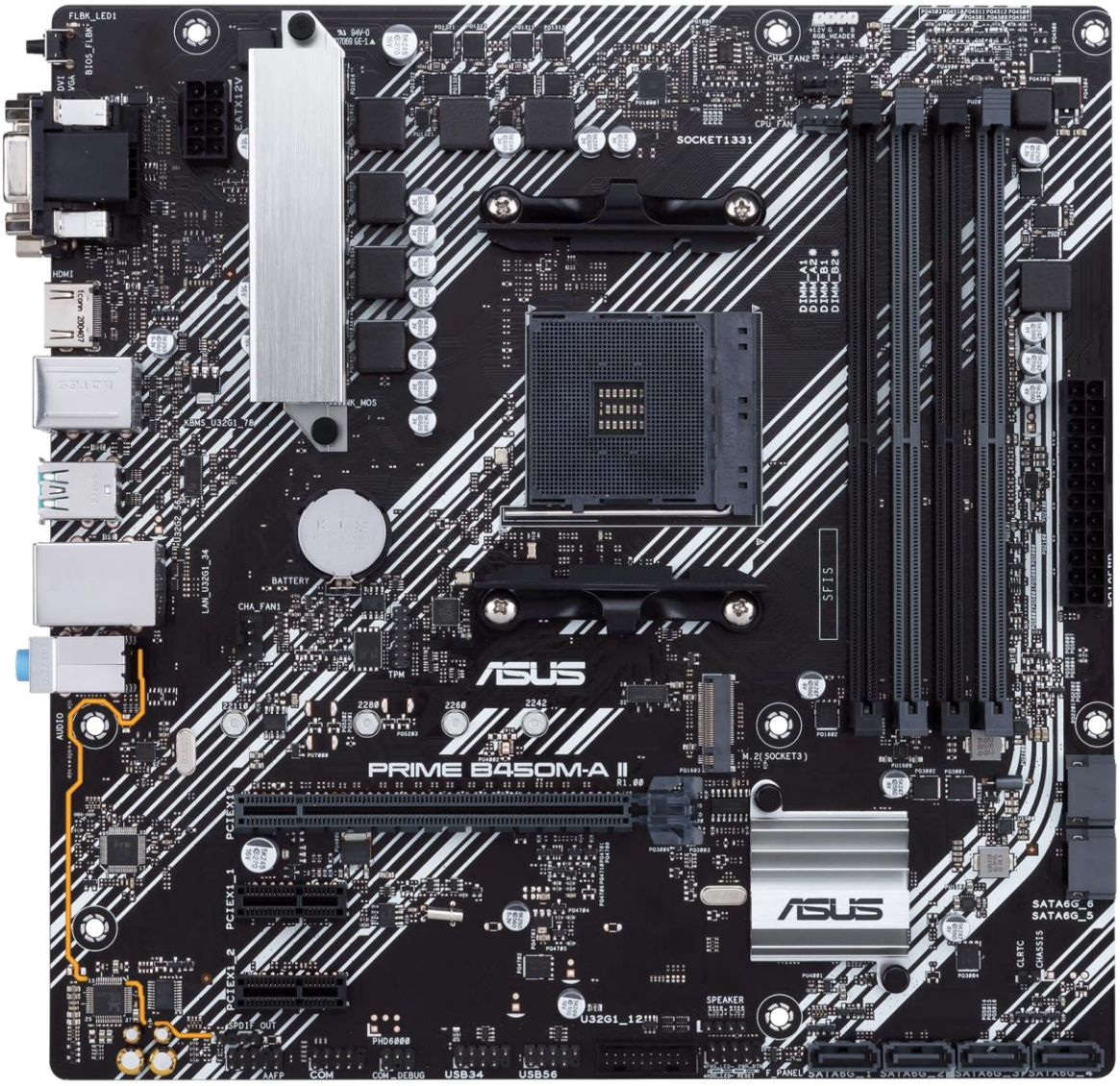
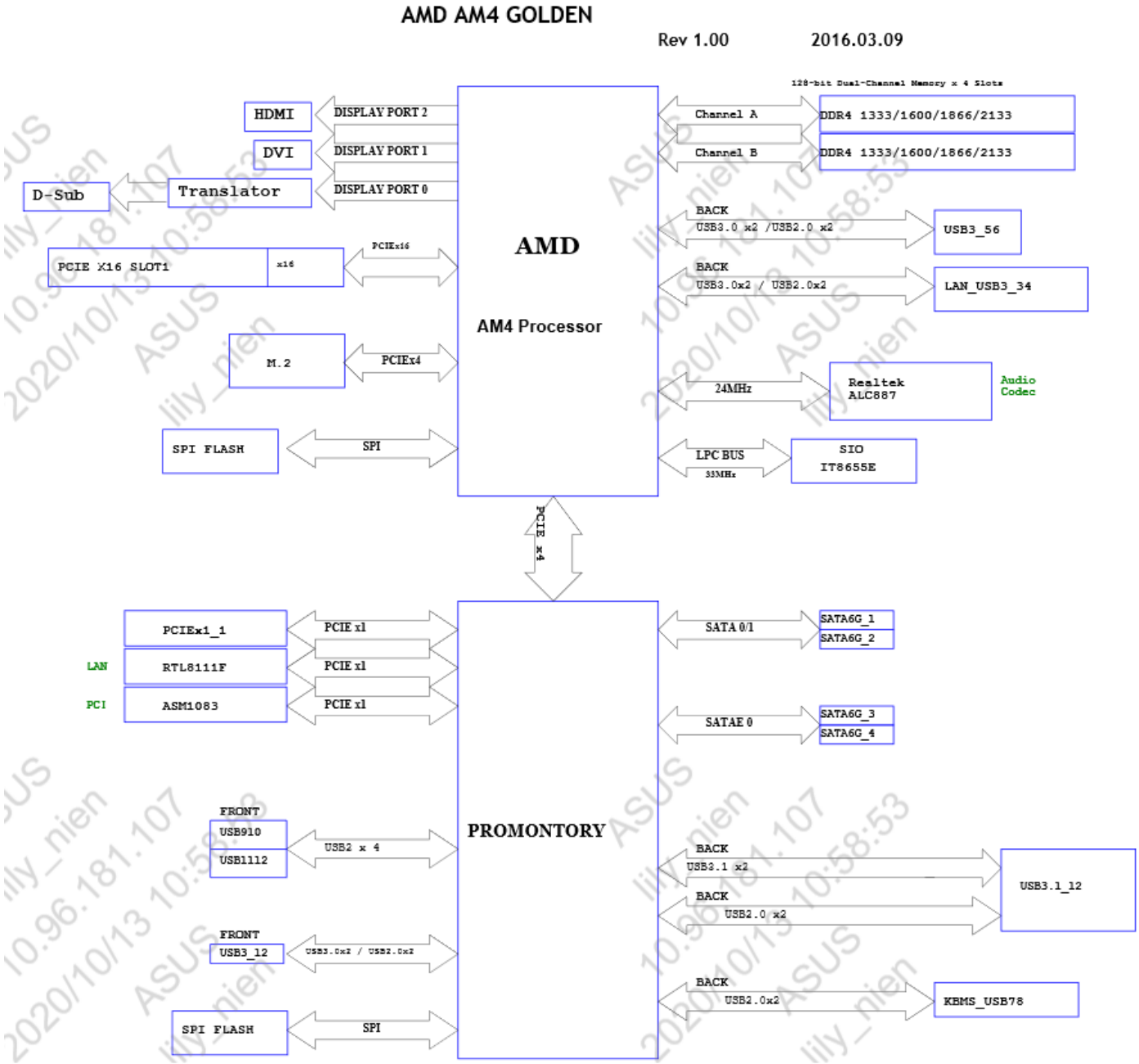
PRIME B450M-A II Repair Guide

2020/10/13

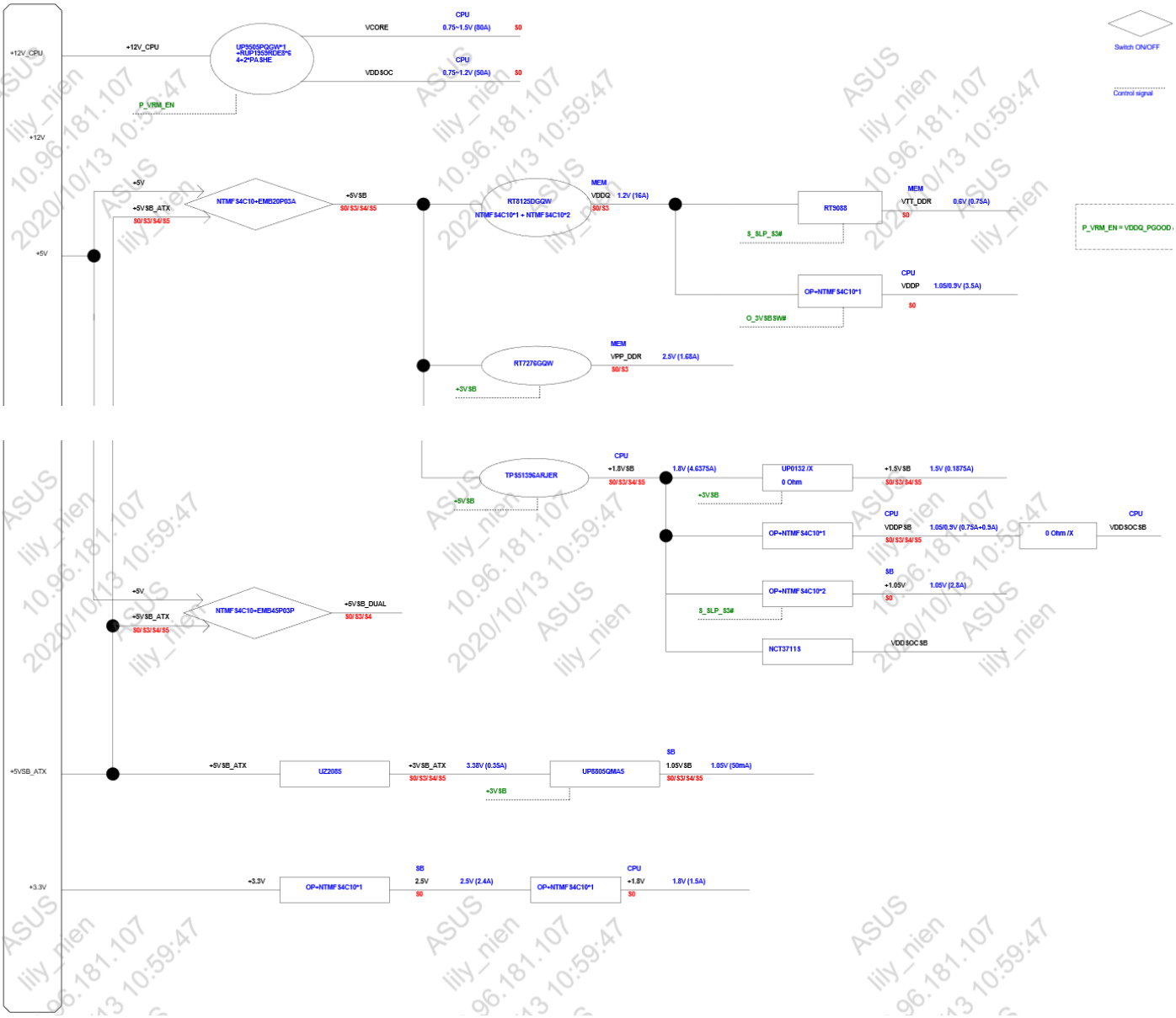
1. STANDARD APPEARANCE



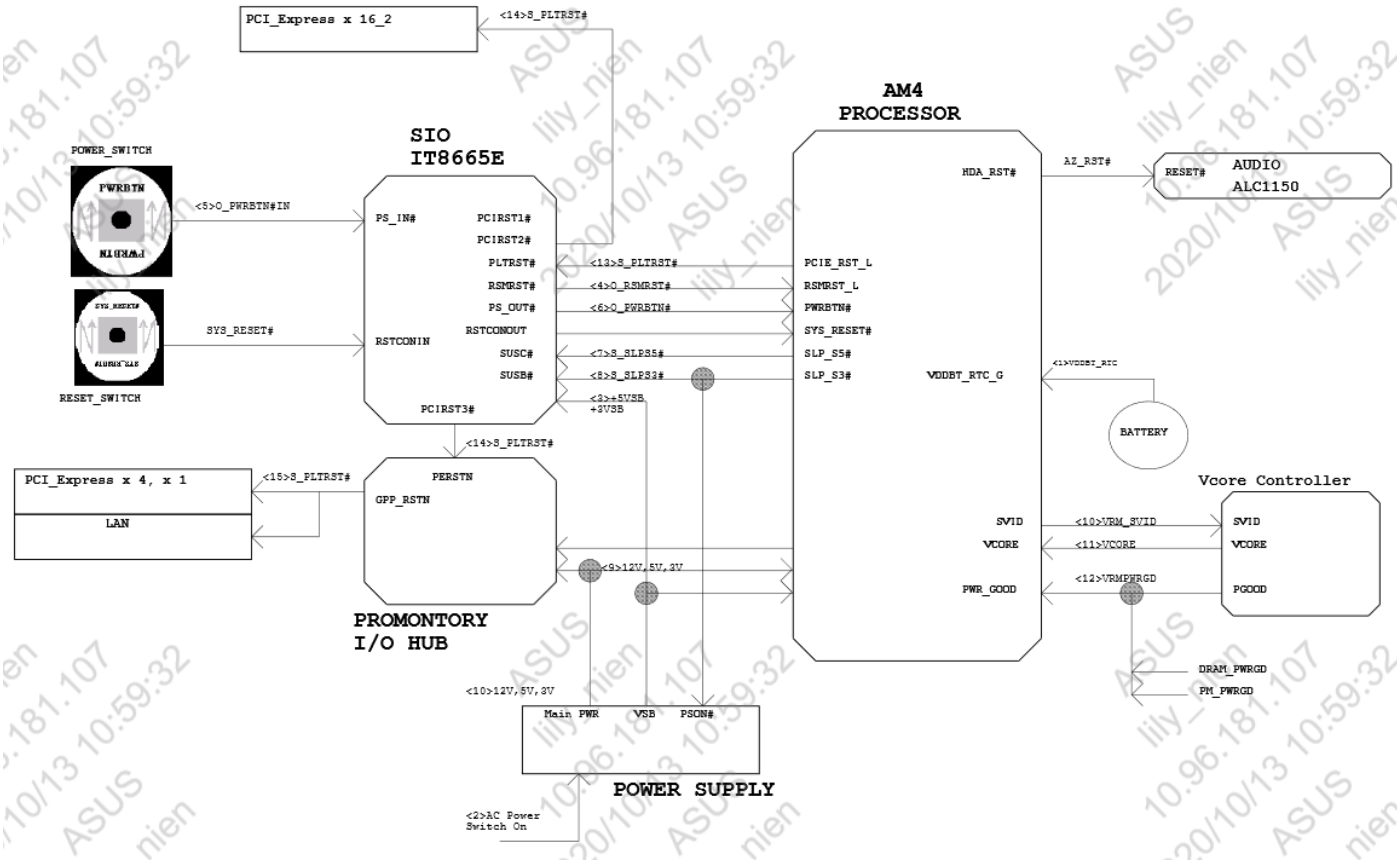
2. BLOCK DIAGRAM



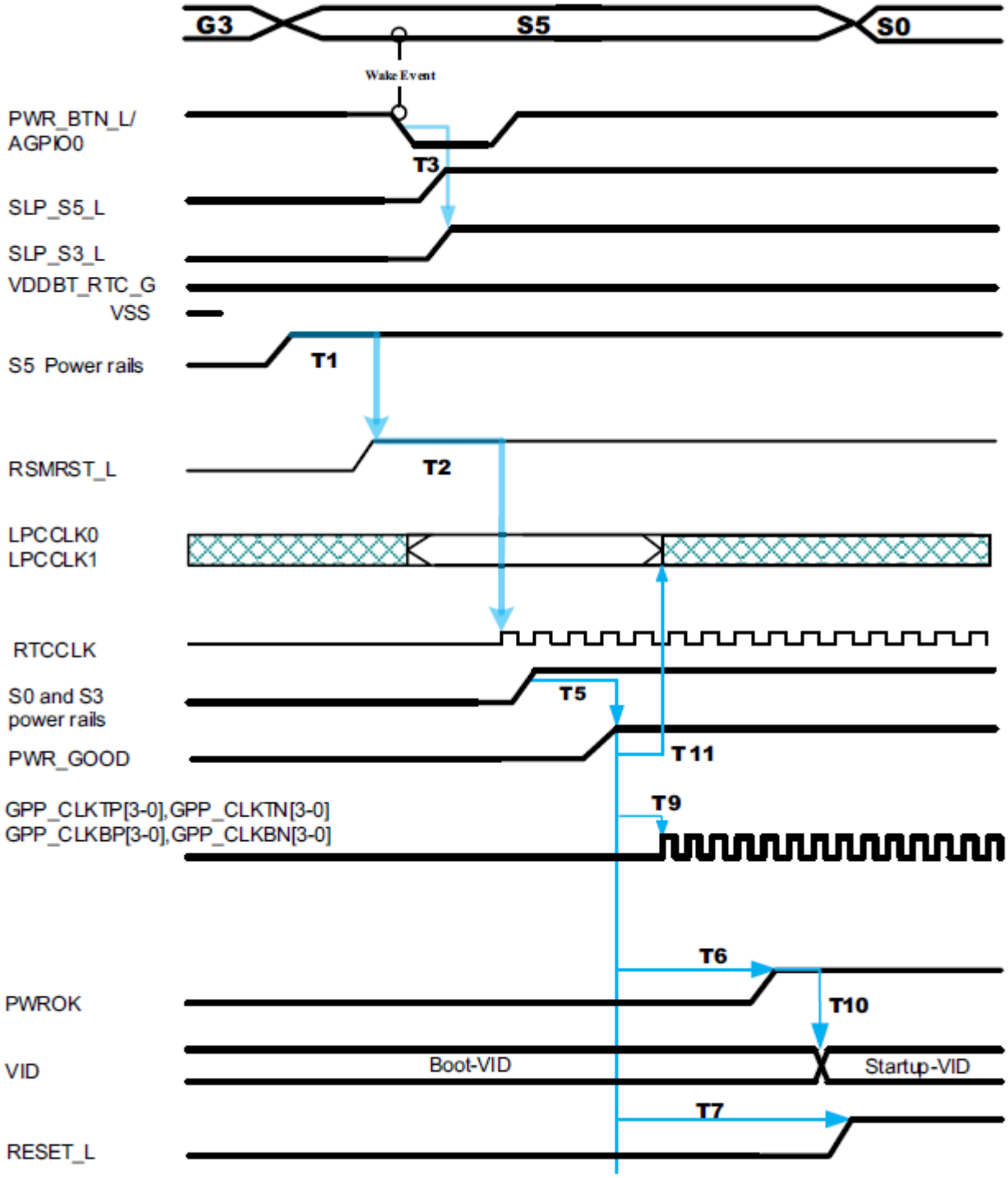
3. POWER FLOW


+12V_CPU
+12V_CPU
UP9505PQGW*1
+RUP1953RDEP*6
4+2*PASHE
VCORE
CPU
0.75~1.5V (80A)
S0
VDDSOC
CPU
0.75~1.2V (50A)
S0
P_VRM_EN
+12V
+5V
+5VSB_ATX
S0/S3/S4/S5
NTMF S4C10+EMB20P03A
+5VSB
S0/S3/S4/S5
RT8125DGQW
NTMF S4C10*1 + NTMF S4C10*2
MEM
VDDQ
1.2V (16A)
S0/S3
RT9088
MEM
VTT_DDR
0.6V (0.75A)
S0
S_SLP_S3#
OP+NTMF S4C10*1
CPU
VDDP
1.05/0.9V (3.5A)
S0
O_3VSBSW#
RT7276GQW
MEM
VPP_DDR
2.5V (1.68A)
S0/S3
+3VSB
Switch ON/OFF
Control signal
P_VRM_EN = VDDQ_PGOOD
TPS51396ARJER
CPU
+1.8VSB
S0/S3/S4/S5
1.8V (4.6375A)
UP0132 /X
0 Ohm
+1.5VSB
1.5V (0.1875A)
S0/S3/S4/S5
+3VSB
+5VSB
OP+NTMF S4C10*1
CPU
VDDPSB
1.05/0.9V (0.75A+0.9A)
S0/S3/S4/S5
0 Ohm /X
CPU
VDDSOCSB
OP+NTMF S4C10*2
SB
+1.05V
1.05V (2.8A)
S0
S_SLP_S3#
NCT3711S
VDDSOCSB
NTMF S4C10+EMB45P03P
+5VSB_DUAL
S0/S3/S4
+5VSB_ATX
UZ2085
+3VSB_ATX
3.3V (0.35A)
S0/S3/S4/S5
UP8805QMA5
SB
1.05VSB
1.05V (50mA)
S0/S3/S4/S5
+3VSB
+3.3V
OP+NTMF S4C10*1
SB
2.5V
2.5V (2.4A)
S0
OP+NTMF S4C10*1
CPU
+1.8V
1.8V (1.5A)
S0

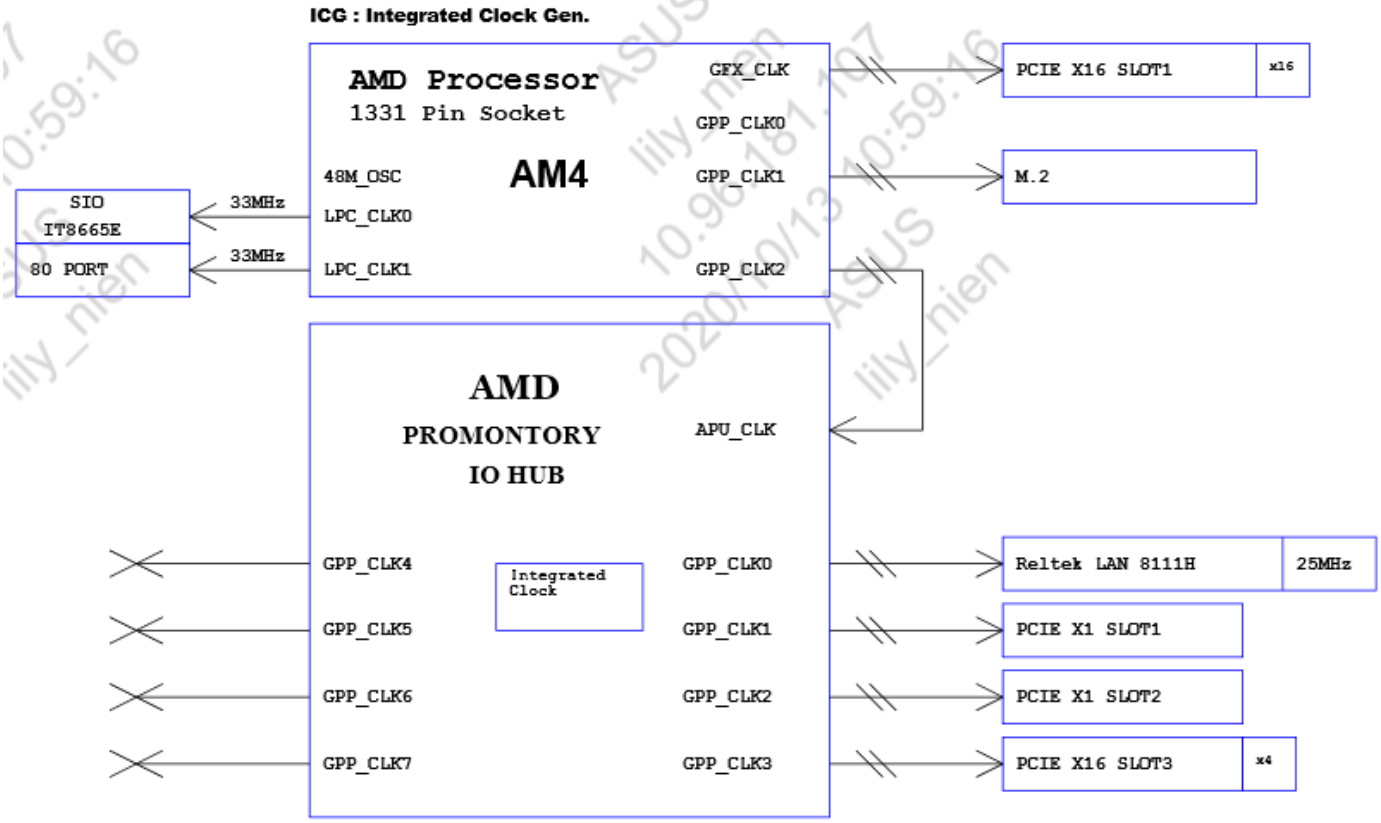
4. POWER ON SEQUENCE



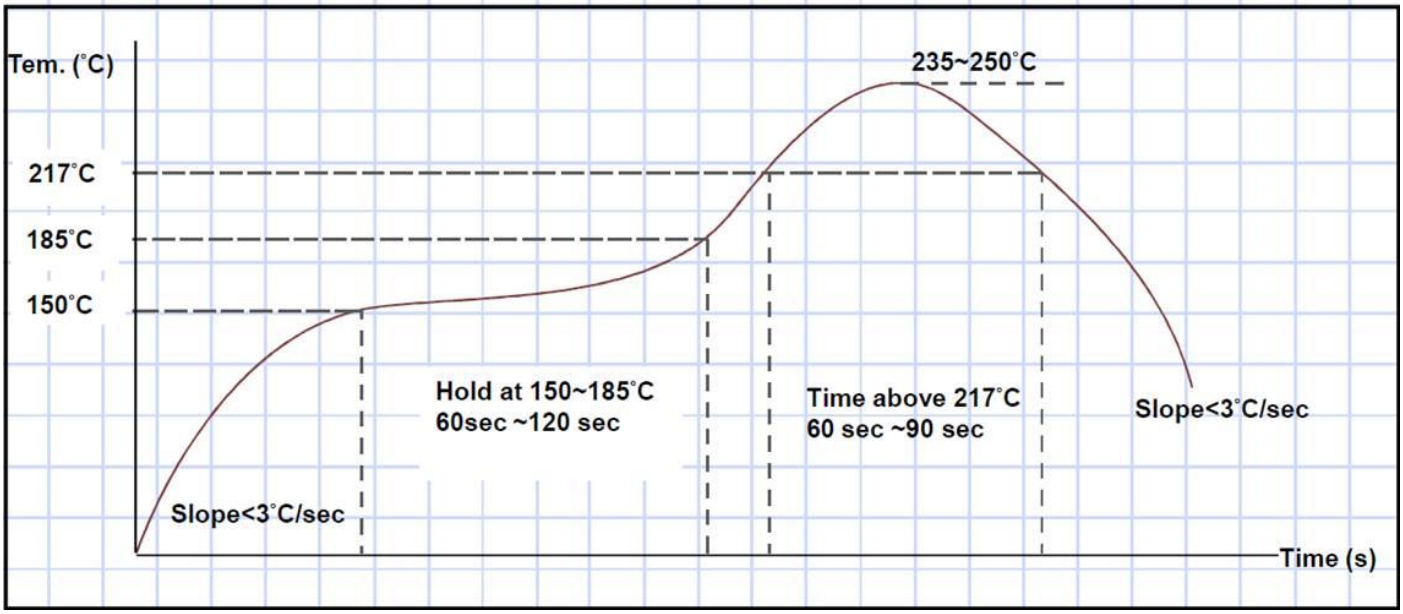
5. Timing Diagram for G3 to S0



6. **Frequency Flow**



7. **Socket reflow profile**



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

Note 2 : For SMT type component, it need be able to withstand twice times SMT Reflow + once DIP Wave soldering process.