# ST2203U

## 8-Bit Microcontroller With 2K Bytes RAM

**P r e l i m i n a r y**

Note: This is not a final specification.
Some parameters are subject to change.

# Checklist

**Version 2.0**

**2006/11/28**

Sitronix Technology Corporation

# ROM CODE CHECKLIST

## ST2203U-□□□□

8-Bit Microcontroller With 2K Bytes RAM

| | |
|---|---|
| **OSCILLATOR** | □32768 Hz Crystal (□Switch to normal load after 1.5 second)<br>□Crystal _____ MHz(tolerance ±30ppm) |
| **OPERATING VOLTAGE** | □2.4V ~ 3.6V □3.0V ± 10% □3.3V ± 10%<br>□Other Range_____~_____V<br>**Note**: Maximum operating frequency = 8.0MHz@3.0V, 6.0Mhz@2.4V |
| **BATTERY** | □CR20___x___ □AAx □AAAx □_____ |
| **POWER DOWN MODES** | □WAI-0 □WAI-1 |
| **LOW VOLTAGE DETECTOR** | □Disabled<br>□ External -LVD level1(2.4V)<br>□ External -LVD level2(2.2V)<br>□ External -LVD level3(2.0V)<br>□ External -LVD level4(1.9V) |
| **LCD SPECIFICATIONS** | Resolution:_____x_____ Duty: 1/___ VLCD:___<br>Frame Rate:_____Hz Alternation: Every □Frame □___Lines<br>Driver: □ST8012x___ □ST8008x___ □ST8009x___ □ST8011x___ |
| **LCD Gray-level** | □Black and White □4 Gray-level |
| **REGISTER VALUE** | When LCD is on: LCKR =_____ LCTR =_____ LFRA =_____ LXMAX =_____ LYMAX =_____<br>When LVD is on: LVCTR =_____<br>When power down: SYS =_____ (WAIT0 or WAIT1) |
| **DATA SHEET:** ST2203U user's manual Ver_____ | |
| **CODE FILE:**_____.BIN | **DATE(Y/M/D):** 20___/____/____ |
| **CHECK SUM:** □□□□H | |

**Note:**

a. File format must be binary and the extension should be ".BIN".
b. File should be wrapped in ZIP format for transferring or e-mailing.
c. Only single file is allowed.
d. File length equals to 131072 (128x1024) bytes.
e. Functions should be checked on the emulation board or by real chip.
f. Electric characteristics of the emulation board are not identical with those of the real chip.

**CUSTOMER**

COMPANY

SIGNATURE

**SITRONIX**

FAE/SA

SALES

Project Name: DATE:

| | ITEM | CHECK | NOTE |
|---|---|---|---|
| 1 | Check the desired frequency matched the VDD | | |
| 2 | Check and use the updated version of data sheet | | |
| 3 | After power on, enter wait-1 mode for 1.5 second before normal operation | | |
| 4 | Initialize user RAM and every related control register | | |
| 5 | Confirm contrast level, duty, frame rate, alternating rate and the display quality of LCD | | |
| 6 | Before entering power down mode, turn off unused peripheral such as LCD controller, and LVD | | |
| 7 | Confirm I/O direction, default state, and function enable bits. Enable pull-up for unused input pins | | |
| 8 | Read from an input port after the signals are stable. Ex. when doing key scan, delay 12 us from a new scan value then read the return lines. | | |
| 9 | If an input connects to VDD or GND directly, make sure to remove any DC current from internal pull-up/down resistor after the status is being read. | | |
| 10 | Do not use “read-modify-write” instructions, e.g. ROR and SMB0, to the registers that are read-only, write-only or have different functions for read and write. The registers at least include PA ~ PD, PL, PCD, PFC, PFD, TIEN, PCL, TxCH, TxCL, PRS, BTREQ, BTCKS, RTCR, RTC, IRRH, PRRH, DRRH, XREQ, MISC, SYS, IREQL, IREQH, LSSAL, LSSAH, LVPW, LCKR, LFRA, LPAN, LCTR, LAC, SDATAH, SDATAL, SSR, SMOD, DMSL, DMSH, DMDL, DMDH, DCNTL, DCNTH, LVCTR, BCTR, USBIRQ, USBBFS, USBCON, EP0CON, EP0LEN, BKCON, BKOLEN, INTCON, WEC | | |
| 11 | Disable unused functions and reserve “RTI” instruction for unused interrupt vectors | | |
| 12 | Check stack memory limited within 256 bytes. | | |
| 13 | Always disable interrupt function (by an ‘SEI’ instruction) when modifying the IENAL, IENAH, IREQL and IREQH registers. | | |
| 14 | Use a ST2203U real chip, together with the emulation mode, to development the whole system. Test and verify every condition | | |
| 15 | File length of released binary file must equals to 131072 (128x1024) bytes | | |

| | | | |
|---|---|---|---|
| 16 | Settings of Port-L for LCD control signals must include lines below:<br>STZ <PL<br>LDA #FFh<br>STA <PCL | | |

Engineer

Manager