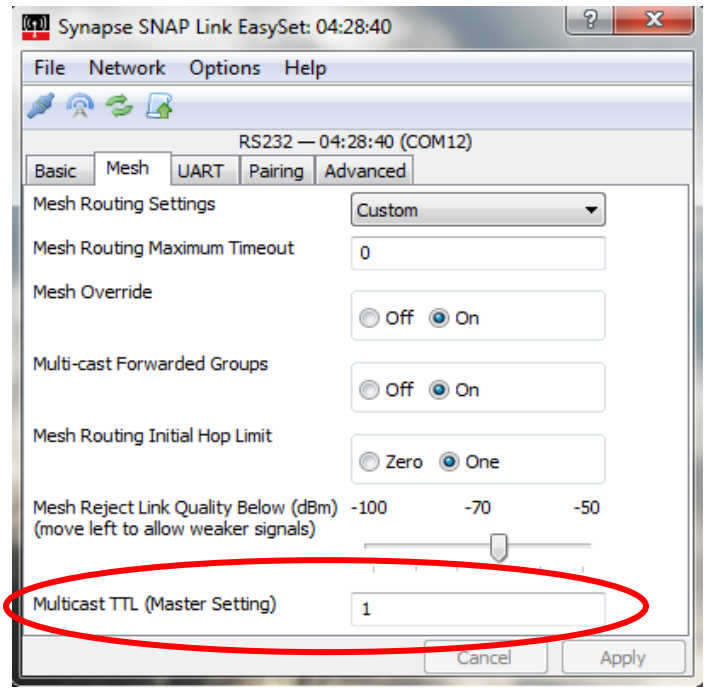
Using a SNAP link as a repeater

Under certain conditions it may be necessary to extend the range of a SNAP link by adding another SNAP link to the setup to act as a repeater.

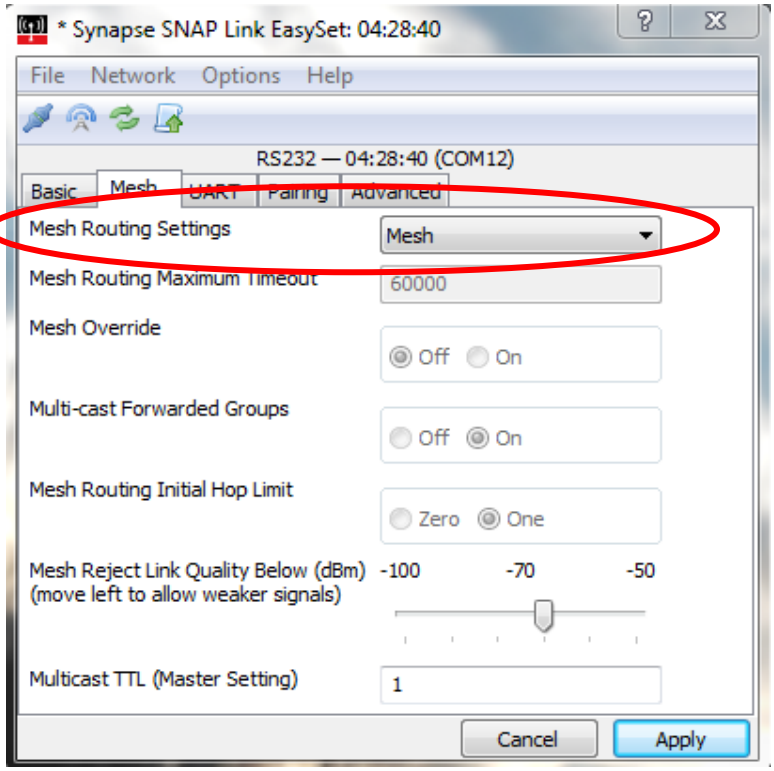
Under normal conditions two SNAP links can easily talk to each other as shown below ……

Under certain conditions it may be necessary to extend the range between two SNAP links. This could be conditions related to interior walls, equipment, doors, anything that can impede the RF signal. In cases like this you may be able to re-establish the wireless link with a SNAP link configured as a repeater.

Using Easy Set you will need to configure the Multicast TTL setting to 2. In some cases where more "hops" are needed simply increase the TTL setting. This setting is located under the "mesh" tab as shown below. Make this change to SNAP link A.



To make a SNAP link repeat the message it hears then mesh routing needs to be turned on. By default this setting on the SNAP link is off because we assume that normally two SNAP links will be within range of each other since this product is for wire replacement.



The way this works is the message is transmitted, in this case, with a TTL of 2. When the repeater receives this message in will see the TTL of 2 and decrement the value and resend the message because there is one hop left. (TTL now = 1)

From the SNAP reference manual here is a definition on TTL ….
Parameter *ttl* specifies the Time To Live (TTL) for the request. This basically specifies how many hops the message is allowed to make before being discarded.

Do not assume that turning on mesh routing on every SNAP link you install is a good idea. Having every SNAP link in your setup repeating a message can cause more harm than good. Doing this can actually cause a traffic storm and / or collisions. A proper setup would be one where only SNAP links that need to repeat do so. A good source of information on this can be found in the SNAP primer manual.

SNAP link modes of operation:
Paired mode (point to point) – unicast scheme both ways (A to B, B to A)
One too many – multicast out from the master, unicast back from the slaves (back to master)
No configuration mode – simple broadcast mode

Useful links:
http://www.synapse-wireless.com/snap
http://www.synapse-wireless.com/snap-components/snp-link-serial-adapters