



RS232 Protocol Function List

Baud Rate : 19200
 Data Bits: 8
 Parity: None
 Stop Bits: 1
 Flow Control : None
 UART16550 FIFO: Disable

Note: It supports data rates from 9600 to 115200 bps. The default is 19200 bps. Depending on the equipment, a lower baud rate may be recommended for long cable runs.

Write Command

~	X	X	X	X	X		n	CR
Lead Code	Projector ID		Command			space	variable	carriage return
Prefix	00~99 (00: All projectors)		000~999				0~9999	suffix

Response Format

Pass: Fail:

Read Command

~	X	X	X	X	X		n	CR
Lead Code	Projector ID		Command			space	variable	carriage return
Prefix	00~99 (00: All projectors)		000~999				0~9999	suffix

Response Format

Pass: Fail:

System Automatically Send

I	N	F	O	n
				variable

Note: There is a <CR> after all ASCII commands. 0D is the HEX code for <CR> in ASCII code.

Character to HEX table

Character	HEX
~	7E
0	30
1	31
2	32
3	33
4	34
5	35
6	36
7	37
8	38
9	39
Space	20
CR (Enter)	0D

e.g.

ASCII to HEX

RS232 Command	~	0	0	1	9	5		1	CR
HEX	7E	30	30	31	39	35	20	31	0D

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Write Parameter	Optoma Read CMD					Read Parameter	Reply Parameter			
DISPLAY	Display Mode	Presentation								1								1		
		Movie								3								3		
		Bright								2								2		
		REC709								4								4		
		DICOM SIM				~	X	X	2	0	13	~	X	X	1	2	3	1	O k	10
		2D High Speed									18								18	
		3D									9								9	
		Blending									19								19	
		User									5								5	
		Save to User																		
	Brightness	0 ~ 100				~	X	X	2	1	0 ~ 100	~	X	X	1	2	5	1	O k	%
	Contrast	0 ~ 100				~	X	X	2	2	0 ~ 100	~	X	X	1	2	6	1	O k	%
	Sharpness	0 ~ 4				~	X	X	2	3	0 ~ 8									
	Color	0 ~ 100				~	X	X	4	5	0 ~ 100									
	Tint	0 ~ 100				~	X	X	4	4	0 ~ 100									
	Phase	0 ~ 100				~	X	X	7	4	0 ~ 100									
	Frequency	0 ~ 100				~	X	X	7	3	0 ~ 100									
	Horz Position	0 ~ 100				~	X	X	7	5	0 ~ 100									
	Vert Position	0 ~ 100				~	X	X	7	6	0 ~ 100									
	3D	3D Format	Auto								0									
			Frame Packing								7									
			Side by Side								1									
			Top and Bottom				~	X	X	4	0	5								
Frame Sequential										3										
Off										8										
3D Invert		Off				~	X	X	2	3	1									
		On								1										
DLP Link	Off				~	X	X	2	3	0										
	On								0 & 2											
									1											

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Write Parameter	Optoma Read CMD					Read Parameter	Reply Parameter					
DISPLAY	Color Matching	HSG Enable	Off								0 & 2											
			Color Enhancement 1			~	X	X	4	1	0	3										
			Color Enhancement 2									4										
			User									5										
		Auto Test Pattern	Off				~	X	X	4	1	1	0 & 2									
			On										1									
		Red H.	0 – 254			~	X	X	3	3	3	0-254										
		Red S.	0 – 254			~	X	X	3	2	7	0-254										
		Red G.	0 – 254			~	X	X	3	3	9	0-254										
		Green H.	0 – 254			~	X	X	3	3	4	0-254										
		Green S.	0 – 254			~	X	X	3	2	8	0-254										
		Green G.	0 – 254			~	X	X	3	4	0	0-254										
		Blue H.	0 – 254			~	X	X	3	3	5	0-254										
		Blue S.	0 – 254			~	X	X	3	2	9	0-254										
		Blue G.	0 – 254			~	X	X	3	4	1	0-254										
		Cyan H.	0 – 254			~	X	X	3	3	6	0-254										
		Cyan S.	0 – 254			~	X	X	3	3	0	0-254										
		Cyan G.	0 – 254			~	X	X	3	4	2	0-254										
		Magenta H.	0 – 254			~	X	X	3	3	7	0-254										
		Magenta S.	0 – 254			~	X	X	3	3	1	0-254										
		Magenta G.	0 – 254			~	X	X	3	4	3	0-254										
		Yellow H.	0 – 254			~	X	X	3	3	8	0-254										
		Yellow S.	0 – 254			~	X	X	3	3	2	0-254										
		Yellow G.	0 – 254			~	X	X	3	4	4	0-254										
		White R Gain	0 – 254			~	X	X	3	4	5	0-254										
		White G Gain	0 – 254			~	X	X	3	4	6	0-254										
		White B Gain	0 – 254			~	X	X	3	4	7	0-254										
		Reset to Default	No				~	X	X	2	1	5										
			Yes										1									

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Write Parameter	Optoma Read CMD	Read Parameter	Reply Parameter										
DISPLAY	Advanced	White Peaking	0 - 100																
		Gamma	Video					2											
			Film					1											
			Blackboard		~	X	X	3	5										
			Graphic					12											
			DICOM					13											
			Gamma 2.2					11											
		Color Temperature	Warm					4											
			Medium					1											
			Cool		~	X	X	3	6	~	X	X	1	2	8	1	O	k	3
			Cold					2										0	
		Color Space	RGB																
			REC709																
			REC601		~	X	X	3	7										
			RGB Video																
			Auto																
		RGB Gain/Bias	Red Gain	0 ~ 100	~	X	X	2	4										
			Green Gain	0 ~ 100	~	X	X	2	5										
			Blue Gain	0 ~ 100	~	X	X	2	6										
			Red Offset	0 ~ 100	~	X	X	2	7										
			Green Offset	0 ~ 100	~	X	X	2	8										
			Blue Offset	0 ~ 100	~	X	X	2	9										
			Reset RGB Gain/Offset		~	X	X	5	1	7									
		Color Wheel Speed	2X																
			3X		~	X	X	5	4	7									
		Film Mode	Off																
			On																
		Extreme Black	Off																
			On																
		DynamicBlack	Off		~	X	X	1	9	1									
			On								0 & 2								
											1								

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Write Parameter	Optoma Read CMD					Read Parameter	Reply Parameter			
OUTPUT	Aspect Ratio	Auto								7								7		
		4:3								1								1		
		16:9			~	X	X	6	0		2	~	X	X	1	2	7	1	O k	2
		16:10									3								3	
		Native									6								6	
	Overscan	Off																		
		Zoom																		
		Crop																		
	H Digital Zoom	50% ~ 400%			~	X	X	5	0	4	50 ~ 400									
	V Digital Zoom	50% ~ 400%			~	X	X	5	0	5	50 ~ 400									
	H Digital Shift	0 ~ 100			~	X	X	6	3		0~100									
	V Digital Shift	0 ~ 100			~	X	X	6	4		0~100									
	Image Warping	PC Mode	Off	Off		~	X	X	5	4	9	0 & 2								
			On									1								
		H Keystone	0 ~ 40			~	X	X	6	5		0 ~ 40								
		V Keystone	0 ~ 40			~	X	X	6	6		0 ~ 40								
		H Pincushion	0 ~ 100			~	X	X	3	0	0	0 ~ 100								
		V Pincushion	0 ~ 100			~	X	X	3	0	1	0 ~ 100								
		4-Corner	Top Left Adjust										1	0~120						
													2	0~80						
													3	0~120						
													4	0~80						
												5	0~120							
												6	0~80							
												7	0~120							
												8	0~80							
PIP/PBP Settings	PIP/PBP Function	Off	Off		~	X	X	3	0	2	0									
		On									1									

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Write Parameter	Optoma Read CMD	Read Parameter	Reply Parameter																		
OUTPUT	PIP/PBP Settings	Main Source	VGA		~	X	X	1	2	5	~	X	X	1	2	1	1	O	k	2							
			HDMI							1										7							
			DVI-D							2										1							
			HDBaseT							21										12							
			Network Display							18										13							
			3GSDI							22										18							
		Sub Source	VGA		~	X	X	3	0	5	2	~	X	X	1	3	1	1	O	k	2						
			HDMI								1										7						
			DVI-D								9										1						
			HDBaseT								10										16						
			Network Display								12										13						
			3GSDI								11										17						
		Swap			~	X	X	3	0	6																	
		Size	Small		~	X	X	3	0	4	3																
			Medium								2																
			Large								1																
		Layout	PBP, Main Left		~	X	X	3	0	3	5																
			PBP, Main Top								6																
			PBP, Main Right								7																
			PBP, Main Bottom								8																
			PIP-Bottom Right								4																
PIP-Bottom Left			3																								
PIP-Top Left			1																								
PIP-Top Right			2																								
SETUP	Language	English		~	X	X	7	0	1																		
		French							3																		
		Spanish							5																		
		German							2																		
		Italian							4																		
		Russian							17																		
		Chinese Simplified							14																		
		Japanese							15																		

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Write Parameter	Optoma Read CMD					Read Parameter	Reply Parameter			
SETUP	Language	Korean									16									
		Portuguese				~	X	X	7	0		6								
		Indonesian										26								
		Dutch										8								
	Ceiling Mount	Off										0 & 2								
		On				~	X	X	5	1	3	1								
		Auto										3								
	Rear Projection	Off				~	X	X	5	1	4	0 & 2								
		On										1								
	Lens Settings	Focus	Focus in - motor go step			~	X	X	3	0	8	1								
			Focus out - motor go step										2							
		Zoom	Zoom in - motor go step				~	X	X	3	0	7	1							
			Zoom out - motor go step										2							
		Lens Shift	Left shift up - motor go step										3							
			Left shift down - motor go step				~	X	X	8	4		4							
			Left shift right - motor go step										6							
			Left shift left - motor go step										5							
		Lens Memory	Apply Position			1	~	X	X	3	5	9	1							
						2	~	X	X	3	5	9	2							
						3	~	X	X	3	5	9	3							
						4	~	X	X	3	5	9	4							
					5	~	X	X	3	5	9	5								
	Save Current Position					1	~	X	X	3	6	0	1							
						2	~	X	X	3	6	0	2							
					3	~	X	X	3	6	0	3								
					4	~	X	X	3	6	0	4								
					5	~	X	X	3	6	0	5								

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Write Parameter	Optoma Read CMD	Read Parameter	Reply Parameter		
SETUP	Lens Settings	Lens Calibration	No								
			Yes		~	X	X	5	2	5	1
		Lens Lock	No		~	X	X	3	4	9	2
			Yes								1
	Menu Settings	Menu Transparency	0 ~ 9		~	X	X	5	2	6	0 ~ 9
		Information Hide	Off		~	X	X	1	0	2	0 & 2
			On								1
	Keypad LED Settings	Off									
		On									
	Security	Password	Off		~	X	X	7	8		99999
			On								99999
		Change Password			~	X	X	5	2	7	00000,99999
	Communications	LAN	DHCP	Off							
				On							
			IP Address								
			Subnet Mask								
			Gateway								
			MAC Address								
			Apply								
		WLAN	Enable								
			Start IP								
			End IP								
			Subnet Mask								
			Gateway								
			MAC Address								
		SSID									
		Network	Projector Name								
			Restart Network								
			Network Factory Reset								

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Write Parameter	Optoma Read CMD	Read Parameter	Reply Parameter												
SETUP	Communications	Serial Port Baud Rate	9600																		
			14400																		
			19200																		
			38400																		
			57600																		
			115200																		
		Serial Port Path	RS232																		
			HDBaseT																		
	Projector ID	0 - 99			~	X	X	7	9		(0 ~ 99)										
OPTION	Auto Source	Off									1										
		On				~	X	X	1	0	0	0 & 2									
	High Altitude	Off										0 & 2									
		On				~	X	X	1	0	1	1									
	Grid Pattern	Off				~	X	X	0	5	7	0									
		Red				~	X	X	0	5	7	1									
		Green				~	X	X	0	5	7	2									
		White				~	X	X	0	5	7	3									
	Test Pattern	Off										0									
		Grid										1									
		Red										5									
		Green										6									
		Blue										7									
		Yellow				~	X	X	1	9	5	8									
		Magenta										9									
		Cyan										10									
		White										2									
		Black										11									
	Background Color	Logo										7									
		Blue										1									
Black					~	X	X	1	0	4	2										
White											5										

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Write Parameter	Optoma Read CMD	Read Parameter	Reply Parameter	
OPTION	Hot-Key settings	Blank Screen								
		Aspect Ratio								
		Freeze Screen								
		Overscan								
	Power Settings	Standby Power Mode	0.5W mode			~	X X	1 1 4	1	
			Communication mode						0 & 2	
		Direct Power On	Off			~	X X	1 0 5	0 & 2	
			On						1	
		Auto Power Off	No						0	
			5 Mins						5	
			10 Mins						10	
			15 Mins			~	X X	1 0 6	15	
			20 Mins						20	
			25 Mins						25	
			30 Mins						30	
		Sleep Timer	No						0	
			2 Hours			~	X X	1 0 7	120	
			4 Hours						240	
			6 Hours						360	
		Light Source Settings	Light Source Mode	Constant Power						
	Constant Luminance									
	Eco Mode									
	Constant Power Settings		0 - 99			~	X X	3 2 6	0~99	
	Constant Luminance Settings		0 - 99			~	X X	5 2 2	0~99	
	Total Projector Hours									
	Light Sensor	Light Sensor Calibration				~	X X	5 5 2	1	
		Calibrated?	(Display Yes/No)							

Note: Some commands are not supported depending on the model.

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Write Parameter	Optoma Read CMD	Read Parameter	Reply Parameter	
OPTION	Information	Model Name					~ X X 1 5 1	1	O k #	
		Serial Number					~ X X 3 5 3	1	O k #	
		Native Resolution					~ X X 1 5 0	2	O k #	
		Firmware					~ X X 1 2 2	1	O k #	
		Main Source							3	O k #
		- Resolution							4	O k #
		- Signal Format							5	O k #
		- Pixel Clock							6	O k #
		- Horz Refresh							7	O k #
		- Vert Refresh							8	O k #
		Sub Source					~ X X 1 5 0	9	O k #	
		- Resolution							10	O k #
		- Signal Format							11	O k #
		- Pixel Clock							12	O k #
		- Horz Refresh							13	O k #
		- Vert Refresh							14	O k #
		Light Source Mode							15	O k #
		Total Projector Hours						~ X X 1 0 8	1	O k #
		Standby Power Mode						~ X X 1 5 0	16	O k #
		IP Address						~ X X 8 7	3	O k *** _ _ _ _
DHCP						~ X X 1 5 0	17	O k #		
Factory Reset	Yes/No (Dialog box)				~ X X 1 1 2	1				
Service										

Note: Some commands are not supported depending on the model.

Other Uart Command

Item	Command	Range or Explanation	Note	Optoma Write CMD					Write Parameter	Optoma Read CMD					Read Parameter	Reply Parameter				
Power On	Power On			~	X	X	0	0	1	~	X	X	1	2	4	1	O	k	1	
Power Off	Power Off								0&2										0	
AV Mute Enable	AV Mute Enable			~	X	X	3	2	5	1	~	X	X	3	5	5	1	O	k	0
AV Mute Disable	AV Mute Disable								0&2										1	
Freeze Screen	Freeze Screen			~	X	X	0	4	1											
Unfreeze Screen	Unfreeze Screen								0&2											
Power On	Power On		Simulate key input						1											
Power Off	Power Off									50										
1	1									51										
2	2									52										
3	3									53										
4	4									54										
5	5									55										
6	6									56										
7	7									57										
8	8									58										
9	9									59										
Info	Info									40										
0	0				~	X	X	1	4	0	60									
Mode	Mode									36										
Auto	Auto									41										
Input	Input									46										
Up	Up									10										
Left	Left									11										
Enter	Enter									12										
Right	Right									13										
Down	Down								14											
Menu	Menu								20											
Exit	Exit								72											
Gamma	Gamma								61											
Bright	Bright								19											

Note: Some commands are not supported depending on the model.

Item	Command	Range or Explanation	Note	Optoma Write CMD					Write Parameter	Optoma Read CMD					Read Parameter	Reply Parameter	
Cont.	Cont.									62							
PIP	PIP									63							
Lens H(Left)	Lens H(Left)									64							
Lens H(Right)	Lens H(Right)									65							
Focus(Up)	Focus(Up)									34							
Lens V(Up)	Lens V(Up)									66							
Lens V(Down)	Lens V(Down)									67							
Focus(Down)	Focus(Down)									35							
Keystone H(Left)	Keystone H(Left)		Simulate key input	~	X	X	1	4	0	68							
Keystone H(Right)	Keystone H(Right)									69							
Zoom(Up)	Zoom(Up)									32							
Keystone V(Up)	Keystone V(Up)									15							
Keystone V(Down)	Keystone V(Down)									16							
Zoom(Down)	Zoom(Down)									33							
Shutter(AV Mute)	Shutter(AV Mute)									24							
Hot Key	Hot Key									70							
Pattern	Pattern									71							
Note 1																	
PIN Protect	[PINP"12345"]	"12345" is current PIN code. When PIN protect is off, input this command will turn PIN protect on, and vice versa.	Note 1														
Note 2																	
Change PIN	[PINC"12345,67890"]	The former 5 digits "12345" is old PIN code, and the later 5 digits "67890" is new PIN code you want to set.	Note 2														

Note: Some commands are not supported depending on the model.

