

) EYE-LCD-7000/8000-LE



## **RS 232 CONTROL PROTOCOL Protocol for LCD Monitors**

) **EYE-LCD-7000/8000-LE**

Version 1.1 (November 2012)

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## REVISION HISTORY

VERSION	DATE	PAGE SECTION	DESCRIPTION
1.0	2012-04-24	All	Protocol first issued
1.1	2012-11-06	Page 4	Protocol updated

## 1. APPENDIX : RS232 PROTOCOL

### [Communication Parameters]

\* Baud rate : 115200 bps, 19200 bps, 9600 bps

\* Data length : 8 bit

\* Parity : None

\* Stop bit : 1

\* Communication code : ASCII

\* Communication Protocol : 8 byte

- [Len][Cmd][Index][Wall ID][Set ID][Data][Wall Column ID][Cr]

[Cr] = [Len]+[Cmd]+[Index]+[Wall ID]+[Set ID]+[Data]+[Wall Column ID]-1;

[Cr] = ~[Cr];

### [SEND COMMAND Reference List]

SEND [ACK/NAK] :

- [ACK] : [Len][ACK][Data] => [0x03][0x0c][0xf1],

- [NAK] : [Len][NAK][Data] => [0x03][0x0b][0xf2]

Name	Len	CMD	Index	Wall ID	Set ID	Data	Wall Column ID	Cr
HUE	0x08	0x12	0x7b	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
SATURATION	0x08	0x12	0x7c	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
SHARPNESS	0x08	0x12	0x7d	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
IMAGE SIZE	0x08	0x12	0x7e	0x00~0x64	0x00~0x64	0x00~0x04	0x01~0x10	
FW RELEASE	0x08	0x12	0x7f	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	
BACKLIGHT	0x08	0x12	0x80	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
CONTRAST	0x08	0x12	0x81	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
PHASE	0x08	0x12	0x82	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
AUTO ADJUSTMENT	0x08	0x12	0x83	0x00~0x64	0x00~0x64	0x01	0x01~0x10	
COLOR TEMP	0x08	0x12	0x84	0x00~0x64	0x00~0x64	0x00~0x04	0x01~0x10	
RED GAIN	0x08	0x12	0x85	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
GREEN GAIN	0x08	0x12	0x86	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
BLUE GAIN	0x08	0x12	0x87	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
IMAGE POS HOR	0x08	0x12	0x88	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
IMAGE POS VER	0x08	0x12	0x89	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
GAMMA	0x08	0x12	0x8a	0x00~0x64	0x00~0x64	0x00~0x02	0x01~0x10	
FACTORY RESET	0x08	0x12	0x8b	0x00~0x64	0x00~0x64	0x01	0x01~0x10	
BURN IN MODE	0x08	0x12	0x8c	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	
GAMMA CURVE	OPTIONS							
MAIN SOURCE	0x08	0x12	0x8e	0x00~0x64	0x00~0x64	0x00~0x05	0x01~0x10	
ADC CALIBRATION	0x08	0x12	0x8f	0x00~0x64	0x00~0x64	0x01	0x01~0x10	
IMAGE SCAN	0x08	0x12	0x90	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	

MULTI VISION	0x08	0x12	0x91	0x00~0x64	0x00~0x64	0x00~0x05	0x01~0x10	
HOR PERCENT	0x08	0x12	0x92	0x00~0x64	0x00~0x64	0x00~0x14	0x01~0x10	
VER PERCENT	0x08	0x12	0x93	0x00~0x64	0x00~0x64	0x00~0x14	0x01~0x10	
HOR POSITION	0x08	0x12	0x94	0x00~0x64	0x00~0x64	0x00~0xff	0x01~0x10	
VER POSITION	0x08	0x12	0x95	0x00~0x64	0x00~0x64	0x00~0xff	0x01~0x10	
SELECT COLUMN	0x08	0x12	0x96	0x00~0x64	0x00~0x64	0x00~0x10	0x01~0x10	
PIP MODE	0x08	0x12	0x97	0x00~0x64	0x00~0x64	0x00~0x04	0x01~0x10	
PIP SOURCE	0x08	0x12	0x98	0x00~0x64	0x00~0x64	0x00~0x05	0x01~0x10	
PIP POSITION	0x08	0x12	0x99	0x00~0x64	0x00~0x64	0x00~0x03	0x01~0x10	
PIP SWAP	0x08	0x12	0x9a	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	
PIP BLENDING	0x08	0x12	0x9b	0x00~0x64	0x00~0x64	0x00~0x0f	0x01~0x10	
POWER MANAGE	0x08	0x12	0x9c	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	
POWER ON TIME	0x08	0x12	0x9d	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
BL ON TIME	0x08	0x12	0x9e	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
COLOR BRIGHTNESS	0x08	0x12	0x9f	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
VOLUME WINDOW	0x08	0x12	0xa1	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	
VOLUME	0x08	0x12	0xa2	0x00~0x64	0x00~0x64	0x00~0x20	0x01~0x10	
MUTE	0x08	0x12	0xa3	0x00~0x64	0x00~0x64	0x00~0x01	0x01~0x10	
WALL ID	0x08	0x12	0xa4	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
SET ID	0x08	0x12	0xa5	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
BAUD RATE	0x08	0x12	0xa6	0x00~0x64	0x00~0x64	0x00~0x02	0x01~0x10	
MADI MODE	0x08	0x12	0xa7	0x00~0x64	0x00~0x64	0x00~0x02	0x01~0x10	
RED OFFSET	0x08	0x12	0xa8	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
GREEN OFFSET	0x08	0x12	0xa9	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
BLUE OFFSET	0x08	0x12	0xaa	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	
AUTO SCAN	0x08	0x12	0xaa	0x00~0x64	0x00~0x64	0x00~0x64	0x01~0x10	

**- IMAGE POSITION HOR :**

**[Data] : 0x00 ~ MaxHStart()\*2**  
**If ([Data] > MaxHStart ())**  
**[Data] = MaxHStart();**

**- IMAGE POSITION VER:**

**[Data] : 0x00 ~ MaxVStart()\*2**  
**If ([Data] > MaxVStart())**  
**[Data] = MaxVStart();**

**- MULTI HOR POSITION :**

**[Data] :**  
**0x00 ~ 0x7f : decrement horizontal image position**  
**0x80 : default horizontal image position**  
**0x81 ~ 0xff : increment horizontal image position**

**- MULTI VER POSITION :**

**[Data] :**  
**0x00 ~ 0x7f : decrement horizontal image position**  
**0x80 : default vertical image position**  
**0x81 ~ 0xff : increment horizontal image position**

## [QUERY COMMAND Reference List]

### \* QUERY [ACK/NAK] :

- [ACK] : [0x07][Send Command Index][Data Value][Wall ID][SET ID]

[Wall Column ID][Cr]

[Cr] = [0x07]+[ Send Command Index]+[ Data Value]+[Wall ID]+[Set ID]

[Wall Column ID]-1

[Cr] = ~[Cr];

- [NAK] : [0x07][Send Command Index][0x0b][Wall ID][ SET ID]

[ Wall Column ID][Cr]

[Cr] = [0x07]+[ Send Command Index]+[0x0b]+[Wall ID]+[Set ID]+

[ Wall Column ID]-1

[Cr] = ~[Cr];

Name	Len	CMD	Index	Wall ID	Set ID	Data	Wall Column ID	Cr
HUE	0x08	0x12	0xbb	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
SATURATION	0x08	0x12	0xbc	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
SHARPNESS	0x08	0x12	0xbd	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
IMAGE SIZE	0x08	0x12	0xbe	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
FW RELEASE	0x08	0x12	0xbf	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
BACKLIGHT	0x08	0x12	0xc0	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
CONTRAST	0x08	0x12	0xc1	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
PHASE	0x08	0x12	0xc2	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
AUTO ADJUSTMENT	0x08	0x12	0xc3	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
COLOR TEMP	0x08	0x12	0xc4	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
RED GAIN	0x08	0x12	0xc5	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
GREEN GAIN	0x08	0x12	0xc6	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
BLUE GAIN	0x08	0x12	0xc7	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
IMAGE POS HOR	0x08	0x12	0xc8	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
IMAGE POS VER	0x08	0x12	0xc9	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
GAMMA	0x08	0x12	0xca	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
FACTORY RESET	0x08	0x12	0xcb	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
BURN IN MODE	0x08	0x12	0xcc	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
GAMMA CURVE	OPTIONS							
MAIN SOURCE	0x08	0x12	0xce	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
ADC CALIBRATION	0x08	0x12	0xcf	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
IMAGE SCAN	0x08	0x12	0xd0	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
MULTI VISION	0x08	0x12	0xd1	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
HOR PERCENT	0x08	0x12	0xd2	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
VER PERCENT	0x08	0x12	0xd3	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
HOR POSITION	0x08	0x12	0xd4	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
VER POSITION	0x08	0x12	0xd5	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
SELECT COLUMN	0x08	0x12	0xd6	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
PIP MODE	0x08	0x12	0xd7	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
PIP SOURCE	0x08	0x12	0xd8	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
PIP POSITION	0x08	0x12	0xd9	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
PIP SWAP	0x08	0x12	0xda	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	

PIP BLENDING	0x08	0x12	0xdb	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
POWER MANAGE	0x08	0x12	0xdc	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
POWER ON TIME	0x08	0x12	0xdd	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
BL ON TIME	0x08	0x12	0xde	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
COLOR BRIGHTNESS	0x08	0x12	0xdf	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
VOLUME WINDOW	0x08	0x12	0xe1	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
VOLUME	0x08	0x12	0xe2	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
MUTE	0x08	0x12	0xe3	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
WALL ID	0x08	0x12	0xe4	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
SET ID	0x08	0x12	0xe5	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
BAUD RATE	0x08	0x12	0xe6	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
MADI MODE	0x08	0x12	0xe7	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
RED OFFSET	0x08	0x12	0xe8	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
GREEN OFFSET	0x08	0x12	0xe9	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
BLUE OFFSET	0x08	0x12	0xea	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	
AUTO SCAN	0x08	0x12	0xeb	0x00~0x64	0x00~0x64	0xf0	0x01~0x10	

**[ ETC. COMMAND ] :**

[len][query index][wall id][set id][send index][data][ send index][data] ...  
[send index][data][wall column id][Cr]

**1. IMAGE TAB :**

- [ACK] : [0x10][0xf6][Wall ID][SET ID][0x9f][Data] [0x81][Data] [0x7c][Data] [0x7b][Data] [0x7d]  
[Data] [ Wall Column ID] [Cr]  
[Cr] = [0x10]+[ 0xf6]+[Wall ID]+[Set ID]+[0x9f]+[Data] +[0x81]+[Data] +[0x7c]+[Data]  
+[0x7b]+[Data]+[0x7d]+[Data]+[ Wall Column ID]-1  
[Cr] = ~[Cr];

**2. DISPLAY TAB**

- [ACK] : [0x10][0xf7][Wall ID][SET ID][0x90][Data] [0x7e][Data] [0x88][Data] [0x89][Data] [0x82]  
[Data][ Wall Column ID][Cr]  
[Cr] = [0x10]+[ 0xf7]+[Wall ID]+[Set ID]+[0x90]+[Data] +[0x7e]+[Data] +[0x88]+[Data]  
+[0x89]+[Data] +[0x82]+[Data]+[ Wall Column ID]-1  
[Cr] = ~[Cr];

**3.COLOR TEMP TAB**

- [ACK] : [0x0e][0xf8][Wall ID][SET ID][0x84][Data] [0x85][Data] [0x86][Data] [0x87][Data]  
[Wall Column ID] [Cr]  
[Cr] = [0x0e]+[ 0xf8]+[Wall ID]+[Set ID]+[0x84]+[Data] +[0x85]+[Data] +[0x86]+[Data]  
+[0x87]+[Data]+ [ Wall Column ID]-1  
[Cr] = ~[Cr];

**4. PIP TAB**

- [ACK] : [0x0e][0xf9][Wall ID][SET ID][0x97][Data] [0x98][Data] [0x99][Data] [0x9b][Data]  
[Wall Column ID] [Cr]  
[Cr] = [0x0e]+[ 0xf9]+[Wall ID]+[Set ID]+[0x97]+[Data] +[0x98]+[Data] +[0x99]+[Data]  
+[0x9b]+[Data]+ [ Wall Column ID]-1  
[Cr] = ~[Cr];

## 5. MULTIVISION TAB

- [ACK] : [0x12][0xfa][Wall ID][SET ID][0x91][Data] [0x92][Data][0x93][Data] [0x94][Data][0x95][Data] [0x96][Data] [ Wall Column ID] [Cr]  
[Cr] = [0x12]+[ 0xfa]+[Wall ID]+[Set ID]+[0x91]+[Data] +[0x92]+[Data] +[0x93]+ [Data] +[0x94]+[Data]+[0x95]+[Data] +[0x96]+[Data]+ [ Wall Column ID]-1  
[Cr] = ~[Cr];

## 6. SETUP TAB

- [ACK] : [0x0e][0xfb][Wall ID][SET ID][0x8e][Data] [0x8a][Data] [0xa7][Data] [0x80][Data] [Wall Column ID] [Cr]  
[Cr] = [0x0e]+[ 0xfb]+[Wall ID]+[Set ID]+[0x8e]+[Data] +[0x8a]+[Data] +[0xa7]+[Data] +[0x80]+[Data]+ [ Wall Column ID]-1  
[Cr] = ~[Cr];

## 7. OPTION TAB

- [ACK] : [0x0e][0xfc][Wall ID][SET ID][0xa1][Data] [0xa2][Data] [0xa3][Data] [0xa6][Data] [Wall Column ID] [Cr]  
[Cr] = [0x0e]+[ 0xfc]+[Wall ID]+[Set ID]+[0xa1]+[Data] +[0xa2]+[Data] +[0xa3]+[Data] +[0xa6]+[Data]+ [ Wall Column ID]-1  
[Cr] = ~[Cr];



## 2. ADDITIONAL SUPPORT

For additional support for eyevis displays products, please contact:



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www: [www.eyevis.de](http://www.eyevis.de)

As at: November 2012

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