webdyn

Flexitron group

TITAN

Application Note 49

Reading IEC 60870-5-102 Electricity Meters using CSD Data Calls

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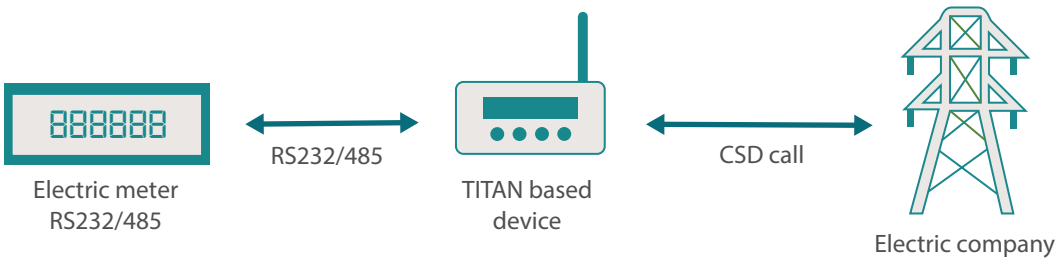
1. Scenario Details

TITAN-based devices have all the typical functionalities of 4G/3G/2G routers, as well as a series of added features that make them one of the most feature-packed routers on the market. One of the added features is its ability to accept CSD data calls, often used for reading electricity meters of the IEC 60870-5-102 type.

2. Description of the Example Scenario

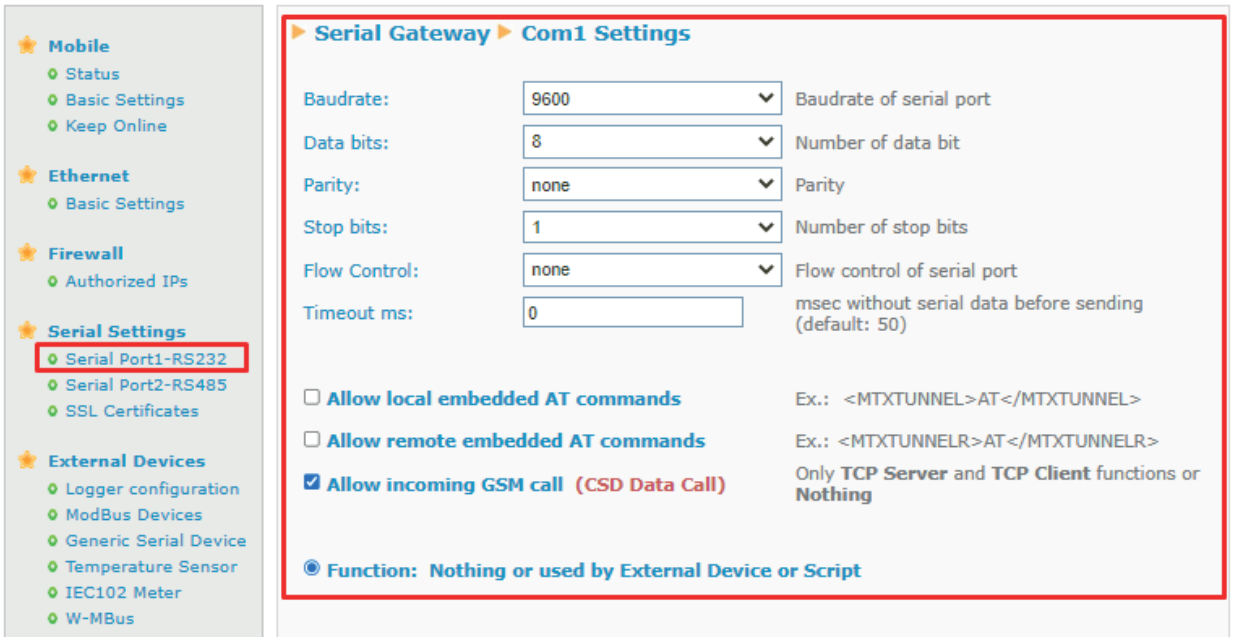
- Electricity Meters (IEC 60870-5-102) in some locations have RS232 (9600,8,N,1) serial ports and RS485 (9600,8,N,1) ports in others.
- The intention is to configure the TITAN-based device to automatically accept CSD calls and to allow the meter to be read by the utility company via a transparent CSD-RS232 or CSD-RS485 gateway.



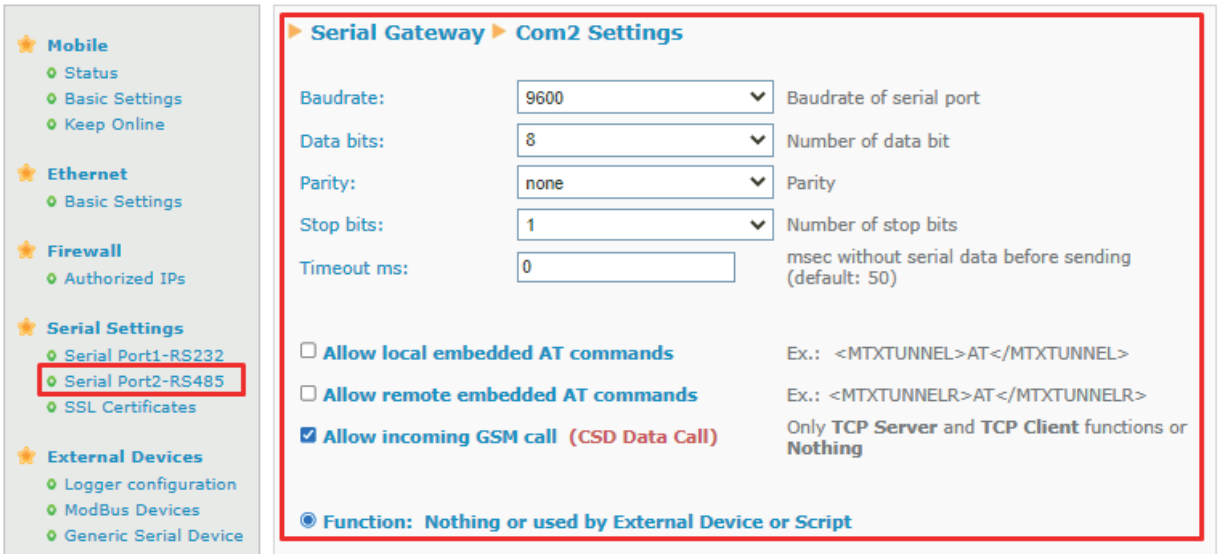
3. Configuring the Associated Serial Port

If we want to be able to use the TITAN-based device's RS232 and RS485 serial ports to accept CSD calls, we must first configure both ports to the appropriate speed and parity, etc. These values match those in the meter's serial port configuration, which in this example is 9600,8,N,1.

To do this, go to the "Serial Settings > Serial Port1-232" menu and configure the screen as follows:



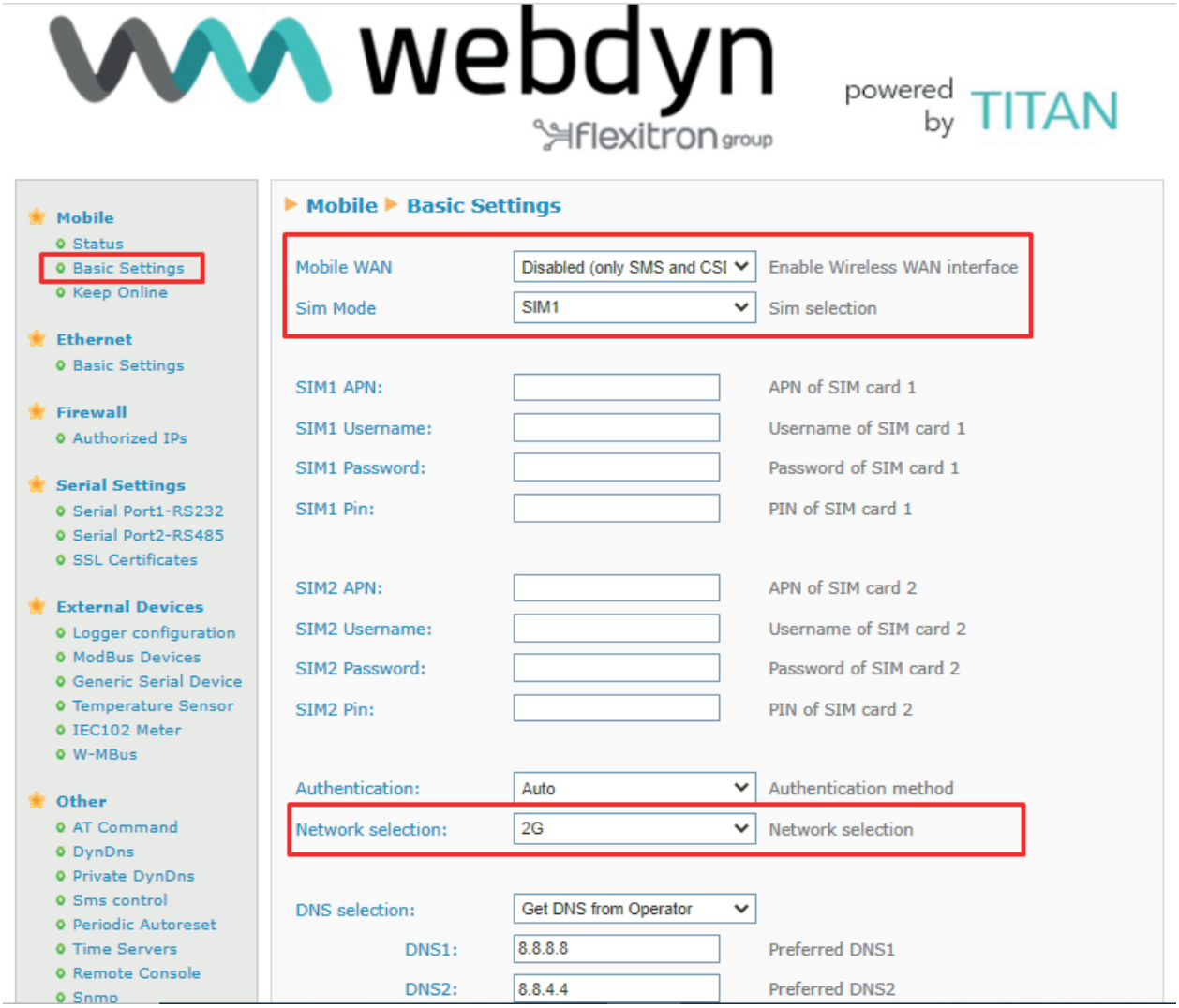
Do the same for the other RS485 serial port in the “Serial Settings > Serial Port2-RS485” menu, configure the screen as follows:



4. WAN Configuration

If the TITAN-based device needs to be configured to receive CSD calls alone, it is highly recommended (and in some locations it is essential) to configure the device to use the 2G network, avoiding 3G and 4G, even though the TITAN-based devices can use them, not all carriers allow fallback from 3G to 2G, or from 4G to 2G, to receive CSD calls when they occur.

Network configuration is done from the “Mobile > Basic Settings” menu. The figure below shows the appropriate settings.

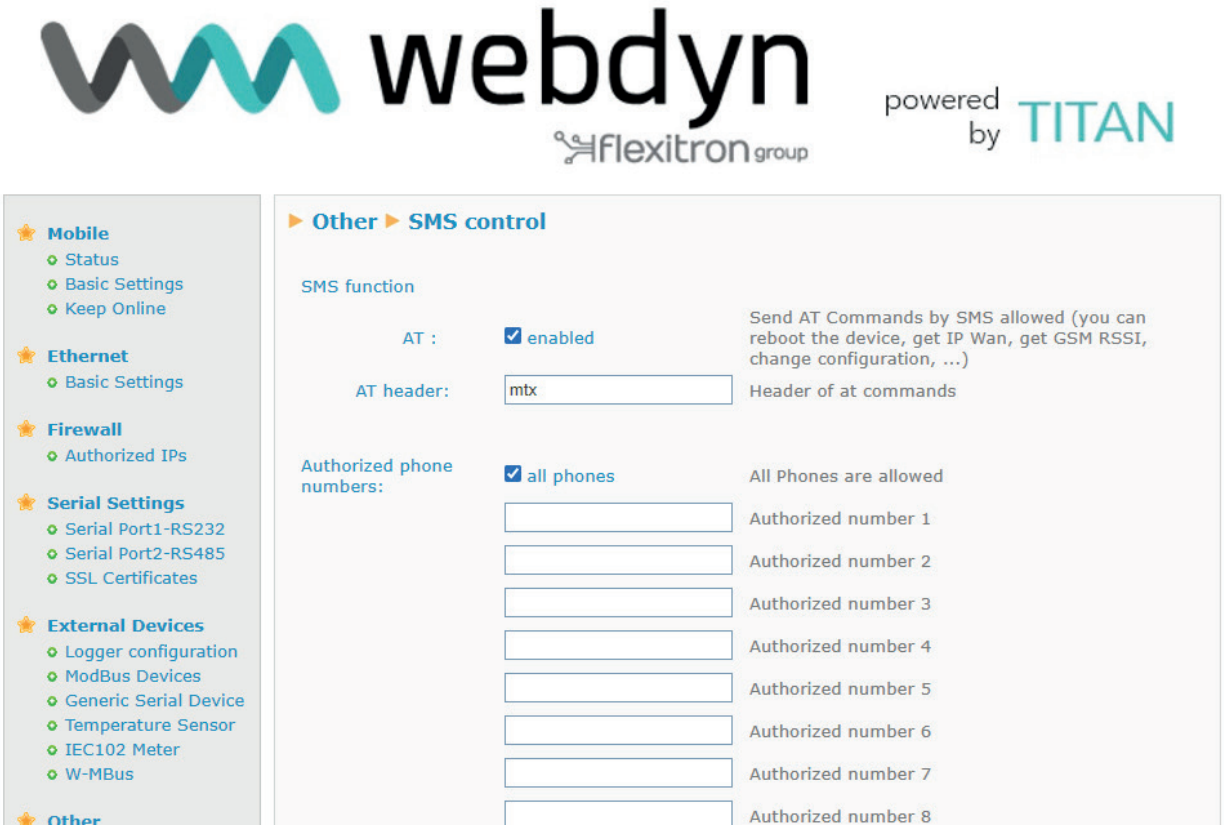


5. Configuration

Optionally, it can be useful to configure SMS messages to be used the TITAN-based device in the event that remote commands need to be sent to it in the future (i.e. a configuration change, a remote reset, a status reading, etc.). SMS message configuration can be done from the “Other > SMS control” menu.

The following screenshot shows a configuration in which SMS messages are enabled with headers (password), with text “mtx”, and all phone numbers are authorized (those from which all AT commands can be sent by SMS). If you only want authorized phones to be able to send AT commands via SMS, leave the “all phones” checkbox unchecked and enter the authorized phone numbers in full (e.g. +34666123456).

For example, if you need to remotely check the coverage, send an SMS with the text “mtx at+csq” and you will get an SMS message back with the requested information.



6. End of the Configuration Process

After entering the above settings, simply reboot the TITAN-based device for them to take effect. You can do this from the “Other > Titan Scripts” menu.