

BB2400 Installation And Operation

Overview

The BB2400 system consists of a single ISA format PC card and an external antenna/transceiver unit used in a x86 based personal computer and configured as a wireless router. The PC is configured with a version of the Linux operating system combined with a special driver to exercise this system. This configuration lends itself to two discrete steps. The first is hardware installation in the PC. The second, is the physical installation of the system.

Due to the unique nature of the product, installation should be limited to qualified individuals, understanding the local building and safety codes.

PC Hardware Installation

The ISA portion of the system is designed to be installed into a standard PC system. As mentioned, the LINUX operating system is the “heart” of the router, assisted by a custom driver unique to the BB2400 card. Since Linux is an “open source” architecture, to simplify installation and ensure correct hardware-software compatibility, the software is available at installation only in a compiled, ready to run, image. All unnecessary code is eliminated and a very compact and efficient operating system is the result. This router operating system software is distributed on 3.5” floppy disk, and is a completely bootable image at this point. The PC can function by booting directly from the floppy with no additional mass storage. If a hard drive is present, booting from the hard drive can be accomplished by copying this floppy image to the hard drive. Depending on master or slave configuration, a different floppy is used. This simplifies the installation and reduces the chance of installation error.

Every unit has a unique MAC address, just as with a conventional network card. When a master is set up, and prior to operation, the MAC address of the slave unit must be entered into a table at startup. This allows the master to send out a request to its associated slave. In this way, its associated master can only address slaves. Likewise, a slave could possibly decode data from another master, but will throw away any data not destined for its unique MAC address. This method of operation is very similar to a wire based LAN.

Once the system is setup, it is attached to a LAN just as any other router. Since network topologies are widely varied, this installation is left to a network professional, and is outside the scope of the basic hardware installation. Operation requires no user intervention, once programmed with the proper addresses and netmasks. Upon application of power, the unit loads the program code, and becomes a wireless router.

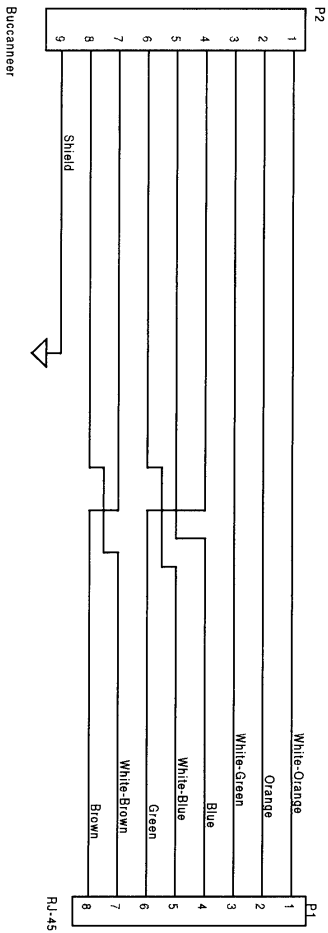
Antenna Hardware Installation

The BB2400 Transceiver/ Antenna is designed to be mounted so that it has direct “line-of-site” to its companion. Since most installations must comply with local building codes and safety

requirements, this portion of the installation is left to trained, licensed installers. Considerations must be made for grounding against static damage, cable UV performance and weather-proofness. To prevent mis-installation, a special control connector is included with each antenna and must be wired as shown in the attached drawing. This connector, not readily available, prevents the transceiver from being used in an unintentional manner. Cable run lengths can be up to 250 feet. As mentioned, shorter lengths are OK and will not cause the maximum output power to be exceeded, due to the system gain distribution.

Once installed, care should be taken to aim the antenna correctly. Also the antenna can be operated in either of two polarization modes, selectable by orientation. This must be the same as the companion. The direction nature of the antennas produces a main lobe of about 30 degrees. Proper aiming will enhance system reliability while achieving the maximum off axis rejection of jamming signals.

BITBEAM ANTENNA CONTROL CABLE



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