



Portrait Driver Controller

Part Number	SSD1269	SSD1276	SSD1284	SSD1287	SSD1297	SSD2006	SSD2215	SSD2220	SSD2225
Display Size (Source x Gate)	240RGB x 320	176RGB x 220	132RGB x 132	176RGB x 220	240RGB x 320 (QVGA)	240RGB x 320 (LTPS)	240RGB x 320	240RGB x 432	240RGB x 432
RAM size (Byte)	-	-	39204	87120	172800	-	-	223280	-
Max. Color Depth	262K	262K	262K	262K	262K	262K	16M	262K	16M
Supply Voltage for logic	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V	1.4 ~ 3.6V
Supply Voltage for analog	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V
Max. Gate Output Voltage	32Vpp	32Vpp	30Vpp	32Vpp	30Vpp	30Vpp	30Vpp	30Vpp	30Vpp
Internal DC-DC Converter	-6X ~ +6X	-6X ~ +6X	-6X ~ +6X	-6X ~ +6X	-6X ~ +6X	-5X ~ +5X	-6X ~ +6X	-6X ~ +6X	-6X ~ +6X
Graphic Controller Function	-	-	Yes	Yes	Yes	-	-	Yes	-
MCU Interface	RGB I/F, SPI, Mini-RGB I/F	RGB I/F, SPI, Mini-RGB I/F	MPU I/F, SPI	MPU I/F, SPI	MPU I/F, SPI	RGB I/F, SPI, Mini-RGB I/F	RGB I/F, SPI, MIPI	MPU I/F, SPI	RGB I/F, SPI, MIPI
8 Color Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Partial Display Mode	-	-	Yes	Yes	Yes	-	-	Yes	-
WVA Support	Yes	N/A	N/A	Yes	Yes	N/A	Yes	Yes	Yes
Vcom adjustment	MTP	MTP	MTP	MTP	MTP	MTP	MTP	MTP	MTP
Scrolling	-	-	Yes	Yes	Yes	-	-	Yes	-
Dynamic Backlight Control	-	-	-	-	-	-	-	-	Yes
Operation Temperature	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C
Package	COG	COG	COG	COG	COG	COG	COG	COG	COG

Landscape Driver Controller

Part Number	SSD2118	SSD2118B	SSD2119	SSD2123	SSD2125
Display Size (Source x Gate)	320RGB x 240	320RGB x 240	320RGB x 240	480 x 272RGB	272RGB x 480
RAM size (Byte)	-	-	172800	-	-
Max. Color Depth	262K	16M	262K	16M	16M
Supply Voltage for logic	1.6 ~ 3.6V	1.6 ~ 3.6V	1.4 ~ 3.6V	1.6 ~ 3.6V	1.6 ~ 3.6V
Supply Voltage for analog	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V	2.5 ~ 3.6V
Max. Gate Output Voltage	32Vpp	32Vpp	30Vpp	32Vpp	32Vpp
Internal DC-DC Converter	-5X ~ +6X	-5X ~ +6X	-5X ~ +6X	-5X ~ +6X	-5X ~ +6X
Interface	RGB I/F, SPI	RGB I/F, SPI, CCIR I/F	RGB I/F, SPI, MPU I/F	RGB I/F, SPI	RGB I/F, SPI
8 Color Mode	Yes	Yes	Yes	Yes	Yes
Vcom adjustment	MTP	MTP	MTP	MTP	MTP
Dynamic Backlight Control	-	Yes	-	-	-
Operation Temperature	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C
Package	COG	COG	COG	COG	COG



CSTN Driver

Part Number	SSD1768	SSD1774	SSD1777	SSD1784	SSD1793	SSD1797	
Max. Display Size (Seg x Com)	96RGB x 96	104RGB x 80	98RGB x 68	132RGB x 160	132RGB x 160	130RGB x 132	
Max. no. of Colors	65K	65K	65K	65k	262k	262k/65k	
Supply Voltage	2.4 ~ 3.6V	2.4 ~ 3.6V	2.4 ~ 3.6V	2.4 ~ 3.6V	2.3 ~ 3.6V	2.4 ~ 3.6V	
Logic I/O Voltage	1.2 ~ VDD	1.65 ~ VDD	1.65 ~ VDD	1.2 ~ VDD	1.2 ~ VDD	1.65 ~ 1.95	
Max. LCD Voltage	16V	13.5V	13.5V	19V	40	30V	
Interface	8bit Parallel	7.7MHz 6800/8080	6800/8080	6800/8080	7.7MHz 6800/8080	6800/8080	6800/8080
	16bit Parallel	7.7MHz 6800/8080	6800/8080	6800/8080	6800/8080	6800/8080	6800/8080
	Serial Interface	15MHz 3 or 4 wires	3 or 4 wires	3 or 4 wires	15MHz 3 or 4 wires	3 or 4 wires	3 or 4 wires
	I2C	No	No	No	No	No	No
Features	Graphic RAM (bits)	96x96x16 = 147,456	104x81x16 = 134,784	98x68x16 = 106,624	132x160x16 = 337,920	132x162x18 = 384,912	132x130x18 = 308,880
	Build-in Booster Capacitor	No	Yes	Yes	No	No	No
	Build-in Divider Capacitor	Yes	Yes	Yes	No	No	No
	DC/DC Level	4 ~ 7X	3 ~ 6X	3 ~ 6X	4 ~ 8X	7 ~ 10X	5 ~ 8X
	Bias Ratio	1:5 ~ 1:10	1:4 ~ 1:10	1:4 ~ 1:8	1:7 ~ 1:14	1:7 ~ 1:14	1:7 ~ 1:14
	Partial Display	1/8 ~ 1/96	1/8 ~ 1/81	1/8 ~ 1/68	1/32 ~ 1/160	1/32 ~ 1/160	1/32 ~ 1/132
	Contrast Level	8 internal gain + 64 steps contrast adjustment	8 internal gain + 64 steps contrast adjustment	8 internal gain + 64 steps contrast adjustment	8 internal gain + 64 steps contrast adjustment	8 internal gain + 64 steps contrast adjustment	8 internal gain + 64 steps contrast adjustment
	Default Frame Frequency (Hz)	78	78	78	75	75	73.5
	Operation Temperature (°C)	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85	-40 ~ +85
	Advanced Features	Sleep Mode	Yes	Yes	Yes	Yes	Yes
N-Line Inversion	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Temperature Compensation	4 Setting	4 Setting	4 Setting	5 Setting	4 Setting	4 Setting	
On Chip OTP	Yes (2 x 5bit)	Yes (5bit)	Yes (5bit)	Yes (2 x 5bit)	MTP	MTP	
2D GIGA	Yes	Yes	Yes	Yes	Yes	Yes	
Grayscale Control	5 bits PWM + 1 bit FRC	5 bits PWM + 1 bits FRC	5 bits PWM + 1 bits FRC	5 bits PWM + 1 bit FRC	5 bits PWM + 1 bit FRC	5 bits PWM + 1 bit FRC	
Interlace COM Output Pin	No	Yes	Yes	Yes	Yes	Yes	
Chip Size (mmxmm)	12.174x1.672	13.4x1.52	10.99x1.223	15.917x2.08	14.49x0.95	11.62x0.753	
Pad Pitch	33	33	28	33	28	24	
Process um/Voltage	0.35u / +18V	0.35u / +18V	0.35u / +18V	0.35u / +18V	0.18u / 40V	0.18u / 32V	
Pin Package	COG	COG	COG	COG, COF	COG	COG	
Sample	Done	Done	Done	Done	Done	Done	
MP	Done	Done	Done	Done	Done	Done	

Note: 2D GIGA- 2D Graphic Imitation Graphic Acceleration Series



Gray Scale Driver

Part Number	SSD1848	SSD1857	SSD1858	SSD1859
Max. Display Size (Seg x Com)	130X130	96 x 96	104 x 64	128 x 80
Low Power Icon	-	-	104	128
Grayscale	4 out of 64 levels	4 out of 16 levels	4 out of 64 levels	4 out of 64 levels
Supply Voltage	2.4V ~ 3.3V	1.8 ~ 3.3V	1.8 ~ 3.3V	1.8 ~ 3.3V
Logic I/O Voltage	1.7V~3.3V	2.4 ~ 3.3V	1.8 ~ 3.3V	2.4 ~ 3.3V
Max. LCD Voltage	+15V	+15V	+12.0V	+15.0V
Interface	8bit Parallel	6800/8080	6800/8080	6800/8080
	Serial Interface	3 or 4 wires	3 or 4 wires	3 or 4 wires
	I2C	No	No	No
Features	Graphic RAM (bits)	130 x 130 x 2	96 x 96 x 2	104 x 65 x 2
	Build-in Booster Capacitor	No	Yes	Yes
	Build-in Divider Capacitor	Yes	Yes	Yes
	DC/DC Level	4 ~ 7X	4 ~ 8X	2 ~ 5X
	Bias Ratio	1:4 ~ 1:13	1:4 ~ 1:11	1:4 ~ 1:9
	Partial Display	1/9 ~ 130	1/16 ~ 96	1/16 ~ 65
	Contrast Level	64 Level	64 Levels	64 Levels
	Operation Temperature (°C)	-30 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C
Advanced Features	Sleep Mode	Yes	Yes	Yes
	N-Line Inversion	Yes	Yes	Yes
	Temperature Compensation	4 Settings	2 Settings	5 Settings
	On Chip OTP	Yes	Yes, Dual	Yes
	Pin Package	COG	COG	COG
	Sample	Done	Done	Done
	MP	Done	Done	Done



Monochrome Display

Part Number	SSD1805	SSD1829
Description	Seg/Com Driver w/ Controller	Seg/Com Driver w/ Controller
Display Size (Seg x Com)	132 x68	96 x 68
Low Power Icon	132	96
Grey-scale	-	-
Supply Voltage	1.8 ~ 3.6V	1.8V ~ 3.6V
Max. LCD Driving Voltage	+12.5V	+12V
Die Dize	13.38	3.63
Pad Pitch	58	33
Internal DC-DC Converter	2 ~ 5X	3 ~ 6X
On-chip Bias Divider	Yes	Yes
On-chip Oscillator	Yes	Yes
Display Data RAM (bits)	132 x68	96 x 98 x 1
MCU Interface	PPI, SPI	PPI, SPI
Prog. Multiplex Ratio	1/9 ~ 68	1/16 ~ 65
Power Save Mode	Yes	Yes
Standalone Annunciator	-	-
Non-Volatile Memory (OTP)	Yes	Yes
Bias Ratio	1:4 ~ 1:9	1:4 ~ 1:9
Re-mapping of Row/Column	Yes	Yes
Vertical Scrolling	Yes	Yes
Display Offset Control	Yes	Yes
RAM Page Blinking	Yes	Yes
Software Contrast Control	64 Levels	64 Level
Temperature Compensation	4 Setting	4 Setting
Operation Temperature	-30 ~ 85°C	-30 ~ 85°C
Package	COG, TAB	COB, COG
Remarks	All Build-in Cap	All Build-in Cap Low volt feature



Technical Selection Guide

DISPLAY PANEL IC

Mobile Display

PDA Chipset

MLA Chipset

SLA Chipset

Display Resolution	SSD1732 MLA Power Chip	SSD1871 160 Column Driver	SSD1873 320 Column Driver	SSD1876 480 Column Driver	SSD1881 160 Row Driver	SSD1701 160 Com/Seg Driver	SSD1702 240 Com/Seg Driver	SSD1703 320 Com/Seg Driver	SSD1706 48 Com/Seg Driver
Mono/ Gray Scale									
160x160	1	1			1	2		1	
320x240	1		1				1	2	1
320x320								1	
480x320								1	1
Color									
160RGBx160	1			1	1	1			1
320RGBx240	1			2			1		2
320RGBx2320								1	2

IC Combination Examples for Mono/Gray Scale and Color STN Display Resolution

Number indicates number of proposed IC used in applications

MLA - Multi-line Addressing, IC manufactured under Motif License including US Patent No.5,420,604

SLA - Single-line Addressing



MLA LCD Driver Chipset

Power Chip	
Device	SSD1732
Description	Power Chip
Part Number	SSD1732QL3
Power Supply (Vdd)	2.4-3.6V
Package Info	48LQFP
Size	7mm x 7mm

Column Driver	
Device	SSD1873
Description	Column Driver
No. of Output	320
Power Supply (Vdd)	2.4-3.6V
LCD Drive Voltage	4.8-7.2V
Part Number	SSD1873T1R1
Package Info	TAB
Output lead pitch (mm)	0.18
Input lead pitch (mm)	0.6
TAB length (mm)	70

Row Driver	
Device	SSD1881
Description	Row Driver
No. of Output	160
Power Supply (Vdd)	2.7-5.5V
LCD Drive Voltage	14-30V
Part Number	SSD1881TR1
Package Info	TAB
Output lead pitch (mm)	0.14
Input lead pitch (mm)	0.5
TAB length (mm)	35

Remarks: Au Bump Package is also available on all MLA/SLA driver except MLA power chip and MLA row driver



Technical Selection Guide

DISPLAY PANEL IC

SOLOMON
SYSTECH

Mobile Display

PDA Chipset

SLA LCD Driver Chipset

Device	SSD1701	SSD1702	SSD1703
Description	Seg/Com Driver	Seg/Com Driver	Seg/Com Driver
No. of Ouput	160	240	320
Power Supply (Vdd)	2.4-3.6V	2.4-3.6V	2.4-3.6V
LCD Drive Voltage	15-30V	15-30V	15-30V
Part Number	SSD1701T2R1	SSD1702T1R1	SSD1703T1R1
Package Info	TAB	TAB	TAB
Output lead pitch (mm)	0.22	0.21	0.18
Input lead pitch (mm)	0.8	0.8	0.6
Sample	Done	Done	Done
MP	Done	Done	Done

Remarks: Au Bump Package is also avilable on all MLA/SLA driver except MLA power chip



Part Number	Mono/Area Color		Gray Scale			Color	
	SSD1305	SSD1325	SSD1326	SSD1329	SSD1331	SSD1353	SSD1355
Display Features							
- Maximum panel resolution	132 x 64	128 x 80	256 x 16	128 x 128, 64 hard icons	96RGB x 64	160RGB X 132	128RGB x 160
- Embedded SRAM display buffer	132 x 64 bits	128 x 80 x 4 bits	128 x 80 x 4 bits	128 x 128 x 4 bits	96 x 64 x 16 bits	160 x 132 x 18 bits	128 x 160 x 18 bits
- Display color	Mono and 4 color selections for area color	16 gray scale	16 gray scale	16 gray scale	65k colors	262k colors	262k colors
- Contrast control	256 steps	128 steps	256 steps	256 steps	256 steps	256 steps	256 steps
DC Characteristics							
- Segment maximum source current	320uA	300uA	100uA	350uA	200uA	160uA	200uA
- Common maximum sink current	45mA	40mA	25mA	40mA	60mA	60mA	80mA
- MCU interface Voltage Supply (V _{DDIO})	1.6V - V _{DD}	-	1.7V - V _{DD}	1.7V - V _{DD}	1.6V - V _{DD}	1.6V - V _{CI}	1.6V - V _{CI}
- Core V _{DD} power supply (V _{DD})	2.4V - 3.5V	2.4V - 3.5V	2.4V - 3.5V	2.4V - 3.5V	2.4V - 3.5V	2.4V - 2.6V	2.4V - 2.6V
- Logic Voltage Supply (V _{CI})	-	-	-	3.2V - 4.2V (for icon)	-	2.4V - 3.5V	2.4V - 3.5V
- High Voltage Supply (V _{CC})	7.0V - 15.0V	8.0V - 16.0V	8.0V - 16.0V	9.0V - 18.0V	8.0V - 18.0V	10.0V-21.0V	10.0V-21.0V
MCU Host Interface Supported							
- 8-bit parallel interface	√	√	√	√	√	√	√
- 9-bit parallel interface	-	-	-	-	√	√	-
- 16-bit parallel interface	-	-	-	-	√	√	√
- 18-bit parallel interface	-	-	-	-	-	√	√
- Serial peripheral interface	√	√	√	√	√	√	√
- I ² C interface	√	-	-	-	-	-	-
Package Information							
-TAB	T7(132x64)	T6(128x80)	-	-	-	-	-
-COF	-	-	-	-	U3(96x64)	U4(160x128)	U2(128x128), U3(128x96), U6(128x160)
-COG	Z(132x64)	Z(128x80)	Z(256x32)	Z(128x128, 64 icon)	Z(96x64)	Z(160x132)	-
High Integration Controller Function							
- On-chip oscillator	√	√	√	√	√	√	√
- On-chip DC-DC booster	√	√	-	for hard icon	-	-	-
- On chip V _{DD} regulator	-	-	-	-	-	√	√
- Non-Volatile Memory (OTP) for calibration	-	-	-	-	-	√	√
- Programmable frame rate	√	√	√	√	√	√	√
- Programmable display MUX	√	√	√	√	√	√	√
- Row/Column re-mapping	√	√	√	√	√	√	√
- Horizontal scrolling	√	-	√	√	√	√	√
- Vertical scrolling	√	-	-	√	√	√	√
- Vertical scrolling by RAM	√	√	√	√	√	√	√
- Color swapping function	-	-	-	-	√	√	√
- Graphic acceleration command set: draw line & rectangle, copy & dim window, clear window, etc	-	-	-	√	√	√	-



Part Number	SSD2383	SSD2388
Display Features		
Max. Display Size	132 RGB x 132	176 RGB x 220
Display Color	262K / 65K / 4K	262K / 65K
Source Driver Output Voltage Level	64 Levels	64 Levels
DC Characteristics		
Core Voltage Supply	2.3V - 2.6V (internal generated / external supply)	Connected to analog voltage supply
Interface Voltage Supply	1.65V - 3.0V	1.8V - 3.6V
Analog Voltage Supply	2.3V - 3.3V	2.5V - 3.6V
Gate Driver Output Voltage	-	0V - 18V
Source Driver Output Voltage	0V - 5.2V	0V - 11.5V
On-chip DC-DC Charge Pump	For source high voltage: 2X, 3X	For gate high voltage: 5X, 6X For source high voltage: 4X, 5X
MCU Host Interface		
Parallel Interface	8/9/16/18-bits	8/16-bits
Serial Peripheral Interface	✓	✓
Controller Features		
Programmable Gamma Correction Curve	Curves for each RGB component	Curves for each RGB component
Programmable Duty Cycle	1/16 to 1/132	1/16 to 1/220
On-chip Memory	132 x 132 x 18 bits	176 x 220 x 18 bits
On-chip Oscillator	✓	✓
Gate & Source Scan Direction	✓ (No gate)	✓
Split Screen Display	-	-
Vertical Scrolling	✓	✓
Horizontal Scrolling	✓	✓
Graphic Acceleration Command Set	-	✓

Source Driver

Part Number	SSD1246	SSD1211	SSD1237	SSD1232
Number of Output Channels	540 / 600 / 630 / 645	384 / 414	618 / 642	480 / 504 / 516 / 528
Gray Scale Level	64	256	64	64
Supply Voltage	2.4 ~ 3.6	2.7 ~ 3.6	2.3 ~ 3.6	2.3 ~ 3.6
Max. Output Voltage	15	16	13.5	15
Interface	Mini-LVDS	RSDS	RSDS	RSDS
Package	COF	TAB, COF	TAB, COF	COF
Application	Monitor, Notebook	TV, Monitor	Monitor, Notebook	Monitor
Features				
Max. Interface Clock Frequency	172MHz	85MHz	85MHz	85MHz
Gamma Correction	5+5 Input	9+9 Input	7+7 Input	4+4 Input
Build-in Gamma Buffer	Yes	Yes	Yes	Yes
N-Line Inversion	Yes	Yes	Yes	Yes
Dot Inversion	Yes	Yes	Yes	Yes
Cascade Function	Yes	Yes	Yes	Yes
Operation Temperature	-20 ~ +75°C	-20 ~ +75°C	-20 ~ +75°C	-20 ~ +75°C

Gate Driver

Part Number	SSD1201	SSD1204	SSD1205
Number of Output Channels	256 / 263	256	200 / 240 / 256 / 263 / 270
Max. Clock Frequency	200KHz	200KHz	200KHz
Supply Voltage	2.5 ~ 3.6	2.3 ~ 3.6	2.3 ~ 3.6
Max. Gate Voltage	40	40	40
Features			
Select Shift Direction	Yes	Yes	Yes
Cascade	Yes	Yes	Yes

Source Driver

Gate Driver

Format	Resolution	Source Driver				Gate Driver		
		SSD1211 384 / 414 o/p (RSDS)	SSD1237 618 / 642 o/p (RSDS)	SSD1232 480 / 504 / 516 / 528 o/p (RSDS)	SSD1246 540 / 600 / 630 / 645 o/p (mini-LVDS)	SSD1201 256 / 263 o/p	SSD1204 256 o/p	SSD1205 200 / 240 / 256 / 263 / 270 o/p
VGA	640RGB x 480			4			2	
WVGA	852RGB x 480		4			4	2	
SVGA	800RGB x 600			5*	4		3	
XGA	1024RGB x 768	8	5*	6		3	3	
XGA+	1152RGB x 768					3	3	
WXGA	1280RGB x 768	10	6	8	6	3	3	
QVGA	1280RGB x 960	10	6	8	6		4	
SXGA	1280RGB x 1024	10	6	8	6	4	4	
	1366RGB x 768	10		8		3	3	
SXGA+	1400RGB x 1050			8		4	4	
WXGA+	1440RGB x 900		7*		8			
UXGA	1600RGB x 1200			10	8		5	
	1680RGB x 1050			10	8		4	
	1920RGB x 1080						4	

Remark: The number inside the box indicates the suggested number of driver used

Part Number	SSD1615	SSD1621
Panel Type	Passive dot-matrix for Cholesteric display	Segment/icon type direct drive display
Resolution	132 Segments x 64 Commons	92 Segments, 1 Background Segment, 1 Common
Embedded Display Memory	132 x 64 bits	93 x 2 bits
Logic Supply Voltage	VDD: 2.4V – 3.5V (logic) VDDIO: 1.6V to VDD (MCU interface) VCI: 2.8 – 3.5V (analog/booster)	VDD: 2.4V – 3.5V (logic), VDDIO: 2.4V – VDD (MCU interface), VCI: 2.4V – 3.5V (analog/booster)
Max. Output Voltage	V0 = 35V	V0 = 32V
No. of Voltage Output Level	6 Levels	3 Levels, V0, V1 (=1/2 V0), Vss
Built-in DC/DC Converter	8X, 16X charge pump	Max. 30V DC/DC converter
Package	COG and COF	COB and COF

Part Number	SSD1905	SSD1906	SSD1918
Embedded Display Buffer Memory	80KB	256KB	174KB
MCU Interface			
- Control pins	Enhanced 6800, 8080, generic #1, generic #2, control interface, w/ wait option		6800, 8080, 3/4 wire SPI, w/ wait option
- Data bus	8 or 16 bit options		8, 9, 16 or 18 bit options
- Address bus	Separated bus required		Not required, internal auto increment
Panels Support			
Main			
- Panel types	STN or TFT (mono or color) Mono, Grey Scale, Color (STN) 4-bit / 8-bit driver bus (STN) 9-bit, 12-bit or 18-bit digital RGB (TFT, HR-TFT, AD-TFT)		Generic TFT panel 9-bit, 12-bit or 18-bit digital RGB
- Color depth	1/2/4/8/16 bits-per-pixel (bpp)		8/16/18 bpp
- Resolution	Programmable according to frame buffer memory		Within 320x240 (QVGA)
Sub	NONE (Only 1 main panel supported)		Almost any driver controllers w/ 8 bit or 9 bit 6800, 8080 or 3/4 wires SPI; separated programmable RESET pin available
Display Features			
- Display rotation	√		√
- Display color invert	√		√
- Multi-page buffering	√		2 pages (QCIF+), 1 page (QVGA)
- Horizontal Resolution doubling	-		X
- Color look-up-table	√		X
- Floating window	√		X
- Virtual display	√		X
- Hardware cursors	2		0
Power			
- MCU interface	3.0V - 3.6V		1.6V - 3.6V
- Main panel interface	3.0V - 3.6V		1.6V - 3.6V
- Sub-panel interface	N.A.		1.6V - 3.6V
- Core voltage	2.5V (by internal regulator)		1.8V (selectable internal regulator)
- Power consumption	~ 2mW to 50mW depends on screen, color and resolution		~ 2mW to 6mW typically
Misc			
- GPIO pins	√		√
- PWM and CV	√		√
- Frame synchronisation signal to MCU	-		√
- Package	TQFP-100	TQFP-100 / TFBGA-100	Gold bump die / LGA-112



Part Number	SSD1921	SSD1922	SSD1926	SSD1928
Host MCU interface				
Generic #1/2	√	√	√	√
MC68K 1/2	√	√	–	–
SH3/4	√	√	–	–
VZ328	√	√	–	–
6800 8/16 bit	√	√	–	–
8080 8/16 bit	√	√	√	√
Internal RAM size	256KB	256KB	256KB	256KB
Camera / Video Interface (BT-656)				
Camera I/F	√	√	–	√
Camera Resolution	2Mpx	2Mpx	–	2Mpx
I ² C Master	√	√	–	√
YUV/raw Data Capture	√	√	–	√
Resize (view/capture)	√	√	–	√
Display Feature				
GC (SSD1906) Functions Support (Display Rotation, Color Invert; Multi-page Buffering; Color LUT; Overlay Window; 2 Hardware Cursors)	√	√	√	√
Color Depth	1,2,4,8,16,32 bpp	1,2,4,8,16,32 bpp	1,2,4,8,16,32 bpp	1,2,4,8,16,32 bpp
YUV <-> RGB	√	√	√	√
P-in-P+	√	√	√	√
Fractional Shrink	√	√	√	√
Fractional Zoom	√	√	√	√
Mirror Display	√	√	√	√
Graphic Accelerations				
JPEG Encoder	2Mpx	2Mpx	–	2Mpx
JPEG Decoder	Up to 16M (4K x 4K)	Up to 16M (4K x 4K)	Up to 16M (4K x 4K)	Up to 16M (4K x 4K)
JPEG Animation Frame Rate	196fps (240x160)	196fps (240x160)	196fps (240x160)	196fps (240x160)
Motion JPEG	√	√	√	√
BitBLT	√	√	√	√
Draw Lines	√	√	√	√
Draw Circles	√	√	√	√
Color Fill	√	√	√	√
Color Expansion	√	√	√	√
Panels Support				
Ramless Main LCD Interface				
4/8 bit STN	√	√	√	√
4/8 bit CSTN	√	√	√	√
16 bit CSTN	√	√	√	–
Parallel 9/12 bit TFT	√	√	√	–
Parallel 18/24 bit TFT	√	√	√	–
Serial 8 bit TFT	√	√	√	√
MCU Mode Main LCD Interface	–	–	√	√
Typical Resolution	320x240 / 16bpp	320x240 / 16bpp	320x240 / 16bpp	320x240 / 16bpp
Maximum Resolution / Color Depth	320x200 / 32bpp 800x600 / 2bpp	320x200 / 32bpp 800x600 / 2bpp	320x200 / 32bpp 800x600 / 2bpp	320x200 / 32bpp 800x600 / 2bpp
Sub-panel Support				
	–	(MCU mode)	–	–
Miscellaneous				
Clock Source	1 clock input	1 clock input	1 clock input	1 clock input
Power Save Mode	√	√	√	√
GPIO Pins	√	√	√	√
SD Card I/F	√	√	√	√
Core Voltage	1.8V +/- 10%	1.8V +/- 10%	1.8V +/- 10%	1.8V +/- 10%
Host I/O Voltage	3.3V +/- 10%	3.3V +/- 10%	3.3V +/- 10%	3.3V +/- 10%
Panel I/F Voltage	3.3V +/- 10%	3.3V +/- 10%	3.3V +/- 10%	3.3V +/- 10%
Package	144LQFP	144TFBGA	128LQFP	128LQFP



KCD-QECF-LX

MECHANICAL

Dimension 97.42mm (W) x 23.02mm (H) x 30.88mm (D)

Weight 28g

CYBERDISPLAY® *922K

Resolution 640 x 480 (VGA)

Diagonal Size 0.44" (11mm)

Active Area 9.0mm x 6.77mm

Color Configuration Vertical stripe

OPTICAL

Field of View 32° diagonal

Virtual Image Size 48 inches diagonal at 7 feet

Eye Relief 20mm

Exit Pupil Diameter 10mm

Interpupillary Distance 63.5mm

ENVIRONMENTAL

Storage Temperature -20°C to 80°C

Operating Temperature 0°C to 60°C

Humidity 40°C at 80% humidity for 240 hours

Shock 4 foot to drop to concrete

Vibration 20 Hz to 2000 Hz, 6 G's RMS maximum 3 axes

ELECTRICAL

CONNECTOR	PIN #	SIGNAL	PARAMETERS
KCD-QECF-LX input	1	Power	+3.3 VDC @ 290 mA
	2	Power RTN	
	3	CVBS	Composite video input
	4	CVBS RTN	
	5	Audio L	
	6	Audio R	
	7	Audio RTN	
Audio Output Right	1	Audio R+	
	2	Audio R-	
Audio Output Left	1	Audio L+	
	2	Audio L-	

* CyberDisplay® is a registered microdisplay of Kopin Corporation

Binocular Display Module
KCD-QENF-LX
MECHANICAL
Dimension 97.5mm (W) x 22.0mm (H) x 23.75mm (D)

Weight 26g

CYBERDISPLAY® * 230K
Resolution 320RGB x 240 (QVGA)

Diagonal Size 0.24" (6mm)

Active Area 4.80mm x 3.60mm

Color Configuration Vertical stripe

OPTICAL
Field of View 24° diagonal

Virtual Image Size 35 inches diagonal at 7 feet

Eye Relief 20mm

Exit Pupil Diameter 10mm

Interpupillary Distance 63.5mm

Effective Focal Length 14.16mm

Back Focal Length 6.37mm (-0.5 diopter/2 meter object focus)

ENVIRONMENTAL
Storage Temperature -20°C to 80°C

Operating Temperature 0°C to 60°C

Humidity 40°C at 80% humidity for 240 hours

Shock 4 foot to drop to concrete

Vibration 20 Hz to 2000 Hz, 6 G's RMS maximum 3 axes

ELECTRICAL

CONNECTOR	PIN #	SIGNAL	PARAMETERS
KCD-QENF-LX input	1	Power	+3.3 VDC @ 140 mA
	2	Power RTN	
	3	CVBS	Composite video input
	4	CVBS RTN	
	5	Audio L	
	6	Audio R	
	7	Audio RTN	
Audio Output Right	1	Audio R+	
	2	Audio R-	
Audio Output Left	1	Audio L+	
	2	Audio L-	

Monocular Display Module
KCD-QMNF-ITB
MECHANICAL
Dimension 20 mm (W) x 18 mm (H) x 25 mm (D)

Weight 6.6 g

CYBERDISPLAY® * 230K
Resolution 320RGB x240 (QVGA)

Diagonal Size 0.24" (6 mm)

Active Area 4.80 mm x 3.60 mm

Color Configuration Vertical stripe

OPTICAL
Field of View 22° diagonal

Virtual Image Size 16 inches diagonal at 1 m

Eye Relief 16 mm

Exit Pupil Diameter 3 mm

Eye Pupil Offset ±2.0 mm

No Vignetting 21 mm

TV Distortion ±1.0 %

Focus Range -3.0D~+1.0D

ENVIRONMENTAL
Storage Temperature -20°C to 60°C

Operating Temperature 0°C to 60°C

Humidity 40°C at 80% RH, 240 hrs

Shock 2 foot drop to concrete

Vibration 5 Hz – 60 Hz – 5 Hz, 30 min, 5 cycles all 3 axes

ESD (Human Body Model) 2000 V electric discharge

MTBF 20,000 hours (based on accelerated testing)

Focus Dial Durability 1500 cycles, full range back to front

DIOPTER
Focus Adjustment One click (-0.4D) 12°

Full rotation 180°

Rotation force 0.2 Ncm – 0.4 Ncm

Dial backlash, radial ≤2°

Dial backlash, thrust ≤0.1 mm