



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					Set 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 ~ 8				~	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						~	X	X	4	0	1									
Top and Bottom										2										
Frame Sequential										3										
Off										8										
3D Invert		Off				~	X	X	2	3	0									
		On								1										
DLP Link		Off				~	X	X	2	3	0 & 2									
		On								1										
3D Sync Out	To Emitter				~	X	X	2	3	2										
	To Next Projector								1											
Frame Delay	1~ n (by timing,Max 200)				~	X	X	2	3	3							0~n			

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

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Set 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																	
			Yes		~	X	X	2	1	5	1									

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

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Set 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				2												
			REC709				5												
			REC601		~	X	X	3	7										
			RGB Video				6												
			Auto				4												
		RGB Gain/Bias	Red Gain	0 ~ 100	~	X	X	2	4		0 ~ 100								
			Green Gain	0 ~ 100	~	X	X	2	5		0 ~ 100								
			Blue Gain	0 ~ 100	~	X	X	2	6		0 ~ 100								
			Red Offset	0 ~ 100	~	X	X	2	7		0 ~ 100								
			Green Offset	0 ~ 100	~	X	X	2	8		0 ~ 100								
			Blue Offset	0 ~ 100	~	X	X	2	9		0 ~ 100								
			Reset RGB Gain/Offset		~	X	X	5	1	7	1								
		Color Wheel Speed	2X				1												
			3X		~	X	X	5	4	7	2								
		Film Mode	Off																
			On																
		Extreme Black	Off																
			On																
		DynamicBlack	Off		~	X	X	1	9	1	0 & 2								
			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					Set 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			~	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 Corner Adjust										1	0~120						
													2	0~80						
	Top Right Corner Adjust											3	0~120							
												4	0~80							
	Bottom Left Corner Adjust					~	X	X	5	8		5	0~120							
												6	0~80							
	Bottom Right Corner Adjust											7	0~120							
												8	0~80							
	Reset to Default																			
	PIP/PBP Settings	PIP/PBP Function	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					Set Parameter	Optoma Read CMD					Read Parameter	Reply Parameter					
OUTPUT	PIP/PBP Settings	Main Source	VGA							5									2			
			HDMI							1										7		
			DVI-D								2	~	X	X	1	2	1	1		O	k	1
			HDBaseT								21										16	
			Network Display								18										13	
			3GSDI								22										18	
		Sub Source	VGA								2										2	
			HDMI								1										7	
			DVI-D								9	~	X	X	1	3	1	1		O	k	1
			HDBaseT								10										16	
			Network Display								12										13	
			3GSDI								11										17	
		Swap									~	X	X	3	0	6						
		Size	Small								3											
			Medium								2	~	X	X	3	0	4					
			Large								1											
		Layout	PBP, Main Left								5											
			PBP, Main Top								6											
			PBP, Main Right								7											
			PBP, Main Bottom								8											
			PIP-Bottom Right								4	~	X	X	3	0	3					
PIP-Bottom Left									3													
PIP-Top Left									1													
PIP-Top Right									2													
SETUP	Language	English								1												
		French								3												
		Spanish								5												
		German								2												
		Italian								4	~	X	X	7	0							
		Russian								17												
		Chinese Simplified								14												
		Japanese								15												
		Korean								16												

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

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Set Parameter	Optoma Read CMD					Read Parameter	Reply Parameter	
SETUP	Language	Portuguese									6							
		Indonesian			~	X	X	7	0			26						
		Dutch										8						
	Ceiling Mount	Off										0 & 2						
		On			~	X	X	5	1	3		1						
		Auto										3						
	Rear Projection	Off										0 & 2						
		On			~	X	X	5	1	4		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 Calibration	No															
			Yes			~	X	X	5	2	5		1					
		Lens Memory	Apply Position	1										1				
				2										2				
	3					~	X	X	3	5	9		3					
	4												4					
	5												5					
	Save Current Position		1											1				
2													2					
3					~	X	X	3	6	0		3						
4												4						
5												5						

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

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Set Parameter	Optoma Read CMD					Read Parameter	Reply Parameter				
SETUP	Lens Settings	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									~	X	X	1	5	0	17	O k	0
				On															17	O k	1
			IP Address										~	X	X	8	7		3	O k	nnn.nnn.nnn.nnn
			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	Set 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)										
		IR Control	Front	Off								0										
				On			~	X	X			1										
			Top	Off								0										
				On			~	X	X			1										
			HDBaseT	Off								0										
On					~	X	X			1												
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											
	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											
	Grid Pattern	Off									0											
		Red									1											
		Green				~	X	X	0	5	7	2										
		White									3											

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

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD					Set Parameter	Optoma Read CMD					Read Parameter	Reply Parameter	
OPTION	Background Color	Logo									7							
		Blue			~	X	X	1	0	4	1							
		Black									2							
		White									5							
	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						
		Sleep Timer	30 Mins									30						
			No									0						
			2 Hours			~	X	X	1	0	7	120						
			4 Hours									240						
	Light Source Settings	Light Source Mode	Constant Power									6						
			Constant Luminance			~	X	X	1	1	0	7						
			Eco Mode									2						
		Constant Power Settings	0 - 99			~	X	X	3	2	6	0~99						
		Total Projector Hours																
	Light Sensor	Default										0						
		Auto			~	X	X	5	5	2	1							
		Manual									2							

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

Level 1	Level 2	Level 3	Level 4	Level 5	Optoma Write CMD	Set 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	Factory Reset	Yes/No (Dialog box)							
	Filter Wheel Index								
	Phosphor Wheel Index								
	Error Log								
	Mode Adjustment								
	Reset Projector Hours								
	Light Sensor Calibration								
	ADC Calibration								
	LD Hours								
UST Lens Install					~ X X 3 6 1	1			

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	0	2	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.

