

Appendix 8 RS232 Protocol

Revision: 02

RS232 Command Format

STX(1byte) + **IDT**(1byte) + **Type**(1byte) + **CMD**(3bytes) + [**Value/Reply**(1byte)] + **ETX**(1byte)

STX : Start byte = **07**

IDT : 00(Hex Num) for broadcast mode (no announcing, only for Video Wall), 01~19(Hex Num) for single control mode.

Type : Read or Write command, **01**: read/action, **02**: write; **00**: return to host (from monitor)

CMD : as following tables

Value : Setting Value of "Write Command"

Reply : Return Value of monitor

ETX : End byte = **08**

Transmit from PC (Host)

Read/Action command : 07 IDT 01 CMD 08 (7bytes)

Write/Setting command : 07 IDT 02 CMD VAL 08 (8bytes)

Return from Monitor: Return CMD is the same with received CMD, the return command will be sent after action. In broadcast mode, no return will be sent.

Serial Port Setting

Baud Rate	Data Bit	Parity Bit	Stop Bit
115200	8	None	1

Baud rate can set to 38400, 19200, 9600 to match the monitor baud rate setting.

Baud rate 115200 is the default setting.

Explanation of symbols

●: Optional commands for advanced A/D board option

▲: Valid command on Power saving/ off mode

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
<u>Power Control and Input Source</u>	Power Control	POW	W/R	00	00	Off (soft power)	50 4F 57	▲
				01	01	On (soft power)		▲
	Input Source	MIN	W/R	00	00	VGA	4D 49 4E	
				01	01	Digital DVI		●
				02	02	S-Video		●
				03	03	Composite 1		●

				04	04	Component 1		●
				05	05	HDSOI 1		●
Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
<u>Power Control and Input Source</u>	Input Source	MIN	W/R	06	06	HDSOI 2	4D 49 4E	●
				09	09	HDMI 1		
				10	10	HDMI 2		
<u>Display Adjustment</u>	Display Adjustment	BRI	W/R	0~100	Current value	Back Light Brightness	42 52 49	
		BRL	W/R	0~100	Current value	Digital Brightness Level	42 52 4C	
		BLC	W/R	00	00	Off (Back Light)	42 4C 43	
				01	01	On (Back Light)		
		CON	W/R	0~100	Current value	Contrast	43 4F 4E	
		HUE	W/R	0~100	Current value	Hue	48 55 45	
		SAT	W/R	0~100	Current value	Saturation	53 41 54	
		COT	W/R	00	00	User	43 4F 54	
				01	01	6500K		
				02	02	9300K		
				06	06	5000K		
				07	07	7500K		
		GAC	W/R	00	00	Off (Gamma)	47 41 43	
				01	01	2.2 (Gamma)		
	Adjustment	PHA	W/R	0~63	Current value	Phase	50 48 41	
		CLO	W/R	0~100	Current value	Clock	43 4C 4F	
		HOR	R		Current value	Horizontal Position	48 4F 52	
		VER	R		Current value	Vertical Position	56 45 52	
		ADJ	W	00	00	Auto Adjust	41 44 4A	
	Video Mode	SHA	W/R	0~24	Current value	Sharpness	53 48 41	

<u>Other Control</u>	PIP Adjust	PSC	W/R	00	00	PIP OFF	50 53 43	
				01	01	PIP Small		
				02	02	PIP medium		
Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
<u>Other Control</u>	PIP Adjust	PSC	W/R	03	03	PIP large	50 53 43	
				04	04	PIP side-by-side		
	PIP source selection	PIN	W/R	00	00	VGA	50 49 4E	
				01	01	Digital DVI		●
				02	02	S-Video		●
				03	03	Composite 1		●
				04	04	Component 1		●
				05	05	HDSDI 1		●
				06	06	HDSDI 2		●
				09	09	HDMI 1		
				10	10	HDMI 2		
	PIP position	PPO	W/R	00	00	PIP Position Bottom-left	50 50 4F	
				01	01	PIP Position Bottom-Right		
				02	02	PIP Position Top-left		
				03	03	PIP Position Top-right		
	PIP/Main Swap	SWA	W	00	00	Swap main and PIP	53 57 41	
	Scaling	ASP	W/R	00	00	Native	41 53 50	
				01	01	Fill		
				02	02	PILLAR Box		
				03	03	Letter Box		
		ZOM	W	00	00	Zoom in	5A 4F 4D	
				01	01	Zoom out		

	Baud Rate Adjustment	BRA	W/R	00	00	115200	42 52 41	
				01	01	38400		
				02	02	19200		
				03	03	9600		
Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
<u>Other Control</u>	Other Control	RCU	W	00	00	MENU Key	52 43 55	
				01	01	INFO Key		
				02	02	UP Key		
				03	03	DOWN Key		
				04	04	LEFT Key		
				05	05	RIGHT Key		
				06	06	ENTER Key		
				07	07	EXIT Key		
		ALL	W	00	00	Reset all	41 4C 4C	
		SID	W	00	00	Show ID	53 49 44	
		KLC	W/R	00	00	Un-lock keys	4B 4C 43	
				01	01	Lock keys		
		SER	R		13 bytes	Read Serial Number	53 45 52	
		MNA	R		13 bytes	Read Model Name	4D 4E 41	
		GVE	R		6 bytes	Read Firmware Version	47 56 45	
		RTV	R		Current value	Read RS232 table Version	52 54 56	
	Audio	VOL	W/R	0~100	Current value	volume	56 4F 4C	●
		MUT	W/R	00	00	Mute Off	4D 55 54	●
				01	01	Mute On		●
	Scheme selection	SCM	W/R	00	00	User	53 43 4D	
				01	01	Sport		
				02	02	Game		

				03	03	Cinema		
				04	04	Vivid		

Example:

Power Control and Input Source

Turn (01) monitor power off [CMD: POW]

[Transmit] : PC → 07 01 02 50 4F 57 00 08 → Monitor

[Return] : Monitor → 07 01 00 50 4F 57 00 08 → PC

Turn (01) monitor power on [CMD: POW]

[Transmit] : PC → 07 01 02 50 4F 57 01 08 → Monitor

[Return] : Monitor → 07 01 00 50 4F 57 01 08 → PC

Read Power Status from (01) monitor [CMD: POW]

[Transmit] : PC → 07 01 01 50 4F 57 08 → Monitor

[Return] : Monitor → 07 01 00 50 4F 57 XX 08 → PC

XX = 0, the set is off. XX = 1, the set is on.

Display Adjustment

Read back light from (15) monitor [CMD: BRI] (If the setting of back light is 80)

[Transmit] : PC → 07 0F 01 42 52 49 08 → Monitor

[Return] : Monitor → 07 0F 00 42 52 49 50 08 → PC

Set back light 80 to (15) monitor [CMD: BRI]

[Transmit] : PC → 07 0F 02 42 52 49 50 08 → Monitor

[Return] : Monitor → 07 0F 00 42 52 49 50 08 → PC

Set Contrast 30 to (02) monitor [CMD: CON]

[Transmit] : PC → 07 02 02 43 4F 4E 1E 08 → Monitor

[Return] : Monitor → 07 02 00 43 4F 4E 1E 08 → PC

Read Contrast from (02) monitor [CMD: CON] (If the monitor contrast setting is 50)

[Transmit] : PC → 07 02 01 43 4F 4E 08 → Monitor

[Return] : Monitor → 07 02 00 43 4F 4E 32 08 → Monitor

PIP and Scaling Adjustment

Set (25) monitor PIP to large [CMD: PSC]

[Transmit] : PC → 07 19 02 50 53 43 03 08 → Monitor

[Return] : Monitor → 07 19 00 50 53 43 03 08 → PC

Set (25) monitor to Pillar box [CMD: ASP]

[Transmit] : PC → 07 19 02 41 53 50 02 08 → Monitor

[Return] : Monitor → 07 19 00 41 53 50 02 08 → PC

Other Control

Adjust up to (02) monitor [CMD: RCU]

[Transmit] : PC → 07 02 02 52 43 55 02 08 → Monitor

[Return] : Monitor → 07 02 00 52 43 55 **02** 08 → PC

Reset all to (02) monitor [CMD: ALL]

[Transmit] : PC → 07 02 02 41 4C 4C 00 08 → Monitor

[Return] : Monitor → 07 02 00 41 4C 4C **00** 08 → PC

Read serial number (01) monitor [CMD: SER]

[Transmit] : PC → 07 01 01 53 45 52 08 → Monitor

[Return] : Monitor → 07 01 00 53 45 52 S(0) ... S(12) 08 → PC , S(0) ~ S(12): serial number in ASCII

Read firmware version (01) monitor [CMD: GVE]

[Transmit] : PC → 07 01 01 47 56 45 08 → Monitor

[Return] : Monitor → 07 01 00 47 56 45 S(0) ... S(5) 08 → PC , S(0) ~ S(5): firmware version in ASCII