NmxCLI

Version 1.00

User Guide

Nanometrics Inc.
Kanata, Ontario
Canada

NmxCLI Version 1.00 User Guide

The information in this document has been carefully reviewed and is believed to be reliable for Version 1.00.*xx*. Nanometrics, Inc. reserves the right to make changes at any time without notice to improve the reliability and function of the product.

Nanometrics, Inc.
250 Herzberg Road
Kanata, Ontario, Canada K2K 2A1
Tel (613)592-6776
Fax (613)592-5929
Email info@nanometrics.ca

Part number 15161R2
Release date 2005-02-04

Contents

Tables iii

NmxCLI 1
1 About NmxCLI 1
1.1 Summary of inputs and outputs 1
1.1.1 Input files 1
1.1.2 Output files 1
2 Installing NmxCLI 2
3 Using NmxCLI 2
3.1 Synopsis 2
3.2 Starting and stopping NmxCLI 2
3.3 Using the NmxCLI run-time commands 2
3.4 Monitoring NmxCLI operation 4

Appendix A
Configuration Field Differences 5
A.1 Comms Controller 5
A.2 TimeServer 7
A.3 Trident 7
A.4 RM-4 8

Tables

3-1 General commands 3
3-2 Configuration commands 3
3-3 Maintenance commands 3
A-1 Comms Controller configuration parameter field comparisons 5
A-2 TimeServer configuration parameter field comparisons. 7
A-3 Trident configuration parameter field comparisons 7
A-4 RM-4 configuration parameter field comparisons 8

NmxCLI

1 About NmxCLI

Nanometrics Command Line Configuration Interface (NmxCLI) provides command-line functions for managing network instruments. NmxCLI can be started locally, and remotely via SSH. It provides a subset of the Nanometrics UI and RM-4 Application-GUI instrument management functions, and allows you to save and load instrument configurations in XML. Functions include:

- Instrument management:
  - Change the configuration of network instruments, including RM-4, comms devices (such as Europa, Cygnus, Carina, Janus), and associated instruments (Trident and TimeServer).
  - Upload new firmware.
  - Test new firmware.
  - Set new firmware as default.
- Instrument configuration:
  - Save the configuration from an instrument to a file in XML format.
  - Load the configuration from the XML file to the instrument(s).

Once you have saved a configuration to an XML file, you may modify it in any standard editor. (See Appendix A for information about differences in configuration parameter fields for the XML file and the GUIs.)

1.1 Summary of inputs and outputs

1.1.1 Input files

- Windows program files – `NmxCli.jar, NmxCLI.bat`.
- Solaris or Linux program files – `NmxCLI.jar, nmxcli`.

1.1.2 Output files

- *logfilename*.`log` – The specified log file will contain timestamped informational and error messages related to user actions, scripts, and instrument replies.
- Configuration files in XML format.

2 Installing NmxCLI

- See the installation instructions for the acquisition system workstation.

3 Using NmxCLI

To use NmxCLI, enter commands at the prompt. NmxCli will prompt for missing arguments on startup.

3.1 Synopsis

- To view the usage string, enter a help command as an argument (see Table 3-1). For example:
  `> NmxCli ?`

  (On Solaris)
  `> NmxCli \?`

```
NmxCli -u userName -p password -i ipaddress [-l logfile]
-u The user name.
-p The password associated with the user name.
-i The ip address of the instrument in the format: x.x.x.x.
-l File name of a log file.
```

3.2 Starting and stopping NmxCLI

Note To create a log file for the session, on startup include the `-l` option when entering the parameters.

- To start NmxCLI, enter `nmxcli` in any terminal window. You can enter all of the parameters on startup, or the main parameters at the prompts:
  - Optionally, enter the parameters for user name, password, IP address, and log file as arguments. For example:
    `> nmxcli -u user -p nmx -i 199.71.138.92 -l c:\nmx\user\logs\nmxcli.log`
  - Otherwise, enter values for the three main parameters at the prompts. For example:
    ```
    > nmxcli
    > User name: user
    > Password: nmx
    > IP Address: 199.71.138.92
    ```
- To stop NmxCLI, enter either `exit` or `quit`. NmxCli will cancel any critical activities currently in progress, log out from any instruments, and exit.

3.3 Using the NmxCLI run-time commands

NmxCLI provides general, instrument configuration, and instrument maintenance commands (see Table 3-1, Table 3-2, and Table 3-3). All commands will query for missing arguments. For more information on the configuration and maintenance commands, see the Nanometrics UI manual.

Table 3-1 General commands

Command	Function
`help`	View available user commands from within NmxCLI.
`nmxcli \? | h | help`	View the usage string from the command prompt when NmxCLI is not running (Solaris).
`nmxcli ? | h | help`	View the usage string from the command prompt when NmxCLI is not running (Windows and Linux).
`exit`	Close down NmxCli.
`quit`	Close down NmxCli.
`list`	View a list of the available devices.
`choose [-d` *device name*`]`	Choose *device name* to be the current device. If you do not enter the flag and parameter, this will provide a list of available devices from which you can choose a new current device: ▸ Enter `choose` [*the corresponding list number*] to select the device. Once a device is selected, it does not need to be specified in any of the configuration or maintenance commands.
`current`	View the name of the current device, if any.

Table 3-2 Configuration commands

Command	Function
`load [-f` *filename*`] [-d` *device*`]`	Load the configuration in the XML file to the device.
`save [-f` *filename*`] [-d` *device*`]`	Save the configuration of the device as XML to the file.
`submit [-d` *device*`]`	Submit the configuration that has been loaded to the device.
`commit [-d` *device*`]`	Commit the configuration that has been submitted to the device.
`reboot [-d` *device*`]`	Reboot the device.

Table 3-3 Maintenance commands

Command	Function
`refresh [-d` *device*`]`	View the current file information for the device.
`send [-d` *device*`] [-p` *partition*`] [-f` *filename*`]`	Send the file *filename* to the specified partition on the device. ▸ To get the partition name, use the `refresh` command.
`test [-d` *device*`]`	Run updated code as a test on the device before submitting and committing it to flash.
`setDefault [-d` *device*`] [-p` *partition*`] [-f` *filename*`]`	Set the file *filename* as default on the specified partition of the device.

3.4 Monitoring NmxCLI operation

Log messages generated by NmxCLI are sent to standard output, and are saved to a log file if you specified a log file on startup. All applicable session messages are appended in this log file.

If NmxCLI encounters an error, the console window will display an error message to help with solving the problem.

Appendix A Configuration Field Differences

Some of the instrument configuration fields in the XML file use different formats (such as the way the configuration options are expressed, and the parameter units) than the corresponding fields in the instrument GUIs. Differences for each instrument type are tabulated in these sections:

- Comms Controller (Section A.1)
- TimeServer (Section A.2 on page 7)
- Trident (Section A.3 on page 7)
- RM-4 (Section A.4 on page 8)

Some parameter values are not editable with tech access (for example, Serial Number). These parameter fields are either "greyed-out" and not selectable in the GUI or are not visible in the GUI. If the configuration is edited in the XML file and then uploaded to the instrument, parameter values that are not editable at the user's level of access will be discarded; the original values for these parameters will be retained on the instrument configuration. See the Nanometrics UI manual and RM-4 manual for details on levels of user access and permissions to edit the various parameter values.

A.1 Comms Controller

Table A-1 lists parameter field differences for instruments using a Comms Controller (Carina, Cygnus, Europa T, Janus). Some parameters are applicable only to a particular instrument type (for example, Authentication parameters apply only to Europa T; Modem and TDMA parameters apply only to Cygnus and Carina).

Table A-1 Comms Controller configuration parameter field comparisons

NmxUI Configuration tab <XML file section>	GUI parameter <XML parameter>	Field options/description	
		XML field	GUI field
System	Hardware features	1	Satellite RF supported
<BoardConfig>	<HardwareFeatureSet>	2	Authentication supported

Table A-1 Comms Controller configuration parameter field comparisons (Continued)

NmxUI Configuration tab <XML file section>	GUI parameter <XML parameter>	Field options/description	
		XML field	GUI field
Modem <ModemConfig>	SSPB Loc Oscillator <SSPBLOFreq>	in hectohertz (hHz), integer	in MHz, float number
	LNB Loc Oscillator <LNBLOFreq>	in hHz, integer	in MHz, float number
	LNB Max Offset <MaxLNBOffset>	in hHz, integer	in kHz, float number
Modem (Test Mode) <ModemTestConfig>	Tx Frequency <TxFrequency>	in hHz, integer	in MHz, float number
	Rx Frequency <RxFrequency>	in hHz, integer	in MHz, float number
	Sweep Range <SweepRange>	in Hz, integer	in kHz, float number
	Level Type <LevelType>	1 2 3 4	EIRP (dBW) SSPB (dBm) L-band (dBm) Raw (counts)
Authentication <SignatureManagerConfig>	CD Version	0 1	CD1.0 CD1.1
	Calibration signal <CalibrationSignalChannel>	0 1 2 3	None SOH 1 SOH2 SOH3
	Vault door open <VaultBoxOpenCh>	0 1 2 3	None SOH 1 SOH2 SOH3
	Authentication box open <AuthBoxOpenCh>	0 1 2 3	None SOH 1 SOH2 SOH3
Ringbuffers <DataManagerConfig>	Limit Data Rate <BitsPerSecond>	in bits, integer	in kbits, float number
	Priority <Priority>	1 2 3	High Medium Low
TDMA <EpochsConfig>	Sat Local Oscillator <SatLocOscHhz>	in hHz, integer	in GHz, float number
	Tx Frequency <TxFrequency>	in hHz, integer	in GHz, float number

A.2 TimeServer

Table A-2 lists parameter field differences for the TimeServer.

Table A-2 TimeServer configuration parameter field comparisons

NmxUI Configuration tab <XML file section>	GUI parameter <XML parameter>	Field options/description	
		XML field	GUI field
TimeServer *n* <GPS>	GPS Source <GPSSource>	0 1	LOCAL CENTRAL
TimeServer *n* <GPS>	1 PPS Selection <PPSSelection>	0 1	GPS TIMESERVER

A.3 Trident

Table A-3 lists parameter field differences for the Trident.

Table A-3 Trident configuration parameter field comparisons

NmxUI Configuration tab <XML file section>	GUI parameter <XML parameter>	Field options/description	
		XML field	GUI field
Trident *n* <FrontEnd>	Input Range <InputRange>	0 1 2 3 4	40Vpp 16Vpp 8Vpp 4Vpp 2Vpp
Trident *n* <Timing>	Resynchronization Mode <ResynchronizationMode>	0 1 2	Discard Samples Slow Coarse Lock No UTC Alignment
Trident *n* <SensorControl>	High Voltage Level <HighVoltageLevel>	0 8 16	HIGH Z +5V +12V
Trident *n* <SensorControl>	Calibration Mode <CalibrationMode>	160 288 192	Voltage (active low) Voltage (active high) Current
Trident *n* <SensorControl>	Line *x* Level <Line*x*Level> (where *x* is 1 | 2 | 3)	0 1	Low High

A.4 RM-4

Table A-4 lists parameter field differences for the RM-4.

Table A-4 RM-4 configuration parameter field comparisons

RM4GUI Configuration tab <XML file section> <XML file sub-section(s)>	GUI parameter <XML parameter>	Field options/description	
		XML field	GUI field
Input Data Ports <HrdMsgProcConfig> <TelemetryPacketReaderConfig_*x*>*	Scrambled <Scrambler>	Y N	☑ (enabled) ☐ (disabled)
Input Data Ports <HrdMsgProcConfig> <TelemetryPacketReaderConfig_*x*>* <SerialPortConfig>	RTS/CTS <LeasedLineFlowControl>	Y N	☑ (enabled) ☐ (disabled)
Input Data Ports <HrdMsgProcConfig> <TelemetryPacketReaderConfig_*x*>* <SerialPortConfig>	TDMA <TDMASupportEnabled>	Y N	☑ (enabled) ☐ (disabled)
System Hardware <Rm4GpsConfig>	Timing <IfGpsIsInstalled>	Y N	GPS HRD
System Hardware <HardwareConfig>	System Baud Rate† <OrderWireperConfigBaud>		

* Where *x* is Default | 1 | 2 | 3 | 4 | 5 | 6 | 7.

† These parameters names are different in the GUI and the XML file. The field options are the same.