

TIME DOMAIN REFLECTOMETRY ADAPTER FOR OSCILLOSCOPE

DESIGN and LAYOUT

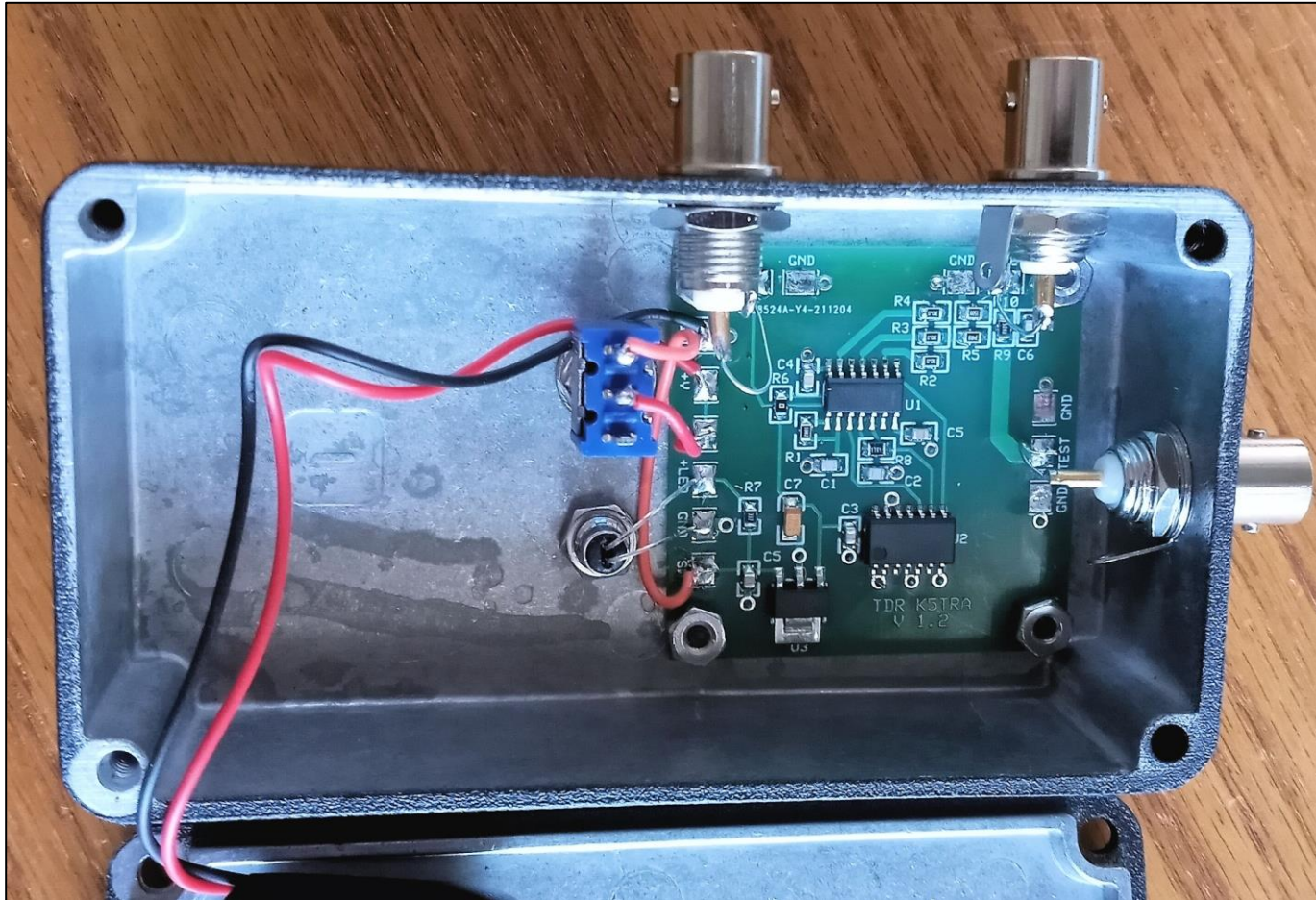
OVERVIEW

- Impulse type TDR adapter based on QST May 2021 from WØSJ
- Improvements include 74AC14, compensated output and surface mount assembly
- 5 nS resolution (150 to 200 MHz oscilloscope)
- Pulse repetition rate is 5 μ S (200 KHz)
- Built in Hammond 1590B Aluminum housing

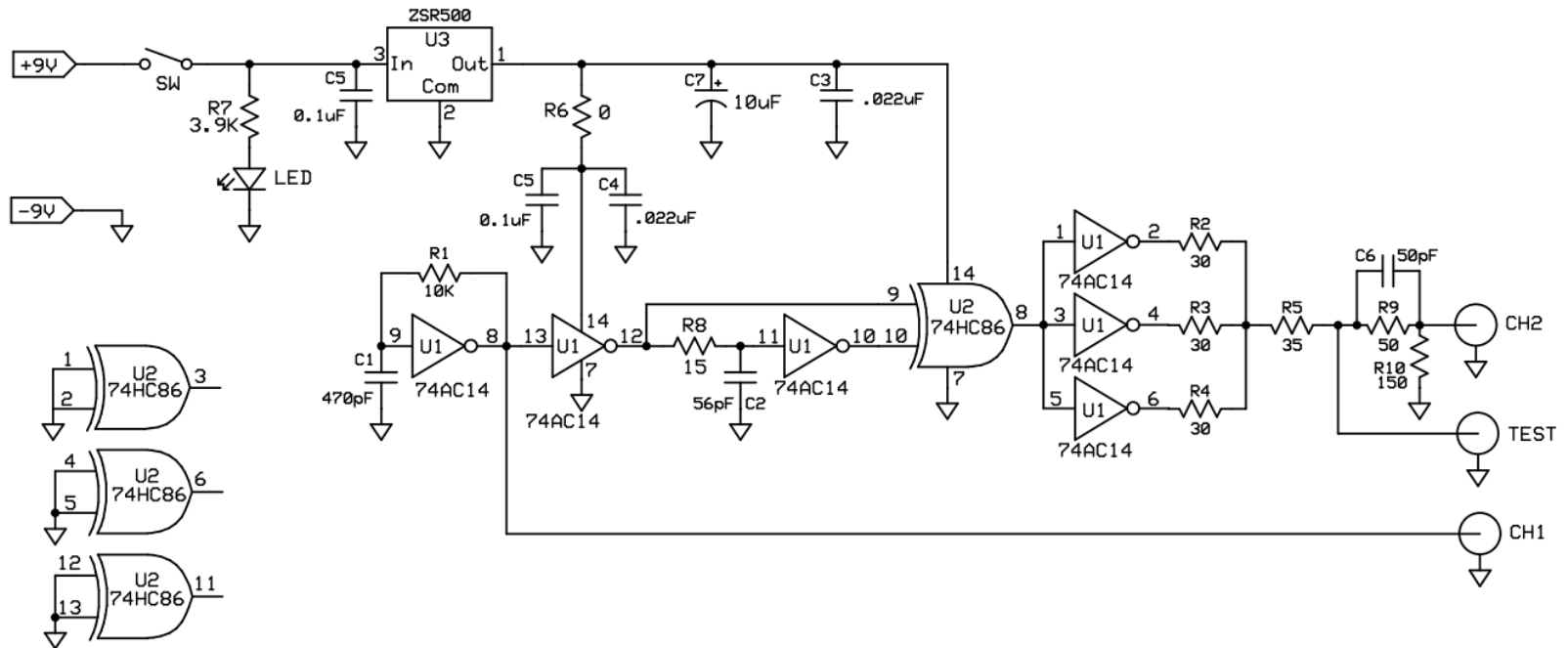
TDR ADAPTER



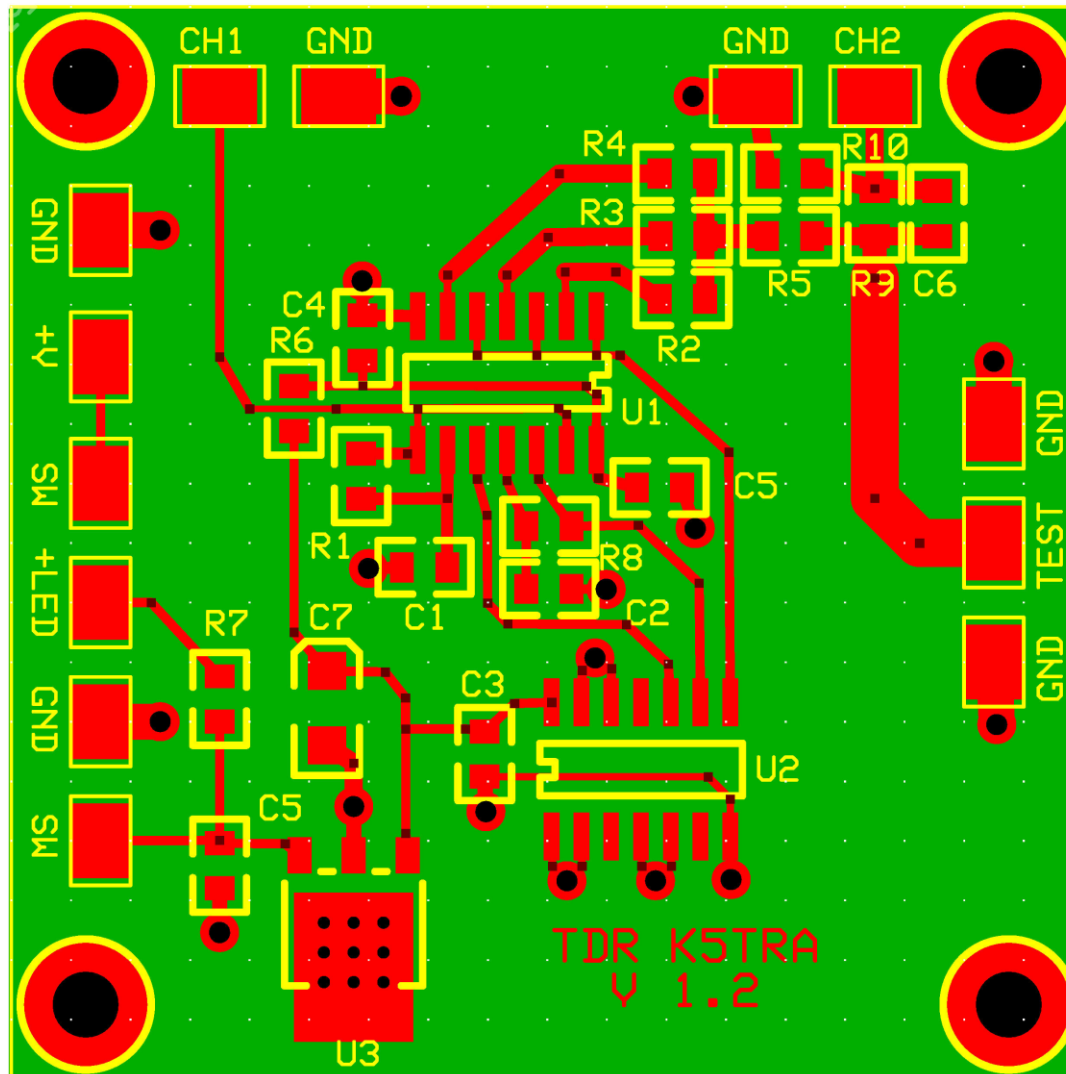
TDR ADAPTER - INTERIOR



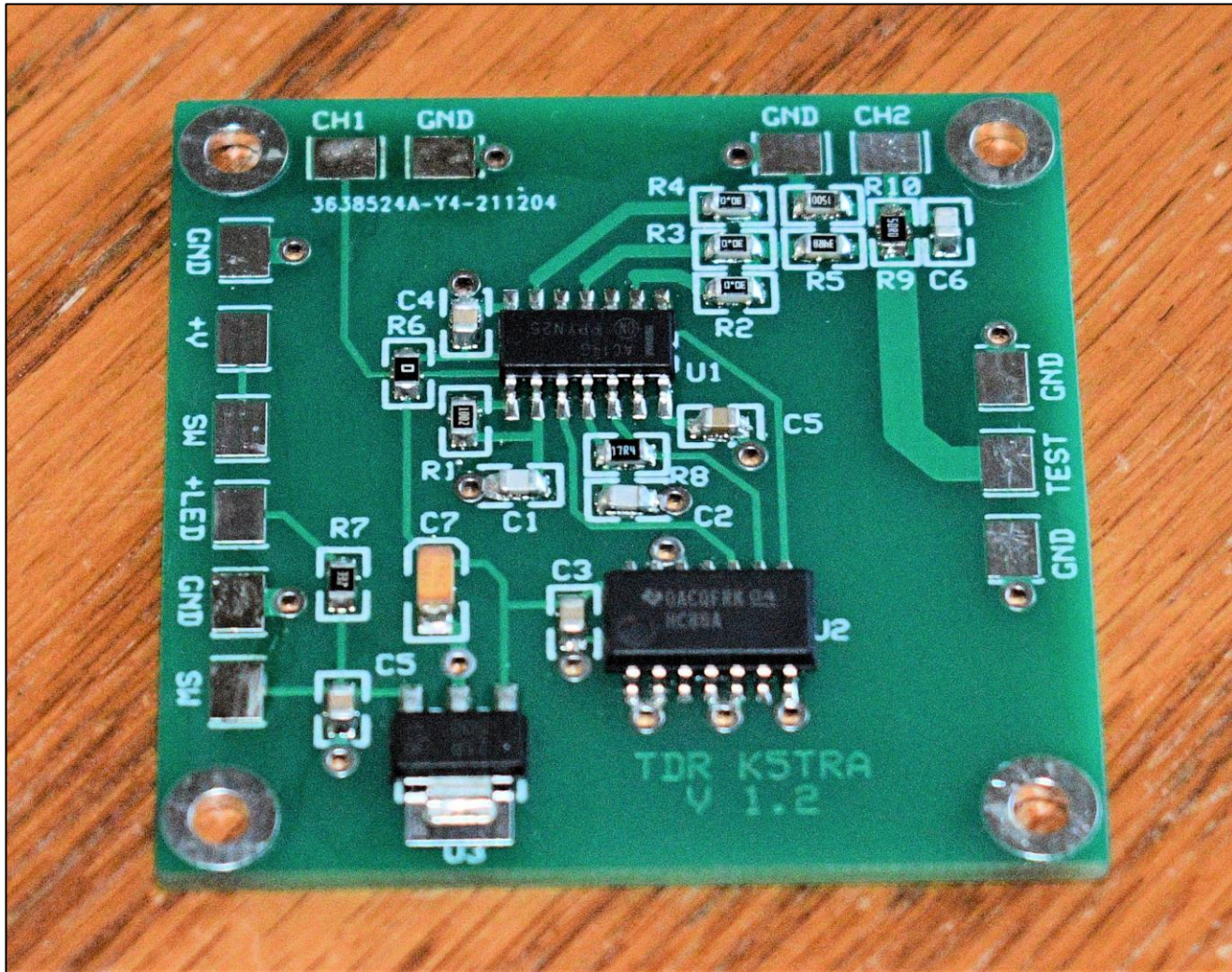
TDR BOARD SCHEMATIC



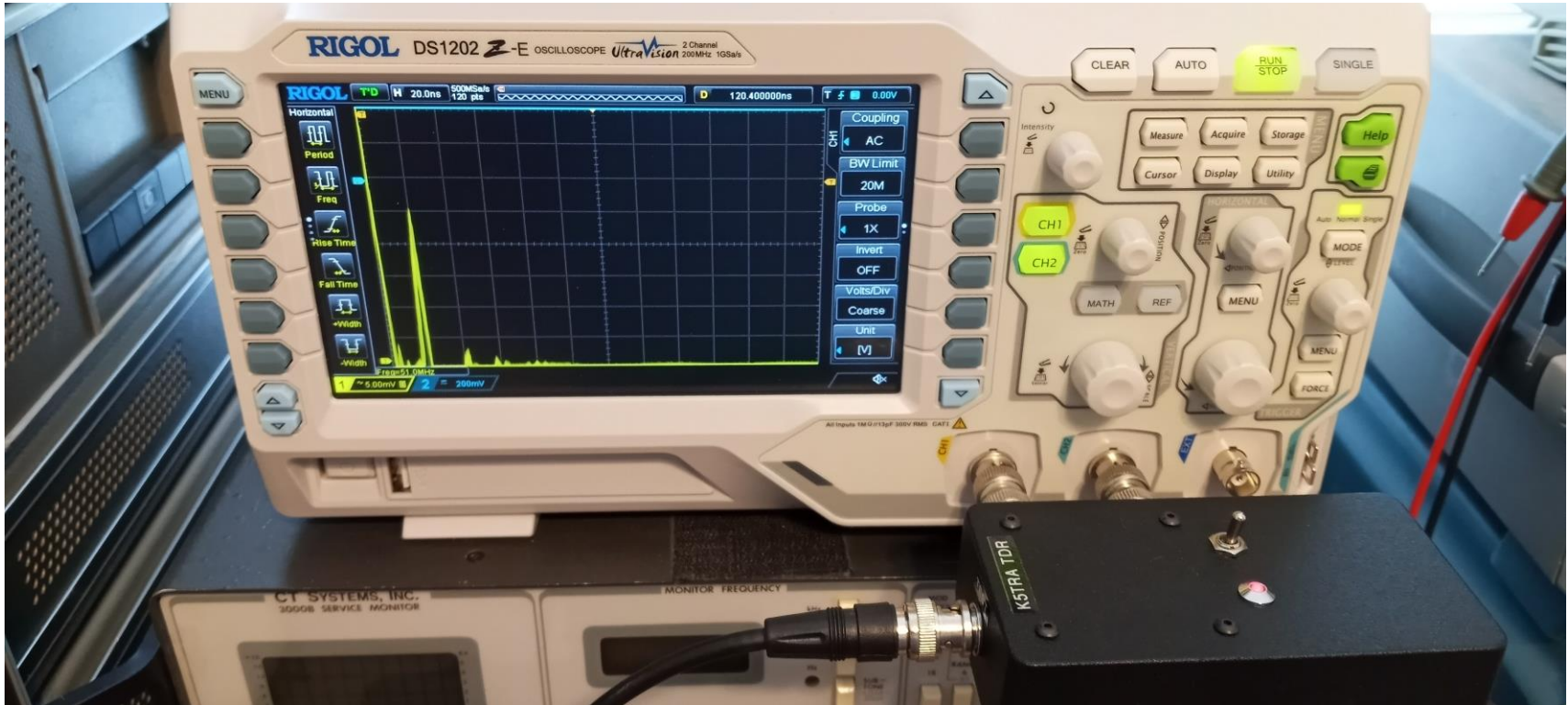
TDR BOARD LAYOUT



ASSEMBLED PC BOARD



TDR DISPLAY



- Scope set to 20nS / division
- 20 nS return from open circuit RG58, length = 74"
- Calculated velocity factor = 0.63

SUMMARY

- Sync with scope channel 2
- TDR response on scope channel 1
- Internal 9v battery
- 5 nS resolution