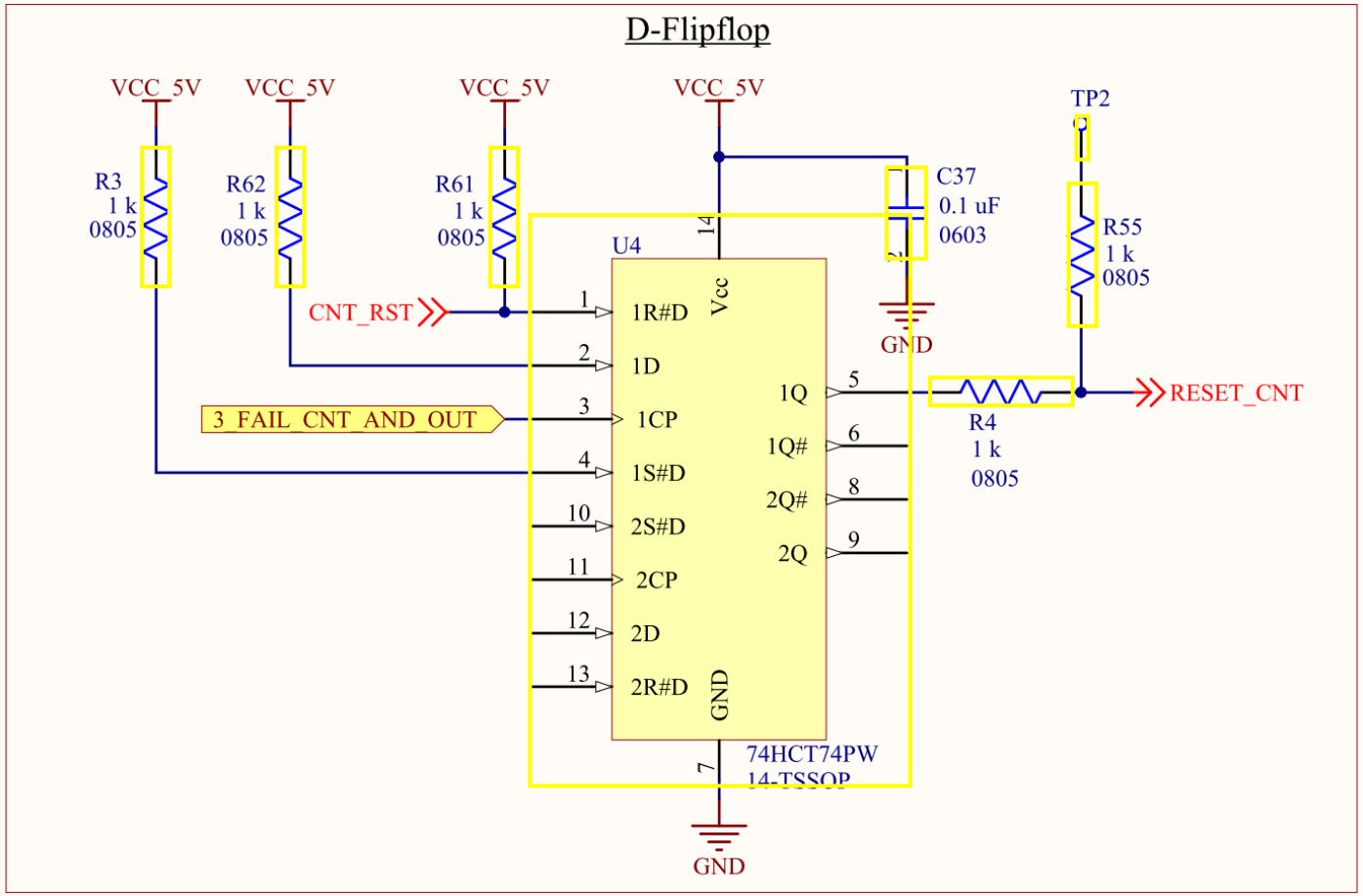
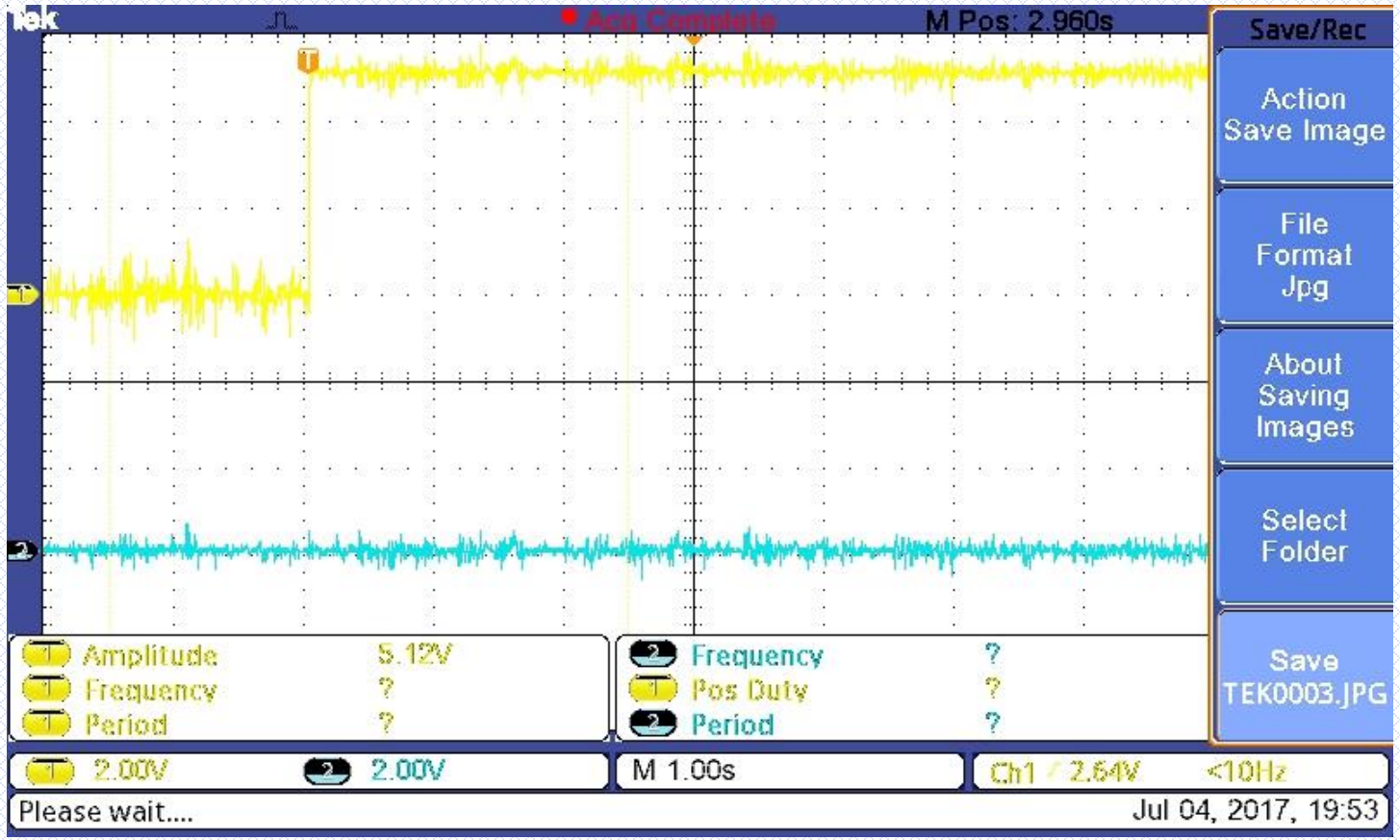
Part #: 74HCT74PW
Function: D-type flip-flop
Description: Dual D-type flip-flop with set and reset; positive-edge trigger; TTL-enabled

Our Circuit diagram:



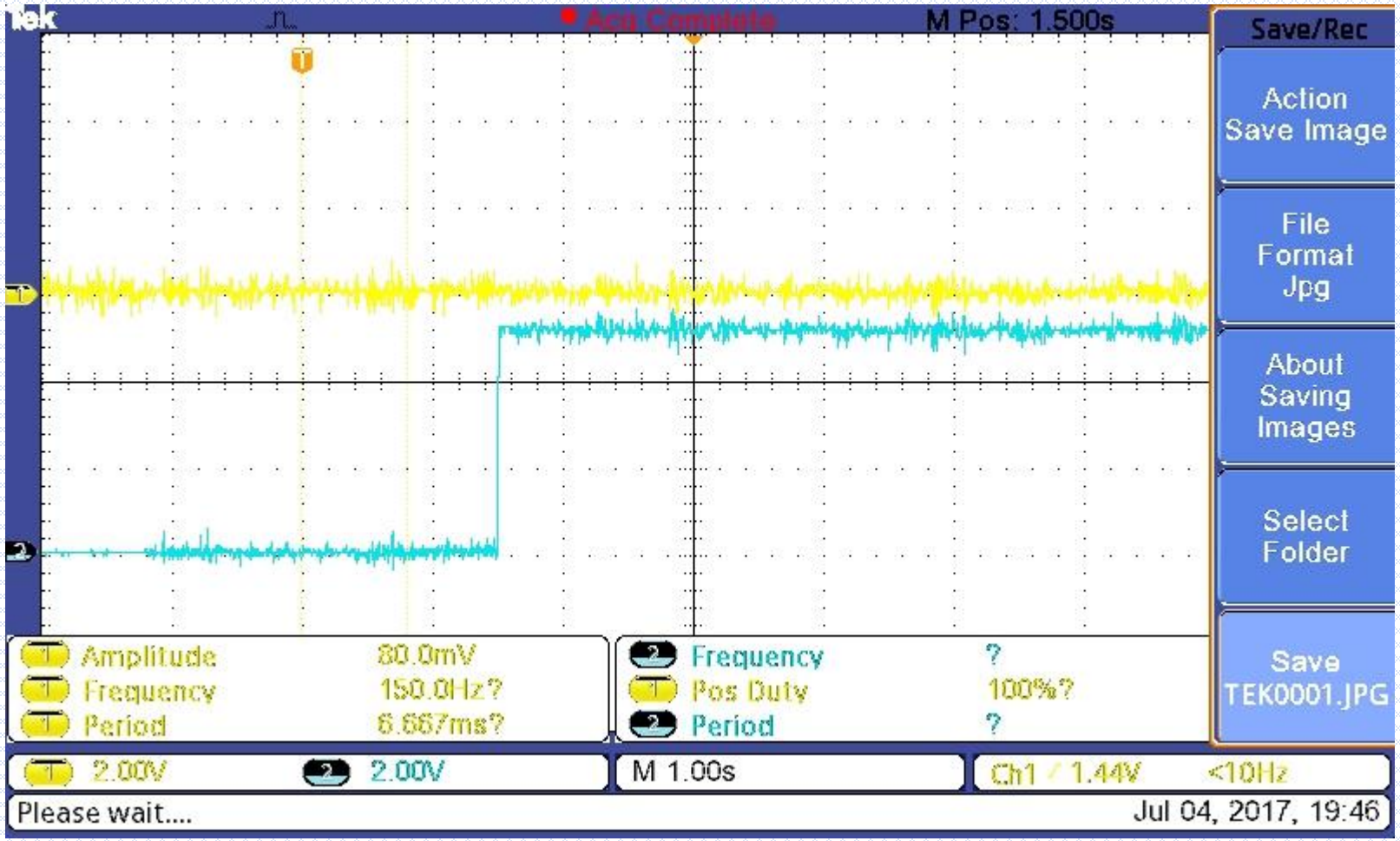
Waveform-1: Flipflop Vcc(Yellow) vs CP(Blue)

When the Vcc +5V is ON, the Clock (CP) is in Low state.



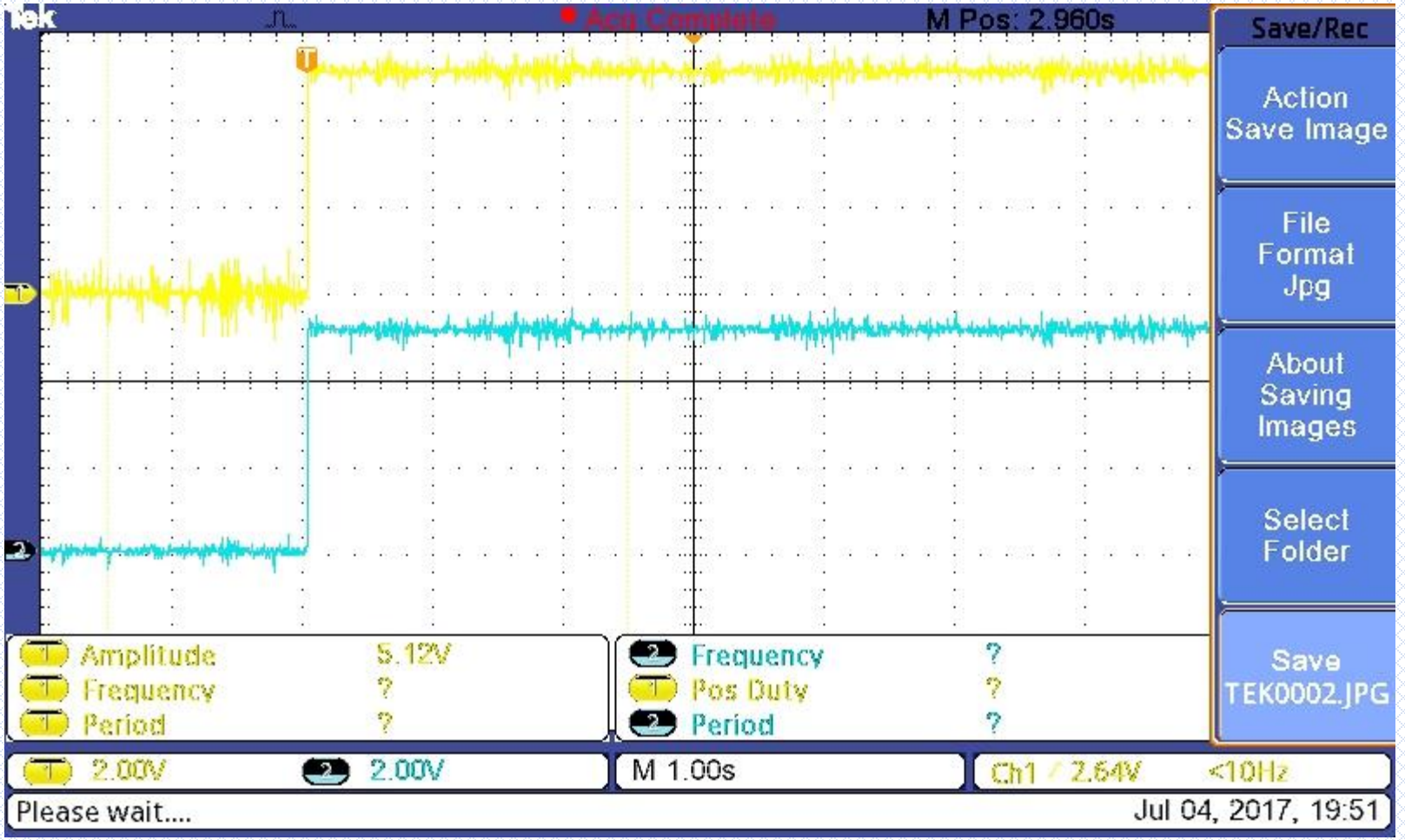
Waveform-2: Flipflop CP(Yellow) vs 1Q(Blue)

When the Clock (CP) is in Low state, the Output (1Q) is going HIGH



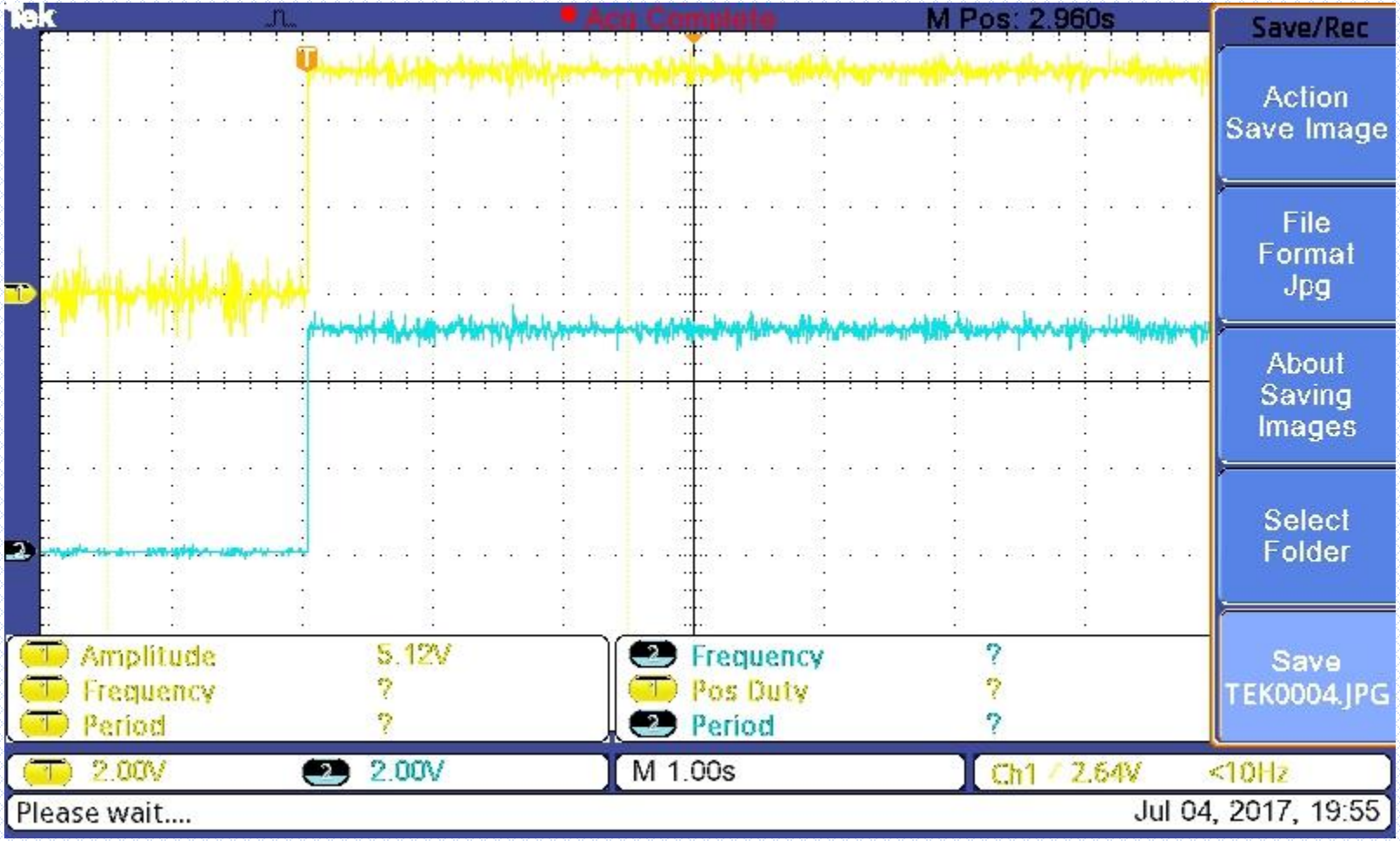
Waveform-3: Flipflop +5V Vcc(Yellow) vs 1D(Blue)

When the Vcc +5V is ON, Data input-1 (1D) is going to HIGH state (It is pulled-up to Vcc_+5V).



Waveform-4: Flipflop 1D(Yellow) vs 1Q(Blue)

When the Data input-1 is going HIGH, the Output (1Q) is going to HIGH state.



As combined:

When the Vcc is ON,

- Clock (CP) is in LOW state,
- Data input-1 is going HIGH and
- Output (1Q) is going to HIGH.

Note: Pin 1R#D and 1S#D were pulled-up.