New issue   ⎘

Major Issue with Lilygo-T-A7670 on Battery: Everytime "Brownout detector was triggered" once connected on battery and devices get hanged and need manual reset #232

Open

🕸 **farhanahmad-ese** opened 2 days ago   ···

Dear Lilygo Team and Developers,

There is major issues in this board. Whenever tries to connect it with battery Li-Ion or Lipo every time it output "Brownout detector was triggered". I have disable brownout detection but our devices get failed/hanged on this stage. There are lot of devices we have procured and whole project has been messed up. When we have connected FTDI adapter to save log, this is the state when device get hangs anytime and we have to go for manual reset. There is lot of unreliability with this product. This log is just got by programming your own example MQTTClient without doing any change just connecting the module on battery.

rst:0x1 (POWERON_RESET),boot:0x12 (SPI_FAST_FLASH_BOOT)
configsip: 0, SPIWP:0xee
clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00
mode:DIO, clock div:2
load:0x3fff0030,len:1184
load:0x40078000,len:13232
load:0x40080400,len:3028
entry 0x400805e4

Brownout detector was triggered

ets Jul 29 2019 12:21:46

```
rst:0xc (SW_CPU_RESET),boot:0x12 (SPI_FAST_FLASH_BOOT)
configsip: 0, SPIWP:0xee
clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00
mode:DIO, clock div:2
load:0x3fff0030,len:1184
load:0x40078000,len:13232
load:0x40080400,len:3028
entry 0x400805e4
Start modem...
[6837] Initializing modem...
[6837] ### TinyGSM Version: 1.0.0
[6837] ### TinyGSM Compiled Module: TinyGsmClientA7670
[6897] ### Modem: A7670E-FASE
[6897] ### Modem: A7670E-FASE
```

😊

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lewisxhe 2 days ago   Contributor   •••

Is the battery reliable? Batteries with too small discharge current or poor quality cannot meet the needs of this board. According to the log you provided, the A7670 did not seem to start up during the first startup. Only the ESP was working at this time. The maximum instantaneous current of the ESP is about 700mA. Have you tried to replace the battery or test it directly with USB-C power supply?

😊

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lewisxhe 2 days ago   Contributor   •••

There is another problem, POWER ON (GPIO12) must be turned on when power is on, otherwise there is a chance of triggering a power-off reset.

😊

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farhanahmad-ese 2 days ago · edited by farhanahmad-ese   Edits ▾   Author   •••

Yes. The batteries are reliable. Yes, I have tried to power the board using USB-C connected through lipo battery charging circuit and the same battery was being used and there was no problem on brownout detection.

The problem occurs when you GPIO 12 is turned ON.

// Turn on DC boost to power on the modem

```
#ifdef BOARD_POWERON_PIN
    pinMode(BOARD_POWERON_PIN, OUTPUT);
```

```
    digitalWrite(BOARD_POWERON_PIN, HIGH);
  #endif
```

This is the part of the code where the Brownout Detector Triggers.

😊

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lewisxhe yesterday · edited by lewisxhe   Edits ▾   (Contributor)   •••

Did you enable GPIO12 at the very beginning of the setup function?

If you enable it after setup, it may cause power failure!

> 7. Known issues, ESP32 (V1.2) version of T-A7670, T-A7608, when using battery power supply mode, BOARD_POWERON_PIN (IO12) must be set to high level after esp32 starts, otherwise a reset will occur.

😊

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farhanahmad-ese yesterday   (Author)   •••

The Serial Log I have shared is from your examples "MQTT Client".

```
void setup()
{
  Serial.begin(115200);
  // Turn on DC boost to power on the modem
#ifdef BOARD_POWERON_PIN
  pinMode(BOARD_POWERON_PIN, OUTPUT);
  digitalWrite(BOARD_POWERON_PIN, HIGH);
#endif
```

And facing issues. There is an issue with hardware. I am not sure if that could be resolve by using a capacitor to stabilized the voltage.

The hardware designer should not use GPIO 12 as this is strapping pin. He could have used any other GPIO.
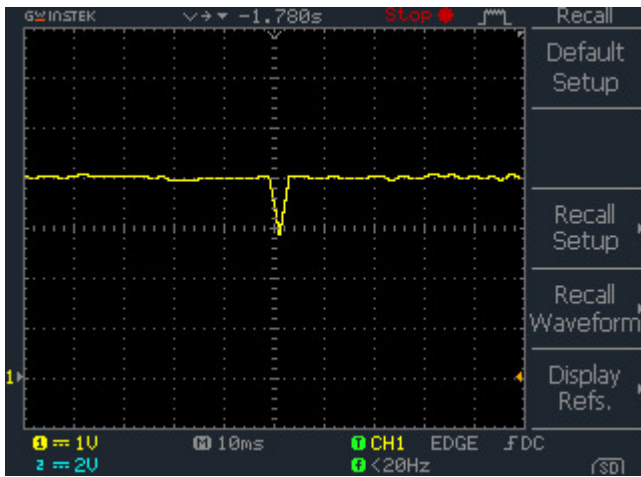
😊

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farhanahmad-ese 4 hours ago   (Author)   •••

Here is the battery voltage waveform captured using oscilloscope. The battery voltage is 4.0 and when modem tried to power up then it drop below 3.0 V

lewisxhe 3 hours ago   Contributor •••

This problem is a known issue and can only be solved by calling GOIO12 to set the high level at the beginning of setup. This problem has been discussed in another post.

#85

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