## Overview

When Pason customers transfer data to and from the DataHub, it's important that network connectivity be consistent and error-free.

This document provides technical and hardware specifications for third-party internet service providers (ISPs) who connect Pason equipment to their satellite or network systems. Pason recommends that you follow these specifications to ensure a timely and efficient satellite or network connection.

## Technical and Hardware Specifications

**Note:**

Avoid the use of any wireless communications or Wi-Fi equipment onsite, as this medium is susceptible to interference and frequent outages. When possible, cable Pason systems directly to the satellite modem without using any wireless infrastructure.

Listed below are the technical and hardware specifications you must use when connecting Pason equipment to your satellite or network system.

Pason's network at the rig uses a Class C (/24) subnet. The network address is 192.168.11.0 and the subnet mask is 255.255.255.0. Refer to Figure 1 on page 2 for more information:

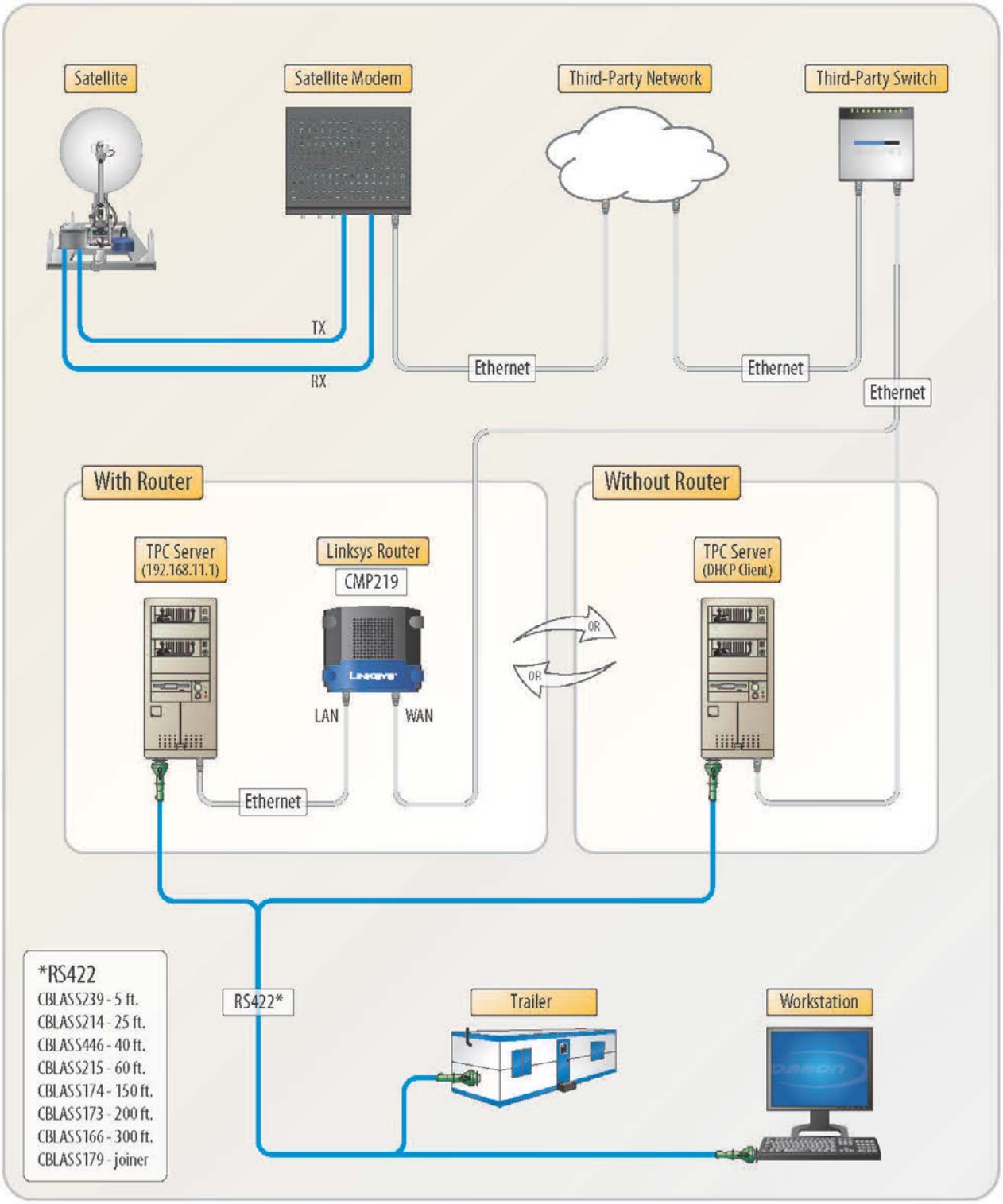


Figure 1: Third-Party Satellite Communication Connection diagram

There are two configurations that can be used to connect Pason equipment to your satellite or network system:

**Configuration One**

Listed below are the specifications for the first configuration:

- The instrumentation network server (TPC server) expects to have a Pason Firewall/Router (Part # CMP157) with an IP address of 192.168.11.10 and a subnet mask of 255.255.255.0.
- The Wide Area Network (WAN) address of the router is assigned dynamically by the provider.
- The router is configured to allow Inbound Port 22/TCP (Port 22 [Under Port Forwarding]). It must be named "SSH" and forwarded [DNAT] to 192.168.11.1, Port 22 in order to enable remote technical support by Pason personnel.

**Configuration Two**

Listed below are the specifications for the second configuration:

- The instrumentation network server (TPC server) connects directly to your dish network. This configuration may be used if a router is not readily available.
- The TPC obtains an IP address dynamically after being directly connected to your network.

**Note:**

IP addresses and/or DNS servers assigned can't contain any ranges in the 10.x.x.x or 192.168.0.x due to the TPC configuration, as this prevents transmission to these networks.

## Configuring Inbound and Outbound Ports

You must allow access from the instrumentation network server (TPC server) through the ports listed below. To verify that these ports are open, contact Pason Technical Support at 1-877-255-3158.

- **Inbound Port (22/TCP)**: Port 22 (Under Port Forwarding) must be named "SSH" and it must be forwarded via Destination Network Address Translation (DNAT) to the Pason router's IP address, Port 22, in order to enable remote technical support by Pason personnel.
- **Outbound Ports**: If possible, all outbound ports should be open. If traffic is restricted, then the following ports, at a minimum, must be opened:

- **Port 20/TCP (FTP-data) and Port 21/TCP (FTP)**: FTP ports are used so that EDR systems can download picklists, and so that WellView systems can synchronize data with their head office FTP servers. In addition, the customer's firewall/router should provide stateful FTP connection tracking so that passive FTP (FTP PASV) mode works.
- **Port 25/TCP (SMTP)**: Pason uses this port to send data and push email, and some customers use SMTP for their own email applications.
- **Port 53/UDP (DNS)**: DNS queries are required for email (including data push) and web access (including EDR picklist downloads and datastream) for Pason and its customers.
- **Port 80/TCP (HTTP)**: This port is used for Internet access.
- **Port 443/TCP (HTTPS)**: This port is required in order for the EDR software to function properly.
- **Ports 7676/TCP, and 40003/TCP (All ports are Pason Datastream ports)**: These ports are required for the EDR Datastream and for Live Rig View to function properly.
- **Port 5000/UDP (OpenVPN)**: This port is used by Pason's EDRVPN.
- Additionally, the following ports should be open, as they may be used by customers for email (the "S" version of the protocol indicates that it is SSL encrypted):
  - 110/TCP - POP3
  - 143/TCP - IMAP
  - 220/TCP - IMAP3
  - 465/TCP - SMTPS
  - 993/TCP - IMAPS
  - 995/TCP - POP3S
- Additional ports may be required for other services such as Voice over IP (VoIP).

## Configuring the ISP Firewall

If you have a firewall, the following IP address ranges must be allowed to communicate through these ports on the firewall:

- IP address range (Pason Headquarters) - 208.38.1.0 /27 & 209.115.131.96/27
- IP address range (Pason DataHub) – 34.210.3.193, 34.216.172.229, 35.155.134.234, 35.155.176.157, 35.163.180.10, 35.163.188.131, 35.165.199.111, 35.165.79.182, 35.166.198.235, 50.112.5.221, 50.112.56.87, 50.112.59.224, 52.11.44.186, 52.13.214.131, 52.13.222.232, 52.25.3.56, 52.26.14.209, 52.27.236.98, 52.34.212.14, 52.35.0.123, 52.37.116.169, 52.38.154.58, 52.38.199.93, 52.40.247.144, 52.43.242.99, 52.88.15.3, 52.88.251.177, 52.88.73.231, 52.89.181.64, 52.89.224.118, 54.186.159.94, 54.191.199.10, 54.200.102.149, 54.203.31.64, 54.214.111.18, 54.214.86.147, 54.68.147.127, 54.69.236.151, 54.70.139.43, and 69.58.16.0/20

  **Important:**

  Customers that have restrictive Firewall rules and/or are using 3rd party connections are more likely to be affected and should update using one of the IPs listed above. Also, be aware that these IP addresses are subject to change on short notice.

- IP address range (Pason Email) – 162.210.234.132 & 209.135.212.132 & 69.58.16.0/20

## Completing the Rig Setup

After you have set up the system in accordance with the above specifications, a Pason field technician will make the final connections (connecting the computers to the existing network). If everything connects properly and the field technician can complete the rig-up, there will be no additional charge. Should the third-party satellite/network connection not work, subsequent trips to the rig will be charged at Pason's discretion.

If the Pason customer is still experiencing problems, please refer them to their own IT department for support.