XAUI Compliance Channel

- Measurement data
- Specification method

Compliance Points

Z_{out}

Driver characteristics
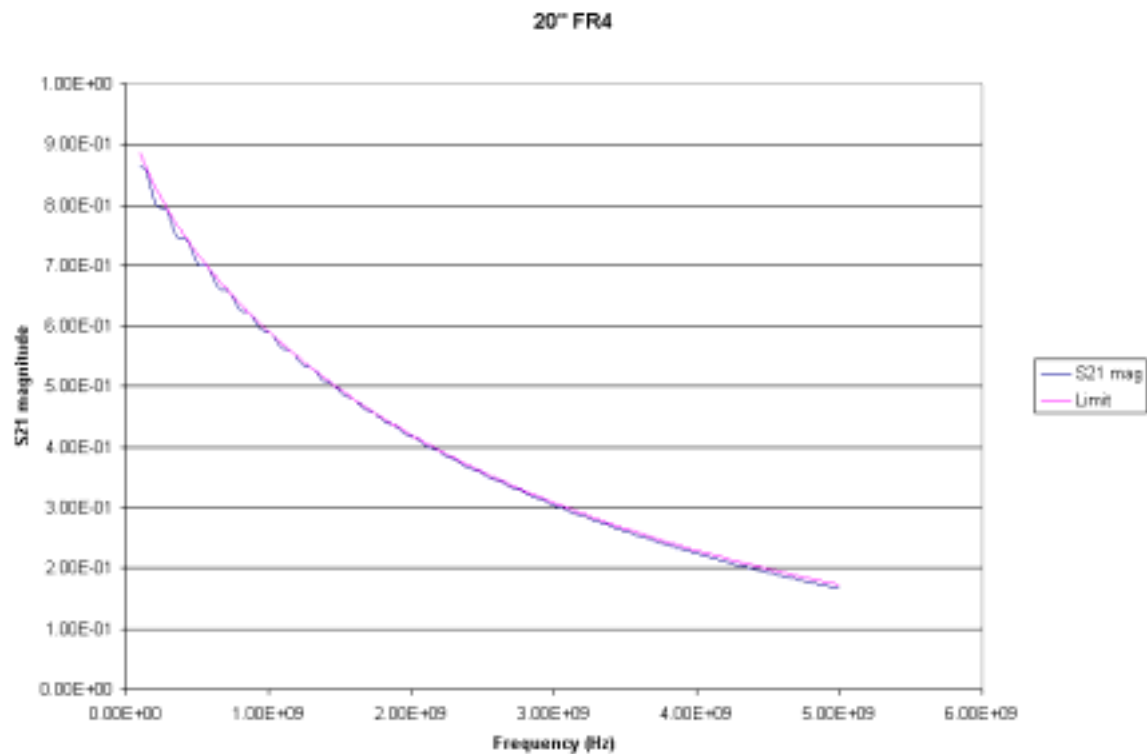
R_{load}

Far-end template

R_{load}

Z_{in}

Implementation-specific

Data

20" FR4

S21 magnitude vs Frequency (GHz) plot with legend:
- 5 mil stripline - measured
- 5 mil stripline - measured
- 8/8 mil stripline - measured
- 5 mil microstrip - sim'ed
- 5/10 mil microstrip - sim'ed
- Fit - analytic
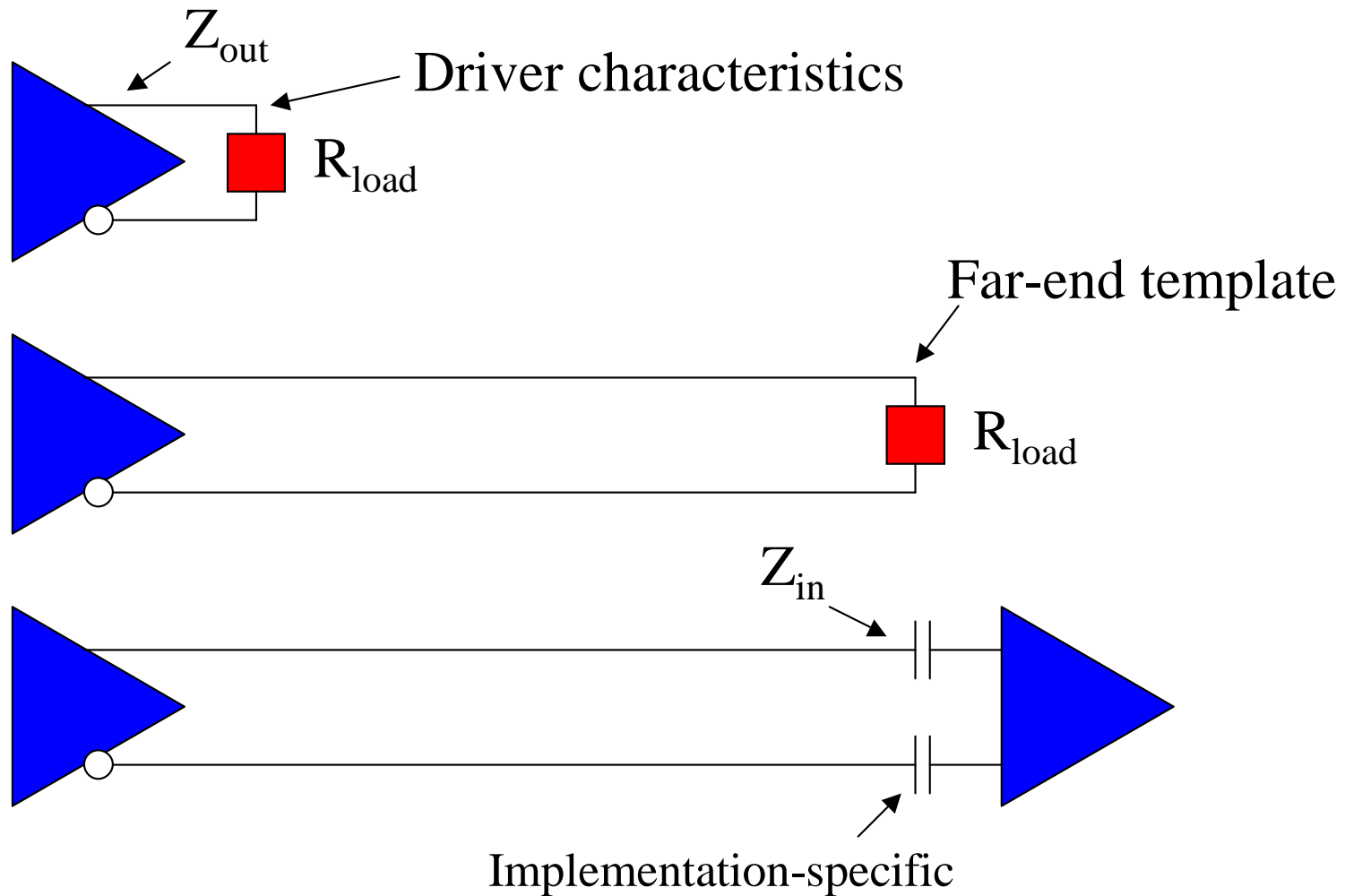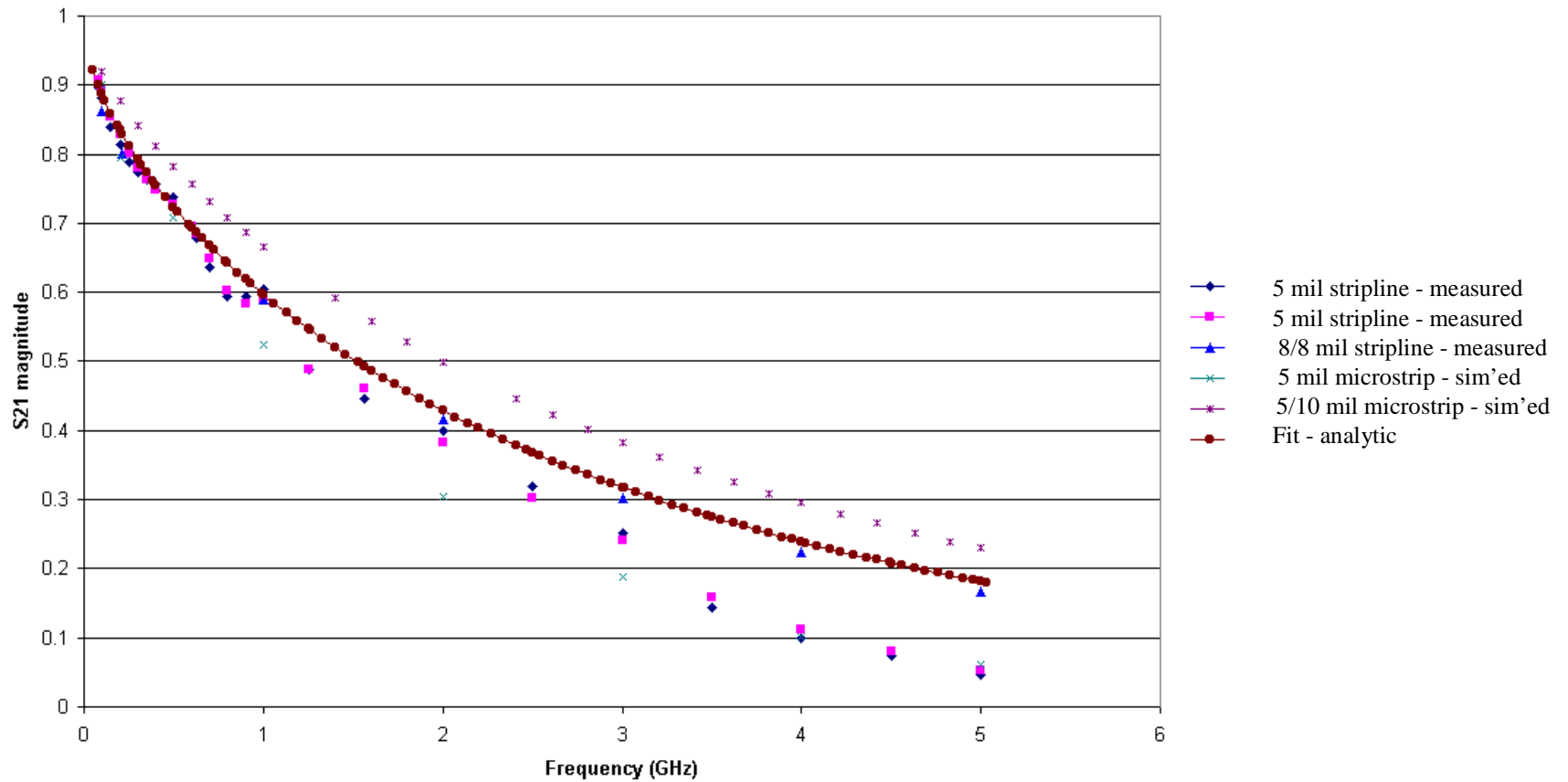
Compliance Channel – loss limit

20" FR4

$$|S21| < \exp (-(a \, sqrt(f) + b \, f))$$

Example limit: a = 1e-5, b = 2e-10

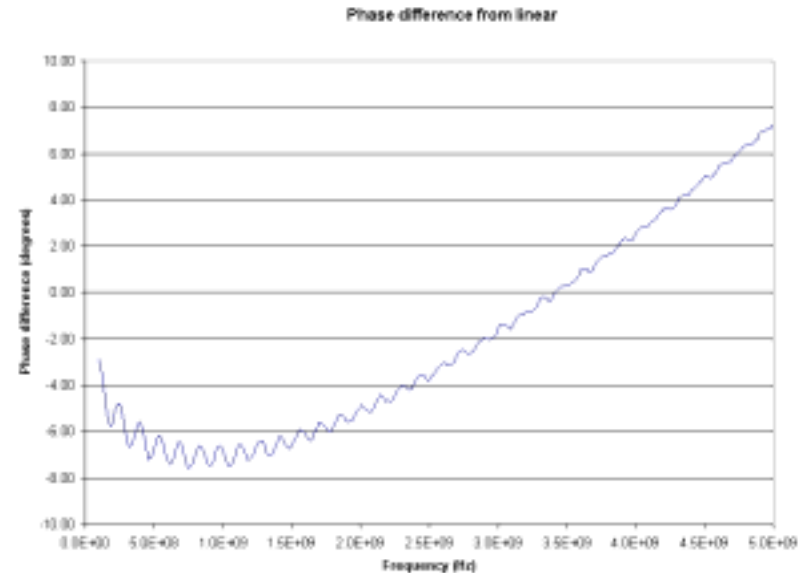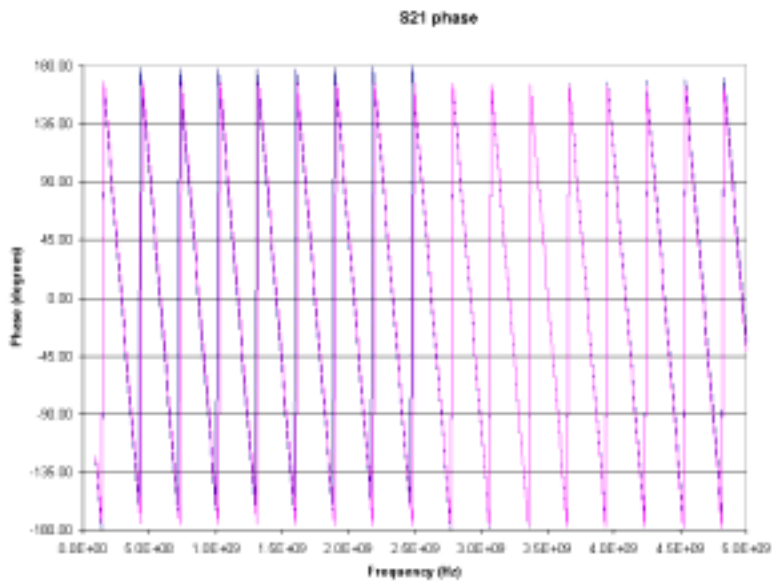*Differential stripline: 8 mil traces, 8 mils apart, 15 mil trace-planes*

Compliance channel – ISI limit

20" FR4

ISI loss = 4.1 dB

312.5 MHz   1.5625 GHz

Example limit: ISI loss > 4 dB

Differential stripline: 8 mil traces, 8 mils apart, 15 mil trace-planes

Compliance Channel - phase linearity

Example limit: Phase difference < 10 degrees

Differential stripline: 8 mil traces, 8 mils apart, 15 mil trace-planes

Channel Specification

- Max S21 magnitude limit
- Min ISI loss
  - Include > Fbaud/2
- Group delay or phase difference from linear
- Channel impedance