TYCON Wireless®

WHITE PAPER

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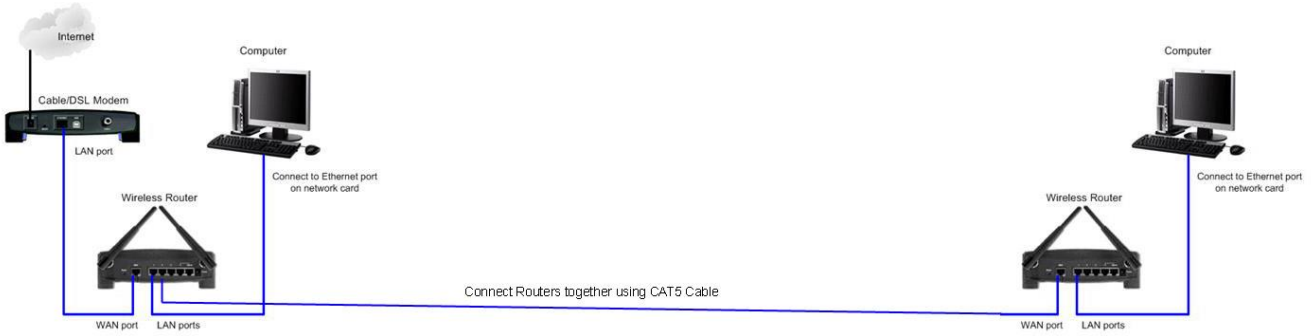
Adding a Second Router to your Network

Summary: When connecting two buildings with the EZ-Bridge® it is sometimes desired to have a second wireless router in building 2 in order to provide wireless connectivity in the second building. For the purpose of this discussion we'll call the router that is connected to the internet the Local Router and the second router we'll call the Remote Router.

1. There are no changes to the EZ-Bridge® for this setup. Make sure the EZ-Bridge is working correctly and you can connect the remote EZ-Bridge® to a computer and get internet access. We recommend the following steps:
    a. Connect the EZ-Bridge at the local site. Run the Discovery Tool (available at http://tyconsystems.com/index.php/support/ez-bridge-firmware). You should be able to see the local EZ-Bridge in the discovery tool.
    b. Connect the EZ-Bridge® on the remote side and power it up. Run the Discovery Tool on a computer connected to the remote EZ-Bridge®. You should be able to see both EZ-Bridge® in the discovery tool.
    c. When you can see both EZ-Bridge® from one side of the network, you know that the EZ-Bridge® are connected with each other and the cabling is good leading to the EZ-Bridge®.

2. Many of the newer wireless routers will automatically configure themselves. If they don't work upon initial setup we highly recommend bringing both routers into the same room and connecting them using a CAT5



Ethernet cable. You can then call your router manufacturer tech support for assistance in getting your particular routers to work in a multi-router configuration. Once the routers are configured properly and working exactly like you want them to, you can replace the CAT5 Ethernet cable with the EZ-Bridge® units and the routers should continue to work the same as when they were directly connected.

3. Some technical notes:
    a. Some routers allow you to turn off NAT (Network Address Translation). If you are able to turn off NAT on the Remote Router, this should allow you to keep both the local and remote sides on the same network subnet. It should also allow devices on the remote side to get their DHCP addressing from the Local Router and the DHCP server should be turned off on the Remote Router. There should only be one DHCP server on each network subnet.
    b. If you can't turn off NAT, the Remote Router will need to be configured with its LAN ports and router IP address on a different subnet than the Local Router. For instance if the Local Router is 192.168.0.x then the Remote Router needs to be on 192.168.1.x.
    c. You may want to configure the Remote Routers WAN port manually if you can't get it to work automatically. Some Recommended Settings:
        i. WAN IP Address = an open IP address on the local routers subnet
        ii. WAN IP Subnet Mask = Automatically set
        iii. WAN Gateway Address = the local routers IP address
        iv. WAN DHCP Server Address = the local routers IP address
    d. Sometimes your computer can't get it's addressing from the Local Router over the EZ-Bridge®. You can go into the Network Setup on your windows machine and open the properties of the TCP/IP connection and set an Alternate Configuration. What this will do is to set your computers IP address to the Alternate Configuration in case your computer can't get it's IP address from the router. Setting as follows:
        i. IP Address = Any open address on your Local Routers subnet (ie; 192.168.1.10 if your router is on the 192.168.1.x subnet)
        ii. Subnet Mask = Automatically set
        iii. Gateway = your local routers IP Address
        iv. DHCP Server = your local routers IP Address
    e. The two routers need to be setup on different wireless channels and those channels need to be different than the wireless channel being used by the two EZ-Bridge® units.
    f. If the networks in your two buildings are on different subnets you won't be able to share files between the computers using Windows. Windows requires all computers in a workgroup to be on the same subnet. If you want to share resources other than internet across an EZ-Bridge® link, you should purchase a Wireless Access Point for your remote building rather than a Wireless Router. You may also need a 10/100 Switch to be able to connect the EZ-Bridge®, the Wireless Access Point and maybe a couple computers together.
    g. Sometimes you have two independent routers or DHCP servers in two buildings and you want to bridge the LANS. To block DHCP requests from travelling across the wireless bridge use the firewall settings in the bridge to block UDP port 67 and UDP Port 68. This will block DHCP requests across the bridge so each network will be independent but also linked by the wireless bridge. Please note that this will also block the discovery tool from reaching across the wireless bridge and it will block Windows discovery also. You won’t be able to browse the other network but you can still access it via direct addressing.