

FR60 FAMILY
SOCKET ADAPTER BOARD
EMA-MB91F465X-NLS-100M20

USER GUIDE



Revision History

Date	Issue
28.11.2006	V1.00, RH/AW, First Release
02.03.2007	V1.1 Recycling Note added
15.03.2007	V1.2 J100 Description added
16.01.2009	V1.3, CEy Description for EMA-MB91FV460B-001 and functional restrictions added

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PCB version: 1.0

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1 Overview

1.1 Abstract

The EMA-MB91F465X-NLS-100M20 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-MB91F465X-NLS-100M20 adapter board, make sure that the following packed components have been delivered:

- 1 pcs. EMA-MB91F465X-NLS-100M20 socket adapter board
- 1 pcs. YQPACK100SD
- 5 pcs. Screw M2x12
- 5 pcs. Washer M2, Nylon
- 1 pcs. User Guide

1.2 General Description

The EMA-MB91F465X-NLS-100M20 in combination with the EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001 replaces a MB91F465X microcontroller. In both cases you need the extension board EMA-MB91V460A-100 for the emulation of FlexRay functionality. For further details of the EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001 board please refer to the User Guide of EMA-MB91V460A-002B/-80/003 or EMA-MB91FV460B-001.

In case of EMA-MB91FV460B-001 that has built-in FlexRay support, it is recommended to use the EMA-MB91F460X-100M20 as socket adapter board.

1.3 Functional Restrictions

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

Port P31 (FlexRay signals) cannot be used in GPIO function mode. Furthermore, FlexRay functionality must be emulated via external bus access to extension board EMA-MB91V460A-100

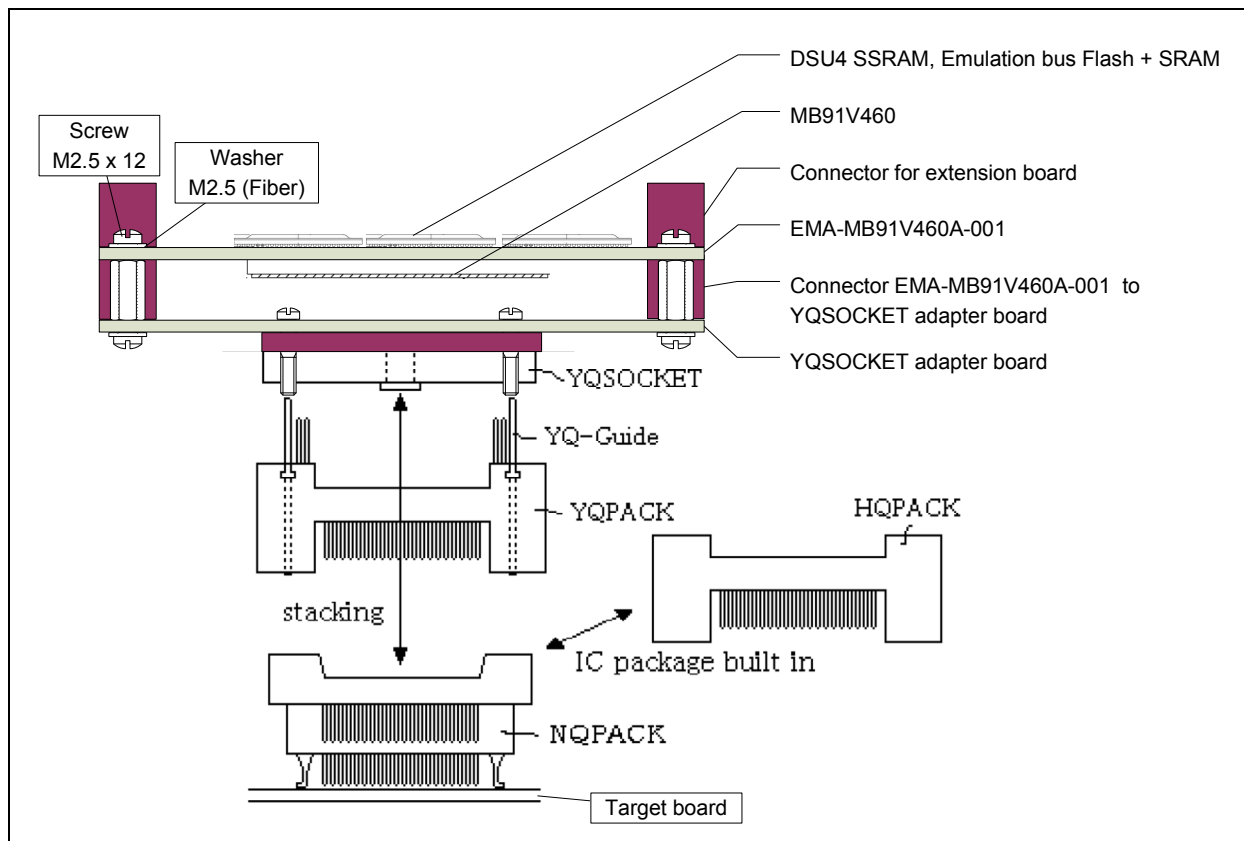
1.3.2 Valid for EMA-MB91FV460B-001

Port P31 (FlexRay signals) cannot be used in GPIO function mode. Furthermore, FlexRay functionality must be emulated via external bus access to extension board EMA-MB91V460A-100

2 Installation

Remove carefully the EMA-MB91F465X-NLS-100M20 board from the shipping carton and check if there are any damages.

Please refer to the attached document “NQPACK/ YQPACK/ HQPACK Technical Information” for installation the socket adapter.



3 Switches and Jumpers

This chapter describes all switches and jumpers that can be modified or accessed on the EMA-MB91F465X-NLS-100M20 board. The default setting is shown with a grey shaded area.

3.1 Switches and Jumpers overview

3.1.1 Flexray Control

Jumper	Description / Function	Default
J100	P14_7J source selection	2-3
J200	P14_7 (FlexRay Stopwatch) pulldown	Open

3.1.2 ADC control

Jumper	Description / Function	Default
J101	P28_0J source selection	2-3
J102	P28_1J source selection	2-3
J103	P28_2J source selection	2-3
J104	P28_3J source selection	2-3
J105	P28_4J source selection	2-3
J201	P26_0 pulldown	Closed
J202	P26_1 pulldown	Closed
J203	P26_2 pulldown	Closed
J204	P26_3 pulldown	Closed
J205	P26_4 pulldown	Closed
J206	P28_0 pulldown	Open
J207	P28_1 pulldown	Open
J208	P28_2 pulldown	Open
J209	P28_3 pulldown	Open
J210	P28_4 pulldown	Open

3.1.3 External bus / DMA control

Jumper	Description / Function	Default
J211	P09_4 (CS4#) pulldown	Closed
J212	P09_5 (CS5#) pulldown	Closed
J213	P09_6 (CS6#) pulldown	Closed
J214	P09_7 (CS7#) pulldown	Closed
J215	P09_0 (CS0#) pulldown	Closed
J216	P09_1 (CS1#) pulldown	Closed
J217	P09_2 (CS2#) pulldown	Closed
J218	P09_3 (CS3#) pulldown	Open
J219	P12_0 (DREQ2) pulldown	Closed
J220	P12_4 (DREQ3) pulldown	Closed
J221	P13_0 (DREQ0) pulldown	Open
J222	P13_4 (DREQ1) pulldown	Closed

3.2 Default Jumper Setting

The following jumper setting is the default setting.

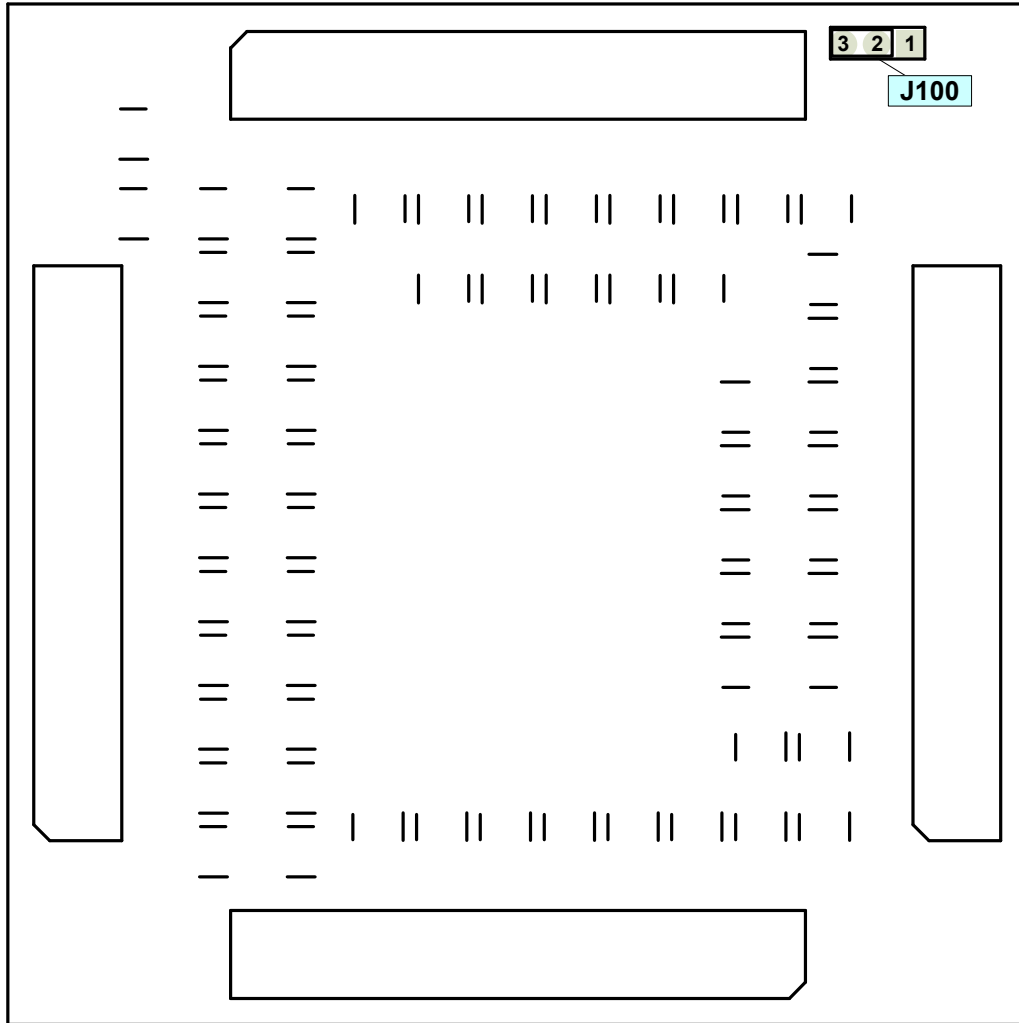


Figure 3-1: Jumper default setting, top

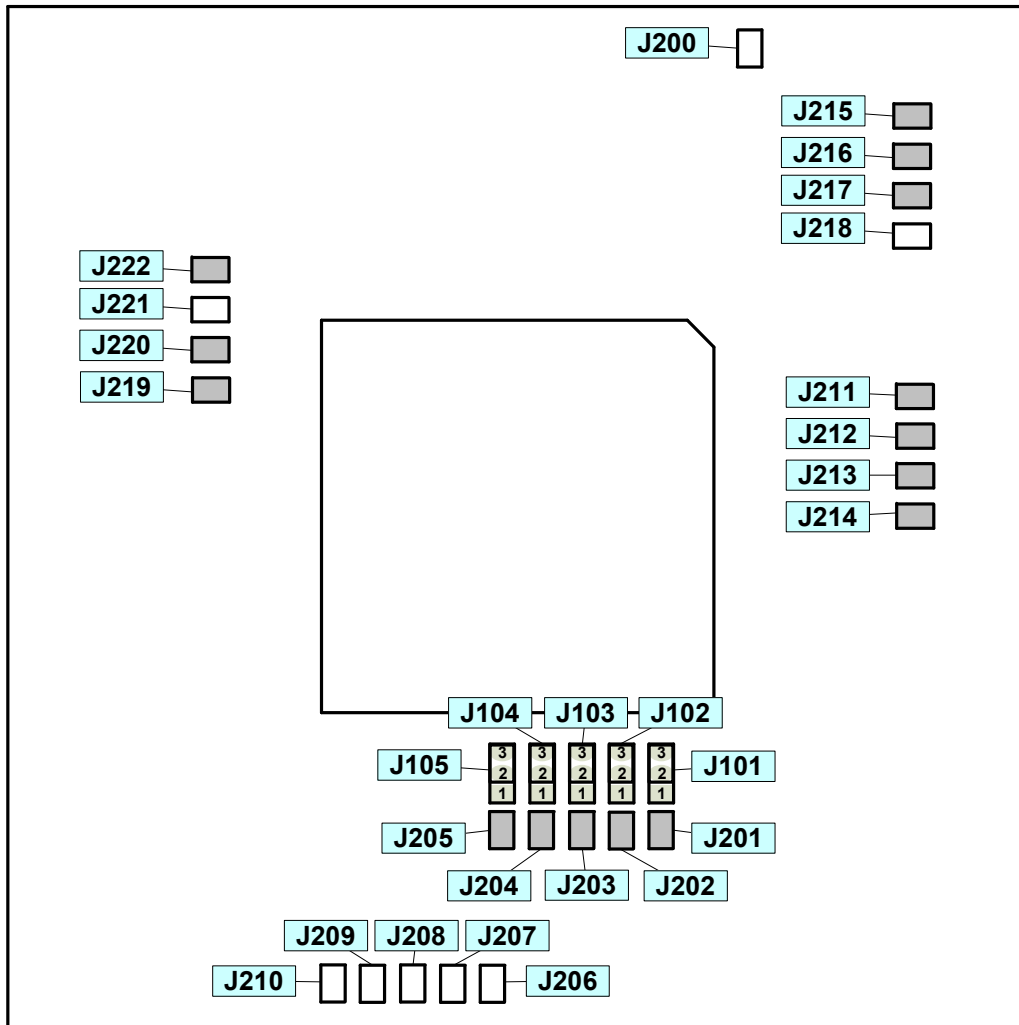


Figure 3-2: Jumper default setting, bottom

3.3 Flexray Control (J200)

The jumper J200 controls the FlexRay StopWatch signal pulldown.

In MB91F465XA series P14_7 is also shared with Stop Watch function of the FlexRay communication controller. This function is not available on the MB91V460A series, but on MB88121B series at the FlexRay extension board (EMA-MB91V460A-100).

Jumper J100 selects if P14_7 (MB91V460A port) is connected to the pin 91 (position 2-3) or Stop watch function (MB88121B port) is connected to the pin 91 (position 1-2).

Jumper	Setting	Description
J100 (P14_7J source selection)	1-2	P14_7J is connected to FRA_BGE
	2-3	P14_7J is connected to P14_7
J200 (P14_7 - FlexRay Stopwatch)	Open	No pulldown
	Closed	Pulldown

Default:

J100: 2-3

J200: open

3.4 ADC control (J101 - J105, J201 - J210)

Jumper	Setting	Description
J101 (P28_0J source selection)	1-2	P28_0J is connected to P26_0
	2-3	P28_0J is connected to P28_0
J102 (P28_1J source selection)	1-2	P28_1J is connected to P26_1
	2-3	P28_1J is connected to P28_1
J103 (P28_2J source selection)	1-2	P28_2J is connected to P26_2
	2-3	P28_2J is connected to P28_2
J104 (P28_3J source selection)	1-2	P28_3J is connected to P26_3
	2-3	P28_3J is connected to P28_3
J105 (P28_4J source selection)	1-2	P28_4J is connected to P26_4
	2-3	P28_4J is connected to P28_4
J201 (P26_0)	Open	No pulldown
	Closed	Pulldown
J202 (P26_1)	Open	No pulldown
	Closed	Pulldown
J203 (P26_2)	Open	No pulldown
	Closed	Pulldown

J204 (P26_3)	Open	No pulldown
	Closed	Pulldown
J205 (P26_4)	Open	No pulldown
	Closed	Pulldown
J206 (P28_0)	Open	No pulldown
	Closed	Pulldown
J207 (P28_1)	Open	No pulldown
	Closed	Pulldown
J208 (P28_2)	Open	No pulldown
	Closed	Pulldown
J209 (P28_3)	Open	No pulldown
	Closed	Pulldown
J210 (P28_4)	Open	No pulldown
	Closed	Pulldown

Default:

J101 – J105: 2-3

J201 - J205: Open

J206 - J210: Closed

3.5 External bus / DMA control (J211 - J222)

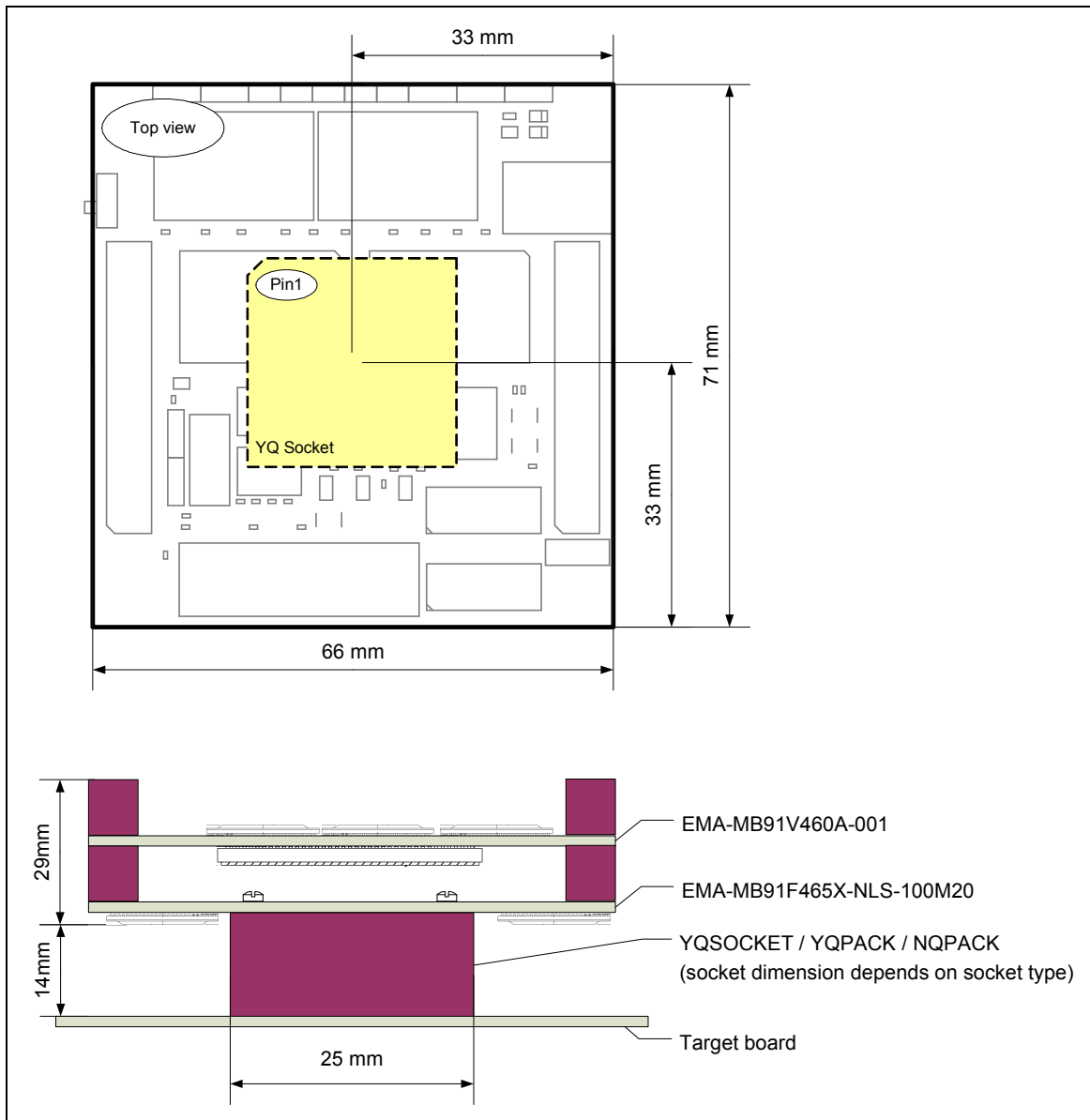
Jumper	Setting	Description
J211 (P09_4 - CS4#)	Open	No pulldown
	Closed	Pulldown
J212 (P09_5 - CS5#)	Open	No pulldown
	Closed	Pulldown
J213 (P09_6 - CS6#)	Open	No pulldown
	Closed	Pulldown
J214 (P09_7 - CS7#)	Open	No pulldown
	Closed	Pulldown
J215 (P09_0 - CS0#)	Open	No pulldown
	Closed	Pulldown
J216 (P09_1 - CS1#)	Open	No pulldown
	Closed	Pulldown
J217 (P09_2 - CS2#)	Open	No pulldown
	Closed	Pulldown
J218 (P09_3 - CS3#)	Open	No pulldown
	Closed	Pulldown
J219 (P12_0 - DREQ2)	Open	No pulldown
	Closed	Pulldown
J220 (P12_4 - DREQ3)	Open	No pulldown
	Closed	Pulldown
J221 (P13_0 - DREQ0)	Open	No pulldown
	Closed	Pulldown
J222 (P13_4 - DREQ1)	Open	No pulldown
	Closed	Pulldown

Default:

J211 – J217, J219 – J220, J222: Closed

J218, J221: Open

4 Mechanical dimensions



5 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>

6 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
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
63225 Langen