

BYAI Connections
BYAI Connections V2.SchDoc

I2C1_SCL
I2C1_SDA
GPIO25
PWM0
GPIO23
GPIO5

PCM_DIN
PCM_DOUT
PCM_CLK
PCM_FS
GPIO_26

GPIO4
GPIO6

UART-TXD
UART-RXD

SPIO-MOSI
SPIO-CLK
GPIO27
GPIO22
PWM1
SPIO-CE0

GPIO24
GPIO16
GPIO17

SPIO-MISO
SPIO-CE1

U_AtoD
AtoD.SchDoc

I2C1_SCL
I2C1_SDA

AIN1
AIN0
AIN2

U_HAT IO V2
HAT IO V2.SchDoc

JOY_X
JOY_Y
LED_REC

LED
IR_Emitter
LED_LS_CTRL
JOY_SW

U_HAT Audio V2
HAT Audio V2.SchDoc

I2C1_SCL
I2C1_SDA

AUD_DIN
AUD_DOUT
AUD_BCLK
AUD_WCLK
AUD_RST

U_HAT IO EXP V2
HAT IO EXP V2.SchDoc

GPIO4
GPIO6

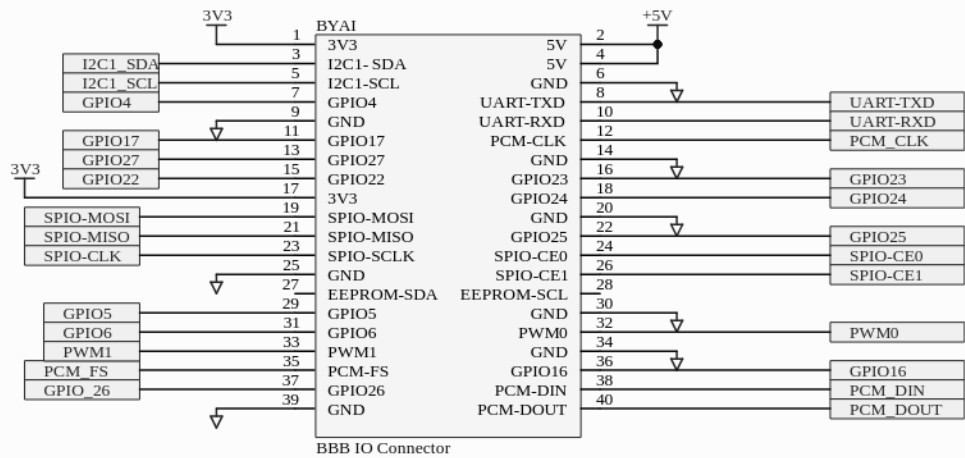
TX
RX

MOSI
SCLK
LCD_DC
LCD_RST
LCD_BL
LCD_CS

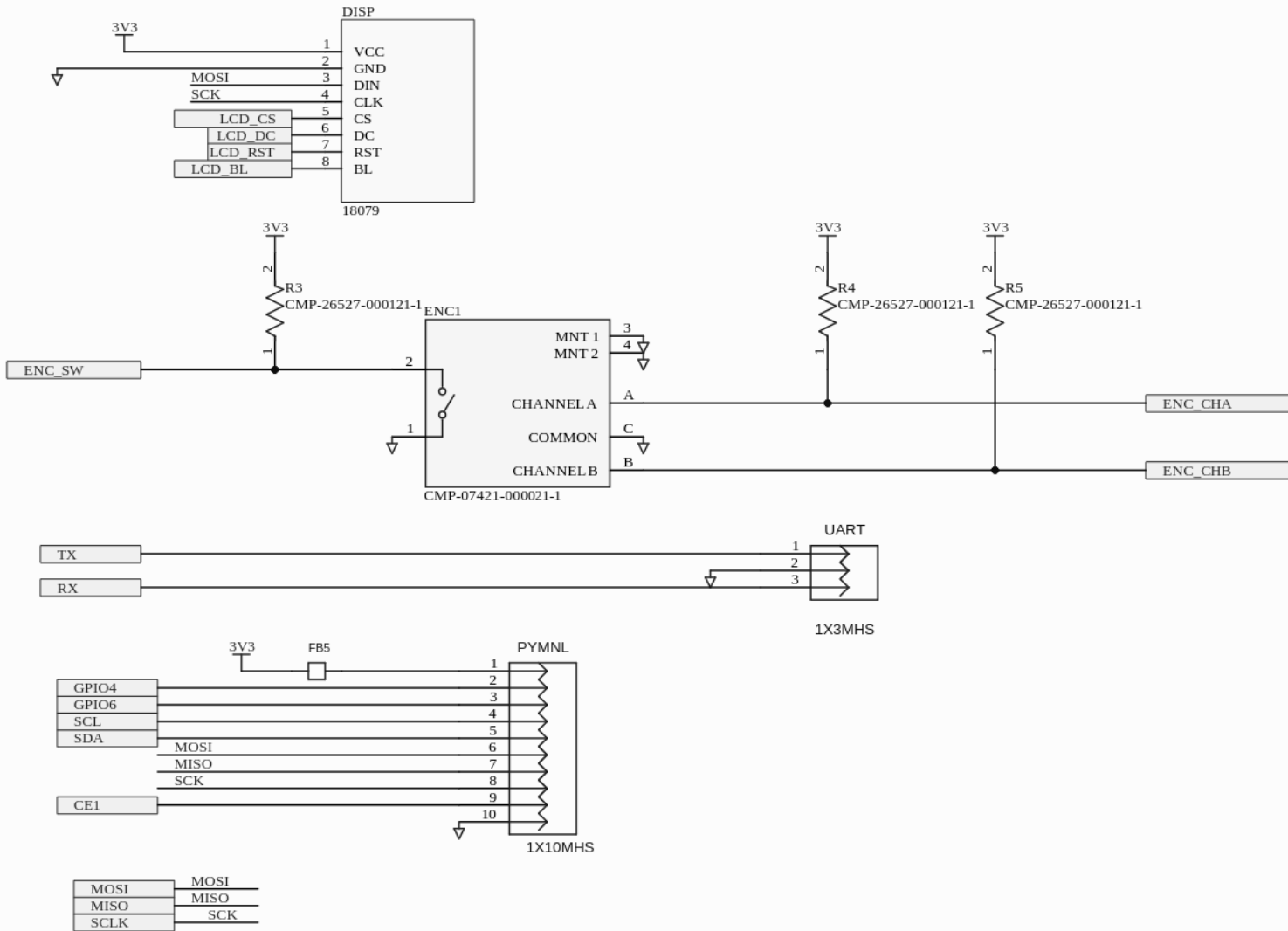
ENC_SW
ENC_CHA
ENC_CHB
SCL
SDA

MISO
CE1

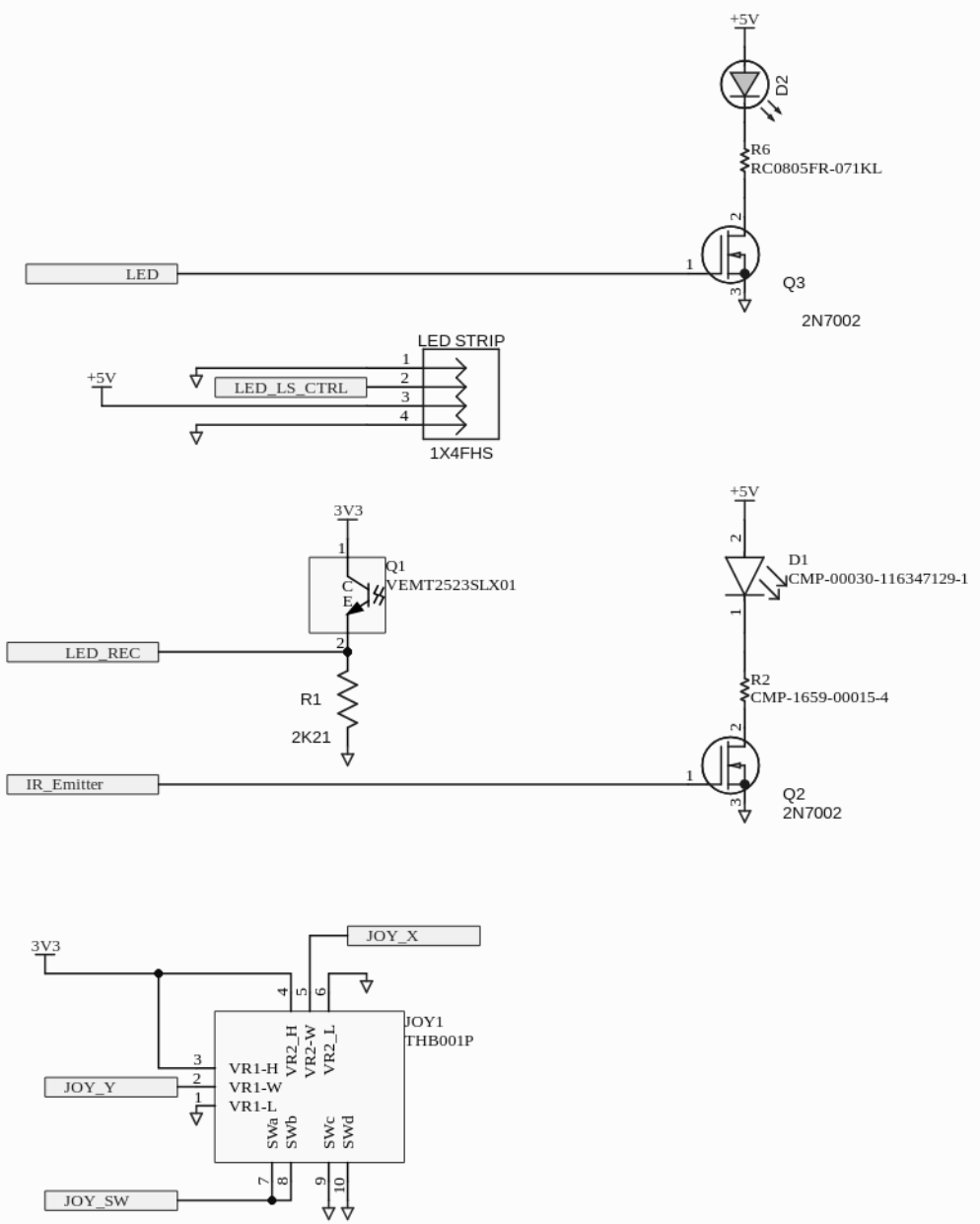
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HIGH LEVEL			
Size	Number		Revision
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Date:	12-20-2024		Sheet of 5
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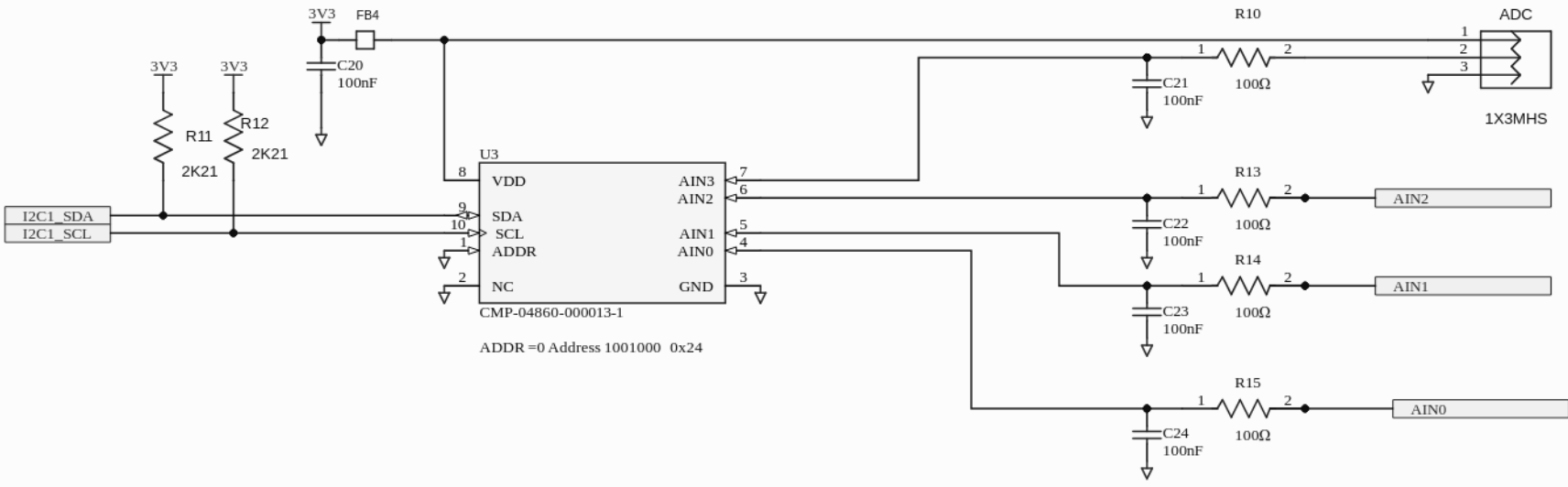
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BYAI CONNECTIONS		
Size	Number	Revision
Letter	DFM ZEN HAT	2.2
Date:	12-20-2024	Sheet 2 of 5
File:	Z:\DFM\..BYAI Connections V2.SchDoc	Drawn By: DFM



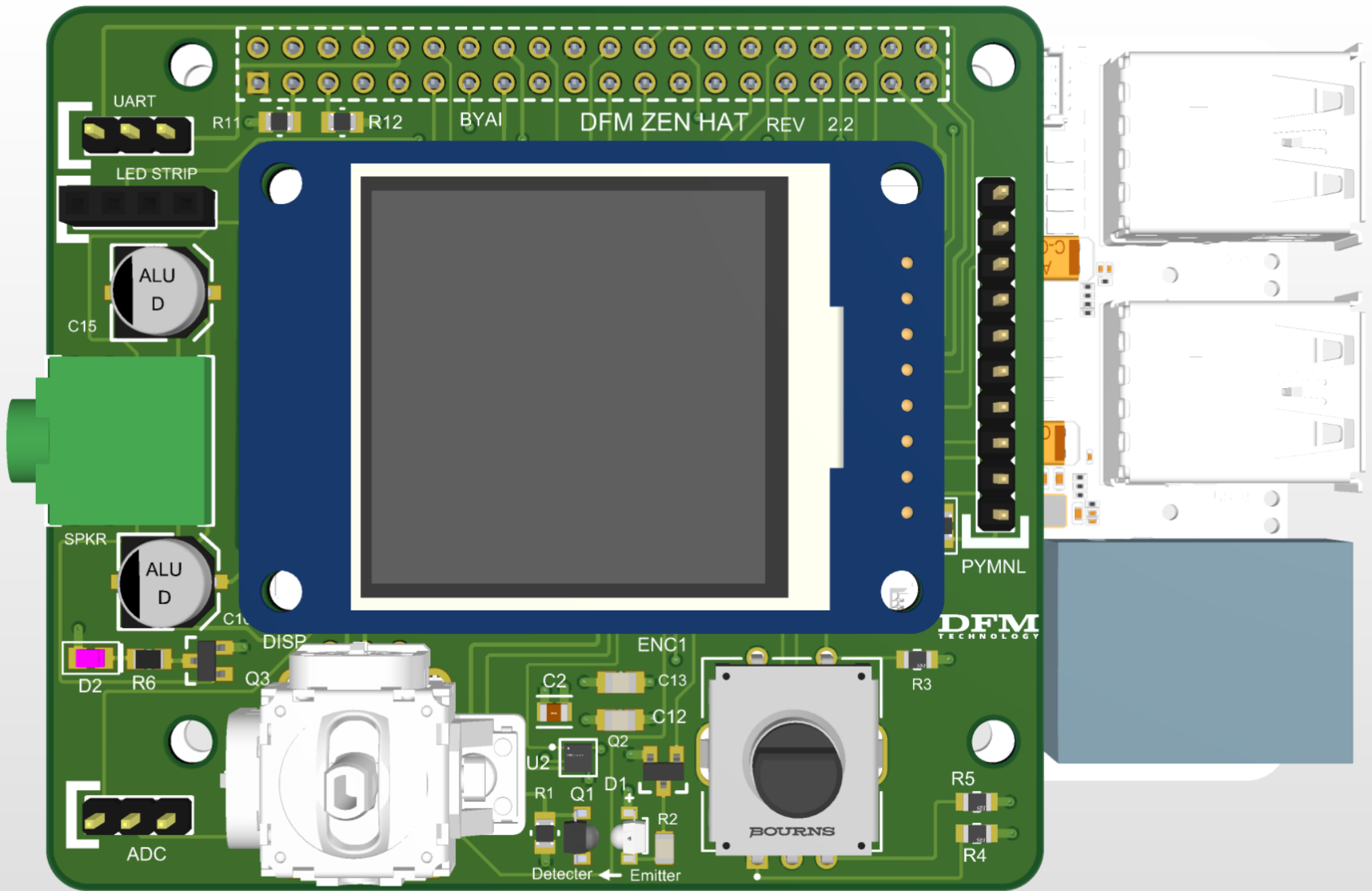
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Expansion IO		
Size	Number	Revision
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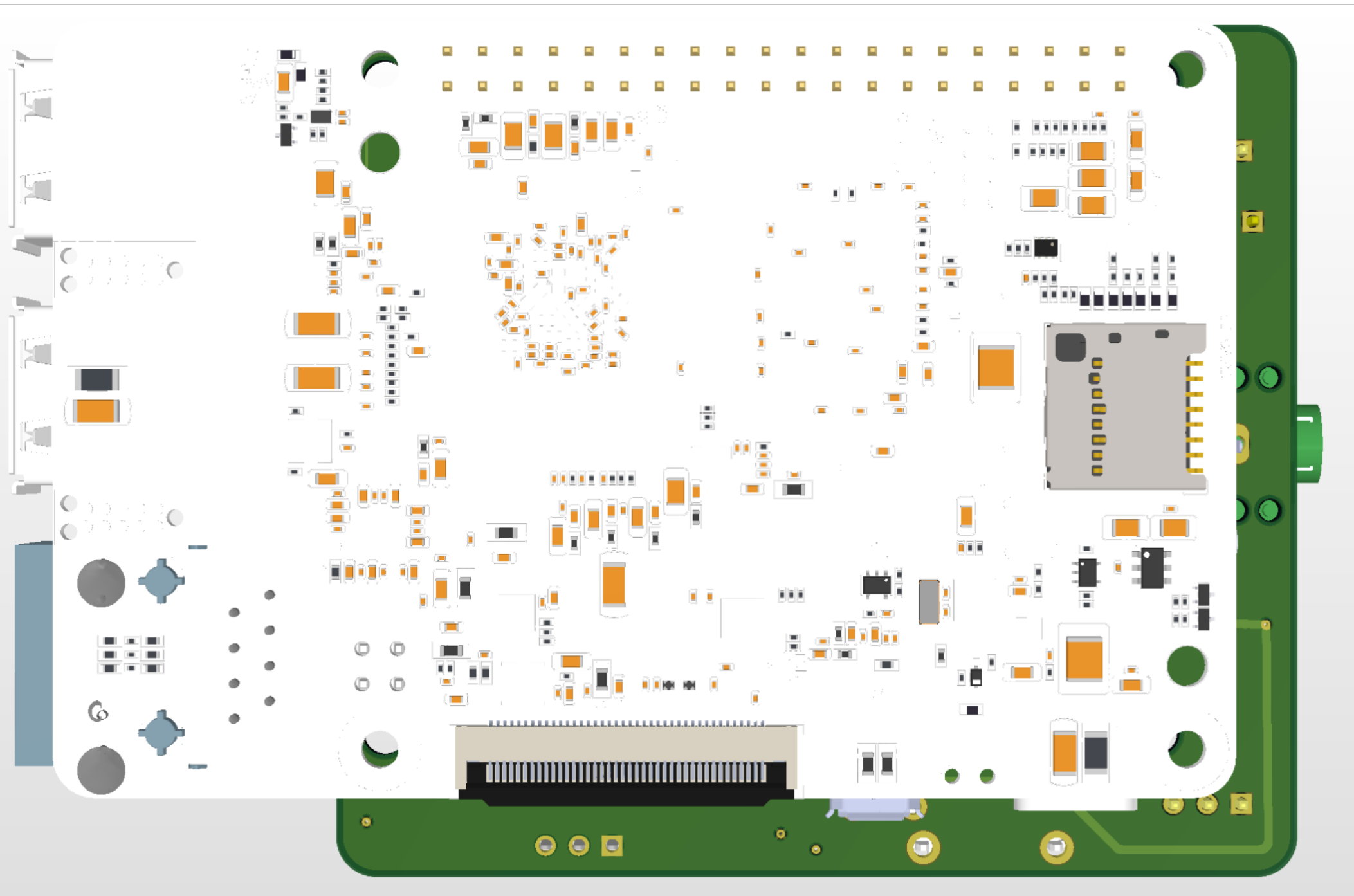


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MISC IO		
Size	Number	Revision
Letter	DFM ZEN HAT	2.2
Date:	12-20-2024	Sheet 4 of 5
File:	Z:\DFM\..HAT IO V2.SchDoc	Drawn By: DFM



Title		
Size	Number	Revision
Letter		
Date:	12-20-2024	Sheet of
File:	Z:\DFM\...\AtoD.SchDoc	Drawn By:

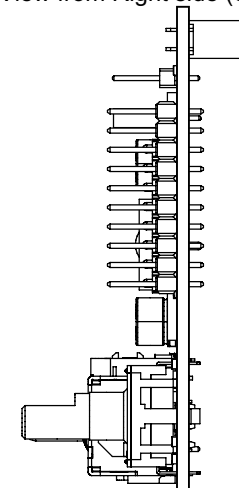
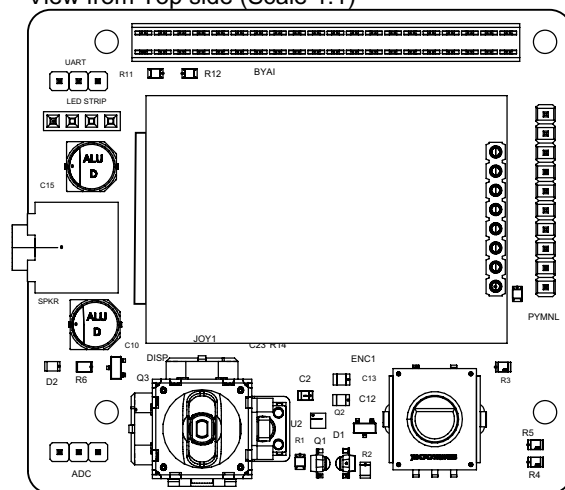
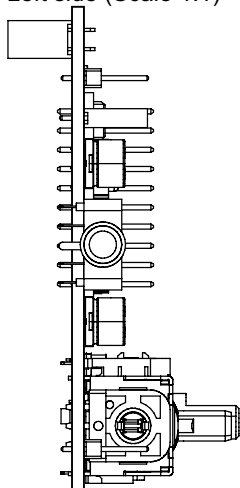




F

1

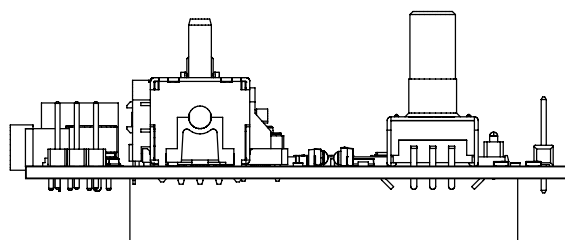
View from Right side (Scale 1:1)



2

3

View from Front side (Scale 1:1)



4

F

A

B

C

D

E

F

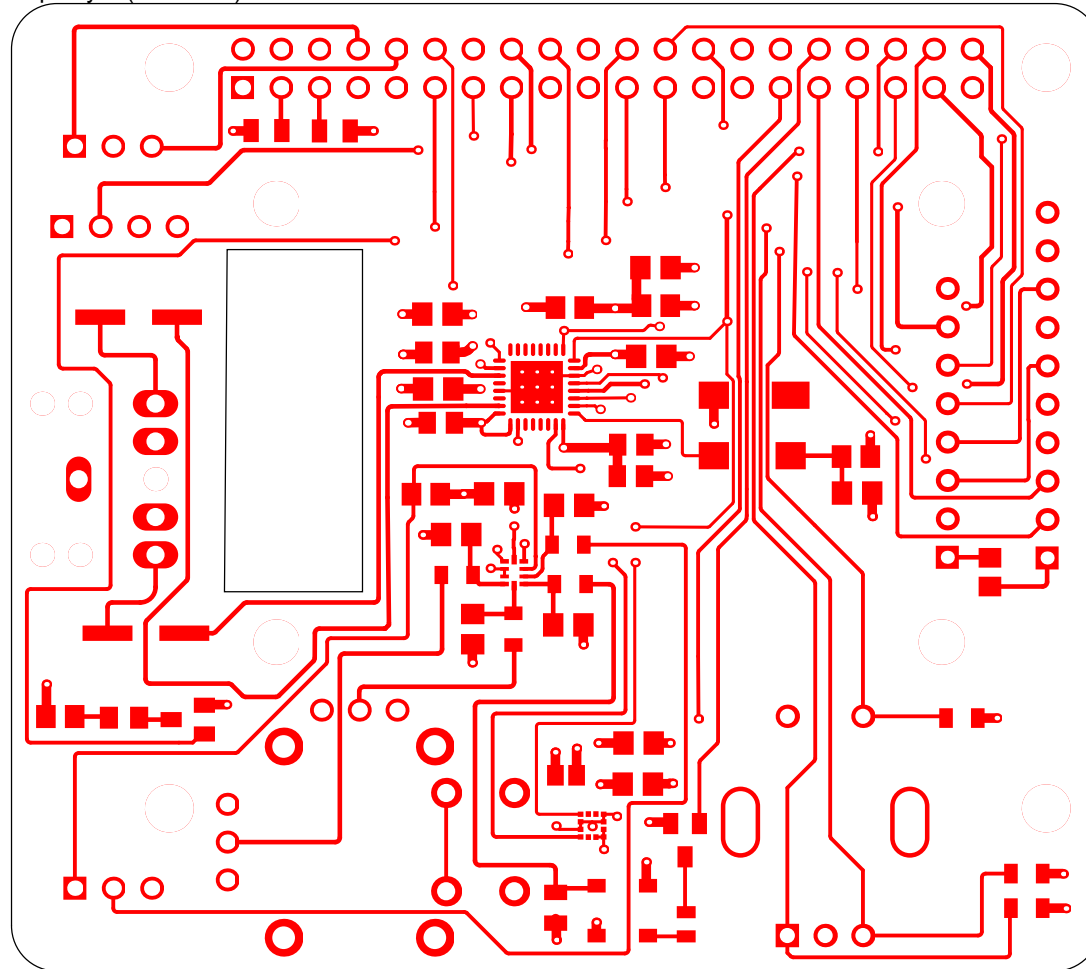
1

2

3

4

Top Layer (Scale 2:1)



1

2

3

4

A

B

C

D

E

F

A

B

C

D

E

F

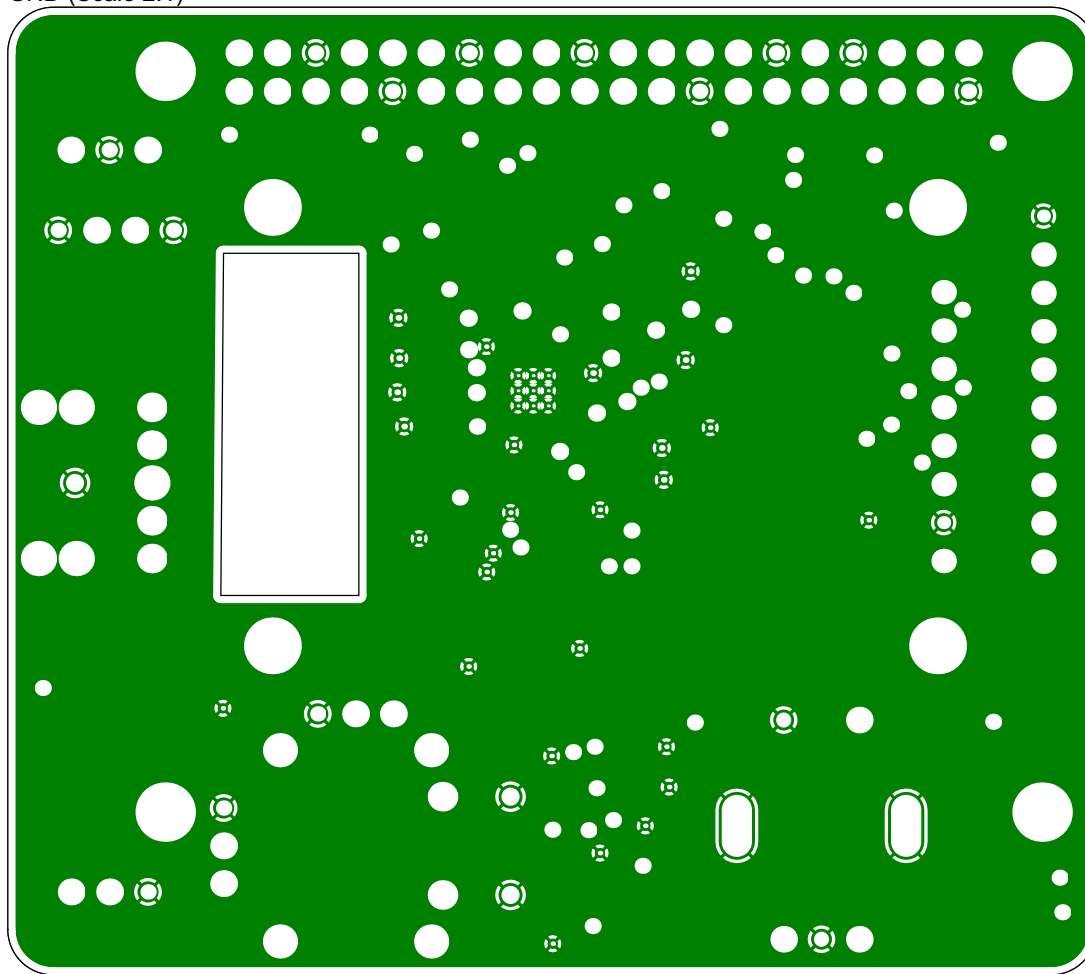
1

2

3

4

GND (Scale 2:1)



1

2

3

4

A

B

C

D

E

F

A

B

C

D

E

F

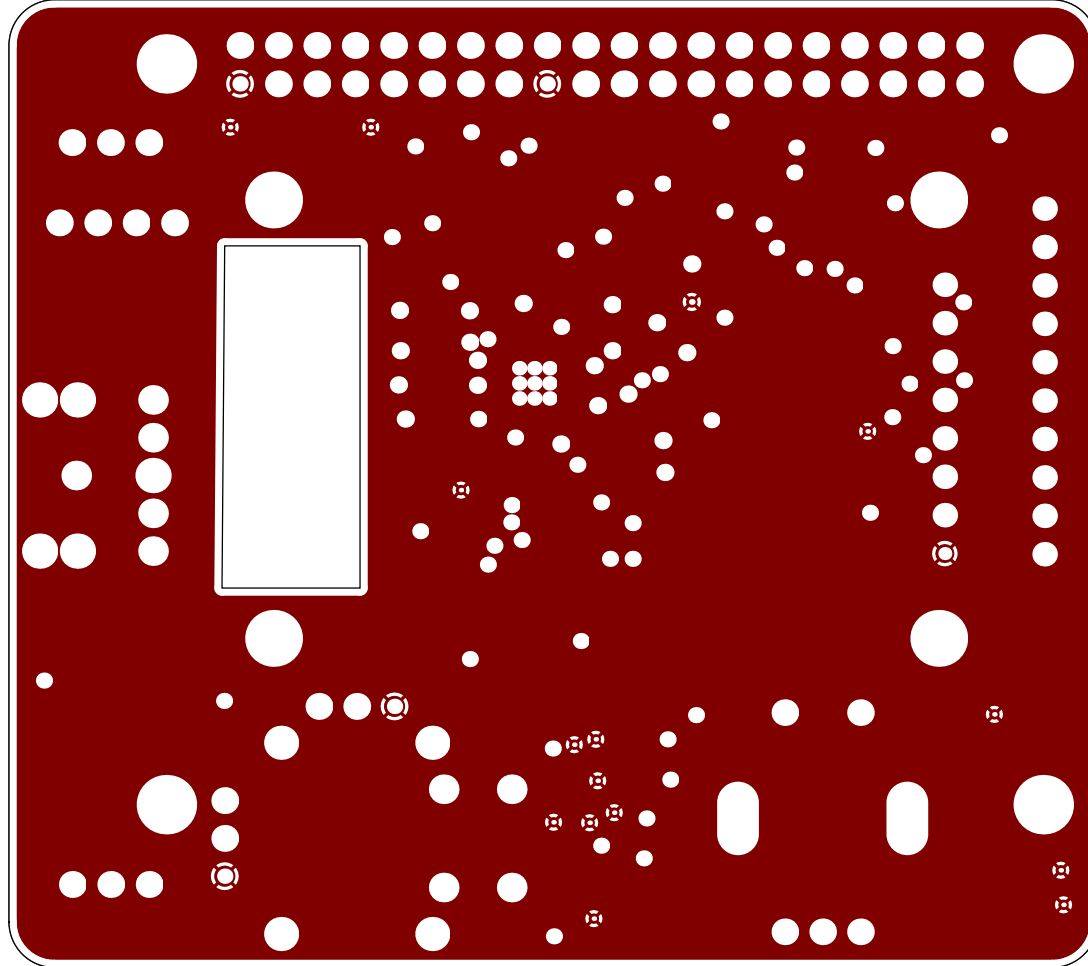
1

2

3

4

PWR (Scale 2:1)



1

2

3

4

A

B

C

D

E

F

A

B

C

D

E

F

1

1

2

2

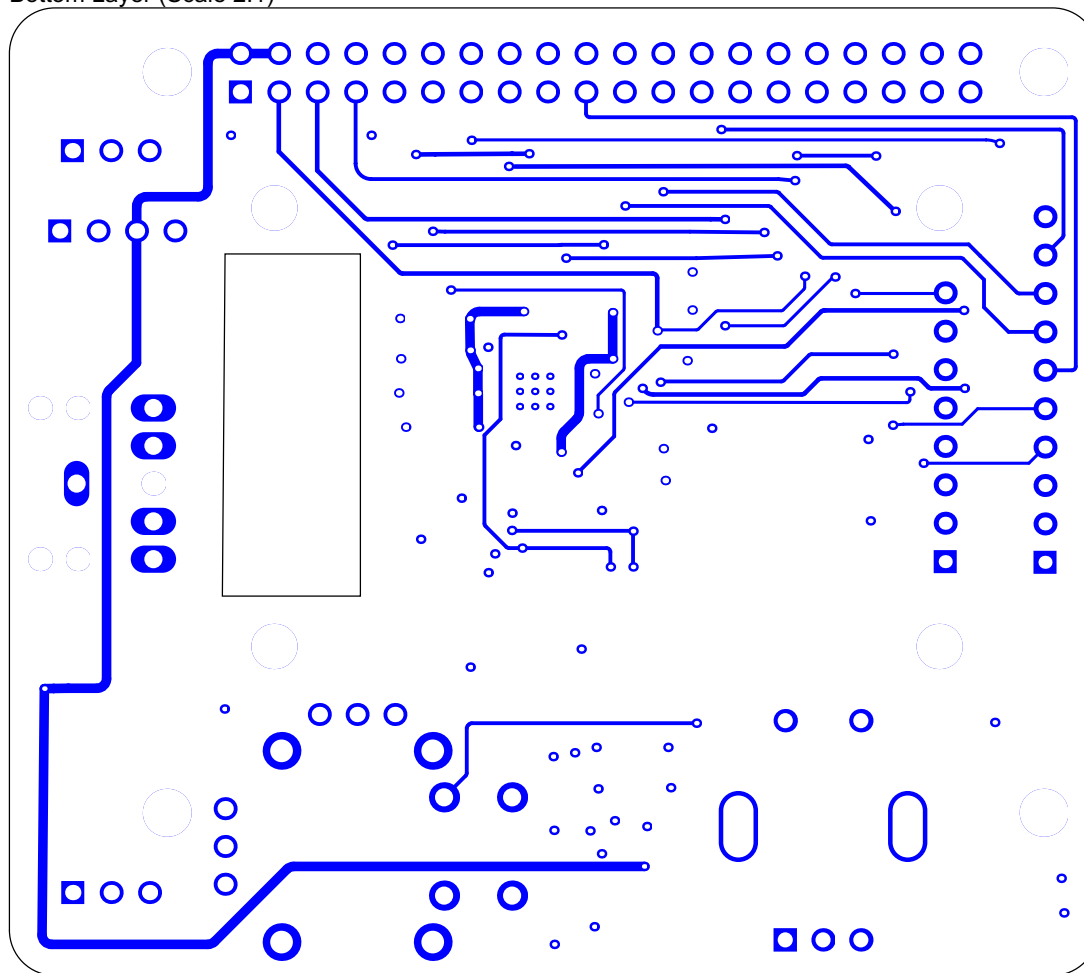
3

3

4

4

Bottom Layer (Scale 2:1)



A

B

C

D

E

F

1

1

2

2

3

3

4

4

Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
	Surface Material	0.03mm	SM-003	Solder Mask	GTS
CF-004	Top Layer	0.04mm		Signal	GTL
Prepreg		0.13mm	PP-017	Dielectric	
CF-004	GND	0.04mm		Internal Plane	GP1
Core		1.13mm	Core-044	Dielectric	
CF-004	PWR	0.04mm		Internal Plane	GP2
Prepreg		0.13mm	PP-017	Dielectric	
CF-004	Bottom Layer	0.04mm		Signal	GBL
Surface Material	Bottom Solder	0.03mm	SM-003	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
Total thickness: 1.58mm					

A

B

C

D

E

F

1

1

Bill Of Materials

Quantity	Supplier Part Number 1	Designator	Manufacturer Part Number 1
12	1276-1099-1-ND	C1, C4, C6, C8, C11, C12, C13, C20, C21, C22, C23, C24	CL21B104KACNNNC
5	587-1766-1-ND	FB1, FB2, FB3, FB4, FB5	FBMJ2125HM330-T
4	YAG3689CT-ND	R10, R13, R14, R15	AC0805FR-07100RL
4	1276-CL21B106KPQNNWECT-ND	C3, C5, C7, C9	CL21B106KPQNNWE
3	311-10KLGCT-ND	R3, R4, R5	AC0805FR-0710KL
3	311-2.21KCRCT-ND	R1, R11, R12	RC0805FR-072K21L
2	2N7002H6327XTSA2DKR-ND	Q2, Q3	2N7002H6327XTSA2
2	PCE3880CT-ND	C10, C15	EEE-1CA101WP
2	2057-PH1-03-UA-ND	ADC, UART	PH1-03-UA
1	ED8197-08-ND	DISP	821-22-008-10-000101
1	754-2044-1-ND	D2	APTD2012LSURCK
1	535-9309-1-ND	Y1	ASV-12.000MHZ-E-J-T
1	1276-CL21B106KPQNNWECT-ND	C2	CL21B106KPQNNWE
1	497-18226-1-ND	U2	IIS2DLPCTR
1	PEC12R-4220F-S0024-ND	ENC1	PEC12R-4220F-S0024
1	2057-PH1-10-UA-ND	PYMNL	PH1-10-UA
1	S7037-ND	LED STRIP	PPPC041LFBN-RC
1	S7123-ND	BYAI	PPPC202LFBN-RC
1	311-1.00KCRCT-ND	R6	RC0805FR-071KL
1	311-33.0CRCT-ND	R2	RC0805FR-0733RL
1	CP1-3525NG-GR-ND	SPKR	SJ1-3525NG-GR
1	108-THB001P-ND	JOY1	THB001P
1	296-51661-1-ND	U3	TLA2024IRUGR
1	296-26818-1-ND	U1	TLV320AIC3104IRHBR
1	VENT2523SLX01DKR-ND	Q1	VENT2523SLX01
1	VSMY2853SLX01CT-ND	D1	VSMY2853SLX01

4

4

A

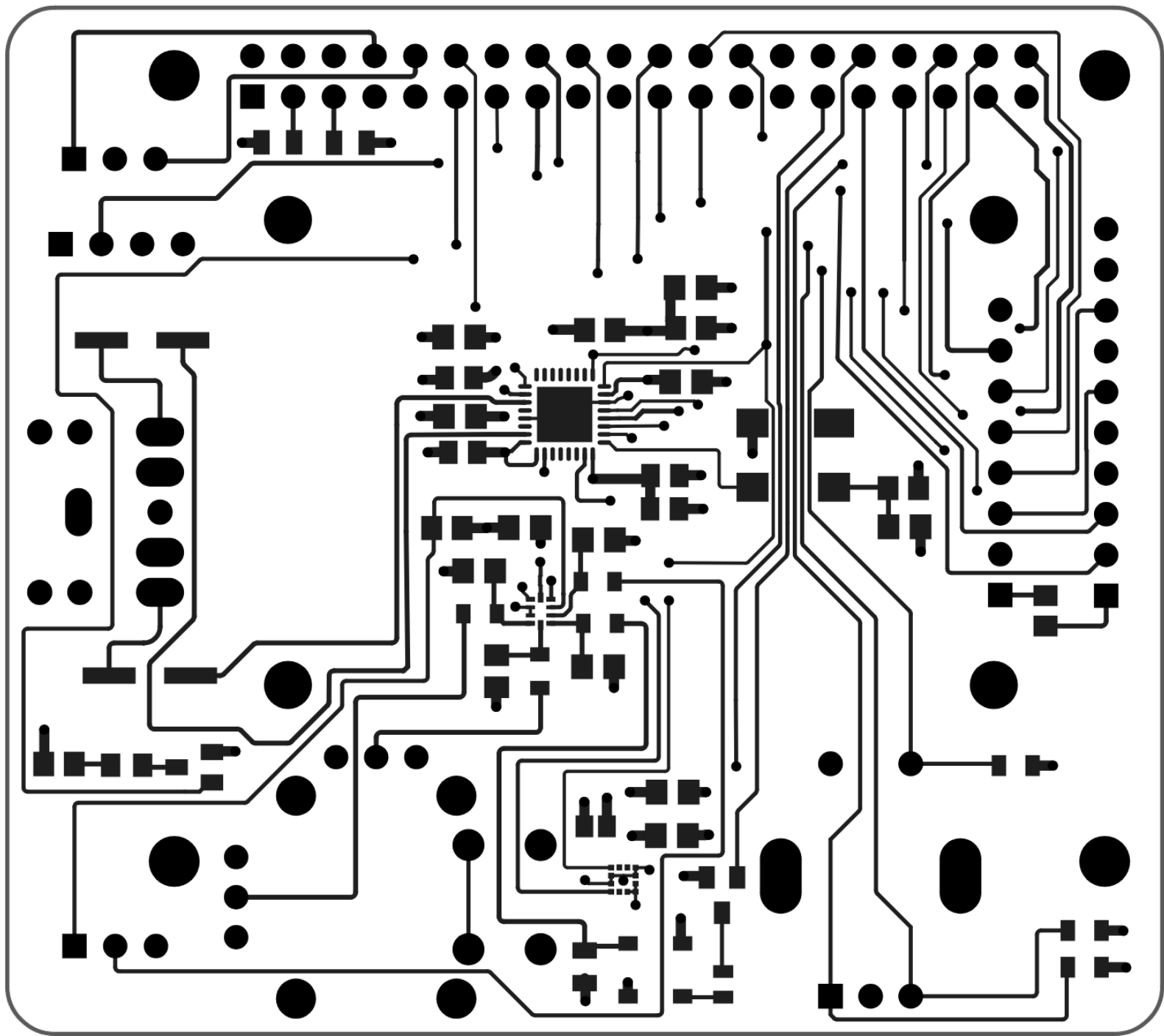
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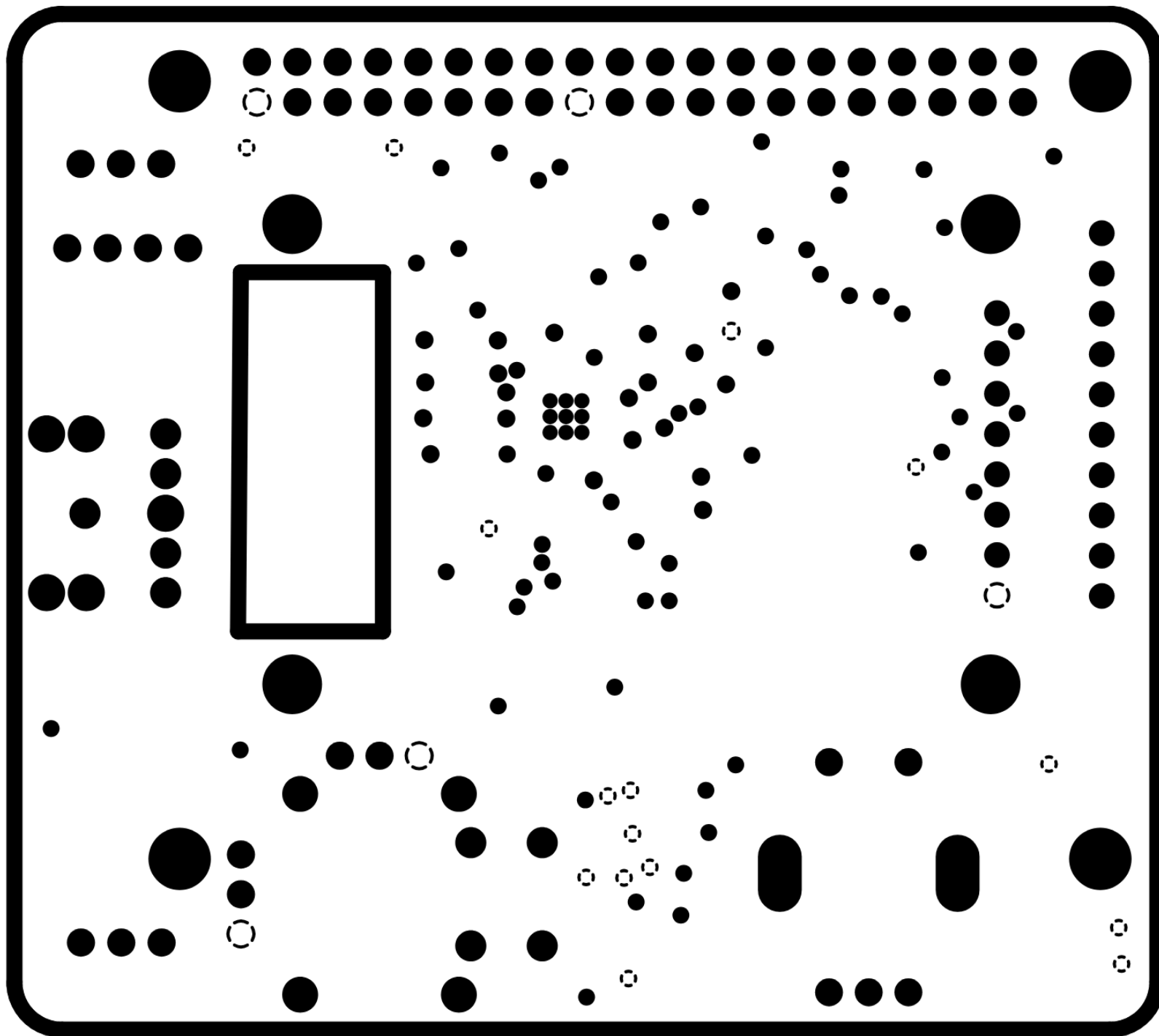
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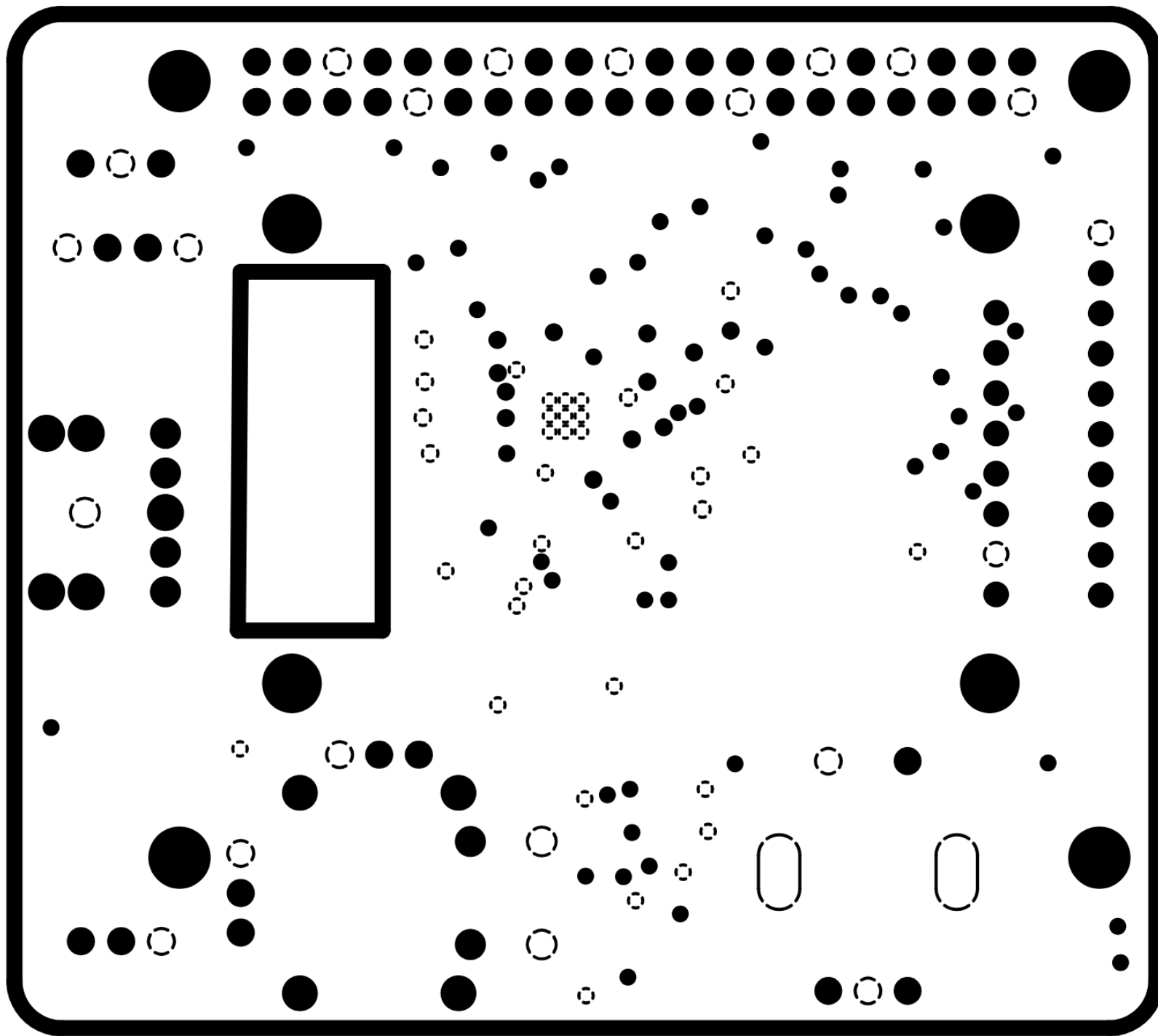
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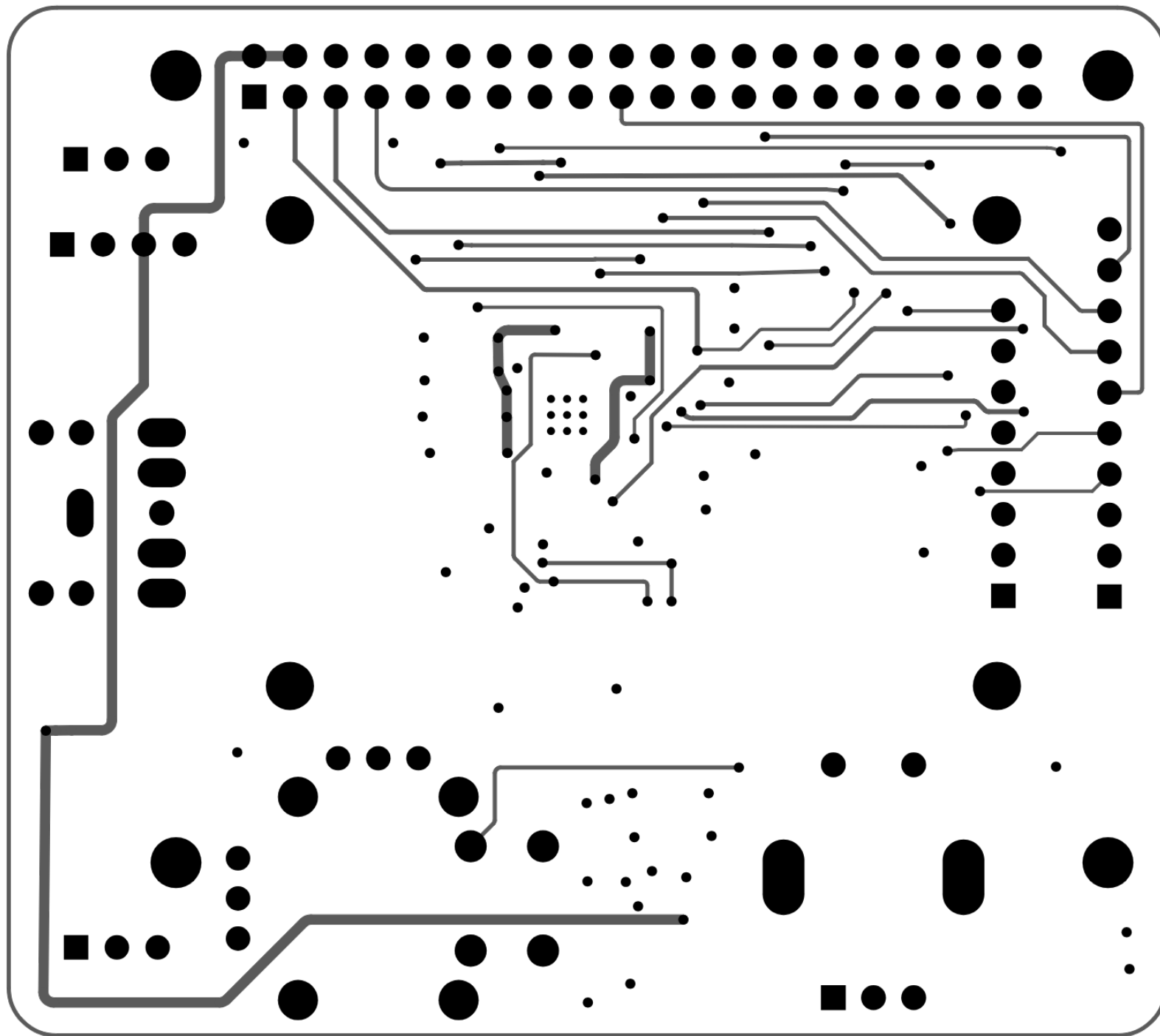
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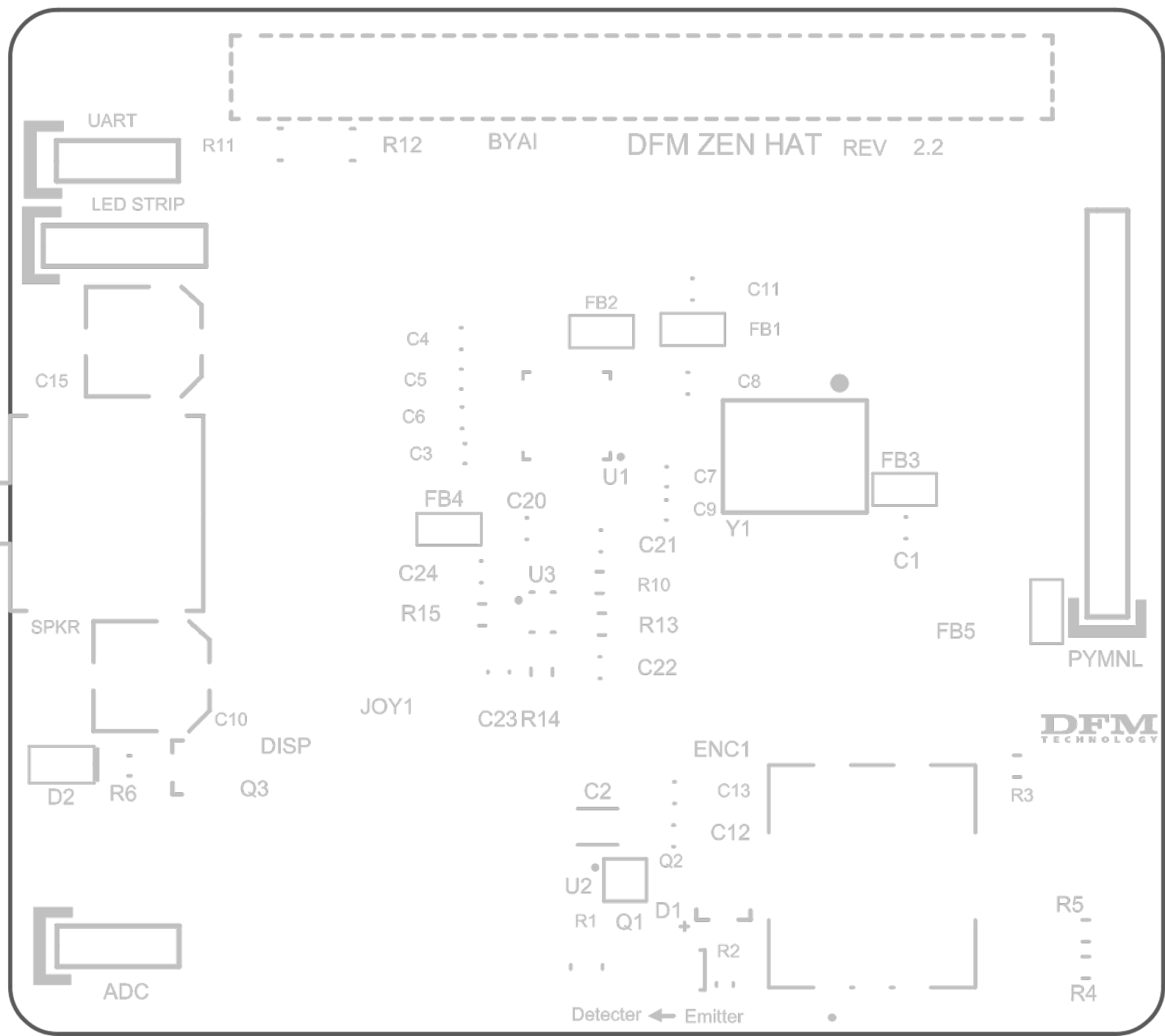
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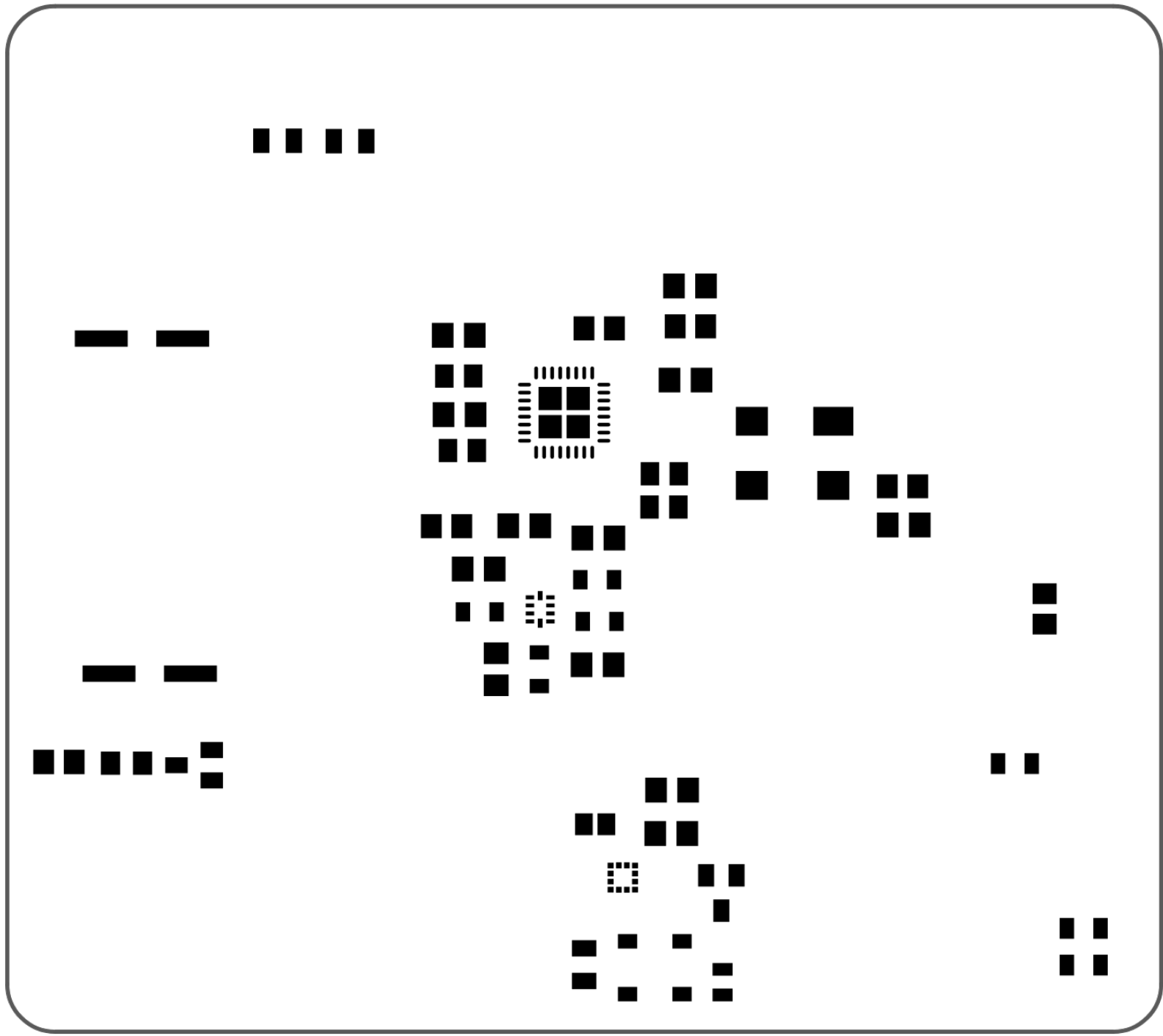


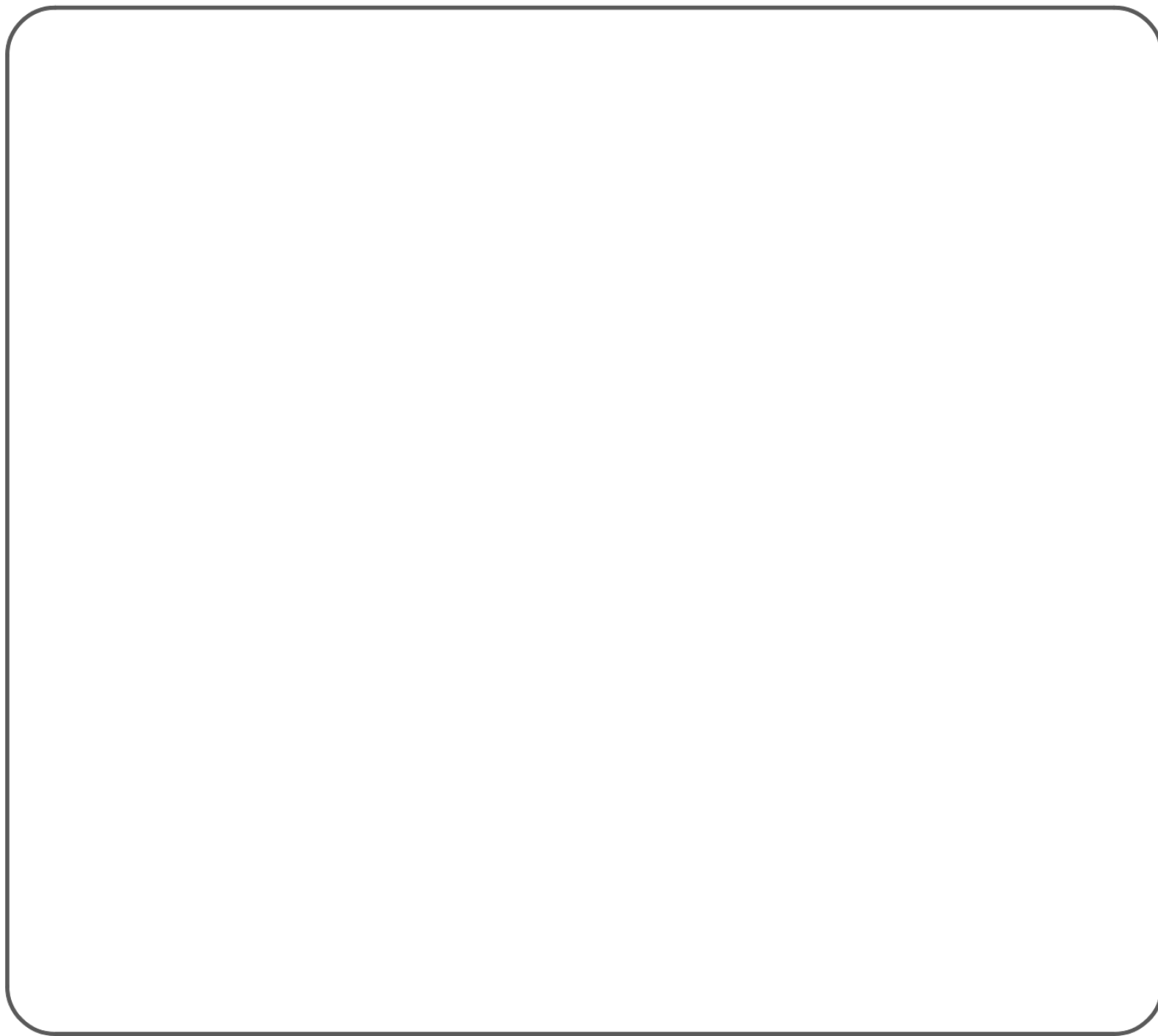


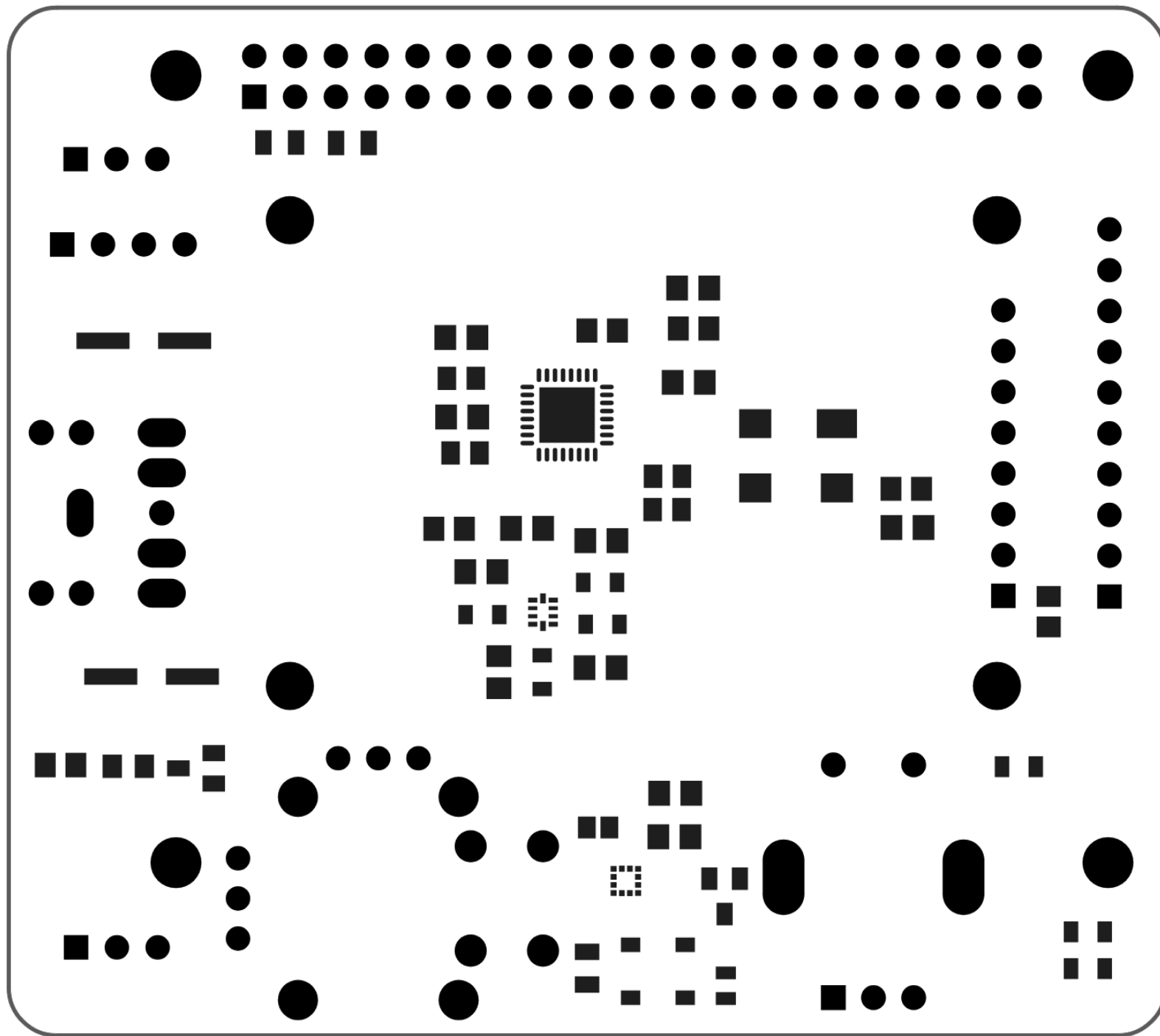


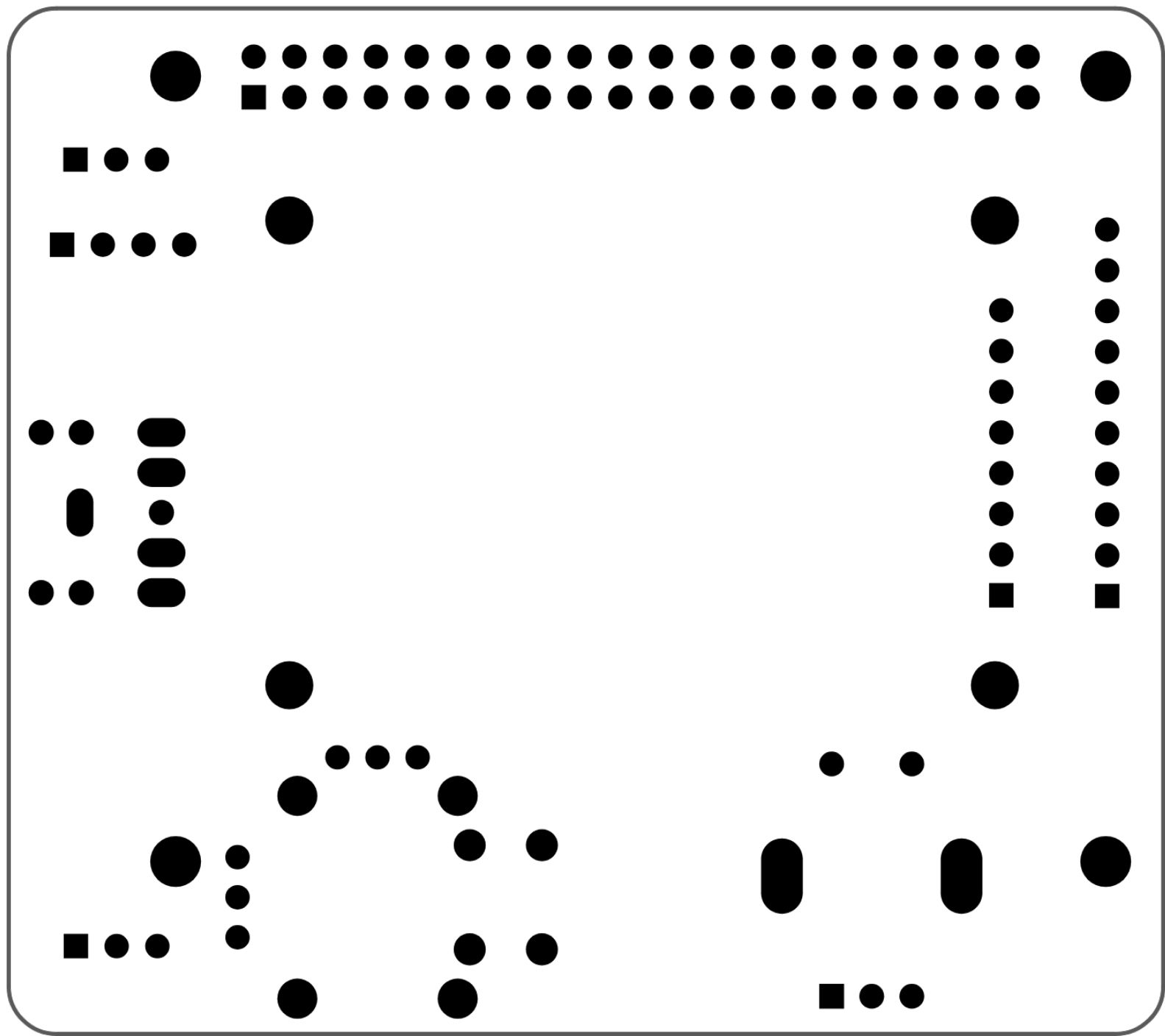


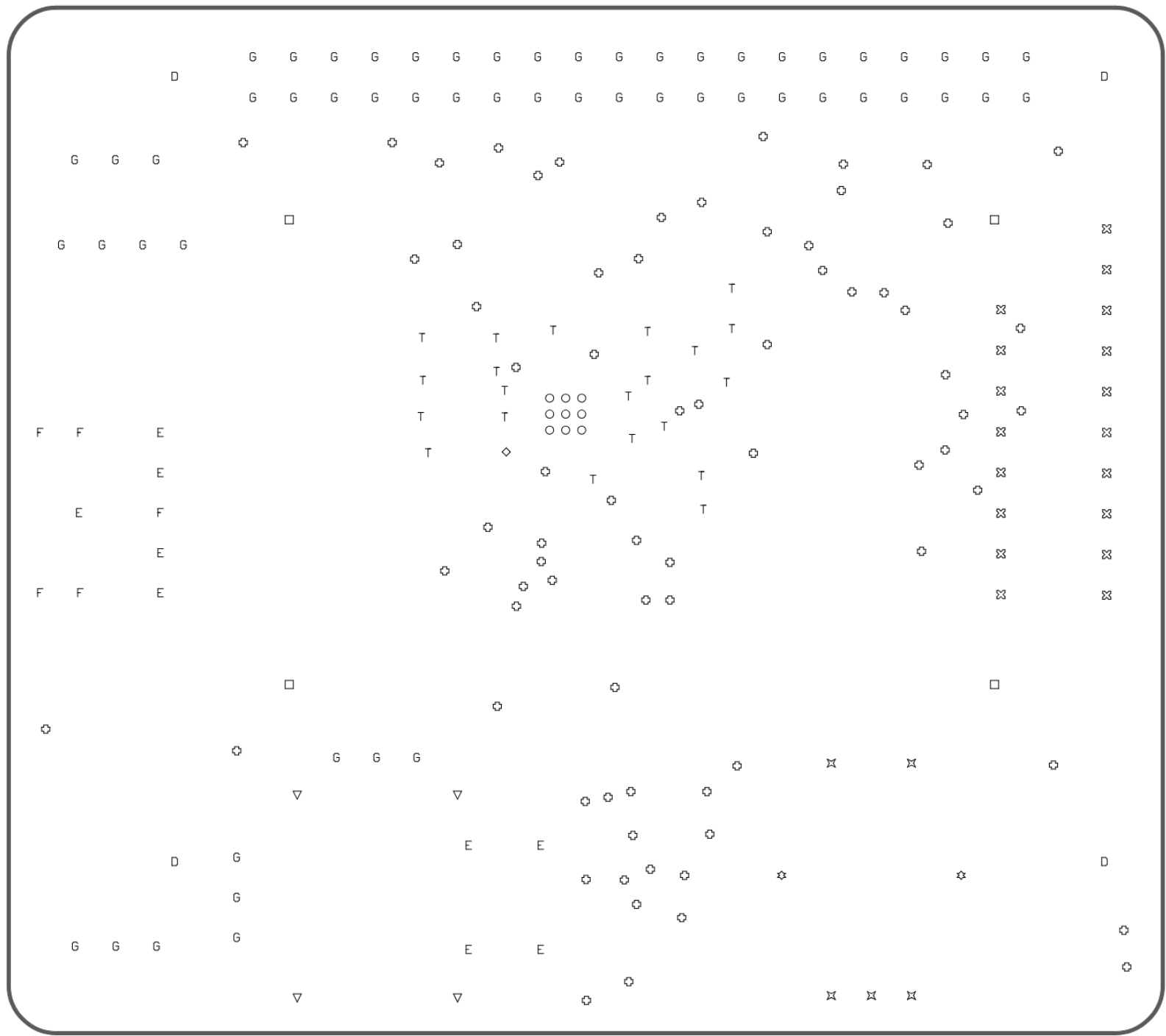


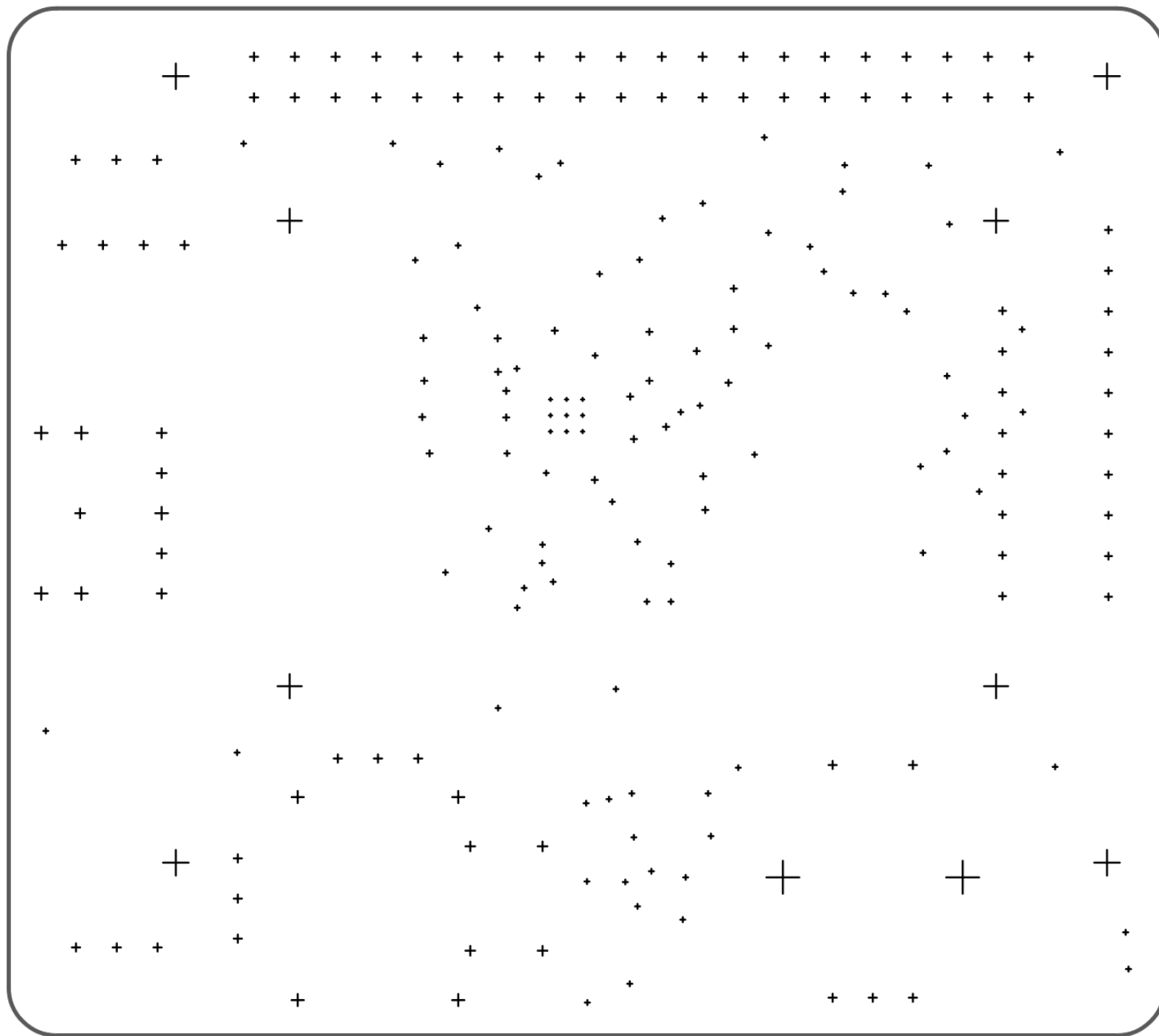












Bill of Materials

Source Data From: ZEN Hat.BomDoc

Project: BYAI Hat V 2.0.PrpPcb

Variant: None

Revision: REV 2.2

Creation Date: 12:55 PM

Print Date: 12:55:45 PM

Quantity	Supplier Part Number 1	Designator	Manufacturer Part Number 1	Manufacturer 1	Description
12	1276-1099-1-ND	C1, C4, C6, C8, C11, C12, C13, C20,	CL21B104KACNNNC	Samsung	CAP 100nF 25V ±5% 0805
5	587-1766-1-ND	FB1, FB2, FB3, FB4, FB5	FBMJ2125HM330-T	Taiyo Yuden	FB0805
4	1276-CL21B106KPQNNWECT-ND	C3, C5, C7, C9	CL21B106KPQNNWE	Samsung	CAP 10uF 10V ±10% 0805
4	YAG3689CT-ND	R10, R13, R14, R15	AC0805FR-07100RL	Yageo	Res Thick Film 0805 100
3	311-2.21KCRCT-ND	R1, R11, R12	RC0805FR-072K21L	Yageo	R0805
3	311-10KLGCT-ND	R3, R4, R5	AC0805FR-0710KL	Yageo	RES 10K OHM 1% 1/8W
2	2057-PH1-03-UA-ND	ADC, UART	PH1-03-UA	Adam Equipment	1X3 MALE HEADER STP
2	PCE3880CT-ND	C10, C15	EEE-1CA101WP	Panasonic	SMT_CE_D
2	2N7002H6327XTSA2DKR-ND	Q2, Q3	2N7002H6327XTSA2	Infineon	2N7002
1	S7123-ND	BYAI	PPPC202LFBN-RC	Sullins	
1	1276-CL21B106KPQNNWECT-ND	C2	CL21B106KPQNNWE	Samsung	CAP CER 10UF 10V X7R
1	VSMY2853SLX01CT-ND	D1	VSMY2853SLX01	Vishay Semiconductors	VSMY2853SLX01 High S
1	604-APTD2012LSURCK	D2	APTD2012LSURCK	Kingbright	LED0805
1	ED8197-08-ND	DISP	821-22-008-10-000101	Mill-Max	240×240, General 1.54in
1	PEC12R-4220F-S0024-ND	ENC1	PEC12R-4220F-S0024	Bourns	ROTARY ENCODER ME
1	108-THB001P-ND	JOY1	THB001P	ITT C&K	Analog JoyStick THB001
1	S7037-ND	LED STRIP	PPPC041LFBN-RC	Sullins	1X4 Female Heater Strip
1	737-PH1-10-UA	PYMNL	PH1-10-UA	Adam Equipment	1X10MHS
1	VEMT2523SLX01DKR-ND	Q1	VEMT2523SLX01	Vishay Semiconductors	Phototransistors 850nm
1	311-33.0CRCT-ND	R2	RC0805FR-0733RL	Yageo	Chip Resistor, 33 Ohm, +
1	311-1.00KCRCT-ND	R6	RC0805FR-071KL	Yageo	Chip Resistor, 1 KOhm, -
1	CP1-3525NG-GR-ND	SPKR	SJ1-3525NG-GR	CUI Devices	
1	296-26818-1-ND	U1	TLV320AIC3104IRHBR	Texas Instruments	Low-Power Stereo CODE
1	497-18226-1-ND	U2	IIS2DLPCTR	STMicroelectronics	ACCEL 2-16G I2C/SPI 12
1	595-TLA2024IRUGR	U3	TLA2024IRUGR	Texas Instruments	IC ADC 12BIT SIGMA-DE
1	535-9309-1-ND	Y1	ASV-12.000MHZ-E-J-T	Abracon	

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Approved

Notes

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