

1. DESCRIPTION

This microcomputer is a single-chip microcomputer that adopts a high-performance silicon gate CMOS process, and is contained in a 100-pin plastic mold QFP. This single-chip microcomputer is provided with an instruction queue buffer and a data buffer for executing instructions at high speed. The central processing unit runs in a 16-bit parallel processing mode but can be converted into an 8-bit parallel processing mode when necessary. This product has been designed exclusively for video equipment system controls, incorporating a time measuring circuit for VCR servo control, a real-time pattern generating circuit, analog amplifiers, an OSD display circuit, and a data slicer, among its many other peripheral capabilities.

1.1 FEATURES

- Number of basic instructions 103
- Memory size
 - ROM 64K byte(M37762M8A-XXXGP)
96K byte(M37762MCA-XXXGP)
120K byte(M37762MFA-XXXGP)
 - RAM 2048 byte(M37762M8A-XXXGP)
2560 byte(M37762MCA-XXXGP)
3072 byte(M37762MFA-XXXGP)
- Instruction execution time
 - (fastest instruction, 16 MHz high-speed mode) 250 ns
 - (fastest instruction, 12 MHz double-speed mode) 167 ns
- Single power source
 - In 16 MHz high-speed mode
 - (OSD/data slicer off) 4.0 V to 5.5 V
 - (OSD/data slicer on) 4.75 V to 5.25 V
 - In 12 MHz double-speed mode
 - (OSD/data slicer off) 4.0 V to 5.5 V
 - (OSD/data slicer on) 4.75 V to 5.25 V
 - In 32 kHz low-speed mode
 - (OSD/data slicer off) 2.6 V to 5.5 V
- OSD power source 4.75 V to 5.25 V
- Interrupt 23 factors, 6 levels
- 16-bit timer 3
- 8-bit timer 3
- Clock-synchronous serial I/O 2
(one of which can perform automatic 64-byte transfers)
- I²C-Bus interface (single master) 1
- 8-bit A-D converter..... 1 unit (11 channel inputs)
- 8-bit D-A converter 2
- 12/14-bit PWM 2
- 14-bit PWM 1
- Time measurement circuit (TMT)
 - One counter for measuring time to generate input signals DRFG, CPFPG, CPPG, VSYNG, and GEN
 - One counter for measuring time to generate input signals RLS and RLT
- Remote-control noise filter (majority of 4 samplings)
 - Real-time pattern (RTP) generation circuit
 - Outputs real-time pattern to exterior, RECCTL signal to CTL head control circuit, trigger for start the A-D converter, trigger for starting OSD vertical display
 - Amplification circuits
 - CTL head control circuit, CTL amplifier, CTL schmidt circuit, drum PG circuit, drum FG circuit, capstan FG circuit, capstan FG amplifier circuit
 - Pulse duty detection circuit (VISS and VASS signal detection features embedded) Measures PBCTL signal duty ratio.
 - Synchronous signal separation circuit
 - EOR output feature (HASW, CROT) 2-bit output
 - Watchdog timer
 - Programmable I/O ports 69
(Ports P00 to P06, P10, P11, P15 to P17, P2, P4 to P7, P84 to P87, P9, P10, P110, P111)
 - Input ports 10
(Ports P07, P12 to P14, P30,P31,P80 to P83)
 - 4 Embedded clock-generating circuits
 - Built-in feed-back resistor between XIN to XOUT
 - Built-in feed-back resistor between XCIN to XCOU
 - CPU double-speed enable (f(XIN) max. 12.0 MHz)
 - ROM correction function included
 - OSD function
 - Display characters 32 characters X 16 lines
 - Kinds of characters Composite Output 254 kinds
RGB Output 285 kinds
 - Kinds of character sizes 8 kinds
 - Output method Composite video signal, RGB output (PAL, MPAL, NTSC, NPAL)
 - Special function Display with background shadow
(button display)
 - On-chip sync correct circuit (AFC)
 - Data slicer
 - On-chip slicer for XDS

1.2 APPLICATION

VCR, TVCR