SGS-THOMSON MICROELECTRONICS

ST63PXX

8-BIT HCMOS PIGGYBACK MCUs FOR TV APPLICATIONS

ADVANCE DATA

- DEVICE TYPE :
  - ST63P06/7/8
  - ST63P16/7/8
  - ST63P26/7/8
  - ST63P36/7/8
  - ST63P56/7/8
- EMULATION OF ST63XX DIP MASKED DEVICES
- PIN TO PIN REPLACEMENT OF ALL ROM MASKED DEVICES
- 8-BIT ARCHITECTURE
- STATIC HCMOS OPERATION
- 4.5 TO 5.5 V SUPPLY OPERATING RANGE
- 4MHZ CLOCK OPERATION
- PROGRAM ROM : 16K BYTES EXTERNAL
- DATA ROM : USER SELECTABLE SIZE
- DATA RAM : 256 BYTES
- DATA EEPROM : 128 BYTES
- 40/42 SHRINK/48 PIN DUAL-IN-LINE PIGGYBACK CERAMIC PACKAGE
- 14/15 BIT PHASE LOCKED LOOP PERIPHERAL (PLL, ST63P16/7/8, ST63P36/7/8 ONLY)
- 14 BIT VOLTAGE SYNTHESIS TUNING PERIPHERAL (VS, ST63P56/7/8 only)
- SAME I/O PORT CONFIGURATION AS IN THE MASKED PRODUCTS, INCLUDING DIRECT LED DRIVING OUTPUTS
- TWO TIMERS EACH INCLUDING AN 8-BIT COUNTER WITH A 7-BIT PROGRAMMABLE PRESCALER
- DIGITAL WATCHDOG
- SERIAL PERIPHERAL INTERFACE (SPI) SUPPORTING S-BUS I^2CBUS AND STANDARD SERIAL PROTOCOLS
- ON-CHIP 5 LINES BY 15 COLUMNS ON-SCREEN-DISPLAY GENERATOR (NOT AVAILABLE ON ST63P06/07/08 AND ST63P16/7/8)
- FOUR 6-BIT PWM D/A CONVERTERS
- AFC A/D CONVERTER WITH 0.5V RESOLUTION
- INFRARED SIGNAL PRE-PROCESSOR
- THREE INTERRUPT VECTORS (IR, TIMER 1 & 2, ST63P06/7/8, ST63P16/7/8)
- FOUR INTERRUPT VECTORS (IR, TIMER 1 & 2, OSD VSYNC, ST63P26/7/8, ST63P36/7/8, ST63P56/7/8)
- ON-CHIP CLOCK OSCILLATOR
- ON-BOARD POWER-ON RESET CIRCUITRY
- BYTE EFFICIENT INSTRUCTION SET
- BIT TEST AND JUMP INSTRUCTIONS
- WAIT AND BIT MANIPULATION INSTRUCTIONS
- 3.25µS TCYCLE (WITH 4.0 MHz CLOCK)
- TRUE LIFO 6-LEVEL STACK
- THE DEVELOPMENT TOOL OF THE ST63XX MICROCONTROLLERS CONSISTS OF THE EMST63 HW/TVS EMULATION AND DEVELOPMENT SYSTEM AND CONNECTED VIA A STANDARD RS232 SERIAL LINE TO AN MS-DOS™ PC.

Figure 1 : ST63P06 - ST63P07 - ST63P08 Pin Configurations.

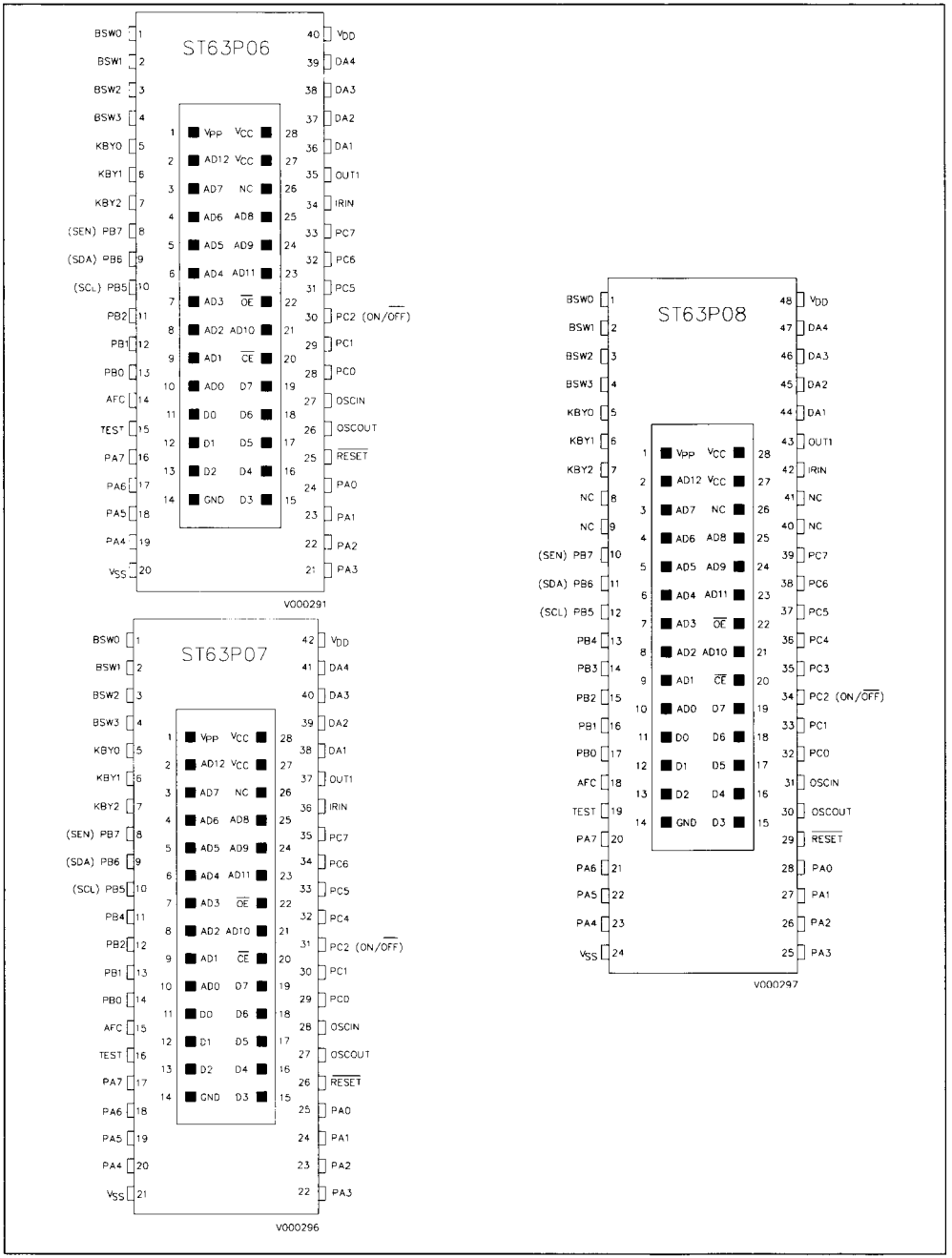
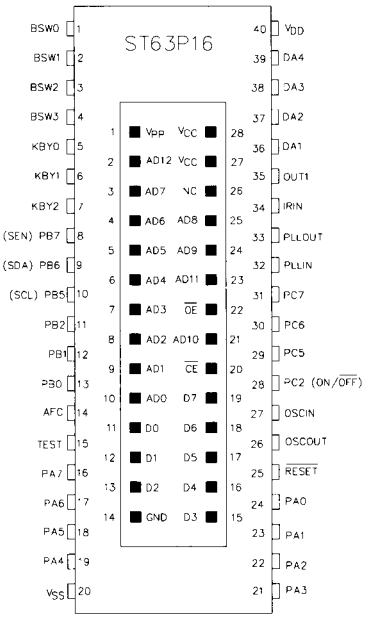
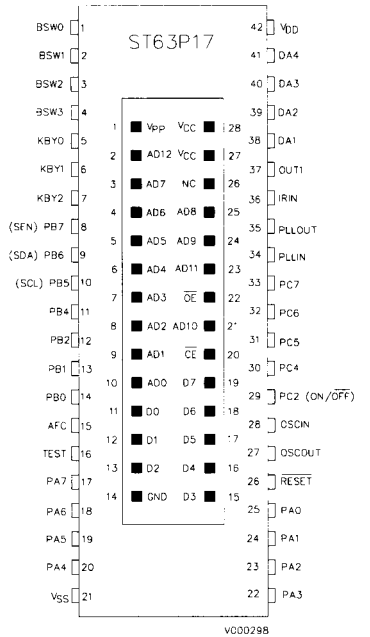


Figure 2 : ST63P16 - ST63P17 - ST63P18 Pin Configurations.





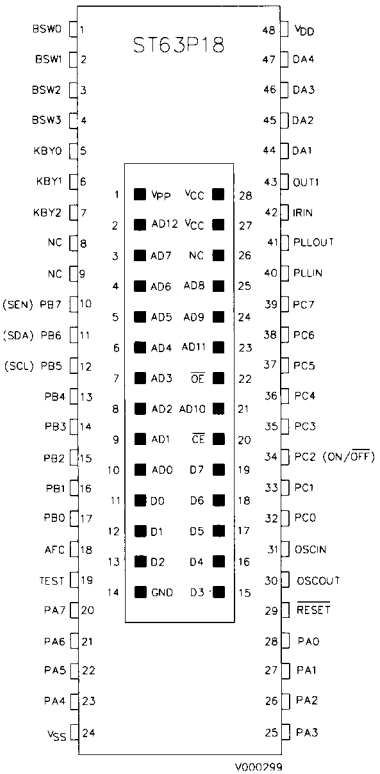
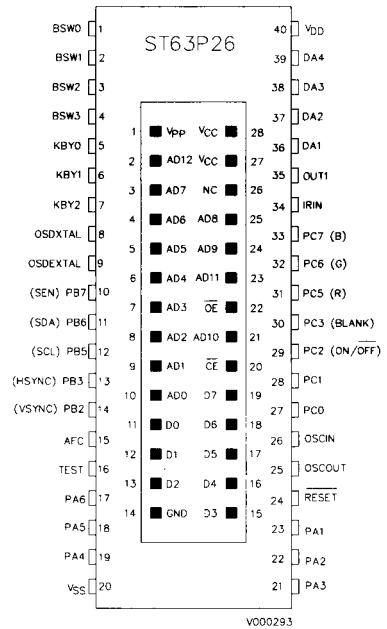
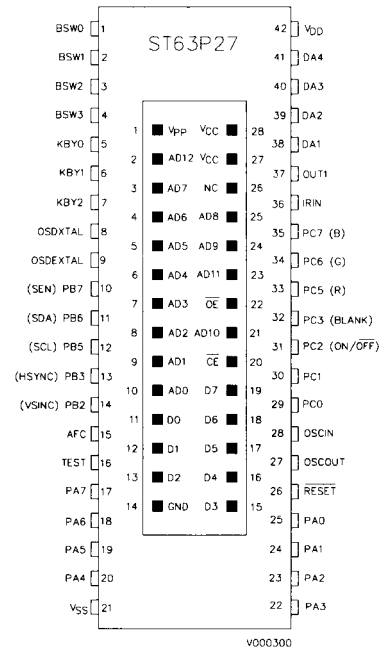


Figure 3 : ST63P26 - ST63P27 - ST63P28 Pin Configuration.





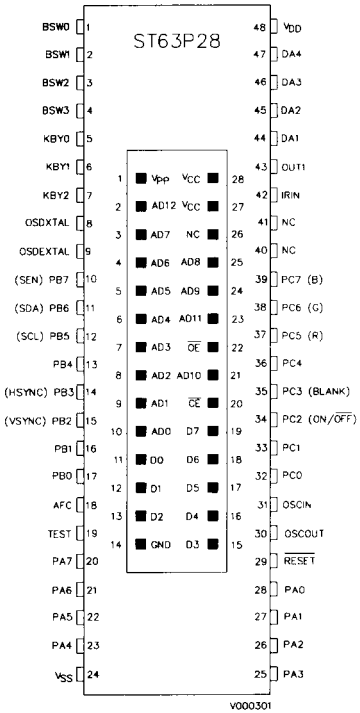
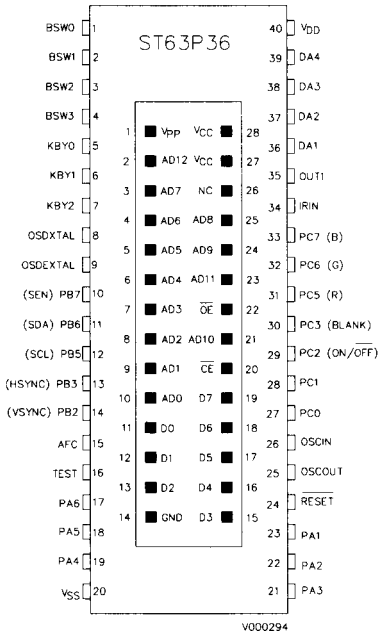
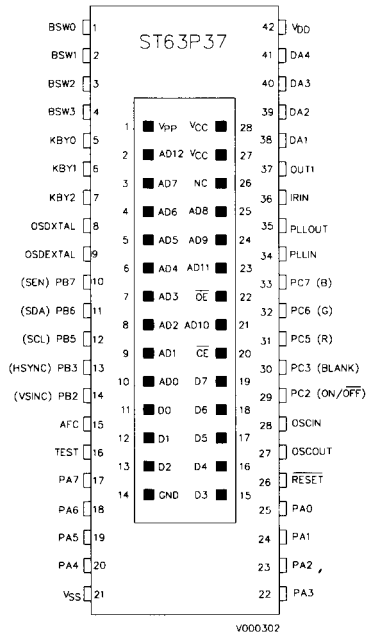


Figure 3 : ST63P36-ST63P37-ST63P38 Pin Configuration.





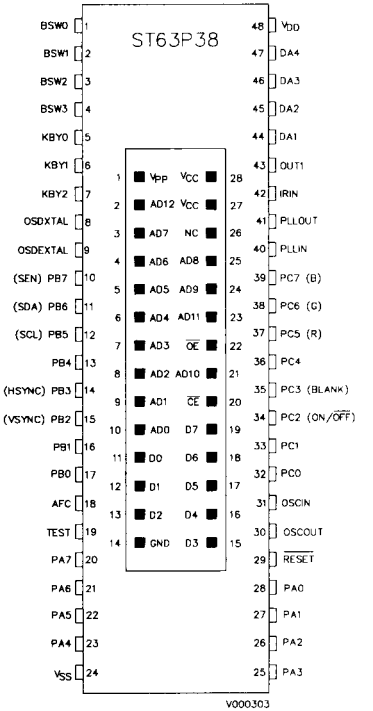
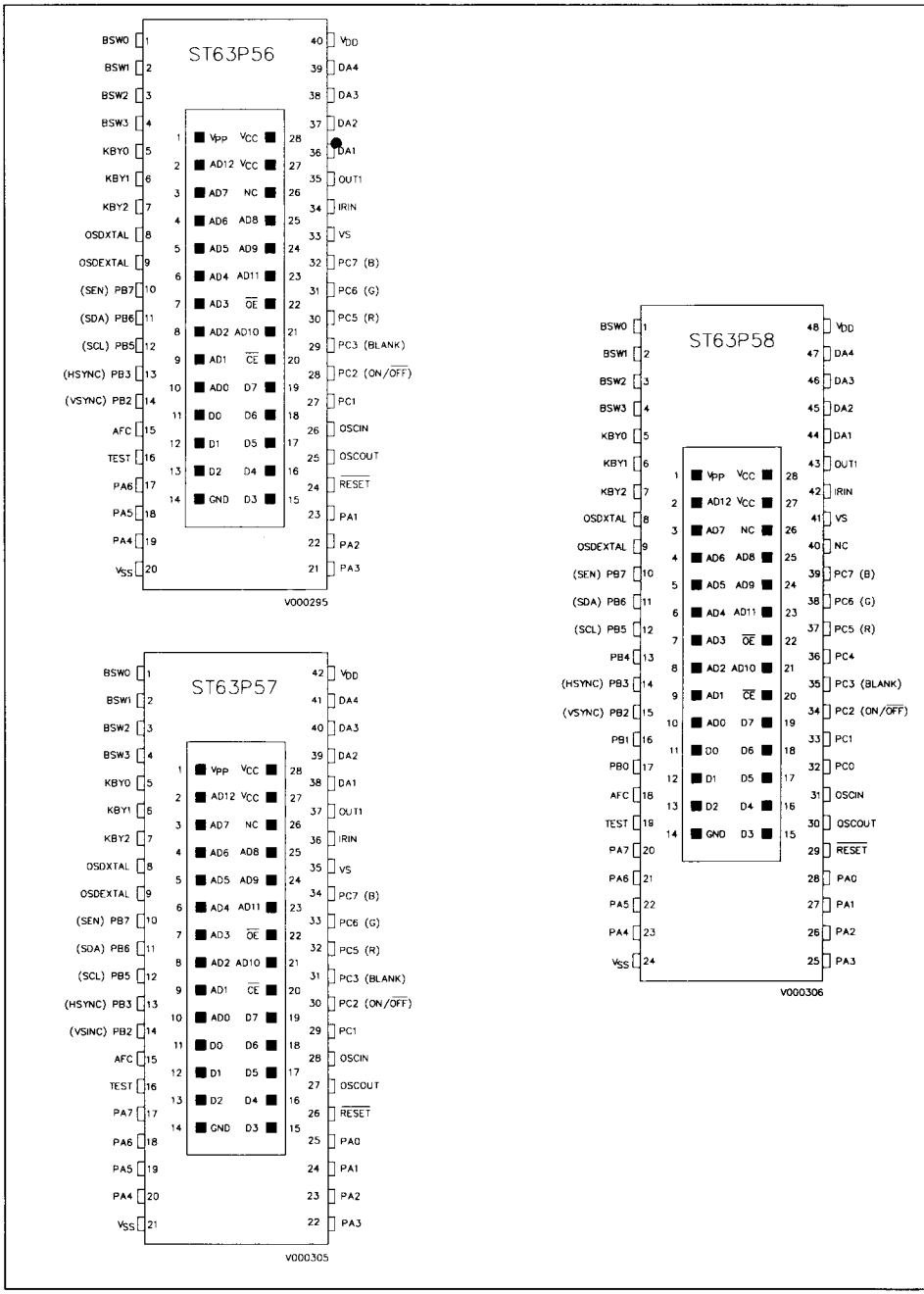


Figure 3 : ST63P56-ST63P57-ST63538 Pin Configurations.



GENERAL DESCRIPTION

The ST63PXX microcontrollers are piggyback members of the 8-bit HCMOS ST63XX family, a series of devices specially oriented to TV applications. Different packages and configurations are available to offer different performance/cost tradeoffs. All ST63XX members are based on a building block approach: to a common Core is associated a combination of on-chip peripherals (macrocells) available from a standard library.These peripherals are designed with the same Core technology giving full compatibility, short design and testing time. Many of these macrocells are specially dedicated to TV applications. These piggyback devices have the same functions and pin configuration as all ROM ST63XX masked products. In the piggyback devices instead of on-chip program and data ROM, the relevant "address" and "data" lines are lead out to the 28 pin socket which is directly located on the top of the package, so that an external memory can be addressed. These piggyback devices can operate as an emulator to verify the user code, or for prototype/small volume production in order to test design concept before commitment is made to high volume production with masked ST63XX devices. The macrocells of the ST63PXX are: two 8-bit counter with a 7-bit programmable prescaler (Timer), a Digital Watchdog Timer, a Serial Peripheral Interface (SPI), a 5 lines by 15 columns On-screen display generator (OSD, not available on ST63P06/7/8, ST63P16/7/8), four 6-Bit PWM D/A Converters, an AFC A/D converter with 0.5V resolution, a 14 bit Phase Locked Loop peripheral (PLL, ST63P16/7/8, ST63P36/7/8 only), a 14 bit Voltage synthesis tuning peripheral (VS, ST63P56/7/8 only). In addition all these devices have 128 bytes of on-chip EEPROM. Refers to ST63XX masked devices datasheets for additional information.