



**OCS Training Workshop
LAB 27**

GPRS Functionality

Lab 27: GPRS Functionality

Objective:

The objective of this lab is to give you the knowledge to use the GPRS optional add-on module for the XL series. It will allow you to understand the tools required to configure the module when attached in a controller.

Overview:

The GSM/GPRS add-on module allows remote access to a controller. When connected to a GSM/GPRS network, the OCS can wirelessly connect to Cscape, a SCADA platform or even to another controller via peer-to-peer communications. Peer-to-peer communications generally refers to a client-server connection between two devices. With this optional add-on module, the XL unit has the flexibility to be both.

Requirements:

- *XL_e, XL_t, XL₆, XL_{6e} or XL_{10e}. This is the only hardware the module can be applied to for now.*
- *HE-GSM04ANT, GSM/GPRS add-on module with t-bar antenna.*
- *SIM card from local network provider (including APN and VPN account details, static/semi-static IP, usernames and passwords).*
- *Cscape 8.52 or higher.*
- *Firmware version 12.70 or higher.*

Configuration Procedure 1

Connecting an OCS to Cscape via GPRS

Step 1

Attach the add-on module

Attach the GSM/GPRS add-on module (with SIM card and antenna) to the back of the OCS controller as described on the in-box instruction sheets. Next, power the device.

Step 2

Load a default GPRS configuration to the OCS

When connected to the OCS serially (via MJ1), open Cscape and browse to **Program** menu, **Messaging** and **GPRS**. Check the 'Enable GPRS Configuration' check box and enter the APN (username, password etc) provided by your service provider. There is no requirement to change any other settings, then click OK.

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GPRS Configuration

Enable GPRS Configuration

GPRS Access Point Configuration

Get Access Point Configuration from Registers

User Name: Horner
Name: [dropdown]
Password: xxxxxxxx
Name: [dropdown]
Access Point Address: apn.service.provider
Name: [dropdown]

GPRS Packet Assembler/Disassembler Configuration

Client Mode Server Mode

Get Source IP Address from Register

Address: [dropdown] Name: [dropdown] 32-BIT

CsCAN Source IP Addr: 0 . 0 . 0 . 0

Source Port: 10001 (2 - 65535)

Block Size: 50 (3 - 512 Bytes)

Timeout Period: 0.1 (0.1 - 6553.5 Seconds)

Forward Character: [dropdown] (00 - FF Hex)

Send Forward Character

OK Cancel

Step 3

Switch programming port to GPRS

After the download has completed (ignore any screen messages now visible on the controller) go to the system menu of the OCS and browse to **Set serial ports**. Change the **Dflt Pgm Port** to GPRS and hit enter. ESC back to the system menu and now power cycle the device.

****Note. It is critical to power cycle the OCS whenever you change the default programming port. Changes will only take after said power cycle. ****

Step 4

Starting a VPN to connect to Cscape

Set up a VPN in windows on your PC for connecting the OCS to Cscape wirelessly via GPRS. Follow the *'How to create a VPN client to connect to your service provider'* that accompanies this lab. It details the steps necessary to enable a VPN.

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Step 5

Connection to Cscope

When the VPN is open and running, go to Cscope. In Cscope, go to **Tools -> Application Settings -> Communications -> Configure**.

In this configuration tool, enter the IP address of the SIM card you want to connect to and select the GPRS mode option from the drop down menu. Also, increase the timeout value at the bottom of the tool to 20000 ms minimum as seen below.

The screenshot shows the 'Add Target' dialog box with the following configuration:

- Target Name: test
- Connection Medium: Ethernet (selected)
- Ethernet IP: 10 . 111 . 64 . 6
- Mode: HE-GSM GPRS Mode
- Can Interface: CGM500
- Installed Modem: (empty)
- Phone Number: (empty)
- USB: (empty)
- Connected Device: Connected Device (selected)
- Target Node ID: 1
- Maximum Baud Rate: 57600
- Timeout: 20000 ms

Click OK and wait for connection to Cscope. Be patient as connectivity depends on network traffic, signal strength and the VPN at that time. When connected you will see local and target values at the bottom of Cscope. You will also see the traffic light symbols to take the device in and out of run mode etc.

You will now be able to download a program, debug a program and edit a program etc just as you could with a standard serial connection.

End of LAB 27