

Section 6 Commissioning a System

Commissioning a VersaNet2 system consists of:

- Checking carefully all connections
- Ensuring all Nodes are correctly configured
- Powering up and running the Test programme accessed via the VNMGR software supplied with each Communications Controller
- Checking that all inputs are reflected correctly at their corresponding outputs on the destination Node.

Connecting the Communications Controller to your PC using the configuration lead supplied and running the VNMGR software will provide access to the Test screen where you can perform all of the commissioning routines.

On entry to the Test screen, all static data regarding the RF module is displayed along with a Received Signal Strength Indicator (RSSI) for the RF channel indicated. The RSSI display travels from left to right across the screen and consists of three colours and a numeric readout.

Signal levels at -120dBm or less are displayed in red.
Signal levels between -120dBm and -114dBm are shown in yellow.
Signal levels >-114dBm are shown in green.

6.1 Selecting a suitable RF Channel

In some countries VersaNet2 is supplied to operate on a particular RF channel that has been pre-allocated by the National Radio Authority for the country in question. If this is the case then the frequency should be free from interference by other users. Other countries, such as the UK, have a band of radio channels available that are classed as 'licence-free'. This means that anyone can operate type approved radio equipment on any of the available RF channels and care needs to be taken to avoid selection of a 'busy' radio channel that may impair the performance of the system you are commissioning. VersaNet2 uses a 'listen-before-transmit' strategy, which effectively checks the RF channel for activity prior to sending any data and minimises the chances of interference. A busy channel may therefore cause unacceptable delays.

On entry to the Test screen select the Local button, which places the Node into Local mode and permits you to monitor RSSI on all of the available RF channels in order to select an appropriate operating channel for the network. Obviously if you are adding a Node to an existing network the correct channel must be selected to match the other Nodes in the system.

Step through each of the available RF channels in turn by selecting the channel up/down arrow. After each channel change, monitor the RSSI indicator for channel activity. Make sure all other Nodes in the system are turned off or they may be seen on the indicator.

If any green segments of the display are visible, this indicates RF noise at a level that will prevent the VersaNet2 Node from transmitting.

Noise may vary from site to site so this procedure should be followed at all planned VersaNet2 locations and an RF channel should be selected that is available for use at all locations.

6.2 Checking Signal Strength between Nodes

The 'Remote' facility allows you to ask another VersaNet2 Node to send you approximately 30 seconds of RF carrier so that you can correctly check the received signal strength at the Node you are commissioning.

To request a remote Node to send you a test signal you must first make sure that Network is selected on the Test screen.

Next select the 'Node' box and enter the number of the remote Node that you wish to send you a test signal. Set the channel and the power. This will remotely set the channel and transmit power of the selected Node.

Finally click on the 'Request' button. The remote Node selected will now transmit RF carrier for approximately 30 seconds allowing you time to monitor the RSSI display. To ensure reliable operation between the two Nodes selected, it is advisable that the RSSI bar graph is steadily showing a minimum of -110dBm, which is equivalent to any part of the indicator being green.

NOTE: Before performing the RSSI signal strength check, wait a few minutes and check that the channel is quiet. Any activity on the channel may affect your results and could prevent the selected Node from transmitting.

When the requested signal is first received, the RSSI indicator may flash up and down. This is because the Node is receiving valid data from the selected Node. Wait for this to finish then hit the request button again.

During the 30-second test period other units on the same channel may be affected.

If no RSSI display appears then check all antenna and cable connections before repeating the process.