SkyRouter Configuration For Operation With Campbell Scientific CR1000

Tech Note – TN[021]
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Introduction

The Ctek Z4200, Z4400 and Z4300 SkyRouter products are a perfect complement for the Campbell Scientific CR1000. Offering reliable communications on any CDMA/EvDO or GPRS/EDGE/HSPA network, the customer is free to choose the cellular network that best serves their specific area. Equally as important is the SkyRouter's ability to stand by with an extremely low current draw. All units equipped with the Ctek PowerMinder module draw approximately sixty microamperes in stand-by mode making them the ideal choice for solar operation.

Prerequisites

Before attempting to configure a SkyRouter to support the CR1000, it is expected that customer will configure the SkyRouter for operation on the network of their choice and verify proper operation of the router. Instruction for this level of configuration may be found at www.ctekproducts.com.

Electrical Connection

The CR1000 RS-232 (DB-9) connection should be cabled to the SkyRouter RS-232 (DB-9) connection using a cable configured in the following manner:

Pin 2	----------	Pin 3
Pin 3	----------	Pin 2
Pin 5	----------	Pin 5

Protocol

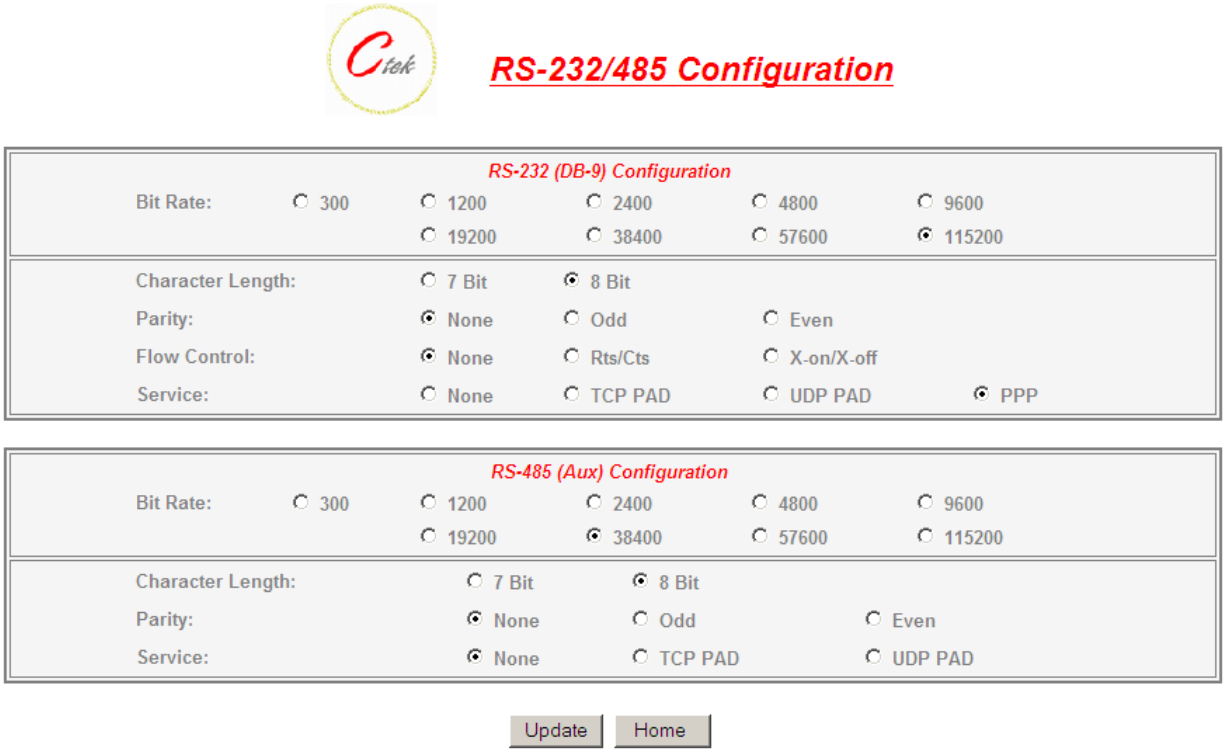
The CR1000 is configured to recognize a PPP connection on the RS-232 interface. The SkyRouter will be configured to initiate the PPP session that the CR1000 is expecting. Once the PPP connection is established, the SkyRouter will automatically provide the CR1000 with an IP address and DNS addresses.

Configuration Steps

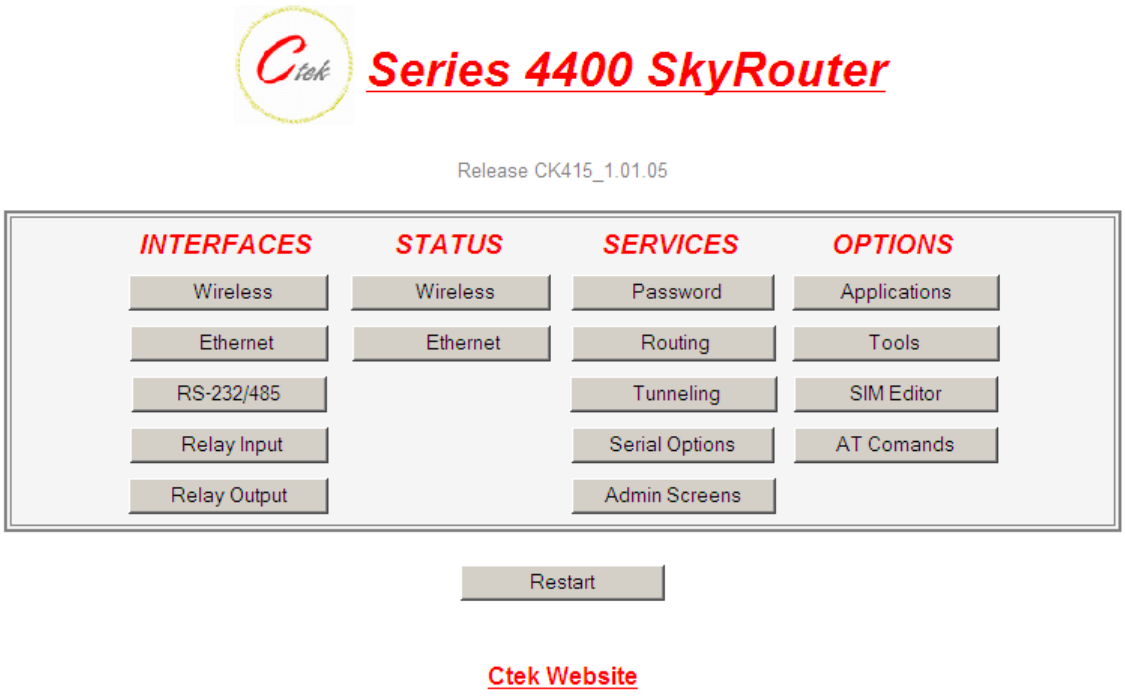
All SkyRouter configuration is performed using the standard web based screens of the SkyRouter. It is assumed that the customer has become familiar with this interface while configuring the unit for operation on their specific network.

STEP 1 - RS-232 SETUP - Starting from the SkyRouter home configuration screen shown below, click on the RS-232/485 button.

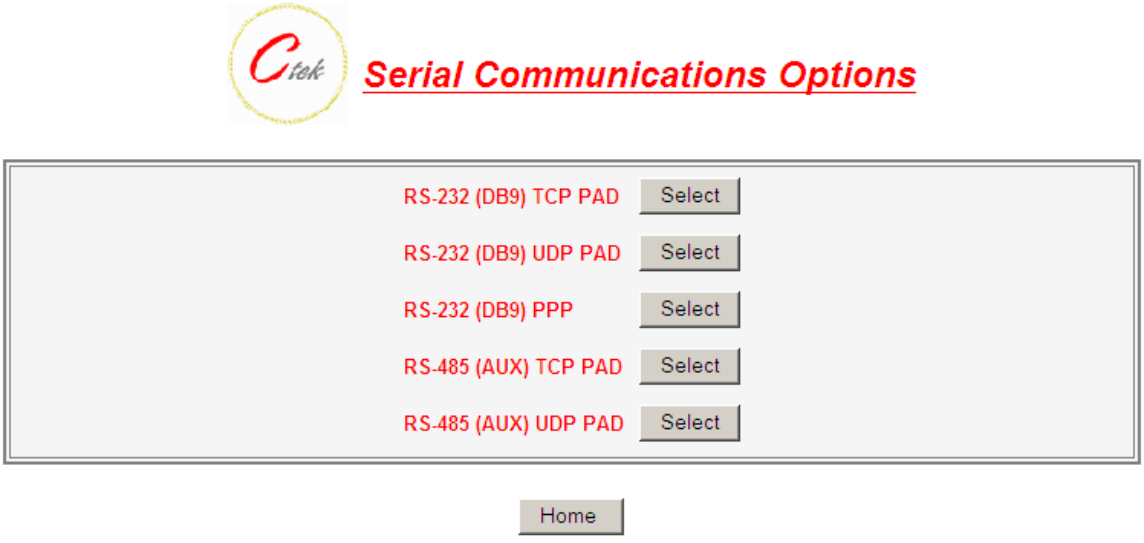
STEP 2 - RS-232 SETUP - Configure the RS-232 (DB-9) connection as shown below and click on update when done.



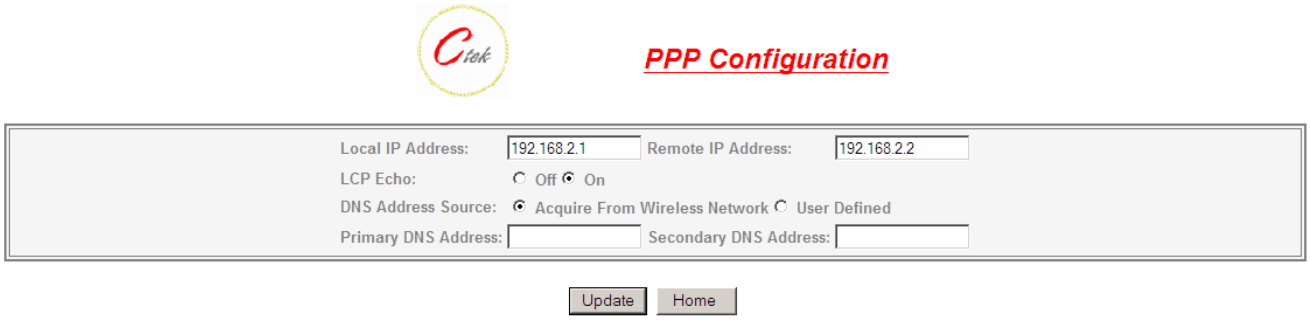
STEP 3 – PROTOCOL CONFIGURATION - Starting from the SkyRouter home configuration screen shown below, click on the Serial Options button.



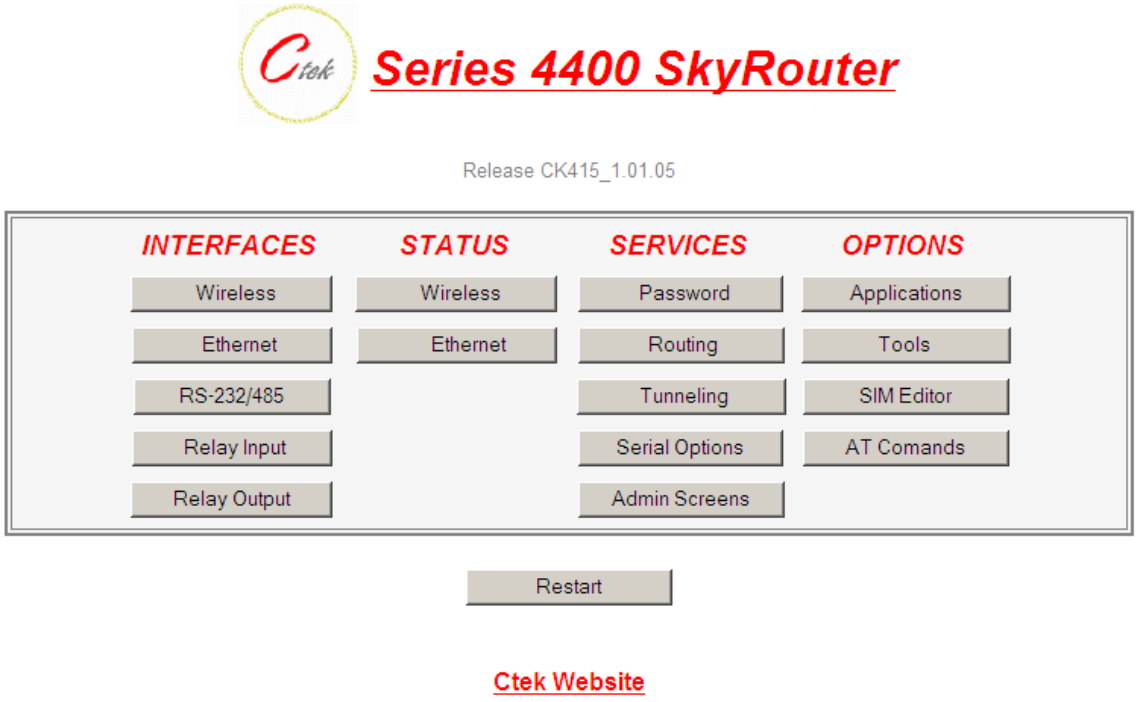
STEP 4 – PROTOCOL CONFIGURATION – Click on the RS-232(DB-9) PPP Select button shown below.



STEP 5 – PROTOCOL CONFIGURATION – Configure PPP protocol as shown below. Please note that the cellular carrier provides its specific DNS addresses to the SkyRouter when the SkyRouter makes a data connection to the cellular network. The SkyRouter will then remember those addresses and use them to fill in the DNS fields on screens such as the PPP configuration screen. The DNS fields should populate when you click on update. If you have not had a previous connection with the cellular network, the SkyRouter will return an error message indicating that it does not yet have DNS addresses to provide for PPP. If this occurs, you must allow the SkyRouter to connect to the cellular network and them come back to this screen and click on update.



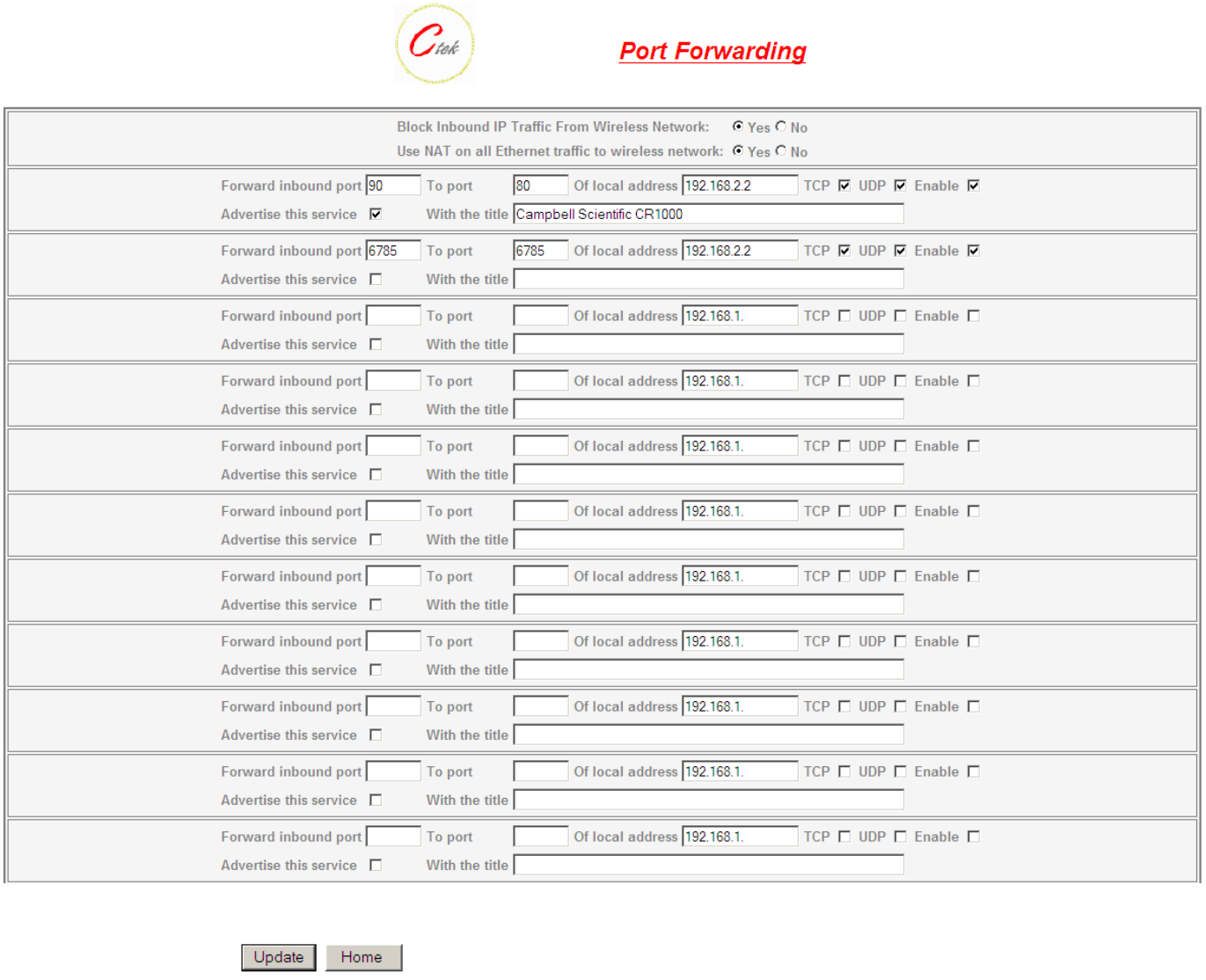
STEP 6 – PORT FORWARDING - Starting from the SkyRouter home configuration screen shown below, click on the Routing button.



STEP 7 – PORT FORWARDING – Configure port forwarding as shown below and then click on the update button.

Please note that this sample forwarding configuration requires that you access the HTML interface of the CR1000 via port 90. This is done since the SkyRouter's remote configuration screens are on port 80 by default. If you prefer to move the SkyRouter screens to a different port so that the HTML screens of the CR1000 can be on port 80, this can be done by clicking on the Admin Screens button of the SkyRouter home configuration screen and making the appropriate changes.

The sample configuration also advertises the HTML services of the CR1000. This means that after logging into the SkyRouter, you will be presented with a screen containing buttons for all advertised services. You then just click on the appropriate button to be automatically forwarded through the SkyRouter to that device.



If you need to use telnet or ftp on the CR1000, you will need to also forward those ports through the SkyRouter.

STEP 8 – RESTART THE SKYROUTER – Once all configurations steps are complete, restart the SkyRouter to initiate the new configuration.