## Introduction

This document describes the serial and network control commands for the Datasat LS10 Audio Processor. The LS10 supports a command set for remote control and automation. These commands can be transmitted via either the Ethernet or the serial interface.

This document is intended to be used by any system integrator who needs to control the LS10 remotely. Example of an application where these commands could be used may be an automation unit, a remote control unit, or a remote software interface.

It assumes that the reader is familiar with standard serial and network TCP/IP concepts.

## Serial Control

The remote serial control device must be connected to the RS232 ”Control” connector on the back of the LS10. To configure the serial port on the LS10, go to the menu Automation ->Serial. Select the desired baud rate, and data bits should be 8.

For test purposes you may connect to the LS10 using PuTTY or any similar serial communications program. Connection from a standard PC to the LS10 is a straight-through cable.

Once the serial connection is made and setup the user can execute any of the commands listed within this document.

## Ethernet connection to LS10

The RJ45 connector labeled Ethernet on the back of the LS10 can be connected to a network switch or router. Once the network parameters are properly set the IP address for the LS10 can be found in the Network screen in the IP Address box.

The LS10 could also be connected directly to another network device using crossover cable, or a straight cable if the device supports auto-MDIX.

The client initiates the communication session with the LS10 IP address at TCP port 14500. Once connected the client may send commands as described in this document to set or read the LS10 configuration. The configuration changes happen as soon as they are received. For example, you should see the volume change immediately after receiving a command to set the volume.

For test purposes you may use PuTTY or any similar communications program to make a TCP/IP connection to the LS10.

### Using PuTTY

Open PuTTY in the configuration Session and set the following:

- Host Name: (enter the LS10 IP address)
- Port: 14500
- Configuration type: Raw.
- Select the Open button.

Once the network connection is made the user may type in commands listed within this document and read the response.

## Password Protection

The LS10 may be protected from unauthorized access by setting a password under the **System > Access Control** screen. There are two levels of password protection in the LS10, labeled as **NetCmd Password** and **Setup Password** in the system access screen on the LS10.

### NetCmd Password

The **NetCmd Password** is used to prevent unauthorized access to the LS10 through a network connection. The **NetCmd Password** does not prevent access through the serial command.

### Setup Password

The Setup Password prevents unauthorized access to the LS10 VNC GUI. This does not affect the operator level commands that are used in this document.

### Authentication Command

The AUTH command must be sent to the LS10 before sending a password protected command. If this is not done, then the command results in no action and the LS10 returns the string "SECERR". Sending the correct password enables all network commands for the password level for as long as the network connection is maintained.

Not all network commands require a password. Inquiry commands such as SYSTEM and IDENTIFY will operate without a password.

## Command Format

The general command format for all configuration commands is listed below:

**@COMMAND *[arg1] [arg2]*<CR>**

Each **COMMAND** and its arguments (***arg1***, ***arg2***) are defined in this document. Whether or not ***arg1*** and/or ***arg2*** are used depends on the command. Square brackets **[]** around the argument in this document indicate that the argument is optional .

The command is terminated by a **<CR>**. The response returns ASCII text and is also terminated by **<CR>** character at the end. The **<CR>** represents an ASCII character with the value **0x0D**. How to enter this character in the command is entirely dependant on the remote program or interface used. On a terminal interface, it is added by pressing ENTER on the keyboard. In some GUI interfaces it is represented by "**\r**", and for XML it may be **&#10**.

> ***Important:*** If you are having problems with executing a simple command to the LS10, check that the command string starts with '@' and properly sends the carriage return at the end.

Some commands are characterized as "Read" and are used only to read status or information from the LS10. Commands that are "Read/Write" can be used to set the specific configuration item, or just read it.

For "Read/Write" commands the last argument is the value to write to the configuration. Omit the final argument in order to read the configuration item without changing it.

## Input Selection Commands

### 1. Input Selection

| **Command:** | @**INPUT**<space>***[input]***<CR> | **Operation** |
|---|---|---|
| **Response:** | **INPUT**<space>***input***<CR> | **Read/Write** |

This is used to select a new input, or view the current input.

**Parameters**

***input*** Identifies the desired or selected input name. For the set command to be successful, the name must be one of the input names:

| | | | |
|---|---|---|---|
| Stereo 1 | Stereo 2 | USB | TosLink 1 |
| TosLink 2 | SPDIF 1 | SPDIF 2 | HDMI 1 |
| HDMI 2 | HDMI 3 | HDMI 4 | HDMI 5 |
| HDMI 6 | HDMI 7 | HDMI 8 | eARC |

**Note**: Names with a space must use exactly one space. Upper/lower cases in the name must be followed.

**Example**

Set the Input to Stereo 1
***Send:*** @INPUT Stereo 1<cr>
**Receive*:*** INPUT Stereo 1<cr>

### 2. EQ Selection

| **Command:** | @**EQSET**<space>***[eq]***<CR> | **Operation** |
|---|---|---|
| **Response:** | **EQSET** <space>***eq***<CR> | **Read/Write** |

This is used to select a new EQ set, or view the current EQ set.

**Parameters**

***eq*** **EQ1 or EQ2**.

**Example**

Select EQ2
***Send:*** @EQSET EQ2<cr>
**Receive*:*** EQSET EQ2<cr>

## Control Commands

### 1. Standby Power

| **Command:** | @**POWER**<space>***[mode]***<CR> | **Operation** |
|---|---|---|
| **Response:** | **POWER**<space>***mode***<CR> | **Read/Write** |

This is used to control the power mode.

**Note**: On a network TCP/IP connection, the network connection is closed / reset during the power on process. A reconnection should be performed after power on.

**Parameters**

| Mode | Selection |
|---|---|
| **0** | Power off, or sleep mode |
| **1** | Operating mode. Requires 15 seconds for unit to be operational |

**Example**

Set unit to operating mode.
***Send:*** @POWER 1<cr>
**Receive*:*** POWER 1<cr>

## Automation

### 1. Execute an LS10 Macro

| **Command:** | @**RUNMACRO**<space>***[macro]***<CR> | **Operation** |
|---|---|---|
| **Response:** | ***OK*** or ***ERR no macro***<CR> | **Write** |

This is used to execute a user defined automation macro in the LS10. User defined macros must be created in the LS10 setup menus, or copied through the configuration file. See the command MACRONAMES to extract a list of available macros in the current LS10 configuration.

**Parameters**

***[macro ]*** This is the macro name to execute. The name must match exactly the macro name on the LS10.
**Note**: Spaces may be included within the macro name.

***OK*** Response after macro is found and executed.

***ERR* no *macro*** Response if macro does not exist on the LS10.

**Example**

Run Macro named Auto1
***Send:*** @RUNMACRO Auto1<cr>
**Receive*:*** OK<cr>

## Volume and Mute Commands

### 1. Master Volume Level

| **Command:** @**VOLUME**<space>***[+][-][Value]***<CR> | **Operation** |
|---|---|
| **Response:** **VOLUME**<space>***Level***<CR> | **Read/Write** |

This is used to set or read the volume level.

**Parameters**

| | |
|---|---|
| ***[+]*** | Add [Value] to current volume. |
| ***[-]*** | Subtract [Value] from current volume. |
| ***[Value]*** | Value to set the volume in negative tenths dB or, if +/- is used, it is the value to increment or subtract from the current volume. The value should be in increments of 5, or 0.5dB steps.<br>Omit this argument to only read the volume. |

**Returns**

| | |
|---|---|
| ***[Level]*** | Current volume level represented using the range of 0 (-0dB) to 700 (-70.0 dB)**.** |

**Example**

Set the volume to -35dB

***Send*** @VOLUME 350<cr>

**Receive*:*** VOLUME 350<cr>

Increase volume by 0.5dB

***Send:*** @VOLUME +5<cr>

***Receive:*** VOLUME 345<cr>

### 2. Master Volume Mute

| **Command:** @**MUTED**<space>***[value]***<CR> | **Operation** |
|---|---|
| **Response:** **MUTED**<space>***value***<CR> | **Read/Write** |

Mute or Unmute the LS10 output.

**Parameters**

| value | Selection |
|---|---|
| 0 | Unmute |
| 1 | Mute |
| ± | Toggle the mute state |

**Example**

Mute

***Send:*** @MUTED 1<cr>

**Receive*:*** MUTED 1<cr>

## Audio Setup

### 1. Channel Noise Sequencer

| **Command:** @**NOISESEQ**<space>***[value]***<CR> | **Operation** |
|---|---|
| **Response:** **NOISESEQ *value***<CR> | **Read/Write** |

Enable an internally generated pink noise that is sequenced through LS10 channels. The exact channel sequence is dependant on the speaker configuration. This sequence for each speaker configuration is shown in the table below. The LFE and additional sub woofers are not included in the noise sequence.

**LS10 Noise Sequencer Channels**

**Parameters**

| value | Selection |
|---|---|
| **0** | Turn off pink noise. |
| **1** | Automatically sequence pink noise through each channel. |
| **2** | Manual mode: Enable pink noise with manual stepping through channels. |
| **3** | Channel Step. Advance to the next channel in the sequence and return to manual mode (value will be 2 when read from the command). |

**Example**

Start automatic pink noise sequence.
***Send:*** @NOISESEQ 1<cr>
**Receive*:*** NOISESEQ 1<cr>

Turn off pink noise.
***Send:*** @NOISESEQ 0<cr>
**Receive*:*** NOISESEQ 0<cr>

## Audio Decoder Configuration

### 1. Post Processing Mode

Select post processing function between None, DTS NeoX, Dolby Pro Logic II or IIx, Dolby Pro Logic IIz, or Auro-3D.

The option for Pro Logic IIz is only valid for speaker configurations that include front left/right high speakers. If Pro Logic IIz is selected for a speaker configuration without these speakers, the system defaults to operating as if None were selected for the processing mode.

| **Command:** @**DECODERPOST *[mode]***<cr> | **Operation** |
|---|---|
| **Response:** **DECODERPOST *[mode]***<CR> | **Read/Write** |

### Parameters

| [mode] | Selection | Valid Speaker Configurations(1) |
|---|---|---|
| **0** | Off/None | Any |
| **3** | DTS Neo:X | All, except 2.0 or 2.1 |
| **4** | Dolby PLII, or<br>Dolby PLIIx | Not Available for 2.0 or 2.1<br>PLIIx for all configuration with LB/RB<br>PLII for all other configurations |
| **5** | Dolby PLIIz | Must include High Left / High Right |
| **6** | Auro-3D (2) | Auro 9.1, Auro 10.1, Auro 11.1 or Auro 13.1,<br>2.0, 2.1, 5.1, 7.1. |
| **7** | Dolby Surround | All Atmos speaker configurations (available when Atmos decoding option is present) |
| **8** | DTS Neural:X | All DTS speaker configurations (available when DTS:X decoding option is present). Not available when Auro or Atmos is selected. |
| **9** | Stereo Surround | Any. 2-channel content only will copy L to all Left floor-level speakers and R to all Right floor-level speakers. An LR mix will go to Center. Non 2.0 content will pass through without being changed. |
| **10** | Auto 1 | All DTS and Atmos speaker configurations. Content Upmix:<br>DTS content will upmix with Neural:X<br>Dolby content will upmix with Dolby Surround<br>LPCM will upmix with Neural:X |
| **11** | Auto 2 | All DTS and Atmos speaker configurations. Content Upmix:<br>DTS content will upmix with Neural:X<br>Dolby content will upmix with Dolby Surround<br>LPCM will upmix with Dolby Surround |

**Notes:**
(1) The mode will not change when the selected mode is not valid for the current speaker configuration.
(2) Auro-3D is available only on units with the Auro-3D upgrade option installed.

### Sub Configurations

**DTS Neo:X** See the command **NEOXMODE** for details on configuration item available only with DTS Neo:X.

**Dolby PLIIx** See the command **DPL2MODE** for details on Pro Logic IIx configuration items.

**Dolby PLIIz** See the command **DPL2HEGAIN** for details on and additional Pro Logic IIz configuration item.

### Example

Enable Auro-3D.
***Send:*** @DECODERPOST 6<cr>
**Receive*:*** DECODERPOST 6<cr>

## 2. Neo:X Mode

Select Neo:X mode to Cinema, Music or Game. The Neo:X mode selection is in affect only when the Post Processing Mode (**DECODERPOST**) is set for Neo:X.

| **Command:** @**NEOXMODE** ***[value]***<cr> | **Operation** |
|---|---|
| **Response:** **NEOXMODE** ***[value]***<CR> | **Read/Write** |

**Parameters**

| [value] | Selection |
|---|---|
| **0** | Cinema |
| **1** | Music |
| **2** | Game |

## 3. Generate Subwoofer with Neo:X

Generate a subwoofer (LFE) channel when using Neo:X with a 2-channel input source.

| **Command:** @**NEOXLFE** ***[value]***<cr> | **Operation** |
|---|---|
| **Response:** **NEOXLFE** ***[value]***<CR> | **Read/Write** |

**Parameters**

| [value] | Selection |
|---|---|
| **0** | Disable |
| **1** | Enable |

## 4. DTS:X Dialog Boost

Sets DTS:X Dialog Gain. This raises or lowers the level of the center channel (Dialog) only.

| **Command:** @**DTSXDIALOG** <space> ***[n]***<cr> | **Operation** |
|---|---|
| **Response:** **DTSXDIALOG** ***[n]***<CR> | **Read/Write** |

N = gain in dB (0 to 6)

**Example:**

Set DTS-X Dialog to 5
***Send:*** @DTSXDIALOG 5
***Receive***: DTSXDIALOG 5

DTS:X Dialog Gain may also be raised or lowered as follows:

| **Command:** @**DTSXDIALOG** <space> ***[+][-]***<cr> | **Operation** |
|---|---|
| **Response:** **DTSXDIALOG** ***[+][-]***<CR> | **Read/Write** |

Parameters:

| *[+] [-]* | ***Selection*** |
|---|---|
| + | Increase current level by 1 |
| - | Decrease current level by 1 |

**Example:**

Raise DTS-X dialog by 1
***Send:*** @DTSXDIALOG +<cr>
***Receive:*** DTSXDIALOG 1

## 5. Pro Logic II/IIx Mode

Selects Pro Logic II or Pro Logic IIx mode to Pro Logic, Music, Game, or Dolby Digital EX. The Pro Logic II/IIx mode selection is in affect only when the Post Processing Mode (**DECODERPOST**) is set for Pro Logic II or Pro Logic IIx.

| **Command:** @**DPL2MODE *[value]***<cr> | **Operation** |
|---|---|
| **Response:** **DPL2MODE *[value]***<CR> | **Read/Write** |

**Parameters**

| [value] | Selection |
|---|---|
| **0** | Pro Logic (1) |
| **2** | Music |
| **3** | Movie |
| **5** | Dolby Digital Ex (2) |

**Notes**:
(1) Pro Logic can only be selected with Pro Logic II (speaker configuration without LB/RB).
(2) Pro Logic EX can only be selected with Pro Logic IIx (speaker configuration with LB/RB).

Three additional controls are available only for use with Pro Logic IIx Music mode (**DPL2MODE 1**). Those are Dimension, Center Width, and Panorama. See commands **DPL2DIM, DPL2CW,** and **DPL2PANO** for additional details.

## 6. Dimension for Pro Logic IIx Music Mode

The Dimension control is used with Pro Logic IIx music mode to adjust the sound field.

| **Command:** @**DPL2DIM [*DIM*]**<cr> | **Operation** |
|---|---|
| **Response:** **DPL2DIM *DIM***<CR> | **Read/Write** |

**Parameters:**

| DIM | Selection | |
|---|---|---|
| **7** | + 7 | Sound field towards |
| **6** | + 6 | the rear |
| **5** | + 5 | |
| **4** | + 4 | ⇑ |
| **3** | + 3 | |
| **2** | + 2 | |
| **1** | + 1 | |
| **0** | 0 | |
| **-1** | - 1 | |
| **-2** | - 2 | |
| **-3** | - 3 | |
| **-4** | - 4 | ⇓ |
| **-5** | - 5 | |
| **-6** | - 6 | Sound field towards |
| **-7** | - 7 | the Front |

## 7. Center Width for Pro Logic IIx Music Mode

The Center Width control works with Pro Logic IIx music.

| **Command:** @**DPL2CW [*cw]*** <cr> | |
|---|---|
| **Response:** **DPL2CW *cw*** <CR> | **Read/Write** |

**Parameters:**

| cw | Selection |
|---|---|
| **0** | 0 (Off, no balance applied) |
| **1** | 1 |
| **2** | 2 |
| **3** | 3 (Neutral) |
| **4** | 4 |
| **5** | 5 |
| **6** | 6 |
| **7** | 7 Phantom Center |

## 8. Panorama for Pro Logic IIx Music Mode

Enable or Disable the Panorama setting used with Pro Logic IIx music mode.

| **Command:** @**DPL2PANO *[pano]*** <cr> | |
|---|---|
| **Response:** **DPL2PANO *pano*** <CR> | **Read/Write** |

**Parameters:**

| pano | Selection |
|---|---|
| **0** | 0 Panorama off |
| **1** | 1 Panorama on |

## 9. Height Gain for Pro Logic IIz

This command sets or reads the height gain selection used with Pro Logic IIz.

| **Command:** @**DPL2HEGAIN *[value]*** <cr> | |
|---|---|
| **Response:** **DPL2HEGAIN *value*** <CR> | **Read/Write** |

**Parameters:**

| [value] | Selection |
|---|---|
| **0** | Low |
| **1** | Mid |
| **2** | High |

## 10. Auro-3D Strength

This command sets upmixing strength for Auro-3D.

| Command: @AUROSTRENGTH [value]<cr> | |
|---|---|
| Response: AUROSTRENGTH value<CR> | Read/Write |

**Parameters:**

| [value] | Selection |
|---|---|
| 1-16 | 16 is the highest strength level |

## 11. Auro-3D Preset

This command sets or reads the Auro-3D Preset. Selections are Small, Medium, Large, or Speech.

| | |
|---|---|
| Command: @AUROPRESET [value]<cr> | |
| Response: AUROPRESET value<CR> | Read/Write |

**Parameters:**

| [value] | Selection |
|---|---|
| 0 | Small |
| 1 | Medium |
| 2 | Large |
| 3 | Speech |

## 12. Auro-3D Listening Mode

This command sets or reads the Auro-3D Listening Mode. Selections are Stereo, Surround, and Auro-3D.

| | |
|---|---|
| Command: @AUROLM [value]<cr> | |
| Response: AUROLM value<CR> | Read/Write |

**Parameters:**

| [value] | Selection |
|---|---|
| 0 | Native |
| 1 | Stereo |
| 2 | Surround |
| 3 | Auro-3D (Valid only with one of the Auro speaker Configurations |

## 13. Dolby Surround Upmixer Center Spread

This command sets or reads the Center-Spread setting for the Dolby Surround Upmixer

| | |
|---|---|
| **Command: @DSUCENTERSPREAD** <space> **[value]**<cr> | |
| **Response: DSUCENTERSPREAD value<CR>** | **Read/Write** |

**Parameters:**

| **[value]** | ***Selection*** |
|---|---|
| **0** | Center Spread disabled |
| **1** | Center Spread enabled |

## 14. Downsample higher sample rates to allow Dolby Surround Upmix

This command sets or reads the setting which permits downsampling of higher-rate audio streams to allow upmixing using DSU

| | |
|---|---|
| **Command:** **@DOWNSAMPLEFORDSU** <space> **[value]**<cr> | |
| **Response:** **DOWNSAMPLEFORDSU value<CR>** | **Read/Write** |

**Parameters:**

| **[value]** | ***Selection*** |
|---|---|
| **0** | Disabled |
| **1** | Enabled |

## 15. Dolby DRC Setting

| | |
|---|---|
| **Command:** **@TRUEHDDRC *[drc]***<cr> | |
| **Response:** **TRUEHDDRC *drc***<CR> | **Read/Write** |

**Parameters:**

| **drc** | **Selection** |
|---|---|
| **0** | DRC Off |
| **1** | On / TrueHD-Auto |
| **2** | DRC On |

## 16. Post Stereo Gain

Sets gain (attenuation) for non-LR speakers

| | |
|---|---|
| **Command:** **@POSTSTEREOGAIN** <space> ***[n]***<cr> | **Operation** |
| **Response:** **POSTSTEREOGAIN *[n]***<CR> | **Read/Write** |

N = gain (attenuation) in dB (-20 to 0)

# LFE Boost

## 1. DTS LFE Boost

Enable 10dB gain to the subwoofer outputs when playing DTS audio

| | |
|---|---|
| **Command:** **@DECODERDTSLFEBOOST *[dtslfe]***<cr> | |
| **Response:** **DECODERDTSLFEBOOST *[dtslfe]***<CR> | **Read/Write** |

**Parameters:**

| **dtslfe** | **Selection** |
|---|---|
| **0** | Do not apply 10dB gain for DTS |
| **1** | Apply 10dB gain for DTS |

## 2. PCM LFE Boost

Enable 10dB gain to the subwoofer outputs when playing PCM audio

| **Command:** @ **DECODERPCMLFEBOOST *[pcmlfe]***<cr> | |
|---|---|
| **Response:** **DECODERPCMLFEBOOST *pcmlfe***<CR> | **Read/Write** |

**Parameters:**

| pcmlfe | Selection |
|---|---|
| **0** | Do not apply 10dB gain for PCM |
| **1** | Apply 10dB gain for PCM |

## 3. Dolby LFE Boost

Enable 10dB gain to the subwoofer outputs when playing Dolby Digital decoded audio

| **Command:** @ **DECODERDDLFEBOOST *[ddlfe]***<cr> | |
|---|---|
| **Response:** **DECODERDDLFEBOOST *ddlfe***<CR> | **Read/Write** |

**Parameters:**

| ddlfe | Selection |
|---|---|
| **0** | Do not apply 10dB gain for Dolby Digital |
| **1** | Apply 10dB gain for Dolby Digital |

# Audio Decoder Stream Information

## 1. Decoder Stream

Returns a text description of the stream type currently playing

| **Command:** @**DECSTREAM**<cr> | |
|---|---|
| **Response:** ***[Desc]***<CR> | **Read/Write** |

**Parameters:**

***[Desc]*** Description of the current audio stream type being received by the decoder.

**Example**

***Send:*** @DECSTREAM<cr>

**Receive*:*** DTS 48k + NeoX <cr>

## 2. Decoder Channels

Returns a text description of the number of channels at the decoder output. This does not include additional channels from processing by Auro Decoder or Upmix, DTS NEO:X or Dolby PLIIx/PLIIy.

| **Command:** | @**DECCHANS**<cr> | |
|---|---|---|
| **Response:** | ***[n.s]***<CR> | **Read/Write** |

The string [n.s] appears only when the decoder is running. In that case the values ***n*** and ***s*** are defined as follows.

***[n]*** Number of main channels at the decoder output.
***[s]*** The value is 1 when there is a decoder LFE output. Otherwise it is 0.

**Example**

***Send:*** @DECCHANS <cr>
**Receive*:*** 7.1 <cr>

# Setup Information

## 1. List Generic Input Names

This command returns a comma delimited string with the generic Input names in the LS10.

| **Command:** | @**INPUTNAMES** <cr> | **Operation** |
|---|---|---|
| **Response*:*** | **INPUTNAMES Stereo 1,Stereo 2,USB,TosLink 1, TosLink 2,SPDIF 1,SPDIF 2,HDMI 1,HDMI 2, HDMI 3,HDMI 4,HDMI 5,HDMI 6,HDMI 7,HDMI 8, eARC**, <CR> | **Read** |

## 2. List Assigned Input Names

This command returns a comma delimited string with the user assigned Input names in the LS10.

The order of the returned name is the match the inputs returned from @INPUTNAMES. Unassigned names are blank.

| **Command:** | @**INPNAMES** <cr> | **Operation** |
|---|---|---|
| **Response*:*** | **INPNAMES *[n1], [n2], [n3], [n4], [n5], [n6], [n7], [n8], [n9], [n10], [n11], [n12], [n13], [n14], [n15],*** <CR> | **Read** |

### 3. List Macro Names

The LS10 may have several user-defined macros. This command returns a comma delimited string with all macro definitions in the LS10.

| | | |
|---|---|---|
| **Command:** | @**MACRONAMES** <cr> | **Operation** |
| **Response:** | **MACRONAMES** ***[m1],[m2],[m3],…***<CR> | **Read** |

**Parameters**

***m1-mx*** Macro names. Each name will have a comma to separate it from the next name. Spaces may be included within the macro names. This will be empty if there are no macros defined in the LS10.

## General Commands

### 1. System Information

Returns system versions and MAC address

| | | |
|---|---|---|
| **Command:** | @**SYSTEM** <cr> | **Operation** |
| **Response:** | **VER**<space>***version***<LF><br>**VERDATE**<space>***date***<LF><br>**MAC**<space>***mac address***<CR> | **Read** |

**Parameters**

| | |
|---|---|
| ***version*** | Software version number |
| ***date*** | Software date/time |
| ***mac address*** | LS10 MAC address |

### 2. Identify

Get system identify information. Mostly used in discovery protocol.

| | | |
|---|---|---|
| **Command:** | @**IDENTIFY**<cr> | **Operation** |
| **Response:** | **LS10**<space>***IP***<space>***[screen]***<cr> | **Read** |

**Parameters**

| | |
|---|---|
| ***LS10*** | General identifier for Datasat audio processor product. XZ |
| ***ip*** | IP address (useful after network broadcast command) |
| ***[Screen]*** | User defined ID string, if entered in the LS10 configuration. |

### 3. Model

Determines that the Datasat Audio processor is an LS10.

| | | |
|---|---|---|
| **Command:** | @**MODEL**<cr> | **Operation** |
| **Response:** | **MODEL**<space>**LS10**<cr> | **Read** |

**Parameters**

| | |
|---|---|
| **LS10** | An LS10 returns this model string. |

## 4. Authorization

| **Command:** @**AUTH**<space>**[Password]**<cr> | **Operation** |
|---|---|
| **Response:** **AUTH**<space>***[SETUP\|OP\|SECERR]***<cr> | **Read** |

Give a password to allow usage of restricted commands. The authorization is required for many commands if access to the LS10 has been configured with a Password. The **AUTH** must be issued before issuing any password protected commands, and is valid only for the duration of the TCP/IP connection.

**Note**: This application accepts only Latin alphanumeric characters.

There are two levels of password protection in the LS10. The **NetCmd Password** will allow access to the LS10 for Operator level type commands. The **Setup Password** allows access to setup and configuration level commands. The commands in this document only require the operator level password (if set).

The **AUTH** may be used for either the Operator or Setup level password.

**Parameters:**

***[Password]*** NetCmd or Setup level password. The LS10 compares this first with setup level password and gives Setup Level authorization if it matches. Otherwise, it compares it to the NetCmd password and authorizes operator commands if it matches.

**SETUP** The LS10 returns this value when Setup Level authorization has been granted.

**OP** The LS10 returns this value when NetCmd Level authorization has been granted.

**SECERR** The LS10 returns this value if neither Setup nor Operator level authorization has been granted.

## 5. Serial Number

| **Command:** @**SERIALNO**<CR> | **Operation** |
|---|---|
| **Response:** **SERIALNO** <space>***SN***<CR> | **Read** |

Reads the LS10 serial number.

**Parameters**

***SN*** This value is the serial number string that has been permanently assigned to the LS10 unit.

## 6. MAC Address

| **Command:** | @**MAC**<CR> | **Operation** |
|---|---|---|
| **Response:** | **MAC**<space>***Mac adr***<CR> | **Read** |

Reads the LS10 network MAC address.

**Parameters**

***Mac adr*** This is the 12 digit LS10 network interface MAC address.

**Example**

***Send:*** @MAC<cr>
**Receive*:*** MAC 080077124578<cr>

## 7. Video Resolution

| Command: | @**VIDRES**<CR> | **Operation** |
|---|---|---|
| **Response:** | **Video resolution**<CR> | **Read** |

Reads the current video resolution.

**Example**

***Send:*** @VIDRES<cr>
**Receive*:*** 1080p<cr>

## 8. Video Protection

| **Command:** | @**VIDPROT**<CR> | **Operation** |
|---|---|---|
| **Response:** | **Video protection**<CR> | **Read** |

Reads the current video protection applied.

**Example**

***Send:*** @VIDPROT<cr>
**Receive*:*** HDCP<cr>

## Copyright Protection



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