UM0224
User manual

STR75x Demonstration Software

Introduction

This document describes the demonstration software running on the STR75x-EVAL evaluation board, which you can use to evaluate the capabilities of the microcontroller and the on-board peripherals.

The demonstration software contains a main application divided into various smaller applications. The demonstration software is already stored in the embedded flash memory of the microcontroller and could be downloaded from http:\\www.st.com\mcu then programmed into the STR75x flash.

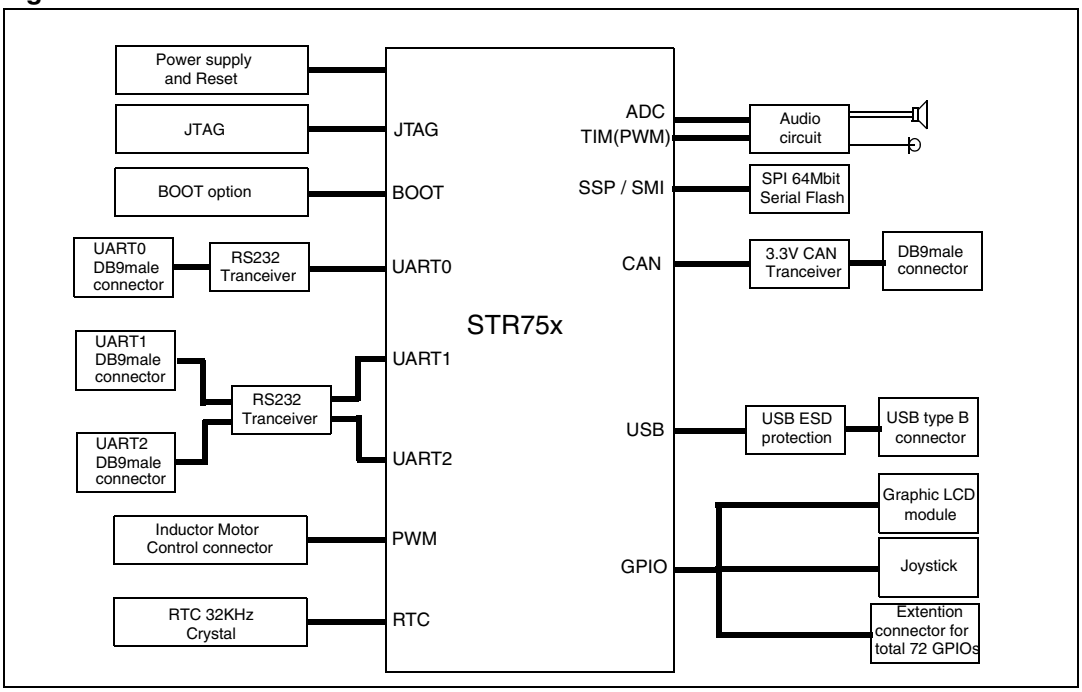
Contents

1 Functional description

The STR75x microcontroller evaluation board provides a development and demonstration platform for STR75x-based applications. It is designed to allow you to try out the major functions of the STR75x microcontroller.

The following picture summarizes the main functional blocks of the evaluation board:

Figure 1. Evaluation board overview



1.1 Power Control

The evaluation board is powered by an external 5V supply all other required voltage are provided by on-board voltage regulators.

1.2 Clocking

Three clock sources are available on STR75x-EVAL evaluation board for STR750Fx, USB and RTC:

- 32 kHz Crystal for embedded RTC.
- 4 MHz Crystal for STR750Fx.
- 48 MHz Oscillator for USB.

1.3 Reset control

The Reset can be generated by hardware or software sources:

- Reset button: activates the RESET input when pressed.
- A JTAG reset

1.4 Debug JTAG interface

Software debug is done via the standard ARM JTAG connection: 20 pins IDC to connect to the standard ARM host interface.

1.5 Displays and input devices

1.5.1 LCD

122x32 graphic LCD display connected to GPIOs.

1.5.2 LED

4 general purpose LED's are available as display device.

1.5.3 Joystick

4-direction joystick with selection key.

1.6 Interfaces

1.6.1 RS232

The STR75x evaluation board (STR75x-EVAL) provides three on-board RS-232 serial ports. Two channels, UART1 and UART2, use one RS-232 transceiver U12.

For the UART0 with handshake signal support, it uses another RS-232 transceiver.

Both these RS232 ports are terminated by DB9 connectors.

1.6.2 CAN

STR75x-EVAL evaluation board supports CAN2.0A/B complaint CAN bus communication based on 3.3V CAN transceiver. Both High-speed mode and slope control mode are available and can be selected by setting a dedicated jumper.

1.7 Motor control

STR75x-EVAL evaluation board supports inductor motor control via a 34-pins connector, which provides all required control and feedback signals to and from motor power-driving board.

1.8 Miscellaneous peripherals

1.8.1 10-bit analog to digital converter

- Varistor: ADC channel3 connected to an on board variable resistor. The variable resistor provides a voltage in the range of 0 to 3.3V.

1.8.2 Push-buttons

The following push-buttons are provided:

- KEY: user push-button
- Wakeup: push-button to wake-up the processor from low power modes

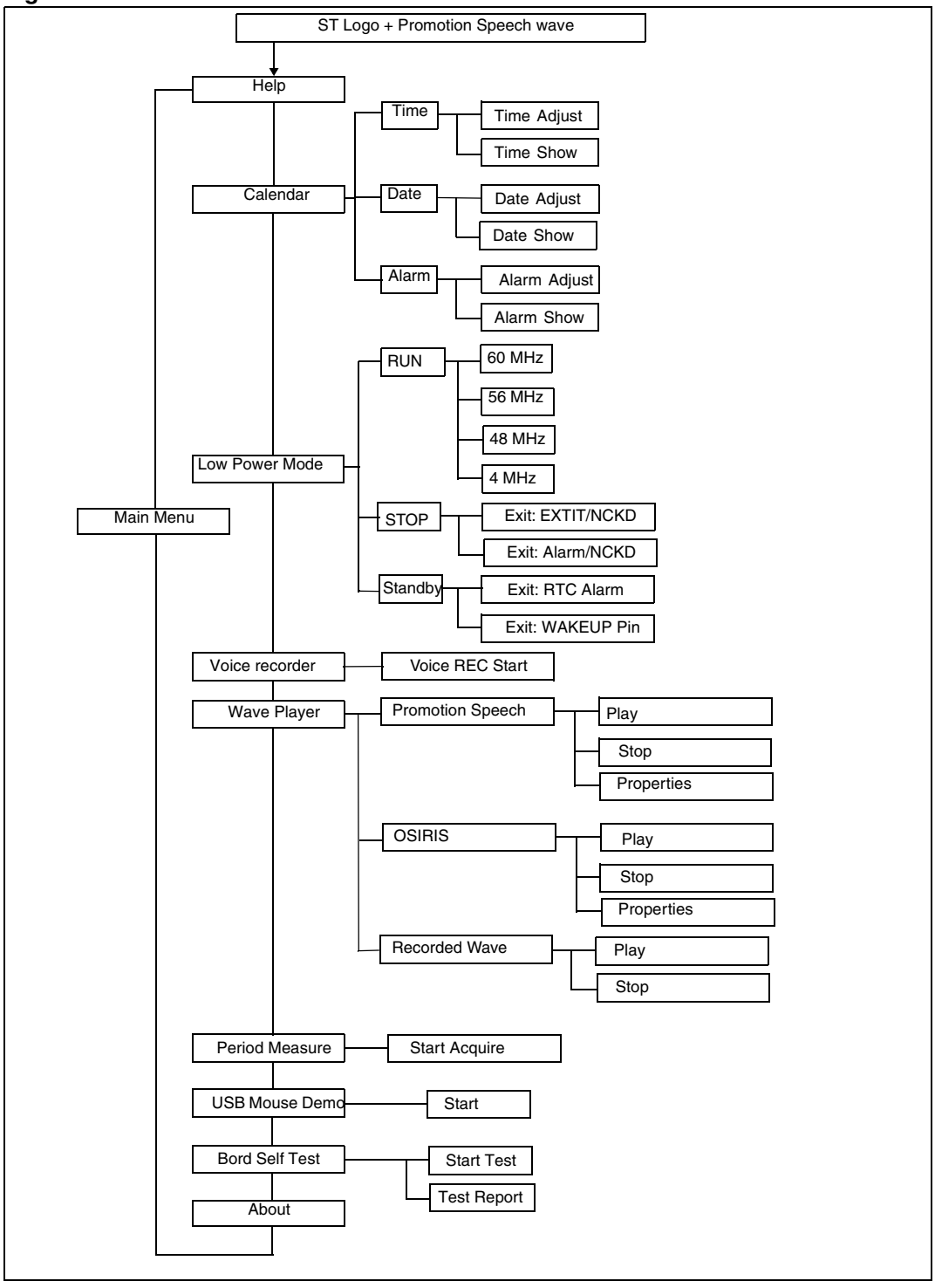
1.8.3 Audio

STR75x-EVAL evaluation board supports both audio (*.wav format) recording and playback.

2 Running the demonstrations

2.1 Menu

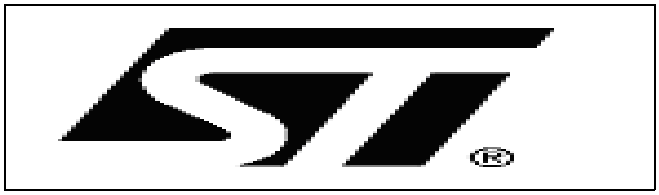
Figure 2. Structure of the demonstration Menus



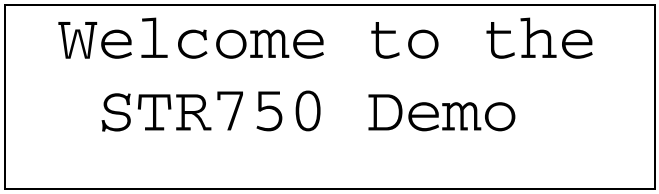
The above figure shows the menu system of the STR75x demonstration. The column to the left displays the main menu. "RIGHT" and "LEFT" joystick direction allow you to navigate between the items in the menu or in the sub-menu. To enter a sub-menu, press the "SEL" push-button. To exit a sub-menu press the "UP/DOWN" joystick direction.

2.1.1 Welcome screen

After a board RESET, the ST Logo appears on the LCD as shown in the figure below and the Promotion speech wave is played.



Then, after two seconds, the Welcome message is displayed on the LCD screen as follow:



After two seconds, the following graphic is displayed on the LCD screen:

Then press "SEL" to enter in the main menu and displays the first menu item *"Help"*.

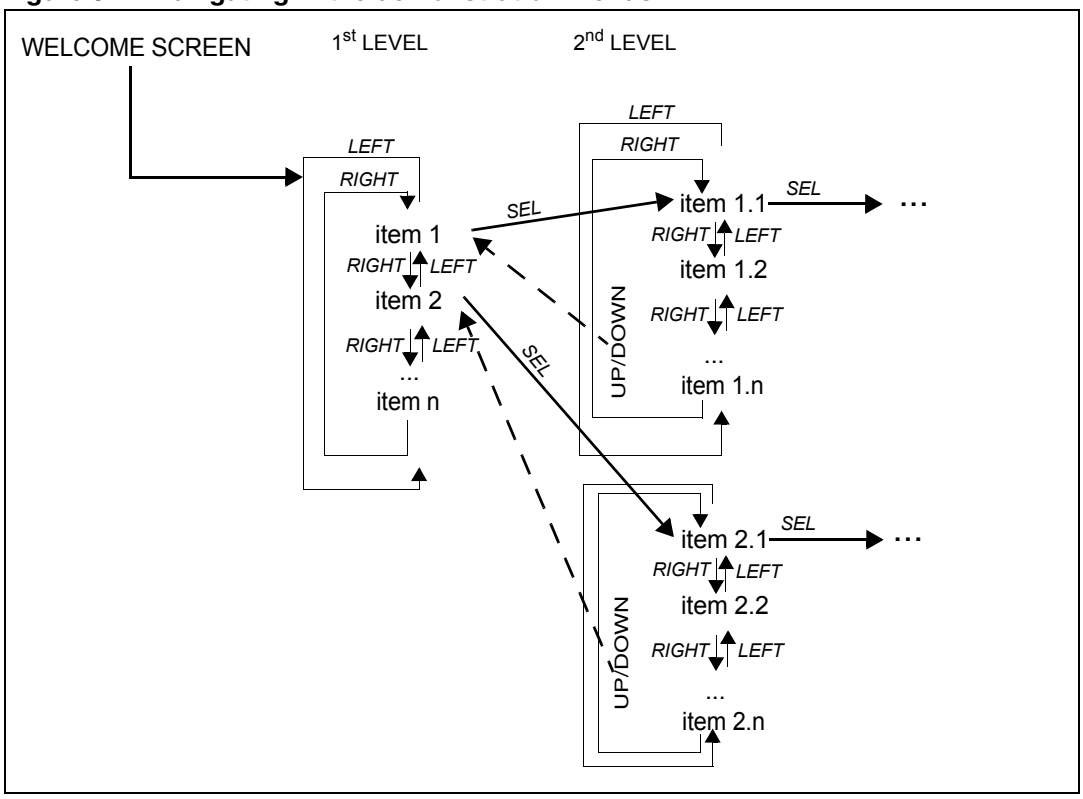
If no SEL pressed the main menu is shown automatically after 100 seconds at the end of the promotion speech wave end.

Note: When the board is powered up for the first time, you have to set the date and time in the "Calendar" menu.

2.1.2 Navigation

The demonstration menu is based on circular navigation, sub-menu, item selection and back capability as follows:

Figure 3. Navigating in the demonstration menus

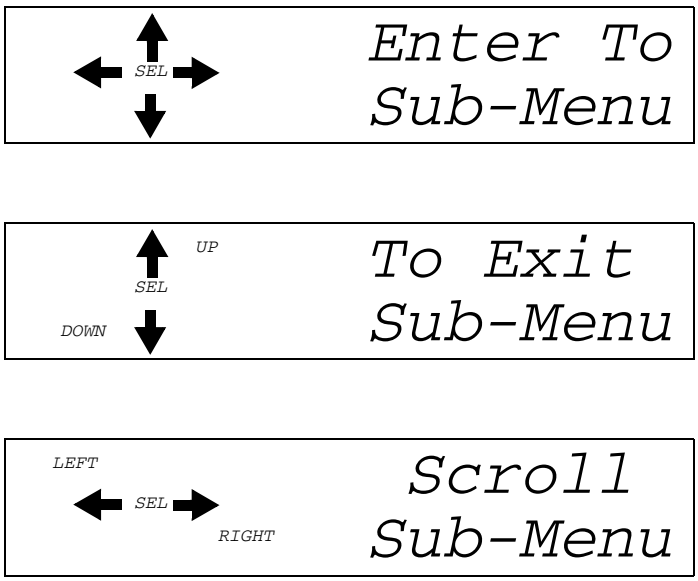


The user navigates using the joystick push-buttons: “RIGHT”, “LEFT” ,“SEL”, “UP” and “DOWN” located on the evaluation board.

- “RIGHT” and “LEFT” push-buttons perform circular navigation in the current menu items.
- “SEL” push-button selects the current item.
- “UP” and “DOWN” jumps to the higher level menu.

When the demonstration menu is activated, the following message is displayed on the LCD:

In this case, when "SEL" pressed the following graphics are shown on LCD screen continuously one by one each two seconds.



To exit from this help menu press any joystick buttons.

2.2 Clock sources

2.2.1 Clock control

The STR750 internal clocks are derived from one source mounted 4 MHz Crystal.

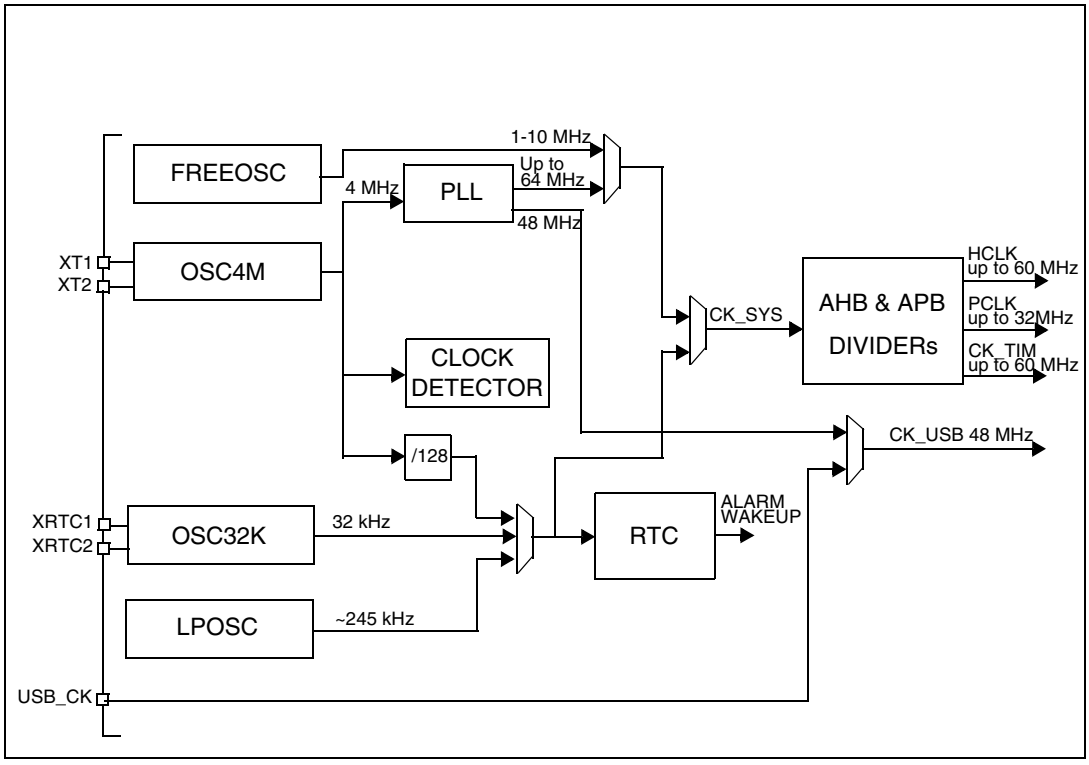
In this demo application, the system clock is configured as follow:

- System clock is set to 60 MHz
- HCLK frequency is set to 60 MHz
- Timer clock (CK_TIM) is set to 60 MHz
- PCLK is set to 30 MHz
- USB clock (CK_USB) is set to 48 MHz (internal clock)

Only the RTC is clocked by a 32 kHz external oscillator.

The HCLK clock can be changed only in the "Run" sub-menu: it can be 60 MHz, 56 MHz, 48 MHz or 4 MHz.

Figure 4. Clock Control



2.2.2 Clock failure

At any demo level, if no clock is present on OSC4M (broken or disconnected Crystal), the following message is displayed on the LCD screen:

If the 4 MHz Crystal is not reconnected in 30s, the MCU enters STANDBY mode and the demo will never restart as long as the clock is not present. If the 4 MHz Crystal is reconnected within thirty seconds the MCU continues execution.

Note: Connecting the OSC4M after reset may not restart the demo correctly. So you must connect the crystal before starting the demo.

Note: The Clock Detector (CKD) feeds the MCU with the FREEOSC used as emergency clock if no clock is detected.

2.3 STR750 resources

2.3.1 Peripherals

All used peripherals are described on the following table:

Table 1. STR750 Demo Peripherals

Used Peripherals	Application
ADC	Voice Recorder
EIC	Main
EXTIT	Main
GPIO	All applications
MRCC	All applications
RTC	Calendar
SMI	Wave player, voice recorder, alarm wave and board self test
TB	System timer
TIM	Wave player and voice recorder
UART	Board self test
USB	USB mouse demo
WDG	Screen saver

2.3.2 Interrupts

The following table show all the enabled interrupts

Table 2. STR750 Demo Interrupts

Interrupts	Priority	Used for
EXTIT Line0 FIQ channel	Fast interrupt	JoyStick SEL push-button
WATCHDOG FIQ channel	Fast interrupt	Screen Saver
RTC IRQ channel	15	Calendar
MRCC IRQ channel	14	Detect the clock failure
EXTIT IRQ channel	4	JoyStick and Key push-button
TIM0 IRQ channel	3	Voice recorder and wave player
USB_LP IRQ channel	2	USB synchro
TB IRQ channel	1	System timer

2.3.3 External interrupts

Table 3. STR750 Demo External Interrupts

External Interrupts	Used for
EXTIT Line 0	JoyStick SEL push-button: menu navigation
EXTIT Line 3	JoyStick UP push-button: menu navigation
EXTIT Line 8	JoyStick DOWN push-button: menu navigation
EXTIT Line 12	JoyStick LEFT push-button: menu navigation
EXTIT Line 13	JoyStick RIGHT push-button: menu navigation
EXTIT Line 7	Key push-button: Alarm stop and voice recorder application
EXTIT Line 15	RTC Alarm: Wake-up from low power modes

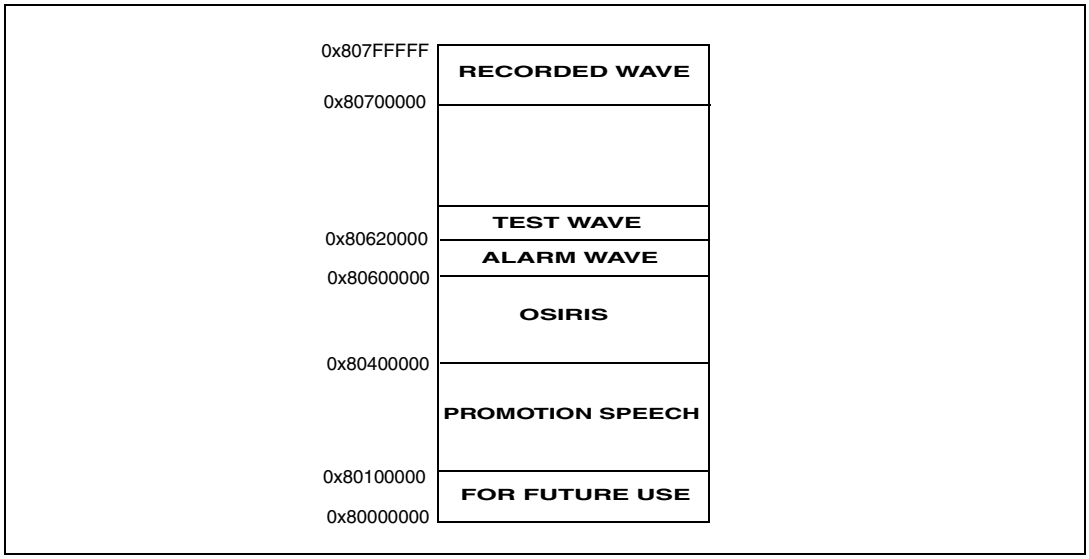
All External interrupts except the Key (EXTIT Line 7) are disabled in "SEL" function execution.

The Key push button (EXTIT Line 7) is only enabled in voice recorder (To start and to stop recording) application or if an alarm is occurred (To stop the alarm wave).

2.3.4 SMI Flash memory organization

The SMI Flash is used to store the Promotion speech, the OSIRIS wave, the recorded wave, the wave test (in board self test) and the alarm wave. Below the SMI memory organization:

Figure 5. SMI Flash memory organization



2.4 Demo applications

The following section provides a detailed description of each part of the demonstration.

Notes:

- In the demonstration, the core runs at HCLK = 60 MHz.
- Red LEDs: LD2, LD3, LD4 and LD5 are always blinking with a frequency depending on the core clock (except in the board self test menu).

2.4.1 Calendar

The STR750 provides a Real Time Clock (RTC) which provide a set of continuously running counters that can be used, with suitable software, to implement a clock-calendar function. The counters values can be written to set the current time of the system.

This sub-menu is used to configure some miscellaneous functions such as time, date and alarm.

Time

This sub-menu is divided in two items allowing the user to display or to adjust the current time.

- **Time Adjust:** After the evaluation board is powered up the user has to select this sub-menu to change the default time (00:00:00) to the current time. Once "Time Adjust" is selected, the first digit of the hour field is ready to be changed. Pressing the "UP" button will display the current value plus one. Pressing the "DOWN" button will display the previous digit value. After choosing the digit value press "SEL", the cursor jumps automatically to the next digit. When all the time digits are set, the "Calendar" menu is shown. Some digit values are limited to a range of values depending on the field (hour, minute or seconds). The following message (with the default time or the current time) is displayed on the LCD when this sub-menu is selected:

- **Time Show:** this item displays the current time or the default time. The following message is displayed on the LCD when this sub-menu is selected:

To exit from this sub menu press UP/DOWN push buttons.

Date

This sub-menu is divided in two items allowing the user to display or to adjust the current date.

- **Date Adjust:** This item has to be selected after each power-up in order to set the current date. The user is asked to fill the current date to be stored in the application memory. The date is displayed on 8 digits: MM/DD/YYYY. The default date value

01/01/2006 is displayed when you enter this menu for the first time after power-up. The first digit of the month field is ready to be changed. To change the digit value it is needed to press "UP" or "DOWN". Pressing "UP" button will display the current value plus one, pressing "DOWN" button will display the previous value. After choosing the digit value press "SEL", the cursor jumps automatically to the next digit. When all the date digits are set, the "Calendar" menu is shown. Some digits values are limited depending on the field (month, day or year). In case of a re-adjust of the date, the current date value is shown. The following message is displayed on the LCD when this sub-menu is selected:

- **Date Show:** this item displays the current date. The default date displayed after power up and before using the Adjust item application is 01/01/2006. The following message is displayed on the LCD when this sub-menu is selected:

To exit from this sub menu press UP/DOWN push buttons.

Alarm

By means of this Sub-menu the user can configure the time when an alarm can be activated. When the alarm time value is reached the alarm wave is played. The Alarm wave is loaded in the SMI Flash. This sub-menu is divided in two items to display or to adjust the current Alarm**.**

- **Alarm Adjust:** the alarm adjust is reached by the same procedure as the Time Adjust Submenu.

- **Alarm Show:** this item displays the current alarm time. The default Alarm displayed after power up and before using the Adjust item application is 00:00:00. The following message is displayed on the LCD when this sub-menu is selected:

To exit from this sub menu press UP/DOWN push buttons.

Note: When an alarm occurrs the Alarm wave is played and can be stopped only by pushing the Key button.

Note: The Alarm wave is played only if this wave is loaded in the SMI flash, otherwise the alarm event is used only to wake-up the system from low power modes.

2.4.2 Low power modes

The STR750 microcontroller provides different operating modes in which the power consumption is reduced. The purpose of this menu is to show the behavior of the microcontroller in different low-power modes. STOP and STANDBY mode are taken as examples.

RUN

STR750 provides a Power, Reset and Clock Configuration Unit (MRCC) which allows the user to configure the system clock.

Selecting this item shows how an application can be run at different clocking frequencies. Blinking LEDs show the effect of changing the clock.

The following message is displayed on the LCD:

The RUN menu contains five submenu items:

- ***"60 MHz"*:** the application runs at 60 MHz.
- ***"56 MHz"*:** the application runs at 56 MHz.
- ***"48 MHz":*** the application runs at 48 MHz.
- ***"4 MHz":*** the application runs at 4 MHz.

The user has to press the "SEL" push button to select one of the listed run modes. "UP/DOWN" button have to be pushed to exit from any selected mode and return to 60 MHz as default clock value.

STOP

This menu allows you to put the STR750 in STOP mode. The software performs the specific sequence of instructions needed to enter STOP mode. STOP mode is characterized by:

- Possibility to turn off the Main Oscillator and PLL
- Possibility to turn off the Flash
- Possibility to turn off the Main Voltage Regulator
- Minimum power consumption
- Automatic context saving
- All Registers and SRAM contents are preserved

In this application, there are two ways to make the STR750 exit from STOP mode:

- In the first one, the EXTIT (Key button) is used to exit the MCU from STOP mode. The following message is displayed on the LCD:

The red LEDs continue blinking until the "SEL" push button is pressed, then the system enters STOP mode and the following message is displayed on the LCD:

The MCU will remain in STOP mode unless the Key push button is pressed. Once this button is pressed, the MCU exits from STOP mode. Then the system clock is set to 60 MHz and the application resumes executing.

Note: If an alarm occurs when the system is in STOP mode, the following message is displayed on the LCD screen when the MCU resumes from STOP mode:

- In the second case, the RTC Alarm will wake-up the MCU from STOP mode after the programmed timing. The following message is displayed on the LCD:

The red LEDs continue blinking until the "SEL" push button is pressed, then the system enters STOP mode and the following message is displayed on the LCD:

After the programmed timing has elapsed, the system exits from STOP mode. Then the system clock is set to 60 MHz and the application resumes executing.

Note: In both cases, the NCKD flag will wake-up the MCU from STOP mode.

STANDBY

This menu allows you to put the STR750 in STANDBY mode. The software performs the specific sequence of instructions needed to enter STANDBY mode. STANDBY mode is characterized by:

- The main voltage regulator is disabled
- Only the backup circuitry remains powered by the low power voltage regulator
- Minimum power consumption
- All registers and SRAM contents are lost

In this application, there are two ways to make the STR750 exit from STANDBY mode:

- In the first one, the Wake-up push button is used to wake-up the MCU from STANDBY mode. The following message is displayed on the LCD:

The red LEDs continue blinking until the "SEL" push button is pressed, then the system enters STANDBY mode and the following message is displayed on the LCD:

The MCU will remain in STANDBY mode unless the Wakeup push button is pressed. Once this button is pressed, the MCU exits from STANDBY mode and system reset signal is generated.

- In the second case, the RTC Alarm will wake-up the MCU from STANDBY mode after the programmed timing. The following message is displayed on the LCD:

The red LEDs continue blinking until the "SEL" push button is pressed, then the system enters STANDBY mode and the following message is displayed on the LCD:

After the programmed timing have elapsed, the system exits from the STANDBY mode and system reset signal is generated.

2.4.3 Voice recorder

The STR750 microcontroller provides timers and an ADC module which can be used for timing and signal acquisition respectively. In this case, we use one Timer (TIM0) to generate an Update interrupt every 45.35 µs (22.05 KHz) which corresponds to the sampling frequency of the ADC.

Note: To fine tune the voice recording quality you can use the on board potentiometer RV3 to control the micro preamplifier gain.

The following message is displayed on the LCD:

This LCD message remains until the "SEL" push button is pressed, then the MCU will erase the SMI memory area that is used to store the voice data and the following message is displayed on the LCD:

When KEY is pressed, the MCU starts recording voice and the following message is displayed on the LCD:

To stop recording you may press the KEY button. Otherwise the MCU will stop it automatically afer 30s.

2.4.4 Wave player

The STR750 microcontroller has several embedded Timers which can be used for timing purposes and generating the output signals. In this case, we use 2 Timers (TIM) the first Timer (TIM2) is configured to generate a PWM signal with a tunable duty cycle. The second Timer (TIM0) is used to generate an Update interrupt each time the wave file is sampled which corresponds to the TIM2 Duty cycle update.

The wave file has the following characteristics:

- *.wav file
- Audio Format: PCM
- Sample rate: 8000 Hz/ 11025 Hz/ 22050 Hz/ 44100 Hz
- Bits Per Sample: 8 bits
- Number Of Channels: Mono

There are three waves to play:

- Promotion speech
- OSIRIS
- Recorded wave

Promotion Speech

The following message is displayed on the LCD:

You can re-play a wave only by returning to the precedent sub-menu (Wave Player). The following message is displayed on the LCD:

If "SEL" pressed, The following message is displayed on the LCD:

To stop playing press "SEL" or wait until the end of the wave and the MCU will stop it automatically.

In this sub-menu, we can view the wave properties. The following message is displayed on the LCD:

The Promotion Speech wave file properties are:

- Playing time: 1min 40 sec
- File size: 2210758 Bytes
- Format Tag: PCM
- Channels: MONO
- Sample Rate: 22050 Hz
- Bits per sample: 8 Bits

Note: If the Promotion speech wave is not loaded in the reserved SMI memory, the following message is displayed on the LCD screen:

OSIRIS

The following message is displayed on the LCD:

You can re-play a wave only by returning to the precedent sub-menu (Wave Player). The following message is displayed on the LCD:

If "SEL" pressed, The following message is displayed on the LCD:

To stop playing press "SEL" or wait until the end of the wave and the MCU will stop it automatically.

In this sub-menu, we can view the wave properties. The following message is displayed on the LCD:

The OSIRIS wave file properties are:

- Playing time: 1min 04 sec
- File size: 1426686 Bytes
- Format Tag: PCM
- Channels: MONO
- Sample Rate: 22050 Hz
- Bits per sample: 8 Bits

Note: If the OSIRIS wave is not loaded in the reserved SMI memory, the following message is displayed on the LCD screen:

Recorded Wave

The following message is displayed on the LCD:

You can re-play a wave only by returning to the precedent sub-menu (Wave Player). The following message is displayed on the LCD:

If "SEL" pressed, The following message is displayed on the LCD:

To stop playing press "SEL" or wait until the end of the wave and the MCU will stop it automatically.

Note: If there is no recorded wave or if the SMI memory reserved for recorded wave is erased, the following message is displayed on the LCD screen:

2.4.5 Period measurement

This menu allows you to measure the period of an external input signal. The STR750 timers can be used in PWMI (PWM input) mode to measure the frequency and the duty cycle of an input signal in a range which depends on the TIM1 clock: in our case the range is from 458 Hz to 10 kHz. You have to connect the signal to be measured to the TIM1_TI2/P0.31 pin.

If the input signal is in the specified range, the following message is displayed on the LCD:

```
Duty Cycle: xx%
Freq: xxxxx Hz
```

If the signal is under the low limit of the range, the following message is displayed on the LCD:

```
Out of range!!
Freq < 458 Hz
```

If the signal is over the high limit of the range, the following message is displayed on the LCD:

```
Out of range!!
Freq > 10 kHz
```

If there is no signal connected to the TIM1_TI2/P0.31 pin, the following message is displayed on the LCD:

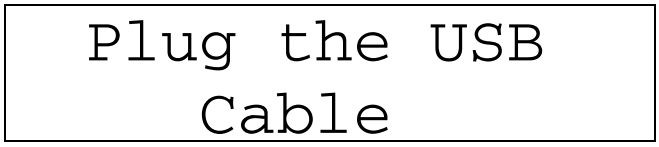
```
!!no signal!!
Press UP/DOWN
```

2.4.6 USB mouse demo

The STR750 microcontroller provides an USB (Universal Serial Bus) which provide an interface between a full-speed USB bus and the APB bus.

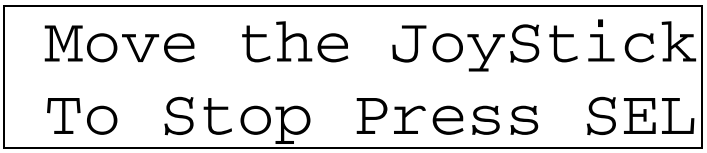
This sub-menu is used to configure the USB cell to communicate with the PC and run the mouse demo using the joystick push-buttons.

If "SEL" pressed the following message is displayed on the LCD screen:



For this sub-menu you have to connect an USB cable between the USB connector type B (CN2) and the PC. The previous message will remain displayed on the LCD screen until the cable plugin.

Once the cable is connected, the following message is displayed on the LCD screen:



Move the joystick and the PC cursor will move corresponding to the joystick push-button.

To exit from this sub-menu press "SEL".

2.4.7 Board self test

This test consists of checking the different components of the board and the STR750 peripherals.

The board test is made of the following sub-menus:

Start test

You select this sub-menu to start the various board tests.

After some tests the user is asked to store the test result. Press the "SEL" push button if the test is passed, else press the "LEFT" push button if test is failed.

The board self tests are:

- PushButtons Test: tests all the connected push buttons which are "Wakeup" and "Key". The following message is displayed on the LCD:

- JoyStick Test: tests all the connected joystick pins which are: "SEL", "RIGHT", "LEFT", "UP" and "DOWN".

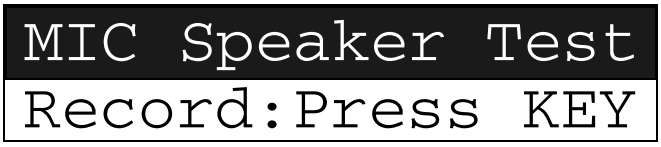
- LEDs Test: Successively lights up the four red LEDs connected to P0.16, P1.01, P2.18 and P2.19. The following message is displayed on the LCD:

Press "SEL" to select whether the current test is passed or failed.

Press "SEL" when the test is passed else press "LEFT".

- MIC Speaker Test: tests whether the microphone and the speaker work correctly.The following message is displayed on the LCD:

First, the MCU will record data using a microphone. It will store it in the SMI after erasing the corresponding region and displaying the following message on the LCD:



If a key is pressed, the MCU records a short data wave (3s).The following message is displayed on the LCD:

Once recording is finished, the MCU will play the recorded wave and the following message is displayed on the LCD:

If the "UP" or "DOWN" push-button is pressed, the following message is displayed on the LCD:

To stop the test wave press "UP" or "DOWN" or it will be stopped automatically at the end, and you must enter the result of the test:

Press "SEL" when the test is passed else press "LEFT".

- VaResistor Test: tests whether the potentiometer connected to Channel3 of the ADC works correctly. The number of the red LEDs turned on corresponds to the potentiometer output voltage. The following message is displayed on the LCD:

If "SEL" pressed the following message is displayed on the LCD:

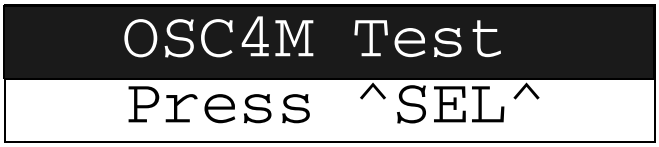
Press "SEL" to select whether the current test is passed or failed.

Press "SEL" when the test is passed else press "LEFT".

- OSC32K Test: Test if Oscillator 32K is ready or not.

Press "SEL" to display whether the current test is passed or failed.

- OSC4M Test: Test if Oscillator 4M is ready or not.



Press "SEL" to display whether the current test is passed or failed.

- SMI Flash Test: Test Access to SMI flash.

Press "SEL" to display whether the current test is passed or failed.

- UART0 UART1 Test: Testing a transmission and reception between UART0 and UART1. For this test you have to connect a null-modem female/female RS232 cable between the two DB9 connectors on the evaluation board (CN4-CN8).

Once the test is finished, a message is displayed indicating whether the UART test is passed or failed.

The following message is displayed on the LCD:

- UART1 UART2 Test: Testing a transmission and reception between UART1 and UART2. For this test you have to connect a null-modem female/female RS232 cable between the two DB9 connectors on the evaluation board (CN8-CN10).

Once the test is finished, a message is displayed indicating whether the UART test is passed or failed.

The following message is displayed on the LCD:

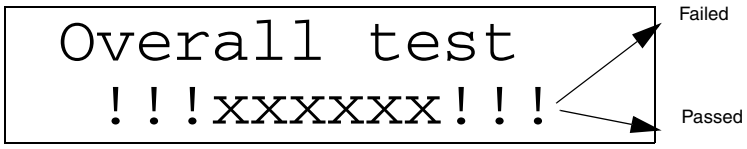
Press "SEL" to exit from board self test.

Test report

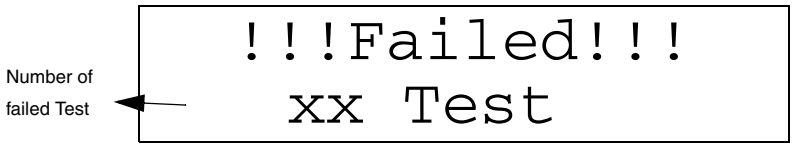
This sub-menu offers the possibility of showing the result of all tests done in the "Start Test" sub-menu.

If you select this sub-menu before starting the test, the following message is displayed on the LCD:

After selecting this sub-menu, the result of all the board tests is displayed, it is failed if at least one test was not correct, else passed if all tests are done successfully. The following message is displayed on the LCD:



If some tests were failed, a second message is displayed which contains in the first line the number of the failed test, and in the second line the name of those tests which you can display one-by-one using the "RIGHT" and "LEFT" push buttons. The following message is displayed on the LCD:



To exit from the "Test Report" sub-menu, press the "UP/DOWN" push button.

2.4.8 Screen saver

The STR750 Watchdog Timer module (WDG) can be used to reset the system or used as a timer base to generate an interrupt after a selected time delay depending on the system clock. In this demonstration software the WDG is used as timer with its End of Count interrupt, that sets a screen saver display when the WDG timer reaches a specified time delay without resetting the system. If any of the push-buttons are pressed during this delay which is 30 seconds, the screen saver is displayed on LCD. Since one push-button is pressed, the last sub-menu is re-displayed on LCD.

When the demonstrations enter in screen save mode, the date and time are displayed on the LCD as shown in the figure below. The time and date are continuously updated:

Using the WDG functions, we can enable or disable the screen saver for each demonstration sub-menu.

2.4.9 About menu

This menu shows the version of the STR75x Demo software. When this sub-menu is selected the following message is displayed on the LCD screen:

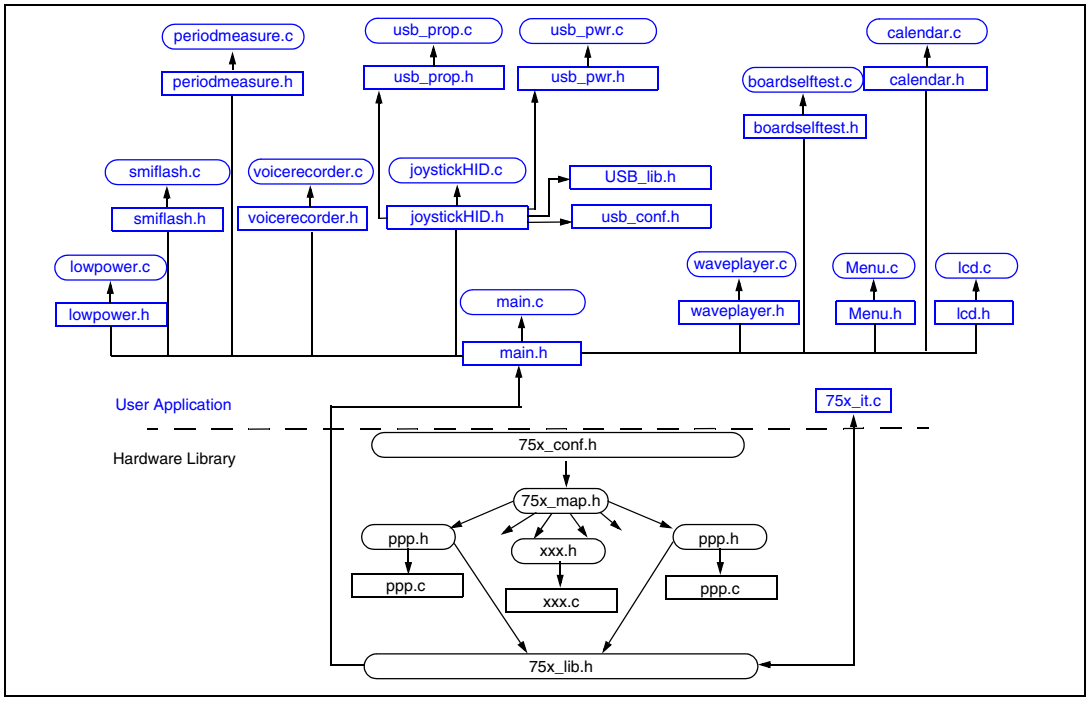
2.5 Software architecture

This section describes the software architecture. It is divided into two layers:

- **Hardware library layer**: contains the software library source files. These do not need to be modified by the user:
  - 75x_conf.h: is the header file for configuring which peripherals are used, and miscellaneous defines
  - 75x_type.h: contains the common data types and enumerations used in the other files
  - 75x_map.h: contains the peripheral memory mapping and register data structures
  - 75x_lib.h: is the main header file including all the others
  - 75x_it.c: is the source file containing the interrupt handlers
  - USB_lib.h: is the USB library include file
- **Demonstration architecture**: contains the architecture of the demonstration software that may be modified by the user:
  - menu.h: Header for the menu.c file.
  - menu.c: This file provides a set of functions needed to manage the demonstration menu
  - calendar.h: Header for the calendar.c file
  - calendar.c: This file provides functions for managing time, date and alarm events
  - lowpower.h: Header for the lowpower.c file
  - lowpower.c: This file provides low power modes functions
  - periodmeasure.h: Header for the periodmeasure.c file
  - periodmeasure.c: This file provides functions for measuring the period and the duty cycle of an external signal
  - lcd.h: Header for the lcd.c file
  - lcd.c: This file provides a set of functions needed to manage the LCD screen.
  - voicerecorder.h: Header for the voicerecorder.c file
  - voicerecorder.c: This file provides a set of functions needed to record voice.
  - waveplayer.h: Header for the waveplayer.c file
  - waveplayer.c: This file provides a set of functions needed to play waves.
  - smiflash.h: Header for the smiflash.c file
  - smiflash.c: This file provides a set of functions needed to manage SMI Flash.
  - joystickHID.h: Header for the joystickHID.c file
  - joystickHID.c: This file provides a set of functions needed to manage the USB Mouse Demo.
  - usb_conf.h: USB device configuration file
  - usb_desc.h: Header for the usb_desc.c file
  - usb_desc.c: Descriptor for USB Joystick Mouse
  - usb_prop.h: Header for the usb_prop.c file
  - usb_prop.c: All processing related to the Joystick Mouse device
  - usb_pwr.h: Header for the usb_pwr.c file
  - usb_pwr.c: Connection/disconnection & power management
  - usb_endp.c: Non control endpoints interrupt service routine

- usb_istr.c: ISTR events interrupt service routines
- boardselftest.h: Header for the boardselftest.c file
- boardselftest.c: This file provides functions for testing the STR75x-EVAL board.
- main.h: Header for the main.c file
- main.c: This file provides a set of functions needed to manage the demonstration menu

Figure 6. Software architecture



3 Revision history

Table 4. Document revision history

Date	Revision	Changes
20-Sep-2006	1	Initial release