

Appendix C RS232 Protocol

RS232 settings are internally definable via jumper blocks, to accommodate interfacing with a wide range of control products.

Baud rate	9600 or 19200
Echo status	AUTO or REQUEST

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 (**AUTO**) be echoed back to the controller when there is any change, or whether the user must manually request (**REQ**) the status information be sent to the controller. Please refer to page 14 or information on changing these settings.

All commands will follow the format:

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

<Header> = <FEh><EEh>
<Command identifier> = <byte>
<Argument x> = <byte>

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

Examples:

- 1) To select put the Dreadnaught into standby: Send FE, EE, 01, 00, 00, 00 (all values in Hex).
Where FE and EE are the header, 01 = command, 00 = main standby, 00 = put unit in standby and 00 = filler (4 characters required)
- 2) To activate the Surround buss: Send FE, EE, 01, 01, 01, 00
Where FE and EE are the header, 01 = command, 01 = surround buss, 01 = activate surround buss and 00 = filler (4 characters required)

Command	Description	Argument 1	Argument 1 Description	Argument 2	Argument 2 Desc	Argument 3	Arg 3 Desc
01	Standby	0	Main standby	0	Put unit in standby		
		0	Main standby	1	Take unit out of standby.		
		1	Surround bus	0	Make surround bus inactive.		
		1	Surround bus	1	Activate surround bus.		
02	Status	0	Return amplifier status.				
The RS232 can be set using a hardware jumper to automatically send changes to the RS232 port.							
Status Byte #	Byte Description	bit	Value Description				
1	Bus	0	Main bus				
		1	Surround bus				
2	Temperature	0	Channel 1				
		1	Channel 2				
		2	Channel 3				
		3	Channel 4				
		4	Channel 5				
3	Fuse Plus Rail	0	Channel 1				
		1	Channel 2				
		2	Channel 3				
		3	Channel 4				
		4	Channel 5				
4	Fuse Minus Rail	0	Channel 1				
		1	Channel 2				
		2	Channel 3				
		3	Channel 4				
		4	Channel 5				
5	Channel Sense	0	Channel 1				
		1	Channel 2				
		2	Channel 3				
		3	Channel 4				
		4	Channel 5				

RS232 Hardware Connections

RTS and CTS are not implemented in Dreadnaught

DB9

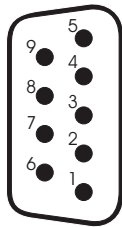
Pin	I/O	
1 - DCD	0	Jumped
2 - Dreadnaught sends on this pin	0	
3 - Dreadnaught receives on this pin	1	
4 - DTR	1	
5 - GND		
6 - DSR	0	
7 - RTS	1	
8 - CTS	0	
9 - Ring	---	

CN2

RJ45

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

CN3



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

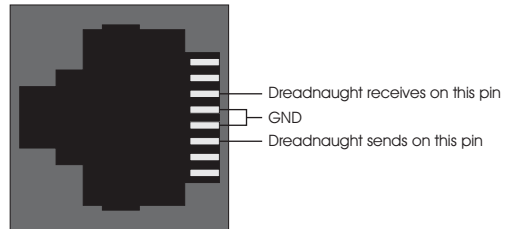


Figure 6 – Dreadnaught RS232 Jack Pinout

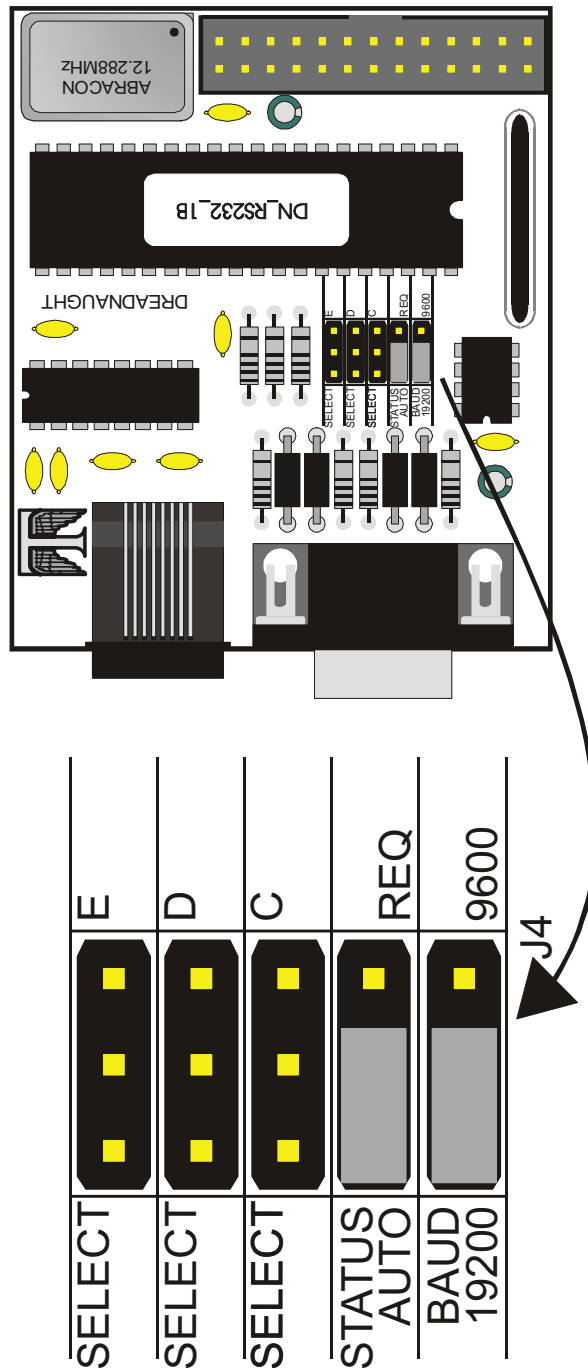


Figure 7 – Dreadnaught RS232 Jumper Settings

RS232 Jumper Settings

There are 2 possible Baud rates: **9600** and **19200**. The factory default is **19200**. To change the baud rate to **9600**, move the jumper to the center and top pins (if the RS232 board is orientated as in figure 7).

The **STATUS** can be returned to the controller either: automatically every time a parameter has changed, or the user can request it manually. The factory default is **AUTO**. To set the Echo **STATUS** to return Status information only upon request, move the **AUTO/REQ** jumper to the top pins, or nearer to **REQ** on the RS232 board.

The three **SELECT** jumpers are not currently implemented.

Appendix D Specifications

Inputs: Analog audio:
 1 Single-ended per channel (RCA) on each module type.
 1 Balanced per channel (XLR) on each module type.
 Input Impedance: 50 K Ω Single-ended or Balanced, for each phase. (both modules)
 Input sensitivity: Mono module: (Single-ended) 2.0V RMS input for 200W into 8 ohms.
 (Balanced) 1.0V RMS input for 200W into 8 ohms.
 Stereo module: (Single-ended) 1.5V RMS input for 100W into 8 ohms.
 (Balanced) 0.75V RMS input for 100W into 8 ohms.
 Gain: Mono Module: (Single-Ended) 26dB (19x).
 (Balanced) 32dB (38x).
 Stereo Module: (Single-Ended) 25.5dB (17x).
 (Balanced) 31.5dB (38x).
 Polarity: (Single-ended) Non-Inverting.
 (Balanced) Pin-2 = Positive, Pin-3 = Negative for Non-Inverting Output.

Outputs: Analog Audio: 1 balanced output per channel.

I/O RS232: 1 DB9 and 1 RJ45 connector.

Modes/Processes: Standby, Stereo and Surround. Channels may be individually assigned to either buss.

Power Output: Mono Module: (8 ohms-one channel driven) 200 W (rated) 250 W (typical)
 (8 ohms-five channels driven) 200 W (rated) 210 W (typical)
 (4 ohms-one channel driven) 400 W (rated) 440 W (typical)
 Stereo module: (8 ohms-one to ten channels driven) 100W (rated) 115W (typical)
 (4 ohms-one channel driven) 200W (rated) 210W (typical)

Frequency Response: (-3dB points @ full power) 0.3Hz - 250 kHz.

THD+Noise: Mono module: <1%
 Stereo Module: <1.25% (both channels driven into 100W @ 8 ohms).

Signal to Noise Ratio: (unweighted) >100dB

Power Requirements: 117 VAC, 18 amp, 230 VAC, 9 amp; 50-60 Hz, 20 amp for full power in all channels.

Power Consumption:

No. of 1 ch. Modules	No. of 2 ch. Modules	Total no. of channels	STANDBY	IDLE	All chs. at rated power into 8 ohms
2		2	75W	125W	750W
3		3	100W	175W	1020W
4		4	125W	225W	1230W
5		5	150W	275W	1440W
	2	4	90W	145W	860W
	3	6	120W	205W	1275W
	4	8	150W	265W	1690W
	5	10	180W	325W	2080W
1	1	3	85W	135W	805W
1	2	5	115W	195W	1210W
1	3	7	145W	255W	1615W
1	4	9	175W	315W	2020W
2	1	4	105W	185W	1155W
2	2	6	135W	245W	1560W
2	3	8	165W	305W	1965W
3	1	5	130W	235W	1425W
3	2	7	160W	295W	1830W
4	1	6	155W	285W	1635W

Trigger Inputs: 5-12 VDC Pulse between 1 and 500mS. (1/8" (3.5mm) mono jacks).

Dimensions: 17 5/8" W x 8 7/16" H x 23 1/2" D (448 x 214 x 597 mm)

Weight: 100 Lbs. Stand alone (45.4 Kg), 115 Lbs. Boxed with accessories (52.2 Kg)

Maximum Operating Temperature: Internal: 176° F (80° C)
 Room: 122° F (50° C)

90 DAY LIMITED WARRANTY TERMS AND CONDITIONS
(3 Year optional extended service contract)

1. Theta Digital Corporation, henceforth referred to as Theta, warrants the product designated herein to be free of manufacturing defects in material and workmanship, subject to the conditions set forth herein, for a period of 90 days from the date of purchase by the original purchaser, henceforth referred to as purchaser. If the purchaser registers the unit with Theta by mailing in the warranty card, together with a copy of the bill of sale, within 14 days of the date of purchase, said purchaser will be registered for an extended service contract. The extended service contract extends the 90 days to a period of 3 years from the date of purchase by the original purchaser or no later than 7 years from the date of shipment to the authorized Theta dealer, whichever comes first.
2. **CONDITIONS**
This warranty is subject to the following conditions and limitations. The warranty is void and inapplicable if the product has been used or handled other than in accordance with the instructions in the owner's manual, abused or misused, damaged by accident or neglect or in being transported, or if the defect is due to the product being repaired or tampered with or modified by anyone other than Theta or an authorized Theta repair center. In the unlikely event that the unit requires service, contact Theta for an RA (Return Authorization) number. The product must be packed and returned to Theta or an authorized Theta repair center by the customer at his or her sole expense. Theta will pay return freight of its choice. A returned product must be accompanied by a written description of the defect, a photocopy of the original purchase receipt, and a daytime phone number where the owner can be reached. The unaltered receipt must clearly list model and serial number, the date of purchase, the name and address of the purchaser and authorized dealer and the purchase price. Theta reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any product without notice or obligation to any person.
3. **REMEDY**
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This warranty expires 90 days after the date of original purchase. If Theta receives the completed warranty registration card within 14 days of original purchase, this period is extended to the third anniversary of the original date of purchase or no later than the seventh anniversary of the shipment to the authorized Theta dealer, whichever comes first.
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Inquiries regarding the above limited warranty may be sent to the following address:

THETA DIGITAL CORPORATION
5330 DERRY AVENUE, SUITE "R"
AGOURA HILLS, CA 91301

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1. To prevent fire or shock hazard, do not expose your Theta product to rain or moisture.
2. This unit contains voltages which can cause serious injury or death. Do not operate with covers removed. Refer all servicing to your authorized Theta dealer.
3. For continued protection against fire hazard, replace fuses only with the same type and rating of fuses as specified.