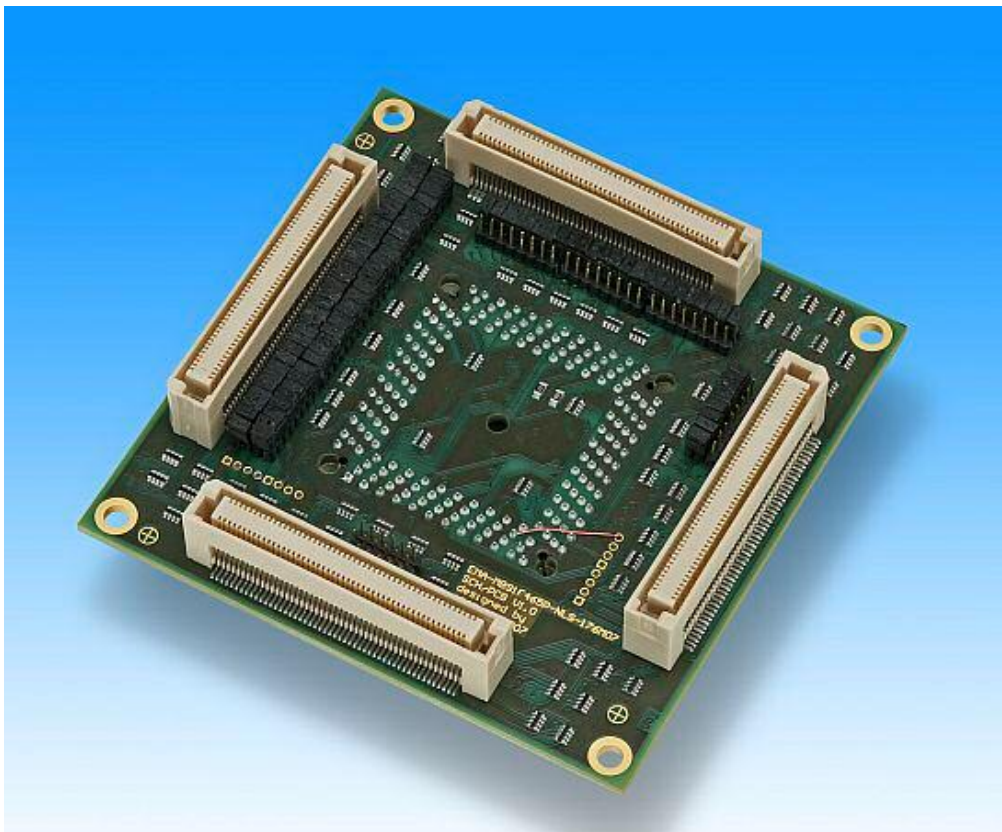


FR60 FAMILY

SOCKET ADAPTER BOARD

EMA-MB91F465P-NLS-176M07

USER GUIDE



Revision History

Date	Issue
12.09.2007	V1.00, RH/AW, First Release
02.10.2007	V1.1, Amendments to tables 3.1.1 to 3.1.9
25.10.2007	V1.2, Removing of headlines
07.03.2008	V1.3, China RoHS note added, Chapter 3.1.2 and 3.1.3 changed
13.06.2008	V1.4, Chapter 3.1.10 and schematic version changed
19.01.2009	V1.5, CEy Description for EMA-MB91FV460B-001 and functional restrictions added
11.02.2009	V1.6, CEy Corrected chapter 3.1.10 (Testpoints)

Latest product revision: 1.0

Schematic version: 1.4

PCB version: 1.0

This document contains 17 pages.

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1 Overview

1.1 Abstract

The EMA-MB91F465P-NLS-176M07 in combination with the EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001 is a development system for the Fujitsu FR60 MB91V460 Flash microcontroller.

The development system allows the designer immediately to start with the software development before MB91V460 based silicon samples are available.

**This board must only be used for test applications
in an evaluation laboratory environment.**

Before using the EMA-MB91F465P-NLS-176M07 adapter board, make sure that the following packed components have been delivered:

- 1 pcs. EMA-MB91F465P-NLS-176M07 socket adapter board
- 1 pcs. YQPACK176SD
- 5 pcs. Screw M2x12
- 5 pcs. Washer M2, Nylon
- 20 pcs. 1.27mm mini jumper
- 1 pcs. User Guide

1.2 General Description

The EMA-MB91F465P-NLS-176M07 in combination with the EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001 replaces a MB91F465P microcontroller. For further details of the EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001 board please refer to the User Guide of the EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001.

1.3 Functional Restrictions

1.3.1 Valid for EMA-MB91V460A-002B/-80/003

This probe cable can only be used for the following Microcontroller configuration:

1. VDD5 = 5V, VDD35 = 5V
2. VDD5 = 3.3V, VDD35 = 3.3V

While using this probe cable, there is no restriction on GPIO functionality for the above mentioned MCU configuration!

The following ports are not routed to the target board with this socket adapter:

P30_[0:7], P32_3, P32_7, P33_3, P33_7, P34_3, P34_7, P35_3, P35_7

1.3.2 Valid for EMA-MB91FV460B-001

The following ports are not routed to the target board with this socket adapter:

P30_[0:7], P32_3, P32_7, P33_3, P33_7, P34_3, P34_7, P35_3, P35_7

Therefore, it is recommended to use EMA-MB91F460P-176M07 as socket adapter board!

2 Installation

Remove carefully the EMA-MB91F465P-NLS-176M07 board from the shipping carton and check if there are any damages.

Please refer to the attached document “BGA Adapter-CSPACK/CSICE Instruction for use” for installation the socket adapter.

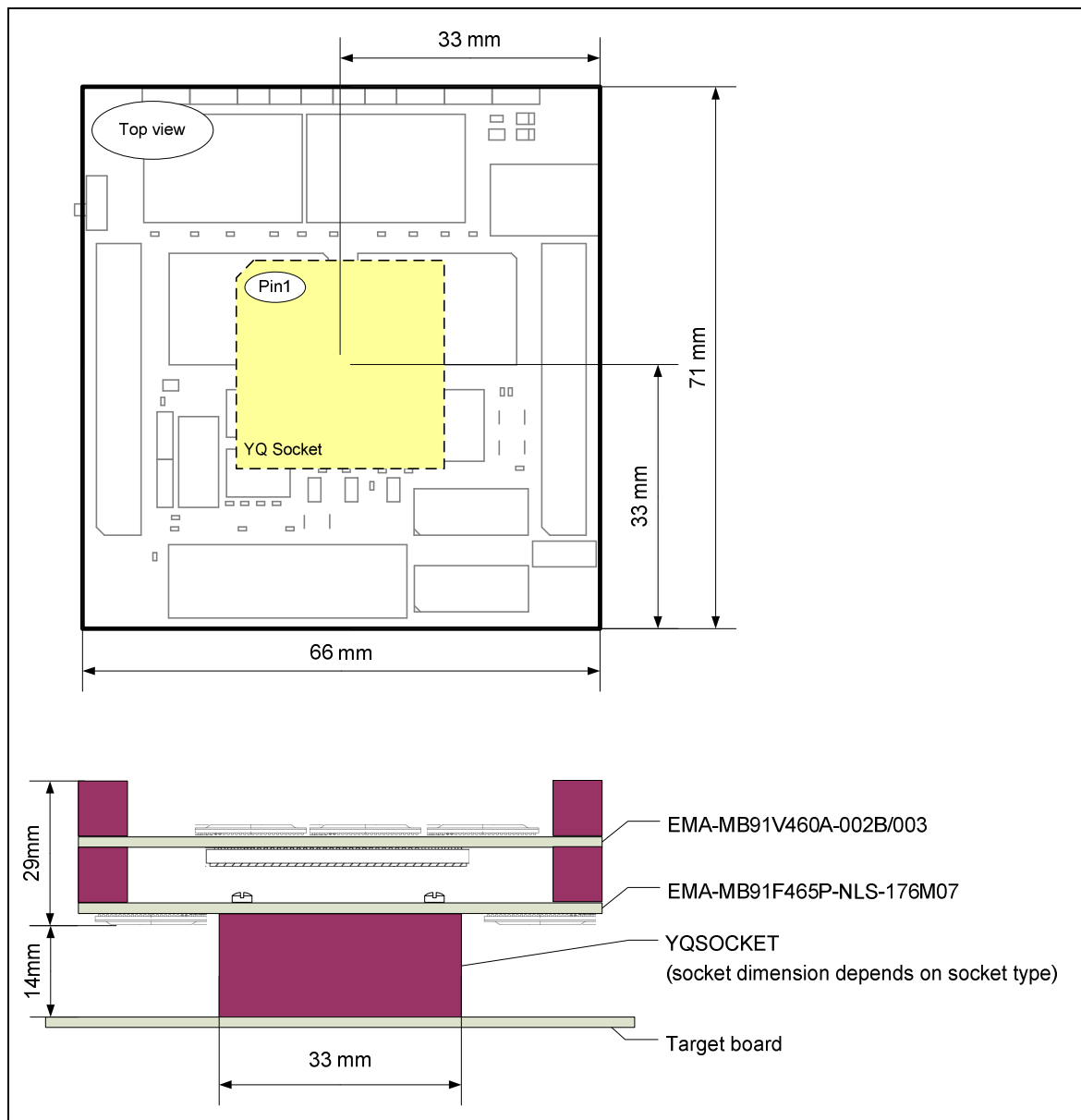


Figure 2-1: Installation

3 Jumpers

This chapter describes all jumpers that can be modified or accessed on the EMA-MB91F465P-NLS-176M07 board. The default setting is shown with a grey shaded area.

3.1 Jumpers overview

3.1.1 P06 ⇔ P21/P17/P14

Jumper	U100 pin	P 1-2 [PPMUX.PS4=0]	P 2-3 [PPMUX.PS4=1]
J200	6	P06_0	P21_0
J201	7	P06_1	P21_1
J202	8	P06_2	P21_2
J203	9	P06_3	P17_4
J204	10	P06_4	P14_4
J205	11	P06_5	P14_5
J206	12	P06_6	P14_6
J207	13	P06_7	P14_7

Default: all 1-2

3.1.2 P05 ⇔ P16/P20

Jumper	U100 pin	P 1-2 [PPMUX.PR(11..10) = 0]	P 2-3 [PPMUX.PR11..10 = 1]
J208	6	P05_0	P16_0
J209	7	P05_1	P16_1

Jumper	U100 pin	P 1-2 [PPMUX.PR(17..12)=0] and [PPMUX.PRPS0 = X]	P 2-3 [PPMUX.PR17..12=1] and [PPMUX.PRPS0 = 1]	P 1-2 and P 2-3 [PPMUX.PR17..12 = 1] and [PPMUX.PRPS0 = 0]
J210	8	P05_2	P20_0	Not connected
J211	9	P05_3	P20_1	
J212	10	P05_4	P20_2	
J213	11	P05_5	P20_4	
J214	12	P05_6	P20_5	
J215	13	P05_7	P20_6	

Default: all 1-2

3.1.3 P05 ⇔ P34

Jumper	U100 pin	P 1-2 [PPMUX.PR17..12=1] and [PPMUX.PRPS0=0]	P 2-3 Other variations [PPMUX.PR17..12] [PPMUX.PRPS0]
J216	16	P34_0	Not connected
J217	17	P34_1	
J218	18	P34_2	
J219	19	P34_3	
J220	20	P34_4	
J221	21	P34_7	

Default: open

3.1.4 P01 ⇔ P17/P15

Jumper	U100 pin	P 1-2 [PPMUX.PS3=0]	P 2-3 [PPMUX.PS3=1]
J222	24	P01_0	P17_0
J223	25	P01_1	P17_1
J224	26	P01_2	P17_2
J225	27	P01_3	P17_3
J226	28	P01_4	P15_4
J227	29	P01_5	P15_5
J228	30	P01_6	P15_6
J229	31	P01_7	P15_7

Default: all 1-2

3.1.5 P00 ⇔ P24

Jumper	U100 pin	P 1-2 [PPMUX.PR0=0]	P 2-3 [PPMUX.PR0=1]
J230	32	P00_0	P24_0
J231	33	P00_1	P24_1
J232	34	P00_2	P24_2
J233	35	P00_3	P24_3
J234	36	P00_4	P24_4
J235	37	P00_5	P24_5
J236	38	P00_6	P24_6
J237	39	P00_7	P24_7

Default: all 1-2

3.1.6 P35 ⇔ P29

Jumper	U100 pin	P 1-2 [PPMUX.PS5=1]	P 2-3 [PPMUX.PS5=0]	P 3-4 [PPMUX.PS5=1]
J238	138	P35_0	P29_0	P29_0 pulldown
J239	139	P35_1	P29_1	P29_1 pulldown
J240	140	P35_2	P29_2	P29_2 pulldown
J241	141	P35_3	P29_3	P29_3 pulldown
J242	142	P35_4	P29_4	P29_4 pulldown
J243	143	P35_5	P29_5	P29_5 pulldown

Default: all 1-2 and 3-4

3.1.7 P24 ⇔ P28

Jumper	U100 pin	P 1-2 [PPMUX.PS2=0] and [PPMUX.PR0=0]	P 2-3 [PPMUX.PS2=1] and [PPMUX.PR0=1]	P 3-4 [PPMUX.PS2=0] and [PPMUX.PR0=0]
J244	146	P24_0	P28_0	P28_0 pulldown
J245	147	P24_1	P28_1	P28_1 pulldown
J246	148	P24_2	P28_2	P28_2 pulldown
J247	149	P24_3	P28_3	P28_3 pulldown
J248	150	P24_4	P28_4	P28_4 pulldown
J249	151	P24_5	P28_5	P28_5 pulldown
J250	152	P24_6	P28_6	P28_6 pulldown
J251	153	P24_7	P28_7	P28_7 pulldown

Default: all 1-2 and 3-4

3.1.8 P16/P20 ⇔ P27

Jumper	U100 pin	P 1-2 [PPMUX.PS1=0] and NOT [PPMUX.PR(11..17)=1] and [PPMUX.PRPS0=1]	P 2-3 [PPMUX.PS1=1] and NOT [PPMUX.PR(11..17)=1] and [PPMUX.PRPS0=1]	P 3-4 [PPMUX.PS1=0] and NOT [PPMUX.PR(11..17)=1] and [PPMUX.PRPS0=1]
J252	156	P16_0	P27_0	P27_0 pulldown
J253	157	P16_1	P27_1	P27_1 pulldown
J254	158	P20_0	P27_2	P27_2 pulldown
J255	159	P20_1	P27_3	P27_3 pulldown
J256	160	P20_2	P27_4	P27_4 pulldown
J257	161	P20_4	P27_5	P27_5 pulldown
J258	162	P20_5	P27_6	P27_6 pulldown
J259	163	P20_6	P27_7	P27_7 pulldown

Default: all 1-2 and 3-4

3.1.9 P07 ⇔ P26

Jumper	U100 pin	P 1-2 [PPMUX.PS0=0]	P 2-3 [PPMUX.PS0=1]	P 3-4 [PPMUX.PS0=0]
J260	164	P07_0	P26_0	P26_0 pulldown
J261	165	P07_1	P26_1	P26_1 pulldown
J262	166	P07_2	P26_2	P26_2 pulldown
J263	167	P07_3	P26_3	P26_3 pulldown
J264	168	P07_4	P26_4	P26_4 pulldown
J265	169	P07_5	P26_5	P26_5 pulldown
J266	170	P07_6	P26_6	P26_6 pulldown
J267	171	P07_7	P26_7	P26_7 pulldown

Default: all 1-2 and 3-4

3.1.10 Testpoints (J268, J269, J270, J271)

Jumper	U100 pin	I/O
J268-1	46	P30_0
J268-2	47	P30_1
J268-3	48	P30_2
J268-4	49	P30_3
J269-1	84	P30_4
J269-2	85	P30_5
J269-3	86	P30_6
J269-4	87	P30_7
J270-1	134	P35_3
J270-2	135	P35_7
J270-3	136	P34_3
J270-4	137	P34_7
J271-1	172	P33_3
J271-2	173	P33_7
J271-3	174	P32_3
J271-4	175	P32_7

4 Connectors

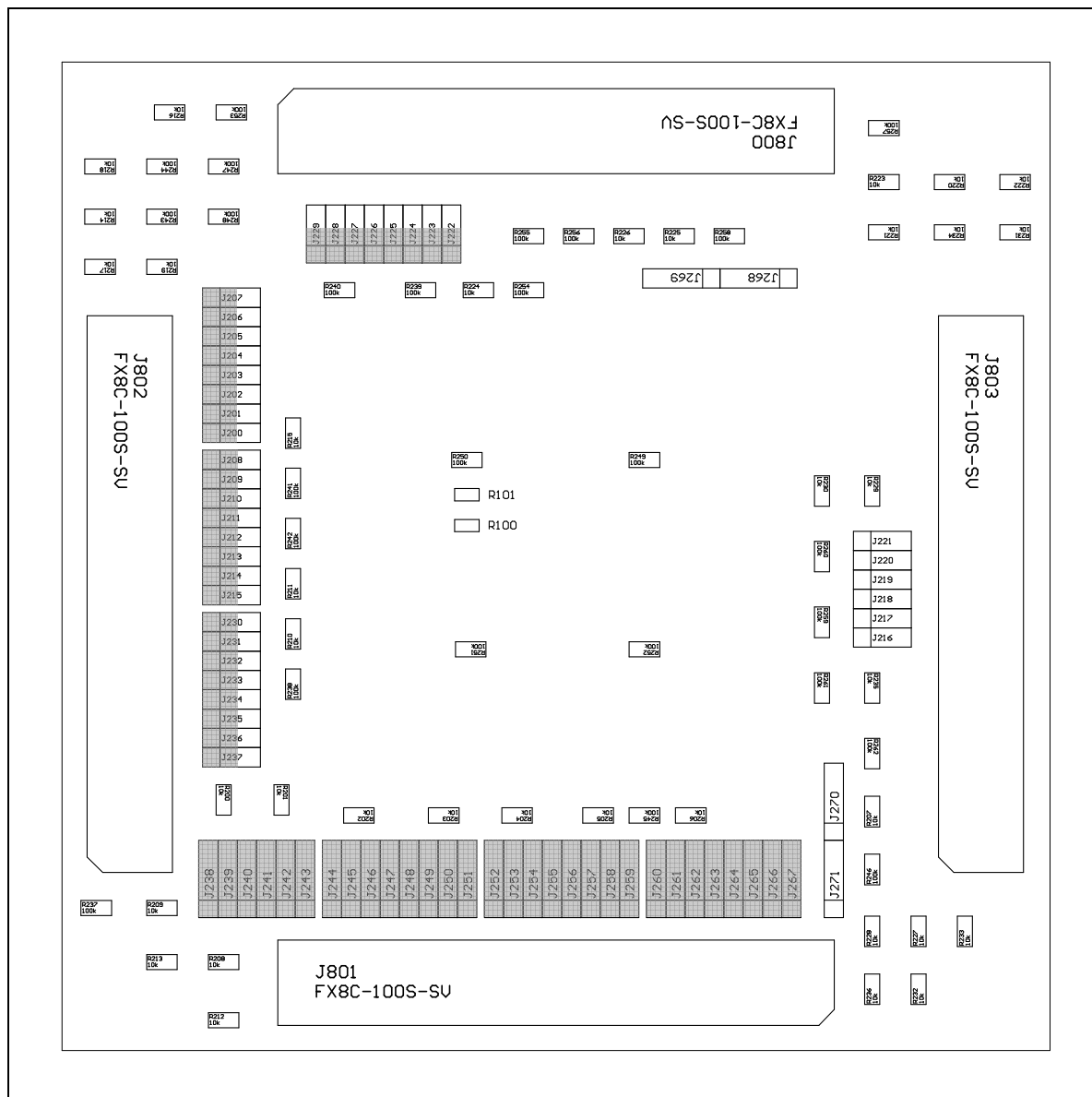


Figure 4-1: Connector Location

5 Mechanical dimensions

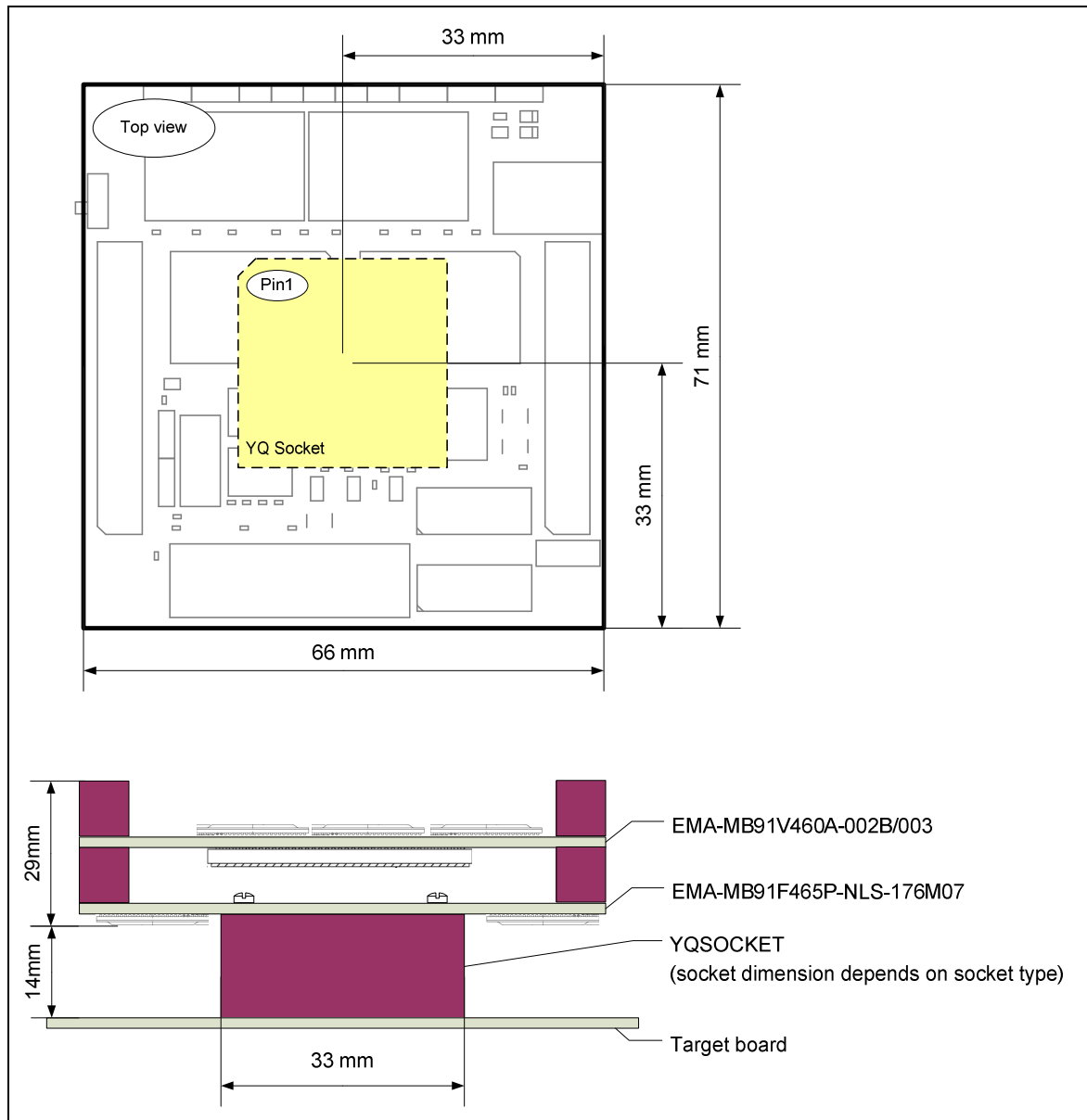


Figure 5-1: Mechanical Dimensions

6 Information in the WWW

Information about FUJITSU MICROELECTRONICS Products
can be found on the following Internet pages:

Microcontrollers (8-, 16- and 32bit), Graphics Controllers
Datasheets and Hardware Manuals, Support Tools (Hard- and Software)

http://mcu.emea.fujitsu.com/mcu_portal.htm

Linear Products: Power Management, A/D and D/A Converters

<http://www.fujitsu.com/emea/services/microelectronics>

Media Products: SAW filters, acoustic resonators and VCOs

<http://www.fujitsu.com/emea/services/microelectronics/saw>

For more information about FUJITSU MICROELECTRONICS

<http://www.fujitsu.com/emea/services/microelectronics>

7 China-RoHS regulation

Evaluation Board 评估板

Emulation Board 仿真板

根据SJ/T11364-

2006《电子信息产品污染控制标识要求》特提供如下有关污染控制方面的信息。

The following product pollution control information is provided according to SJ/T11364-2006 *Marking for Control of Pollution caused by Electronic Information Products*.

1. 电子信息产品污染控制标志说明 Explanation of Pollution Control Label



该标志表明本产品含有超过中国标准SJ/T11363-

2006《电子信息产品中有毒有害物质的限量要求》中限量的有毒有害物质。标志中的数字为本产品的环保使用期，表明本产品在正常使用的条件下，有毒有害物质不会发生外泄或突变，用户使用本产品不会对环境造成严重污染或对其人身、财产造成严重损害的期限，单位为年。

为保证所声明的环保使用期限，应按产品手册中所规定的环境条件和方法进行正常使用，并严格遵守产品维修手册中规定的定期维修和保养要求。

产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限有可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所声明的整个产品的环保使用期限。

本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。

请注意：环保使用期限50年的指定不是与产品的耐久力，使用期限或任何担保要求等同的。

This symbol to be added to all EIO sold to China, indicates the product contains hazardous materials in excess of the limits established by the Chinese standard SJ/T11363-2006 *Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products*. The number in the symbol is the Environment-friendly Use Period (EFUP), which indicates the period, starting from the manufacturing date, during which the toxic or hazardous substances or elements contained in electronic information products will not leak or mutate under normal operating conditions so that the use of such electronic information products will not result in any severe environmental pollution, any bodily injury or damage to any assets, the unit of the period is "Year".

In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.

Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures.

This product must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

Please note: The designation of 10 years EFUP is not to be equated with the durability, use-duration or any warranty-claims of the product.

产品中有毒有害物质或元素的名称及含量

Table of hazardous substances name and concentration

部件名称 EMA-MB91F465P-NLS-176M07	有毒有害物质或元素 Hazardous substances name					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
	○	○	○	○	○	○

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求

- 此表所列数据为发布时所能获得的最佳信息
- 由于缺少经济上或技术上合理可行的替代物质或方案，此医疗设备运用以上一些有毒有害物质来实现设备的预期临床功能，或给人员或环境提供更好的保护效果。

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.

- Data listed in the table represents best information available at the time of publication

8 Recycling

Gültig für EU-Länder:

Gemäß der Europäischen WEEE-Richtlinie und deren Umsetzung in landesspezifische Gesetze nehmen wir dieses Gerät wieder zurück.

Zur Entsorgung schicken Sie das Gerät bitte an die folgende Adresse:

Fujitsu Microelectronics Europe GmbH
Warehouse
Monzastraße 4a
63225 Langen

Valid for European Union Countries:

According to the European WEEE-Directive and its implementation into national laws we take this device back.

For disposal please send the device to the following address:

Fujitsu Microelectronics Europe GmbH
Warehouse
Monzastraße 4a
63225 Langen