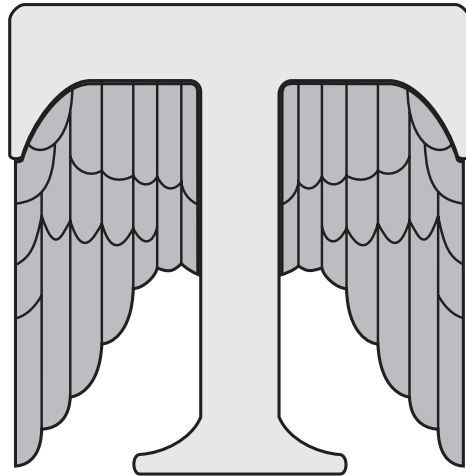


THETA DIGITAL

C O R P O R A T I O N



Generation VIII

RS232 Control Protocol

V 1.02

Digital Done Right

™

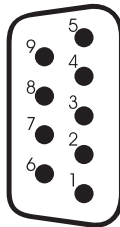
RS232 Hardware Connections

RTS and CTS are not implemented in Generation VIII

DB9

Pin	I/O	Jumped
1 - DCD	0	
2 - Generation VIII sends on this pin	0	
3 - Generation VIII receives on this pin	1	
4 - DTR	1	
5 - GND		
6 - DSR	0	
7 - RTS	1	
8 - CTS	0	
9 - Ring	---	

CN2



Rear panel view of DB9 connector
(From outside of unit).

These are the connector drawings only. The RS232 cable must be a regular RS232 or mouse extender cable that are wired pin for pin.

Generation VIII RS232 Control Details

RS232 settings are user definable in the Setup/RS232 menu, to accommodate interfacing with a wide range of control products.

Baud rate	4800, 9600, 19200, 38400, 57600 or 115200
Echo status	On-Off

Baud rate: Maximum number of bits per second. The duration of a single bit is equal to 1 / baud rate.
Echo status: Specifies whether the **STATUS** of each parameter shown in the protocol will automatically (**On**) be echoed back to the controller when there is any change, or whether no status information will be transmitted. Please refer to page **Error! Bookmark not defined.** or information on changing these settings.

The parameters for RS232 communication will default to 8 bits, 1 stop bit and no parity. (Software flow control).

All values in this document are in Decimal.

All commands will follow the format:

<Header><Command Identifier><Argument 1><Argument 2><Argument 3>
where:

<Header> = <254><241>
<Command identifier> = <byte>
<Argument 1> = <byte>
<Argument 2> = <byte>
<Argument 3> = <byte>

Each command will be able to access the system configuration directly, eliminating the need to press any button on the Generation VIII's front panel.

Examples:

- 1) To put the Generation VIII into standby: Send 254, 241, 04, 14, 01, 00 (all values in decimal).
Where 254 and 241 are the header, 04 = Command_Do Action, 14 = Action_Power Main, 01 = put unit into standby, and 00 = filler (4 characters required).
- 2) To change to Input # 2: Send 254, 241, 01, 04, 00, 02
Where 254 and 241 are the header, 01 = Command_Variable_Change, 04 = Variable_Input_Selected, 00 = filler (4 characters required), and 02 = Input 2.
-OR-
254, 241, 04, 05, 02, 00
Where 254 and 241 are the header, 04 = Command_Do Action, 05 = Select Input, 02 = Input 2, and 00 = filler (4 characters required).
- 3) To increment the Master Volume: Send 254, 241, 04, 20, 00, 00
Where 254 and 241 are the header, 04 = Command_Do Action, 20 = Action_Variable Specified Increment, 00 = Variable_Master Volume, and 00 = filler (4 characters required)

Please note: All values below are in decimal.

Command	Description	Argument 1	Argument 1 Description	Argument 2	Argument 2 Desc	Argument 3	Arg 3 Desc
1	Variable Change	0-33	Variable number (See list)			0-86	new value
4	Do Action	5-21	Action number (See list)				See Action List
5	Get Variable Value	0-33	Variable number (See list)				
6	Return Status	0-1	Status level to return (See list)				
11	Simulate Keypress		Simulate Keypress number (See list)				
25	Execute Macro	2	Restore Factory Settings	4			
Action List	Action Name						
5	Select Input			1-5	Input number		
6	Mute			0-2	0=Toggle, 1=Mute, 2=Unmute		
8	Go to Menu			0-11	Menu # (See List)		
14	Power Main			0-2	0=Cycle Standby, 1=In Standby, 2=Out of Standby		
20	Variable Specified Increment					0-33	Variable # (See List)
21	Variable Specified Decrement					0-33	Variable # (See List)
Variable List	Variable Name	Range	Range Description				
0	Master Volume	0-86					
1	Volume Muted	0-1	0=Not muted, 1=Muted				
2	Display Brightness	0-4	0=Full, 1=3/4, 2=1/2, 3=1/4, 4=Off				
3	Balance	-7 to 7					
4	Input Selected	1-5					
5	Input Jack - Inp # 1	1-8	1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opt, 7=Ana Bal, 8=Ans S.E.				
6	Input Jack - Inp # 2	1-8	1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opt, 7=Ana Bal, 8=Ans S.E.				
7	Input Jack - Inp # 3	1-8	1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opt, 7=Ana Bal, 8=Ans S.E.				
8	Input Jack - Inp # 4	1-8	1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opt, 7=Ana Bal, 8=Ans S.E.				
9	Input Jack - Inp # 5	1-8	1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opt, 7=Ana Bal, 8=Ans S.E.				
10	Input Name - Inp # 1	0-19	0=number, 1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opti, 7=Abal, 8=A Se, 9=CD, 10=CD1, 11=CD2, 12=DVD, 13=DVD1, 14=DVD2, 15=Phon, 16=Tune, 17=AM, 18=FM, 19=TV				

11	Input Name - Inp # 2	0-19	0=number, 1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opti, 7=Abal, 8=A Se, 9=CD, 10=CD1, 11=CD2, 12=DVD, 13=DVD1, 14=DVD2, 15=Phon, 16=Tune, 17=AM, 18=FM, 19=TV				
12	Input Name - Inp # 3	0-19	0=number, 1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opti, 7=Abal, 8=A Se, 9=CD, 10=CD1, 11=CD2, 12=DVD, 13=DVD1, 14=DVD2, 15=Phon, 16=Tune, 17=AM, 18=FM, 19=TV				
13	Input Name - Inp # 4	0-19	0=number, 1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opti, 7=Abal, 8=A Se, 9=CD, 10=CD1, 11=CD2, 12=DVD, 13=DVD1, 14=DVD2, 15=Phon, 16=Tune, 17=AM, 18=FM, 19=TV				
14	Input Name - Inp # 5	0-19	0=number, 1=RCA1, 2=RCA2, 3=BNC, 4=XLR, 5=TOS, 6=Opti, 7=Abal, 8=A Se, 9=CD, 10=CD1, 11=CD2, 12=DVD, 13=DVD1, 14=DVD2, 15=Phon, 16=Tune, 17=AM, 18=FM, 19=TV				
15	Clock Type - Inp # 1	0-1	0=Jitter Jail, 1=Reclock				
16	Clock Type - Inp # 2	0-1	0=Jitter Jail, 1=Reclock				
17	Clock Type - Inp # 3	0-1	0=Jitter Jail, 1=Reclock				
18	Clock Type - Inp # 4	0-1	0=Jitter Jail, 1=Reclock				
19	Clock Type - Inp # 5	0-1	0=Jitter Jail, 1=Reclock				
20	Phase - Inp # 1	0-1	0="-", 1="+"				
21	Phase - Inp # 2	0-1	0="-", 1="+"				
22	Phase - Inp # 3	0-1	0="-", 1="+"				
23	Phase - Inp # 4	0-1	0="-", 1="+"				
24	Phase - Inp # 5	0-1	0="-", 1="+"				
25	Burn In	0-1	0=Off, 1=On				
26	Remote Trigger	0-3	0=Out-DC, 1=Out-Pulse, 2=Receive-DC, 3=Receive-Pulse				
27	Pulse Duration	0-4	0=50, 1=100, 2=150, 3=200, 4=250				
28	Baud Rate	0-5	0=4800, 1=9600, 2=19200, 3=38400, 4=57600, 5=115200				
29	Echo Status	0-1	0=No, 1=Yes				
30	IR Source	0-2	0=Front Panel, 1=Rear Jack, 2=None				
31	Ext Volume Receive	0-6	0=Left/Right, 1=Center/Sub, 2=L/R Surr, 3=Ch 7/8, 4=Ch 9/10, 5=Ch 11/12, 6=None				
32	Screensaver Time	1-60	Time in minutes				
33	Initial Volume	0-40	0=Level 0, 1=Level 1, etc.				
Menu List	Menu Name						
0	Standby						
1	Main						
2	Setup Inputs						

3	Setup Clocking						
4	Setup Burn In						
5	Setup Trigger						
6	Setup RS232						
7	Setup IR						
8	Setup Ext Volume						
9	Setup Screensaver						
10	Setup Serial/Version						
11	Edit Balance						
Status Returned							
Byte #	Description	Value					
1	Input	1-5					
2	Jack	1-8					
3	Volume	0-86					
4	Standby	0-1	0=standby, 1=not in standby				
5	Lock	0-1	0=not locked, 1=locked				
6							
6	Sample Rate	0-7	0=32K, 1=44K, 2=48K, 4=88K, 5=96K, 6=176K, 7=192K				
7	Variable 0						
8	Variable 1						
9	Variable 2						
10	Variable 3						
11	Variable 4						
12	Variable 5						
...	Variable ...						
40	Variable 33						
Simulate Keypress List							
Key	Value						
1-5	1-5						
Mute	8						
Setup	11						
Display	13						
Standby	14						
Level up	15						
Level down	16						
Level Left	19						
Level Right	20						
Phase	21						
Discrete Off	25						
Discrete On	26						