

EP-Series Ultra HD LCD Displays RS232 User Guide

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RoHS Compliance Statement

The Planar EP-Series is fully RoHS compliant.

Part Number: 020-1289-00

RS232 Codes

RS232 control is not necessary for operation, but is a convenient way to control displays from a computer at a distance. Most things you can do with the remote, you can do with RS232 commands. Plus, you can send inquiries to the displays and find out the current settings and values.

1 RS232 Command Format

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

STX: Start byte = **07**

IDT: Don't care

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

CMD: As shown in the table on the following pages

Value: Setting Value of "Write Command"

Reply: Return Value of monitor

ETX: End byte = **08**

Transmit from PC (Host)

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

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

Return from Monitor: Sent after receiving any valid command. The response CMD is the same as the received CMD.

2 Serial Port Setting

Baud Rate	Data Bit	Parity Bit	Stop Bit
19200	8	None	1

Baud rate can be set to 115200, 38400, 19200, or 9600 to match the monitor baud rate setting.

Baud rate 19200 is the default setting.

Explanation of symbols

▲: Valid command on Power saving/ off mode (The setting of "Wake Up from Sleep" must be "VGA, Digital, RS-232").

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark	
Power Control and Input Source	Power Control	POW	W/R	00	00	Off (soft power)	50 4F 57	▲	
				01	01	On (soft power)		▲	
	IPC Control	IPC	W/R	00	00	Off	49 50 43		
				01	01	On			
	Input Source	MIN	W/R	00	00	VGA	4D 49 4E		
				13	13	DisplayPort			
				14	14	OPS			
				9	9	HDMI1			
				10	10	HDMI2			
				11	11	HDMI3			
				12	12	HDMI4			
	Display Adjustment	Color	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		
SHA			W/R	0~100	Current value	Sharpness	53 48 41		
HUE			W/R	0~100	Current value	Hue	48 55 45		
SAT			W/R	0~100	Current value	Saturation	53 41 54		
Noise Reduction		NOR	W/R	00	00	Off	4E 4F 52		
				01	01	Low			
				02	02	Medium			
				03	03	High			

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
Display Adjustment	Local Dimming	LDM	W/R	00	00	Local Dimming Off	4C 44 4D	
				01	01	Local Dimming On		
	MEMC	MEM	W/R	00	00	MEMC: Off	4D 45 4D	
				01	01	MEMC: Low		
				02	02	MEMC: Medium		
				03	03	MEMC: High		
	Scheme	SCM	W/R	00	00	User	53 43 4D	
				01	01	Sport		
				02	02	Game		
				03	03	Cinema		
				04	04	Vivid		
	Color Temperature	COT	W/R	00	00	User	43 4F 54	
				01	01	6500K		
				02	02	9300K		
				03	03	3200K		
				06	06	5000K		
				07	07	7500K		

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark	
Display Adjustment	Gamma	GAC	W/R	00	00	Off (Gamma)	47 41 43		
				01	01	1.85 (Gamma)			
				02	02	1.9 (Gamma)			
				03	03	1.95 (Gamma)			
				04	04	2.0 (Gamma)			
				05	05	2.05 (Gamma)			
				06	06	2.15 (Gamma)			
				07	07	2.15 (Gamma)			
				08	08	2.2 (Gamma)			
				09	09	2.25 (Gamma)			
				10	10	2.3 (Gamma)			
				11	11	2.35 (Gamma)			
				12	12	2.4 (Gamma)			
				13	13	2.45 (Gamma)			
				14	14	2.5 (Gamma)			
				15	15	2.55 (Gamma)			
	16	16	2.6 (Gamma)						
		Gain & Offset	USR	W/R	0~100	Current value	Red Gain (0~100)	55 53 52	
			USG	W/R	0~100	Current value	Green Gain (0~100)	55 53 47	
	USB		W/R	0~100	Current value	Blue Gain (0~100)	55 53 42		
	UOR		W/R	0~100	Current value	Red Offset (0~100)	55 4F 52		
	UOG		W/R	0~100	Current value	Green Offset (0~100)	55 4F 47		
	UOB		W/R	0~100	Current value	Blue Offset (0~100)	55 4F 42		

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
Display Adjustment	VGA Adjustment	PHA	W/R	0~100	Current value	Phase	50 48 41	
		CLO	W/R	0~100	Current value	Clock	43 4C 4F	
		HOR	W/R	0~100	Current value	Horizontal Position	48 4F 52	
		VER	W/R	0~100	Current value	Vertical Position	56 45 52	
		ADJ	W	00	00	Auto Adjust	41 44 4A	
RTC	Current Time Adjustment	RTY	W/R	0~99	0~99	Year	52 54 59	
		RTM	W/R	1~12	1~12	Month	52 54 4D	
		RTD	W/R	1~31	1~31	Day	52 54 44	
		RTH	W/R	0~23	0~23	Hour	52 54 48	
		RTN	W/R	0~59	0~59	Minute	52 54 4E	
	Timer Mode	TMS	W/R	0	0	Everyday Mode	54 4D 53	
				1	1	Workday Mode		
				2	2	User Mode		

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
RTC	Enable	AEN	W/R	0~127	0~127	In User Mode: Set bit0 to 1: Sunday Enable Set bit1 to 1: Monday Enable Set bit2 to 1: Tuesday Enable Set bit3 to 1: Wednesday Enable Set bit4 to 1: Thursday Enable Set bit5 to 1: Friday Enable Set bit6 to 1: Saturday Enable In Everyday Mode: Set any bit0~6 to 1: Mon.~Sun. Enable In Workday Mode: Set bit0 to 1: Sunday Enable Set any bit1~5 to 1: Mon.~Fri. Enable Set bit6 to 1: Saturday Enable	41 45 4E	
	Disable	AEF	W/R	0~127	0~127	In User Mode: Set bit0 to 1: Sunday Disable Set bit1 to 1: Monday Disable Set bit2 to 1: Tuesday Disable Set bit3 to 1: Wednesday Disable Set bit4 to 1: Thursday Disable Set bit5 to 1: Friday Disable Set bit6 to 1: Saturday Disable In Everyday Mode: Set any bit0~6 to 1: Mon.~Sun. Disable In Workday Mode: Set bit0 to 1: Sunday Disable Set any bit1~5 to 1: Mon.~Fri. Disable Set bit6 to 1: Saturday Disable	41 45 46	

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
RTC	Sunday	SNH	W/R	0~23	0~23	Sunday On Hour	49 4E 48	
		SNM	W/R	0~59	0~59	Sunday On Minute	53 4E 4D	
		SFH	W/R	0~23	0~23	Sunday Off Hour	53 46 48	
		SFM	W/R	0~59	0~59	Sunday Off Minute	53 46 4D	
	Monday	NNH	W/R	0~23	0~23	Monday On Hour	4E 4E 48	
		NNM	W/R	0~59	0~59	Monday On Minute	4E 4E 4D	
		NFH	W/R	0~23	0~23	Monday Off Hour	4E 46 48	
		NFM	W/R	0~59	0~59	Monday Off Minute	4E 46 4D	
	Tuesday	ENH	W/R	0~23	0~23	Tuesday On Hour	45 4E 48	
		ENM	W/R	0~59	0~59	Tuesday On Minute	45 4E 4D	
		EFH	W/R	0~23	0~23	Tuesday Off Hour	45 46 48	
		EFM	W/R	0~59	0~59	Tuesday Off Minute	45 46 4D	
	Wednesday	DNH	W/R	0~23	0~23	Wednesday On Hour	44 4E 48	
		DNM	W/R	0~59	0~59	Wednesday On Minute	44 4E 4D	
		DFH	W/R	0~23	0~23	Wednesday Off Hour	44 46 48	
		DFM	W/R	0~59	0~59	Wednesday Off Minute	44 46 4D	
	Thursday	UNH	W/R	0~23	0~23	Thursday On Hour	55 4E 48	
		UNM	W/R	0~59	0~59	Thursday On Minute	55 4E 4D	
		UFH	W/R	0~23	0~23	Thursday Off Hour	55 46 48	
		UFM	W/R	0~59	0~59	Thursday Off Minute	55 46 4D	
	Friday	INH	W/R	0~23	0~23	Friday On Hour	49 4E 48	
		INM	W/R	0~59	0~59	Friday On Minute	49 4E 4D	
		IFH	W/R	0~23	0~23	Friday Off Hour	49 46 48	
		IFM	W/R	0~59	0~59	Friday Off Minute	49 46 4D	

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
RTC	Saturday	TNH	W/R	0~23	0~23	Saturday On Hour	54 4E 48	
		TNM	W/R	0~59	0~59	Saturday On Minute	54 4E 4D	
		TFH	W/R	0~23	0~23	Saturday Off Hour	54 46 48	
		TFM	W/R	0~59	0~59	Saturday Off Minute	54 46 4D	
Audio	Volume	VOL	W/R	0~100	Current value	volume	56 4F 4C	
	Bass	BAS	W/R	0~12	Current value	Bass (-6 ~ 6)	42 41 53	
	Treble	TRE	W/R	0~12	Current value	Treble (-6 ~ 6)	54 52 45	
	Balance	BAL	W/R	0~12	Current value	Balance (-6 ~ 6)	42 41 4C	
	Internal Speaker	INS	W/R	00	00	Internal Speaker Off	49 4E 53	
				01	01	Internal Speaker On		
	Mute	MUT	W/R	00	00	Mute Off	4D 55 54	
				01	01	Mute On		
	Audio Source Select	CAS	W/R	00	00	Line-In	43 41 53	
				01	01	HDMI1		
				02	02	HDMI2		
				03	03	HDMI3		
				04	04	HDMI4		
				05	05	DisplayPort		
07				07	OPS			
OSD	Transparency	OST	W/R	0~4	0~4	OSD Transparency	4F 53 54	
	H Position	OSH	W/R	0~100	0~100	OSD H Position	4F 53 48	
	V Position	OSV	W/R	0~100	0~100	OSD V Position	4F 53 56	

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
OSD	OSD Rotation	OSR	W/R	00	00	Landscape	4F 53 52	
				01	01	Portrait		
	OSD Language	OSL	W/R	00	00	English	4F 53 4C	
				01	01	Chinese		
	OSD Timeout	OSO	W/R	5~60	Current value	OSD Timeout (5, 10, 20, 30, 60 sec)	4F 43 4F	
	Splash Screen	SPS	W/R	0	0	Off	53 50 53	
				1	1	On		
	Message Box	MSB	W/R	0	0	Off	4D 53 42	
				1	1	On		
	EDID	DisplayPort	EDP	W/R	00	00	4K2K	45 44 50
01					01	1080P		
HDMI		EDH	W/R	00	00	4Kx2K	45 44 48	
				01	01	1080P		
Multi-Source	Multi-Source Views Adjust	PSC	W/R	00	00	OFF	50 53 43	
				01	01	PIP Small		
				02	02	PIP medium		
				03	03	PIP large		
				04	04	Dual View		
				05	05	Dual View Portrait		
				06	06	Triple View		
				07	07	Quad View		

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark	
Multi-Source	Multi-Source selection	PIN	W/R	(refer to MIN)	(refer to MIN)	Select the input source of sub window 1 (refer to MIN)	50 49 4E		
		PIO	W/R	(refer to MIN)	(refer to MIN)	Select the input source of sub window 2 (refer to MIN)	50 49 4F		
		PIP	W/R	(refer to MIN)	(refer to MIN)	Select the input source of sub window 3 (refer to MIN)	50 49 50		
	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		
	Multi-Source Presets Recall	PRC	W/R	00	00	Preset1 Recall	50 52 43		
				01	01	Preset2 Recall			
				02	02	Preset3 Recall			
				03	03	Preset4 Recall			
	Other Control	Scaling	ASP	W/R	00	00	Native	41 53 50	
					01	01	Full Screen		
02					02	4:3			
03					03	Letterbox			
PAS			W/R	01	01	Full Screen	50 41 53		
				02	02	4:3			
				03	03	Letterbox			
ZOM			W/R	0~10	0~10	Adjust overscan ratio	41 53 50		

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
Other Control	Baud Rate Adjustment	BRA	W/R	00	00	115200	42 52 41	
				01	01	38400		
				02	02	19200		
				03	03	9600		
	Power Saving Config	WFS	W/R	0	0	Wake on VGA	57 46 53	
				1	1	Wake on All		
				2	2	Always On		
	Auto Scan	ATS	W/R	0	0	Off	41 54 53	
				1	1	Main		
				2	2	Multi		
				3	3	All		
	IRFM	IRF	W/R	0	0	Off	49 52 46	
				1	1	On		
	Smart Light Control	SLC	W/R	0	0	Off	53 4C 43	
				1	1	DCR		
				2	2	Light Sensor		
	Power LED	LED	W/R	0	0	Off	4C 45 44	
				1	1	On		
	DisplayPort Version	DPM	W/R	0	0	DP 1.1	44 50 4D	
				1	1	DP 1.2		
HDMI EDID	EDH	W/R	00	00	4Kx2K	45 44 48		
			01	01	1080P			
DisplayPort EDID	EDP	W/R	00	00	4Kx2K	45 44 50		
			01	01	1080P			

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
Other Control	OPS Power Down Check	OPC	W/R	00	00	Disable OPS power down check	4F 50 43	
				01	01	Enable OPS power down check		
	HDMI RGB Color Range	HCR	W/R	00	00	Auto Detect	48 43 52	
				01	01	Full Range		
				02	02	Limited Range		
	Touch Control	TOC	W/R	00	00	Auto (Read Only)	54 4F 43	
				01	01	OPS		
				02	02	External		
	Remote Control	RCU	W	14	14	MENU Key	52 43 55	
				04	04	INFO Key		
				02	02	UP Key		
				25	25	DOWN Key		
				01	01	LEFT Key		
				03	03	RIGHT Key		
				18	18	ENTER Key		
				05	05	EXIT Key		
				07	07	VGA Key		
				09	09	HDMI1 Key		
				12	12	HDMI2 Key		
16				16	HDMI3 Key			
22				22	HDMI4 Key			
08				08	DISPLAYPORT Key			
21	21	OPS Key						
15	15	SOURCE Key						

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark	
Other Control	Remote Control	RCU	W	19	19	P-SOURCE Key	52 43 55		
				17	17	PIP Key			
				26	26	P-POSITION Key			
				06	06	SWAP Key			
				20	20	SCALING Key			
				67	67	FREEZE Key			
				00	00	MUTE Key			
				23	23	BRIGHT Key			
				24	24	CONTRAST Key			
				30	30	AUTO Key			
				29	29	VOLUME+ Key			
				27	27	VOLUME- Key			
				32	32	Preset1 Recall			
				33	33	Preset2 Recall			
				34	34	Preset3 Recall			
				35	35	Preset4 Recall			
				36	36	Audio Source Main Key			
				37	37	Audio Source 2 Key			
				38	38	Audio Source 3 Key			
		39	39	Audio Source 4 Key					
		ALL	W	00	00	Reset all	41 4C 4C		
		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	

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
Other Control	Remote Control	GVE	R		6 bytes	Read Firmware Version	47 56 45	
		RTV	R		Current value	Read RS232 table Version	52 54 56	
Ethernet Setup	Network Enable	NWE	W/R	0	0	No	4E 57 45	
				1	1	Yes		
	Dynamic IP	DIP	W/R	0	0	Disable	44 49 50	
				1	1	Enable		
	Default	LDS	W	0	0	Load default settings (About 15 seconds.)	4C 44 53	
	E-Mail Alert	PSA	W/R	0	0	Off (Power Status Alert)	50 53 41	
				1	1	On (Power Status Alert)		
		SSA	W/R	0	0	Off (Source Status Alert)	53 53 41	
				1	1	On (Source Status Alert)		
		SLA	W/R	0	0	Off (Signal Lost Alert)	53 4C 41	
				1	1	On (Signal Lost Alert)		
	Static IP Settings	IP1	W/R	0~255	0~255	Static IP Address 1	49 50 31	
		IP2	W/R	0~255	0~255	Static IP Address 2	49 50 32	
		IP3	W/R	0~255	0~255	Static IP Address 3	49 50 33	
		IP4	W/R	0~255	0~255	Static IP Address 4	49 50 34	
		MK1	W/R	0~255	0~255	Subnet Mask 1	4D 4B 31	
		MK2	W/R	0~255	0~255	Subnet Mask 2	4D 4B 32	
		MK3	W/R	0~255	0~255	Subnet Mask 3	4D 4B 33	
		MK4	W/R	0~255	0~255	Subnet Mask 4	4D 4B 34	
		GW1	W/R	0~255	0~255	Gateway 1	47 57 31	
GW2		W/R	0~255	0~255	Gateway 2	47 57 32		
GW3		W/R	0~255	0~255	Gateway 3	47 57 33		

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)	Remark
Ethernet Setup	Static IP Settings	GW4	W/R	0~255	0~255	Gateway 4	47 57 34	
		FD1	W/R	0~255	0~255	DNS Address 1	46 44 31	
		FD2	W/R	0~255	0~255	DNS Address 2	46 44 32	
		FD3	W/R	0~255	0~255	DNS Address 3	46 44 33	
		FD4	W/R	0~255	0~255	DNS Address 4	46 44 34	
		SNS	W	0	0	Save Static IP Settings	53 4E 53	

Example

Power Control and Input Source

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

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

[Return] : Monitor → 07 01 00 42 52 49 **50** 08 → PC

Set back light 80 to monitor [CMD: BRI]

[Transmit] : PC → 07 01 02 42 52 49 **50** 08 → Monitor

[Return] : Monitor → 07 01 00 42 52 49 **50** 08 → PC

Set Contrast 30 to monitor [CMD: CON]

[Transmit] : PC → 07 01 02 43 4F 4E **1E** 08 → Monitor

[Return] : Monitor → 07 01 00 43 4F 4E **1E** 08 → PC

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

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

[Return] : Monitor → 07 01 00 43 4F 4E **32** 08 → Monitor

Scaling Adjustment

Set monitor to Pillar box [CMD: ASP]

[Transmit] : PC → 07 01 02 41 53 50 02 08 → Monitor

[Return] : Monitor → 07 01 00 41 53 50 **02** 08 → PC

Other Control

Adjust up to monitor [CMD: RCU]

[Transmit] : PC → 07 01 02 52 43 55 02 08 → Monitor

[Return] : Monitor → 07 01 00 52 43 55 **02** 08 → PC

Reset all to monitor [CMD: ALL]

[Transmit] : PC → 07 01 02 41 4C 4C 00 08 → Monitor

[Return] : Monitor → 07 01 00 41 4C 4C**00** 08 → PC

Read serial number 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 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

Accessing Planar's Technical Support Website

Go to www.planar.com/support to locate the following support documents and resources:

- User Guide
- RS232 User Manual
- Touchscreen drivers
- Standard warranties
- Planar support hotline number and email