Graphics Engine Command List

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Command List 3

Command List

The Graphics Engine commands are listed below. Since the initial values of a command are undefined, you must set the values before executing the command.

Command	Address	Description
CMD_NOP	00h	No operation
CMD_VADR	01h	Set vertex data
CMD_IADR	02h	Set index data
CMD_PRIM	04h	Draw primitive
CMD_BEZIER	05h	Draw Bezier surface
CMD_SPLINE	06h	Draw spline surface
CMD_BBOX	07h	Set bounding box
CMD_JUMP	08h	Jump
CMD_BJUMP	09h	Conditional jump
CMD_CALL	0Ah	List call
CMD_RET	0Bh	List return
CMD_END	0Ch	End reading
CMD_SIGNAL	0Eh	Signal interrupt
CMD_FINISH	0Fh	Finish drawing
CMD_BASE	10h	Set address base
CMD_VTYPE	12h	Set vertex type
CMD_OFFSET	13h	Set offset address
CMD_ORIGIN	14h	Set origin address
CMD_REGION1	15h	Set drawing region
CMD_REGION2	16h	
CMD_LTE	17h	Lighting enable
CMD_LE0-3	18h	Light enable
	19h	
	1Ah	
	1Bh	
CMD_CLE	1Ch	Clipping enable
CMD_BCE	1Dh	Culling enable
CMD_TME	1Eh	Texture enable
CMD_FGE	1Fh	Fog enable
CMD_DTE	20h	Dither enable
CMD_ABE	21h	Alpha blending enable
CMD_ATE	22h	Alpha test enable
CMD_ZTE	23h	Depth test enable
CMD_STE	24h	Stencil test enable
CMD_AAE	25h	Antialiasing enable
CMD_PCE	26h	Patch culling enable
CMD_CTE	27h	Color test enable
CMD_LOE	28h	Logical operation enable
CMD_BONEN	2Ah	Set bone matrix number
CMD_BONED	2Bh	Set bone matrix data

Command	Address	Description
CMD_WEIGHT0-7	2Ch	Set vertex weight
	2Dh	
	2Eh	
	2Fh	
	30h	
	31h	
	32h	
	33h	
CMD_DIVIDE	36h	Set patch division count
CMD_PPM	37h	Set patch primitive
CMD_PFACE	38h	Patch Face
CMD_WORLDN	3Ah	Set world matrix number
CMD_WORLDD	3Bh	Set world matrix data
CMD_VIEWN	3Ch	Set view matrix number
CMD_VIEWD	3Dh	Set view matrix data
CMD_PROJN	3Eh	Set perspective matrix number
CMD_PROJD	3Fh	Set perspective matrix data
CMD_TGENN	40h	Set texture generation matrix number
CMD_TGEND	41h	Set texture generation matrix data
CMD_SX	42h	Set viewport
CMD_SY	43h	
CMD_SZ	44h	
CMD_TX	45h	
CMD_TY	46h	
CMD_TZ	47h	
CMD_SU	48h	Set texture scale
CMD_SV	49h	
CMD_TU	4Ah	Set texture offset
CMD_TV	4Bh	
CMD_OFFSETX	4Ch	Set screen offset
CMD_OFFSETY	4Dh	
CMD_SHADE	50h	Set shading mode
CMD_NREV	51h	Normal reverse
CMD_MATERIAL	53h	Material
CMD_MEC	54h	Set model color
CMD_MAC	55h	
CMD_MDC	56h	
CMD_MSC	57h	
CMD_MAA	58h	
CMD_MK	5Bh	Set model specular
CMD_AC	5Ch	Set ambient light color
CMD_AA	5Dh	
CMD_LMODE	5Eh	Set light mode
CMD_LTYPE0-3	5Fh	Set light type
	60h	
	61h	
	62h	

Command	Address	Description
CMD_LX0	63h	Set light vector
CMD_LY0	64h	
CMD_LZ0	65h	
CMD_LX1	66h	
CMD_LY1	67h	
CMD_LZ1	68h	
CMD_LX2	69h	
CMD_LY2	6Ah	
CMD_LZ2	6Bh	
CMD_LX3	6Ch	
CMD_LY3	6Dh	
CMD_LZ3	6Eh	
CMD_LDX0	6Fh	Set light direction
CMD_LDY0	70h	
CMD_LDZ0	71h	
CMD_LDX1	72h	
CMD_LDY1	73h	
CMD_LDZ1	74h	
CMD_LDX2	75h	
CMD_LDY2	76h	
CMD_LDZ2	77h	
CMD_LDX3	78h	
CMD_LDY3	79h	
CMD_LDZ3	7Ah	
CMD_LKA0	7Bh	Set light distance attenuation factor
CMD_LKB0	7Ch	
CMD_LKC0	7Dh	
CMD_LKA1	7Eh	
CMD_LKB1	7Fh	
CMD_LKC1	80h	
CMD_LKA2	81h	
CMD_LKB2	82h	
CMD_LKC2	83h	
CMD_LKA3	84h	
CMD_LKB3	85h	
CMD_LKC3	86h	
CMD_LKS0	87h	Set light convergence factor
CMD_LKS1	88h	
CMD_LKS2	89h	
CMD_LKS3	8Ah	
CMD_LKO0	8Bh	Set light cut-off dot product coefficient
CMD_LKO1	8Ch	
CMD_LKO2	8Dh	
CMD_LKO3	8Eh	

Command	Address	Description
CMD_LAC0	8Fh	Set light color
CMD_LDC0	90h	
CMD_LSC0	91h	
CMD_LAC1	92h	
CMD_LDC1	93h	
CMD_LSC1	94h	
CMD_LAC2	95h	
CMD_LDC2	96h	
CMD_LSC2	97h	
CMD_LAC3	98h	
CMD_LDC3	99h	
CMD_LSC3	9Ah	
CMD_CULL	9Bh	Culling surface
CMD_FBP	9Ch	Set frame buffer
CMD_FBW	9Dh	
CMD_ZBP	9Eh	Set depth buffer
CMD_ZBW	9Fh	
CMD_TBP0	A0h	Set texture buffer
CMD_TBP1	A1h	
CMD_TBP2	A2h	
CMD_TBP3	A3h	
CMD_TBP4	A4h	
CMD_TBP5	A5h	
CMD_TBP6	A6h	
CMD_TBP7	A7h	
CMD_TBW0	A8h	
.	.	
.	.	
CMD_TBW7	AFh	
CMD_CBP	B0h	Set CLUT buffer
CMD_CBW	B1h	
CMD_XBP1	B2h	Set transfer buffer (source)
CMD_XBW1	B3h	
CMD_XBP2	B4h	Set transfer buffer (destination)
CMD_XBW2	B5h	
CMD_TSIZE0	B8h	Set texture size
.	.	
.	.	
CMD_TSIZE7	BFh	
CMD_TMAP	C0h	Set texture map mode
CMD_TSHADE	C1h	Set shade mapping
CMD_TMODE	C2h	Set texture mode
CMD_TPF	C3h	Set texture pixel format
CMD_CLOAD	C4h	CLUT load
CMD_CLUT	C5h	Set CLUT
CMD_TFILTER	C6h	Set texture filter
CMD_TWRAP	C7h	Set texture wrap mode
CMD_TLEVEL	C8h	Set texture level mode
CMD_TFUNC	C9h	Set texture function
CMD_TEC	CAh	Set texture environment color

Command	Address	Description
CMD_TFLUSH	CBh	Texture flush
CMD_TSYNC	CCh	Texture synchronization
CMD_FOG1	CDh	Set fog parameter
CMD_FOG2	CEh	
CMD_FC	CFh	Set fog color
CMD_TSLOPE	D0h	Set texture slope
CMD_FPF	D2h	Set frame pixel format
CMD_CMODE	D3h	Set clear mode
CMD_SCISSOR1	D4h	Set scissoring area
CMD_SCISSOR2	D5h	
CMD_MINZ	D6h	Set depth range
CMD_MAXZ	D7h	
CMD_CTEST	D8h	Set color test parameter
CMD_CREF	D9h	Set color test reference
CMD_CMSK	DAh	Set color test mask
CMD_ATEST	DBh	Set alpha test parameters
CMD_STEST	DCh	Set stencil test parameters
CMD_SOP	DDh	Set stencil operation
CMD_ZTEST	DEh	Set depth test parameter
CMD_BLEND	DFh	Set alpha blending parameters
CMD_FIXA	E0h	Set fixed color A
CMD_FIXB	E1h	Set fixed color B
CMD_DITH1	E2h	Set dither coefficients
CMD_DITH2	E3h	
CMD_DITH3	E4h	
CMD_DITH4	E5h	
CMD_LOP	E6h	Set logical operation parameter
CMD_ZMSK	E7h	Depth mask
CMD_PMSK1	E8h	Set plane mask
CMD_PMSK2	E9h	
CMD_XSTART	EAh	Inter-buffer transfer start
CMD_XPOS1	EBh	Set source buffer transfer position
CMD_XPOS2	ECh	Set destination buffer transfer position
CMD_XSIZE	EEh	Set transfer size