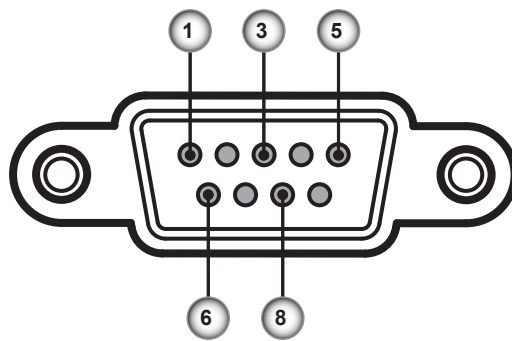


RS232 Commands and Protocol Function List RS232 Pin Assignments



Pin no.	Name	I/O (From Projector Side)
1	NC	—
2	RXD	IN
3	TXD	OUT
4	NC	—
5	GND	Signal Ground
6	NC	—
7	RTS	—
8	CTS	—
9	NC	—



RS232 Protocol Function List

Optoma Data and HT Projectors

HD33

Baud Rate: 9600
 Data Bits: 8
 Parity: None
 Stop Bits: 1
 Flow Control: None
 UART16550 FIFO: Disable
 Projector Return (Pass): P
 Projector Return (Fail): F

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

XX=01-99, projector's ID, XX=00 is for all projectors

Lead Code	Projector ID	Command ID	space	variable	CR
Power					
Re-sync		0x01			
Direct Source Commands					
	HDMI 1	m1			
	VGA 1	m5			
	VGA 1 Component	m8			
	Video	m10			
	Component B/C/A	m14			
	HDMI 2	m15			
	Contrast	m1		-X020 n	P
	Bright	m2			
	Photo	m3			
	Reference	m4			
	User	m5			
	SB Left	m7			
	SB Right	m8			
	SB	m9			
	Contrast	m -50 +50		-X022 n	P
	Brightness	m -50 +50		-X021 n	P
	Color	m -50 +50		-X043 n	P
	Limit	m -50 +50		-X044 n	P
	Sharpness	m -50 +50		-X045 n	P
	Sharpness	m -50 +50		-X046 n	P
IMAGE					
	Display Mode				
	Noise Reduction				
	Film	m1		-X035 n	P
	Curve Type	m1 +3		-X032 n	P
	Offset	m -3 -5		-X033 n	P
	Reset	m1		-X026 n	
	Video	m2		-X025 n	
	Curve Type	m -3 +3		-X034 n	P
	Offset	m -5 +5		-X036 n	P
	Reset	m1		-X020 n	
	Graphics	m3		-X027 n	
	Curve Type	m -3 +3		-X035 n	P
	Offset	m -5 +5		-X037 n	P
	Reset	m1		-X026 n	
	Standard	m4		-X028 n	
	Curve Type	m -3 +3		-X038 n	P
	Offset	m -5 +5		-X039 n	P
	Reset	m1		-X026 n	
	PureMotion	m0		-X030 n	
	LOW	m1		-X031 n	
	MED	m2		-X032 n	
	HIGH	m3		-X033 n	
	120Hz	m4		-X034 n	
	PureDetail	OFF		-X041 n	
	1	m1		-X041 n	
	2	m2		-X041 n	
	3	m3		-X041 n	
	PureColor	OFF		-X042 n	
	1	m1		-X042 n	
	2	m2		-X042 n	
	3	m3		-X042 n	
	4	m4		-X042 n	
	5	m5		-X042 n	
	PureEngine Demo	OFF		-X037 n	
	16:9	m1		-X037 n	
	V-Spill	m2		-X039 n	
	Red Gain	m -50 +50		-X024 n	
	Green Gain	m -50 +50		-X025 n	
	Blue Gain	m -50 +50		-X026 n	
	Red Bias	m -50 +50		-X027 n	
	Green Bias	m -50 +50		-X028 n	
	Blue Bias	m -50 +50		-X029 n	
	Reset	m1		-X033 n	
	Warm	m1		-X0210 n	
	Medium	m2		-X0210 n	
	Cold	m3		-X0210 n	
	Auto	m1		-X037 n	P
	Color Space				
	RGB (0-255)*	m2			
	RGB(16 - 235)*	m4			
	VUV	m3			
DISPLAY					
	Format				
	4:3	m1		-X060 n	P
	16:9	m2			
	LBX	m5			
	Native	m8			
	Auto2:3	m9			
	SuperWide	m10			
	Edge Mask	m11		-X061 n	P
	Zoom	m10		-X062 n	P
	V Image Shift (1:1)	m -50 +50		-X064 n	P
	V Keystone	m -50 +50		-X065 n	P
	3D				
	3D Mode	DLP Link/VESA 3D			
	3D -2D	3D / L / R	3D->2D; 3D->3D / 3D->L; 3D->R	m1/m2/m3	
	3D Format	OFF/RGB/eps and Bottom/Frame Sequential	Processing RAW/11.3 3D timing	m1/m2/m3	
	3D Sync Invert	OFF		m3/m4	
	Off	Off/Off		m1/m2	
	SuperWide				
	On (16:9)	m1		-X066 n	P
	On (2:35:1)	m2		-X067 n	P
	Auto	m3		-X068 n	P

Appendices

Lead Code	-	X	X	X	X	X	state	n	CR	
		Projector ID		Command ID			variable	carriage return		
SYSTEM	Menu Location	Top Left				m1	-XX12 n		F	
		Top Right				m2			F	
		Center				m3				
		Bottom Left				m4				
	Lamp Setting	Lamp Hour	Lamp hour				m1	-XX108 n	mm	F
		Lamp Reminder	On/Off				m1	am1mm0 & 2	-XX109 n	P
		Lamp Mode	High/Normal/Power				m1	mm0mm2	-XX110 n	P
		Lamp Reset	Yes				m1	-XX111 n	P	F
		Lamp Reset	No				m2			F
	Projection	Front/De-stop	Yes				m1	-XX11 n	P	F
		Front/De-stop	No				m2			F
		Rear/De-stop	Yes				m3			F
	Test Pattern	Blue	Off / Grid / White				m0mm1mm2	-XX186 n		F
		Black					m1	-XX184 n	P	F
		Grey					m2			F
	Background Color	Blue					m1	-XX182 n		F
		Grey					m2			F
	12V Trigger		On/Off				m1	-XX19 n	P	F
	SETUP	Language	English				m1	-XX19 n	P	F
			German				m2			F
French						m3			F	
Italian						m4			F	
Spanish						m5			F	
Portuguese						m6			F	
Polish						m7			F	
Dutch						m8			F	
Swedish						m9			F	
Norwegian/Danish						m10			F	
Finnish						m11			F	
Greek						m12			F	
Traditional Chinese						m13			F	
Simplified Chinese						m14			F	
Japanese						m15			F	
Korean						m16			F	
Russian						m17			F	
Hungarian						m18			F	
Czech						m19			F	
Arabic						m20			F	
Turk					m21			F		
Turkish					m22			F		
Input Source		HDMI 1					m1	-XX38 n	P	F
		HDMI 2					m2			F
		VGA					m3			F
		3 x RCA Component					m4			F
Source Lock			On/Off				m1mm0 & 1	-XX160 n	P	F
High Altitude			On/Off				m1mm0 & 2	-XX161 n	P	F
Information Hide			On/Off				m1mm0 & 2	-XX162 n	P	F
Auto Power Off (min)			On/Off				m1mm0	-XX163 n	P	F
Signal	Automatic	Enable/Disable				m1mm0	-XX01 n		F	
	Frequency Tracking					m1mm0	-XX02 n	P	F	
	Phase					m1mm0 +50	-XX03 n	P	F	
	H. Position					m1mm0 +50	-XX04 n	P	F	
	V. Position					m1mm0 +50	-XX05 n	P	F	
	White level					m1mm0 +50	-XX06 n	P	F	
	Black level					m1mm0 +50	-XX07 n	P	F	
	Subpicture					m1mm0 +50	-XX08 n	P	F	
	Hue					m1mm0 +50	-XX09 n	P	F	
	IRE	0 IRE / 7.5 IRE				m1mm0	-XX204 n		F	
Reset	Yes					m1	-XX112 n	P	F	
	No					m2			F	
Projector ID						n = 00 - 99	-XX79 n	P	F	
Reset System Alert						m1	-XX09 n	P	F	
Information from Projector Automatically when	Standby Mode					am0		INF0a		
	Warming up					am1		INF0a		
	Cooling Down					am2		INF0a		
	Out of Range					am3		INF0a		
	Lamp Fail					am4		INF0a		
	Thermal Switch Error					am5				
	Fan Lock					am6				
	Over Temperature					am7				
	Lamp Hours Running Out					am8				
	READ/Return information from projector	Information					m1	-XX150 n	7abbbbcddddd	
a = Power State		On/Off				am01				
b = Lamp Hour						bbb0				
c = Input Source Commands		None				cm00				
		VGA				cm02				
		Video				cm05				
		HDMI1				cm07				
		HDMI2				cm08				
		Component				cm11				
a = Firmware Version						cm00				
b = Display mode		None				em0				
		Cinema				em1				
		Bright				em2				
		Movie				em3				
		eSBR				em4				
		User1				em5				
		User2				em6				
		ISF Day				em7				
		ISF Night				em8				
Model Name		00					m1	-XX151 n	Ok	a=1 HD83 a=2 HD33
	Depends					am0 / U2				
RS232 Version No						m1	-XX152 n	Ok		
	Depends					am0?				
		None/VGA/Video/HDMI1/HDMI2/Component				m1	-XX121 n	Ok	a=0/2/5/7/8/11	
Software Version						m1	-XX122 n	Ok		
Display Mode						m1		Ok	a=1/2/3/4/5/7/8/9 Cinema=1 Bright=2 Photo=3 Reference=4 User=5 ISF Day=7 ISF Night=8 3D=9	
Power State						m1	-XX123 n	Ok	a=1/0	
Brightness						m1	-XX125 n	Ok		



Appendices

-	X	X	X	X	X	-	n	CR
Lead Code	Projector ID	Command ID	scope	variable	carriage return			
	Format	4:3/16:9L/EX/Native/Auto/2:5/Super/Wide	m1	-XX127 n	Ok			a=12/5/6/9 for 4:3/16:9L/EX/Native/Auto/2:5/Super/Wide
	Color Temperature	Warm/Medium/Cold	m1	-XX128 n	Ok			a=0/1/2 Warm/Medium/Cold
	Projection Mode	Front-Desktop Rear-Desktop Front-Ceiling Rear-Ceiling	m1	-XX129 n	Ok			a=0/1/2/3 for Front-Desktop/Rear-Desktop/Front-Ceiling/Rear-Ceiling
	RS232 Commands for HD33 Remote							
Remote Control	Up/Page -		m10	-XX140 n				
	Left/Source		m11					
	Enter (for projection MENU)		m12					
	Right/SYNC		m13					
	Down/Page -		m14					
	Menu		m20					
	Re-quit		m21					