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INTERCONNECT CHARACTERIZATION

COMPLIANT PROBE CONTACTOR

CONTACT: 0.020" diameter pogo pins

SUPPORT MATERIAL: Torlon 5530

MEASURED PARAMETERS:

Rise Time: 17.63 pS (3dB Bandwidth 19.84GHz)

Inductance of shorted adjacent path: 1.054 nH

Insertion Loss: 1.86% or 0.16dB for $f < 1\text{GHz}$

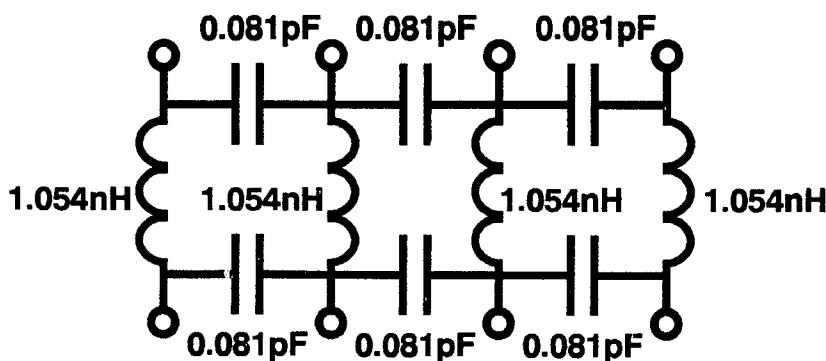
Capacitance of open adjacent path: 0.162pF

Cross talk:

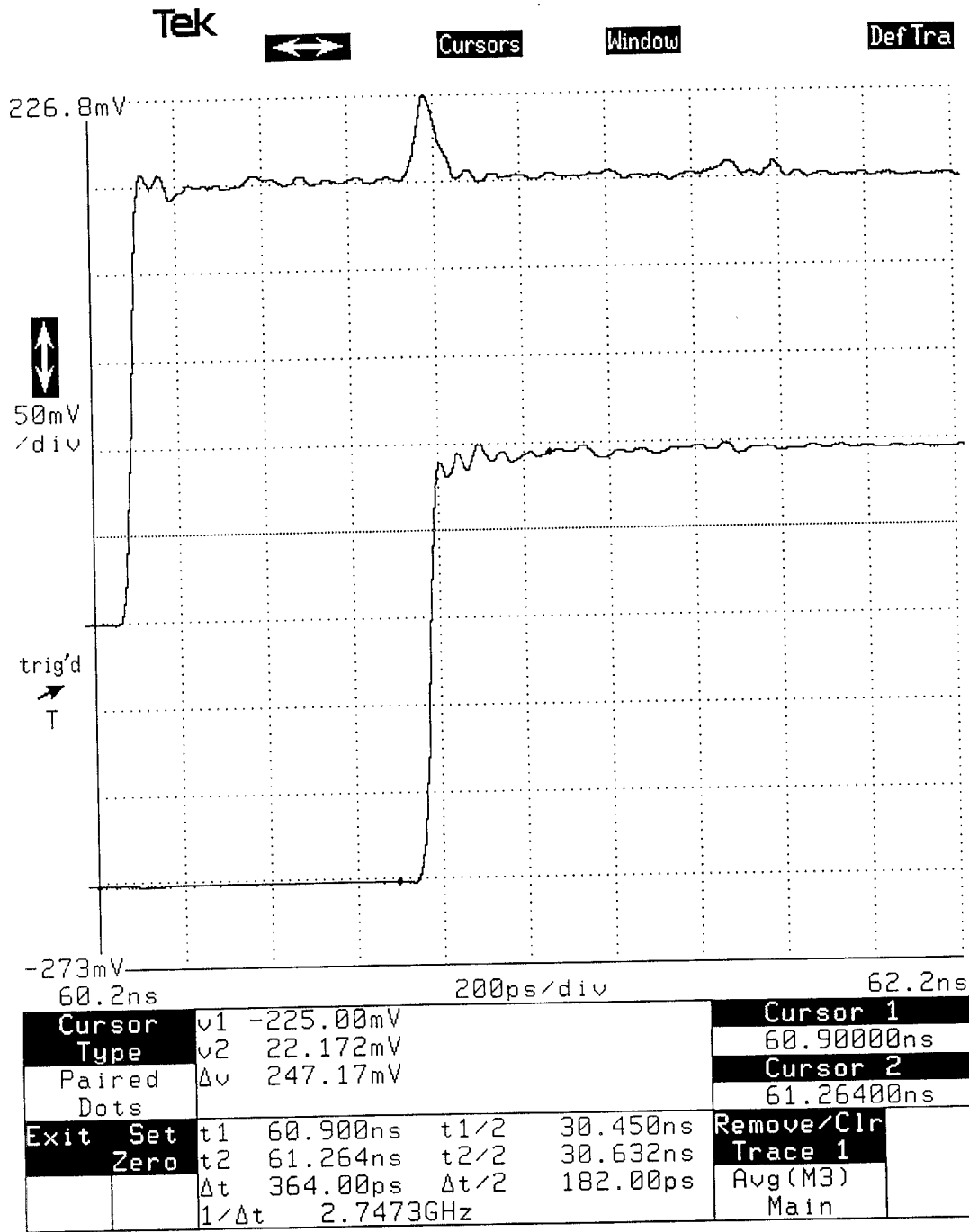
Inductive: 28.9% @ 29.1pS rise time

Capacitive: 22.3% @ 29.1pS rise time

SPICE MODEL:



HL HYPERLABS, Inc.
Ultrafast Sampler/TDR Instruments



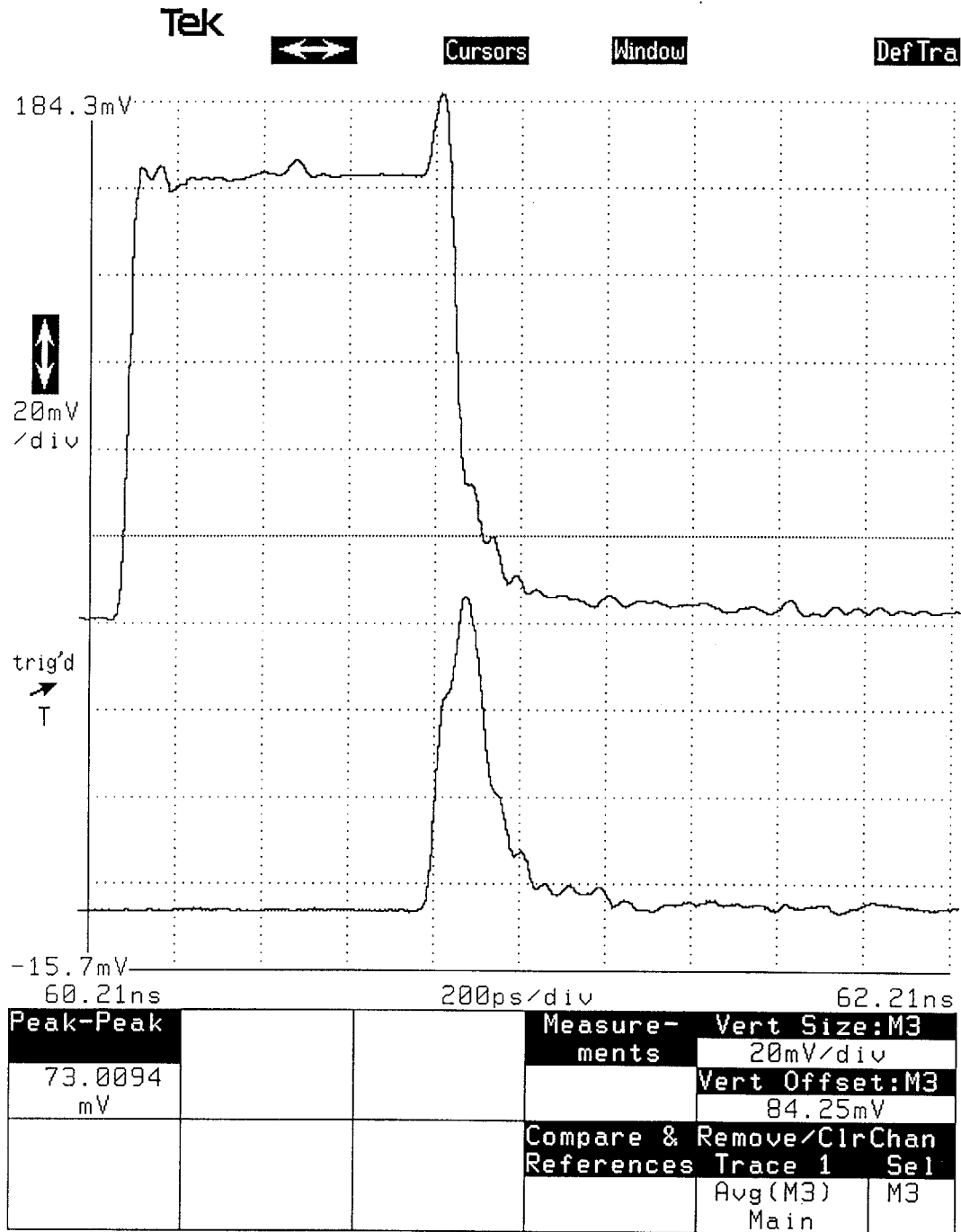
CALCULATIONS:

Insertion Loss= $V_{in}/V_{out}=251.77/247.17=1.0186$ or 1.8%
 $=20*\log 1.0186= 0.16\text{dB @ } f<1\text{GHz}$

CONFIGURATION: GSG

FIXTURE: 0.156" Gap in 0.141" Semirigide Coax

TESTED by: Agoston Agoston, Ph.D.



CALCULATIONS:

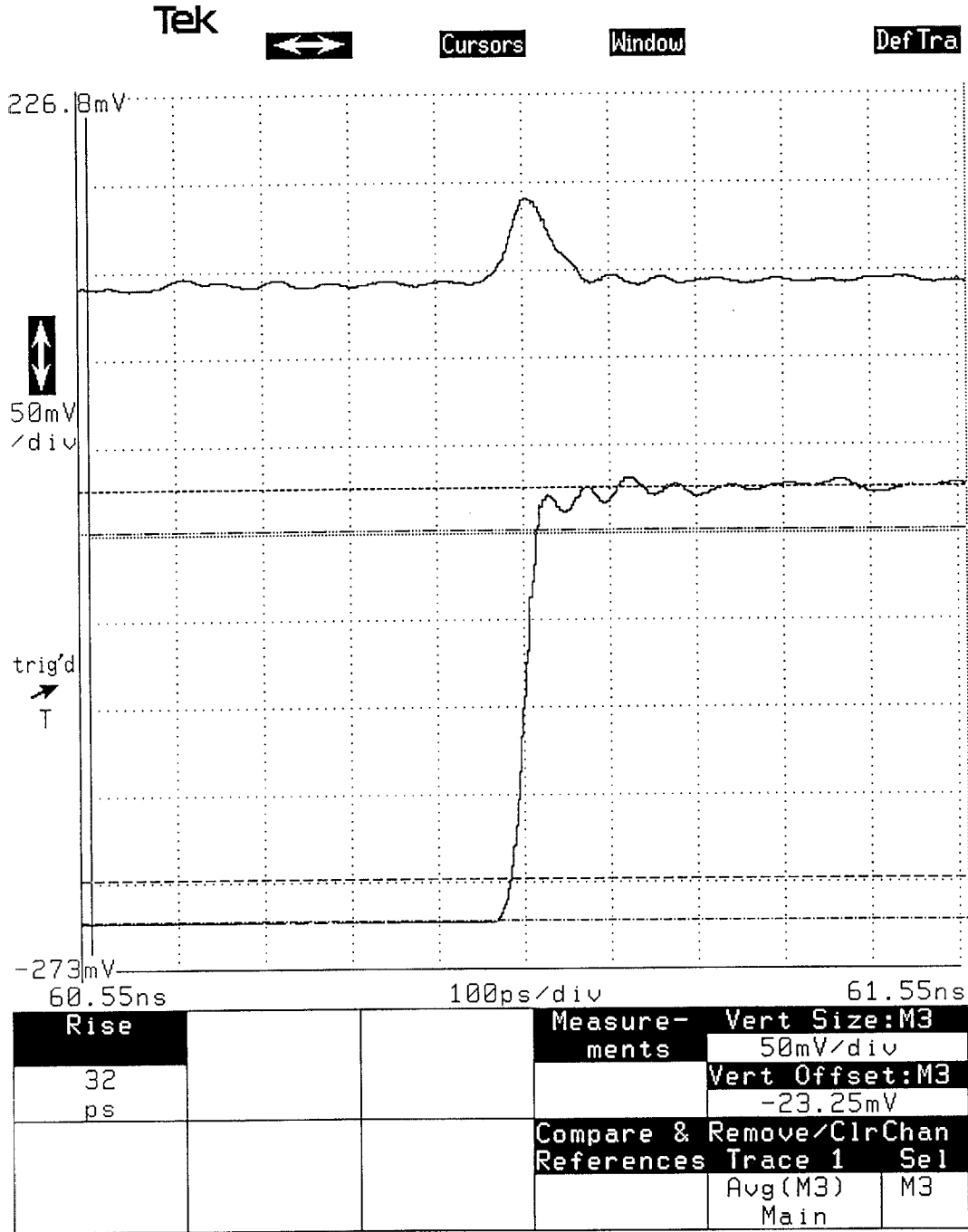
$$L_{adj} = 2 * V_{p-p} / (di/dt) = 2 * 0.073 * ((1/50) * (0.2014 / 29.1 * 10^{-9})) = 1.054 nH$$

$$\text{Inductive Cross Talk} = 73 / 251.77 = 28.9\%$$

CONFIGURATION: GSSG

FIXTURE: One 0.087" Coaxial Probe

TESTED by: Agoston Agoston, Ph.D.



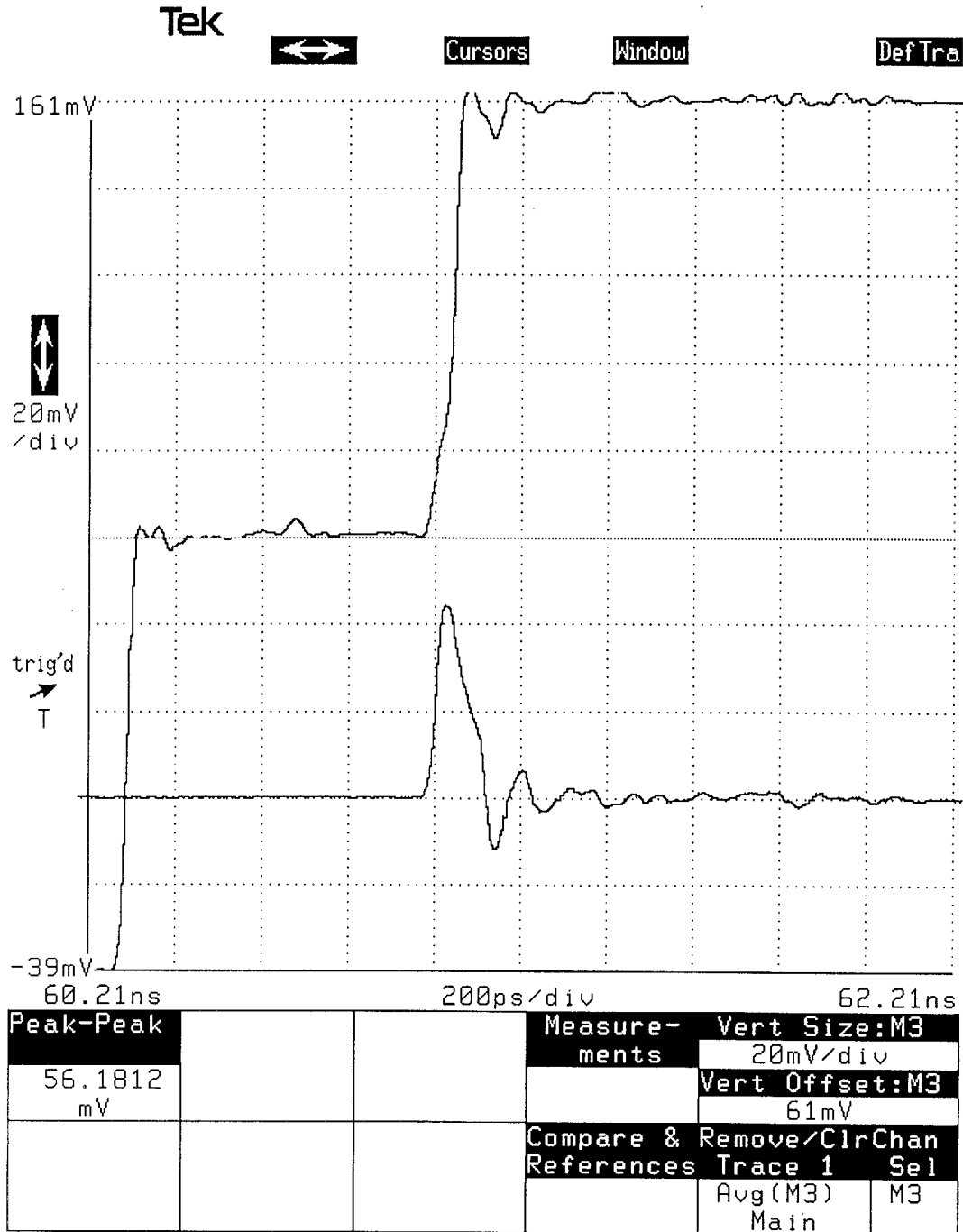
CALCULATIONS:

Rise Time = $\sqrt{32^2 - 26.7^2} = 17.63\text{ps}$
 3dB Bandwidth = $0.35/17.63\text{ps} = 19.84\text{ GHz}$

CONFIGURATION: GSG

FIXTURE: 0.156" gap in 0.141 Semirigide Coax

TESTED by: Agoston Agoston, Ph.D.



CALCULATIONS:

$$C_{adj} = V_{p-p} / ((dv/dt) * z_0) = 0.05618 / (0.8 * 255.77 * 50 / 29.1 * 10^{-13}) = 0.162 \text{ pF}$$

$$\text{Capacitive Cross Talk} = V_{p-p} / V_{amp} = 56.182 / 251.77 = 22.3\%$$

CONFIGURATION: GSSG

FIXTURE: One 0.087" Coax Probe

TESTED by: Agoston Agoston, Ph.D.