

# **OsmoBTS VTY Reference**



**osmo-bts-lc15**

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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.

Pattern	Example	Explanation
A.B.C.D	127.0.0.1	A IPv4 address
TEXT	example01	A single string without any spaces, tabs
.TEXT	Some information	A line of text
(OptionA OptionB OptionC)	OptionA	A choice between a list of available options
<0-10>	5	A number from a range

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 sismocom products:

Port Number	Software
4240	osmo-pcu
4241	osmo-bts
4242	osmo-nitb, osmo-bsc
4243	osmo-bsc_mgcp
4244	osmo-bsc_nat
4245	osmo-sgsn
4246	osmo-gbproxy

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

vtty-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

vtty-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|pbccch|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

## agch

- AGCH

## bcch

- BCCH

## cbch

- CBCH

## facch/f

- FACCH/F

## facch/h

- FACCH/H

## fcch

- FCCH

## idle

- IDLE

## nch

- NCH

## pacch

- PACCH

## pagch

- PAGCH

## pbccch

- PBCCH

## pch

- PCH

## pdtch

- PDTCH

## pnch

- PNCH

## ppch

- PPCH

prach

PRACH

ptcch

PTCCH

rach

RACH

sacch

SACCH

sch

SCH

sdccch

SDCCH

tch/f

TCH/F

tch/h

TCH/H

## 1.2.7 logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|...

Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal ↔
|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua| ↔
lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

rsl

A-bis Radio Siganlling 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

llc  
Layer 1 Control (MPH)

llp  
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

sum  
DSUM

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

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

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

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.

### 1.2.14 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|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|l...

### Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|llapd| ↵
linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp| ↵
ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal) (debug|info|notice|error|fatal) . ↵
LOGMESSAGE
```

### 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

llc  
Layer 1 Control (MPH)

llp  
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

sum  
DSUM

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

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

---

Inpdata

GPRS NS layer data PDU

Inssignal

GPRS NS layer signal PDU

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

facch/f

FACCH/F

facch/h

FACCH/H

fcch

FCCH

idle

IDLE

nch

NCH

pacch

PACCH

pagch

PAGCH

pbccch

PBCCH

pch

PCH

pdтч

PDTCH

pnch

PNCH

ppch

PPCH

prach

PRACH

ptcch

PTCCH

rach

RACH

sacch

SACCH

sch

SCH

sdccch

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 <0-0> dsp-trace-flag (debug|l1\_warning|error|l1\_rx\_msg|l1\_rx\_msg\_byte|l1\_...

Command

```
no phy <0-0> 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

<0-0>

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 <0-0> dsp-trace-flag (debug|l1\_warning|error|l1\_rx\_msg|l1\_rx\_msg\_byte|l1\_tx\_...

#### Command

```

phy <0-0> 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  
 <0-0>  
     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

### 1.2.23 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 e1\_driver

Command

```
show e1_driver
```

Parameters

show

Show running system information

e1\_driver

Display information about available E1 drivers

### 1.2.29 show e1\_line [line\_nr] [stats]

#### Command

```
show e1_line [line_nr] [stats]
```

#### Parameters

show

Show running system information

e1\_line

Display information about a E1 line

[line\_nr]

E1 Line Number

[stats]

Include statistics

### 1.2.30 show e1\_timeslot [line\_nr] [ts\_nr]

#### Command

```
show e1_timeslot [line_nr] [ts_nr]
```

#### Parameters

show

Show running system information

e1\_timeslot

Display information about a E1 timeslot

[line\_nr]

E1 Line Number

[ts\_nr]

E1 Timeslot Number

### 1.2.31 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

### 1.2.32 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

### 1.2.33 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

### 1.2.34 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

---

### 1.2.35 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history

### 1.2.36 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

### 1.2.37 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

### 1.2.38 show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vtty

Show current logging configuration for this vty

### 1.2.39 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

### 1.2.40 show phy <0-1> instance <0-0> system-information

#### Command

```
show phy <0-1> instance <0-0> system-information
```

#### Parameters

show

Show running system information

phy

Transceiver related commands

<0-1>

TRX number

instance

Display information about system

<0-0>

(null)

system-information

(null)

### 1.2.41 show rate-counters

#### Command

```
show rate-counters
```

#### Parameters

show

Show running system information

rate-counters

Show all rate counters

### 1.2.42 show stats

#### Command

```
show stats
```

#### Parameters

show

Show running system information

stats

Show statistical values

### 1.2.43 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

### 1.2.44 show talloc-context (application|all) (full|brief|DEPTH)

#### Command

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

#### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

---

### 1.2.45 show talloc-context (application|all) (full|brief|DEPTH) filter REGEXP

#### Command

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

#### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

### 1.2.46 show talloc-context (application|all) (full|brief|DEPTH) tree ADDRESS

#### Command

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

#### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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)

### 1.2.47 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

### 1.2.48 show trx <0-0> dsp-trace-flags

Command

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

Parameters

show

Show running system information

trx

Transceiver related commands

<0-0>

TRX number

dsp-trace-flags

Display the current setting of the DSP trace flags

### 1.2.49 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

### 1.2.50 show version

#### Command

```
show version
```

#### Parameters

show

Show running system information

version

Displays program version

### 1.2.51 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)

---

### 1.2.52 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

### 1.2.53 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 <0-7> rtp jitter-buffer <0-10000>

#### Command

```
bts <0-0> trx <0-255> ts <0-7> lchan <0-7> rtp jitter-buffer <0-10000>
```

#### Parameters

##### bts

BTS related commands

##### <0-0>

BTS number

##### trx

TRX related commands

<0-255>

TRX number

ts

timeslot related commands

<0-7>

timeslot number

lchan

logical channel commands

<0-7>

logical channel number

rtp

RTP settings

jitter-buffer

Jitter buffer

<0-10000>

Size of jitter buffer in (ms)

### 1.3.2 configure terminal

Command

```
configure terminal
```

Parameters

configure

Configuration from vty interface

terminal

Configuration terminal

### 1.3.3 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)



### 1.3.4 disable

#### Command

```
disable
```

#### Parameters

##### disable

Turn off privileged mode command

### 1.3.5 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

### 1.3.6 logging disable

#### Command

```
logging disable
```

#### Parameters

##### logging

Configure logging

##### disable

Disables logging to this vty

---

### 1.3.7 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

### 1.3.8 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

### 1.3.9 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

## agch

- AGCH

## bcch

- BCCH

## cbch

- CBCH

## facch/f

- FACCH/F

## facch/h

- FACCH/H

## fcch

- FCCH

## idle

- IDLE

## nch

- NCH

## pacch

- PACCH

## pagch

- PAGCH

## pbccch

- PBCCH

## pch

- PCH

## pdtch

- PDTCH

## pnch

- PNCH

## ppch

- PPCH

prach

PRACH

ptcch

PTCCH

rach

RACH

sacch

SACCH

sch

SCH

sdccch

SDCCH

tch/f

TCH/F

tch/h

TCH/H

### 1.3.10 logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|...

Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal ↔
|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua| ↔
|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

rsl

A-bis Radio Siganlling 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

llc  
Layer 1 Control (MPH)

llp  
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

sum  
DSUM

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

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

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

---

### 1.3.11 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

### 1.3.12 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

### 1.3.13 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

### 1.3.14 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>')



### 1.3.15 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

### 1.3.16 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.

### 1.3.17 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

### 1.3.18 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

### 1.3.19 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

### 1.3.20 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

### 1.3.21 logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|l...

#### Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|llapd| ↵
linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscdp|lsua|lm3ua|lmgcp| ↵
ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal) (debug|info|notice|error|fatal) . ↵
LOGMESSAGE
```

#### 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

llc  
Layer 1 Control (MPH)

llp  
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

sum  
DSUM

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

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

---

Insdata

GPRS NS layer data PDU

Inssignal

GPRS NS layer signal PDU

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

### 1.3.22 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

pbccch  
    PBCCH

pch  
    PCH

pdтч  
    PDTCH

pнch  
    PNCH

ppch  
    PPCH

prach  
    PRACH

ptcch  
    PTCCH

rach  
    RACH

sacch  
    SACCH

sch  
    SCH

sdccch  
    SDCCH

---

tch/f

TCH/F

tch/h

TCH/H

### 1.3.23 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>'

### 1.3.24 no phy <0-0> dsp-trace-flag (debug|l1\_warning|error|l1\_rx\_msg|l1\_rx\_msg\_byte|l1\_...

Command

```
no phy <0-0> 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

<0-0>

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

### 1.3.25 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

### 1.3.26 phy <0-0> dsp-trace-flag (debug|l1\_warning|error|l1\_rx\_msg|l1\_rx\_msg\_byte|l1\_tx\_...

#### Command

```
phy <0-0> 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

<0-0>

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

### 1.3.27 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

### 1.3.28 show asciidoc counters

#### Command

```
show asciidoc counters
```

#### Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

### 1.3.29 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

### 1.3.30 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

### 1.3.31 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)

### 1.3.32 show e1\_driver

#### Command

```
show e1_driver
```

#### Parameters

show

Show running system information

e1\_driver

Display information about available E1 drivers

### 1.3.33 show e1\_line [line\_nr] [stats]

#### Command

```
show e1_line [line_nr] [stats]
```

#### Parameters

show

Show running system information

e1\_line

Display information about a E1 line

[line\_nr]

E1 Line Number

[stats]

Include statistics

---

### 1.3.34 show e1\_timeslot [line\_nr] [ts\_nr]

#### Command

```
show e1_timeslot [line_nr] [ts_nr]
```

#### Parameters

show

Show running system information

e1\_timeslot

Display information about a E1 timeslot

[line\_nr]

E1 Line Number

[ts\_nr]

E1 Timeslot Number

### 1.3.35 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

### 1.3.36 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

---

### 1.3.37 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

### 1.3.38 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

### 1.3.39 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history



### 1.3.40 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

### 1.3.41 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

### 1.3.42 show logging vty

#### Command

```
show logging vty
```

#### Parameters

show

Show running system information

logging

Show current logging configuration

vtv

Show current logging configuration for this vty

### 1.3.43 show online-help

#### Command

```
show online-help
```

#### Parameters

show

Show running system information

online-help

Online help

### 1.3.44 show phy <0-1> instance <0-0> system-information

#### Command

```
show phy <0-1> instance <0-0> system-information
```

#### Parameters

show

Show running system information

phy

Transceiver related commands

<0-1>

TRX number

instance

Display information about system

<0-0>

(null)

system-information

(null)

### 1.3.45 show rate-counters

#### Command

```
show rate-counters
```

#### Parameters

show

Show running system information

rate-counters

Show all rate counters

### 1.3.46 show startup-config

#### Command

```
show startup-config
```

#### Parameters

show

Show running system information

startup-config

Contentes of startup configuration

### 1.3.47 show stats

#### Command

```
show stats
```

#### Parameters

show

Show running system information

stats

Show statistical values

### 1.3.48 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

### 1.3.49 show talloc-context (application|all) (full|brief|DEPTH)

#### Command

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

#### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

---

### 1.3.50 show talloc-context (application|all) (full|brief|DEPTH) filter REGEXP

#### Command

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

#### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

### 1.3.51 show talloc-context (application|all) (full|brief|DEPTH) tree ADDRESS

#### Command

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

#### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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)

### 1.3.52 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

### 1.3.53 show trx <0-0> dsp-trace-flags

Command

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

Parameters

show

Show running system information

trx

Transceiver related commands

<0-0>

TRX number

dsp-trace-flags

Display the current setting of the DSP trace flags

### 1.3.54 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

### 1.3.55 show version

#### Command

```
show version
```

#### Parameters

show

Show running system information

version

Displays program version

### 1.3.56 stats report

#### Command

```
stats report
```

#### Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

### 1.3.57 stats reset

#### Command

```
stats reset
```

#### Parameters

stats

Stats related commands

reset

Reset all stats

### 1.3.58 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)

### 1.3.59 terminal monitor

#### Command

```
terminal monitor
```

#### Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

---



### 1.3.60 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

### 1.3.61 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

### 1.3.62 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

---

### 1.3.63 **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

### 1.3.64 **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

### 1.3.65 `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

### 1.3.66 `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

##### vtty

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

#### Command

```
log file .FILENAME
```

#### Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

### 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

#### Command

```
log stderr
```

#### Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

### 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 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

### 1.4.24 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

### 1.4.25 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

### 1.4.26 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

### 1.4.27 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)

---

### 1.4.28 no stats reporter log

#### Command

```
no stats reporter log
```

#### Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

### 1.4.29 no stats reporter statsd

#### Command

```
no stats reporter statsd
```

#### 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

### 1.4.30 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

### 1.4.31 password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

### 1.4.32 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

### 1.4.33 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

---

### 1.4.34 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)

### 1.4.35 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history

### 1.4.36 stats interval <0-65535>

#### Command

```
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)

---

### 1.4.37 stats reporter log

#### Command

```
stats reporter log
```

#### Parameters

##### stats

Configure stats sub-system

##### reporter

Configure a stats reporter

##### log

Report to the logger

### 1.4.38 stats reporter statsd

#### Command

```
stats reporter statsd
```

#### Parameters

##### stats

Configure stats sub-system

##### reporter

Configure a stats reporter

##### statsd

Report to a STATSD server

### 1.4.39 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|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|...)

#### Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal ↔
|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua| ↔
|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal) (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

sum  
DSUM

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

lscpp  
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
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

#### 1.5.4 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.

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

### 1.5.5 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 YYYYMMDDhhmmssnnn

### 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

```
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

```
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

```
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>'

## 1.6 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

DAHDI 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

```
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

```
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 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

### 1.8.11 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

### 1.8.12 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)

self

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 diversity-mode (siso-a|siso-b|mrc)

#### Command

```
diversity-mode (siso-a|siso-b|mrc)
```

#### Parameters

diversity-mode

Set reception diversity mode

siso-a

Reception diversity mode can be (siso-a, siso-b, mrc)

siso-b

(null)

mrc

(null)

---

### 1.12.3 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)

### 1.12.4 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

---



### 1.12.5 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)

### 1.12.6 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_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

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

---

### 1.12.7 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)

### 1.12.8 pwr-adj-mode (none|auto)

#### Command

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

#### Parameters

##### pwr-adj-mode

Set output power adjustment mode

##### none

(null)

##### auto

(null)

### 1.12.9 trx-calibration-path PATH

#### Command

```
trx-calibration-path PATH
```

#### Parameters

##### trx-calibration-path

Set the path name to TRX calibration data

##### PATH

Path name

---

### 1.12.10 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|DCS...

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

.TEXT

Text until the end of the line

### 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|sdccch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sa...

#### Command

```
gsmtap-sapi (bcch|ccch|rach|agch|pch|sdccch|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

pch

PCH

sdccch

SDCCCH

tch/f

TCH/F

tch/h

TCH/H

pacch

PACCH

pdtch

PDTCH

ptcch

PTCCH

cbch

CBCH

sacch

SACCH

### 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 led-control-mode (bts|external)

#### Command

```
led-control-mode (bts|external)
```

#### Parameters

##### led-control-mode

Set LED controlled by BTS or external software

##### bts

LED can be controlled by (bts, external)

##### external

(null)

### 1.13.11 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)

### 1.13.12 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)

---

### 1.13.13 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)

### 1.13.14 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

### 1.13.15 no description

#### Command

```
no description
```

#### Parameters

no

Negate a command or set its defaults

description

Remove description of the object

### 1.13.16 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

### 1.13.17 no gsmtap-sapi (bcch|ccch|rach|agch|pch|sdccch|tch/f|tch/h|pacch|pdtch|ptcch|cbch...

#### Command

```
no gsmtap-sapi (bcch|ccch|rach|agch|pch|sdccch|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

sdccch

SDCCCH

tch/f

TCH/F

tch/h

TCH/H

pacch

PACCH

pdтч

PDTCH

ptтч

PTCCH

cbтч

CBCH

sacтч

SACCH

### 1.13.18 no supp-meas-info toa256

Command

```
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

#### rtp

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

rtp

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 rtp-drift-threshold <0-10000>

#### Command

```
rtp-drift-threshold <0-10000>
```

#### Parameters

rtp-drift-threshold

RTP parameters

<0-10000>

RTP timestamp drift threshold in ms

### 1.13.27 smscb queue-hysteresis <0-30>

#### Command

```
smscb queue-hysteresis <0-30>
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

smscb

SMSCB (SMS Cell Broadcast) / CBCH configuration

queue-hysteresis

Hysteresis of the SMSCB (CBCH) queue

<0-30>

In count of messages/pages (default: 2)

---

### 1.13.28 smscb queue-max-length <1-60>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

smscb

SMSCB (SMS Cell Broadcast) / CBCH configuration

queue-max-length

Maximum length of the SMSCB (CBCH) queue

<1-60>

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

### 1.13.29 smscb queue-target-length <1-30>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

smscb

SMSCB (SMS Cell Broadcast) / CBCH configuration

queue-target-length

Target length of the SMSCB (CBCH) queue

<1-30>

Length in count of messages/pages (default: 2)



### 1.13.30 **supp-meas-info toa256**

#### Command

```
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

```
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

```
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 <0-40>

#### Command

```
nominal-tx-power <0-40>
```

#### Parameters

##### nominal-tx-power

Set the nominal transmit output power in dBm

##### <0-40>

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 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)

---