

### TSAN 037

HiPR-900™ Terminal Server (RS-232 Serial) Repeater (Bridge Mode)

### Dataradio Technical Support

For additional assistance: [www.dataradio.com](http://www.dataradio.com)

Within the U.S.A.	1-800-992-7774	International	1-507-833-8819
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**Product:** Dataradio HiPR-900™

**Application:** Provide the information necessary to configure an Ethernet network using back-to-back HiPR-900's as a serial data repeater. This application uses the HiPR-900 bridge mode. The SCADA host and RTUs are on the same IP sub network. Serial data between HiPR-900s is transported in TCP/IP protocol. This allows legacy serial devices to operate within a mixed HiPR-900 system.

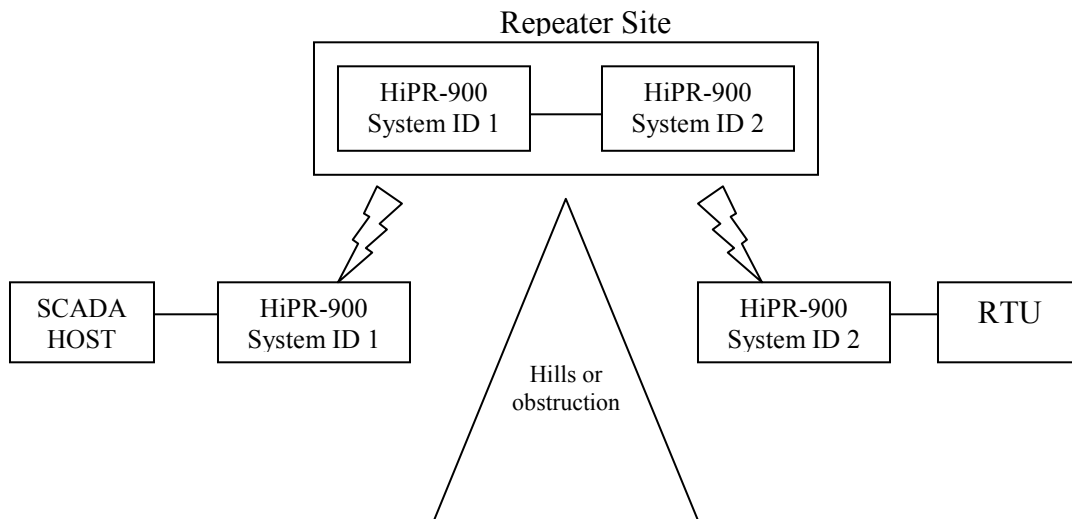


Fig. 1

Figure 2 shows a sample system configuration.

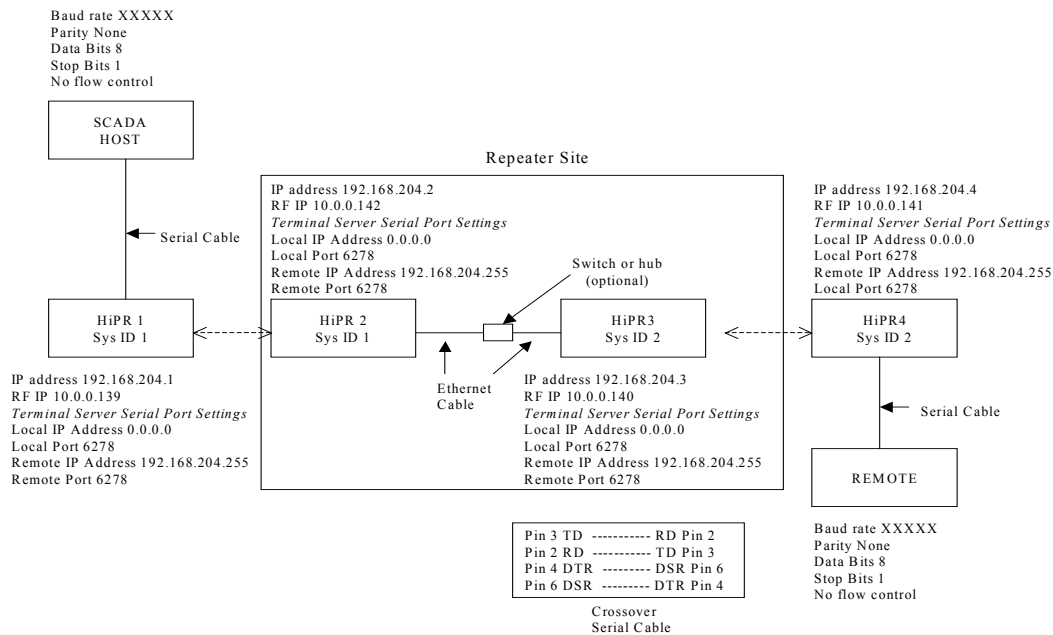


Figure 2

### Set-up:

The HiPR-900s are required to be on the same IP subnet.

An Ethernet switch, an Ethernet hub or an Ethernet cable, may connect the HiPR-900s at the repeater site.

One HiPR-900 (not at the repeater site) must be designated as a Synch Master unit on each System ID. Please refer to the HiPR-900 Quick Start Guide for information on Synch Master and System ID programming.

All Ethernet connections must use Cat 5 or higher cable.

### Repeater Site:

A "straight through" Ethernet cable may be used if the cable is to be connected directly between the "LAN" connectors on the radios. A straight through cable may be used if the HiPR-900 is powered by an external power supply. A straight through cable does not allow local Ethernet access to the radios.

Switch or hub: A "straight through" Ethernet cable is connected from the RJ-45 connector marked as "LAN" on one radio to a RJ-45 port connector on the switch or hub. A separate "straight through" cable is used to connect from a RJ-45 port connector on the switch or hub to the RJ-45 connector marked "LAN" on the other radio. A switch or hub allows local Ethernet access for testing and maintenance.

A crossover serial cable may be used in lieu of an Ethernet cable. See Table 1 for crossover cable wiring. You will not be able to ping from a HiPR-900 on system ID 1 to a HiPR-900 on system ID 2 when a serial cable is used. The serial cable is connected between the selected DB-9 connectors on the HiPR-900 units. You may use either the Set Up Port or the Data Port. The selected port must be programmed for RF/Serial Bridge in the IP Gateway Services. The Serial Port programming is located under Setup (Basic), Serial Port. See Figure 3 for set up information. The Serial Port set up is the same for all HiPR-900s in the system.

DB-9		DB-9	
Pin	Description	Description	Pin
3	TD	RD	2
2	RD	TD	3
4	DTR	DSR	6
6	DSR	DTR	4

Table 1

### Serial Crossover Cable

#### SETUP PORT

**Enabled**

**Speed**  
115200

**Flow Control**  
None

**Connection Control**  
Permanent (3-wire)

**IP Gateway Service**

- CLI Service
- Serial/RF bridge
- Online Diagnostics
- Custom

**IP Gateway Transport**  
TCP Client

Local IP Address: [ ]  
Local IP Port #: [ ]  
Remote IP Address: [ ]  
Remote IP Port #: 23

**Status: READY**

#### DATA PORT

**Enabled**

**Speed**  
19200

**Flow Control**  
None

**Connection Control**  
Permanent (3-wire)

**IP Gateway Service**

- CLI Service
- Serial/RF bridge
- Online Diagnostics
- Custom

**IP Gateway Transport**  
UDP

Local IP Address: 0.0.0.0  
Local IP Port #: 6278  
Remote IP Address: 192.168.204.255  
Remote IP Port #: 6278

**Status: UP**

Figure 3

**Note:** Dataradio offers this type of repeater as a complete assembly. Contact your Wireless Data Adviser for details.