

# RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU		Document No.	TN-SH7-529A/EA	Rev.	1.0
Title	SH7751 series The revision about power-on and power-off procedure.		Information Category	Correction or Supplement of Document		
Applicable Product	SH7751/ SH7751R	Lot No.	Reference Document	SH7751 Hardware Manual ADE-602-201		
		ALL				

SH7751 series Power-On and Power-Off Procedures.

## 1. Power-on Procedure

- (1) Please turn on the power supply of I/O, RTC and CPG to the same timing as a power supply VDDQ.
- (2) After turning on a power supply to VDDQ or simultaneously, the input of a signal line (RESET, MRESET, MD0-MD10, external clock, and etc) must be input. If the signal lines are entered first, the LSI may be damaged.
  - (i) Please make a RESET signal into a Low level at the power supply VDDQ.
- (3) Please turn on the power supply so that the voltage of a power supply VDD may become  $VDD < 1.2V$  until the voltage of a power supply VDDQ reaches 2V to avoid the unusual frequency of the PLL 1/2 circuit.
- (4) It recommends that a power supply to VDDQ is in advance, and a power supply to VDD is behind.
- (5) In addition to the above (1), (2), (3) and following (i)(ii), please follow "3. The ratings for power-on and power-off".
  - (i) In the case of this LSI simple substance, the power supply sequence of a power supply to VDDQ and VDD does not have time restrictions. Please refer to Figure G {Fig. G1}. In addition, it recommends performing a power-on procedure at the shortest possible time.
  - (ii) When this LSI is connected with other elements on the mounting board, please keep that
 
$$-0.3V < V_{in} < VDDQ + 0.3V.$$

Moreover, as shown in figure G {Fig. G2}, restrictions time until it goes up from GND [0V] to a operation voltage value {VDDQ (min), VDD (min)} is 100ms (max). It is exceeded, a product may be damaged.

In addition, it recommends performing a power-on procedure at the shortest possible time.

## 2. Power-off Procedure

- (1) Please turn off the power supply of I/O, RTC and CPG to the same timing as a power supply VDDQ.
- (2) There is no timing regulation of a signal line (RESET and MRESET).
- (3) The input level to the pin must be lowered in compliance with the I/O, RTC, CPG power supply voltage.
- (4) It recommends that turning off the I/O, RTC, CPG power supply voltage after (or at the same time as) turning off the internal power supply voltage (VDD).
- (5) In addition to the above (1), (2), (3), (4) and following (i)(ii), please follow "3. The ratings for power-on and power-off".
  - (i) In the case of this LSI simple substance, the power supply sequence of a power supply to VDDQ and VDD does not have time restrictions. Please refer to Figure G {Fig. G1}. In addition, it recommends performing a power off at the shortest possible time.
  - (ii) When this LSI is connected with other elements on the mounting board, please keep that
 
$$-0.3V < V_{in} < VDDQ + 0.3V.$$

Moreover, as shown in figure G {Fig. G2}, restrictions time until it goes down from a operation voltage value {VDDQ (min), VDD (min)} to GND [0V] is 150ms (max). It is exceeded, a product may be damaged.

In addition, it recommends performing a power off at the shortest possible time.

### 3. The ratings for power-on and power-off

A product may be damaged when not satisfying the conditions of (1), (2), (3) and (4) below.

(1)  $VDDQ = VDD-CPG = VDD-RTC$

$VDD-RTC$  in the hardware standby mode is to follow the content 9.9.5 of the SH4-SH7751 hardware manual in the case of SH7751.

(2)  $VDD = VDD-PLL1/2$

(3)  $-0.3V < VDD < VDDQ+0.3V$ .

$-0.3V < VDD-PLL1/2 < VDDQ+0.3V$ .

(4)  $VSS = VSSQ = VSS-PLL1/2 = VSS-CPG = VSS-RTC = GND [0V]$ .

(5) Please refer the technical update (TN-SH7-341B/E).

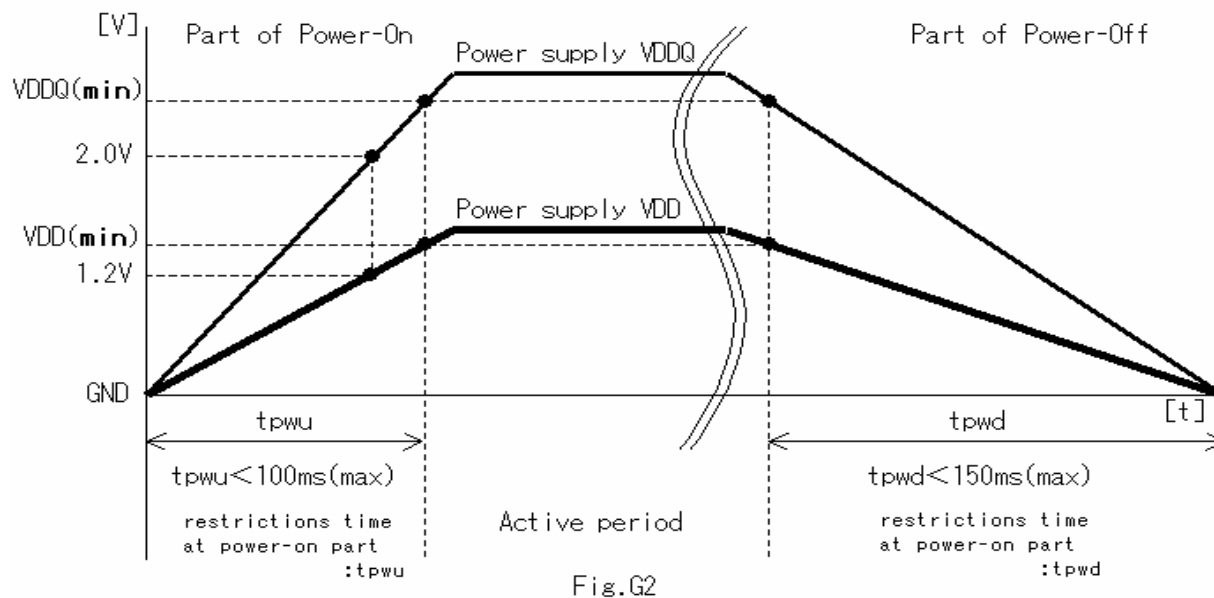
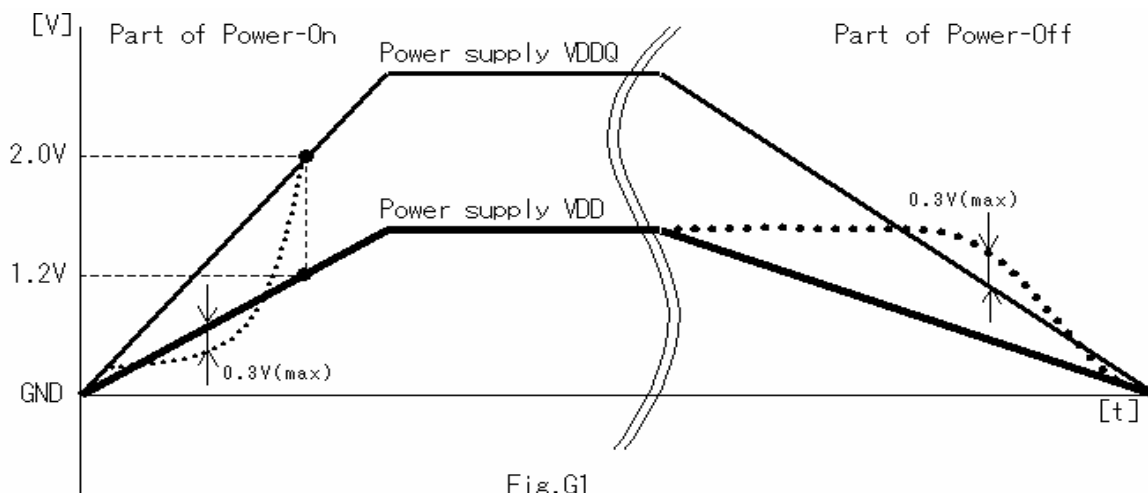


Fig.G Power-On and Power-off Procedures.