8. Command

8.1. Command List

Regular Command Set

Command Function	D/CX	RDX	WRX	D[15:8]	D7	D6	D5	D4	D3	D2	D1	D0	Hex
NOP	0	1	↑	XXXXXXXX	0	0	0	0	0	0	0	0	00h
Soft Reset	0	1	↑	XXXXXXXX	0	0	0	0	0	0	0	1	01h
Read display identification information	0	1	↑	XXXXXXXX	0	0	0	0	0	1	0	0	04h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				ID1 [7:0]					XX
	1	↑	1	XXXXXXXX				ID2 [7:0]					XX
	1	↑	1	XXXXXXXX				ID3 [7:0]					XX
Read Number of the Errors on DSI	0	1	↑	XXXXXXXX	0	0	0	0	0	1	0	1	05h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				P[7:0]					XX
Read Display Status	0	↑	1	XXXXXXXX	0	0	0	0	1	0	0	1	09h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				D[31:24]					XX
	1	↑	1	XXXXXXXX				D[23:16]					XX
	1	↑	1	XXXXXXXX				D[15:8]					XX
	1	↑	1	XXXXXXXX				D[7:0]					XX
Read Display Power Mode	0	↑	1	XXXXXXXX	0	0	0	0	1	0	1	0	0Ah
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX			D[7:2]				0	0	XX
Read Display MADCTL	0	↑	1	XXXXXXXX	0	0	0	0	1	0	1	1	0Bh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX			D[7:2]				0	0	XX
Read Pixel Format	0	↑	1	XXXXXXXX	0	0	0	0	1	1	0	0	0Ch
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX		DPI[3:0]			0		DBI[2:0]		XX
Read Display Image Mode	0	↑	1	XXXXXXXX	0	0	0	0	1	1	0	1	0Dh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				D[7:0]					XX
Read Display signal Mode	0	↑	1	XXXXXXXX	0	0	0	0	1	1	1	0	0Eh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	D7	D6	D5	D4	D3	D2	D1	D0	XX
Read Display Self-Diagnostic Result	0	↑	1	XXXXXXXX	0	0	0	0	1	1	1	1	0Fh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	D7	D6	0	0	0	0	0	D0	XX
Sleep IN	0	1	↑	XXXXXXXX	0	0	0	1	0	0	0	0	10h
Sleep OUT	0	1	↑	XXXXXXXX	0	0	0	1	0	0	0	1	11h
Partial Mode ON	0	1	↑	XXXXXXXX	0	0	0	1	0	0	1	0	12h
Normal Display Mode ON	0	1	↑	XXXXXXXX	0	0	0	1	0	0	1	1	13h
Display Inversion OFF	0	1	↑	XXXXXXXX	0	0	1	0	0	0	0	0	20h
Display Inversion ON	0	1	↑	XXXXXXXX	0	0	1	0	0	0	0	1	21h
Display OFF	0	1	↑	XXXXXXXX	0	0	1	0	1	0	0	0	28h
Display ON	0	1	↑	XXXXXXXX	0	0	1	0	1	0	0	1	29h
Column Address Set	0	1	↑	XXXXXXXX	0	0	1	0	1	0	1	0	2Ah
	1	1	↑	XXXXXXXX				SC[15:8]					XX
	1	1	↑	XXXXXXXX				SC[7:0]					XX
	1	1	↑	XXXXXXXX				EC[15:8]					XX
	1	1	↑	XXXXXXXX				EC[7:0]					XX
Page Address Set	0	1	↑	XXXXXXXX	0	0	1	0	1	0	1	1	2Bh
	1	1	↑	XXXXXXXX				SP[15:8]					XX
	1	1	↑	XXXXXXXX				SP[7:0]					XX
	1	1	↑	XXXXXXXX				EP[15:8]					XX
	1	1	↑	XXXXXXXX				EP[7:0]					XX
Memory Write	0	1	↑	XXXXXXXX	0	0	1	0	1	1	0	0	2Ch
	1	1	↑					D1[15:0]					XX
	1	1	↑					Dx[15:0]					XX
	1	1	↑					Dn[15:0]					XX
Memory Read	0	↑	1	XXXXXXXX	0	0	1	0	1	1	1	0	2Eh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX

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	D/CX	RDX	WRX	D[15:8]	D7	D6	D5	D4	D3	D2	D1	D0	Hex
	1	↑	1					D1[15:0]					XX
	1	↑	1					Dx[15:0]					XX
	1	↑	1					Dn[15:0]					XX
	1	↑	1	XXXXXXXX				Pn[7:0]					XX
Partial Area	0	1	↑	XXXXXXXX	0	0	1	1	0	0	0	0	30h
	1	1	↑	XXXXXXXX				SR[15:8]					XX
	1	1	↑	XXXXXXXX				SR[7:0]					XX
	1	1	↑	XXXXXXXX				ER[15:8]					XX
	1	1	↑	XXXXXXXX				ER[7:0]					XX
Vertical Scrolling Definition	0	1	↑	XXXXXXXX	0	0	1	1	0	0	1	1	33h
	1	1	↑	XXXXXXXX				TFA[15:8]					XX
	1	1	↑	XXXXXXXX				TFA[7:0]					XX
	1	1	↑	XXXXXXXX				VSA[15:8]					XX
	1	1	↑	XXXXXXXX				VSA[7:0]					XX
	1	1	↑	XXXXXXXX				BFA[15:8]					XX
	1	1	↑	XXXXXXXX				BFA[7:0]					XX
Tearing Effect Line OFF	0	1	↑	XXXXXXXX	0	0	1	1	0	1	0	0	34h
Tearing Effect Line ON	0	1	↑	XXXXXXXX	0	0	1	1	0	1	0	1	35h
Memory Access Control	0	1	↑	XXXXXXXX	0	0	1	1	0	1	1	0	36h
	1	1	↑	XXXXXXXX	MY	MX	MV	ML	BGR	MH	X	X	XX
Vertical Scrolling Start Address	0	1	↑	XXXXXXXX	0	0	1	1	0	1	1	1	37h
	1	1	↑	XXXXXXXX				VSP[15:8]					XX
	1	1	↑	XXXXXXXX				VSP[7:0]					XX
Idle Mode OFF	0	1	↑	XXXXXXXX	0	0	1	1	1	0	0	0	38h
Idle Mode ON	0	1	↑	XXXXXXXX	0	0	1	1	1	0	0	1	39h
Interface Pixel Format	0	1	↑	XXXXXXXX	0	0	1	1	1	0	1	0	3Ah
	1	1	↑	XXXXXXXX	0		DPI[6:4]		0		DBI[2:0]		XX
Memory Write Continue	0	1	↑	XXXXXXXX	0	0	1	1	1	1	0	0	3Ch
	1	1	↑					D1[15:0]					XX
	1	1	↑					Dx[15:0]					XX
	1	1	↑					Dn[15:0]					XX
Memory Read Continue	0	↑	1	XXXXXXXX	0	0	1	1	1	1	1	0	3Eh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1					D1[15:0]					XX
	1	↑	1					Dx[15:0]					XX
	1	↑	1					Dn[15:0]					XX
Write Tear Scan line	0	1	↑	XXXXXXXX	0	1	0	0	0	1	0	0	44h
	1	1	↑	XXXXXXXX				N[15:8]					XX
	1	1	↑	XXXXXXXX				N[7:0]					XX
Read Tear Scan Line	0	↑	1	XXXXXXXX	0	1	0	0	0	1	0	1	45h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				N[15:8]					XX
	1	↑	1	XXXXXXXX				N[7:0]					XX
Write Display Brightness value	0	1	↑	XXXXXXXX	0	1	0	1	0	0	0	1	51h
	1	1	↑	XXXXXXXX				DBV[7:0]					XX
Read Display Brightness Value	0	1	↑	XXXXXXXX	0	1	0	1	0	0	1	0	52h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				DBV[7:0]					XX
Write CTRL Display value	0	1	↑	XXXXXXXX	0	1	0	1	0	0	1	1	53h
	1	1	↑	XXXXXXXX	0	0	BCTRL	0	DD	BL	0	0	XX
Read CTRL Display value	0	1	↑	XXXXXXXX	0	1	0	1	0	1	0	0	54h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	0	0	BCTRL	0	DD	BL	0	0	XX
Write Content Adaptive Brightness Control value	0	1	↑	XXXXXXXX	0	1	0	1	0	1	0	1	55h
	1	1	↑	XXXXXXXX	0	0	0	0	0	0	C[1:0]		XX
Read Content Adaptive Brightness Control value	0	1	↑	XXXXXXXX	0	1	0	1	0	1	1	0	56h
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	0	0	0	0	0	0	C[1:0]		XX
Write CABC Minimum Brightness	0	1	↑	XXXXXXXX	0	1	0	1	1	1	1	0	5Eh
	1	1	↑	XXXXXXXX				CMB[7:0]					XX
Read CABC Minimum Brightness	0	1	↑	XXXXXXXX	0	1	0	1	1	1	1	1	5Fh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX				CMB[7:0]					XX
Read First Checksum	0	1	↑	XXXXXXXX	1	0	1	0	1	0	1	0	AAh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX

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Command Function	D/CX	RDX	WRX	D[15:8]	D7	D6	D5	D4	D3	D2	D1	D0	Hex
	1	↑	1	XXXXXXXX	FCS[7:0]								XX
Read Continue Checksum	0	1	↑	XXXXXXXX	1	0	1	0	1	1	1	1	AFh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	CCS[7:0]								XX
Read ID1	0	1	↑	XXXXXXXX	1	1	0	1	1	0	1	0	DAh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	ID1[7:0]								XX
Read ID2	0	1	↑	XXXXXXXX	1	0	1	0	1	0	1	1	DBh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	ID2[7:0]								XX
Read ID3	0	1	↑	XXXXXXXX	1	0	1	0	1	1	0	0	DCh
	1	↑	1	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	1	XXXXXXXX	ID3[7:0]								XX

Extended Command Set

Command Function	D/CX	RDX	WRX	D[15:8]	D7	D6	D5	D4	D3	D2	D1	D0	Hex
Interface Mode Control	0	1	↑	XXXXXXXX	1	0	1	1	0	0	0	0	B0h
	1	1	↑	XXXXXXXX	SDA_EN	0	0	0	VSPL	HSPL	DPL	EPL	XX
Frame Rate Control（In Normal Mode/Full Colors）	0	1	↑	XXXXXXXX	1	0	1	1	0	0	0	0	B1h
	1	1	↑	XXXXXXXX	FRS[3:0]				0	0	DIVA[1:0]		XX
	1	1	↑	XXXXXXXX	0	0	0	RTNA[4:0]					XX
Frame Rate Control（In Idle Mode/8 colors）	0	1	↑	XXXXXXXX	1	0	1	1	0	0	1	0	B2h
	1	1	↑	XXXXXXXX	0	0	0	0	0	DIVB[1:0]			XX
	1	1	↑	XXXXXXXX	0	0	0	RTNB[4:0]					XX
Frame Rate Control（In Partial Mode/Full colors）	0	1	↑	XXXXXXXX	1	0	1	1	0	0	1	1	B3h
	1	1	↑	XXXXXXXX	0	0	0	0	0	0	DIVC[1:0]		XX
	1	1	↑	XXXXXXXX	0	0	0	RTN[4:0]					XX
Display Inversion Control	0	1	↑	XXXXXXXX	1	0	1	1	0	1	0	0	B4h
	1	1	↑	XXXXXXXX	0	0	0	ZINV	0	0	DINV[1:0]		XX
Blanking Porch Control	0	1	↑	XXXXXXXX	1	0	1	1	0	1	0	1	B5h
	1	1	↑	XXXXXXXX	VFP[7:0]								XX
	1	1	↑	XXXXXXXX	VBP[7:0]								XX
	1	1	↑	XXXXXXXX	0	0	0	HFP[4:0]					XX
	1	1	↑	XXXXXXXX	HBP[7:0]								XX
Display Function Control	0	1	↑	XXXXXXXX	1	0	1	1	0	1	1	0	B6h
	1	1	↑	XXXXXXXX	BYPASS	0	RM	DM	PTG[1:0]		PT[1:0]		XX
	1	1	↑	XXXXXXXX	0	GS	SS	SM	ISC[3:0]				XX
	1	1	↑	XXXXXXXX	0	0	NL[5:0]						XX
Entry Mode Set	0	1	↑	XXXXXXXX	1	0	1	1	0	1	1	1	B7h
	1	1	↑	XXXXXXXX	EPF[1:0]		0	0	DSTB	GON	DTE	GAS	XX
Power Control 1	0	1	↑	XXXXXXXX	1	1	0	0	0	0	0	0	C0h
	1	1	↑	XXXXXXXX	0	0	0	VRH1[4:0]					XX
	1	1	↑	XXXXXXXX	0	0	0	VRH2[4:0]					XX
Power Control 2	0	1	↑	XXXXXXXX	1	1	0	0	0	0	0	1	C1h
	1	1	↑	XXXXXXXX	0	SAP[2:0]			BT[2:0]				XX
	1	1	↑	XXXXXXXX	0	0	0	0	0	VC[2:0]			XX
Power Control 3	0	1	↑	XXXXXXXX	1	1	0	0	0	0	1	0	C2h
	1	1	↑	XXXXXXXX	0	DCA1[2:0]			0	DCA0[2:0]			XX
Power Control 4	0	1	↑	XXXXXXXX	1	1	0	0	0	0	1	1	C3h
	1	1	↑	XXXXXXXX	0	DCB1[2:0]			0	DCB0[2:0]			XX
Power Control 5	0	1	↑	XXXXXXXX	1	1	0	0	0	1	0	0	C4h
	1	1	↑	XXXXXXXX	0	DCC2[2:0]			0	DCC0[2:0]			XX
VCOM Control 1	0	1	↓	XXXXXXXX	1	1	0	0	0	1	0	1	C5h
	1	1	↑	XXXXXXXX	0	0	0	0	0	0	0	nVM	XX
	1	1	↑	XXXXXXXX	VCM_REG[7:0]								XX
	1	1	↑	XXXXXXXX	VCM_REG_EN	0	0	0	0	0	0	0	XX
	1	↑	↓	XXXXXXXX	VCM_OUT[7:0]								XX
CABC Control 1	0	1	↑	XXXXXXXX	1	1	0	0	0	1	1	0	C6h

Command Function	D/CX	RDX	WRX	D[15:8]	D7	D6	D5	D4	D3	D2	D1	D0	Hex
	1	1	↑	XXXXXXXX	SCD_VLINE[7:0]								XX
	1	1	↑	XXXXXXXX	0	0	0	0	0	SCD_VLINE[10:8]			XX
CABC Control 2	0	1	↑	XXXXXXXX	1	1	0	0	1	0	0	0	C8h
	1	1	↑	XXXXXXXX	0	0	0	0	0	LEDONR	LEDONPOL	PWMPOL	XX
	1	1	↑	XXXXXXXX	PWM_DIV[7:0]								XX
CABC Control 3	0	1	↑	XXXXXXXX	1	1	0	0	1	0	0	1	C9h
	1	1	↑	XXXXXXXX	THRES_MOV[3:0]				THRES_STILL[3:0]				XX
CABC Control 4	0	1	↑	XXXXXXXX	1	1	0	0	1	0	1	0	CAh
	1	1	↑	XXXXXXXX	0	0	0	0	THRES_UI[3:0]				XX
CABC Control 5	0	1	↑	XXXXXXXX	1	1	0	0	1	0	1	1	CBh
	1	1	↑	XXXXXXXX	DTH_MOV[3:0]				DTH_STILL[3:0]				XX
CABC Control 6	0	1	↑	XXXXXXXX	1	1	0	0	1	1	0	0	CCh
	1	1	↑	XXXXXXXX	0	0	0	0	DTH_UI[3:0]				XX
CABC Control 7	0	1	↑	XXXXXXXX	1	1	0	0	1	1	0	1	CDh
	1	1	↑	XXXXXXXX	0	DIM_MOV[2:0]			0	DIM_STILL[2:0]			XX
CABC Control 8	0	1	↑	XXXXXXXX	1	1	0	0	1	1	1	0	CEh
	1	1	↑	XXXXXXXX	DIM_MIN[3:0]				0	DIM_UI[2:0]			XX
CABC Control 9	0	1	↑	XXXXXXXX									CFh
	1	1	↑	XXXXXXXX	PWM_DIV[7:0]								XX
NV Memory Write	0	1	↑	XXXXXXXX	1	1	0	1	0	0	0	0	D0h
	1	1	↑	XXXXXXXX	0	0	0	PGM_ADR[4:0]					XX
	1	1	↑	XXXXXXXX	PGM_DATA[7:0]								XX
NV Memory Protection Key	0	1	↑	XXXXXXXX	1	1	0	1	0	0	0	1	D1h
	1	1	↑	XXXXXXXX	KEY[23:16]								XX
	0	↑	↓	XXXXXXXX	KEY[15:8]								XX
	1	↑	↓	XXXXXXXX	KEY[7:0]								XX
NV Memory Status Read	1	1	↓	XXXXXXXX	1	1	0	1	0	0	1	0	D2h
	1	1	↓	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	0	1	↑	XXXXXXXX	ID2_CNT[3:0]				ID1_CNT[3:0]				XX
	1	1	↑	XXXXXXXX	VMF_CNT[3:0]				ID3_CNT[3:0]				XX
	1	1	↑	XXXXXXXX	BUSY	0	0	0	0	0	0	MDDI_V12	XX
	1	1	↑	XXXXXXXX	OTP_DATA[7:0]								XX
Read ID4	0	↑	↓	XXXXXXXX	1	1	0	1	0	0	1	1	D3h
	1	↑	↓	XXXXXXXX	X	X	X	X	X	X	X	X	XX
	1	↑	↓	XXXXXXXX	ID41[7:0]								XX
	1	↑	↓	XXXXXXXX	ID42[7:0]								XX
	1	↑	↓	XXXXXXXX	ID43[7:0]								XX
PGAMCTRL（Positive Gamma Control）	0	1	↑	XXXXXXXX	1	1	1	0	0	0	0	0	E0h
	1	1	↑	XXXXXXXX	0	0	0	0	VP0[3:0]				XX
	1	1	↑	XXXXXXXX	0	0	VP1[5:0]						XX
	1	1	↑	XXXXXXXX	0	0	VP2[5:0]						XX
	1	1	↑	XXXXXXXX	0	0	0	0	VP4[3:0]				XX
	1	1	↑	XXXXXXXX	0	0	0	VP6[4:0]					XX
	1	1	↑	XXXXXXXX	0	0	0	0	VP13[3:0]				XX
	1	1	↑	XXXXXXXX	0	VP20[6:0]							XX
	1	1	↑	XXXXXXXX	VP36[3:0]				VP27[3:0]				XX
	1	1	↑	XXXXXXXX	0	VP43[6:0]							XX
	1	1	↑	XXXXXXXX	0	0	0	0	VP50[3:0]				XX
	1	1	↑	XXXXXXXX	0	0	0	VP57[4:0]					XX
	1	1	↑	XXXXXXXX	0	0	0	0	VP59[3:0]				XX
	1	1	↑	XXXXXXXX	0	0	VP61[5:0]						XX
	1	1	↑	XXXXXXXX	0	0	VP62[5:0]						XX
	1	1	↑	XXXXXXXX	0	0	0	0	VP63[3:0]				XX
NGAMCTRL（Negative Gamma Control）	0	1	↑	XXXXXXXX	1	1	1	0	0	0	0	1	E1h
	1	1	↑	XXXXXXXX	0	0	0	0	VN0[3:0]				XX
	1	1	↑	XXXXXXXX	0	0	VN1[5:0]						XX
	1	1	↑	XXXXXXXX	0	0	VN2[5:0]						XX

Instruction					Parameter	HEX
	1	1	↑	XXXXXXXX	0　0　0　0　VN4[3:0]	XX
	1	1	↑	XXXXXXXX	0　0　0　VN6[4:0]	XX
	1	1	↑	XXXXXXXX	0　0　0　VN13[3:0]	XX
	1	1	↑	XXXXXXXX	0　VN20[6:0]	XX
	1	1	↑	XXXXXXXX	VN36[3:0]　VN27[3:0]	XX
	1	1	↑	XXXXXXXX	0　VN43[6:0]	XX
	1	1	↑	XXXXXXXX	0　0　0　0　VN50[3:0]	XX
	1	1	↑	XXXXXXXX	0　0　0　VN57[4:0]	XX
	1	1	↑	XXXXXXXX	0　0　0　0　VN59[3:0]	XX
	1	1	↑	XXXXXXXX	0　0　VN61[5:0]	XX
	1	1	↑	XXXXXXXX	0　0　VN62[5:0]	XX
	1	1	↑	XXXXXXXX	0　0　0　0　VN63[3:0]	XX
Digital Gamma Control 1	0	1	↑	XXXXXXXX	1　1　1　0　0　0　0　1	E2h
	1	1	↑	XXXXXXXX	RCA0[3:0]　BCA0[3:0]	XX
	1	1	↑	XXXXXXXX	RCAx[3:0]　BCAx[3:0]	XX
	1	1	↑	XXXXXXXX	RCA63[3:0]　BCA63[3:0]	XX
Digital Gamma Control 2	0	1	↑	XXXXXXXX	1　1　1　0　0　0　0　1	E3h
	1	1	↑	XXXXXXXX	RFA0[3:0]　BFA0[3:0]	XX
	1	1	↑	XXXXXXXX	RFAx[3:0]　BFAx[3:0]	XX
	1	1	↑	XXXXXXXX	RFA255[3:0]　BFA255[3:0]	XX
SPI Read Command Setting	0	1	↑	XXXXXXXX	1　1　1　1　1　0　1　1	FBh
	1	1	↑	XXXXXXXX	0　0　0　SPI_READ_EN　SPI_CNT[3:0]	XX