

# BlueConsole

## FAQ

### **What makes BlueConsole different from other Bluetooth to RS232/Serial adapters?**

BlueConsole is unique from all other Bluetooth Serial adapters because it requires no AC adapter or DB9 Pin-9 connection for power. It is parasitically powered directly from the existing RS232 hardware handshaking lines. It offers TRUE wireless access to RS232 applications. BlueConsole uses the smallest possible package and has an integrated 9V battery connection to support RS232 devices lacking handshaking lines.

### **How does BlueConsole obtain power?**

BlueConsole2 utilizes the existing RS232 hardware handshaking leads to obtain power. The Specifications section of the User's Manual indicates which leads on the DB9 or RJ45 connection can be used to provide power. BlueConsole2 consumes about 50mW of power even while Connected and Transmitting. If your RS232 device does not have adequate power for BlueConsole, you can connect a 9V battery directly to provide power. Our testing and feedback has shown that a majority of RS232 devices can self-power BlueConsole2 without the need for a battery.

### **What does the term "parasitic power" mean?**

A parasite is something that feeds off of a host. In electronics, parasitic power refers to a device that robs power for itself from a data connection which may not have originally been intended to provide power. This eliminates the complexity of extra AC/DC power sources and wires. RS232 hardware handshaking leads (DCD, DTR, RTS, CTS, DSR) were not originally intended as a power source, although a limited amount of power can be drawn from them. The most common parasitic powered RS232 application was the IBM PS2 mouse which used hardware handshaking leads to power the electronics in the mouse. Many USB peripherals also commonly use parasitic power from the 5V USB data port.

### **What is the deal with RS232 DB9 Pin 9 Power that some vendors advertise?**

Pin 9 (RI) is typically unused on an RS232 DB9 connection. Some Bluetooth Serial vendors advertise that they can obtain power from Pin 9. The RS232 device would have to be designed in advance to provide Pin 9 as a high current power source. The reality is that on most all RS232 devices Pin 9 is open with no power at all. Even worse, if you plug in an AC power brick into a Bluetooth Serial Adapter it could short into Pin 9 on your RS232 device and damage it. Some other vendors actually document this risk in their Manuals. BlueConsole can obtain line power from the existing hardware handshaking leads or from Pin 9. It is a true wireless parasitically powered Bluetooth Serial solution. BlueConsole also provides full isolation and reverse-voltage protection between all power sources.

### **When do I need to use a 9V Battery to power BlueConsole?**

Many RS232 devices can provide adequate power to BlueConsole. However if you cannot Discover or Connect to BlueConsole it is usually an indication that there is inadequate power. In these circumstances, you will need a 9V battery to power BlueConsole. Factors such as lack of hardware handshaking leads, low current on handshaking leads, high baud rates, or high-load on the RS232 Tx lead may prevent inline power from occurring thus requiring the 9V battery.

### **Is it safe to use a 9V battery on BlueConsole when the RS232 device is also providing parastic power?**

There is isolation and reverse-voltage protection between the 9V battery and the RS232 lines. Using both inline power and a 9V battery together will not damage BlueConsole or your RS232 device.

### **Which Cisco devices require a 9V battery on the BlueConsole RJ45 model?**

We have found that all Cisco routers (with the exception of 2500, 7500, GSR) will self-power BlueConsole2. LAN Switches are a mixed bag (about 50%), where some models only provide one positive handshake lead with inadequate power. Try it first without a battery, and then attach a 9V battery if you cannot Connect. Devices like PIX, ASA, IDS, WLC, and WAE/CE will also generally self-power BlueConsole. Devices like CSS, MDS, and wireless APs will always need a 9V battery for power.

### **What drivers are required on my PC or Mac to use BlueConsole?**

No special drivers are needed to use BlueConsole. All that is required is a PC, Mac, or PDA equipped with Bluetooth, as well as Terminal Software (such as Hyperterminal). Most Windows/PC Bluetooth adapters use Widcomm drivers. Microsoft Windows XP SP2 also includes an integrated Bluetooth Enumerator that can be used in place of Widcomm drivers. The BlueConsole User's Manual contains full documentation for common Clients such as Windows XP, Windows Vista, Mac OS-X, Windows Mobile 5.0, Linux, and Palm/Treo.

### **Can I connect to multiple BlueConsole adapters from the same Bluetooth PC - and how many can I use?**

You can pair as many BlueConsole adapters as you like on your Bluetooth equipped PC/Mac. Each one will show up as a different COM port which can be used by application software. The only limitation is that up to 7 may be Connected (in use) at the same time by your application software. This is a Bluetooth protocol limitation (7 Slaves per Piconet). The definition of Connected is that the software/terminal program has performed a Connect/Open operation on the Bluetooth COM port to lock it for exclusive use.

### **Can multiple PCs access a single BlueConsole adapter?**

You may Pair as many Bluetooth Clients (PC/Mac/PDA) as you like with BlueConsole. Using the default firmware, only one Client can be Connected to a BlueConsole adapter at any given time. Once that Client disconnects (i.e. closes the COM port), then another Client can Connect. Using the Multipoint firmware, you can have up to 7 Clients simultaneously Connect to a single BlueConsole adapter and see the same data stream. See the Multipoint Application Note for more details. BlueConsole is the only Bluetooth Serial Adapter which offers the Multipoint feature.

### **I want to replace an RS232 cable. Should I buy 2 BlueConsole adapters or 1 BlueConsole & USB Bluetooth dongle?**

You can use two BlueConsole adapters to form a physical cable replacement between two RS232 devices. This is referred to as the BlueConsole AutoConnect feature. However if one end of the connection is a Windows XP PC, you may find it easier and cheaper to equip the computer with a USB Bluetooth dongle to make it a Native Bluetooth Client. Commodity USB Bluetooth dongle are available from a variety of manufacturers for as low as \$20.

### **I need a Bluetooth USB Adapter to add Native Bluetooth to my Windows XP PC. Which one should I use?**

There are a variety of low cost Bluetooth USB adapters on the market. The most important thing is to ensure you purchase a Bluetooth USB adapter that is Class 1 with up to 100m distance. You may not be happy with a low power Class 2 product. BestBuy sells the Kensington USB adapter on the shelf for about \$40. You can also purchase Bluetooth USB adapters from online retailers such as [www.newegg.com](http://www.newegg.com). We have seen good results with the Trendnet TBW-102UB. It is Class 1, Bluetooth 2.0 certified, works with Native Microsoft XP SP2 Bluetooth drivers (though it ships with BlueSoleil drivers), and is less than \$20.

### **How are Baud Rate and other Serial Settings used on a Bluetooth Virtual (Outgoing) COM Port?**

An Outgoing Bluetooth COM Port on a PC is not a physical Serial Port, although it does emulate one. Your application software may allow you to select a Baud Rate for this Bluetooth COM Port, however it is not used by driver. You will find that any Baud Rate setting on this virtual COM port will work. However the Baud Rate setting on the physical DB9/RJ45 of the BlueConsole adapter must match that of your target RS232 device. This physical RS232 Baud Rate is set using the BlueConsole Config Utility. The Config Utility can be used with BlueConsole over a Local PC DB9 COM Port, or over a Bluetooth Virtual (Outgoing) COM Port.

### **Does BlueConsole work with WM5/6 Smartphones such as Motorola Q or Samsung Blackjack Bluetooth?**

Windows Mobile 5/6 Smartphone is a lightweight version of the PocketPC software. We have heard reports of this working with BlueConsole though it is dependant on your phone's firmware distribution. Click Bluetooth Manager, Settings, Menu – and you should see an option for “COM Ports” or “Serial Ports”. If this is missing, then your carrier (Cingular/Verizon) has removed Bluetooth Serial Profile support from the firmware. If Bluetooth Serial support is on the Smartphone then you should be able to pair with BlueConsole and use an Outgoing COM Port. See the User's Manual Windows Mobile section for some setup guidelines. You should use PocketTTY as terminal software, as the VxHPC terminal does not support WM5 Smartphones.

### **How far away can my PC be from BlueConsole and still function?**

BlueConsole uses a 5mW Class 1 Bluetooth radio with an outdoor unobstructed range of up to 100m. Just like WiFi, this range may be reduced if there are obstructions such as interior walls between your computer and BlueConsole. The range can also be reduced if your computer or PDA has a low power Bluetooth radio or low-gain antenna. A PDA with a very low power Class 2 radio may only achieve about 10m of travel.

### **The range/distance to my Blueconsole adapter seems limited. What is causing this?**

There are a number of factors that can influence your Bluetooth range. Make sure your Bluetooth Client (PC, PDA) is using a Class 1 high power Bluetooth radio. Class 1 radios with appropriate power and antennas can achieve up to 100m (330ft) unobstructed best case, whereas low power Class 2 radios or USB dongle will only yield close to 10m (30ft). BlueConsole is a Class 1 Bluetooth radio, but you will be limited by the lowest common denominator. If you have a Class 2 Bluetooth USB dongle, you should consider replacing it with a Class 1 USB radio.

Similar to WiFi, Bluetooth 2.4Ghz range will also be impacted by obstructions such as building walls. Avoid placing metal housings or heavy metal objects very close to any Bluetooth devices or antennas. Significant interference from other Bluetooth devices or WiFi devices may also have some impact on range, though Bluetooth employs frequency hopping to work around such interference.

### **How does the BlueConsole interact with 802.11b/g WiFi networks?**

While Bluetooth and WiFi both use the 2.4Ghz spectrum, Bluetooth utilizes a frequency hopping technique to continuously hop between 79 different 1 Mhz channels – each hop using a 625us time slot before moving to another channel. Coupled with this rapid Adaptive Frequency Hopping are strong error correction controls in the Bluetooth stack. This allows Bluetooth to cleanly coexist with other WiFi or Bluetooth signals in the same work area. You can find greater detail on the subject of Bluetooth Wifi interaction here: <http://www.eurescom.de/~pub-deliverables/P1100-series/P1118/D3/BLTandWLAN.html>  
<http://www.eurescom.de/~pub-deliverables/P1100-series/P1118/D3/BLT-WLAN-interference.pdf>

### **How does Bluetooth 1.2/2.0 Adaptive Frequency Hopping (AFH) work?**

It is common to have both 2.4Ghz Bluetooth and 802.11b/g WiFi in the same area. A Bluetooth connection hops across 79 different 1Mhz channels 1600 times per second, however it usually ends up stepping on WiFi signals along the way. AFH was added to the Bluetooth 1.2 specification to help with this issue. AFH allows a Bluetooth connection to lock out a particular channel from the hop sequence if the signal is corrupted by a WiFi carrier. After about 30 seconds, another attempt is made to use the channel again in the hop sequence. This improves the performance of Bluetooth and helps eliminate interference with 802.11b/g WiFi connections.

### **Can BlueConsole send an RS232 <BREAK> Sequence?**

BlueConsole supports the transmission of an RS232 < BREAK> sequence. BlueConsole uses the character sequence \\ to transmit a logic <BREAK> to the RS232 device. <BREAK> support requires version 3.7 or better firmware. See the Application Note: Sending an RS232 <BREAK> for further details. BlueConsole is the only Bluetooth Serial Adapter which offers the BREAK feature.

### **When I unplug BlueConsole to move it to another RS232 device, my terminal session dies. Is there a way to move BlueConsole without having to reconnect my Terminal session?**

When you unplug BlueConsole it loses inline power and your current Bluetooth terminal connection is lost. If you want to move BlueConsole between several devices without having to reconnect your terminal, attach a 9V battery. When using a 9V battery BlueConsole will never lose power.

### **What is the Security best practice for my BlueConsole Adapter?**

BlueConsole provides secure Bluetooth pairing and link encryption. The first security option is to disable Discoverability so others can't see your BlueConsole with common tools. This can optionally be done after you have added the BlueConsole COM port to your system. The second option is to change the default PIN code from 1234 to something unique. This way others may see your BlueConsole but will be unable to pair with it without knowing your PIN code. If you are very security conscious, then you can employ both these options for the greatest security.

### **Is there an easy way to test BlueConsole without connecting it to an RS232 device?**

An easy way to test BlueConsole is to attach a 9V battery and then loopback the Transmit (Tx) and Receive (Rx) leads. These are pins 2 & 3 of a DB9 connection or 3 & 6 of an RJ45 connection. You can then connect to BlueConsole via a Bluetooth PC/Mac/PDA terminal program and see your characters echo back as you type. When you remove the loopback, the character echo should stop.

### **What Bluetooth Profiles are supported by BlueConsole?**

BlueConsole supports a Serial Port Profile (SPP). Typically when you Discover and Connect to BlueConsole using your Bluetooth equipped PC, your Bluetooth drivers will automatically add this SPP Service using the next available COM port on your system. BlueConsole only requires an “Outgoing Serial Port”. If your Bluetooth drivers add an instance for “Incoming Serial Port”, that Incoming COM Port can be safely deleted.

### **How do I change the COM port number used in Windows for the BlueConsole SPP service?**

Windows XP typically assigns the next available COM port number for your BlueConsole unit. This can be changed via Hardware Device Manager. Right-click on “My Computer”, “Hardware”, “Device Manager”, “Ports”. Select the COM port, right-click and choose “Properties”, “Port Settings”, “Advanced”. The drop-down box will allow you to reassign the COM port number in Windows XP. Note this is only an option on Microsoft Native XP SP2 Bluetooth drivers. Widcomm drivers do not allow reassignment of COM port numbers.

### **I receive an “Access is Denied” error under the Microsoft XP Bluetooth drivers when Discovering BlueConsole**

Microsoft has a known issue in XP where in certain circumstances the Bluetooth database security settings can become corrupt. This is documented in this Microsoft article along with a resolution to the problem: <http://support.microsoft.com/kb/892891>

### **I can't seem to get Bluetooth working on my Laptop even after loading the manufacturer drivers**

This is not a BlueConsole issue, but a common laptop issue. Most laptops have a special function key to turn the Bluetooth and WiFi radios On & Off (Fn+F5 on Lenovo, Fn+F2 on Dell, etc.) This is used to save power or disable RF on airplanes. You may have accidentally pressed this key causing the Bluetooth radio hardware to be turned OFF on your laptop.

**Does BlueConsole comply with US FCC and Canada IC regulations?**

The radio is complies with FCC (ID: PVH090103S) and IC (5325A-090103S). It also complies with Part 15 of the FCC Rules.

**What is the warranty period for BlueConsole?**

The warranty period for BlueConsole is 1 year from shipment date. The warranty covers replacement of the unit if it fails due to normal operation. The defective unit and a copy of the receipt or packing-slip should be shipped back to BlueConsole's mailing address before it can be replaced.

**How does the 30 Day Money Back Guarantee Work?**

We believe you will be very pleased with the BlueConsole solution. If you are not satisfied, you may return the product within 30 days for a refund. The refund will be the full product value minus the shipping cost. If you have any technical issues with BlueConsole, we encourage you to first contact us via email at [support@blueconsole.com](mailto:support@blueconsole.com) to try to resolve the issue before returning the product.

**How can I provide feedback on the BlueConsole product?**

We are always happy to hear about ways we can improve the BlueConsole product. If you have any suggestions on how to make the product better, improve our website or ordering process, or an item you think should be included in our User Manual or FAQ, please email us at: [info@blueconsole.com](mailto:info@blueconsole.com)