

# Chapter 6

## RAPIDESIGNER slide rule

### 6.1 RAPIDESIGNER slide rule

National's Transmission Line RAPIDESIGNER slide rule makes quick work of calculations frequently used in the design of data transmission line systems on printed circuit boards.

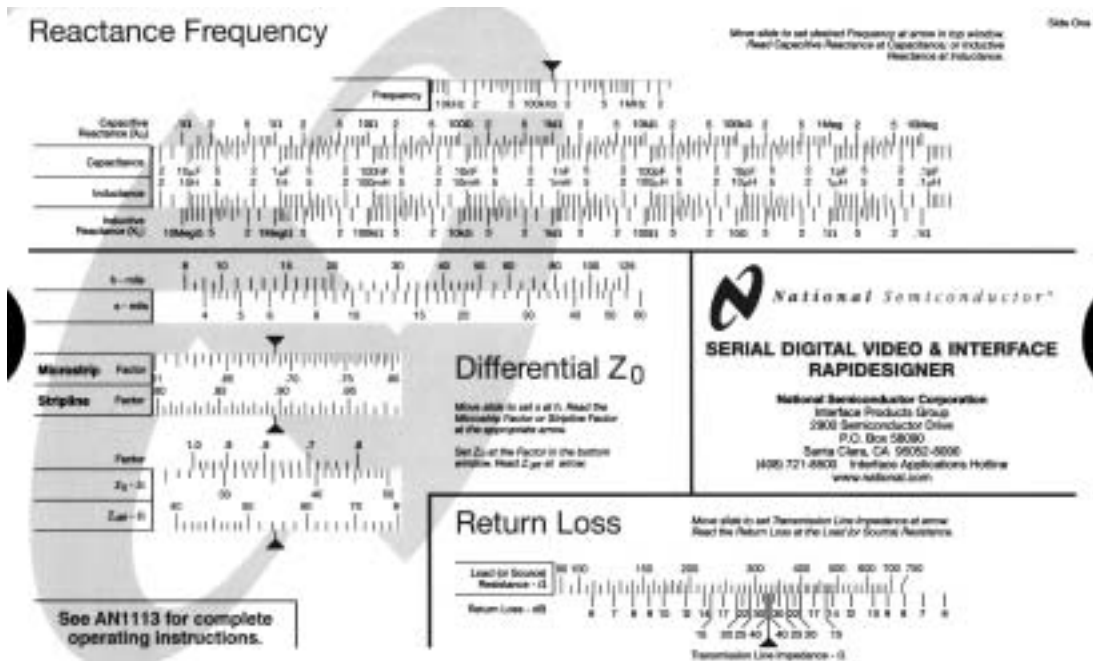


Figure 6.1. Rapidesigner slide rule

The following calculations can be made with the Transmission Line RAPIDESIGNER slide rule for both microstrip and stripline geometries:

- Characteristic impedance ( $Z_0$ )
- Intrinsic delay
- Unterminated stub length
- Loaded impedance
- Differential impedance
- Propagation delay
- Reflection coefficient
- $C_0$  and  $L_0$
- Reactance frequency

# Broadcast Video Owner's Manual

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Two versions of the Transmission Line RAPIDESIGNER slide rule are available. The two RAPIDESIGNER slide rules differ in the dimensions supported; one is for metric units while the other supports English units.

- Transmission Line RAPIDESIGNER slide rule, metric units, Lit# 633200-001
- Transmission Line RAPIDESIGNER slide rule, English units, Lit# 633201-001

The Serial Digital Video & Interface RAPIDESIGNER slide rule adds calculations frequently used in designs using National's Broadcast Video products in video and telecom applications.

- Serial Digital Video & Interface RAPIDESIGNER slide rule, Lit# 633202-001

Full operation and application guides are provided in AN-905 for the Transmission Line RAPIDESIGNER slide rule and AN-1113 for the Serial Digital Video RAPIDESIGNER slide rule. Also included in the application notes are the formulas for the calculations, accuracy information, example calculations, and other useful information.