

# Time-domain reflectometry for CCT subscale2

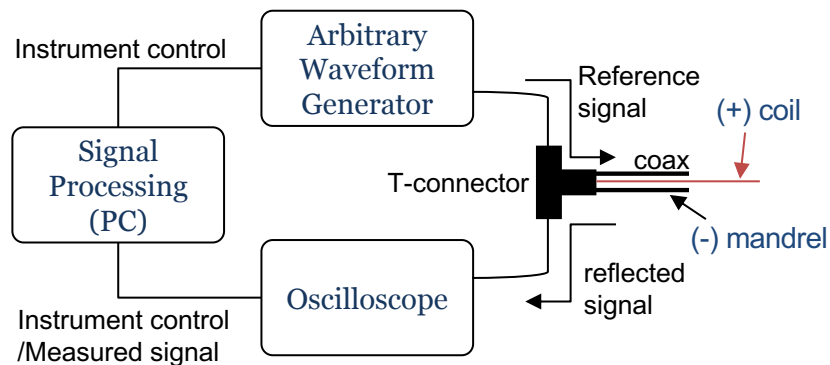
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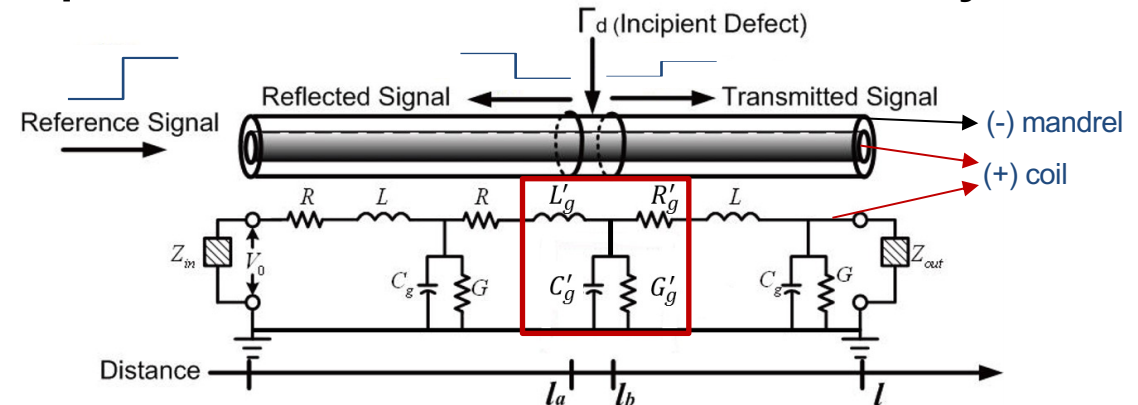
# Electrical reflectometry setup for CCT subscale 2

- The inner/outer layer of CCT subscale 2 can be considered a transmission line.
- Coil (+), Mandrel (-), Resin/Epoxy (insulation)
- The incident signal will be reflected at the impedance discontinuity (mismatch) points
  - Insulation defect, voltage taps, short
- Additional capacitors and diodes are connected to isolate the instrumentation equipment

## TDR setup



## Equivalent circuit for subscale2 – Inner layer





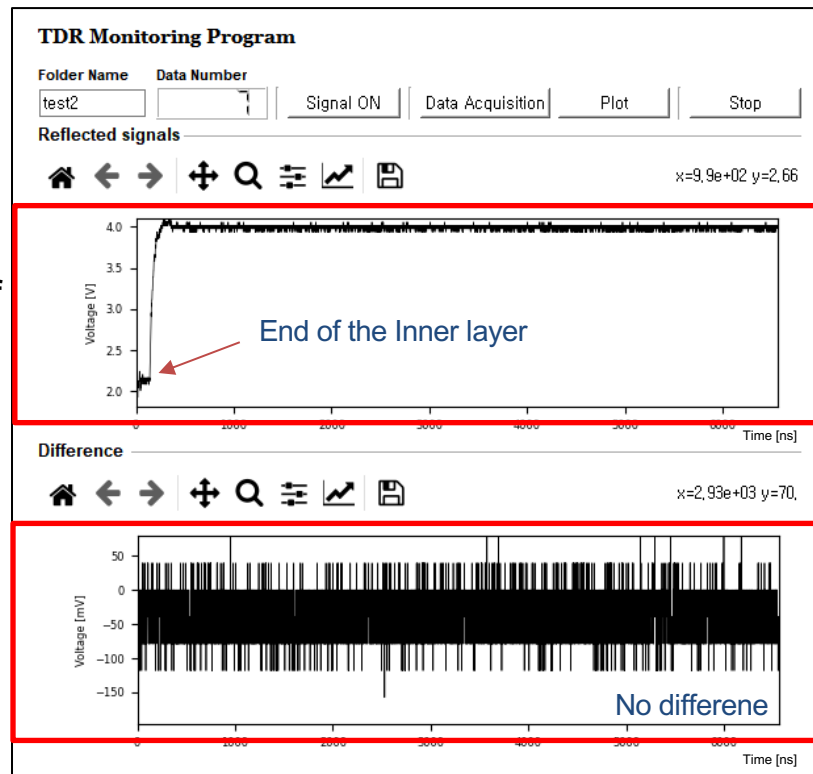
# Example of TDR monitoring program

- Monitoring the difference value from the reflected signal at normal conditions
- Quench localization using the point where the difference occurs

## Normal (open)

Continuous monitoring of reflected signals.

Baseline subtraction:  
Difference from the first reflected signal (finger prints)



## Abnormal (short)

