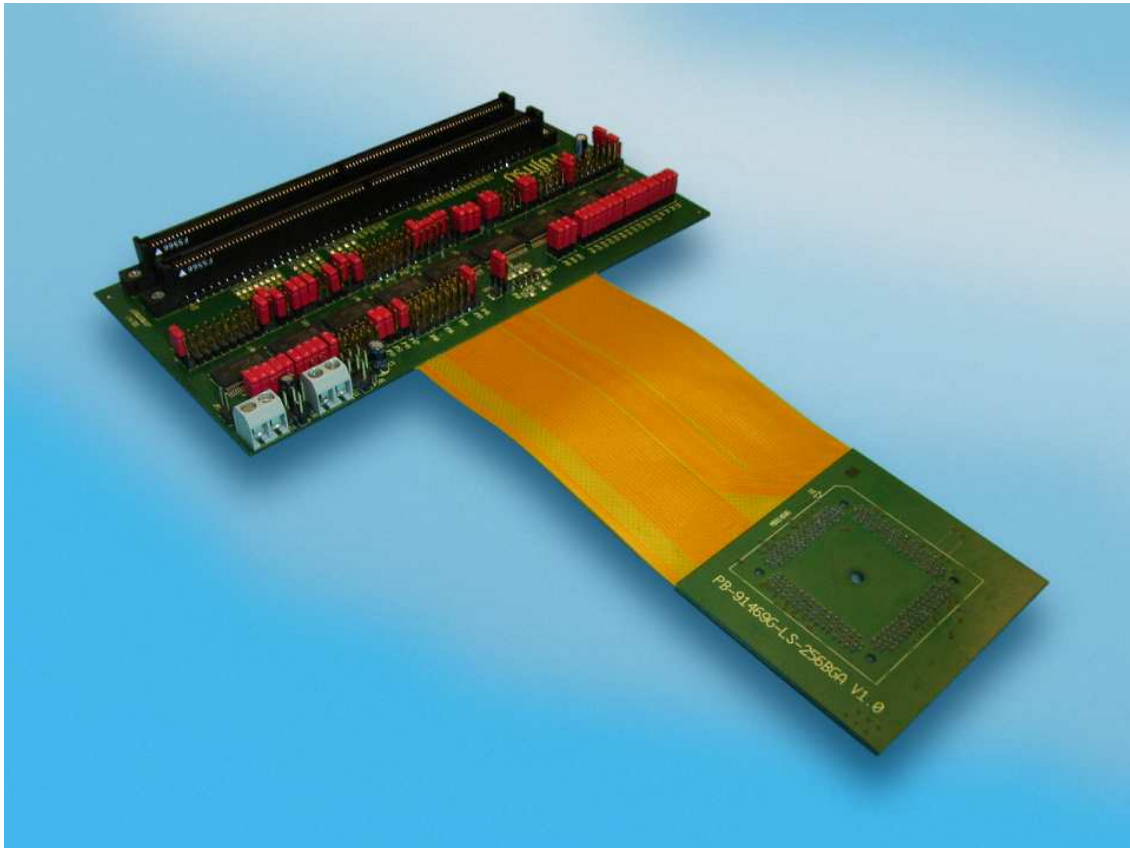


MB91V460 FAMILY

PROBE CABLE

PB-91469G-LS-256BGA

USER GUIDE



Revision History

Date	Issue
2006-Jun-06	V1.0, HLi, First Release
2007-Mar-02	V1.1 Recycling Note added
2007-Apr-11	V1.2 Hli, remove MCU before using probe info added
2008-Sep-16	V1.3 MSc, China-RoHS regulation added

This document contains 27 pages and the schematic in the middle.

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1 Overview

1.1 Abstract

The PB-91469G-LS-256BGA is a probe cable with Level shifters to support the MB91V460 external bus interface at 3.3 V levels.

This fix/flex cable can be connected between the BGA-660P ADAPTER (MB2198-300) and the starter kit (SK-91469G-256BGA), or the own target application.

Related documents such as MB91460 or MB91F46x "Hardware Manual" are available and should always be use in addition to this manual.

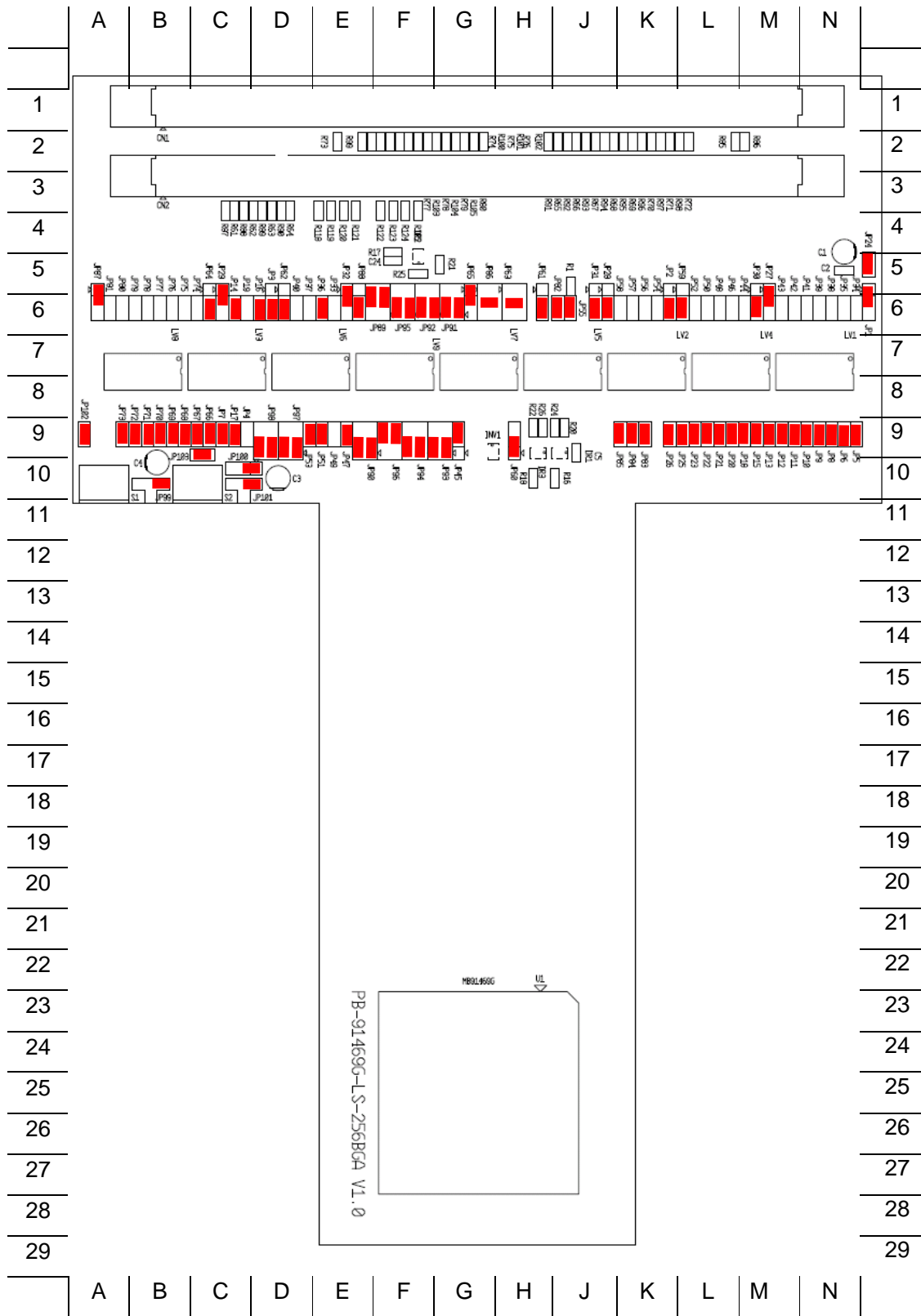
2 Default Jumper Setting

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	Coordinat
JP1	Levelshifter1 / direction control 1DIR	1x3pol	1 - 2	N5/6
JP2	Levelshifter2 / direction control 1DIR	1x3pol	2 - 3	K5/6
JP3	Levelshifter3 / direction control 1DIR	1x3pol	2 - 3	D5/6
JP4	P08_7 RDY / use LV3 A/B > JP16 is closed	Jumper 2pol	open	C/D9
JP5	P03_0 D0 / use LV1 > JP34 must be open	Jumper 2pol	closed	N9
JP6	P03_1 D1 / use LV1 > JP35 must be open	Jumper 2pol	closed	N9
JP7	P10_1 ASX / use LV3 A/B > JP19 is open	Jumper 2pol	closed	C9
JP8	P03_2 D2 / use LV1 > JP38 must be open	Jumper 2pol	closed	N9
JP9	P03_3 D3 / use LV1 > JP39 must be open	Jumper 2pol	closed	N9
JP10	P03_4 D4 / use LV1 > JP41 must be open	Jumper 2pol	closed	M/N9
JP11	P03_5 D5 / use LV1 > JP42 must be open	Jumper 2pol	closed	M9
JP12	P03_6 D6 / use LV1 > JP43 must be open	Jumper 2pol	closed	M9
JP13	P03_7 D7 / use LV1 > JP44 must be open	Jumper 2pol	closed	M9
JP14	P10_6 MCLKE / use LV3	Jumper 2pol	closed	C6
JP15	P02_0 D8 / use LV1 > JP46 must be open	Jumper 2pol	closed	M9
JP16	P08_7 RDY / use LV3 B/A > JP4 is open	Jumper 2pol	closed	D6
JP17	P08_7 RDY pull up 3V3	Jumper 2pol	closed	C9
JP18	P02_1 D9 / use LV1 > JP48 must be open	Jumper 2pol	closed	L/M9
JP19	P10_1 ASX / use LV3 B/A > JP7 is closed	Jumper 2pol	open	C/D6
JP20	P02_2 D10 / use LV1 > JP50 must be open	Jumper 2pol	closed	L9
JP21	P02_3 D11 / use LV1 > JP52 must be open	Jumper 2pol	closed	L9
JP22	P02_4 D12 / use LV1 > JP54 must be open	Jumper 2pol	closed	L9
JP23	P02_5 D13 / use LV1 > JP56 must be open	Jumper 2pol	closed	L9
JP24	VCC3C > 10LF 10nF > GND	Jumper 2pol	closed	N5
JP25	P02_6 D14 / use LV1 > JP57 must be open	Jumper 2pol	closed	K/L9
JP26	P02_7 D15 / use LV1 > JP58 must be open	Jumper 2pol	closed	K9
JP27	Levelshifter1 / direction control 2DIR	1x3pol	1 - 2	M5/6
JP28	Levelshifter2 / direction control 2DIR	1x3pol	2 - 3	J5/6
JP29	Levelshifter3 / direction control 2DIR	1x3pol	1 - 2	C5/6
JP30	Levelshifter4 / direction control 2DIR	1x3pol	2 - 3	M5/6
JP31	Levelshifter5 / direction control 2DIR	1x3pol	2 - 3	J5/6
JP32	Levelshifter6 / direction control 2DIR	1x3pol	1 - 2	E5/6
JP33	P08_5 BGRNTX / use LV6 A/B > JP47 is closed	Jumper 2pol	open	E6
JP34	P03_0 D0 / use LV4 > JP5 is closed	Jumper 2pol	open	N6
JP35	P03_1 D1 / use LV4 > JP6 is closed	Jumper 2pol	open	N6
JP36	P08_6 BRQ / use LV6 A/B > JP49 must be open	Jumper 2pol	closed	E6
JP37	P10_3 WEX / use LV6 A/B > JP51 is closed	Jumper 2pol	open	D/E6
JP38	P03_2 D2 / use LV4 > JP8 is closed	Jumper 2pol	open	N6
JP39	P03_3 D3 / use LV4 > JP9 is closed	Jumper 2pol	open	N6
JP40	P10_2 BAAX / use LV6 A/B > JP53 is closed	Jumper 2pol	open	D6
JP41	P03_4 D4 / use LV4 > JP10 is closed	Jumper 2pol	open	N6
JP42	P03_5 D5 / use LV4 > JP11 is closed	Jumper 2pol	open	M6
JP43	P03_6 D6 / use LV4 > JP12 is closed	Jumper 2pol	open	M6

JP44	P03_7 D7 / use LV4 > JP13 is closed	Jumper 2pol	open	M6
JP45	WEX or V460_WEX	1x3pol	2 – 3	G9
JP46	P02_0 D8 / use LV4 > JP14 is closed	Jumper 2pol	open	L6
JP47	P8_5 BGRNTX / use LV6 B/A > JP33 must be open	Jumper 2pol	closed	E9
JP48	P02_1 D9 / use LV4 > JP18 is closed	Jumper 2pol	open	L6
JP49	P08_6 BRQ / use LV6 B/A > JP36 is closed	Jumper 2pol	open	E9
JP50	P02_2 D10 / use LV4 > JP20 is closed	Jumper 2pol	open	L6
JP51	P10_3 WEX / use LV6 B/A > JP37 must be open	Jumper 2pol	closed	E9
JP52	P02_3 D11 / use LV4 > JP21 is closed	Jumper 2pol	open	L6
JP53	P10_2 BAAX / use LV6 B/A > JP40 must be open	Jumper 2pol	closed	D/E9
JP54	P02_4 D12 / use LV4 > JP22 is closed	Jumper 2pol	open	K6
JP55	MONCLK	Jumper 2pol	closed	J6
JP56	P02_5 D13 / use LV4 > JP23 is closed	Jumper 2pol	open	K6
JP57	P02_6 D14 / use LV4 > JP25 is closed	Jumper 2pol	open	K6
JP58	P02_7 D15 / use LV1 > JP26 is closed	Jumper 2pol	open	J/K6
JP59	Levelshifter4 / direction control 2DIR	1x3pol	2 – 3	K/L5/6
JP60	RDX or WEX	1x3pol	1 – 2	H9
JP61	Levelshifter5 / direction control 2DIR	1x3pol	2 – 3	H5/6
JP62	Levelshifter6 / direction control 2DIR	1x3pol	2 – 3	D5/6
JP63	Levelshifter7 / direction control 1DIR	2x3pol	2 – 5	H5/6
JP64	Levelshifter8 / direction control 1DIR	1x3pol	2 – 3	C5/6
JP65	Levelshifter9 / direction control 1DIR	1x3pol	1 – 2	G5/6
JP66	P09_0 CSX0 / use LV8 B/A > JP74 must be open	Jumper 2pol	closed	C9
JP67	P09_1 CSX1 / use LV8 B/A > JP75 must be open	Jumper 2pol	closed	C9
JP68	P09_2 CSX2 / use LV8 B/A > JP76 must be open	Jumper 2pol	closed	B9
JP69	P09_3 CSX3 / use LV8 B/A > JP77 must be open	Jumper 2pol	closed	B9
JP70	P09_4 CSX4 / use LV8 B/A > JP78 must be open	Jumper 2pol	closed	B9
JP71	P09_5 CSX5 / use LV8 B/A > JP79 must be open	Jumper 2pol	closed	B9
JP72	P09_6 CSX6 / use LV8 B/A > JP80 must be open	Jumper 2pol	closed	A/B9
JP73	P09_7 CSX7 / use LV8 B/A > JP81 must be open	Jumper 2pol	closed	A9
JP74	P09_0 CSX0 / use LV8 A/B > JP66 is closed	Jumper 2pol	open	C6
JP75	P09_1 CSX1 / use LV8 A/B > JP67 is closed	Jumper 2pol	open	B6
JP76	P09_2 CSX2 / use LV8 A/B > JP68 is closed	Jumper 2pol	open	B6
JP77	P09_3 CSX3 / use LV8 A/B > JP69 is closed	Jumper 2pol	open	B6
JP78	P09_4 CSX4 / use LV8 A/B > JP70 is closed	Jumper 2pol	open	B6
JP79	P09_5 CSX5 / use LV8 A/B > JP71 is closed	Jumper 2pol	open	B6
JP80	P09_6 CSX6 / use LV8 A/B > JP72 is closed	Jumper 2pol	open	A/B6
JP81	P09_7 CSX7 / use LV8 A/B > JP73 is closed	Jumper 2pol	open	A6
JP82	AVCC5	Jumper 2pol	closed	H/J6
JP83	AVSS	Jumper 2pol	closed	K9
JP84	AVSS	Jumper 2pol	closed	K9
JP85	AVRH5	Jumper 2pol	closed	J/K9
JP86	Levelshifter7 / direction control 2DIR	2x3pol	2 – 5	G/H5/6
JP87	Levelshifter8 / direction control 2DIR	1x3pol	1 – 2	A5/6
JP88	Levelshifter9 / direction control 2DIR	1x3pol	2 – 3	E5/6
JP89	DACKX0	2x3pol	1–2, 4-5	E/F5/6
JP90	DEOP0	2x3pol	1–2, 4-5	E/F9
JP91	DREQ0	2x3pol	2-3, 5-6	G5/6
JP92	DEOTX0	2x3pol	2-3, 5-6	F/G5/6
JP93	DACKX1	2x3pol	1–2, 4-5	F/G9
JP94	DEOP1	2x3pol	1–2, 4-5	F9

JP95	DREQ1	2x3pol	2-3, 5-6	F5/6
JP96	DEOTX1	2x3pol	2-3, 5-6	F9
JP97	IOWRX	2x3pol	1-2, 4-5	D9
JP98	IORDX	2x3pol	1-2, 4-5	C/D9
JP99	5V supply jumper	1x3+1	1 – 2	B10
JP100	VDD35 jumper	1x3pol	1 – 2	C/D10
JP101	3V supply jumper	1x3+1	1 – 2	C/D10
JP102	5V_T > UVCC5	Jumper 2pol	closed	A9
JP103	3V3 > UVCC3	Jumper 2pol	closed	C9



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: 99, 100, 101, 102, 103)

3V3 and 5V are the supply voltages for the Level shifters. The Jumpers JP99 and JP101 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 with UVCC3 and UVCC5 directly.

Jumper	Setting	Description
JP99 (5V supply)	1 - 2	The emulator site of the level shifters (B-site, 5V) is supplied by 5V_T.
	2 - 3	The emulator site of the level shifters (B-site, 5V) is supplied by external power-supply from S1.
JP101 (3V3 supply)	1 - 2	The target site of the level shifters (A-site, 3V3) is supplied by VDD35.
	2 - 3	The target site of the level shifters (A-site, 3V3) is supplied by external power-supply from S2.
JP102 (UVCC5 > 5V_T)	ON (closed)	5V_T (target) is connected to UVCC5 of the emulator MB2198-300. (see also JP100)
	OFF (open)	5V_T (target) is not connected to UVCC5 of the emulator MB2198-300. (see also JP100)
JP103 (UVCC3 > 3V3)	ON (closed)	3V3 (target) is connected to UVCC3 of MB2198-300. (see also JP100)
	OFF (open)	3V3 (target) is not connected to UVCC3 of MB2198-300. (see also JP100)
JP100	1 – 2	VDD35 is connected to 3V3
	2 – 3	VDD35 is connected to 5V_T
	Open	

3.2 Level-shifter Direction Control: (JP1 – JP3, JP27 – JP32, JP59, JP61 – JP65 and JP86 – JP88)

Jumper	Setting	Description
JP1 (D0-D7) direction control LV1 /1DIR	1 – 2	1DIR connected to DIR -> the direction of LV1/1 1A<->1B is selectable
	2 – 3	1DIR connected to GND -> LV1/1 direction B/A (MB2198-300 to target)

JP2 (A0-A7) direction control LV2 1DIR	1 – 2	1DIR connected to 5V -> LV2/1 direction A/B (target to MB2198-300)
	2 – 3	1DIR connected to GND -> LV2/1 direction B/A (MB2198-300 to target)
JP3 (RDY, ASX, RDX, WRX0-3) direction control LV3 1DIR	1 – 2	1DIR connected to 5V -> LV3/1 direction A/B (target to MB2198-300)
	2 – 3	1DIR connected to GND -> LV3/1 direction B/A (MB2198-300 to target)
JP27 (D8-D15) direction control LV1 2DIR	1 – 2	2DIR connected to DIR -> the direction of LV1/2 1A<>1B is selectable
	2 – 3	2DIR connected to GND -> LV1/2 direction B/A (MB2198-300 to target)
JP28 (A8-A15) direction control LV2 2DIR	1 – 2	2DIR connected to 5V -> LV2/2 direction A/B (target to MB2198-300)
	2 – 3	2DIR connected to GND -> LV2/2 direction B/A (MB2198-300 to target)
JP29 (RDY, ASX) direction control LV3 2DIR	1 – 2	2DIR connected to 5V -> LV3/2 direction A/B (target to MB2198-300)
	2 - 3	2DIR connected to GND -> LV3/2 direction B/A (MB2198-300 to target)
JP30 (D0-D7) direction control LV4 1DIR	1 – 2	1DIR connected to DIR -> the direction of LV4/1 1A<>1B is selectable
	2 - 3	1DIR connected to 5V -> LV4/1 direction A/B (MB2198-300 to target)
JP31 (A16-A23) direction control LV5 1DIR	1 – 2	1DIR connected to 5V > LV5/1 direction A/B > (target to MB2198-300)
	2 - 3	1DIR connected to GND -> LV5/1 direction B/A (MB2198-300 to target)
JP32 (external bus control signals) direction control LV6 1DIR	1 – 2	1DIR connected to 5V > LV6/1 direction A/B > (target to MB2198-300)
	2 - 3	1DIR connected to GND -> LV6/1 direction B/A (MB2198-300 to target)
JP59 (D8-D15) direction control LV4 2DIR	1 – 2	2DIR connected to DIR -> the direction of LV4/2 1A<>1B is selectable
	2 - 3	2DIR connected to 5V -> LV4/2 direction A/B (MB2198-300 to target)
JP61 (A24-A27, MONCLK) direction control LV5 2DIR	1 – 2	2DIR connected to 5V > LV5/2 direction A/B > (target to MB2198-300)
	2 - 3	2DIR connected to GND -> LV5/2 direction B/A (MB2198-300 to target)

JP62 (BGRNTX, BRQ, WEX, BAAX) direction control LV6 2DIR	1 – 2	2DIR connected to 5V > LV6/2 direction A/B > (target to MB2198-300)
	2 - 3	2DIR connected to GND -> LV6/2 direction B/A (MB2198-300 to target)
JP63 (D16-D23) direction control LV7 1DIR	1 – 4	1DIR connected to 5V > LV7/1 direction A/B > (target to MB2198-300)
	2 – 5	1DIR connected to DIR -> the direction of LV7/1 1A<->1B is selectable
	3 – 6	1DIR connected to GND -> LV7/1 direction B/A (MB2198-300 to target)
JP64 (CSX0-C7) direction control LV8 1DIR	1 – 2	1DIR connected to 5V > LV8/1 direction A/B > (target to MB2198-300)
	2 - 3	1DIR connected to GND -> LV8/1 direction B/A (MB2198-300 to target)
JP65 (DMA signals) direction control LV9 1DIR	1 – 2	1DIR connected to 5V > LV9/1 direction A/B > (target to MB2198-300)
	2 - 3	1DIR connected to GND -> LV9/1 direction B/A (MB2198-300 to target)
JP86 (D24-D31) direction control LV7 2DIR	1 – 4	2DIR connected to 5V > LV7/2 direction A/B > (target to MB2198-300)
	2 – 5	2DIR connected to DIR -> the direction of LV7/2 1A<->1B is selectable
	3 – 6	2DIR connected to GND -> LV7/2 direction B/A (MB2198-300 to target)
JP87 (CSX0-7) direction control LV8 2DIR	1 – 2	2DIR connected to 5V > LV8/2 direction A/B > (target to MB2198-300)
	2 - 3	2DIR connected to GND -> LV8/2 direction B/A (MB2198-300 to target)
JP88 (DMA signals) direction control LV9 2DIR	1 – 2	2DIR connected to 5V > LV9/2 direction A/B > (target to MB2198-300)
	2 - 3	2DIR connected to GND -> LV9/2 direction B/A (MB2198-300 to target)

3.3 Data Bus

Jumper	Setting	Description
JP5 (D0)	ON (closed)	P03_0 D0 > JP34 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP6 (D1)	ON (closed)	P03_1 D1 > JP35 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP8 (D2)	ON (closed)	P03_2 D2 > JP38 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)

JP09 (D3)	ON (closed)	P03_3 D3 > JP39 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP10 (D4)	ON (closed)	P03_4 D4 > JP41 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP11 (D5)	ON (closed)	P03_5 D5 > JP42 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP12 (D6)	ON (closed)	P03_6 D6 > JP43 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP13 (D7)	ON (closed)	P03_7 D7 > JP44 must be open
	OFF (open)	Direction control via DIR (D0-D7 in all)
JP15 (D8)	ON (closed)	P02_0 D8 > JP46 must be open
	OFF (open)	Direction control via DIR (D0-D15 in all)
JP18 (D9)	ON (closed)	P02_1 D9 > JP48 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP20 (D10)	ON (closed)	P02_2 D10 > JP50 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP21 (D11)	ON (closed)	P02_3 D11 > JP52 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP22 (D12)	ON (closed)	P02_4 D12 > JP54 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP23 (D13)	ON (closed)	P02_5 D13 > JP56 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP25 (D14)	ON (closed)	P02_6 D14 > JP57 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP26 (D15)	ON (closed)	P02_7 D15 > JP58 must be open
	OFF (open)	Direction control via DIR (D8-D15 in all)
JP34 (D0)	ON (closed)	P03_0 D0 > in case of close JP34, JP5 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP35 (D1)	ON (closed)	P03_1 D1 > in case of close JP35, JP6 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP38 (D2)	ON (closed)	P03_2 D2 > in case of close JP38, JP8 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP39 (D3)	ON (closed)	P03_3 D3 > in case of close JP39, JP9 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	

JP41 (D4)	ON (closed)	P03_4 D4 > in case of close JP41, JP10 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP42 (D5)	ON (closed)	P03_5 D5 > in case of close JP42, JP11 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP43 (D6)	ON (closed)	P03_6 D6 > in case of close JP43, JP12 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP44 (D7)	ON (closed)	P03_7 D7 > in case of close JP44, JP13 must be open. > Direction control via DIR (D0-D7 in all)
	OFF (open)	
JP46 (D8)	ON (closed)	P02_0 D8 > in case of close JP46, JP15 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP48 (D9)	ON (closed)	P02_1 D9 > in case of close JP48, JP18 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP50 (D10)	ON (closed)	P02_2 D10 > in case of close JP50, JP20 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP52 (D11)	ON (closed)	P02_3 D11 > in case of close JP52, JP21 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP54 (D12)	ON (closed)	P02_4 D12 > in case of close JP54, JP22 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP56 (D13)	ON (closed)	P02_5 D13 > in case of close JP56, JP23 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP57 (D14)	ON (closed)	P02_6 D14 > in case of close JP57, JP25 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	
JP58 (D15)	ON (closed)	P02_7 D15 > in case of close JP58, JP26 must be open. > Direction control via DIR (D7-D15 in all)
	OFF (open)	

3.4 Chip Select: JP66 – JP81

Jumper	Setting	Description
JP66 (CSX0)	ON (closed)	P09_0 CSX0 / > in case of close JP66, JP74 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP67 (CSX1)	ON (closed)	P09_1 CSX1 / > in case of close JP67, JP75 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP68 (CSX2)	ON (closed)	P09_2 CSX2 / > in case of close JP68, JP76 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	

JP69 (CSX3)	ON (closed)	P09_3 CSX3 / > in case of close JP69, JP77 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP70 (CSX4)	ON (closed)	P09_4 CSX4 / > in case of close JP70, JP78 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP71 (CSX5)	ON (closed)	P09_5 CSX5 / > in case of close JP71, JP79 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP72 (CSX6)	ON (closed)	P09_6 CSX6 / > in case of close JP72, JP80 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP73 (CSX7)	ON (closed)	P09_7 CSX7 / > in case of close JP73, JP81 must be open. > Direction control via JP64 (CSX0 – CSX7 in all)
	OFF (open)	
JP74 (CSX0)	ON (closed)	P09_0 CSX0 / > in case of close JP74, JP66 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP75 (CSX1)	ON (closed)	P09_1 CSX1 / > in case of close JP75, JP67 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP76 (CSX2)	ON (closed)	P09_2 CSX2 / > in case of close JP76, JP68 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP77 (CSX3)	ON (closed)	P09_3 CSX3 / > in case of close JP77, JP69 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP78 (CSX4)	ON (closed)	P09_4 CSX4 / > in case of close JP78, JP70 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP79 (CSX5)	ON (closed)	P09_5 CSX5 / > in case of close JP79, JP71 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP80 (CSX6)	ON (closed)	P09_6 CSX6 / > in case of close JP80, JP72 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	
JP81 (CSX7)	ON (closed)	P09_7 CSX7 / > in case of close JP81, JP73 must be open. > Direction control via JP87 (CSX0 – CSX7 in all)
	OFF (open)	

3.5 DMA Signals: DACK, DEOP, DREQ, DEOTX and IOWRX, IORDX (JP89 – JP98)

Jumper	Setting	Description
JP89 (DACKX0) DMA Acknowledge	1 – 2	1DACKX0 > V460_DACKX0
	2 – 3	V460_DACKX0 > 2DACKX0
	4 – 5	4DACKX0 > MCU_D1
	5 – 6	MCU_D1 > 5DACKX0
JP90 (DEOP0) DMA termination output pin	1 – 2	1DEOP0 > V460_DEOP0
	2 – 3	V460_DEOP0 > 2DEOP0
	4 – 5	4DEOP0 > MCU_E1
	5 – 6	MCU_E1 > 5DEOP0
JP91 (DREQ0) DMA Request	1 – 2	1DREQ0 > V460_DREQ0
	2 – 3	V460_DREQ0 > 2DREQ0
	4 – 5	4DREQ0 > MCU_C1
	5 – 6	MCU_C1 > 5DREQ0
JP92 (DEOTX0) DMA stop request	1 – 2	1DEOTX0 > V460_DEOTX0
	2 – 3	V460_DEOTX0 > 2DEOTX0
	4 – 5	4DEOTX0 > MCU_D2
	5 – 6	MCU_D2 > 5DEOTX0
JP93 (DACKX1) DMA Acknowledge	1 – 2	1DACKX1 > V460_DACKX1
	2 – 3	V460_DACKX1 > 2DACKX1
	4 – 5	4DACKX1 > MCU_E3
	5 – 6	MCU_E3 > 5DACKX1
JP94 (DEOP1) DMA termination output pin	1 – 2	1DEOP1 > V460_DEOP1
	2 – 3	V460_DEOP1 > 2DEOP1
	4 – 5	4DEOP1 > MCU_F2
	5 – 6	MCU_F2 > 5DEOP1
JP95 (DREQ1) DMA Request	1 – 2	1DREQ1 > V460_DREQ1
	2 – 3	V460_DREQ1 > 2DREQ1
	4 – 5	4DREQ1 > MCU_E2
	5 – 6	MCU_E2 > 5DREQ1

JP96 (DEOTX1) DMA stop request	1 – 2	1DEOTX1 > V460_DEOTX1
	2 – 3	V460_DEOTX1 > 2DEOTX1
	4 – 5	4DEOTX1 > MCU_F1
	5 – 6	MCU_F1 > 5DEOTX1
JP97 (IOWRX) DMA control signal	1 – 2	1IOWRX > V460_IOWRX
	2 – 3	V460_IOWRX > 2IOWRX
	4 – 5	4IOWRX > MCU_G1
	5 – 6	MCU_G1 > 5IOWRX
JP98 (IORDX) DMA control signal	1 – 2	1IORDX > V460_IORDX
	2 – 3	V460_IORDX > 2IORDX
	4 – 5	4IORDX > MCU_F3
	5 – 6	MCU_F3 > 5IORDX

3.6 External Bus Signals: (RDY, ASX, BGRNTX, BRQ, WEX, BAAX)

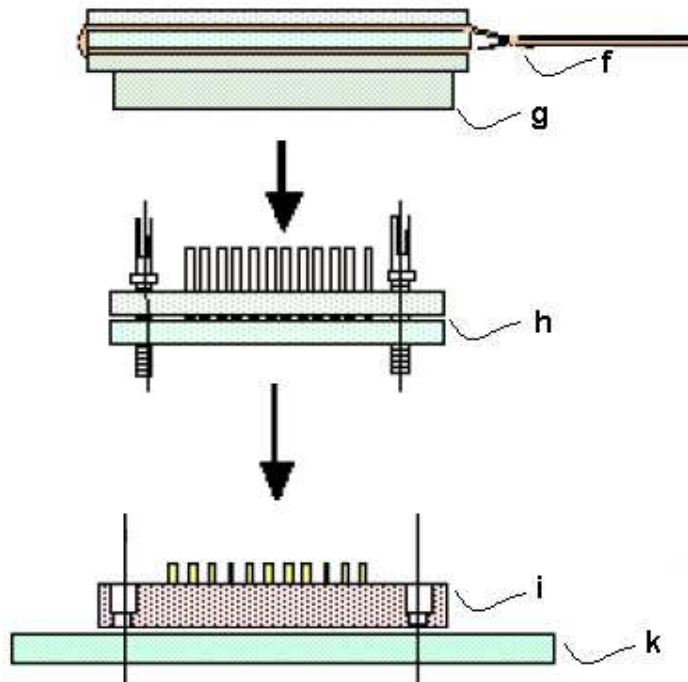
Jumper	Setting	Description
JP4 (RDY)	ON (closed)	RDY P08_7: Input pin for external wait. > in case of close JP4, JP16 must be open. > Direction control via JP3
	OFF (open)	
JP16 (RDY)	ON (closed)	RDY P08_7: Input pin for external wait. > JP4 must be open. > Direction control via JP29
	OFF (open)	
JP7 (ASX)	ON (closed)	ASX P10_1: Output pin for external bus address strobe. > JP19 must be open. > Direction control via JP3
	OFF (open)	
JP19 (ASX)	ON (closed)	ASX P10_1: Output pin for external bus address strobe. > in case of close JP19, JP7 must be open. > Direction control via JP29
	OFF (open)	
JP33 (BGRNTX)	ON (closed)	BGRNTX P08_5: Output pin for external bus granted. > in case of close JP33, JP47 must be open. > Direction control via JP32
	OFF (open)	
JP47 (BGRNTX)	ON (closed)	BGRNTX P08_5: Output pin for external bus granted. > JP33 must be open > Direction control via JP62
	OFF (open)	
JP36 (BRQ)	ON (closed)	BRQ P08_6: Input pin for external bus request. > JP49 must be open > Direction control via JP32
	OFF (open)	
JP49 (BRQ)	ON (closed)	BRQ P08_6: Input pin for external bus request. > in case of close JP49, JP36 must be open. > Direction control via JP62
	OFF (open)	
JP37 (WEX)	ON (closed)	WEX P10_3: Output pin for external bus write strobe. > in case of close JP37, JP51 must be open > Direction control via JP32
	OFF (open)	
JP51 (WEX)	ON (closed)	WEX P10_3: Output pin for external bus write strobe. > JP51 must be open > Direction control via JP62
	OFF (open)	
JP40 (BAAX)	ON (closed)	BAAX P10_2: Output pin for external bus burst access. > in case of close JP40, JP53 must be open > Direction control via JP32
	OFF (open)	
JP53 (BAAX)	ON (closed)	BAAX P10_2: Output pin for external bus burst access. > JP40 must be open > Direction control via JP62
	OFF (open)	

3.7 Other Jumpers: MCLKE (JP14), RDY (JP17), VCC3C (JP24), WEX (JP45), MONCLK (JP55), RDY or WEX (JP60), AVCC5 (JP82), AVSS (JP83/84), AVRH5 (JP85)

Jumper	Setting	Description
JP14 (MCLKE)	ON (closed)	MCLKE P10_6: Output pin for external bus memory clock enable.
	OFF (open)	
JP17 (RDY)	ON (closed)	RDY P08_7: Input pin for external wait. Pull up 3V3
	OFF (open)	
JP24 (VCC3C)	ON (closed)	VCC3C > 10µF 10nF > GND
	OFF (open)	
JP45 (WEX)	1-2	WEX P10_3 use for DIR
	2-3	V460_WEX use for DIR
JP55 (MONCLK)	ON (closed)	MONCLK: Clock Monitor Output
	OFF (open)	
JP60 (RDX or WEX)	1-2	RDX is for SRAM and Flash
	2-3	WEX is for SRAM and SDRAM
JP82 (AVCC5)	ON (closed)	Analog supply voltage is connected to the target
	OFF (open)	Analog supply voltage is disconnected from the target
JP83, JP84 (AVSS)	ON (closed)	Analog input voltage is connected to the target
	OFF (open)	Analog input voltage is disconnected from the target
JP85 (AVRH5)	ON (closed)	Analog reference voltage is connected to the target
	OFF (open)	Analog reference voltage is disconnected from the target

4 Installation

- Remove carefully the board from the shipping carton.
- Check first if there are any damages.
- Check and compare the jumper setting with the default jumper settings (page 9)
- Open the box CSICE256Y2027FJ01 and take out the four screws. Put the screws with the slot on top into bottom of the CSICE256Y2027FJ01 > see following figure part "h"
- Note: **The connection between CSICE256Y2027FJ01 and the first YQSOCKET256SE is only once pluggable, since otherwise the pins can break off. Decide how many YQSOCKET256SE are needed for the required high of the buildup.**
- Press/connect **carefully and smooth** the CSICE256Y2027FJ01 into the YQSOCKET256SE.
- **Remove MCU out of the socket (CS-PACK) before using the probe cable**



f: PB-91469G-LS-256BGA

g: YQSOCKET256SE

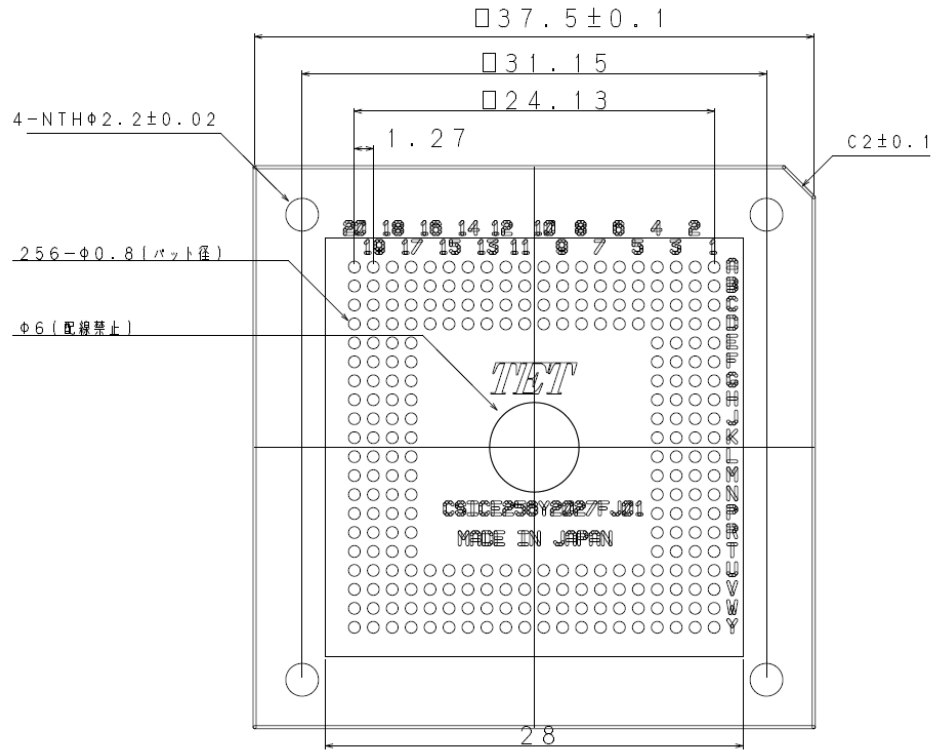
h: CSICE256Y2027FJ01

i: CSPACK256

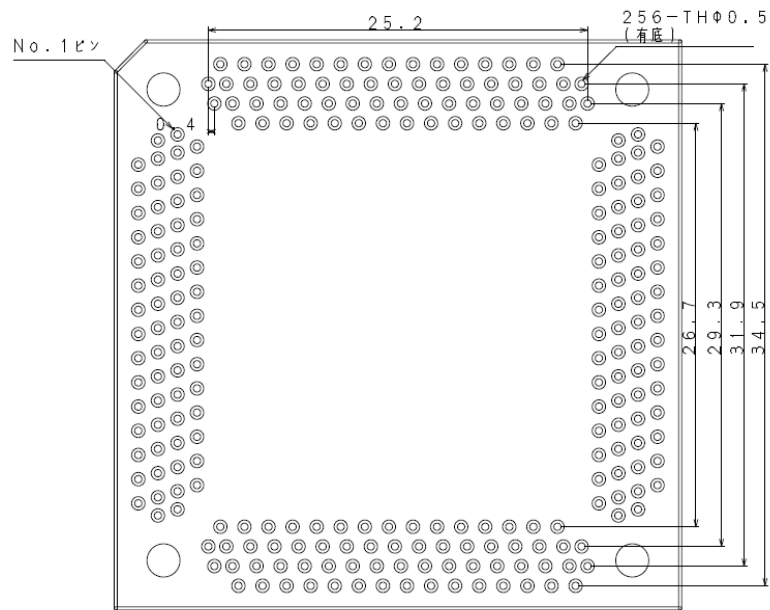
k: Target board

(e.g. SK-91469G-256BGA)

CSICE256Y2027FJ01 Top view

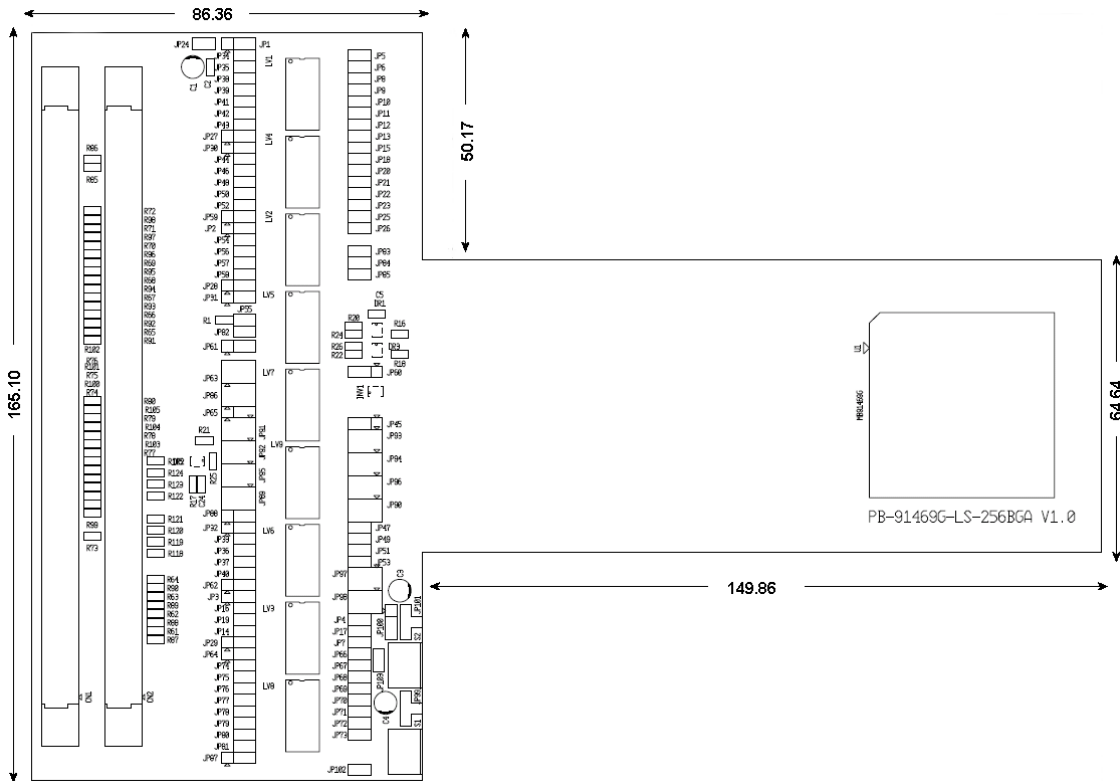


CSICE256Y2027FJ01 Bottom view

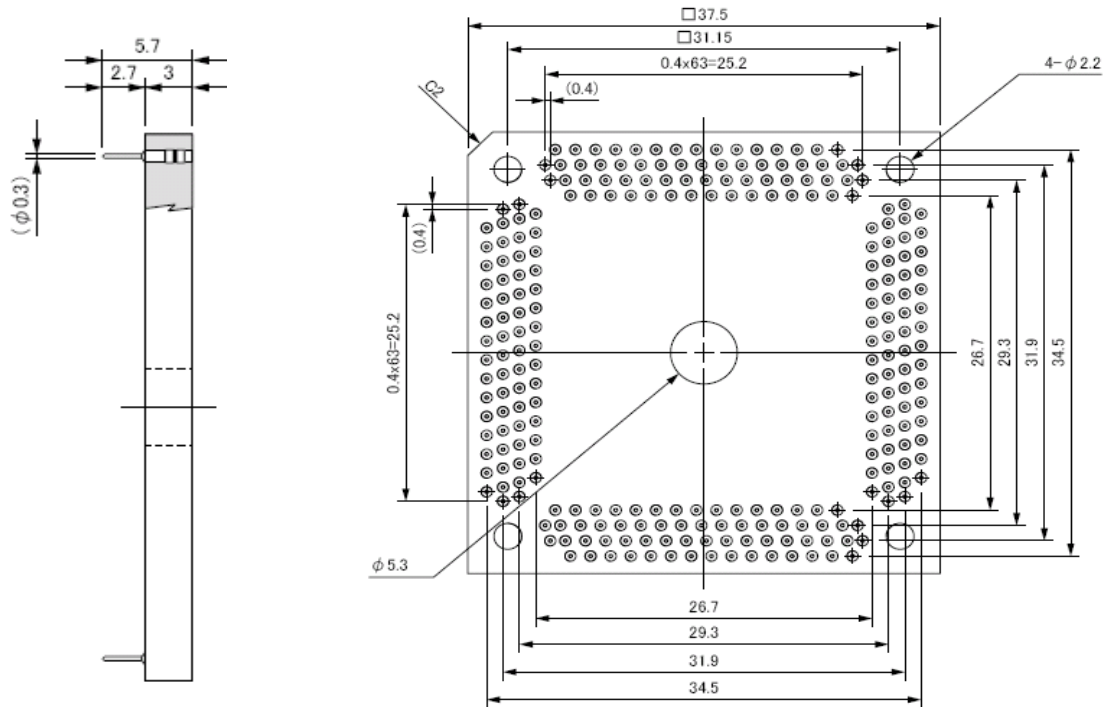


5 Dimensions

PB-91469G-LS-256BGA



YQSOCKET256SE



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 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)
PB-91469G-LS-256BGA	x	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
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