Intel CONFIDENTAL for use under NDA

TGL Power Map --- Please defer to component EDS/datasheet for offical numbers. Non-Intel devices are current estimates.

Updated: 2020-August

TGL SKU:	UP3-R 4+2 28W
CPU PL2/4 Config:	Performance
Deep Sleep:	Deep Sleep Enabled
Memory:	32GB DDR4 3200 MT/s
PD Tier:	Premium
Additional Options:	☐ Connected Standby
	☑ Wake on Voice Capability

Adapter

Non-NVDC

Charger

NVDC

Battery

*CCG recommends NVDC charger and 2SxP battery for better VR performance, however traditional 3SxP battery and non-NVDC charger may implemented in some designs

SoC Power Levels

Package PL1(TDP):	28	
PL2:	64	<----Hover over PL value for a definiion
PL3:	66	
PL4:	121	

VR Naming Convention

Suffix	Engerized States
S	On in S0, S0ix
U	On in S0 - S3
A	On in S0 - S5
DSW	On in S0 - DS4/DS5

Voltage Regulators (VRs)

RAIL NAME		V_{IN}	V_{OUT}	I_{MAX}	I_{TDC}
VCCIN (IMVP9)	VR_EN	VDC	SVID	65.00 A	43.00 A
VCCIN_AUX	SLP_SUS#	VDC	VID	27.00 A	14.00 A
V1.05A (internal rail in PCH FIVR)					
VDD2	SLP_S4#	VDC	1.20 V	9.40 A	
VTT(DDR4only)	DDR_VTT_CTRL	VDC	0.60 V	0.40 A	
V2.5U	SLP_S4#	VDC	2.5V	1.00 A	
V1.8A	SLP_SUS#	VDC	1.80 V	1.30 A	
V1.05 ByPass	SLP_SUS#	VDC	1.05 V	0.20 A	
Vnn ByPass	SLP_SUS#	VDC	0.76 V	0.20 A	
	CS S0ix state?	TRUE			
V3.3_DSW	VDC	VDC	3.30 V	0.20 A	
V5A	SLP_SUS#	VDC	5.00 V	2.00 A	

Load Switches (LS)

SUB-RAIL NAME	Enable	V_{IN}	Max R_{dsON}
VCCST	SLP_S3#	PCH FIVR	
VccSTG	CPU_C10_GATE#	PCH FIVR	
V1.8S	SLP_S3#	V1.8A	
V1.8S_PLATFORM	SLP_S0# && SLP_S3#	V1.8A	
V1.8S_AUDIO	GPIO_AUDIO	V1.8A	
V3.3A (PCH)	SLP_SUS#	V3.3_DSW	
V3.3S	SLP_S3#	V3.3_DSW	
V3.3Dx_PLATFORM	SLP_S0# && SLP_S3#	V3.3_DSW	
V3.3S_AUDIO	GPIO_AUDIO	V3.3_DSW	
VSS_PLATFORM	SLP_S3#	V5A	
VDCDx_EDP	GPIO_L	VDC	

Note: Use of a GPIO+BIOS control is also allowed; consult PDG.

Load Summary

LOAD NAME	$V_{NOMINAL}$	I_{MAX}
VCCIN (IMVP9)	SVID	65.00 A
VCCIN_AUX	1.80 V	27.00 A
VCCST	1.050 V	0.50 A
VCCSTG	1.050 V	0.30 A
VDD2_MEM	1.20 V	7.90 A
VDD2_CPU	1.20 V	1.50 A
VTT	0.60 V	0.40 A
V2.5U (VDD1)	2.50 V	1.00 A
VCCPRIM_1P8	1.80 V	1.300 A
V1.8A_FLASH	1.80 V	N/A
V1.8A_EC	1.80 V	N/A
V1.8S	1.80 V	N/A
V1.8S_SSD	1.80 V	N/A
V1.8S_SDCARD	1.80 V	N/A
V1.8Dx_WIFI	1.80 V	0.000 A
V1.8S_AUDIO	1.80 V	N/A
V1.8S_SENSORS	1.80 V	N/A
VCC_V1P05EXT_1P05	1.05 V	0.20 A
VCC_VNNEXT_1P05	0.76 V	0.20 A
VCCDSW_3P3	3.30 V	N/A
VCCPRIM_3P3	3.30 V	0.202 A
V3.3A_EC	3.30 V	N/A
V3.3S	3.30 V	N/A
V3.3Dx_SSD	3.30 V	N/A
V3.3Dx_EDP	3.30 V	N/A
V3.3Dx_DPWP	3.30 V	N/A
V3.3Dx_TOUCHSCREEN	3.30 V	N/A
V3.3Dx_CAMERA	3.30 V	N/A
V3.3Dx_SDCARD	3.30 V	N/A
V3.3Dx_WIFI	3.30 V	N/A
V3.3Dx_MODEM	3.30 V	N/A
V3.3S_AUDIO	3.30 V	N/A
V3.3S_SENSORS	3.30 V	N/A
V5A	5.00 V	N/A
V5S_AUDIO	5.00 V	N/A
V5Dx_HDMIWP	5.00 V	N/A
V5Dx_USBWP	5.00 V	2.000 A
VDCDx_EDP	VDC	N/A