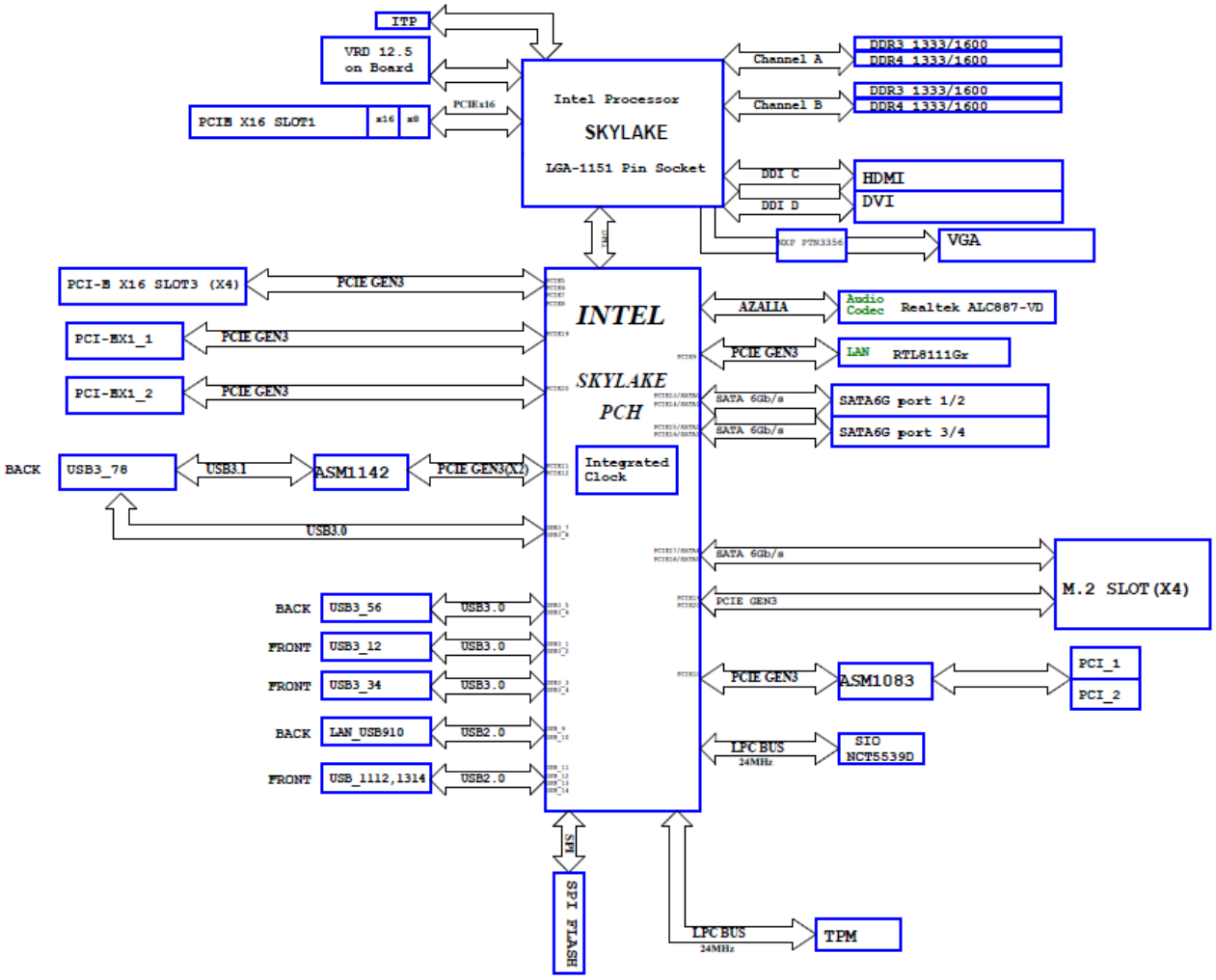
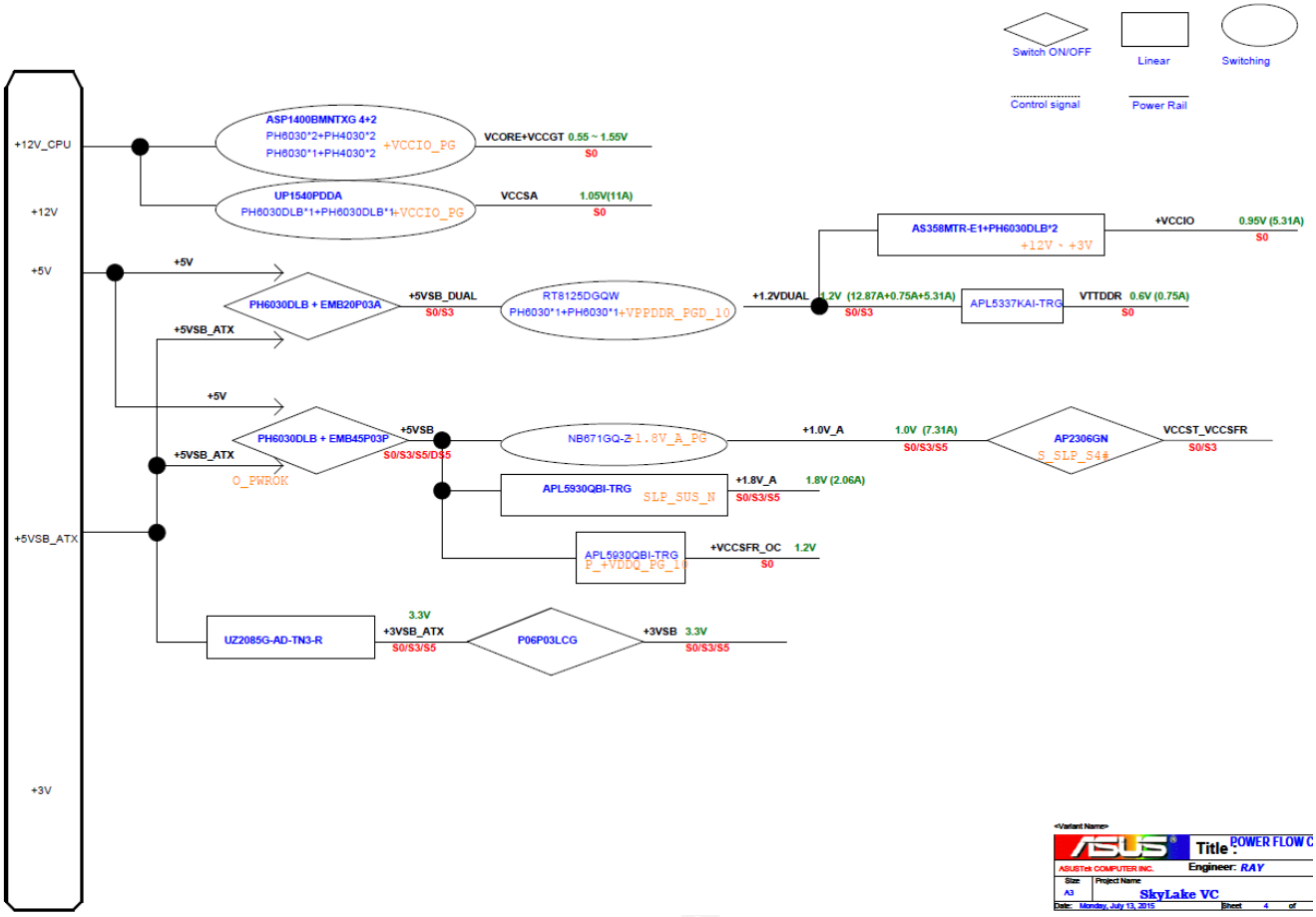
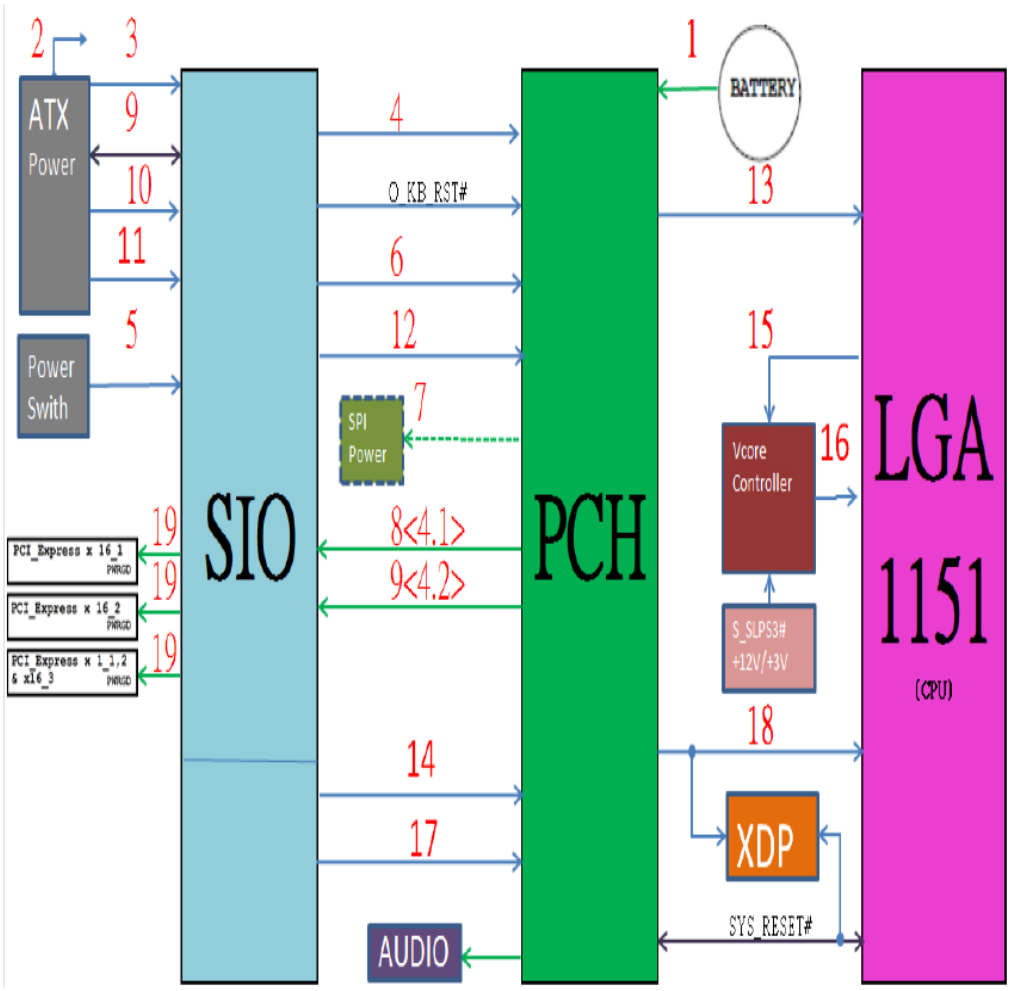
1. BLOCK DIAGRAM



2. POWER FLOW

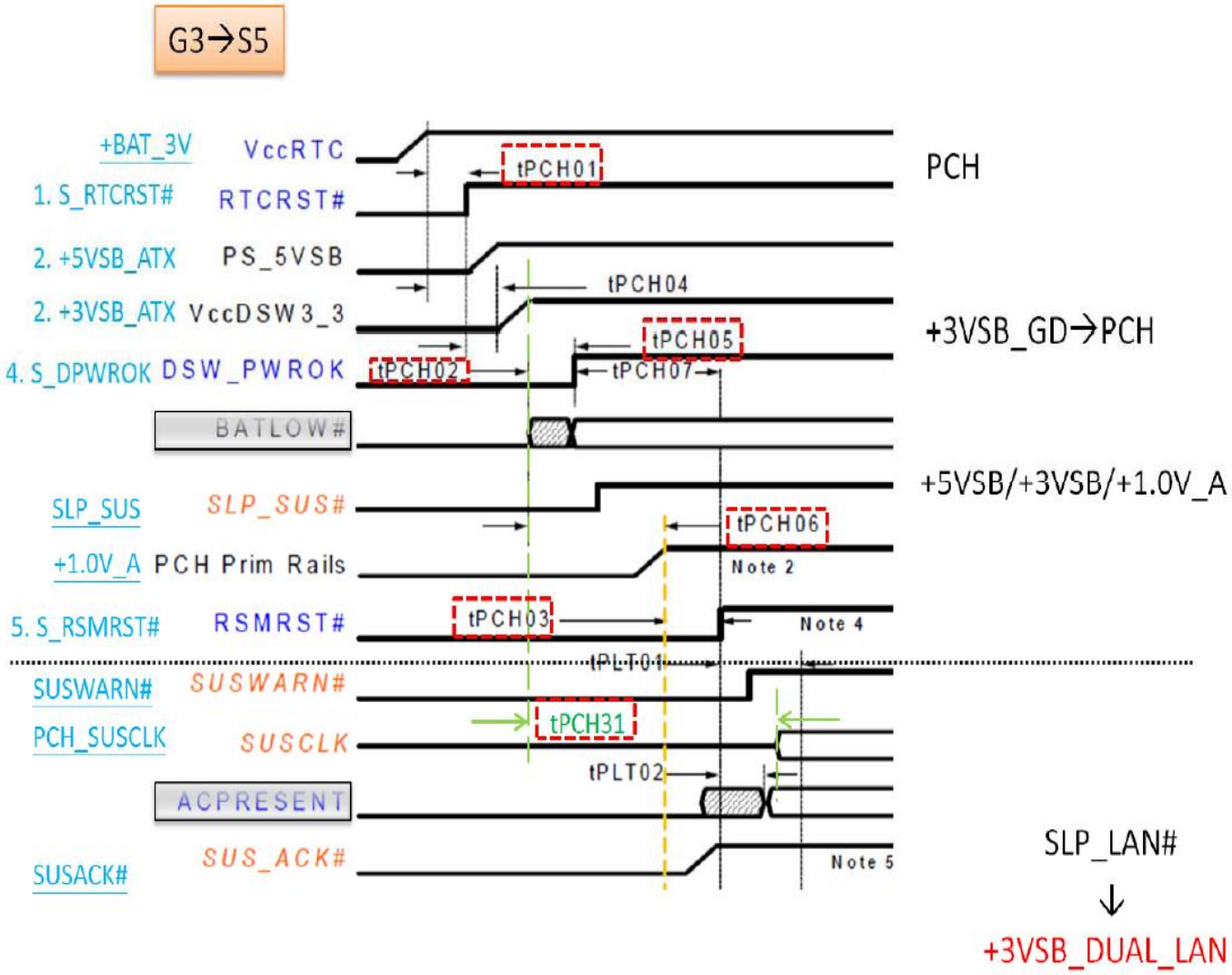


3. POWER ON SEQUENCE

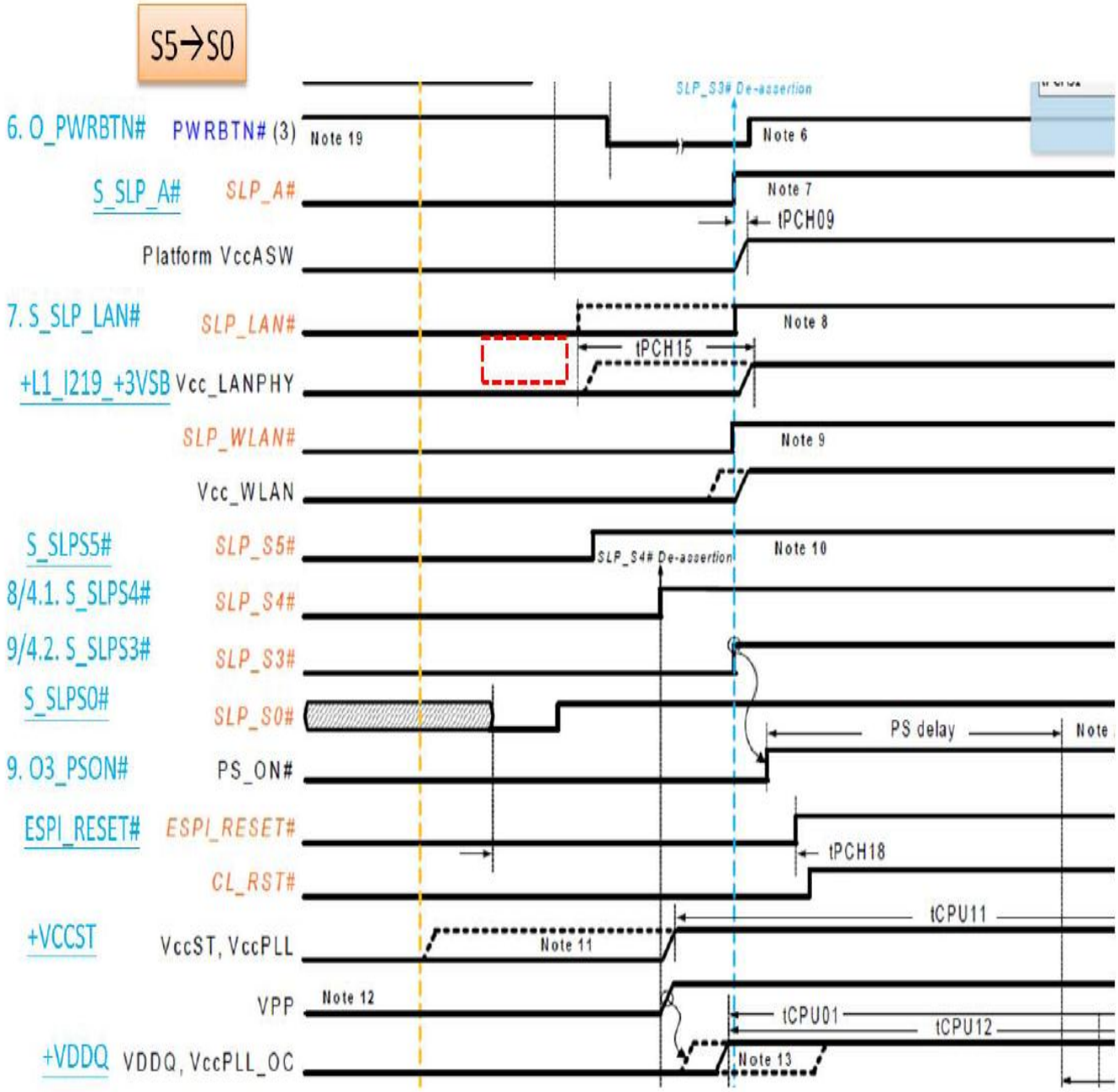


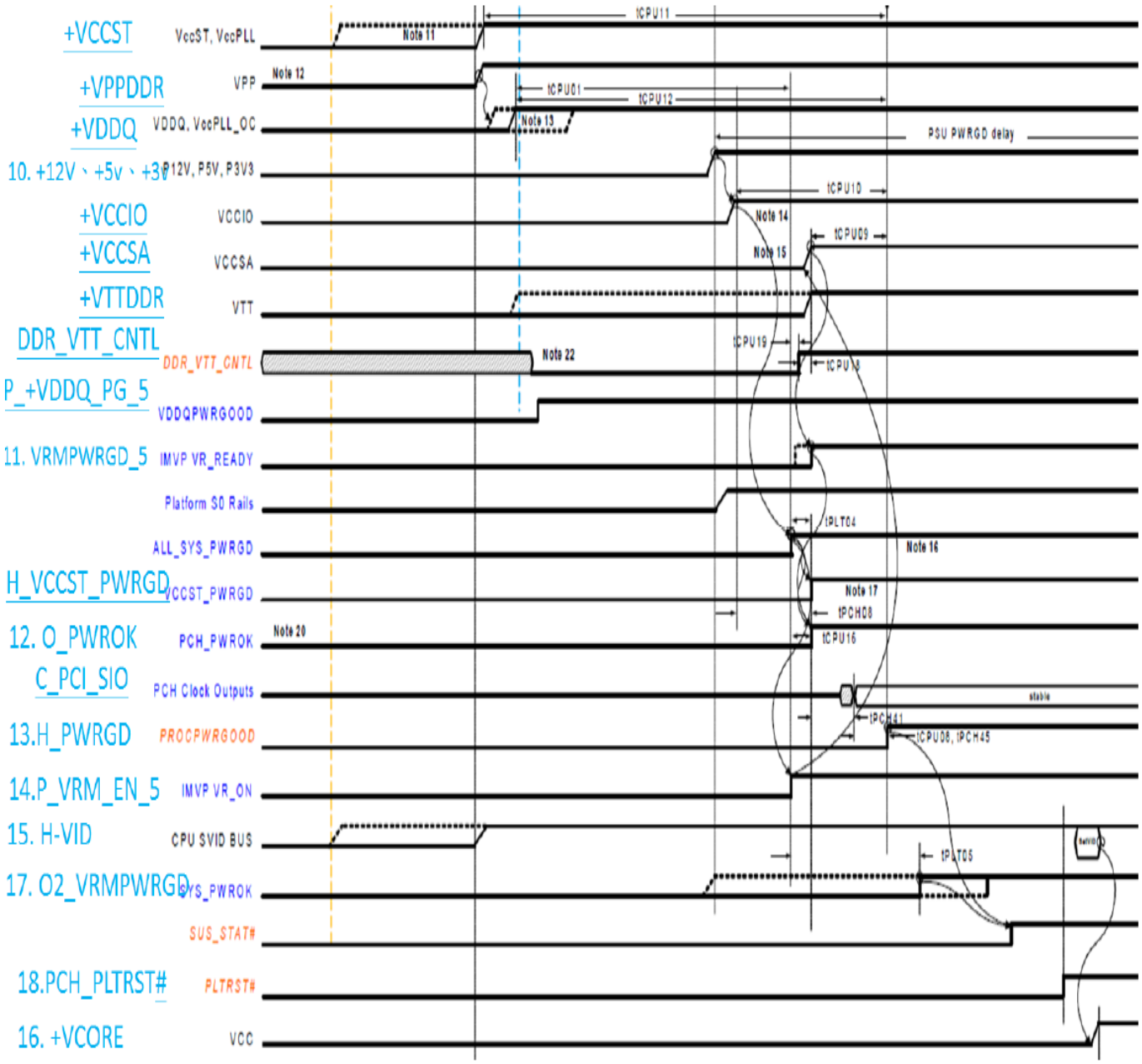
Signal Measure Point	
Sequence	Net Name
1	S_RTCRST#
2	+5VSB_ATX;+3VSB_ATX
3	+5VSB;+3VSB
4	O_RSMRST#
5	O_PWRBTN#IN
6	O_PWRBTN#
7	S_SLP_LAN#
8/<4.1>	S_SLPS4#
9/<4.2>	S_SLPS3#
9	O_PSON# /O3_PSON#
10	12V,5V,3V
11	VRMPWRGD_5/B_ATX_PWROK
12	O_PWROK
13	H_PWRGD
14	P_VRM_EN_5
15	H_VIDDATA/ H_VIDCLK
17	O2_VRMPWRGD
18	H_CPURST# /PCH_PLTRST#
16	+VCORE
19	O_PCIRST#_PCIEX16_1 O_PCIRST#_PCIEX16_2 O_PCIRST#_PCIEX16_3

4. Timing Diagram for G3 to S5

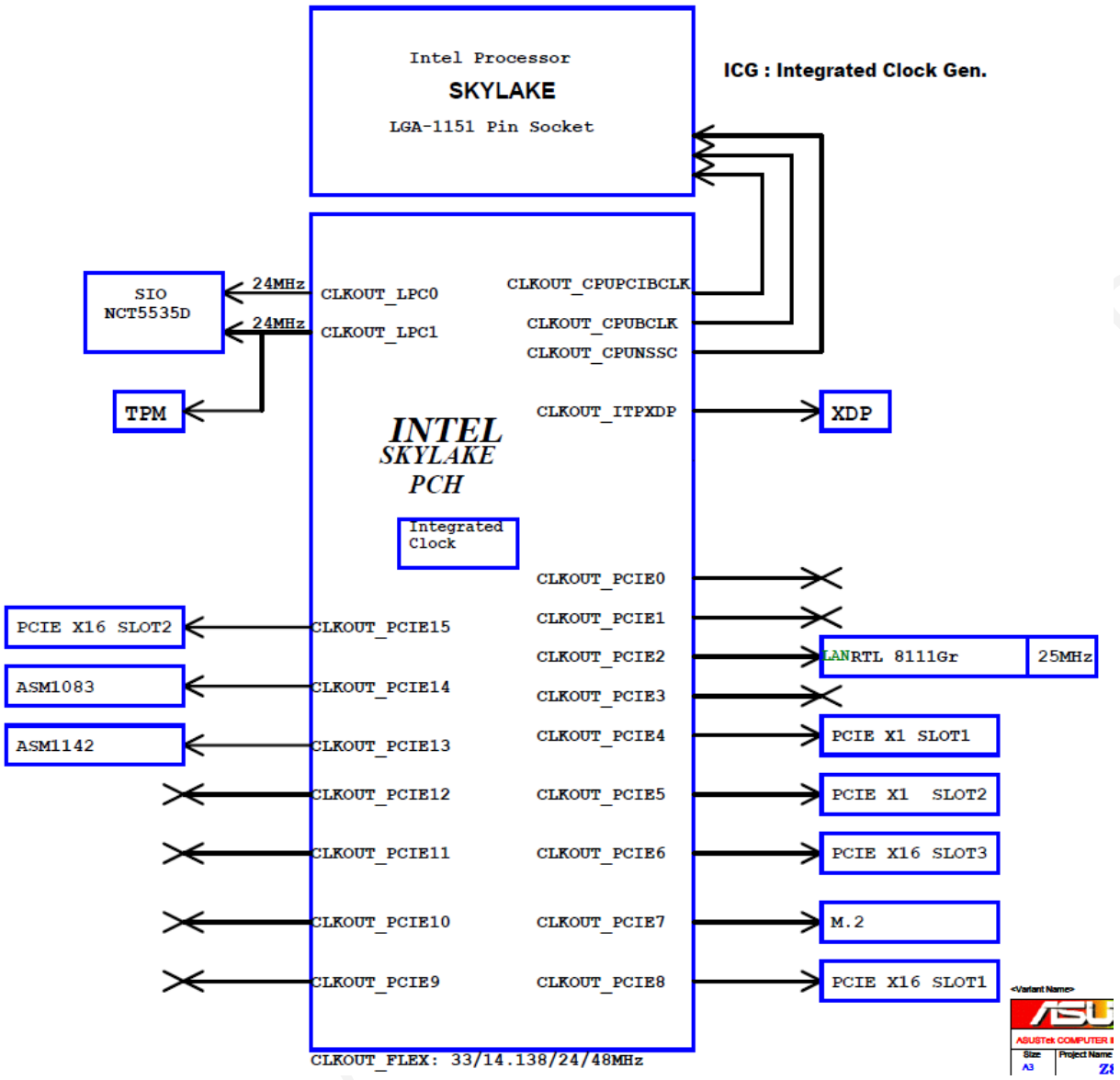


Timing Diagram for S5 to S0/M0




+VCCST
VccST, VccPLL
+VPPDDR
VPP
+VDDQ
VDDQ, VccPLL_OC
10. +12V、+5v、+3V
P12V, P5V, P3V3
+VCCIO
VCCIO
+VCCSA
VCCSA
+VTTDDR
VTT
DDR_VTT_CNTL
DDR_VTT_CNTL
P_+VDDQ_PG_5
VDDQPWRGOOD
11. VRMPWRGD_5
IMVP VR_READY
Platform S0 Rails
ALL_SYS_PWRGD
H_VCCST_PWRGD
VCCST_PWRGD
12. O_PWROK
PCH_PWROK
C_PCI_SIO
PCH Clock Outputs
13.H_PWRGD
PROCPWRGOOD
14.P_VRM_EN_5
IMVP VR_ON
15. H-VID
CPU SVID BUS
17. O2_VRMPWRGD
SYS_PWROK
SUS_STAT#
18.PCH_PLTRST#
PLTRST#
16. +VCORE
VCC
tCPU11
Note 11
Note 12
tCPU01
tCPU12
Note 13
PSU PWRGD delay
tCPU10
Note 14
tCPU09
Note 15
tCPU19
Note 22
tCPU13
tPLT04
Note 16
Note 17
tPCH08
Note 20
tCPU16
stable
tPCH41
tCPU08, tPCH45
tPLT05

5. Frequency Flow



6. **Socket reflow profile**

Profile Feature	SMD Pb-Free Assembly	DIP Pb-Free Assembly	SMT Component Vendor Spec	DIP Component Vendor Spec
Preheat/Soak Temperature Min (Tsmin) Temperature Max (Tsmax) Time (ts) from (Tsmin to Tsmax)	150 °C 200 °C 120 seconds	80 °C 135 °C 120 seconds	150 °C 200 °C need endure 120 seconds	135 °C need endure 80 seconds
Ramp-up rate (TL to Tp)	3 °C/second max.	3 °C/second max.	need endure 3 °C/second max.	need endure3 °C/second max.
Liquidous temperature (TL) Time (tL) maintained above TL	217 °C 90 seconds	NA	217 °C need endure 90 seconds	NA
Peak package body temperature (Tp)	260 °C	270 °C	260 °C	270 °C
Time (tp)* within 5 °C of the specified classification temperature (Tc), see Figure 1-1 .	10* seconds	6* seconds	need endure 10* seconds	need endure 6* seconds
Ramp-down rate (Tp to TL)	6 °C/second max.	6 °C/second max.	need endure 6 °C/second max.	need endure 6 °C/second max.
Time 25 °C to peak temperature	8 minutes max.	8 minutes max.	8 minutes max.	8 minutes max.

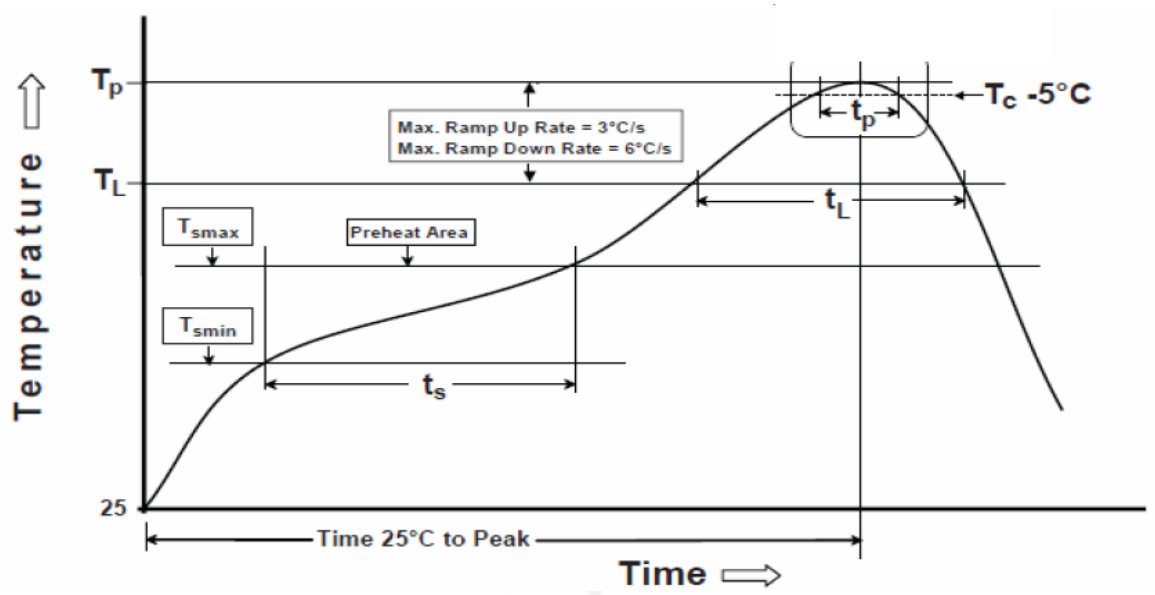
Note 1: All temperatures refer to the center of the package, measured on the package body surface that is facing up during assembly reflow (e.g., live-bug). If parts are reflowed in other than the normal live-bug assembly reflow orientation (i.e., dead-bug), Tp shall be within ± 2 °C of the live-bug Tp and still meet the Tc requirements, otherwise, the profile shall be adjusted to achieve the latter. To accurately measure actual peak package body temperatures refer to JEP140 for recommended thermocouple use.

2. DIP Plastic heat resistance capability :

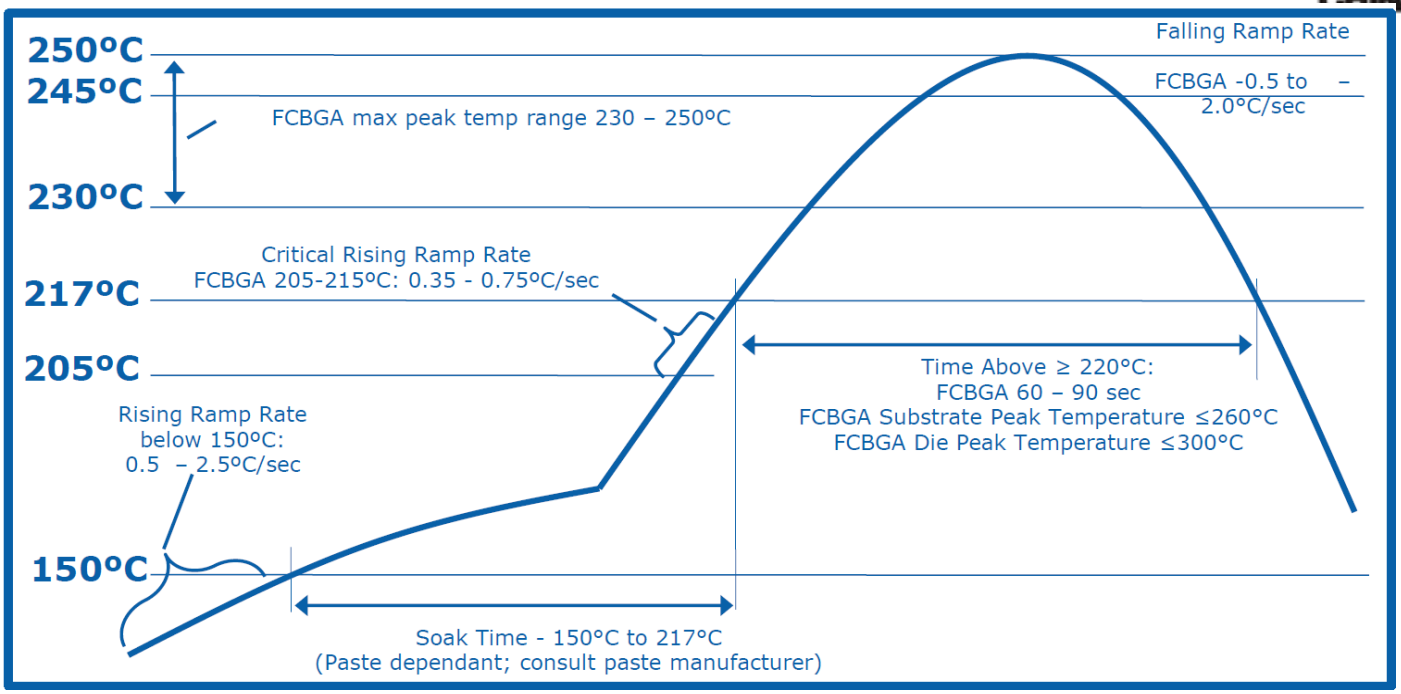
(1) Direct contact 270℃, 6 seconds

(2) In-direct contact 230℃, 5 seconds

(3) no contact 130℃, 5 seconds



7. **Lead-Free Rework Thermo profile Graphic for BGA & Chipset**



Except for body temp, all temperatures are measured with thermo couples inside solder joints, for better accuracy

Primary Factors for Successful Rework:

- **Flux formulation and solder paste formulation and volume**
- **A capable thermal reflow profile**
- **Proper PCB pad solder preparation/wicking (clean-up of the residual solder from the PCB pads)**

Caution: Always remove batteries and thermal solutions following the system design disassembly process steps prior to BGA rework to avoid damaging the BGA.

View this Intel®BGA / Socket Rework Video (10 minutes in length):

http://link.brightcove.com/services/player/bcpid1409165005001?bckey=AQ~~,AAAAqwZd9wk~,X1Exj3sUi-03b71FGkEmVWbi4T4yGcor&bctid=1519232885001

8. MB Baking Time: 120 °C, 8 hours

BGA Baking Time:

5.2 Floor Life The floor life of SMDs per Table 5-1 will be modified by environmental conditions other than 30 °C/60% RH. Refer to Clause 7 to determine maximum allowable time before rebake would be necessary. If partial lots are used, the remaining SMD packages must be resealed or placed in safe storage within one hour of bag opening (see 5.3). If one hour exposure is exceeded, refer to 4.1.

Table 5-1 Moisture Classification Level and Floor Life per J-STD-020

Level	Floor Life (out of bag) at factory ambient ≤ 30 °C/60% RH or as stated
1	Unlimited at ≤ 30 °C/85% RH
2	1 year
2a	4 weeks
3	168 hours
4	72 hours
5	48 hours
5a	24 hours
6	Mandatory bake before use. After bake, must be reflowed within the time limit specified on the label

Supplier Bake: Default Baking Times Used Prior to Dry-Pack that were Exposed to Conditions ≤ 60% RH ("MET" = 24 h)

Package Body Thickness	Level	Bake @ 125° C +10/-0 ° C	Bake @ 150° C +10/-0 ° C
≤ 1.4 mm	2	7 hours	3 hours
	2a	8 hours	4 hours
	3	16 hours	8 hours
	4	21 hours	10 hours
	5	24 hours	12 hours
	5a	28 hours	14 hours
> 1.4 mm ≤ 2.0 mm	2	18 hours	9 hours
	2a	23 hours	11 hours
	3	43 hours	21 hours
	4	48 hours	24 hours
	5	48 hours	24 hours
	5a	48 hours	24 hours
> 2.0 mm ≤ 4.5 mm	2	48 hours	24 hours
	2a	48 hours	24 hours
	3	48 hours	24 hours
	4	48 hours	24 hours
	5	48 hours	24 hours
	5a	48 hours	24 hours

Note 1: If baking of packages > 4.5 mm thick is required see appendix B.
Note 2: The bake times specified are conservative for packages without blocking planes or stacked die. For a stacked die or BGA package with internal planes that impede moisture diffusion the actual bake time may be longer than that required in Table 4-2 if packages have had extended exposure to factory ambient before bake. Also the actual bake time may be reduced if technically justified. The increase or decrease in bake time **shall** be determined using the procedure in JEDEC JESD22-A120 (i.e., < 0.002 % weight loss between successive readouts) or per critical interface concentration calculations.

9. Voltage Measure Point

Voltage Measure Point		
Station	**Net Name**	**Diode resistance**
PU702	+3VSB_ATX	333
PQ605	+5VSB	496
PL201	VCCGT	483
PL704	VCCIO	505
EATX12V	12V_CPU	551
TPM	+3VSB	311
PC550	VTT_DDR	427
EATXPWR	+5VSB_ATX	598
PQ708	+5VDUAL	516
EATXPWR	+12V	496
EATXPWR	+5V	449
PQ403	+3V	314

10.Signal Measure Point

		Signal Measure Point	
Station	**Sequence**	**Net Name**	**Diode resistance**
SR120 **SR121**	1	S_RTCRST# S_SRTCRST#	777 777
NA	2	AC Power Switch ON	NA
PQ605 **TPM**	3	+5VSB +3VSB	496 311
SR80	3.1	S_DPWROK	18
SR80	4	O_RSMRST#	18
O1R14	5	PWRBTN#	846
SC29	6	O_IOPWRBTN#	311
SD5	7/4.2	S_SLP_S3#	496
NA	7	S_SLP_A#	NA
NA	7.1	S_SLP_LAN#	NA
O1R10	8/4.1	S_SLP_S4#	520
EATXPWR	9	ATX_PSON#_R	551
EATXPWR **EATXPWR** **PQ403**	10	12V 5V 3V	496 449 316
EATXPWR	11	P_PWROK_PS	0
O1R12	12	O_PWROK	35
SR75	13	H_CPUPWRGD	399
HR210 **PR109**	14	H_SVID_DATA H_SVID_CLK	508 509
PC168	15	VCORE	429
SQ6	16	P_VR_READY_10	458
TPM	17	S_PLTRST#	480
ESDC3	18	H_CPURST#	386
XC75 **XC71**	19	O_ X1__RST# O_ X16_RST#	591 590