



SPACE TECHNOLOGY LABORATORIES, INC.

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FOR IMMEDIATE RELEASE

"TELEBIT"

The tiny electronic brain riding as a passenger in the payload of Explorer VI is the long sought after means of relaying information from space.

Called Telebit, it is the most advanced telemetric system to date. It is designed to transmit information over interplanetary distances upward of fifty million miles. And unlike its predecessors, which only collected data, Telebit stores and calculates before transmitting the totalled data earthward via radio signal.

Developed by telecommunication specialists at Space Technology Laboratories, Inc., Telebit is the digital unit responsible for the gathering and relaying of data concerning cosmic radiation, magnetic fields, radiowave propagation, solar corona density, ionization, micrometeorite flux and momentum, and other vital aspects of astro-physics.

Previously, the telemetric systems contained in payloads had to relay information the very moment a reaction occurred. This seriously limited them to "single" responses, as well as subsequently draining the battery on which their transmitters depended.

While Telebit continually collects data, this information is stored and tallied while its transmitter is turned off. Then after the transmitter resumes, this totalled information is transmitted to the ground station.

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For example, when a micrometeorite particle strikes a diaphragm mounted on the exterior of the payload, this action registers as a pulse on a carrier wave which is channeled through an amplifier into a pulse shaper. It is then singly recorded in mathematical form in an electronic counter. Each additional time a meteorite strikes the diaphragm, the resultant amplified pulse is added to the total being stored in the counter.

Then upon completion of a predetermined cycle, this summed-up information is dispatched via the payload's radio signal.

At a ground station this coded data is picked up by an antenna. Here it is directed through a sensitive radio receiver before being demodulated. It is then punched on teletype tape. This teletype tape, in turn, provides an exact representation of the data recorded by the instruments within the payload.

The information on the teletype tape is transmitted to a central computer which in turn prints out the scientific information in chart or graphical form for detailed evaluation by STL scientists.

In spite of the complexity of this advanced telemetric system, the size of Telebit is disproportionately small. This has been accomplished by miniaturization and modular construction, insuring high density packing and lightest weight, while still possessing high structural strength.

The development of Telebit is a vital advance in the state of the art in deep space communications. It answers the immediate needs of America's current space exploration programs while anticipating the requirements of future deep space probes.

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