

BRYSTON SERIAL PROTOCOL FOR 9B3 POWER AMPLIFIER

20-Oct-2014 Stan Bleszynski Bryston Ltd.

9BSST3 can receive commands and can send responses to each command. It can also (optionally) broadcast automatic responses to certain system events such as source switching from the front panel etc. The commands can be sent over RS232, RS485 (with a RS232-to-RS485 interface) and over TCP/IP Ethernet connection (using GET mechanism on port 80).

Command format:

RS232: ASCII string beginning with # ending with carriage return (ASCII code 13).

#	D1	D2	C1	C2	C3	C4	P1	P2	...	<CR>
---	----	----	----	----	----	----	----	----	-----	------

#	command start character (replaced by %23 when using TCP/IP)
D1	device category, one digit 1..f (for 9BSST3, D1 must always be 2)
D2	RS485 Device ID, one hex digit 0..9 and a..f (dflt=0). D2=set by three bits 2,3 and 4 of the four bit switches at the back of the unit(see *).
C1..C4	command name (4 chars) , typically uppercase ASCII letters.
P1,P2,..	parameters are two or more ASCII characters.
<CR>	Carriage return end char, code 13 (replaced by dot character '.' when using TCP/IP)

Example of power up command (RS232):

#20MPWR01<CR>

Example of power up command (TCP/IP):

%2320MPWR01.

Note (*):

The switches are numbered S1 to S4, positions are:

up=open=off=push right=logics 1,

down=closed=on= push left=logics 0.

S1: operation of the power button - 1=Local, 0=Remote

When S4=1 then S2,S3 select the network IP address/IP Mask and DHCP mode and the Device ID (D2 digit) :

S2,S3 = 01 = 169.254.1.2/255.255.0.0, static mode (no DHCP), D2=2.

S2,S3 = 10 = 192.168.0.2/255.255.255.0, static mode (no DHCP), D2=1.

S2,S3 = 00 = 10.0.0.2/255.255.255.0, static mode (no DHCP), D2=3.

S2,S3 = 11 = DHCP client mode enabled, automatic IP mode, D2=0.
(the fall-back is 169.254.1.2/255.255.0.0)

S4=0: reserved

Default factory setting:

S1,S2,S3,S4 = 1,1,1,1 (open,open,open,open) that is: power switch=local, DHCP=enabled
(automatic IP)

Response format:

#	D1	D2	C1	C2	C3	C4	R1	R2	...	<CR>
---	----	----	----	----	----	----	----	----	-----	------

Response format is the same as commands, repeating the D1,D2,C and R bytes (R bytes may carry either an actual status value in ASCII or ?? string to indicate errors).

Example (RS232):

```
#20MPWRQS<CR>  command: query power status
#20MPWR00<CR>  response: power is off (STANDBY)
#20MPWR01<CR>  command: power up
#20MPWR01<CR>  response: power is on
```

Example (TCP/IP):

```
%2320MPWRQS.  command: query power status
%2320MPWR00.  response: power is off (STANDBY)      %2320MPWR01.
command: power up
%2320MPWR01.  response: power is on
```

Notes:

All characters preceding the # of a command, and following the <CR> will be ignored. Do not insert #, spaces, <LF>, <TAB> or other non-ASCII characters inside the command string.

When using TCP/IP, replace carriage return character with the dot '.' character.

Do not assume that the number of response bytes R1,R2,... is always fixed. Allow up to 320 bytes to be read or until a <CR> is encountered.

The format of the automatic responses is the same as the response to a serial command sent with the "Query Status" parameter bytes P1 P2 = "QS".

Issue a single character ? to display help page (RS232 and TCP/IP).

COMMAND NAME	PARAM.	DESCRIPTION
MPWR		Set Main Power (works in standby!)
	00	Off (Standby)
	01	On
	QS	Query Status
MMUT		Set Main Mute
	00	Mute Off
	01	Mute On
	02	Mute toggle
	QS	Query Status
INFO		Query system info (works in standby!)
	QS	Query, returns system data as a block of up to 300 chars terminated by <CR>
		The response is split into 13 <LF> ('\n') delimited lines of text:
		#10INFO<LF>
		01:%8sPRODUCT NAME<LF>
		02:%8dSERNUM<LF>
		03:%8dMANUFDATE<LF>
		04:%12sSOFTWARE REV <LF>
		05:%8sBOOTLOADER REV<LF>
		06:%8xCPU PIC32 REV<LF>
		07:%8xETHERNET<LF>
		08:%8xFLASH<LF>
		09:%18sMACADDR[18] <LF>
		10:%16sNETBIOSNAME[16] <LF>
		11:%16s IP ADDR<LF>
		12:%4dMAINBOARD REV<LF><CR>
		Note: %8x means 8 char hex,
		%8d means 8 char dec,
		%NNs means NN char str. <CR> ('\r') is the last byte
INIT		Re-default internal parameters
	00	Re-default/reset internal parameters except TCP/IP
	01	Re-default TCP/IP parameters (only)
	02	Reset all to factory default.

	QS	Query recently performed re-default status
		-- = nothing was re-defaulted (since the last power up)
		00 = Internal parameters (except TCP/IP) were re-defaulted
		01 = TCP/IP parameters were re-defaulted
STAT		Send/query status command
	QS	Query channel modules status, returns 5 symbols xxxxx representing channels 1..5 each. Each symbol x represents color status of each channel:
		g = green (normal)
		r = red (muted or clipping)
		y = yellow (thermal overload)
		0 = zero = off or not installed
TEMP		Query temperature
	QS	Return channel modules temperatures in Celsius, as string of signed decimal values aabbccdddeee, where aaa = temperature for channel1, bbb = temperature for channel 2 etc. The range is -40 to 120, resolution is 1C, leading zeros are replaced with blanks. Example: " 20 20 20 20 20" .
		Currently this feature is not yet supported by hardware and always returns all zeros, that is:
		" 0 0 0 0 0"
TEST		Send/query test status command
	00	Switch blue LED off
	01	Switch blue LED on
	02	Toggle blue LED
	QS	Query channel LED status, back panel switch and internal jumpers status. Returns 4-digit hex value
		Bits 0..4 = green LED status of channels 1 to 5, respectively.
		Bits 5..9 = red LED status of channels 1 to 5, respectively.
		Bits 10..13 = status of the back panel 4-bit switch, 1=Open,0=Close
		Bit 14 = Jumper P2, 1=Open,0=On
		Bit 15 = Jumper P3, 1=Open,0=On
_____		Comment (all text up to 300 characters will be ignored)

-- END OF FILE --