

***dCS* Remote Control Codes User Manual**

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If you need assistance, please consult an experienced A/V installer.

IR COMMAND CODES

The following codes are in the Philips RC5 protocol, where each command code consists of two parts: a category (e.g. 14 hex, for CD Player) and a command (e.g. 36 hex, for STOP). For reliable operation, send the command 3 times.

All commands are **hexadecimal**.

The IR carrier frequency is 37.9kHz.



Many of the IR commands in this document will operate the *dCS* "Classic" range also, but not all commands are supported by "classic" range software. Make sure the unit software is up to date.

Scarlatti / Paganini / Vivaldi Transport & Puccini Player

Category code is **14** hex.

Function	Transport / Player Command
'0'	500000000000000100140000
'1'	500000000000000100140001
'2'	500000000000000100140002
'3'	500000000000000100140003
'4'	500000000000000100140004
'5'	500000000000000100140005
'6'	500000000000000100140006
'7'	500000000000000100140007
'8'	500000000000000100140008
'9'	500000000000000100140009
Stop/Eject	500000000000000100140036
Play/Pause	500000000000000100140035
Previous Track	500000000000000100140021
Next Track	500000000000000100140020
Fast Forward	50000000000000010014003B
Fast Reverse	500000000000000100140024
Repeat	50000000000000010014001D
Program	500000000000000100140029
Clear	50000000000000010014003A
Display Mode	50000000000000010014000F
Select CD Layer	50000000000000010014003D
Select SACD Layer	50000000000000010014003E
Toggle Layer	50000000000000010014003C
Menu Select	50000000000000010014001A
Menu forward	500000000000000100140020
Menu back	500000000000000100140021
Display On/Off	500000000000000100140038

Sleep	50000000000000010014000A
Wake	50000000000000010014000B
Toggle Sleep/Wake	50000000000000010014000C
Power Off*	500000000000000100140037

* All models must be in **Sleep Mode** before the **Power Off** button will operate.

Debussy DAC USB Player section

These Debussy DAC commands are currently not recognised by the dCS Windows USB Class 2 driver.

Category code is **14** hex.

Function	Debussy DAC USB Player Command
Play/Pause	500000000000000100140035
Previous Track	500000000000000100140021
Next Track	500000000000000100140020
Fast Forward	500000000000000100140034**
Fast Reverse	500000000000000100140032**

** Fast Forward and Fast Reverse codes are not well supported by PCM streaming programs at present.

Scarlatti / Paganini / Debussy / Vivaldi DACs & Puccini Player DAC Section

Category code is **0D** hex.

Function	DAC Command	Command is supported by:				
		Scarlatti DAC	Paganini DAC	Puccini DAC Section	Debussy DAC	Vivaldi DAC
Volume +	5000000000000001000D0010	✓	✓	✓	✓	✓
Volume -	5000000000000001000D0011	✓	✓	✓	✓	✓
Volume/Balance	5000000000000001000D0008	✓	✓	✓		✓
Change Filter +	5000000000000001000D000E	✓	✓	✓	✓	✓
Change Filter -	5000000000000001000D001D		✓	✓		✓
Change Phase	5000000000000001000D0009	✓	✓	✓	✓	✓
Select next Input	5000000000000001000D001B	✓	✓	✓	✓	✓
Select previous Input	5000000000000001000D001C		✓	✓	✓	✓
Select AES1 input	5000000000000001000D0003	✓	✓		✓	✓
Select AES2 input	5000000000000001000D0004	✓	✓		✓	✓
Select Dual AES 1-2 input	5000000000000001000D0020	✓	✓		✓	✓
Select RCA1/SPDIF1 input	5000000000000001000D0001	✓	✓	✓	✓	✓

Select BNC/SPDIF3 input	5000000000000001000D0006	✓			✓	✓
Select RCA2/SPDIF2 input	5000000000000001000D000F	✓	✓	✓		✓
Select Toslink input	5000000000000001000D0005	✓				✓
Select USB input	5000000000000001000D0002				✓	✓
Select 1394 channel 0	5000000000000001000D0022	✓	✓			
Select AES3 input	5000000000000001000D0022					✓
Select 1394 channel 1	5000000000000001000D0023	✓	✓			
Select AES4 input	5000000000000001000D0023					✓
Select 1394 channel 2	5000000000000001000D0024	✓	✓			
Select Dual AES 3-4 input	5000000000000001000D0024					✓
Select 1394 channel 3	5000000000000001000D0025	✓	✓			
Select 1394 channel 4	5000000000000001000D0026	✓	✓			
Select SDIF-2 input	5000000000000001000D0021	✓				✓
Select Filter 1	5000000000000001000D002C	✓	✓			✓
Select Filter 2	5000000000000001000D002D	✓	✓			✓
Select Filter 3	5000000000000001000D002E	✓	✓			✓
Select Filter 4	5000000000000001000D002F	✓	✓			✓
Select Filter 5 (44/176/192)	5000000000000001000D0030	✓	✓			✓
Select Filter 6 (44/176/192)	5000000000000001000D0031	✓	✓			✓
Mute ON	5000000000000001000D0027	✓	✓			✓
Mute OFF	5000000000000001000D0028	✓	✓			✓
Mute toggle	5000000000000001000D000D	✓	✓	✓	✓	✓
Sync to MASTER	5000000000000001000D0032	✓	✓			✓
Sync to AUDIO	5000000000000001000D0033	✓	✓			✓
Sync to WORD CLOCK 1	5000000000000001000D0036					✓
Sync to WORD CLOCK1/2	5000000000000001000D0034	✓	✓			✓
Sync to WORD CLOCK 2	5000000000000001000D0039					✓
Sync to WORD CLOCK 3	5000000000000001000D0035					✓
Menu Forward	5000000000000001000D0037	✓	✓			✓
Menu Back	5000000000000001000D0038	✓	✓			✓
Menu Select	5000000000000001000D001A	✓	✓			✓
Display On/Off	5000000000000001000D0007	✓	✓			✓
Wake	5000000000000001000D002A	✓	✓		✓	✓
Sleep	5000000000000001000D0029	✓	✓		✓	✓
Toggle Sleep/Wake	5000000000000001000D000C	✓	✓			✓
Power Off*	5000000000000001000D002B	✓	✓		✓	✓
Select Disc mode	5000000000000001000D0025			✓		

Scarlatti / Paganini / Vivaldi Upsamplers

Category code is **1D** hex.



You cannot set an output rate that is less than the input rate.

You cannot select a filter that does not exist, or change the filter if the current input / output combination has only 1 filter choice, or if the unit is not locked.

Function	Upsampler Command	Command is supported by:		
		Scarlatti Upsampler	Paganini Upsampler	Vivaldi Upsampler
Select next input	50000000000000001001D001B	✓	✓	✓
Select previous input	50000000000000001001D001C			✓
Select AES input	50000000000000001001D0003	✓	✓	✓
Select SPDIF1-RCA input	50000000000000001001D0001	✓	✓	✓
Select SPDIF2-RCA input	50000000000000001001D000F	✓	✓	✓
Select SPDIF3-BNC input	50000000000000001001D0006	✓		✓
Select Toslink input	50000000000000001001D0005	✓		✓
Select SDIF input	50000000000000001001D000B			✓
Select USB1 input	50000000000000001001D0002	✓	✓	✓
Select USB2 input	50000000000000001001D0008			✓
Select iPod input	50000000000000001001D0009			✓
Select Network input	50000000000000001001D000A			✓
Output rate up	50000000000000001001D0010	✓	✓	✓
Output rate down	50000000000000001001D0011	✓	✓	✓
Select 32kS/s output	50000000000000001001D0020	✓	✓	✓
Select 44.1kS/s output	50000000000000001001D0021	✓	✓	✓
Select 48kS/s output	50000000000000001001D0022	✓	✓	✓
Select 88.2kS/s output	50000000000000001001D0023	✓	✓	✓
Select 96kS/s output	50000000000000001001D0024	✓	✓	✓
Select 176.4kS/s output	50000000000000001001D0025	✓	✓	✓
Select 192kS/s output	50000000000000001001D0026	✓	✓	✓
Select 352.8kS/s output	50000000000000001001D001E			✓
Select 384kS/s output	50000000000000001001D001F			✓
Select DSD output	50000000000000001001D0027	✓	✓	✓
Change Filter +	50000000000000001001D000E	✓	✓	✓
Change Filter -	50000000000000001001D001D			✓
Select Filter 1	50000000000000001001D002C			✓
Select Filter 2	50000000000000001001D002D			✓
Select Filter 3	50000000000000001001D002E			✓
Select Filter 4	50000000000000001001D002F			✓
Select Filter 5	50000000000000001001D0030			✓
Select Filter 6	50000000000000001001D0031			✓

Sync to MASTER	50000000000000001001D0032			✓
Sync to AUDIO	50000000000000001001D0033			✓
Sync to WORD CLOCK 1	50000000000000001001D0036			✓
Sync to WORD CLOCK 2	50000000000000001001D0039			✓
Sync to WORD CLOCK 1/2	50000000000000001001D0034			✓
Menu select	50000000000000001001D001A	✓	✓	✓
Menu forward	50000000000000001001D0011	✓	✓	✓
Menu back	50000000000000001001D0010	✓	✓	✓
Display on/off	50000000000000001001D0007	✓	✓	✓
Sleep	50000000000000001001D0029	✓	✓	✓
Wake	50000000000000001001D002A	✓	✓	✓
Toggle Sleep/Wake	50000000000000001001D000C	✓	✓	✓
Power Off*	50000000000000001001D002B	✓	✓	✓

Scarlatti / Paganini / Vivaldi Clocks

Category code is **1C** hex.

			Command is supported by:	
	Function	Clock Command	Scarlatti & Paganini Clock	Vivaldi Clock
Output Group 1	Next Frequency	5000000000000001001C0000	✓	✓
	Set to 44.1kHz	5000000000000001001C0001	✓	✓
	Set to 48kHz	5000000000000001001C0002	✓	✓
	Set to 88.2kHz	5000000000000001001C0006	✓	✓
	Set to 96kHz	5000000000000001001C0008	✓	✓
	Set to 176.4kHz	5000000000000001001C0009	✓	✓
	Set to 192kHz	5000000000000001001C000A	✓	✓
	Dither on/off	5000000000000001001C0003	✓	✓
Output Group 2	Next Frequency	5000000000000001001C000B		✓
	Set to 44.1kHz	5000000000000001001C000D		✓
	Set to 48kHz	5000000000000001001C000E		✓
	Set to 88.2kHz	5000000000000001001C000F		✓
	Set to 96kHz	5000000000000001001C0010		✓
	Set to 176.4kHz	5000000000000001001C0011		✓
	Set to 192kHz	5000000000000001001C0012		✓
	Dither on/off	5000000000000001001C0013		✓
	Menu select	5000000000000001001C001A	✓	✓
	Menu forward	5000000000000001001C0004	✓	✓
	Menu back	5000000000000001001C0005	✓	✓
	Display on/off	5000000000000001001C0007	✓	✓
	Lock on/off	5000000000000001001C0014		✓
	Sleep	5000000000000001001C0029	✓	✓
	Wake	5000000000000001001C002A	✓	✓
	Toggle Sleep/Wake	5000000000000001001C000C	✓	✓
	Power Off*	5000000000000001001C002B	✓	✓

RS232 COMMAND CODES

General

While most *dCS* products may be controlled via RS232, this feature is included primarily to facilitate automatic testing, so the commands available may be limited. We recommend using IR remote control instead.

Numbers are in **decimal**.

Physical Connection

Most *dCS* equipment features a male 9-way D-type connector, often labelled **SUC**. This should be wired to a PC as "straight through" - each pin on one connector should be connected to the same pin on the other connector.

The interface is designed to work at 4800 baud, 1 start bit, 1 stop bit, no parity, no handshaking.

Binary Protocol

The *dCS* RS232 Binary protocol is defined as follows:

All communications are packetised, with a general packet structure of the form:

Byte	Name	Description
0	ID	The identity of the unit you are attempting to talk to. For audiophile products, this id is fixed as follows: 1 = dCS Clock – Scarlatti, Paganini, Vivaldi & Verona Master Clocks 9 = dCS DAC – Scarlatti, Paganini, Vivaldi & Debussy DACs, Elgar Plus, Delius. 5 = dCS Upsampler – Scarlatti, Paganini & Vivaldi Upsamplers, Purcell. 10 = dCS Transport – Scarlatti, Paganini & Vivaldi Transports, Puccini Player, Verdi, Verdi LS, Verdi Encore, P8i Player. dCS pro products support daisy-chaining the RS232, where each unit can have its own id.
1	Cmd	The command you are attempting to execute (e.g. change input, filter etc.) This varies by product, please see the tables below
2	Length	The number of bytes in the payload.
3	Payload[0]	The payload for a command. The number of bytes and the content varies by command and by unit, please see the tables below.
...	Payload[n]	
4+n	Payload checksum	Add together all bytes in payload, modulo by 255.

If the unit is being addressed and the checksum is OK, it will return a single byte ACK of 170 (0xAA in hex). Otherwise it will not transmit anything.

There is no returned payload unless specifically stated.



The data packets are in binary, so you cannot use HyperTerminal.

Vivaldi units have two RS232 modes: set the RS232 menu page to B for Binary or T for Text (see page **20**).

Note that some of the Vivaldi-only commands are implemented in Control software version 1.10 or later and are not supported by earlier versions.

Scarlatti / Paganini / Vivaldi / Debussy DAC Binary Commands

RS_STATUS

Requests Status from the unit

ID	Cmd	Length	Payload	Checksum	Description
9	76	1	2	2	Returns the 5-byte "Page" specified by the Payload (Page 2 in this example).

Page 0:

Byte 0	Sample Rate – see Sample Rate Table
Byte 1	0 = Not muted, 4 = Muted
Byte 2	0 – fixed
Byte 3	0 – fixed
Byte 4	0 - fixed

Page 1:

Byte 0	0 - fixed
Byte 1	0 – fixed
Byte 2	0 – fixed
Byte 3	De-Emphasis Mode
Byte 4	Unit ID – 14=Vivaldi DAC – fixed (ask dCS for other models)

Page 2:

Byte 0	255 - fixed
Byte 1	0 – fixed
Byte 2	Volume setting in –dB (Vivaldi only), 0 = 0dB, 80 = -80dB
Byte 3	Balance setting (-61 to 61) in 0.1dB steps (Vivaldi only) 194 = balance to left, 0 = balance central, 61 = balance to right
Byte 4	0 – fixed

Page 3:

Byte 0	0 = Phase Normal, 1 = Phase Inverted						
Byte 1	Currently Selected Input: Scarlatti & Paganini (* = Scarlatti only)	0	RCA1	3	Toslink*	7	SDIF-2*
		1	BNC*	4	AES2	8	1394
		2	AES1	6	AES1+2	9	RCA2
	Currently Selected Input: Vivaldi	0	SPDIF1	4	AES1+2	9	SPDIF2
		1	SPDIF3	5	USB	10	AES3
		2	AES1	6	TOSLINK	11	AES4
		3	AES2	7	SDIF-2	12	AES3+4
Byte 2	Physical Lock Frequency – see Sample Rate Table						
Byte 3	32 – fixed						
Byte 4	Current Filter: 0 = Filter1, 1 = Filter2, 2 = Filter3, 3 = Filter4, 4 = Filter5, 5 = Filter6						

Sample Rate Table

Payload	0	1	4	5	6	9	10	20	21	22	255
Rate	96k	88.2k	44.1k	48k	32k	176.4k	192k	352.8k	384k	DSD	Unlocked/ Unknown

Note: the 2 rates relate to the data sample rate and the physical lock frequency. For example, a typical scenario has the DAC locked to a 44.1kHz Word Clock while decoding 176.4kS/s data.

RS_INPUT

ID	Cmd	Length	Payload	Checksum	Description
9	113	1	2	2	Selects the Audio Input (AES1 in this example)

Payloads: See RS_STATUS, Page 3, Byte 1 for valid inputs.

RS_FILTER

ID	Cmd	Length	Payload	Checksum	Description
9	33	1	3	3	Selects the anti-image Filter <u>for the current sample rate</u> (Filter4 in this example).

Payload	0	1	2	3	4	5
Filter	Filter1	Filter2	Filter3	Filter4	Filter5	Filter6

Note that all 6 Filters may not be available at all sample rates.

RS_EMPH

Selects the De-Emphasis Mode (applies at 32, 44.1 or 48kS/s only).

ID	Cmd	Length	Payload	Checksum	Description
9	34	1	0	0	Auto Select De-Emphasis
9	34	1	1	1	Select 50/15 De-Emphasis
9	34	1	2	2	Select CCITT J.17 De-Emphasis
9	34	1	3	3	No De-emphasis

RS_PHASE

Sets the phase for all analogue outputs.

ID	Cmd	Length	Payload	Checksum	Description
9	112	1	0	0	Phase normal
9	112	1	1	1	Phase inverted

RS_MUTE (Vivaldi DAC only)

Mutes or un-mutes the analogue outputs.

ID	Cmd	Length	Payload	Checksum	Description
9	43	1	0	0	Not muted
9	43	1	1	1	Muted

RS_OUT_LEV (Vivaldi DAC only)

Sets the output level.

ID	Cmd	Length	Payload	Checksum	Description
9	80	1	0	0	2V rms at full scale.
9	80	1	1	1	6V rms at full scale.

RS_VOL (Vivaldi DAC only)

Sets the DAC Volume. Payload is between 0 (0dB) and 80 (-80dB).

ID	Cmd	Length	Payload	Checksum	Description
9	111	1	0	0	Sets the Volume to 0dB (maximum).
9	111	1	65	65	Sets the Volume to -65dB.

RS_BAL (Vivaldi DAC only)

Sets the DAC Balance. Payload is between 194 (Balance to Left) and 61 (Balance to right) in 0.1dB steps. The fully Left and fully Right settings mute the other channel.

ID	Cmd	Length	Payload	Checksum	Description
9	206	1	194	194	Sets the Balance fully Left.
9	206	1	223	223	Sets the Balance 3.2dB to the Left.
9	206	1	0	0	Sets the Balance central.
9	206	1	30	30	Sets the Balance 3dB to the Right.
9	206	1	61	61	Sets the Balance fully Right.

RS_SYNC (Vivaldi DAC only)

Sets the Sync Mode for the selected input.

ID	Cmd	Length	Payload	Checksum	Description
9	114	1	0	0	Audio sync.
9	114	1	1	1	Master Mode.
9	114	1	2	2	Sync to Word Clock 1 input.
9	114	1	3	3	Sync to Word Clock 2 input.
9	114	1	4	4	Sync to Word Clock 3 input.
9	114	1	5	5	Automatically syncs to Word Clock 1 or 2.
9	114	1	6	6	Universal Master Mode (see manual).

RS_SLEEP_OFF

ID	Cmd	Length	Payload	Checksum	Description
9	218	0		0	Wakes the unit from Sleep mode.

RS_SLEEP_ON

ID	Cmd	Length	Payload	Checksum	Description
9	217	0		0	Sets the unit to Sleep mode.

RS_POWER_DOWN

When the unit is in Sleep mode, this command powers down completely.

ID	Cmd	Length	Payloads	Checksum	Description
9	219	0		0	Vivaldi DAC
9	219	5	1 2 3 5 7	18	Scarlatti, Paganini & Debussy DACs

Scarlatti / Paganini / Vivaldi Transport Binary Commands

RS_TRANSPORT_COMMAND

Description: Performs a Transport Action.

ID	Cmd	Length	Payloads	Checksum	Description
10	210	1	1	1	Play (Vivaldi Transport only)
10	210	1	2	2	Stop
10	210	2	3 5	8	Selects the track specified by Payload[1] (track 5 in this example) and plays it.
10	210	1	4	4	Changes to the other layer for a hybrid disc
10	210	1	5	5	Open / close the CD tray
10	210	1	6	6	Pause (Vivaldi Transport only)

RS_SLEEP_OFF

ID	Cmd	Length	Payload	Checksum	Description
10	218	0		0	Wakes the unit from Sleep mode.

RS_SLEEP_ON

ID	Cmd	Length	Payload	Checksum	Description
10	217	0		0	Sets the unit to Sleep mode.

RS_POWER_DOWN

When the unit is in Sleep mode, this command powers down completely.

ID	Cmd	Length	Payloads	Checksum	Description
10	219	0		0	Vivaldi Transport
10	219	5	1 2 3 5 7	18	Scarlatti & Paganini Transports

Scarlatti / Paganini / Vivaldi Clock Binary Commands

RS_SEL_FS

Selects the clock frequency (Vivaldi only)

ID	Cmd	Length	Payloads	Checksum	Description
1	66	2	0 4	4	Group1 – Sets the frequency to 44.1kHz.
1	66	2	1 10	11	Group2 – Sets the frequency to 192kHz.

Payload	0	1	4	5	9	10
Group Payload[0]	Group1	Group2				
Frequency Payload[1]	96kHz	88.2kHz	44.1kHz	48kHz	176.4kHz	192kHz

Selects the clock frequency (Scarlatti & Paganini)

ID	Cmd	Length	Payload	Checksum	Description
1	32	1	4	4	Sets the frequency to 44.1kHz.
1	32	1	0	0	Sets the frequency to 96kHz.

Payload	0	1	4	5
Frequency	96kHz	88.2kHz	44.1kHz	48kHz

RS_DITHER (Vivaldi only)

ID	Cmd	Length	Payloads	Checksum	Description
1	69	2	0 0	0	Group1 – Dither Off
1	69	2	0 1	1	Group1 – Dither On
1	69	2	1 0	1	Group2 – Dither Off
1	69	2	1 1	2	Group2 – Dither On

RS_SLEEP_OFF (Vivaldi only)

ID	Cmd	Length	Payload	Checksum	Description
1	218	0		0	Wakes the unit from Sleep mode.

RS_SLEEP_ON (Vivaldi only)

ID	Cmd	Length	Payload	Checksum	Description
1	217	0		0	Sets the unit to Sleep mode.

RS_POWER_DOWN (Vivaldi only)

ID	Cmd	Length	Payload	Checksum	Description
1	219	0		0	When the unit is in Sleep mode, this command powers down completely.

Scarlatti / Paganini / Vivaldi Upsampler Binary Commands

RS_STATUS

ID	Cmd	Length	Payload	Checksum	Description
5	76	1	1	1	Returns the 5-byte Status "Page" specified by the Payload (Page 1 in this example).

Page 0:

Byte 0	Input Sample Rate	See RS_OUT_FREQ below. 255 = Unlocked / Unknown
Byte 1	Output Sample rate	See RS_OUT_FREQ below.
Byte 2	0 – fixed	
Byte 3	Input Selected	See RS_INPUT below.
Byte 4	0 - fixed	

Page 1:

Byte 0	0 - fixed
Byte 1	0 – fixed
Byte 2	0 – fixed
Byte 3	24
Byte 4	97 = Paganini, 98 = Scarlatti or Vivaldi

RS_INPUT

ID	Cmd	Length	Payload	Checksum	Description
5	113	1	0	0	Selects the Audio Input (AES in this example)

Payload	0	3	4	5
Paganini Inputs	AES	RCA1	RCA 2	USB

Payload	0	3	4	5	9	10
Scarlatti Inputs	AES	RCA1	BNC	USB	Toslink	RCA 2

Payload	0	3	4	5	9	10	6	7	11	12
Vivaldi Inputs	AES	SPDIF 1	SPDIF 3	USB1	Toslink	SPDIF 2	SDIF-2	USB2	iPod	Network

RS_OUT_FREQ

ID	Cmd	Length	Payload	Checksum	Description
5	32	1	1	1	Sets the Output Sample Rate (to 176.4kS/s in this example).

Payload	0	1	2	3	4	5	6	17	18	19
Output Rate	192k	176.4k	96k	88.2k	48k	44.1k	32k	352.8k	384k	DSD



You cannot set an output rate that is less than the input rate.

RS_FILTER

ID	Cmd	Length	Payload	Checksum	Description
5	33	1	1	1	Selects the anti-alias Filter for the <u>current input / output sample rate combination</u> (Filter2 in this example).

Payload	0	1	2	3	4	5
Filter	Filter1	Filter2	Filter3	Filter4	Filter5	Filter6



You cannot select a filter that does not exist, or change the filter if the current input / output sample rate combination has only 1 filter choice, or if the Upsampler is not locked.

RS_OUT_MODE

ID	Cmd	Length	Payload	Checksum	Description
5	42	1	0	0	Sets the Output Mode to Single AES.
5	42	1	1	1	Sets the Output Mode to Dual AES.
5	42	1	2	2	Sets the Output Mode to DSD.

RS_OUT_MODE > DSD applies to obsolete pro products only. Use the RS_OUT_FREQ command to select DSD output mode.

RS_SYNC (Vivaldi Upsampler only)

Sets the Sync Mode for the selected input.

ID	Cmd	Length	Payload	Checksum	Description
5	114	1	0	0	Audio sync.
5	114	1	1	1	Master Mode.
5	114	1	2	2	Sync to Word Clock 1 input.
5	114	1	3	3	Sync to Word Clock 2 input.
5	114	1	5	5	Automatically syncs to Word Clock 1 or 2.

RS_SLEEP_OFF (Vivaldi only)

ID	Cmd	Length	Payload	Checksum	Description
5	218	0		0	Wakes the unit from Sleep mode.

RS_SLEEP_ON (Vivaldi only)

ID	Cmd	Length	Payload	Checksum	Description
5	217	0		0	Sets the unit to Sleep mode.

RS_POWER_DOWN (Vivaldi only)

ID	Cmd	Length	Payload	Checksum	Description
5	219	0		0	When the unit is in Sleep mode, this command powers down completely.

Puccini Player Binary Commands

RS_STATUS

Requests Status from the unit.

ID	Cmd	Length	Payload	Checksum	Description
10	76	1	0	0	Returns the 5-byte "Page" specified by the Payload (Puccini Player has only Page 0).

Page 0:

Byte 0	Sample Rate – see Player Sample Rate Table
Byte 1	99 - fixed
Byte 2	1 – fixed
Byte 3	0 – fixed
Byte 4	1 = SACD layer, 0 = CD layer

Player Sample Rate Table

Payload	0	1	4	5	6	9	10	22	255
Rate	96k	88.2k	44.1k	48k	32k	176.4k	192k	DSD	Unknown / not locked

The unit will return 44.1k while in disc mode.

RS_INPUT

Selects the source for the Player's DAC.

ID	Cmd	Length	Payload	Checksum	Description
10	113	1	128	128	Selects Disc Mode.
10	113	1	3	3	Selects the RCA1 input.
10	113	1	4	4	Selects the RCA2 input.

RS_TRANSPORT_COMMAND

Performs a Transport Action.

ID	Cmd	Length	Payloads	Checksum	Description
10	210	1	2	2	Stops the CD mechanism
10	210	2	3 5	8	Selects the track specified by Payload[1] (track 5 in this example) and plays it.
10	210	1	4	4	Changes to the other layer for a hybrid disc
10	210	1	5	5	Open / close the CD tray

RS_STANDBY_OFF

ID	Cmd	Length	Payload	Checksum	Description
10	218	0		0	Wakes the unit from Sleep mode.

RS_SLEEP_ON

ID	Cmd	Length	Payload	Checksum	Description
10	217	0		0	Sets the unit to Sleep mode.

RS_POWER_OFF

ID	Cmd	Length	Payloads	Checksum	Description
10	219	5	1 2 3 5 7	18	When the unit is in Sleep mode, this command powers down completely.

Text Protocol

The 4 units in the Vivaldi series feature an RS232 Text mode, set in the menu. This mode allows control of the units by typing text commands into HyperTerminal / TeraTerminal (open source) or with a household control system.

The interface is wired pin 1 to pin 1, etc and must be set to 4800 baud, 1 stop bit, no parity, no handshaking (the same as for Binary mode).

Vivaldi Transport Text Commands

COMMAND	ACTION
STATUS	Reports unit status
PLAY	Plays
PAUSE	Pauses
NEXT	Next track
BACK	Previous track
STOP	Stop
LAYER	Changes hybrid layer
TRACK n	Select track 'n'

Vivaldi DAC Text Commands

COMMAND	ACTION	VALUES (n)		
STATUS	Reports unit status			
INPUT = n	Select input 'n'	0 AES1 1 AES2 2 AES1+2 3 AES3	4 AES4 5 AES3+4 6 SPDIF1 7 SPDIF2	8 SPDIF3 9 Toslink 10 SDIF-2 11 USB
NAME n = name	Rename input 'n', up to 8 letters/numbers. (e.g. SACD, TV, COMPUTER)	Values as for INPUT command		
SYNC = n	Set Sync Mode to 'n'	0 Audio 1 Master	2 W1 3 W2	4 W3 5 Auto W1/2
GAIN = n	Set gain to 'n'	0 2V	1 6V	

Vivaldi Upsampler Text Commands

COMMAND	ACTION	VALUES (n)
STATUS	Reports unit status	
INPUT = n	Select input 'n'	<div>0 AES1</div> <div>1 SPDIF1</div> <div>2 SPDIF2</div> <div>3 SPDIF3</div> <div>4 Toslink</div> <div>5 SDIF-2</div> <div>6 USB1</div> <div>7 USB2</div> <div>(flash drive)</div> <div>8 iPod (USB2)</div> <div>9 Network</div>
NAME n = name	Rename input 'n', up to 8 letters/numbers. (e.g. CD1, TV, COMPUTER)	Values as for INPUT command
SYNC = n	Set Sync Mode to 'n'	<div>0 Audio</div> <div>1 Master</div> <div>2 W1</div> <div>3 W2</div> <div>4 Auto W1/2</div>
OUT = n	Set Output Rate to 'n'	<div>32000</div> <div>44100</div> <div>48000</div> <div>88200</div> <div>96000</div> <div>176400</div> <div>192000</div> <div>352800</div> <div>384000</div> <div>2822400 (DSD)</div>

Vivaldi Clock Text Commands

COMMAND	ACTION	VALUES (n)
STATUS	Reports unit status	
OUT1 = n	Set Group 1 Frequency to 'n'	<div>44100</div> <div>48000</div> <div>88200</div> <div>96000</div> <div>176400</div> <div>192000</div>
OUT2 = n	Set Group 2 Frequency to 'n'	<div>44100</div> <div>48000</div> <div>88200</div> <div>96000</div> <div>176400</div> <div>192000</div>