

## **Instruction Manual**

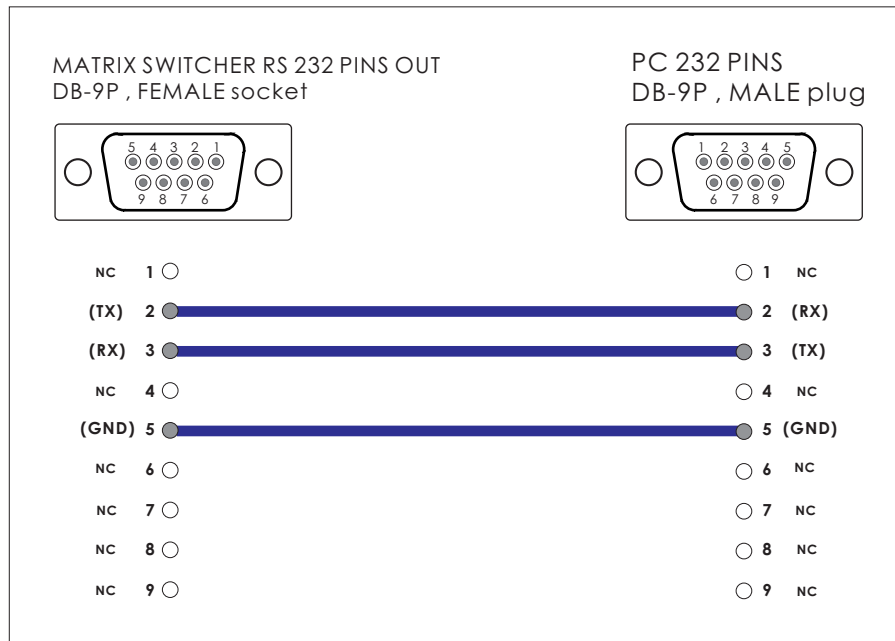
# RS-232 PROTOCOL

### **Matrix / Routing Switcher Series RS-232 Protocol Table**

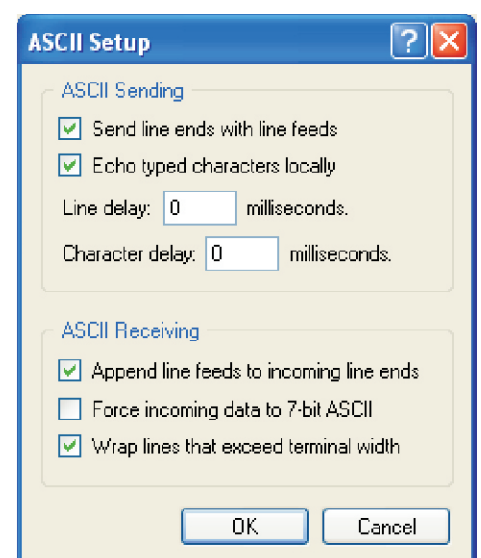
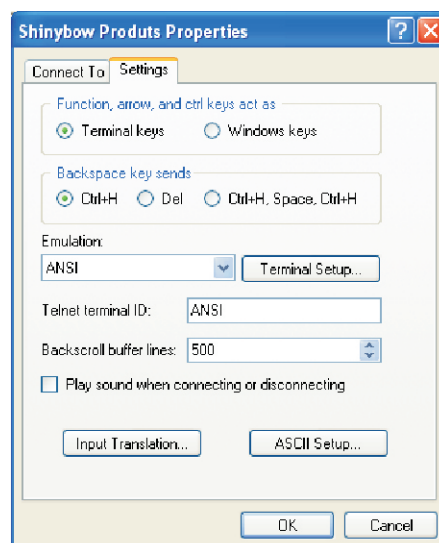
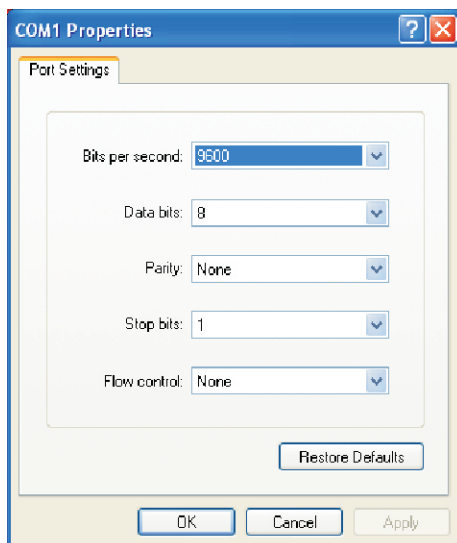
*Thank you for purchasing SHINBOW Matrix/Routing Switcher. You will find this unit easy to install and highly reliable but it is essential that you read this manual thoroughly before attempting to use Matrix / Routing switcher.*

## SB RS232 Protocol and Command

### RS232-Cable Pin Lines



1. Transmission rate: 9600bps
  2. Data format: 8 data bits, No parity, 1 start bit and 1 stop bit
  3. Flowing control: None
- Also know as 9600,8,n,1



## Data String Format :

The Data String contains four elements.

[Command][ ][Data][;]

The format is:

1. Command
2. Space
3. Data
4. ;

There is a single space after the Command and before the Data string.

The data string must conclude with an “;” (without the quotes).

All text is full ASCII Code and is NOT case sensitive.

LINK is the same as Link. You can use either capital letters or small letters and get the same result.

The LINK command must be sent first. This establishes a communications “link” between an external controller (or computer) and the device you wish to control. When you have an established link, communication via the IR port is disabled. The front panel remains operational.

The format is

**LINK 01**; This will establish the link

*Your commands*

**LINK 00**; This will terminal the link

Devices that are firmware version x.x or higher will return a status.

Status is command dependent.

For example: Response : [SKU][ ][Status][;]

The Status is a two digit numerical code.

See further in this document for specific details.

# Commands

Note: not all commands are supported on all devices.

| Item | Command      | Description                                                   |
|------|--------------|---------------------------------------------------------------|
| 1    | Link         | Establish or disable data link between controller and device. |
| 2    | Power        | Set/Check the status of Power                                 |
| 3    | Output[dd]   | Set/Check the state of single outputs                         |
| 4    | ActiveSource | Check the status of an Input for a signal present             |
| 5    | OutputAll    | Set/Check the state of all outputs                            |
| 6    | Memory       | Save the current matrix configuration to memory               |
| 7    | Recall       | Recall a saved matrix configuration from memory               |
| 8    | Recall[mm]   | Check the data of memory address                              |
| 9    | Lock         | Set/Check the status of Lock                                  |
| 10   | EDID         | Set/Check EDID (HDMI only)                                    |
| 11   | Audio        | Set/Check Audio(Only product with Audio function)             |

## 1.Link

| Function             | Command  | Response   | Description     |
|----------------------|----------|------------|-----------------|
| Leave                | Link 00; | SB5688 00; | Leave           |
|                      |          | SB5688 01; | UN-KNOW Command |
| Link                 | Link 01; | SB5688 00; | Link            |
|                      |          | SB5688 01; | UN-KNOW Command |
| Check Link Condition | Link ?;  | Link 00;   | System Leave    |
|                      |          | Link 01;   | System Link     |

## 2.Power

| Function                      | Command   | Response   | Description     |
|-------------------------------|-----------|------------|-----------------|
| Power OFF                     | Power 00; | SB5688 00; | Power OFF       |
|                               |           | SB5688 01; | UN-KNOW Command |
| Power ON                      | Power 01; | SB5688 00; | Power ON        |
|                               |           | SB5688 01; | UN-KNOW Command |
| Check the Status of Condition | Power ?;  | Power 00;  | Power OFF       |
|                               |           | Power 01;  | Power ON        |

### 3. Output[dd]

| Function        | Command      | Variables           |
|-----------------|--------------|---------------------|
| OFF destination | OUTPUTXX 00; | xx = Output Channel |
| Command Example | Response     |                     |
|                 | Description  |                     |
|                 | OUTPUT04 00; | SB5688 00;          |
|                 | SB5688 01;   | UN-KNOW Command     |

| Function           | Command      | Variables                                 |
|--------------------|--------------|-------------------------------------------|
| Set channel status | OUTPUTxx yy; | xx = Output Channel<br>yy = Input Channel |
| Command Example    | Response     |                                           |
|                    | Description  |                                           |
|                    | OUTPUT02 04; | SB5688 00;                                |
|                    | SB5688 01;   | UNKNOWN Command                           |

| Function            | Command     | Variables           |
|---------------------|-------------|---------------------|
| Check Output status | OUTPUTxx ?; | xx = Output Channel |
| Command Example     | Response    |                     |
|                     | Description |                     |
|                     | OUTPUT04 ?; | Output04 01;        |
|                     |             | Output04 02;        |
|                     |             | Output04 03;        |
|                     |             | Output04 04;        |
|                     |             | Output04 05;        |
|                     |             | Output04 06;        |
|                     |             | Output04 07;        |
|                     |             | Output04 08;        |

## 4. ActiveSource

| Function                                               | Command Example                                                                                                                                                                                                                                                               | Response                       | Description                                                                                |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------|
| Check the status of a signal presence on an Input port | ACTIVESOURCE ?;                                                                                                                                                                                                                                                               | ActiveSource 0100000101010100; | Each position indicates which source is active or inactive<br>01 = Active<br>00 = Inactive |
| For Example:                                           | <div>01 00 00 01 01 01 01 00;</div> <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div><div>Input 3&gt; Inactive</div><div>Input 2&gt; Inactive</div><div>Input 1&gt; Active</div><div>Input 8&gt; Inactive</div></div> |                                |                                                                                            |

Note: this does not validate if the signal is within proper format (ex: 1VPP Video), only that one is present and active.

## 5. OutputAll

| Function       | Command       | Response   | Description    |
|----------------|---------------|------------|----------------|
| OFF all output | OUTPUTALL 00; | SB5688 00; | OFF all output |
|                |               | SB5688 01; | UNKNOW Command |

| Function                      | Command       | Variables          |
|-------------------------------|---------------|--------------------|
| Set all outputs to one source | OUTPUTALL XX; | xx = Source number |

| Command Example | Response   | Description                |
|-----------------|------------|----------------------------|
| OUTPUTALL 02;   | SB5688 00; | Set all output to Source 2 |
|                 | SB5688 01; | UN-KNOW Command            |

| Function                       | Command Example                                                                                                                                                                                                                                                                | Response                    | Description                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------------|
| Check the status of all ouputs | OUTPUTALL ?;                                                                                                                                                                                                                                                                   | OutputALL 0307050502010804; | Each position indicates which source is connect to which output. |
| For Example:                   | <div>03 07 05 05 02 01 08 04</div> <div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div><div>Input 5&gt; Output 3</div><div>Input 7&gt; Output 2</div><div>Input 3&gt; Output 1</div><div>Input 4&gt; Output 8</div></div> |                             |                                                                  |

## 6.Memory

| Function                                            | Command    | Variables                                                   |
|-----------------------------------------------------|------------|-------------------------------------------------------------|
| Save current matrix configuration to memory address | MEMORY XX; | xx = Memory address<br><br>*See 6. Recall for all available |
| Command Example                                     | Response   | Description                                                 |
| MEMORY 0F;                                          | SB5688 00; | Save at memory address 16                                   |
|                                                     | SB5688 01; | UNKNOWN Command                                             |

## 7. Recall

| Function                                 | Command    | Variables            |          |
|------------------------------------------|------------|----------------------|----------|
| Recall a saved configuration from memory | RECALL XX; | xx = Memory Location |          |
|                                          |            | XX                   | Location |
|                                          |            | 00                   | 1        |
|                                          |            | 01                   | 2        |
|                                          |            | 02                   | 3        |
|                                          |            | 03                   | 4        |
|                                          |            | 04                   | 5        |
|                                          |            | 05                   | 6        |
|                                          |            | 06                   | 7        |
|                                          |            | 07                   | 8        |
|                                          |            | 08                   | 9        |
|                                          |            | 09                   | 10       |
|                                          |            | 0A                   | 11       |
|                                          |            | 0B                   | 12       |
|                                          |            | 0C                   | 13       |
|                                          |            | 0D                   | 14       |
|                                          |            | 0E                   | 15       |
|                                          |            | 0F                   | 16       |

|                           |                     |  |  |
|---------------------------|---------------------|--|--|
| 4x4<br>Destination<br>Row | 8x8 Destination Row |  |  |
|                           |                     |  |  |
|                           |                     |  |  |
|                           |                     |  |  |
| 4x4<br>Source Row         | 8x8 Source Row      |  |  |
|                           |                     |  |  |
|                           |                     |  |  |
|                           |                     |  |  |

| Command Example | Response   | Description                  |
|-----------------|------------|------------------------------|
| RECALL 07;      | SB5688 00; | Recall a saved from memory08 |
|                 | SB5688 01; | UNKNOWN Command              |

## 8. Recall[mm]

| Function                         | Command     | Variables            |
|----------------------------------|-------------|----------------------|
| Check the data of memory address | RECALLXX ?; | xx = Memory Location |

| Command Example | Response                                                                                                                                                                                         | Description                         |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| RECALL00 ?;     | RECALL00 0102030405060708;<br><br>Note : "RECALL00" means recall from the memory address 1. "0102030405060708" is the input numbers that is connected to output 1-8, see left side discription.  | Output1=01 so the output1 to input1 |
|                 |                                                                                                                                                                                                  | Output2=02 so the output2 to input2 |
|                 |                                                                                                                                                                                                  | Output3=03 so the output3 to input3 |
|                 |                                                                                                                                                                                                  | Output4=04 so the output4 to input4 |
|                 |                                                                                                                                                                                                  | Output5=05 so the output5 to input5 |
|                 |                                                                                                                                                                                                  | Output6=06 so the output6 to input6 |
|                 |                                                                                                                                                                                                  | Output7=07 so the output7 to input7 |
|                 |                                                                                                                                                                                                  | Output8=08 so the output8 to input8 |
| RECALL0F ?;     | RECALL0F 0102030405060708;<br><br>Note : "RECALL0F" means recall from the memory address 16. "0102030405060708" is the input numbers that is connected to output 1-8, see left side discription. | Output1=01 so the output1 to input1 |
|                 |                                                                                                                                                                                                  | Output2=02 so the output2 to input2 |
|                 |                                                                                                                                                                                                  | Output3=03 so the output3 to input3 |
|                 |                                                                                                                                                                                                  | Output4=04 so the output4 to input4 |
|                 |                                                                                                                                                                                                  | Output5=05 so the output5 to input5 |
|                 |                                                                                                                                                                                                  | Output6=06 so the output6 to input6 |
|                 |                                                                                                                                                                                                  | Output7=07 so the output7 to input7 |
|                 |                                                                                                                                                                                                  | Output8=08 so the output8 to input8 |

## 9. Lock

| Function                 | Command  | Response   | Description     |
|--------------------------|----------|------------|-----------------|
| Unlock                   | LOCK 00; | SB5688 00; | Unlock          |
|                          |          | SB5688 01; | UNKNOWN Command |
| Lock                     | LOCK 01; | SB5688 00; | Lock            |
|                          |          | SB5688 01; | UNKNOWN Command |
| Check the status of lock | LOCK ?;  | Lock 00;   | System Unlock   |
|                          |          | Lock 01;   | System Lock     |



## 10. EDID

| Function | Command  | Response   | Description                 |
|----------|----------|------------|-----------------------------|
| Set EDID | EDID 01; | SB5688 00; | Set EDID to FSS             |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 02; | SB5688 00; | Set EDID to H24-3D          |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 03; | SB5688 00; | Set EDID to H24M-3D         |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 04; | SB5688 00; | Set EDID to H36-3D          |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 05; | SB5688 00; | Set EDID to H36-3D-M        |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 06; | SB5688 00; | Set EDID to DVI-D 1280x1024 |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 07; | SB5688 00; | Set EDID to DVI-D 1920x1200 |
|          |          | SB5688 01; | UNKNOW Command              |
|          | EDID 08; | SB5688 00; | Set EDID to Auto            |
|          |          | SB5688 01; | UNKNOW Command              |

| Function                 | Command | Response | Description     |
|--------------------------|---------|----------|-----------------|
| Check the Status of EDID | EDID ?; | EDID 01; | FSS Mode        |
|                          |         | EDID 02; | H24-3D          |
|                          |         | EDID 03; | H24M-3D         |
|                          |         | EDID 04; | H36-3D          |
|                          |         | EDID 05; | H36-3D-M        |
|                          |         | EDID 06; | DVI-D 1280x1024 |
|                          |         | EDID 07; | DVI-D 1920x1200 |
|                          |         | EDID 08; | Auto            |

When issuing EDID commands, you need to incorporate a minimum of a 5 second delay before issue additional commands. When changing EDID settings, the switcher does a soft-reboot to implement the new EDID format.

## 10. Audio

| Function         | Command      | Variables                                |
|------------------|--------------|------------------------------------------|
| Set Volume Value | Volumexx yy; | xx = Output Channel<br>yy = Volume Value |

| Command Example | Response   | Description                     |
|-----------------|------------|---------------------------------|
| Volume02 30;    | SB8804 00; | Set ouput 2's volume vale to 30 |
|                 | SB8804 01; | UNKNOWN Command                 |

| Function           | Command     | Variables           |
|--------------------|-------------|---------------------|
| Check Volume Value | Volumexx ?; | xx = Output Channel |

| Command Example | Response     | Description                    |
|-----------------|--------------|--------------------------------|
| Volume04 ?;     | Volume04 50; | Volume value of output 4 is 50 |
|                 | Volume04 25; | Volume value of output 4 is 25 |
|                 | Output04 70; | Volume value of output 4 is 70 |