

A B S T R A C T

Preliminary Work in Developing an Automated
Test Capability for the DMS Line Card

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In telephony the subscriber's line card is the primary interface between an analogue subscriber's line and a digital switch controller. This report presents preliminary work undertaken on an automated DMS line card repair system. Reverse engineering techniques were used to identify undocumented components on the line card under test.

Hardware and software diagnostic tools were designed and implemented to monitor line card performance. Hardware was also designed and built to test signalling characteristics and data integrity of the main VLSI component on the card, the CODEC integrated circuit. Knowledge of appropriate input data to the CODEC and of its expected response was acquired using high impedance circuits to monitor actual telephone conversations. This monitoring entailed using time domain techniques to acquire PCM data relevant to a single line card of thirty-two (32) supported on the same bus.

As documented in the report, all functions required of the project were realized and the hardware is currently being incorporated in advanced work on the automated line card repair system.