The Usage of this document

Per DOCSIS standard, console or command line interface should not be accessed by end-users. The purpose of this document is not and should not reveal to end-users, nor provide the information to un-trained engineers.

Some MSO would even think that this is a security problem if they found that product developed to have CLI and accessible by un-authorized people.

The main purpose of this document is used for product developing purpose and is covered by the non-disclosure agreement signed between Hitron and its customers.

This document is not provided as part of standard product specification for customers. Nor Hitron has the obligation to compliant all the commands listed below, for CLI is not standard for Cable Modem Products.

Table of Contents

1. APPLICATION CONSOLE

For ease of use in console mode, every command has two forms – full and short. (e.g., typing t is the same as tuner). The console commands are organized into a number of groups that differ in functionality. Each group is called a submenu.

As can be seen in commands list below, the submenus have “>” (more) symbol following their name. The navigation through the submenus is simple – type submenu name (without the “>” symbol) to get into. Type “exit” in order to get back to the main menu.

Commands that are used more often than others are placed in the main menu in order to provide a quick access to them.

All commands in all menu levels are placed in alphabetical order.
All commands are case–sensitive.

1.1. Main Menu Commands

MAIN> he

Console Commands for this level:

config - Display configuration file.

hwcounters - Shows HW counters.

ipcable - Print the cable modem IP address.

macaddr - Display Cable MAC address.

ping - Sends ICMP request "ping destination_IP length num_times".

phystatus - Display status of PHY.

printdsdb - Print HAL DS DB.

reset - 'reset 0' will reboot the cable modem.

replevel - Update [set|reset] Report level: repl [-|+]<level_id>.

scanmode - Set Scan Mode (0 or 1).

status - Display current CM state.

tuner - Program the tuner to <freq>(Mhz) & Sync [US option].

ucd - Display current ucds.

upstatus - Upstream Status for SID n.

usdbsids - Shows Us Active sids info.

! - Execute the last command.

help - Display this message.

exit - Quit the console.

FRP_dbg> - Frame Processor Debugger.

atp> - Modem initiated tests.

qos> - Quality of Service parameters.

setup> - Configure modem parameters.

debug> - General debug options.

show> - Show modem parameters.

bpi> - Show BPI messages.

certificates> - Certificate options.

production> - Production commands.

MAIN>

1.1.1. config command

Command name

config

Short form

co

Command usage

config

Command action

Shows the DOCSIS configuration file

Example

MAIN> config

Configuration File Parameters:

****

Maximum_Number_of_CPEs = 16

Network_Access = 1

Upstream_Service_Flow_Encoding :

Service_Flow_Reference = 1

QoS_Parameters_Set_Type = 07

Service_Flow_Scheduling_Type = 2

Downstream_Service_Flow_Encoding :

Service_Flow_Reference = 5

QoS_Parameters_Set_Type = 07

Privacy_Enable = 0

CM_MIC = 8f 3b 5a fb 67 2f d7 3b 18 e1 ef bd 30 e0 23 24

CMTS_MIC = 12 9a 57 59 18 d4 15 1e c0 f8 3a c0 53 01 ad 55

MAIN>

1.1.2. hwcounters command

Command name

hwcounters

Short form

hw

Command usage

hw

Command action

This command shows modem's MAC and PHY internal statistics counters.

Example

MAIN> hw

US sent packets : 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US Tx Error packets : 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US minislots immediate: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US minislots granted : 271 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US collision immediate: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US 16retries immediate: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US Re request : 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US 16 retries request : 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

US REQs : 18

US FRGs : 0

DS MAPs : 45128

DS SYNCs : 46569

SYNC LOSTs : 0

US MAC transmitted : 81

DS MAC received : 84

DS MAC hcs errs : 0

MGMNT MAC received : 57

MGMNT MAC CRC errs : 0

DS PDU packets : 27

DS PDU CRC ERR packets: 0

DS PDU Q ovflw : 0

DS MGMNT Q ovflw : 0

MAIN>

1.1.3. ipcable command

Command name

ipcable

Short form

ip

Command usage

ip

Command action

Displays the IP address of the cable interface, as acquired by the DHCP process.

Example

MAIN> ip

Cable new IP address: 10.0.33.145

MAIN>

1.1.4. macaddr command

Command name

macaddr

Short form

mac

Command usage

mac

Command action

Displays the cable interface MAC address.

Example

MAIN> mac

CM MAC address is 00-50-F1-12-41-00

MAIN>>

1.1.5. ping command

Command name

ping

Short form

pi

Command usage

pi DestinationIPAddress, Length, Times

Command action

Sends ICMP request, where:

- **DestinationIPAddress** is an IP address of the destination machine
- **Length** represents number of bytes
- **Times** is a retry number

Example

MAIN> ping 10.0.10.253 100 10

PING:pinging 10.0.10.253 with 100 bytes of data

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:ECHO REPLY from:10.0.10.253

PING:STATISTICS:

10 packets transmitted, 10 packets received, 0% packet loss.

MAIN>

1.1.6. phystatus command

Command name

phystatus

Short form

ph

Command usage

ph

Command action

Displays the current status of the QAM receiver.

Example

MAIN> ph

Current PHY status:

Downstream Freq - 507.000 MHz

Estimated Power - 0.0 dbmV

MSE - -33.337 dB

Timing Offset - -37.836 ppm

Carrier Offset - -2954.855 Hz

AGC Gain - 236.540

Qam mode - 256 QAM

Interleave mode - I=32, J=4

CW Error Rate - 4.68e-06

QAM Lock - YES

FEC Sync - YES

MPEG Sync - YES

Weak signal – NO

TOP value - 0x12C

MAIN>

1.1.7. printdsdb command

Command name

printdsdb

Short form

pri

Command usage

pri

Command action

Displays the downstream database.

Example

MAIN> pri

Upstream DB SCN Table :

Upstream DB Sorted Table :

Upstream DB Classifiers:

FreeCount: 1024; Seq: 2; BusyPtr: 218; FreePtr: 218

FreeDBCounter: 4314; AddDBCounter: 4314; 50YearsCounter: 0

BoundaryError: 0; NotBusyError: 0

MAIN>

1.1.8. reset command

Command name

reset

Short form

reb

Command usage

reb 0

Command action

This command performs the soft reset of the CM.

1.1.9. replevel command

Command name

replevel

Short form

rep

Command usage

rep <report level>

Command action

Changes the report level (status messages) of the modem. The modem can print status messages on many events. The user can control the amount of these messages by using the repl command. There are 26 different types of message classes. The following screen lists the message types that are implemented. It is possible to turn ON (+level) and OFF (-level) each class. Class 27 turns on (+27) or off (-27) all the classes. The following list of classes is displayed when using the repl 0 command:

Note:

1. This feature has no influence on the cable modem performance.

See Appendix A for information about these messages

2. After power on, all report levels are set to off by default

3. It is possible that the modem willcontinue to display although you already typed the rep –27 command. The display will continue until the buffer is cleared.

Example

MAIN> rep 0

Report levels ON:

1 CPU Usage 16 CableNet

2 TCB 17 Bridge

3 Upstream 18 IP Apps

4 Hardware 19 Statistics

5 Management 20 Main S.M.

6 Advanced PHY 21 Root

7 Registration 22 CM Messages

8 Sync 23 RSA

9 BLP 24 SNMP

10 TSM 25 IGMP

11 Downstream 26 Security

12 US Sniffer 27 ALL

13 DS Sniffer 28 TurboDOX

14 QoS 29 Application

15 DSX

1.1.10. findds command

Command name

1.1.10. findds

Short form

1.1.10. findds

Command usage

findds <mode >

Command action

When the mode is set to 0, the CM stops scanning downstream channels. When this mode is set to 1, the CM will perform the scan of the downstream channels. After typing **findds** 1, scan mode is enabled but the CM does not start scanning. To restart the scanning, you must force the modem to try to lock on a certain frequency by using the **dsfreq** command

Example

MAIN> sc 0

Scan mode - OFF

MAIN> sc 1

Scan mode - ON

MAIN>

1.1.11. status command

Command name

status

Short form

st

Command usage

st

Command action

Displays the current status of the modem

The modem can be in one of the following states (these states are defined in DOCSIS standard):

Modem State	Definition
IP_COMPLETE	IP connectivity has been established
NOT_READY	While booting and after reset, while scanning for example
NOT_SYNC	Modem is not locked on a downstream channel
OPERATIONAL	The modem is registered and forwarding data
PARM_ACQUIRED	DHCP parameters have been acquired
PARM_TRANSFER_COMPLETE	Configuration file has been loaded from the TFTP server
PHY_SYNC	The PHY is locked on a downstream channel
RANGING_COMPLETE	Initial ranging has been completed
REGISTRATION_COMPLETE	Registration process is completed
SECURITY_ESTABLISHED	Baseline privacy keys have been exchanged
TOD_ESTABLISHED	Time of day has been established

Example

MAIN> st

MODEM STATUS - OPERATIONAL

MAIN>

1.1.12. dsfreq command

Command name

dsfreq

Short form

dsfreq

Command usage

dsfreq <frequency >

Command action

Forces the tuner to try to lock on a desired frequency. The modem resets its PHY parameters and tries to find a QAM signal on the frequency entered. Frequency is expressed in MHz and can include a decimal point (i.e., 507.25 MHz means 507,250,000Hz). In case the modem does not find a valid signal on the requested frequency, it continues the scanning process.

Example

MAIN> dsfreq 669

MAIN> Trying to synchronize ...

Tuning to frequency 669000000Hz, (us 2 mode 2)

Downstream Locked - Collecting Upstream Information

Starting Ranging On Channel 2

SYNCHRONIZED - 669000000 Hz , ucd 2

Trying to register through CMTS...

DHCP - parameters acquired

Time of day - retrieved

Registration file - downloaded

REGISTRATION COMPLETE - MODEM IS ACTIVE

Working in SNMP V1/2c Only NmAccess mode

1.1.13. ucd command

Command name

ucd

Short form

uc

Command usage

uc

Command action

Displays the burst profiles parameters that are currently in use, as acquired from the UCD message.

Example

MAIN> uc

Upstream ID: 1, Frequency: 10000000Hz, Rate: 1280 KSym/Sec, MS Size 8

IUC1 Prmbl(O=952,L= 64) FEC(T= 0,K= 1) QPSK Fixed Scr-ON Dif-OF Mx: 1 G:8

IUC3 Prmbl(O=896,L=128) FEC(T= 5,K= 34) QPSK Fixed Scr-ON Dif-OF Mx:FF G:48

IUC4 Prmbl(O=896,L=128) FEC(T= 5,K= 34) QPSK Fixed Scr-ON Dif-OF Mx:FF G:48

IUC5 Prmbl(O=952,L= 64) FEC(T= 5,K= 18) QPSK Short Scr-ON Dif-OF Mx: 9 G:8

IUC6 Prmbl(O=952,L= 64) FEC(T= 7,K= 80) QPSK Short Scr-ON Dif-OF Mx:FF G:8

MAIN>

1.1.14. upstatus command

Command name

upstatus

Short form

up

Command usage

up <SID>

Command action

Displays the upstream state for each SID. You must specify a SID number.

Example

MAIN> up 0

US Stat SID#0: sz:128 n2poll:44 n2send:44 n2ins:44 eBusy:0 eWait:0

Ring data

numOfBds=14 numOfUsed=0 nextBdToUse=11 nextBdToFree=11

BD 0 ring=0x0000 Buf=0x00649700 len=604(0x25c) bdFlg=0x040b mnslts=11775(0x2dff)

BD 1 ring=0x0000 Buf=0x00649700 len=604(0x25c) bdFlg=0x040b mnslts=11775(0x2dff)

BD 2 ring=0x0000 Buf=0x00649900 len=56(0x38) bdFlg=0x040b mnslts=1791(0x6ff)

BD 3 ring=0x0000 Buf=0x00649800 len=56(0x38) bdFlg=0x040b mnslts=1791(0x6ff)

BD 4 ring=0x0000 Buf=0x00649900 len=57(0x39) bdFlg=0x040b mnslts=1791(0x6ff)

BD 5 ring=0x0000 Buf=0x00649900 len=78(0x4e) bdFlg=0x040b mnslts=4351(0x10ff)

BD 6 ring=0x0000 Buf=0x00649900 len=60(0x3c) bdFlg=0x040b mnslts=1791(0x6ff)

BD 7 ring=0x0000 Buf=0x003347b0 len=141(0x8d) bdFlg=0x0003 mnslts=4351(0x10ff)

BD 8 ring=0x0000 Buf=0x003357d0 len=33(0x21) bdFlg=0x0003 mnslts=1791(0x6ff)

BD 9 ring=0x0000 Buf=0x00649900 len=57(0x39) bdFlg=0x040b mnslts=1791(0x6ff)

BD10 ring=0x0000 Buf=0x00649900 len=129(0x81) bdFlg=0x040b mnslts=4351(0x10ff)

BD11 ring=0x0000 Buf=0x00000000 len=0(0x0) bdFlg=0x0000 mnslts=0(0x0)

BD12 ring=0x0000 Buf=0x00000000 len=0(0x0) bdFlg=0x0000 mnslts=0(0x0)

BD13 ring=0x0002 Buf=0x00000000 len=0(0x0) bdFlg=0x0000 mnslts=0(0x0)

BD00 - 0000 025C 0000 2DFF

BD01 - 0400 025C 0000 2DFF

BD02 - 0800 0038 0000 06FF

BD03 - 0C00 0038 0000 06FF

BD04 - 0000 0039 0000 06FF

BD05 - 0400 004E 0000 10FF

BD06 - 0800 003C 0000 06FF

BD07 - 0C00 008D 0000 10FF

BD08 - 0000 0021 0000 06FF

BD09 - 0400 0039 0000 06FF

BD10 - 0800 0081 0000 10FF

BD11 - 0000 0000 0000 0000

BD12 - 0000 0000 0000 0000

BD13 - 0000 0000 0000 0000

BD14 - 000B 775B 0051 C005

BD15 - 0000 0000 0000 0000

MaxUpBandwidth = 0

MaxBucketSize = 1522

currentBucketInclude = 1522

MAIN>

1.1.15. usdbsids command

Command name

usdbsids

Short form

us

Command usage

us

Command action

Displays the upstream channel's info for each active SID.

Example

MAIN> us

Upstream DB Sids Info

Index MaxTxBurst MaxUpRate TokenSize MaxBucketSize BucketInclude

0 0 0 0 1522 1522

MAIN>

1.1.16. ! command

Command name

!

Short form

!

Command usage

!

Command action

Executes the last command used.

Example

MAIN> ip

Cable new IP address: 10.0.44.48

MAIN> !

Cable new IP address: 10.0.44.48

MAIN> st

MODEM STATUS - OPERATIONAL

MAIN> !

MODEM STATUS - OPERATIONAL

MAIN>

1.1.17. help command

Command name

help

Short form

he

Command usage

he

Command action

Displays help message (list of all commands and sub–menus available at this moment)

Example

MAIN> he

Console Commands for this level:

config - Display configuration file.

hwcounters - Shows HW counters.

ipcable - Print the cable modem IP address.

macaddr - Display Cable MAC address.

ping - Sends ICMP request "ping destination_IP length num_times".

phystatus - Display status of PHY.

printdsdb - Print HAL DS DB.

reset - 'reset 0' will reset the cable modem.

replevel - Update [set|reset] Report level: repl [-|+]<level_id>.

scanmode - Set Scan Mode (0 or 1).

status - Display current CM state.

tuner - Program the tuner to <freq>(Mhz) & Sync [US option].

ucd - Display current ucds.

upstatus - Upstream Status for SID n.

usdbsids - Shows Us Active sids info.

! - Execute the last command.

help - Display this message.

exit - Quit the console.

FRP_dbg> - Frame Processor Debugger.

atp> - Modem initiated tests.

qos> - Quality of Service parameters.

setup> - Configure modem parameters.

debug> - General debug options.

show> - Show modem parameters.

bpi> - Show BPI messages.

certificates> - Certificate options.

production> - Production commands.

MAIN>

1.1.18. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exits the DOCSIS application console mode and switches the console back to the VxWorks console mode.

Example

MAIN> e

Exiting console mode.

value = 0 = 0x0

->

1.2. The Frame Processor debug submenu

1.2.1. General

The Frame Processor Debug sub–menu is used for hardware debug purposes only. These commands are not intended for any other purpose. These commands may be changed in forthcoming releases and its behavior may change as well.

In order to enter the Frame Processor Debug sub–menu, enter the **FRP_dbg** command from

the

main menu.

Example:

FRP_dbg> h

Console Commands for this level:

help - Display this message.

exit - Quit this sub-menu.

FRP_dbg>

1.2.2. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **FRP_dbg** sub–menu)

Example

FRP_dbg> h

Console Commands for this level:

help - Display this message.

exit - Quit this sub-menu.

FRP_dbg>

1.2.3. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **FRP_dbg** sub–menu and get back to the **main** menu.

Example

FRP_dbg> e

MAIN>

1.3. The Modem Initiated tests submenu

1.3.1. General

In order to enter the Modem Initiated tests sub–menu, enter the **atp** command from the main menu.

Example

MAIN> a

Modem initiated tests

atp> h

Console Commands for this level:

dsa - Initiate DSA test <DSX Type> (1=usf-100a, 2=usf-200a).

dsc - Initiate DSC test <SF N£> <DSX Type> (1=usf-100a, 2=usf-200a).

dsd1sf - Initiate DSD test <SF N£>.

dsd2sf - Initiate DSD test <SF N£>.

dsx - Init arbitrary DSX <DSX Msg Type> (0-DSA, 1-DSC, 2-DSD) <TLV>.

igmpjoin - Initiate an IGMP 'join' event in BPI-Map for <IP address>.

igmpdelete - Initiate an IGMP 'delete' event in BPI-Map for <IP address>.

snmpadduser - Add SNMP predefines V3 tables.

dccrequest - Init DCC test - <DS> <US> <Init> <UCD(0-OFF,1-ON)>.

dccsendack - Initiate DCC-ACK message to TSM.

togglecpe - Toggle swith for CPE veiw MIB limitation.

genev - Generate random EV_message! <TrapType> <Id> <Pri-err>.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

atp>

1.3.2. dsa command

Command name

dsa

Short form

dsa

Command usage

dsa <Test>

Command action

Starts the Dynamic Service Addition test according to procedure described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.4, pp 327-328.

There are two tests:

1. usf-100a
2. usf-200a

For more information about these tests, please refer to documents mentioned above.dsc command

1.3.3. dsc command

Command name

dsc

Short form

dsc

Command usage

dsc <ServiceFlow> <Test>

Command action

Starts the Dynamic Service Change test according to procedure described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.4, pp 327-328.

The **ServiceFlow** parameter represents the service flow number.

There are two tests:

3. usf-100a
4. usf-200a

For more information about these tests, please refer to documents mentioned above.

NOTE: User must know the service flow number before using this command. In order to get this number, use **serviceflow** command from **Quality of Service** sub–menu.

1.3.4. dsd1sf command

Command name

dsd1sf

Short form

dsd1

Command usage

dsd1 <ServiceFlow>

Command action

Starts the Dynamic Service Deletion test according to procedure described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.4, p 323.

This command deletes one Dynamic Service Flow. For more information about this test,please refer to documents mentioned above.

NOTE: User must know the service flow number before using this command. In order to get this number, use **serviceflow** command from **Quality of Service** sub–menu.

1.3.5. dsd2sf command

Command name

dsd2sf

Short form

dsd2

Command usage

dsd2 <ServiceFlow>

Command action

Starts the Dynamic Service Deletion test according to procedure described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.4, p 323. This command deletes two Dynamic Service Flows. For more information about this test, please refer to documents mentioned above.

NOTE:

User must know the service flow number before using this command. In order to get this number, use **serviceflow** command from **Quality of Service** sub–menu.

1.3.6. igmpjoin command

Command name

igmpjoin

Short form

igmpj

Command usage

igmpj <IPAddress >

Command action

Starts the CM IGMP Membership Query test according to procedure described in

*Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.3.14, p 309

1.3.7. igmpdelete command

Command name

igmpdelete

Short form

igmpd

Command usage

igmpd <IPAddress >

Command action

Starts the CM IGMP Membership Leave test according to procedure described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.3.14, p 309

1.3.8. snmpadduser command

Command name

snmpadduser

Short form

s

Command usage

s

Command action

This command is intended for use with MG–Soft SNMP browser. This command is for debug purposes only and not intended for any other use.

1.3.9. dccrequest command

Command name

dccrequest

Short form

dccr

Command usage

dccr <DS> <US> <Init> <UCD>

Command action

This command is intended for use with Dynamic Channel Change debug. This command is for debug purposes only and not intended for any other use.

1.3.10. dccsendack command

Command name

dccsendack

Short form

dccs

Command usage

dccs

Command action

This command is intended for use with Dynamic Channel Change debug. This command is for debug purposes only and not intended for any other use.

Command action

Starts the CM IGMP Membership Leave test according to procedure described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.3.14, p 309

1.3.11. togglecpe command

Command name

togglecpe

Short form

t

Command usage

t

Command action

This command switches the CPE MIB limitations view on to off and back.

Example

atp> t

Cpe view ON

atp> t

Cpe view OFF

atp>

1.3.12. genev command

Command name

genev

Short form

g

Command usage

g <TrapType > <ID> <Priority>

Command action

Generates the random software upgrade messages, according to procedure, described in *Data–Over–Cable Service Interface Specification Acceptance Test Plan, TP-RFI-ATPv1.1-I01-000822 by Cable Lab*s, section 2.3.12, p 277

1.3.13. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **atp** sub–menu)

Example

atp> h

Console Commands for this level:

dsa - Initiate DSA test <DSX Type> (1=usf-100a, 2=usf-200a).

dsc - Initiate DSC test <SF N£> <DSX Type> (1=usf-100a, 2=usf-200a).

dsd1sf - Initiate DSD test <SF N£>.

dsd2sf - Initiate DSD test <SF N£>.

dsx - Init arbitrary DSX <DSX Msg Type> (0-DSA, 1-DSC, 2-DSD) <TLV>.

igmpjoin - Initiate an IGMP 'join' event in BPI-Map for <IP address>.

igmpdelete - Initiate an IGMP 'delete' event in BPI-Map for <IP address>.

snmpadduser - Add SNMP predefines V3 tables.

dccrequest - Init DCC test - <DS> <US> <Init> <UCD(0-OFF,1-ON)>.

dccsendack - Initiate DCC-ACK message to TSM.

togglecpe - Toggle swith for CPE veiw MIB limitation.

genev - Generate random EV_message! <TrapType> <Id> <Pri-err>.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

atp>

1.3.14. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **atp** sub–menu and get back to the **main** menu.

Example

atp> e

MAIN>

1.4. The Quality of Service submenu

1.4.1. General

In order to enter the Quality of Service sub–menu, enter the **qos** command from the main menu.

Example

MAIN> q

Quality of Service submenu

qos> h

Console Commands for this level:

classifiers - Show the Classifiers.

phs - Show the PHSs.

serviceflow - Show the Service Flows.

usclassifiers - Show sorted Classifiers.

usphs - Show the Active PHSs.

ussid - Show the SID table (upstream).

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

qos>

1.4.2. classifiers command

Command name

classifiers

Short form

c

Command usage

c

Command action

Show the QoS classifiers.

Example

qos> c

CLASSIFIER 1:

Class ID 1

Class SFID 31

Direction 2

isIPclass 1

isLLCclass 0

isIEEEclass 0

isIEEEprio 0

isPortSet 1

IpSourceAddr= 0.0.0.0

IpSourceMask= 255.255.255.255

IpDestAddr= 10.0.10.152

IpDestMask= 255.255.255.255

IpProtocol=6

SourcePortStart=1000

SourcePortEnd=1000

DestPortStart=0

DestPortEnd=65535

VlanId=0

EnetProtocol=0

EnetProtocolType=255

ActivationState=1

Priority=2

IpTosLow=0

IpTosHigh=ff

IpTosMask=0

UserPrioLow=0

UserPrioHigh=0

DestMacAddr= 0 0 0 0 0 0

DestMacMask= 0 0 0 0 0 0

SourceMacAddr= 0 0 0 0 0 0

CLASSIFIER 2:

Class ID 2

………..

………..

………..

DestMacMask= 0 0 0 0 0 0

SourceMacAddr= 0 0 0 0 0 0

qos>

1.4.3. phs command

Command name

phs

Short form

p

Command usage

p

Command action

Show the QoS Payload Header Supression (PHS) status

Example

qos> p

PHSID = 1:

PHS SFID = 31

PHS ClassID = 1

PHS Direction = 2

PHS Size = 64

PHS Verify = 1

PHS ActivationState = 3

PHS Field = 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 0a 00 0a 98 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0

0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ff

PHS Mask = 00 00 00 03 c0 00 00 01

qos>

1.4.4. serviceflow command

Command name

serviceflow

Short form

s

Command usage

s

Command action

Show the QoS Service Flows

Example

qos> s

SERVICE FLOW 1:

SFID=25

Direction=2

isPrimary=1

isDirect=0

ParamSetType=7

SID=12

timeCreated=974901512

timeActive=0

MaxTrafficRate=0

MaxTrafficBurst=1522

MinReservedRate=0

NomPollInterval=0

TolPollJitter=0

NomGrantInterval=0

TolGrantJitter=0

GrantTimeReference=0

MaxLatency=0

RequestPolicy=0

MaxConcatBurst=0

MinReservedPkt=0

ActiveTimeOut=0

AdmittedTimeOut=200

UnsolicitGrantSize=0

Priority=0

GrantsPerInterval=0

TosAndMask=255

TosOrMask=0

ScheduleType=2

SERVICE FLOW 2:

SFID=31

……..

……..

……..

TosOrMask=0

ScheduleType=256

qos>

1.4.5. usclassifiers command

Command name

usclassifiers

Short form

usc

Command usage

usc

Command action

Show the QoS upstream sorted classifiers

Example

qos> usc

Upstream DB Sorted classifiers 3

Class index 0, priority 2

Class index 1, priority 1

Class index 2, priority 0

qos>

1.4.6. usphs command

Command name

usphs

Short form

usp

Command usage

usp

Command action

Show the QoS upstream sorted Payload Header Suppression (PHS)

Example

qos> usp

Downstream DB PHS:

Upstream DB PHS:

PHSID = 1:

Size = 64

Verify = 1

Field = 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 0a 00 0a 98 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00 00 00 00 00 ff

MaskBytes = 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 ff ff ff ff 00 00 00 00 00 00 00 00 00 00 00 00 00 0

0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ff

MaskedByteNumber = 5

qos>

1.4.7. ussid command

Command name

ussid

Short form

uss

Command usage

uss

Command action

Show the QoS upstream SID table

Example

qos> uss

Upstream DB Sids:

Sid Entry 0:

SID = 12

SFID = 25

RequestPolicy = 0

Priority = 0

MaxUpBandwidth(bytes) = 0

MaxTxBurst = 1522

MaxConcatBurst = 0

BurstProfileMaxTx = 0

NomGrantInterval = 0

GrantsPerInterval = 0

UnsolicitGrantSize = 0

GrantTimeReference = 0

ScheduleType = 2

SCNHandle = -1

currentRateBytesCount = 0

grantsPerUsInterval = 0

currentGrantsPerInterval = 0

isDirect = 0

pktCounter = 1

octetCounter = 33

dropPkts = 0

delayPkts = 0

Sid Entry 2:

SID = 16

SFID = 32

……

……

……

dropPkts = 0

delayPkts = 0

qos>

1.4.8. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **qos** sub–menu)

Example

qos> h

Console Commands for this level:

classifiers - Show the Classifiers.

phs - Show the PHSs.

serviceflow - Show the Service Flows.

usclassifiers - Show sorted Classifiers.

usphs - Show the Active PHSs.

ussid - Show the SID table (upstream).

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

qos>

1.4.9. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **qos** sub–menu and get back to the **main** menu.

Example

qos> e

MAIN>

1.5. The Modem Configuration submenu

1.5.1. General

In order to enter the Modem Configuration sub–menu, enter the **setup** command from the main

menu.

Example

MAIN> se

Configuration parameters submenu

setup> h

Console Commands for this level:

addcpe - Add new cpe to the learned cpe's.

classification - Set Classification (1=On or 0=Off).

concat - Set Concatenation (1=On or 0=Off).

default - Change CM mode to 'default'.

igmpstart - Start IGMP task manually.

scanreset - Reset scanning frequency cache.

setopmode - Set Operational mode <index>.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

setup>

1.5.2. addcpe command

Command name

addcpe

Short form

a

Command usage

a <MAC_Addr>

Command action

Manually adds a new static MAC address to the table of a known CPE. Only the CPEs that appear in the table are enabled to forward data through the CM. To see the current list of CPEs, use the **cpes** command from **show** sub–menu.

Example

setup> a 00-50-f1-12-21-47

CPE was added successfuly.

setup>

1.5.3. classification command

Command name

classification

Short form

cl

Command usage

cl <Mode>

Command action

Set (or clear) the classification of packets arriving from the upper layer service interface to a specific active Service Flow. The **Mode** parameter should be used as follows:

0 - Classification is off

1 - Classification is on

Example

setup> cl 0

Classification is OFF !

setup> cl 1

Classification is ON !

setup>

1.5.4. concat command

Command name

concat

Short form

co

Command usage

co <Mode>

Command action

Set (or clear) the packet concatenation support. The **Mode** parameter should be used as follows:

0 - Concatenation is off

1 - Concatenation is on

Example

setup> co 0

Concatenation is OFF !

setup> co 1

Concatenation is ON !

setup>setup>

1.5.5. default command

Command name

default

Short form

d

Command usage

d

Command action

This command resets the frequency cache and cancels all report levels.

Example

setup> d

Reset Frequency cache

No Report Levels

setup>

1.5.6. igmpstart command

Command name

igmpstart

Short form

i

Command usage

i

Command action

Start the IGMP task.

1.5.7. scanreset command

Command name

scanreset

Short form

sc

Command usage

sc

Command action

Reset the scanning frequency cache. After reset, the modem scans the downstream frequencies for an active signal. The modem first tries the last five frequencies on which it has successfully locked before. The **scanreset** command clears this cache - next time the modem will start scanning from the lowest downstream frequency.

Example

setup> sc

setup>

1.5.8. setopmode command

Command name

setopmode

Short form

se

Command usage

se

Command action

Set operational mode on or off. In order to get the operational modes list, use **opmode** command from **show** sub–menu.

Example

MAIN> sh

Display modem parameters submenu

show> o

Operational Mode: (Capabilities)

Description Type Value

----------- ----- -----

Concatenation Support 1 0

Docsis Support 2 0

Fragmentation Support 3 0

PHS Support 4 0

IGMP Support 5 1

BPI+ Support 6 0

DS SAID's 7 15

US SID's 8 16

Filtering Support 9 0

Equalizer Taps per Symbol 10 4

Number of Equalizer Taps 11 64

DCC Support 12 0

show> e

MAIN> se

Configuration parameters submenu

setup> se 1 1

setup> e

MAIN> sh

Display modem parameters submenu

show> o

Operational Mode: (Capabilities)

Description Type Value

---------- ----- -----

Concatenation Support 1 1

Docsis Support 2 0

Fragmentation Support 3 0

PHS Support 4 0

IGMP Support 5 1

BPI+ Support 6 0

DS SAID's 7 15

US SID's 8 16

Filtering Support 9 0

Equalizer Taps per Symbol 10 4

Number of Equalizer Taps 11 64

DCC Support 12 0

show>

1.5.9. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **setup** sub–menu)

Example

setup> h

Console Commands for this level:

addcpe - Add new cpe to the learned cpe's.

classification - Set Classification (1=On or 0=Off).

concat - Set Concatenation (1=On or 0=Off).

default - Change CM mode to 'default'.

igmpstart - Start IGMP task manually.

scanreset - Reset scanning frequency cache.

setopmode - Set Operational mode <index>.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

setup>

1.5.10. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **setup** sub–menu and get back to the **main** menu.

Example

setup> e

MAIN>

1.6. The Debug submenu

1.6.1. General

In order to enter the Debug sub–menu, enter the **debug** command from the main menu.

Example

MAIN> d

General debug submenu

debug> h

Console Commands for this level:

collectmap - Collect Map Packets (0-stop, 1-start, other num-print num).

equadump - Dump equalization coeff.

macread - Read from MAC register <reg> (0x7????, 0x4????, etc').

macwrite - Write to MAC register <reg> the value <data>.

mapdata - Transfer MAP messages also to the software (0 or 1).

read - Read from PHY register <reg>.

write - Write <data> to PHY register <reg>.

sread - Read from SRAM <addr> through MAC (in non-DMA mode).

swrite - Write <data> to SRAM <addr> through MAC (in non-DMA mode).

cerreset - Reset CER counter.

sequthresh - Set the equ threshold <NUM> times 10 to the pewer of -<NUM>.

gequthresh - Read the equalizer threshold.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

debug>

1.6.2. collectmap command

Command name

collectmap

Short form

co

Command usage

co <Mode>

Command action

Collects the MAP packets and shows them on demand.

The **Mode** parameter is:

0 – Stop collect MAP packets

1 – Start collect MAP packets

Any other number shows the MAP packets. The quantity of shown packets is equal to number entered.

NOTE: In order to start to collect the MAP packets, the **mapdata 1** command must be issued prior to operation.

Example

debug> map 1

debug> co 1

DEBUG: Start collecting map packets

debug> co 0

DEBUG: Stop collecting map packets

debug> co 2

DEBUG: Collected MAPS

UCD : 1

NumElem: 3

AllocStartTime : 2dc5ab

AckTime : 2dc481

RangingBackoffs : 0 3

DataBackoffs : 0 4

SID: 3fff, IUC: 01, Offset: 0

SID: 3fff, IUC: 01, Offset: 40

SID: 0000, IUC: 07, Offset: 41

UCD : 1

NumElem: 3

AllocStartTime : 2dc5d4

AckTime : 2dc4a9

RangingBackoffs : 0 3

DataBackoffs : 0 4

SID: 3fff, IUC: 01, Offset: 0

SID: 3fff, IUC: 01, Offset: 39

SID: 0000, IUC: 07, Offset: 40

debug>

1.6.3. equadump command

Command name

equadump

Short form

eq

Command usage

eq

Command action

Dump the equalization coefficient parameter table for the shape filter.

Example

debug> eq

EQUA: DUMP coeff FT[0];MTL[0]

0x0000,0x0000 0x0000,0x0000 0x0000,0x0000 0x0000,0x0000

0x0000,0x0000 0x0000,0x0000 0x0000,0x0000 0x0000,0x0000

0x0000,0x0000 0x0000,0x0000 0x0000,0x0000 0x0000,0x0000

0x0000,0x000

1.6.4. macread command

Command name

macread

Short form

macr

Command usage

macr <Register>

Command action

Reads the value of one of the MAC registers. The register number can be in the range 0x0–0xFFFF. Here, for convenience, we omit the higher bits of the absolute address (0xNNNN is equivalent to 0x7NNNN).

Example

debug> macr 0xd000

Value in register 0xFD000 is 0x1.

debug>

1.6.5. macwrite command

Command name

macwrite

Short form

macw

Command usage

macw <Register>

Command action

Writes data to one of the MAC registers. The register number can be in the range 0x0-xFFFF. Here, for convenience, we omit the higher bits of the absolute address. See the TNETC4400 DOCSIS Cable Modem Block User's Guide. Changing any of the DOCSIS block registers can interfere with the normal operation of the mode.

Example

debug> macw 0xd000 0x1

Writing value 0x1 to register 0xFD000.

debug>

1.6.6. mapdata command

Command name

mapdata

Short form

map

Command usage

map <Mode>

Command action

Set on or off the MAP messages transfer to the software.

The **Mode** parameter is:

0 – Stop transfer MAP messages to software

1 – Start transfer MAP messages to software

NOTE: User must issue **mapdata 1** command prior to collecting any MAP packets **(collectmap** command)

Example

debug> map 1

debug>

1.6.7. read command

Command name

read

Short form

r

Command usage

r <Register>

Command action

Reads the value of one of the PHY registers. The register number can be in the range 0x0–0x7F. See the TNETC4400 DOCSIS Cable Modem Block User's Guide.

Example

debug> r 0x12

Value in register 0x12 is 0x5.

debug>

1.6.8. write command

Command name

write

Short form

w

Command usage

w <Data> <Register>

Command action

Writes data to one of the PHY registers. The register number can be in the range 0x0–0x7F. See the TNETC4400 DOCSIS Cable Modem Block User's Guide. Changing any of the

DOCSIS block registers can interfere with the normal operation of the mode.

Example

debug> w 10 100

Writing value 0xA to register 0x64.

debug>

1.6.9. sread command

Command name

sread

Short form

sr

Command usage

sr <Address>

Command action

When an external SRAM is connected to the TNETC4400, displays the content of the SRAM. Ninety–six (96) bytes will be displayed. The SRAM contains the packets received in the downstream and transmitted in the upstream. Refer to the TNETC4400 DOCSIS Block User's Guide for more information about the data in the SRAM.

Example

debug> sread 0x1000

Value in SRAM:

1000: FDD2 4D23 F131 CC31 A40C DCAC 3EB2 4CDB

1010: A459 1B93 7DFD 8F8A 2765 EF62 CB8D 6CA3

1020: 8F13 7081 C233 4B33 C9F2 25A4 93EC 36B1

1030: 9B87 9C09 1073 B64B 1F6C 7068 C75E 74EF

1040: 58B1 9591 E354 34D2 6282 679C 654E 3917

1050: ED0C 8540 A82F 2990 0465 28E3 0863 E6FE

debug>

1.6.10. swrite command

Command name

swrite

Short form

sw

Command usage

sw <Address> <Data>

Command action

When an external SRAM is connected to the TNETC4400, writes a 16–bit value to a specific address in the SRAM. Changing the SRAM content can interfere with the normal operation of the modem.

Example

debug> sw 10 100

Writing value 0x64 to address 0xA.

debug>

1.6.11. cerreset command

Command name

cerreset

Short form

ce

Command usage

ce

Command action

Reset the CER counter.

1.6.12. sequthresh command

Command name

sequthresh

Short form

se

Command usage

se <Base> <Power>

Command action

Sets the equalizer threshold to the value specified in the command line.

Example

debug> se 1 5

debug> g

1.000000e-05

debug>

1.6.13. gequthresh command

Command name

Gequthresh

Short form

g

Command usage

g

Command action

Prints the equalizer threshold value specified by **sequthresh** command.

Example

debug> ge 1 2

1.000000e-02

1.6.14. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **debug** sub–menu)

Example

debug> h

Console Commands for this level:

collectmap - Collect Map Packets (0-stop, 1-start, other num-print num).

equadump - Dump equalization coeff.

macread - Read from MAC register <reg> (0x7????, 0x4????, etc').

macwrite - Write to MAC register <reg> the value <data>.

mapdata - Transfer MAP messages also to the software (0 or 1).

read - Read from PHY register <reg>.

write - Write <data> to PHY register <reg>.

sread - Read from SRAM <addr> through MAC (in non-DMA mode).

swrite - Write <data> to SRAM <addr> through MAC (in non-DMA mode).

cerreset - Reset CER counter.

sequthresh - Set the equ threshold <NUM> times 10 to the pewer of -<NUM>.

gequthresh - Read the equalizer threshold.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

debug>

1.6.15. exit command

Command name

exit

Short form

ex

Command usage

ex

Command action

Exit the **debug** sub–menu and get back to the **main** menu.

Example

debug> ex

MAIN>

1.7. The Show Parameters submenu

1.7.1. General

In order to enter the Show Parameters sub–menu, enter the **show** command from the main menu.

Example

MAIN> sh

Display modem parameters submenu

show> h

Console Commands for this level:

cpes - Display list of learned cpe's.

igmpdb - Print IGMP Info.

ipfilters - Shows IP filters.

llcfilters - Shows LLC filters.

opmode - Get Operational mode.

version - Software Version.

lanstatus - Lan Interface Status.

dsdmaring - DS DMA Status.

dmamcode - DMA's Micro Code.

timeofversion - Show date & time of image creation.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

show>

1.7.2. cpes command

Command name

exit

Short form

c

Command usage

c

Command action

Displays the MAC address of the CPE learned by the modem. The CM forwards data to or from CPEs that appear in this list. In addition, it displays the way the address was learned as follows:

1) Dynamic - through listening to the network traffic

2) Static – set by the user using the command addcpe or added by a command in the configuration file

The modem can be configured to learn any number of CPEs from 0 to 16. The default number of the CPE is 1 and this is changed in the configuration file.

Example

show> c

CPE table - 1 learned. configured max is 16

0: 00 06 5b d0 97 15 Dynamic - Interface is LAN

show>

1.7.3. igmpdb command

Command name

igmpdb

Short form

ig

Command usage

ig

Command action

Show the IGMP interface information

Example

show> ig

IGMP interface:

****

QueryInterval queryMaxResTime joins groups

HFC : 0 0 0 0 10.2.75.1

CMCI: 125 100 0 0 10.2.75.1

IGMP cache table:

****

index groupIp state lastReporter suppressReport UpTime

0 000.000.000.000 0 000.000.000.000 0 974915120

1 000.000.000.000 0 000.000.000.000 0 974915120

2 000.000.000.000 0 000.000.000.000 0 974915120

3 000.000.000.000 0 000.000.000.000 0 974915121

4 000.000.000.000 0 000.000.000.000 0 974915121

5 000.000.000.000 0 000.000.000.000 0 974915121

6 000.000.000.000 0 000.000.000.000 0 974915121

7 000.000.000.000 0 000.000.000.000 0 974915121

8 000.000.000.000 0 000.000.000.000 0 974915121

9 000.000.000.000 0 000.000.000.000 0 974915121

10 000.000.000.000 0 000.000.000.000 0 974915121

11 000.000.000.000 0 000.000.000.000 0 974915121

12 000.000.000.000 0 000.000.000.000 0 974915121

13 000.000.000.000 0 000.000.000.000 0 974915121

14 000.000.000.000 0 000.000.000.000 0 974915121

15 000.000.000.000 0 000.000.000.000 0 974915121

show>

1.7.4. ipfilters command

Command name

ipfilters

Short form

ip

Command usage

ip

Command action

Displays a list of the currently active IP filters

Example

show> ip

IPDefault is ACCEPT(2).

IPCount: 0

show>

1.7.5. llcfilters command

Command name

llcfilters

Short form

ll

Command usage

ll

Command action

Displays a list of the currently active LLC filters

Example

show> ll

LLCDefault is ACCEPT(2).

LLCCount: 0

show>

1.7.6. opmode command

Command name

opmode

Short form

o

Command usage

o

Command action

Show the CM operational mode. The operational mode could be set (or reset) by **setopmode** command from **setup** sub–menu.

Example

show> o

Operational Mode: (Capabilities)

Description Type Value

---------- ----- -----

Concatenation Support 1 0

Docsis11 Support 2 0

Fragmentation Support 3 0

PHS Support 4 0

IGMP Support 5 1

BPI+ Support 6 0

DS SAID's 7 15

US SID's 8 16

Filtering Support 9 0

Equalizer Taps per Symbol 10 4

Number of Equalizer Taps 11 64

DCC Support 12 0

show>

1.7.7. version command

Command name

version

Short form

v

Command usage

V

Command action

Displays the software and hardware versions of the cable modem.

Example

show> v

Version: Software - 6.3.0

Hardware - 9.0.0

CHIP_ID - 4042A

show>

1.7.8. lanstatus command

Command name

lanstatus

Short form

la

Command usage

la

Command action

Displays the LAN interface status.

Example

show> la

LAN link ON.

show>

1.7.9. dsdmaring command

Command name

dsdmaring

Short form

ds

Command usage

ds

Command action

Displays the Downstream DMA status.

Example

show> ds

================ Manamegment ring ================:

£ dataBuf dataLen MngBits

RD->IN-> 0 0x005ff650 0 O I :0x0005

1 0x005fe6a0 0 O I :0x0005

2 0x005fd6f0 0 O I :0x0005

3 0x005fc740 0 O I :0x0005

4 0x005fb790 0 O I :0x0005

5 0x005fa7e0 0 O I :0x0005

6 0x005f9830 0 O I :0x0005

7 0x005f8880 0 O I :0x0005

8 0x005f78d0 0 O I :0x0005

9 0x005f6920 0 O I :0x0005

10 0x005f5970 0 O I :0x0005

11 0x005f49c0 0 O I :0x0005

12 0x005f3a10 0 O I :0x0005

13 0x005f2a60 0 O I :0x0005

14 0x005f1ab0 0 O I :0x0005

15 0x005f0b00 0 OWI :0x0007

BD Statistics: numOfBusy=0 maxNumOfBusy=0

================= Data ring =================:

£ dataBuf dataLen MngBits

RD->IN-> 0 0x0061f8a0 0 O I :0x0005

1 0x0061f0c0 0 O I :0x0005

2 0x0061e8e0 0 O I :0x0005

3 0x0061e100 0 O I :0x0005

4 0x0061d920 0 O I :0x0005

5 0x0061d140 0 O I :0x0005

6 0x0061c960 0 O I :0x0005

7 0x0061c180 0 O I :0x0005

8 0x0061b9a0 0 O I :0x0005

9 0x0061b1c0 0 O I :0x0005

10 0x0061a9e0 0 O I :0x0005

….

….

….

60 0x00602020 0 O I :0x0005

61 0x00601840 0 O I :0x0005

62 0x00601060 0 O I :0x0005

63 0x00600880 0 OWI :0x0007

BD Statistics: numOfBusy=0 maxNumOfBusy=0

show>

1.7.10. dmamcode command

Command name

dmamcode

Short form

dm

Command usage

dm

Command action

Displays the DMA microcode software version information.

1.7.11. time of version

Command name

timeofversion

Short form

t

Command usage

t

Command action

Displays data and time of image creation

Example

show> t

Image Creation Date/Time: Apr 21 2002 / 11:02:17

show>

1.7.12. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **show** sub–menu)

Example

show> h

Console Commands for this level:

cpes - Display list of learned cpe's.

igmpdb - Print IGMP Info.

ipfilters - Shows IP filters.

llcfilters - Shows LLC filters.

opmode - Get Operational mode.

version - Software Version.

lanstatus - Lan Interface Status.

dsdmaring - DS DMA Status.

dmamcode - DMA's Micro Code.

timeofversion - Show date & time of image creation.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

show> >

1.7.13. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **show** sub–menu and get back to the **main** menu.

Example

show> e

MAIN>

1.8. The BPI Parameters submenu

1.8.1. General

In order to enter the BPI Parameters sub–menu, enter the **bpi** command from the main menu.

Example

MAIN> b

BPI messages submenu

bpi> h

Console Commands for this level:

authinfo - Display Auth info message.

authreply - Display Auth Reply message.

authrequest - Display Auth Request message.

keyreply - Display TEK Reply message for SID number.

keyrequest - Display TEK Request message for SID number.

mapreply - Display SA Map Reply message for SID number.

maprequest - Display SA Map Request message for SID number.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

bpi>

1.8.2. authinfo command

Command name

authinfo

Short form

authi

Command usage

authi

Command action

Show the transmitted BPI information (Authorization message)

Example

bpi> authi

Auth Info transmitted:

09 2a 86 48 86 f7 0d 01 01 05 05 00 30 81 85 31 0b 30 09 06

03 55 04 06 13 02 49 4c 31 0f 30 0d 06 03 55 04 0a 13 06 54

……..

……..

c1 9b 5b ea f0 cb ef 1e cf 60 df dd 71 56 d5 eb d8 2e 1f 49

0c 0f 3c 6c ff d5 50 a7 6e 8d 8f a1 b1 43 94 5b 5c 74 f8 ee

88 84 33 3d 62 1a ba cf df a5 73 4c 4c 5c 1d b6 ff 44 10 48

be 75 df 98 2f

bpi>

1.8.3. authreply command

Command name

authreply

Short form

authrep

Command usage

authrep

Command action

Show the received BPI information (Authorization Reply message)

Example

bpi> authrep

Auth Reply received:

f6 ff cf 4e ff 6d af ff fb 9b 4f df bb 7e db da ff fc d7 f9

bd ed b5 ff ff cf af ff 77 fb 8d 9c f8 bb fb ff ff 78 ce bf

……..

……..

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

bpi>

1.8.4. authrequest command

Command name

authrequest

Short form

authreq

Command usage

authreq

Command action

Show the transmitted BPI information (Authorization Request message)

Example

bpi> authreq

Auth Request transmitted:

37 32 35 02 00 03 00 50 f1 03 00 06 00 50 f1 12 27 25 04 00

8c 30 81 89 02 81 81 00 c3 fd b2 6b 6a 60 63 7d 13 de 73 2f

……..

……..

fa d6 51 0b 7b 3e 78 e7 89 75 ef e3 b9 42 c9 13 00 09 15 00

02 01 00 16 00 01 01 0c 00 02 00 0c

bpi>

1.8.5. keyreply command

Command name

keyreply

Short form

keyrep

Command usage

keyrep <SID>

Command action

Show the received TEK information (TEK Reply message) for the SID specified.

Example

bpi> keyrep 1

TEK Reply received:

29 a4 30 63 c0 46 03 8a 80 01 04 08 68 49 6c 40 4c 01 2d a8

18 c3 40 21 00 0c 8d 04 80 c0 03 c3 0b 1c 04 40 08 39 10 2c

……..

……..

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00

bpi>

1.8.6. keyrequest command

Command name

keyreq

Short form

keyreq

Command usage

keyreq <SID>

Command action

Show the transmitted TEK information (TEK Request message) for the SID scpecified.

Example

bpi> keyreq 1

TEK Request transmitted:

36 00 8a 42 0c 40 95 90 a0 01 8a 2a 44 f1 66 02 91 51 e3 11

a0 00 e3 e5 92 0a 86 1e 41 29 09 0a 18 04 0a 08 2d 10 00 43

……..

……..

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00 00 00 00 00 00 00

bpi>

1.8.7. mapreply command

Command name

mapreply

Short form

maprep

Command usage

maprep <SID>

Command action

Show the received SA MAP information (SA Reply message) for the SID specified.

Example

bpi> maprep 28

SA Map Reply received:

31 ef 37 cc fb 4c 2b cc 67 c4 1a ec 2a 4f 37 ec b0 ce 37 1c

3b dc b2 84 b6 c8 21 cf 01 fc 22 fe 51 cc 3f 48 77 44 33 04

……..

……..

0d 81 7f 00 00 80 6b 00 18 48 01 f6 1d 80 9f 00 00 80 64 00

20 2c 03 00 00 41 82 00 10 80 a4 00 24 38 80 00 00 48 01 f4

c1 81 9f 00 00

bpi>

1.8.8. maprequest command

Command name

mapreq

Short form

mapreq

Command usage

mapreq <SID>

Command action

Show the transmitted SA MAP information (SA Request message) for the SID specified.

Example

bpi> mapreq 28

SA Map Request transmitted:

00 8c 7f b2 42 a6 93 a1 00 9c 7f a0 00 26 93 a1 00 90 00 00

00 00 00 00 00 00 00 04 e5 38 cc f3 89 6b cc fb c8 77 cc 00

……..

……..

00 2e 94 21 ff 48 93 a1 00 84 93 c1 00 88 7f b3 42 a6 93 a1

00 8c 7f b2 42 a6 93 a1 00 9c 7f a0 00 26 93 a1

bpi>

1.8.9. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **bpi** sub–menu)

Example

bpi> h

Console Commands for this level:

authinfo - Display Auth info message.

authreply - Display Auth Reply message.

authrequest - Display Auth Request message.

keyreply - Display TEK Reply message for SID number.

keyrequest - Display TEK Request message for SID number.

mapreply - Display SA Map Reply message for SID number.

maprequest - Display SA Map Request message for SID number.

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

bpi>

1.8.10. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **bpi** sub–menu and get back to the **main** menu.

Example

bpi> e

MAIN>

1.9. The Certificate Parameters submenu

1.9.1. General

In order to enter the Certificate Parameters sub–menu, enter the **certificates** command from the main menu.

Example

Console Commands for this level:

cw19reset - Reset CoSigner Access start times in NVRAM..

status - Check if CM certificate exists.

accesstime - Display Access start times..

cmcert - Display CM's certificate fields..

mfgcert - Display Manufacturer's certificate fields..

rootpublickey - Display Root PublicKey..

resetaccesstime - Reset Access start times in NVRAM..

destroymfgcert - Destroy Mfg Certificate in NVRAM..

destroyrootpub - Destroy Root Public Key in NVRAM..

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

certificates>

1.9.2. status command

Command name

status

Short form

s

Command usage

s

Command action

Show certificate status.

Example

certificates> s

CM certificate is present and correct.

certificates>

1.9.3. accesstime command

Command name

accesstime

Short form

a

Command usage

a

Command action

This command shows the CVC (code–signing verification certificate) access time limits.

Example

certificates> a

Mfg Code Access Start:

[UTC] SAT JAN 01 00:00:00 2000

Mfg CVC Access Start:

[UTC] SAT JAN 01 00:00:00 2000

Co-Signer Code Access Start:

[UTC] SUN FEB 06 06:28:15 2106

Co-Signer CVC Access Start:

[UTC] SUN FEB 06 06:28:15 2106

certificates>

1.9.4. cmcert command

Command name

cmcert

Short form

cm

Command usage

cm

Command action

This command shows the cable modem certificate details.

Example

certificates> cm

Manufacturer's certificate fileds:

Version 3 certificate

Serial Number (2 bytes):

20 63 [c]

Signature Algorithm:

SHA1 With RSA Encryption

Issuer Name

****

Country, Printable String (2 bytes):

49 4c [IL]

****

Organization, Printable String (6 bytes):

54 49 20 43 42 43 [TI CBC]

****

Organizational Unit, Printable String (6 bytes):

44 4f 43 53 49 53 [DOCSIS]

****

Organizational Unit, Printable String (19 bytes):

48 61 73 61 64 6e 61 6f 74 20 38 2c 48 65 72 7a [Hasadnaot 8,Herz]

6c 69 61 [lia]

****

Common Name, Printable String (45 bytes):

54 49 20 43 42 43 20 43 61 62 6c 65 20 4d 6f 64 [TI CBC Cable Mod]

65 6d 20 52 6f 6f 74 20 43 65 72 74 69 66 69 63 [em Root Certific]

61 74 65 20 41 75 74 68 6f 72 69 74 79 [ate Authority]

Validity Start

[UTC] SUN MAY 20 14:54:40 2001

Validity End

[UTC] TUE MAY 16 14:54:40 2023

Subject Name

****

Country, Printable String (2 bytes):

49 4c [IL]

****

Organization, Printable String (6 bytes):

54 49 20 43 42 43 [TI CBC]

****

Organizational Unit, Printable String (19 bytes):

48 61 73 61 64 6e 61 6f 74 20 38 2c 48 65 72 7a [Hasadnaot 8,Herz]

6c 69 61 [lia]

****

Common Name, Printable String (17 bytes):

30 30 3a 35 30 3a 46 31 3a 31 32 3a 34 31 3a 30 [00:50:F1:12:41:0]

30 [0]

Public Key BER (162 bytes):

30 81 9f 30 0d 06 09 2a 86 48 86 f7 0d 01 01 01 [0..0....H.....]*

……..

……..

68 e8 be ec 41 ea f1 37 95 56 50 9e 86 e0 fa f8 [h...A..7.VP.....]

c5 db a7 3c 49 6f 57 1f 39 bf 37 eb e1 02 03 01 [...<IoW.9.7.....]

00 01 [..]

certificates>

1.9.5. mfgcert command

Command name

mfgcert

Short form

m

Command usage

m

Command action

This command shows the manufacturer's certificate details.

Example

certificates>m

Manufacturer's certificate fileds:

Version 3 certificate

Serial Number (16 bytes):

7c 27 48 d7 64 27 42 f3 ec 7f 5f 86 c5 48 1a 30 [|'H.d'B..._..H.0]

Signature Algorithm:

SHA1 With RSA Encryption

Issuer Name

****

Country, Printable String (2 bytes):

55 53 [US]

****

Organization, Printable String (48 bytes):

44 61 74 61 20 4f 76 65 72 20 43 61 62 6c 65 20 [Data Over Cable]

53 65 72 76 69 63 65 20 49 6e 74 65 72 66 61 63 [Service Interfac]

65 20 53 70 65 63 69 66 69 63 61 74 69 6f 6e 73 [e Specifications]

****

Organizational Unit, Printable String (12 bytes):

43 61 62 6c 65 20 4d 6f 64 65 6d 73 [Cable Modems]

****

Common Name, Printable String (45 bytes):

44 4f 43 53 49 53 20 43 61 62 6c 65 20 4d 6f 64 [DOCSIS Cable Mod]

65 6d 20 52 6f 6f 74 20 43 65 72 74 69 66 69 63 [em Root Certific]

61 74 65 20 41 75 74 68 6f 72 69 74 79 [ate Authority]

Validity Start

[UTC] WED JUL 11 00:00:00 2001

Validity End

[UTC] SAT JUL 10 23:59:59 2021

Subject Name

****

Country, Printable String (2 bytes):

49 4c [IL]

****

Organization, Printable String (6 bytes):

54 49 20 43 42 43 [TI CBC]

****

Organizational Unit, Printable String (6 bytes):

44 4f 43 53 49 53 [DOCSIS]

****

Organizational Unit, Printable String (19 bytes):

48 61 73 61 64 6e 61 6f 74 20 38 2c 48 65 72 7a [Hasadnaot 8,Herz]

6c 69 61 [lia]

****

Common Name, Printable String (45 bytes):

54 49 20 43 42 43 20 43 61 62 6c 65 20 4d 6f 64 [TI CBC Cable Mod]

65 6d 20 52 6f 6f 74 20 43 65 72 74 69 66 69 63 [em Root Certific]

61 74 65 20 41 75 74 68 6f 72 69 74 79 [ate Authority]

Public Key BER (162 bytes):

30 81 9f 30 0d 06 09 2a 86 48 86 f7 0d 01 01 01 [0..0....H.....]*

05 00 03 81 8d 00 30 81 89 02 81 81 00 c6 c7 a8 [......0.....]

30 15 35 ad c7 54 56 f4 86 df 97 02 bf 4b 4f 95 [0.5..TV.....KO.]

30 ab 23 42 61 74 ae 86 af ab 3d f9 fe 96 b6 1f [0.#Bat....=.....]

56 3f 22 4f da d8 55 6b 87 bd 71 2d f7 85 9e de [V?"O..Uk..q-....]

12 04 99 ea 2e 62 e3 07 dc be 8a a3 74 0e 1f 08 [.....b.....t...]

cb 68 f3 19 64 db 2e 43 14 56 d9 32 76 95 b7 05 [.h..d..C.V.2v...]

68 3c c6 3b d6 fb a6 82 76 43 9f 7e be bc 26 f0 [h<.;....vC.~..&.]

6c c0 2f a7 cc 32 11 fb 02 ad 28 3e 5c 5b a3 f5 [l./..2....(>\[..]

33 ed 74 80 11 d5 05 2d 72 20 04 9f 15 02 03 01 [3.t....-r ......]

00 01 [..]

certificates>

1.9.6. rootpublickey command

Command name

rootpublickey

Short form

ro

Command usage

ro

Command action

This command displays the root public key.

Example

certificates>ro

Root public Key Length = 270

30 82 01 0a 02 82 01 01 00 c0 ef 36 9d 7b da b0 a9 38 e6 ed 29 c3 8d 3a 88

9f 82 48 a7 b7 c5 1e 63 55 f6 53 6f 5b da 39 8b f6 19 a1 1b 3c 0f 64 91 2d

……

de 4a 2a 21 9c 27 e9 25 3f 41 f8 58 53 fc 52 e0 fc a5 98 e5 c9 d8 bb d4 7b

cb b5 49 4e 99 36 d5 1c b0 eb 66 ef 0b 0a 4f 0c dd 08 e8 ca d1 14 8f 4c 37

d9 02 c0 83 cf 8e b1 96 42 31 70 b2 66 84 bf 67 30 c0 99 d2 71 7c 8f 1a e5

3e af 67 3c 8e c8 e5 bf 7b a4 a4 1e df 8f e3 02 03 01 00 01

certificates>

1.9.7. resetaccesstime command

Command name

resetaccestime

Short form

re

Command usage

re

Command action

This command resets the access time certificate.

Example

certificates> a

Mfg Code Access Start:

[UTC] SAT JAN 01 00:00:00 2000

Mfg CVC Access Start:

[UTC] SAT JAN 01 00:00:00 2000

Co-Signer Code Access Start:

[UTC] SUN FEB 06 06:28:15 2106

Co-Signer CVC Access Start:

[UTC] SUN FEB 06 06:28:15 2106

certificates>re

Mfg and Co-Signer Access start times were reset.

certificates> a

Mfg Code Access Start:

[UTC] THU JAN 01 00:16:40 1970

Mfg CVC Access Start:

[UTC] THU JAN 01 00:16:40 1970

Co-Signer Code Access Start:

[UTC] THU JAN 01 00:16:40 1970

Co-Signer CVC Access Start:

[UTC] THU JAN 01 00:16:40 1970

certificates>

1.9.8. destroymfgcert command

Command name

destroymfgcert

Short form

destroym

Command usage

destroym

Command action

This command destroys the manufacturer's certificate in the NVRAM.

Example

certificates>destroym

NVRAM Mfg Certificate destroyed.

certificates>

1.9.9. destroyrootpub command

Command name

destroyrootpub

Short form

destroyr

Command usage

destroyr

Command action

This command destroys the root public key in the NVRAM.

Example

certificates>destroyr

NVRAM Root Public Key destroyed.

certificates>

1.9.10. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **certificates** sub–menu)

Example

certificates>h

Console Commands for this level:

cw19reset - Reset CoSigner Access start times in NVRAM..

status - Check if CM certificate exists.

accesstime - Display Access start times..

cmcert - Display CM's certificate fields..

mfgcert - Display Manufacturer's certificate fields..

rootpublickey - Display Root PublicKey..

resetaccesstime - Reset Access start times in NVRAM..

destroymfgcert - Destroy Mfg Certificate in NVRAM..

destroyrootpub - Destroy Root Public Key in NVRAM..

! - Execute the last command.

help - Display this message.

exit - Quit this sub-menu.

certificates>

1.9.11. exit command

Command name

exit

Short form

e

Command usage

e

Command action

Exit the **certificates** sub–menu and get back to the **main** menu.

Example

certificates> e

MAIN>

1.10. The Production submenu

1.10.1. General

This submenu is intented only for use at the time of production or product validation test. Due to this reason, the access to this menu is restricted by password. Once entering this menu, the modem will stop being operational and in order to perform re-registration the modem have to be rebooted.

1.10.2. Service Application commands description

All commands under the production menu (not included it's sub directories) are used for intial configuration of the modem, such as image loading, production parameters and etc. The same command can be found in the standalone service application image.

1.10.2.1. help command

Command name

help

Command usage

h

Command action

Displays list of available commands

Example

production> help

Console Commands for this level:

reset - 'reset 0' will reboot the cable modem.

dir - dir - List available modem software versions.

erase - erase <sec #> - Erase sector <sec#> from Flash.

dl - dl <sec#> <srvIP> <name> - Downld <name> from <srvIP> to <sec>.

setdef - setdef <sec#> - Set <sec#> as default modem software.

prodshow - prodshow - Show production params.

prodset - prodset - Set production params.

proddef - proddef - Set production default params.

password - password <pwrd>- Set production menu password.

prodmib - prodmib <level>- Set production MIB access level.

help - Display this message.

exit - Quit this sub-menu.

certificate> - Production Certificate.

calibrate> - Downstream Power Table Calibration.

test> - Test commands.

1.10.2.2. dir command

Command name

dir

Command usage

dir

Command action

Lists the contents of each flash sector. The information includes sector number, image file name and CRC check. The little arrow to the left of the sector number (->Sec#) indicates the default image to load on startup.

Example

production> dir

Directory of Flash (Checking CRC, Please wait ...)

Sec#1 servapp.gz 205504 CRC OK

-> Sec#2 DataCM.img 896240 CRC OK

production>

1.10.2.3. erase command

Command name

erase

Command usage

erase <sec#>

Command action

Erases software image located on sector number <sec#> of the Flash and clear Its minformation from non–volatile memory.

Caution: This command is destructive.

Example

Production> erase 1

Are you sure you want to erase sector #1? [y/n]y

Erasing sector 1 ... Done.

Production>

1.10.2.4. dl command

Command name

dl

Command usage

dl serverIP, filename

Command action

Downloads software image file <filename> from TFTP server with IP address <serverIP> to flash sector number <sec#>. The download uses a TFTP protocol to download the software image file. The target sector must be empty to allow download operation. This can be done with the **erase** command.

Example

Production> dl 192.168.100.2 405_D11_ver6.3.0.gz

Downloading <405_d11_ver6.3.0.gz> from TFTP server <192.168.100.2> to Flash

TFTP: Starting for the file <405_d11_ver6.3.0.gz> on server <192.168.100.2>...

Programming the FLASH (image size=882816 [0xD7880])...

File download and FLASH programming successfully completed

Production>

1.10.2.5. bootfrom command

Command name

bootfrom

Command usage

bootfrom <sec#>

Command action

This command sets the default software image to boot from to that in flash sector number <sec#> while booting up next time. If no sec# is assigned, it will display the current sector of boot image. The Sec# are defined as 0 or 1 in the flash.

Example

Production> bootfrom 1

Setting default sector to 1

Production>

1.10.2.6. bloader command

Command name

bloader

Command usage

bloader [<server IP> <filename>]

Command action

This command show or download the boot loader from **<server IP>**. If no parameter are entered, it will display the current boot loader information..

Example

Production> bloader 192.168.100.12 bload_10_01

Dowdload the boot loader file "bload_10_01" from TFTP server 192.168.100.12

Production>

- ***Be aware of using this command, it may not bootable if errors or mistake are committer during swapping the boot loader.***

1.10.2.7. bpiset command

Command name

bpiset

Command usage

bpiset [<server IP> <filename>]

Command action

This command show or download the CA file from **<server IP>**. If no parameter are entered, it

will display the current boot loader information..

Example

Production> bpiset 192.168.100.12 bpi_11_09

Dowdload the boot loader file "bpi_11_09" from TFTP server 192.168.100.12

Production>

**** Be aware of using this command, it may not bootable if errors or mistake are committer during swapping the boot loader.***

1.10.2.8. vendor command

Command name

vendor

Command usage

vendor [<ip> <filename>] | [tdox [0|1]] | [ds20 [0|1]] | [http [0|1]]

Command action

no parameters: show vendor information

<ip> <filename>: download vendor information file from tftp server ip and vendor file name

tdox [0|1]: If no value assigned, display TURBO-DOX enable(1) or disable(0)
Set value 1 to enable TURBO-DOX, 0 to disable

ds20 [0|1]: If no value assigned, display DOCSIS 2.0 enable(1) or disable(0)
Set value 1 to enable DOCSIS 2.0, 0 to disable

http [0|1]: If no value assigned, display HTTP enable(1) or disable(0)
Set value 1 to enable HTTP, 0 to disable

1.10.2.9. reset command

Command name

reset

Command usage

reset

Command action

The reset command reboots the board using the updated parameters and boot files. Powering Off–On or pushing the reset push button generates the same process as reset.

Example

production> reset

Cable Modem Image starter

Texas Instruments (C) 2001

Version 01.03

Press ANYKEY to run service application.....

Trying to run default image

Prefix address - B0080000 Found image CRC OK; Decompressing

.....

Well, looks OK; Let's go

Target Name: vxTarget

Attached TCP/IP interface to emac unit 0

NFS client support not included.

TNETC405: MIPS Core speed is 100.00 MHz (100 Ticks per second)

0x947ffdf0 (tRootTask): Loading RNDIS End Driver...

0x947ffdf0 (tRootTask): Memory setup complete

0x947ffdf0 (tRootTask): Configuring rndis2...

0x947ffdf0 (tRootTask): Done loading RNDIS END.

Installed MIPS exception handler

Initialized BBIF

```
                                        ****
                                        ****
                                      ******o***
                                    ********_///_****
                                    ******/_//_/*****
                                     ** ***(__|*****
                                        *********
                                        ****
                                        ***
```

****

** *Texas Instruments* ***

** *DOCSIS based Cable Modem* ***

****

Version 6.3.0 (Build 10_04_02:1) - Creation Date/Time: Apr 21 2002 / 11:07:01

USB_Init

0x947ffdf0 (tRootTask): After USB_Init

InitCB

init RNDIS CB

Attaching network interface lo0... done.

>>>

Cable Modem Console

Type 'help' for list of commands

MAIN>

1.10.3. Test Application sub menu

1.10.3.1. General

This section describes the test commands needed to perform various tests on the cable modem.

All commands under this menu has the same functionality as in the separated test application image.

1.10.3.2. help command

Command name

help

Short form

h

Command usage

h

Command action

Displays help message (list of all commands available from the **main** sub–menu)

Example

production> test

Console Commands for this level:

help - Display this message.

exit - Quit this sub-menu.

read - read <reg> Read from PHY register.

write - write <reg> <data> Update PHY register.

initphy - initphy Init PHY.

6 - 6 <sec> Display PHY status for <sec>.

phystatus - phystatus Display status of PHY (current).

tuner - tuner <freq> Set DS frequency(Mhz).

ber - ber <sec> DS BER statistics for <sec>.

freq - freq <freq> Set upstream frequency (MHz).

gain - gain <gain> Set upstream gain (step).

modulation - modulation <mod> QPSK-1 QAM16-2 QAM8-3 QAM32-4 QAM64-5.

*symb - symb <symb> US SymbolRate*160KSymb (1,2,4,8,16,32).*

cont - modulation <mode> US mode 0-stop 1-data 2-syn.

upstream - upstream <count> Transmit US bursts <count>.

settop - settop TOP table interface.

! - Execute the last command.

extra> - Extra Test Commands.

test>

1.10.3.3. version command

Command name

version

Command usage

version

Command action

Show HW/SW/BL version information

1.10.3.4. debug command

Command name

debug

Command usage

debug <level>

Command action

Show/Set debug level. If no parameter assigned, it will show current debug level

debug level setted to 0 will show few message

debug level setted to 2 will show normal message

1.10.3.5. snr command

Command name

snr

Command usage

snr

Command action

Display cable signal information. It can display cable DS/US power and SNR.

1.10.3.6. dsfreq command

Command name

1.10.3.8. dsfreq

Command usage

1.10.3.8. dsfreq <Frequency>

Command action

Sets the tuner to a desired downstream frequency.

Example

Test> dsfreq 333

TOP value: 0x200

Setting tuner to 333.00 MHz.

Reseting PHY ...

Test>

1.10.3.7. ber command

Command name

ber

Command usage

ber <Seconds>

Command action

Collects downstream BER information for number of seconds specified in Seconds.

Example

Test> ber 3

Sec C.E.R. Un.BER Es.BER Cor.Bt Err.F Frames MSE AGC

1 0.0e+00 0.0e+00 0.0e+00 0 0 65535 -23.20 511

2 0.0e+00 0.0e+00 0.0e+00 0 0 65535 -23.12 511

3 0.0e+00 0.0e+00 0.0e+00 0 0 65535 -23.22 511

Test>

1.10.3.8. frequency command

Command name

frequency

Command usage

f <Frequency>

Command action

Sets upstream transmit frequency to the frequency specified by Frequency parameter.

Example

Test> f 37.5

Setting US Frequency to 37.500 MHz.

Test>

1.10.3.9. gain command

Command name

gain

Command usage

gain <DB>

Command action

Adjusts the gain of upstream output power. The gain values could be between 0~63dB.

Example

Test> gain 60

Setting gain to 60.00 dB.

Test>

1.10.3.10. modulation command

Command name

modulation

Command usage

m <Modulation>

Command action

Sets upstream transmit modulation to specified by Modulation parameter:

VALUE	PARAMETER
1	QPSK
2	16 QAM
3	8 QAM
4	32 QAM
5	64 QAM

Example

Test> m 1

Set Modulation to QPSK

Test>

1.10.3.11. symb command

Command name

symb

Command usage

s <SymbolRate>

Command action

Sets upstream transmit symbol rate to specify by SymbolRate parameter:

VALUE	PARAMETER (kSym/sec)
1	160
2	320
4	640
8	1280
16	2560
32	5120

Example

Test> s 16

Set Symbol Rate to 2560 KSymbol/Sec

Test>

1.10.3.12. cont command

Command name

cont

Command usage

c <Mode>

Command action

Sets upstream transmit continuous mode to be specified by Mode parameter:

VALUE	PARAMETER
0	None
1	Data
2	Sin

Example

Test> c 1

Set Continues to Data

Test>

1.10.3.13. upstream command

Command name

upstream

Command usage

u <Times>

Command action

Transmits upstream bursts for number of times specified by Times parameter:

Example

Test> u 50

Upstream transmit Bursts 50 times ...

Test>

1.10.3.14. settop command

Command name

settop

Command usage

settop

Command action

Set the TOP table in NVRAM. To find the right parameters in the settop command, a measurement procedure to the modem must be performed.

1.10.3.15. quit command

Command name

quit

Command usage

quit

Command action

Quit console then continue to run. When CM breaks the display of initialization, use it to continue.

2. APPENDIX A. REPORT LEVELS EXAMPLE

2.1. General

This appendix gives code examples of the output received when report levels are sent to specific test command levels.

2.2. IP Level report example

If you set report level 18 (IP applications) by the console command replevel 18, you can check the DHCP, TOD and TFTP values that the modem acquires. This indicates the IP addresses in the system and helps in debugging the system when the registration process fails

DHCP : Entering Idle State

Trying to synchronize - searching...

SYNCHRONIZED - 202500000 Hz , ucd 1

Trying to register through CMTS...

DHCP : Start message received

DHCP: sending DHCP-DISCOVER size 548

DHCP: received DHCP-OFFER

DHCP: Setting (*) CM IP address to: 137.71.90.213

DHCP: Setting (*) CM TFTP Server address to: 137.71.91.100

DHCP: Setting (*) CM Gateway address to: 137.71.90.197

DHCP: Setting (*) CM Time Server address to: 137.71.91.100

DHCP: Setting (*) CM Time Server address to: 137.71.91.200

Gateway: 137.71.90.197

SubNetMask: 255.255.255.192

DHCP: sending DHCP-REQUEST

DHCP - setting info : RenewTime = 536870910 , RebindTime = 536870911

DHCP: received DHCP-REQ-ACK

DHCP: Setting CM IP address to: 137.71.90.213

DHCP - parameters acquired

TOD: The date is: 15/12/1998

TOD: The time is: 19:36:35

Time of day - retrieved

TFTP Start Request: going active

TFTP: Starting...

TFTP: Starting for the file <test.cfg> on server 137.71.91.100

TFTP: Downloading parameter file

TFTP download completed...

TFTP: Succeed... going inactive

Registration file - downloaded

REGISTRATION COMPLETE - MODEM IS ACTIVE

2.3. Synchronization process report level example

If you set report level 8 (synchronization process) by the console command replevel 8, you can check the downstream and upstream lock process, especially the ranging responses from the CMTS and Sync problems. See the example below:

Trying to synchronize ...

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:6.00), Time: 2264. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:6.00), Time: 0. Freq: 0

SYNCHRONIZED - 202500000 Hz , ucd 1

Trying to register through CMTS...

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:6.00), Time: 0. Freq: 0

DHCP - parameters acquired

Time of day - retrieved

Registration file - downloaded

REGISTRATION COMPLETE - MODEM IS ACTIVE

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:6.00), Time: 0. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:6.00), Time: 0. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:6.00), Time: 0. Freq: 0

SYNC: T4_TIMEOUT.

Synchronization LOST <202500000 Hz - ucd 1, msg 10>

Trying to synchronize - searching...

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: 2263. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: 0. Freq: 0

SYNCHRONIZED - 202500000 Hz , ucd 1

Trying to register through CMTS...

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: 0. Freq: 0

DHCP - parameters acquired

Registration file - downloaded

REGISTRATION COMPLETE - MODEM IS ACTIVE

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: 0. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: -3. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: 2. Freq: 0

SYNC: RNG-RSP: d-Gain: 0.00 (New Gain:5.00), Time: 0. Freq: 0