RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RZ*-A€€Í A/E	Rev.	1.00
Title	RZ/A1L Groups: Notes about specification defferencies between new version and old version of RZ/A1L.		Information Category	Technical Notification		
Applicable Product	See following	Lot No.	Reference Document	RZ/A1L Group User's Manual: Hardware Rev 1.00 (R01UH0437EJ0100)		
		All				

In RZ/A1L Group, the current product (old version) which has restriction about power on sequence is in mass production, and revised product (new version) which relaxed this restriction is also in mass production now. Because both versions are in mass production, please be careful when ordering. We will inform differences about specification and orderable part number of both version.

Since revised product (new version) comprise whole specification of current product (old version), we plan to terminate production of old version. For new design, please use revised product (new version).

1. Production Termination

1.1 plan to termination

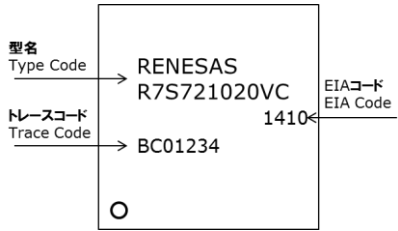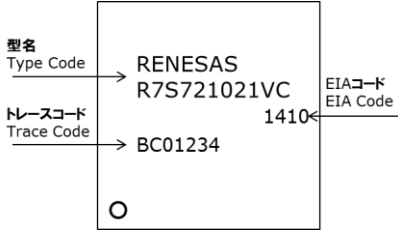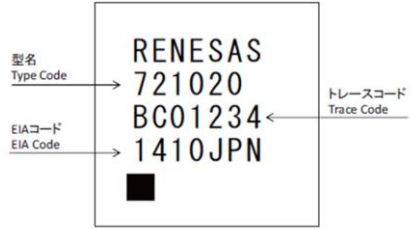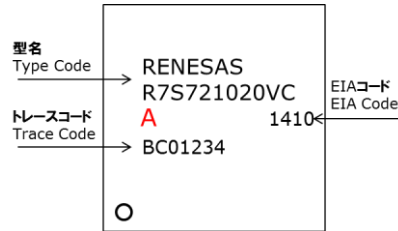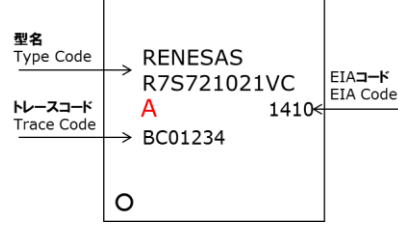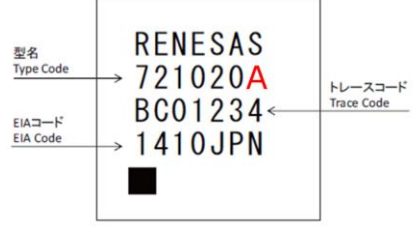| Steps	Date	Notes
Change Orderable Part No. in the WEB site from current product to revised product	2014/10/E	
Request of using orderable part number of revised product	Now	
Production termination of current product	2015/12 (plan)	There is a possibility of termination earlier than planned

Because current version will be shipped to only few particular customers which launched mass production at early time (before revised version mass production), order revised version using indicated orderable part number.

1.2 Orderable part number list

No.	Current Product (to be terminated) Orderable Part Number	Revised Product Orderable Part Number
1	R7S721020VLFP#AA0	R7S721020VLFP#AA1
2	R7S721020VCFP#AA0	R7S721020VCFP#AA1
3	R7S721020VCBG#AC0	R7S721020VCBG#AC1
4	R7S721021VLFP#AA0	R7S721021VLFP#AA1
5	R7S721021VCFP#AA0	R7S721021VCFP#AA1

2. Differences between current product (old version) and revised product (new version)

The differences between current product (old version) and revised product (new version) of RZ/A1L is shown below. It is possible to distinguish between current product and revised product in the difference of the mark. There is no functional difference other than restriction on power on sequence, so current product and revised product is software compatible. For more information about detail function differences, please see "3. Detail function differences".

	Current Product	Revised Product
Part Name	R7S721020VLFP, R7S721020VCFP, R7S721020VCBG, R7S721021VLFP, R7S721021VCFP,	Same as Current Product
function	**There is one restriction** on power on sequence. Because there is difference in specification described in the user's manual in this point, it may be necessary to take countermeasure described in "3. Detail function differences" depending on system requirement.	**No restriction** on power on sequence, as described in the user's manual.
Physical Outline	−	Same as Current Product
Mark	Nothing is marked between Type Code and Trace Code. QFP176 QFP208 BGA176 	"A" is marked between Type Code and Trace Code. QFP176 QFP208 BGA176

3. Detail function difference

Because current product (old version) has restriction on power on sequence, it may be necessary to take countermeasure depending on system requirement.

Restriction and countermeasure for current product is shown in "3.1 Restriction for current product".

Note: Because revised product satisfy specification of power on sequence described in the user's manual, restriction and countermeasure for current product will not be added to the user's manual. Since current product has mismatch with specification described in the user's manual permanently, please use revised product for new designs.
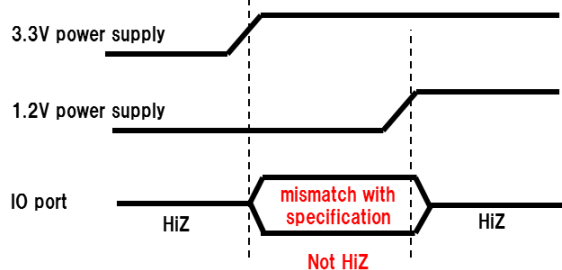
3.1 Restriction for current product

3.1.1 Condition

When 3.3V power (PVcc, AVcc, USBAPVcc, and USBDPVcc) is turned on before 1.2V power (Vcc, PLLVcc, USBAVcc, USBDVcc, and USBUVcc) is turned on in power on sequence.

* In BGA package, USBDVcc, USBUVcc, and USBDPVcc is not exist.
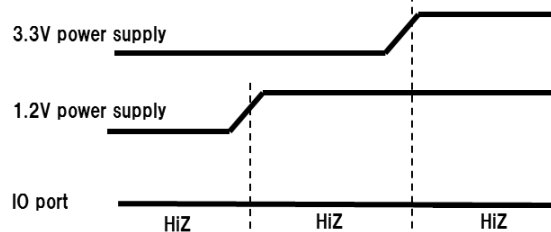
3.1.2 Phenomenon

State of input-output terminal is possibly mismatch with specification (HiZ) until 1.2V power on, even if the TRST and RES pins are driven to low.

3.3V is turned on before 1.2V is turned on

3.3V power supply

1.2V power supply

IO port   HiZ   mismatch with specification / Not HiZ   HiZ

* Even if the TRST and RES pins are driven to LOW.

1.2V is turned on before 3.3V is turned on

3.3V power supply

1.2V power supply

IO port   HiZ   HiZ   HiZ

* Under the condition that the TRST and RES pins are driven to LOW.

3.1.3 Potential problem

- In power on sequence, if other LSI is running and expecting signals form RZ/A1L, the unpredictable input/output state (potentially not HiZ) may cause of malfunction of the other LSI or whole system.

3.1.4 Countermeasure

- In power on sequence, turn 1.2V power on before or simultaneously to 3.3V power on.

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3.2 Restriction relaxation in revised product

Restriction described in "3.1 Restriction for current product" is relaxed in revised product.
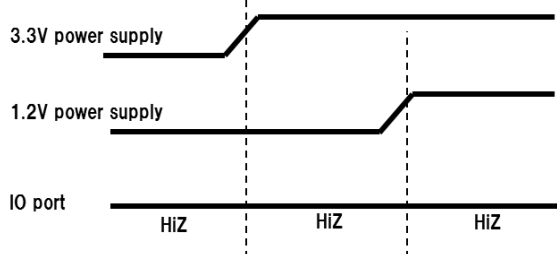
As the user's manual describes:

The 1.2-V power supply (V$_{CC}$, PLLV$_{CC}$, USBAV$_{CC}$, USBDV$_{CC}$, and USBUV$_{CC}$) and 3.3-V power supply (PV$_{CC}$, AV$_{CC}$, USBAPV$_{CC}$, and USBDPV$_{CC}$) can be turned on and off in any order.

When turning on the power, be sure to drive both the TRST and RES pins low; otherwise, the output pins and input/output pins output undefined levels, resulting in system malfunction.

When turning off the power, drive the TRST and RES pins low if the undefined output may cause a problem.
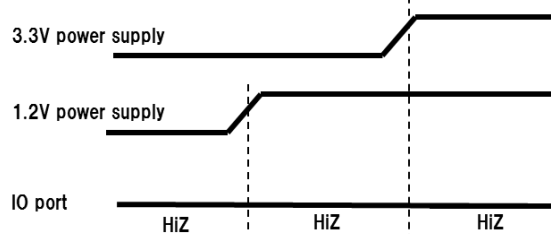
Regarding the input/output state, following timing chart shows input/output state under the condition that the TRST and RES pins are driven to low.

3.3V is turned on before 1.2V is turned on

* Under the condition that the TRST and RES pins are driven to LOW.

1.2V is turned on before 3.3V is turned on

* Under the condition that the TRST and RES pins are driven to LOW.

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