

lamaPLC: st756x display drivers

The ST7567 and ST7565 are the two most common “COV” (Chip-on-Glass) controllers for monochrome graphic LCDs. While they share the same basic command set, they represent different generations of hardware integration.



Feature	ST7565	ST7567
Release Era	Older (Legacy)	Newer (Current Standard)
External Caps	5–9 capacitors needed	0–2 capacitors needed
Default Bias	Usually 1/9 or 1/7	Usually 1/9
Interface	Parallel / SPI	Parallel / SPI / I ² C
Power Consumption	Low	Ultra-Low
Best For	Heavy-duty industrial gear	Tiny DIY modules, I2C displays
Types	-	GM12864

Software Differences

While they are “command compatible,” you usually cannot swap them in code without minor tweaks:

- **Initialization:** The ST7567 requires a specific “Power Control” command (0x2F) and “Booster Ratio” command (0xF8) that may differ in value from the ST7565.
- **Contrast (Electronic Volume):** The range of contrast values varies; an ST7565 setting might make an ST7567 screen appear completely black or invisible.
- **Addressing:** If you see a 4-pixel shift on your screen, you are likely using an ST7565 driver with an ST7567 chip (or vice versa), as their internal RAM start addresses can differ.

GM12864

GM12864 refers to a family of 128×64-pixel graphical LCD and OLED display modules commonly used in Arduino and DIY electronics projects. The most frequent variant is the GM12864-59N, which features an I²C interface and a 2.14-inch screen

Variants

Model	Interface	Driver	Type
GM12864-59N	I ² C	ST7567S	LCD
GM12864-03A	SPI	ST7567	LCD
GM12864-01A	SPI	ST7567A	LCD (with COG panel)
GME12864-41	I ² C/SPI	SSD1315	OLED

Note: The I²C address is often 0x3F or 0x3C. Users sometimes report issues with pre-installed zener diodes causing signal interference on some boards.

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