Fujitsu Microelectronics Europe
User Guide

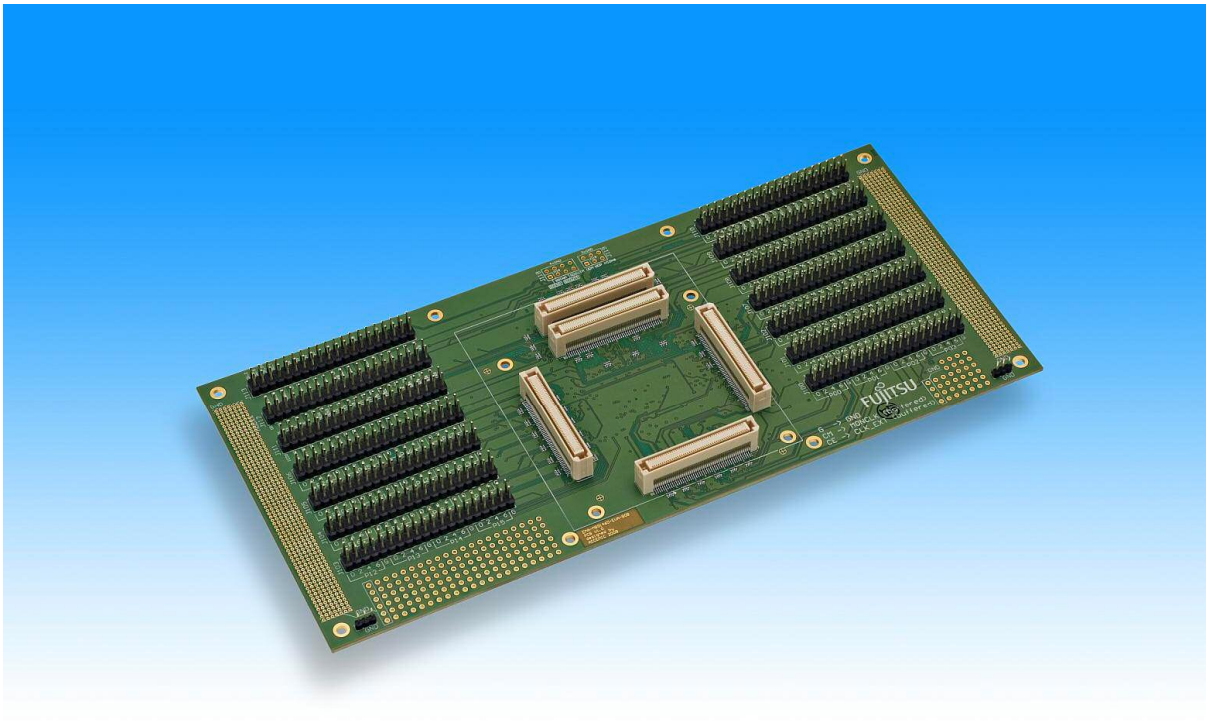
FMEMCU-UG-910083-11

FR60 FAMILY

BREAKOUT BOARD

EMA-MB91460-EVA-BOB

USER GUIDE



Revision History

Date	Issue
2008-12-15	V1.0 AW, First draft
2009-03-10	V1.1 CEy, Added cover picture

These were the latest revisions of related documents when this user guide revision had been released:

Schematic: 1.0

PCB: 1.0

This document contains 16 pages.

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Contents

1 Introduction

1.1 Abstract

The EMA-MB91460-EVA-BOB in combination with the EMA-MB91V460A-002B-80/-003 or the EMA-MB91FV460B-001 board is a development system for Fujitsu FR60 MB91V460A / MB91FV460B based flash microcontrollers.

The development system allows the designer immediately to start with the software development before MB91V460A / MB91FV460B based silicon samples are available.

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

Before using the EMA-MB91460-EVA-BOB breakout board, make sure that the following packed components have been delivered:

- 1 pcs. EMA-MB91460-EVA-BOB breakout board
- 8 pcs. Spacer M2,5 x 12
- 8 pcs. Washer M2,5
- 8 pcs. Nuts M2,5
- 1 pcs. User Guide

1.2 General Description

The EMA-MB91460-EVA-BOB breakout board enables access to all signals of the EMA-MB91V460A-002B-80/-003 and the EMA-MB91FV460B-001 board.

For further details of the EMA-MB91V460A-002B-80/-003 board please refer to the User Guide of the EMA-MB91V460A-002B-80/-003.

For further details of the EMA-MB91FV460B-001 board please refer to the User Guide of the EMA-MB91FV460B-001.

The layout of the connectors J100 to J112 enables the direct connection of a LA1034 LOGICPORT logic analyzer (http://www.pctestinstruments.com/) via a 40pol flat ribbon cable.

The MB91V460A / MB91FV460B clock signals (MONCLK, SYSCLK and MCLKO) are distributed via a low skew clock fanout buffer.

The EMA-MB91460-EVA-BOB breakout board provides several prototype areas with 1.27mm and 2.54mm grid.

2 Installation

Remove carefully the EMA-MB91460-EVA-BOB breakout board from the shipping carton and check if there are any damages.

Please refer to the User Guide of the EMA-MB91FV460B-001 for a description of the assembling and disassembling process of the EMA system stack.

If the system is used as a stand-alone system without socket adapter board and target board, the attached spacer should be installed.

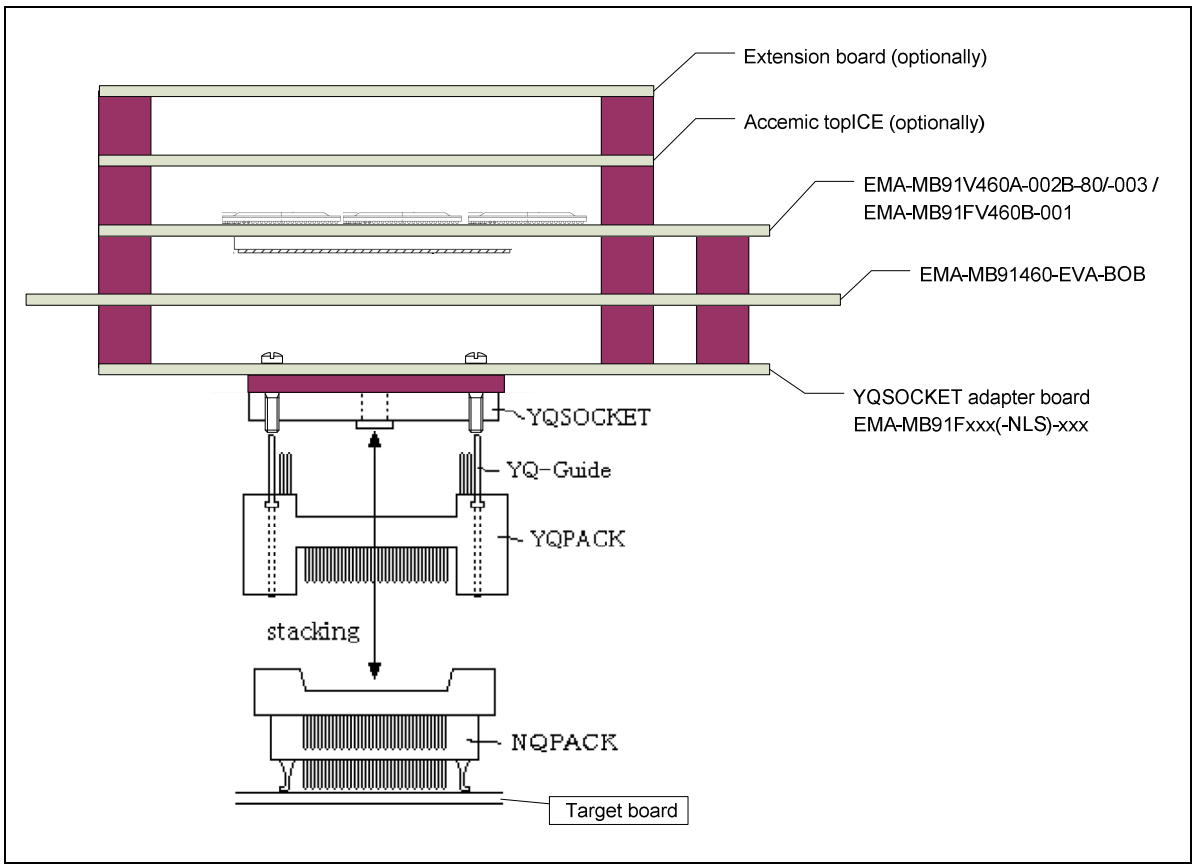

Figure 2-1: Installation

3 Location of Parts

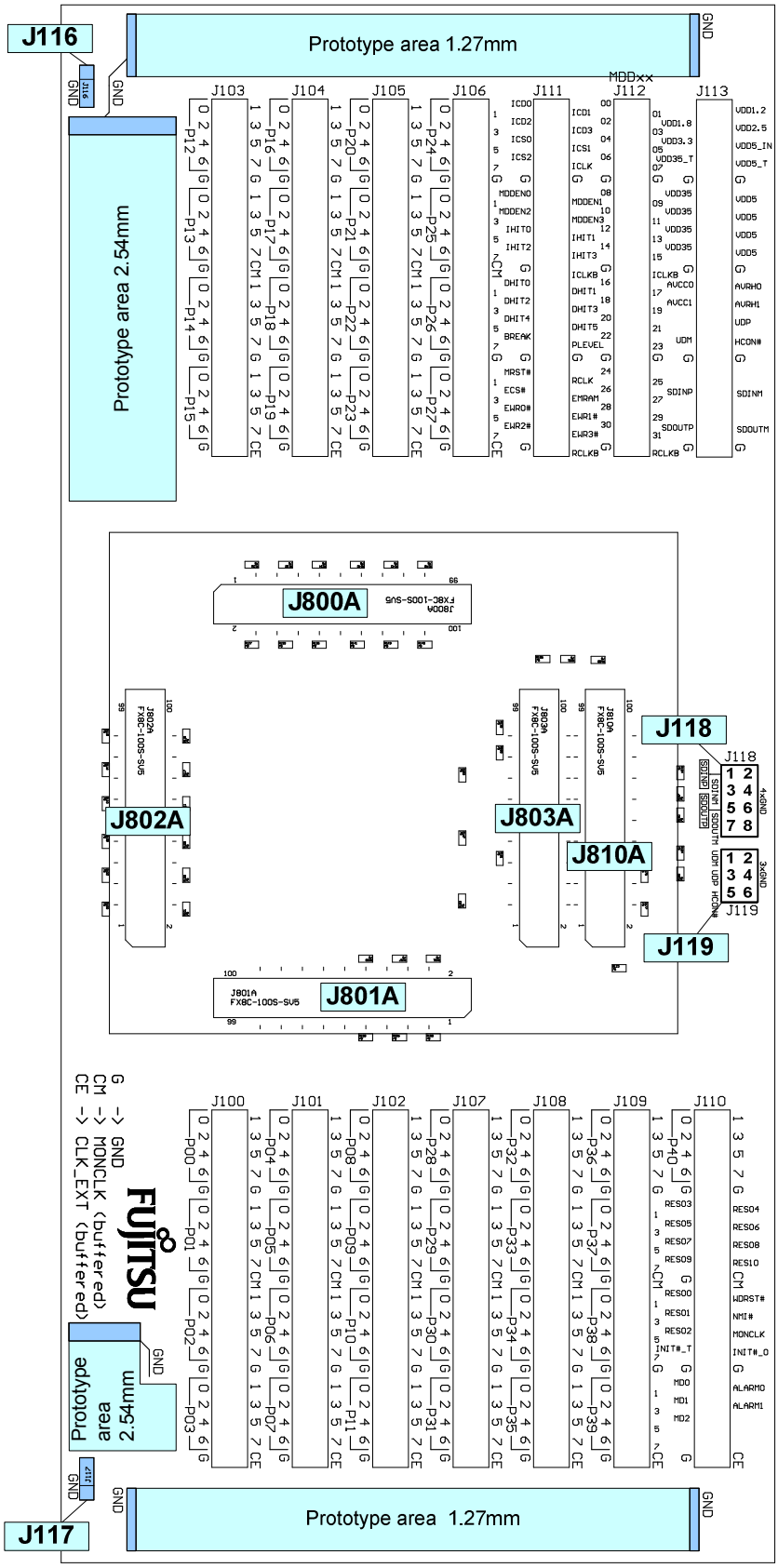

Figure 3-1: Location of parts (top layer)

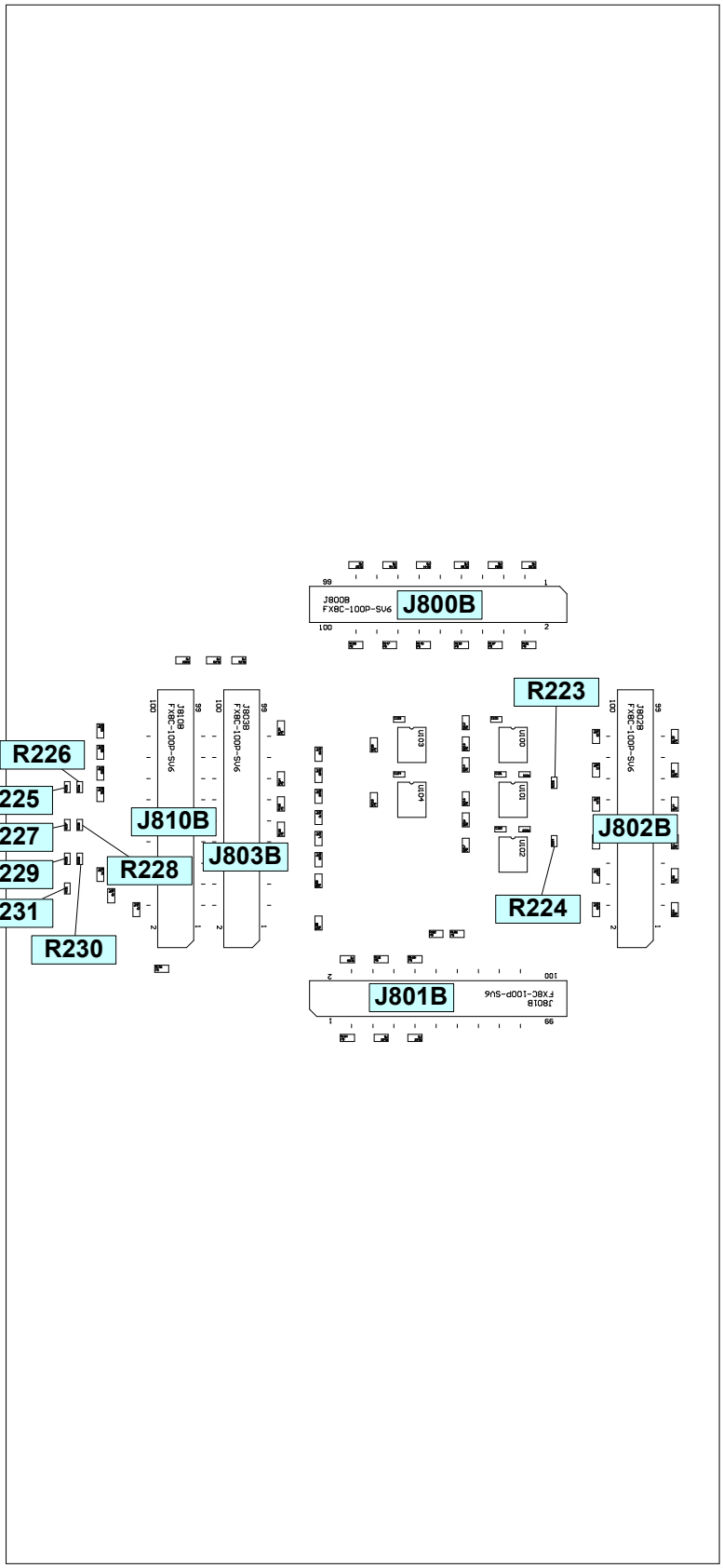

Figure 3-2: Location of parts (bottom layer)

4 Operation

The default setting is shown with a grey shaded area.

4.1 Jumpers and Connectors Overview

This chapter describes all jumpers and connectors that can be modified or accessed on the EMA-MB91460-EVA-BOB breakout board.

4.1.1 Jumper Overview

Please refer to the attached schematic for detailed jumper layout information.

Jumper	Description / Function	Type	Default
R223	Clock source select	0R 0603	Open
R224		0R 0603	Closed
R225	APIX_SDINP -> J113	0R 0603	Open
R226	APIX_SDINM -> J113	0R 0603	Open
R227	APIX_SDOUTP -> J113	0R 0603	Open
R228	APIX_SDOUTM -> J113	0R 0603	Open
R229	USB_UDM -> J113	0R 0603	Open
R230	USB_UDP -> J113	0R 0603	Open
R231	USB_HCON# -> J113	0R 0603	Open

4.1.2 Connector Overview

Please refer to the attached schematic for detailed connector layout information.

Connector	Description / Function	Type
J100	P00, P01, P02, P03	Header 20x2
J101	P04, P05, P06, P07	Header 20x2
J102	P08, P09, P10, P11	Header 20x2
J103	P12, P13, P14, P15	Header 20x2
J104	P16, P17, P18, P19	Header 20x2
J105	P20, P21, P22, P23	Header 20x2
J106	P24, P25, P26, P27	Header 20x2
J107	P28, P29, P30, P31	Header 20x2
J108	P32, P33, P34, P35	Header 20x2
J109	P36, P37, P38, P39	Header 20x2
J110	P40, diverse signals	Header 20x2
J111	DSU4 signals	Header 20x2
J112	DSU4 signals	Header 20x2
J113	Power, APIX , USB	Header 20x2
J116	GND	Header 3 pol
J117	GND	Header 3 pol
J118	APIX	Header 4x2
J119	USB	Header 3x2

4.2 CLK_EXT Clock Source Selection

The CLK_EXT clock signals on the connectors J100 to J110 (pin 40) can be sourced either by SYSCLK (P10_0) or by MCLKO (P10_4).

R223	R224	Description
Open	Open	Not allowed
Open	Closed	SYSCLK
Closed	Open	MCLKO
Closed	Closed	Not allowed

Default: R223: open, R224: closed

5 Mechanical dimensions

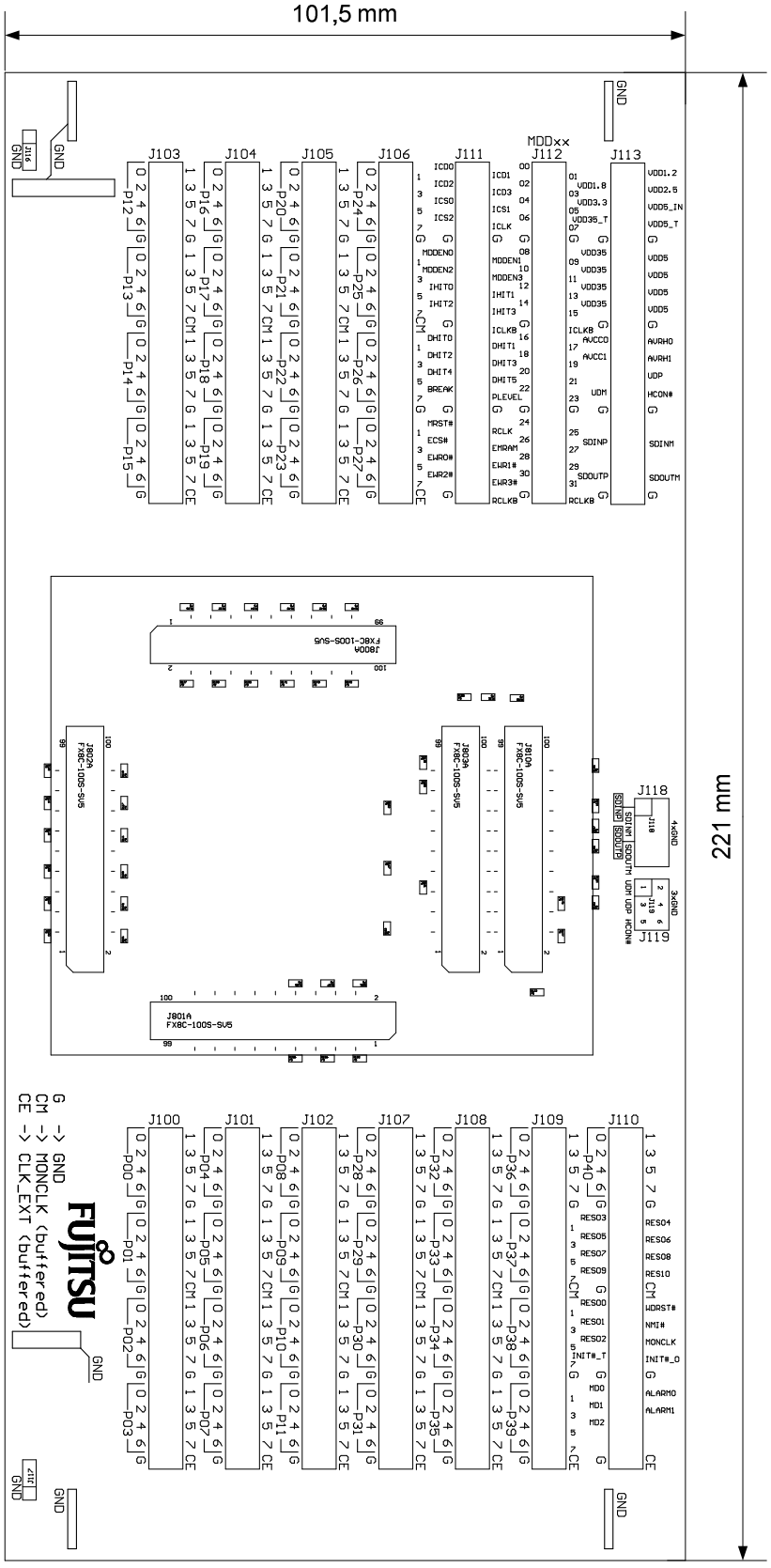

Figure 5-1: Mechanical Dimensions

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/

Power Management Products

http://www.fujitsu.com/emea/services/microelectronics/powerman/

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。

为保证所申明的环保使用期限，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，以保证所申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 Component Name	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)
EMA-MB91460-EVA-BOB	o	o	o	o	o	o

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/Disposal
Monzastraße 4a
D-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/Disposal
Monzastraße 4a
D-63225 Langen
GERMANY

-- END --