

SELECTION GUIDES

Multimedia Display Controller

	SSD1938	SSD1936	SSD1935
ARM Core	ARM1176JZF	ARM926EJ	ARM926EJ
Maximum Clock Speed	660MHz	528MHz	240MHz
DSP/VPU Core	VPU@200MHz	DSP@420MHz	DSP@270MHz
Display Support	2	1	1
Maximum LCD Resolution	HD (1920x1080) @30Hz WXGA (1366x768) @60Hz	WVGA (800x600)	WVGA (800x480)
LCD Display Port Width	24-bit	24-bit	24-bit
Smart LCD Support	√	√	-
Video Encoding Capability	720p	D1	D1
Video Decoding Capability	HD Decoder (1080p)	720p (MPEG2)/D1	D1
Video Format	H.263, H.264 HP, MPEG2 HP, MPEG4SP/ASP, VC-1, DivX, RealVideo, Sorenson, JPEG	H.263 BP, H.264 BP, MPEG2, MPEG4 ASP, VC-1, DivX, Sorenson, JPEG	H.263 BP, H.264 BP, MPEG2 MP, MPEG4 SP/ASP, VC-1, DivX, Sorenson, JPEG
System Connectivity			
USB2.0	Host x 1, Device x 1	Host x 1, Device x 1	OTG x 1
SDHC/SDIO/MMC	3	2	2
PC	1	1	1
SPI	2	2	2
UART	4	4	3
TSI	√	√	√
PS	√	√	√
System Integration			
Audio Codec(100dB)	√	√	-
2D Graphic Acceleration	2DGA	Draw 2D	Draw 2D
Dynamic Backlight Control	√	√	√
Integrated NTSC/PAL Encoder	√	√	√
Touch Panel Controller	√	√	√
Ethernet Mac	√	√	-
Keystone correction	√	√	-

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Multimedia Display Controller (Continued from pg 28)

	SSD1938	SSD1936	SSD1935
Camera Interface			
Maximum Sensor Resolution	12Mpixel	12Mpixel	12Mpixel
Video Input Processor	√	√	√
BT1120	√	√	√
BT656	√	√	-
Memory Interface			
DDR2	√	-	-
Mobile DDR	√	√	Embedded 32MBytes
NAND Flash	64bit ECC MLC SLC	24bit ECC MLC SLC	8bit ECC MLC SLC
NOR Flash	√	-	√
SPI NOR Flash	√	-	-
Boot Mode			
NAND Boot	√	√	√
USB Boot	√	√	√
UART Boot	√	√	√
NOR Boot	√	-	√
SPI Boot	√	-	-
SD Boot	√	-	-
eMMC Boot	√	-	-
Technology	90 nm	90 nm	130 nm
Ball Pitch	0.65 mm	0.80 mm	0.80 mm
Package	TFBGA-373	TFBGA-289	TFBGA-268

Product Development Kits

Part Number	Product Development Kits (BSP + Reference Application SW)
ADS-WE8626-PI	SSD1935, Projector Reference SW, BSP, Linux 2.6.24, Office Viewer
ADS-WE8628-PL	SSD1936, Projector Reference SW, BSP, Linux 2.6.24, Office Viewer
ADS-WE8628-LQ	SSD1936, PMP, WQVG, Linux 2.6.24
ADS-WE8628-AQ	SSD1936, WQVG, Android 2.1 BSP, 128MB mDDR
ADS-WE8628-AW	SSD1936, WVGA, Android 2.1 BSP, 256MB mDDR
ADS-WE8628-AWE	SSD1936 Options: including Android 2.2, ZTE 3G, USB WiFi, GPS, Captouch
ADS-SSD1938-256D2L	BSP, Linux 2.6.29, VGAout, Awind MirrorOps, Office Viewer
ADS-SSD1938-256D2A	WVGA, Android 2.3 BSP, 256MB DDR2, D2533, Awind MirrorOps
ADS-SSD1938-AMB	Android Media Box (Internet TV, D1938 PDK)

Standard Display Controller

		SSD1960	SSD1961	SSD1962	SSD1963
Host MCU Interface	6800 (8/16/18-bit)	√	√	√	√
	8080 (8/16/18-bit)	√	√	√	√
Internal RAM Size		170KB	675KB	912KB	1215KB
Display Feature	Display Rotation	√	√	√	√
	Display Mirror	√	√	√	√
	Display Windowing	√	√	√	√
Panel Support	Serial TFT	6-bit	6-bit	6-bit	8-bit
	Parallel TFT	18-bit	18-bit	18-bit	24-bit
	Typical Resolution	320x240 /18bpp	640x480 /18bpp	864x480 /18bpp	864x480 /24bpp
			480x320 /18bpp	854x480 /18bpp	854x480 /24bpp
			400x240 /18bpp	800x480 /18bpp	800x480 /24bpp
Dynamic Backlight Control	√	√	√	√	
Miscellaneous	Core Voltage	1.2V +/- 10%	1.2V +/- 10%	1.2V +/- 10%	1.2V +/- 10%
	Host I/O Voltage	1.8/3.3V +/- 10%	1.8/3.3V +/- 10%	1.8/3.3V +/- 10%	1.8/3.3V +/- 10%
	Panel I/F Voltage	1.8/3.3V +/- 10%	1.8/3.3V +/- 10%	1.8/3.3V +/- 10%	1.8/3.3V +/- 10%
	Package	TFBGA-64	TFBGA-64	TFBGA-64	TFBGA-80 LQFP-128

Graphic Controller

		SSD1905	SSD1906
Embedded Display Buffer Memory		80KB	256KB
MCU Interface	Control Pins	Enhanced 6800, 8080, Generic #1, Generic #2, Control Interface, with Wait Option	
	Data Bus	8 or 16 Bit Options	8 or 16 Bit Options
	Address Bus	Separated Bus Required	Separated Bus Required
Panel Support	STN or CSTN (4bit / 8bit)	√	√
	Parallel TFT	9/12/18-bit	9/12/18-bit
Display Feature	Display Rotation	√	√
	Display Color Invert	√	√
	Multi-page Buffering	√	√
	Color Look-up-table	√	√
	Floating Window	√	√
	Virtual Display	√	√
	Hardware Cursors	2	2
	Typical Resolution	160x160 / 16bpp	320x240 /16bpp
Color Depth	1/2/4/8/16 bpp	1/2/4/8/16 bpp	
Power	MCU Interface	3.0V - 3.6V	3.0V - 3.6V
	Main Panel Interface	3.0V - 3.6V	3.0V - 3.6V
	Core Voltage	2.5V (by Internal Regulator)	2.5V (by Internal Regulator)
	Power Consumption	~ 2mW to 50mW Depends on Screen, Color and Resolution	
Miscellaneous	GPIO Pins	√	√
	PWM and CV	√	√
	Package	TQFP-100	TQFP-100

Image Processor

		SSD1921	SSD1926	SSD1928
Host MCU Interface	Direct Addressing	8-bit I/F	√	√
		16-bit I/F	√	√
	Indirect Addressing	8-bit I/F	√	√
		16-bit I/F	√	√
Internal RAM Size		256KB	256KB	256KB
Camera / Video Interface (BT-656)	Camera I/F	√	-	√
	Camera Resolution	2Mpx	-	2Mpx
	I²C Master	√	-	√
	YUV/Raw Data Capture	√	-	√
	Resize (View/Capture)	√	-	√
Display Feature	GC 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
	YUV <-> RGB	√	√	√
	P-in-P+	√	√	√
	Fractional Shrink	√	√	√
	Fractional Zoom	√	√	√
	Mirror Display	√	√	√
	JPEG Encoder	2Mpx	-	2Mpx
	JPEG Decoder	Up to 16M (4K x 4K)	Up to 16M (4K x 4K)	Up to 16M (4K x 4K)
	Motion JPEG	Encode/Decode	Decode Only	Encode/Decode
Panel Support	BitBLT	√	√	√
	Draw Lines	√	√	√
	Draw Circles	√	√	√
	Color Fill	√	√	√
	Color Expansion	√	√	√
	Display By-pass Access	√	√	√
	Main Panel	MCU Mode or RAM-less Driver Mode	MCU Mode or RAM-less Driver Mode	MCU Mode or RAM-less Driver Mode
	STN or CSTN (4bit / 8bit) / 8-bit Delta	√	√	√
	Serial 8-bit TFT	√	√	√
	Parallel TFT	18-bit	24-bit	-
Miscellaneous	Typical Resolution	320x240 / 16bpp 480x234 / 16bpp	320x240 / 16bpp 480x234 / 16bpp	320x240 / 16bpp 480x234 / 16bpp
	Maximum Resolution / Color Depth	320x200 / 32bpp 800x600 / 2bpp	320x200 / 32bpp 800x600 / 2bpp	320x200 / 32bpp 800x600 / 2bpp
	Power Save Mode	√	√	√
	GPIO Pins	√	√	√
Miscellaneous	SD Card I/F	√	√	√
	Core Voltage	1.8V +/- 10%	1.8V +/- 10%	1.8V +/- 10%
	Host I/O Voltage	3.0V +/- 10%	3.0V +/- 10%	3.0V +/- 10%
	Panel I/F Voltage	3.0V +/- 10%	3.0V +/- 10%	3.0V +/- 10%
	Package	LQFP-144	LQFP-128	LQFP-128