

Apollo AGC Replica

Monitor Board

Inputs

CON1 – Power

1. +12V
2. GND

CON2 – RUN/SELECT Switch input

1. RSS1 Switch input
2. GND
3. RSS2 Switch input

CON3 – STEP MODE Switch input

1. SM1 Switch input
2. GND
3. SM2 Switch input

CON4 – CLOCK MODE Switch input

1. CM1 Switch input
2. GND
3. CM2 Switch input

CON5 – STANDBY ALLOWED Switch input

1. SA1 Switch input
2. GND
3. SA2 Switch input

CON6 – INSTRUCTION STEP Switch input

1. IS1 Switch input
2. GND
3. IS2 Switch input

CON7 – CLOCK STEP Switch input

1. CS1 Switch input
2. GND
3. CS2 Switch input

CON8 – MASTER RESET Pushbutton input

1. MRST Pushbutton input
2. GND

Outputs

CON11 – CONTROL signals

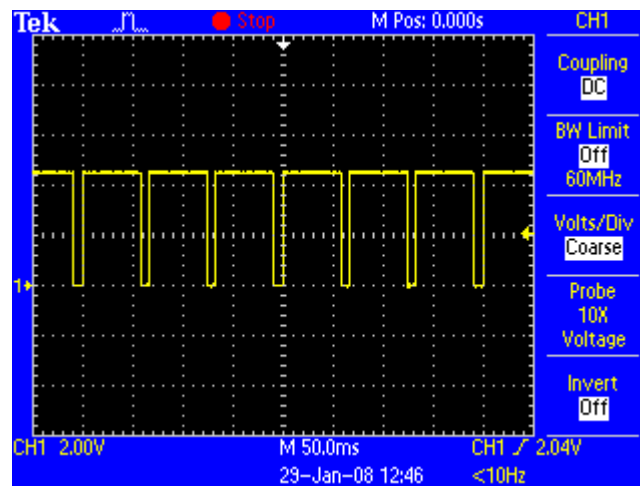
1. NRUN – De-bounced output from RUN/STEP switch
2. INST – De-bounced output from STEP MODE switch
3. FCLK – De-bounced output from CLOCK MODE switch
4. NSA – De-bounced output from STANBY ALLOWED switch
5. NSTEP – De-bounced output from INSTRUCTION STEP switch
6. MCLK – De-bounced output from CLOCK STEP switch
7. GND
8. GND

CON10 – RESET CONTROL Outputs

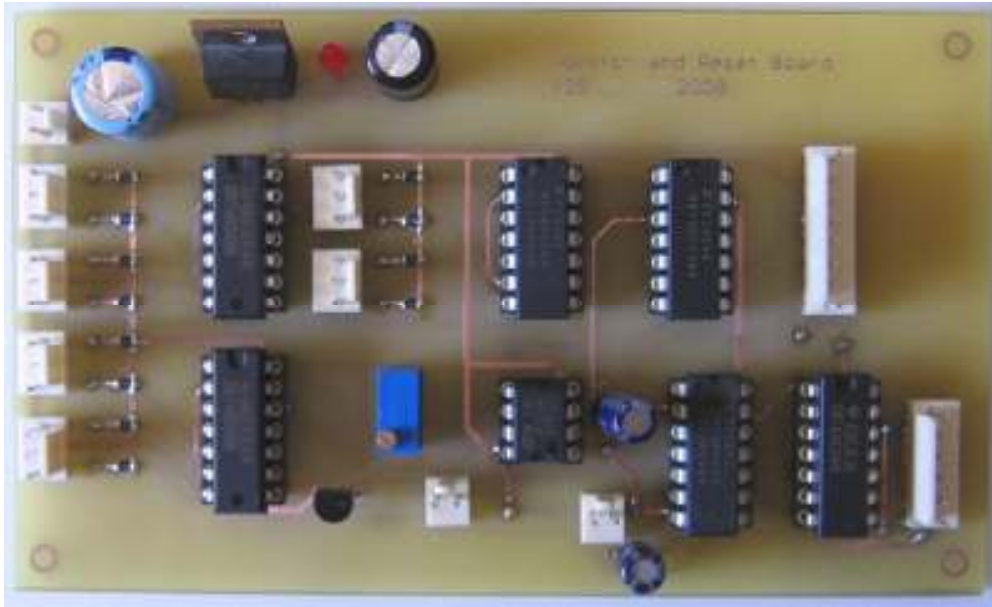
1. Buffered Reset output line SL RSTA
2. Buffered Reset output line SL RSTB
3. Buffered Reset output line TP NPUR
4. Buffered Reset output line CK NPUR
5. Reset Output line NPURST
6. GND

CON9 – RESET LED Outputs

1. RESET LED connection A
2. RESET LED connection K



Picture 1 - The above picture shows the 15Hz clock (yellow trace) output from the onboard de-bounce 555 timer circuit



Picture 2 - The above picture is the completed and assembled Clock Generator PCB

Comments

The only thing that is different to the original circuit done by John Pultorak is that I have removed the scaler select switch input and placed it on the clock board. When I get around to updating this board I will use 74HC14 schmitt trigger inverters with pull up/down resistors on the inputs as well as a 0.1uF capacitor to ground. I would also use a dedicated reset controller with a de-bounced push button input pin.

Jan 2008