

# BenQ

## SP820

### Software/RS-232 Programming Guide

## 1. RS232 Setting

Baud rate:	9600
Parity check:	None
Data bit:	8
Stop bit:	1
Flow Control	None

Note: The SP820 has a male DB9 RS-232 connector and will take a standard "straight through" cable.

Pin 2 = RxD, Pin 3 = TxD, Pin 5 = Ground

Minimum delay for next command: 1ms

## 2. Operation Command

The operation commands execute the basic operation setting of this projector.

Operation	ASCII	HEX
Power On *	~ P N CR	7Eh 50h 4Eh 0Dh
Power Off	~ P F CR	7Eh 50h 46h 0Dh
Auto Image	~ A I CR	7Eh 41h 49h 0Dh
Input Select RGB	~ S R CR	7Eh 53h 52h 0Dh
Input Select DVI	~ S D CR	7Eh 53h 44h 0Dh
Input Select Video	~ S V CR	7Eh 53h 56h 0Dh
Input Select S-Video	~ S S CR	7Eh 53h 53h 0Dh
Input Select Component	~ S Y CR	7Eh 53h 59h 0Dh

\* Power On command will not work for 1 minute after the power off command triggered.

Note: CR = Enter.

## 3. Remote Command

The remote commands simulate the code send from IR remote handset.

Button's name	ASCII	HEX
UP arrow	~ r U CR	7Eh 72h 55h 0Dh
DOWN arrow	~ r D CR	7Eh 72h 44h 0Dh
LEFT arrow	~ r L CR	7Eh 72h 4Ch 0Dh
RIGHT arrow	~ r R CR	7Eh 72h 52h 0Dh
POWER	~ r P CR	7Eh 72h 50h 0Dh
EXIT	~ r E CR	7Eh 72h 45h 0Dh
INPUT	~ r I CR	7Eh 72h 49h 0Dh
AUTO	~ r A CR	7Eh 72h 41h 0Dh
KEystone+	~ r K CR	7Eh 72h 4Bh 0Dh



KEYSTONE-	~ r J CR	7Eh 72h 4Ah 0Dh
MENU	~ r M CR	7Eh 72h 4Dh 0Dh
STATUS	~ r S CR	7Eh 72h 53h 0Dh
MUTE	~ r T CR	7Eh 72h 54h 0Dh
BLANK	~ r B CR	7Eh 72h 42h 0Dh
FREEZE	~ r F CR	7Eh 72h 46h 0Dh
VOLUME+	~ r V CR	7Eh 72h 56h 0Dh
VOLUME-	~ r W CR	7Eh 72h 57h 0Dh
Enter	~ r N CR	7Eh 72h 4Eh 0Dh

#### 4. Set Value Command \*

ITEM	ASCII	HEX
Brightness	~ s B ? CR *	7Eh 73h 42h ?h 0Dh
Contrast	~ s C ? CR	7Eh 73h 43h ?h 0Dh
Color	~ s R ? CR	7Eh 73h 52h ?h 0Dh
Tint	~ s N ? CR	7Eh 73h 4Eh ?h 0Dh
Scaling	~ s A ? CR	7Eh 73h 41h ?h 0Dh
Color Temperature	~ s T ? CR	7Eh 73h 54h ?h 0Dh
Projection Mode	~ s J ? CR	7Eh 73h 4Ah ?h 0Dh

\* Value should be given in ASCII character set, see valid ranges below.

#### Data Range

ITEM	Set Data Range	Source
Brightness	0 ~ 100	ALL
Contrast	0 ~ 100	ALL
Color	0 ~ 100	Video/S-Video/Component
Tint	0 ~ 100	Video/S-Video/Component
Scaling	0: 4:3 1: 16:9	ALL
Color Temperature	0: Cool 1: Ceiling 2: Warm	ALL
Projection Mode	0: Front 1: Rear 2: Rear+Ceiling 3: Ceiling	ALL

Example 1. Adjust Brightness value to 100  
Send Command: ~sB100CR

Example 2. Adjust Color Temperature to Warm  
Send Command: ~sT2CR

## 5. Query Command

ITEM	ASCII	HEX
Software Version	~qVCR	7Eh 71h 56h 0Dh
Power State	~qPCR	7Eh 71h 50h 0Dh
Input Select	~qSCR	7Eh 71h 53h 0Dh
Lamp Hours	~qLCR	7Eh 71h 4Ch 0Dh
Brightness	~qBCR	7Eh 71h 42h 0Dh
Contrast	~qCCR	7Eh 71h 43h 0Dh
Color (Video)	~qRCR	7Eh 71h 52h 0Dh
Tint (Video)	~qNCR	7Eh 71h 4Eh 0Dh
Scaling	~qACR	7Eh 71h 41h 0Dh
Color Temperature	~qTCR	7Eh 71h 54h 0Dh
Projection Mode	~qJCR	7Eh 71h 4Ah 0Dh

### Response message

ITEM	Response Message examples
Software Version	.....
Power State	On Off
Input Select	RGB DVI Video S-Video Component
Lamp Hours	2000
Brightness	100
Contrast	100
Color (Video)	100
Tint (Video)	100
Scaling	4:3 16:9
Color Temperature	Cool Normal
Projection Mode	Front Rear+Ceiling Rear Ceiling

**Example 1.** Get Brightness value  
 Send Command: ~qB`CR`  
 Response: 100

**Example 2.** Get Color Temperature  
 Send Command: ~qT`CR`  
 Response: Cool

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