AllDSP Daemon Interface User Manual

Introduction

After installing the AllDSP AllControl software, any connected hardware can be accessed by a local loopback TCP connection to the AllControl daemon. The AllControl daemon is a background process that always runs while the AllControl software is running. It starts automatically when you start the AllControl software, and ends automatically when you close the AllControl software. The daemon takes care of all background processes that are needed to communicate with hardware via Ethernet networks and / or USB, as well as firmware upgrades.

In this manual you will find the necessary steps to make a connection to the daemon, find out which units are connected, and monitor and control the units.

Setup

Install the AllControl software normally. The daemon software is part of a normal install and no additional installation is needed.

If you want to use the daemon without seeing the graphical part of the software, do the following steps:

- Find “main.cfg” in the main program directory, copy it to the desktop and open it with a unix-compatible text editor (such as TextEdit on MAC, or WordPad on Windows). On Windows, it is usually located in C:/Program Files/AllDSP/AllControl. On MAC OSX, right-click the application and select “Show Package Contents”, then click Contents – Resources.
- Make a backup of this config file before editing it.
- Add a line below [ROOT]: daemon=True
- Save the file, copy it back where it was (you may need administrator privileges, and you may need to enter your password) and start the software normally.

To use it with graphical interface again, you need to remove the line or comment it out by adding “;” in front of it.

ATTENTION: To close the software while running it in daemon mode, you need to connect to it via TCP as described below and enter the command “quit”. On MAC OSX, you can also right-click the icon in the dock and choose “Quit”.

AllDSP Daemon Interface User Manual

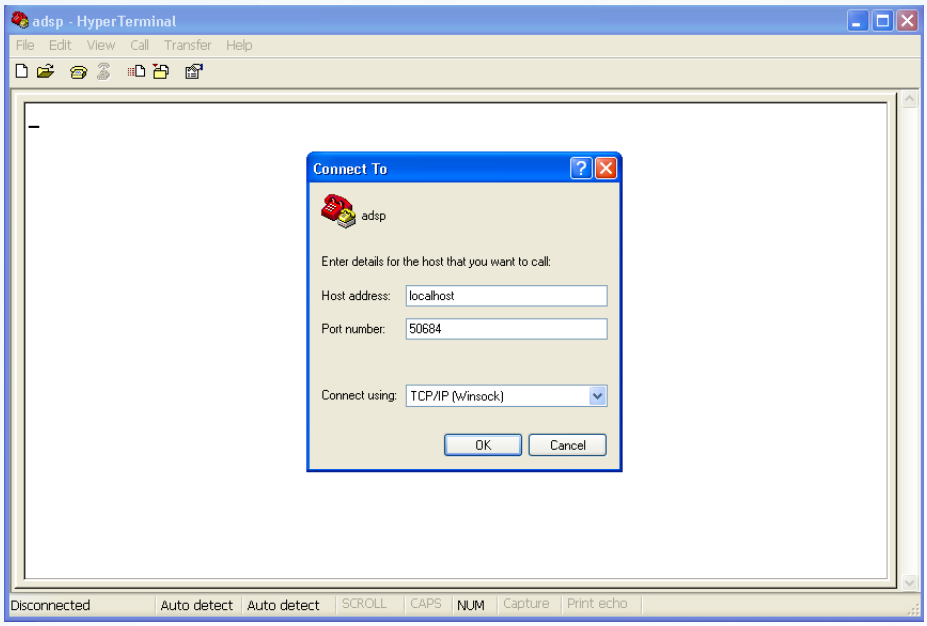
Start a connection and find connected hardware

After starting the software, you can connect to the daemon via a local loopback TCP connection (usually “localhost” or 127.0.0.0), port number 50684. Upon established connection, you need to send an initial command “telnet” to activate the connection. Failing to send “telnet” will result in unreadable responses and other errors. Each command must be followed by a newline (hit Enter) and each response is terminated by a newline.

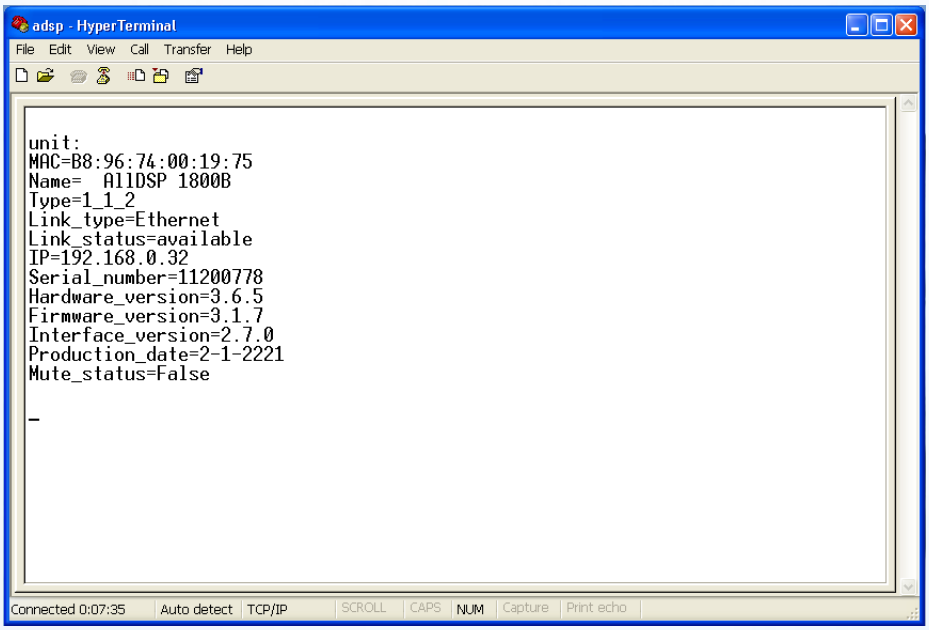
To demonstrate the daemon, we will show the features by connecting with a terminal application.

On Windows XP

Open Hyperterminal (Start – Programs – Accessories – Communications) and choose any name in the pop-up. In the following dialog, choose “localhost” as host address, and “50684” as port number. Connect using TCP/IP.



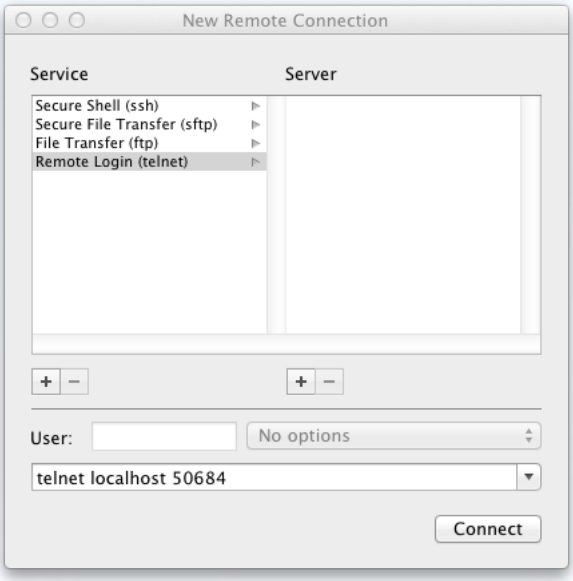
By default, you will not see what you type; it is transmitted to the daemon immediately. To see what you type, first type “echo” and hit Enter.
To start the communication protocol, type: “telnet” and hit Enter. You will see the cursor move one line down. Now type: “list” and hit Enter. The daemon will respond by sending a list of connected hardware:



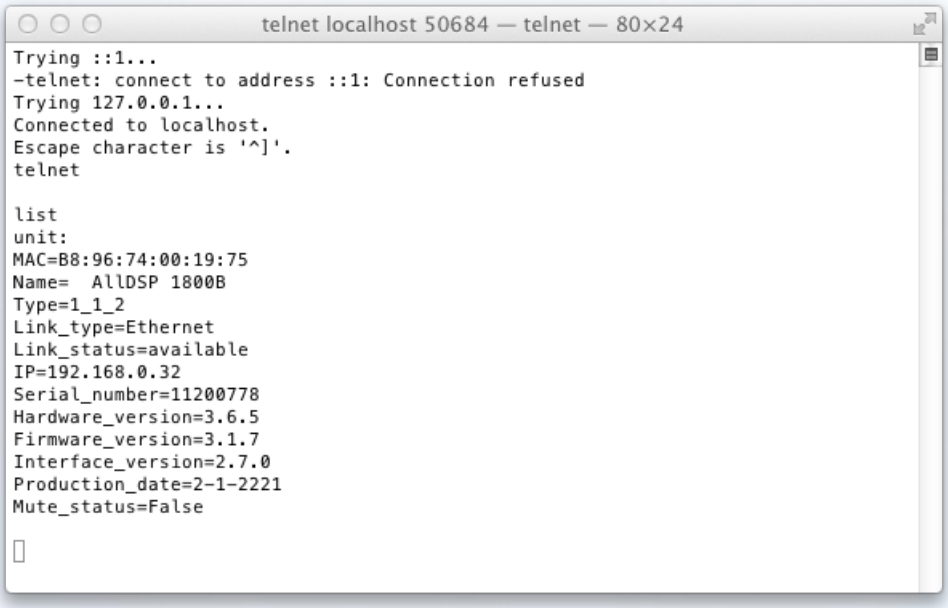
AllDSP Daemon Interface User Manual

On MAC OSX

Start Terminal (Applications – Utilities – Terminal.app) and click Shell – New Remote Connection. Choose Remote Login (telnet) and type “telnet localhost 50684” in the field below.

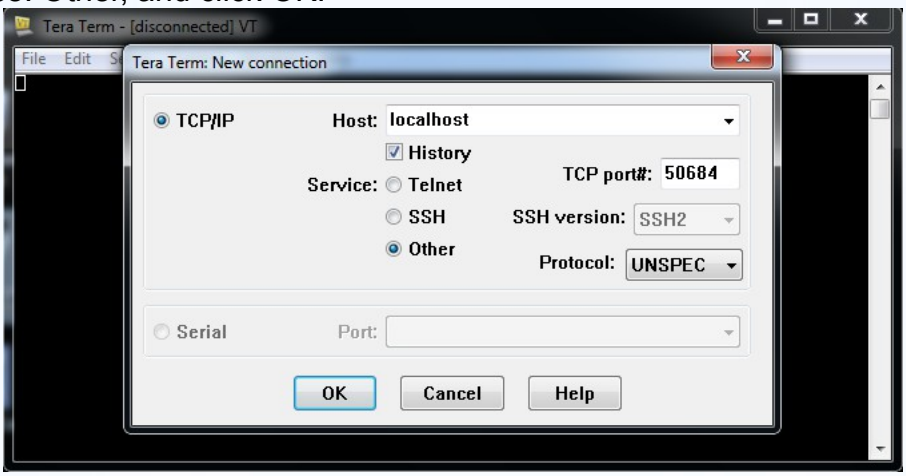


A terminal window will open. Type “telnet” and hit Enter; then type “list” and hit Enter.

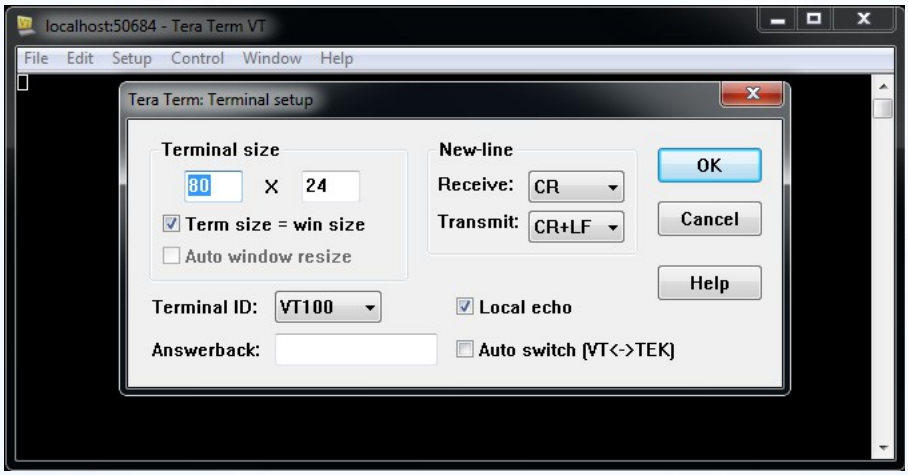


On Windows 7

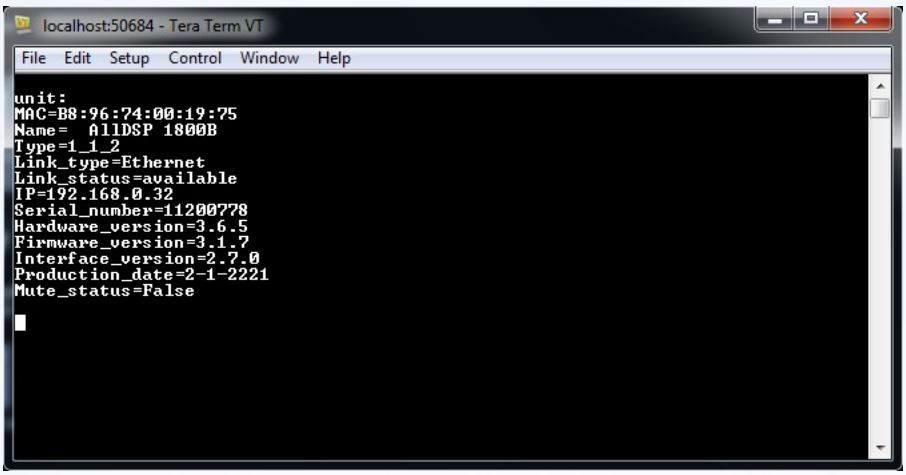
On Windows 7, Microsoft chose to not include Hyperterminal, so you need a 3rd party application. We used TeraTerm for testing. Download it from
http://sourceforge.jp/projects/ttssh2/downloads/58915/teraterm-4.78.exe/
and install with the default options. After opening it, select as Host: localhost, TCP port#: 50684, Service: Other, and click OK.



By default, you will not see what you type; it is transmitted to the daemon immediately. To see what you type, click Setup – Terminal and enable “local echo”. Also select “CR+LF” in the New-line / Transmit field so that the entered text is not overwritten by the response from the unit.



Now type “telnet” and hit Enter; then type “list” and hit Enter.



Quitting the connection and the daemon

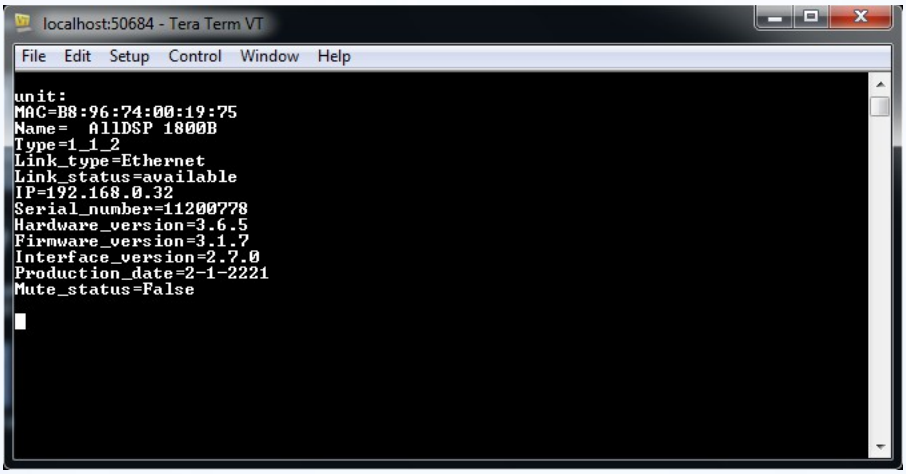
To quit the connection, simply close the terminal application. To close the daemon software, send the command “quit”. Please note that it may take up to several seconds for the application to exit.

Controlling the hardware

After establishing connection, the first step is to identify which units are available to connect to. For this, use the “list” command.

list

Type: “list” and hit Enter.



In this example, one unit is connected with name “AllDSP 1800B”. Each found unit is preceded by a line saying “unit:”. Each field separates the denominator and the value by “=” and ends with a newline.

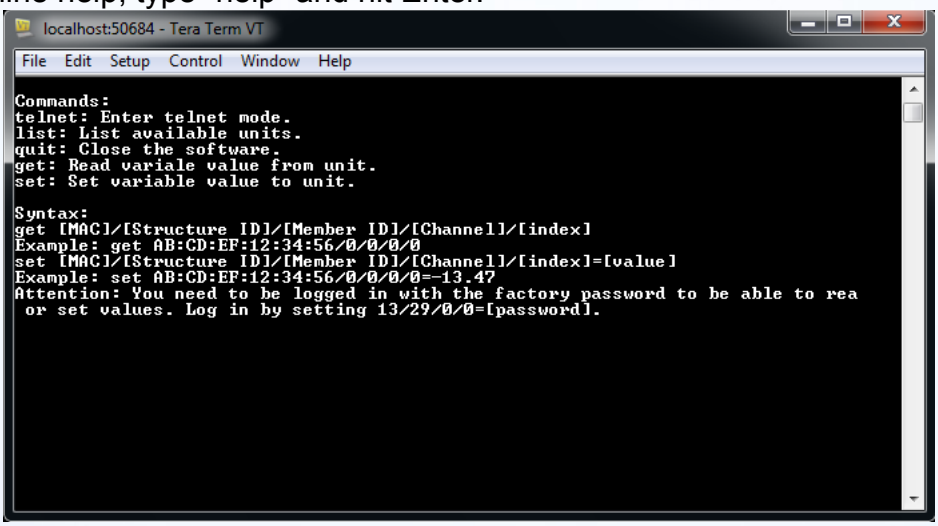
The available fields are:

- MAC address: B8:96:74:00:19:75
- Name: AllDSP 1800B
- Type: This is the unit type identifier. In this example, 1:1:2 is the identifier for the default AllDSP 1800B DSP module.
- Link_type: Ethernet or USB
- Link_status: This indicates the link state. Normally, if a unit is connected, it should say “available”. If a unit is disconnected while the software is running, it will say “disconnected”. During startup of the ethernet inteface of the unit (if applicable), it will say “bootloader”.
- IP: The IP address of the unit (if applicable)
- Serial_number: The serial number of the DSP module (which is not necessarily the same as the serial number of the complete unit, especially when DSP modules are built into other equipment).
- Hardware_version: The hardware type and revision of the DSP module
- Firmware_version: The firmware version of the DSP module
- Interface_version: The firmware version of the Ethernet or USB interface on the DSP module
- Production_date: Production date of DSP module (d-m-y)
- Mute_status: True if all inputs are muted, False otherwise.

Please note that units will not be removed from this list until the daemon is restarted.

help

For short online help, type “help” and hit Enter.



AllDSP Daemon Interface User Manual

Setting values

To set a value, type “set ” followed by the MAC address of the target unit, the structure ID, member ID, channel and index of the value you want to set (more on this later), “=” and the value, and hit Enter. After a set command, the daemon will try to set the desired value in the unit.You need to verify this with a get command to make sure the value is accepted. It is possible to set illegal values (e.g. Outside the valid range, or trying to unmute a unit that is in protection state) and this needs to be verified.

Getting values

To get a value, type “get ” followed by the MAC address of the target unit, the structure ID, member ID, channel and index of the value you want to set (more on this later), and hit Enter. The daemon will respond with the desired value.

Available parameters

Depending on the hardware, a different set of parameters will be available. Generally, parameters are always identified by 4 8-bit numbers:

- Structure ID: This defines the general category of the parameter, e.g. PEQ.
- Member ID: This identifies the actual parameter within the category. e.g. Frequency.
- Channel: DSP channel in the unit. Note that for inputs, channels start at 0. For outputs, channels start at 128. So channel 130 would be output 3.
- Index: In some cases, there are several instances of the same parameter in one channel (e.g. 10 PEQ bands). The index identifies which one, starting at 0.

Please see the list of structure IDs and member IDs at the end of this manual.

Log in first

Before any setting can be made or any value can be retrieved, you need to log into the unit with the factory password. By default, this password is Fact_ory. To log in, we need to set the “check password” value to the factory password, then we can send a “get” command to see if the current user equals 1. Type:

get B8:96:74:00:19:75/13/38/0/0

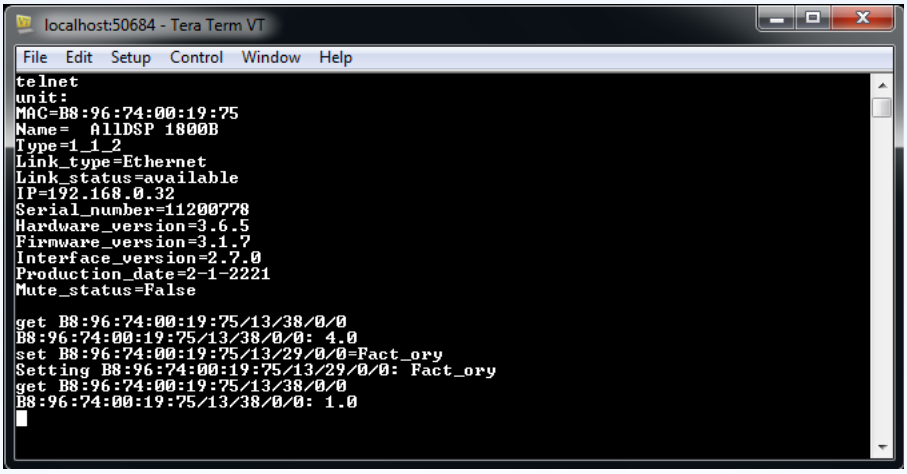
to check the current user. Then, type:

set B8:96:74:00:19:75/13/29/0/0=Fact_ory

to log in, and again use

get B8:96:74:00:19:75/13/38/0/0

to see if login was successfull:



The current user must equal 1. If this step fails, no control is possible. You may repeat this step as many times as needed; it is normal that between setting the password and getting the correct current user you may have to wait several seconds.

Example

As an example, we will now set the gain of output 1 to -3.75dB. Type:

get B8:96:74:00:19:75/0/0/128/0

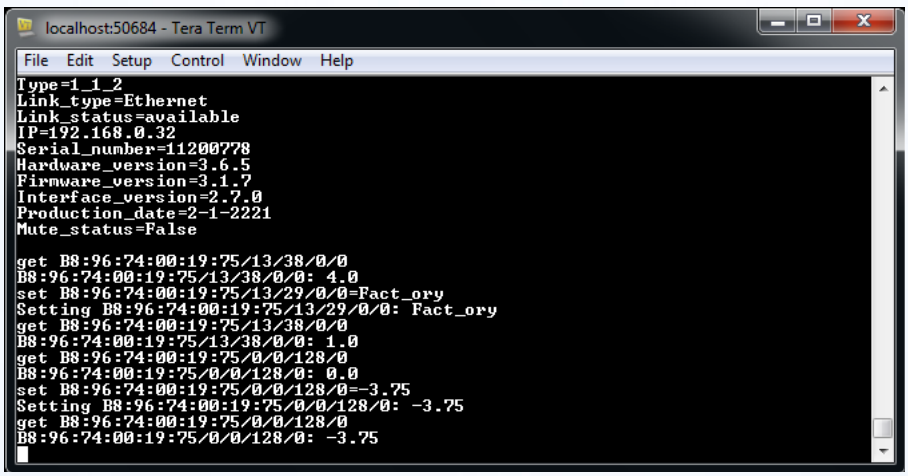
to see the current gain; then

set B8:96:74:00:19:75/0/0/128/0=-3.75

to set it, and again

get B8:96:74:00:19:75/0/0/128/0

to verify it.



All variables can be set and verified this way. Some examples:

set B8:96:74:00:19:75/7/14/0/0=1: Set mute of input 1 on

set B8:96:74:00:19:75/5/1/5/4=1225: Set frequency of the 5th PEQ of input 6 to 1225Hz

set B8:96:74:00:19:75/13/16/0/0=My Speaker: Set name of the unit to “My Speaker”

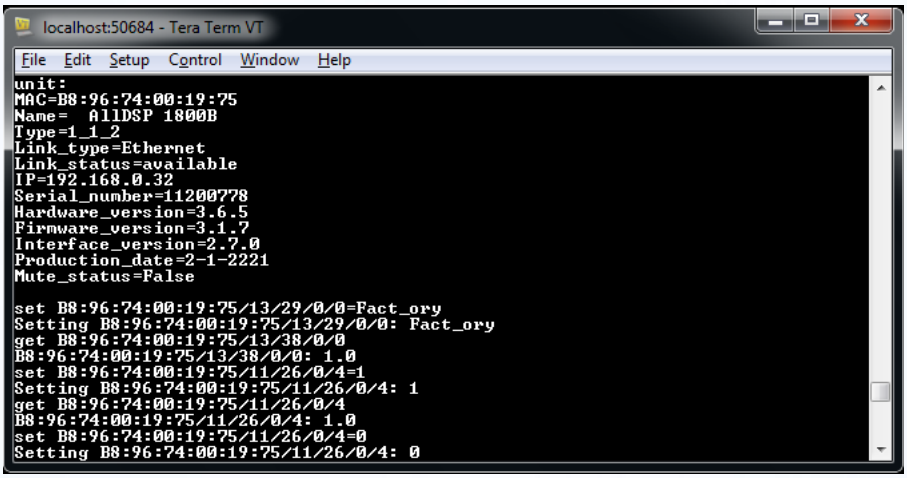
set B8:96:74:00:19:75/9/16/0/0=My Preset: Set name of the current preset to “My Preset”

Sending commands

To execute actions in the hardware, such as saving a preset, go to standby etc, there is a special category of variables: The command variable. The command variable always has structure ID 11, member ID 26, channel 0, and the index identifies the command. To execute a command, set the command variable to 1, then verify it, wait one second, and set it to 0. See the list at the end of this document for available commands.

Example: Set unit to standby would be command nr. 4, so the instruction is:

set B8:96:74:00:19:75/11/26/0/4=1

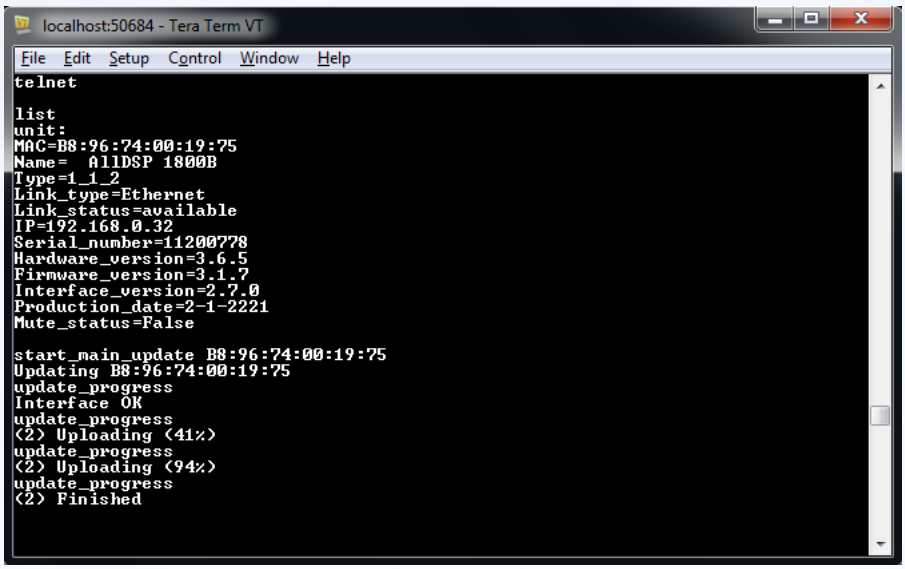


Updating Firmware

To update the firmware of a unit, execute the instruction: “start_main_update [MAC]”, for example: “start_main_update B8:96:74:00:19:75”. The progress can be monitored by sending “update_progress”. The unit's firmware will be updated, regardless of the current firmware. It is up to you to verify if the firmware needs updating or not. For firmware update, it is not needed to log in to the unit.

IMPORTANT NOTE: There will be no confirmation step. The firmware will be updated immediately. All settings will be lost, and all presets will be lost.

AllDSP Daemon Interface User Manual



Available Parameters

All available parameters are listed here. Not implemented IDs should not be used, they are reserved for future use and / or internal use.

Structure IDs

STRUCT_ID_VU = -1

STRUCT_ID_GR = -2

STRUCT_ID_RAW_VU = -3

STRUCT_ID_GAIN = 0

STRUCT_ID_MIXER = 1

STRUCT_ID_DELAY = 2

STRUCT_ID_LPF = 3

STRUCT_ID_HPF = 4

STRUCT_ID_PEQ = 5

STRUCT_ID_LIMITER = 6

STRUCT_ID_MUTE = 7

STRUCT_ID_INVERT = 8

STRUCT_ID_PRESET_GLOBAL = 9

STRUCT_ID_LINK = 10

STRUCT_ID_COMMAND = 11

STRUCT_ID_COMPRESSOR = 12

STRUCT_ID_GLOBAL = 13

STRUCT_ID_CHANNEL = 14

STRUCT_ID_FIR = 15

Member IDs

MEMBER_ID_GAIN = 0
MEMBER_ID_FREQ = 1
MEMBER_ID_Q = 2
MEMBER_ID_TYPE = 3
MEMBER_ID_THRESHOLD = 4
MEMBER_ID_ATTACK = 5
MEMBER_ID_RELEASE = 6
MEMBER_ID_HOLD = 7
MEMBER_ID_DELAY = 8
MEMBER_ID_STATUS = 9
MEMBER_ID_VU_IN = 10
MEMBER_ID_VU_OUT = 11
MEMBER_ID_GR_IN = 12
MEMBER_ID_GR_OUT = 13
MEMBER_ID_MUTE = 14
MEMBER_ID_INVERT = 15
MEMBER_ID_SHORT_NAME = 16
MEMBER_ID_PRESET_NUMBER = 18
MEMBER_ID_ON = 24
MEMBER_ID_LINK = 25
MEMBER_ID_COMMAND = 26
MEMBER_ID_RATIO = 27
MEMBER_ID_CHECK_PASSWORD = 29
MEMBER_ID_ACCESS_RIGHTS = 30
MEMBER_ID_SW_VERSION=33
MEMBER_ID_STANDBY_DELAY=34
MEMBER_ID_HARDWARE_STATUS_FLAGS=35
MEMBER_ID_CONFIGURATION = 36
MEMBER_ID_AMP_READINGS=37
MEMBER_ID_CURRENT_USER=38
MEMBER_ID_AMP_READINGS_2=39
MEMBER_ID_IP=87
MEMBER_ID_SUBNET_MASK=40
MEMBER_ID_STARTUP_PRESET=43
MEMBER_ID_INPUT_SELECT=44
MEMBER_ID_AES_FS=45
MEMBER_ID_CONNECTOR_NAME=46
MEMBER_ID_RAW_VU_IN=47
MEMBER_ID_MODEL_NUMBER=48
MEMBER_ID_MODEL_FIRMWARE=49
MEMBER_ID_MODEL_NAME=50
MEMBER_ID_FIR=128

AllDSP Daemon Interface User Manual

Commands

cmdNone = 0

cmdLoadPreset = 1

cmdSavePreset = 2

cmdGotoStandby = 4

cmdExitStandby = 5

cmdLocate=6

cmdActivateNewNetworkSettings=14

cmdMirrorPreset=16

cmdChangeUnitType=17