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SPCN340 4G Modem

The SPCN340 modem support communication on both 4G/2G networks.
This document highlights how the SPCN340 modem manages this communication and connection to both networks.

- Network Support
- Communication management
- Recommendations

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1. Network Support

The SPCN340 supports communication to both the 2G and 4G networks.

1.1. 4G/2G Networks

4G frequencies: 800MHz/900MHz/1800MHz
2G frequencies: 900 MHz/1800MHz

2. Communication Management

Modem Communication Process

2.1. Signal level

The 4G Modem connects to any 4G network when a level of approx. -115dB or less is detected.
If the signal drops below this, the modem will retry to connect to that mast a number of times. It this process fails; the modem will reset and continue the process to find an available network/mast (sim dependant).
The minimum signal level for a data connection will require a signal level of [2-3], however this could potentially be unreliable. Ideally a signal level of at least [4-5] i.e., the red LED on steady (without flashing), for data communications is recommended.

2.2. Connection Process

The 4G Modem is strictly working on the next detected 4G network – there is no possibility to decide on a preferred selection. This means that the signal connection is not necessarily the strongest signal nor is it the nearest mast to the modem.
The modem provides a number of “Network” choices
2G Only – The modem will scan for 2G networks only and connect to the first 2G network discovered.
4G Only – The modem will scan for 4G networks only and connect to the first 4G network discovered.
4G First – The modem will scan 4G network first and only if it cannot find or connect to a 4G network, will it rescan for a 2G network. This connection process will be longer depending on the networks in your area.
In the mode, the modem can move across 2G to 4G networks depending on connection reliability and mast usage. Please note that the network name displayed on the SPC webpage will not update when jumping across networks. It will only update on a modem reset.

2.3. Multi Network Sims (world-sims)

Multi-network sims can be used with the SPCN340 modem. For these to work correctly you must enable the “Allow Roaming” option on the modem. Again, depending on your network preferences, the modem will scan for 4G networks first and connect to the first network detected. It will not connect to the strongest level nor will it give you a choice of networks to connect to.

2.4. Network provider sims.

Before using a dedicated network provider sim it is important to manually scan available networks with a third party tool. This will give you a list of available networks in the vicinity. This will enable you to choose the correct sim for the area. Please note that this modem does not support 3G networks so this has to be taken into account when choosing the best sim. If the sim you choose it only 4G only compatible, then make sure you select 4G only on the modem settings. This also applies for 2G only sims, again make sure you select 2G only on modem settings.

2.5. SPC Displayed Signal levels

The SPC displays the modem signal both on the system status webpage and the system keypad in communication menu.
The signal display is based on a rolling average over a 30 second period. This is to stop the displayed signal bouncing up and down.
In some cases, you may see a signal jump for a signal 8 to a signal 3. This is usually caused when the modem jumps from one network to another or from one mast to another for the reasons I described earlier.
Again, please note in this case, the network description will not change, and this may cause confusing when viewing the network provider name (multi-network sim only).

3. Recommendations

- Do a network survey in your area. This will allow you to choose the best network provider for that area and therefore get you the highest signal available.
- Make sure that you choose a 4G network when completing the survey. Mistakes have been made where a sim was acquired based on the best 3G signal. Please note that the SPCN340 does not support 3G.
- It is recommended to choose 4G only option on the modem when using a 4G sim. His speeds up the connection process and prevents the modem search for unnecessary 2G networks.
- If possible, always complete a survey for the best signal level within an installation prior to installing the controller. This again will give you optimum signal level.
- Mounting the Antenna outside any giving area may also improve signal level. If required, you can purchase an addition Antenna kit SPCW101. This consists of a GSM Antenna mounted on a stainless-steel L bracket, connected to a 2m cable.

SUPPORT INFORMATION

If you have any questions, please contact our Technical Competence Centre.

Contact details can be found on our website.

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