Wiwynn OCP Design Contribution Guideline

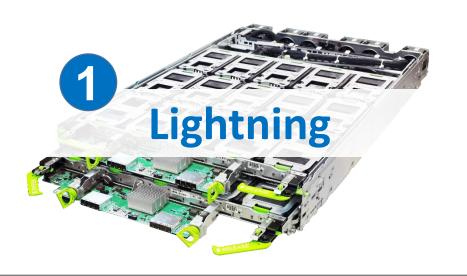
Jan. 11, 2018



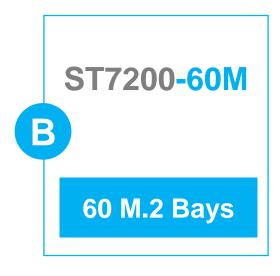
Agenda

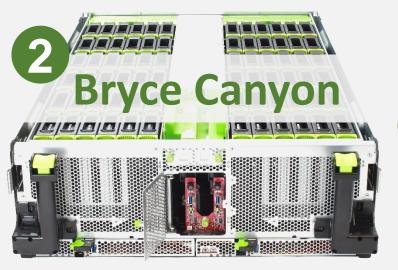
- 2 Designs and 5 Product Contributions
- Datasheets
- System Block Diagrams
- Guide for Design Files (Bryce Canyon as the example)

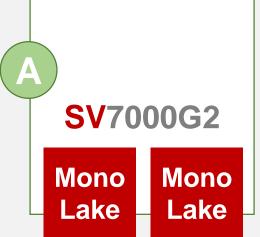
2 Design and 5 Product Contribution List

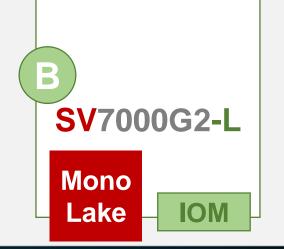


ST7200-30P
A
30 U.2 Bays











N

SV7200-30P/60M (Lightning Series) Datasheet

	Storage and I/O							
ST7200-30P/60M	Expander	PCIe 3.0 Switch						
0P/	Storage	60 M.2 NVMe SSDs:						
0-3		· 22110 or 2280						
720		30 U.2 NVMe SSDs						
ηST		· 15mm or 7mm						
Wiwynn	Expansion Ports	Up to 4 PCle 3.0 (x16) ports						
	Remote Management	ВМС						
iel :	Power Supply and Physical Specifications							
Model	Power Supply	Centralized 12V DC bus bar						
	Form Factor and Dimension	2 OU (Open Rack); 93.5(H) x 536 (W) x 795 (D)						
	Weight	38 kg ~ 55 kg						

N

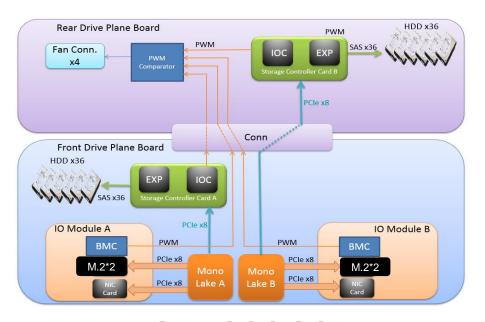
ST7000G2/SV7000G2 (Bryce Canyon) Datasheet

Š	Storage and I/O	SV7000G2	SV7000G2-L	ST7000G2					
Series	Expander	SAS12G expander							
32 S	Storage	72 3.5" hot-plug drive bay							
2000	Micro Server	2	1						
3773	Processor	Intel® Xeon® Broadwell-DE	Intel® Xeon® Broadwell-DE						
Model: Wiwynn ST7000G2/SV7200G2	Memory	DDR4 x 8 (4 per server), up to 2400MT/s	DDR4 x 4, up to 2400MT/s						
T70	Boot Drive	2 x M.2 (1 per server)	1 x M.2						
S u	IO Module (IOM)	2	1						
wyr	OCP Mezzanine	2 (1 per server)	1						
: Wi	Expansion Ports	N/A	Two EXT mini-SAS 12G HD	Two EXT mini-SAS 12G					
del			ports (SASx4)	HD ports (SASx4)					
Mo	Remote Management	IPMI v2.0 Compliant, iKVM,		SES, SMP					
		Wiwynn Cluster Manager							
	Power Supply and Physical Spe	cifications							
	Power Supply	Centralized 12.5 V DC bus b	ar						
	Form Factor and Dimensions								

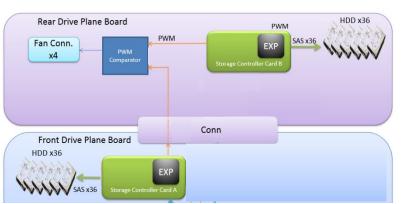


Bryce Canyon Contribution

System Topology



SV7000G2



Rear Drive Plane Board Fan Conn. PWM Comparate Conn Front Drive Plane Board HDD x36 PCIe x8 10 Module A PCle x8 PCIe x8 Lake A

SV7000G2-L

ST7000G2

Design Files

The following folders are included in the zip file

> Schematic:

Contain designed DSN files (Cadence OrCAD) and .pdf files

> Layout and Stackup:

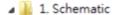
Contain designed BRD files (Allegro) and Excel files show detail stack up information

➤ BOMs (Bill of material):

An excel file shows full component information. (Including EE & ME)

- > Manufacture files:
 - Gerber files for PCB manufacture.
 - Contain PCBAs DXF, PDF and EMN.
- > MB Placement
- ➤ ME CAD(3D & 2D):
 - Contain all system Solidworks files and neutral file. (STEP)
 - Contain all chassis assemblies, metals, plastics, accessories, cables 2D files.
- > oBMC:
 - https://github.com/facebook/openbmc

Schematic



- FDPB
- Front IO panel
- IOM_IOC
- M IOM M2
- LED board
- RDPB
- SCC







- Front IO panel
- IOM_IOC
- IOM_M2
- LED board
- RDPB
- SCC







BRYCECANYON_FRONT_DPB_OCP_2011207.pdf



Bryce Canyon

Front Drive Plan Board 36 HDDs

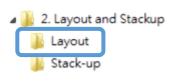
PCB P/N: 16315 Version:

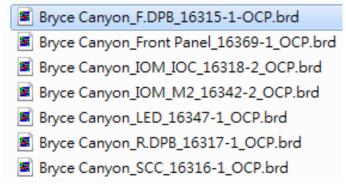
Layer: 12 Layers

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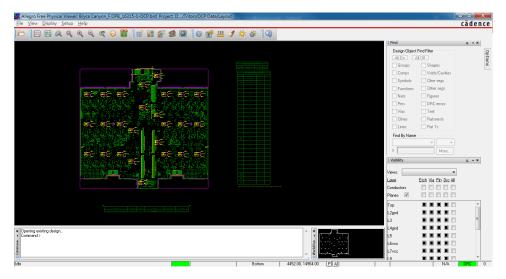
SY	COVER PAGE	40	H20 19	Ø1	PHYRINE PURE TRESCUM
82	TABLE OF CONTENTS	42	HDID 20	82	Screw & Hole
83	BLOCK DSAGRAM	-63	HDD 21		
54	ACMER DISTRIBUTION	44	H00 22		
35	ROWER ROW	46	1620.23		
36	POWER SEQUENCE	46	HDID 24	$\overline{}$	
57	CLOOK TREE	47	HDD 25		
581	STACK-OP	46	HDD 26		
99	DC TOPOLOGY	49	H20 27		
10	LIART TOYOLOGY	50	HDID 28		
U.	LEVEL SHIFT	52	HDD 29		
12	HOD PRESENT CONTROL_DC	52	H200 30		
13	HOD POWER CONTROL_LIC	537	HDD 31		
M	HOD LED CONTROL, ISC	34	HDD 32		
NF .	REAR OFB DRIVIE LED CONTROL	55	HD0 33		
16	DC BUYER	56	1620 34	\perp	
17	REAR OFB LEGS 24-29	57	HDD 35		
18	REAR OPE LEON 30-35	59	DPB PINR CONN		
ήŘ.	IOH A/B IO Expander	59	DPB SIGNAL CONV		
20	DC DEVICES	60	SCC PINT CONN		
21	PRONT SO BOARD CONN	62	SCC S4S CONN, J		
12	HDD 8	62	SCC S4S CONN_2		
22	HEED I	67	SCC PCSE CONN		
24	H00 2	64	A SIDE PICE CONNA		
25	H00 3	65	A SIDE POE CONNB		
26	H004	66	B SIDE POE CONNA		
27	HGD S	67	B SIDE POE CONNE		
28	HOD 8	687	LED BOARD COMV		
29 30	H00 7	69	A SIDE ROLMODULE, CONV		
30	HED 8	20	B SIDE SO MODULE COMM		
П	HDD 9	72	HSC PLIV_A ADMILITE_1		
32	HDD 10	72	HSC PIZIV_A ADMIZ78_Z		
327	H00 []	23	HSC P12V_A_COMP ADM1278_1		
34	1620 12	24	HSC PLOV_A_COMP ADMILETY_2	\perp	
35	HDD 13	75	HSC F12V_8_CONF ADM1278_1		
36	H00 14	.N	HSC P12V_B_COMP ADM1278_2		
17	HDD 15	77	PWRSW PSY_A_1 TPSS3209		
38	HDD 16	79	PHRSH PSY A 2 TPSS13/9		
39	HDD 17	79	PWRSW PSV_A_3 TPSS3339		
40	HOD 18	80	PWRSW PSV. A. 4 TPSS2274		

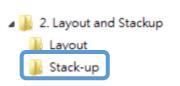
Layout and Stackup





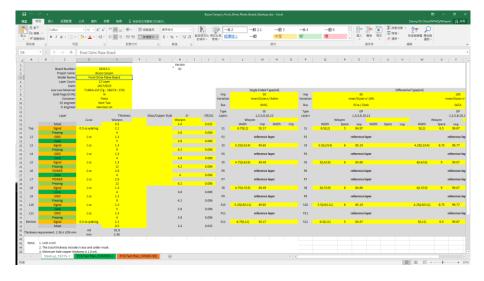






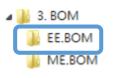
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- Bryce Canyon_Front_Panel_Board_Stackup.xlsx
- Bryce Canyon_IOM_IOC_Stackup.xlsx
- Bryce Canyon_IOM_M2_Stackup.xlsx
- Bryce Canyon_LED_Board_Stackup.xlsx
- Bryce Canyon_Rear_Drive_Plane_Board_Stackup.xlsx
- Bryce Canyon_Storage_Controller_Card_Stackup.xlsx





AV

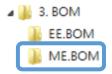
BOMs (EE & ME)



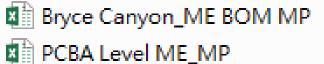
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- Primary and Alternate BOM of B91.01110.0010_SCC wo IOC.xls
- Primary and Alternate BOM of B91.01110.0015_FDPB.xls
- Primary and Alternate BOM of B91.01110.0016_RDPB.xls
- Primary and Alternate BOM of B91.01110.0017_LED.xls
- Primary and Alternate BOM of B91.01110.0018_Front panel.xls
- Primary and Alternate BOM of B91.01110.0037_IOM M.2.xls
- Primary and Alternate BOM of B91.01110.0038_IOM IOC.xls



	I										
	PDM BOM List										
evel	Parent Number	Part Number	Description	Green Factor	Life Cycle State	Manufacturer	Manufacturer Part Number	Source	BOM Usage	M/P Code	
	1 B91.01110.0015	B55.01103.0002	BRYCE CANYON FRONT		Released				M	Manufacture	
	2 B55.01103.0002	020.50215.0164	CONN EDGE 164P G630H		Released	AMPHENOL	G630HAA25062HR	Single		Purchase	
	2 B55.01103.0002	020.80417.0001	CONN CTR XCEDE 968-32		Released	AMPHENOL	968-3200-A1H	Single		Purchase	
	2 B55.01103.0002	020.80656.0001	CONN PWR XCEDE JX410		Released	AMPHENOL	JX410-50728	Single		Purchase	
	2 B55.01103.0002	020.80946.0001	CONN XCEDE JX924-3405-		Released	AMPHENOL	C-924-3405-505_RevA	Single		Purchase	
	2 B55.01103.0002	020.80956.0001	CONN SIGNAL XCEDE 923		Released	AMPHENOL	923-3L0E-40H	Single		Purchase	
	2 B55.01103.0002	020.80957.0001	CONN SIGNAL XCEDE 923		Released	AMPHENOL	923-300C-40H	Single		Purchase	
	2 B55.01103.0002	020.80958.0001	CONN SIGNAL XCEDE 92	(R2_SA;HF_SA;	Released	AMPHENOL	923-300E-40H	Single		Purchase	
	2 B55.01103.0002	020.80959.0001	CON SIGNAL XCEDE JX41:		Released	AMPHENOL	JX412-50282_RevA	Single		Purchase	
	2 B55.01103.0002	020.80960.0001	CONN SIGNAL XCEDE JX4		Released	AMPHENOL	JX430-50035_RevB	Single		Purchase	
	2 B55.01103.0002	020.80961.0001	CONN SIGNAL XCEDE 923	R2_SA;HF_SA;	Released	AMPHENOL	923-310E-30H	Single		Purchase	
	2 B55.01103.0002	038.01071.0001	HOT GLUE DPB BRCA	R2_C;	Released	TBD		Single		Purchase	
	2 B55.01103.0002	086.000BF.0G20	SCRW #2-56_L3_8_INCH 5		Released	TBD		Single		Purchase	
	2 B55.01103.0002	086.000LQ.0543	THUMB SCREW PRESSFI		Released	FIVETECH	27-141-201-5	Single		Purchase	
	2 B55.01103.0002	40.58D03.001	LBL POLYIMIDE31.8*6.35 I		Released	LABELJET	40.58D03.001	Single		Purchase	
	2 B55.01103.0002	40.6E727.001	LBL 50X15MM BLANK WH	IR2_SA;HF_SA;	Released	TBD		Single		Purchase	
	2 B55.01103.0002	640.00X01.0001	LBL 7X7MM FOR SONIC	R2_SA;HF_SA;	Released	TBD		Single		Purchase	
	2 B55.01103.0002	B42.01101.0001	GUIDE PIN 914-3000-00A	R2_SA;HF_SA;	Released	TBD		Single		Purchase	
	2 B55.01103.0002	B42.0111I.1001	CVR XCEDE PWR JX410-5		Released	KANGYANG	COVER-18	Multiple		Purchase	
١	B55.01103.0002	B42.0111I.0001	CVR XCEDE PWR JX410-5	(R2_SA;HF_SA;	Released	KANGYANG	COVER-18			Purchase	
	2 B55.01103.0002	B42.0111M.1001	CVR XCEDE SIGNAL JX41:	R2_SA;HF_SA;	Released	KANGYANG	COVER-19	Multiple		Purchase	
	B55.01103.0002	B42.0111M.0001	CVR XCEDE SIGNAL JX41:		Released	KANGYANG	COVER-19			Purchase	
	2 B55.01103.0002	B42.0111N.1001	CVR XCEDE SIGNAL JX43		Released	KANGYANG	COVER-20	Multiple		Purchase	
	B55.01103.0002	B42.0111N.0001	CVR XCEDE SIGNAL JX430	(R2 SA;HF SA;	Released	KANGYANG	COVER-20			Purchase	¥



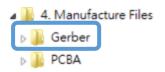






Level	WW P/N E/T	WW P/N DVT	WW P/N DVT2	WW P/N MP	Description (PDM)	Part Name	Picture	Tool status	Type 7 JB00 Usage/ Lower les	Type 7 JBOO Usage/ System	Type 5 Usage/ Lower lev	Type 5 Usage/ System	Type 7 Usage/ Loveries —	Type 7 Usage/ System —	Material/Finish	Type: Assy/Metal/Plastic/P urchase/Cabli	Suppler	Remark
1	B60.01108.0001			860.01107.0021	ASSY MAIN CHASSIS TYPEA/7 (800 BC MP	OO-ACKBAR TOP ASSEMBLY			1	- 1				_				
					ASSI													
					Packing													
					Transportation													
1	860.01101.0001	860.01105.0001	860.01105.0011	860.01105.0021	ASSY MAIN CHASSIS TYPES BC MP	00-ACKBAR TOP ASSEMBLY					1	1						
					ASSI													
					Packing													
					Transportation													
1	860.01109.0001	860.0110U.0001	860.0110U.0011	860.0110U.0021	ASSY MAIN CHASSIS TYPE? HEADNODE BC MP	00-ACKBAR TOP ASSEMBLY							1	1				
					ASSI													
					Packing													
					Transportation													
2	BRD 01104.0001	860.01104.0001	560.01104.0001	860.01104.0001	ASSY MAIN HOUSING BRCA	01-ASSY LOW CASE ACKBAR			1	1	1	1	"	1	Assy	Assy		
3	834.01101.0001	834.01101.0001	834.01101.0001	854.01101.0001	CVR LOW CASE TOP COVER BRICA	03-FRONT TOP COVER BRYCE CANYON_DVT		PVT new tool	1	1	1	1	1	1	SGCC(T+1.2mm)/NA	Metal	æŒ	MS
5					CAS LOW CASE TRITON	02-ASSY LOW CASE TRITON			1	:	:	1	1	1	Assy	lssy		
4	830.01101.0001	830.01101.0001	830.01101.0001	890.01101.0001	CAS LOW CASE BRICA	08-LOW CASE BRYCE CANYON_DVT			1	1	1	1	1	1	Assy	Assy		
5						OS-LOW_CASE_BRYCE_CANYON_DVT		PVT new tool	1	1	1	1	1	1	SGCC(T=1.2mm)/NA	Metal	PΩ	M2
5						STD LOW CASE-2 TRITON_DVT	S		4	4	4	4	4	4	Standoff	Purchase	表正	
3							Q 2		6	6	6	6	6	6	Vendor PN:E2017-192	Purchase	Fivetech	

Manufacture Files _ Gerber





Bryce Canyon_F.DPB_16315-1-OCP_Gerber Files.zip

Bryce Canyon_Front Panel_16369-1_OCP_Gerber Files.zip

Bryce Canyon_IOM_IOC_16318-2_OCP_Gerber Files.zip

Bryce Canyon_IOM_M2_16342-2_OCP_Gerber Files.zip

Bryce Canyon_LED_16347-1_OCP_Gerber Files.zip

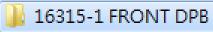
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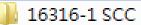
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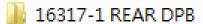
16315-1.ipc
16315-1.net
16315-1.rou
16315-1_testpoint_report.txt
16315-1_X_Y.art
16315-1-valor.txt
art_param.txt
BACKDRILL_1_6.art
BMASK.art
Bryce Canyon_Front_Drive_Plane_Board_Stackup.xlsx
BSILK.art
BSMD.art
DP_REF_L1.art
DP_REF_L3.art
DP_REF_L8.art
DP_REF_L10.art
DP_REF_L12.art
DRILL.art
drilltable_1_12.drl
drilltable_bd_1_6.drl
L1.art
L2GND.art
L3.art
L4GND.art
L5.art
L6VCC.art
Pizzoco i

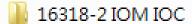
Manufacture Files _ PCBA







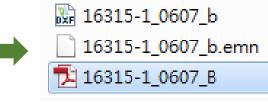




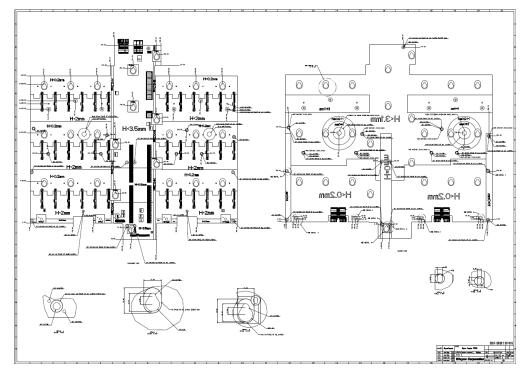
16342-2 IOM M.2

16347-SC LED BOARD

16369-SC FRONT IO BOARD

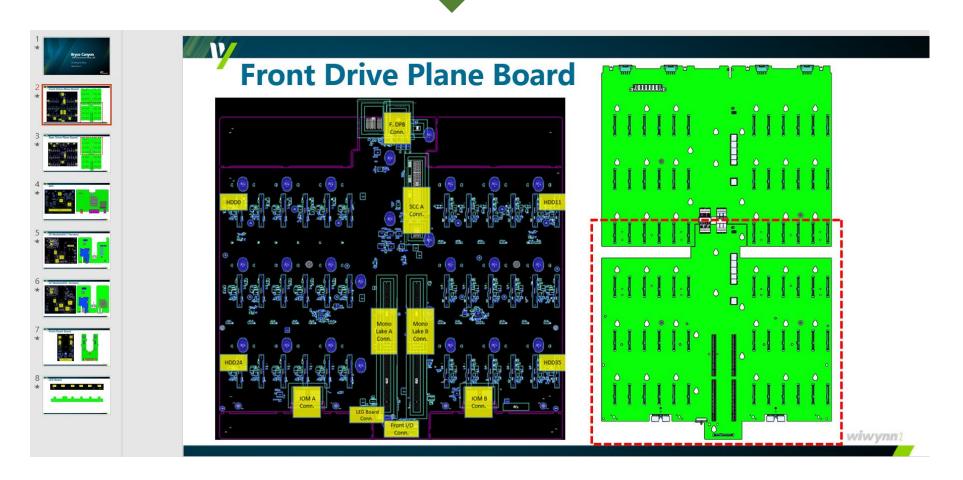




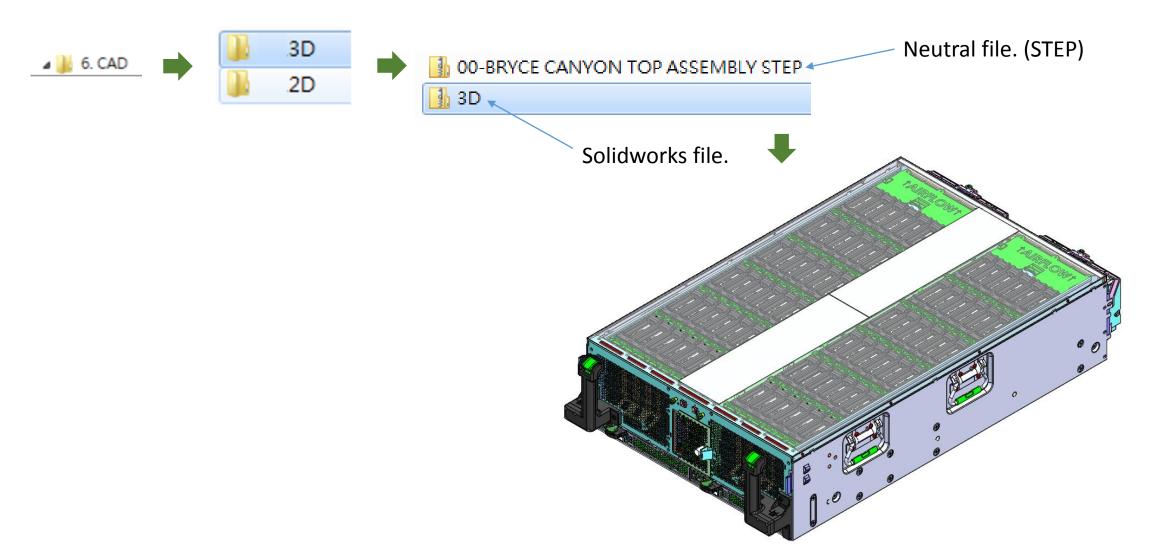


MB Placement





ME CAD(3D)



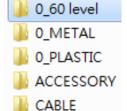
ME CAD(2D)















B60.0110K.0001 ASSY 7TH F+R PARTITION BC_20170815

B60.0110K.0001 ASSY 7TH F+R PARTITION BC_20170815

B60.0110O.0011_ASSY IO MODULE BRACKET M.2 BRCA_20170814

1 B60.0110O.0011_ASSY IO MODULE BRACKET M.2 BRCA_20170814

B60.0110P.0011_ASSY IO MODULE BRACKET IOC BRCA_20170814

17. B60.0110P.0011_ASSY IO MODULE BRACKET IOC BRCA_20170814 B60.0110S.0021 ASSY MAIN CHASSIS TYPE5 BRCA_20170822

B60.0110S.0021 ASSY MAIN CHASSIS TYPE5 BRCA_20170822

B60.0110T.0021 ASSY MAIN CHASSIS TYPE7 JBOD BRCA_20170822

17 B60.0110T.0021 ASSY MAIN CHASSIS TYPE7 JBOD BRCA_20170822

B60.0110U.0021 ASSY MAIN CHASSIS TYPE7 HEADNODE BRCA_20170822

🔁 B60.0110U.0021 ASSY MAIN CHASSIS TYPE7 HEADNODE BRCA_20170822

B60.01107.0011 ASSY FAN CAGE BRCA_20170814

B60.01107.0011 ASSY FAN CAGE BRCA_20170814

B60.01110.0001_ASSY IO MODULE BRACKET DUMMY BRCA_20170814

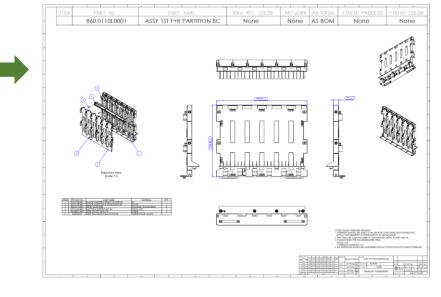
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B60.01111.0001 ASSY DPB AIR BAFFLE BC_20170814

B60.01112.0001 ASSY FDPB SUPPORT BKT_20170724

B60.01112.0001 ASSY FDPB SUPPORT BKT_20170724

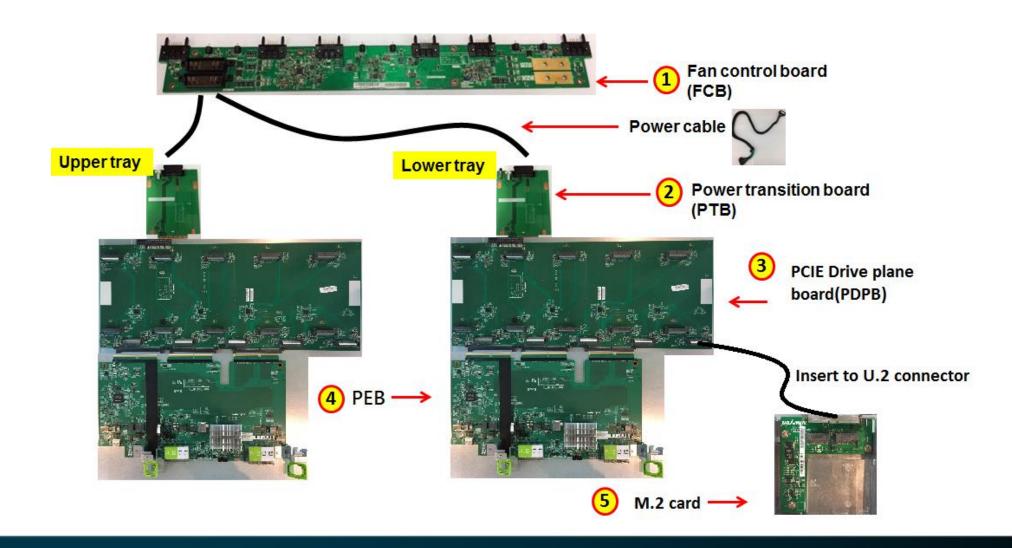




Lightning Contribution

Lightning System topology

Lightning has 5 types board, including FCB, PTB, PDPB, PEB and M.2 card.



Design Files

The following folders are included in the zip file

> 1 Schematic:

Contain designed DSN files (Cadence OrCAD) and .pdf files

➤ 2 Layout and Stackup:

Contain designed BRD files (Allegro) and Excel files show detail stack up / Equal length table / SI constraints information

> 3 BOMs (Bill of material):

An excel file shows full component information. (Including EE & ME)

4 Manufacture files:

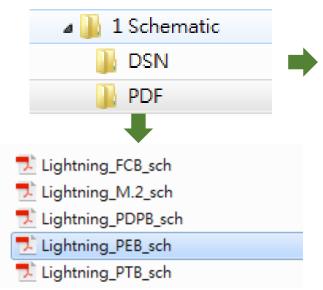
Gerber files for PCB manufacture and Excel files show component coordinates / Test coverage percentage.

> 5 Placement Map:

Contain component placement of top/bot view.

- ➢ 6 ME CAD(3D & 2D):
 - Contain all system Solidworks files and neutral file. (STEP)
 - Contain all chassis assemblies, metals, plastics, accessories, cables 2D files.
- > oBMC:
 - https://github.com/facebook/openbmc

1 Schematic: DSN and PDF



- ill Lightning_M.2_DSN
- Tightning_PDPB_DSN
- IGHTNING_PEB_DSN
- Ightning_PTB_DSN



Lightning - PMC PEB

PCB P/N: 15105

Version:

Project Code: BPD00Q010001

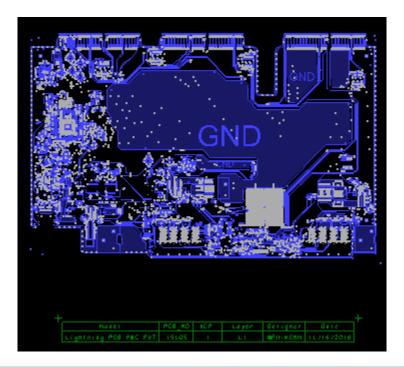
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02	TABLE OF CONTENTS	42	SPI NOR FLASH L
03	SYSTEM BLOCK DIAGRAM	43	MBP CONN
04	POWER DISTRIBUTION DIAGRAM	44	INTEL 1210
05	POWER FLOW & SEQUENCE	45	INTEL 1210 DECL
06	RESET DIAGRAM	46	12V-DCIN_ADM1.
07	CLOCK TREE	47	PWRSW_P5V_ST
08	STACK-UP INFORMATION	48	PWRSW_P3V3_P
09	I2C SMBUS DIAGRAM	49	PWRLDO_P1V8_F
10	SPI MUX	50	PWRLDO_P1V53_
11	AST2400 I2C DEVICE	51	PWRLDO_P1V26
12	AST2400 I2C DDR LPC	52	PWRSW_POV9_TI
13	AST2400 WART LAN SPI	53	PWRSW_POV9_E
14	AST2400 FAN ADC VGA JTAG	54	ME
15	AST2400 Power	55	History EVT1
16	AST2400 Strapping	56	History EVT2
17	AST2400_VOLTAGE SENSE	57	History DVT
18	BLANK	58	History DVT
19	LAN CONNECTOR	59	History DVT
20	USB2.0 x1	60	History PVT
21	I2C_BUFFER		
22	LED		

2 Layout: Board file and Equal Length



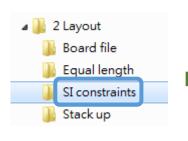






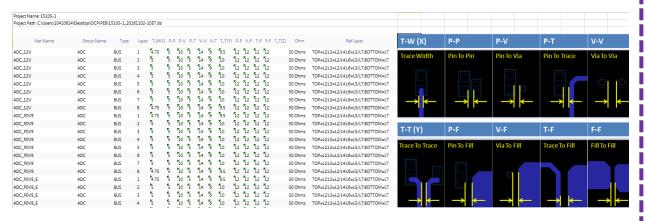
Wits Re-timer card													
				Leopard-WW							Leopard-Bitt Raise Card		
Net Name	PIG Lengths		Offerential Match	Net Name	PCB Nat Length	Differential Match	MSTotalLargth	Offerental Match	Net Name	PCBNet Length	DifferentialMatch	Militie Raise Card Total Length	Differentiality
PSE_CPUO_PES_RISERS_TX_DP_0		10551.21		PSE_CPUID_PES_RISERS_TX_C_DP_0	262.56		10919.77		POS_SLOTS_TXPO	2972.00		14751.77	
SE_CPUO_PER_RISERS_TX_DN_O		10550.18	yez, within 5 mile	PSE_CPUO_PES_RISERS_TX_C_ON_O	269.52	yeş within 5 mile	10919.71	yez, vittin 5 miz	POE_SLOTS_TAND	2972.00	yaq vittin 1 mile	14790.79	Vet with
00_09U0_902_8/5081_TX_09_1		10424.09		F26_CPU0_F63_RISER1_TX_C_DP_1	252.54		10679.00		POR_SLOTS_TXPS	2907.17		14485.20	
SE CPUD PEZ RISERS TX DN.S		10422.49	ver within 5 mile	PSE_CPUO_PES_RISERS_TX_C_DN_S	221.65	vec vibrin 5 mile	10675.09	ver vittin 5 mile	POE SLOTE TWO	2905.20	vec within 1 mile	14461.20	VME (4800)
	routing bundle delta	120.70	VAC WIRNIN SCORE	routhe bundle date	15.91	vac within 500ml	144.02	Vest Within 500mil	routive bundle delta	145.64	Vall Within 200 mil	210.42	186 W/20
E_CPUO_PE2_RISERS_TX_DP_2		10249.55		PRE_CPUID_PER_RISERS_TX_C_DP_R	254.02	110	10502.59	100	POIE_SLOTS_TXP2	2699, 52		14192.12	
CPU0_PE2_RISERS_TX_DN_2		10251.45	yes; within 5 mile	PSE_CPUO_PE2_RISERS_TX_C_DN_2	252,77	yes within Smile	10504.22	yez; within 5 mile	POE_SLOTS_TXX2	2699.05	yeg within 1 mile	14192.20	yes with
_CPU0_RE2_RISERS_TX_DP_3		10026.02		PRE_CPUIC_PRES_RISERS_TX_C_DP_R	252.94		10299.96		POR_SLOTS_TXP2	2629.79		12919.75	
_CPUO_PE2_RISERS_TX_DN_3		10026.22	yes; within 5 mile	F2E_CFU0_FE2_RISERS_TX_C_DN_2	252.77	yes within 5 mile	10269.09	VALUATIONS MILE	PO E_SLOTS_TXN2	2629.42	yes within 1 mile	12917.51	yes, with
	routing bundle delta	215.44	yeş; within \$00mil	routing bundle delta	1.36	yes, within \$55ml	215.14	yeş within 500mil	routing bundle delta	60.11	yes; within 200mil	274.77	yet with
_CPU0_PE2_RISER2_TX_DP_4 _CPU0_PE2_RISER2_TX_DN_4		9941.33 9944.97		P2E_CPU0_PE2_RISER1_TX_C_DP_4 P3E_CPU0_PE2_RISER1_TX_C_DN_4	252.94	uga waters timbe	10195.04	var udron timbr	PDE_SLOTS_TXP4	3479,79 3479,94		12674.02	
CPUIC_PEX_RISERS_TX_DN_4		9944, 97	yes; within 5 mile	FSE_CHUC_FES_RISERS_TX_C_DN_A	252.77	vec within 5 mile	10197.64	yes; within 5 mile	POE_SLOTS_TXNA	3479,94	yaq within 1 mile	12675.40	Ast Ny
_CPU0_PE2_RISERS_TX_DP_S		9777.00		P20_09U0_P02_RISERO_TX_C_0P_S	253.94		10020.94		POS_SLOTI_TXPS	2422.00		19454.82	
CPUO_PE2_RISERS_TX_DN_S		9779.29	Variables Similar	F3E_CFU0_FE2_RISERS_TX_C_ON_S	252.77	user within Similar	10022.06	Value within 5 mile	BOE SLOTE TIME	2422.42	user which I mile	12455.40	vac viti
24040444	routing bundle delta	167.07	veg within \$00mil	routing bundle delta	1.17	vac within \$00mil	166.70	vac vitrin 500mi	routing bundle delta	56.26	vac within 200mil	221.66	vac vit
CPUO_PE2_RISERS_TX_DR_6		9997.00	100,000,000	P2E_CPU0_PE2_RISERS_TX_C_DP_6	253.94	10,	10250.97	100	POR SLOTE TXPS	2291,20	100	12542.27	100,000
CPUC_PE2_RISERS_TX_DN_6		9994.22	VAE WINN 5 mile	F9E_CFU0_FE2_RISERS_TX_C_ON_6	252.77	Vec Within Smile	10251.09	year within 5 mile	POE_SLOTS_TXNE	2291.22	year within 1 mile	12542.41	VAC NO
	•												
_CPU0_PE2_RISER1_TX_DP_7		9907.21		P26_CPU0_P62_RISER1_TX_C_DP_7	252.94		10061.15		PO E_SLOT1_TXP7	3192.23		12253.20	
_CPUO_PE3_RISERS_TX_DN_7		9405.31	yea; within 5 mile	PSE_CRUO_RES_RISERS_TX_C_ON_T	252.77	yes; within 5 mile	10058.08	yes; within 5 mile	POE_SLOTS_TXX/T	2191.29	yeş within 1 mis	13349.37	TAK MA
	routing bundle delta	192.01	yez; within \$00mil	routing bundle delta	1.17	yez within 500mil	192.01	yez; within 500mil	routing bundle delts	100.02	yez; within 200mil	292.04	yet with
_CPUO_PE2_RISER1_TX_DP_8		9540.04		PRE_CPUO_PER_RISERI_TX_C_OP_B	212.41		9952.45		POIE_SLOTS_TXPB	3129.06		12061.51	
CHUC_HES_RESERS_TX_CHI_S		9643.00	yeş vithin 5 mile	FSE_CHUC_RES_RISERS_TY_C_CIN_E	212.24	yeş within 5 mile	9955.36	yez within 5 mile	ROS_SLOTS_TANK	3119.09	yaq oldrir 1 mile	13084.45	ARC AND
CPU0_PE2_RISERS_TX_DP_9		9612.29		P2E_CPU0_PE2_RISER1_TX_C_OP_9	217.42	_	9939.71		PO E_\$L071_TXP9	2017.79		12007 50	_
CRUD RES RISSRS TX DN 9		9610.29	vez within 5 mile	FRE CRUD REZ RISERS TX C DN 9	216.12	vac within 5 mile	\$926.42	vac vithin 5 mile	POS SLOTE TXXS	2058.29	vas viknin 1 mis	12994.91	vec with
	routing bundle delta	21.72	vec within 500ml	routing bundle delta	5.01	vec within 500mil	28.94	vec within 500ml	routing bundle delta	71,20	vec within 200mil	88.64	195 V/S
CPUO_PE2_RISER1_TX_DP_10		9515.29	1000000	P3E_CPUO_PE2_RISERS_TX_C_OP_10	216.72	113	9420.00	100	PO E_SLOT1_TXP10	2006.26	100 110 110 110	11006.20	100,000
CRUO_RES_RISERS_TX_DN_SO		9514.51	vez within 5 mile	PRE_CRUO_RE2_RISERS_TX_C_DN_SD	212.55	vac within 5 mile	9929.06	ver vithin 5 mile	POR_SLOTS_TXNSS	2997.20	vec while I mile	11915.16	vec wh
DPU0_PE2_RISERS_TX_DP_11		9644.62		P2E_CPU0_PE2_R1SER1_TX_C_0P_11	225.00		9970.51		POS_SLOTI_TXP11	2956.50		12927.01	
CPU0_PE2_R SERI_TX_DN_11		9641.61	yez; within 5 mile	PSE_CPUO_PE2_RISERO_TX_C_ON_11	225.07	yag within 5 mile	9966.69	yez; within 5 mile	POS_\$LOT3_TXN21	2957.31	yez; within 1 mile	12922.99	yeş wit
	routing bundle delta	120.11	yez; within 500mil	routing bundle delta	12.24	yes; within 500mit	142.45	yes; within 500mil	routing bundle delts	40.90	yes; within 200mil	101.65	Ast mp
CPU0_PE2_RISERS_TX_DP_32		9711.64		P2E_CPU0_PE2_RISERS_TX_C_CPP_12	220.87		10022.51		PO E_\$LOT1_TXP11	2924.45		11971.26	
CPUID_PER2_RISERRI_TX_DN_12		9709.67	yez; within 5 mile	PRE_CPUID_PER_RISERI_TX_C_DN_12	218.60	yaq within 5 mile	10027.67	yez; vithin 5 mlz	POR SLOTE TXN22	2929.76	yeş within 1 miz	12967.42	yet vit
CRU0_RE3_RISERS_TX_DR_13		9433.45		F2E_CFU0_FE3_F15EF1_TX_C_CFF_13	215.00		10148.53		POE_\$L071_TXP13	2929.60		12097.12	
CPU0_PE2_RISERS_TX_DN_12		9925.18	vec within 5 mile	PSE_CPUO_RES_RISERS_TX_C_DN_SS PSE_CPUO_RES_RISERS_TX_C_DN_SS	213.00	vec within 5 mile	10149.50	vec within 5 mile	POE SLOTE TONES	2929.10	vac within 1 mis	12007.12	vec vib
	routing bundle delta	126.21	VAE WIREN SCORE	routing bundle delta	7.16	Vall Works Scores	121.12	VAE VIDOUS THE	routhe hands date	1.16	yag uleni 1 mig	120.55	yes with
CRU0_RE2_RISERS_TX_DR_S4	nous & onuce parts	9696.13	144,	F3E_CRUC_RES_RISERS_TX_C_OP_14	266.22	THE WEST SOUTH	2004.45	(M, 100 M 300 M)	POIE_SLOT1_TXP14	2946.59	144, 4611 20071	12921.02	AND MAIN
CPU0_PE2_RISERS_TX_DN_34		9696.61	ver within 5 mile	P2E_CPUC_PE2_RISERS_TX_C_DN_14	290.05	vec within 5 mile	2995.95	vec within 5 mile	POR_SLOTE_TXXX4	2047.55	vec within 1 mile	12994.42	vec with
						12,000,010	11,000	100,000,000		22.7.20	100,000,000		- 100
CPUO_PE2_RISERI_TX_DP_15		9701.09		PSE_CRUO_REI_RISERI_TX_C_DP_1S	244.21		10045.40		POIE_SLOTI_TXPIS	2997.64		12022.04	
CPUO_PE2_RISERS_TX_DN_15		9699.77	yez; within 5 mile	PRE_CPUID_PEX_RISERU_TX_C_DN_15	246.01	yeg within 5 mile	10045.59	yez; within 5 mile	POR_SLOTS_TXXS	2999.59	yeg within I mile	12024.16	yez with
	routing bundle delta	4.96	yes; within 500mil	routing bundle delta	50.49	yee within 500mil	61.12	yes; within 500mil	routing bundle delta	42.00	yee within 200mit	103.13	yes with
	diff pair to pair delta	1025.70	vez within 7000mil	difficult to pair dalta	94.16	 vec within 7000mll 	991.71	vez within 7000mil	diff pair to pair delta	1022.49	▼ vec within 2000mil	1965.41	vec within

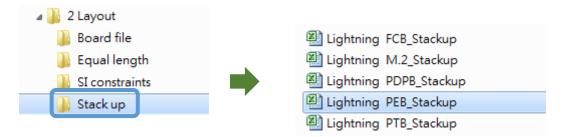
2 Layout: SI constraints and Stackup



- Lightning_FCB_SI constraints
- Lightning_M.2_SI constraints
- Lightning_PDPB_SI constraints
 Lightning_PEB_SI constraints
- Lightning_PTB_SI constraints











3 BOMs (EE & ME)



Lightning_FCB_BOM

Lightning_M.2_BOM

Lightning_PDPB_BOM

Lightning_PEB_BOM Lightning_PTB_BOM



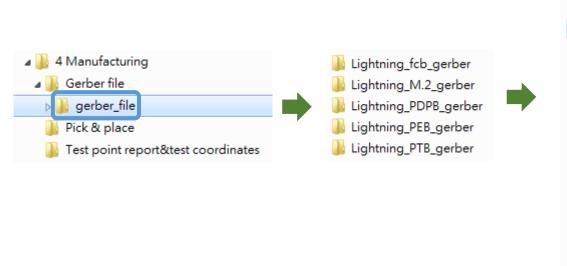
Level Parent Nur Part Numb Description Green Fact Life Cycle Manufactu Manufactu Source	BOM Usag M/P Code S/D	Qty UoM	Location
1 B55.00Q0 020.F0528 CONN CT R2_SA;HF Released FCI 91931-311 Single	Purchase SMT	1 PCS	CN11
1 B55.00Q0 062.10029 SKT SPI CR2_SA;HF Released LOTES ACA-SPI-0 Single	Purchase SMT	1 PCS	SKT4
1 B55.00Q0 064.82R05CHIP RES R2_SA;HF Released ROHM;YAMCR01M;Multiple	Purchase SMT	1 PCS	R958
1 B55.00Q0 071.07311 IC EXPAN R2_SA; HF Released MAXIM MAX7311 Single	Purchase SMT	5 PCS	U198 U199 U200 U201 U203
1 B55.00Q0 071.08536 IC PCIE G R2_SA; HF Released PMC PM8536B- Single	Purchase SMT	1 PCS	U1
1 B55.00Q0 071.90431 IC CLK G R2_SA; HF Released IDT 9FGV0431 Single	Purchase SMT	1 PCS	U196
1 B55.00Q0 072.02464 IC EEPRM R2_SA;HF Obsoleted MICROCF 24LC64-I/ Single	Purchase SMT	1 PCS	U16
1 B55.00Q0 072.42164 IC SDRAN R2_SA; HF Released SAMSUN(K4B2G164 Single	Purchase SMT	1 PCS	U18
1 B55.00Q0 074.01278 IC SWAP (R2_SA;HF Released ADI ADM1278 Single	Purchase SMT	1 PCS	U2
1 B55.00Q0 074.06315 IC RESET R2_SA;HF Released ANALOG ADM6315 Single	Purchase SMT	1 PCS	U82
1 B55.00Q0 074.06654 IC TEMP R2_SA;HF Released MAXIM MAX6654 Single	Purchase SMT	1 PCS	U4
1 B55.00Q0 074.53355 IC PWM CR2_SA;HF Released TI TPS53355 Single	Purchase SMT	2 PCS	PU1 PU3
1 B55.00Q0 074.74801 IC LDO TIR2_SA;HF Released TI TPS74801 Single	Purchase SMT	3 PCS	PU4 PU5 PU6
1 B55.00Q0 077.51571 CHIP CAP R2_SA; HF Released PANASON EEJRX0J1 Single	Purchase SMT	2 PCS	PTC38 TC17
1 B55.00Q0 078.10421 CHIP CAP R2_SA; HF Released MURATA GRM033C Single	Purchase SMT	169 PCS	C27 C28 C29 C30 C31 C32 C33 C34 C35 C36 C37 C38 C39 C40 C428 C42
1 B55.00Q0 078.1071T CHIP CAP R2_SA; HF Released MURATA; GRM21B(Multiple	Purchase SMT	6 PCS	C454 C455 C456 C459 C494 C495
1 B55.00Q0 078.22611 CHIP CAP R2_SA; HF Released MURATA; GRM21BC Multiple	Purchase SMT	2 PCS	PC66 PC68
1 B55.00Q0 078.22622 CHIP CAP R2_SA; HF Released MURATA GRM31C0 Single	Purchase SMT	16 PCS	PC196 PC199 PC201 PC210 PC211 PC213 PC214 PC215 PC216 PC217 PC2
1 B55.00Q0 078.47522 CHIP CAP R2_SA; HF Obsoleted DARFON; I C2012X7F Multiple	Purchase SMT	4 PCS	PC184 PC212 PC26 PC72
1 B55.00Q0 082.30003 XTAL 32.7R2_SA;HFReleased KDS 1TJF125D Single	Purchase SMT	1 PCS	X2
1 B55.00Q0 082.30005 XTAL 25N R2_SA; HF Released HARMON X3S02500 Single	Purchase SMT	1 PCS	X3





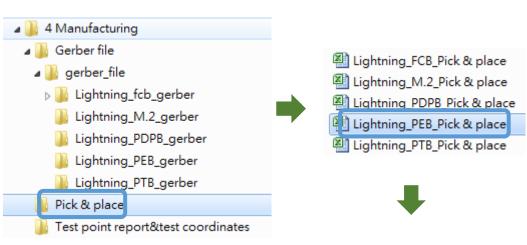
		Main housing	Old Part Number							
v	1	B60.00Q15.0001		ASSY MAIN HOUSING FOR LIGHTNING PVT		1	Priver			А
v	2	60.64W04.001		ASSY TOP COVER HU230		1	Priver			М
	3			CVR TOP COVER HU230		1	Priver	SGCC (T=1.0mm)		М
	3			26-411-201-5		2	Fivetech	Hardened carbon steel	PENTON 376C	sc
	3			SO_D4_L4		10	Priver			SO
	3			TOP_COVER_PIN	A	1	Priver			SO
v	2	60.64W05.001		ASSY LOWER CASE HU230		1	Priver			A
v	3	30.64W01.001		CAS LOWER CASE HUZ30		i	Priver	SGCC (T=1.6mm)		М
	4			SO-M3-L12.18MM-GUIDE	Ů.	2	Priver			SO

4 Manufacture Files: Gerber

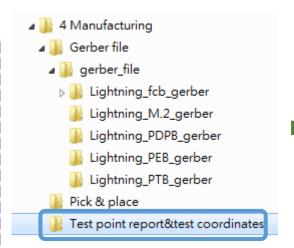


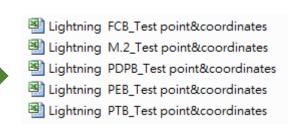
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15105-1.rou
15105-1_X_Y.art
15105-1-1-8.drl
15105-1-valor
art_param
BMASK.art
BSILK.art
BSMD.art
DP_REF_L1.art
DP_REF_L3.art
DP_REF_L6.art
DP_REF_L8.art
DRILL.art
GOLD_B.art
GOLD_T.art
L1.art
L2GND.art
L3.art
L4VCC.art
L5VCC.art
L6.art
L7GND.art
L8.art
ncdrill
mg

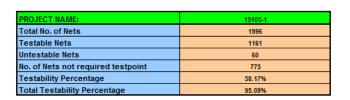
4 Manufacture Files: Pick & Place / Test point report



15105-1.	1116WPH	0457.brd						
Date Tue	Mar 07 1	1:50:07 2	017					
Total Co	mponents:	_2560						
			Соп	ponent Re	eport			
REFDES	COMP_ DEVICE _TYPE	COMP_ VALUE	COMP_ TOL	COMP_ PACKA GE	SYM_X	SYM_Y	SYM_R OTATE	SYM_M IRROR
BAT1	AAA-BAT	AAA-BAT	0007.0091	AAA-BAT	4732.31	2552.45	270	NO
C1	C402H22	SCD22U1	78.22423.5	C402H22	10785	500	90	NO
C2	C402H22	SCD22U1	78.22423.5	C402H22	10785	535	90	NO
C4	C402H22	SCD1U16	78.10421.2	C402H22	8960	45	180	NO
C6	C402H22	SCD22U1	78.22423.5	C402H22	10785	605	90	NO
C7	C402H22	SCD22U1	78.22423.5	C402H22	10785	570	90	NO
C8	C402H22	SCD22U1	78.22423.5	C402H22	11279	1333	90	NO
C9	C402H22	SCD22U1	78.22423.5	C402H22	11279	1298	90	NO
C10	C402H22	SCD22U1	78.22423.5	C402H22	11385	1320	0	NO
C11	C402H22	SCD22U1	78.22423.5	C402H22	11420	1320	0	NO
C12	C402H22	SCD22U1	78.22423.5	C402H22	11579.07	1326.54	0	NO
C13	C402H22	SCD22U1	78.22423.5	C402H22	11614.07	1326.54	0	NO

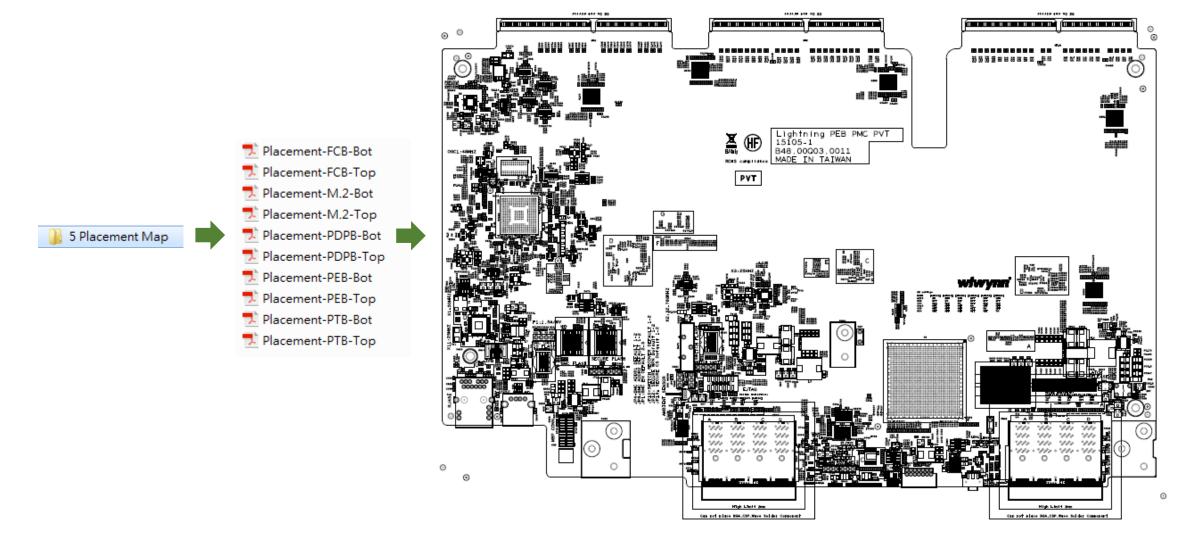






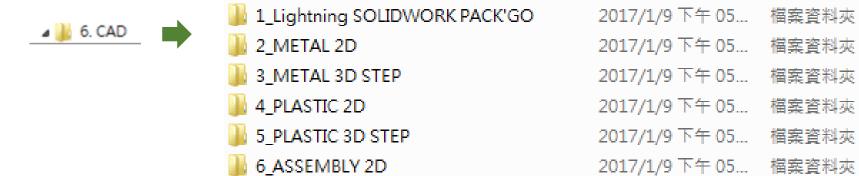
NETS NOT REQUIRED TO HAVE TESTPOINT				
CLK GEN AREA	Comment	NC PINS	Comment	HI-SPEED
50M_CLK_OUT		MB0_CM_SENSE_R1_P		8644_USB_DN1
OM_CLK_OUT_R		MB0_CM_SENSE_R1_N		8644_USB_DN2
CLK_N_2		MB0_CM_SENSE_P		8644_USB_DN3
CLK_N_4		MB0_CM_SENSE_N		8644_USB_DN4
CLK_N_6		ADM1278_HS_N		8644_USB_DN6
CLK_N_8		ADM1278_HS_P		8644_USB_DN7
CLK_P_2		P5V_STBY_FB		8644_USB_DN8
CLK_P_4		VR_P1V538_STBY_FB		8644_USB_DP1
LK_P_6		VR_P1V26_STBY_FB		8644_USB_DP2
LK_P_8		VR_P1V8_STBY_FB		8644_USB_DP3
CLKGEN_N1_R		P3V3_STBY_VBST		8644_USB_DP4
CLKGEN_N2_R		P3V3_STBY_VBST_RC		8644_USB_DP6
CLKGEN N3 R		P3V3 STBY LL		8644 USB DP7

5 Placement Map



6 ME CAD(2D & 3D files)

7 OUT PURCHASE 2D



2017/1/9 下午 05... 檔案資料夾

