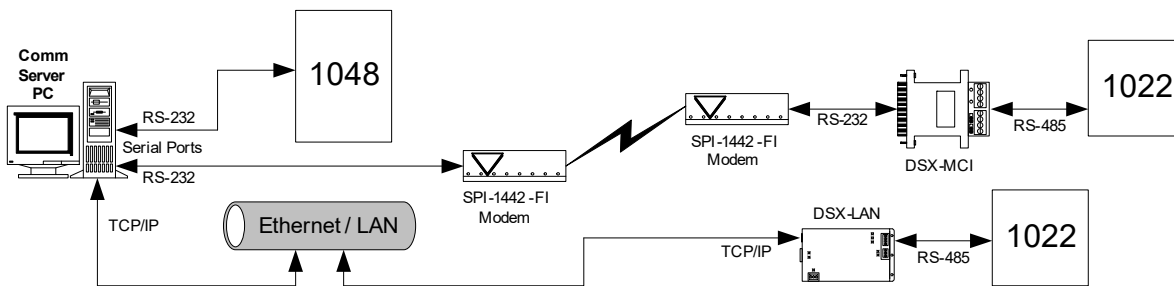# MASTER COMMUNICATIONS

PC TO MASTER CONTROLLER

Communications between the Comm Server PC and the Master Controller can be achieved by
- Direct Connection - Serial/USB
- TCP/IP Connection - Direct or OnDemand
- Dial Up Modem - (Legacy)

All three methods can be used at the same time.
The following example illustrates 3 separate Locations using different communication methods.


DIRECT CONNECT COMMUNICATIONS

The Serial Port of the Comm Server PC is directly connected to the Master Controller.

1040 SERIES CONTROLLERS

Used with the DSX-1040 for short distances, RS-232 is the most straightforward method of communication.
Distances up to 50 feet
Requires 2-pair 22AWG cable with an overall shield. A DSX-USB is available to convert USB to RS-232.
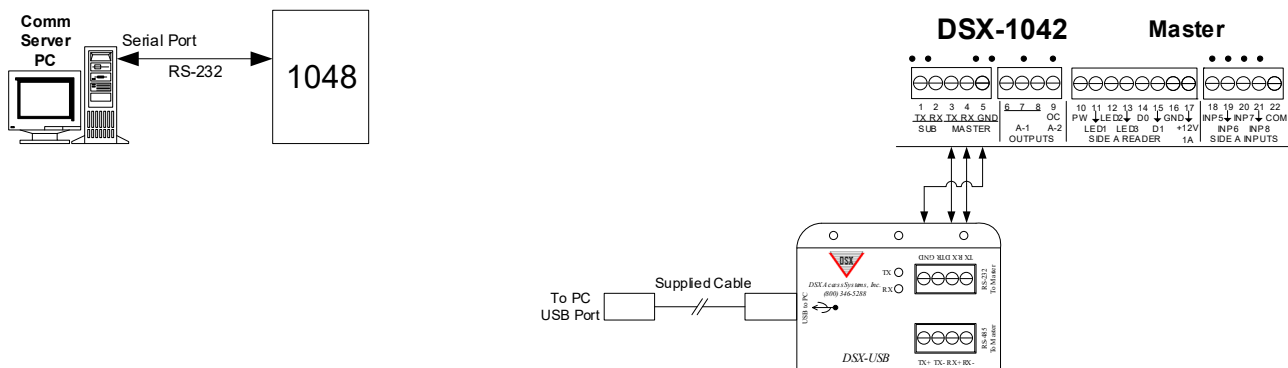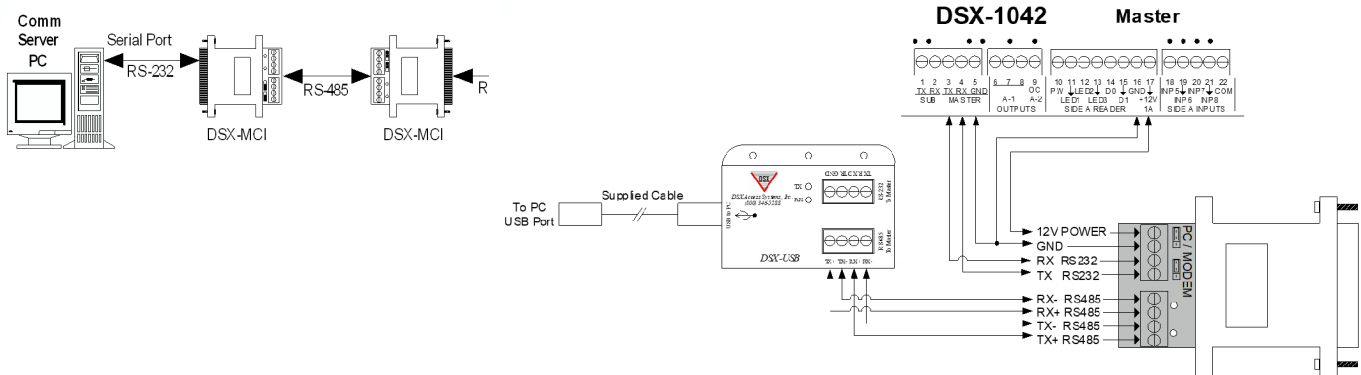
Distances 50 feet to 4000 feet
Requires two DSX-MCI modules and 2 twisted pair 22AWG cable.
The first MCI module converts the RS-232 to RS-485.
The second MCI module converts the RS-485 back to RS-232 for the 1040 Series Master Controller.
A DSX-USB could also be used with an MCI to gain the necessary distance.
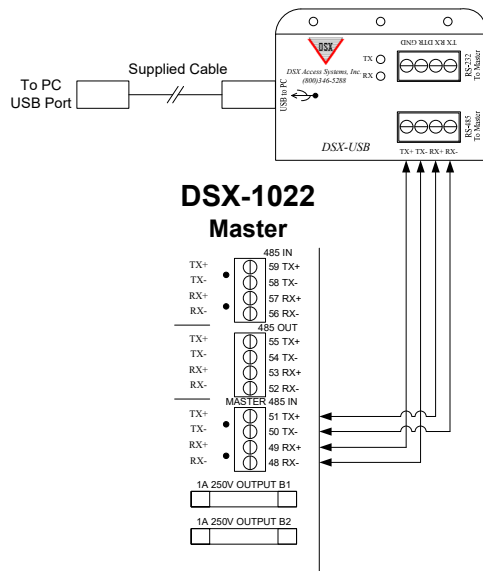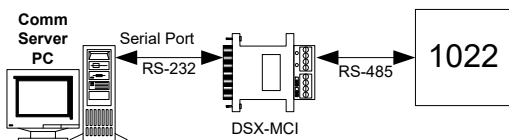

1022 Series Controllers
Require RS-485 for communications.
DSX-MCI or USB module converts the RS-232/USB port of the PC to RS-485 for the 1022 Series Master Controller.
Required DSX-MCI module is placed at the PC.
Requires 2 twisted pair AWG cable.
Distances up to 4000 feet away.

TCP/IP Communications

DSX-LAN-D module connects the Comm Server PC to the Master Controller over a Local or Wide Area Network. WinDSX software is inherently TCP/IP capable. Communications normally transmitted out a serial port can be redirected over a LAN/WAN to a specific IP address. The DSX-LAN-D module receives that communication and converts it to RS-232 or RS-485 that connects directly to the Master Controller.

The illustration below shows the Comm Server communicating with two Location Master Controllers. Data packets between the PC and the Master Controller vary in size.
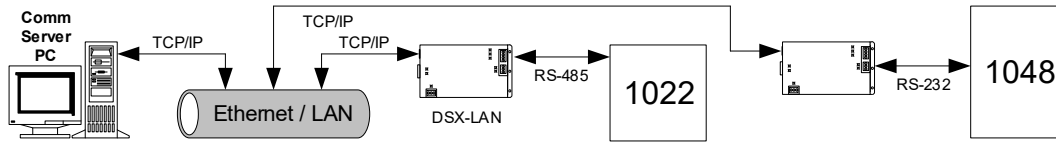
Bandwidth
Most packets between the Comm Server PC and the Location Master Controller are empty polls.
Empty Polls are 18 bytes long.
The longest packets are 200 bytes long.
Communication connections between the WinDSX Comm Server and a Location Master Controller use approximately 4800 bits per second of bandwidth regardless of DataBase size.

IP OnDemand

DSX now offers an efficient process for IP Communications. The ability to open a communication port only when necessary (OnDemand), offers increased system integrity. In theory it operates like a Dial-Up modem, OnDemand opens the communication port, data is exchanged, and the port is closed. This allows the use of Internet or Cellular metered service for communication without constant online exposure to the world resulting in enhanced security and lower bandwidth consumption.

IP OnDemand

IP OnDemand Typical Communications

This example shows the Comm Server communicating with Direct and IP OnDemand Locations using both DSX-LAN-D and UDS-1100. DSX-LAN-D are required for Internet, Cellular and busy WAN connections.

Comm Server PC
Comm Server Settings
Static IP: 173.26.15.140

Workstation PC

TCP-IP NETWORK

Router 3
Cellular Router
With Public Address
10.10.217.221

Routing Table
Port 4140 forwarded to
192.168.1.30

Cellular System Router

Cradlepoint IBR200

Location 1

DSX-LAN-D

1022

DSX-LAN-D Settings
Static IP: 173.26.15.196
TX IP 4196 RX IP 4196
Send to: 173.26.15.140

Location Settings
Connect Type: LAN (UDP)

DSX-LAN-D

Location 5

1022

DSX-LAN-D Settings
Static IP: 192.168.1.30
RX IP 4140 TX IP 4140
Send to: 10.10.25.109

Location Settings
Panel Phone #: 10.10.217.221:4140
Connect Type: Ip On Demand

Location 2

UDS-1100

1040

UDS-1100 Settings
Static IP: 173.26.15.198
Port 4198
Remote Port 4198
Remote IP Adr: 173.26.15.140

Location Settings
Connect Type: LAN (UDP)

With Public Address
10.10.25.109

Routing Table
Port 4140 forwarded to
173.26.15.140

Router 1

Location 3

DSX-LAN-D

1022

DSX-LAN-D Settings
Static IP: 173.26.15.201
TX IP 4195 RX IP 4195
Send to:173.26.15.140

Location Settings
Panel Phone #: 173.25.15.201:4195
Connect Type: Ip On Demand

DSX-LAN-D

Location 6

1040

DSX-LAN-D Settings
Static IP: 192.168.0.2
TX IP 4140 RX IP 4140
Send to: 10.10.25.109

Location Settings
Panel Phone #: 10.10.14.40:4140
Connect Type: Ip On Demand

Router 2
ISP Router
With Public Address
10.10.14.40

Routing Table
Port 4140 forwarded to
192.168.0.2

Location 4

DSX-LAN-D

1040

UDS-1100 Settings
Static IP: 173.26.15.202
Port 4195
Remote Port 4195
Remote IP Adr: 173.26.15.140

Location Settings
Panel Phone #: 173.26.15.202:4195
Connect Type: Ip On Demand

NOTE\\\ Locations using Internet, Cellular Routers or busy WANs require the DSX-LAN-D using Packet Mode under Advanced Settings.