

**Engineering Leadership**

## **Getting Started Manual MSC Q7-SK-BT-EP6-KIT001 Starterkit**

Revision V0.4

# Preface

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Technical Support:

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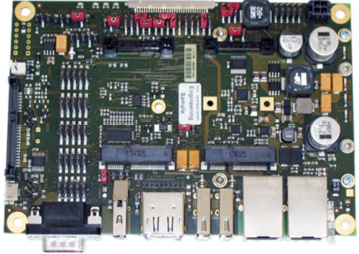


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## 1 Getting Started

This document describes the hardware and up the MSC Q7-SK-BT-EP6-KIT001

### 1.1 Package Content

The MSC Q7-SK-BT-EP6-KIT001 (referenced from now as Q7-SK-BT) contains the following components:

1. MSC Q7-MB-EP6-601-ES baseboard	
2. Power Supply Unit (with cable to the baseboard)	
3. Power Cord	no image
4. Q7-BT Heat Sink	
5. USB Flash Drive (containing BIOS, Drivers & Manuals)	no image
6. Getting Started Manual (this manual)	no image

**NOTE:**

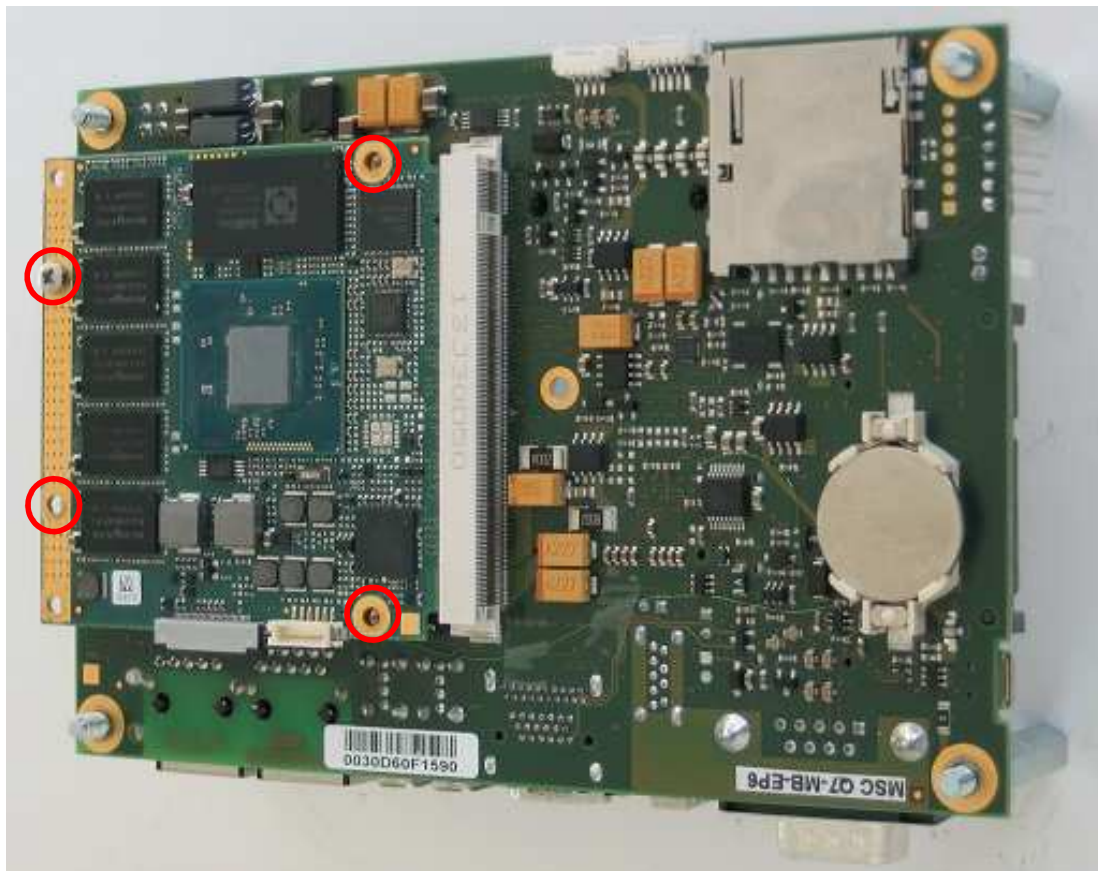
The Q7-SK-BT Starterkit does not include the MSC Q7-BT module, it must be ordered separately. However, the appropriate Heatsink is already contained in the Starterkit.

## 1.2 Mounting Module and Heatsink

Module and Heatsink are mounted with four screws, which are included with the MSC Q7-MB-EP6-601-ES Baseboard.

**NOTE:**

Depending on the application and environment it is recommended that the MSC Q7-BT be mounted with a Heatsink or Heatspreader because operating the module without cooling may result in thermal issues.



*Figure 1 Module and Heatsink (not depicted here)*



### 1.3 Power Connection

The Q7-SK-BT Starterkit system is powered by a 12V DC switched AC/DC converter which is included in the kit. A customized DC cable provides the connector for the MSC Q7-MB-EP6-601-ES.

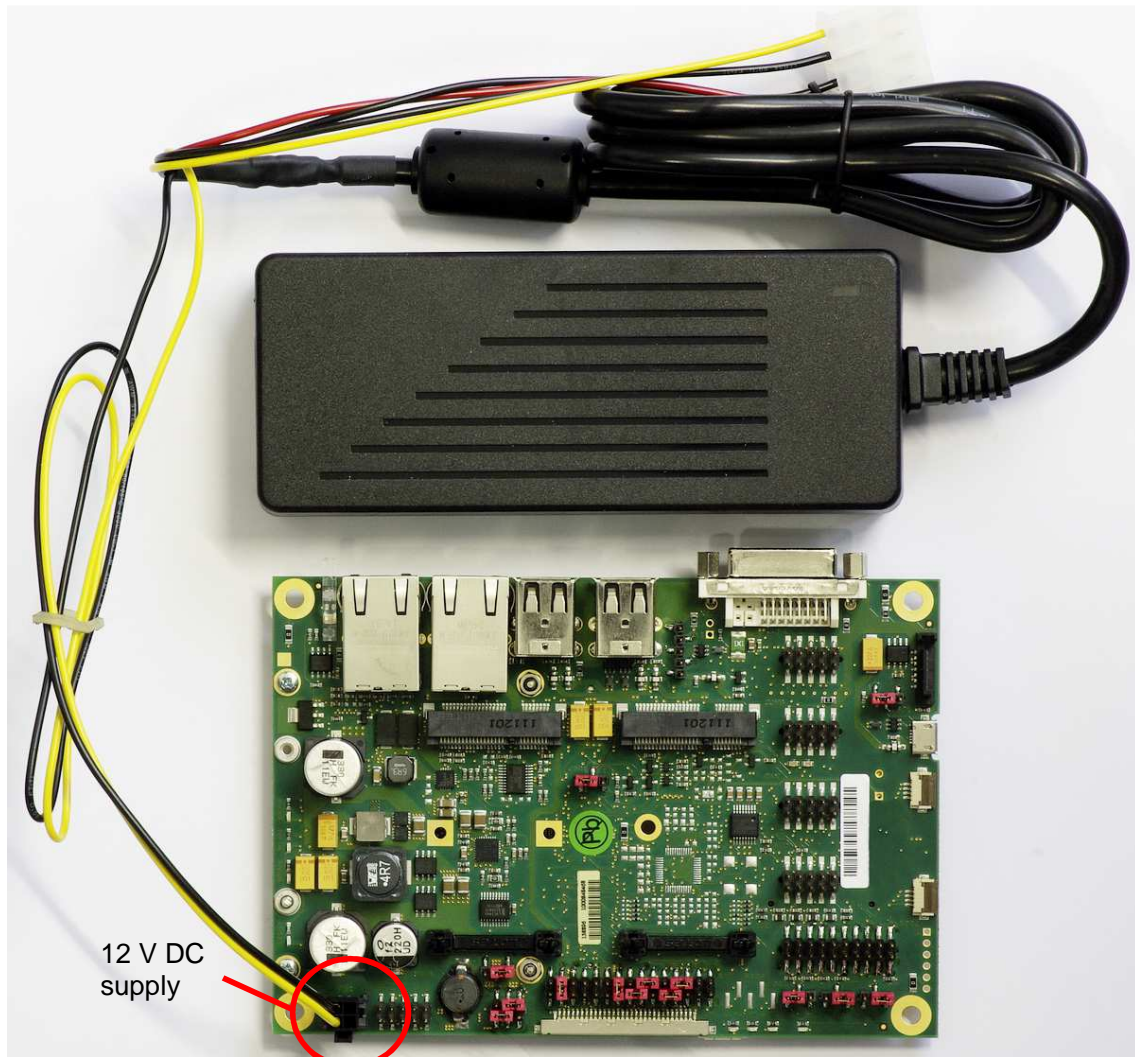


Figure 2 Power connection



**NOTE:**

Insert the DC power cable plug into the 12V DC connector (4-pin Mini-ATX). Connect the power supply to the AC power outlet with the power cable supplied.

## 1.4 DisplayPort Monitor Connection

The Q7-SK-BT6 Starterkit supports DisplayPort monitors. A standard DP monitor can be connected to the EP6 motherboard (refer to MSC Q7-MB-EP6 user's guide).



Figure 3 Connection of DisplayPort Monitor Cable

## 1.5 LVDS Connection

The Q7-SK-BT6 Starterkit supports LVDS TFT panels. The LVDS data and supply cables plug into the sockets in one direction only. Please refer to the photos below.

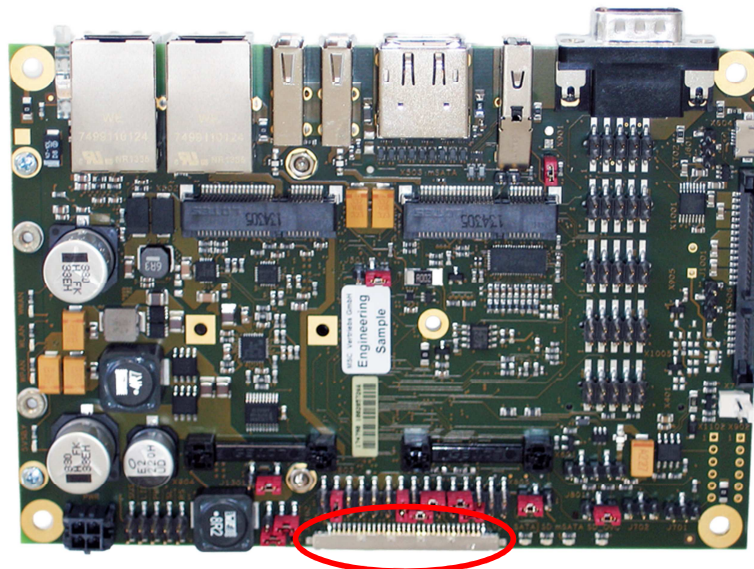


Figure 4 LVDS connection on MSC Q7-MB-EP6

All jumpers on the EP6 baseboard have to be configured correctly (see “EP6 User’s Guide” available on the MSC website or on the USB Flash drive supplied with the kit).

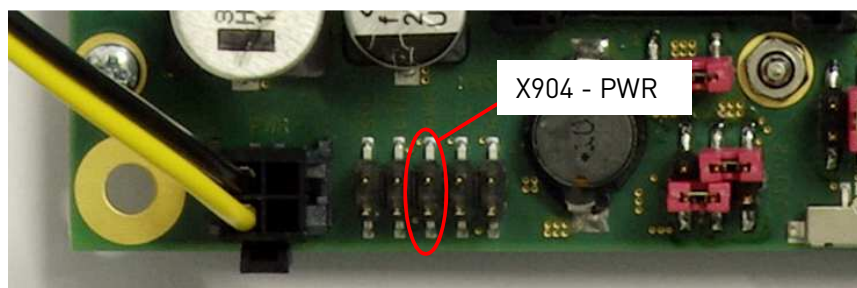
Pin Header	Position	Function
X803	3-4	+3.3V Panel Power
	13-14	+12V Backlight
	15-17	+3.3V brightness peak level for analog PWM
	18-20	BLON active high
	23-25	Digital PWM not analog dimming
	24-26	Digital PWM signal inverted
	28-30	EDID EEPROM enabled
J801	1-2	Digital PWM signal level set to 3.3V
J1301	1-2	Backlight voltage connected to input power source

**Table 1** Jumper settings for Chimei G121I1-L01 (12.1",1280x800 pixel)

## 1.6 Power Up

Switch on the main supply. The system should boot up immediately.

If the system does not boot, connect the “Power” jumper pin header (X904 – PWR) on the baseboard (see chapter “power button” in “MSC Q7-MB-EP6 User’s Guide” available from the MSC website).



**Figure 5** Position of PWR Jumper on MSC Q7-MB-EP6

## 1.7 First Boot

Some MSC Q7-BT Modules have an on-board Flash which can be used for data and program. Also you can use any SATA-connected SSD or Hard Disk to install and boot your Operating System of choice (Windows EC7 and Linux may also boot from SD-Card).



## 1.8 Operation of the Module

The following User Manuals are available on the Support section of the MSC Embedded website:

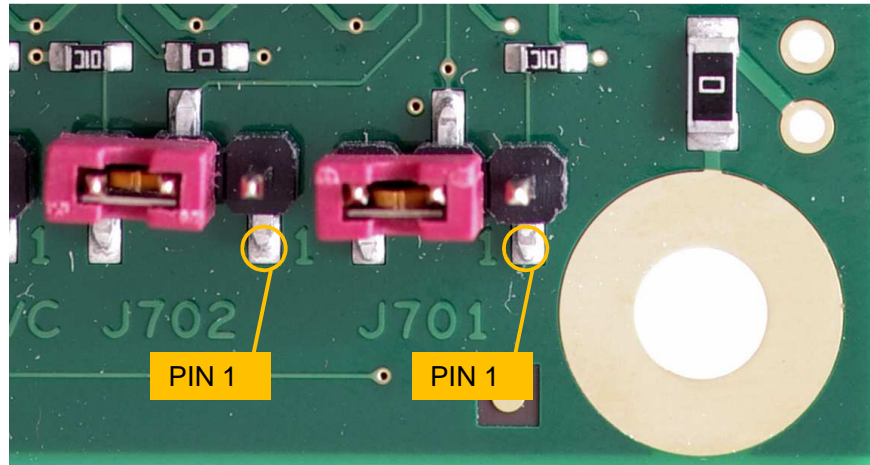
- MSC\_Q7-BT\_User-Manual
- MSC\_Q7-MB-EP6\_User-Guide
- MSC\_Q7-IMX6\_Getting-Started-Manual (this manual)

Before turning to the MSC COM Support Hotline, please make sure that your query is not answered in one of these manuals or “Getting Started” documents.

## 2 Appendix

### 2.1 Mandatory jumper settings on Q7-MB-EP6

There are several jumpers pre-installed on the EP6. For normal operation J701 and J702 have to be in the correct position (right side position, not as depicted below):



*Figure 6 Jumper settings for normal boot*

Jumper	Position	Function
J701	1-2	MFG_NC4 High
J702	1-2	MFG_NC3 High

### 3 Document Change History

<i>Date</i>	<i>Version</i>	<i>Author</i>	<i>Document change description</i>
2014-02-25	0.1	MSC	Initial Version
2014-03-31	0.2	MSC	Amendments
2014-08-18	0.3	MSC	Improvements and Clarifications
2015-07-27	0.4	MSC	Adaptations for final EP6 variants