# Collaborators

<table>
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<th>ACTION</th>
<th>NAME</th>
<th>DATE</th>
<th>SIGNATURE</th>
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<tr>
<td>WRITTEN BY</td>
<td></td>
<td>March 8, 2022</td>
<td></td>
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# Revision History

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<td>08th March 2022</td>
<td>Automatic build (1.4.0.20-ad842)</td>
<td>s.f.m.c.</td>
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Chapter 1

VTY reference

The Virtual Tele Type (VTY) has the concept of nodes and commands. This chapter lists all nodes and the commands that are available within the node. Each command can consist out of several words followed by a variable number of parameters. There are common patterns for the parameters, these include IPv4 addresses, number ranges, a word, a line of text and choice. The following will explain the commonly used patterns.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Example</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.B.C.D</td>
<td>127.0.0.1</td>
<td>A IPv4 address</td>
</tr>
<tr>
<td>TEXT</td>
<td>example01</td>
<td>A single string without any spaces, tabs</td>
</tr>
<tr>
<td>.TEXT</td>
<td>Some information</td>
<td>A line of text</td>
</tr>
<tr>
<td>(OptionA</td>
<td>OptionB</td>
<td>OptionC)</td>
</tr>
<tr>
<td>&lt;0-10&gt;</td>
<td>5</td>
<td>A number from a range</td>
</tr>
</tbody>
</table>

Table 1.1: VTY Parameter Patterns

The application is configured through the VTY. For configuring a system one needs to enter the `enable` node and then enter the `configure terminal` command. Then the configuration can be made according to the available commands. After the system has been configured one can use the `write` command to write the new configuration to the configuration file. The new file will be used after the application has been restarted.

The following table lists the TCP port numbers of the VTY for the various Osmocom GSM related programs as used on sysmocom products:

<table>
<thead>
<tr>
<th>Port Number</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>4240</td>
<td>osmo-pcu</td>
</tr>
<tr>
<td>4241</td>
<td>osmo-bts</td>
</tr>
<tr>
<td>4242</td>
<td>osmo-nitb, osmo-bsc</td>
</tr>
<tr>
<td>4243</td>
<td>osmo-bsc_mgcp</td>
</tr>
<tr>
<td>4244</td>
<td>osmo-bsc_nat</td>
</tr>
<tr>
<td>4245</td>
<td>osmo-sgsn</td>
</tr>
<tr>
<td>4246</td>
<td>osmo-gbproxy</td>
</tr>
</tbody>
</table>

Table 1.2: VTY port numbers

1.1 Common Commands

These commands are available on all VTY nodes. They are listed here only once, to unclutter the VTY reference.
1.1.1  end

Command
  end

Parameters
end

End current mode and change to enable mode.

1.1.2  exit

Command
  exit

Parameters
exit

Exit current mode and down to previous mode.

1.1.3  help

Command
  help

Parameters
help

Description of the interactive help system

1.1.4  list [with-flags]

Command
  list [with-flags]

Parameters
list

  Print command list

[with-flags]

  Also print the VTY attribute flags
1.1.5  show running-config

Command

```
show running-config
```

Parameters

show

  Show running system information

running-config

  running configuration

1.1.6  show vty-attributes

Command

```
show vty-attributes
```

Parameters

show

  Show running system information

vty-attributes

  List of VTY attributes

1.1.7  show vty-attributes (application|library|global)

Command

```
show vty-attributes (application|library|global)
```

Parameters

show

  Show running system information

vty-attributes

  List of VTY attributes

application

  Application specific attributes only

library

  Library specific attributes only

global

  Global attributes only
1.1.8 write

Command
  write

Parameters
  write
  Write running configuration to memory, network, or terminal

1.1.9 write file [PATH]

Command
  write file [PATH]

Parameters
  write
  Write running configuration to memory, network, or terminal
  file
  Write to configuration file
  [PATH]
  Set file path to store the config, or replace if already exists

1.1.10 write memory

Command
  write memory

Parameters
  write
  Write running configuration to memory, network, or terminal
  memory
  Write configuration to the file (same as write file)

1.1.11 write terminal

Command
  write terminal

Parameters
  write
  Write running configuration to memory, network, or terminal
  terminal
  Write to terminal
1.2 view

The view node is the default node when connecting to the VTY interface. This node does not require any additional permission and allows to introspect the application.

1.2.1 enable [expert-mode]

Command

```
enable [expert-mode]
```

Parameters

- **enable**
  - Turn on privileged mode command
- **[expert-mode]**
  - Enable the expert mode (show hidden commands)

1.2.2 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

- **logging**
  - Configure logging
- **color**
  - Configure color-printing for log messages
- **0**
  - Don’t use color for printing messages
- **1**
  - Use color for printing messages

1.2.3 logging disable

Command

```
logging disable
```

Parameters

- **logging**
  - Configure logging
- **disable**
  - Disables logging to this vty
1.2.4 logging enable

This command is required to make logging commands available on the telnet VTY.

Command

```
logging enable
```

Parameters

logging
Configure logging
enable
Enables logging to this vty

1.2.5 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging
Configure logging
filter
Filter log messages
all
Do you want to log all messages?
0
Only print messages matched by other filters
1
Bypass filter and print all messages

1.2.6 logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pac...

Command

```
logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch|pagch|pbcch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdccch|tch/f|tch/h)
```
Parameters

logging
  Configure logging

filter
  Filter log messages

l1-sapi
  L1 SAPI

unknown
  UNKNOWN

agh
  AGCH

bcch
  BCCH

cbch
  CBCH

facch/f
  FACCH/F

facch/h
  FACCH/H

fcch
  FCCH

idle
  IDLE

nch
  NCH

pacch
  PACCH

pagech
  PAGCH

pbcch
  PBCCH

pch
  PCH

pdtch
  PDTCH

pnch
  PNCH

ppch
  PPCH
prach
  PRACH
ptcch
  PTCCH
rach
  RACH
sacch
  SACCH
sch
  SCH
sdcch
  SDCCH
tch/f
  TCH/F
tch/h
  TCH/H

1.2.7 logging level (rsl|oml|rl|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|lglo...)

Command

```bash
logging level (rsl|oml|rl|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|lglo|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtplstats|lgsup|loa|lss7|lsccp|lsua|l3ua|lmgcp|ljibuf|lspro|lns|labsgp|lndata|lnssignal|liuup|lpfcp) (debug|info|notice|error|fatal)
```

Parameters

logging
  Configure logging
level
  Set the log level for a specified category
rsl
  A-bis Radio Signalling Link (RSL)
oml
  A-bis Network Management / O&M (NM/OML)
rl
  A-bis Radio Link Layer (RLL)
rr
  Layer3 Radio Resource (RR)
meas
  Radio Measurement Processing
OsmoBTS VTY Reference

lstats
  Statistics messages and logging
lgsup
  Generic Subscriber Update Protocol
loap
  Osmocom Authentication Protocol
lss7
  libosmo-sigtran Signalling System 7
lsccp
  libosmo-sigtran SCCP Implementation
lsua
  libosmo-sigtran SCCP User Adaptation
lm3ua
  libosmo-sigtran MTP3 User Adaptation
lmgcp
  libosmo-mgcp Media Gateway Control Protocol
ljibuf
  libosmo-netif Jitter Buffer
lrspro
  Remote SIM protocol
lns
  GPRS NS layer
lbssgp
  GPRS BSSGP layer
lnsdata
  GPRS NS layer data PDU
lnsignal
  GPRS NS layer signal PDU
liuup
  Iu UP layer
lpfcp
  libosmo-pfcp Packet Forwarding Control Protocol
debug
  Log debug messages and higher levels
info
  Log informational messages and higher levels
notice
  Log noticeable messages and higher levels
**error**
Log error messages and higher levels

**fatal**
Log only fatal messages

### 1.2.8 logging level force-all (debug|info|notice|error|fatal)

**Command**

```
logging level force-all (debug|info|notice|error|fatal)
```

**Parameters**

- **logging**
  Configure logging

- **level**
  Set the log level for a specified category

- **force-all**
  Globally force all logging categories to a specific level. This is released by the `no logging level force-all` command. Note: any `logging level <category> <level>` commands will have no visible effect after this, until the forced level is released.

- **debug**
  Log debug messages and higher levels

- **info**
  Log informational messages and higher levels

- **notice**
  Log noticeable messages and higher levels

- **error**
  Log error messages and higher levels

- **fatal**
  Log only fatal messages

### 1.2.9 logging level set-all (debug|info|notice|error|fatal)

**Command**

```
logging level set-all (debug|info|notice|error|fatal)
```

**Parameters**

- **logging**
  Configure logging

- **level**
  Set the log level for a specified category
set-all
   Once-off set all categories to the given log level. There is no single command to take back these changes -- each category
   is set to the given level, period.

debug
   Log debug messages and higher levels

info
   Log informational messages and higher levels

notice
   Log noticeable messages and higher levels

error
   Log error messages and higher levels

fatal
   Log only fatal messages

1.2.10 logging print category (0|1)

Command
   logging print category (0|1)

Parameters
logging
   Configure logging

print
   Log output settings

category
   Configure log message

0
   Don’t prefix each log message

1
   Prefix each log message with category/subsystem name

1.2.11 logging print category-hex (0|1)

Command
   logging print category-hex (0|1)

Parameters
logging
   Configure logging
print
   Log output settings
category-hex
   Configure log message
   0
   Don’t prefix each log message
   1
   Prefix each log message with category/subsystem nr in hex (`<000b>`)

1.2.12 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters
logging
   Configure logging
print
   Log output settings
extended-timestamp
   Configure log message timestamping
   0
   Don’t prefix each log message
   1
   Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.2.13 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters
logging
   Configure logging
print
   Log output settings
file
   Configure log message
Don’t prefix each log message

1

Prefix each log message with the source file and line basename

Prefix each log message with the source file’s basename (strip leading paths) and line

Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.2.14 logging print level (0|1)

Command

logging print level (0|1)

Parameters

logging
Configure logging

print
Log output settings

level
Configure log message

0
Don’t prefix each log message

1
Prefix each log message with the log level name

1.2.15 logging print thread-id (0|1)

Command

logging print thread-id (0|1)

Parameters

logging
Configure logging

print
Log output settings

thread-id
Configure log message logging Thread ID

0
Don’t prefix each log message

1
Prefix each log message with current Thread ID
1.2.16 logging set-log-mask MASK

Command

```
logging set-log-mask MASK
```

Parameters

logging
Configure logging

set-log-mask
Set the logmask of this logging target

MASK
List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are LOGL_DEBUG=1 LOGL_INFO=3 LOGL_NOTICE=5 LOGL_ERROR=7 LOGL_FATAL=8

1.2.17 logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging
Configure logging
timestamp
Configure log message timestamping

0
Don’t prefix each log message

1
Prefix each log message with current timestamp

1.2.18 logp (rsl|oml|rl|rr|meas|pag|llc|llp|dsp|pcu|ho|trx|loop|abis|rtp|lglobal|llap...
logp
   Print a message on all log outputs; useful for placing markers in test logs

rsl
   A-bis Radio Signalling Link (RSL)

oml
   A-bis Network Management / O&M (NM/OML)

rll
   A-bis Radio Link Layer (RLL)

rr
   Layer 3 Radio Resource (RR)

meas
   Radio Measurement Processing

pag
   Paging Subsystem

l1c
   Layer 1 Control (MPH)

l1p
   Layer 1 Primitives (PH)

dsp
   DSP Trace Messages

pcu
   PCU interface

ho
   Handover

trx
   TRX interface

loop
   Control loops

abis
   A-bis Input Subsystem

rtp
   Realtime Transfer Protocol

lglobal
   Library-internal global log family

llapd
   LAPD in libsmogsm

linp
   A-bis Input Subsystem
lmux
A-bis B-Subchannel TRAU Frame Multiplex

lmi
A-bis Input Driver for Signalling

lmib
A-bis Input Driver for B-Channels (voice)

lsms
Layer3 Short Message Service (SMS)

lctrl
Control Interface

lgtp
GPRS GTP library

lstats
Statistics messages and logging

lgsup
Generic Subscriber Update Protocol

loap
Osmocom Authentication Protocol

lss7
libosmo-sigtran Signalling System 7

lsccp
libosmo-sigtran SCCP Implementation

lsua
libosmo-sigtran SCCP User Adaptation

lm3ua
libosmo-sigtran MTP3 User Adaptation

lmgcp
libosmo-mgcp Media Gateway Control Protocol

ljibuf
libosmo-netif Jitter Buffer

lrpro
Remote SIM protocol

lns
GPRS NS layer

lbssgp
GPRS BSSGP layer

lnsdata
GPRS NS layer data PDU
Inssignal
   GPRS NS layer signal PDU
liuup
   Iu UP layer
lpfcp
   libosmo-pfcp Packet Forwarding Control Protocol
debug
   Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
error
   Log error messages and higher levels
fatal
   Log only fatal messages
.LOGMESSAGE
   Arbitrary message to log on given category and log level

1.2.19 no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|...)

Command
   no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch|...
   pagch|pbcch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdcch|tch/f|tch/h)

Parameters
   no
      Negate a command or set its defaults
   logging
      Configure logging
   filter
      Filter log messages
   l1-sapi
      L1 SAPI
   unknown
      UNKNOWN
   agch
      AGCH
bcch
  BCCH
cbch
  CBCH
cach/f
  FACCH/F
cach/h
  FACCH/H
cch
  FCCH
dle
  IDLE
ch
  NCH
ach
  PACCH
agch
  PAGCH
bcch
  PBCCH
ch
  PCH
dtch
  PDTCH
neh
  PNCH
mph
  PPCH
ach
  PRACH
cch
  PTCCH
ach
  RACH
acch
  SACCH
ch
  SCH
sdcch
    SDCCH

tch/f
    TCH/F

tch/h
    TCH/H

1.2.20  no logging level force-all

Command

    no logging level force-all

Parameters

no
    Negate a command or set its defaults

logging
    Configure logging

level
    Set the log level for a specified category

force-all
    Release any globally forced log level set with 'logging level force-all <level>'

1.2.21  no phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx_msg_byte|mph_cnf|mph_ind|mph_req|ph_ind|ph_req|phy_rf|phy_msg_byte|mode|tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory|profiling|test_comment|test|status)

Command

    no phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx_msg_byte|mph_cnf|mph_ind|mph_req|ph_ind|ph_req|phy_rf|phy_msg_byte|mode|tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory|profiling|test_comment|test|status)

Parameters

no
    Negate a command or set its defaults

phy
    Transceiver related commands

<0-1>
    TRX number

dsp-trace-flag
    DSP Trace Flag
debug
    Debug Region
l1_warning
    L1 Warning Region
error
    Error Region
l1_rx_msg
    L1_RX_MSG Region
l1_rx_msg_byte
    L1_RX_MSG_BYTE Region
l1_tx_msg
    L1_TX_MSG Region
l1_tx_msg_byte
    L1_TX_MSG_BYTE Region
mph_cnf
    MphConfirmation Region
mph_ind
    MphIndication Region
mph_req
    MphRequest Region
ph_ind
    PhIndication Region
ph_req
    PhRequest Region
phy_rf
    PhyRF Region
phy_msg_byte
    PhyRF Message Region
mode
    Mode Region
tdma_info
    TDMA Info Region
bad_crc
    Bad CRC Region
ph_ind_byte
    PH_IND_BYTE
ph_req_byte
    PH_REQ_BYTE
device_msg
    Device Message Region
rach_info
    RACH Info
log_ch_info
    LOG_CH_INFO
memory
    Memory Region
profiling
    Profiling Region
test_comment
    Test Comments
test
    Test Region
status
    Status Region

1.2.22  phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|...)

Command

phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|11_rx_msg_byte|11_tx_msg|mph_cnf|mph_ind|mph_req|ph_ind|ph_req|phy_rf|phy_msg_byte|mode|tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory|profiling|test_comment|test|status)

Parameters

phy
    Transceiver related commands

<0-1>
    TRX number
dsp-trace-flag
    DSP Trace Flag
debug
    Debug Region
l1_warning
    L1 Warning Region
error
    Error Region
l1_rx_msg
    L1_RX_MSG Region
l1_rx_msg_byte
   L1_RX_MSG_BYTE Region
l1_tx_msg
   L1_TX_MSG Region
l1_tx_msg_byte
   L1_TX_MSG_BYTE Region
mph_cnfr
   MphConfirmation Region
mph_ind
   MphIndication Region
mph_req
   MphRequest Region
ph_ind
   PhIndication Region
ph_req
   PhRequest Region
phy_rf
   PhyRF Region
phy_msg_byte
   PhyRF Message Region
mode
   Mode Region
tdma_info
   TDMA Info Region
bad_crc
   Bad CRC Region
ph_ind_byte
   PH_IND_BYTE
ph_req_byte
   PH_REQ_BYTE
device_msg
   Device Message Region
rach_info
   RACH Info
log_ch_info
   LOG_CH_INFO
memory
   Memory Region
1.2.23  **show alarms**

**Command**

```
show alarms
```

**Parameters**

- `show`
  - Show running system information
- `alarms`
  - Show current logging configuration

1.2.24  **show asciidoc counters**

**Command**

```
show asciidoc counters
```

**Parameters**

- `show`
  - Show running system information
- `asciidoc`
  - Asciidoc generation
- `counters`
  - Generate table of all registered counters
1.2.25  show bts <0-255> gprs

Command

```
show bts <0-255> gprs
```

Parameters

show
  Show running system information
bts
  Display information about a BTS
<0-255>
  BTS Number
gprs
  GPRS/EGPRS configuration

1.2.26  show bts [<0-255>]

Command

```
show bts [<0-255>]
```

Parameters

show
  Show running system information
bts
  Display information about a BTS
[<0-255>]
  BTS Number

1.2.27  show cpu-sched threads

Command

```
show cpu-sched threads
```

Parameters

show
  Show running system information
cpu-sched
  Show Sched section information
threads
  Show information about running threads)
1.2.28  **show dsp-trace-flags trx <0-0>**

**Command**

```
show dsp-trace-flags trx <0-0>
```

**Parameters**

- **show**
  Show running system information
- **dsp-trace-flags**
  Transceiver related commands
- **trx**
  TRX number
- **<0-0>**
  Display the current setting of the DSP trace flags

1.2.29  **show e1_driver**

**Command**

```
show e1_driver
```

**Parameters**

- **show**
  Show running system information
- **e1_driver**
  Display information about available E1 drivers

1.2.30  **show e1_line [<0-255>] [stats]**

**Command**

```
show e1_line [<0-255>] [stats]
```

**Parameters**

- **show**
  Show running system information
- **e1_line**
  Display information about a E1 line
- **[<0-255>]**
  E1 Line Number
- **[stats]**
  Include statistics
### 1.2.31 show e1_timeslot [<0-255>] [<0-31>]

**Command**

```
show e1_timeslot [<0-255>] [<0-31>]
```

**Parameters**

- **show**
  - Show running system information
- **e1_timeslot**
  - Display information about a E1 timeslot
- **[<0-255>]**
  - E1 Line Number
- **[<0-31>]**
  - E1 Timeslot Number

### 1.2.32 show fsm NAME

**Command**

```
show fsm NAME
```

**Parameters**

- **show**
  - Show running system information
- **fsm**
  - Show information about finite state machines
- **NAME**
  - Display information about a single named finite state machine

### 1.2.33 show fsm all

**Command**

```
show fsm all
```

**Parameters**

- **show**
  - Show running system information
- **fsm**
  - Show information about finite state machines
- **all**
  - Display a list of all registered finite state machines
1.2.34  show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

```
show
    Show running system information

fsm-instances
    Show information about finite state machine instances

NAME
    Display a list of all FSM instances of the named finite state machine
```

1.2.35  show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

```
show
    Show running system information

fsm-instances
    Show information about finite state machine instances

all
    Display a list of all FSM instances of all finite state machine
```

1.2.36  show history

Command

```
show history
```

Parameters

```
show
    Show running system information

history
    Display the session command history
```
1.2.37  show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

- **show**
  - Show running system information
- **lchan**
  - Display information about a logical channel
- **<0-255>**
  - BTS Number
- **<0-255>**
  - TRX Number
- **<0-7>**
  - Timeslot Number
- **<0-7>**
  - Logical Channel Number

1.2.38  show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

- **show**
  - Show running system information
- **lchan**
  - Display information about a logical channel
- **summary**
  - Short summary
- **<0-255>**
  - BTS Number
- **<0-255>**
  - TRX Number
- **<0-7>**
  - Timeslot Number
- **<0-7>**
  - Logical Channel Number
1.2.39 show logging vty

Command

```
show logging vty
```

Parameters

- **show**
  - Show running system information
- **logging**
  - Show current logging configuration
- **vty**
  - Show current logging configuration for this vty

1.2.40 show online-help

Command

```
show online-help
```

Parameters

- **show**
  - Show running system information
- **online-help**
  - Online help

1.2.41 show phy <0-0> instance <0-0> system-information

Command

```
show phy <0-0> instance <0-0> system-information
```

Parameters

- **show**
  - Show running system information
- **phy**
  - Transceiver related commands
- **<0-0>**
  - TRX number
- **instance**
  - Display information about system
- **<0-0>**
  - (null)
- **system-information**
  - (null)
1.2.42  show pid

Command

    show pid

Parameters

    show
        Show running system information
    pid
        Displays the process ID

1.2.43  show rate-counters

Command

    show rate-counters

Parameters

    show
        Show running system information
    rate-counters
        Show all rate counters

1.2.44  show stats

Command

    show stats

Parameters

    show
        Show running system information
    stats
        Show statistical values
1.2.45  show stats level (global|peer|subscriber)

Command

```
show stats level (global|peer|subscriber)
```

Parameters

show
  Show running system information
stats
  Show statistical values
level
  Set the maximum group level
global
  Show global groups only
peer
  Show global and network peer related groups
subscriber
  Show global, peer, and subscriber groups

1.2.46  show talloc-context (application|global|all) (full|brief|DEPTH)

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH)
```

Parameters

show
  Show running system information
talloc-context
  Show talloc memory hierarchy
application
  Application’s context
global
  Global context (OTC_GLOBAL)
all
  All contexts, if NULL-context tracking is enabled
full
  Display a full talloc memory hierarchy
brief
  Display a brief talloc memory hierarchy
DEPTH
  Specify required maximal depth value
1.2.47  show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP
```

Parameters

- **show**
  - Show running system information
- **talloc-context**
  - Show talloc memory hierarchy
- **application**
  - Application’s context
- **global**
  - Global context (OTC_GLOBAL)
- **all**
  - All contexts, if NULL-context tracking is enabled
- **full**
  - Display a full talloc memory hierarchy
- **brief**
  - Display a brief talloc memory hierarchy
- **DEPTH**
  - Specify required maximal depth value
- **filter**
  - Filter chunks using regular expression
- **REGEXP**
  - Regular expression

1.2.48  show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS
```

Parameters

- **show**
  - Show running system information
- **talloc-context**
  - Show talloc memory hierarchy
- **application**
  - Application’s context
global
  Global context (OTCLOBAL)
all
  All contexts, if NULL-context tracking is enabled
full
  Display a full talloc memory hierarchy
brief
  Display a brief talloc memory hierarchy
DEPTH
  Specify required maximal depth value
tree
  Display only a specific memory chunk
ADDRESS
  Chunk address (e.g. 0xdeadbeef)

### 1.2.49 show timer [(bts|abis)] [TNNNN]

**Command**

```
show timer [(bts|abis)] [TNNNN]
```

**Parameters**

**show**
  Show running system information

**timer**
  Show timers

[bts]
  BTS process timers

[abis]
  Abis (RSL) related timers

[TNNNN]
  T- or X-timer-number -- 3GPP compliant timer number of the format ’1234’ or ’T1234’ or ’t1234’; Osmocom-specific timer number of the format: ’X1234’ or ’x1234’.

### 1.2.50 show timeslot [<0-255>] [<0-255>] [<0-7>]

**Command**

```
show timeslot [<0-255>] [<0-255>] [<0-7>]
```

**Parameters**
show
  Show running system information
timeslot
  Display information about a TS
  [<0-255>]
    BTS Number
  [<0-255>]
    TRX Number
  [<0-7>]
    Timeslot Number

1.2.51  show trx [<0-255>] [<0-255>]

Command
  show trx [<0-255>] [<0-255>]

Parameters
  show
    Show running system information
  trx
    Display information about a TRX
  [<0-255>]
    BTS Number
  [<0-255>]
    TRX Number

1.2.52  show uptime

Command
  show uptime

Parameters
  show
    Show running system information
  uptime
    Displays how long the program has been running
1.2.53  **show version**

Command

```
show version
```

Parameters

show
  Show running system information

version
  Displays program version

1.2.54  **terminal length <0-512>**

Command

```
terminal length <0-512>
```

Parameters

terminal
  Set terminal line parameters

length
  Set number of lines on a screen

<0-512>
  Number of lines on screen (0 for no pausing)

1.2.55  **terminal no length**

Command

```
terminal no length
```

Parameters

terminal
  Set terminal line parameters

no
  Negate a command or set its defaults

length
  Set number of lines on a screen
1.2.56 who

Command

```
who
```

Parameters

```
who
```

 Display who is on vty

1.3 enable

The enable node is a privileged node, allowing to make changes to the configuration and to access further commands like 'configure'. All commands seen on the view node are also available here.

1.3.1 bts <0-0> trx <0-255> ts <0-7> (lchan|shadow-lchan) <0-7> rtp jitter-buffer <0-1...
rtp
  RTP settings
jitter-buffer
  Jitter buffer
  <0-10000>
  Size of jitter buffer in (ms)

1.3.2  bts <0-255> c0-power-red <0-6>

Command
  bts <0-255> c0-power-red <0-6>

Parameters
bts
  BTS Specific Commands
  <0-255>
  BTS Number
c0-power-red
  BCCH carrier power reduction operation
  <0-6>
  Power reduction value (in dB, even numbers only)

1.3.3  configure terminal

Command
  configure terminal

Parameters
configure
  Configuration from vty interface
terminal
  Configuration terminal
1.3.4  **copy running-config startup-config**

**Command**
```
copy running-config startup-config
```

**Parameters**
- **copy**
  - Copy configuration
- **running-config**
  - Copy running config to...
- **startup-config**
  - Copy running config to startup config (same as write file)

1.3.5  **disable**

**Command**
```
disable
```

**Parameters**
- **disable**
  - Turn off privileged mode command

1.3.6  **logging color (0|1)**

**Command**
```
logging color (0|1)
```

**Parameters**
- **logging**
  - Configure logging
- **color**
  - Configure color-printing for log messages
  - **0**
    - Don’t use color for printing messages
  - **1**
    - Use color for printing messages
1.3.7 logging disable

Command

```
logging disable
```

Parameters

`logging`

Configure logging

`disable`

Disables logging to this vty

1.3.8 logging enable

This command is required to make logging commands available on the telnet VTY.

Command

```
logging enable
```

Parameters

`logging`

Configure logging

`enable`

Enables logging to this vty

1.3.9 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

`logging`

Configure logging

`filter`

Filter log messages

`all`

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages
1.3.10 logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pac...
1.3.11 logging level (rsl|oml|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|lglo...)

Command

logging level (rsl|oml|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|lglobal| llapd|llnp|lmux|lmi|lmib|lsms|lcrti|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua| lmgcp|ljibuf|lrspro|lns|lbsgp|lnsdata|lnssignal|liuup|lpfcp) (debug|info|notice| error|fatal)

Parameters

logging
Configure logging

level
Set the log level for a specified category

rsl
A-bis Radio Signalling Link (RSL)

oml
A-bis Network Management / O&M (NM/OML)
rll
   A-bis Radio Link Layer (RLL)
rr
   Layer3 Radio Resource (RR)
meas
   Radio Measurement Processing
pag
   Paging Subsystem
l1c
   Layer 1 Control (MPH)
l1p
   Layer 1 Primitives (PH)
dsp
   DSP Trace Messages
pcu
   PCU interface
ho
   Handover
trx
   TRX interface
loop
   Control loops
abis
   A-bis Input Subsystem
rtp
   Realtime Transfer Protocol
lglobal
   Library-internal global log family
llapd
   LAPD in libosmogsm
linp
   A-bis Input Subsystem
lmux
   A-bis B-Subchannel TRAU Frame Multiplex
lmi
   A-bis Input Driver for Signalling
lmib
   A-bis Input Driver for B-Channels (voice)
lsms
   Layer3 Short Message Service (SMS)

lctrl
   Control Interface

lgtp
   GPRS GTP library

lstats
   Statistics messages and logging

lgsup
   Generic Subscriber Update Protocol

loap
   Osmocom Authentication Protocol

lss7
   libosmo-sigtran Signalling System 7

lsccp
   libosmo-sigtran SCCP Implementation

lsua
   libosmo-sigtran SCCP User Adaptation

lm3ua
   libosmo-sigtran MTP3 User Adaptation

lgmcp
   libosmo-mgcp Media Gateway Control Protocol

ljibuf
   libosmo-netif Jitter Buffer

lrspro
   Remote SIM protocol

lns
   GPRS NS layer

lbssgp
   GPRS BSSGP layer

lnsdata
   GPRS NS layer data PDU

lnssignal
   GPRS NS layer signal PDU

liuup
   Iu UP layer

lpfcp
   libosmo-pfcp Packet Forwarding Control Protocol
debug
  Log debug messages and higher levels

info
  Log informational messages and higher levels

notice
  Log noticeable messages and higher levels

error
  Log error messages and higher levels

fatal
  Log only fatal messages

1.3.12 logging level force-all (debug|info|notice|error|fatal)

Command

logging level force-all (debug|info|notice|error|fatal)

Parameters

logging
  Configure logging

level
  Set the log level for a specified category

force-all
  Globally force all logging categories to a specific level. This is released by the ‘no logging level force-all’ command. Note: any ‘logging level <category> <level>’ commands will have no visible effect after this, until the forced level is released.

d debug
  Log debug messages and higher levels

info
  Log informational messages and higher levels

notice
  Log noticeable messages and higher levels

error
  Log error messages and higher levels

fatal
  Log only fatal messages
1.3.13 logging level set-all (debug|info|notice|error|fatal)

Command

logging level set-all (debug|info|notice|error|fatal)

Parameters

logging
  Configure logging

level
  Set the log level for a specified category

set-all
  Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug
  Log debug messages and higher levels

info
  Log informational messages and higher levels

notice
  Log noticeable messages and higher levels

error
  Log error messages and higher levels

fatal
  Log only fatal messages

1.3.14 logging print category (0|1)

Command

logging print category (0|1)

Parameters

logging
  Configure logging

print
  Log output settings

category
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with category/subsystem name
1.3.15 logging print category-hex (0|1)

Command

logging print category-hex (0|1)

Parameters
logging
Configure logging

print
Log output settings

category-hex
Configure log message

0
Don’t prefix each log message

1
Prefix each log message with category/subsystem nr in hex (’<000b>’)

1.3.16 logging print extended-timestamp (0|1)

Command

logging print extended-timestamp (0|1)

Parameters
logging
Configure logging

print
Log output settings

extended-timestamp
Configure log message timestamping

0
Don’t prefix each log message

1
Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn
1.3.17 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging
  Configure logging

print
  Log output settings

file
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with the source file and line

basename
  Prefix each log message with the source file’s basename (strip leading paths) and line

[last]
  Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.3.18 logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging
  Configure logging

print
  Log output settings

level
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with the log level name
1.3.19  **logging print thread-id (0|1)**

Command

```
logging print thread-id (0|1)
```

Parameters

logging
  Configure logging

print
  Log output settings

thread-id
  Configure log message logging Thread ID

0
  Don’t prefix each log message

1
  Prefix each log message with current Thread ID

1.3.20  **logging set-log-mask MASK**

Command

```
logging set-log-mask MASK
```

Parameters

logging
  Configure logging

set-log-mask
  Set the logmask of this logging target

MASK
  List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to
  the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are
  LOGL_DEBUG=1 LOGL_INFO=3 LOGL_NOTICE=5 LOGL_ERROR=7 LOGL_FATAL=8

1.3.21  **logging timestamp (0|1)**

Command

```
logging timestamp (0|1)
```

Parameters
logging
  Configure logging
timestamp
  Configure log message timestamping
  0
    Don’t prefix each log message
  1
    Prefix each log message with current timestamp

1.3.22  logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|lglobal|llapd...

Command

\texttt{logp \ (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|lglobal|llapd\ldots |}
  \texttt{lmux|lmni|lmsa|lctrl|lgtp|lstats|lgsm|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|} \leftarrow
  \texttt{lspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp) \ (debug|info|notice|error|fatal) \ . \leftarrow

Parameters

logp
  Print a message on all log outputs; useful for placing markers in test logs
rsl
  A-bis Radio Signalling Link (RSL)
oml
  A-bis Network Management / O&M (NM/OML)
rll
  A-bis Radio Link Layer (RLL)
rr
  Layer3 Radio Resource (RR)
meas
  Radio Measurement Processing
pag
  Paging Subsystem
l1c
  Layer 1 Control (MPH)
l1p
  Layer 1 Primitives (PH)
dsp
  DSP Trace Messages
pcu
  PCU interface
ho
  Handover
trx
  TRX interface
loop
  Control loops
abis
  A-bis Input Subsystem
rtp
  Realtime Transfer Protocol
lglobal
  Library-internal global log family
lapd
  LAPD in libosmogsm
linp
  A-bis Input Subsystem
lmux
  A-bis B-Subchannel TRAU Frame Multiplex
limi
  A-bis Input Driver for Signalling
limib
  A-bis Input Driver for B-Channels (voice)
lsms
  Layer3 Short Message Service (SMS)
lctrl
  Control Interface
lgtp
  GPRS GTP library
lstats
  Statistics messages and logging
lgsup
  Generic Subscriber Update Protocol
loap
  Osmocom Authentication Protocol
lss7
  libosmo-sigtran Signalling System 7
lsccp
  libosmo-sigtran SCCP Implementation
lsua
   libosmo-sigtran SCCP User Adaptation
lm3ua
   libosmo-sigtran MTP3 User Adaptation
lmgcp
   libosmo-mgcp Media Gateway Control Protocol
ljibuf
   libosmo-netif Jitter Buffer
lrspro
   Remote SIM protocol
lns
   GPRS NS layer
lbssgp
   GPRS BSSGP layer
lnsdata
   GPRS NS layer data PDU
lnssignal
   GPRS NS layer signal PDU
liuup
   Iu UP layer
lpfcp
   libosmo-pfcp Packet Forwarding Control Protocol
debug
   Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
error
   Log error messages and higher levels
fatal
   Log only fatal messages
.ŁOLOGIN
egebung
   Arbitrary message to log on given category and log level
1.3.23  no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|...)

Command

```
no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch|pagch|pbcch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdcch|tch/f|tch/h)
```

Parameters

no
  Negate a command or set its defaults
logging
  Configure logging
filter
  Filter log messages
l1-sapi
  L1 SAPI
unknown
  UNKNOWN
agch
  AGCH
bcch
  BCCH
cbch
  CBCH
facch/f
  FACCH/F
facch/h
  FACCH/H
fcch
  FCCH
idle
  IDLE
nch
  NCH
pacch
  PACCH
pagch
  PAGCH
pbcch
  PBCCH
1.3.24  no logging level force-all

Command

```
no logging level force-all
```

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

Release any globally forced log level set with 'logging level force-all <level>'
1.3.25 no phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx...
ph_req
  PhRequest Region
phy_rf
  PhyRF Region
phy_msg_byte
  PhyRF Message Region
mode
  Mode Region
tdma_info
  TDMA Info Region
bad_crc
  Bad CRC Region
ph_ind_byte
  PH_IND_BYTE
ph_req_byte
  PH_REQ_BYTE
device_msg
  Device Message Region
rach_info
  RACH Info
log_ch_info
  LOG_CH_INFO
memory
  Memory Region
profiling
  Profiling Region
test_comment
  Test Comments
test
  Test Region
status
  Status Region
1.3.26  no trx <0-0> <0-7> loopback <0-1>

Command

no trx <0-0> <0-7> loopback <0-1>

Parameters

no

Negate a command or set its defaults

trx

Transceiver related commands

<0-0>

TRX number

<0-7>

Timeslot number

loopback

Set TCH loopback

<0-1>

Logical Channel Number

1.3.27  phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx...

Command

phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg| l1_tx_msg_byte|mph_cnf|mph_ind|mph_req|ph_ind|ph_req|phy_rf|phy_msg_byte|mode| tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory| profiling|test_comment|test|status)

Parameters

phy

Transceiver related commands

<0-1>

TRX number

dsp-trace-flag

DSP Trace Flag

default

DSP Trace Flag

default

DSP Trace Flag

debug

Debug Region

l1_warning

L1 Warning Region

error

Error Region
l1_rx_msg
  L1_RX_MSG Region

l1_rx_msg_byte
  L1_RX_MSG_BYTE Region

l1_tx_msg
  L1_TX_MSG Region

l1_tx_msg_byte
  L1_TX_MSG_BYTE Region

mph_cnf
  MphConfirmation Region

mph_ind
  MphIndication Region

mph_req
  MphRequest Region

ph_ind
  PhIndication Region

ph_req
  PhRequest Region

phy_rf
  PhyRF Region

phy_msg_byte
  PhyRF Message Region

mode
  Mode Region

tdma_info
  TDMA Info Region

bad_crc
  Bad CRC Region

ph_ind_byte
  PH_IND_BYTE

ph_req_byte
  PH_REQ_BYTE

device_msg
  Device Message Region

rach_info
  RACH Info

log_ch_info
  LOG_CH_INFO
memory
  Memory Region
profiling
  Profiling Region
test_comment
  Test Comments
test
  Test Region
status
  Status Region

1.3.28  show alarms

Command

```plaintext
show alarms
```

Parameters

show
  Show running system information
alarms
  Show current logging configuration

1.3.29  show asciidoc counters

Command

```plaintext
show asciidoc counters
```

Parameters

show
  Show running system information
asciidoc
  Asciidoc generation
counters
  Generate table of all registered counters
1.3.30  show bts <0-255> gprs

Command
  show bts <0-255> gprs

Parameters
  show
    Show running system information
  bts
    Display information about a BTS
  <0-255>
    BTS Number
  gprs
    GPRS/EGPRS configuration

1.3.31  show bts [<0-255>]

Command
  show bts [<0-255>]

Parameters
  show
    Show running system information
  bts
    Display information about a BTS
  [<0-255>]
    BTS Number

1.3.32  show cpu-sched threads

Command
  show cpu-sched threads

Parameters
  show
    Show running system information
  cpu-sched
    Show Sched section information
  threads
    Show information about running threads)
1.3.33  **show dsp-trace-flags trx <0-0>**

**Command**

```
show dsp-trace-flags trx <0-0>
```

**Parameters**

**show**
- Show running system information

**dsp-trace-flags**
- Transceiver related commands

**trx**
- TRX number

**<0-0>**
- Display the current setting of the DSP trace flags

1.3.34  **show e1_driver**

**Command**

```
show e1_driver
```

**Parameters**

**show**
- Show running system information

**e1_driver**
- Display information about available E1 drivers

1.3.35  **show e1_line [<0-255>] [stats]**

**Command**

```
show e1_line [<0-255>] [stats]
```

**Parameters**

**show**
- Show running system information

**e1_line**
- Display information about a E1 line

**[<0-255>]**
- E1 Line Number

**[stats]**
- Include statistics
1.3.36  **show e1_timeslot [<0-255>] [<0-31>]**

Command

```text
show e1_timeslot [<0-255>] [<0-31>]
```

Parameters

- **show**: Show running system information
- **e1_timeslot**: Display information about an E1 timeslot
- [<0-255>]: E1 Line Number
- [<0-31>]: E1 Timeslot Number

1.3.37  **show fsm NAME**

Command

```text
show fsm NAME
```

Parameters

- **show**: Show running system information
- **fsm**: Show information about finite state machines
- **NAME**: Display information about a single named finite state machine

1.3.38  **show fsm all**

Command

```text
show fsm all
```

Parameters

- **show**: Show running system information
- **fsm**: Show information about finite state machines
- **all**: Display a list of all registered finite state machines
1.3.39  show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

- `show`
  Show running system information
- `fsm-instances`
  Show information about finite state machine instances
- `NAME`
  Display a list of all FSM instances of the named finite state machine

1.3.40  show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

- `show`
  Show running system information
- `fsm-instances`
  Show information about finite state machine instances
- `all`
  Display a list of all FSM instances of all finite state machine instances

1.3.41  show history

Command

```
show history
```

Parameters

- `show`
  Show running system information
- `history`
  Display the session command history
1.3.42  show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Parameters

show
    Show running system information
lchan
    Display information about a logical channel
    [<0-255>]
        BTS Number
    [<0-255>]
        TRX Number
    [<0-7>]
        Timeslot Number
    [<0-7>]
        Logical Channel Number

1.3.43  show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Parameters

show
    Show running system information
lchan
    Display information about a logical channel
summary
    Short summary
    [<0-255>]
        BTS Number
    [<0-255>]
        TRX Number
    [<0-7>]
        Timeslot Number
    [<0-7>]
        Logical Channel Number
1.3.44  **show logging vty**

**Command**

```
show logging vty
```

**Parameters**

- `show`  
  Show running system information
- `logging`  
  Show current logging configuration
- `vty`  
  Show current logging configuration for this vty

1.3.45  **show online-help**

**Command**

```
show online-help
```

**Parameters**

- `show`  
  Show running system information
- `online-help`  
  Online help

1.3.46  **show phy <0-0> instance <0-0> system-information**

**Command**

```
show phy <0-0> instance <0-0> system-information
```

**Parameters**

- `show`  
  Show running system information
- `phy`  
  Transceiver related commands
- `<0-0>`  
  TRX number
- `instance`  
  Display information about system
- `<0-0>`  
  (null)
- `system-information`  
  (null)
1.3.47  **show rate-counters**

**Command**

```
show rate-counters
```

**Parameters**

*show*

- Show running system information

*rate-counters*

- Show all rate counters

1.3.48  **show startup-config**

**Command**

```
show startup-config
```

**Parameters**

*show*

- Show running system information

*startup-config*

- Contentes of startup configuration

1.3.49  **show stats**

**Command**

```
show stats
```

**Parameters**

*show*

- Show running system information

*stats*

- Show statistical values
1.3.50  show stats level (global|peer|subscriber)

Command

```
show stats level (global|peer|subscriber)
```

Parameters

show
  Show running system information
stats
  Show statistical values
level
  Set the maximum group level
global
  Show global groups only
peer
  Show global and network peer related groups
subscriber
  Show global, peer, and subscriber groups

1.3.51  show talloc-context (application|global|all) (full|brief|DEPTH)

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH)
```

Parameters

show
  Show running system information
talloc-context
  Show talloc memory hierarchy
application
  Application’s context
global
  Global context (OTCGLOBAL)
all
  All contexts, if NULL-context tracking is enabled
full
  Display a full talloc memory hierarchy
brief
  Display a brief talloc memory hierarchy
DEPTH
  Specify required maximal depth value
1.3.52  **show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP**

**Command**

```
show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP
```

**Parameters**

**show**
- Show running system information

**talloc-context**
- Show talloc memory hierarchy

**application**
- Application’s context

**global**
- Global context (OTC_GLOBAL)

**all**
- All contexts, if NULL-context tracking is enabled

**full**
- Display a full talloc memory hierarchy

**brief**
- Display a brief talloc memory hierarchy

**DEPTH**
- Specify required maximal depth value

**filter**
- Filter chunks using regular expression

**REGEXP**
- Regular expression

1.3.53  **show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS**

**Command**

```
show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS
```

**Parameters**

**show**
- Show running system information

**talloc-context**
- Show talloc memory hierarchy

**application**
- Application’s context
global
   Global context (OTCGLOBAL)
all
   All contexts, if NULL-context tracking is enabled
full
   Display a full talloc memory hierarchy
brief
   Display a brief talloc memory hierarchy
DEPTH
   Specify required maximal depth value
tree
   Display only a specific memory chunk
ADDRESS
   Chunk address (e.g. 0xdeadbeef)

1.3.54  show timer [(bts|abis)] [TNNNN]

Command

   show timer [(bts|abis)] [TNNNN]

Parameters
show
   Show running system information
timer
   Show timers
[bts]
   BTS process timers
[abis]
   Abis (RSL) related timers
[TNNNN]
   T- or X-timer-number -- 3GPP compliant timer number of the format ’1234’ or ’T1234’ or ’t1234’; Osmocom-specific timer number of the format: ’X1234’ or ’x1234’.

1.3.55  show timeslot [<0-255>] [<0-255>] [<0-7>]

Command

   show timeslot [<0-255>] [<0-255>] [<0-7>]

Parameters
show
   Show running system information

timeslot
   Display information about a TS
   <0-255>
   BTS Number
   <0-255>
   TRX Number
   <0-7>
   Timeslot Number

1.3.56  show trx [<0-255>] [<0-255>]

Command

   show trx [<0-255>] [<0-255>]

Parameters
show
   Show running system information
trx
   Display information about a TRX
   <0-255>
   BTS Number
   <0-255>
   TRX Number

1.3.57  show version

Command

   show version

Parameters
show
   Show running system information
version
   Displays program version
1.3.58  **shutdown**

Command

```
shutdown
```

Parameters

```
shutdown
```

Request a shutdown of the program

1.3.59  **stats report**

Command

```
stats report
```

Parameters

```/stats
/report
```

Stats related commands

Manually trigger reporting of stats

1.3.60  **stats reset**

Command

```
stats reset
```

Parameters

```/stats
/reset
```

Stats related commands

Reset all rate counter stats

1.3.61  **terminal length <0-512>**

Command

```
terminal length <0-512>
```

Parameters

```
terminal
/length
/<0-512>
```

Set terminal line parameters

Set number of lines on a screen

Number of lines on screen (0 for no pausing)
1.3.62 terminal monitor

Command

```
terminal monitor
```

Parameters

- **terminal**
  - Set terminal line parameters

- **monitor**
  - Copy debug output to the current terminal line

1.3.63 terminal no length

Command

```
terminal no length
```

Parameters

- **terminal**
  - Set terminal line parameters

- **no**
  - Negate a command or set its defaults

- **length**
  - Set number of lines on a screen

1.3.64 terminal no monitor

Command

```
terminal no monitor
```

Parameters

- **terminal**
  - Set terminal line parameters

- **no**
  - Negate a command or set its defaults

- **monitor**
  - Copy debug output to the current terminal line
1.3.65  test send-failure-event-report <0-255>

Command

```
test send-failure-event-report <0-255>
```

Parameters

test

Various testing commands

send-failure-event-report

Send a test OML failure event report to the BSC

<0-255>

BTS Number

1.3.66  trigger-ho-cause trx <0-1> ts <0-7> lchan <0-1> cause (l_rxlev_ul_h|l_rxlev_dl_h...

Command

```
trigger-ho-cause trx <0-1> ts <0-7> lchan <0-1> cause (l_rxlev_ul_h|l_rxlev_dl_h|l_rxqual_ul_h|
```

Parameters

trigger-ho-cause

Transceiver related commands

trx

TRX number

<0-1>

(null)

ts

(null)

<0-7>

(null)

lchan

(null)

<0-1>

(null)

cause

(null)

l_rxlev_ul_h

(null)
1.3.67  `trx <0-0> <0-7> (activate|deactivate) <0-7>`

**Command**

`trx <0-0> <0-7> (activate|deactivate) <0-7>`

**Parameters**

*trx*

Transceiver related commands

*<0-0>*

TRX number

*<0-7>*

Timeslot number

activate

Activate Logical Channel

deactivate

Deactivate Logical Channel

*<0-7>*

Logical Channel Number
1.3.68  `trx <0-0> <0-7> loopback <0-1>`

Command

```
trx <0-0> <0-7> loopback <0-1>
```

Parameters

`trx`
Transceiver related commands

`<0-0>`
TRX number

`<0-7>`
Timeslot number

`loopback`
Set TCH loopback

`<0-1>`
Logical Channel Number

1.3.69  `trx nr <0-1> tx-power <-110-100>`

Command

```
trx nr <0-1> tx-power <-110-100>
```

Parameters

`trx`
Transceiver related commands

`nr`
TRX number

`<0-1>`
TRX number

`tx-power`
Set transmit power (override BSC)

`<-110-100>`
Transmit power in dBm

1.3.70  `who`

Command

```
who
```

Parameters

`who`
Display who is on vty
1.4 config

The config node is the root for all configuration commands, which are identical to the config file format. Changes made on the telnet VTY can be made persistent with the `write file` command.

1.4.1 banner motd default

Command

```
    banner motd default
```

Parameters

- **banner**
  - Set banner string
- **motd**
  - Strings for motd
- **default**
  - Default string

1.4.2 banner motd file [FILE]

Command

```
    banner motd file [FILE]
```

Parameters

- **banner**
  - Set banner
- **motd**
  - Banner for motd
- **file**
  - Banner from a file
- [FILE]
  - Filename

1.4.3 bts BTS_NR

Command

```
    bts BTS_NR
```

Global attributes
Flag: !
   This command applies immediately

Parameters
bts
   Select a BTS to configure
BTS_NR
   BTS Number

1.4.4 cpu-sched

Command
   cpu-sched

Parameters
cpu-sched
   Configure CPU Scheduler related settings

1.4.5 ctrl

Command
   ctrl

Parameters
ctrl
   Configure the Control Interface

1.4.6 e1_input

Command
   e1_input

Global attributes
Flag: !
   This command applies immediately

Parameters
e1_input
   Configure E1/T1/J1 TDM input
1.4.7 enable password (8|) WORD

Command

```
enable password (8|) WORD
```

Parameters

- `enable`
  - Modify enable password parameters
- `password`
  - Assign the privileged level password
- `8`
  - Specifies a HIDDEN password will follow
dummy string
- `WORD`
  - The HIDDEN 'enable' password string

1.4.8 enable password LINE

Command

```
enable password LINE
```

Parameters

- `enable`
  - Modify enable password parameters
- `password`
  - Assign the privileged level password
- `LINE`
  - The UNENCRYPTED (cleartext) 'enable' password

1.4.9 hostname WORD

Command

```
hostname WORD
```

Parameters

- `hostname`
  - Set system’s network name
- `WORD`
  - This system’s network name
1.4.10  line vty

Command

```
line vty
```

Parameters

- **line**
  - Configure a terminal line

- **vty**
  - Virtual terminal

1.4.11  log alarms <2-32700>

Command

```
log alarms <2-32700>
```

Parameters

- **log**
  - Configure logging sub-system

- **alarms**
  - Logging alarms to osmo_strrb

- **<2-32700>**
  - Maximum number of messages to log

1.4.12  log file FILENAME [blocking-io]

Command

```
log file FILENAME [blocking-io]
```

Parameters

- **log**
  - Configure logging sub-system

- **file**
  - Logging to text file

- **FILENAME**
  - Filename

- **[blocking-io]**
  - Use blocking, synchronous I/O
1.4.13 log gsmtap [HOSTNAME]

**Command**

```
log gsmtap [HOSTNAME]
```

**Parameters**

log  
Configure logging sub-system

gsmtap  
Logging via GSMTAP

[HOSTNAME]  
Host name to send the GSMTAP logging to (UDP port 4729)

1.4.14 log stderr [blocking-io]

**Command**

```
log stderr [blocking-io]
```

**Parameters**

log  
Configure logging sub-system

stderr  
Logging via STDERR of the process

[blocking-io]  
Use blocking, synchronous I/O

1.4.15 log syslog (authpriv|cron|daemon|ftp|lpr|mail|news|user|uucp)

**Command**

```
log syslog (authpriv|cron|daemon|ftp|lpr|mail|news|user|uucp)
```

**Parameters**

log  
Configure logging sub-system

syslog  
Logging via syslog

authpriv  
Security/authorization messages facility
cron
   Clock daemon (cron/at) facility
daemon
   General system daemon facility
ftp
   Ftp daemon facility
lpr
   Line printer facility
mail
   Mail facility
news
   News facility
user
   Generic facility
uucp
   UUCP facility

1.4.16  log syslog local <0-7>

Command
   log syslog local <0-7>

Parameters
log
   Configure logging sub-system
syslog
   Logging via syslog
local
   Syslog LOCAL facility
<0-7>
   Local facility number

1.4.17  log systemd-journal [raw]

Command
   log systemd-journal [raw]

Parameters
log
  Configure logging sub-system
systemd-journal
  Logging to systemd-journal
[raw]
  Offload rendering of the meta information (location, category) to systemd

1.4.18  no banner motd

Command

```
no banner motd
```

Parameters

no
  Negate a command or set its defaults
banner
  Set banner string
motd
  Strings for motd

1.4.19  no enable password

Command

```
no enable password
```

Parameters

no
  Negate a command or set its defaults
enable
  Modify enable password parameters
password
  Assign the privileged level password
1.4.20  no hostname [HOSTNAME]

Command

no hostname [HOSTNAME]

Parameters

no
  Negate a command or set its defaults
hostname
  Reset system’s network name
[HOSTNAME]
  Host name of this router

1.4.21  no log alarms

Command

no log alarms

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
alarms
  Logging alarms to osmo_strrb

1.4.22  no log file FILENAME

Command

no log file FILENAME

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
file
  Logging to text file
FILENAME
  Filename
1.4.23  no log gsmtap [HOSTNAME]

Command

no log gsmtap [HOSTNAME]

Parameters

no
   Negate a command or set its defaults

log
   Configure logging sub-system

gsmtap
   Logging via GSMTAP

[HOSTNAME]
   Host name to send the GSMTAP logging to (UDP port 4729)

1.4.24  no log stderr

Command

no log stderr

Parameters

no
   Negate a command or set its defaults

log
   Configure logging sub-system

stderr
   Logging via STDERR of the process

1.4.25  no log syslog

Command

no log syslog

Parameters

no
   Negate a command or set its defaults

log
   Configure logging sub-system

syslog
   Logging via syslog
1.4.26 no log systemd-journal

Command

no log systemd-journal

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

1.4.27 no service advanced-vty

Command

no service advanced-vty

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

1.4.28 no service terminal-length [<0-512>]

Command

no service terminal-length [<0-512>]

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

Number of lines of VTY (0 means no line control)
1.4.29 no stats reporter log [NAME]

Command

```
no stats reporter log [NAME]
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

[NAME]

Name of the reporter

1.4.30 no stats reporter statsd [NAME]

Command

```
no stats reporter statsd [NAME]
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

[NAME]

Name of the reporter
1.4.31  password (8) WORD

Command

```
password (8) WORD
```

Parameters

password
  Assign the terminal connection password

8
  Specifies a HIDDEN password will follow
dummy string

WORD
  The HIDDEN line password string

1.4.32  password LINE

Command

```
password LINE
```

Parameters

password
  Assign the terminal connection password

LINE
  The UNENCRYPTED (cleartext) line password

1.4.33  phy <0-255>

Command

```
phy <0-255>
```

Global attributes

Flag: !
  This command applies immediately

Parameters

phy
  Select a PHY to configure

<0-255>
  PHY number
1.4.34 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service
Set up miscellaneous service
advanced-vty
Enable advanced mode vty interface

1.4.35 service terminal-length <0-512>

Command

```
service terminal-length <0-512>
```

Parameters

service
Set up miscellaneous service
terminal-length
System wide terminal length configuration
<0-512>
Number of lines of VTY (0 means no line control)

1.4.36 show history

Command

```
show history
```

Parameters

show
Show running system information
history
Display the session command history
1.4.37  stats interval <0-65535>

Command

```plaintext
stats interval <0-65535>
```

Parameters

- **stats**
  Configure stats sub-system
- **interval**
  Set the reporting interval
- `<0-65535>`
  Interval in seconds (0 disables the reporting interval)

1.4.38  stats reporter log [NAME]

Command

```plaintext
stats reporter log [NAME]
```

Parameters

- **stats**
  Configure stats sub-system
- **reporter**
  Configure a stats reporter
- **log**
  Report to the logger
- `[NAME]`
  Name of the reporter

1.4.39  stats reporter statsd [NAME]

Command

```plaintext
stats reporter statsd [NAME]
```

Parameters

- **stats**
  Configure stats sub-system
- **reporter**
  Configure a stats reporter
- **statsd**
  Report to a STATSD server
- `[NAME]`
  Name of the reporter
1.4.40 stats-tcp batch-size <1-65535>

Command

```
stats-tcp batch-size <1-65535>
```

Parameters

- **stats-tcp**
  Configure stats sub-system
- **batch-size**
  Set the number of tcp sockets that are processed per stats polling interval

1.4.41 stats-tcp interval <0-65535>

Command

```
stats-tcp interval <0-65535>
```

Parameters

- **stats-tcp**
  Configure stats sub-system
- **interval**
  Set the tcp socket stats polling interval

1.4.42 timer [(bts|abis)] [TNNNN] [(<0-2147483647>|default)]

Command

```
timer [(bts|abis)] [TNNNN] [(<0-2147483647>|default)]
```

Parameters

- **timer**
  Configure or show timers
- **[bts]**
  BTS process timers
- **[abis]**
  Abis (RSL) related timers
[TNNNN]
T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

[<0-2147483647>]
New timer value

[default]
Set to default timer value

1.4.43 vty telnet-port <0-65535>

Command

vty telnet-port <0-65535>

Parameters

vty
Configure the VTY
telnet-port
Set the VTY telnet port

<0-65535>
TCP Port number

1.5 config-log

The log node is commonly available in all Osmocom programs and allows configuring logging to stderr and/or log files, including logging category and level filtering as well as output formatting options. Note that the 'logging enable' command is required to make logging commands available on the telnet VTY.

1.5.1 logging color (0|1)

Command

logging color (0|1)

Parameters

logging
Configure logging
color
Configure color-printing for log messages

0
Don’t use color for printing messages

1
Use color for printing messages
1.5.2 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, ’logging filter all 1’ allows to see the usual log output on a given target. Setting to ’0’ can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; ’logging filter all 1’ then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set ’logging filter all 0’ to disable general logging, and then enable a more specific filter instead.

Command

logging filter all (0|1)

Parameters

logging
Configure logging

filter
Filter log messages

all
Do you want to log all messages?

0
Only print messages matched by other filters

1
Bypass filter and print all messages

1.5.3 logging level (rsl|oml|rll|rr|meas|pag|1c|1p|dsp|pcu|ho|trx|loop|abis|rtp|lglo...
rr
  Layer 3 Radio Resource (RR)
meas
  Radio Measurement Processing
pag
  Paging Subsystem
l1c
  Layer 1 Control (MPH)
l1p
  Layer 1 Primitives (PH)
dsp
  DSP Trace Messages
pcu
  PCU interface
ho
  Handover
trx
  TRX interface
loop
  Control loops
abis
  A-bis Input Subsystem
rtp
  Realtime Transfer Protocol
lglobal
  Library-internal global log family
llapd
  LAPD in libosmogsm
linp
  A-bis Input Subsystem
lmux
  A-bis B-Subchannel TRAU Frame Multiplex
lmi
  A-bis Input Driver for Signalling
lmib
  A-bis Input Driver for B-Channels (voice)
lsms
  Layer 3 Short Message Service (SMS)
lctrl
  Control Interface
lgtp
  GPRS GTP library
lstats
  Statistics messages and logging
lgsup
  Generic Subscriber Update Protocol
loap
  Osmocom Authentication Protocol
lss7
  libosmo-sigtran Signalling System 7
lsccp
  libosmo-sigtran SCCP Implementation
lsua
  libosmo-sigtran SCCP User Adaptation
lm3ua
  libosmo-sigtran MTP3 User Adaptation
lmgecp
  libosmo-mgcp Media Gateway Control Protocol
ljibuf
  libosmo-netif Jitter Buffer
lrspro
  Remote SIM protocol
lns
  GPRS NS layer
lbssgp
  GPRS BSSGP layer
lnsdata
  GPRS NS layer data PDU
lnssignal
  GPRS NS layer signal PDU
liuup
  Iu UP layer
lpfcp
  libosmo-pfcp Packet Forwarding Control Protocol
ddebug
  Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
terror
   Log error messages and higher levels
fatal
   Log only fatal messages

1.5.4 logging level force-all (debug|info|notice|error|fatal)

Command
   logging level force-all (debug|info|notice|error|fatal)

Parameters
logging
   Configure logging
level
   Set the log level for a specified category
force-all
   Globally force all logging categories to a specific level. This is released by the ‘no logging level force-all’ command. Note: any ‘logging level <category> <level>’ commands will have no visible effect after this, until the forced level is released.
d debug
   Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
terror
   Log error messages and higher levels
fatal
   Log only fatal messages

1.5.5 logging level set-all (debug|info|notice|error|fatal)

Command
   logging level set-all (debug|info|notice|error|fatal)

Parameters
logging
  Configure logging

level
  Set the log level for a specified category

set-all
  Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug
  Log debug messages and higher levels

info
  Log informational messages and higher levels

notice
  Log noticeable messages and higher levels

error
  Log error messages and higher levels

fatal
  Log only fatal messages

1.5.6 logging print category (0|1)

Command

logging print category (0|1)

Parameters

logging
  Configure logging

print
  Log output settings

category
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with category/subsystem name
1.5.7 logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging
  Configure logging

print
  Log output settings

category-hex
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with category/subsystem nr in hex (’<000b>’)

1.5.8 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging
  Configure logging

print
  Log output settings

extended-timestamp
  Configure log message timestamping

0
  Don’t prefix each log message

1
  Prefix each log message with current timestamp with YYYYMMDDhhmmsnnn
1.5.9 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging
  Configure logging

print
  Log output settings

file
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with the source file and line

basename
  Prefix each log message with the source file’s basename (strip leading paths) and line

[last]
  Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.5.10 logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging
  Configure logging

print
  Log output settings

level
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with the log level name
### 1.5.11 logging print thread-id (0|1)

**Command**

```text
logging print thread-id (0|1)
```

**Parameters**

- **logging**
  - Configure logging
- **print**
  - Log output settings
- **thread-id**
  - Configure log message logging Thread ID
    - 0: Don’t prefix each log message
    - 1: Prefix each log message with current Thread ID

### 1.5.12 logging timestamp (0|1)

**Command**

```text
logging timestamp (0|1)
```

**Parameters**

- **logging**
  - Configure logging
- **timestamp**
  - Configure log message timestamping
    - 0: Don’t prefix each log message
    - 1: Prefix each log message with current timestamp

### 1.5.13 no logging level force-all

**Command**

```text
no logging level force-all
```
no
  
  Negate a command or set its defaults

logging
  
  Configure logging

level
  
  Set the log level for a specified category

force-all
  
  Release any globally forced log level set with 'logging level force-all <level>'

1.6 config-stats

1.6.1 disable

Command
  
  disable

Parameters

disable
  
  Disable the reporter

1.6.2 enable

Command
  
  enable

Parameters

enable
  
  Enable the reporter

1.6.3 flush-period <0-65535>

Command
  
  flush-period <0-65535>

Parameters

flush-period
  
  Configure stats sub-system

<0-65535>
  
  Send all stats even if they have not changed (i.e. force the flush)every N-th reporting interval. Set to 0 to disable regular flush (default).
1.6.4 level (global|peer|subscriber)

Command

```
level {global|peer|subscriber}
```

Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

1.6.5 local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address

1.6.6 mtu <100-65535>

Command

```
mtu <100-65535>
```

Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte
1.6.7  no local-ip

Command

no local-ip

Parameters
no
   Negate a command or set its defaults
local-ip
   Set the IP address to which we bind locally

1.6.8  no mtu

Command

no mtu

Parameters
no
   Negate a command or set its defaults
mtu
   Set the maximum packet size

1.6.9  no prefix

Command

no prefix

Parameters
no
   Negate a command or set its defaults
prefix
   Set the item name prefix

1.6.10 prefix PREFIX

Command

prefix PREFIX

Parameters
prefix
   Set the item name prefix
PREFIX
   The prefix string
1.6.11  remote-ip ADDR

Command

remote-ip ADDR

Parameters
remote-ip

  Set the remote IP address to which we connect

ADDR

  IP Address

1.6.12  remote-port <1-65535>

Command

remote-port <1-65535>

Parameters
remote-port

  Set the remote port to which we connect

<1-65535>

  Remote port number

1.7  config-line

1.7.1  bind A.B.C.D [<0-65535>]

Command

bind A.B.C.D [<0-65535>]

Parameters
bind

  Accept VTY telnet connections on local interface

A.B.C.D

  Local interface IP address (default: 127.0.0.1)

[<0-65535>]

  Local TCP port number
1.7.2 login

Command

```
login
```

Parameters

```
login
```
Enable password checking

1.7.3 no login

Command

```
no login
```

Parameters

```
no
```
Negate a command or set its defaults

```
login
```
Enable password checking

1.8 config-e1_input

1.8.1 e1_line <0-255> driver (misdn|misdn_lapd|dahdi|e1d|ipa|unixsocket)

Command

```
e1_line <0-255> driver (misdn|misdn_lapd|dahdi|e1d|ipa|unixsocket)
```

Parameters

```
e1_line
```
Configure E1/T1/J1 Line

```
<0-255>
```
Line Number

```
driver
```
Set driver for this line

```
misdn
```
mISDN supported E1 Card (kernel LAPD)

```
misdn_lapd
```
mISDN supported E1 Card (userspace LAPD)
dahdi
  DAHD1 supported E1/T1/J1 Card
e1d
  osmo-e1d supported E1 interface
ipa
  IPA TCP/IP input
unixsocket
  Unix socket input

1.8.2  e1_line <0-255> ipa-keepalive <1-300> <1-300>

Command
  e1_line <0-255> ipa-keepalive <1-300> <1-300>

Global attributes
Flag: !
  This command applies immediately

Parameters
e1_line
  Configure E1/T1/J1 Line
  <0-255>
    Line Number
ipa-keepalive
  Enable IPA PING/PONG keep-alive
  <1-300>
    Idle interval in seconds before probes are sent
  <1-300>
    Time to wait for PONG response

1.8.3  e1_line <0-255> keepalive

Command
  e1_line <0-255> keepalive

Library specific attributes
Flag: I
  This command applies on IPA link establishment
Parameters

- **e1_line**
  
  Configure E1/T1/J1 Line

  <0-255>

  Line Number

- **keepalive**

  Enable keep-alive probing

### 1.8.4 e1_line <0-255> keepalive <1-300> <1-20> <1-300>

#### Command

```plaintext
e1_line <0-255> keepalive <1-300> <1-20> <1-300>
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

- **e1_line**

  Configure E1/T1/J1 Line

  <0-255>

  Line Number

- **keepalive**

  Enable keep-alive probing

  <1-300>

  Idle interval in seconds before probes are sent

  <1-20>

  Number of probes to sent

  <1-300>

  Delay between probe packets in seconds

### 1.8.5 e1_line <0-255> name .LINE

#### Command

```plaintext
e1_line <0-255> name .LINE
```

Global attributes

Flag: !

This command applies immediately
Parameters

e1_line
  Configure E1/T1/J1 Line
  <0-255>
  Line Number

name
  Set name for this line

.LINE
  Human readable name

1.8.6  e1_line <0-255> pcap .FILE

Command
  e1_line <0-255> pcap .FILE

Global attributes

Flag: !
  This command applies immediately

Parameters

e1_line
  Configure E1/T1/J1 Line
  <0-255>
  Line Number

pcap
  Setup a pcap recording of E1 traffic for line

.FILE
  Filename to save the packets to

1.8.7  e1_line <0-255> port <0-255>

Command
  e1_line <0-255> port <0-255>

Library specific attributes

Flag: L
  This command applies on E1 line update

Parameters
e1_line
   Configure E1/T1/J1 Line
<0-255>
   Line Number
port
   Set physical port/span/card number
<0-255>
   E1/T1 Port/Span/Card number

1.8.8  e1_line <0-255> socket .SOCKET

Command

   e1_line <0-255> socket .SOCKET

Library specific attributes
Flag: L
   This command applies on E1 line update
Parameters
e1_line
   Configure E1/T1/J1 Line
<0-255>
   Line Number
socket
   Set socket path for unixsocket
.SOCKET
   socket path

1.8.9  ipa bind A.B.C.D

Command

   ipa bind A.B.C.D

Library specific attributes
Flag: L
   This command applies on E1 line update
Parameters
ipa
   ipa driver config
bind
   Set ipa local bind address
A.B.C.D
   Listen on this IP address (default 0.0.0.0)
1.8.10  **ipa ip-dscp (oml|rsl) <0-63>**

Command

```
ipa ip-dscp (oml|rsl) <0-63>
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

ipa  
ipa driver config

ip-dscp  
Set IP DSCP value for outbound packets

oml  
Set IP DSCP for OML link

rsl  
Set IP DSCP for RSL link

<0-63>  
IP DSCP Value to use

1.8.11  **ipa socket-priority (oml|rsl) <0-255>**

Command

```
ipa socket-priority (oml|rsl) <0-255>
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

ipa  
ipa driver config

socket-priority  
Set socket priority value for outbound packets

oml  
Set socket priority for OML link

rsl  
Set socket priority for RSL link

<0-255>  
socket priority value to use (>6 requires CAP_NET_ADMIN)
1.8.12  no e1_line <0-255> ipa-keepalive

Command

```
no e1_line <0-255> ipa-keepalive
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

ipa-keepalive

Enable IPA PING/PONG keep-alive

1.8.13  no e1_line <0-255> keepalive

Command

```
no e1_line <0-255> keepalive
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

no

Negate a command or set its defaults

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

keepalive

Enable keep-alive probing
1.8.14  **no e1_line <0-255> pcap**

Command
```
no e1_line <0-255> pcap
```

Global attributes
Flag: !
This command applies immediately

Parameters
no
Negate a command or set its defaults
e1_line
Configure E1/T1/J1 Line
<0-255>
Line Number
pcap
Disable pcap recording of E1 traffic for line

1.9  **config-ctrl**

1.9.1  **bind A.B.C.D**

Command
```
bind A.B.C.D
```

Parameters
bind
Set bind address to listen for Control connections
A.B.C.D
Local IP address (default 127.0.0.1)

1.10  **config-cpu-sched**

1.10.1  **cpu-affinity (self|all|<0-4294967295>|THREADNAME) CPUHEXMASK [delay]**

Command
```
cpu-affinity (self|all|<0-4294967295>|THREADNAME) CPUHEXMASK [delay]
```
Global attributes
Flag: !
   This command applies immediately

Parameters
cpu-affinity
   Set CPU affinity mask on a (group of) thread(s)
s
   Set CPU affinity mask on thread running the VTY

all
   Set CPU affinity mask on all process’ threads

<0-4294967295>
   Set CPU affinity mask on a thread with specified PID

THREADNAME
   Set CPU affinity mask on a thread with specified thread name

CPUHEXMASK
   CPU affinity mask

[delay]
   If set, delay applying the affinity mask now and let the app handle it at a later point

1.10.2  policy rr <1-32>

Command

   policy rr <1-32>

Global attributes
Flag: !
   This command applies immediately

Parameters

policy
   Set the scheduling policy to use for the process

rr
   Use the SCHED_RR real-time scheduling algorithm

<1-32>
   Set the SCHED_RR real-time priority
1.11 phy

1.11.1 instance <0-255>

Command

| instance <0-255> |

Global attributes
Flag: !
This command applies immediately

Parameters
instance
Select a PHY instance to configure
<0-255>
PHY Instance number

1.11.2 no instance <0-255>

Command

| no instance <0-255> |

Parameters
no
Negate a command or set its defaults
instance
Select a PHY instance to remove
<0-255>
PHY Instance number

1.12 phy-inst

1.12.1 c0-idle-red-pwr <0-40>

Command

| c0-idle-red-pwr <0-40> |

Parameters
c0-idle-red-pwr
Set reduction output power for C0 idle slot in dB unit
<0-40>
(null)
1.12.2 dsp-alive-period <0-60>

Command

```
dsp-alive-period <0-60>
```

Parameters
dsp-alive-period
   Set DSP alive timer period in second
   <0-60>
   (null)

1.12.3 dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx...

Command

```
dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx_msg_byte|mph_cnf|mph_ind|mph_req|ph_ind|ph_req|phy_rf|phy_msg_byte|mode|tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory|profiling|test_comment|test|status)
```

Parameters
dsp-trace-flag
   DSP Trace Flag
debug
   Debug Region
l1_warning
   L1 Warning Region
error
   Error Region
l1_rx_msg
   L1_RX_MSG Region
l1_rx_msg_byte
   L1_RX_MSG_BYTE Region
l1_tx_msg
   L1_TX_MSG Region
l1_tx_msg_byte
   L1_TX_MSG_BYTE Region
mph_cnf
   MphConfirmation Region
mph_ind
   MphIndication Region
mph_req
    MphRequest Region
ph_ind
    PhIndication Region
ph_req
    PhRequest Region
phy_rf
    PhyRF Region
phy_msg_byte
    PhyRF Message Region
mode
    Mode Region
tdma_info
    TDMA Info Region
bad_crc
    Bad CRC Region
ph_ind_byte
    PH_IND_BYTE
ph_req_byte
    PH_REQ_BYTE
device_msg
    Device Message Region
rach_info
    RACH Info
log_ch_info
    LOG_CH_INFO
memory
    Memory Region
profiling
    Profiling Region
test_comment
    Test Comments
test
    Test Region
status
    Status Region
1.12.4 max-cell-size <0-166>

Command

```
max-cell-size <0-166>
```

Parameters

max-cell-size
Set the maximum cell size in qbits

<0-166>
(null)

1.12.5 no dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1...

Command

```
no dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1...
```

Parameters

no
Negate a command or set its defaults

dsp-trace-flag
DSP Trace Flag
dbg
Debug Region
l1_warning
L1 Warning Region
error
Error Region
l1_rx_msg
L1_RX_MSG Region
l1_rx_msg_byte
L1_RX_MSG_BYTE Region
l1_tx_msg
L1_TX_MSG Region
l1_tx_msg_byte
L1_TX_MSG_BYTE Region
mph_cnf
MphConfirmation Region
mph_ind
   MphIndication Region
mph_req
   MphRequest Region
ph_ind
   PhIndication Region
ph_req
   PhRequest Region
phy_rf
   PhyRF Region
phy_msg_byte
   PhyRF Message Region
mode
   Mode Region
tdma_info
   TDMA Info Region
bad_crc
   Bad CRC Region
ph_ind_byte
   PH_IND_BYTE
ph_req_byte
   PH_REQ_BYTE
device_msg
   Device Message Region
rach_info
   RACH Info
log_ch_info
   LOG_CH_INFO
memory
   Memory Region
profiling
   Profiling Region
test_comment
   Test Comments
test
   Test Region
status
   Status Region
1.12.6 osmotrx maxdly <0-63>

Access Burst is the first burst a mobile transmits in order to establish a connection and it is used to estimate Timing Advance (TA) which is then applied to Normal Bursts to compensate for signal delay due to distance. So changing this setting effectively changes maximum range of the cell, because Access Bursts with a delay higher than this value will be ignored.

Command

```
osmotrx maxdly <0-63>
```

Parameters

1.12.7 osmotrx maxdlynb <0-63>

USE FOR TESTING ONLY. DO NOT CHANGE IN PRODUCTION USE! During the normal operation, delay of Normal Bursts is controlled by the Timing Advance loop and thus Normal Bursts arrive to a BTS with no more than a couple GSM symbols, which is already taken into account in osmo-trx. Changing this setting will have no effect in production installations except increasing osmo-trx CPU load. This setting is only useful when testing with a transmitter which cannot precisely synchronize to the BTS downlink signal, like R&S CMD57.

Command

```
osmotrx maxdlynb <0-63>
```

Parameters

1.12.8 pedestal-mode (on|off)

Command

```
pedestal-mode (on|off)
```

Parameters

pedestal-mode
Set unused time-slot transmission in pedestal mode

on
Transmission pedestal mode can be (off, on)

off
(null)

1.12.9 pwr-adj-mode (none|auto)

Command

```
pwr-adj-mode (none|auto)
```
Parameters

pwr-adj-mode
  Set output power adjustment mode

  none
    (null)
  auto
    (null)

1.12.10  trx-calibration-path PATH

Command

  trx-calibration-path PATH

Parameters

trx-calibration-path
  Set the path name to TRX calibration data

PATH
  Path name

1.12.11  tx-red-pwr-8psk <0-40>

Command

  tx-red-pwr-8psk <0-40>

Parameters

tx-red-pwr-8psk
  Set reduction output power for 8-PSK scheme in dB unit

  <0-40>
    (null)

1.13  bts

1.13.1  agch-queue-mgmt default

Command

  agch-queue-mgmt default

Global attributes
Flag: !
   This command applies immediately

Parameters
agch-queue-mgmt
   AGCH queue mgmt
default
   Reset clean parameters to default values

1.13.2  agch-queue-mgmt threshold <0-100> low <0-100> high <0-100000>

Command
   agch-queue-mgmt threshold <0-100> low <0-100> high <0-100000>

Global attributes
Flag: !
   This command applies immediately

Parameters
agch-queue-mgmt
   AGCH queue mgmt
threshold
   Threshold to start cleanup
<0-100>
   in % of the maximum queue length
low
   Low water mark for cleanup
<0-100>
   in % of the maximum queue length
high
   High water mark for cleanup
<0-100000>
   in % of the maximum queue length

1.13.3  auto-band

Command
   auto-band

Parameters
auto-band
   Automatically select band for ARFCN based on configured band
1.13.4 band (450|GSM450|480|GSM480|750|GSM750|810|GSM810|850|GSM850|900|GSM900|1800|DCS1800|1900|PCS1900)

Command

| band (450|GSM450|480|GSM480|750|GSM750|810|GSM810|850|GSM850|900|GSM900|1800|DCS1800|1900|PCS1900) |
|---------------------------------------------------------------|

Parameters

band

Set the frequency band of this BTS

450
Alias for GSM450
GSM450
450Mhz

480
Alias for GSM480
GSM480
480Mhz

750
Alias for GSM750
GSM750
750Mhz

810
Alias for GSM810
GSM810
810Mhz

850
Alias for GSM850
GSM850
850Mhz

900
Alias for GSM900
GSM900
900Mhz

1800
Alias for DCS1800
DCS1800
1800Mhz

1900
Alias for PCS1900
PCS1900
1900Mhz
1.13.5  **description .TEXT**

**Command**

```
description .TEXT
```

**Parameters**

- **description**
  - Save human-readable description of the object

---

1.13.6  **gsmtap-remote-host [HOSTNAME]**

**Command**

```
gsmtap-remote-host [HOSTNAME]
```

**Parameters**

- **gsmtap-remote-host**
  - Enable GSMTAP Um logging (see also 'gsmtap-sapi')
- **[HOSTNAME]**
  - Remote IP address or hostname ('localhost' if omitted)

---

1.13.7  **gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sacch)**

**Command**

```
gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sacch)
```

**Parameters**

- **gsmtap-sapi**
  - Enable sending of UL/DL messages over GSMTAP
- **bcch**
  - BCCH
- **ccch**
  - CCCH
- **rach**
  - RACH
- **agch**
  - AGCH
1.13.8  **gsmtap-sapi (enable-all|disable-all)**

**Command**

```
gsmtap-sapi (enable-all|disable-all)
```

**Parameters**

- **gsmtap-sapi**
  Enable/disable sending of UL/DL messages over GSMTAP
- **enable-all**
  Enable all kinds of messages (all SAPI)
- **disable-all**
  Disable all kinds of messages (all SAPI)

1.13.9  **ipa unit-id <0-65534> <0-255>**

**Command**

```
ipa unit-id <0-65534> <0-255>
```

**Parameters**
ipa
  ip.access RSL commands

unit-id
  Set the Unit ID of this BTS

<0-65534>
  Site ID

<0-255>
  Unit ID

1.13.10 max-ber10k-rach <0-10000>

Command

```
max-ber10k-rach <0-10000>
```

Global attributes

Flag: !
  This command applies immediately

Parameters

max-ber10k-rach
  Set the maximum BER for valid RACH requests

<0-10000>
  BER in 1/10000 units (0=no BER; 100=1% BER)

1.13.11 min-qual-norm <-100-100>

Command

```
min-qual-norm <-100-100>
```

Global attributes

Flag: !
  This command applies immediately

Parameters

min-qual-norm
  Set the minimum link quality level of Normal Bursts to be accepted

<-100-100>
  C/I (Carrier-to-Interference) ratio in centiBels (10e-2 B or 10e-1 dB)
1.13.12  **min-qual-rach <-100-100>**

Command

```
min-qual-rach <-100-100>
```

Global attributes

Flag: !

This command applies immediately

Parameters

`min-qual-rach`

Set the minimum link quality level of Access Bursts to be accepted

`<-100-100>`

C/I (Carrier-to-Interference) ratio in centiBels (10e-2 B or 10e-1 dB)

1.13.13  **no auto-band**

Command

```
no auto-band
```

Parameters

`no`

Negate a command or set its defaults

`auto-band`

Automatically select band for ARFCN based on configured band

1.13.14  **no description**

Command

```
no description
```

Parameters

`no`

Negate a command or set its defaults

`description`

Remove description of the object
1.13.15  **no gsmtap-remote-host**

**Command**

```
no gsmtap-remote-host
```

**Parameters**

- `no`
  
  Negate a command or set its defaults
- `gsmtap-remote-host`
  
  Disable GSMTAP Um logging

1.13.16  **no gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sacch)**

**Command**

```
no gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sacch)
```

**Parameters**

- `no`
  
  Negate a command or set its defaults
- `gsmtap-sapi`
  
  Disable sending of UL/DL messages over GSMTAP
- `bcch`
  
  BCCH
- `ccch`
  
  CCCH
- `rach`
  
  RACH
- `agch`
  
  AGCH
- `pch`
  
  PCH
- `sdcch`
  
  SDCCH
- `tch/f`
  
  TCH/F
- `tch/h`
  
  TCH/H
- `pacch`
  
  PACCH
- `pdtch`
  
  PDTCH
- `ptcch`
  
  PTCCH
- `cbch`
  
  CBCH
- `sacch`
  
  SACCH
pdtch
  PDTCH
ptcch
  PTCCH
cbch
  CBCH
cacch
  SACCH

1.13.17  no oml remote-ip A.B.C.D

Command

```text
no oml remote-ip A.B.C.D
```

Parameters

no
  Negate a command or set its defaults
oml
  OML Parameters
remote-ip
  OML IP Address
  A.B.C.D
    OML IP Address

1.13.18  no supp-meas-info toa256

Command

```text
no supp-meas-info toa256
```

Global attributes

Flag: !
  This command applies immediately

Parameters

no
  Negate a command or set its defaults
supp-meas-info
  Configure the RSL Supplementary Measurement Info
toa256
  Report the TOA in 1/256th symbol periods
1.13.19  oml remote-ip A.B.C.D

Command

```
  oml remote-ip A.B.C.D
```

Parameters

- oml
  - OML Parameters
- remote-ip
  - OML IP Address
  - A.B.C.D
    - OML IP Address

1.13.20  paging lifetime <0-60>

Command

```
paging lifetime <0-60>
```

Global attributes

- Flag: !
  - This command applies immediately

Parameters

- paging
  - Paging related parameters
- lifetime
  - Maximum lifetime of a paging record
  - <0-60>
    - Maximum lifetime of a paging record (seconds)

1.13.21  paging queue-size <1-1024>

Command

```
paging queue-size <1-1024>
```

Global attributes

- Flag: !
  - This command applies immediately
Parameters
paging
  Paging related parameters
queue-size
  Maximum length of BTS-internal paging queue
<1-1024>
  Maximum length of BTS-internal paging queue

1.13.22  pcu-socket PATH

Command
  pcu-socket  PATH

Parameters
pcu-socket
  Configure the PCU socket file/path name
PATH
  UNIX socket path

1.13.23  rtp ip-dscp <0-63>

Command
  rtp  ip-dscp  <0-63>

Application specific attributes
Flag: 1
  This command applies for newly created lchans

Parameters
rtp
  RTP parameters
ip-dscp
  Specify DSCP for RTP/IP packets
<0-63>
  The DSCP value (upper 6 bits of TOS)
1.13.24  rtp jitter-buffer <0-10000> [adaptive]

Command

```
  rtp jitter-buffer <0-10000> [adaptive]
```

Application specific attributes

Flag: 1
This command applies for newly created lchans

Parameters

rt
  RTP parameters
jitter-buffer
  RTP jitter buffer
<0-10000>
  Jitter buffer in ms
[adaptive]
  Enable adaptive RTP jitter buffering

1.13.25  rtp port-range <1-65534> <1-65534>

Command

```
  rtp port-range <1-65534> <1-65534>
```

Parameters

rt
  RTP parameters
port-range
  Range of local ports to use for RTP/RTCP traffic
<1-65534>
  Port range start (inclusive)
<1-65534>
  Port range end (inclusive)
1.13.26  \texttt{rtp socket-priority <0-255>}

\textbf{Command}

\begin{verbatim}
rtp socket-priority <0-255>
\end{verbatim}

\textbf{Application specific attributes}

Flag: 1

This command applies for newly created lchans

\textbf{Parameters}

\texttt{rtp}

RTP parameters

\texttt{socket-priority}

Specify socket priority for RTP/IP packets

\texttt{<0-255>}

The socket priority value (> 6 requires CAP\_NET\_ADMIN)

1.13.27  \texttt{smscb queue-hysteresis <0-30>}

\textbf{Command}

\begin{verbatim}
smscb queue-hysteresis <0-30>
\end{verbatim}

\textbf{Global attributes}

Flag: !

This command applies immediately

\textbf{Parameters}

\texttt{smscb}

SMSCB (SMS Cell Broadcast) / CBCH configuration

\texttt{queue-hysteresis}

Hysteresis of the SMSCB (CBCH) queue

\texttt{<0-30>}

In count of messages/pages (default: 2)
1.13.28  smscp queue-max-length <1-60>

Command

```
smscp queue-max-length <1-60>
```

Global attributes

Flag: !

This command applies immediately

Parameters

smscp

SMSCP (SMS Cell Broadcast) / CBCH configuration

queue-max-length

Maximum length of the SMSCP (CBCH) queue

<1-60>

Length in count of messages/pages (default: 15)

1.13.29  smscp queue-target-length <1-30>

Command

```
smscp queue-target-length <1-30>
```

Global attributes

Flag: !

This command applies immediately

Parameters

smscp

SMSCP (SMS Cell Broadcast) / CBCH configuration

queue-target-length

Target length of the SMSCP (CBCH) queue

<1-30>

Length in count of messages/pages (default: 2)
1.13.30  **supp-meas-info toa256**

Command

```plaintext
supp-meas-info toa256
```

Global attributes

Flag: !
   This command applies immediately

Parameters

**supp-meas-info**
   Configure the RSL Supplementary Measurement Info

**toa256**
   Report the TOA in 1/256th symbol periods

1.13.31  **trx <0-254>**

Command

```plaintext
trx <0-254>
```

Global attributes

Flag: !
   This command applies immediately

Parameters

**trx**
   Select a TRX to configure

`<0-254>`
   TRX number

1.14  **trx**

1.14.1  **ms-power-control (dsp|osmo)**

Command

```plaintext
ms-power-control (dsp|osmo)
```

Parameters

**ms-power-control**
   Mobile Station Power Level Control

**dsp**
   Handled by DSP

**osmo**
   Handled by OsmoBTS
1.14.2 nominal-tx-power <0-25>

Command

nominal-tx-power <0-25>

Parameters

nominal-tx-power
  Set the nominal transmit output power in dBm
  <0-25>
  Nominal transmit output power level in dBm

1.14.3 phy <0-255> instance <0-255>

Command

phy <0-255> instance <0-255>

Parameters

phy
  Configure PHY Link+Instance for this TRX
  <0-255>
  PHY Link number
instance
  PHY instance
  <0-255>
  PHY Instance number

1.14.4 power-ramp max-initial <-10000-100000> (dBm|mdBm)

Command

power-ramp max-initial <-10000-100000> (dBm|mdBm)

Parameters

power-ramp
  Power-Ramp settings
max-initial
  Maximum initial power
<-10000-100000>
  Value
dBm
  Unit is dB (decibels)
mdBm
  Unit is mdB (milli-decibels, or rather 1/10000 bel)
1.14.5  power-ramp step-interval <1-100>

Command

```
power-ramp step-interval <1-100>
```

Parameters

power-ramp
  Power-Ramp settings
step-interval
  Power increase by step
<1-100>
  Step time in seconds

1.14.6  power-ramp step-size <1-100000> (dB|mdB)

Command

```
power-ramp step-size <1-100000> (dB|mdB)
```

Parameters

power-ramp
  Power-Ramp settings
step-size
  Power increase by step
<1-100000>
  Step size
dB
  Unit is dB (decibels)
mdB
  Unit is mdB (milli-decibels, or rather 1/10000 bel)

1.14.7  ta-control interval <0-31>

Command

```
ta-control interval <0-31>
```

Parameters

ta-control
  Timing Advance Control Parameters
interval
  Set TA control loop interval
<0-31>
  As in P_CON_INTERVAL, in units of 2 SACCH periods (0.96 seconds) (default=0, every SACCH block)
1.14.8 **user-gain < -100000-100000> (dB|mdB)**

Command

```
user-gain < -100000-100000> (dB|mdB)
```

Global attributes

Flag: !

This command applies immediately

Parameters

user-gain

Inform BTS about additional, user-provided gain or attenuation at TRX output

<-100000-100000>

Value of user-provided external gain(+)/attenuation(-)

**dB**

Unit is dB (decibels)

**mdB**

Unit is mdB (milli-decibels, or rather 1/10000 bel)