

RENESAS TECHNICAL UPDATE

1753, Shimonumabe, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8668 Japan
Renesas Electronics Corporation

Product Category	MPU/MCU	Document No.	TN-SH7-A847A/E	Rev.	1.00
Title	SH7734 Pin Treatment When Not in Use		Information Category	Technical Notification	
Applicable Product	SH7734	Lot No.	Reference Document	SH7734 User's Manual: Hardware Rev.1.00 (R01UH0233EJ0100)	
		All lots			

Pin Treatment When Not in Use is additional information to SH7734 User's Manual.

1. "Treatment of Unused Pins"

Table: Treatment of Unused Pins

Signal Name			Treatment of Unused Pins [*1]
PRESET#,EXTAL, MPMD,BSMODE			Always used
XTAL			Open
VCCQ-PLL			Always used (Connect to a power-supply)
VDD-PLL			Always used (Connect to a power-supply)
TEST1,TEST2			Always used (Pull down or Input level of V _{il})
TRST#			Fix this pin at V _{il} level (Pull down or Input level of V _{il}). Recommends that bit 0 of PUPCTL2 is set to "0" in order to reduce power consumption after fixing this pin. [*2]
TCK,TMS,TDI,TDO,ASEBRK#/ACK			Open [*2]
NMI			Fix this pin at V _{ih} level (Pull up or Input level of V _{ih})
DP0,DM0,DP1,DM1			Follow "23.5.1 Example of DP and DM Connections" for treatment of these pins.
OVC0/VBUS0, OVC1/VBUS1			Fix these pins at V _{il} level (Pull down or Input level of V _{il})
USB_EXTAL			Fix this pin at V _{il} level (Pull down or Input level of V _{il})
USB_XTAL			Open
REFRIN			Follow "23.6.6 REFRIN Pin" for treatment of this pin.
AV33			Always used (Connect to a power-supply)
AV12			Always used (Connect to a power-supply)
AG			Always used (Connect to ground)
RTC_X1			Fix this pin at V _{il} level (Pull down or Input level of V _{il})
RTC_X2			Open
AN0,AN1,AN2,AN3,AN4,AN5,AN6,AN7			Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})
AVCC, AVRef			Always used (Connect to a power-supply)
AVSS			Always used (Connect to ground)
SCL0,SCL1,SDA1			Fix these pins at V _{ih} level (Pull up or Input level of V _{ih})
SDA0	In boot mode	0,1,2,3,4,5	Fix this pin at V _{ih} level (Pull up or Input level of V _{ih})
		6	Always used
MBKPRST#, SDBUP			Fix these pins at VDD-DDR level (Pull up or Input level of VDD-DDR)
MZQ,MRESET#,MDM0,MDM1,MODT,MCK0,MCK0#,MCKE,MCS#,MWE#,MRAS#,MCAS#,MA0-MA13,MBA0-MBA2,MDQ0-MDQ15,MDQS0,MDQS0#,MDQS1,MDQS1#			Open
VDD-DDR			Always used (Connect to a power-supply)
MVREFDQ			Always used (Input level of VDD-DDR/2)
MVREFCA			Always used (Connect to ground)
A5,A6,A7,A8,A9,A10,A11,A12,A13,A14,A15,A16,A17,A18,A19 (Multiplexed with mode signals)			During PRESET#="L" : Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il}) During PRESET#="H" : Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down), or Open Pull-up or Pull-down is recommended since these pins will be output pins during PRESET#="H".
PRESETOUT#,A0,A1,A2,A3,A4,A20,A21,A22,A23,BS#,CS0#,RD#,CLKOUT,CS1#/A26,WE0#,WE1#,PENCO			Open
D0,D1,D2,D3,D4,D5	In boot mode	0,1,2,4,5	Always used
		3,6	Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})
D6,D7	In boot mode	0,1,2,3,4	Always used
		5,6	Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})
D8,D9	In boot mode	1,2,4,5	Always used
		0,3,6	Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})
D10,D11	In boot mode	1,2,3	Always used
		0,4,5,6	Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})
D12,D13,D14	In boot mode	1,2	Always used
		0,3,4,5,6	Fix these pins at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})
D15	In boot mode	1	Always used
		0,2,3,4,5,6	Fix this pin at V _{ih} or V _{il} level (Pull up, Pull down, Input level of V _{ih} or Input level of V _{il})

DU0_DR0,DU0_DR1,DU0_DR2,DU0_DR3,DU0_DR4,DU0_DR5,DU0_DR6,DU0_DR7,DU0_DG0,DU0_DG1,DU0_DG2,DU0_DG3,DU0_DG4,DU0_DG5,DU0_DG6,DU0_DG7,DU0_DB0,DU0_DB1,DU0_DB2,DU0_DB3,DU0_DB4,DU0_DB5,DU0_DB6	In boot mode	0,1,2,3,4,5 6	Fix these pins at Vih or Vil level (Pull up, Pull down, Input level of Vih or Input level of Vil) Always used
Pin Group A (Pull-up is enabled in default)			Open
Pin Group B (Pull-up is disabled in default)			Fix these pins at Vih or Vil level (Pull up, Pull down, Input level of Vih, Input level of Vil)
VDD			Always used (Connect to a power-supply)
VCCQ			Always used (Connect to a power-supply)
VCC			Always used (VCC and VCCQ are separate, but should be at the same voltage on the board)
VSS			Always used (Connect to ground)

Notes: Supply the specified voltages for all of the power supplies.

*1) Pin treatments are supposed in case of PFC default configuration after power on reset.

*2) When using an emulator, follow the instruction from the emulator.

[Boot mode]

- 0:CS0 boot (8-bit)
- 1:CS0 boot (16-bit)
- 2:NAND Flash boot
- 3:Serial boot
- 4:MMC boot
- 5:eSD boot
- 6:HIF boot

Table: Pin Group

Pin Group	Signal Name
Pin Group A	SDSELF,EX_CS0#,EX_CS1#,EX_CS2#,EX_CS5#,RD/WR#,EX_WAIT1,EX_WAIT2,DREQ0,DREQ1,DACK1,IRQ0_A,IRQ1_A,IRQ2_A,IRQ3_A,SCIF_CLK_A,SCK0_A,RX0_A,HCTS0#_A,HRTS0#_A,HCK0_A,HRX0_A,HTX0_A,CTS0#_B,RTS0#_B,SCK1_B,RX1_B,TX1_B,CTS1#_B,RTS1#_B,SCK2_A,SD2_CLK_A,SD2_CMD_A,SD2_DAT0_A,SD2_DAT1_A,SD2_DAT2_A,SD2_DAT3_A,SD2_CD_A,SD2_WP_A,DU0_DOTCLKIN,DU0_DOTCLKOUT,DU0_EXHSYNC,DU0_HSYNC,DU0_EXVSYNC,DU0_VSYNC,DU0_EXODDF,DU0_ODDF,DU0_DISP,DU0_CDE,VI1_0_A,VI1_1_A,VI1_2_A,VI1_3_A,VI1_4_A,VI1_5_A,VI1_6_A,VI1_7_A,SSI_SCK0_A,SSI_WS0_A,SSI_SDATA0_A,SSI_SCK1_A,SSI_WS1_A,SSI_SDATA1_A,SSI_SCK23,SSI_WS23,SSI_SDATA2,SSI_SDATA3,AUDIO_CLK_A,AUDIO_CLKOUT,PENC1,USB_OVC1,CAN_CLK_A,CAN1_RX_A
Pin Group B	A24,A25,EX_CS3#,EX_CS4#,DRACK0,DACK0,TX0_A,REF125CK,REF50CK,DU0_DB7,VI1_CLK_A,AUDIO_CLKB_A,AUDIO_CLKC,CAN0_TX_A,CAN0_RX_A,CAN1_TX_A,EX_WAIT0,USB_OVC0

- End of report -