Use Ethernet to Send Commands to DC205 via SX199

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Prepare the SX199 IP Address

If the first three numbers of your local network IP Address are "192.168. 0" or "169.254.100" or "10. 0. 0", you only need to set the rear-panel DIP switch to get the fourth number. If you have changed DIP setting, you need to cycle the SX199 power.

If your local network IP Address range is different, you need to request a LAN IP Address from your IT administrator. Also ask your IT administrator for the correct "Net Mask" (sometimes called "Subnet Mask") and "Default Gateway" to use for your network. Then program this new address into SX199. Do the following:

1. Set the rear-panel DIP selector for "Custom IP Address" by switching DIP switch positions 2 and 3 into the "1 (on)" position.
2. Use a USB-to-Serial cable to connect your PC to RS-232 port of SX199. The Baud Rate is controlled by DIP switch position 1, and is set to 9600 if the switch is in the upper position set to "0 (off)"; it is 57600 if switched down, to the "1 (on)" position.
3. Open Tera Term or other terminal emulators. Select the correct serial Port for the USB-to-Serial cable. Then, use the SX199's **IPAD** command to set it's IP address. For example, if your new IP Address is 172.56.127.25, send the command **"IPAD 0, 172;   IPAD 1, 56;   IPAD 2, 127;   IPAD 3, 25**" to the SX199.
4. Use "**IPAD?0", …… , "IPAD?3**" to check your new settings.
5. Similarly, use the **NMSK** command to program the Net Mask into the SX199. For example, if your subnet mask is 255.255.0.0, then send the command "**NMSK 0, 255;   NMSK 1, 255;   NMSK 2, 0;   NMSK 3, 0**" to the SX199.
6. Use "**NMSK?0", ……, "NMSK?3**" to check your new settings
7. Set the Default Gateway address for the SX199. For example, if your default gateway is "172.25.0.0", then send the command "**GWAY 0, 172;   GWAY 1, 25;   GWAY 2, 0;   GWAY 3, 0**" to the SX199.
8. Use "**GWAY?0", ……, "GWAY?3**" to check your new settings
9. Use "**SPAR 0**" to save the new IP Address to the EEPROM of SX199.

Test Ethernet Connection

After IP Address is ready, power cycle the SX199. Connect SX199 to a network switch with a RJ-45 cable. Open a Command Prompt, and test the connection by using the PING command. For example, send "**ping 172.56.127.25**". You should receive multiple lines similar to:

```
Reply from 172.56.127.25: bytes=32 time=1ms TTL=128
```
(end the ping test by typing ctrl-C).

Example with Tera Term

Open Tera Term terminal, select TCP/IP. Write the SX199 IP Address (as the example: 172. 56. 127. 25) to the Host box. In the TCP port#, fill in 8888, as shown in Fig. 1.
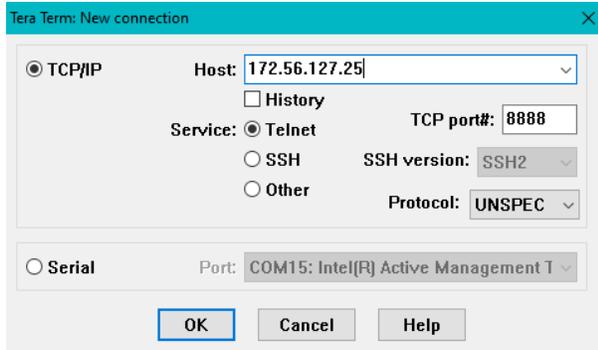

Fig.1   Tera Term Ethernet Setting example for SX199

Example with PuTTY

Launch PuTTY, select connection type Telnet. Write the SX199 IP Address (as the example: 172. 56. 127. 25) to the Host Name box. In the Port, fill in 8888, as shown below in Fig 2:
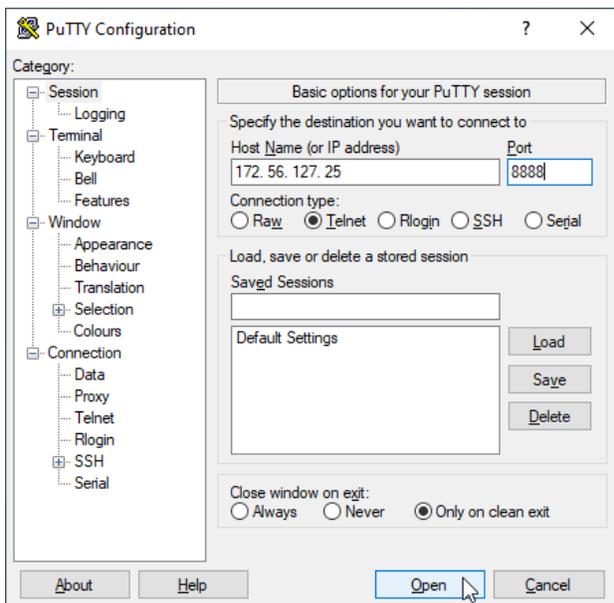

Fig.2   PuTTY Ethernet Setting example for SX199

Example LINK session

On the Tera Term or PuTTY window, write "**ULOC 1**" and then Enter. Then send "***IDN?**", you should get a response from the SX199 similar to

```
 Stanford_Research_Systems, SX199, s/n126023, ver1.10
```

This means the Ethernet connection is setup.

Control DC205

Connect the optical cable between DC205 and SX199 port 1. In the Tera Term window, command "**LINK 1**", and then "***IDN?".** You should get a response from DC205 similar to

```
 Stanford_Research_Systems, DC205, s/n20500019, ver1.60
```

Now you can control DC205 through Ethernet within the LAN.

To end the LINK session with the DC205 and return to commanding the SX199, send the "**!**" escape character, and press Enter. Now, the response to *IDN? should be the SX199 again.