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APPENDIX 2
SYSTEM SPECIFICATIONS

gap: 0.75 in.
Tape capacity: 3,680 512 word blocks (1.88 million samples) typical for 450 ft. tape. Twenty six minutes continuous record time at the maximum sample rate.
Tape Speed: 30 ips write or read.
Display and Keyboard
Display Type: LED with optical filters 32 characters, alphanumeric, 18 segment, character height .15 in.
Keyboard Type: Mechanical switch with dust cover and water seal. 20 button keyboard with numerical and function entry.
Status
Time, battery voltage, no. of events, % of tape used, up time (elapsed time since power on).
Internal Timebase
Frequency: 3 MHz
Temperature Stability: $\pm 1 \times 10^{-6}$; -20° C. to $+70^{\circ}$ C.
Aging Rate: less than 5×10^{-7} per year
Communications Interface
I/O Port: RS-232 Compatible, baud rate programmable to standard rates
Time Synchronization
WWVB Receiver: Internal receiver designed to be used with active, ferrite antenna. Will automatically synchronize internal clock to WWVB under program command.
External time: Will start internal clock with external pulse and will compare and note time difference between external time tick and internal clock after startup.
Manual Start: Time can be entered through keyboard and started by key manually.
Power Requirements
Voltage, current: +24 VDC nominal $\pm 15\%$, 40 mA nominal in operating mode with display off. 300 mA nominal with display on, 600 mA with display on and recording.
Internal batteries: ± 24 V, 5 AH Gates type, operates about 3 days on internal batteries. Connector provided for internal battery charging or external battery operation.
Physical and Environmental Requirements
Case Type: Waterproof aluminum case, 20 $\frac{1}{4}$ " long, 9 $\frac{1}{8}$ " wide 13 $\frac{3}{4}$ " high
Weight: 47 lbs. with internal batteries.
Operating Temperature Range: -20° C. to $+60^{\circ}$ C., 15% to 95% rel. humidity

We claim:

1. A computer system for monitoring analog signals produced by a plurality of transducers, the system comprising:
 - a computer bus;
 - a microcomputer comprised of a microprocessor and program memory connected to said computer bus, said program memory for storing software that controls operation of said microprocessor, which programmed microprocessor in turn controls the operation of said system;
 - a plurality of software selectable input channels connectable to the transducers, each channel comprising amplifiers and software selectable filters;
 - an analog to digital converter coupled to a selected input channel for converting analog data from said selected input channel to digital data;
 - a Direct Memory Access data bus;
 - Direct Memory Access data memory connected to said data bus;

- 5 a controller for initiating a Direct Memory Access data transfer of said digital data from said converter to said data memory through said data bus; a data recorder connected to said data bus; and means for automatically storing said digital data on said data recorder.
2. The system as claimed in claim 1, and further comprising a signal conditioning means for conditioning an analog signal received from a sensor and for providing the conditioned signal to said converter.
3. The system as claimed in claim 2 wherein said conditioning means includes filtering means and means under control of said programmed microprocessor for changing the filtering of said filtering means.
- 15 4. The system as claimed in claim 1 and further including portable battery means for providing all of the power to said system.
5. The system as claimed in claim 4 and further including means under control of said programmed microprocessor for automatically controlling the power supplied to preselected components of said system.
- 20 6. The system as claimed in claim 1 and further including a portable housing in which said system is contained, and a front panel mounted on said housing for permitting operator control of said system.
- 25 7. The system as claimed in claim 6 wherein said front panel includes a keyboard having numeric keys, cursor control keys and function keys, and an alphanumeric display.
- 30 8. The system as claimed in claim 7 and further including means under control of said programmed microprocessor for automatically controlling the power supplied to said display such that said power is turned off when said display is not being used.
- 35 9. The system as claimed in claim 1 and further including means under control of said programmed microprocessor for automatically scanning preselected ones of said input channels.
- 40 10. The system as claimed in claim 9 wherein said scanning means includes a control means for controlling the operation of said controller.
11. The system as claimed in claim 1 and further including an internal clock means for keeping track of the absolute time; and
- 45 means under control of said programmed microprocessor for calibrating said internal clock means.
12. The system as claimed in claim 11 wherein said clock calibrating means includes means for receiving an external time standard broadcast by a radio station and means for calibrating said internal clock means with said external time standard.
- 50 13. The system as claimed in claim 12 wherein said clock calibrating means further includes means under control of said programmed microprocessor for automatically calibrating said internal clock means at predetermined, future times.
- 55 14. The system as claimed in claim 1 and further including a digital to analog converter means for providing an analog output signal of selectable, stored digital data.
- 60 15. The system as claimed in claim 1 wherein said controller under command of said programmed microprocessor causes new converted data to be stored cyclically in said data memory such that new data overwrites the oldest stored data.
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