

Confidential

**Serial protocol description
for Lyngdorf Audio products.**

Last revision 2007-08-13

RS232 Control Codes

Lyngdorf Audio products utilizes RS232 communication channel to communicate with PS and other units. To send data or commands to the device, PC software sends variable length data packet. Each packet consists of N bytes. Packets are structured in the following way:

Byte #0 = **N** - number of bytes in the packet
 Byte #1 = **A0** - Least significant address byte
 Byte #2 = **A1** - Most significant address byte
 Byte #3 = **CC** - Command code byte
 Byte #4 = **D0** - First data byte
 Byte #5 = **D1** - Second data byte

 Byte #(N-2) = Last data byte
 Byte #(N-1) = Check sum byte

All bytes are copied into COMM_TxBuffer() and then transmitted. Last byte contains packets check sum. Check sum is computed in the following way:

```
Check_Sum = 0;
For(i=0;i<N-1;i++){
  Check_Sum = Check_Sum + COMM_TxBuffer(i);
}
Check_Sum = Check_Sum & 0xFF;
```

```
COMM_TxBuffer(N-1)= Check;
```

All Lyngdorf components connected to the PC will receive transmitted packed. The only component that will respond to the received message is the one that matches its internal address with the received one. All others will ignore entire packet. Addressed component could respond by sending a packet of its own to acknowledge received packet, or send back requested information, or not to respond at all depending on the received command code.

Product device code

The different PROD_DEV_CODE defined in sysinfo.h are:

```
1:      SDAI2175
2:      MILLENNIUM Mk.III + IV
3:      TDA 2200
4:      CD-1
5:      TDAI 2200
6:      CDpre (Never released product)
7:      TDA2200+ RoomP
8:      Millennium ADC
9:      DPA-1
10:     RP-1
```

Examples

This is commands for TDAI 2200 with device address 1:

Command	TX (Hex)	RX (Hex)	Comments
Power Off	06 01 00 75 00 7C	-	No ACK returned
Power On	06 01 00 75 01 7D	-	No ACK returned
Set volume to 40.0 dB	07 01 00 70 90 01 09	02 AA	
Selecting input A1	06 01 00 72 01 7A	02 AA	
Selecting input D1	06 01 00 71 01 79	02 AA	

To get information from the TDAI 2200 here's the command:

```
TX: 05 01 00 C8 CE
```

The amplifier could reply reply:

```
RX: 19 01 26 02 00 26 02 E7 03 05 01 01 00 00 00 00 00 00 00 00 23 07 85
```

Much information can be retrieved from the reply (see documentation for command 200 (Hex C8)).

RS232 Control Codes overview

Command	Code	DPA-1	CD1
Communication test	1	●	●
Toggle power	16	-	●
Power on command	17	-	●
Power off command	18	-	●
Toggle mute	19	-	-
Mute on command	20	-	-
Mute off command	21	-	-
IR enable command	22	-	●
IR disable command	23	-	●
IR toggle command	24	-	●
Volume up command	25	-	●
Volume down command	26	-	-
Volume increase with value	27	-	-
Volume decrease with value	28	-	-
Get balance command	29	-	-
Set balance command	30	-	-
Select input command	32	-	-
Select input 1 command	33	-	-
Select input 2 command	34	-	-
Select input 3 command	35	-	-
Select input 4 command	36	-	-
Select input 5 command	37	-	-
Select input 6 command	38	-	-
Select input 7 command	39	-	-
Set label text for input x	48	-	-
Set label text for input 1	49	-	-
Set label text for input 2	50	-	-
Set label text for input 3	51	-	-
Set label text for input 4	52	-	-
Set label text for input 5	53	-	-
Set label text for input 6	54	-	-
Set label text for input 7	56	-	-
Get label text for input x	57	-	-
Send Names to product	58	-	-
Select Preset	62	●	-
Display Intensity	64	-	-
Show Address	66	●	-
Set Address	67	●	●
Show Software version	68	●	●
Send Default to EEPROM	73	●	●
Set Volume Level	112	●	-
Select Digital Input	113	●	-
Select Analog Input	114	●	-
Set Volume Level – no ack.	115	●	-
Mute	116	●	-
Power On/Off	117	●	-
Master/Slave	118	●	-
Select Preset – no ack.	119	●	-
Set Polarity - no acknowledgement	120	●	-
Set Display Intensity - no ack.	121	-	-
Set Maximum Volume Level - no ack.	122	●	-
Set Default Volume Level - no ack.	123	●	-
Set Voicing – no ack.	124	●	-
Set Focus – no ack.	125	●	-
Set Maximum Volume Level	132	●	-
Set Default Volume Level	133	●	-
Enable/Disable IR Remote	136	●	-
Set Volume Display Offset	137	●	-
CD Play/Pause	140	-	●
CD Stop	141	-	●
CD Eject	142	-	●
CD Skip Left	143	-	●
CD Skip Right	144	-	●

CD Scan Left Start	145	-	●
CD Scan Right Start	146	-	●
CD Scan Stop	147	-	●
CD Select Track	148	-	●
CD Set Repeat	149	-	●
CD Toggle Repeat	150	-	●
CD Set Random	151	-	●
CD Toggle Random	152	-	●
CD AB Repeat	153	-	●
CD Set Sample rate	154	-	●
CD Set DAC Gain	155	-	●
Get CD State (incl. TOC)	156	-	●
Get 16 char. Name from product	194	-	-
Set 16 char. Name to product	195	-	-
Get Amp temperatures	196	●	-
Get product name	197	●	-
Set product name	198	●	-
Master command - no ack.	199	●	-
Get setup data	200	●	-
Set setup data	201	●	-
Get SDAI2175 data command 1	202	-	-
Set SDAI2175 data command 1	203	-	-
Get SDAI2175 data command 2	204	-	-
Set SDAI2175 data command 2	205	-	-
Get Millennium data command 1	206	-	-
Set Millennium data command 1	207	-	-
Get Millennium data command 2	208	-	-
Set Millennium data command 2	209	-	-
Get TDA2200 data command 1	210	●	-
Set TDA2200 data command 1	211	●	-
Get TDA2200 data command 2	212	●	-
Set TDA2200 data command 2	213	●	-
Get Millennium ADC setup data	214	-	-
Set Millennium ADC setup data	215	-	-
Get Millennium ADC Cartridge setup data	216	-	-
Set Millennium ADC Cartridge setup data	217	-	-
Get TDA2200 data command 3	218	●	-
Set TDA2200 data command 3	219	●	-

Communication Test	CC = 1
---------------------------	---------------

This command is used to test RS232 communication channel. It can be used to detect if a Lyngdorf component with specified address is connected to PC.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	1	CC – command code
4	7	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

If received packet is not equal to above description communication error has occurred.

Note: Device address is calculated as:

$$\text{Device Address} = 256 * A1 + A0$$

Toggle Power	CC = 16
---------------------	----------------

Command to change stand by state.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	16	CC – command code
4	22	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

Power on command	CC = 17
-------------------------	----------------

Command to set to on.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	17	CC – command code
4	23	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

Power off command	CC = 18
--------------------------	----------------

Command to set to off.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	18	CC – command code
4	24	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

Toggle mute	CC = 19
--------------------	----------------

Command to set change SDAI2175 mute state.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	19	CC – command code
4	25	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Mute on command	CC = 20
------------------------	----------------

Command to set SDAI2175 muted.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	20	CC – command code
4	26	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Mute off command	CC = 21
-------------------------	----------------

Command to set SDAI2175 mute off.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	21	CC – command code
4	27	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

IR enable command	CC = 22
--------------------------	----------------

Command to turn IR on.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	22	CC – command code
4	28	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

IR disable command	CC = 23
---------------------------	----------------

Command to turn IR off.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	23	CC – command code
4	29	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

IR toggle command	CC = 24
--------------------------	----------------

Command to toggle IR on/off.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	24	CC – command code
4	30	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

Volume up command	CC = 25
--------------------------	----------------

SDAI 2175 command

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	25	CC – command code
4	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Volume down command	CC = 26
----------------------------	----------------

SDAI 2175 command

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	26	CC – command code
4	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Volume increase with value	CC = 27
SDAI 2175 command	

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	27	CC – command code
4	n	LSB
5	n	MSB
6	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Volume decrease with value	CC = 28
SDAI 2175 command	

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	28	CC – command code
4	n	LSB
5	n	MSB
6	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get balance command	CC = 29
SDAI 2175 command	

RS_CMD_GET_BALANCE, 5, FALSE RSgetBalance (CC=29)-len, a0, a1, cmd, chk

Set balance command	CC = 30
SDAI 2175 command	

RS_CMD_SET_BALANCE, 6, TRUE, RSsetBalance (CC=30)-len, a0, a1, cmd, val, chk

Select input command	CC = 32
SDAI 2175 command	

RS_CMD_INPUT_SELECT_X, 6, TRUE, rs_input_sel (CC=32)-len, a0, a1, cmd, input, chk

Select input 1 command	CC = 33
SDAI 2175 command	

RS_CMD_INPUT_SELECT_1, 5, TRUE, cmd_input_select_1 (CC=33)-len, a0, a1, cmd, chk

Select input 2 command	CC = 34
SDAI 2175 command	

RS_CMD_INPUT_SELECT_2, 5, TRUE, cmd_input_select_2 (CC=34)-len, a0, a1, cmd, chk

Select input 3 command	CC = 35
SDAI 2175 command	

RS_CMD_INPUT_SELECT_3, 5, TRUE, cmd_input_select_3 (CC=35)-len, a0, a1, cmd, chk

Select input 4 command	CC = 36
-------------------------------	----------------

SDAI 2175 command

RS_CMD_INPUT_SELECT_4, 5, TRUE, cmd_input_select_4 (CC=36)-len, a0, a1, cmd, chk

Select input 5 command	CC = 37
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SDAI 2175 command

RS_CMD_INPUT_SELECT_5, 5, TRUE, cmd_input_select_5 (CC=37)-len, a0, a1, cmd, chk

Select input 6 command	CC = 38
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SDAI 2175 command

RS_CMD_INPUT_SELECT_6, 5, TRUE, cmd_input_select_6 (CC=38)-len, a0, a1, cmd, chk

Select input 7 command	CC = 39
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SDAI 2175 command

RS_CMD_INPUT_SELECT_7, 5, TRUE, cmd_input_select_7 (CC=39)-len, a0, a1, cmd, chk

Set label text for input x	CC = 48
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SDAI 2175 command

RS_CMD_LABEL_X, 12, TRUE, rs_label_stub_x (CC=48)-len, a0, a1, cmd, inp, 6*txt
chars, chk

Set label text for input 1	CC = 49
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_1, 11, TRUE, rs_label_stub (CC=49)-len, a0, a1, cmd, 6*txt
chars, chk

Set label text for input 2	CC = 50
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_2, 11, TRUE, rs_label_stub (CC=50)-len, a0, a1, cmd, 6*txt
chars, chk

Set label text for input 3	CC = 51
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_3, 11, TRUE, rs_label_stub (CC=51)-len, a0, a1, cmd, 6*txt
chars, chk

Set label text for input 4	CC = 52
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_4, 11, TRUE, rs_label_stub (CC=52)-len, a0, a1, cmd, 6*txt
chars, chk

Set label text for input 5	CC = 53
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_5, 11, TRUE, rs_label_stub (CC=53)-len, a0, a1, cmd, 6*txt
chars, chk

Set label text for input 6	CC = 54
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_6, 11, TRUE, rs_label_stub (CC=54)-len, a0, a1, cmd, 6*txt
chars, chk

Set label text for input 7	CC = 55
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_LABEL_7, 11, TRUE, rs_label_stub (CC=55)-len, a0, a1, cmd, 6*txt
chars, chk

Get label text for input x	CC = 57
-----------------------------------	----------------

SDAI 2175 command

RS_CMD_GET_LABEL_X, 6, FALSE, rs_get_label_stub_x (CC=57)-len, a0, a1, cmd, inp, 6*txt
chars, chk

Select Preset	CC = 62
----------------------	----------------

This command is used to select one of 8 filter presets.
In Millennium ADC the valid values for PRE are 0-99 (0 = default)

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	62	CC – command code
4	PRE	PRE = 1 preset #1 ... PRE = 8 preset # 8
5	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Display Intensity	CC = 64
--------------------------	----------------

This command is used to set the Display intensity of the Millennium.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	64	CC – command code
4	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
5	ax	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Show Address	CC = 66
---------------------	----------------

This command is used for checking the RS232 Addresses of different Millennium amplifiers, when sent out all Millennium amplifiers will react by showing sub address in the display for 3 sec.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	0	A0
2	0	A1
3	66	CC – command code
4	71	Check sum

Received packet:

Byte#	Value	Description
0	3	Packet size
1	A0	Low part of device address
2	A1	High part of device address

Device Address = $256 \cdot A1 + A0$

Set Address	CC = 67
--------------------	----------------

This command is used for setting the RS232 Addresses of products, when sent out the amplifier with the active address will change its address to the new address.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	67	CC – command code
4	A0	New A0 address to store
5	A1	New A1 address to store
6	Xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Device Address = $256 \cdot A1 + A0$

Show Software version	CC = 68
------------------------------	----------------

This command is used for checking the Software version of the amplifier, when sent out the chosen amplifier will react by showing the Software version in the display for 3 sec. besides sending it back to the PC (Only Millennium)

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	68	CC – command code
4	74	Check sum

Received packet:

Byte#	Value	Description
0	3	Packet size
1	0x	Version Number 8 MSB's – V1
2	0x	Version Number 8 LSB's - V0

If received packet is not equal to above description communication error has occurred.

$$\text{Software version} = 256 \cdot V1 + V0$$

Send Default to EEPROM	CC = 73
-------------------------------	----------------

This command is used to default the EEPROM.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	73	CC – command code
4	79	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: For CD 1 no data received!

Millennium ADC: The contents in received package are not trustable.

Set Volume Level	CC = 112
-------------------------	-----------------

This command is used to set Millennium.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	112	CC – command code
4	LSB	Master level –Least significant byte
5	MSB	Master level – Most significant byte
6	Xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Select Digital Input	CC = 113
-----------------------------	-----------------

This command is used to select digital input.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	113	CC – command code
4	Input	1,2,3,4,5
5	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Select Analog Input	CC = 114
----------------------------	-----------------

This command is used to select analog input.

For Millennium ADC valid values for Input channels are 1 – 5 (1-4 = analog 1-4, 5 = Phono input)

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	114	CC – command code
4	Input	1,2,3,4
5	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Set Volume Level – no acknowledgement	CC = 115
--	-----------------

This command is used to set Millennium.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	115	CC – command code
4	LSB	Master level – Least significant byte
5	MSB	Master level – Most significant byte
6	xx	Check sum

Received packet:

No returned packet.

When used between TCS/RCS and amplifiers the broadcast code address is fixed to 0xA55B – i.e. A0 = 0x5B and A1 = 0xA5

Mute	CC = 116
-------------	-----------------

This command is used to mute or un-mute Millennium.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	116	CC – command code
4	M	M = 1 mute M = 0 un-mute
5	xx	Check sum

Received packet:

No returned packet.

When used between TCS/RCS and amplifiers the broadcast code address is fixed to 0xA55B – i.e. A0 = 0x5B and A1 = 0xA5

Power On/Off	CC = 117
---------------------	-----------------

This command is used to power on / off the Millennium.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	117	CC – command code
4	ON/OFF	1 = Power ON 0 = Power OFF
5	xx	Check sum

Received packet:

No returned packet.

When used between TCS/RCS and amplifiers the broadcast code address is fixed to 0xA55B – i.e. A0 = 0x5B and A1 = 0xA5

Master/Slave	CC = 118
---------------------	-----------------

This command is used to handle more equipment (in master mode)

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	118	CC – command code
4	MASL	0 = Slave 1 = Master
5	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

If received packet is not equal to above description communication error has occurred.

Select Preset - no acknowledgement	CC = 119
---	-----------------

This command is used to select one of 8 filter presets.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	119	CC – command code
4	PRE	PRE = 1 preset #1 ... PRE = 8 preset # 8
5	ax	Check sum

Received packet:

No returned packet.

When used between TCS/RCS and amplifiers the broadcast code address is fixed to 0xA55B – i.e. A0 = 0x5B and A1 = 0xA5

Set Polarity - no acknowledgement	CC = 120
--	-----------------

This command is used to set polarity for all four channels. The function is similar with the function from the remote control.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	120	CC – command code
4	P	0 = pos (+) 1 = neg (-)
5	Ax	Check sum

Received packet:

No returned packet.

When used between TCS/RCS and amplifiers the broadcast code address is fixed to 0xA55B – i.e. A0 = 0x5B and A1 = 0xA5

Set Display Intensity - no acknowledgement	CC = 121
---	-----------------

This command is used to set the Display intensity of the Millennium.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	121	CC – command code
4	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
5	ax	Check sum

Received packet:

No returned packet.

When used between TCS/RCS and amplifiers the broadcast code address is fixed to 0xA55B – i.e. A0 = 0x5B and A1 = 0xA5

Set Maximum Volume Level - no acknowledgement	CC = 122
--	-----------------

This command is used to set maximum volume level. The minimum value is 0 and maximum value is 999.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0 (Value is 0x5B when coming from TCS/RCS)
2	0	A1 (Value is 0xA5 when coming from TCS/RCS)
3	122	CC – command code
4	Max_Level	Most significant byte
5	Max_Level	Least significant byte
6	xx	Check sum

Received packet:

No returned packet.

Set Default Volume Level – no acknowledgement	CC = 123
--	-----------------

This command is used to set default volume level. The minimum value is 0 and maximum value is 999.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	123	CC – command code
4	Def Level	Most significant byte
5	Def Level	Least significant byte
6	xx	Check sum

Received packet:

No returned packet.

Set Voicing – no acknowledgement	CC = 124
---	-----------------

This command is used to select voicing. The minimum value is 0 and maximum value is 6. It is only for RoomPerfect variants.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	124	CC – command code
4	n	Voicing no.
5	xx	Check sum

Received packet:

No returned packet.

Set Focus – no acknowledgement	CC = 125
---------------------------------------	-----------------

This command is used to select Focus, Global or Bypass. 0 is Bypass, 1 to 8 is Focus number and 9 is Global. It is only for RoomPerfect variants.

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	125	CC – command code
4	n	Focus no.
5	xx	Check sum

Received packet:

No returned packet.

Set Maximum Volume Level	CC = 132
---------------------------------	-----------------

This command is used to set maximum volume level. The minimum value is 0 and maximum value is 999.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	132	CC – command code
4	Max_Level	Most significant byte
5	Max_Level	Least significant byte
6	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Set Default Volume Level	CC = 133
---------------------------------	-----------------

This command is used to set default volume level. The minimum value is 0 and maximum value is 999.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	132	CC – command code
4	Level	Most significant byte
5	Level	Least significant byte
6	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Enable/Disable IR Remote	CC = 136
---------------------------------	-----------------

This command is used to enable/disable IR remote control

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	136	CC – command code
4	Remote_SEL	0 – IR Both remotes disabled 1 – IR “Black” enabled; “Silver” disabled 2 – IR “Black” disabled; “Silver” enabled 3 - IR Both remotes always enabled
5	Remote_EN	0 – No disable 1 – Disable
6	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Set Volume Display Offset	CC = 137
----------------------------------	-----------------

This command is used to make the display show the right volume level in a Master/Slave system with RoomPerfect.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	137	CC – command code
4	SIGN	0: Negative 1: Positive
5	OFFSET	Volume offset 0-255
6	xx	Check sum

No returned packet.

CD Play/Pause	CC = 140
----------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	140	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Stop	CC = 141
----------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	141	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Eject	CC = 142
-----------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	142	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Skip Left	CC = 143
---------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	143	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Skip Right	CC = 144
----------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	144	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Scan Left Start	CC = 145
---------------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	145	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Scan Right Start	CC = 146
----------------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	146	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Scan Stop	CC = 147
---------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	147	CC – command code
4	xx	Check sum

Received packet:

No returned packet.

CD Select Track	CC = 148
------------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	148	CC – command code
4	n	Track no
5	xx	Check sum

No returned packet.

CD Set Repeat	CC = 149
----------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	149	CC – command code
4	n	0: Repeat off; 1: Repeat one; 2: Repeat All
5	xx	Check sum

No returned packet.

CD Toggle Repeat	CC = 150
-------------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	150	CC – command code
4	xx	Check sum

No returned packet.

CD Set Random	CC = 151
----------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	151	CC – command code
4	n	0: Off; 1: On
5	xx	Check sum

No returned packet.

CD Toggle Random	CC = 152
-------------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	152	CC – command code
4	xx	Check sum

No returned packet.

CD A/B Repeat	CC = 153
----------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	153	CC – command code
4	xx	Check sum

No returned packet.

CDSets Sample Rate	CC = 154
---------------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	154	CC – command code
4	n	0: 44.1 kHz 1: 48 kHz 2: 96 kHz 3: 192 kHz
5	xx	Check sum

No returned packet.

CD Set DAC Gain	CC = 155
------------------------	-----------------

CD-1 command.

Transmitted packet:

Received packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	155	CC – command code
4	gain	0-12: 0 = 0dB; 1 = -0,5dB; 2 = -1dB ...
5	xx	Check sum

No returned packet.

Get CD State (incl. TOC)	CC = 156
---------------------------------	-----------------

CD-1 command.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	156	CC – command code
4	xx	Check sum

Received packet:

Byte#	Value	Description
0	18	Packet size
1	Byte 1	CD state: 0: Not initialized 1: Open 2: Opening 3: Closing 4: Closed 5: No disc 6: Error 7: Search error 8: Stopped 9: Playing
2	Byte 2	CD playing state: 0: Normal 1: Wind or Rewind 2: Playing A 3: Playing B 4: Playing AB 5: Search 6: Stopping 7: Opening
3	Byte 3	0: Repeat off; 1: Repeat one; 2: Repeat All
4	Byte 4	Random state 0: Off; 1: On
5	Byte 5	Title min.
6	Byte 6	Title max.
7	Byte 7	CD time minutes
8	Byte 8	CD time seconds
9	Byte 9	CD time frames
10	Byte 10	Track title
11	Byte 11	Track index
12	Byte 12	Track minutes
13	Byte 13	Track seconds
14	Byte 14	Sample rate: 0: 44.1 kHz 1: 48 kHz 2: 96 kHz 3: 192 kHz
15	Byte 15	DAC gain: 0-12: 0 = 0dB; 1 = -0,5dB; 2 = -1dB ...
16	Byte 16	IR on/off
17	xx	Check sum

Get 16 char. Name from Product	CC = 194
---------------------------------------	-----------------

This command is used to get a 16 char. name from the product.

Transmitted packet:

Byte#	Value	Description
0	7	Packet size
1	1	A0
2	0	A1
3	194	CC – command code
4	Name for	0=Input,1=Cartridge, 2=Preset
5	Number	Input no. Cartridge no. Preset no.
6	Xx	Check sum

Received packet:

Byte#	Value	Description
0	20	Packet size
1	Name from	0=Input, 1=Cartridge, 2=Preset
2	Number	Input no. Cartridge no. Preset no.
3	Byte 1	Char. 1
4	Byte 2	Char. 2
5	Byte 3	Char. 3
6	Byte 4	Char. 4
7	Byte 5	Char. 5
8	Byte 6	Char. 6
9	Byte 7	Char. 7
10	Byte 8	Char. 8
11	Byte 9	Char. 9
12	Byte 10	Char. 10
13	Byte 11	Char. 11
14	Byte 12	Char. 12
15	Byte 13	Char. 13
16	Byte 14	Char. 14
17	Byte 15	Char. 15
18	Byte 16	Char. 16
19	xx	Check sum

Note: Device address is calculated as:

$$\text{Device Address} = 256 * A1 + A0$$

For Millennium ADC:

Name for: 0 = Input name
 1 = Cartridge name
 2 = Preset name
 Number: Input: 1 - 5
 Preset: 1 - 99
 Cartridge: 1 - 4

Set 16 char. Name to Product	CC = 195
-------------------------------------	-----------------

This command is used to send a 16 char. name to the product.

Transmitted packet:

Byte#	Value	Description
0	23	Packet size
1	1	A0
2	0	A1
3	195	CC – command code
4	Name for	0=Input, 1=Cartridge, 2=Preset
5	Number	Input no. Cartridge no. Preset no.
6	Byte 1	Char. 1
7	Byte 2	Char. 2
8	Byte 3	Char. 3
9	Byte 4	Char. 4
10	Byte 5	Char. 5
11	Byte 6	Char. 6
12	Byte 7	Char. 7
13	Byte 8	Char. 8
14	Byte 9	Char. 9
15	Byte 10	Char. 10
16	Byte 11	Char. 11
17	Byte 12	Char. 12
18	Byte 13	Char. 13
19	Byte 14	Char. 14
20	Byte 15	Char. 15
21	Byte 16	Char. 16
22	Xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Note: Device address is calculated as:

$$\text{Device Address} = 256 * A1 + A0$$

For Millennium ADC:

Name for: 0 = Input name
 1 = Cartridge name
 2 = Preset name
 Number: Input: 1 - 5
 Preset: 1 - 99
 Cartridge: 1 - 4

Get Amp temperatures	CC = 196
-----------------------------	-----------------

This command is used to get Bridge and Coil temperatures from TDA2200.

Millennium ADC: This command is used in R&D. Byte 0 – 1 contains RIAA temperature. Byte 2 – 3 are 0x00.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	196	CC – command code
4	202	Check sum

Received packet:

Byte#	Value	Description
0	xx	Bridge temp – high byte
1	xx	Bridge temp – low byte
2	xx	Coil temp – high byte
3	xx	Coil temp – low byte
4	xx	Check sum

Get Product Name	CC = 197
-------------------------	-----------------

This command is used to get product string name.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	197	CC – command code
4	203	Check sum

Received packet:

Byte#	Value	Description
0	22	Packet size
1	'x'	Char. 1
2	'x'	Char. 2
3	'x'	Char. 3
4	'x'	Char. 4
5	'x'	Char. 5
6	'x'	Char. 6
7	'x'	Char. 7
8	'x'	Char. 8
9	'x'	Char. 9
10	'x'	Char. 10
11	'x'	Char. 11
12	'x'	Char. 12
13	'x'	Char. 13
14	'x'	Char. 14
15	'x'	Char. 15
16	'x'	Char. 16
17	'x'	Char. 17
18	'x'	Char. 18
19	'x'	Char. 19
20	'x'	Char. 20
21	xx	Check sum

Set Product Name	CC = 198
-------------------------	-----------------

This command is used to store setup data in TDA2200.
This command is used to change the product name in Millennium ADC.

Transmitted packet:

Byte#	Value	Description
0	25	Packet size
1	1	A0
2	0	A1
3	198	CC – command code
4	'x'	Char. 1
5	'x'	Char. 2
6	'x'	Char. 3
7	'x'	Char. 4
8	'x'	Char. 5
9	'x'	Char. 6
10	'x'	Char. 7
11	'x'	Char. 8
12	'x'	Char. 9
13	'x'	Char. 10
14	'x'	Char. 11
15	'x'	Char. 12
16	'x'	Char. 13
17	'x'	Char. 14
18	'x'	Char. 15
19	'x'	Char. 16
20	'x'	Char. 17
21	'x'	Char. 18
22	'x'	Char. 19
23	'x'	Char. 20
24	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Master Command - no acknowledgement	CC = 199
--	-----------------

This command is from master to set up slave target.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	199	CC – command code
4	205	Check sum

Received packet:

No returned packet.

Get setup data	CC = 200
-----------------------	-----------------

This command is used to get setup data from target.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	200	CC – command code
4	206	Check sum

Received packet:

Byte#	Value	Description
0	25	Packet size
1	POW	1 = Power ON; 0 = Power OFF
2	VOL_LSB	Actual volume – Least significant byte
3	VOL_MSB	Actual volume – Most significant byte
4	MUT	M=1 mute; M=0 un-mute
5	DEF_VOL_LSB	Default volume – Least significant byte
6	DEF_VOL_MSB	Default volume – Most significant byte
7	MAX_VOL_LSB	Max volume - Least significant byte
8	MAX_VOL_MSB	Max volume - Most significant byte
9	SRC	SRC=1 analog 1; ...; SRC=8 digital 4
10	PRE	PRE=1 preset #1; ...; PRE=8 preset # 8
11	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
12	POL	POL=0 pos (+); POL=1 neg (-)
13	P1	Left Main channel polarity
14	P2	Right Main channel polarity
15	P3	Left Line out polarity
16	P4	Right Line out polarity
17	Remote_SEL	0 – IR Both remotes disabled 1 – IR “Balck” enabled; “Silver” disabled 2 – IR “Balck” disabled; “Silver” enabled 3 - IR Both remotes always enabled
18	Remote_EN	0 – No disable; 1 – Disable
19	MASL	0 = Slave; 1 = Master
20	BALANCE	Balance
21	VER_HIGH	Version high byte
22	VER_LOW	Version low byte
23	DEV_CODE	1:SDAI2175 2:MILLENNIUM 3:TDA2200 5:TDA2200R 6:CDpre 7: TDA2200+ RoomP 8: Millennium ADC
24	xx	Check sum

Millennium ADC: This is used in R&D. Received packet byte 2 – 20 is set to 0xFF.

Set setup data	CC = 201
-----------------------	-----------------

This command is used to store setup data.

Transmitted packet:

Byte#	Value	Description
0	24	Packet size
1	1	A0
2	0	A1
3	201	CC – command code
4	POW	1 = Power ON; 0 = Power OFF
5	VOL_LSB	Actual volume – Least significant byte
6	VOL_MSB	Actual volume – Most significant byte
7	MUT	M=1 mute; M=0 un-mute
8	DEF_VOL_LSB	Default volume – Least significant byte
9	DEF_VOL_MSB	Default volume – Most significant byte
10	MAX_VOL_LSB	Max volume - Least significant byte
11	MAX_VOL_MSB	Max volume - Most significant byte
12	SRC	SRC=1 analog 1; ...; SRC=8 digital 4
13	Xx	Not used yet
14	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
15	Xx	Not used yet
16	Xx	Not used yet
17	Xx	Not used yet
18	Xx	Not used yet
19	Xx	Not used yet
20	Xx	Not used yet
21	Remote_EN	0 – No disable; 1 – Disable
22	BALANCE	Balance
23	Xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get SDAI2175 data command 1

CC = 202

This command is used to get setup data from SDAI2175.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	202	CC – command code
4	208	Check sum

Received packet:

Byte#	Value	Description
0	30	Packet size
1	REL_VOL_1_LSB	Relative Volume inp 1 LSB
2	REL_VOL_1_MSB	Relative Volume inp 1 MSB
3	SIGN_1	0:Negativ 1:Positive
4	REL_VOL_2_LSB	Relative Volume inp 2 LSB
5	REL_VOL_2_MSB	Relative Volume inp 2 MSB
6	SIGN_2	0:Negativ 1:Positive
7	REL_VOL_3_LSB	Relative Volume inp 3 LSB
8	REL_VOL_3_MSB	Relative Volume inp 3 MSB
9	SIGN_3	0:Negativ 1:Positive
10	REL_VOL_4_LSB	Relative Volume inp 4 LSB
11	REL_VOL_4_MSB	Relative Volume inp 4 MSB
12	SIGN_4	0:Negativ 1:Positive
13	REL_VOL_5_LSB	Relative Volume inp 5 LSB
14	REL_VOL_5_MSB	Relative Volume inp 5 MSB
15	SIGN_5	0:Negativ 1:Positive
16	REL_VOL_6_LSB	Relative Volume inp 6 LSB
17	REL_VOL_6_MSB	Relative Volume inp 6 MSB
18	SIGN_6	0:Negativ 1:Positive
19	REL_VOL_7_LSB	Relative Volume inp 7 LSB
20	REL_VOL_7_MSB	Relative Volume inp 7 MSB
21	SIGN_7	0:Negativ 1:Positive
22	SENSIVITY_1	Sensivity input 1
23	SENSIVITY_2	Sensivity input 2
24	SENSIVITY_3	Sensivity input 3
25	SENSIVITY_4	Sensivity input 4
26	SENSIVITY_5	Sensivity input 5
27	SENSIVITY_6	Sensivity input 6
28	SENSIVITY_7	Sensivity input 7
29	xx	Check sum

Set SDAI2175 data command 1

CC = 203

This command is used to store setup data to SDAI2175.

Transmitted packet:

Byte#	Value	Description
0	26	Packet size
1	1	A0
2	0	A1
3	203	CC – command code
4	REL_VOL_1_LSB	Relative Volume inp 1 LSB
5	REL_VOL_1_MSB	Relative Volume inp 1 MSB
6	SIGN_1	0:Negative 1:Positive
7	REL_VOL_2_LSB	Relative Volume inp 2 LSB
8	REL_VOL_2_MSB	Relative Volume inp 2 MSB
9	SIGN_2	0:Negative 1:Positive
10	REL_VOL_3_LSB	Relative Volume inp 3 LSB
11	REL_VOL_3_MSB	Relative Volume inp 3 MSB
12	SIGN_3	0:Negative 1:Positive
13	REL_VOL_4_LSB	Relative Volume inp 4 LSB
14	REL_VOL_4_MSB	Relative Volume inp 4 MSB
15	SIGN_4	0:Negative 1:Positive
16	REL_VOL_5_LSB	Relative Volume inp 5 LSB
17	REL_VOL_5_MSB	Relative Volume inp 5 MSB
18	SIGN_5	0:Negative 1:Positive
19	REL_VOL_6_LSB	Relative Volume inp 6 LSB
20	REL_VOL_6_MSB	Relative Volume inp 6 MSB
21	SIGN_6	0:Negative 1:Positive
22	REL_VOL_7_LSB	Relative Volume inp 7 LSB
23	REL_VOL_7_MSB	Relative Volume inp 7 MSB
24	SIGN_7	0:Negative 1:Positive
25	Xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get SDAI2175 data command 2**CC = 204**

This command is used to get setup data from SDAI2175.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	204	CC – command code
4	210	Check sum

Received packet:

Byte#	Value	Description
0	12	Packet size
1	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
2	Remote_EN	0 – No disable; 1 – Disable
3	DEV_ADR_LOW	Device address low byte
4	DEV_ADR_HIGH	Device address high byte
5	COM_SPEED	Baudrate: 0 - 9600 1 - 57600
6	BALANCE	Balance
7	DEF_VOL_LSB	Default volume – Least significant byte
8	DEF_VOL_MSB	Default volume – Most significant byte
9	MAX_VOL_LSB	Max volume - Least significant byte
10	MAX_VOL_MSB	Max volume - Most significant byte
11	xx	Check sum

Set SDAI2175 data command 2**CC = 205**

This command is used to store setup data to SDAI2175.

Transmitted packet:

Byte#	Value	Description
0	26	Packet size
1	1	A0
2	0	A1
3	205	CC – command code
4	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
5	Remote_EN	0 – No disable; 1 – Disable
6	DEV_ADR_LOW	Device address low byte
7	DEV_ADR_HIGH	Device address high byte
8	COM_SPEED	Baudrate: 0 - 9600 1 - 57600
9	BALANCE	Balance
10	DEF_VOL_LSB	Default volume – Least significant byte
11	DEF_VOL_MSB	Default volume – Most significant byte
12	MAX_VOL_LSB	Max volume - Least significant byte
13	MAX_VOL_MSB	Max volume - Most significant byte
14	SENSIVITY_1	Sensivity input 1
15	SENSIVITY_2	Sensivity input 2
16	SENSIVITY_3	Sensivity input 3
17	SENSIVITY_4	Sensivity input 4
18	SENSIVITY_5	Sensivity input 5
19	SENSIVITY_6	Sensivity input 6
20	SENSIVITY_7	Sensivity input 7
21	Xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get Millennium data command 1**CC = 206**

This command is used to get setup data from Millennium.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	206	CC – command code
4	212	Check sum

Received packet:

Byte#	Value	Description
0	16	Packet size
1	PRES_LOCK	Preset Lock Byte
2	Remote_SEL	0 – IR Both remotes disabled 1 – IR “Balck” enabled; “Silver” disabled 2 – IR “Balck” disabled; “Silver” enabled 3 - IR Both remotes always enabled
3	Remote_EN	0 – No disable; 1 – Disable
4	DEV_ADR_LOW	Device address low byte
5	DEV_ADR_HIGH	Device address high byte
6	COM_SPEED	Baudrate: 0 - 9600 1 - 57600 2 - 115200
7	PRE	PRE=1 preset #1; ...; PRE=8 preset # 8
8	MASL	0 = Slave; 1 = Master
9	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
10	TRIG	Trigger
11	DEF_VOL_LSB	Default volume – Least significant byte
12	DEF_VOL_MSB	Default volume – Most significant byte
13	MAX_VOL_LSB	Max volume - Least significant byte
14	MAX_VOL_MSB	Max volume - Most significant byte
15	xx	Check sum

Set Millennium data command 1**CC = 207**

This command is used to store setup data in Millennium.

Transmitted packet:

Byte#	Value	Description
0	24	Packet size
1	1	A0
2	0	A1
3	207	CC – command code
4	DIS	DIS=0 Display dimmed DIS=1 Display max intensity DIS=2 Display off
5	Remote_SEL	0 – IR Both remotes disabled 1 – IR “Balck” enabled; “Silver” disabled 2 – IR “Balck” disabled; “Silver” enabled 3 - IR Both remotes always enabled
6	Remote_EN	0 – No disable; 1 – Disable
7	DEV_ADR_LOW	Device address low byte
8	DEV_ADR_HIGH	Device address high byte
9	COM_SPEED	Baudrate: 0 - 9600 1 - 57600 2 - 115200
10	MASL	0 = Slave; 1 = Master
11	DEF_VOL_LSB	Default volume – Least significant byte
12	DEF_VOL_MSB	Default volume – Most significant byte
13	MAX_VOL_LSB	Max volume - Least significant byte
14	MAX_VOL_MSB	Max volume - Most significant byte
15	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get Millennium data command 2	CC = 208
--------------------------------------	-----------------

This command is used to get setup data from Millennium.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	208	CC – command code
4	214	Check sum

Received packet:

Byte#	Value	Description
0	7	Packet size
1	POL	POL=0 pos (+); POL=1 neg (-)
2	P1	Left Main channel polarity
3	P2	Right Main channel polarity
4	P3	Left Line out polarity
5	P4	Right Line out polarity
6	xx	Check sum

Set Millennium data command 2	CC = 209
--------------------------------------	-----------------

This command is used to store setup data in Millennium.

Transmitted packet:

Byte#	Value	Description
0	24	Packet size
1	1	A0
2	0	A1
3	207	CC – command code
4	POL	POL=0 pos (+); POL=1 neg (-)
5	P1	Left Main channel polarity
6	P2	Right Main channel polarity
7	P3	Left Line out polarity
8	P4	Right Line out polarity
9	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get TDA2200 data command 1**CC = 210**

This command is used to get setup data from TDA2200.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	210	CC – command code
4	216	Check sum

Received packet:

Byte#	Value	Description
0	18	Packet size
1	xx	ADC level for Analog 1
2	xx	ADC level for Analog 2
3	xx	ADC level for Analog 3
4	xx	ADC level for Analog 4
5	xx	IR status
6	xx	Device code - Least significant byte
7	xx	Device code - Most significant byte
8	xx	SCI speed
9	xx	PRE=1 preset #1; ...; PRE=8 preset # 8
10	xx	0=Slave; 1 = Master
11	xx	Display timeout on/off
12	xx	Trigger
13	xx	Default volume - Least significant byte
14	xx	Default volume - Most significant byte
15	xx	Max volume - Least significant byte
16	xx	Max volume - Most significant byte
17	xx	Check sum

Set TDA2200 data command 1

CC = 211

This command is used to store setup data in TDA2200.

Transmitted packet:

Byte#	Value	Description
0	21	Packet size
1	1	A0
2	0	A1
3	211	CC – command code
4	xx	Display timeout on/off
5	xx	IR status
6	xx	Device code - Least significant byte
7	xx	Device code - Most significant byte
8	xx	SCI speed
9	xx	0=Slave; 1 = Master
10	xx	Default volume - Least significant byte
11	xx	Default volume - Most significant byte
12	xx	Max volume - Least significant byte
13	xx	Max volume - Most significant byte
14	xx	PRE=1 preset #1; ...; PRE=8 preset # 8
15	xx	Trigger
16	xx	ADC level for Analog 1
17	xx	ADC level for Analog 2
18	xx	ADC level for Analog 3
19	xx	ADC level for Analog 4
20	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get TDA2200 data command 2

CC = 212

This command is used to get setup data from TDA2200.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	212	CC – command code
4	218	Check sum

Received packet:

Byte#	Value	Description
0	25	Packet size
1	xx	Preset Lock Byte
2	xx	Polarity
3	xx_lsb	Lineout level
4	xx_msb	Lineout level
5	xx	Lineout control
6	xx_lsb	Crossover fq.
7	xx_msb	Crossover fq.
8	xx	Crossover lock
9	xx	Filter type
10	xx	Routing main L
11	xx	Routing main R
12	xx	Routing line L
13	xx	Routing line R
14	xx	RoomP. installed
15	xx	RoomP. listen sel.
16	xx_lsb	RoomP. measure volume
17	xx_msb	RoomP. measure volume
18	xx	Advanced function
19	xx	Unit select
20	xx	Selected voicing
21	xx	Display brightness
22	xx	Volume disp. timeout
23	xx	Volume control byte
24	xx	Check sum

Set TDA2200 data command 2**CC = 213**

This command is used to store setup data in TDA2200.

Transmitted packet:

Byte#	Value	Description
0	31	Packet size
1	1	A0
2	0	A1
3	213	CC – command code
4	P	Overall polarity
5	P1	Left Main channel polarity
6	P2	Right Main channel polarity
7	P3	Left Line out polarity
8	P4	Right Line out polarity
9	xx_lsb	Lineout level
10	xx_msb	Lineout level
11	xx	Lineout control
12	xx_lsb	Crossover fq.
13	xx_msb	Crossover fq.
14	xx	Crossover lock
15	xx	Filter type
16	xx	Routing main L
17	xx	Routing main R
18	xx	Routing line L
19	xx	Routing line R
20	xx	RoomP. installed
21	xx	RoomP. listen sel.
22	xx_lsb	RoomP. measure volume
23	xx_msb	RoomP. measure volume
24	xx	Advanced function
25	xx	Unit select
26	xx	Selected voicing
27	xx	Display brightness
28	xx	Volume disp. timeout
29	xx	Volume control byte
30	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get Millennium ADC setup data**CC = 214**

This command is used to get setup data from Millennium ADC for all input channels.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
4	214	CC – command code
5	220	Check sum

Received packet:

Byte#	Value	Description
0	30	Packet size
1	1-5	Active Input channel (5 = phono)
2	0 – 2	Dig. Out Samplerate 0=48, 1=96, 2=192
3	0 – 120	Rel. input Gain Input channel 1 0 = -6dB, 60=0dB, 120 = +6dB
4	0 – 120	Rel. input Gain Input channel 2
5	0 – 120	Rel. input Gain Input channel 3
6	0 - 120	Rel. input Gain Input channel 4
7	0 - 120	Rel. input Gain Input channel Phono
8	0 - 3	Polarity for Input channel 1 Polarity = 0x00 -> + + Polarity = 0x01 -> + - Polarity = 0x02 -> - + Polarity = 0x03 -> - -
9	0 - 3	Polarity for Input channel 2
10	0 - 3	Polarity for Input channel 3
11	0 - 3	Polarity for Input channel 4
12	0 - 3	Polarity for Input channel Phono
13	0 - 1	Display timeout 0=OFF, 1=ON
14	0 - 99	Comm. Address
15	0 - 2	Comm. Speed 0=9600, 1=57600, 2=115200
16	0 - 2	Remote control 0=OFF, 1=ON, 2=MILLENNIUM connection
17	0 - 1	ADC level for Analog Input 1 0=LOW, 1=HIGH
18	0 - 1	ADC level for Analog Input 2
19	0 - 1	ADC level for Analog Input 3
20	0 - 1	ADC level for Analog Input 4
21	0 - 1	Input filter Analog 1, 0=OFF, 1=ON
22	0 - 1	Input filter Analog 2
23	0 - 1	Input filter Analog 3
24	0 - 1	Input filter Analog 4
25	0 - 4	Phono HP Filter 0 = OFF, 5, 10, 15, 20
26	0 – 99	Selected Preset – Phono input
27	0 – 99	Number OF active Presets - Phono
28	0 – 4	Selected Cartridge – Phono input
29	Xx	Check sum

Values that are the same for all channels:

Dig. Out Samplerate
Display timeout
Comm. Address
Comm. Speed
Remote control

Values that are different (optional) for each channel:

Relative input gain
Polarity

Values that are different (optional) for analog 1 – analog 4 (not valid for Phono input):

ADC level

Values that are optional for Phono input (not valid for analog 1 – analog 4):

Phono HP Filter
Selected Preset
Selected Cartridge

Set Millennium ADC setup data	CC = 215
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This command is used to store setup data in Millennium ADC for all input channels.
If just some of the values should be changed, the rest should be set to 0xFF.

Transmitted packet:

Byte#	Value	Description
0	33	Packet size
1	1	A0
2	0	A1
3	215	CC – command code
4	1 – 5	Set Input channel, 1 - 4 = analog 5 = Phono
5	0 – 2	Dig. Out Samplerate 0=48, 1=96, 2=192
6	0 – 120	Rel. input Gain Input channel 1 0 = -6dB, 60=0dB, 120 = +6dB
7	0 – 120	Rel. input Gain Input channel 2
8	0 – 120	Rel. input Gain Input channel 3
9	0 – 120	Rel. input Gain Input channel 4
10	0 – 120	Rel. input Gain Input Phono
11	0 – 3	Polarity for Input channel 1 Polarity = 0x00 -> + + Polarity = 0x01 -> + - Polarity = 0x02 -> - + Polarity = 0x03 -> - -
12	0 – 3	Polarity for Input channel 2
13	0 – 3	Polarity for Input channel 3
14	0 – 3	Polarity for Input channel 4
15	0 – 3	Polarity for Phono channel
16	0 – 1	Display timeout 0=OFF, 1=ON
17	0 – 99	Comm. Address
18	0 – 2	Comm. Speed 0=9600, 1=57600, 2=115200
19	0 – 2	Remote control 0=OFF, 1=ON, 2=MILLENNIUM connection
20	0 – 1	ADC level Analog 1 0 = LOW, 1 = HIGH
21	0 – 1	ADC level Analog 2
22	0 – 1	ADC level Analog 3
23	0 – 1	ADC level Analog 4
24	0 – 1	Input filter Analog 1, 0=OFF, 1=ON
25	0 – 1	Input filter Analog 2
26	0 – 1	Input filter Analog 3
27	0 – 1	Input filter Analog 4
28	0 – 4	Phono HP Filter 0 = OFF, 5, 10, 15, 20
29	0 – 99	Selected Preset – Phono input
30	0 – 99	Number OF active Presets - Phono
31	0 – 4	Selected Cartridge – Phono input
32	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

If Comm. Speed is changed – the value in received packet is not trustable.

Values that are the same for all channels:

Dig. Out Sample rate
Display timeout
Comm. Address
Comm. Speed
Remote control

Values that are different (optional) for each channel:

Relative input gain
Polarity

Values that are different (optional) for analog 1 – analog 4 (not valid for Phono input):
ADC level

Values that are optional for Phono input (not valid for analog 1 – analog 4):
Phono HP Filter
Selected Preset
Number OF Active Presets
Selected Cartridge

Get Millennium ADC Cartridge setup data	CC = 216
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This command is used to get Phono Cartridge setup data from Millennium ADC (Phono input).

Transmitted packet:

Byte#	Value	Description
0	6	Packet size
1	1	A0
2	0	A1
3	216	CC – command code
4	0 – 4	Cartridge number
5	xx	Check sum

Received packet:

Byte#	Value	Description
0	8	Packet size
1	0 – 4	Cartridge number 0= DSP Cartridge filter default
2	0 – 7	Phono Gain 28, 34, 40, 46, 52, 58, 64, 70
3	0 – 1	Phono Capacitance 100pF, 430pF
4	0 – 2	Phono Impedance 20, 200, 47k
5	0 – 1	50 kHz Zero OFF, ON
6	0 – 1	DSP Cartridge filter OFF, ON
7	Xx	Check sum

Set Millennium ADC Cartridge setup data	CC = 217
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This command is used to store Phono Cartridge setup data in Millennium ADC (Phono input).

If just some of the values should be changed, the rest should be set to 0xFF.

This command does not change the active cartridge number – to do that, use CC = 215 Set Millennium ADC setup data.

Transmitted packet:

Byte#	Value	Description
0	11	Packet size
1	1	A0
2	0	A1
3	217	CC – command code
4	0 – 4	Cartridge number 0= DSP Cartridge filter default
5	0 – 7	Phono Gain 28, 34, 40, 46, 52, 58, 64, 70
6	0 – 1	Phono Capacitance 100pF, 430pF
7	0 – 2	Phono Impedance 20, 200, 47k
8	0 – 1	50 kHz Zero OFF, ON
9	0 – 1	DSP Cartridge filter OFF, ON
10	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte

Get TDA2200 data command 3

CC = 218

This command is used to get setup data from TDA2200.

Transmitted packet:

Byte#	Value	Description
0	5	Packet size
1	1	A0
2	0	A1
3	218	CC – command code
4	224	Check sum

Received packet:

Byte#	Value	Description
0	37	Packet size
1	xx_lsb	Delay dist. Main L
2	xx_msb	Delay dist. Main L
3	xx_lsb	Delay dist. Main R
4	xx_msb	Delay dist. Main R
5	xx_lsb	Delay dist. Line L
6	xx_msb	Delay dist. Line L
7	xx_lsb	Delay dist. Line R
8	xx_msb	Delay dist. Line R
9	xx_lsb	Analog1 sens.
10	xx_msb	Analog1 sens.
11	xx_lsb	Analog2 sens.
12	xx_msb	Analog2 sens.
13	xx_lsb	Analog3 sens.
14	xx_msb	Analog3 sens.
15	xx_lsb	Analog4 sens.
16	xx_msb	Analog4 sens.
17	xx_lsb	Digital1 sens.
18	xx_msb	Digital1 sens.
19	xx_lsb	Digital2 sens.
20	xx_msb	Digital2 sens.
21	xx_lsb	Digital3 sens.
22	xx_msb	Digital3 sens.
23	xx_lsb	Digital4 sens.
24	xx_msb	Digital4 sens.
25	xx_lsb	Digital5 sens.
26	xx_msb	Digital5 sens.
27	xx	Analog1 text
28	xx	Analog2 text
29	xx	Analog3 text
30	xx	Analog4 text
31	xx	Digital1 text
32	xx	Digital2 text
33	xx	Digital3 text
34	xx	Digital4 text
35	xx	Digital5 text
36	xx	Check sum

Set TDA2200 data command 3

CC = 219

This command is used to store setup data in TDA2200.

Transmitted packet:

Byte#	Value	Description
0	40	Packet size
1	1	A0
2	0	A1
3	219	CC – command code
4	xx_lsb	Delay dist. Main L
5	xx_msb	Delay dist. Main L
6	xx_lsb	Delay dist. Main R
7	xx_msb	Delay dist. Main R
8	xx_lsb	Delay dist. Line L
9	xx_msb	Delay dist. Line L
10	xx_lsb	Delay dist. Line R
11	xx_msb	Delay dist. Line R
12	xx_lsb	Analog1 sens.
13	xx_msb	Analog1 sens.
14	xx_lsb	Analog2 sens.
15	xx_msb	Analog2 sens.
16	xx_lsb	Analog3 sens.
17	xx_msb	Analog3 sens.
18	xx_lsb	Analog4 sens.
19	Xx_msb	Analog4 sens.
20	xx_lsb	Digital1 sens.
21	xx_msb	Digital1 sens.
22	xx_lsb	Digital2 sens.
23	xx_msb	Digital2 sens.
24	xx_lsb	Digital3 sens.
25	xx_msb	Digital3 sens.
26	xx_lsb	Digital4 sens.
27	xx_msb	Digital4 sens.
28	xx_lsb	Digital5 sens.
29	xx_msb	Digital5 sens.
30	xx	Analog1 text
31	xx	Analog2 text
32	xx	Analog3 text
33	xx	Analog4 text
34	xx	Digital1 text
35	xx	Digital2 text
36	xx	Digital3 text
37	xx	Digital4 text
38	xx	Digital5 text
39	xx	Check sum

Received packet:

Byte#	Value	Description
0	2	Packet size
1	0xaa	Acknowledgement byte