



# RS232 Protocol Function List

Baud Rate : 9600  
 Data Bits: 8  
 Parity: None  
 Stop Bits: 1  
 Flow Control : None  
 UART16550 FIFO: Disable

**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 (Default: 00)		000~999				0~9999	suffix

Response Format

Pass: 

O	k	n
		Variable

      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	32
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	7D	30	30	35	39	35	20	31	0D

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	
		Display Mode	[None]			
			Presentation			
			Bright			
			Cinema			
			Game			
			sRGB			
			DICOM SIM.			
			User			
			3D			
			User (3D)			
			Off			
			BlackBoard			
			Wall Color	Light Yellow		
		Light Green				
		Light Blue				
		Pink				
		Gray				
		Brightness	-50 ~ 50			
		Contrast	-50 ~ 50			
		Sharpness	1 ~ 15			
		Color	-50 ~ 50			
		Tint	-50 ~ 50			
		Gamma	Film			
			Video			
			Graphics			
			Standard(2.2)			
			1.8			
			2.0			
		2.4				
		Color Temperature	BrilliantColor™	1 ~ 10		
			Warm			
			Standard			
			Cool			
		Color Matching	Cold			
			Color	R / G / B / C / Y / M / W		
			(R) Saturation	-50 ~ 50		
			(R) Hue	-50 ~ 50		
			(R) Gain	-50 ~ 50		
			(G) Saturation	-50 ~ 50		
			(G) Hue	-50 ~ 50		
			(G) Gain	-50 ~ 50		
			(B) Saturation	-50 ~ 50		
			(B) Hue	-50 ~ 50		
			(B) Gain	-50 ~ 50		
			(C) Saturation	-50 ~ 50		
			(C) Hue	-50 ~ 50		
			(C) Gain	-50 ~ 50		
			(Y) Saturation	-50 ~ 50		
			(Y) Hue	-50 ~ 50		
			(Y) Gain	-50 ~ 50		
			(M) Saturation	-50 ~ 50		
			(M) Hue	-50 ~ 50		
			(M) Gain	-50 ~ 50		
		(W) Red	-50 ~ 50			
		(W) Green	-50 ~ 50			
		(W) Blue	-50 ~ 50			
		Reset	Cancel / Yes			

Image Settings

Color Settings

Write Command						Response		
CMD					space	Set Para.	Fail	Pass
~	X	X	2	0		1	F	P
						2	F	P
						3	F	P
						12	F	P
						4	F	P
						13	F	P
						5	F	P
						9	F	P
						6	F	P
						0 & 2	F	P
						1	F	P
						7	F	P
~	X	X	5	0	6	3	F	P
						4	F	P
						5	F	P
						6	F	P
~	X	X	2	1		-50~50	F	P
~	X	X	2	2		-50~50	F	P
~	X	X	2	3		1~15	F	P
~	X	X	4	5		-50~50	F	P
~	X	X	4	4		-50~50	F	P
~	X	X	3	5		1	F	P
~	X	X	3	5		2	F	P
~	X	X	3	5		3	F	P
~	X	X	3	5		4	F	P
~	X	X	3	5		5	F	P
~	X	X	3	5		6	F	P
~	X	X	3	5		12	F	P
~	X	X	3	4		1~10	F	P
						4	F	P
~	X	X	3	6		1	F	P
						2	F	P
						3	F	P
~	X	X	3	3	3	-50~50	F	P
~	X	X	3	2	7	-50~50	F	P
~	X	X	3	3	9	-50~50	F	P
~	X	X	3	3	4	-50~50	F	P
~	X	X	3	2	8	-50~50	F	P
~	X	X	3	4	0	-50~50	F	P
~	X	X	3	3	5	-50~50	F	P
~	X	X	3	2	9	-50~50	F	P
~	X	X	3	4	1	-50~50	F	P
~	X	X	3	3	6	-50~50	F	P
~	X	X	3	3	0	-50~50	F	P
~	X	X	3	4	2	-50~50	F	P
~	X	X	3	3	7	-50~50	F	P
~	X	X	3	3	1	-50~50	F	P
~	X	X	3	4	3	-50~50	F	P
~	X	X	3	3	8	-50~50	F	P
~	X	X	3	3	2	-50~50	F	P
~	X	X	3	4	4	-50~50	F	P
~	X	X	3	4	5	-50~50	F	P
~	X	X	3	4	6	-50~50	F	P
~	X	X	3	4	7	-50~50	F	P
~	X	X	2	1	5	1	F	P

Read Command				Response						
CMD		CMD Value		Fail	Pass					
~	X	X	1	2	3	1	F	O	k	0
										1
										2
										3
										12
										4
										10
										5
										9
										6
~	X	X	1	2	5	1	F	O	k	nnnn
~	X	X	1	2	6	1	F	O	k	nnnn
~	X	X	1	2	8	1	F	O	k	3
										0
										1
										2

Note: Some commands are not supported, it's depends on models, please refer to UM.





Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	
Audio	Volume	0 - 10				
	Mic Volume	0 - 10				
	Audio Input	Default				
		Audio 1(Mini-jack)				
		RCA				
		Audio 2				
		Aduio 3				
		Audio 4				
		HDMI 1				
		HDMI 2				
Audio 5/Displayport						
Displayport						
Projection	Front					
	Rear					
	Ceiling-top					
	Rear-top					
Screen Type	16:9					
	16:10					
Lamp Settings	Lamp Reminder	Off				
	Lamp Reset	On				
Filter Settings	Filter Usage Hours					
	Optional Filter Installed	No				
		Yes				
	Filter Reminder	Off				
		300hr				
		500hr				
800hr						
1000hr						
Filter Reset	Cancel / Yes					
Power Settings	Direct Power On	Off				
	On					
	Auto Power Off (min)	0 ~ 180 (5 min increments)				
	Sleep Timer (min)	0 ~ 990 (30 min increments)				
	Quick Resume	Always On	No			
		Yes				
	Power Mode (Standby)	Off				
		On				
	USB Power	Active				
		Eco.				
Off						
Wireless	On					
	Off					
Security	Security	Off				
	Security Timer	On				
	Change Password	MM/DD/HH				

Write Command							Response	
CMD	SPACE	Set Para.	Fail	Pass				
~ X X 8 1		0~10	F	P				
~ X X 9 3		0~10	F	P				
~ X X 8 9		0	F	P				
		1	F	P				
		2	F	P				
		3	F	P				
		4	F	P				
		5	F	P				
		6	F	P				
		7	F	P				
		8	F	P				
		9	F	P				
~ X X 7 1		1	F	P				
		2	F	P				
		3	F	P				
		4	F	P				
~ X X 9 0		0	F	P				
		1	F	P				
~ X X 1 0 9		0 & 2	F	P				
		1	F	P				
~ X X 1 1 1		1	F	P				
~ X X 3 2 0		0 & 2	F	P				
		1	F	P				
~ X X 3 2 2		0	F	P				
		1	F	P				
		2	F	P				
		3	F	P				
		4	F	P				
~ X X 3 2 3		1	F	P				
~ X X 1 0 5		0 & 2	F	P				
		1	F	P				
~ X X 1 0 6		0 ~ 180	F	P				
~ X X 1 0 7		000~990	F	P				
~ X X 5 0 7		0 & 2	F	P				
		1	F	P				
~ X X 1 1 5		0 & 2	F	P				
		1	F	P				
~ X X 1 1 4		1	F	P				
		0 & 2	F	P				
		0 & 2	F	P				
~ X X 5 2 0		1	F	P				
		3	F	P				
		0 & 2	F	P				
~ X X 5 2 1		1	F	P				
		0 ~ nnnn	F	P				
~ X X 7 8		1 ~ nnnn	F	P				
		~MMDDHH	F	P				

Read Command				Response	
CMD	CMD Value	Fail	Pass		
~ X X 1 2 9	1	F		O k	0 1 2 3
~ X X 3 2 1	1	F		O k	nnnn
~ X X 1 5 0	16	F		O k	1 0

Note: Some commands are not supported, it's depends on models, please refer to UM.





Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Options		Menu Settings	Menu Location	Top left	
				Top right	
				Center	
				Bottom left	
				Bottom right	
			Menu Timer	Off	
				5sec	
				10sec	
			Menu Transparency	0~9	
			Input Source *1	[no signal]	
HDMI					
HDMI1					
HDMI/MHL					
HDMI1/MHL					
HDMI2					
HDMI2/MHL					
HDMI3					
DVI-D					
DVI-A					
VGA					
VGA1					
VGA2					
Component					
S-Video					
Video					
DisplayPort					
HDBaseT					
BNC					
Wireless					
Flash Drive					
Network Display					
USB Display					
Multimedia					
3G-SDI					
Input Name	HDMI	Default / Custom			
	HDMI1	Default / Custom			
	HDMI2	Default / Custom			
	HDMI3	Default / Custom			
	HDMI/MHL	Default / Custom			
	HDMI1/MHL	Default / Custom			
	HDMI2/MHL	Default / Custom			
	DVI	Default / Custom			
	VGA	Default / Custom			
	VGA1	Default / Custom			
	VGA2	Default / Custom			
	Compnent	Default / Custom			
	S-Video	Default / Custom			
	Video	Default / Custom			
	DisplayPort	Default / Custom			
	HDBaseT	Default / Custom			
	BNC	Default / Custom			
	Wireless	Default / Custom			
	Flash Drive	Default / Custom			
	Network Display	Default / Custom			
	USB Display	Default / Custom			
	Multimedia	Default / Custom			
3G-SDI	Default / Custom				
High Altitude	Off				
	On				

Write Command							Response	
CMD	SPACE	Set Para.	Fail	Pass				
~	X	X 7 2			1	F	P	
					2	F	P	
					3	F	P	
					4	F	P	
					5	F	P	
					0 & 2	F	P	
~	X	X 5 1 5			1	F	P	
					3	F	P	
~	X	X 5 2 6			0~9	F	P	
					1	F	P	
					15	F	P	
					16	F	P	
					2	F	P	
					3	F	P	
					5	F	P	
~	X	X 1 2			6	F	P	
					14	F	P	
					9	F	P	
					10	F	P	
					20	F	P	
					21	F	P	
					4	F	P	
					11	F	P	
					17	F	P	
					18	F	P	
					19	F	P	
					23	F	P	
					22	F	P	
					0 ~nn...n (10 characters)	F	P	
					1 ~nn...n (10 characters)	F	P	
					2 ~nn...n (10 characters)	F	P	
					3 ~nn...n (10 characters)	F	P	
					4 ~nn...n (10 characters)	F	P	
					5 ~nn...n (10 characters)	F	P	
					6 ~nn...n (10 characters)	F	P	
					7 ~nn...n (10 characters)	F	P	
					8 ~nn...n (10 characters)	F	P	
					9 ~nn...n (10 characters)	F	P	
					10 ~nn...n (10 characters)	F	P	
~	X	X 5 1 8			11 ~nn...n (10 characters)	F	P	
					12 ~nn...n (10 characters)	F	P	
					13 ~nn...n (10 characters)	F	P	
					14 ~nn...n (10 characters)	F	P	
					15 ~nn...n (10 characters)	F	P	
					16 ~nn...n (10 characters)	F	P	
					17 ~nn...n (10 characters)	F	P	
					18 ~nn...n (10 characters)	F	P	
					19 ~nn...n (10 characters)	F	P	
					20 ~nn...n (10 characters)	F	P	
					21 ~nn...n (10 characters)	F	P	
					22 ~nn...n (10 characters)	F	P	
~	X	X 5 1 9			1	F	P	
					0 & 2	F	P	
~	X	X 1 0 1			1	F	P	

Read Command			Response	
CMD	CMD Value	Fail	Pass	
				0
				7
				7
				7
				7
				8
				8
				9
				1
				1
				2
				2
~	X X X 1 2 1	1	F	O k
				3
				11
				4
				5
				15
				16
				6
				10
				12
				13
				14
				17
				18

Note: Some commands are not supported, it's depends on models, please refer to UM.



Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Info	Projector ID	00~99			
	Remote Code	00~99			
	Remote Code(Active)	00~99			
	Display Mode				
	Power mode(standby)	Active			
	Brightness Mode				
	Filter Usage Hours				

Write Command										Response		
CMD					SPACE	Set Para.				Fail	Pass	

Read Command										Response					
CMD					CMD Value					Fail	Pass				
~	X	X	1	2	3					1	F	* Check "Display Mode" read above			
~	X	X	1	5	0					16	F		O	k	1
~	X	X	3	2	1					1	F		O	k	

**Note:** Some commands are not supported, it's depends on models, please refer to UM.





Note \*1 0

Power	Lamp Life				Input Source		Firmware Version			Display Mode	
a	b	b	b	b	c	c	d	d	d	e	e
a=0 Power Off	Lamp Life = nnnn				cc=00 None		#	#	#	ee=00 None	
a=1 Power On	Calucalte by each mode formula				cc=01 DVI					ee=01 Presentation (Old: Cinema)	
					cc=02 VGA1					ee=02 Bright	
					cc=03 VGA2					ee=03 Cinema (Old: Movie/Photo)	
					cc=04 S-Video					ee=04 sRGB\Reference\Standard	
					cc=05 Video					ee=05 User(1)	
					cc=06 BNC					ee=06 User2	
					cc=07 HDMI1					ee=07 Blackboard	
					cc=08 HDMI2					ee=08 Classroom	
					cc=09 Wireless					ee=09 3D	
					cc=10 Compnent					ee=10 DICOM SIM.	
					cc=11 Flash drive					ee=11 Film	
					cc=12 Network Display(Presenter)					ee=12 Game	
					cc=13 USB Display					ee=13 Cinema	
					cc=14 HDMI3					ee=14 Vivid	
					cc=15 DisplayPort					ee=15 ISF Day	
					cc=16 HDBaseT					ee=16 ISF Night	
										ee=17 ISF 3D	

Note: Some commands are not supported, it's depends on models, please refer to UM.

