Cat.5e Connecting hardware testing procedure according to ANSI/TIA/EIA 568-B.2 February 2001 by Ray Chang Telebox

Test 100MHz Cat.5e Balun

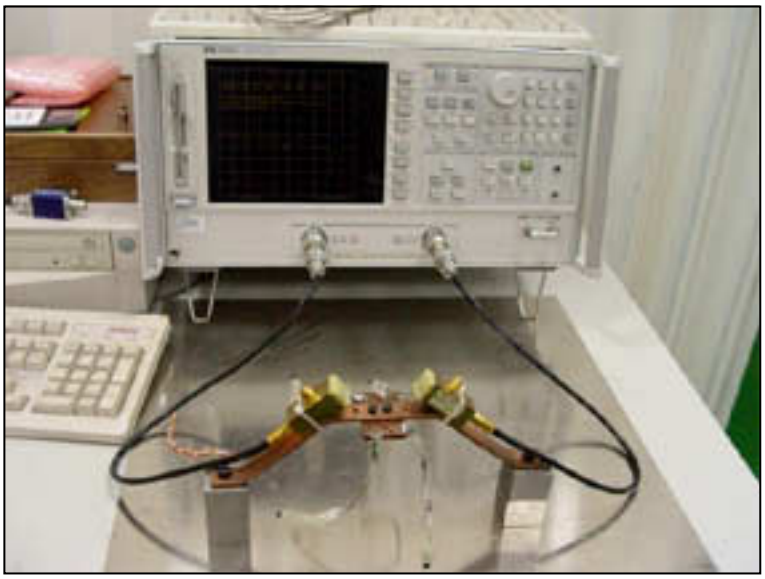
Table B.1 - Test balun performance characteristices

(1 MHz-100 MHz)

Parameter:	Value:
Impedance, Primary[1)]	50 Ω unbalanced
Impedance, Secondary	100 Ω balanced
Insertion loss	1.2 dB maximum
Return Loss, Bi-directional[2)]	20 dB minimum
Return Loss, Common Mode[2)]	20 dB minimum
Power Rating	0.1 wait minimum
Longitudnal Balance[3)]	60 dB minimum
Output Signal Balance[2)]	50 dB minimum
Common Mode Rejection[2)]	50 dB minimum

1) Primary impedance may differ. If necessary, to accommodate analyer outputs other than 50Ω.
2) Measured per ITU-T (formerly CCITT) Recommendation G.117 with the network analyzer calibrated using a 50Ω load.
3) this paramenter is measured at the center tap input with the balanced terminals and ground connected together ehrough two 50Ω resistors in a "Y" or equivalent configuration line to line and 25Ω resistor to ground. The primary balun input should be connected to a 50Ω termination.

Test 100MHz Cat.5e Balun



De-embedded reference plug- reference jack

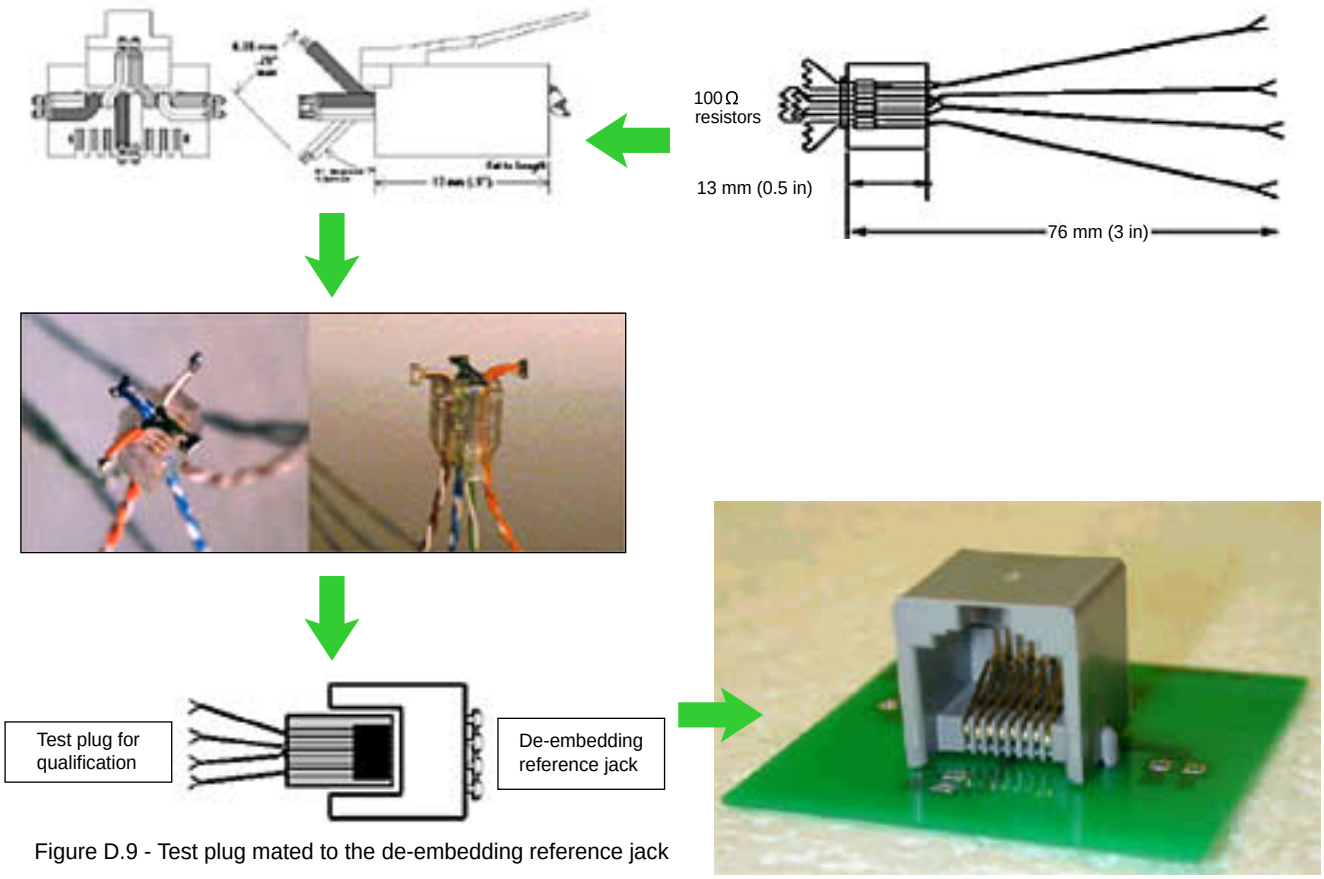
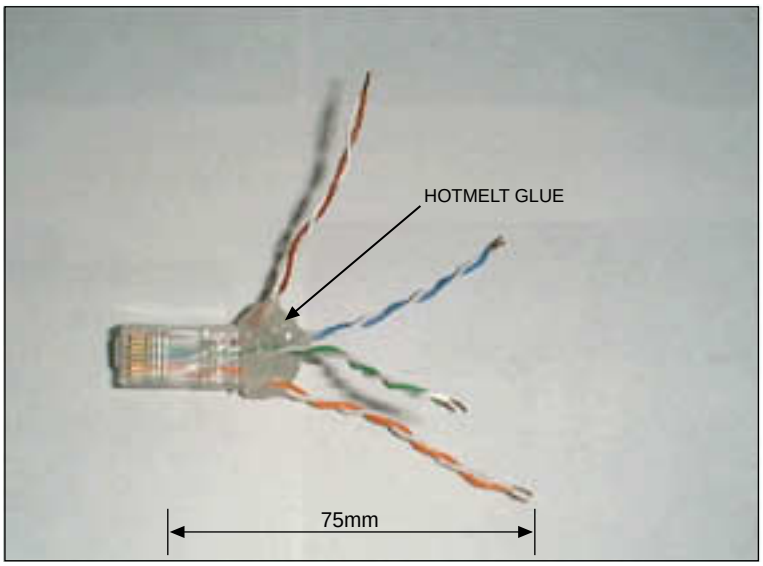


Figure D.9 - Test plug mated to the de-embedding reference jack

Test Plug



Test plugs group for Cat.5e measurement

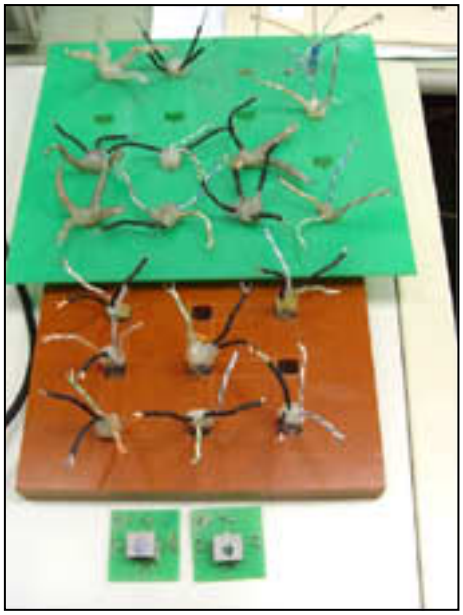
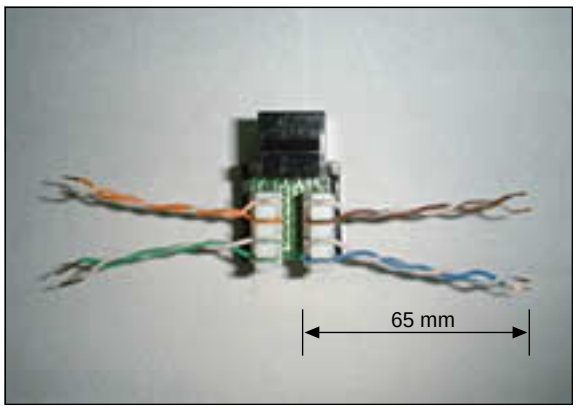


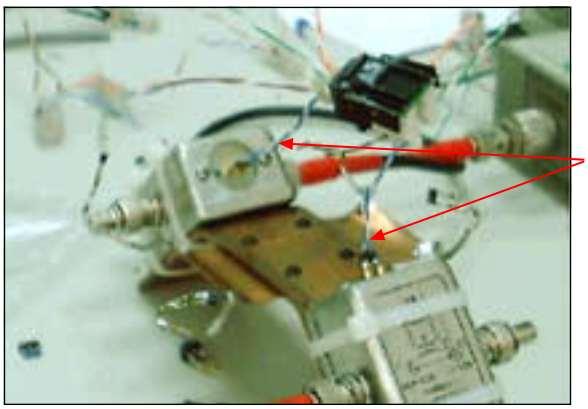
Table D.4 - Test plug de-embedded NEXT loss selection at 100MHz

Pin Combination	Cat.5e	
	Range (dB)	Phase (degrees)
4&5 - 3&6	3.4 - 37.6	-90 ± 10
3&6 - 1&2	42 - 50	-90 ± 20
3&6 - 7&8	42 - 50	-90 ± 20
4&5 - 1&2	≥ 50	90 ± 30 or -90 ± 30
4&5 - 7&8	≥ 50	90 ± 30 or -90 ± 30
1&2 - 7&8	≥ 60	90 ± 30 or -90 ± 30

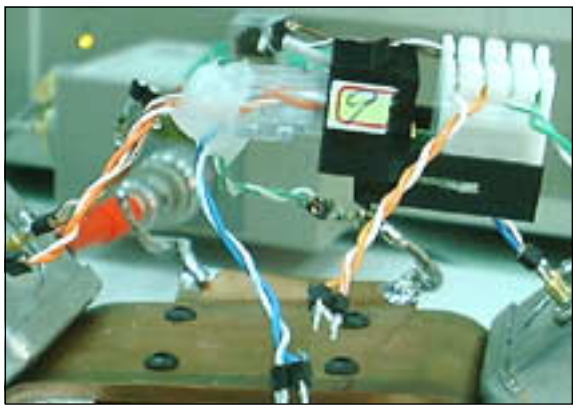
Test Plug



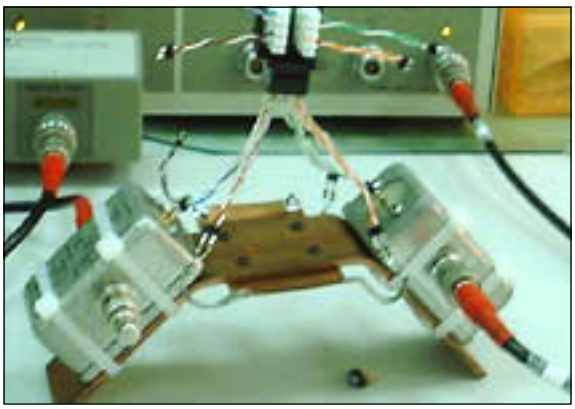
Insertion loss



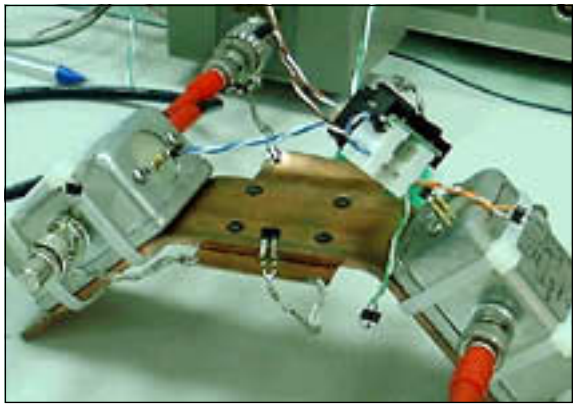
Far End Cross Talk



Near end Cross Talk



Return Loss



QA Cat.5e sampling testing

Transfer Impedance test apparatus

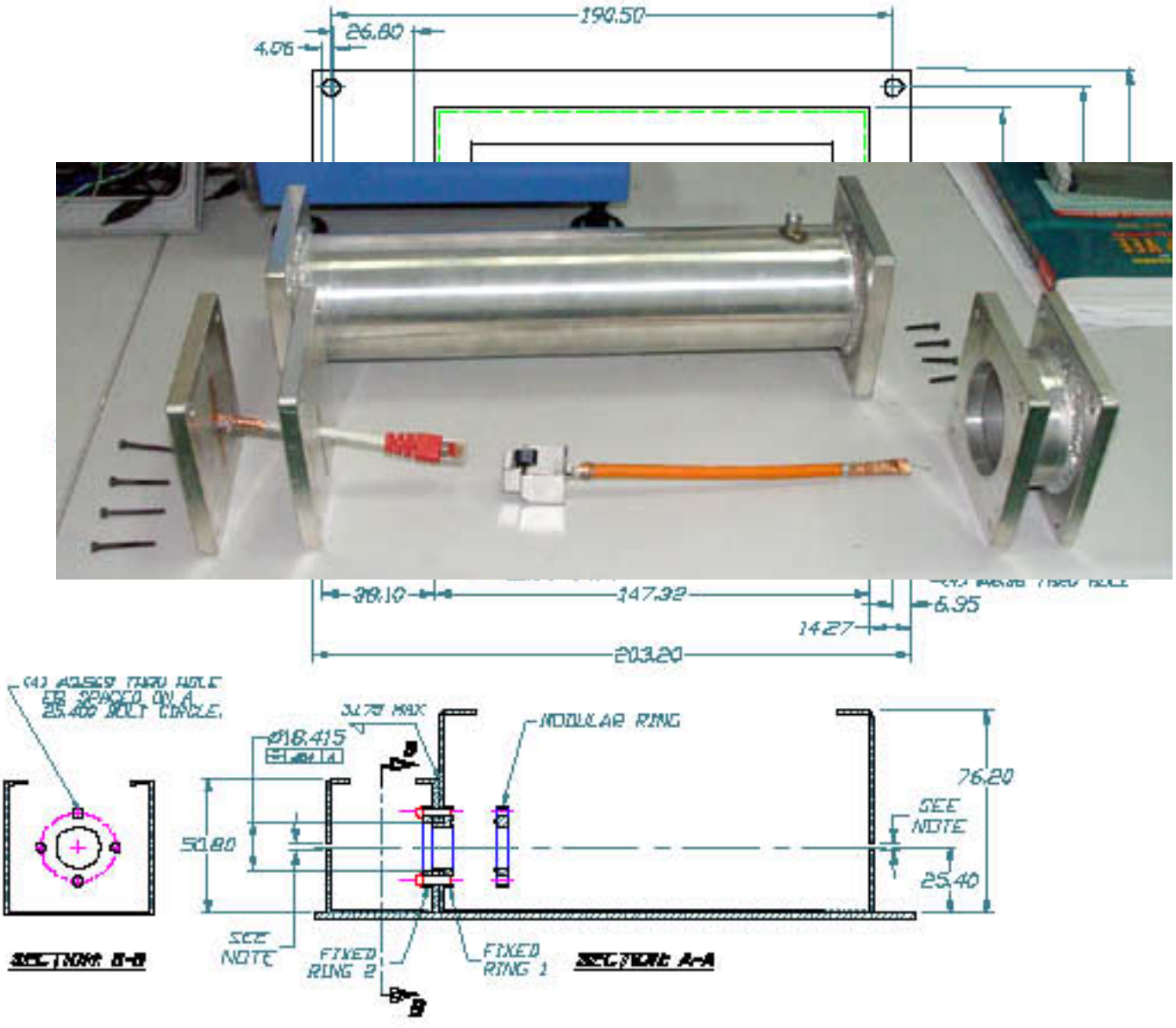


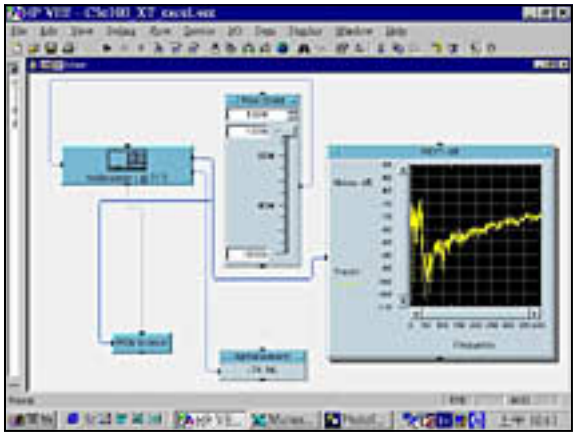
Figure K.3 - HF sealed case dimensional characteristics

Transfer Impedance Test

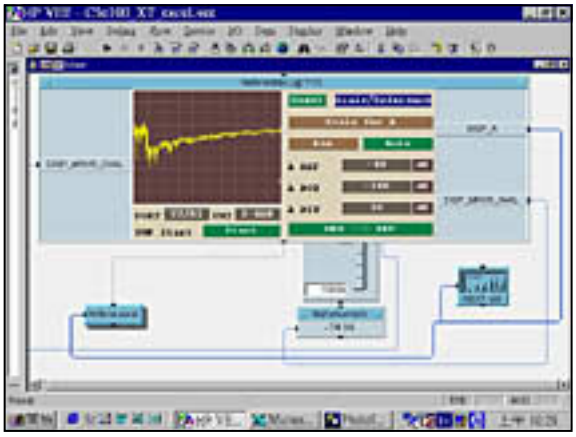
Table K.2 - Maximum connecting hardware shield transfer impedance (mΩ)

Frequency MHz	Category 3 mΩ	Category 5e mΩ
1	40	40
4	80	80
10	200	200
16	320	320
20		400
100		2000

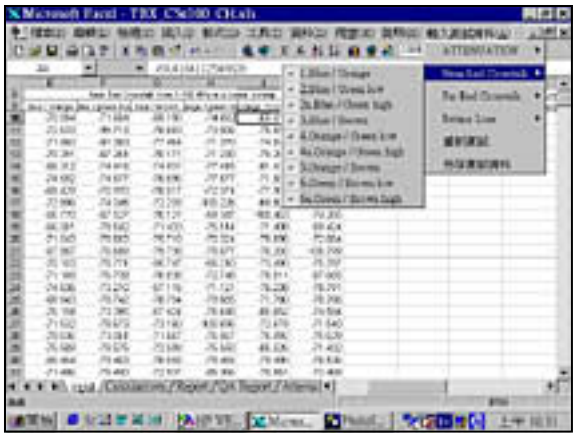
Capture Test data from Network Analyzer to VEE



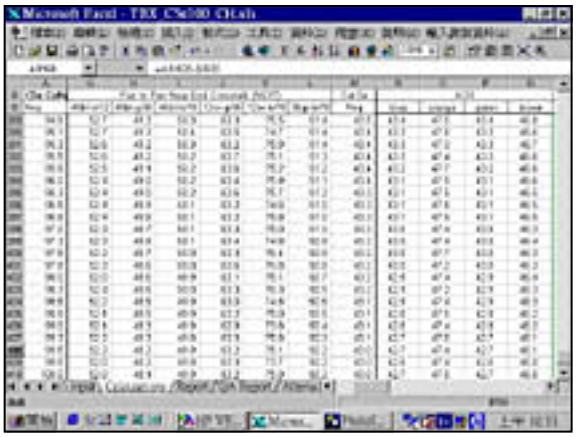
Send test data to Excel program



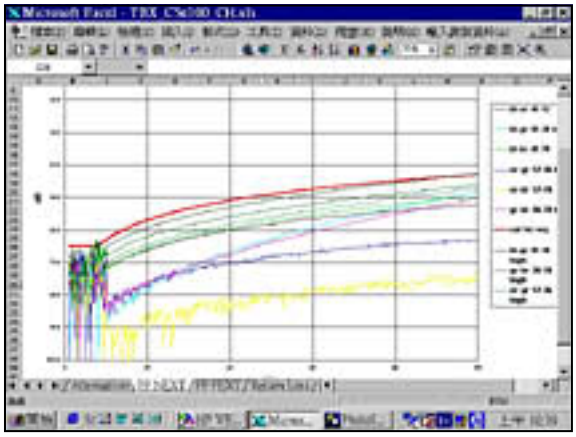
Auto Paste test data to Excel program



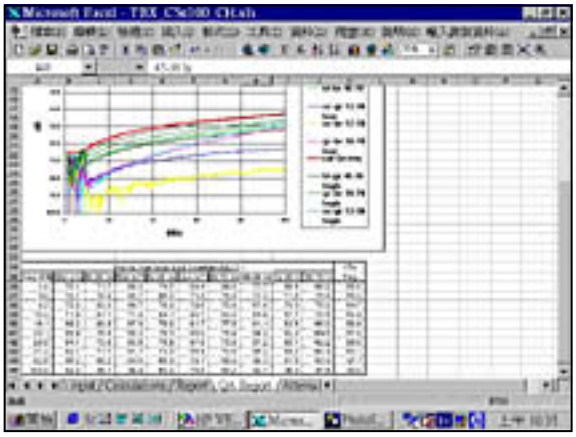
Test program auto calculation



Auto Chart producing



Auto test report for QA incoming and outgoing



3p Compliance Statement : connecting hardware