ELECTRONIC REVISION CONTROLLED

Rosen Aviation
9002934 - Revision D

Definition of RS232 external controller message formats.

This document defines the types and formats of serial message packets which can be used to control a Rosen display panel. It is intended that external switch controllers would adopt this serial output to eliminate the need for parallel wires running from a controller to the monitor for each switch. 2-way communication to an external controller would also allow monitor status to be displayed on switch panels with built in LCD panels. Not all monitors would support every command but this document is intended to capture a wide range of possible commands and functions which could be implemented as needed. Check the product manual to see if a particular monitor supports this interface.

Communication Protocol:

- 9600 Baud
- 8 data bits
- 1 stop bit
- no parity

Packet Formats: There are typically 2 bytes per message. The first byte is a header byte and the second identifies the specific command. Some commands will initiate a response from the monitor, others will not.
Certain buttons, such as the four arrow buttons, may be held down for adjusting video settings. The button messages should be repeated approximately every 150mSec as long as the key is depressed.

BUTTON PACKETS

- **Power**

Byte 1:	0xF1	Header
Byte 2:	0x01	Power button

- **Source (cycle)**

Byte 1:	0xF1	Header
Byte 2:	0x02	Source button

- **Left**

Byte 1:	0xF1	Header
Byte 2:	0x03	Left button

- **Right**

Byte 1:	0xF1	Header
Byte 2:	0x04	Right button

- **Up**

Byte 1:	0xF1	Header
Byte 2:	0x05	Up button

- **Down**

Byte 1:	0xF1	Header
Byte 2:	0x06	Down button

- **Menu/Select**

Byte 1:	0xF1	Header
Byte 2:	0x07	Menu select button

COMMAND PACKETS

Command packets are “shortcut” messages which directly tell the monitor to perform some function which otherwise might require use of an on-screen menu or multiple button entries.

- **Source Composite**

Byte 1:	0xF2	Header
Byte 2:	0x01	Switch monitor input source to composite video

- **Source S-Video**

Byte 1:	0xF2	Header
Byte 2:	0x02	Switch monitor input source to S-Video video

- **Source RGB**

Byte 1:	0xF2	Header
Byte 2:	0x03	Switch monitor input source to analog RGB

- **Source Component**

Byte 1:	0xF2	Header
Byte 2:	0x04	Switch monitor input source to component video

- **Source DVI**

Byte 1:	0xF2	Header
Byte 2:	0x05	Switch monitor input source to digital RGB

- **Power off**

Byte 1:	0xF2	Header
Byte 2:	0x06	Power down monitor

- **Power on**

Byte 1:	0xF2	Header
Byte 2:	0x07	Power up monitor

- **Pip on**

Byte 1:	0xF2	Header
Byte 2:	0x08	Picture-in-Picture on if available

- **Pip off**

Byte 1:	0xF2	Header
Byte 2:	0x09	Picture-in-Picture off

- **RGB Auto-sync**

Byte 1:	0xF2	Header
Byte 2:	0x0A	Auto-sync to RGB format

- **RJ45 Cable Compensation ON (Pre-Emphasis ON) ***

  Byte 1: 0xF2 Header
  Byte 2: 0x0B Turn ON THine Pre-Emphasis

- **RJ45 Cable Compensation OFF (Pre-Emphasis OFF) ***

  Byte 1: 0xF2 Header
  Byte 2: 0x0C Turn OFF THine Pre-Emphasis

  * Only applicable in Remote Monitor Electronics Boxes (RMEBs)

Note: Some commands packets may not work with older Rosen Monitors.

Power Header Packets

- **Power On**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0x0f Power on command

- **Power Off (older units)**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0xf0 Power off command

- **Power Off**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0x10 Power off command

- **Power Toggle**

  Byte 1: 0x81 Power Message Header
  Byte 2: 0x3c Power on/off command

Video Source Selection Packets

- **Source Composite Video 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x01 composite 1 command

- **Source Composite Video 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x02 composite 2 command
  *not all monitors support a 2nd composite video input.

- **Source S-Video**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x03 S-Video command
  *not all monitors support an S-Video input.

- **Source Analog RGB 1 (ARGB)**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x04 ARGB 1 command
  *not all monitors support an analog RGB input.

- **Source Analog RGB 2 (ARGB)**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x12 ARGB 2 command

*not all monitors support an analog RGB input.

- **Source Component Video 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x05 Component Video 1 command
  *not all monitors support a component video input.

- **Source Component Video 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x14 Component Video 2 command
  *not all monitors support a component video input.

- **Source DVI 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x06 DVI 1 command
  ***not all monitors support a DVI input.

- **Source DVI 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x13 DVI 2 command
  ***not all monitors support a DVI input.

- **Source SDI 1**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x07 SDI 1 command
  ***not all monitors support a SDI input.

- **Source SDI 2**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x08 SDI 2 command
  ***not all monitors support a SDI input.

- **Auto SDI**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x15 Auto SDI command
  ***not all monitors support the Auto SDI function.

- **Source Next**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x10 Next command

- **Source Next Scaling**

  Byte 1: 0x82 Video Source Header
  Byte 2: 0x11 Next scaling command

- **Button Left**

  Byte 1: 0x83 Video Source Header
  Byte 2: 0x01 Button Left command

- **Button Right**

  Byte 1: 0x83 Video Source Header
  Byte 2: 0x02 Button Right command

- **Button Up**

  Byte 1: 0x83 Video Source Header
  Byte 2: 0x03 Button Up command

- **Button Down**

  Byte 1: 0x83 Video Source Header
  Byte 2: 0x04 Button Down command

- **Button Menu**

Byte 1:	0x83	Video Source Header
Byte 2:	0x05	Menu command

- **Button Brightness up**

Byte 1:	0x83	Video Source Header
Byte 2:	0x11	Brightness up command

- **Button Brightness Down**

Byte 1:	0x83	Video Source Header
Byte 2:	0x12	Brightness down command

- **Button Contrast Up**

Byte 1:	0x83	Video Source Header
Byte 2:	0x13	Contrast up command

- **Button Contrast Down**

Byte 1:	0x83	Video Source Header
Byte 2:	0x14	Contrast Down command

- **Button Hue Up**

Byte 1:	0x83	Video Source Header
Byte 2:	0x15	Hue up command

- **Button Hue Down**

Byte 1:	0x83	Video Source Header
Byte 2:	0x16	Hue Down command

- **Button Sharpness Up**

Byte 1:	0x83	Video Source Header
Byte 2:	0x17	Sharpness up command

- **Button Sharpness Down**

Byte 1:	0x83	Video Source Header
Byte 2:	0x18	Sharpness down command

- **Button Saturation Up**

Byte 1:	0x83	Video Source Header
Byte 2:	0x19	Saturation Up command

- **Button Saturation Down**

Byte 1:	0x83	Video Source Header
Byte 2:	0x1a	Saturation Down command

- **Button Swap**

Byte 1:	0x83	Video Source Header
Byte 2:	0x23	PIP swap command

- **Button Ok**

Byte 1:	0x83	Video Source Header
Byte 2:	0x24	Ok command

- **Button Exit**

Byte 1:	0x83	Video Source Header
Byte 2:	0x25	Exit command

- **Button Tech Menu**

Byte 1:	0x83	Video Source Header
Byte 2:	0x26	Tech Menu command

Rosen Control Function Packets

- **RJ-45 Cable Compensation ON***

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x01	RJ-45 Cable Compensation ON (Pre-Emphasis)

- **RJ-45 Cable Compensation OFF***

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x02	RJ-45 Cable Compensation OFF (Pre-Emphasis)

- **Operation Mode Standard***

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x03	Operation Mode Standard

- **Operation Mode Auto SDI***

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x04	Operation Mode Auto SDI

- **SDI Overscan Enable**

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x05	Enable SDI-overscan

- **SDI Overscan Disable**

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x06	Disable SDI-overscan

- **Increase SDI Overscan**

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x07	Increase SDI-overscan

- **Decrease SDI Overscan**

Byte 1:	0x85	Rosen Control Header
Byte 2:	0x08	Decrease SDI-overscan

* Only applicable in certain Remote Monitor Electronics Boxes (RMEBs).

Miscellaneous Commands:

- **Get monitor mode**

  Byte 1: 0xEE Header
  Byte 2: 0x08 returns mode info (momentary, constant, auto-detect)
  Return packet:
  Byte 1: 0xC0 Header
  Byte 2: 0x00 = auto-detect mode
  0x01 = momentary sw mode
  0x02 = constant sw mode
  0x03 = manual mode

- **Get device type**

  Byte 1: 0xF5 Header
  Byte 2: 0x01 returns monitor type
  Return packet:
  Byte 1: 0xC0 Header
  Byte 2:
  0x01 = 8.4" monitor
  0x02 = 10.4" monitor
  0x03 = 15" monitor
  0x04 = 17" monitor
  0x05 = 17" WS monitor
  0x06 = 20" monitor
  0x07 = 24" WS monitor
  0x08 = 7" WS monitor
  0x09 = 6.5" monitor
  0x0A = RosenView

- **Get current source**

  Byte 1: 0xF5 Header
  Byte 2: 0x02 returns current source setting
  Return packet:
  Byte 1: 0xC0 Header
  Byte 2: 0x00 = composite
  0x01 = S-Video
  0x02 = RGB
  0x03 = Component
  0x04 = DVI

- **Get power state**

  Byte 1: 0xF5 Header
  Byte 2: 0x03 returns current power on/off state
  Return packet::
  Byte 1: 0xC0 Header
  Byte 2: 0x00 = power off
  0xFF = power on

Revision History

NOTICE Revision E is limited to Draft or Prototype documents. Revisions I, O, Q, S, X and Z are not to be used

Revision	Date	Revision Description	EC
A	12-19-08	New Release	-
B	02-12-12	Added RJ-45 Cable Compensation Command	12-0065
C	04-02-12	Updated with entire packet set description	12-0193
D	04-04-13	Added SDI overscan packet descriptions	13-0139