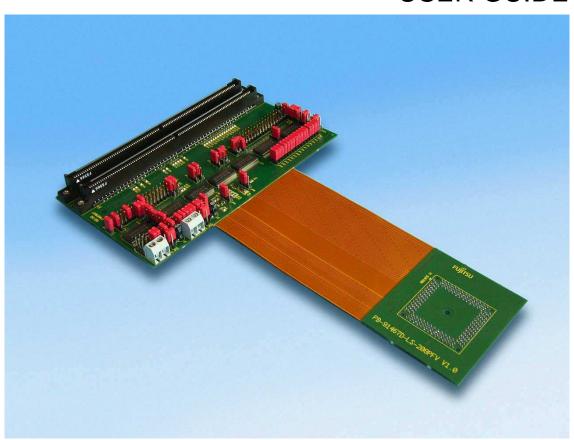
# MB91V460 FAMILY PROBE CABLE PB-91467D-LS-208PFV

# **USER GUIDE**







# **Revision History**

Date	Issue		
2006-Mar-17	V1.0, HLi, First Release		
2007-Mar-02	1.1 Recycling Note added		
2007-Apr-10	V1.2 HLi, Remove MCU before using probe cable info added		
2008-Sep-16	V1.3 MSc, China-RoHS regulation added		
2009-Jan-09	V1.4 MSc, Information WWW updated		

This document contains 24 pages.

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#### PB-91467D-LS-208PFV V12 Chapter 1 Overview

## 1 Overview

#### 1.1 Abstract

The PB-91467D-LS-208PFV is a probe cable with Level shifters to support the MB91V460 external bus interface at  $3.3\ V$  levels.



# 2 Default Jumper Setting

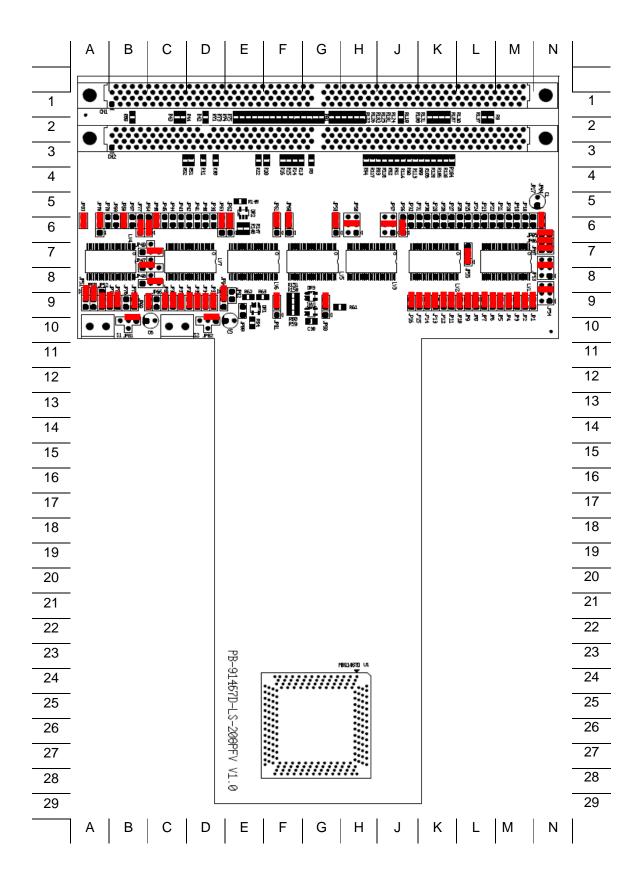
The following jumper setting is the default setting. All jumpers are named directly on the board, so it is easy to set the jumpers according to the features.

Jumper	Description / Function	Type	Default	Coordinate
JP1	P03_0 <b>D0</b> / use LV1 > JP17 must be open	Jumper 2pol	closed	M9
JP2	P03_1 <b>D1 /</b> use LV1 > JP18 must be open	Jumper 2pol	closed	M9
JP3	P03_2 <b>D2</b> / use LV1 > JP19 must be open	Jumper 2pol	closed	M9
JP4	P03_3 <b>D3</b> / use LV1 > JP20 must be open	Jumper 2pol	closed	M9
JP5	P03_4 <b>D4</b> / use LV1 > JP21 must be open	Jumper 2pol	closed	M9
JP6	P03_5 <b>D5</b> / use LV1 > JP22 must be open	Jumper 2pol	closed	L9
JP7	P03_6 <b>D6</b> / use LV1 > JP23 must be open	Jumper 2pol	closed	L9
JP8	P03_7 <b>D7</b> / use LV1 > JP24 must be open	Jumper 2pol	closed	L9
JP9	P02_0 <b>D8</b> / use LV1 > JP25 must be open	Jumper 2pol	closed	L9
JP10	P02_1 <b>D9</b> / use LV1 > JP26 must be open	Jumper 2pol	closed	L9
JP11	P02_2 <b>D10</b> / use LV1 > JP27 must be open	Jumper 2pol	closed	K9
JP12	P02_3 <b>D11</b> / use LV1 > JP28 must be open	Jumper 2pol	closed	K9
JP13	P02_4 <b>D12</b> / use LV1 > JP29 must be open	Jumper 2pol	closed	K9
JP14	P02_5 <b>D13</b> / use LV1 > JP30 must be open	Jumper 2pol	closed	K9
JP15	P02_6 <b>D14</b> / use LV1 > JP31 must be open	Jumper 2pol	closed	J/K9
JP16	P02_7 <b>D15</b> / use LV1 > JP32 must be open	Jumper 2pol	closed	J9
JP17	P03_0 <b>D0</b> / use LV2 > JP1 is closed	Jumper 2pol	open	M/N5/6
JP18	P03_1 <b>D1 /</b> use LV2 > JP2 is closed	Jumper 2pol	open	M5/6
JP19	P03_2 <b>D2</b> / use LV2 > JP3 is closed	Jumper 2pol	open	M5/6
JP20	P03_3 <b>D3</b> / use LV2 > JP4 is closed	Jumper 2pol	open	M5/6
JP21	P03_4 <b>D4</b> / use LV2 > JP5 is closed	Jumper 2pol	open	M5/6
JP22	P03_5 <b>D5</b> / use LV2 > JP6 is closed	Jumper 2pol	open	L/M5/6
JP23	P03_6 <b>D6</b> / use LV2 > JP7 is closed	Jumper 2pol	open	L5/6
JP24	P03_7 <b>D7</b> / use LV2 > JP8 is closed	Jumper 2pol	open	L5/6
JP25	P02_0 <b>D8</b> / use LV2 > JP9 is closed	Jumper 2pol	open	L5/6
JP26	P02_1 <b>D9</b> / use LV2 > JP10 is closed	Jumper 2pol	open	L5/6
JP27	P02_2 <b>D10</b> / use LV2 > JP11 is closed	Jumper 2pol	open	K5/6
JP28	P02_3 <b>D11</b> / use LV2 > JP12 is closed	Jumper 2pol	open	K5/6
JP29	P02_4 <b>D12</b> / use LV2 > JP13 is closed	Jumper 2pol	open	K5/6
JP30	P02_5 <b>D13</b> / use LV2 > JP14 is closed	Jumper 2pol	open	K5/6
JP31	P02_6 <b>D14</b> / use LV2 > JP15 is closed	Jumper 2pol	open	J/K5/6
JP32	P02_7 <b>D15</b> / use LV2 > JP16 is closed	Jumper 2pol	open	J5/6
JP33	P09_0 <b>CSX0</b> / use LV7 B/A > JP39 must be open	Jumper 2pol	closed	D9
JP34	P09_1 CSX1 / use LV7 B/A > JP40 must be open	Jumper 2pol	closed	D9
JP35	P09_2 CSX2 / use LV7 B/A > JP41 must be open	Jumper 2pol	closed	D9
JP36	P09_3 CSX3 / use LV7 B/A > JP42 must be open	Jumper 2pol	closed	C/D9
JP37	P09_6 CSX6 / use LV7 B/A > JP43 must be open	Jumper 2pol	closed	C9
JP38	P09_7 CSX7 / use LV7 B/A > JP44 must be open	Jumper 2pol	closed	C9
JP39	P09_0 CSX0 / use LV7 A/B > JP33 is closed	Jumper 2pol	open	D5/6
JP40	P09_1 CSX1 / use LV7 A/B > JP34 is closed	Jumper 2pol	open	D5/6
JP41	P09_2 CSX2 / use LV7 A/B > JP35 is closed	Jumper 2pol	open	D5/6
JP42	P09_3 CSX3 / use LV7 A/B > JP36 is closed	Jumper 2pol	open	D5/6
JP43	P09_6 <b>CSX6</b> / use LV7 A/B > JP37 is closed	Jumper 2pol	open	C5/6

#### PB-91467D-LS-208PFV V12 Chapter 2 Default Jumper Setting

JP44	P09_7 <b>CSX7</b> / use LV7 A/B > JP38 is closed	Jumper 2pol	open	C5/6
JP45	P10_1 <b>ASX</b> / use LV7 A/B > JP65 is closed	Jumper 2pol	open	C5/6
JP46	P08_7 RDY / use LV7 A/B > JP66 must open	Jumper 2pol	closed	C5/6
JP47	P13_1 1DACKX0 > V460_DACKX0	Jumper 3+1	1-2	B/C7/8
JP48	P13_2 <b>1DEOP0 &gt;</b> V460_DEOP0	Jumper 3+1	2-3	B/C8
JP49	P13_0 <b>2DREQ0 &gt;</b> V460_DREQ0	Jumper 3+1	2-3	B/C6/7
JP50	P13 1 4DACKX0 > DACKX0	Jumper 3pol	1-2	A8/9
JP51	P13 2 <b>4DEOP0 &gt;</b> 4DEOP0 and DEOP0	Jumper 3pol	1-2	A8/9
JP52	P13 0 <b>5DREQ0 &gt;</b> DREQ0 and 5DREQ0	Jumper 3pol	2-3	A8/9
JP53	Levelshifter1 / direction control 1DIR	2x3pol	2-5	N7/8
JP54	Levelshifter1 / direction control 2DIR	2x3pol	2-5	N8/9
JP55	Levelshifter2 / direction control 1DIR	1x3pol	1-2	L6/7
JP56	Levelshifter2 / direction control 2DIR	1x3pol	1-2	J5/6
JP57	Levelshifter3 / direction control 1DIR	2x3pol	2-5	J5/6
JP58	Levelshifter3 / direction control 2DIR	2x3pol	2-5	H5/6
JP59	Levelshifter5 / direction control 1DIR	·		G5/6
		1x3pol	2-3	
JP60 JP61	Levelshifter5 / direction control 2DIR  Levelshifter6 / direction control 1DIR	1x3pol	2-3 2-3	F5/6 F5/6
		1x3pol	-	
JP62	Levelshifter6 / direction control 2DIR	1x3pol	2-3	E5/6
JP63	Levelshifter7 / direction control 1DIR	1x3pol	2-3	D5/6
JP64	Levelshifter7 / direction control 2DIR	1x3pol	1-2	B/C5/6
JP65	P10_1 ASX / use LV7 B/A > JP45 must be open	Jumper 2pol	closed	C8/9
JP66	P08_7 RDY / use LV7 B/A > JP46 is closed	Jumper 2pol	open	C8/9
JP67	P08_5 <b>BGRNTX</b> / use LV4 B/A>JP75 is closed	Jumper 2pol	open	B5/6
JP68	P08_6 <b>BRQ</b> / use LV4 B/A > JP76 must be open	Jumper 2pol	closed	B5/6
JP69	P10_2 <b>BAAX</b> / use LV4 B/A > JP72 is closed	Jumper 2pol	open	B5/6
JP70	P10_3 <b>WEX</b> / use LV4 B/A > JP73 is closed	Jumper 2pol	open	A/B5/6
JP72	P10_2 <b>BAAX</b> / use LV4 B/A > JP69 must be open	Jumper 2pol	closed	B8/9
JP73	P10_3 <b>WEX</b> / use LV4 B/A > JP70 must be open	Jumper 2pol	closed	A/B8/9
JP75	P08_5 <b>BGRNTX</b> / use LV4 B/A>JP67 must be open	Jumper 2pol	closed	B8/9
JP76	P08_6 BRQ / use LV4 B/A > JP68 is closed	Jumper 2pol	open	B8/9
JP77	Levelshifter4 / direction control 1DIR	Jumper 3pol	1-2	B5/6
JP78	Levelshifter4 / direction control 2DIR	Jumper 3pol	2-3	A5/6
JP81	VCC 5V Jumper	Jumper 3+1	1-2	B9/10
JP82	VCC 3V Jumper	Jumper 3+1	1-2	D9/10
JP84	VCC3C > 10μF   10nF > GND	Jumper 2pol	closed	N5/6
JP85	AVSS	Jumper 2pol	closed	N6
JP86	AVRH5	Jumper 2pol	closed	N6/7
JP87	AVCC5	Jumper 2pol	closed	N7
JP88	MONCLK / test point	Jumper 2pol	open	B8/9
JP89	RDY pull up	Jumper 2pol	closed	B/C8/9
JP90	WEX or RDX > DIR	Jumper 3pol	2-3	G8/9
JP91	WEX or V460_WEX	Jumper 3pol	2-3	F8/9
JP92	3V3 > UVCC3	Jumper 2pol	open	E8/9
JP93	5V_T > UVCC5	Jumper 2pol	closed	A5/6
JP94	VDD3_T: UVCC3 or UVCC5	Jumper 3pol	1-2	D/E8/9
	_			





## 3 Jumpers

This chapter describes all jumpers that can be modified on the probe. The default setting is shown with a grey shaded area. All jumpers are named directly on the board, so it is very easy to set the jumpers according to the features.

## 3.1 Power Supply Voltage (JP: 81, 82, 92, 93, 94)

3V3 and 5V are the supply voltages for the Level shifters. The Jumpers JP81 and JP82 in conjunction with S1 and S2, allow to use an externally power supply for the Level shifters. In that case, take care of the input-voltage. Neither a voltage regulation nor an over-voltage-protection does exist for an external power-supply. The default setting is supplying the level shifters via VDD3\_T and 5V\_T directly from the target board. JP93 must be closed and JP94 have to be set to 1-2. JP 92 should be left open.

Jumper	Setting	Description
<b>JP81</b> (5V	1 - 2	The target site of the level shifters (A-site, 3V3) is supplied by VDD3_T.
supply)	2 - 3	The target site of the level shifters (A-site, 3V3) is supplied by external power-supply from S1.
<b>JP82</b> (3V3	1 - 2	The emulator site of the level shifters (B-site, 5V) is supplied by 5V_T.
supply)	2 - 3	The emulator site of the level shifters (B-site, 5V) is supplied by 5V_T external power-supply from S2
<b>JP92</b> (UVCC3 >	ON (closed)	3V3 is connected to UVCC3 of the emulator MB2198-300. (see also JP94)
3V3)	OFF (open)	3V3 is not connected to UVCC3 of the emulator MB2198-300. (see also JP94)
<b>JP93</b> (UVCC5 >	ON (closed)	The power supply 5V_T of target is connected to UVCC5 of MB2198-300. (see also JP94)
5V_T)	OFF (open)	The power supply 5V_T of target is not connected to UVCC5 of MB2198-300. (see also JP94)
	1 – 2	UVCC3 of MB2198-300 is connected to VDD3_T of target ( see also JP92, JP93)
JP94	2 – 3	UVCC5 of MB2198-300 is connected to VDD3_T.
	Open	

#### 3.2 C-Pin Jumper (JP84)

Jumper	Setting	Description
JP84	ON (closed)	The C-Pin is connected to 10µF   10nF > GND
	OFF (open)	The C-Pin is not connected to $10\mu\text{F}$   $10\text{nF}$ > GND



## 3.3 Analog voltage Jumpers (JP85, JP86, JP87)

Jumper	Setting	Description
JP85 AVSS	ON (closed)	Analog input voltage is connected to the target
<b>3F63</b> AV33	OFF (open)	Analog input voltage is not connected to the target
JP86 AVRH5	ON (closed)	Analog reference voltage is connected to the target
	OFF (open)	Analog reference voltage is not connected to the target
	ON (closed)	Analog supply voltage is connected to the target
JP87 AVCC5	OFF (open)	Analog supply voltage is not connected to the target

## **3.4** Level-shifter direction control Jumper (JP53 – JP64, JP77 and JP78)

Jumper	Setting	Description
<b>JP53</b> (D0-D7)	1 – 4	1DIR connected to 5V -> LV1/1 direction A/B (target to MB2198-300)
direction control	2 – 5	1DIR connected to DIR -> the direction of LV1 1A<>1B is selectable
LV1 /1DIR	3 – 6	1DIR connected to GND -> LV1/1 direction B/A (MB2198-300 to target)
<b>JP54</b> (D7-D15)	1 – 4	2DIR connected to 5V -> LV1/2A direction A/B (target to MB2198-300)
direction control	2 – 5	2DIR connected to DIR -> the direction of LV1 2A<>2B is selectable
	3 – 6	2DIR connected to GND -> LV1/2 direction B/A (MB2198-300 to target)
JP55 (D0-D7)	1 – 2	1DIR connected to 5V > LV2/1 direction A/B> (target to MB2198-300)
LV2 /1DIR	2 – 3	1DIR connected to GND -> LV2/1 direction B/A (MB2198-300 to target)
JP56 (D7-D15) direction control	1 – 2	2DIR connected to 5V > LV2/2 direction A/B> (target to MB2198-300)
LV2 /2DIR	2 – 3	2DIR connected to GND -> LV2/2 direction B/A (MB2198-300 to target)
<b>JP57</b> (D16-D23)	1 – 4	1DIR connected to 5V -> LV3 /1 direction A/B (target to MB2198-300)
direction control  LV3 /1DIR	2 – 5	1DIR connected to DIR -> the direction of LV3 1A<>1B is selectable
LV3/1DIK	3 – 6	1DIR connected to GND -> LV3/1 direction B/A (MB2198-300 to target)
<b>JP58</b> (D24-D31)	1 – 4	2DIR connected to 5V -> LV3/2 direction A/B (target to MB2198-300)
direction control	2 – 5	2DIR connected to DIR -> the direction of LV3 2A<>2B is selectable
LV3 /2DIR	3 – 6	2DIR connected to GND -> LV3/2 direction B/A (MB2198-300 to target)

JP59 (A0-A7) direction control	1 – 2	1DIR connected to 5V > LV5/1 direction A/B > (target to MB2198-300)
LV5 1DIR	2 – 3	1DIR connected to GND -> LV5/1 direction B/A (MB2198-300 to target)
JP60 (A8-A15) direction control	1 – 2	2DIR connected to 5V > LV5/2 direction A/B > (target to MB2198-300)
LV5 2DIR	2 – 3	2DIR connected to GND -> LV5/2 direction B/A (MB2198-300 to target)
JP61 (A16-A23) direction control	1 – 2	1DIR connected to 5V > LV6/1 direction A/B > (target to MB2198-300)
LV6 1DIR	2 – 3	1DIR connected to GND -> LV6/1 direction B/A (MB2198-300 to target)
JP62 (A24, A25) direction control	1 – 2	2DIR connected to 5V > LV6/2 direction A/B > (target to MB2198-300)
LV6 2DIR	2 – 3	2DIR connected to GND -> LV6/2 direction B/A (MB2198-300 to target)
JP63 direction control LV7	1 – 2	1DIR connected to 5V > LV7/1 direction A/B > (target to MB2198-300)
1DIR	2 – 3	1DIR connected to GND -> LV7/1 direction B/A (MB2198-300 to target)
JP64 (CSX0- CSX7) direction	1 – 2	2DIR connected to 5V > LV7/2 direction A/B > (target to MB2198-300)
control LV7 2DIR	2 - 3	2DIR connected to GND -> LV7/2 direction B/A (MB2198-300 to target)
JP77 direction control LV4	1 – 2	1DIR connected to 5V > LV4/1 direction A/B > (target to MB2198-300)
1DIR	2 - 3	1DIR connected to GND -> LV4/1 direction B/A (MB2198-300 to target)
JP78 direction control LV4	1 – 2	2DIR connected to 5V > LV4/2 direction A/B > (target to MB2198-300)
2DIR	2 - 3	2DIR connected to GND -> LV4/2 direction B/A (MB2198-300 to target)

## 3.5 Data bus jumpers (D0-D31, JP1 – JP32)

Jumper	Setting	Description
IP1 (D0)	ON (closed)	P03_0 <b>D0</b> > JP17 must be open
<b>JP1</b> (D0)	OFF (open)	Direction control via DIR (D0-D15 in all)
ID2 (D1)	ON (closed)	P03_1 <b>D1</b> > JP18 must be open
<b>JP2</b> (D1)	OFF (open)	Direction control via DIR (D0-D15 in all)
ID2 (D2)	ON (closed)	P03_2 <b>D2</b> > JP19 must be open
<b>JP3</b> (D2)	OFF (open)	Direction control via DIR (D0-D15 in all)



JP4 (D3)			
JP5 (D4)	<b>JP4</b> (D3)	ON (closed)	<del> </del>
JP5 (D4)	- (= -)	OFF (open)	Direction control via DIR (D0-D15 in all)
Def	J <b>P5</b> (D4)	ON (closed)	P03_4 <b>D4</b> > JP21 must be open
DFF (open)   Direction control via DIR (D0-D15 in all)	010 (84)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)   Direction control via DIR (D0-D15 in all)	IP6 (D5)	ON (closed)	P03_5 <b>D5</b> > JP22 must be open
JP7 (D6)         OFF (open)         Direction control via DIR (D0-D15 in all)           JP8 (D7)         ON (closed)         P03_7 D7 > JP24 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP9 (D8)         ON (closed)         P02_0 D8 > JP25 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP10 (D9)         ON (closed)         P02_1 D9 > JP26 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP11 (D10)         ON (closed)         P02_2 D10 > JP27 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP12 (D11)         ON (closed)         P02_3 D11 > JP28 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP13 (D12)         ON (closed)         P02_4 D12 > JP29 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP14 (D13)         ON (closed)         P02_5 D13 > JP30 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP15 (D14)         ON (closed)         P02_6 D14 > JP31 must be open           OFF (open)         Direction control via DIR (D0-D15 in all)           JP16 (D15)         ON (closed)         P03_0 D0	<b>31 0</b> (B3)	OFF (open)	Direction control via DIR (D0-D15 in all)
Direction control via DIR (D0-D15 in all)   JP8 (D7)	IP7 (D6)	ON (closed)	P03_6 <b>D6</b> > JP23 must be open
Direction control via DIR (D0-D15 in all)	017 (20)	OFF (open)	Direction control via DIR (D0-D15 in all)
DFF (open)   Direction control via DIR (D0-D15 in all)	IDS (D7)	ON (closed)	P03_7 <b>D7</b> > JP24 must be open
Direction control via DIR (D0-D15 in all)	3F6 (D7)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)   Direction control via DIR (D0-D15 in all)	IDO (DO)	ON (closed)	P02_0 <b>D8</b> > JP25 must be open
Direction control via DIR (D0-D15 in all)   JP11 (D10)	3F9 (D6)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)   Direction control via DIR (D0-D15 in all)	IP10 (D0)	ON (closed)	P02_1 <b>D9</b> > JP26 must be open
JP11 (D10)  OFF (open)  Direction control via DIR (D0-D15 in all)  P02_3 D11 > JP28 must be open Direction control via DIR (D0-D15 in all)  JP13 (D12)  ON (closed) OFF (open)  Direction control via DIR (D0-D15 in all)  P02_4 D12 > JP29 must be open Direction control via DIR (D0-D15 in all)  ON (closed) OFF (open) Direction control via DIR (D0-D15 in all)  JP14 (D13)  ON (closed) OFF (open) Direction control via DIR (D0-D15 in all)  JP15 (D14) ON (closed) OFF (open) Direction control via DIR (D0-D15 in all)  JP16 (D15) ON (closed) OFF (open) Direction control via DIR (D0-D15 in all)  P02_7 D15 > JP32 must be open Direction control via DIR (D0-D15 in all)  P03_0 D0 > in case of close JP17, JP1 must be open. > Different directions selectable (JP55)  JP18 (D1) ON (closed) OFF (open) ON (closed) OFF (open)  ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) OFF (open) ON (closed) OFF (open)	<b>3F 10</b> (D9)	OFF (open)	Direction control via DIR (D0-D15 in all)
Direction control via DIR (D0-D15 in all)	IP11 (D10)	ON (closed)	P02_2 <b>D10</b> > JP27 must be open
Direction control via DIR (D0-D15 in all)   JP13 (D12)	<b>3</b> F11 (D10)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)  Direction control via DIR (D0-D15 in all)  P02_4 D12 > JP29 must be open Direction control via DIR (D0-D15 in all)  JP14 (D13)  ON (closed) OFF (open)  Direction control via DIR (D0-D15 in all)  P02_5 D13 > JP30 must be open Direction control via DIR (D0-D15 in all)  P02_6 D14 > JP31 must be open Direction control via DIR (D0-D15 in all)  JP15 (D14)  ON (closed) OFF (open)  ON (closed) P02_7 D15 > JP32 must be open Direction control via DIR (D0-D15 in all)  JP16 (D15)  ON (closed) OFF (open)  ON (closed) P03_0 D0 > in case of close JP17, JP1 must be open. > Different directions selectable (JP55)  JP18 (D1)  ON (closed) OFF (open)  ON (closed) OFF (open)  ON (closed) P03_1 D1 > in case of close JP18, JP2 must be open. > Different directions selectable (JP55)  ON (closed) OFF (open)  ON (closed) P03_2 D2 > in case of close JP19, JP3 must be open. > Different directions selectable (JP55)  ON (closed) P03_3 D3 > in case of close JP20, JP4 must be open. > Different directions selectable (JP55)	ID12 (D11)	ON (closed)	P02_3 <b>D11</b> > JP28 must be open
JP13 (D12)  OFF (open)  Direction control via DIR (D0-D15 in all)  JP14 (D13)  ON (closed) OFF (open)  Direction control via DIR (D0-D15 in all)  JP15 (D14)  ON (closed) OFF (open)  ON (closed) OFF (open)  Direction control via DIR (D0-D15 in all)  JP16 (D15)  ON (closed) OFF (open)  ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open)	<b>3P12</b> (D11)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)  Direction control via DIR (D0-D15 in all)  ON (closed) OFF (open)  OFF (open)  OFF (open)  ON (closed) OFF (open) OFF (open)  ON (closed) OFF (open) OFF (open)  ON (closed) OFF (open) OFF (o	ID12 (D12)	ON (closed)	P02_4 <b>D12</b> > JP29 must be open
JP14 (D13)  OFF (open)  Direction control via DIR (D0-D15 in all)  P02_6 D14 > JP31 must be open  Direction control via DIR (D0-D15 in all)  OFF (open)  OFF (open)  ON (closed)  OFF (open)	3F 13 (D12)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)  OFF (open)  ON (closed) OFF (open)	ID44 (D42)	ON (closed)	P02_5 <b>D13</b> > JP30 must be open
JP15 (D14)  OFF (open)  Direction control via DIR (D0-D15 in all)  P02_7 D15 > JP32 must be open  Direction control via DIR (D0-D15 in all)  OFF (open)  OFF (open)  ON (closed)  OFF (open)	<b>3F14</b> (D13)	OFF (open)	Direction control via DIR (D0-D15 in all)
OFF (open)  Direction control via DIR (D0-D15 in all)  P02_7 D15 > JP32 must be open Direction control via DIR (D0-D15 in all)  OFF (open)  OFF (open)  ON (closed) OFF (open) OFF (open)	ID15 (D14)	ON (closed)	P02_6 <b>D14</b> > JP31 must be open
JP16 (D15)  OFF (open)  Direction control via DIR (D0-D15 in all)  P03_0 D0 > in case of close JP17, JP1 must be open. >Different directions selectable (JP55)  ON (closed)  OFF (open)	<b>3P13</b> (D14)	OFF (open)	Direction control via DIR (D0-D15 in all)
JP17 (D0)  OFF (open)  ON (closed) OFF (open)  OFF (open)  ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) OFF (open) ON (closed) ON (closed) OFF (open) OFF (open) ON (closed) OFF (open) OFF (open)	ID16 (D15)	ON (closed)	P02_7 <b>D15</b> > JP32 must be open
JP17 (D0)  OFF (open)  OPF (open)  ON (closed)  OFF (open)  OFF (open)  OFF (open)  ON (closed)	7F 10 (D15)	OFF (open)	Direction control via DIR (D0-D15 in all)
JP18 (D1)  ON (closed) OFF (open)  ON (closed) OFF (open) ON (closed)	ID17 (D0)	ON (closed)	
JP18 (D1)  OFF (open)  ON (closed)  OFF (open)  ON (closed)  OFF (open)  ON (closed)  OFF (open)  ON (closed)  ON (closed)  ON (closed)  ON (closed)  P03_2 D2 > in case of close JP19, JP3 must be open. > Different directions selectable (JP55)  ON (closed)  P03_3 D3 > in case of close JP20, JP4 must be open. > Different directions selectable (JP55)	3F17 (D0)	OFF (open)	open. >Different directions selectable (JP55)
JP19 (D2)  ON (closed) OFF (open)  ON (closed) OFF (open)  ON (closed) OFF (open)  ON (closed)	IP18 (D1)	ON (closed)	
JP19 (D2)  OFF (open)  OPEN SPIN SPIN SPIN SPIN SPIN SPIN SPIN SPI	3F 10 (D1)	OFF (open)	open. >Different directions selectable (JP55)
JP20 (D3)  OFF (open)  ON (closed)  P03_3 D3 > in case of close JP20, JP4 must be open. >Different directions selectable (JP55)	ID10 (D2)	ON (closed)	
JP20 (D3) open. >Different directions selectable (JP55)	<b>JP19</b> (D2)	OFF (open)	open. >Different directions selectable (JP55)
	ID30 (D3)	ON (closed)	
OFF (open)	JF20 (D3)	OFF (open)	open. >Different directions selectable (JP55)

		T
<b>JP21</b> (D4)	ON (closed)	P03_4 <b>D4</b> > in case of close JP21, JP5 must be open. >Different directions selectable (JP55)
, ,	OFF (open)	open. >Different directions selectable (01 33)
<b>JP22</b> (D5)	ON (closed)	P03_5 <b>D5</b> > in case of close JP22, JP6 must be
<b>3. 22</b> (B3)	OFF (open)	open. >Different directions selectable (JP55)
<b>JP23</b> (D6)	ON (closed)	P03_6 <b>D6</b> > in case of close JP23, JP7 must be
3. 23 (BO)	OFF (open)	open. >Different directions selectable (JP55)
<b>JP24</b> (D7)	ON (closed)	P03_7 <b>D7</b> > in case of close JP24, JP8 must be
<b>3. 2</b> 4 ( <i>D1</i> )	OFF (open)	open. >Different directions selectable (JP55)
<b>JP25</b> (D8)	ON (closed)	P02_0 <b>D8</b> > in case of close JP25, JP9 must be
<b>3. 23</b> (B0)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP26</b> (D9)	ON (closed)	P02_1 <b>D9</b> > in case of close JP26, JP10 must
<b>01 20</b> (B3)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP27</b> (D10)	ON (closed)	P02_2 <b>D10</b> > in case of close JP27, JP11 must be
J. 2. (B.5)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP28</b> (D11)	ON (closed)	P02_3 <b>D11</b> > in case of close JP28, JP12 must be
31 23 (211)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP29</b> (D12)	ON (closed)	P02_4 <b>D12</b> > in case of close JP29, JP13 must be
<b>31 23</b> (B12)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP30</b> (D13)	ON (closed)	P02_5 <b>D13</b> > in case of close JP30, JP14 must be
<b>31 30</b> (B 13)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP31</b> (D14)	ON (closed)	P02_6 <b>D14</b> > in case of close JP31, JP15 must be
31 31 (B14)	OFF (open)	open. >Different directions selectable (JP56)
<b>JP32</b> (D15)	ON (closed)	P02_7 <b>D15</b> > in case of close JP32, JP16 must be
JP32 (D15)	OFF (open)	open. >Different directions selectable (JP56)

## **3.6 Chip Select CSX0,1,2,3,6,7 Jumpers** (JP33 – JP44)

Jumper	Setting	Description
<b>JP33</b> (CSX0)	ON (closed)	P09_0 <b>CSX0</b> / > JP39 must be open
	OFF (open)	
<b>JP34</b> (CSX1)	ON (closed)	P09_1 <b>CSX1</b> / > JP40 must be open
	OFF (open)	
<b>JP35</b> (CSX2)	ON (closed)	P09_2 <b>CSX2</b> / > JP41 must be open
	OFF (open)	



<b>JP36</b> (CSX3)	ON (closed)	P09_3 <b>CSX3</b> / > JP42 must be open			
	OFF (open)				
<b>JP37</b> (CSX6)	ON (closed)	P09_6 <b>CSX6</b> / > JP43 must be open			
<b>37</b> (00X0)	OFF (open)				
<b>JP38</b> (CSX7)	ON (closed)	P09_7 <b>CSX7</b> / > JP44 must be open			
<b>01 30</b> (00X1)	OFF (open)				
<b>JP39</b> (CSX0)	ON (closed)	P09_0 CSX0 > in case of close JP39, JP33 must			
<b>3P39</b> (C3X0)	OFF (open)	be open. > Different directions via JP63 and JP64			
<b>JP40</b> (CSX1)	ON (closed)	P09_1 CSX1 > in case of close JP40, JP34 must			
<b>01 40</b> (00X1)	OFF (open)	be open. > Different directions via JP63 and JP64			
<b>JP41</b> (CSX2)	ON (closed)	P09_2 CSX2 > in case of close JP41, JP35 must			
<b>31 41</b> (00%2)	OFF (open)	be open. > Different directions via JP63 and JP64			
<b>JP42</b> (CSX3)	ON (closed)	P09_3 CSX3 > in case of close JP42, JP36 must			
<b>31 42</b> (00/3)	OFF (open)	be open. > Different directions via JP63 and JP64			
<b>JP43</b> (CSX6)	ON (closed)	P09_6 CSX6 > in case of close JP43, JP37 must			
	OFF (open)	be open. > Different directions via JP63 and JP64			
<b>JP44</b> (CSX7)	ON (closed)	P09_7 CSX7 > in case of close JP44, JP38 must			
	OFF (open)	be open. >Different directions via JP63 and JP64			

## **3.7 DMA Jumpers DACK, DEOP, DREQ** (JP47 – JP50)

Jumper	Setting	Description				
JP47 (DACK	1 – 2	1DACKX0 > V460_DACKX0 (MB2198-300)				
P13_1) DMA	2 – 4	V460_DACKX0 > DACKX0 (MB2198-300 to target)				
Acknowledge	2-3	2DACKX0 > V460_DACKX0 (MB2198-300)				
JP48 (DEOP	1 – 2	1DEOP0 > V460_DEOP0 (MB2198-300)				
P13_2) DMA Request	2 – 4	V460_DEOP0 > DEOP0 (MB2198-300 to target)				
	2-3	2DEOP0 > V460_DEOP0 (MB2198-300)				
JP49 (DREQ P13_0) DMA termination output pin	1 – 2	1DREQ0 > V460_DREQ0 (MB2198-300)				
	2 – 4	V460_DREQ0 > DREQ0 (MB2198-300 to target)				
	2-3	2DREQ0 > V460_DREQ0 (MB2198-300)				
<b>JP50</b> (DACKX) P13_1	1 – 2	4DACKX0 > DACKX0 (target)				
	2 – 3	5DACKX0 > DACKX0 (target)				
	open	JP47 set > V460_DACKX0				

<b>JP51</b> (DEOP) P13_2	1 – 2	4DEOP0 > DEOP0 (target)	
	2 – 3	5DEOP0 > DEOP0 (target)	
	open	JP48 set > V460_DEOP0	
<b>JP52</b> (DREQ) P13_0	1 – 2	4DREQ0 > DREQ0 (target)	
	2 – 3	5DREQ0 > DREQ0 (target)	
	open	JP49 set > V460_ DREQ0	

## **3.8 ASX, RDY, BGRNTX, BRQ, BAAX, WEX** (JP45, 46, 65-76, 88-90)

Jumper	Setting	Description			
JP45 (ASX)	ON (closed)	ASX P10_1 > in case of close JP45, JP65 must be			
P10_1	OFF (open)	open. > Different directions selectable (JP64)			
JP46 (RDY)	ON (closed)	JP66 must be open / target to MB2198-300			
P08_7	OFF (open)	> Different directions selectable (JP64)			
<b>JP65</b> (ASX)	ON (closed)	JP45 must be open / MB2198-300 to target			
P10_1	OFF (open)	> Different directions selectable (JP63)			
<b>JP66</b> (RDY)	ON (closed)	RDY P08_7 > in case of close JP66, JP46 must be			
P08_7	OFF (open)	open. > Different directions selectable (JP63)			
JP67	ON (closed)	BGRNTX P08_5 > in case of close JP67, JP75			
(BGRNTX) P08_5	OFF (open)	must be open. > Different directions selectable (JP77)			
<b>JP68</b> (BRQ)	ON (closed)	JP76 must be open > target to MB2198-300			
P08_6	OFF (open)	> Different directions selectable (JP77)			
JP69 (BAAX)	ON (closed)	BAAX P10_2 > in case of close JP69, JP72 m			
P10_2	OFF (open)	be open. > Different directions selectable (JP77)			
JP70 (WEX)	ON (closed)	WEX P10_3 > in case of close JP70, JP73 must			
P10_3	OFF (open)	be open. > Different directions selectable (JP77)			
JP72 (BAAX)	ON (closed)	JP69 must be open > MB2198-300 to target			
P10_2	OFF (open)	> Different directions selectable (JP78)			
JP73 (WEX)	ON (closed)	JP70 must be open > MB2198-300 to target			
P10_3	OFF (open)	> Different directions selectable (JP78)			
JP75	ON (closed)	JP67 must be open > MB2198-300 to target			
(BGRNTX) P08_5	OFF (open)	> Different directions selectable (JP78)			
<b>JP76</b> (BRQ)	ON (closed)	BRQ P08_6 > in case of close JP76, JP68 must be			
P08_6	OFF (open)	open. > Different directions selectable (JP78)			



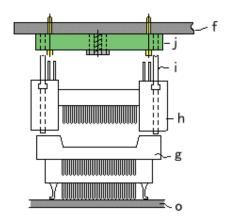
## **3.9 Other Jumper** (JP88 – JP91)

Jumper	Setting	Description			
JP88	ON (closed)	Test point only			
(MONCLK)	OFF (open)				
JP89	ON (closed)	RDY via 10k> 3V3 > pull up			
RDY pull up	OFF (open)				
JP90	1-2	RDX for DIR			
WEX or RDX	2-3	WEX for DIR			
JP91 WEX or	1-2	WEX for DIR			
V460_WEX	2-3	V460_WEX for DIR			

## 4 Installation

- Remove carefully the board from the shipping carton.
- Check first if there are any damages before power on the evaluation board.
- Press carefully and smooth the YQ-PACK208SD or the QFP-EXTENDER-208PFV in the YQ-SOCKET208SDN.
- Remove MCU out of the socket (NQ-PACK) before using the probe cable

The connection between YQ-SOCKET208SDN and YQ-PACK208SD or QFP-EXTENDER-208PFV is only once pluggable, since otherwise the pins can break off.



h: YQ-PACK208SD

g: NQ-PACK208SD

o: Target Board

f: PB-91467D-LS-208PFV

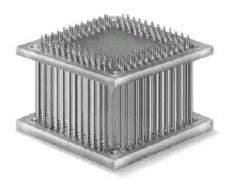
j: YQ-SOCKET208SDN

i: YQ-Guide

#### YQ-PACK208SD

#### **QFP-EXTENDER-208PFV**

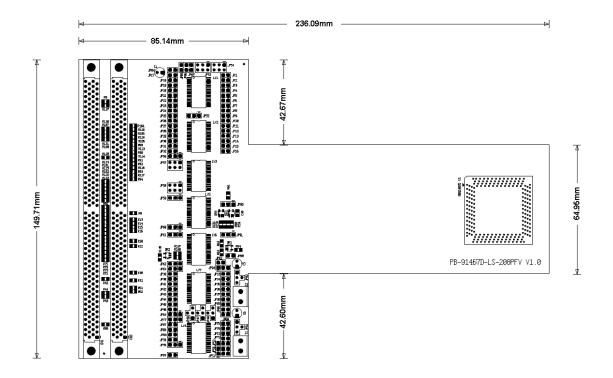




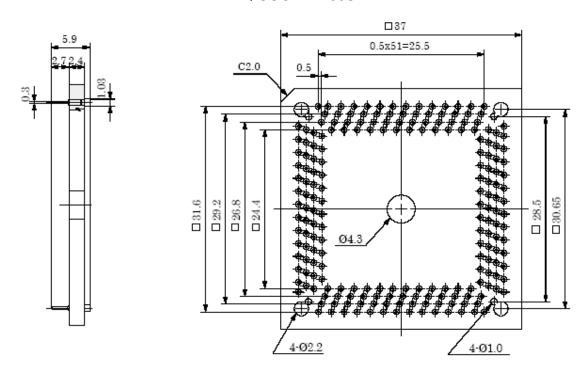


## 5 Dimensions

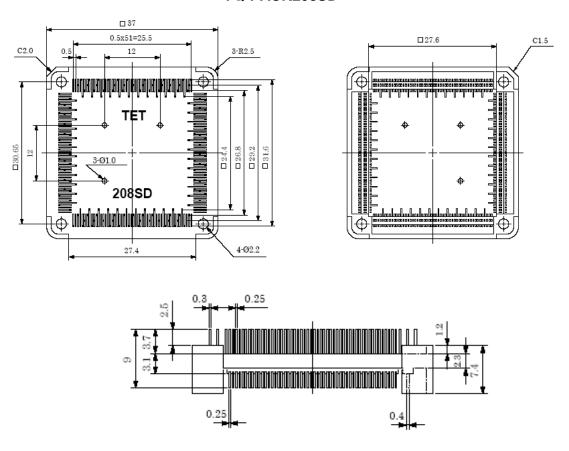
#### PB-91467D-LS-208PFV



## YQ-SOCKET208SDN

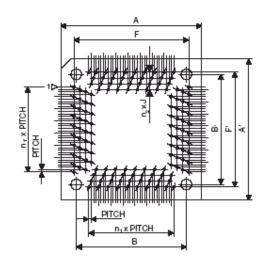


## YQ-PACK208SD





## QFP-EXTENDER-208PFV (not included)



A,A´: 37mm

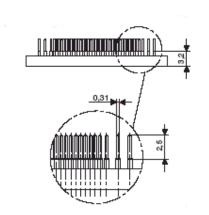
B,B': 30.65mm

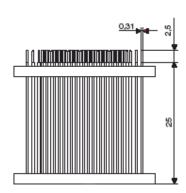
F: 31.60mm

J: 1.2mm

n2': 3mm

n1,n1':51mm





## 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://www.fme.gsdc.de/gsdc.htm

For more information about FUJITSU MICROELECTRONICS

http://www.emea.fujitsu.com/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<u>常</u>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".

#### PB-91467D-LS-208PFV V12 Chapter 7 China-RoHS regulation

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 <u>not</u> to be equated with the <u>durability</u>, <u>useduration</u> or any <u>warranty-claims</u> 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	有毒有害物质或元素 Hazardous substances name					
Component Name	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
PB-91467D-LS-208PFV	ж	0	0	0	0	0

#### 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 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