Arduino TITO and Player Tracking Project

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ADDENDUM

This document describes adding an ArduCam OV2640_MINI_2MP_PLUS camera module to the MAGSTRIPE version of the Arduino TITO and Player Tracking project for the purpose of taking a 'Jackpot Winner' photo when certain payouts occur. This is an experimental feature and is NOT RECOMMENDED for novice users as it requires modification of the cabinet or player tracking bracket to accommodate the camera. This feature is also only compatible with the MAGSTRIPE version due to limits in the SPI bus.

Version 2.0.20210522C

There is no official support for this version.

ADDITIONAL HARDWARE REQUIRED

Arducam Mini Module Camera Shield with OV2640
https://www.amazon.com/gp/product/B012UXNDOY

You may also need some longer M-F Dupont cables depending on where you will place the camera

You also may need a drill and several bits capable of cutting through metal; a 'christmas tree' bit would probably be useful

ADDITIONAL LIBRARIES REQUIRED

Modified version of ArduCam is included in the Experimental\libraries folder

BEFORE YOU BEGIN

These instructions assume familiarity with electronics, coding and slot machine configurations. If you are new to any of these then this project may not be for you. My instructions were not written for beginners. You may damage your game or the Arduino/TITO hardware if you do not understand what you are doing.

You will need to determine a place to mount the camera. This will vary depending on the machine so you will need to decide what is best in your case. The player tracking bracket on my S2000 has enough room for me to cut a hole in the cover plate and bracket to expose the camera lens and have it reasonably centered. Not all brackets may allow for this though. Other options include exposing the camera in the top glass – some glass has sections where labels can be added for jackpots or for casino rules. It could be possible to expose the camera lens through the clear glass there.

I TAKE NO RESPONSIBILITY FOR ANY DAMAGE TO YOUR MACHINE IF YOU ATTEMPT TO DO THIS! THIS IS ALL ON YOU.

WIRING

Follow all wiring steps in the main documentation to get your board wired for your display and player tracking options. Reminder – this modification will only work with the MAGSTRIPE version of the code.

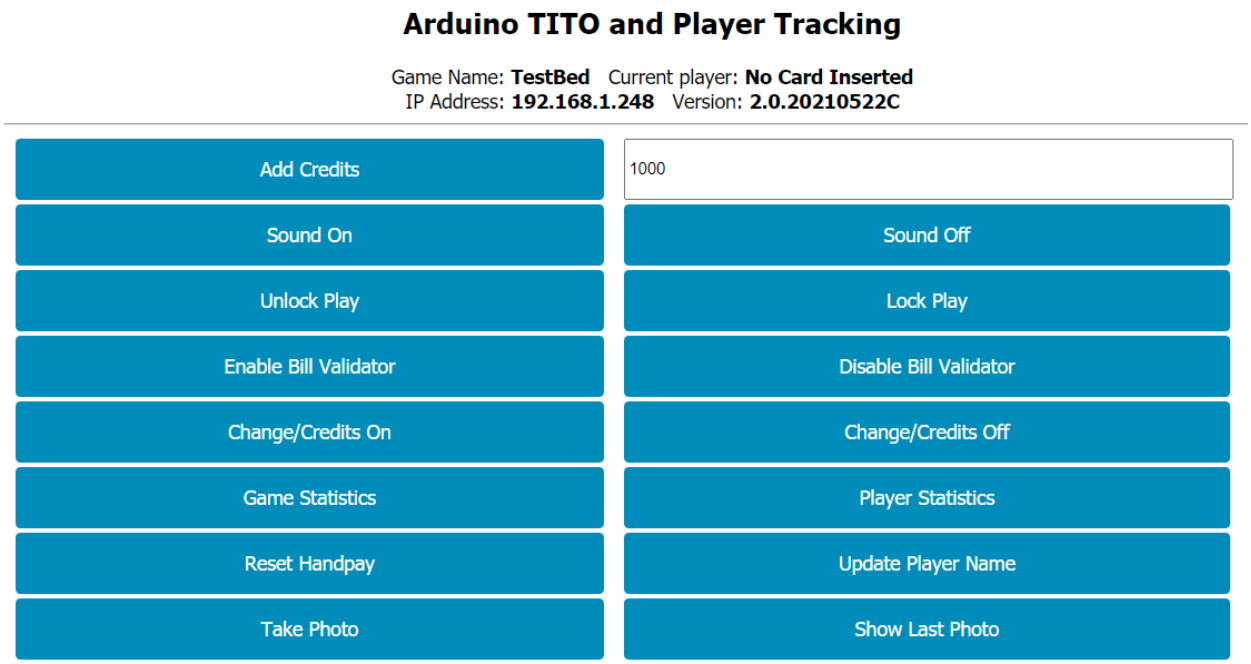
- Wire the OV2640 camera module as follows:

OV2640 Camera	Arduino
CS	Data Pin 6
MOSI	Data Pin 51
MISO	Data Pin 50
SCLK	Data Pin 52
GND	Ground
VCC	5V
SDA	SDA
SCL	SCL

  - IMPORTANT! The SDA and SCL pins on the Arduino Mega are not exposed through the Ethernet Shield. You will need to use a right-angle adapter to connect to the pins on the Mega directly; See Figure 1

INITIAL SETUP

- Assumes you have the Arduino IDE setup, the board and COM port settings are correct and all required libraries are installed, including the ArduCam library included in the package.
- Assumes you have already completed the setup of the MAGSTRIPE version and tested it
- Update the config.txt file on the SD card and add the following parameter
    - jpPhotoMinimum=500
    - Set this to the minimum jackpot value you want the camera to take a photo for
- Update the index.htm file on the SD card with the one in the Experimental\SD Card Files folder
- Load the sketch from the Experimental\src\ ArduinoPlayerTrackingV2MAG-CAM
- Modify this sketch with your display and keypad configuration
- Test the sketch while connected to your laptop and can see the Serial Monitor; you should see the camera initialize in the serial monitor
- Mount the board in your machine following the original instructions
- Determine a place to mount the camera; ideally it should be exposed somewhere on the player tracking bracket. Irreversible modifications may be required.
- After everything is mounted you can test the camera by loading the web interface and clicking on the 'Take Photo' button. You can then see the picture by clicking on the 'Show Last Photo' button.



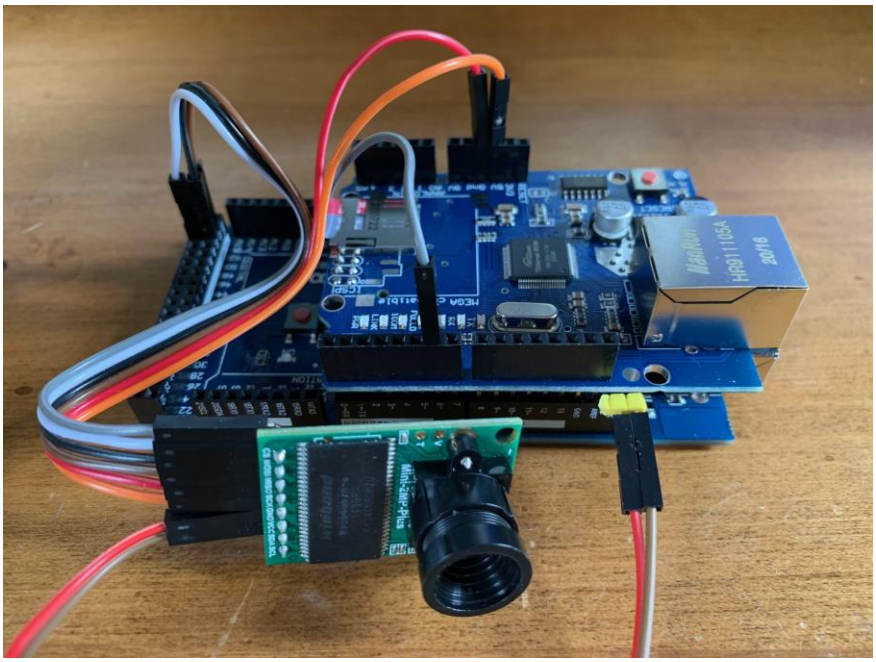
Web UI for the Experimental Camera Version

NOTES

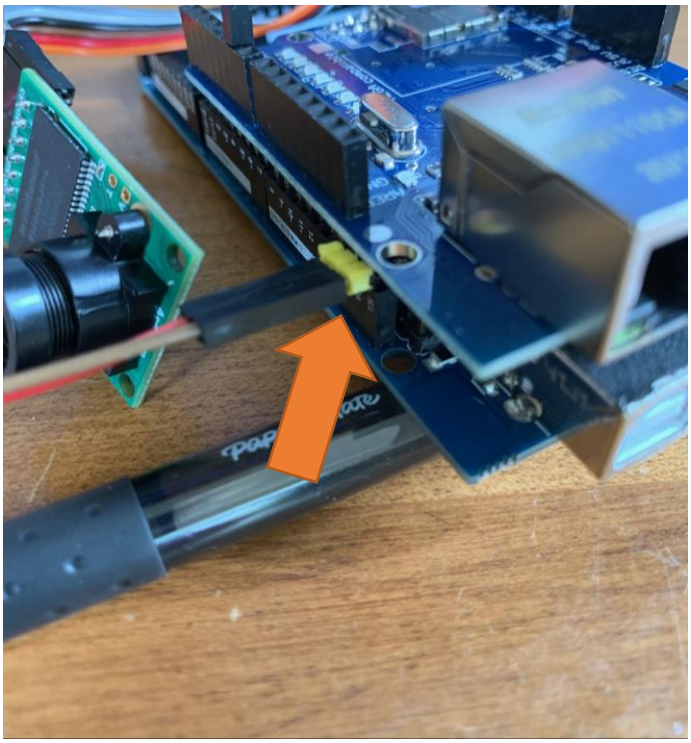
- The initial version only stores one photo; it is named jpphoto.jpg on the SD card
- The 'Jackpot Photo' will be triggered automatically on any win that equals or exceeds the jpPhotoMinimum value in the config.txt file
- You can take a photo at any time by clicking on the 'Take Photo' button in the Web UI
- The default resolution is set to 320x240; it is possible to change this in the code however larger images will take longer to process and may interfere with other TITO operations
- You can download the last photo to another device using the url: http://YourGameIPAddress/jpphoto
- The Game Manager has not been updated to support the photo options at this time
- I am open to suggestions for non-destructive ways to mount the camera
- This is experimental; expect bugs. Please let me know so I can address them if needed

DISCLAIMER

Figure 1 – Mockup and the SDA and SCL pins



Mockup of the camera wiring only



Mockup showing the right-angle connector needed to reach the SDA and SCL pins