

RORC Graphical User Interface Manual

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1 Introduction

The RORC Graphical User Interface (written in Tcl/Tk) uses the commands and routines of the RORC software. The software library has been developed in ANSI C by Ervin Denes (*RMKI-KFKI*) to operate the D-RORC. It is a command line software containing several programmes for finding and resetting the components of the RORC and the DDL, reading and writing the registers, asking the status, receiving data, etc. For more details see the RORC software manual (http://alice-proj-ddl.web.cern.ch/alice-proj-ddl/doc/doc_lib_rev7.pdf).

2 The parts of the GUI screen

To launch the GUI type: `wish rorc_GUI.tcl`
A screenshot of the GUI screen is shown in Figure 1.

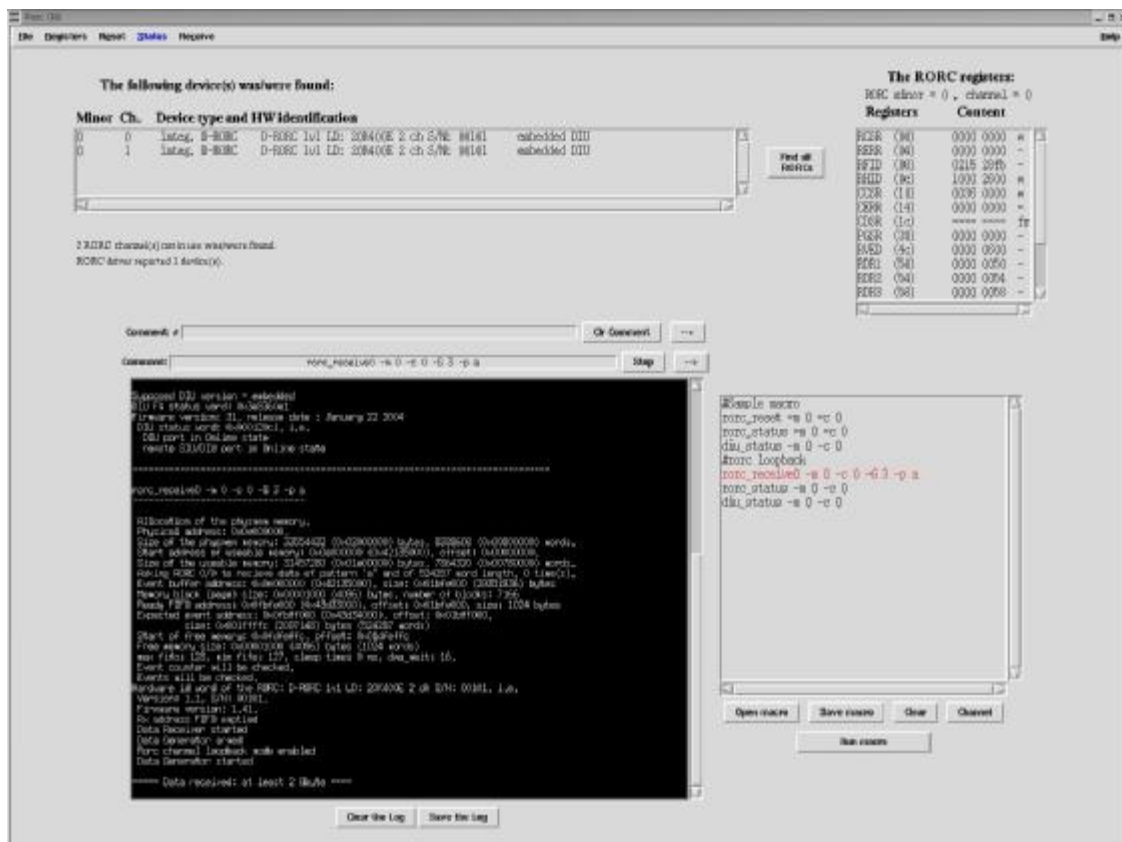


Figure 1: The rorc GUI

2.1 List of RORC channels

The list of RORC channels found by the **rorc_find** programme are displayed in the upper right corner of the GUI in a listbox. Each line corresponds to a channel. A channel can be chosen for other functions by clicking on the appropriate line with the left button of the mouse.

The list of RORCs can be refreshed by pressing the button just right to the listbox, labelled as 'Find all RORCs'.

2.2 List of Registers

The list of registers read (see section 3.2) is displayed in a listbox in the upper right corner. Each line corresponds to a readable register and contains its name and content and shows whether the register is writable (w) or not (-) or in case of volatile registers that it can be 'forced' read (fr).

If Advanced Mode is selected (see section 3.2) one can write writable registers or can read the content of volatile registers by clicking on the appropriate line.

2.3 The Macro Box

More commands can be grouped and put together in a macro file. The Macro Listbox serves to display the content of the macro that is being edited or that is loaded.

Each line in the listbox is either a command or a comment starting with #. See section 2.4 for how to insert commands and comments to a macro.

The 'Open Macro' and 'Save Macro' buttons are equivalent to the 'Open macro' and 'Save macro' options in the File menu (see section 3.1). By pressing the button 'Clear' one can clear the Macro Listbox (it may be useful before loading a new macro). The 'Channel' button can be used when one wants to modify the whole macro such a way that to the end of all the commands the **-m [actual minor] -c [actual channel]** options will be added.

By pressing the 'Run Macro' button the commands of the macro will be executed. The command that is just running is indicated with red colour. By pressing the 'Stop' button near the Command box the next command will be executed. The running of the macro is finished if the last command either has finished or has been stopped.

2.4 The Comment and the Command Boxes

The Comment and Command Boxes are located above the Log Box. The Comment entry can be cleared by pressing the button labelled as 'Clr Comment' near the entry, and by pressing the button '{>' its content may be put to the end of the macro that is displayed in the Macro Box. (Comments always start with a #.)

The Command Box situated below the Comment entry contains the 'activated' command (for how to activate a command see sections 3.3 - 3.5). By pressing the button '{>' the command can be put to the end of the macro that is displayed in the Macro Box (see section 2.3). By pressing button 'Run' the 'activated' command will run and its output

is displayed in the Log Box (see section 2.5). The 'Run' button changes to 'Stop'. By pressing it the run of the command will be stopped.

2.5 The Log

The Log Box displays the output of the command that is running (and of commands that were running before). The content of the Box can either be deleted by pressing button 'Clear the Log' below the box or it can be saved to a .txt file by pressing button 'Save the Log'. (See also the 'Save the content of the Log' option in the File menu.)

3 The parts Menu options of the GUI screen

3.1 File menu

The File menu contains all the options related to file management.

- **Load receive arguments:** loads an argument list of **rorc_receive** from a .rrs (Rorc Receive Switches) file.
- **Save Receive arguments:** saves the actual arguments of **rorc_receive** that are set in menu option Receive to a .rrs file.
- **Save the content of the Log:** saves the content of the Log box to a .txt file. This option is equivalent to pressing the button labelled as 'Save the Log' below the Log box.
- **Open macro:** opens a .mf (Macro File) and loads its content to the Macro box. Equivalent to pressing the button labelled as 'Open Macro' below the Macro Box.
- **Save macro:** saves the content of the macro that one has edited to a .mf file. Equivalent to pressing the button labelled as 'Save Macro' below the Macro Box.
- **Exit:** quits the program.

3.2 Registers

The Registers menu is related to **rorc_reg -m [minor] -c [channel]** where minor and channel are chosen from the *List of RORC channels*.

Read registers: reads the registers out. (**rorc_reg**) Their content is displayed in the *List of Registers*

- **Normal mode:** the default mode. In this mode the user is unable to write the registers or read volatile registers.
- **Advanced mode:** by changing to this mode the user can write to registers and read volatile registers (*List of Registers*).

3.3 Reset

Choose this command: by pressing this button **rorc_reset -m [minor] -c [channel]** will be the 'activated' command where minor and channel are chosen from the *List of RORC channels*. i.e. this command with its arguments will appear in the Command Box.

- **RORC reset:** the default reset. If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel]**,
i.e. only the RORC will be reset.
- **DIU reset:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -d**,
i.e. only the DIU will be reset.
- **RORC & DIU reset:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -b**,
i.e. both the RORC and the DIU will be reset.
- **SIU reset:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -s**,
i.e. only the SIU will be reset.
- **RORC reset FF:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -f**,
i.e. the RORC's Free FIFO will be reset.
- **RORC reset FIFOs:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -o**,
i.e. the other FIFOs of the RORC will be reset.
- **RORC reset error bits:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -e**,
i.e. the RORC's error bits will be reset.
- **RORC reset counters:** If *Reset* is chosen the 'activated' command will be **rorc_reset -m [minor] -c [channel] -n**,
i.e. the RORC's byte counters will be reset.

3.4 Status

Choose this command: by pressing this button **rorc** or **diu** or **siu_status -m [minor] -c [channel]** will be the 'activated' command, where minor and channel are chosen from the *List of RORC channels*, i.e. this command with its arguments will appear in the Command Box.

- **RORC status:** If *Status* is chosen the 'activated' command will be **rorc_status -m [minor] -c [channel]**,
i.e. the status and error registers of the RORC channel will be displayed.
- **DIU status:** If *Status* is chosen the 'activated' command will be **diu_status -m [minor] -c [channel]**,
i.e. a Read and Clear DIU Status command will be sent.
- **SIU status:** If *Status* is chosen the 'activated' command will be

siu_status -m [minor] -c [channel],
i.e. a Read and Clear SIU Status command will be sent.

3.5 Receive

Choose this command: by pressing this button **rorc_receive0** or **rorc_receive1 -m [minor] -c [channel]** will be the 'activated' command, where minor and channel are chosen from the *List of RORC channels*, i.e. this command with its arguments will appear in the Command Box.

- **Verbose:** default: no verbose, if *Receive* is chosen the 'activated' command will be **rorc_receive0 -m [minor] -c [channel]** with the other arguments. If verbose is chosen the 'activated' command will be **rorc_receive1 -m [minor] -c [channel] -v** with the other arguments.
- **Reset level:** sets the reset level before start receiving. Default: the RORC, the DIU and the SIU will be reset.
 - § **No reset:** There will be no reset before receiving. **-r 0** will be added to the receive command.
 - § **RORC:** Only the RORC will be reset before receiving. **-r 1** will be added to the receive command.
 - § **RORC DIU:** Both the RORC and the DIU will be reset before receiving. **-r 2** will be added to the receive command.
 - § **RORC DIU SIU:** The RORC, the DIU and the SIU will be all reset before receiving. **-r 3** will be added to the receive command.
- **Check level:** sets the check level, i.e. to what extent shall the program check the event. Default: the whole event is checked.
 - § **No check:** The event is not checked at all. **-x 0** will be added to the receive command.
 - § **only 1st word:** Only the first word of the events is checked. **-x 1** will be added to the receive command.
 - § **1st word: no:** The first word of the events will not be checked. **-x 2** will be added to the receive command.
 - § **Whole event:** The whole event will be checked. **-x 3** will be added to the receive command.
- **Generator mode:** the use of the data generator of the RORC. Default: the generator is not switched on.
 - § **No loopback:** The data generator is switched on without any loopback. **-g 0** will be added to the receive command.
 - § **DIU loopback:** DIU loopback is set and the data generator is switched on. **-g 1** will be added to the receive command.
 - § **SIU loopback:** SIU loopback is set and the data generator is switched on. **-g 2** will be added to the receive command.
 - § **RORC loopback:** RORC loopback is set and the data generator is switched on. **-g 3** will be added to the receive command.
- **Pattern:** The pattern of the data sent is set. Default: Increment.

- § **Constant:** Constant (init word) pattern is sent. **-p c** will be added to the receive command.
 - § **Alternating:** Alternating pattern is sent. **-p a** will be added to the receive command.
 - § **Flying 0:** Flying 0 pattern is sent. **-p 0** will be added to the receive command.
 - § **Flying 1:** Alternating pattern is sent. **-p 1** will be added to the receive command.
 - § **Increment:** Incremented pattern is sent (from init word). **-p i** will be added to the receive command.
 - § **Decrement:** Decrement pattern is sent (from init word). **-p d** will be added to the receive command.
- **no RDYRX:** Default: RDYRX
 - § **No RDYRX:** No RDYRX and EOBTR are sent. **-z** will be added to the receive command.
- **Page length (B):** Length of a page in bytes is set. Default: 4096 B
 - § **New value:** Page length other than the default value can be set. **-b value** will be added to the receive command.
- **Phymem (MB):** Size of phymem in megabytes reserved for the process. Default: 30 MB
 - § **New value:** Size of phymem other than the default value can be set. **-u value** will be added to the receive command.
- **Offset (MB):** Start of phymem memory in megabytes reserved for the process. Default: 0 MB
 - § **New value:** Offset of the phymem other than the default value can be set. **-o value** will be added to the receive command.
- **Events:** Number of events. Default: infinite
 - § **New value:** Number of events other than the default value can be set. **-e value** will be added to the receive command.
- **Length:** Data length in words can be set. Default: 1024 * 512 - 1
 - § **New value:** Data length other than the default value can be set. **-l value** will be added to the receive command.
- **Init word:** Init word can be set. Default: 0
 - § **New value:** Init word other than the default value can be set. **-i value** will be added to the receive command.
- **Initial event count:** Initial event count can be set. Default: 1
 - § **New value:** Initial event count other than the default value can be set. **-n value** will be added to the receive command.
- **Random length:** Data length can be set to be random. Default: not random length
 - § **New value:** The maximum of the random length can be set. **-j value** will be added to the receive command.
- **max FIFO:** Value of the max FIFO can be set. Default: 128
 - § **New value:** Value of the max FIFO other than the default value can be set. **-F value** will be added to the receive command.
- **min FIFO:** Value of the min FIFO can be set. Default: 127

- § **New value:** Value of the min FIFO other than the default value can be set. **-f value** will be added to the receive command.
- **Sleep time (ms):** The value of sleeping time between events can be set in milliseconds. Default: 0
 - § **New value:** Value of sleep time other than the default value can be set. **-t value** will be added to the receive command.
- **# of GBs to print:** Number of gigabytes of data received is displayed after every n GBs. (where N can be set) Default: 1
 - § **New value:** Number of gigabytes other than the default value can be set. **-Q value** will be added to the receive command.
- **# of pages to print:** Number of pages of data received is displayed after every m pages. (where m can be set) Default: 0
 - § **New value:** Number of pages other than the default value can be set. **-q value** will be added to the receive command.
- **Output file:** Output file to be made. Default: No output file is made
 - § **Output file:** Path and name of the output file can be set. **-k path** of the output file will be added to the receive command.

The values of all the receive parameters can be saved to (or loaded from) a file. For more details see Section 3.1.