



FIG. 1d. A printed circuit board. (Courtesy Motorola Semiconductor Products, Inc.)

architecture (i.e., instruction set and I/O connection rules). Optimists claim that someday the control unit and data operator of large computers will be put on a very large LSI chip; we will look into this possibility later, but would venture to call such a computer a microcomputer.

Ironically, our superstar was born of a broken marriage. At the dawn of this decade, desk calculators of considerable complexity were being put on LSI chips. Why not a primitive computer, then? First Fairchild produced a hybrid between a calculator and a microcomputer, called the PPS-25, and Intel followed with their hybrid called the 4004. While these are classified as microcomputers today, they did not have the general purpose Princeton class (i.e., von Neumann) architecture that is properly a computer, and not a calculator, architecture. Datapoint Corporation, a leading and innovative manufacturer of intelligent terminals based in San Antonio, Texas, contracted with Intel and Texas Instruments to produce a microprocessor of the von Neumann architecture on an LSI chip. Based on their being the largest buyer of metal oxide silicon (MOS) devices, they strongly encouraged reluctant Intel and Texas Instruments to embark on this ambitious venture. The design failed to meet specifications, being an order of magnitude too slow. The contract was broken. Evidently, the father of the microcomputer was burned by the venture. Once burned, twice cautious. Even to this day, Datapoint declines to use microprocessors in its products, relying instead on conventional medium scale integrated (MSI) circuitry. A recession followed, which led the large and diversified Texas Instruments Corporation to cancel its microprocessor effort. Intel was not so well insulated from the recession, manufacturing only a good memory chip to back its investments up. It had to market the microprocessor to recover its design costs. Thus the first microprocessor, the Intel 8008, was made available.