# LCD8000-97C
# Operation Guide

Embest Technology

http://www.embest-tech.com

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# Product Overview

LCD8000-97C is a 9.7-inch capacitive touch-screen developed by Embest Technology for use with MarS Board – a supper ARM DIY platform and SABRE Lite. LCD8000-97C has a LVDS interface and supports a resolution of up to 1024x768 and a 260,000 colors. Its multi-touch screen brings better experience to the users of MarS Board and SABRE Lite.

## 1. Packing List

- LCD8000-97C×1
- Mini HDMI C-to-C Cable Dedicated for Mars Board (for LVDS signal transmission) ×1
- LVDS Cable Dedicated for SABRE Lite×1

## 2. Hardware Specifications

- 9.7-inch TFT Screen
- Resolution of 1024*768, 260,000 colors
- Supporting LVDS Signal
- Multi-Touch Capacitive Touch-Screen

## 3. Electrical Specifications

- Operating Ambient Temperature: 0℃ ~ +50℃
- Storage Temperature: -25℃ ~ +65℃
- Operating Humidity: 20% - 90%
- Dimension: 239mm x 185mm
- Power Supply: +5V(provided by MarS Board or SABRE Lite)

 

# Using LCD8000-97C on MarS Board

## 1. Hardware Connections

**1**） Use the Mini HDMI cable provided with the product to connect the LVDS interface on MarS Board to the Mini HDMI interface on LCD8000-97C as shown below;

**Figure 1** Connection between MarS Board and LCD8000-97C

**2**） Use a (Type Mini B Male to Type A Male) USB cable to connect the USB debugging interface on MarS Board to a USB interface on your PC, and then connect a 5V power supply to the board to finish hardware connections as shown below;

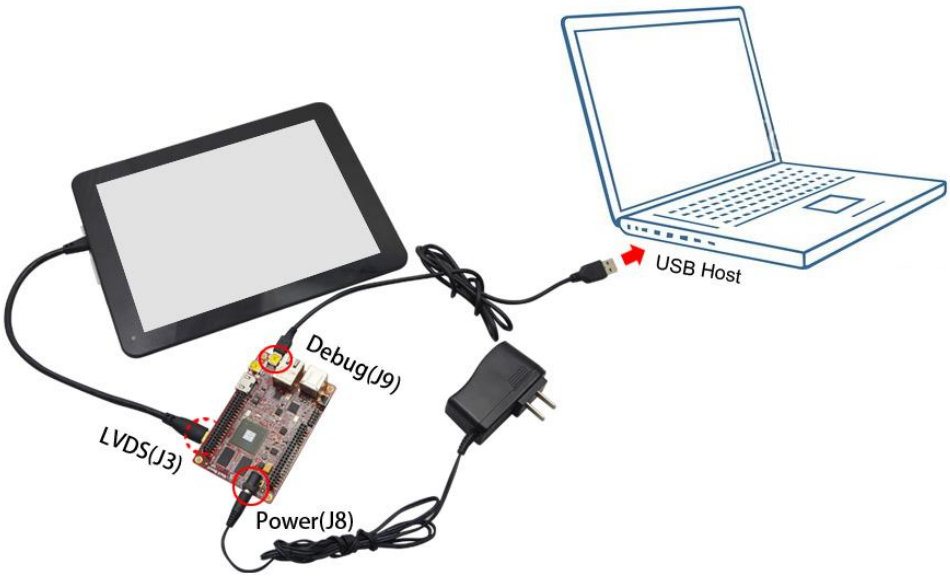


**Figure 2** Complete hardware connection

# 2. Software Configurations

**1**） The latest images and source code for Linux and Android on MarS Board have been able to support LCD8000-97C; Please visit to download them;

**2**） Please refer to Chapter 4 in the User Manual of MarS Board to update Linux/Android images on the board;

**3**） After updating is done, please reboot MarS Board and press any key on PC's keyboard to enter u-boot when you see "Hit any key to stop autoboot" in your terminal window.

```
U-Boot 2009.08-svn1 (Mar 14 2013 - 14:07:49)

CPU: Freescale i.MX6 family TO0.0 at 792 MHz
Temperature:     51 C, calibration data 0x58150469
mx6q pll1: 792MHz
mx6q pll2: 528MHz
mx6q pll3: 480MHz
mx6q pll8: 50MHz
ipg clock        : 66000000Hz
ipg per clock : 66000000Hz
uart clock       : 80000000Hz
cspi clock       : 60000000Hz
```

```
ahb clock        : 132000000Hz
axi clock     : 264000000Hz
emi_slow clock: 29333333Hz
ddr clock        : 528000000Hz
usdhc1 clock    : 198000000Hz
usdhc2 clock    : 198000000Hz
usdhc3 clock    : 198000000Hz
usdhc4 clock    : 198000000Hz
nfc clock        : 24000000Hz
Board: MX6Q-MARSBOARD:[ POR]
Boot Device: I2C
I2C:     ready
DRAM:     1 GB
MMC:     FSL_USDHC: 0,FSL_USDHC: 1
JEDEC ID: 0xbf:0x25:0x41
Reading SPI NOR flash 0xc0000 [0x2000 bytes] -> ram 0x276009b8
SUCCESS

*** Warning - bad CRC, using default environment

In:       serial
Out:     serial
Err:     serial
Net:     got MAC address from IIM: 00:00:00:00:00:00
----enet_board_init: phy reset
FEC0 [PRIME]
Hit any key to stop autoboot:    0 (press any key to enter uboot)
MX6Q MARSBOARD U-Boot >
```

**4**） Execute the following instructions to set the display mode for the 9.7-inch LVDS LCD;

- **setenv bootargs console=ttymxc1,115200 init=/init rw video=mxcfb0:dev=ldb, LDB-XGA,if=RGB666 fbmem=10M vmalloc=400M androidboot.console=ttymxc1**
- **saveenv**

**Note:**

🕮 At present, the touch screen of LCD8000-97C only support single point touch on Linux system

**5**） Reboot MarS Board again and then you can see LCD8000-97C working properly.

# Using LCD8000-97C on SABRE Lite

## 1. Hardware Connections

**1**） Use the LVDS cable provided with the product to connect the Mini HDMI interface on LCD8000-97C to the LVDS and IIC interfaces on SABRE Lite as shown below;

**Figure 3** Connections between SABRE Lite and LCD8000-97C

**2**） Use the serial cable provided with SABRE Lite to connect the serial interfaces on the device and your PC, and then insert a TF card on SABRE Lite and connect a 5V/4A power supply to finish hardware connections as shown below;

 

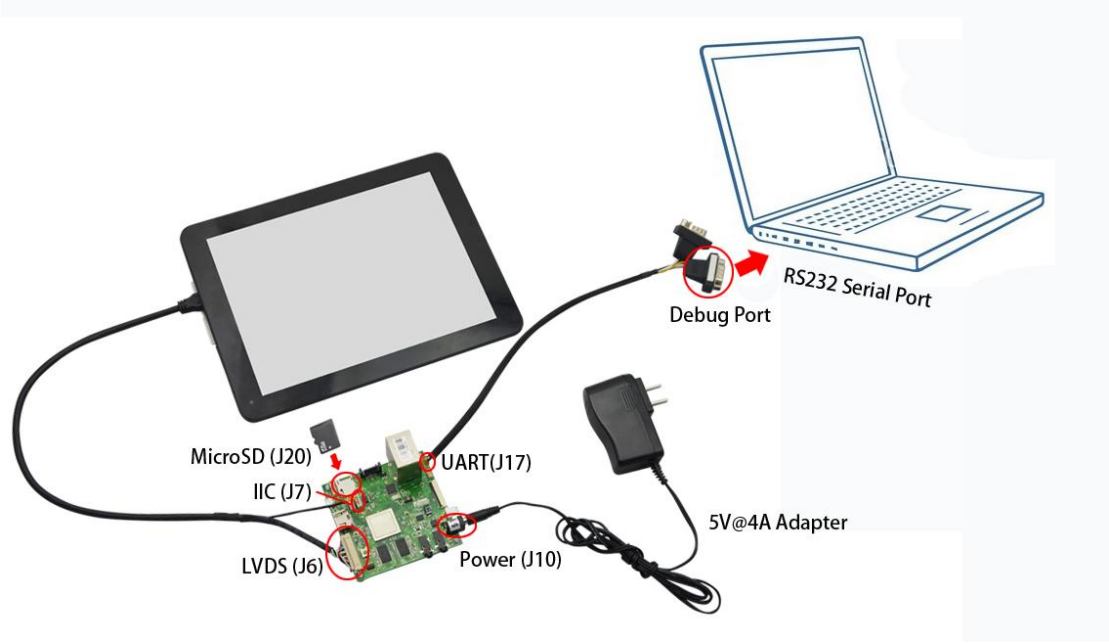


**Figure 4** Complete hardware connection

# 2. Software Configurations

**1**） The latest images and source code for Linux and Android on SABRE Lite have been able to support LCD8000-97C; Please visit http://www.embest-tech.cn/shop/product/sabre-lite-development-board.html to download them;

**2**） Please refer to Chapter 4.2 in the User Manual and Chapter 4 in the Quick Start Guide of SABRE Lite for how to update Android/Linux images on the board.

**3**） After updating is done, please reboot SABRE Lite and press any key on PC's keyboard to enter u-boot when you see "Hit any key to stop autoboot" in your terminal window.

```
U-Boot 2009.08 (Nov 13 2013 - 11:06:28)

CPU: Freescale i.MX6 family TO1.2 at 792 MHz
Temperature:    42 C, calibration data 0x5764fd69
mx6q pll1: 792MHz
mx6q pll2: 528MHz
mx6q pll3: 480MHz
```

```
mx6q pll8: 50MHz
ipg clock        : 66000000Hz
ipg per clock : 66000000Hz
uart clock       : 80000000Hz
cspi clock       : 60000000Hz
ahb clock        : 132000000Hz
axi clock     : 264000000Hz
emi_slow clock: 132000000Hz
ddr clock        : 528000000Hz
usdhc1 clock    : 198000000Hz
usdhc2 clock    : 198000000Hz
usdhc3 clock    : 198000000Hz
usdhc4 clock    : 198000000Hz
nfc clock        : 24000000Hz
Board: MX6Q-SABRELITE:[ POR]
Boot Device: I2C
I2C:     ready
DRAM:     1 GB
MMC:     FSL_USDHC: 0,FSL_USDHC: 1
JEDEC ID: 0xbf:0x25:0x41
Reading SPI NOR flash 0xc0000 [0x2000 bytes] -> ram 0x276009b8
SUCCESS

*** Warning - bad CRC, using default environment

In:      serial
Out:     serial
Err:     serial
Net:     got MAC address from IIM: 00:00:00:00:00:00
FEC0 [PRIME]
Hit any key to stop autoboot:   0    (press any key to enter uboot)
MX6Q SABRELITE U-Boot >
```

**4**） Execute the following instructions to set the display mode for the 9.7-in LVDS LCD;

- **setenv bootargs console=ttymxc1,115200 init=/init rw video=mxcfb0:dev=ldb, LDB-XGA,if=RGB666 fbmem=10M vmalloc=400M androidboot.console=ttymxc1**
- **saveenv**

**Note:**

At present, the touch screen of LCD8000-97C only support single point touch on Linux system

**5**） Reboot SABRE Lite again and then you can see LCD8000-97C working properly.

# Technical Support and Warranty

## Technical Support

Embest Technology provides its product with one-year free technical support including:

- Providing software and hardware resources related to the embedded products of Embest Technology;
- Helping customers properly compile and run the source code provided by Embest Technology;
- Providing technical support service if the embedded hardware products do not function properly under the circumstances that customers operate according to the instructions in the documents provided by Embest Technology;
- Helping customers troubleshoot the products.

The following conditions will not be covered by our technical support service. We will take appropriate measures accordingly:

- Customers encounter issues related to software or hardware during their development process;
- Customers encounter issues caused by any unauthorized alter to the embedded operating system;
- Customers encounter issues related to their own applications;
- Customers encounter issues caused by any unauthorized alter to the source code provided by Embest Technology;

## Warranty Conditions

**1**） 12-month free warranty on the PCB under normal conditions of use since the sales of the product;

**2**） The following conditions are not covered by free services; Embest Technology will charge accordingly:

- Customers fail to provide valid purchase vouchers or the product identification tag is damaged, unreadable, altered or inconsistent with the products.
- Products are damaged caused by operations inconsistent with the user manual;
- Products are damaged in appearance or function caused by natural disasters (flood, fire, earthquake, lightning strike or typhoon) or natural aging of components or other force majeure;
- Products are damaged in appearance or function caused by power failure, external forces, water, animals or foreign materials;
- Products malfunction caused by disassembly or alter of components by customers or, products disassembled or repaired by persons or organizations unauthorized by Embest Technology, or altered in factory specifications, or configured or expanded with the components that are not provided or recognized by Embest Technology and the resulted damage in appearance or function;
- Product failures caused by the software or system installed by customers or inappropriate settings of software or computer viruses;
- Products purchased from unauthorized sales;
- Warranty (including verbal and written) that is not made by Embest Technology and not included in the scope of our warranty should be fulfilled by the party who committed. Embest Technology has no any responsibility;

**3**） Within the period of warranty, the freight for sending products from customers to Embest Technology should be paid by customers; the freight from Embest to customers should be paid by us. The freight in any direction occurs after warranty period should be paid by customers.

**4**） Please contact technical support if there is any repair request.

**Note:**

📖 Embest Technology will not take any responsibility on the products sent back without the permission of the company.

# Contact Information

**Technical Support**

Telephone Number: +86-755-25635626-872/875/897

Email Address: support@embedinfo.com

**Sales Information**

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