

CDM Target for TDT TLP Transients

notes for WG 5.5

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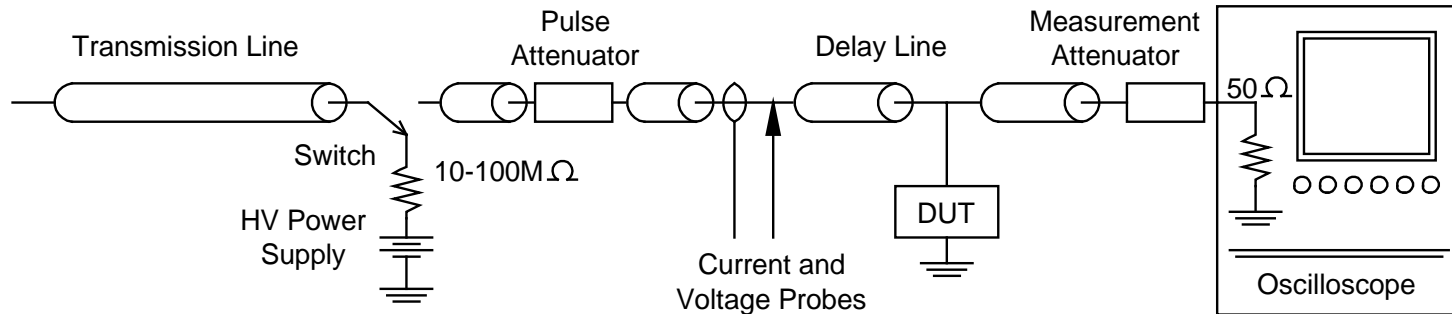
Outline

- Part I (short):
 - Suggested TDT Target, CDM tester+ device
- Part II (longer):
 - TLP Transient Evaluation
 - See submitted EOS/ESD abstract
 - Will discuss highlights only

Part I

Time-Domain Transmission-CDM

Concept: New TDT Target



Recommended Pulse Attenuation: 6dB to 20dB

Recommended Measurement Attenuation: 6dB to 20dB

Source: 5.5.2 spec

Figure 5: Time Domain Transmission (TDT) VF-TLP

For “DUT”, we would have

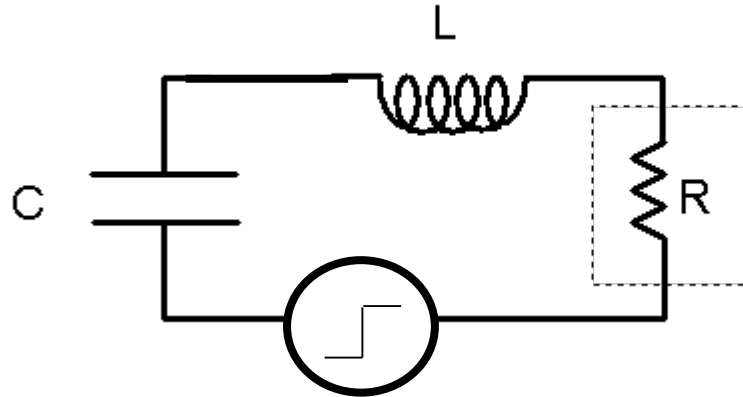
CDM tester, connected at pogo pin, minus 1 ohm R

T-line shields on top ground plane

Device mounted, contacting pogo pin

Note the connection to CC-TLP (but DUT sees 25 ohms)

Simplified CDM Network



$$Y(s) = \frac{Cs}{LCs^2 + RCs + 1},$$

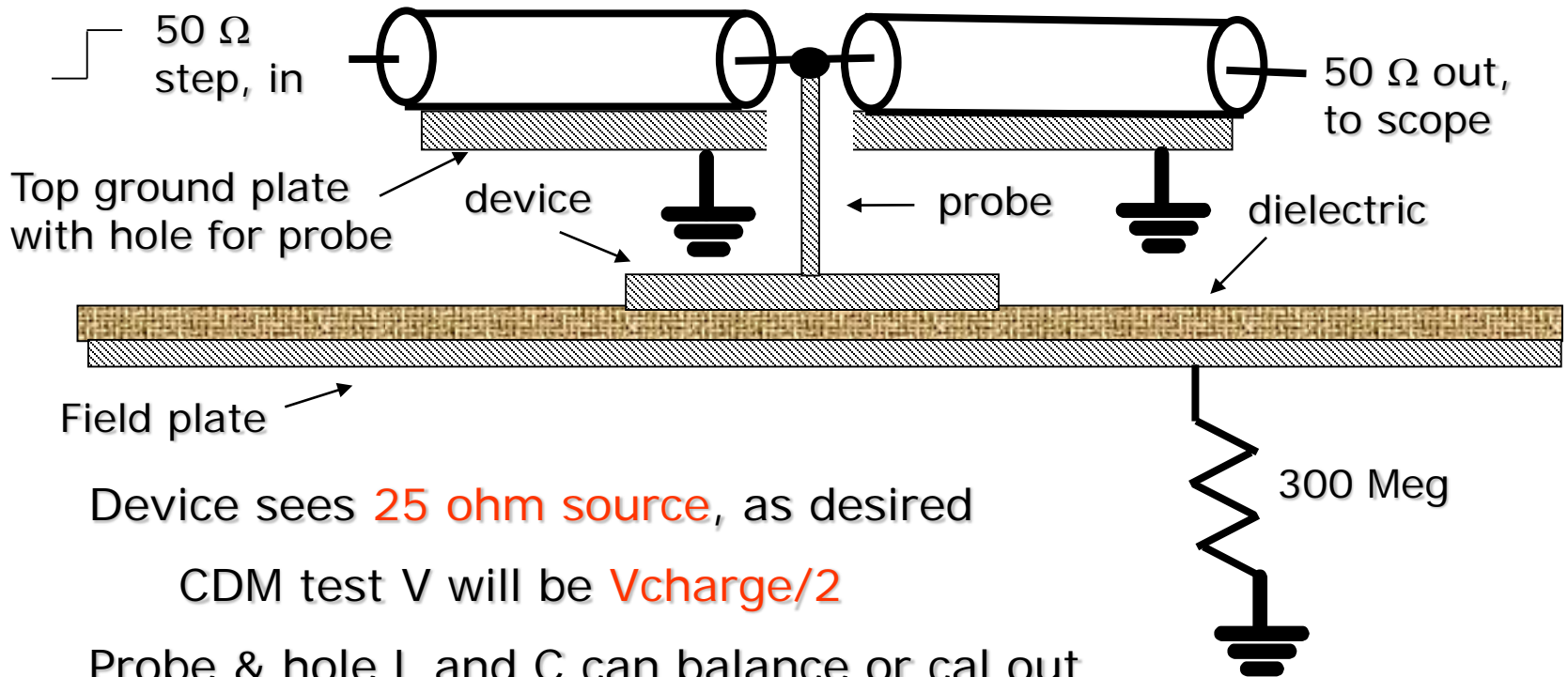
Examine step response of this network

Yes, CDM is always a step response

Even with a more detailed network

R is spark resistance, ~25 ohms

TDT-CDM testing & characterization



Device sees **25 ohm source**, as desired

CDM test V will be **Vcharge/2**

Probe & hole L and C can balance or cal out

Thru pulse has current and CDM net info

Should see **ESDA & JEDEC waveforms**

Can use NWA and look at S12, S11 also

Part II

TLP Transient Evaluation (deleted)