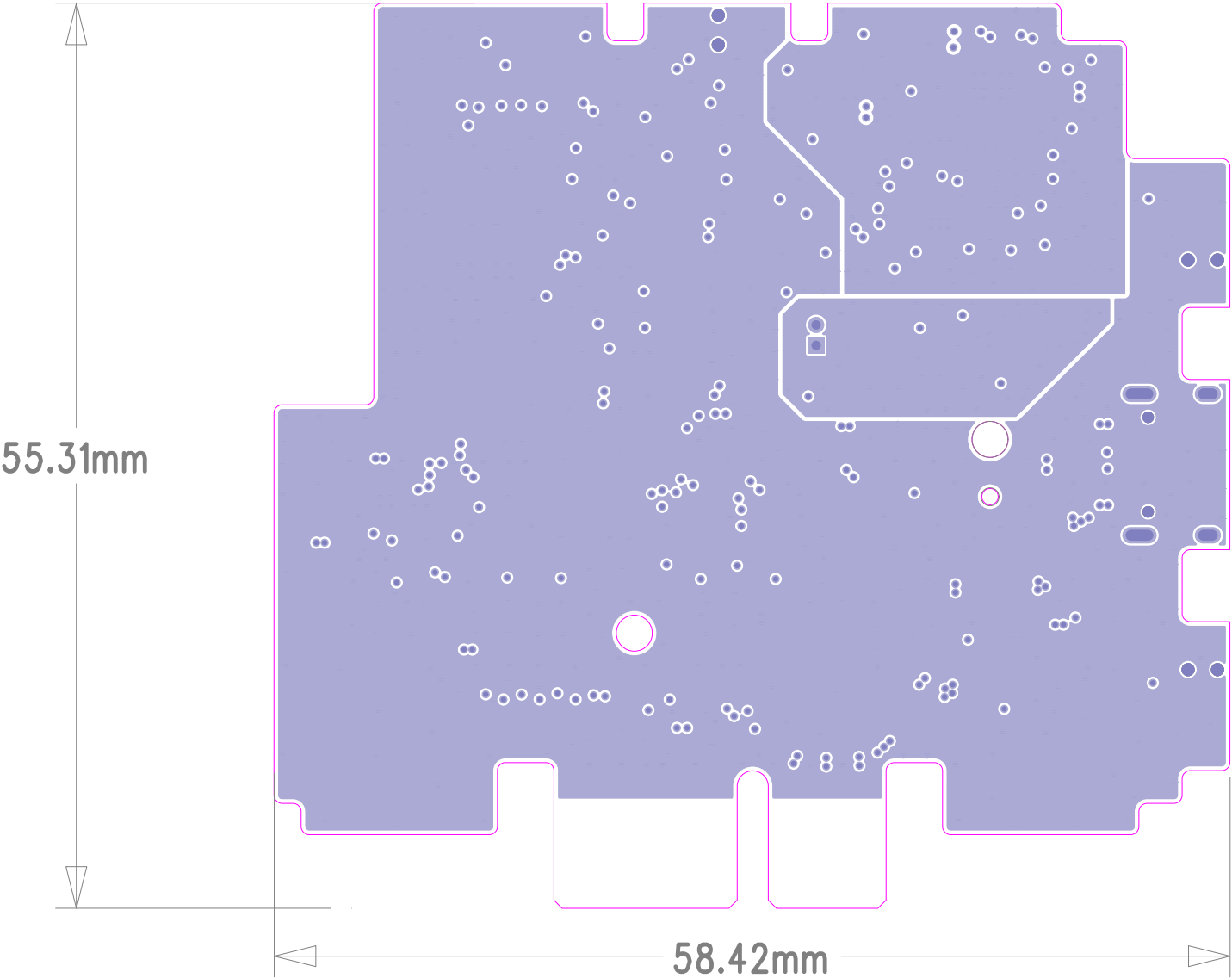


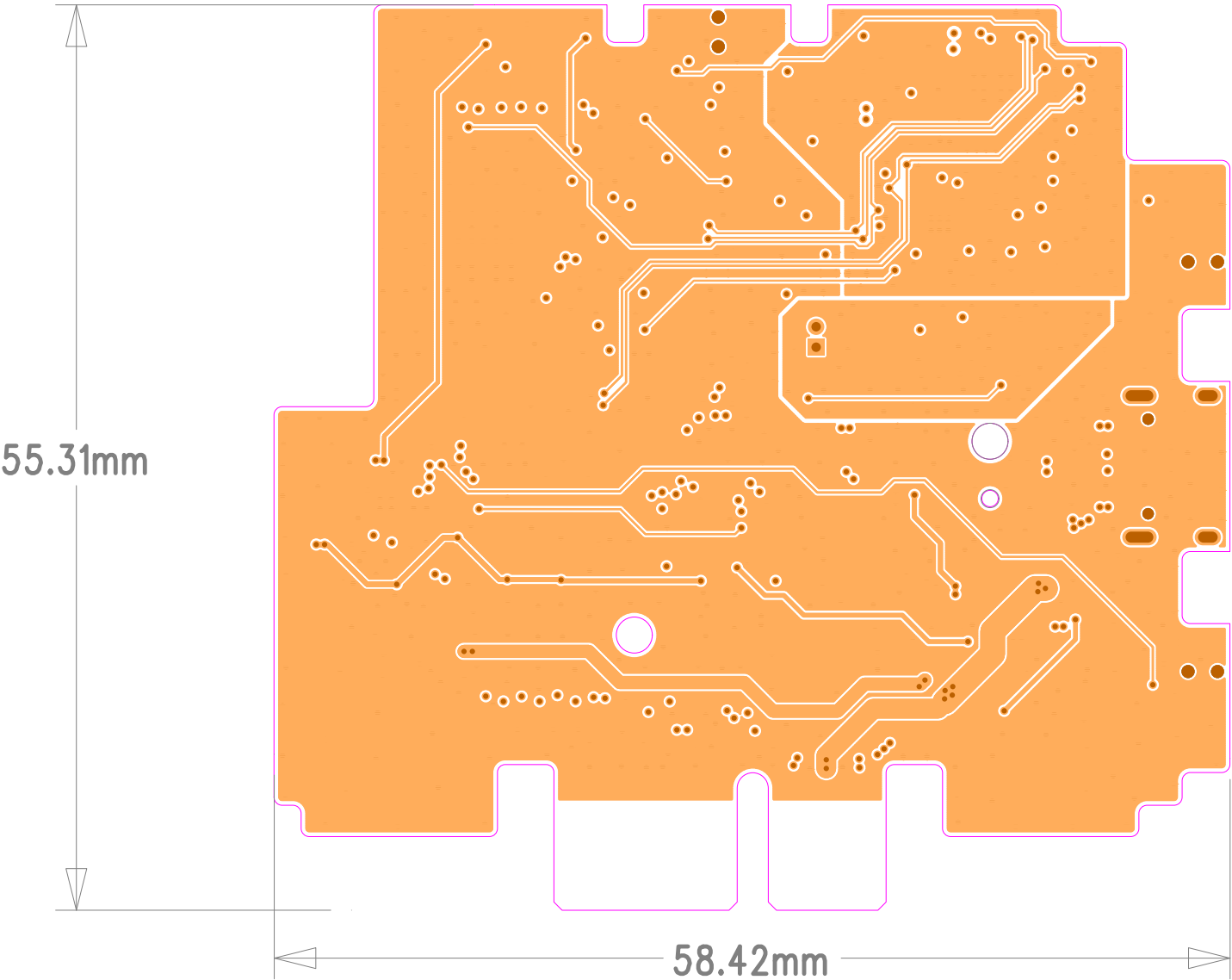
ESPRESSIF SYSTEMS				
乐鑫信息科技（上海）股份有限公司				
Title	ESP32-S3-BOX-3-MB			
Task	HWD-61		Rev	1.0
Date	Thu, Jun 29, 2023	Proprietary		
Thickness	Impedance	Width	Separation	Gap
1.6 mm	90 ohm	8 mil	6 mil	6 mil

Stack up	Material	Base copper (oz.)	Thickness (mil)	DK
CM			0.4	4
L1, Top	Finished Copper 1 OZ	0.33	0.6	
L2, Prepreg	7628 TG150 RC50%		8.22	4.6
L3, Core	Core	1	1.2	
L3, Prepreg	Prepreg	1	Adjustable	4.6
L4, Copper	7628 TG150 RC50%		1.2	
L5, Bottom	7628 TG150 RC50%		8.22	4.6
BM	Finished Copper 1 OZ	0.33	0.6	
SM			0.4	4



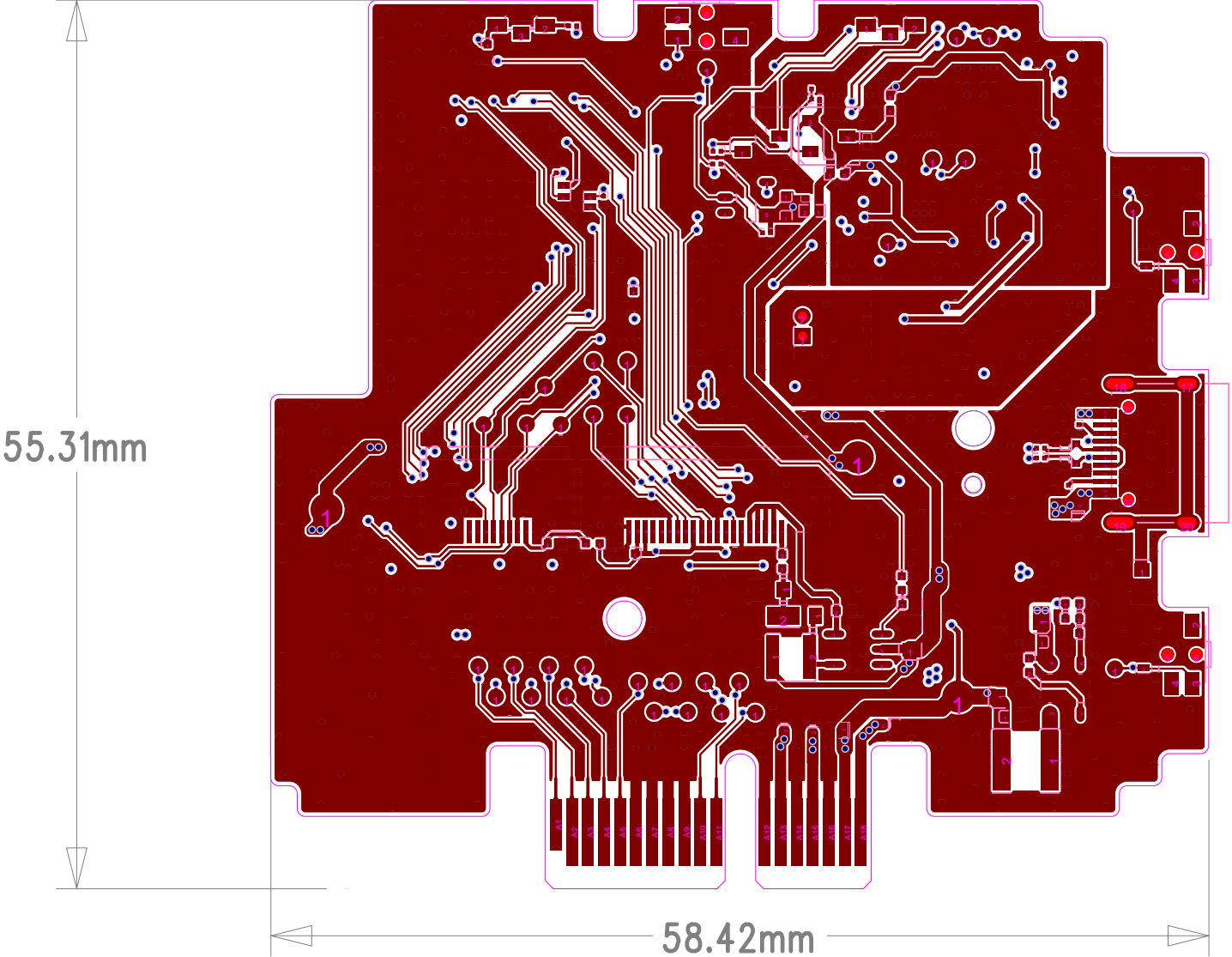
ESPRESSIF SYSTEMS					
乐鑫信息科技（上海）股份有限公司					
Title	ESP32-S3-BOX-3-MB				Rev 1.0
Task	HWD-61				Rev 1.0
Date	Thu, Jun 29, 2023				Proprietary
Thickness	Impedance	Width	Separation	Gap	
1.6 mm	90 ohm	8 mil	6 mil	6 mil	

Stack up	Material	Base copper (oz.)	Thickness (mil)	DK
CM			0.4	4
L1 Top	Finished Copper 1 OZ	0.33	0.8	
L1 Prepreg	N208 TG150 RC50%		8.22	4.6
L1 Core		1	1.2	
L1 Prepreg			Adjustable	4.6
L2 Prepreg		1	1.2	
L2 Core	N208 TG150 RC50%		8.22	4.6
L2 Prepreg		0.33	0.8	
SM	Finished Copper 1 OZ		0.4	4



ESPRESSIF SYSTEMS					
乐鑫信息科技（上海）股份有限公司					
Title	ESP32-S3-BOX-3-MB				Rev 1.0
Task	HWD-61				Rev 1.0
Date	Thu, Jun 29, 2023				Proprietary
Thickness	Impedance	Width	Separation	Gap	
1.6 mm	90 ohm	8 mil	6 mil	6 mil	

Stack up	Material	Base copper (oz.)	Thickness (mil)	DK
CM			0.4	4
L1 Top	Finished Copper 1 OZ	0.33	0.8	
L2 Prepreg	7028 TG150 RC50%		8.22	4.6
L3 Core		1	1.2	
L4 Prepreg		1	1.2	
L5 Core			Adjustable	4.6
L6 Prepreg	7028 TG150 RC50%		8.22	4.6
L7 Bottom	Finished Copper 1 OZ	0.33	0.8	
SM			0.4	4



ESPRESSIF SYSTEMS				
乐鑫信息科技（上海）股份有限公司				
Title ESP32-S3-BOX-3-MB				
Task	HWD-61	Rev	1.0	
Date	Thu Jun 29, 2023	Proprietary		
Thickness	Impedance	Width	Separation	Gap
1.6 mm	90 ohm	8 mil	6 mil	6 mil

Stack up	Material	Base copper (OZ)	Thickness (mil)	OK
GM			0.4	4
L1 Top	Frosted Copper 1 OZ	0.33	0.8	
L2 In1	7628 T0150 RC60%	1	9.22	4.6
L2 In2		1	1.2	
L3 Core			Adjustable	4.6
L3 Prepreg		1	1.2	
L4 Bottom	7628 T0150 RC60%	1	9.22	4.6
SM	Frosted Copper 1 OZ	0.33	0.8	
			0.4	4

55.31mm

58.42mm

ESPRESSIF SYSTEMS					
乐鑫信息科技（上海）股份有限公司					
Title ESP32-S3-BOX-3-MB					
Task	HWD-61		Rev	1.0	
Date	Thu, Jun 29, 2023		Proprietary		
Thickness	Impedance	Width	Separation	Gap	
1.6 mm	90 ohm	8 mil	6 mil	6 mil	

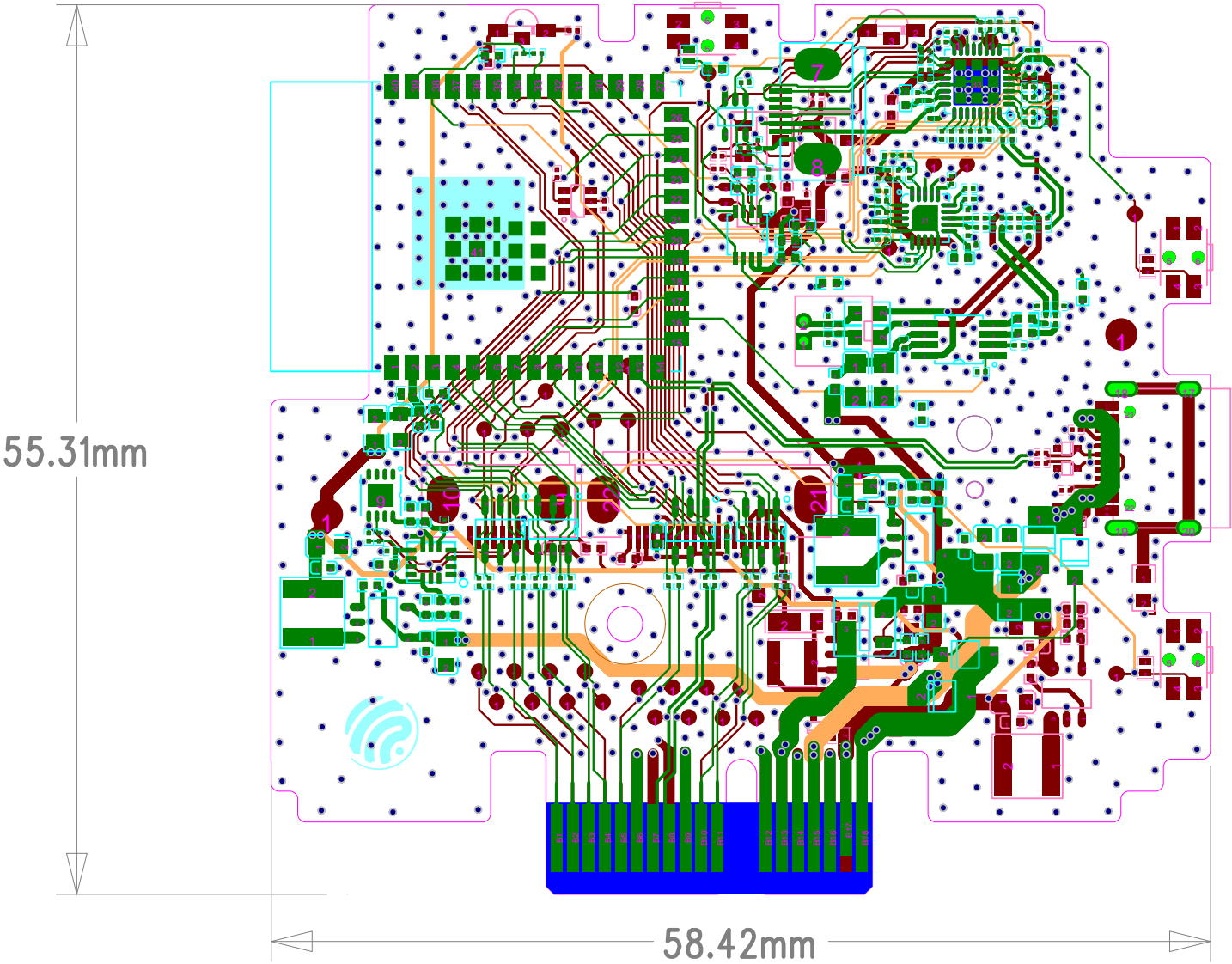
Stack up	Material	Base copper (OZ)	Thickness (mil)	DK
CM			0.4	4
L1 Top	Finished Copper 1 OZ	0.33	0.6	
Prepreg	7628 TG150 RC50%		8.22	4.6
Core		1	1.2	
L3 Power			Adjustable	4.6
Prepreg	7628 TG150 RC50%		1.2	
Prepreg			8.22	4.6
L4 Bottom	Finished Copper 1 OZ	0.33	0.6	
SM			0.4	4

55.31mm

58.42mm

ESPRESSIF SYSTEMS				
乐鑫信息科技（上海）股份有限公司				
Title	ESP32-S3-BOX-3-MB			
Task	HWD-61	Rev	1.0	
Date	Thu Jun 29, 2023	Proprietary		
Thickness	Impedance	Width	Separation	Gap
1.6 mm	90 ohm	8 mil	6 mil	6 mil

Stack up	Material	Base copper (OZ)	Thickness (mil)	DK
CM			0.4	4
1.1 Top	FR408 TQ150 RC30%	0.33	0.8	
1.2 Gold		1	1.2	
1.3 Prepreg	CORE		Adjustable	4.6
1.4 Prepreg	FR408 TQ150 RC30%	1	1.2	
1.4 Bottom	FR408 TQ150 RC30%	0.33	0.8	
BM	FR408 TQ150 RC30%	0.4	0.4	4



ESPRESSIF SYSTEMS				
乐鑫信息科技（上海）股份有限公司				
Title	ESP32-S3-BOX-3-MB	Rev	1.0	
Task	HWD-61			
Date	Thu Jun 29, 2023	Proprietary		
Thickness	Impedance	Width	Separation	Gap
1.6 mm	90 ohm	8 mil	6 mil	6 mil

Stack up	Material	Base copper (oz)	Thickness (mil)	OK
CM			0.4	4
L1 Pre	FR408 TG150 RC20%	0.35	0.8	
L2 Gnd		1	1.2	4.6
L3 Pre			Adjustable	4.6
L4 Bottom	FR408 TG150 RC20%	1	1.2	
SM	FR408 TG150 RC20%	0.35	0.8	4.6
	FR408 TG150 RC20%	0.35	0.8	4