

EPD6303 is designed as a single chip which integrates the display driver with 2160 source channels and touch control driver with 576 sensing channels. It is not only used for mobile display, but also suitable for any small portable battery-driven and long-term driving products, such as tablet PC, personal media players and other mobile devices. It supports Low Temperature Poly Silicon (LTPS), a-Si TFT LCD and Indium Gallium Zinc Oxide (IGZO) with in-cell touch panel technology (1:1 MUX).

EPD6303 is a RAM-less TDDI driver with fan type pad. It can achieve narrower board of panel due to the sinking pad arrangement.

EPD6303 architecture combines the Source Driver (SD), Timing Control circuit (TCON), gate driver control, power supply circuit and the touch controller. EPD6303 touch system protocol to connect the system of host processor via a standard inter integrated circuit bus(I²C) or serial peripheral interface (SPI).

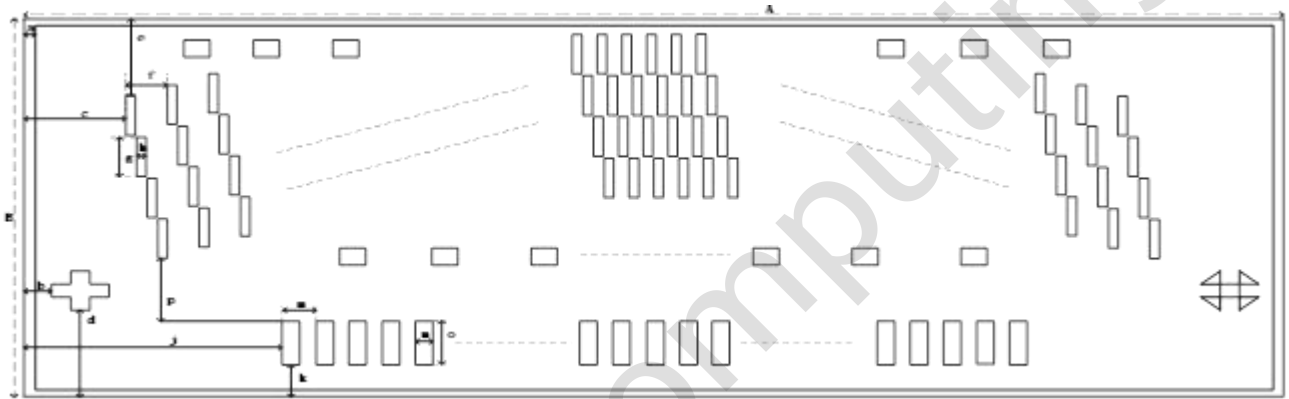
EPD6303 is built in 32bit high performance RISC-V MCU and high performance ADC with digital filters for in-cell touch panel controller. EPD6303 supports 18x32 sensor nodes self-capacitance touch panel scan. The reporting rate can support up to 240Hz when the frame rate of display at 120Hz by the controller combines with time division and channels division scanning technology. With ESWIN Computing touch driving technology and algorithms, the touch controller has excellent water proof performance, strong anti-noise and interference ability and high Signal to Noise Ratio (SNR).

EPD6303 can support various mobile display application requirements:

- Single chip solution for TFT LCD display with fan type pad arrangement
- Internal oscillator for display and touch clock generation
- Support 2160+2 source channels
- Display resolution options (NL max to 1760, N can be selected from 1 to 1760 per 1line/step)
- Display color depth: 16.7M colors/ 262K colors/ 64K colors
- Support 60Hz, 90Hz, 120Hz display frame rate
- MIPI Display Serial Interface (DSI): DSI interface (DSI V1.2, DPHY V1.1, DCS V1.01)
- Single port with 3, 4-lane optional, up to 1.3Gbps per lane at D-PHY
- Support 3-power and 4-power mode
- Logic and interface power voltage ranges: IOVCC 1.65V~1.95V
- Positive source driver power voltage ranges: VSP 4.5V~6.3V
- Negative source driver power voltage ranges: VSN -4.5V~ -6.3V
- Support RGB gamma correction (1 analog gamma and 3 digital gamma)
- Support SRE/CE/SE/CSE/HE/CABC/CTA function
- Support internal or external power mode for OTP
- Support low power detect function for abnormal power off image sticking
- Support temperature sensor function

- Built-in 32bit high performance RISC-V MCU
- Support 576(32x18) touch channels
- Support I²C and SPI interface communication with host
- Support 0-Flash architecture
- Support 60Hz, 120Hz, 180Hz, 240Hz touch report rate according to different display frame rate
- Support touch frequency hopping algorithm for anti-noise
- Support high Signal to Noise Ratio (SNR)
- Support water proof function
- Support glove touch function

PAD Configuration



Bump Information

Item	No.	Size (um)
Input Pad	Pad Width (n)	24
	Pad Height (o)	50、75
	Pad Pitch (m)	39
	Pad to Edge H (j)	2724
	Pad to Edge V (k)	64
Output Pad	Pad Width (h)	21
	Pad Height (g)	50
	Pad Pitch (f)	44
	Pad to Edge H (c)	141
	Pad to Edge V (e)	515
Input to Output	Input to Output Pad (p)	99
Alignment Mark	Mark to Edge (b)	67.1
	Mark to Edge (d)	117.4

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