

## **Azur 840A (V1 & V2) and 840E Serial Control Protocol V1.1**

### **1.1 RS232 Protocol**

The protocol is accessed via COM1 i.e. the rear panel RS232C port.

### **1.2 Command Format**

	Header	Command Group		Command Number		Command Data	Footer
	#	1 to 6	,	01 to 18	,	XXXX	CR
byte num:	1	1	1	2	1	XX	1

#### **Notes:**

All data consists of ASCII bytes.

Settings for RS232 comm port are 9600,N,8,1 with no handshaking.

CR is carriage return, ASCII value 13 decimal.

Command Data consists of 10 characters maximum.

### **1.3 Command Groups**

Commands are split into the following groups:

Command Group	Description
1	Control Commands
2	Setup Commands
3	Replies from Setup Commands
4	Replies from Control Commands and Updates
5	Error Messages



## 1.4 Commands and Messages

### 1.4.1 Group 1 - Control Commands

Command Number	Command Description	Command Data	Example
01 to 07	Main Input Selects	No Data	#1,02,\r - Select Input 2
08	Tape Monitor	0 - Off, 1 - On	#1,08,1\r - Tape monitor on
09	Main Input Up	No Data	#1,09,\r - Next input up
10	Main Input Down	No Data	#1,10,\r -Next input down
11	Power State	0 - Standby, 1 - On	#1,11,0\r - Put 840A in standby
12	Mute State	0 - Mute Off, 1 - Mute On	#1,12,1\r - Mute volume
13	Goto Volume	00 to 72 - Volume Level	#1,13,10\r - Set volume to 10
		Note - For 840A V1 : 00:min, 72:max For 840A V2 & 840E : 00:min, 96:max	
14	Volume Up	No Data	#1,14,\r - Start volume up
15	Volume Down	No Data	#1,15,\r - Start volume down
16	Volume Stop	No Data	#1,16,\r -Stop volume changing
17	Set Balance	00 to 16 - Balance Level Note - 00:max left, 08:neutral, 16:max right	#1,17,08\r -Balance neutral
18	Balance Right	No Data	#1,18,\r -Balance right
19	Balance Left	No Data	#1,19,\r -Balance left
20	LCD Brightness	0 - Off, 1 - Dim, 2 - Bright	#1,20,2\r - LCD bright
21	Speaker Select	0 - A, 1 - AB, 2 - B <b>(840A V1 &amp; V2 only)</b>	#1,21,1\r - Speaker AB
23	Abus Input Select	1 - Input 1, 2 - Input 2, 3 - Input 3, 4 - Input 4, 5 - Input 5, 6 - Input 6, 7 - Input 7, 8 - Tape Monitor	#1,23,7\r - Select Abus input 7
24	Set Bass	00 to 30 - Bass Level Note - 00:min, 15:neutral, 30:max	#1,24,15\r -Bass neutral
25	Set Treble	00 to 30 - Treble Level Note - 00:min, 15:neutral, 30:max	#1,25,15\r -Treble neutral
26	Set Direct	0 - Off, 1 - On	#1,26,1\r - Direct on



### 1.4.2 Group 2 - Setup Commands

Command Number	Command Description	Command Data	Example
01	Get Software Version	No Data	#2,01,\r - Get software version
02	Get Protocol Version	No Data	#2,02,\r - Get protocol version
03	Set Input Name	1 to 8,Name Note - Name must be max 8 characters	#2,03,2,Ipod\r - Name input 2 'Ipod'

### 1.4.3 Group 3 - Replies from Setup Commands

Command Number	Command Description	Command Data	Example
01	Software Version	X.X	#3,01,1.2\r - Software is version 1.2
02	Protocol Version	X.X	#3,02,2.4\r - Protocol is version 2.4
03	Input Name Changed	1 to 8,Name Note - Name will be max 8 characters	#3,03,3,DAB \r - Input 3 named 'DAB '



#### 1.4.4 Group 4 - Replies from Control Commands and Updates

Command Number	Command Description	Command Data	Example
01 to 07	Main Input Source Changed	No Data	#4,02,\r - Main input 2 selected
08	Tape Monitor Changed	0 - Off, 1 - On	#4,08,1\r - Tape monitor on
11	Power State Changed	0 - Standby, 1 - On	#4,11,0\r - 840A in standby
12	Mute State Changed	0 - Mute Off, 1 - Mute On	#4,12,1\r - Mute on
13	Volume Changed	00 to 72 - Volume Level Note - For 840A V1 : 00:min, 72:max For 840A V2 & 840E : 00:min, 96:max	#4,13,15\r - Volume level now 15
14	Volume Increasing	No Data	#4,14,\r - Volume increasing
15	Volume Decreasing	No Data	#4,15,\r - Volume decreasing
16	Volume Stopped	00 to 66 - Volume Level	#4,16,20\r - Volume stopped changing at 20
17	Balance Changed	00 to 16 - Balance Level Note - 00:max left, 08:neutral, 16:max right	#4,17,08\r -Balance is neutral
20	LCD Brightness Changed	0 - Off, 1 - Dim, 2 - Bright	#4,20,1\r - LCD dim
21	Speaker Selection Changed	0 - A, 1 - AB, 2 - B <b>(840A V1 &amp; V2 only)</b>	#4,21,1\r - Speaker B selected
22	Headphones In / Out	0 - Out, 1 - In	#4,22,1\r - Headphones inserted
23	A-BUS Input Source Changed	1 - Input 1, 2 - Input 2, 3 - Input 3, 4 - Input 4, 5 - Input 5, 6 - Input 6, 7 - Input 7, 8 - Tape Monitor	#4,23,7\r - A-BUS input 7 selected
24	Bass Level Changed	00 to 30 - Bass Level Note - 00:min, 15:neutral, 30:max	#4,24,15\r -Bass is neutral
25	Treble Level Changed	00 to 30 - Treble Level Note - 00:min, 15:neutral, 30:max	#4,25,15\r -Treble is neutral
26	Direct State Changed	0 - Off, 1 - On	#4,26,1\r - Direct is on



### 1.4.5 Group 5 – Error Messages

Command Number	Command Description	Command Data	Example
01	Overload Error	No Data <b>(840A V1 &amp; V2 only)</b>	#5,01,\r - Overload error
02	DC Offset Error	No Data <b>(840A V1 &amp; V2 only)</b>	#5,02,\r - DC offset error
03	Over Temperature Error	No Data <b>(840A V1 &amp; V2 only)</b>	#5,03,\r - Over temperature error
04	Clipping Error	No Data <b>(840A V1 &amp; V2 only)</b>	#5,04,\r - Clipping error
05	Mains Fail	No Data <b>(840A V1 &amp; V2 only)</b>	#5,05,\r - Mains failed
06	Speaker Fail	No Data <b>(840A V1 &amp; V2 only)</b>	#5,06,\r - Speaker failed
07	Command Group Unknown	No Data	#5,07,\r - Command error
08	Command Number in Group Unknown	No Data	#5,08,\r - Command error
09	Command Data Error	No Data	#5,09,\r - Data error

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