

**PACKAGE ID** - 001219IBMPC00 CSPVANA

**KWIC TITLE** - Vector Network Analysis

**AUTHORS** - Duda, L.  
Sandia National Labs., Albuquerque, NM (United States)

**LIMITATION CODE** -COPY           **AUDIENCE CODE** - LIM

**COMPLETION DATE** - 02/18/1998   **PUBLICATION DATE** - 02/18/1997

**DESCRIPTION** - Vector network analyzers are a convenient way to measure scattering parameters of a variety of microwave devices. However, these instruments, unlike oscilloscopes for example, require a relatively high degree of user knowledge and expertise. Due to the complexity of the instrument and of the calibration process, there are many ways in which an incorrect measurement may be produced. The Microwave Project, which is part of Sandia National Laboratories Primary Standards Laboratory, routinely uses check standards to verify that the network analyzer is operating properly. In the past, these measurements were recorded manually and, sometimes, interpretation of the results was problematic. To aid our measurement assurance process, a software program was developed to automatically measure a check standard and compare the new measurements with an historical database of measurements of the same device. The program acquires new measurement data from selected check standards, plots the new data against the mean and standard deviation of prior data for the same check standard, and updates the database files for the check standard. The program is entirely menu-driven requiring little additional work by the user.

**PACKAGE CONTENTS** - Media Directory; Software Abstract; media Includes Source Code, User's Guide'

**SOURCE CODE INCLUDED?** - Yes

**MEDIA QUANTITY** - 1 3.5 Diskette

**METHOD OF SOLUTION** - The software uses standard methods to calculate the means and standard deviations of the relevant quantities.

**COMPUTER** - IBM PC

**OPERATING SYSTEMS** - HP BASIC Version 5.13

**PROGRAMMING LANGUAGES** - Basic

**SOFTWARE LIMITATIONS** - The software is limited to 400 frequency points for each data record.

**SOURCE CODE AVAILABLE (Y/N)** - Y

**HARDWARE REQS** - The software requires a minimum of 225 kB of memory in order to run after the Basic system has been loaded. With the

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**HARDWARE REQS - (CONT)** amount of memory, the user should be able to acquire, plot, and store data from the network analyzer. In order to utilize all database operations and the help display, approximately 430 kB of memory are required. Also, to access network analyzers, a Basic Language Processor card or an IEEE-488 interface is required.

**ABSTRACT STATUS** - Released AS-IS 4/30/1998

**SUBJECT CLASS CODE** - OPT

**KEYWORDS** -

COMPUTER PROGRAM DOCUMENTATION  
C CODES  
DATA PROCESSING  
EXPERIMENTAL DATA  
DATA ACQUISITION  
STATISTICS  
PROCESS CONTROL  
ELECTRONIC EQUIPMENT

**EDB SUBJECT CATEGORIES** -  
990200

**SPONSOR** - DOE/DP

**PACKAGE TYPE** - AS - IS