

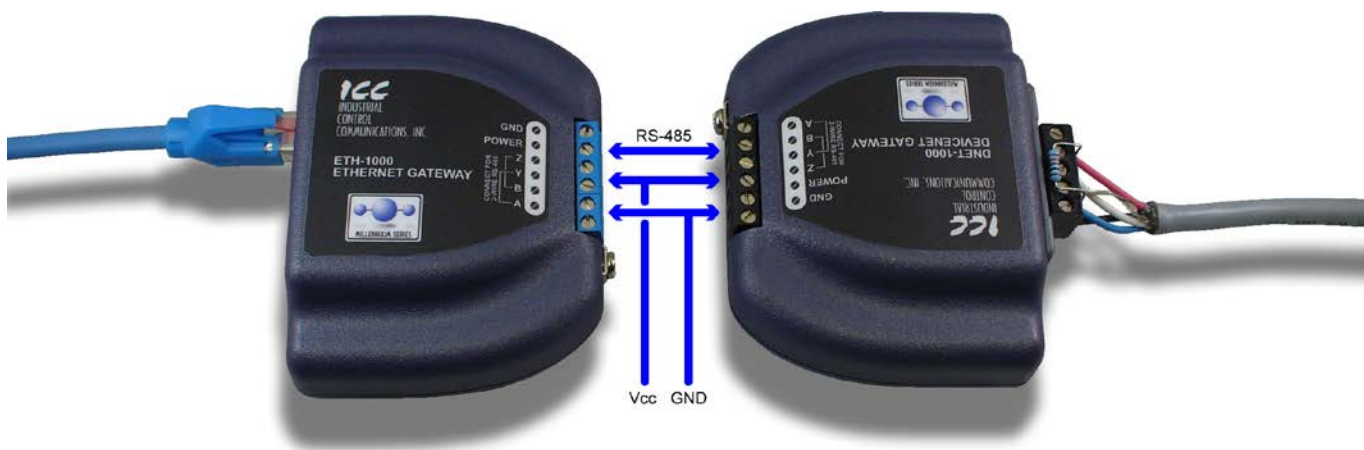
## Millennium Series “Super Gateway” Configuration

ICC Millennium Series gateways have the unique feature of being able to be connected in what is called a “super gateway” configuration. A “super gateway” is essentially two (or more) independent gateways, but connected and configured in such a way that the gateways share a common database. This configuration allows any two (or more) independent networks to be connected to each other, and share information across the various networks.

Establishing a “super gateway” requires only that two or more Millennium Series gateways be connected via their RS-485 ports (refer to Figure 1). One gateway (designated as the master) is then configured via the *ICC Configuration Studio* to have the Modbus RTU Master protocol running on its RS-485 port. All other gateways are configured to have the Modbus RTU slave protocol running on their RS-485 ports. The “master” gateway is then configured with appropriate service objects to read and write all relevant data from the databases of the “slave” gateways.

Because each Modbus RTU service object can be configured for up to 125 registers (250 bytes), mapping the entire 4kB database from one gateway to another would require only 16 nearly identical service objects (16 x 250 bytes = 4kB). Of course, typical network-to-network applications do not usually require this much data to be mapped across the networks. For maximum data throughput, it is recommended to configure both RS-485 ports for 115.2kbaud.

Once the gateways begin synchronizing their databases, the RS-485 “backplane” can essentially be forgotten, and the benefits of what is effectively a network-to-network connection can be realized. Note that although the system shown in Figure 1 contains only two gateways, this system is scalable to include up to 31 Millennium series gateways, communicating through a shared 4kB “common database”. Any combination of supported networks & “Port A” protocols can be joined in this manner.



**Figure 1: Ethernet-DeviceNet Super Gateway**