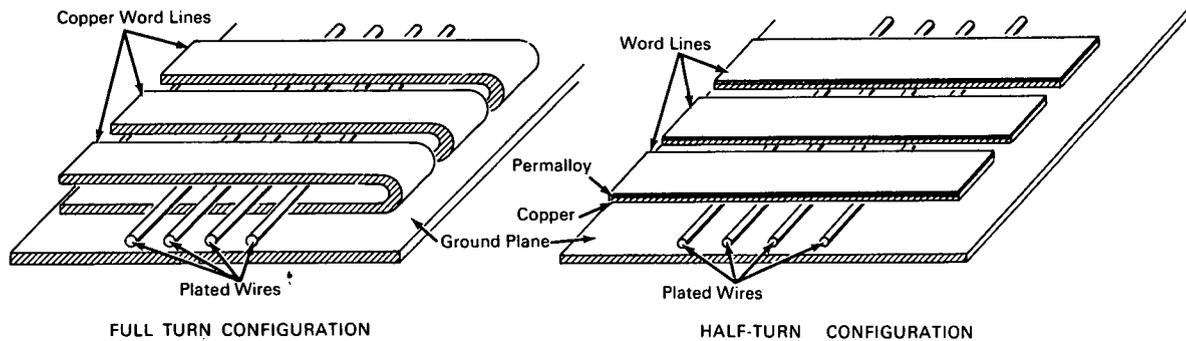


NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

Improved Memory Word Line Configuration Allows High Storage Density



The problem:

To design a plated wire memory word drive line configuration which allows high storage density, good plated wire transmission characteristics, and a simplified memory plane configuration. Prior art used a plain copper full-turn word line to obtain word field uniformity. With the plain copper word line the word field spread to the extent that the desired high storage density could not be obtained. Also, with this configuration the connections have to be made to both ends of the word line to obtain efficient selection of the word lines. With both ends of the word line available at the same side of the plane, the connections are complicated, particularly since the two ends are in different layers of the plane construction. The full turn construction does not allow good plated wire transmission characteristics because of the presence of the copper word line between the plated wire and the ground line return path.

The solution:

A half-turn word drive line with a magnetic keeper. The ground plane provides the return path for both

the word current and the plated wire transmission line.

How it's done:

The half-turn word line structure is made by copper plating a thin magnetic sheet which is cemented to a supporting dielectric. This composite is then photo-etched leaving the desired word line pattern. The copper and the magnetic material are etched away at the same time. High storage density is achieved by having magnetic strips slightly wider than the word lines on top of the word lines. These strips provide a low reluctance path for the word field and inhibit it from spreading.

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Goddard Space Flight Center
Greenbelt, Maryland 20771
Reference: B66-10617

(continued overleaf)

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: UNIVAC
under contract to
Goddard Space Flight Center
(GSFC-559)