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Introduction

This document describes the serial and network control commands for the Datasat RS20i Audio Processor. The RS20i 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 RS20i 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 RS20i. To configure the serial port on the RS20i, go to the menu System -> Automation -> Serial. Select the desired baud rate, and data bits should be 8. Also set **Serial Command Mode** to **RS20i**.

For test purposes you may connect to the RS20i using PuTTY or any similar serial communications program. Connection from a standard PC to the RS20i 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 RS20i

The RJ45 connector labeled Ethernet on the back of the RS20i can be connected to a network switch or router. Once the network parameters are properly set the IP address for the RS20i can be found in the Network screen in the IP Address box.

The RS20i 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 RS20i IP address at TCP port 14500. Once connected the client may send commands as described in this document to set or read the RS20i 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 RS20i.

Using PuTTY

Open PuTTY in the configuration Session and set the following:

- Host Name: (enter the RS20i 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.

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Password Protection

The RS20i 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 RS20i, labeled as **NetCmd Password** and **Setup Password** in the system access screen on the RS20i.

NetCmd Password

The **NetCmd Password** is used to prevent unauthorized access to the RS20i through a network connection. The **NetCmd Password** does not prevent access through the serial command.

Setup Password

The Setup Password prevents unauthorized access to any RS20i setup commands through the RS20i local front panel or remotely through serial or Ethernet connections. This does not affect the operator level commands that are used in this document.

Authentication Command

The AUTH command must be sent to the RS20i before sending a password protected command. If this is not done, then the command results in no action and the RS20i 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 <space> [*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 **
**.

Important: If you are having problems with executing a simple command to the RS20i, 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 RS20i. 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.

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Input Selection Commands

1. Input Selection

Command:	<code>@INPUT<space>[input]<CR></code>	Operation
Response:	<code>INPUT<space>input<CR></code>	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 match exactly the input name on RS20i.
 Note: Spaces may be used within the name.
 See the command **INPUTNAMES** to extract a list of valid input names in the current RS20i configuration.

Example

Set the Input to Oppo 95

Send: `@INPUT Oppo 95<cr>`

Receive: `INPUT Oppo 95<cr>`

2. EQ Selection

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

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

Parameters


eq This is the EQ name which must match exactly the EQ name on RS20i.
 Note: Spaces may be used within the name.
 See the command **EQNAMES** to extract a list of EQ names in the current RS20i configuration.

Example

Set the EQ

Send: `@EQSET eq2<cr>`

Receive: `EQSET eq2<cr>`

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Control Commands

3. 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

<i>Mode</i>	<i>Selection</i>
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>

4. Screensaver On/Off

Command: @SCR<space>[Cmd]<CR>	Operation
Response: OK<CR>	Write

This is used to display the screen if the screensaver is active, or to activate the screensaver. This command works only when the screensaver mode is enabled in the system setup.

Parameters


<i>Cmd</i>	<i>Selection</i>
ON	Deactivate the screensaver
OFF	Display the screensaver

Example

Activate the screensaver:

Send: @SCR OFF<cr>

Receive: OK<cr>

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Automation

5. Execute an RS20i Macro

Command: @RUNMACRO<space> <i>[macro]</i> <CR>	Operation
Response: <i>OK</i> or <i>ERR no macro</i> <CR>	Write

This is used to execute a user defined automation macro in the RS20i. User defined macros must be created in the RS20i setup menus, or copied through the configuration file. See the command MACRONAMES to extract a list of available macros in the current RS20i configuration.

Parameters

[macro] This is the macro name to execute. The name must match exactly the macro name on the RS20i.

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 RS20i.

Example

Run Macro named Auto1

Send: @RUNMACRO Auto1<cr>

Receive: OK<cr>

6. Output a pulse

Command: @PULSE<space> <i>[output]</i> <CR>	Operation
Response: OK<CR>	Write

Activate a pulse in GPIO1-21. The pulse has a fixed length of 250ms.

Parameters


[output] Defines the desired GPIO number for the pulse. Valid numbers are from 1 to 21.

Example

Send a pulse on GPIO-3

Send: @PULSE 3<cr>

Receive: OK<cr>

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Volume and Mute Commands

7. Master Volume Level

Command:	<code>@VOLUME<space>[+][-][Value]<CR></code>	Operation
Response:	<code>VOLUME<space>Level<CR></code>	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. 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>`

8. Master Volume Mute

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

Mute or Unmute the RS20i output.

Parameters


<i>value</i>	<i>Selection</i>
0	Unmute
1	Mute
+	Toggle Mute State

Example

Mute

Send: `@MUTED 1<cr>`

Receive: `MUTED 1<cr>`

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9. Monitor Level

Command: @MONITORLEVEL<space> <i>[level]</i> <CR>	Operation
Response: MONITORLEVEL<space> <i>level</i> <CR>	Read/Write

Set or read the RS20i monitor level.

Parameters

level Monitor level from 0 (minimum) to 100 (maximum).

Example

MONITORLEVEL

Send: @MONITORLEVEL 70<cr>

Receive: MONITORLEVEL 70<cr>

10. Monitor Mute

Command: @MONITORMUTE<space> <i>[value]</i> <CR>	Operation
Response: MONITORMUTE<space> <i>value</i> <CR>	Read/Write

Mute or unmute the RS20i monitor, or read the current setting.

Parameters

<i>value</i>	<i>Selection</i>
0	Unmute
1	Mute

Example

Mute the monitor.

Send: @MONITORMUTE 1<cr>

Receive: MONITORMUTE 1<cr>


Audio Setup

11. Channel Noise Sequencer

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

Enable an internally generated pink noise that is sequenced through RS20i 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.

NOTE! Auro-3D configurations are only available if the RS20i has the Auro-3D option installed

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Parameters

<i>value</i>	<i>Selection</i>
0	Turn off pink noise.
1	Automatically sequence pink noise through each channel.
2	Manual mode: Use to stop pink noise on current speaker.
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

12. 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 <space> <i>[mode]</i> <cr>	Operation
Response: DECODERPOST <i>[mode]</i> <CR>	Read/Write

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Parameters

<i>[mode]</i>	<i>Selection</i>	<i>Valid Speaker Configurations</i>
0	Off/None	Any
3	DTS Neo:X	All, except 2.0 or 2.1
4	Dolby PLII, or Dolby PLIIx	Not Available for 2.0 or 2.1 PLIIx for all configuration with LB/RB PLII for all other configurations
5	Dolby PLIIz	Must include High Left / High Right
6	Auro-3D	Auro 9.1, Auro 10.1, Auro 11.1 or Auro 13.1, 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.

Notes:

The mode will not change when the selected mode is not valid for the current speaker configuration.

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 DTS Neo:X.

Send: @DECODERPOST 3<cr>

Receive: DECODERPOST 3<cr>

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13. 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 <space> [value]<cr>	Operation
Response: NEOXMODE [value]<CR>	Read/Write

Parameters

[value]	Selection
0	Cinema
1	Music
2	Game

14. Generate Subwoofer with Neo:X

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

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

Parameters

[value]	Selection
0	Disable
1	Enable

15. 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: DTSDIALOG 5

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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

16. 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 <space> [value] <cr>	Operation
Response: DPL2MODE [value] <CR>	Read/Write


Parameters

[value]	Selection
0	Pro Logic (1)
2	Music
3	Movie
4	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.

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17. 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 <space> [DIM]<cr>	Operation
Response: DPL2DIM DIM<CR>	Read/Write

Parameters:

<i>DIM</i>	<i>Selection</i>
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


18. Center Width for Pro Logic IIx Music Mode

The Center Width control works with Pro Logic IIx music.

Command: @DPL2CW <space> [cw]<cr>	
Response: DPL2CW cw<CR>	Read/Write

Parameters:

<i>cw</i>	<i>Selection</i>
0	0 (Off, no balance applied)
1	1
2	2
3	3 (Neutral)
4	4
5	5
6	6
7	7 Phantom Center

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19. Panorama for Pro Logic IIx Music Mode

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

Command: @DPL2PANO <space> [<i>pano</i>]<cr>	
Response: DPL2PANO <i>pano</i> <CR>	Read/Write

Parameters:

<i>pano</i>	<i>Selection</i>
0	0 Panorama off
1	1 Panorama on

20. Height Gain for Pro Logic IIz

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

Command: @DPL2HEGAIN <space> [<i>value</i>]<cr>	
Response: DPL2HEGAIN <i>value</i> <CR>	Read/Write

Parameters:

[<i>value</i>]	<i>Selection</i>
0	Low
1	Mid
2	High

21. Auro-3D Strength

This command sets upmixing strength for Auro-3D

Command: @AUROSTRENGTH <space> [<i>value</i>]<cr>	
Response: AUROSTRENGTH <i>value</i> <CR>	Read/Write


Parameters:

[<i>value</i>]	<i>Selection</i>
1-16	16 is the highest strength level

22. Auro-3D Preset

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

Command: @AUOPRESET <space> [<i>value</i>]<cr>	
Response: AUOPRESET <i>value</i> <CR>	Read/Write

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Parameters:

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

23. Auro-3D Listening Mode

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

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

Parameters:

[value]	Selection
0	Native (No upmix)
1	Stereo
2	Surround
3	Auro-3D (Valid only with one of the Auro speaker Configurations)

24. 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


25. 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: DOWNSAMPEFORDSU value<CR>	Read/Write

Parameters:

[value]	Selection
0	Disabled
1	Enabled

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26. Dolby DRC Setting

Command: @TRUEHDDRC <space> [<i>drc</i>]<cr>	
Response: TRUEHDDRC <i>drc</i> <CR>	Read/Write

Parameters:

<i>drc</i>	<i>Selection</i>
0	DRC Off
1	On / TrueHD-Auto
2	DRC On

27. Post Stereo Gain

Sets gain (attenuation) for non-LR speakers

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

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

LFE Boost

28. DTS LFE Boost

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

Command: @ DECODERDTSLFEBOOST <space> [<i>dtslfe</i>]<cr>	
Response: DECODERDTSLFEBOOST [<i>dtslfe</i>]<CR>	Read/Write

Parameters:

<i>dtslfe</i>	<i>Selection</i>
0	Do not apply 10dB gain for DTS
1	Apply 10dB gain for DTS


29. PCM LFE Boost

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

Command: @ DECODERPCMLFEBOOST <space> [<i>pcmlfe</i>]<cr>	
Response: DECODERPCMLFEBOOST <i>pcmlfe</i> <CR>	Read/Write

Parameters:

<i>pcmlfe</i>	<i>Selection</i>
0	Do not apply 10dB gain for PCM
1	Apply 10dB gain for PCM

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30. Dolby LFE Boost

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

Command: @DECODERDDLFEBOOST <space> <i>[ddlfe]</i> <cr>	
Response: DECODERDDLFEBOOST <i>ddlfe</i> <CR>	Read/Write

Parameters:

<i>ddlfe</i>	<i>Selection</i>
0	Do not apply 10dB gain for Dolby Digital
1	Apply 10dB gain for Dolby Digital

Audio Decoder Stream Information

31. Decoder Stream

Returns a text description of the stream type currently playing

Command: @DECSTREAM<cr>	
Response: <i>[Desc]</i> <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>

32. 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/PLIly.


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

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

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

Example

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

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Setup Information

These commands return information regarding the current setup of the RS20i in terms of what inputs and automation macros have been defined.

33. List Input Names

The RS20i may have up to 20 user-defined Input names. This command returns a comma delimited string with all Input names assigned in the RS20i.

Command: @INPUTNAMES <cr>	Operation
Response: INPUTNAMES <i>input1</i> , <i>[input2]</i> , <i>[input3]</i> ,...<CR>	Read

Parameters

input1-input20 Input names. There may be 1 to 20 Input names. Each name will have a comma to separate it from the next name. Spaces may be included in the Input names.

34. List Macro Names

The RS20i may have several user-defined macros. This command returns a comma delimited string with all macro definitions in the RS20i.

Command: @MACRONAMES <cr>	Operation
Response: MACRONAMES [<i>m1</i>],[<i>m2</i>],[<i>m3</i>],...<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 RS20i.


35. List EQ Setup Names

The RS20i may up to 20 different EQ sets stored. This command returns a comma delimited string with all EQ setup names.

Command: @EQNAMES<cr>	Operation
Response: EQNAMES <i>e1</i> , <i>[e2]</i> , <i>[e3]</i> ,...<CR>	Read

Parameters

e1-ex EQ set names. Each name will have a comma to separate it from the next name. Spaces may be included within the macro names.

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General Commands

36. System Information

Returns system versions and MAC address

Command:	@SYSTEM <cr>	Operation
Response:	VER <space> <i>version</i> <LF> VERDATE <space> <i>date</i> <LF> MAC <space> <i>mac address</i> <CR>	Read

Parameters

<i>version</i>	Software version number
<i>date</i>	Software date/time
<i>mac address</i>	RS20i 20 MAC address

37. Identify

Get system identify information. Mostly used in discovery protocol.

Command:	@IDENTIFY <cr>	Operation
Response:	AP20 <space> <i>IP</i> , <i>[info2],[info1],[screen]</i> <cr>	Read

Parameters

AP20	General identifier for Datasat audio processor product. See MODEL command to determine an RS20i model.
<i>ip</i>	IP address (useful after network broadcast command)
<i>[Info2]</i>	User entered information, if entered in the RS20i configuration.
<i>[Info1]</i>	User entered information, if entered in the RS20i configuration.
<i>[Screen]</i>	User defined ID string, if entered in the RS20i configuration.

38. Model

Determines that the Datasat Audio processor is an RS20i.

Command:	@MODEL <cr>	Operation
Response:	MODEL <space> RS20i <cr>	Read


Parameters

RS20i	An RS20i returns this model string.
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39. 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 RS20i 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.

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Note: This application accepts only Latin alphanumeric characters.

There are two levels of password protection in the RS20i. Both levels are set in the **System > Access Control** screen on the RS20i. The top password labeled **NetCmd Password** will allow access to the RS20i for Operator level type commands. The bottom password labeled **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 RS20i 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 RS20i returns this value when Setup Level authorization has been granted.
- OP** The RS20i returns this value when NetCmd Level authorization has been granted.
- SECERR** The RS20i returns this value if neither Setup nor Operator level authorization has been granted.

40. Serial Number

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

Reads the RS20i serial number.

Parameters

- SN** This value is the serial number string that has been permanently assigned to the RS20i unit.

41. MAC Address

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


Reads the RS20i network MAC address.

Parameters

- Mac adr** This is the 12 digit RS20i network interface MAC address.

Example

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

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42. Video Resolution

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

Reads the current video resolution.

Example

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

43. Video Protection

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

Reads the current video protection applied.

Example

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

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