

Products: MultiSmart

Notes: DNP3 or Modbus over cellular data networks, PumpView communications

1 Introduction

This application note describes how to use the PPPM2 module to create IP based communications over serial ports.

Applications include PumpView (the MultiTrode hosted SCADA solution) and for sending protocols like DNP3 or Modbus over cellular data networks.

Note: If you are not routing IP traffic over one of the serial ports then PPPM2 is not required.

2 PPPM2

PPPM2 is a Point to Point Protocol Manager. It is used to route IP based communications over a serial connection.

PPPM2 works by routing all packets on a telemetry channel associated with an IP protocol through a telemetry channel associated with a serial port.

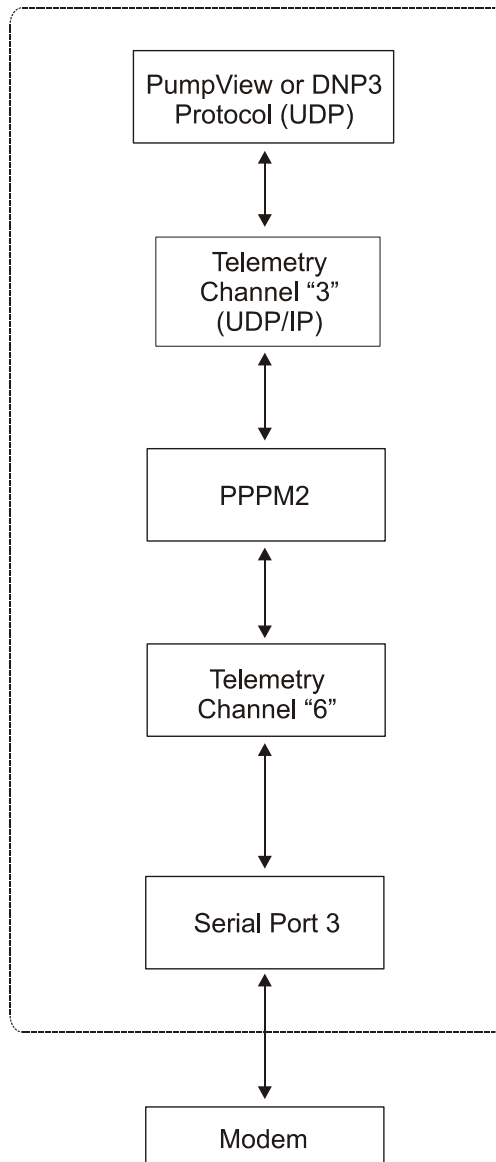


Figure 1 – PPPM2 is used to Route UDP/IP traffic on Channel 3 through Channel 6 to Serial Port 3

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3 Telemetry Channels

By default there are 6 telemetry channels configured as follows:

- 1 – RS232 (Serial Port 2)
- 2 – RS232 (Serial Port 3)
- 3 – UDP
- 4 – TCP/IP (Ethernet Port)
- 5 – Modem (Serial Port 3)
- 6 – (RS232 (Serial Port 3))

PPPM2 takes packets from UDP Channel 3 and routes them out to Serial Port 3 via Telemetry Channel 6.

Note: At this stage PPPM2 cannot be used to route TCP/IP communications over a serial port because there is no channel configured for “TCP”. (TCP/IP is currently only used over the Ethernet port using Channel 4). If TCP/IP over a serial port was required a new channel would have to be added to the list above. Contact MultiTrode technical support for details on how to do this.

PPPM vs PPPM2

PPPM is an earlier version of the Point to Point Protocol Manager used on the MultiSmart. Customers are strongly advised to upgrade to PPPM2 where possible. MultiTrode technical staff can advise on how to do this.

The examples below will work for PPPM if the telemetry channel is changed from “6” to “2”. The reason for this is that the channels are defined differently in code.

Use channel 2 when using PPPM and channel 6 when using PPPM2.

4 Applications

PPPM2 can be used to perform the following tasks:

- Route PumpView packets through a serial port to a modem then to the PumpView Server
- Route DNP3 slave packets through a serial port to a cellular modem for connection to a DNP3 Master

5 Configuration

5.1 Example 1 - PumpView

Configure telemetry Channel 6 to use RS232 Serial Port 3 (this should already be set by default):

Settings -> Advanced -> Telemetry -> Channel -> Channel 06 -> Communications Ports
Ports = “Serial 3”

Configure PPPM2 to use telemetry channel 06 (so packets are redirected out serial port 3):

Settings -> Advanced -> PPPM2 Manager -> Communications Channel
Communications Channel = “6”

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Configure PumpView (T3000) to use UDP/IP communications channel 3:

Settings -> Advanced -> T3000 -> CommsChannel

CommsChannel = "3"

5.2 Example 2 – DNP3 over a cellular modem

Configure telemetry Channel 6 to use RS232 Serial Port 3 (this should already be set by default):

Settings -> Advanced -> Telemetry -> Channel -> Channel 06 -> Communications Ports

Ports = "Serial 3"

Configure PPPM2 to use telemetry channel 06 (so packets are redirected out serial port 3):

Settings -> Advanced -> PPPM2 Manager -> Communications Channel

Communications Channel = "6"

Configure the DNP3 Slave to use UDP/IP communications channel 3:

Settings -> Advanced -> DNP Slave-> Slave -> Slave [Slave Number]

Then Select:

Session -> CommsChannel

CommsChannel = "3"



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