# TECHNICAL NOTE   TNOI25

Title: Modicon Telemecanique Unitelway network with G3s

Product(s): G3 HMI and Modicon TSX PLCs

This technical note presents how to connect G3 HMIs on a Unitelway network. This network is using a proprietary protocol from Schneider Telemecanique. The PLCs are also known as Square D or Modicon. As cabling is particular for Unitelway, this technical note will concentrate mainly on the connections between the HMI and the PLCs and between the PLCs. The example is based on a real application and has been tested.

SYSTEM ARCHITECTURE:

The final design must follow the following diagram:

━━ Existing communication exchange.
━━ Communication to be created.
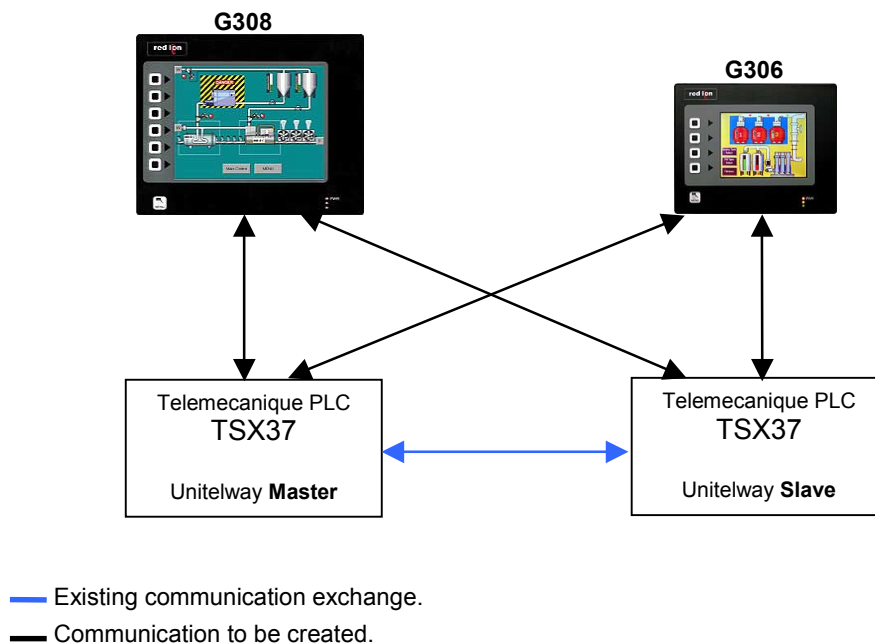
As the Unitelway network supports only one master, both G3 will be slaves. Therefore, the communication driver Unitelway Slave will be used in Crimson 2.0 configuration.

## G3 CONNECTIONS ON THE NETWORK.

In order to get the data exchange shown above working, two cabling solutions are available.

1. USING THE TER AND AUX PORTS OF THE PLCS.

Telemecanique PLCs have 2 communication ports on the front panel. They are actually on the same network and can be used for easy connections to create the network.
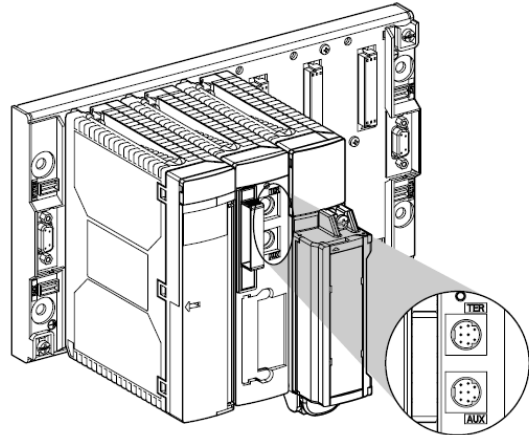
The diagram below shows the connections made using Red Lion Cables CBLTEL01 (Cable for G3 in Slave mode). Details of the cables are shown after.
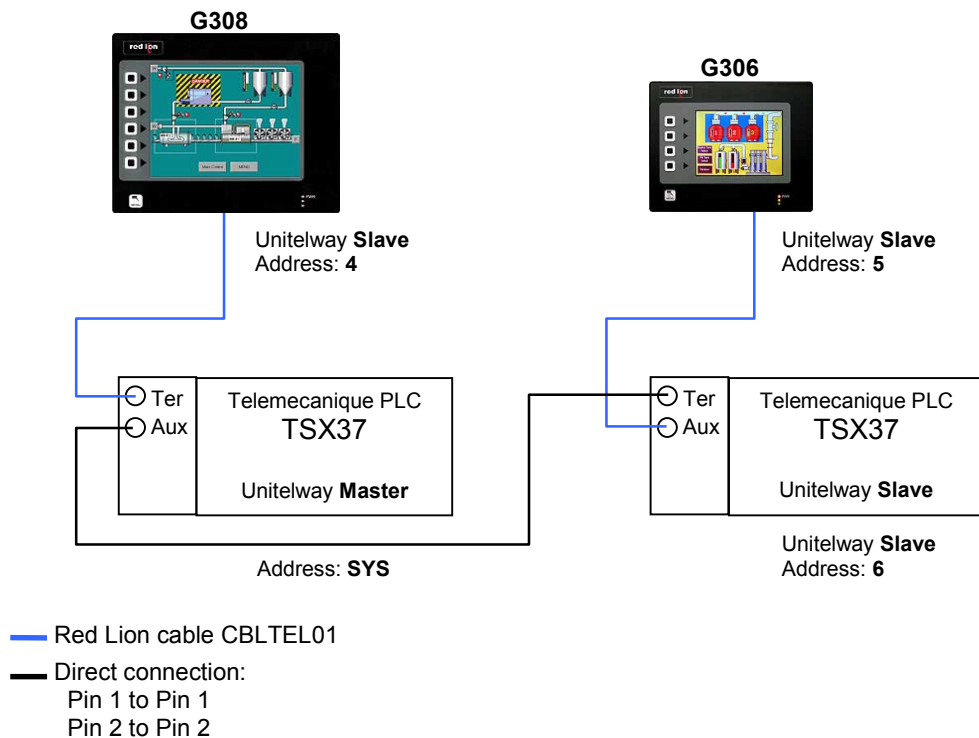
	CABLE 1		CABLE 2		CABLE 3	
	G308 (RJ45)	TSX37 MASTER (TER)	TSX37 MASTER (AUX)	TSX37 SLAVE (TER)	TSX37 SLAVE (AUX)	G306 (RJ45)
TxB	1	1	1	1	1	1
TxA	2	2	2	2	2	2
RxA	3	-	-	-	-	3
RxB	4	-	-	5-7 *	-	4
TxEn	5	-	-	-	-	5
Comm	6	-	-	-	-	6
TxB	7	-	-	-	-	7
TxA	8	-	-	-	-	8

* The above table denotes a bridge between Pin 5 and 7 on the Slave TSX37 terminal port. This bridge is to inform the PLC to act as a slave.

2. CABLING AS A UNIQUE BUS

In this solution, cabling will be the same on a Pin to Pin point of view; only the connection point will be different. It will be as show below:
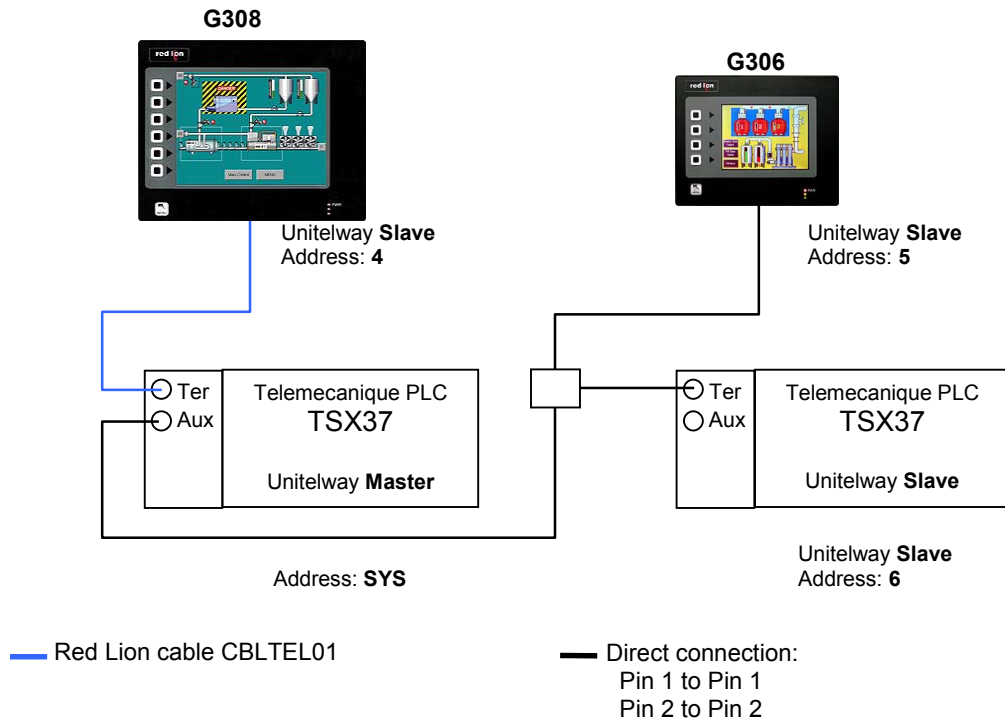
SOFTWARE PROGRAMMING

In order to get this network up on running, the G3s have to be programmed as followed:

- Select Unitelway Slave protocol

- Choose right Baud Rate, parity and stop bits as defined by the network

- Define the TSX as a Master (in our example)

- Enter the G3 address on the network. This address has to be different from the other slaves and cannot be 1, 2 or 3 as they are reserved by the master.
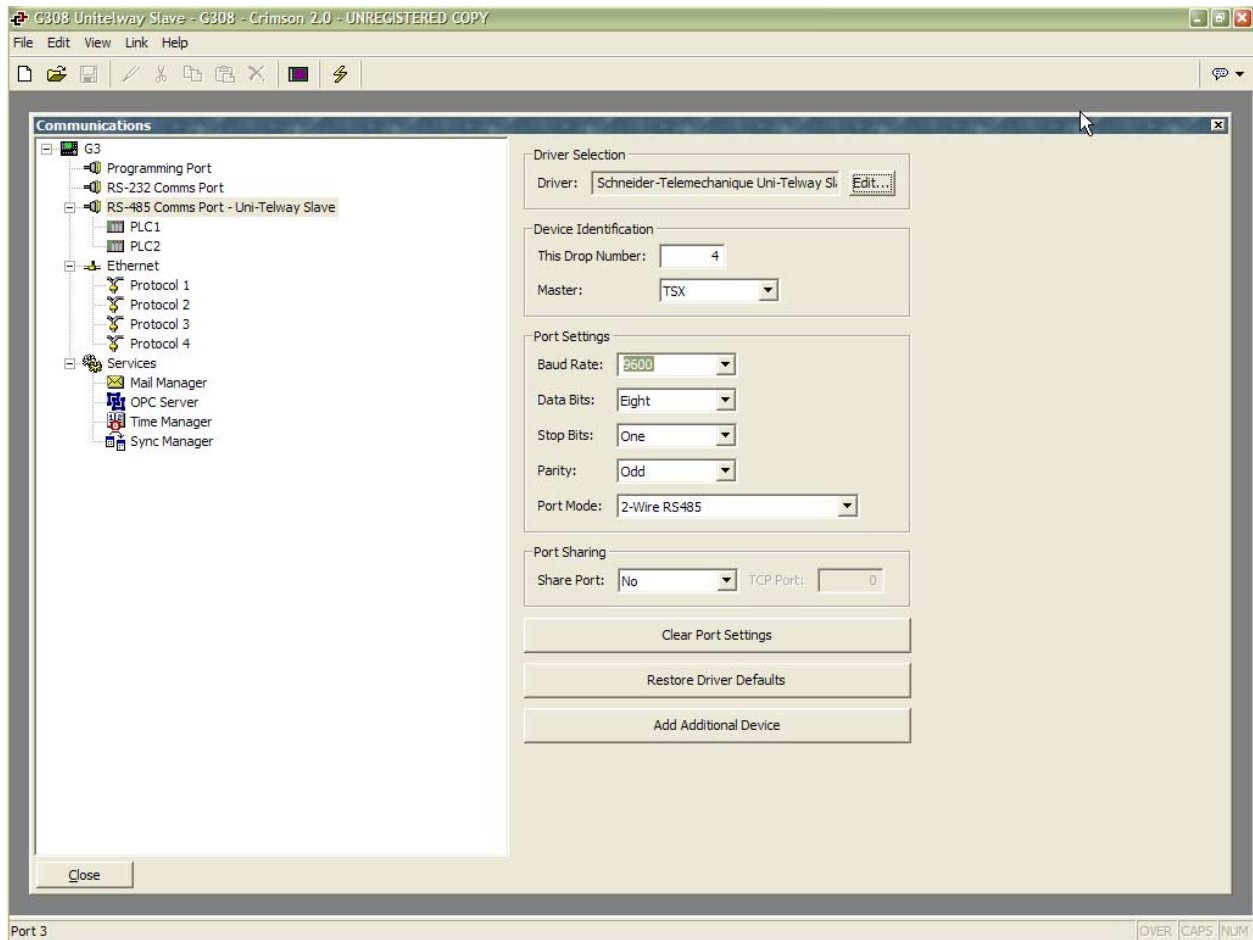
- Indicate the address of the unit you wish to communicate with. An address of 0 will access the master. You can access other slaves as well if you enter their address.
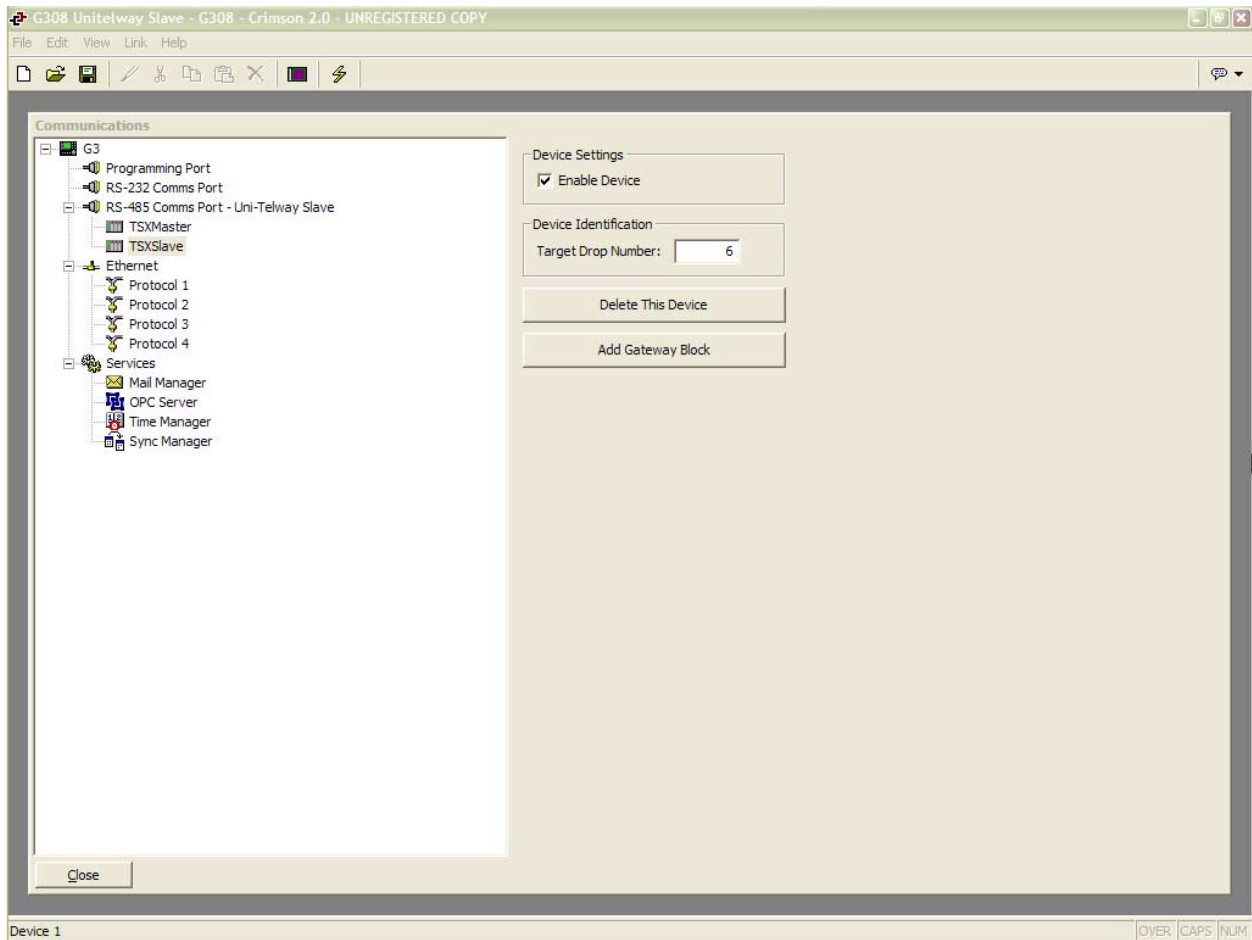
Now, by simply creating Data Tags and map them to the PLC you want to access, you can visualize any data available in the Master or slaves PLCs.

Click the following links to get to the example databases of the network described above.

G303 Unitelway Slave.cd2 G308 Unitelway Slave.cd2 master plc.stx slave plc.stx