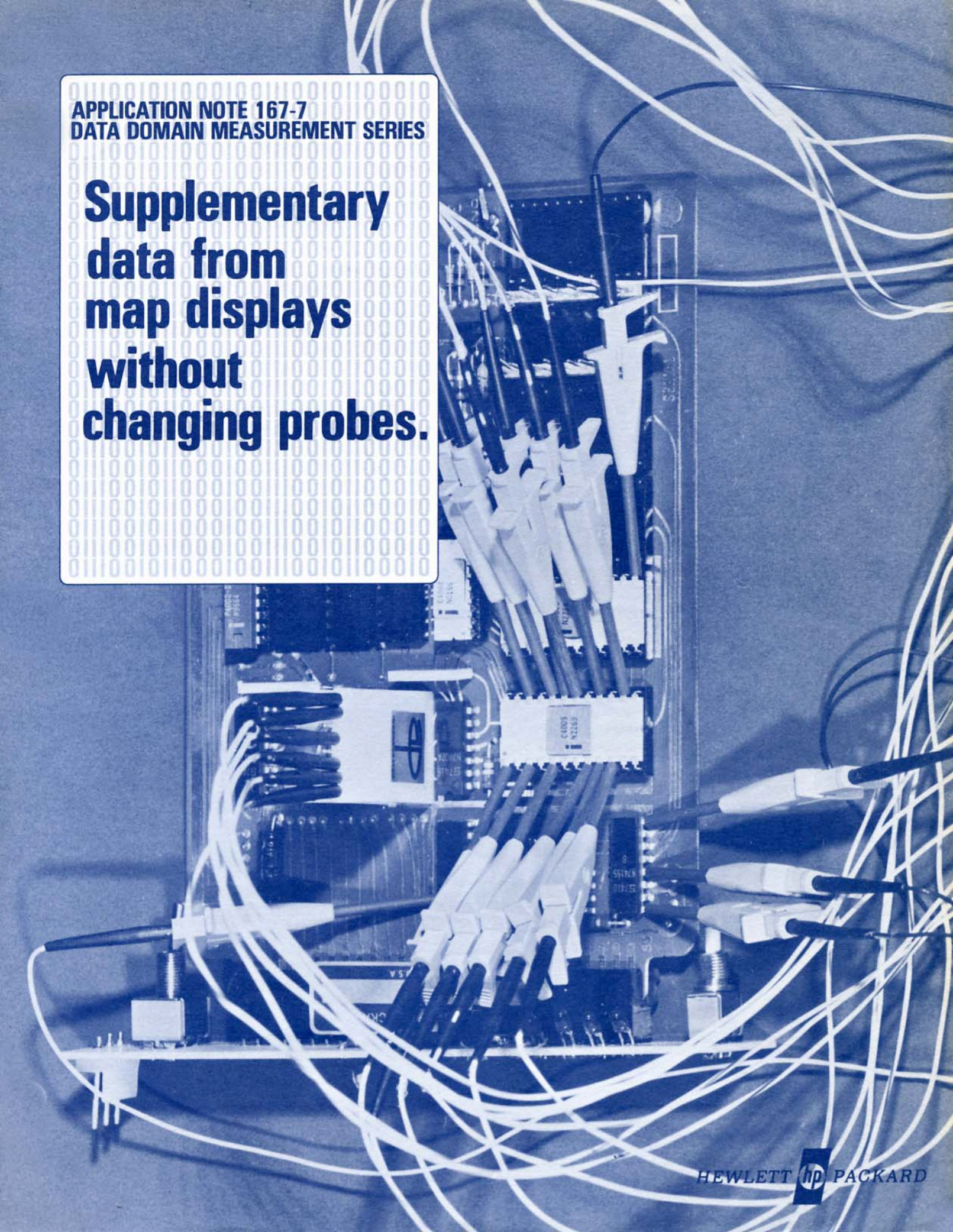
APPLICATION NOTE 167-7
DATA DOMAIN MEASUREMENT SERIES

Supplementary data from map displays without changing probes.



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While using the 1600A Logic State Analyzer for system checkout, there are times you may need to check additional test points to complete your analysis. However, reconnecting all the test leads can be a tedious task when you only need supplementary information about flag, gate, or other system test point activity. The MAP mode makes this supplementary information available without extra instruments and without changing Trigger Word Switch settings or probes. For example, a table display indicates that additional points of a system should be checked. The 1600A is switched to MAP mode which shows system activity in figure 1.

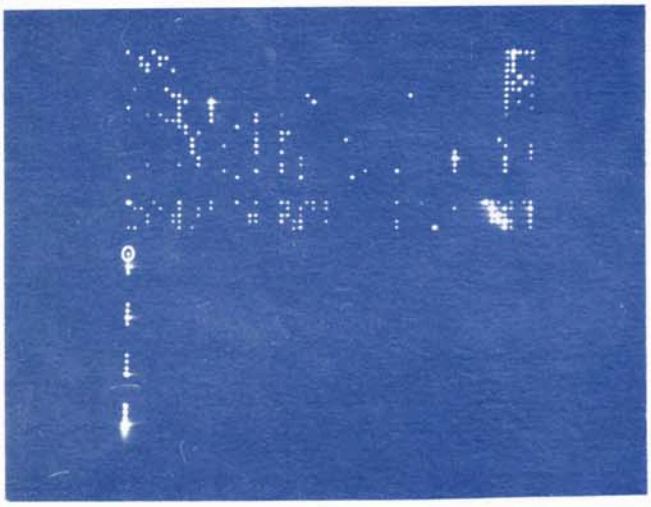


Figure 1. MAP Display of System Activity

Without changing the Trigger Word Switch settings, remove the probe lead 3 from the probe tip. The new map reference pattern with some dots shifted horizontally is shown in figure 2.

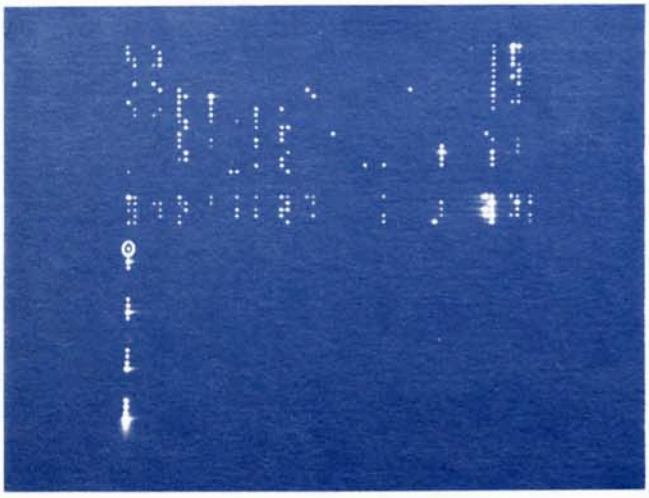


Figure 2. MAP Display after Removing Data Probe Lead 3

Data probe 3 is used because its removal shifts the pattern enough to make a significant, but not drastic, visual change and keeps the shift within range of both NORM and EXP map modes. Equivalent vertical pattern shift can be obtained with data probe 11.

Insert a small piece of 0.6 mm (0.025 in.) wire in the probe lead and probe the first test point of interest. The map now changes as shown in figure 3 with many map dots shifted to the right which indicates a highly active test point. If all dots shift to the right, you have probed a power supply or a point stuck in a HI condition. If few (or no) dots shift, you have a point of low activity or a point stuck in a LO condition.

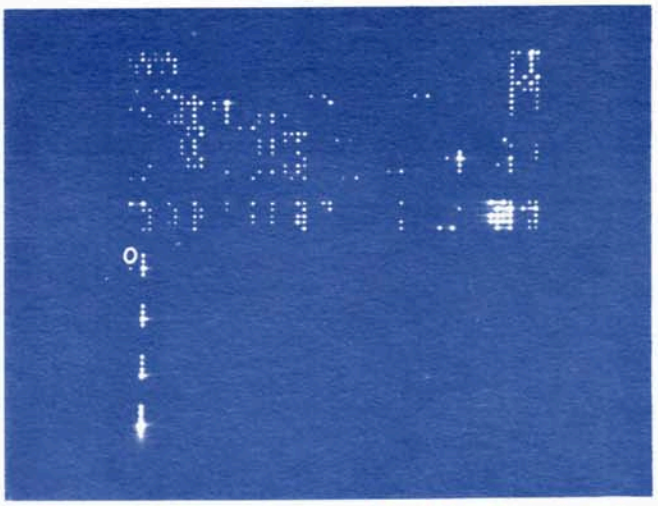


Figure 3. MAP Display at a Highly Active Test Point shows a shift of many dots

Now, move the lead to the next test point and you obtain the map pattern change as shown in figure 4. Notice that a different set of fewer dots has shifted to the right which indicates a low activity test point.

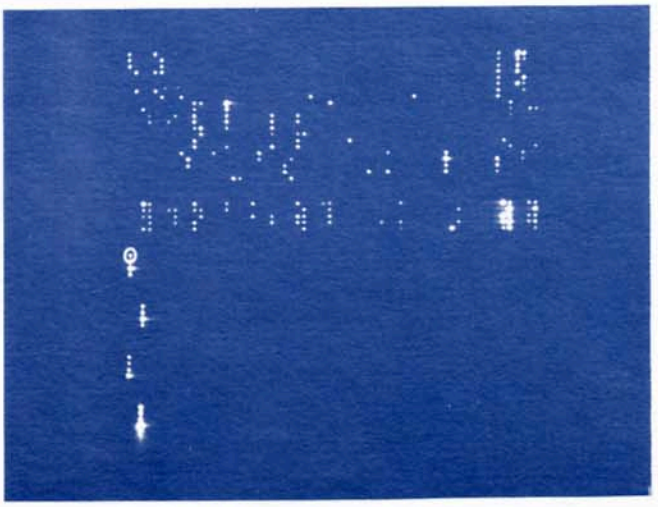


Figure 4. MAP Display at a Low Activity Test Point

Reconnecting the data probe lead to the probe tip returns the Logic State Analyzer to the original operating condition for continuation of detailed investigation in the table mode. The additional information obtained by using this procedure will improve your troubleshooting efficiency and enhance your confidence in the test result by increasing the amount of information available for functional analysis.

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