TOUCH-A-MATIC® Set Uses Semiconductor Memory For Automatic Number Dialing

With the touch of a single button on the new TOUCH-A-MATIC® telephone, Bell System customers will soon be able to dial, in one second, any of 32 pre-recorded numbers. The Touch-A-Matic set, the first Bell System telephone to use a solid-state memory, will be manufactured at Western Electric's Indianapolis, Ind. facility. Illinois Bell Telephone Company will install the first units in mid-1973.

Slightly larger than a standard desk phone, the Touch-A-Matic telephone will be available with a TOUCH-TONE® or rotary dial (for manual number dialing as well as for storing numbers in the memory) and an array of 32 buttons for automatic dialing. Thirty-one of the buttons have nameplates to identify the parties whose numbers are recorded. The remaining button (the "last number dialed" button) accesses a "scratch-pad" memory, which records the last number manually dialed. Thus, if the user dials a number and gets a busy signal, the number can be redialed automatically by pressing the "last number dialed" button.

Up to 15 digits can be stored for each number, allowing calls that require extra digits, such as DDD overseas calls and outside-line calls through a private branch exchange. New numbers can easily be recorded. The user simply presses the "record" button, selects a recording space (a location in the memory), depresses the automatic dialing button for that space, and dials the number. He then presses the "record-off" button to end the recording process. To change a number, the user simply records the new number over a previously recorded number.

The memory of the Touch-A-Matic telephone consists of 10 integrated circuits containing a total of 15,000 transistors. Since integrated circuits need constant power to maintain their memory, nickel-cadmium batteries are incorporated as a source of standby power. If commercial power fails, or if the set is disconnected, the batteries prevent the stored numbers from being lost for a period of about 24 hours.

The set was designed by engineers at Bell Labs in Indianapolis, and the solid-state memory was developed jointly by Bell Labs engineers at Indianapolis and Allentown, Pa.

The TOUCH-A-MATIC® *set, the first Bell System telephone with a solid-state memory, can dial any of 32 prerecorded numbers at the touch of a button. The memory (foreground) consists of 10 integrated circuits interconnected on a substrate.*