



Tally-Core2 User Guide

ATEM Mini Core2 Remote Tally/Control

Core2 ATEM Control – Overview

This version (2021-08) of the code allows you to control an ATEM mini (up to 4 cameras and 12 macros) via a M5Stack Core2 ESP32 device.

Current Feature set

- Current status information displayed including:
 - ✓ SSID, Client MAC/IP Addresses, ATEM IP Address
 - ✓ ATEM connection status
 - ✓ Camera Program/Preview/Key status
- 4 Camera control/status buttons
- 12 Macro control buttons via 3 simulated pages
- Ability to read network config data from an SD card
- Ability to write network config data in encrypted form into EEPROM so on a subsequent boot the SD card can be removed
- Ability to validate EEPROM data to ensure its not corrupted or missing

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This code is a fork of Aaron Parecki's ([aaronpk/am5-core2-atem-controller](#)) code and leverages the following GitHub libraries:

- [kasperskaarhoj / SKAARHOJ-Open-Engineering](#) Arduino ATEM Libraries
- [bneedhamia / write_eeprom_strings](#) and [sdconfigfile](#) libraries
- [arduino-libraries / Arduino_CRC32](#) library
- [josephpal / esp32-Encrypt](#) library

Based on the following:

- M5Stack Core2 (Amazon or elsewhere)
- Arduino IDE: http://docs.m5stack.com/#/en/arduino/arduino_core2_development (Version 1.8.13)
- IDE Board: M5Stack-Core2 (Version 1.0.7)
- IDE Library: M5Core2 (Version 0.0.2)

Libraries

<https://github.com/kasperskaarhoj/SKAARHOJ-Open-Engineering>

<https://github.com/josephpal/esp32-Encrypt>

https://github.com/bneedhamia/write_eeprom_strings

<https://github.com/bneedhamia/sdconfigfile>

https://github.com/arduino-libraries/Arduino_CRC32

<https://github.com/josephpal/esp32-Encrypt>

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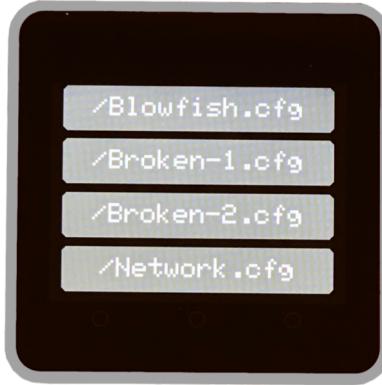
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Requirements

Requirements:

1. DHCP must be enabled for the Core2 client to function This version does not currently support static IP address for the Core2 client.
2. A static IP address must be assigned for the ATEM. This version does not support dynamic network connections.
3. An SD card with a .cfg file containing the network/configuration information. Note that if weeProm is enabled the software will write the required software configuration read from the SD card in encrypted form to the devices EEPROM and on the next boot if there is no SD card the EEPROM data will be used.

CFG file menu
if more than 1 cfg file



CFG file
Selected



EEProm Check
if no SD card



Client Name + MAC
WiFi Name



Client Name + IP
ATEM IP



Waiting for First
Connection



Connected



Disconnected



Page selector
with selection indicator above button

Program/key
Preview

SD Card Boot Process

- Check SD card for CFG files
- Provide list of no more than four (4) .cfg files
- User selects .cfg file
- Open .cfg file and validate
- If bad .cfg file shutdown after 10 seconds (to save battery)
- If weeProm option enabled – write values to EEPROM
- Attempt to connect to Wifi SSID (DHCP required)
- Attempt to connect to ATEM (Static IP required)
- Update Camera button status based on response from ATEM

EEProm Boot Process

- Check SD card for CFG files
- If no SD card check EEProm
- Decrypt EEProm base config options
- Validate EEProm data
- If no / bad EEProm data shutdown after 10 seconds
- Attempt to connect to Wifi SSID (DHCP required)
- Attempt to connect to ATEM (Static IP required)
- Update Camera button status based on response from ATEM

Example network.cfg file

```
# Example configuration file,
# place this file on a Micro SD card
# and insert the card into the Core2 computer
#
# File format: <field>=<value>
# Note: You cannot use a # in your definitions
#
# Fields for ATEM
# weeProm - true/false, if true saves config data to EEPROM. EEPROM will automatically be used if no SD card inserted.
# cfgVer - integer representing simple version control (required)
# waitEnable - true/false, used for troubleshooting to slow the display down
# waitMS - delay in milliseconds
# M5id - Tally Client ID (required)
# ssid - WiFi ID (required)
# password - Wifi Password (required)
# atemIp - IP address of ATEM switch (required)

weeProm=true
cfgVer=1
waitEnable=true
waitMS=2000
M5id=ClientNodeName
ssid=WiFi-SSID
password=network_password
atemIp=192.168.10.240
```