



Digital Enterprise Group

**CIG**

Communications Infrastructure Group

# Return Loss, $A_{\max}(f)$ , and Channels

# Transmission lines used to fit to $A_{max}(f)$

## ■ 2 lines used

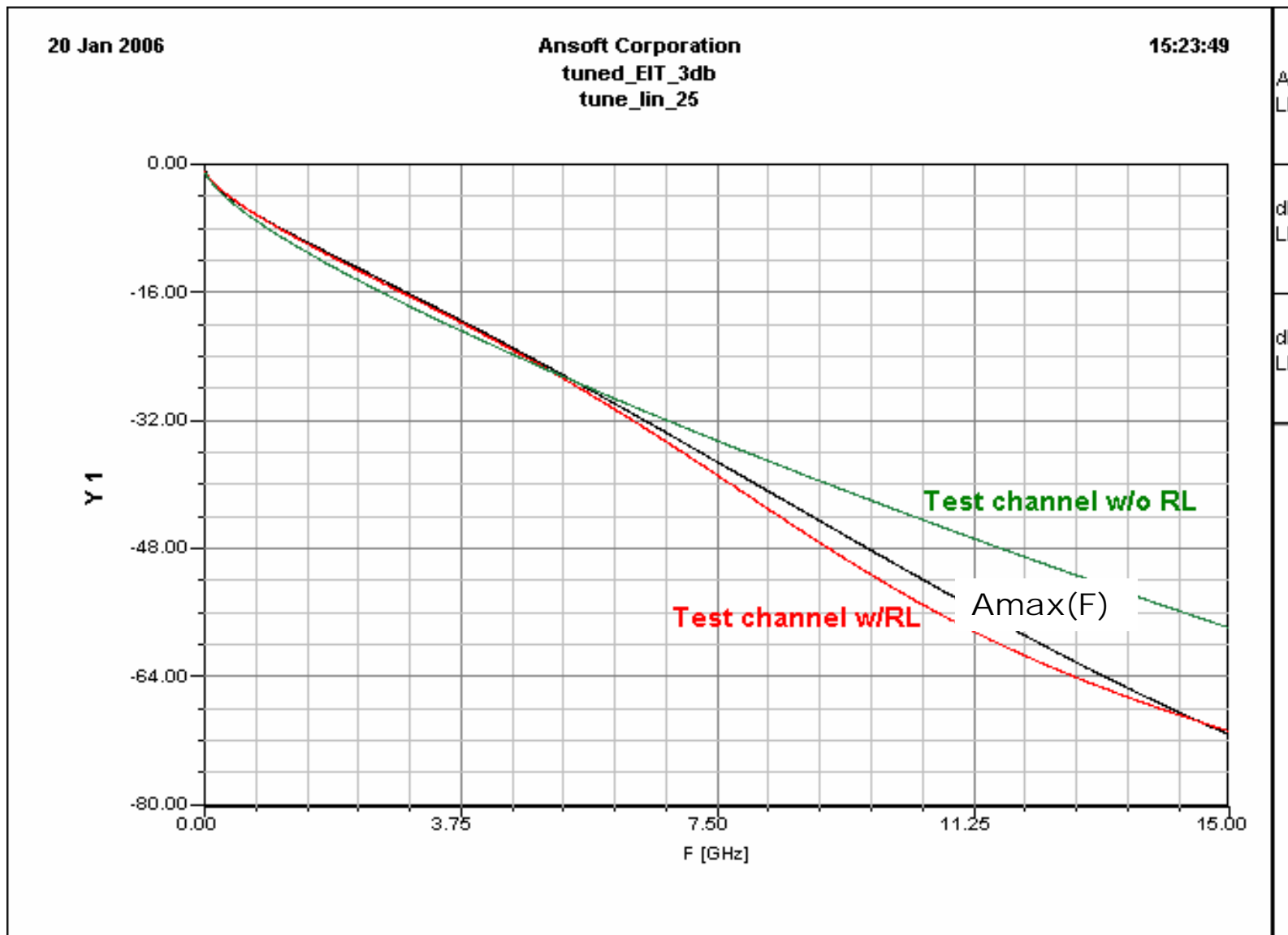
### 1. Lossy transmission line only

- No connectors
- Very low return loss
- Very linear loss vs freq.

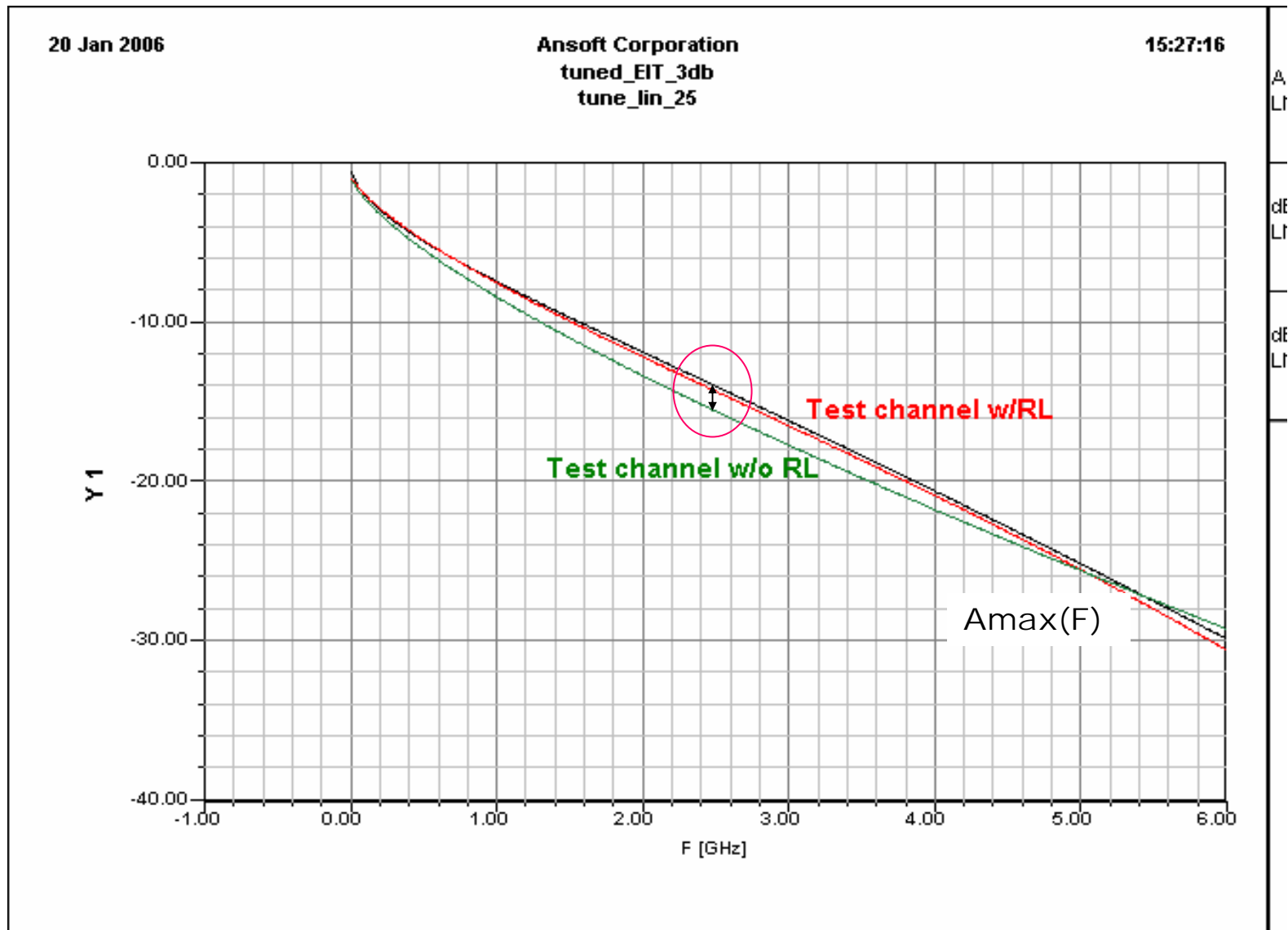
### 2. Lossy transmission line and connector

- Connectors added to each end of line
- Moderate return loss
- Slight impairment to loss line in order to match better to  $A_{max}(f)$

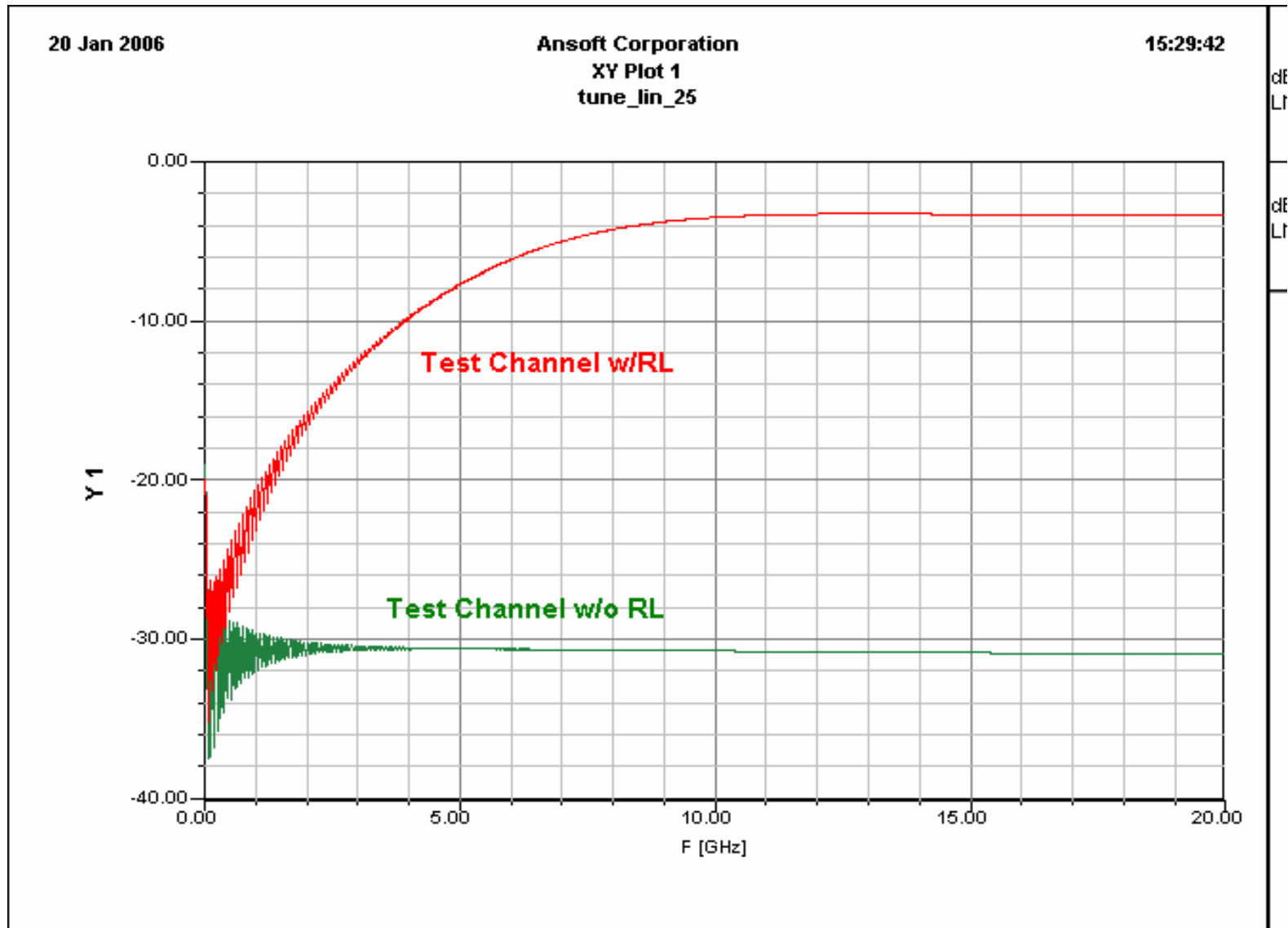
# Insertion Loss



# Insertion loss closer view



# Return Loss



# Conclusion

- AFmax must include some RL