APU2470   Audio Processor (24-Pin Plastic Package)

Programmable digital real-time signal processor for processing digitized sounds signals. This chip is programmable. It is designed to process digital audio data either coming from an ADC2300E or ADC 2310E Analog-to-Digital Converter or from the AMU2480 Audio Mixing Unit. Although the basic functions are mask-programmed, these can be modified by the CCU2030, CCU2050 or CCU2070 Central Control Unit via the serial IM bus.

The APU2470 is an N-channel MOS circuit. It contains some hard-wired digital filters for converting pulse-density modulated sound signals into PCM data, a programmable DSP core and four digital-to-analog converters. The hardware blocks of the APU2470 are:
- IM bus interface; input/output interface with the IM bus
- digital decimation filters
- DAC; output interface circuit for converting the processed audio data
- Vol 2; analog volume adjustment (additional attenuation)
- C RAM 32 · 8 bits; memory for variable coefficients
- C ROM 28 · 8 bits; memory for constant coefficients
- data RAM 50 · 16 bits; memory for state variables (intermediate results) and general purpose variables
- arithmetic logic unit ALU; a fast 16 · 8 bit multiplier, adder, accumulator (20 bits) and circuit for shift operations as well as overflow logic with a saturation characteristic
- separator; separates the very fast data bus I from the slower data bus II
- program counter; loadable incrementer for addressing the program memory
- program ROM 256 · 14 bits; contains all programs (mask-programmed)
- control unit; coordinates the timing of all functions
- serial I/O; serial sound bus interface for 4 channels of 16 bit each Data-Input and Data-Output on different pins
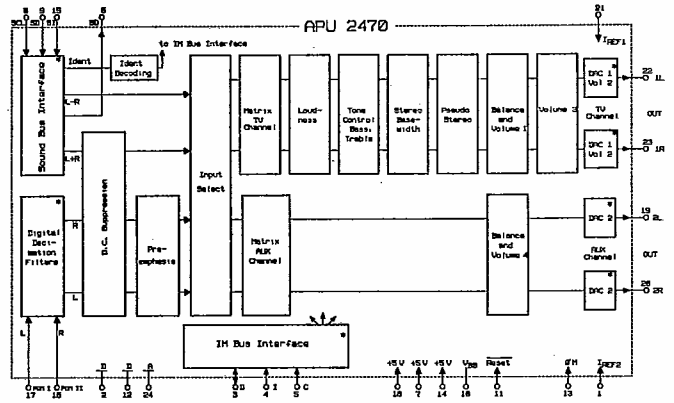
Software Blocks and Hardware Interfaces of the APU2470
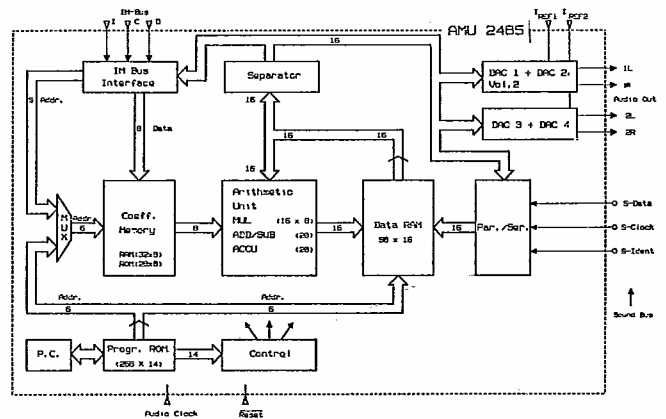The hardware interfaces are marked by an asterisk*.

AMU2485   Audio Mixing Unit for Stand-Alone D2-MAC (24-Pin Plastic Package)

Programmable digital real-time signal processor for processing digitized sound signals. This chip is programmable. It is designed to process digital audio data coming from an DMA2270 D2-MAC Decoder, either in a separate D2-MAC receiver or in an analog TV receiver equipped with D2-MAC. Although the basic functions are mask-programmed, these can be modified by the CCU2030, CCU2050 or CCU 2070 Central Control Unit via the serial IM bus.

The AMU2485 is an N-channel MOS circuit and contains a serial/parallel converter, a programmable DSP core and four digital-to-analog converters.

The hardware blocks of the AMU2485 are:
- IM bus interface; input interface with the IM bus
- C RAM 32 · 8 bits; memory for variable coefficients
- C ROM 28 · 8 bits; memory for constant coefficients
- data RAM 50 · 16 bits; memory for state variables (intermediate results) and general purpose variables
- arithmetic logic unit ALU; a fast 16 · 8 bit multiplier, adder, accumulator (20 bits) and circuit for shift operations as well as overflow logic with a saturation characteristic
- separator; separates the very fast data bus I from the slower data bus II
- program counter; loadable incrementer for addressing the program memory
- program ROM 256 · 14 bits; contains all programs (mask-programmed)
- control unit; coordinates the timing of all functions
- serial input; serial sound bus interface for 4 channels of 16 bit each Data-Input
- DAC; output interface circuit for converting the processed audio data

AMU2485 Architecture