

DIGITAL SIGNAL PROCESSING TRAINING KIT

DSP LAB 2000



A DSP hardware system is formed by connecting the test kit of the exclusive use of Digital Signal Processing for learning a signal processing by using DSP(TMS320C31), with a computer.

Kit can be used by itself, but the support of a computer enables us to gain access to a hardware more easily.

DSP LAB 2000 Exclusive Kit has DSP(Digital Signal Processor) Chip, such a memory as RAM and ROM, A/D and D/A Converters for signal input/output, and each kind of I/O cells, within.

Through this process, the followings are confirmed; various representative signal-analysis algorithms, and the design and response status of various type of FIR, IIR digital filters. Five various analogue signal inputs and over 20 signals of file type are offered for practice.

■ Technical Specification

| Items | Specificaions | Remarks |
|--|---|--|
| DSP | TMS320C31-50 | 50 MHz drive |
| RAM | 128 kbyte x 4 | 128 kWord |
| ROM | 512 kBit | 64 kbyte |
| AD converter | ADS7804 | 1 ch, 12 Bit, 100 ksps, ± 10 V input |
| DA converter | AD664 | 4 ch, 12 Bit, ± 10 V output |
| Analogue MUX | ADG508 | 8 ch analogue input |
| Serial Communication | 8251+MAX232 | 38400 bps |
| Parallel Communication | EPP-mode support | 160 kbyte/s |
| Digital I/O | 8255 | 24bit Digital I/O |
| Input/output modules | each kind of analogue modules 20 2 Line TEXT LCD | Audio input/output, Function Generator, Amplitude modulation and demodulation, Sensor input, and Back-light LCD support |
| Line IN Terminal | Input from cassette, CD and sound card. | An inputted signal is so amplified as to be input into ADC channel 0. |
| MIC IN Terminal | Capacitor microphone input | An inputted signal is so amplified as to be input into ADC channel 1 and the MIC OUT terminal. |
| Speaker OUT Terminal | Speaker drive | 8 Ohm 1W speaker is driven by connecting the speaker to DAC channel 0 and AMP IN. |
| AMP IN Terminal | Input directly into AMP. | Used in hearing the signal from cassette, CD, soundcard by a speaker. |
| AUX IN Terminal | Analog signal input | Connected with ADC channel 4. |
| AUX OUT Terminal | Analog signal output | Connected with DAC channel 3. |
| FUNCTION GENERATOR Module | Sine wave, chopping wave and square-wave | Frequency : 8 Hz ~ 37 kHz variable Amplitude : 0 V ~ ± 10 V variable Duty Rate : 40 % ~ 60 % variable |
| Amplitude Modulation / Demodulation Module | Independent amplitude modulation and demodulation | When DSP makes a modulation, the module makes a demodulation. When DSP makes a demodulation, the module makes a modulation. |
| Sensor IN Module | Differential input, single input | Instrumentation Amplifier |
| Booting method | ROM, parallel communication | Booting using a 25 pin printer cable. The downloading program is basically stored. |