



# Qtest CIMS



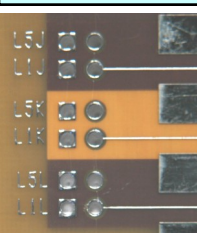
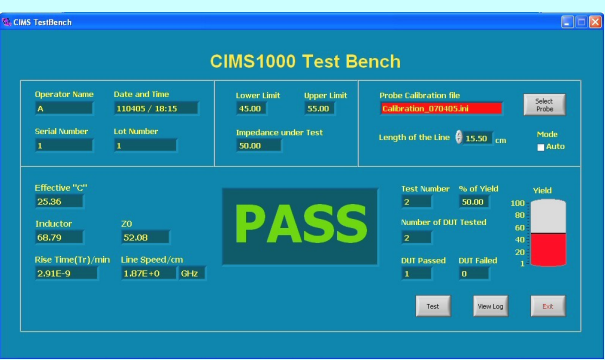
Qtest CIMS1000 is a new approach to measurement of CI or the Characteristic Impedance on printed circuit board and cables. It uses the basic components of L and C in the calculation of CI measured on a pcb or cable.  $Z_o = \sqrt{L/C}$  is the basic formula in the calculation of impedance.

The pcb manufacturing industry is a large user of the CIMS. It provides the users with a simple and very robust measurement equipment. It is very reliable and easy to use. This is good for low level operator user environment.

CIMS test results correlate very well with results measured using standard impedance measurement system for frequencies from 1Mhz to 170Mhz. This has been correlated with test results obtained from a standard impedance measurement system from a test laboratory in Singapore. This gives a level of confidence to using simple method to measure Control impedance on PCB traces.

Understanding the L and C on the pcb trace helps the engineer to design better pcb that enable high frequencies and wider bandwidth and at the same time meets the characteristic impedance requirement to reduce power reflection.

The CIMS measurement approached offers a very low cost and simple way to quickly measure the control impedance of PCB trace. There is no danger and damage to the equipment from ESD as compared to those using TDR.



Control Impedance on pcb are normally measured on special pcb "coupon". The length of these pcb trace is normally 15.5cm long ( used normally for TDR type measurement). However with the CIMS, the length of these test trace can be shorter and this useful for the latest generation of pcbs. However the accuracy of the shorter pcb trace are reduced accordingly as a percentage of the length since L and C are directly proportional to it.

# CIMS 1000 specifications.

## **Characteristic Impedance measurement:**

1. Characteristic impedance range: 20 to 150 ohm
2. Repeatability: 1% of read value ( subjected to probes position and pressure)
3. Accuracy: calibrate to standard value and correlate with standard impedance measurement system from 1Mhz to 170Mhz.
4. Test time per measurement: production mode: approximately 1 sec
5. Measurement type: single end and differential.

## **Capacitance / Inductance Measurement:**

1. Capacitance: 0.2pF to 10nF@0.2pF resolution with zero/offset capability
2. Inductance: lowest 1nH@1nH resolution to 1uH

## **Test Interface: 2 probes method.**

## **Production test feature:**

1. Threshold setting: User define and sequence for coupons with different trace impedances.
2. Pass/Fail automatic comparison within threshold and clear reporting on screen.
3. Data logging feature detailing coupons numbers, measurement results etc.
4. Interface to foot switch for start stop operation

## **Interface to Host PC or note book:**

CIMS will need to be interfaced to a PC or Notebook running Windows XP via a USB interface.

Standard accessories and Probes:

1. Single line, differential lines and Shorting probe are standard accessories.
2. Foot switch and CIMS1000 software.

*Qtest reserves the right to change specifications without prior notice.*



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