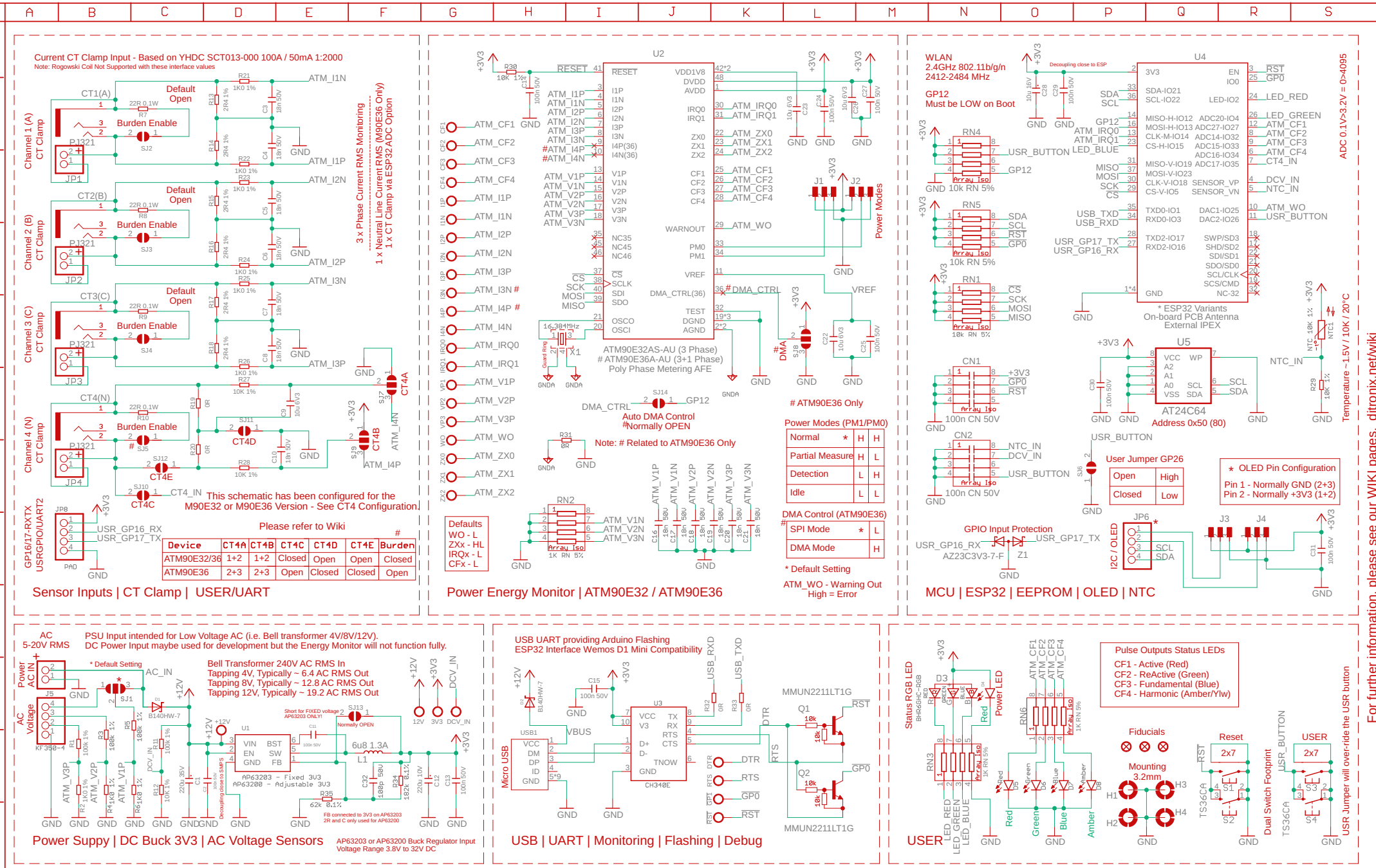
Current CT Clamp Input - Based on YHDC SCT013-000 100A / 50mA 1:2000
Note: Rogowski Coil Not Supported with these interface values
Channel 1 (A) CT Clamp
Channel 2 (B) CT Clamp
Channel 3 (C) CT Clamp
Channel 4 (N) CT Clamp
Default Open
Burden Enable
3 x Phase Current RMS Monitoring
1 x Neutral Line Current RMS (M90E36 Only)
1 x CT Clamp via ESP32 ADC Option
This schematic has been configured for the M90E32 or M90E36 Version - See CT4 Configuration
Please refer to Wiki
Sensor Inputs | CT Clamp | USER/UART
ATM90E32AS-AU (3 Phase)
ATM90E36A-AU (3+1 Phase)
Poly Phase Metering AFE
Power Modes
Auto DMA Control
Normally OPEN
Note: # Related to ATM90E36 Only
ATM90E36 Only
Power Modes (PM1/PM0)
DMA Control (ATM90E36)
* Default Setting
ATM_WO - Warning Out
High = Error
Defaults
WO - L
ZXx - HL
IRQx - L
CFx - L
Power Energy Monitor | ATM90E32 / ATM90E36
WLAN
2.4GHz 802.11b/g/n
2412-2484 MHz
GP12
Must be LOW on Boot
Decoupling close to ESP
* ESP32 Variants
On-board PCB Antenna
External IPEX
ADC 0.1V>3.2V = 0>4095
AT24C64
Address 0x50 (80)
Temperature ~1.5V / 10K / 20°C
User Jumper GP26
Open High
Closed Low
* OLED Pin Configuration
Pin 1 - Normally GND (2+3)
Pin 2 - Normally +3V3 (1+2)
GPIO Input Protection
I2C / OLED
MCU | ESP32 | EEPROM | OLED | NTC
AC
5-20V RMS
PSU Input intended for Low Voltage AC (i.e. Bell transformer 4V/8V/12V).
DC Power Input maybe used for development but the Energy Monitor will not function fully.
Bell Transformer 240V AC RMS In
Tapping 4V, Typically ~ 6.4 AC RMS Out
Tapping 8V, Typically ~ 12.8 AC RMS Out
Tapping 12V, Typically ~ 19.2 AC RMS Out
Power Suppy | DC Buck 3V3 | AC Voltage Sensors
AP63203 or AP63200 Buck Regulator Input Voltage Range 3.8V to 32V DC
USB UART providing Arduino Flashing
ESP32 Interface Wemos D1 Mini Compatibility
USB | UART | Monitoring | Flashing | Debug
Pulse Outputs Status LEDs
CF1 - Active (Red)
CF2 - ReActive (Green)
CF3 - Fundamental (Blue)
CF4 - Harmonic (Amber/Ylw)
Fiducials
Mounting 3.2mm
USER
USR Jumper will over-ride the USR button
For further information, please see our WIKI pages. ditronix.net/wiki
This schematic and PCB serves for both ATM90E32 and ATM90E36 variants. Jumpers for variations.
Production v1.2303-201
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(c) DitroniX - Dave Williams G8PUO
ESP32-S Int/Ext Ant
ATM90E32AS
ATM90E36A
ESP32 D1 Interface SDK
ditronix.net
DitroniX Ltd - UK
IPEM ESP32 ATM90E32 ATM90E36 Variant SDK 1.2303.201PU
ATM90E32-ATM90E36-IOT-POWER-ENERGY-MONITOR-BOARD
Sheet: 1/1
Drawn/Approved: Dave Williams
04/03/2023 14:55