Revision History

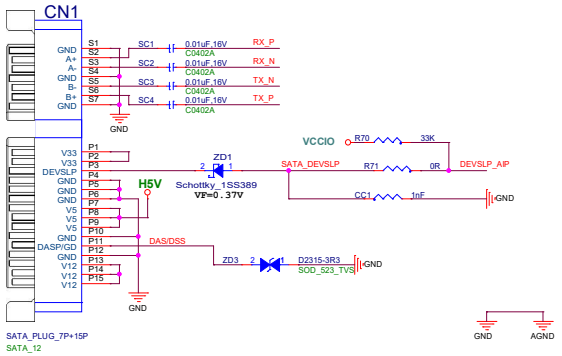
Revision	Date	Reason for redrawing	Page Update	Drawed	Checked	Approved
01A	2021.03.12	Preliminary	--	Tsunglin Yang		

Model: SM2259XT-AB-G144_2p5_G152X4_6L_V01

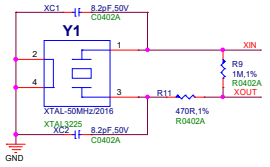
Silicon Motion, INC.

PageTitle	Cover Page
DOC.Number	<Doc>
Sch.FileName	SM2259XT2-F152x4_SHS_DB_V01A
Rev	01A
Date:	Thursday, July 01, 2021
Sheet	1 of 5

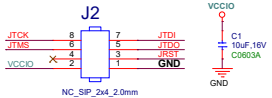
SATA PLUG 7P+15P CONNECTOR



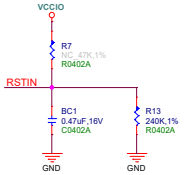
Crystal



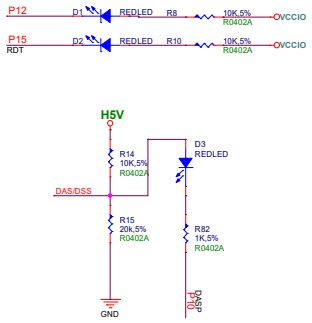
JTAG Port



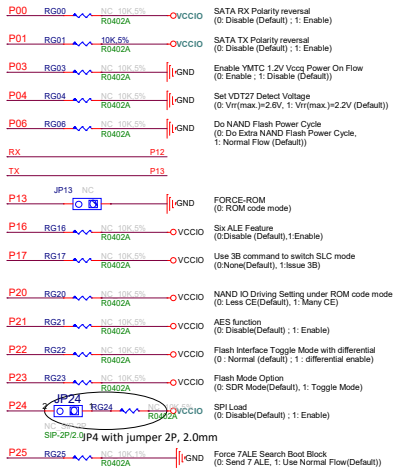
RESET

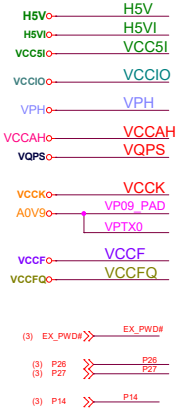


LED function

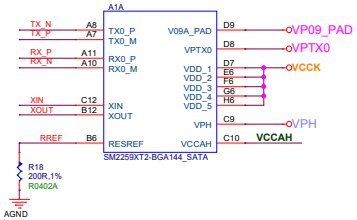


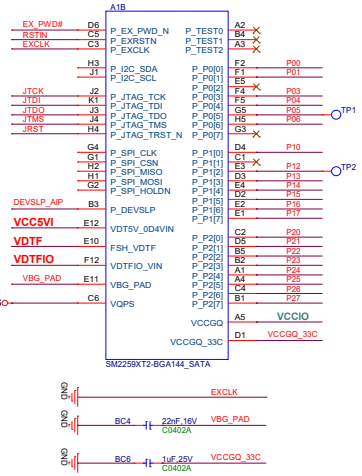
GPIO Definition

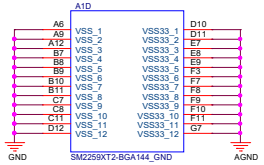




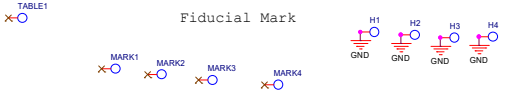
Controller
SM2259XT-BGA144



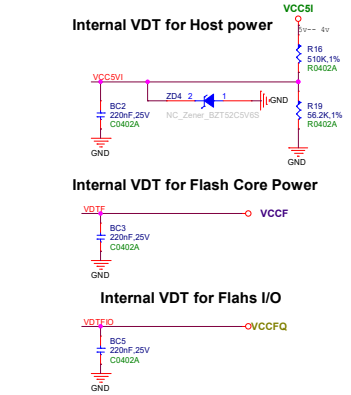




AIP

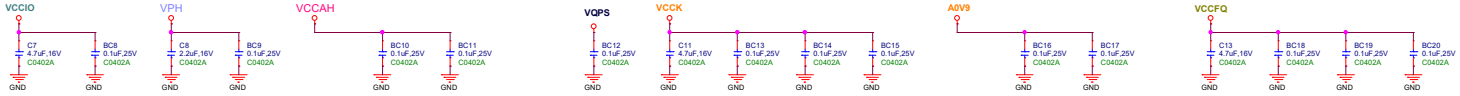


Voltage Detector

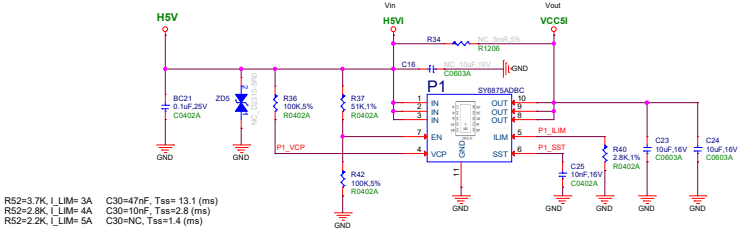


Silicon Motion, INC.	
PageTitle	Main_2p5
DOC.Number	<Doc>
Sch.FileName	SM2259XT2-F152x4_SHS_DB_V01A
Rev	01A
Date: Thursday, July 01, 2021	Sheet 2 of 5

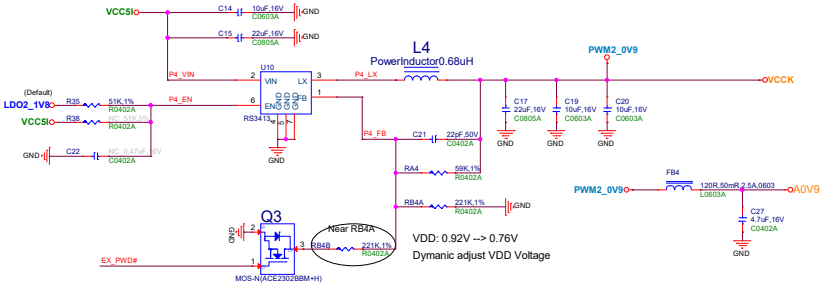
SM2259XT2 Bypass Capacitors



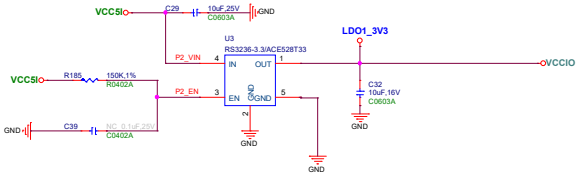
OVP Circuit



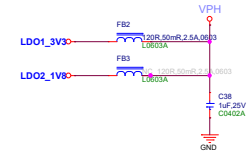
PWM_1 for VCCK/A0V9 0.92V



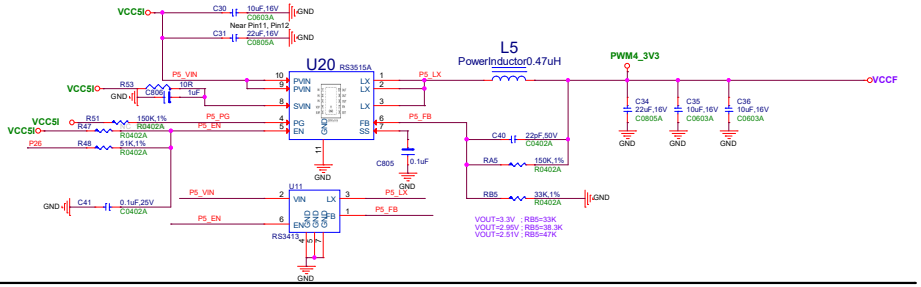
LDO_1: Analog Power / VCCIO 3.3V



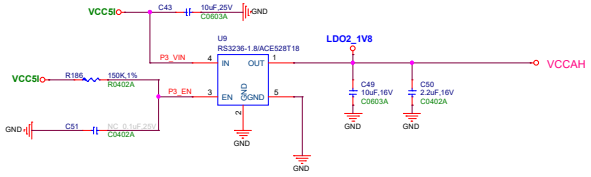
VPH Power 3.3V



PWM_2 for Flash Die Power 3.3V

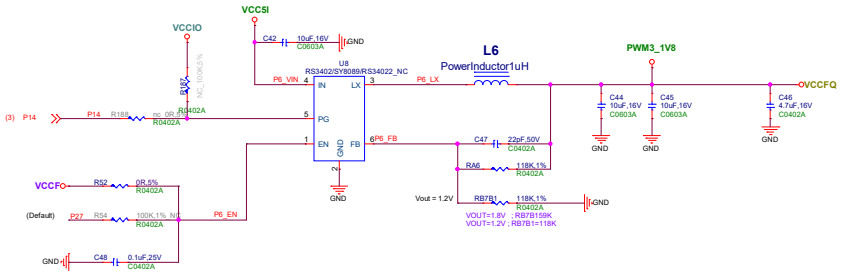


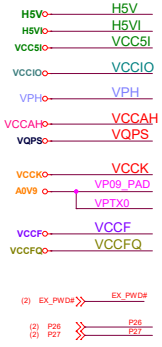
LDO_2: Analog Power / VCCAH 1.8V



VQPS Power 1.8V

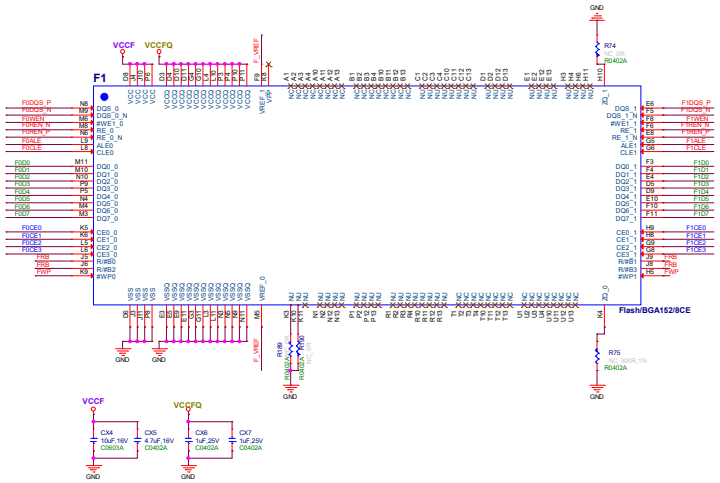
PWM_3 for Flash I/O Power 1.2V / 1.8V

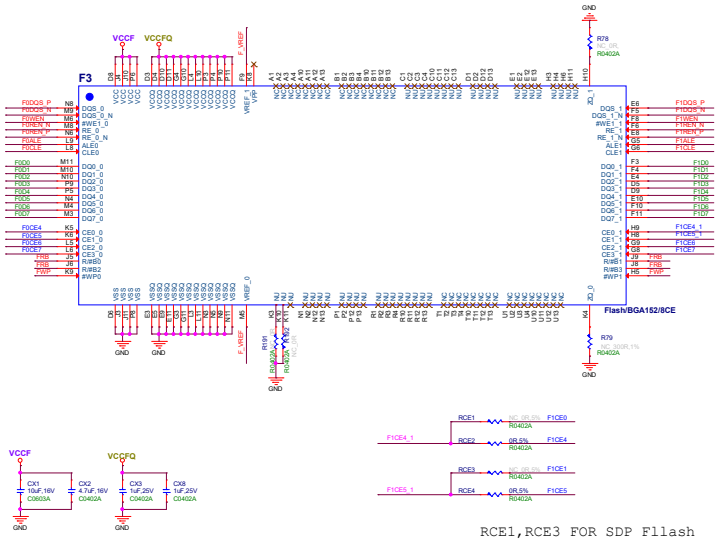




Silicon Motion, INC.	
PageTitle	Power_Host_5V
DOC.Number	<Doc>
Sch.FileName	SM2259XT2-F152x4_SHS_DB_V01A Rev 02A
Date: Thursday, July 01, 2021	Sheet 3 of 5

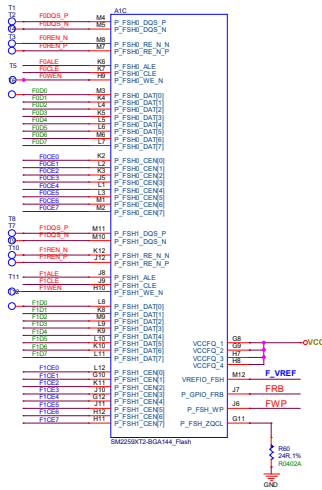
Channel 0 & 1

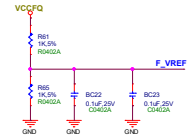




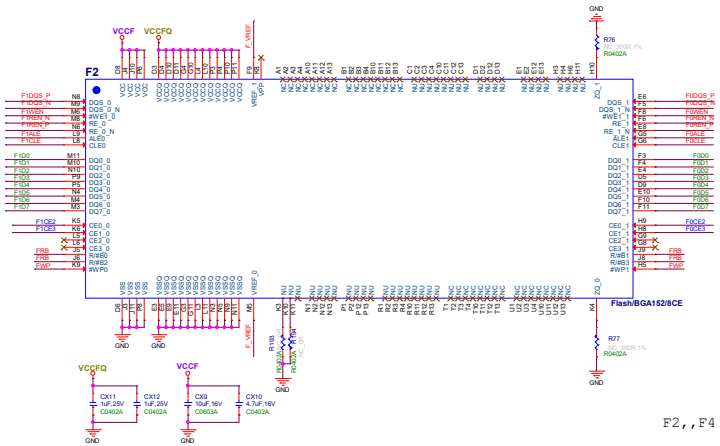
F1 ,F3 TOP Layer

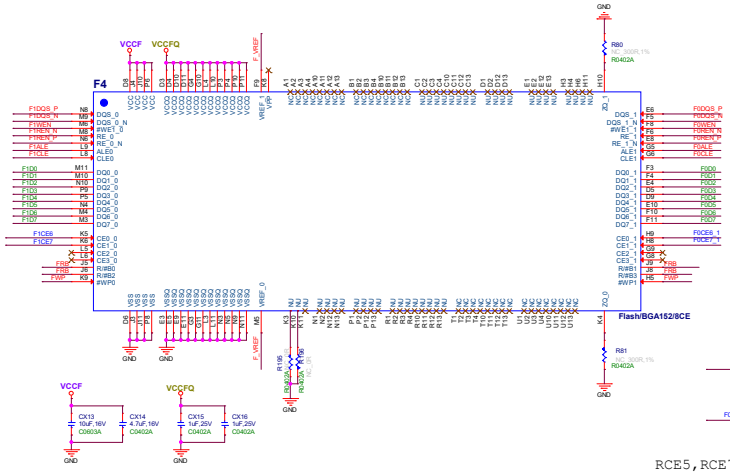
RCE1,RCE3 FOR SDP Fllash



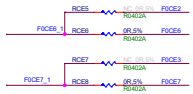


Channel 0 & 1





F2,,F4 BOTTOM Layer



RCE5,RCE7 FOR SDP Flash

Silicon Motion, INC.	
PageTitle	Power_Host_5V
DOC Number	<Doc>
Sch.FileName	SM2259XT2-FBGA4_SHS_DB_V01A
Rev	01A
Date: Thursday, July 01, 2021	Sheet 4 of 5

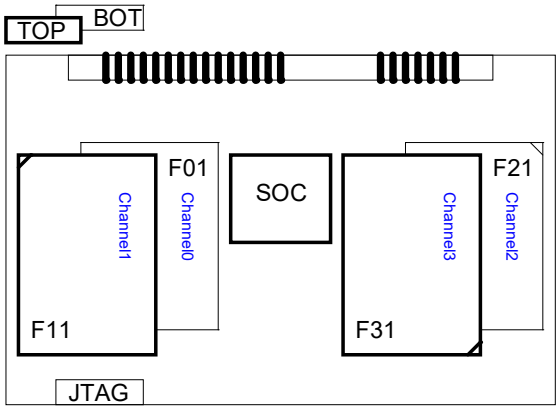
NAND FLASH Mounting Guide

Half-Slim BGA152X4 NAND Flash Mounting Guide

NAND Flash Type	F1	F2	F3	F4	NF Config	RCE0	RCE1	RCE2	RCE3	RCE4	RCE5	RCE6	RCE7
Single CE Flash X1	O	X	X	X	1CH/1CE	)	)	)	)	)	)	)	)
Single CE Flash X2	O	O	X	X	2CH/1CE	O	)	X	)	)	)	)	)
Single CE Flash X4	O	O	O	O	2CH/2CE	O	)	X	O	X	)	O	)
Dual CE Flash X1	O	X	X	X	2CH/1CE	)	)	)	)	)	)	)	)
Dual CE Flash X2	O	O	X	X	2CH/2CE	X	)	O	)	)	)	)	)
Dual CE Flash X4	O	O	O	O	2CH/4CE	X	)	O	)	X	)	O	)
1CH Dual CE X1	O	X	X	X	1CH/2CE	)	)	)	)	)	)	)	)
1CH Dual CE X2	O	O	X	X	2CH/2CE	O	O	X	X	)	)	)	)
1CH Dual CE X4	O	O	O	O	2CH/4CE	O	O	X	X	O	O	X	X
Quad CE Flash X1	O	X	X	X	2CH/2CE	)	)	)	)	)	)	)	)
Quad CE Flash X2	O	O	X	X	2CH/4CE	X	X	O	O	)	)	)	)
Quad CE Flash X4	O	O	O	O	2CH/8CE	X	X	O	O	X	X	O	O
Octo CE Flash X1	O	X	X	X	2CH/2CE	)	)	)	)	)	)	)	)
Octo CE Flash X2	O	X	X	X	2CH/4CE	)	)	)	)	)	)	)	)

O	Install
X	Don't Use
)	Don't Care

TOP View For Flash PCB Placement



STACK UP

Layers Stack Up — P/N: 15080401-00

類型 Type	結構 Construction	層別 Layer	假設的內層殘銅率(%) Assume Cu. Remain rate on inner layer(%)	材料型號 Material Type	ER (@2GHZ)	Thickness after laminate (mil)	Thickness after laminate (mm)	Single Ended (50+/-5ohms) Line Width (mil)	Single Ended (50+/-5ohms) Simulate (ohm)	Differential (100+/-10ohms) Line Width (mil)	Differential (100+/-10ohms) Spacing (mil)	Differential (100+/-10ohms) Simulate (ohm)	Ref. Layer
		Top Solder Mask		R500-MBLH(1)	3.8	1.00	0.025						
Metal		L1 - Signal		1/3OZ+PLATING		1.50	0.038	4.00	49.80	3.30	8.30	100.60	L2
Dielectric		Prepreg		1080	3.6	2.60	0.066						
Metal		L2 - GND	63.0%	0.5OZ		0.55	0.014						
Dielectric		Core		0.003"	4	3.00	0.076						
Metal		L3 - Signal	52.0%	0.5OZ		0.55	0.014	3.80	50.20				L2/L5
Dielectric		Prepreg		7628	4.2	7.84	0.199						
Metal		L4 - Signal	45.0%	0.5OZ		0.55	0.014	3.80	50.20	3.40	8.20	100.60	L2/L5
Dielectric		Core		0.003"	4	3.00	0.076						
Metal		L5 - VCC	61.0%	0.5OZ		0.55	0.014						
Dielectric		Prepreg		1080	3.6	2.60	0.066						
Metal		L6 - Signal		1/3OZ+PLATING		1.50	0.038	4.00	49.80	3.30	8.30	100.60	L5
		Bottom Solder Mask		R500-MBLH(1)	3.8	1.00	0.025						
	Board thickness : 0.68+/-0.07mm				Total :	26.24	0.666						

Silicon Motion, INC.

PageTitle	NF_Mounting_Guide
DOC.Number	<Doc>
Sch.FileName	SM2259XT2-F152x4_SHS_DB_V01A
Rev	01A
Date:	Thursday, July 01, 2021
Sheet	5 of 5