



## MX-2000 Data and Diagnostics Circuit Extensions

The configuration shown below can be used to pass data or diagnostics from one site in a digital point-to-point system to other points down the line. It can also be used to concentrate data returning from outer locations and route it back to the host via a single KLS.1 data channel.

The MS-3 or MS-6 sharing device shown in the diagram allows the Master port to supply data to all the other ports. The Master port should be connected to the KLS.1 data channel that comes from the SCADA host or diagnostics computer. Data returning from points down the line is routed through the sharing device to the Master port only--devices on the other ports cannot communicate with each other. Some form of addressing must be used to prevent data collisions at the sharing device's user ports. This feature is incorporated in MDS master radio diagnostic ports by means of DIP switches, and in MDS MX-2000 multiplexers by means of a programmable Node address. The MDS diagnostics software supports this by using independent addressing to communicate with each radio and multiplexer in the system, one at a time. MDS recommends using two separate data channels for radio and mux diagnostics because of known conflicts between the mux and radio diagnostic protocols. This scheme requires two sharing devices at each site where diagnostics data are carried through the system. Advantages of this method of implementing system diagnostics include the ability to monitor radios and muxes at the same time, and making full use of the system's 255-radio and 255-mux address capabilities.

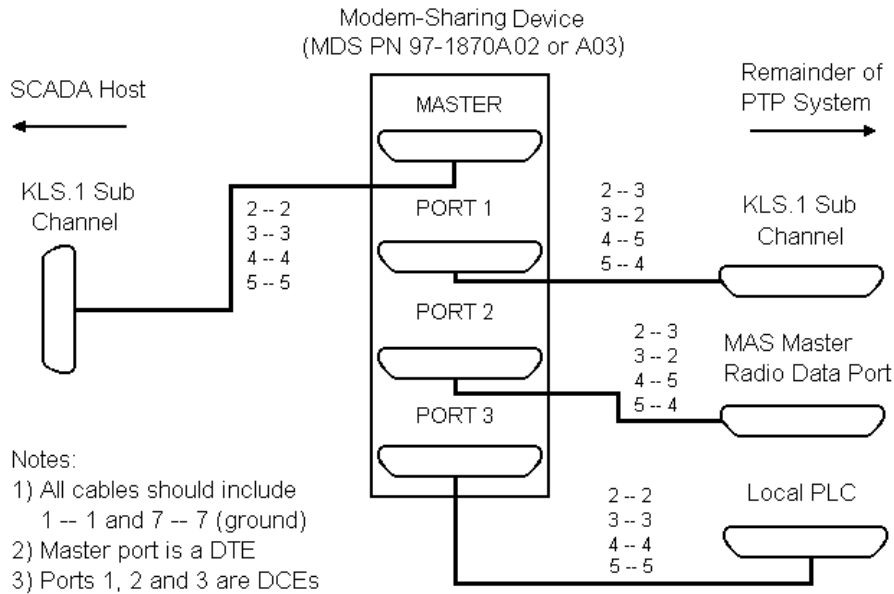
Be sure to choose the appropriate cables for interconnecting devices to the MS-3 or MS-6 modem-sharing device. The Master port is a DTE; all the other ports are DCEs. Connecting a user port of the sharing device to the MX-2000 Supervisory Port on the KCL.1 Common Logic card requires a special null-modem cable, MDS part number 97-1870A15. Any combination of user ports may be used on an MS-3 or MS-6. These sharing devices are passive, so all user port devices must be operated at the same data rate as the channel connected to the Master port.

If system timing is to be passed through modem-sharing devices to supply the system clock to multiple links, synchronous data channels and synchronous cables must be used. See Application Bulletin 96002, "Timing Digital Point-to-Point Links from Data Channels," for more details.

*Please see drawings on next page.*

For more information, contact MDS Technical Services at [techsupport@microwavedata.com](mailto:techsupport@microwavedata.com), or by phone at +1-585-241-5510.

**EXAMPLE 1: SCADA DATA CHANNEL DROP AND EXTENSION WITH LOCAL RTU**



**EXAMPLE 2: RADIO OR MULTIPLEXER DIAGNOSTICS DROP AND EXTENSION**

