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Farallon PhoneNET: Troubleshooting Information

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The typical reason for strange behavior in PhoneNET networks is having drops from a backbone that contain resistors at their ends. A PhoneNET network should have only two terminating resistors: one at each end of the network. If a StarController is being used, there should be one resistor at the end of each drop from the StarController.

Each added resistor pulls down the voltage level across the whole network. This will cause uneven performance as the signal is degraded to below the response level of the nodes and/or the serial ports. The signal may be acceptable near the source but, depending on the configuration of the network, the signal will probably be pulled lower than can be registered by a destination node or serial port as it moves away from the source.

The nodes may be receiving signals at the lower limit of their sensitivity (something under 5 volts). For example: The voltage level is normally 5 volts when high. If added resistors increase the impedance of the network without any added current to draw from, the voltage level may be around 4 volts, depending on how many extra resistors are added, and how far from the source the receiving node is.

Now, assume that the nodes are specified to work with 4.5 to 5.5 volts, but are actually sensitive to signals as low as 4 volts. (Most will be, but some may be sensitive to only 4.5 volts.) These are perfectly good nodes on a properly configured network. Because your network might have signals at 4.2 volts in some places and 4.6 volts in others, some nodes, sensitive to 4.5-volt levels, would not receive the signals in some spots and will in others.

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