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COMMERCIAL PRODUCTS

TECHNICAL BULLETIN

| BULLETIN #1 | PRO895 - RS232 CODES | May 2, 2001 |

We are please to announce the RS232 codes to change the input of the PRO895. The COMM connector of the PRO895 is a RJ11 and should be connected to a RS232 port as illustrated below. The port must be set to 19.2K baud, 8 bit, 1 stop, no parity. The code that is sent to the projector is in **Decimal**. There must be a 10 ms delay between each byte sent.

Composite : 32 01 02 01 00 00 36 19 19
  S-Video : 32 01 02 01 01 00 37 19 19
    RGB : 32 01 02 01 02 00 38 19 19

E.g.: 32 [delay] 01 [delay] 02 [delay] 01 [delay] 00 [delay] 00 [delay] 36 [delay] 19 [delay] 19

Codes must be sent exactly as above, no carriage return, no line feed. No menu will be displayed. Projector will automatically switch to the selected input. If the selected source has been converged it will automatically switch to that convergence memory. The projector will maintain the selected input even at power down. <u>Note; a RJ11 straight thru (not twisted) cable must be used.</u>
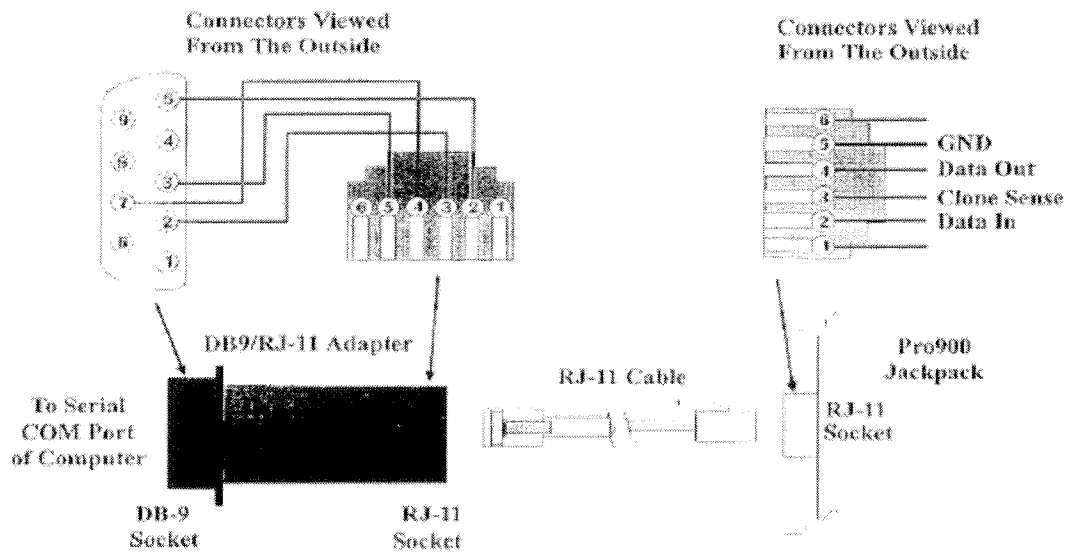
To turn the projector on and off, a IR transmitter on a remote control system can be used. An alternative method is to turn the projector's power on or off via a high voltage relay. The PRO895 must then be set to AC Power ON mode. To accomplish this you must enter the factory menu and change setting 304 from 0 to 1. In order to get into the factory menu the LIN C key must be pressed for roughly five seconds until the Source/Time status display appears in the upper right corner. Press "9(T/L S)","8(T/L PIN)","7(T/L KEY)","6(S-ING)" and Adjust Toggle keys. Once the factory menu is displayed, press the up or down adjust keys until the display reads "304 AC Power On   0/1". Then press the left arrow to change the setting to 1/1. Press the quit key. With this setting the projector will turn on as soon as power is applied. The projector can not be turned off with the remote.

Note: If using a DB-9 Female to RJ-11 adapter from GC Electronics
Cat. No. 45-635, it should be wired as follows,

RJ-11	DB9
red ----------------------	pin 2
yellow ------------------	pin 3
black --------------------	pin 5
green --------------------	pin 7

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Using the RS232 (COMM) port you now have the ability to change the aspect ratio of the PRO895. The COMM connector of the PRO895 is a RJ11 and should be connected to a RS232 port as illustrated below. The port must be set to 19.2K baud, 8 bit, 1 stop, no parity. The code that is sent to the projector is in **Decimal**. There must be a 5 ms delay between each byte sent.

Codes must be sent exactly as shown, no carriage return, no line feed. No menu will be displayed. If the selected aspect ratio has been converged it will automatically switch to that convergence memory. The projector will maintain the selected aspect ratio even at power down.
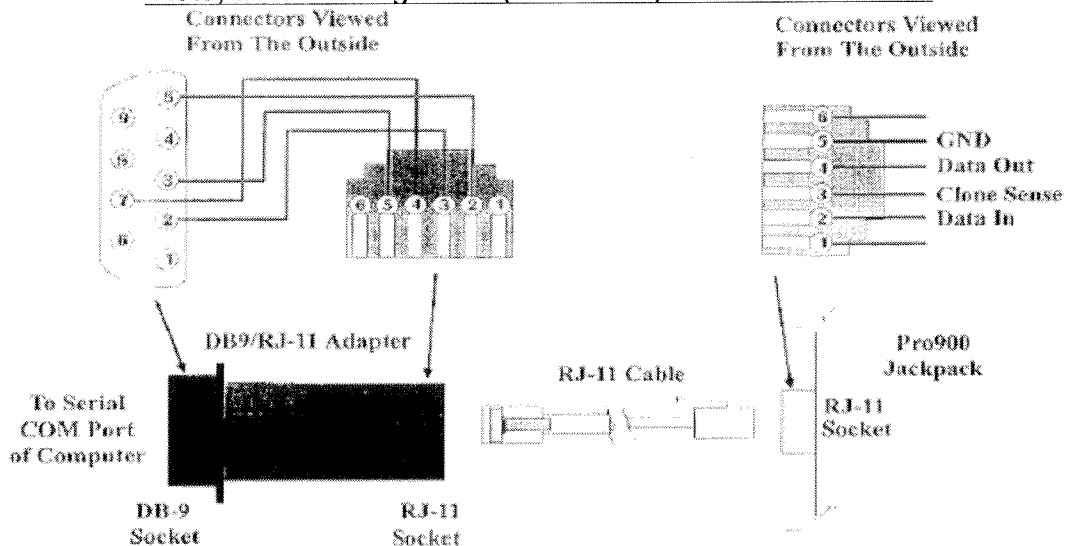
Note; a RJ11 straight thru (not twisted) cable must be used.

Connectors Viewed
From The Outside

Connectors Viewed
From The Outside

GND
Data Out
Clone Sense
Data In

DB9/RJ-11 Adapter

RJ-11 Cable

Pro900
Jackpack

To Serial
COM Port
of Computer

RJ-11
Socket

DB-9
Socket

RJ-11
Socket

Note: If using a DB-9 Female to RJ-11 adapter from GC Electronics
Cat. No. 45-635, it should be wired as follows,

RJ-11	DB9
red -------------------	pin 2
yellow--------------	pin 3
black ----------------	pin 5
green----------------	pin 7

FORMAT	DESIRED ASPECT RATIO	VALUES IN DECIMAL
1 NTSC	aspect:: 4x3	25 01 160 02 19 00 00 207 19 19
1 NTSC	aspect: Letterbox	25 01 160 02 19 01 00 208 19 19
1 NTSC	aspect: 16x9	25 01 160 02 19 02 00 209 19 19
1 NTSC	aspect: Compressed	25 01 160 02 19 03 00 210 19 19
2 PAL	aspect: 4x3	25 01 160 02 150 00 01 82 19 19
2 PAL	aspect: Letterbox	25 01 160 02 150 01 01 83 19 19
2 PAL	aspect: 16x9	25 01 160 02 150 02 01 84 19 19
2 PAL	aspect: Compressed	25 01 160 02 150 03 01 85 19 19
3 VGA 400	aspect: 4x3	25 01 160 03 25 00 00 214 19 19
3 VGA 400	aspect: Letterbox	25 01 160 03 25 01 00 215 19 19
3 VGA 400	aspect: 16x9	25 01 160 03 25 02 00 216 19 19
4 VGA 480	aspect: 4x3	25 01 160 03 156 00 01 89 19 19
4 VGA 480	aspect: Letterbox	25 01 160 03 156 01 01 90 19 19
4 VGA 480	aspect: 16x9	25 01 160 03 156 02 01 91 19 19
5 VGA 350	aspect: 4x3	25 01 160 04 31 00 00 221 19 19
5 VGA 350	aspect: Letterbox	25 01 160 04 31 01 00 222 19 19
5 VGA 350	aspect: 16x9	25 01 160 04 31 02 00 223 19 19
6 HDTV 33	aspect: 4x3	25 01 160 04 162 00 01 96 19 19
6 HDTV 33	aspect: Letterbox	25 01 160 04 162 01 01 97 19 19
6 HDTV 33	aspect: 16x9	25 01 160 04 162 02 01 98 19 19
7 MAC II 35	aspect: 4x3	25 01 160 05 37 00 00 228 19 19
7 MAC II 35	aspect: Letterbox	25 01 160 05 37 01 00 229 19 19
7 MAC II 35	aspect: 16x9	25 01 160 05 37 02 00 230 19 19
8 HDTV 45	aspect: 4x3	25 01 160 05 168 00 01 103 19 19
8 HDTV 45	aspect: Letterbox	25 01 160 05 168 01 01 104 19 19
8 HDTV 45	aspect: 16x9	25 01 160 05 168 02 01 105 19 19
9 SVGA 48	aspect: 4x3	25 01 160 06 43 00 00 235 19 19
9 SVGA 48	aspect: Letterbox	25 01 160 06 43 01 00 236 19 19
9 SVGA 48	aspect: 16x9	25 01 160 06 43 02 00 237 19 19
10 NTSC Y-C	aspect: 4x3	25 01 160 06 174 00 01 110 19 19
10 NTSC Y-C	aspect: Letterbox	25 01 160 06 174 01 01 111 19 19

10 NTSC Y-C	aspect: 16x9	25 01 160 06 174 02 01 112 19 19
10 NTSC Y-C	aspect: Compressed	25 01 160 06 174 03 01 113 19 19
11 customer 1	aspect: 4x3	25 01 160 12 79 00 01 21 19 19
12 customer 1	aspect: Letterbox	25 01 160 12 79 01 01 22 19 19
13 customer 1	aspect: 16x9	25 01 160 12 79 02 01 23 19 19
14 customer 2	aspect: 4x3	25 01 160 12 210 00 01 152 19 19
15 customer 2	aspect: Letterbox	25 01 160 12 210 01 01 153 19 19
16 customer 2	aspect: 16x9	25 01 160 12 210 02 01 154 19 19
17 customer 3	aspect: 4x3	25 01 160 13 85 00 01 28 19 19
18 customer 3	aspect: Letterbox	25 01 160 13 85 01 01 29 19 19
19 customer 3	aspect: 16x9	25 01 160 13 85 02 01 30 19 19
20 customer 4	aspect: 4x3	25 01 160 13 216 00 01 159 19 19
21 customer 4	aspect: Letterbox	25 01 160 13 216 01 01 160 19 19
22 customer 4	aspect: 16x9	25 01 160 13 216 02 01 161 19 19
23 customer 5	aspect: 4x3	25 01 160 14 91 00 01 35 19 19
24 customer 5	aspect: Letterbox	25 01 160 14 91 01 01 36 19 19
25 customer 5	aspect: 16x9	25 01 160 14 91 02 01 37 19 19

When the codes to change aspect ratio are sent to the PRO895 you will not see a immediate change. For the new aspect ratio to take effect you must switch to another input then back to the input you are changing the aspect ratio. (see below for switching codes) This input switch must also be done via the RS-232 COMM port. For example, if you are in the RGB input currently in a 4x3 aspect ratio and want to switch to 16x9, you must send the proper code to switch to 16x9 (depending on the input signal) then switch to S-Video, or Composite input then back to RGB input. There should be a delay of 100ms between switching inputs. An alternative method is, while viewing S-Video send the appropriate codes to change a RGB aspect ratio then switch to RGB input. The chosen aspect ratio for RGB will appear when you switch to RGB. Again all switching must be done via the RS-232 port.

Composite : 32 01 02 01 00 00 36 19 19
S-Video : 32 01 02 01 01 00 37 19 19
RGB : 32 01 02 01 02 00 38 19 19

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COMMERCIAL PRODUCTS

TECHNICAL BULLETIN

BULLETIN #4	PRO895 - Macrovision	May 2, 2001

If you are viewing a macrovision copy guarded movie on the Pro895 Projector you may notice some flagging or tearing of the image at the top of the screen. This is not a defect, but a side-effect of the macrovision copy guarding. This effect can be reduced by implementing the following procedure.

1) Enter the Factory Service Menu.
   a) Press and hold the "Lin-C" button until you see the label box.
   b) Press the "9", "8", "7", "6", and "Adj Toggle" buttons.
2) Set address 320 "Hsync Mute" to 1.
3) Set address 321 "Noise Gate" to 1.
4) Set address 37 "VBLE" to 12.
5) Set address 143 "SOCLMPE" to 12.
6) Exit the Factory Service Menu.
7) While viewing a Macrovision copy guarded DVD, adjust the top vertical blanking downwards to cover the first 3 or 4 lines of active video.

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In the past we instructed you to set all of the DC Centers to zero. This was to keep the electronics working at a minimum.

We have now found that the electronic center for the vertical adjustments is not zero. Although setting your DC centers at zero will not hurt anything, if you want to have your electronics doing as little work as possible, please set the vertical values as follows:

Configuration	Red	Green	Blue
Floor	- 30	- 20	- 30
Ceiling	30	20	30

These should be set before doing any yoke raster centering or CRT angle adjustment.

Horizontal DC Centers are still zero.

This is an update over Bulletin #7. Please use this Bulletin instead of Bulletin #7.

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It has been determined that the optimal method for centering the raster is as follows:

1) Set the DC Centers to their electronic "zero".
2) Center the raster horizontally by aligning the left and right corners of the raster evenly between the corners of the CRT.
3) Align the vertical center of the internal grid pattern (the center horizontal line) to the vertical center of the CRT. Since the internal grid pattern will be severely keystoned it may look as if it is not centered but this is normal.

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Screen Center and Throw Distance Information

During testing of the information provided to us by the Engineering Dept. we discovered a slight discrepancy between the screen centering calculation and reality. After bringing this to the attention of the Engineering Dept. They have amended their previous calculation to the following:

$$Screen\ Center = (Throw\ Distance\ x\ 0.3057) + 8.44"$$

This is based upon the raster being centered vertically where the center line of a cross hatch pattern (when viewed through the lens) is centered on the CRT.

Throw Distance is still calculated by:

$$Throw\ Distance = (Screen\ Width\ x\ 1.179) + 2.063"$$

Please disregard Tech Bulletins 5 (March 2, 1998) and 6 (June 1, 1998).