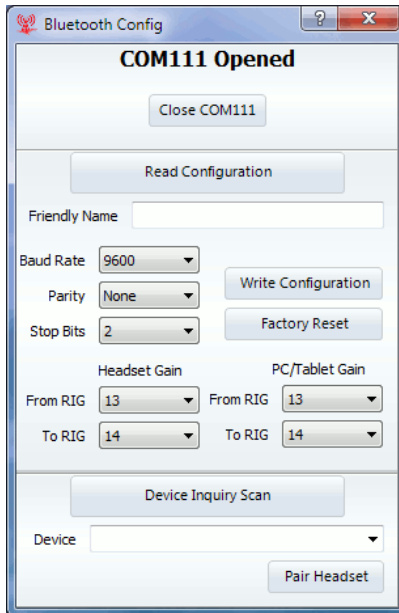
outgoing port, refer to the pairing directions in the previous section.

Close COMx
Close the COM port. When closed the COM port will be available to other applications.

Read configuration
Will read the RIGblaster Blue's current configuration and refresh the window.

Friendly Name
In the event you own more than one RIGblaster Blue, this field can be used to alter the name of the device to differentiate between them. If you change this value, you may have to remove the pairing and re-pair with the RIGblaster Blue for the new value to take effect on your system.

Baud Rate, Parity, Stop Bits
This configures the serial settings of the Serial RS232 DB9 port and the TTL CTL IN/OUT port. You should change these values to match the serial settings of the radio rig you are attempting to control via CAT. (Setting a value of '2' for stop bits will work with devices that expect 1 stop bits, so if you're not sure then leave this value at '2').

Headset and PC/Tablet Gain
This controls the audio amplifier gains inside the RIGblaster Blue.

For most people the default values will suffice, but this was provided in the event your radio rig was exceptionally quit or exceptionally loud. The 'Headset Gain' section controls the gains when the BLUE switch is in 'headset' mode.

The 'PC/Tablet' section controls the gains when the BLUE switch is in 'PC' mode.

'From Rig' controls the receive audio levels coming from the transceiver.

'To Rig' controls the transmit audio levels going to the transceiver.

The 'Headset Gain' 'To Rig' volume is one value that may need user attention. Most Bluetooth® headsets provide no method of adjusting the gain of its microphone, so people who talk quietly or have a Bluetooth® headset with a weak microphone may need to raise this gain.

It may take some experimentation to determine the correct value so spoken audio triggers the VOX in the RIGblaster Blue without causing clipping or distorting because the gain is too high.

There is also a way of adjusting this gain without using the diagnostic software, see the section labeled 'Pairing a headset to the RIGblaster Blue without a Windows PC' in this manual for directions.

Write Configuration
This button will write the values discussed above back to the RIGblaster blue.

Factory Reset
This button will return the RIGblaster Blue back to factory default settings.

Device Inquiry Scan
When pressed, the RIGblaster Blue will search for a compatible Bluetooth® headset for pairing. First, initiate the pairing process of your Bluetooth® headset (refer to the manual of your Bluetooth® headset). Second, press this button. After about 20s the RIGblaster Blue will stop looking for discoverable devices, and will display the devices found in the 'Device' pull-down below.

Device
After pressing the 'Device Inquiry Scan' button, this pull-down will display all the valid Bluetooth® headsets that were found. Use this pull-down to

select the Bluetooth® headset you want to use and press the 'Pair Headset' button. After pressing the 'Read Configuration' button, this will show the Bluetooth® headset that the RIGblaster Blue is currently paired to.

Pair Headset
Pressing this button will cause the RIGblaster Blue to pair with Bluetooth® headset selected in the 'Device' pull-down. See the 'Device Inquiry Scan' and 'Device' sections above for more info.

Pairing a Headset to the RIGblaster Blue without a Windows PC

1. Initiate the pairing process of the desired Bluetooth® headset. Refer to the manual of your Bluetooth® headset, but it's usually done by pressing and holding down the main button for a set period of time.
2. Toggle the 'BLUE' switch on the front panel between 'PC' and 'Headset' at least 6 times, and end on 'Headset'
3. After a few seconds the 'Status' LED of the RIGblaster blue should start a blinking pattern of short green followed by long delay of unlit (2 seconds). This signifies that the RIGblaster Blue is searching for discoverable devices.
4. After about 20 seconds, the RIGblaster Blue should find your headset and pair with it. After it pairs, the RIGblaster Blue will now run in normal 'headset' mode and attempt to connect to the headset as normal. Your Bluetooth® headset might make a special tone or signal when there is a successful pair or connection.
5. When the RIGblaster Blue is operating in normal 'headset' mode, the 'Status' LED will have a slow blink when not connected to the headset and a solid lit LED when connected to the headset. When using this mode to have the RIGblaster Blue pair with a Bluetooth® headset, it will pair with the first compatible device that it sees. If you are in an area with several Bluetooth® devices it is possible that it will pair with one of those devices. Therefore if you use this mode to pair with your headset and it appears to not be pairing correctly, try turning off other Bluetooth® devices in your area or try moving to an area that has no Bluetooth® devices.

Once a Bluetooth® headset has been paired, going to 'headset' mode will always connect to this headset.

Adjusting Headset Microphone Gain

1. If you are paired to a Bluetooth® headset, but the VOX in the RIGblaster Blue is not triggering when you speak, you may need to adjust the microphone gain in the RIGblaster Blue. This can be done

'live', while connected to the Bluetooth® headset, to test the microphone gain while speaking:

2. Toggle the 'BLUE' switch on the front panel between 'PC' and 'Headset' at least 6 times, and end on ''PC'.
3. The RIGblaster Blue will reconnect with the headset, and the Status LED on the RIGblaster Blue will start blinking fast to signify the mode is ready.
4. Toggling the 'BLUE' switch from 'PC' to 'config' will raise the microphone gain one level.
5. Toggling the 'BLUE' switch from 'PC' to 'headset' will lower the microphone gain one level.
6. Repeats steps 3 and 4 until the desired level is reached. Generally, you want to raise the level until you the point where speaking comfortably triggers the VOX in the RIGblaster Blue. You can tell this happens because the XMIT LED on the RIGblaster Blue will light (make sure the 'TX' switch is in 'vox' mode).
7. A power-cycle is required to exit this mode.

Transceiver Connections

Now hook up the RIGblaster Blue to the radio. Follow the steps in the next section and refer to the connection diagrams if necessary (located in the back of this manual).

Required Connections
1. Disconnect the microphone from the transceiver.
2. Reconnect the microphone to the RIGblaster Blue. Note: There will be only one connector on the RIGblaster that will mate with the microphone plug; either the 8-pin round metal socket mating to the front panel or the square RJ-45 connector mating to the rear panel.
3. Connect the 8-pin (round) to RJ-45 (square) microphone cable, included in the package contents, to the transceiver's microphone input socket. There will be only one end that will mate with the transceiver's microphone socket.
4. Connect the other end of the microphone cable to the RIGblaster Blue.
5. Take the 1/8" inch stereo patch cable and connect one end to the transceiver's speaker out (or headphone) jack. Note: If the transceiver uses a 1/4" jack, it will require use of 1/8" inch to 1/4" stereo adapter.
6. The other end of the patch cable should be connected to the jack labeled LINE IN on the rear of the RIGblaster Blue.
7. If you have an optional fixed-level audio cable then you would not perform steps 5 and 6 above. Connect this cable between your

transceiver's DIN (ACC) jack and the other end to the RIGblaster Blue LINE IN jack.

Optional Connections

Additional jacks are provided on the rear of the RIGblaster Blue for operation enhancement:

1. Serial DB-9. This connector can be used to interface transceivers that require RS-232C level CAT.
2. CTL IN/OUT. This is a TTL level jack providing CI-V/CAT rig control. Many radios can be interfaced to this jack with a low-cost cable for complete rig control with suitable software.
3. AUDIO OUT. This jack provides a transmitted audio output. Connect amplified computer speakers or a pair of mini earphones here for transmit monitoring.
4. SPKR OUT. This jack provides a rig receive audio output. Connect a low impedance external speaker here only if not using an optional fixed-level audio cable.
5. PTT IN/OUT. This RCA phono jack is primarily used for connection to a foot-switch for PTT. The contacts are in parallel with the RIGblaster Blue PTT relay (rated 30 VDC 2A max.) and the transceiver's microphone PTT line. It will float at the same voltage.

Transceiver Settings

Operating Mode

Most digital mode programs expect the transceiver to be used in usb (upper sideband).

Traditionally, digital mode transmission was done in lsb (lower sideband) most modern software makes the assumption this is no longer the case. For some modes such as PSK31 (which is sideband independent) it actually makes no difference but to be "on the same page" with other operators you should choose usb unless you have good reason not to.

Because the RIGblaster Blue connects to a transceiver microphone jack it is important not to choose a "data" or "dig" mode on the radio. These modes typically expect transmit modulation through an accessory jack and will disable the microphone jack.

Receive Settings

For most digital modes setting your AGC (automatic gain control) to "auto" or "fast" is recommended. You may find some modes (e.g., Feld Hell, CW & SSB) will benefit from slow AGC action. There is no hard and fast rule for this so experimentation is advised.

Receive filtering is normally left "wide open" but if you have the ability to alter your receive bandwidth in usb mode you may do so which may help with co-channel interference in crowded conditions.

If your radio has DSP noise reduction it should be turned off. The only modes which may benefit from some noise reduction are Feld Hell, CW & SSB. Using DSP noise reduction (or DSP auto-notch filtering) will adversely affect reception of many digital signals.

The transceiver's Noise Blanker ideally should be turned off but that may not be possible if you live in a high noise area.

Transmit Settings

The most important thing to avoid when transmitting digital modes is a distorted signal. This can happen when the drive to the microphone jack is too high or when your transceiver's ALC (automatic level control) is active. It is recommended to leave your RF Power control set to maximum (usually 100W) and adjust the drive level using the RIGblaster's XMIT LEVEL control and/or the Windows playback slider to achieve your final output power. Note: It's important to realize that setting your RF Power control to 100W does not imply you are transmitting a 100W signal! It simply leaves enough "headroom" to prevent ALC action from occurring.

Determining your output power can be problematic with digital mode operating as some modes have a high P(peak) to P(mean) ratio. Unless your power meter shows PEP with hold you may not get a very accurate indication of output power in these modes. Fortunately PSK31 has a P(peak) to P(mean) ratio of approximately 0.79 so what you see on the meter is close to your actual output power.

On the other hand, MT63 has a ratio of about 0.1 which would mean that transmitting a properly adjusted MT63 signal may indicate only 10W on an average power meter for a peak output of 100W. Trying to increase the drive will only distort the signal!

There is never a good reason to use your speech processor function while transmitting a digital mode – so turn it off!

As you will be transmitting in usb mode, the transceiver's mic gain control will have a bearing on your output power. We recommend you leave your mic gain set to your normal level for operating phone and only adjust drive with the XMIT LEVEL and/or Windows playback slider control.

PSK31 rule-of-thumb: Ensure no ALC indication is shown on your meter

Digital Mode Software Configuration

The RIGblaster Blue will provide a new sound device to Windows. To make PC software use the RIGblaster (instead of the computer sound card) simply configure the software to use the for both playback and recording. As the RIGblaster uses VOX PTT there is no need to configure the software for separate PTT.
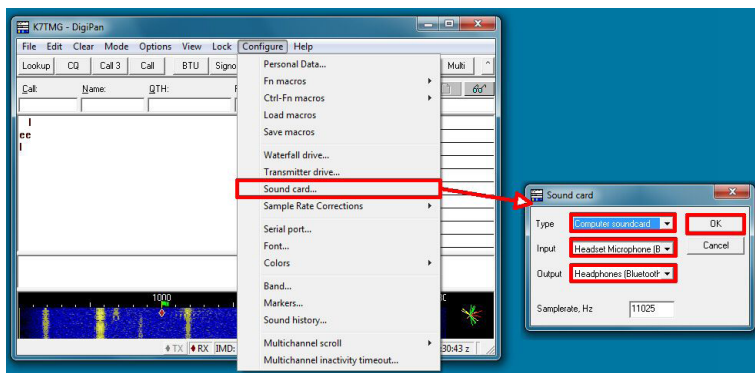
Example: Configuring Digipan With The RIGblaster Blue

Steps

1. Choose "Configure" from the main menu.

2. Select "Sound Card" from the configure menu.

3. A new window will appear titled "Sound card".

4. Ensure the "Type" is set to "Computer soundcard". This sounds counterintuitive but essentially the RIGblaster Blue is just another sound card to Windows.

5. Make sure both Input and Output are set to the Bluetooth "devices". Usually "Headset" and "Headphones".

6. Click on OK to finish.

Android

There are a number of apps for Android which can be used for digital mode operating. We tested the apps from Wolphi software (http://www.wolphi.com/) and find they perform well.

Configuration is usually very easy. Simply pair the RIGblaster to your device and open the app. Some of the apps we tested had an option to enable Bluetooth audio and some just worked straight away.

DroidPSK
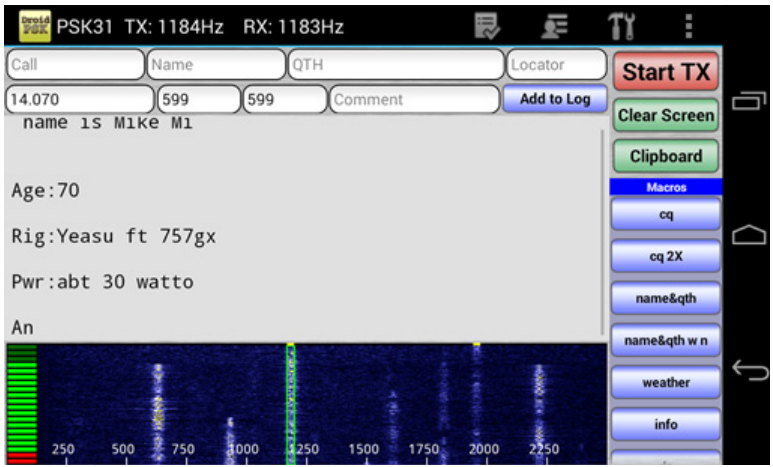
DroidSSTV
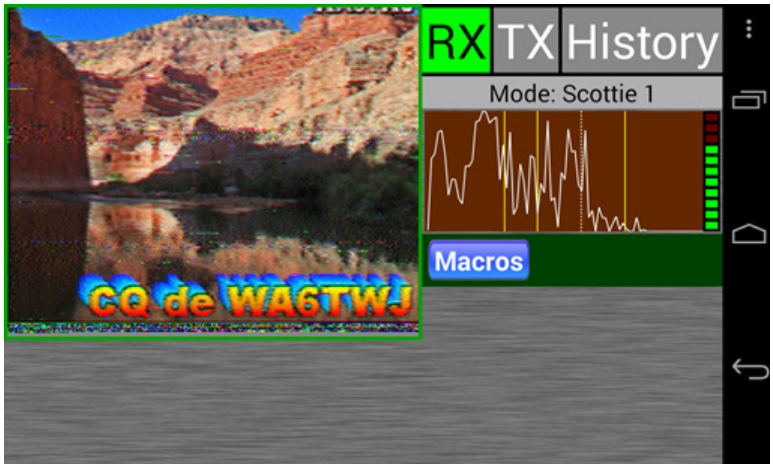
Typical RIGblaster Blue Station Hook-Up
For Radios With '8 Pin Round Metal' Microphones

EXTERNAL SPEAKER
(FOR RX AUDIO)

'COMPUTER SPEAKERS'
(FOR TX AUDIO MONITORING)

AC/DC Wall Adapter

FOOTSWITCH

RCA PTT
IN & OUT

RJ-45 (MIC/RADIO)

LINE-IN   SPK OUT   AUDIO OUT   CTL IN/OUT   RS-232 DB9   DC IN

RIGblaster Blue

8 PIN ROUND (MIC/RADIO)

MICROPHONE

EXT SPK   CAT/CI-V

HF/VHF Transceiver

8 PIN MICROPHONE JACK

RIGblaster MIC CABLE
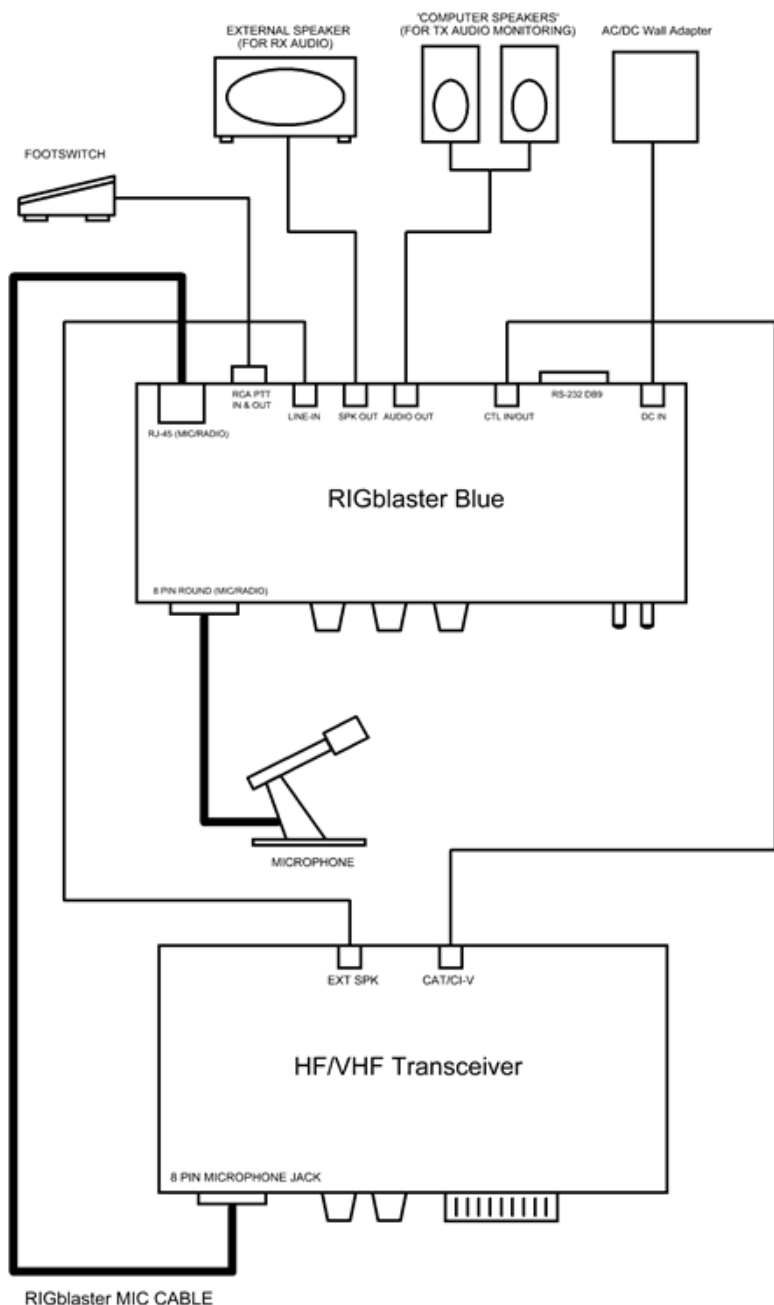
Typical RIGblaster Blue Station Hook-Up
For Radios With RJ-45 Microphones

RJ-45 MICROPHONE

EXTERNAL SPEAKER
(FOR RX AUDIO)

'COMPUTER SPEAKERS'
(FOR TX AUDIO MONITORING)

AC/DC Wall Adapter

FOOTSWITCH

RCA PTT
IN & OUT

LINE-IN SPK OUT AUDIO OUT

CTL IN/OUT

RS-232 DB9

DC IN

RJ-45 (MIC/RADIO)

RIGblaster Blue

8 PIN ROUND (MIC/RADIO)

RIGblaster MIC CABLE

EXT SPK CAT/CI-V

RJ-45 MIC

HF/VHF Transceiver
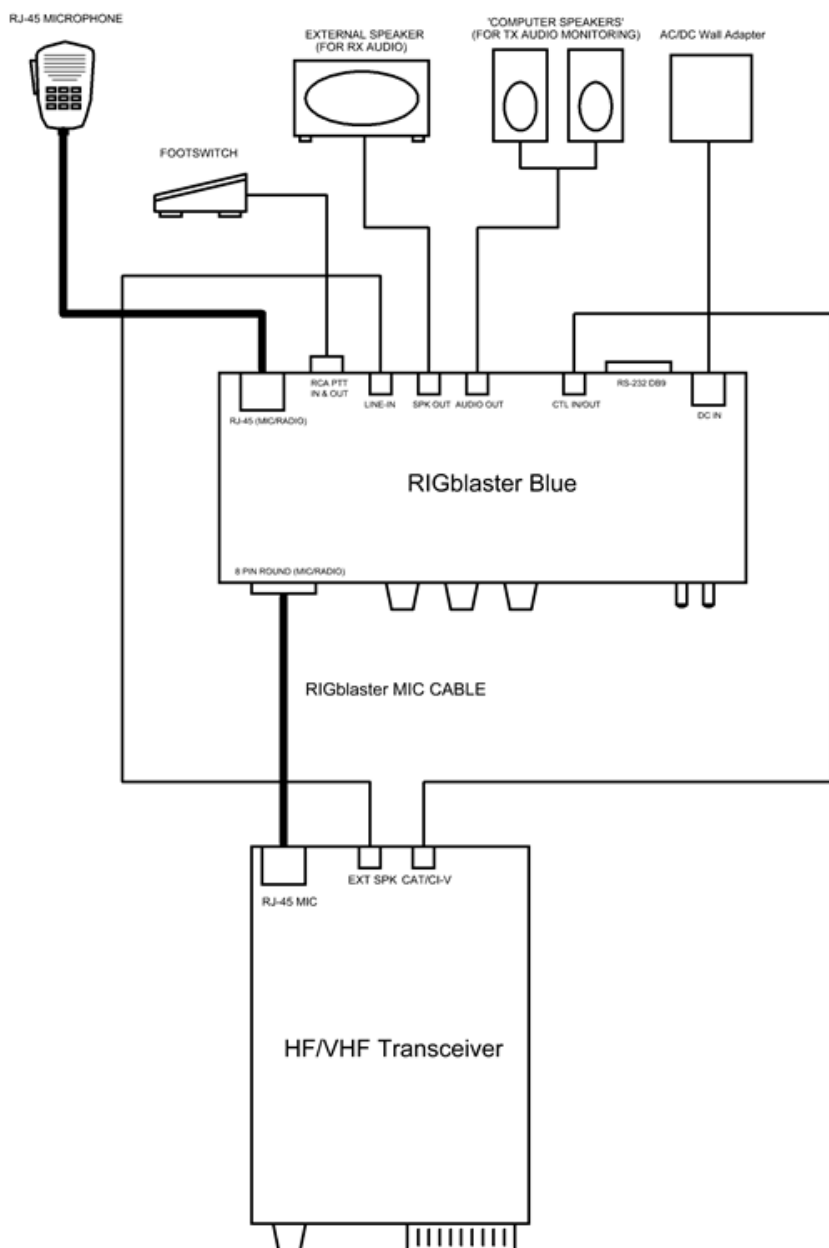
Typical RIGblaster Blue Station Hook-Up
Using An Optional Fixed Level Audio Cable (Shown In Green)

'COMPUTER SPEAKERS'
(FOR TX AUDIO MONITORING)

RCA PTT
IN & OUT

RJ-45 (MIC/RADIO)   LINE-IN   SPK OUT   AUDIO OUT   CTL IN/OUT   RS-232 D89   DC IN

RIGblaster Blue

8 PIN ROUND (MIC/RADIO)

MICROPHONE

ACC   CAT/CI-V

HF/VHF Transceiver

8 PIN MICROPHONE JACK

RIGblaster MIC CABLE
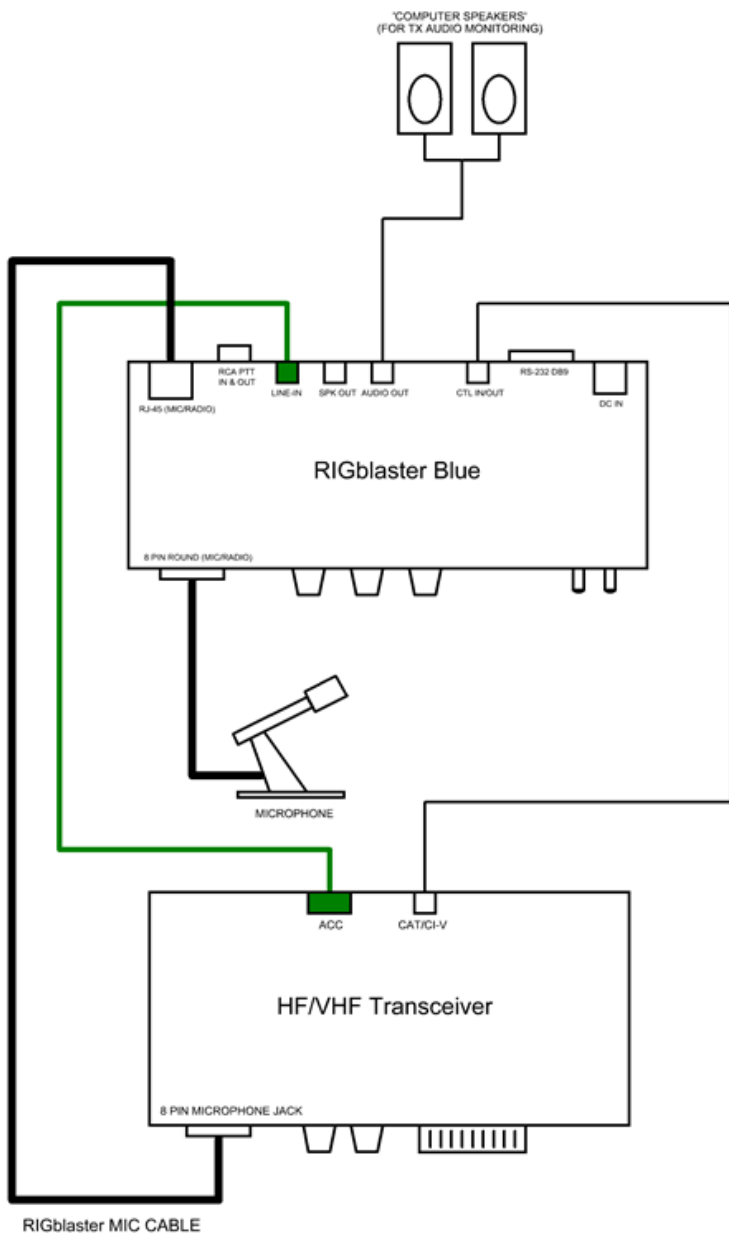
while transmitting and aim for no more than 40W output. You should be transmitting a clean signal and being a "good HF neighbor".

Icom CI-V CAT Cable Schematic

Icom uses the same CI-V interface for nearly all their transceivers. This optional cable (SKU 58107-971) is available from West Mountain Radio

1/8" Stereo Mini Plug
(Connect to Advantage "CTL IN/OUT")

1/8" Mono Mini Plug
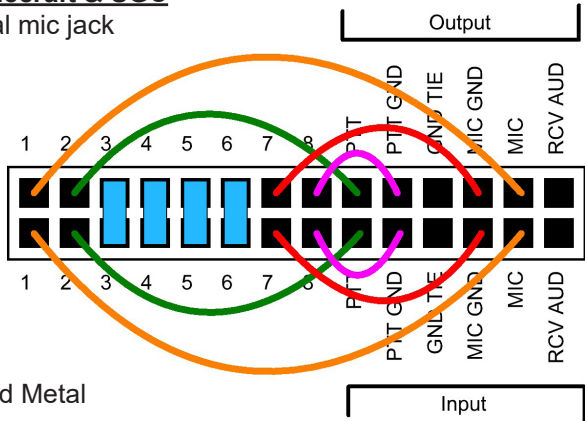(Connect to Icom Transceiver "Remote")
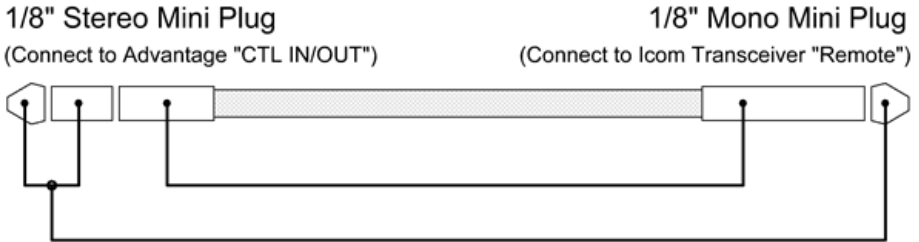
for modest cost but we realize you may want to save a few dollars and make it yourself. Shown below is how the cable should be wired.

Note: A stereo 1/8" patch cable with a stereo-to-mono adapter will not work!

ISC & Jumper Wiring

Kenwood, Alinco, Elecraft & SGC
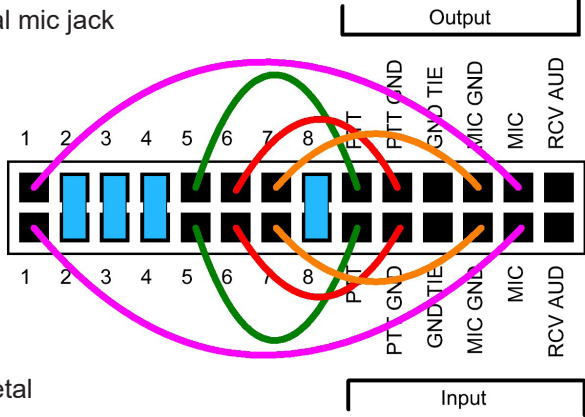with 8 pin round-metal mic jack

ISC labeled:
Kenwood 8 Pin Round Metal

ICOM
with 8 pin round-metal mic jack

ISC labeled:
Icom 8 Pin Round Metal

Older Yaesu Radios
with 8 pin round-metal mic jack

(This jumpering is for older Yaesu radios with
microphones that have common PTT & audio ground
and older hand mics, desk mics, desk
mics and Heil mics)
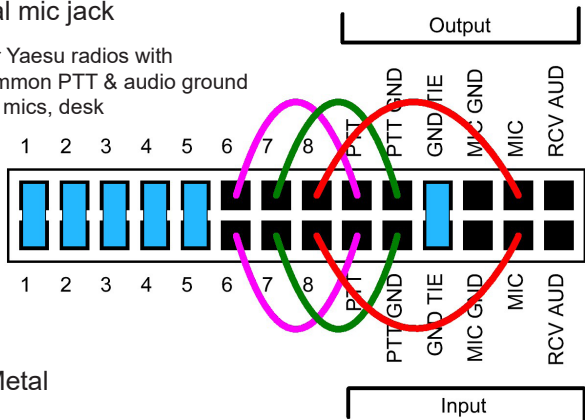
ISC labeled:
Yaesu 8 Pin Round Metal

Newer Yaesu Radios
with 8 pin round-metal mic jack

Use this for FT-950, FT-2000, FTDX-3K,5K,9K (This ISC also used for Flex 6000 series, Ten Tec Omni VII & Orion II)

ISC labeled:
Yaesue 8 Pin Round - Isolated

ICOM & Alinco Radios
with RJ-45 modular mic jack

ISC labeled:
Icom RJ-45 Modular

Kenwood
with RJ-45 mic jack

(Use for most, but not all Kenwood FM rigs)

ISC labeled:
Kenwood RJ-45 Modular

Yaesu
with RJ-45 modular mic jack

Use this for FT-817, FT-857, FT-897
& FT-450

ISC labeled:
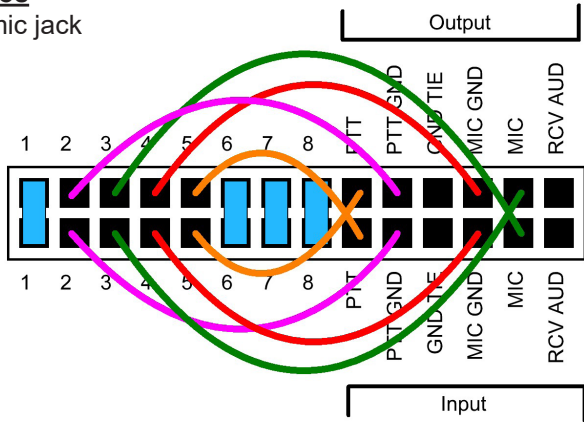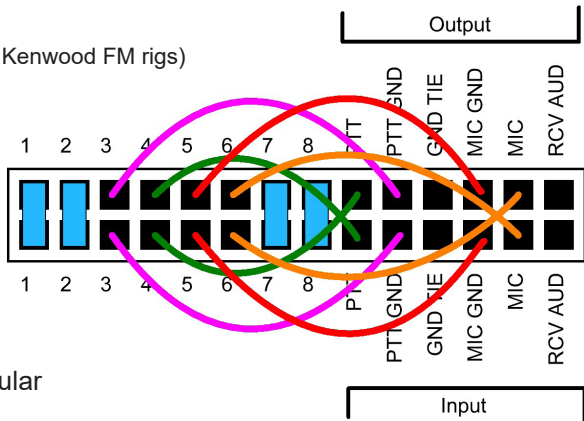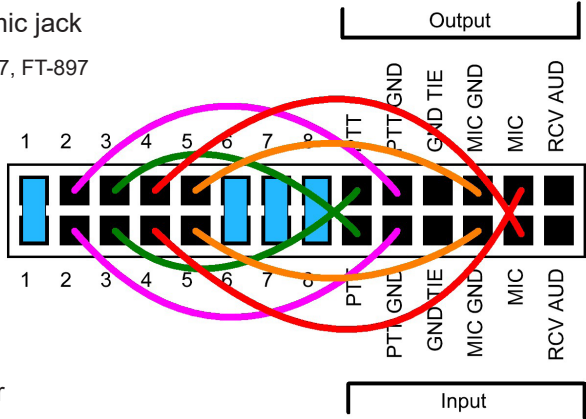Yaesu RJ-45 Modular

ISCs for Some Common Radios

Manuf.	Model	ISC
Icom	All 8 pin round mic jack radios (e.g., IC-746, IC756/Pro/III, IC-7600)	Icom 8-pin Round
Icom	All RJ-45 modular mic jack radios (e.g., IC-703, IC-706, IC-7000)	Icom RJ-45 Modular
Yaesu	All older 8 pin round mic jack radios (e.g., FT-840, FT-757)	Yaesu 8 Pin Round
Yaesu	All newer 8 pin round mic jack radios (e.g., FT-847, FT-950, FT-1000, FTDX-1200, FTDX-3000, FTDX-5000, FTDX-9000)	Yaesu 8 Pin Round - Isolated
Yaesu	All RJ-45 modular mic jack radios (e.g., FT-817, FT-857, FT-897, FT-450	Yaesu RJ-45 Modular
Kenwood	All 8 pin round mic jack radios (e.g., TS-570, TS-2000, TS-590S, TS-990S)	Kenwood 8 Pin Round
Kenwood	most RJ-45 modular mic jack radios (e.g., TM-V71)	Kenwood RJ-45 Modular
Elecraft	K3 & K2 use the same mic jack as Kenwood	Kenwood 8 Pin Round
Ten Tec	Omni VII & Orion II use the same mic jack as newer Yaesu radios	Yaesu 8 Pin Round - Isolated
Flex	Flext 1500 and 3000 use the same mic jack as Yaesu RJ-45 radios	Yaesu RJ-45 Modular
Flex	Flex 5000 and 6000 series use the same mic jack as newer Yaesu radios	Yaesu 8 Pin Round - Isolated

Optional Cables

CAT

The RIGblaster Blue is equipped with TTL and RS-232C level CAT. This makes it possible to use software for logging or radio control in addition to digital modes all through the same interface.

Most modern radios have a CAT jack and with very few exceptions the RIGblaster Blue can be connected to this via an optional cable for full computer control. The CAT jack on your radio is a serial interface (using TxD/RxD) which can receive instructions and send information back to your computer to be used with suitable software.

The serial interface on the RIGblaster Blue is externalized on the RIG CTL jack (TTL) or the DB-9 (RS-232C). Note: Both jacks cannot be in use at the same time.

CAT Cables Available From West Mountain Radio:

Cable SKU#	Used On
58107-971	All CI-V equipped Icom radios (e.g. Icom with a "remote" jack)
58108-972	Yaesu radios with an 8-pin mini DIN CAT jack (e.g. FT-817, FT-857, FT-897)
58108-974	Yaesu radios with a 6-pin DIN CAT jack (e.g. FT-736, FT-747, FT767, FT-990)
58119-1432	Kenwood radios with an RS-232C CAT jack (e.g. TS-480, TS-570, TS-2000)

FLA – Fixed Level Audio

Receive audio can often be obtained from an accessory (DIN) jack on a transceiver. You may prefer to use this audio source instead of connecting to the external speaker jack which mutes the internal speaker in the transceiver. If you have one of these cables, you use it in place of the stereo patch cable provided with the RIGblaster.

FLA Cables Available From West Mountain Radio

Cable SKU#	Used On
58129-993	ICOM Radio ACC1 to Soundcard Cable. Fits any Icom with an 8-pin ACC 1 jack
58131-996	Fixed Level Audio Cable. RCA to Stereo mini-plug. Used on some Yaesu radios
58131-997	Data Port to Soundcard Cable. For radios with a 6-pin mini DIN Data jack

Digital-Modes, Software And Frequencies

A complete list of digital-modes, software and HF frequencies would be difficult to find, however, below is a a brief (non-exhaustive) compilation of suggested frequencies to help get oriented with the RIGblaster Advantage. Most frequencies given here reflect current North American practices. Many of these are shared internationally, but if in doubt, check with a national amateur radio organization for recommendations.

There are many Internet resources that provide further information on operating digital-Modes and a good place to start is K3UK's Digital Radio Yahoo!® forum: http://groups.yahoo.com/group/digitalradio/

Digital Mode	Software	Frequencies	Notes
PSK31	FLdigi, Airlink Express, DM780, Digipan, MixW, MultiPSK, TruTTY, WinWarbler et al.	3.580MHz (usb) 7.035MHz (usb) 10.140MHz (usb) 14.070MHz (usb) 18.100MHz (usb) 21.070MHz (usb) 24.920MHz (usb) 28.120MHz (usb)	
Analog SSTV	MMSSTV, MultiPSK, MixW	7.171Mhz (lsb) 14.230Mhz (usb)	
Digital SSTV	EasyPal	3.713MHz (lsb) 7.173MHz (lsb) 14.233MHz (usb)	
RTTY	MMTTY, TruTTY,DM780, FLdigi, MultiPSK et al	14.080-14.090MHz	Traditional operating was in lsb but many today use usb
JT-65	WSJT, JT65-HF, MultiPSK	1.838MHz (usb) 3.576MHz (usb) 7.039MHz (usb) 7.076MHz (usb) 14.076MHz (usb) 21.076MHz (usb) 28.076MHz (usb)	
Hellsch-reiber	FLdigi, MultiPSK, MixW, DM780	14.063MHz (usb)	
Olivia	FLdigi, MixW, MultiPSK, DM780	14.074MHz (usb) 14.1065MHz (usb)	
Digital Voice	Free DV	14.236 MHz (usb)	
HF Packet Radio	Sound Modem, AGWPE, MultiPSK, MixW	14.1018 MHz (usb)	Tones will be at 1400/1600 Hz on the waterfall

Digital Mode	Software	Frequencies	Notes
VHF APRS	Sound Modem, AGWPE, MultiPSK, MixW	144.390Mhz (fm)	International APRS frequencies vary.

AT Commands

In the event that you do not have a Windows PC and you need to change some of the configuration values of the RIGblaster Blue, these AT commands are available. Sending these AT commands requires a terminal software program that can open the Bluetooth SPP port. The 'BLUE' switch on the RIGblaster Blue front panel needs to be in the 'config' position.

All commands should end in a new-line (carriage-return or line-feed). All commands (with the exception of AT, ATE0, and ATE1) can be used in write or read mode. A write mode contains a '=' followed by a value – this will write the new value to the RIGblaster Blue. A read mode instead contains a '?' at the end, at which point the RIGblaster Blue will display the current value.

Write example: AT*DVICE=00:00:00:00:00:00

Read example: AT*DVICE?

AT Command Summary

Command	Description
AT	This command does nothing. RIGblaster Blue will respond with "OK"
ATE0 ATE1	Will enable (ATE1) or disable (ATE0) local-echo. If local-echo is enabled, the RIGblaster Blue will echo characters typed or entered in the terminal software
AT*LABEL=xxxx	Sets the friendly name of the RIGblaster Blue
AT*MGANH=x AT*MGANP=x AT*AGANH=x AT*AGANP=x	X is a value from 0 to 22 and sets this amplifier gain. MGANH is "headset" from rig MGANP is "pc/tablet" from rig AGANH is "headset" to rig AGANP is "pc/tablet" to rig

AT*BAUDR=x	Set the baud rate used on the Serial RS232 and CTL IN/OUT port when in "pc" mode.
AT*PARITY=x	Set the parity mode used on the Serial RS232 and CTL IN/OUT port when in "pc" mode. 0=none, 1=odd, 2=even
AT*SBITS=x	Set the number of stop bits used on the Serial RS232 and CTL IN/OUT port when in "pc" mode. Valid values for x are 1 and 2
AT*INQRY	This will initiate a search for discoverable devices. This will be used when searching for a Bluetooth headset to pair to the RIGblaster Blue. This takes about 20 seconds. When done, it will display all found devices and their MAC address, followed by AT*INQCT
AT*DVICE=xx:x xx:xx:xx	This will pair the RIGblaster Blue to the Bluetooth headset with the specified MAC address. To find valid MAC addresses, use the AT*INQRY command documented above.

RIGblaster Blue Warranty

RIGblaster Blue 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 Blue* 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 Blue* or accessory made after the expiration of the warranty period.

The flash drive 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 flash drive 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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