macsbug

ESP32-2432S028

with 5 comments

ESP32-2432S028 motherboard
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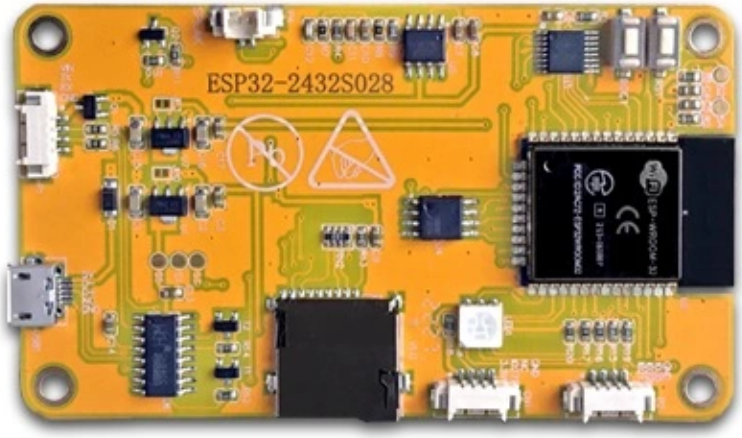
ORG 2022.08.17
rev 1. 2022.09.13
rev 2. 2022.09.22

2.8 ″ 240 x 320 SPI ILI9341V with
Touch Panel (At the time of purchase: 116 Orders: At the time of posting: 471 Orders) Shipping time: 8 days, which was the fastest on Aliexpress.Size : 86x50mm.Same size as the card.



.Configuration
:
1. ESP32 with TELEC(211-161007): Internal 4MB (32Bit) Flash
2. External 4MB (32Mbit) Flash memory, winbond 25Q32JVSIQ

2. External 4MB (32Mbit) Flash memory) with build [illegible]
_ rev 1. : 2022.09.13: U3 4MB, U4 4MB. It is now Parallel SPI.

3. LCD (ILI9341V) with Touch (U3 : XPT2046 resistive film method)
4. Expanded IO x 2
_ P3 (GND, GPIO_35, GPIO_22, GPIO_21)
_ CN1 (GND, NC, GPIO_27, 3V3)
5. SD SLOT (Micro SD)
6. RGB LED (MHP5050RGBDT)
_ BLUE : GPIO_16, RED : GPIO_4, GREEN : GPIO_17
7. CDS (GT36516) : GPIO_34
8. EXT Power Conn : P1 (VIN, TX, RX, GND)
9. Audio OUT(Audio amp SC8002B) : P4 SPEAK(2=VO2,1=VO1)
10. P1: Power Supply Base Conector
11. Included: Touch pen, 4pin External connector cable, USB Cable.
Materials:
– There is a download link for ESP32-2432S028R at the store where you purchased it . It is important. - I can't download 2.8inch_ESP32-2432S028R 625MB, I have to ask for a password. - This seems to vary depending on the browser and computer OS. - My environment MacBooK Pro Catalina 10.15.17, browser - Firefox, Google Chome I can download without any problems. – LVGL demo installed. (Video available at store) – Display Library is running on LovyanGFX (ILI9341 SPI2_HOST). – 2.8inch is the same size as M5Stack (2.0inch) at 240 x 320, making it very easy to see.

.Development
environment:
_ HARD : EESP32_2432S028
_ Display : 2.8″ 240×320 SPI ILI9341V LCD Touch XPT2046 _
Dev environment : Arduino IDE 1.8.19
_ Board Manager : arduino-esp32 2.0.3-RC1
_ Board : “ESP32 Dev Module”
_ Upload Speed : “460800” (Mac), “921600” (Win)
_ CPU Frequency : “240MHz (WiFi/BT)”
_ Flash Frequency : “80MHz”
_ Flash Mode : “QIO” or “DIO”
_ Flash Size : “4MB (32Mb)”
_ Partition Scheme : “Default 4MB with spiffs (1.2MB APP/1.5MB SPIFFS)”
_ Core Degug Level : “Verbose”
_ PSRAM : “Disabled”
_ Arduino Runs On : “Core 1”
_ Events Run On : “Core 1”
_ Pord : “dev/cu.wchusbserial14240”
_ Library : LovyanGFX
_ memo : _ Upload Speed is different between Mac
and Win because of CH340C . _ LovyanGFX Touch cfg.pin_int = 36; If it doesn't work, set it to -1 .

Addendum: SPI connection design error: 2022.09.22
Regarding U4 external Flash memory 4MB of ESP32-2432S028 and ESP32-3248S035.
U2 ESP32-WROOM-32 has a built-in 4MB Flash. And there is

U4 4MB Flash Memory 8Pin W25Q32JV as external memory.

FLASH is SPI connected and all pins other than VCC (CS, DI, DO, WP, CLK, HOLD, GND) are common. It is not in
multi-sub mode or multi-slave .
Therefore, we believe that the parallel connection of U4's CS is a design error.
Problem example: An error occurred during UP LOAD (writing) with Arduino IDE and writing was not possible.
_Flash corruption. Other mysterious phenomena occur.
Phenomenon: UP LOAD is not possible. 🔴 Flash will be broken.
Cause: Flash is duplicated due to common CS, DI, and DO between U2 internal Flash and U4 external Flash.
Solution: 🟢 Remove U4 Flash. Please read Explanation 16 for details.
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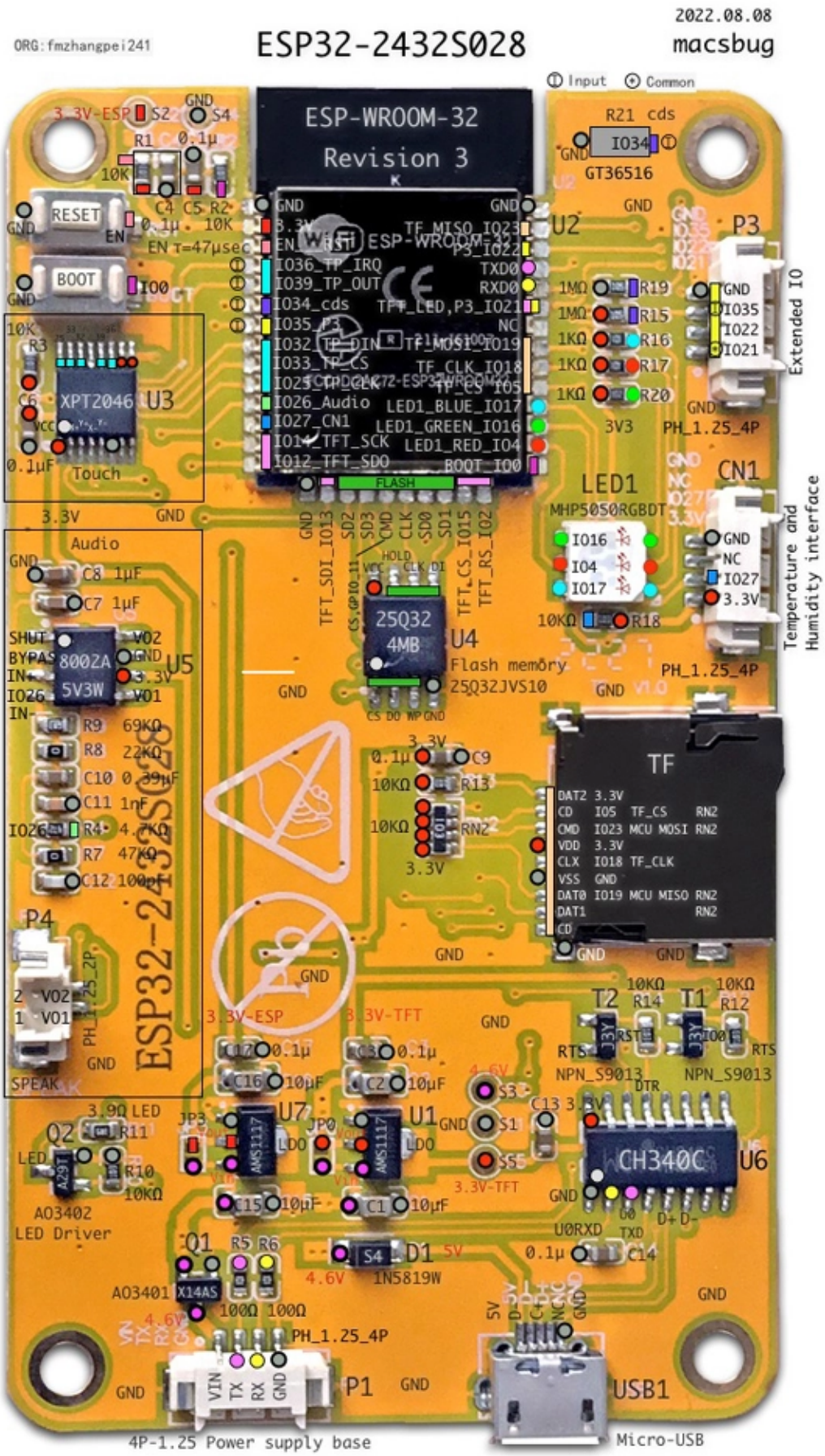
.Down
Load: After downloading, delete the pdf(_.pdf) and unzip the zip.
🟢 Down Load : Tetris_ESP32_2432S028.zip
🟢 Down Load : uncannyEyes_ESP32_2432S028.zip
🟢 Down Load : Raytrace_ESP32_2432S028.zip
🟢 Down Load : Maze_generator_ESP32_2432S028.zip
🟢 Down Load : Life_Game_ESP32_2432S028.zip
🟢 Download Load : 3D_Cube_ESP32_2432S028.zip
🟢 Download Load : Test_PDQ_ESP32_2432S028.zip
🟢 Down Load : LVGL802_demo_ESP32_2432S028.zip
🟢 Down Load : MovingCircles_ESP32_2432S028.zip
- MovingCircles : obj_count 200 =22 FPS, 100=22 FPS, 50=22 FPS
memo : Flash Mode : “DIO”
case is unbranded makeup palette S(111x71x 15mm) 990 I used a circle.

.Component
layout: Placement, signals, and pins are color-coded.



The PDF drawings below can be enlarged and searched for text.
Convenient for wiring, designing, and remodeling.

- ESP32_2432S028_PCB

.GPIO
Pin Assign: Table of components and GPIO.
All GPIOs of ESP32 are used and GPIO_21* is shared.
Touch x,y values can be used with the following values without calibration.

Cds	R21
GPIO	34

Audio AMP	U5
GPIO	26

LED1	GREEN	RED	BLUE
GPIO	16	4	17

U4 Flash	HOLD	WP	CS	CLK	DO	FROM
GPIO	SD2	SD3	CMD	CLK	SD0	SD1
GPIO	9	10	11	6	7	8th

Touch	x_min	x_max	y_min	y_max
LGFX	300	3900	200	3700

Touch SPI	INT(IRQ)	SCLK	SMOKE	MISO	CS
GPIO	36	25	32	39	33

LCD SPI	DC(RS)	SCLK	SMOKE	MISO	CS	RST	LED
GPIO	2	14	13	12	15	IN 1)	21*
SD	DATA2	CLK (CLX)	MOSI (CMD)	MISO (DAT0)	CS(CD)	VSS	VDD
GPIO	3V3	18	23	19	5	GND	3V3

.
Connector：

P3	GND	IO35	IO22	IO21*
CN1	GND	NC	IO27	3V3
P1	COME	TX	RX	GND
P4	VO1	VO2		

.Explanation
:

1. ESP32: Internal 4MB (32Bit) Flash
- esptool.py Display flash_id.

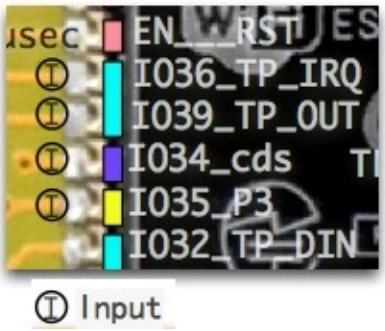
```
Detecting chip type... ESP32
Chip is ESP32-D0WD-V3 (revision 3)
Features: WiFi, BT, Dual Core, 240MHz, VRef calibration in efuse, Coding Schem
Crystal is 40MHz
MAC: 40:22:d8:57:f1:fc
Uploading stub...
Running stub...
Stub running...
Manufacturer: ef
Device: 4016
Detected flash size: 4MB

```

2.
U4 External FLASH Memory 4MB(25Q32):
- rev 1. : 2022.09.13: ESP32 U3 is 4MB, U4 is 4MB.
- External 4MB (32Mbit) Flash memory, winbond 25Q32JVSIQ
- FLASH 4MB for expansion. CS=GPIO_11.
- 3V 32M-BIT SERIAL FLASH MEMORY WITH DUAL, QUAD SPI
- External Flash : Start Address 0x3F40_0000 End 0x3FF8_0000
- 4MB (4194303 bytes): Details: ESP32 Technical Reference Manual
_ Reference: Accessing the external flash memory of ESP-WROOM-32
3.
LCD Touch MISO: Settings required for Arduino IDE setup.
- I am using GPIO_39 for Touch MISO.
- GPIO_39 generates a pulse when using WiFI . (Image: Left)
- Solution: If you write the following, Pulse will disappear. (Image: Right)
- Cause: A bug in the ESP32 chip.

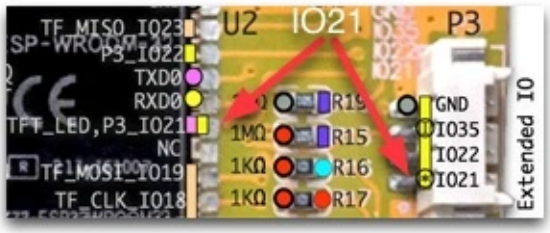
```
void setup() {
WiFi.begin();
WiFi.setSleep(false);
```

WiFi.begin()	WiFi.setSleep(false)
	

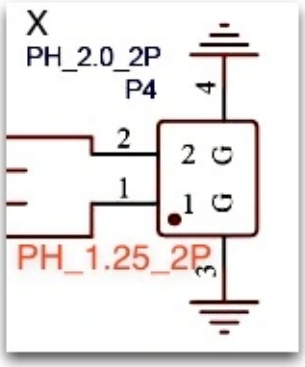
4.
INPUT ONLY GPIO: Understanding input-only GPIO.
- GPIO_36 (TP_IRQ), GPIO_39 (TP_OUT), GPIO_34 (cds),
- GPIO_35 (P3) are INPUT ONLY.
- Be careful when using or changing circuits.



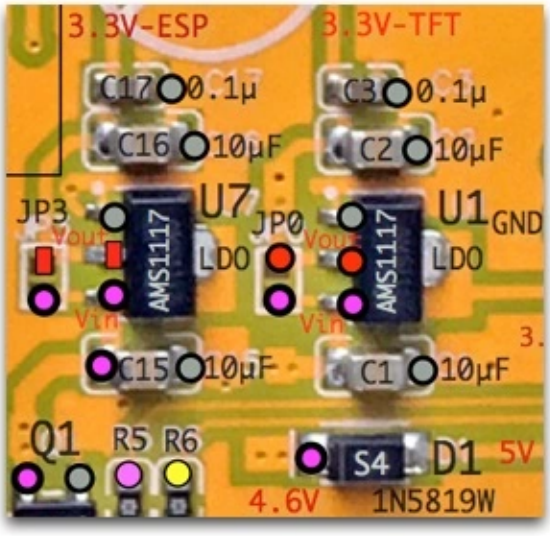
5.
Shared (Commn) GPIO 21: Precautions when using.
- GPIO_21 is shared with TFT_LED and P3 Extended IO21.



6.
Distributor Drawing error: Precautions when using connectors.
- P4 Connector PH_2.0_2P is a typo; the correct name is PH_1.25_2P.



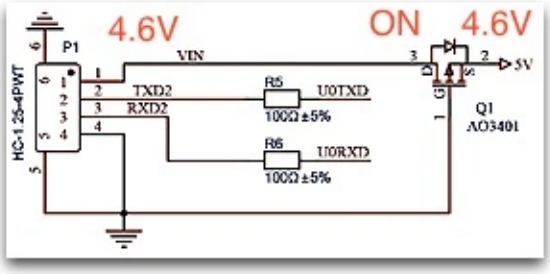
7.
Power supply: 3.3V has two power sources.
- USB 5Vdc becomes 3.3Vdc via D1 Diode with LDO AMS1117.
- D1 1N5819W Diode output is 4.6Vdc.
- 3.3V is created by two LDOs into 3.3V-ESP and 3.3V-TFT.



8.
P1 Power Supply Base Connector: Precautions when using.

- When connected to USB, 4.6V is output from Q1 FET to VIN.

- Q1 is ON because Q1 FET Gate is GND.
- Please consider this when using.
- Diode D1 1N5819W pdf : Vf = 0.32V(0,1A), Vf = 0.45V(1.0A), 5.0-0.45=4.6V



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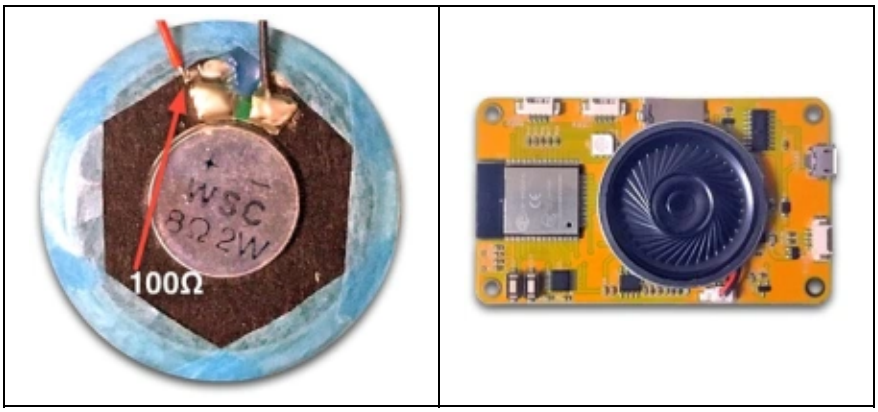
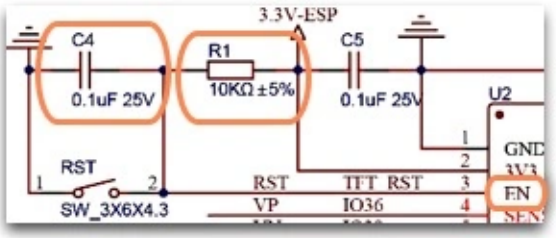
9. P4 SPEAK and Speaker: Speaker connection method.
- You can connect external speakers to the P4 connector.
- The connection requires an external resistance value of approximately 100Ω.
- If you directly connect a 4Ω or 8Ω 40,50mm Speaker, too much current will flow and the 3.3V power will drop and the ESP32 will stop.
- Example: Connect 100Ω in series to an 8Ω 2W 40mm Speaker. (Image: Left)
- You can connect Daiso 330 yen speakers and the sound is much better than M5Stack.

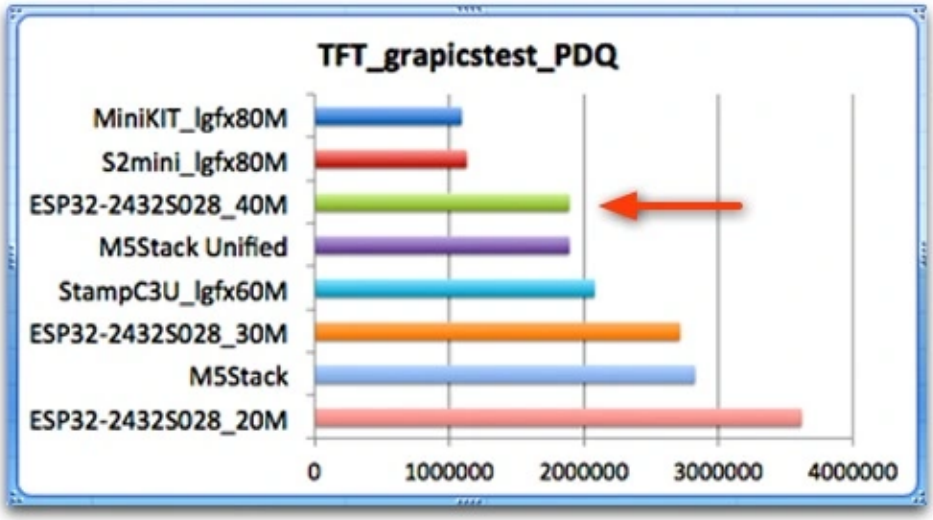


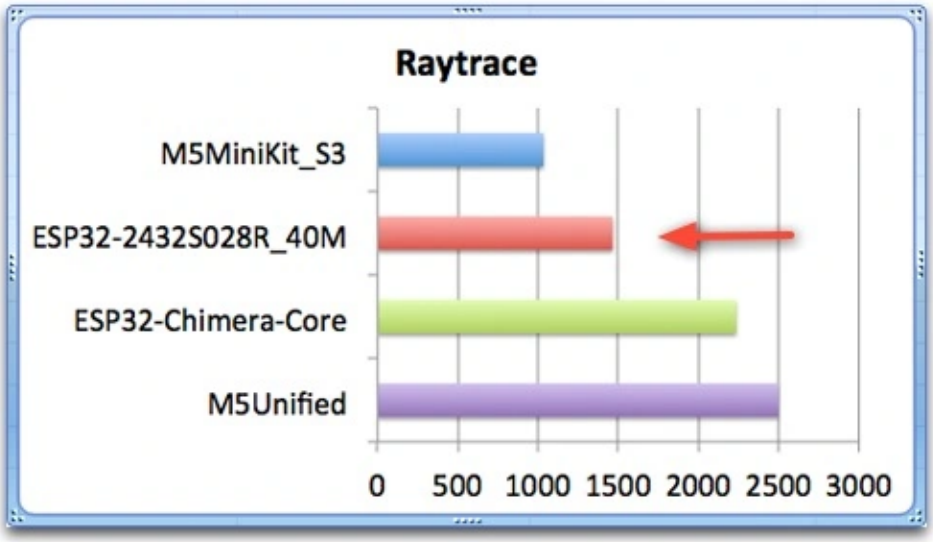
10.
PCB Card Size: How to make the case.
- Because it is a card size, commercially available card cases, business card cases, and card-sized cosmetic cases can be used.
- Although processing is involved, a 3D printer is not required and the finished product is beautiful.

11.
ESP32 EN time constant:
- With R1 (10KΩ) and C4 (0.1μ), the time constant τ (tau) is 47μsec.
- 47μsec is a safe value that meets specifications for starting ESP32.
- Reference:
- His version of the ESP32 Dev Kit is 1nF + 470 Ω. Out of specification at τ=0.22μsec.
- I imagine the designer misunderstands the value of R. Problems are occurring frequently.
- Resistance too low. R is 10KΩ, C is 10nF. It will be about τ=4.7μsec.
- It is wrong to connect a large C without calculating τ because it will not start.
- M5Stack is 1nF+12KΩ, τ=0.564μsec, which is small and tends to cause problems.



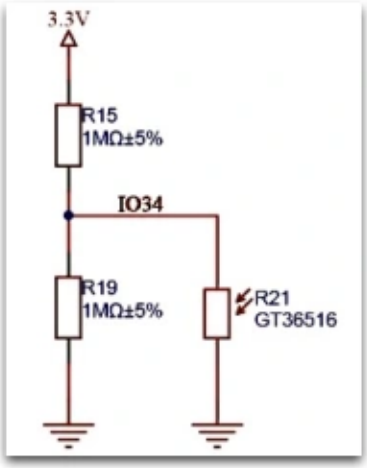
12.
ESP32 Revision: Revision 3.
- Serial port /dev/cu.wchusbserial14240
- Detecting chip type… ESP32
- Chip is ESP32-D0WD-V3 (revision 3)
- Revision 1 is a defective version, so 3 is fine.
13.
Speed:
-1.5x faster when compared to his M5Stack with the same LCD resolution.
- The accelerated M5Unified is also equally faster than the traditional M5Stack.
- LovyanGFX's SPI Clock is cfg.freq_write=40MHz.
- Anything higher than that, such as 50MHz, will be rounded to 40MHz.
- We believe that the wiring layout and component placement are effective.
- The effect of Library LovyanGFX is great.
- Further speed improvement:
- Although it will cost more,
you will get the highest speed by using Parallel 16bit LCD and ESP32 S3 MCU - by shortening the wiring and strengthening the power supply.





14.

R21: GT36516 Photoresistor: Cds operating range.
- The characteristics are as follows, so understand the operating range before use.
- R21 Cds is connected to GPIO_34 (Input).
- Measure the voltage and resistance to GND using a tester.
- Darken: 150mVdc, resistance value = 25KΩ
- Brighten; room fluorescent light: 20mVdc, resistance value = 5.5KΩ. Window light: 16mVdc
- Program:
- analogSetAttenuation(ADC_0db); // 0dB(1.0x) 0~800mV
- pinMode(34, ANALOG);
- Measurement: Serial.printf("%d[mV]\n", analogReadMilliVolts (34));
- Measurement result; Darken the room: 230mVdc. Make it brighter; 75mVdc
- There is little change when shielding it with your finger, so you need a difference in brightness and darkness.



15.
LCD Library:
- Uses LovyanGFX The settings are shown below.
- LovyanGFX is fast, has a large number of FONTs, and can easily use kanji.

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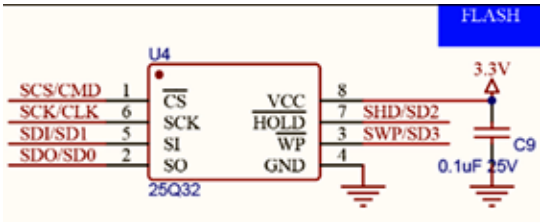
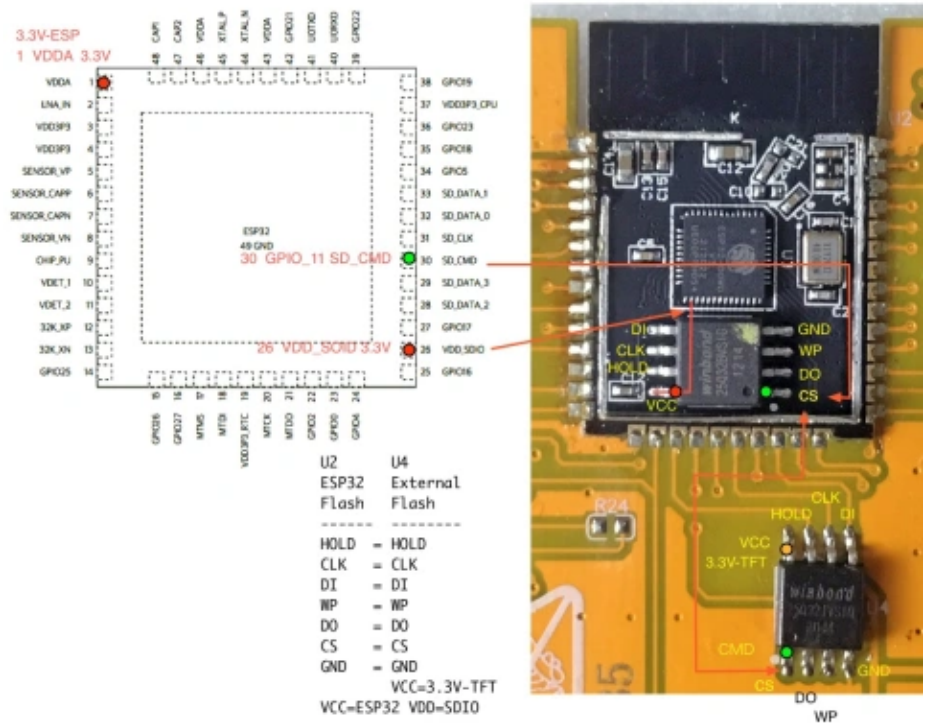
16. U4 SPI connection: 🔴 Design mistake. Addendum: rev 2. 2022.09.22
- The wiring of U2 ESP32 built-in 4MB Flash and U4 external Flash 4MB 8pin W25Q32JV is all common except for -VCC (CS, DI, DO, WP, CLK, HOLD, GND). CS too.
- Please refer to Learn the basics of SPI for the basis of judgment.
- If CS is parallel, DI and DO signals must be connected in series.
- If the DI and DO signals are parallel, the CS signal must be separated.
- The circuit diagram and actual wiring are not included in the "Basics of SPI" above.
- Designer information: We asked you about it on Aliexpress Message center.
- I say parallel. It is unclear why they are placed in parallel.
- Even if I asked twice, the answer was that there was no problem, but the reason was not stated.
- Furthermore, the designer stated that he did not know how to control parallelism.
- Problem: USB connection disconnected. An error message occurs when writing and writing is not possible.
- "A fatal error occurred: Serial data stream stopped: Possible serial noise or corruption."
- "A fatal error occurred: MD5 of file does not match data in flash!" also occurred.
- Cause: ESP32 U2 built-in Flash and U4 Flash CS duplication. U2 ESP32 internal 4MB Flash defective.
- Solution: 🟢 Remove U4 Flash 4MB. Please refer to the drawing.
- Apply heat to the four terminals on one side in parallel with a soldering iron, and lift them up with tweezers.
- Once one side comes off, apply heat to the terminal on the other side and remove it.
- If you do not have a soldering iron, use nippers or a cutter to remove all the pins.

- 🔴 Do not use methods that will cause further problems, such as removing only GND or VCC.
- 🔴 This means not making connections that are not in accordance with the IC specifications.

- U4 is parallel and serves no purpose, so it may be broken when removed.
- After performing he cleans the substrate with acetone or alcohol.
- This is my decision, so please take responsibility for yourself.
- Action: If removing U4 does not work, replace the ESP32 built-in 4MB Flash.
-In this case, the metal lid will be opened for repair and modification, so TELEC will no longer be available.
-Although it is difficult to remove the ESP32, there is also a way to replace it with an ESP32-S3.
-





PDF: If the image is difficult to see, please refer to the PDF. S028_S035_SPI

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🟠 What happens when you write to two parallel Flash cards?
- There are four possible cases: - U2 internal Flash and U4 external Flash are written correctly and
- they are not written.
- When you remove the U4 external Flash
- 1. If the U2 internal Flash is written correctly, the previous sketch will work as is.
- 2. If the U2 internal Flash is not written correctly, it will not work and will not be displayed.
🔵 This shows that this parallel connection is wrong.
;
- Strange phenomena occur when using Flash that has not been written correctly.
- This problem noticeably occurs when the number of writes increases (such as 50 to 200 times) using the Arduino IDE.
- For example, GPIO_27 cannot be used, touch operation is not possible, writing is unstable, writing is not possible, MD5 error,
- U2 internal Flash damage (cannot be erased with esptool) (worst), etc.
- An example of Flash erase in esptool.py is below.

```
実施前 以下で確認。
esptool.py chip_id
esptool.py flash_id
erase 実施。
esptool.py erase_region 0xe000 0xffff
esptool.py erase_region 0x1000 0x5fff
esptool.py erase_region 0x10000 0x83fff
esptool.py erase_region 0x8000 0x8fff
実施後 以下で確認。
esptool.py chip_id
esptool.py flash_id

```

;
🟢 MD5 error is a phenomenon that occurs even on M5Stack which has a large number of writes.
- The solution is to erase Flash using esptool.py.
- In the case of S028 and S035, if the U2 internal Flash is not written correctly after removal, writing will become impossible due to an MD5 error a few times, but after that it will be possible to write. I experience anxiety and relief.
- When I read Espressif Systems' SPI Flash, it contains things that are extremely difficult for me to read, and I find myself wondering if my judgment is correct as it seems to contain some secrets.
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With LIbrary Lovyan GFX you can do many things easily .
Japanese fonts are beautiful and easy to use.

Lovyan GFX settings:
_ Display: ILI9341 : SPI2 HOST: SPI2_HOST
_ cfg.freq_write : Max 40MHz
_ Touch: XPT2046: SPI3 HOST: VSPI_HOST
_ Touch: cfg.pin_int = 36; Set to -1 if Touch does not work.

```
//------------------------------------------------------------------------
// https://github.com/lovyan03/LovyanGFX/blob/master/examples/HowToUse/2_user_
class LGFX : public lgfx::LGFX_Device{
  lgfx::Panel_ILI9341 _panel_instance;
  lgfx::Bus_SPI       _bus_instance;
  lgfx::Light_PWM     _light_instance;
  lgfx::Touch_XPT2046 _touch_instance;
//------------------------------------------------------------------------
public:LGFX(void){
  {                                  // バス制御の設定を行います。
  auto cfg = _bus_instance.config();// バス設定用の構造体を取得します。
                                     // SPIバスの設定
  cfg.spi_host   = SPI2_HOST;  // 使用するSPIを選択 (VSPI_HOST or HSPI_HOST)
  cfg.spi_mode   = 0;          // SPI通信モードを設定 (0 ~ 3)
  cfg.freq_write = 40000000;   // 送信時のSPIクロック(最大80MHz,80MHzを整数割値に
  cfg.freq_read  = 16000000;   // 受信時のSPIクロック
  cfg.spi_3wire  = false;      // 受信をMOSIピンで行う場合はtrueを設定
  cfg.use_lock   = true;       // トランザクションロックを使用する場合はtrueを設定
  cfg.dma_channel=  1;         // 使用DMAチャンネル設定(1or2,0=disable)(0=DMA不
  cfg.pin_sclk   = 14;         // SPIのSCLKピン番号を設定 SCK
  cfg.pin_mosi   = 13;         // SPIのMOSIピン番号を設定 SDI
  cfg.pin_miso   = 12;         // SPIのMISOピン番号を設定 (-1 = disable) SDO
  cfg.pin_dc     =  2;         // SPIのD/C ピン番号を設定 (-1 = disable) RS
  // SDカードと共通のSPIバスを使う場合、MISOは省略せず必ず設定してください。
  _bus_instance.config(cfg);   // 設定値をバスに反映します。
  _panel_instance.setBus(&_bus_instance);// バスをパネルにセットします。
  }
  {                                  // 表示パネル制御の設定を行います。
  auto cfg = _panel_instance.config();// 表示パネル設定用の構造体を取得します。
  cfg.pin_cs           =    15; // CS  が接続されているピン番号(-1 = disable)
  cfg.pin_rst          =    -1; // RST が接続されているピン番号(-1 = disable)
  cfg.pin_busy         =    -1; // BUSYが接続されているピン番号(-1 = disable)
  cfg.memory_width     =   240; // ドライバICがサポートしている最大の幅
  cfg.memory_height    =   320; // ドライバICがサポートしている最大の高さ
  cfg.panel_width      =   240; // 実際に表示可能な幅
  cfg.panel_height     =   320; // 実際に表示可能な高さ
  cfg.offset_x         =     0; // パネルのX方向オフセット量
  cfg.offset_y         =     0; // パネルのY方向オフセット量
  cfg.offset_rotation  =     0; // 回転方向の値のオフセット 0~7 (4~7は上下反転)
  cfg.dummy_read_pixel=     8; // ピクセル読出し前のダミーリードのビット数
  cfg.dummy_read_bits  =     1; // ピクセル外のデータ読出し前のダミーリードのビット
  cfg.readable         =  true; // データ読出しが可能な場合 trueに設定
  cfg.invert           = false; // パネルの明暗が反転場合 trueに設定
  cfg.rgb_order        = false; // パネルの赤と青が入れ替わる場合 trueに設定 ok
  cfg.dlen_16bit       = false; // データ長16bit単位で送信するパネル trueに設定
  cfg.bus_shared       = false; // SDカードとバスを共有 trueに設定
  _panel_instance.config(cfg);
  }
  { // バックライト制御の設定を行います。(必要なければ削除)
  auto cfg = _light_instance.config();// バックライト設定用の構造体を取得します。
  cfg.pin_bl = 21;             // バックライトが接続されているピン番号 BL
  cfg.invert = false;          // バックライトの輝度を反転させる場合 true
  cfg.freq   = 44100;          // バックライトのPWM周波数
  cfg.pwm_channel = 7;         // 使用するPWMのチャンネル番号
  _light_instance.config(cfg);
  _panel_instance.setLight(&_light_instance);//バックライトをパネルにセットします
  }
  { // タッチスクリーン制御の設定を行います。（必要なければ削除)
  auto cfg = _touch_instance.config();
  cfg.x_min      = 300;    // タッチスクリーンから得られる最小のX値(生の値)
```

```
    cfg.x_min      = 300;    // タッチスクリーンから得られる最小のX値(生の値)
    cfg.x_max      = 3900;   // タッチスクリーンから得られる最大のX値(生の値)
    cfg.y_min      = 200;    // タッチスクリーンから得られる最小のY値(生の値)
    cfg.y_max      = 3700;   // タッチスクリーンから得られる最大のY値(生の値)
    cfg.pin_int    = -1;     // INTが接続されているピン番号, TP IRQ 36
    cfg.bus_shared = false;  // 画面と共通のバスを使用している場合 trueを設定
    cfg.offset_rotation = 6; // 表示とタッチの向きのが一致しない場合の調整 0~7の値で
    // SPI接続の場合
    cfg.spi_host = VSPI_HOST;// 使用するSPIを選択 (HSPI_HOST or VSPI_HOST)
    cfg.freq = 1000000;      // SPIクロックを設定
    cfg.pin_sclk = 25;       // SCLKが接続されているピン番号, TP CLK
    cfg.pin_mosi = 32;       // MOSIが接続されているピン番号, TP DIN
    cfg.pin_miso = 39;       // MISOが接続されているピン番号, TP DOUT
    cfg.pin_cs   = 33;       // CS  が接続されているピン番号, TP CS
    _touch_instance.config(cfg);
    _panel_instance.setTouch(&_touch_instance);  // タッチスクリーンをパネルにセッ
    }
    setPanel(&_panel_instance);// 使用するパネルをセットします。
    }
};
LGFX tft; // 準備したクラスのインスタンスを作成します。
//========================================================================
```

.
2.8 inch TFT-ESP32 model free shipping，Landlord first origin learning :
The above is Mr. fmzhangpei241's bbs.
The designer of this ultra-low-priced board is fmzhangpei241 from a neighboring country.
Acknowledgment: We would like to thank fmzhangpei241.
His enthusiasm for this site for learning is amazing.
He stated the following on his July 11, 2022:
"I recently made a 2.8-inch ESP32 module.
I plan to send 10 sets for free. Let's discuss and learn together.
Shipping costs will be covered by you. It
will only be given to engineers who need it.
Currently, There are routines for doing LVGL and some examples on arduino.

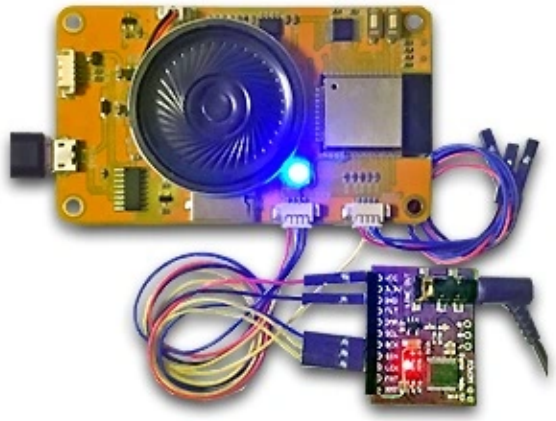
You can learn a lot from fmzhangpei241's bbs page .

I couldn't ask for free shipping, so
I bought 6 units from Aliexpress Sunton Store .
I'm planning to create a program for the board. I have already created Web Radio ESP32-2432S028-I2S using I2S DAC Board .

Impressions
:
Price: 1,480 yen for this configuration is an extremely low price.

- His first purchase was 3 pieces for 4,440 yen. My recent purchases were 3 pieces for 4,695 yen and 1 piece for 1,565 yen.
- One piece costs about 1,500 yen.
- Old and low-priced parts are used, and the prices are kept low.
- When you calculate the individual parts, it's cheaper to buy than to make.
- For the price of one M5Stack, 6,125 yen, he can purchase four.
- The low price means you can easily do electronic work even if it breaks.

Board: You can see that it is well made by adding an interface.
- GPIO and connector wiring can be easily changed, allowing for free modification.
- Example: 8Ω2W 40mm Speaker.
- Example: WEB RADIO with PCM5102A I2S DAC.



- No BUS sharing and fewer GPIOs.
- In ESP32-3248S035, the LCD and Touch BUS are shared.

Problem experience:
- Among the multiple boards I purchased, there was one board that did not output GPIO_27.
- The problem occurred during circuit board analysis and application example prototyping, and it took time to investigate the cause.
- It is good to be able to judge that the LVGL sample works and is a good product at the time of purchase, but
- it is difficult to judge whether all other GPIOs are good.
- I'm not sure how to contact the retailer.
-I'd like to replace the ESP32 with his ESP32-S3, but he can't remove the ESP32 so I'm on hold.

New 3.5″ version product: While writing this blog, a new 3.5″ version product came out.
- 3.5″ 320*480 SPI ESP32 with Touch.
- ESP32-3248S035
- As of 2022.08.16.
- 1832 yen: 2.8″ ESP32-2432S028R: It is getting more expensive little by little.
- 2278 yen: 3.5″ ESP32-3248S035: The difference from the above is 1832 yen.

Sales forecast:
- At the time of posting (2022.08.17), the number of buyers was 471. Assuming 3 machines per person, it is calculated as 1413 machines.
- Total sales of 1000 units will be 1.48 million yen.
- 2020.09.13: 717 orders achieved.
2023.0427
: Tomonori Honda After downloading
Touch_ESP32_2432S032C.zip
, delete the pdf(_.pdf) and unzip the zip.
.

.

ESP32-2432S028 , ESP32 , 4MB , 16 MB , ILI9341 , XPT2046 ,
Written by macsbug

August 17, 2022 @ 2:32 pm
Category: ESP32

5 feedbacks

Subscribe to comments with RSS.

>I don't know how to write FW to empty Flash.
Is it okay to write the bootloader using ARDUINO IDE (EspTool)?
Then, write the file using EspSketch Data UpLoad.

Fumio Komiya

August 31, 2022 at 5:08 pm

reply

thank you for contacting me.
Since I am using a Mac, I cannot use Windows' EspSketch Data UpLoad.
:
Usage environment:
MacBook Pro 2019
To prepare for macOS Catarina, I updated PIP version, checked Python version, installed esptool, and checked version.
Use Terminal on Mac.
Checking the operation of esptool:
The contents of the board can be read with esptool.py chip_id, and version 3 of the ESP32 tip is displayed.
:
esptool command:
Read: esptool.py read_flash 0x0000 0x2000 ~/Desktop/data.bin
Write: esptool.py write_flash 0x0000 ~/Desktop/data.bin
This is a little different from before, but this way of writing seems to be fine.
Previous article: NES GAME with M5STACK

:
Read everything from the purchased board:
esptool.py read_flash 0x0000 0x400000 ~/Desktop/data.bin
and write everything to the empty board:
esptool.py write_flash 0x0000 ~/Desktop/data.bin
Now it works and displays. However, the screen immediately went black.
Even after this, it seems that I can read and write without any errors, but

the screen remains black no matter what I try.

:
Even after writing the following data from Espressif, the screen remains black.
boot_app0.bin
bootloader_qio_80m.bin
:
After trying various things, basic questions arise, such as what should he do with the mac address?
Each chip we sell is different.
I'm sure some of you already know about it, but
I'll put it on hold since it would take time.
16MB purchased from Aliexpress costs 500 yen for 5 pieces.
If you have to, replace the 16MB ESP32 FLASH in Akizuki.
As for the seller, since he has an external FLASH, he should be writing on it alone.
In other words, there is a way to write it.
I can't find an article that explains it.
:
Making an app for this board is a priority, and the above can be done later.
I would like to add more apps as a thank you to the developer of this board.
Additionally, he wants developers to know about LovyanGFX to speed up the board.
I introduced her BLOG article on the developer's BBS.
Other themes are currently being prepared or implemented, and those that require time will be postponed.

macsbug

August 31, 2022 at 8:10 pm

reply

> Thank you for taking the time out of your busy schedule to reply.
>
> **Fumio Komiya**
>
> August 31, 2022 at 8:51 pm
>
> ~~After that, I figured out how to make it work, so I updated the blog.~~
> ~~Please see her blog for details.~~
> U3 ESP32 has 4MB built-in.
> I lacked understanding of U4 4MB Flash.
> U4 4MB Flash is for expansion. With Parallel SPI connection, CS is GPIO-15.
> There are no examples using this feature yet.
> Reading and writing U4 4MB in esptool.py was a mistake.
>
> **macsbug**
>
> 9月 8, 2022 at 10:49 am

Yes, that way is fine.

macsbug

October 15, 2023 at 3:03 pm

reply