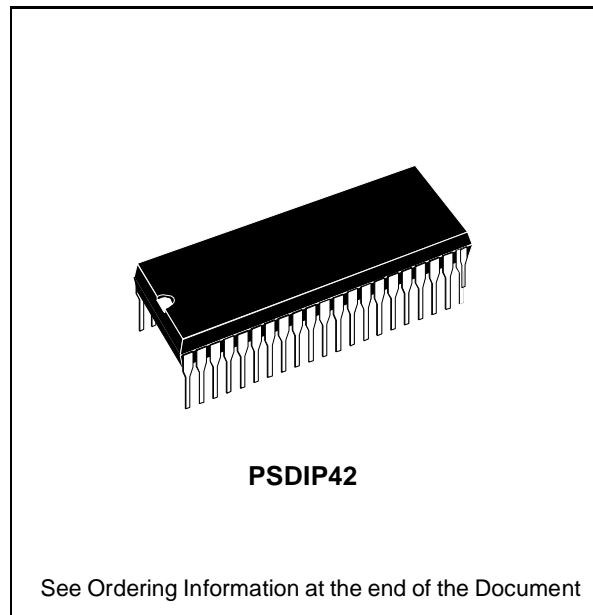


## 8-BIT MCU FOR MONITORS WITH UP TO 32K ROM, 1K RAM, ADC, TIMER, SYNC, PWM/BRM, DDC/DMA & I<sup>2</sup>C

BRIEF DATA

- User ROM/OTP/EPROM: up to 32 Kbytes
- Data RAM: up to 1 Kbytes (256 bytes stack)
- 8 MHz Maximum Internal Clock Frequency in fast mode, 4 MHz in normal mode
- Run, Wait and Halt CPU modes
- Sync Processor for Mode Recognition, power management and composite video blanking, clamping and free-running frequency generation.
  - Corrector mode
  - Analyzer mode
- Fast I<sup>2</sup>C Multi Master Interface
- DDC Bus Interface fully compliant with DDC1, 2B, 2B+, 2AB, 2Bi standards
- 23 I/O lines
  - 1 high current I/O (10 mA)
  - Up to 5 high voltage outputs (9V)
- 16-bit timer with 2 input captures and 2 output compare functions (with 1 output pin)
- 8-bit Analog to Digital Converter with 4 channels on port B
- 8 10-bit PWM/BRM Digital to Analog outputs
- One 12-bit PWM/BRM Digital to Analog output
- Master Reset and Power on/off reset<sup>1</sup>
- Programmable Watchdog for system reliability
- 42-pin Shrink Dual In line Plastic package
- Fully static operation
- 0 to + 70 °C Operating Temperature Range
- 4.0V to 5.5V supply operating range
- 24 MHz Quartz Oscillator
- 63 basic instructions/17 main address modes
- 8x8 unsigned multiply instruction
- True bit manipulation
- Versatile Development Tools (DOS and Windows) including assembler, linker, C-compiler, archiver, source level debugger, programmer, and hardware emulator



### Device Summary

| Features             | ST72752J6       | ST72752J5 | ST72752J4 |
|----------------------|-----------------|-----------|-----------|
| ROM (bytes)          | 32K             | 24K       | 16K       |
| RAM (bytes)          | 1K              | 768       | 512       |
| ADC                  | 4 channels      |           |           |
| Timer                | 1               |           |           |
| I <sup>2</sup> C Bus | one multimaster |           |           |
| DDC/DMA              | yes             |           |           |
| Sync                 | yes             |           |           |
| PWM                  | 9               |           |           |
| I/O                  | 23              |           |           |
| EPROM Device         | ST72E752J6D1    |           |           |
| OTP Device           | ST72T752J6B1    |           |           |

**Note 1:** Power On/Off reset not implemented in this revision.

# 1 GENERAL DESCRIPTION

## 1.1 INTRODUCTION

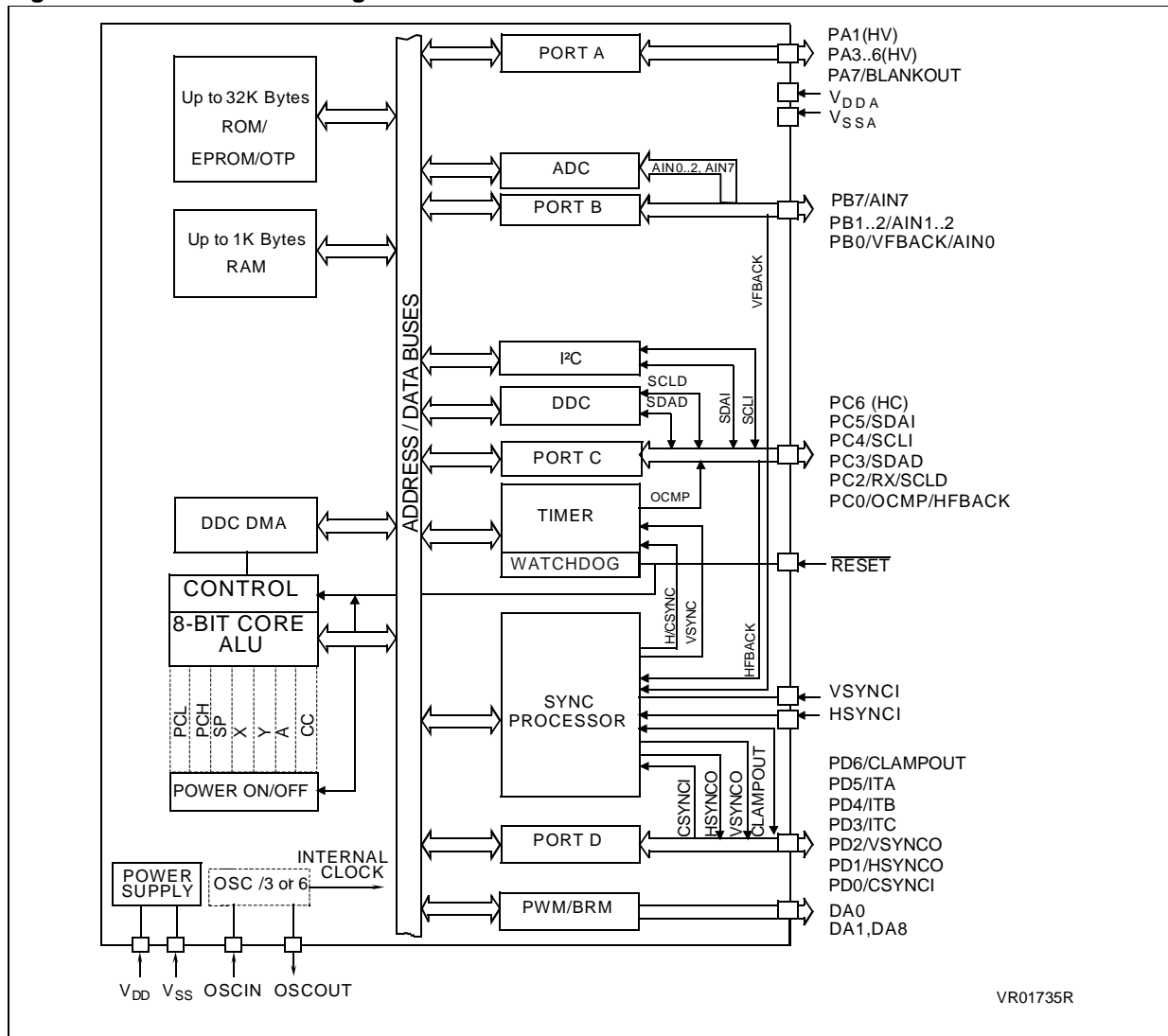
The ST72752 is a HCMOS microcontroller unit (MCU) from the ST7 family with dedicated peripherals for Monitor applications.

It is based around an industry standard 8-bit core and offers an enhanced instruction set. The processor runs with an external clock at 24 MHz with a 5V supply. Due to the fully static design of this device, operation down to DC is possible. Under software control the ST72752 can be placed in WAIT or HALT mode thus reducing power consumption. The enhanced instruction set and addressing modes afford real programming potential.

In addition to standard 8-bit data management the ST7 features true bit manipulation, 8x8 unsigned multiplication and indirect addressing modes.

The device includes an on-chip oscillator, CPU, Sync Processor for video timing & Vfbck analysis, up to 32K ROM, up to 1K RAM, I/O, a timer with 2 input captures and 2 output compares, a 4-channel Analog to Digital Converter, DDC/DMA, I<sup>2</sup>C multi Master, Watchdog Reset, and one 12-bit and eight 10-bit PWM/BRM outputs for analog DC control of external functions.

Figure 1. .ST72752 Block Diagram



Notes:

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without the express written approval of SGS-THOMSON Microelectronics.

©1998 SGS-THOMSON Microelectronics - All Rights Reserved.

Purchase of I<sup>2</sup>C Components by SGS-THOMSON Microelectronics conveys a license under the Philips I<sup>2</sup>C Patent. Rights to use these components in an I<sup>2</sup>C system is granted provided that the system conforms to the I<sup>2</sup>C Standard Specification as defined by Philips.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore  
Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.