

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.

I²C topics on lamaPLC

Page	Date	Tags
• lamaPLC Communication: 1-Wire	2026/04/23 21:51	1-wire, communication, bus, microlan, i2c, uart, usart, ds18b20
• lamaPLC Communication: I²C	2025/09/23 21:25	i2c, i c, smbus, philips, bus, communication, arduino
• lamaPLC project: Senson SCD CO² measurement module	2026/04/15 19:34	scd30, scd40, scd41, iaq, ndir, sensor, i2c, arduino code
• LamaPLC: AHT10 Modul	2026/03/22 03:14	communication, i2c, temperature, humidity, sensor, aht, aht 10, modul
• LamaPLC: AHT20 / BMP280 Modul	2026/04/23 21:52	bmp280, aht20, adafruit, temperature, humidity, pressure, sensor, arduino, code, i2c
• LamaPLC: APDS - Avago ALS and proximity detection sensors with I²C communication	2026/04/23 21:52	avago, apds-9900, apds-9930, apds-9960, als, proximity, detection, gesture recognition, gesture, i2c, communication, sensor, arduino, code
• lamaPLC: Arduino Modul: BME680	2026/05/12 18:40	code, c, 2026, arduino, bme680, sensor, i2c, comunication
• lamaPLC: AS5600 Magnetic Induction Angle Measurement Sensor Module	2026/05/13 00:06	communication, i2c, as5600, as-5600, magnetic, induction, angle, sensor
• lamaPLC: Bi-Directional Logic Level Converter 3.3V ↔ 5V	2026/04/12 00:34	bi-directional, logic level converter, i2c, uart, spi
• LamaPLC: BMP/BME Bosch Temperature/Humidity/Pressure sensors with I²C communication	2026/04/23 21:52	bme280, bme680, bme688, bmp180, bmp280, hw-611, hw611, bosch, temperature, humidity, pressure, sensor, arduino, i2c, communication, ai, cjmcu, volatile organic compounds, vocs, volatile sulfur compounds, vscs, iaq
• LamaPLC: CJMCU-219/INA-219 breakout board/IC with I²C communication	2026/04/23 21:52	cjmcu-219, ina-219, ina219, breakout board, i2c, communication, sensor, voltage, current, arduino, code, cjmcu
• LamaPLC: CJMCU-3216 / AP-3216 integrated digital ambient light and proximity sensor module/IC with I²C communication	2026/04/23 21:52	cjmcu-3216, cjmcu, ap-3216, ap3216, ambient light, proximity, sensor, arduino, code, i2c, communication
• lamaPLC: CJMCU-811 CCS811 Gas Sensor (VOCs TVOC CO₂)	2026/04/23 21:52	cjmcu-811, ccs811, gas, sensor, vocs, tvoc, eco2, co2, arduino, air quality metal oxide, mox, i2c, micropython, rp2040-eth
• LamaPLC: D6T Omron Non-Contact Thermal Sensors with I²C communication	2026/04/23 21:52	d6t, d6t-32l, d6t-44l, d6t-8l, d6t-1a, omron, non-contact, thermal, sensor, i2c, arduino, code
• LamaPLC: DPS Infineon Temperature/Pressure sensors with I²C communication	2026/04/23 21:52	dps310, infineon, temperature, pressure, sensor, arduino, i2c, communication, code
• lamaPLC: Energy, power, current, and voltage	2025/05/31 23:32	i2c, i c, communication, arduino, energy, power, current, sensor, ina226

• LamaPLC: ENS ScioSense Multi-gas sensors with I²C communication	2026/04/23 21:52	ens160 , sciosense , gas-quality , i2c , communication , sensor , arduino , code , eco2 , tvoc , aqi , indoor air quality , iaq , co2 , voc
• lamaPLC: ESP32 / ESP8266	2025/11/22 00:07	esp8266 , esp32 , esp32-c2 , esp32-c3 , esp32-c5 , esp32-c6 , esp32-c61 , esp32-h2 , esp32-s2 , esp32-s3 , esp32-p4 , espressif systems , communication , ethernet , ip , wi-fi , thread , zigbee , matter , homekit , bluetooth , mqtt , adc , spi , uart , i2c , i2s , rmt , pwm , usb , usb otg , twai
• LamaPLC: Gas sensors	2023/07/01 17:29	gas , sensor , i2c , onewire , communication , mq-3 , mq-4 , mq-5 , mq-6 , mq-7 , mq-8 , mq-9 , mq-135 , gm-102b , gm-302b , gm-502b , gm-702b , alcohol , ch4 , natural gas , smoke , lng , co , co2 , lpg , h2 , iso-butane , nox , nh3 , benzene , town gas , formaldehyde , propane , humidity , temperature , voc , grv gas sens v2
• lamaPLC: GY-511 6DOF sensor module	2026/04/23 21:52	stmicroelectronics , lsm303dlhc , i2c , lsm303 , sensor , gy-511 , 6dof , pololu , module , arduino
• LamaPLC: GY-9250 MPU-9250/6500 9-axis Attitude Sensor Board	2026/04/23 21:52	ak8963 , gy-9250 , mpu-9250 , 9-axis , motion detection , magnetometer , communication , i c , i2c , spi
• LamaPLC: HDC Texas Instruments Temperature/humidity sensors with I²C communication	2026/04/23 21:52	sht21 , htu21 , si7021 , gy-21 , gy-213v , hdc1080 , gy-213v-hdc1080 , cjmcu , cjmcu-1080 , texas instruments , temperature , humidity , sensor , i2c , communication , arduino , code
• lamaPLC: HT16K33 display controller	2026/04/23 21:51	i2c , 7-segment display , display , ht16k33 , arduino
• LamaPLC: HTU TE Connectivity temperature/humidity sensors with I²C communication	2026/04/23 21:52	htu , htu31d , htu21d , htu20d , sht20 , htu20 , sht21 , htu21 , si7021 , gy-21 , gy-213v , hdc1080 , si702 , gy-20 , sht31 , htu31 , si7031 , gy-31 , te connectivity , temperature , humidity , i2c , communication , sensor , arduino , code
• lamaPLC: INA modules with Arduino libraries	2026/04/23 21:52	i2c , i c , communication , arduino , energy , power , current , monitor , sensor , ina219 , gy-219 , ina226 , gy-216 , ina228 , gy-228 , ina237 , ina238 , ina260 , ina3221 , ina
• lamaPLC: INA226 - current/voltage/power monitor with I²C communication	2026/04/23 21:52	i2c , i c , communication , arduino , energy , power , current , monitor , sensor , ina226 , ina219 , ina
• lamaPLC: LCD 1602/2004 with I²C communication	2026/02/14 18:27	communication , i2c , display , lcd , 1602 , 2004 , hd44780 , pcf8574 , pcf8574t , pcf8574at , arduino

- [LamaPLC: MAX30100/MAX30102 Heart Rate Click Sensor Module](#) 2026/04/23 21:52 [max30102](#), [max30100](#), [heart rate click](#), [sensor](#), [communication](#), [i2c](#), [arduino](#), [code](#)
- [lamaPLC: MCP23017 / MCP23S17 16-Bit I/O Expander with Serial Interface I²C / SPI](#) 2026/04/23 21:52 [communication](#), [i2c](#), [mcp23017](#), [mcp23s17](#), [spi](#), [i o expander](#), [serial](#), [cjmcu-2317](#), [cjmcu](#)
- [lamaPLC: MLX90614 \(GY-906\) infrared non-contact thermometer](#) 2026/05/08 00:03 [communication](#), [i2c](#), [temperature](#), [mlx90614](#), [gy-906](#), [modul](#), [infrared](#), [non-contact thermometer](#), [dsp](#), [pwm](#), [smbus](#), [hailege](#)
- [lamaPLC: PCF857x I/O Expander chip/modul with I²C communication](#) 2026/05/15 01:03 [communication](#), [i2c](#), [pcf857x](#), [pcf8574](#), [pcf8574a](#), [pcf8575](#), [i o expander](#), [i o extension](#), [nxp](#), [texas instruments](#)
- [LamaPLC: Pixart PAJ7620U2 Gesture recognition sensors/module with I²C communication](#) 2026/04/23 21:52 [paj7620u2](#), [gy-paj7620](#), [pixart](#), [gesture recognition](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#)
- [lamaPLC: RP2040_ETH_Modul: I²C scanner](#) 2026/05/12 16:20 [code](#), [micropython](#), [2026](#), [rp2040 eth](#), [i2c](#), [comunication](#)
- [lamaPLC: RP2040_ETH_Modul: MLX90614 simple](#) 2026/05/12 17:06 [code](#), [micropython](#), [2026](#), [rp2040 eth](#), [i2c](#), [communication](#), [mlx90614](#)
- [lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data](#) 2026/05/12 21:06 [code](#), [micropython](#), [2026](#), [rp2040 eth](#), [bme680](#), [i2c](#), [sensor](#), [communication](#)
- [lamaPLC: RP2040_ETH_Modul: Read BME 680/688 sensor data and store in Modbus input registers](#) 2026/05/12 18:58 [code](#), [micropython](#), [2026](#), [rp2040 eth](#), [bme680](#), [i2c](#), [sensor](#), [communication](#)
- [LamaPLC: SC16IS750 / SC16IS752: One or two serial \(UART\) ports from microcontroller via I²C or SPI communication](#) 2026/04/23 21:52 [cjmcu-750](#), [cjmcu-752](#), [cjmcu](#), [nxp](#), [sc16is750](#), [sc16is752](#), [uart](#), [serial](#), [i2c](#), [spi](#), [modul](#), [converter](#), [arduino](#), [code](#)
- [LamaPLC: SGP Sensirion TVOC/VOC sensors with I²C communication](#) 2026/04/15 19:41 [sgp30](#), [sgp40](#), [sgp41](#), [sensirion](#), [gas-sensor](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#), [eco2](#), [voc](#), [tvoc](#), [indoor air quality](#), [iaq](#), [nox](#), [hydrogen](#)
- [LamaPLC: SHT Sensirion Temperature/humidity sensor with I²C communication](#) 2026/04/23 21:52 [sht20](#), [sht21](#), [sht25](#), [sht30](#), [sht31](#), [sht35](#), [sht40](#), [gy21](#), [temperature](#), [humidity](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#)
- [lamaPLC: Signal level converters](#) 2026/02/14 23:47 [pca9306](#), [i2c](#), [voltage](#), [level](#), [converter](#)
- [lamaPLC: st756x display drivers](#) 2026/05/20 16:17 [display](#), [driver](#), [i2c](#), [spi](#), [lcd](#), [cog](#), [oled](#), [st7565](#), [st7567](#), [gm12864](#), [gm12864-59n](#), [gm12864-03a](#), [gm12864-01a](#), [gme12864-41](#)
- [lamaPLC: TCA9548A \(HW617\); Low-Voltage 8-Channel I²C Switch Module](#) 2026/02/14 23:51 [tca9548a](#), [hw617](#), [i2c](#), [switch](#), [communication](#), [expansion board](#), [arduino](#)
- [lamaPLC: TM1637 7-segment display](#) 2026/02/14 18:26 [i2c](#), [7-segment display](#), [display](#), [tm1637](#), [arduino](#)
- [LamaPLC: TOFnnnC STMicroelectronics Time-of-Flight \(ToF\) sensors with I²C communication](#) 2026/04/23 21:52 [tof050c](#), [vl6180](#), [tof200c](#), [vl5310x](#), [tof400c](#), [vl5311x](#), [stmicroelectronics](#), [time-of-flight](#), [tof](#), [i2c](#), [communication](#), [sensor](#), [arduino](#), [code](#)

- [LamaPLC: VL53Lnn STMicroelectronics time-of-flight \(ToF\) laser-ranging sensors with I²C communication](#) 2026/04/23 21:52 [vl53l0x, vl53l1x, vl53l0 1xv2, gy-530, time-of-flight, tof, laser-ranging, i2c, communication, sensor, arduino, code](#)
- [LamaPLC: VL6180X STMicroelectronics Time-of-Flight \(ToF\) sensor with I²C communication](#) 2026/04/23 21:52 [vl6180x, stmicroelectronics, time-of-flight, tof, i2c, communication, sensor, arduino, code](#)
- [lamaPLC: XGZP68xx: Silicon Pressure Sensors/Module](#) 2026/05/15 15:17 [communication, i2c, sensor, modul, pressure, cfsensor, xgzp68xx, xgzp6810d, xgzp6857d, xgzp6859d, xgzp6887d, xgzp6897d, xgzp6899a, piezoresistive, capacitive](#)
- [Magnetic angle sensors](#) 2026/04/23 21:52 [magnetic angle sensor, magnetic flux, sensor, spi, i2c, pwm, communication, modul, as5047p, as5600, mt6701, mt6816, mt6835, tle5012b, amr, gmr, tmr, anisotropic magnetoresistive](#)
- [SSH1106/SSD1306 OLED Display with I²C communication](#) 2026/02/14 18:27 [i2c, oled, display, ssd1306, sh1106, ssh1106, arduino, cmos](#)

[Display, driver, i2c, SPI, LCD, COG, OLED, ST7565, ST7567, GM12864, GM12864-59N, GM12864-03A, GM12864-01A, GME12864-41](#)

This page has been accessed for: Today: 1, Until now: 162

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Last update: **2026/05/20 16:41**

