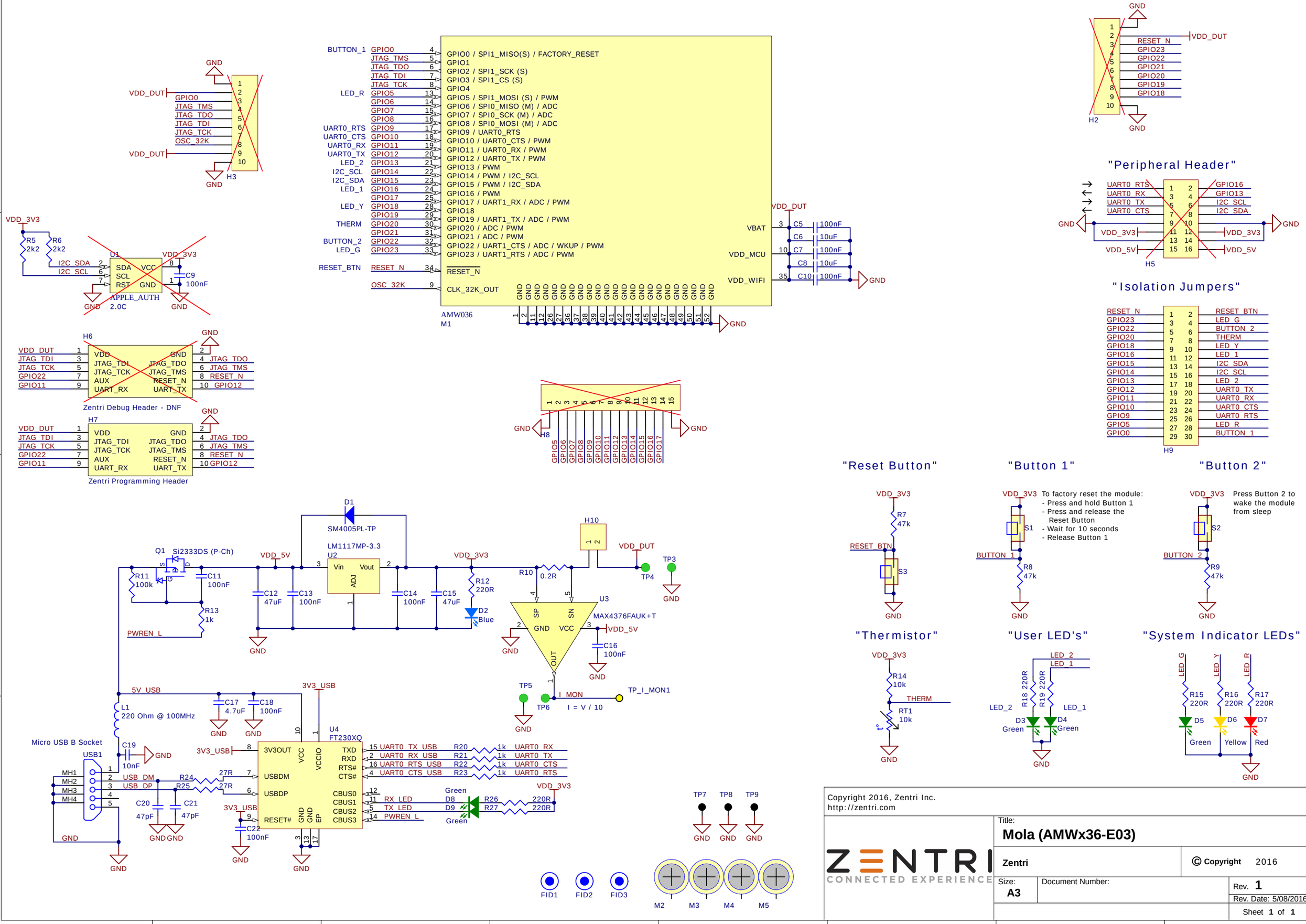
GND
VDD_DUT
GPIO0
JTAG_TMS
JTAG_TDO
JTAG_TDI
JTAG_TCK
OSC_32K
VDD_DUT
H3
BUTTON_1 GPIO0 4
JTAG_TMS 5
JTAG_TDO 6
JTAG_TDI 7
JTAG_TCK 8
LED_R GPIO5 13
GPIO6 14
GPIO7 15
GPIO8 16
UART0_RTS GPIO9 17
UART0_CTS GPIO10 18
UART0_RX GPIO11 19
UART0_TX GPIO12 20
LED_2 GPIO13 21
I2C_SCL GPIO14 22
I2C_SDA GPIO15 23
LED_1 GPIO16 24
GPIO17 25
LED_Y GPIO18 28
GPIO19 29
THERM GPIO20 30
GPIO21 31
BUTTON_2 GPIO22 32
LED_G GPIO23 33
RESET_BTN RESET_N 34
OSC_32K 9
GPIO0 / SPI1_MISO(S) / FACTORY_RESET
GPIO1
GPIO2 / SPI1_SCK (S)
GPIO3 / SPI1_CS (S)
GPIO4
GPIO5 / SPI1_MOSI (S) / PWM
GPIO6 / SPI0_MISO (M) / ADC
GPIO7 / SPI0_SCK (M) / ADC
GPIO8 / SPI0_MOSI (M) / ADC
GPIO9 / UART0_RTS
GPIO10 / UART0_CTS / PWM
GPIO11 / UART0_RX / PWM
GPIO12 / UART0_TX / PWM
GPIO13 / PWM
GPIO14 / PWM / I2C_SCL
GPIO15 / PWM / I2C_SDA
GPIO16 / PWM
GPIO17 / UART1_RX / ADC / PWM
GPIO18
GPIO19 / UART1_TX / ADC / PWM
GPIO20 / ADC / PWM
GPIO21 / ADC / PWM
GPIO22 / UART1_CTS / ADC / WKUP / PWM
GPIO23 / UART1_RTS / ADC / PWM
RESET_N
CLK_32K_OUT
AMW036
M1
VDD_DUT
VBAT
VDD_MCU
VDD_WIFI
C5 100nF
C6 10uF
C7 100nF
C8 10uF
C10 100nF
GND
H2
RESET_N
GPIO23
GPIO22
GPIO21
GPIO20
GPIO19
GPIO18
"Peripheral Header"
UART0_RTS
UART0_RX
UART0_TX
UART0_CTS
GPIO16
GPIO13
I2C_SCL
I2C_SDA
VDD_3V3
VDD_5V
H5
"Isolation Jumpers"
RESET_N
GPIO23
GPIO22
GPIO20
GPIO18
GPIO16
GPIO15
GPIO14
GPIO13
GPIO12
GPIO11
GPIO10
GPIO9
GPIO5
GPIO0
RESET_BTN
LED_G
BUTTON_2
THERM
LED_Y
LED_1
I2C_SDA
I2C_SCL
LED_2
UART0_TX
UART0_RX
UART0_CTS
UART0_RTS
BUTTON_1
LED_R
H9
VDD_3V3
R5 2k2
R6 2k2
I2C_SDA
I2C_SCL
U1
SDA
SCL
RST
VCC
GND
C9 100nF
APPLE_AUTH 2.0C
H6
VDD_DUT
JTAG_TDI
JTAG_TCK
GPIO22
GPIO11
VDD
JTAG_TDI
JTAG_TCK
AUX
UART_RX
GND
JTAG_TDO
JTAG_TMS
RESET_N
UART_TX
GPIO12
Zentri Debug Header - DNF
H7
Zentri Programming Header
H8
GPIO5 GPIO6 GPIO7 GPIO8 GPIO9 GPIO10 GPIO11 GPIO12 GPIO13 GPIO14 GPIO15 GPIO16 GPIO17
"Reset Button"
"Button 1"
"Button 2"
VDD_3V3
R7 47k
RESET_BTN
S3
S1
R8 47k
BUTTON_1
To factory reset the module:
- Press and hold Button 1
- Press and release the Reset Button
- Wait for 10 seconds
- Release Button 1
S2
R9 47k
BUTTON_2
Press Button 2 to wake the module from sleep
"Thermistor"
"User LED's"
"System Indicator LEDs"
R14 10k
THERM
RT1 10k
LED_2
LED_1
R18 220R
R19 220R
D3 Green
D4 Green
LED_G
LED_Y
LED_R
R15 220R
R16 220R
R17 220R
D5 Green
D6 Yellow
D7 Red
D1
SM4005PL-TP
LM1117MP-3.3
U2
Vin
Vout
ADJ
VDD_5V
VDD_3V3
C11 100nF
C12 47uF
C13 100nF
C14 100nF
C15 47uF
R11 100k
R13 1k
Q1 Si2333DS (P-Ch)
PWREN_L
R12 220R
D2 Blue
H10
R10 0.2R
TP3
TP4
U3
MAX4376FAUK+T
SP
SN
GND
VCC
OUT
C16 100nF
TP5
TP6
I_MON
TP_I_MON1
I = V / 10
5V_USB
3V3_USB
L1
220 Ohm @ 100MHz
C17 4.7uF
C18 100nF
C19 10nF
Micro USB B Socket
USB1
MH1
MH2
MH3
MH4
USB_DM
USB_DP
R24 27R
R25 27R
C20 47pF
C21 47pF
U4
FT230XQ
3V3OUT
USBDM
USBDP
RESET#
VCC
VCCIO
GND
EP
TXD
RXD
RTS#
CTS#
CBUS0
CBUS1
CBUS2
CBUS3
UART0_TX_USB
UART0_RX_USB
UART0_RTS_USB
UART0_CTS_USB
R20 1k UART0_RX
R21 1k UART0_TX
R22 1k UART0_CTS
R23 1k UART0_RTS
RX_LED
TX_LED
PWREN_L
D8
D9
R26 220R
R27 220R
C22 100nF
TP7
TP8
TP9
FID1
FID2
FID3
M2
M3
M4
M5
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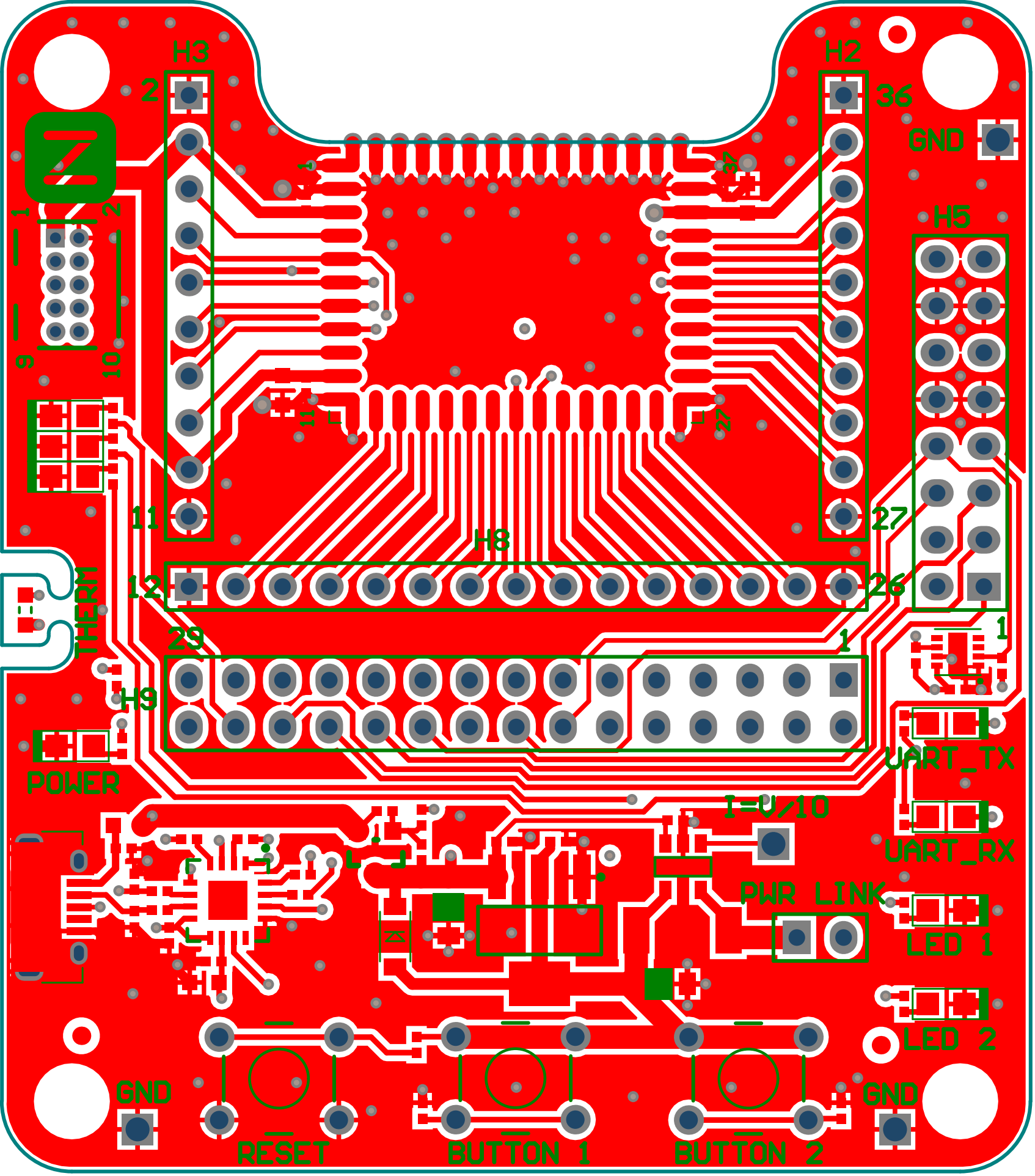
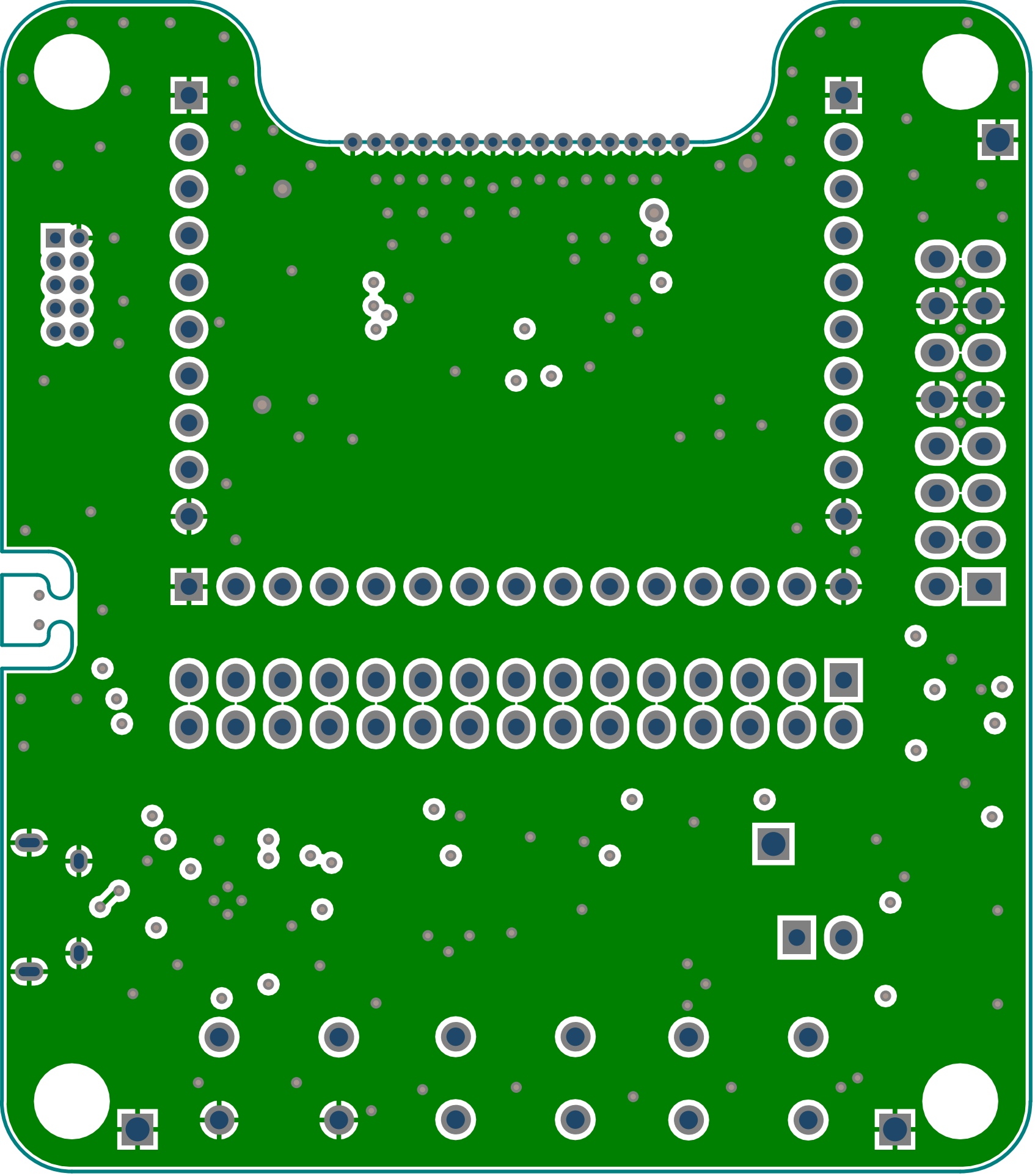
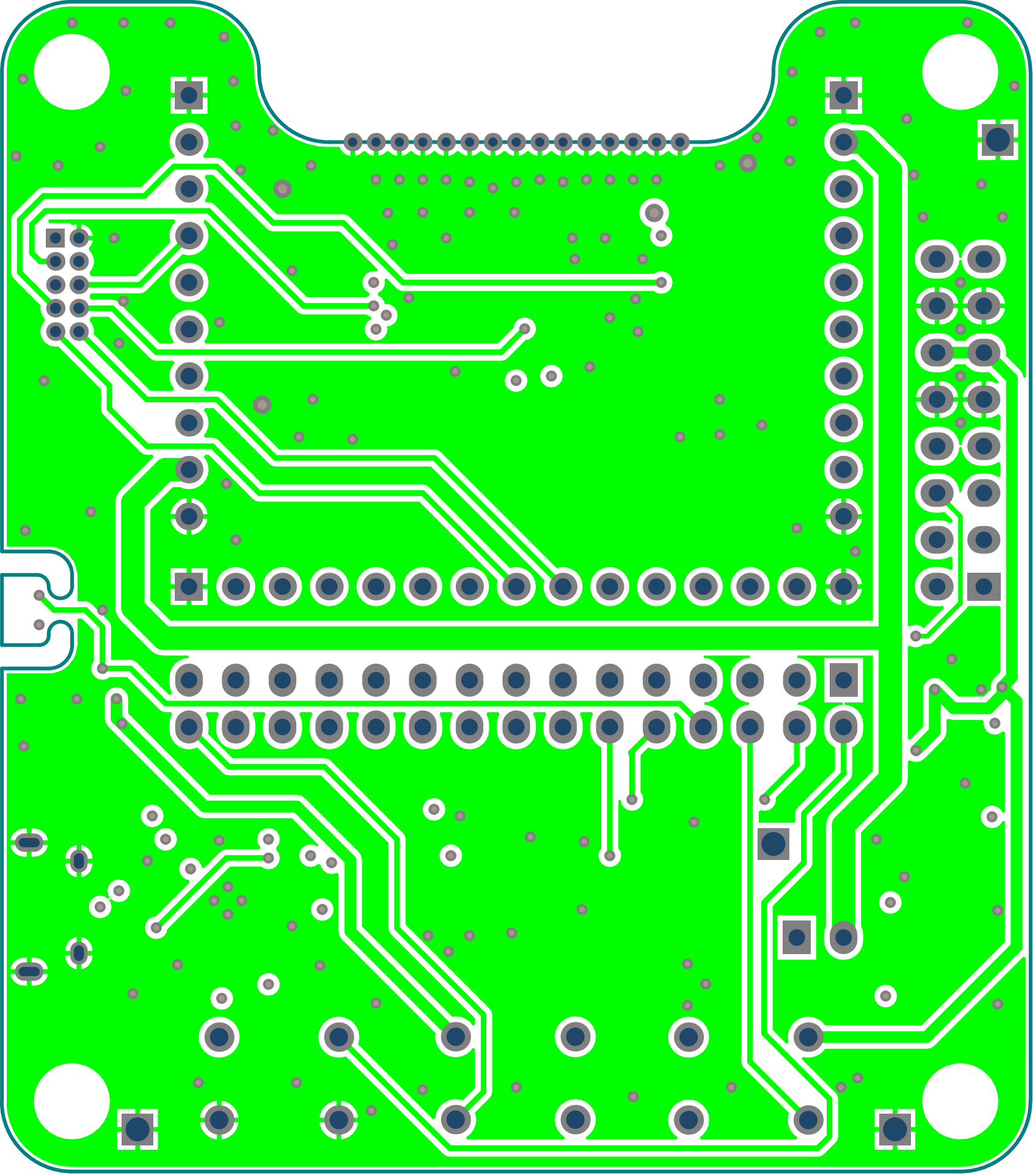
ZENTRI
CONNECTED EXPERIENCE
Title:
Mola (AMWx36-E03)
Zentri
© Copyright 2016
Size:
A3
Document Number:
Rev. 1
Rev. Date: 5/08/2016
Sheet 1 of 1

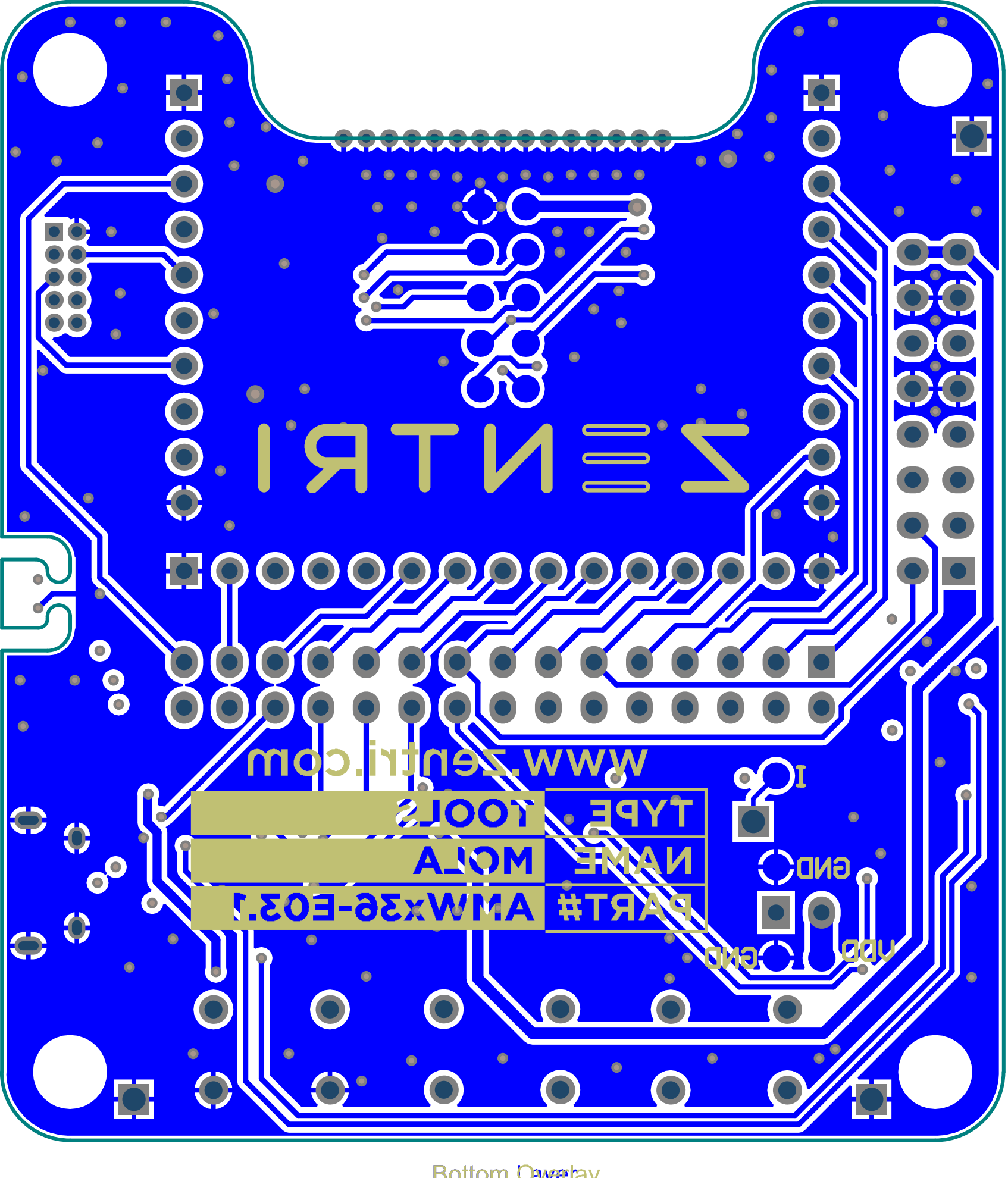

H3
2
H2
36
GND
H5
1
2
9
10
11
27
H8
12
26
29
1
1
THERM
H9
POWER
UART_TX
I=V/10
UART_RX
PWR LINK
LED 1
LED 2
GND
GND
RESET
BUTTON 1
BUTTON 2
Top Overlay

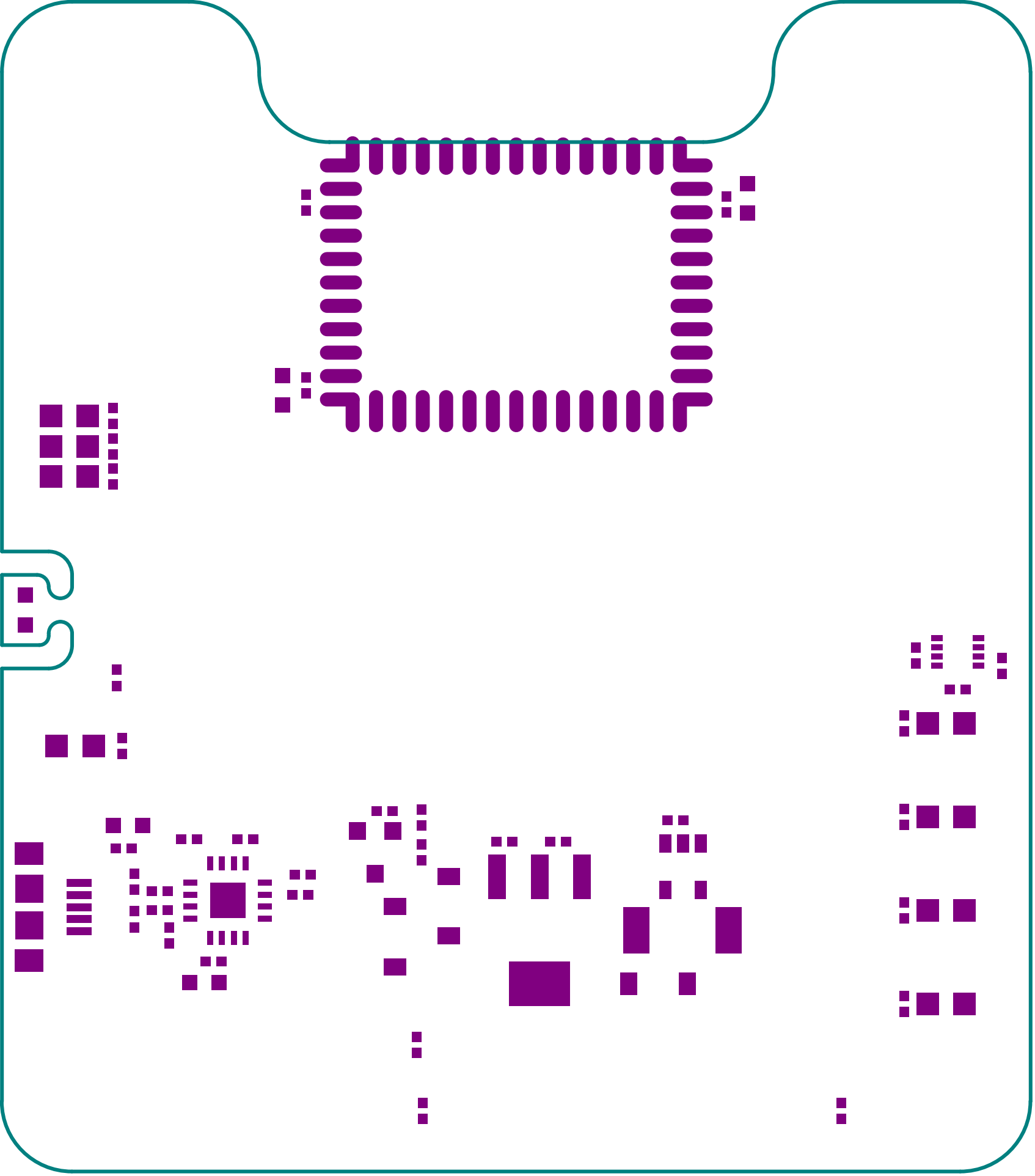


GND1

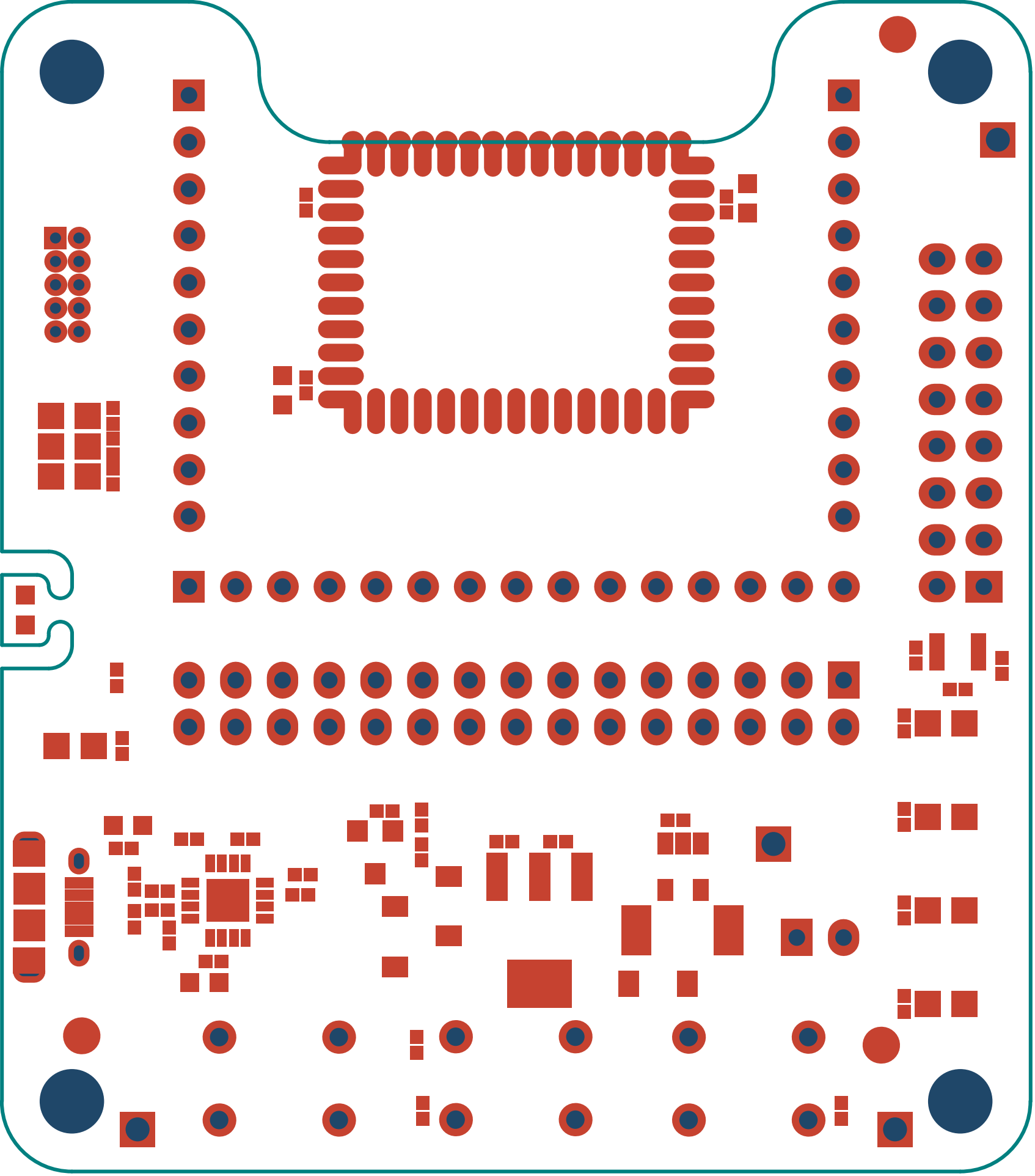


GND2

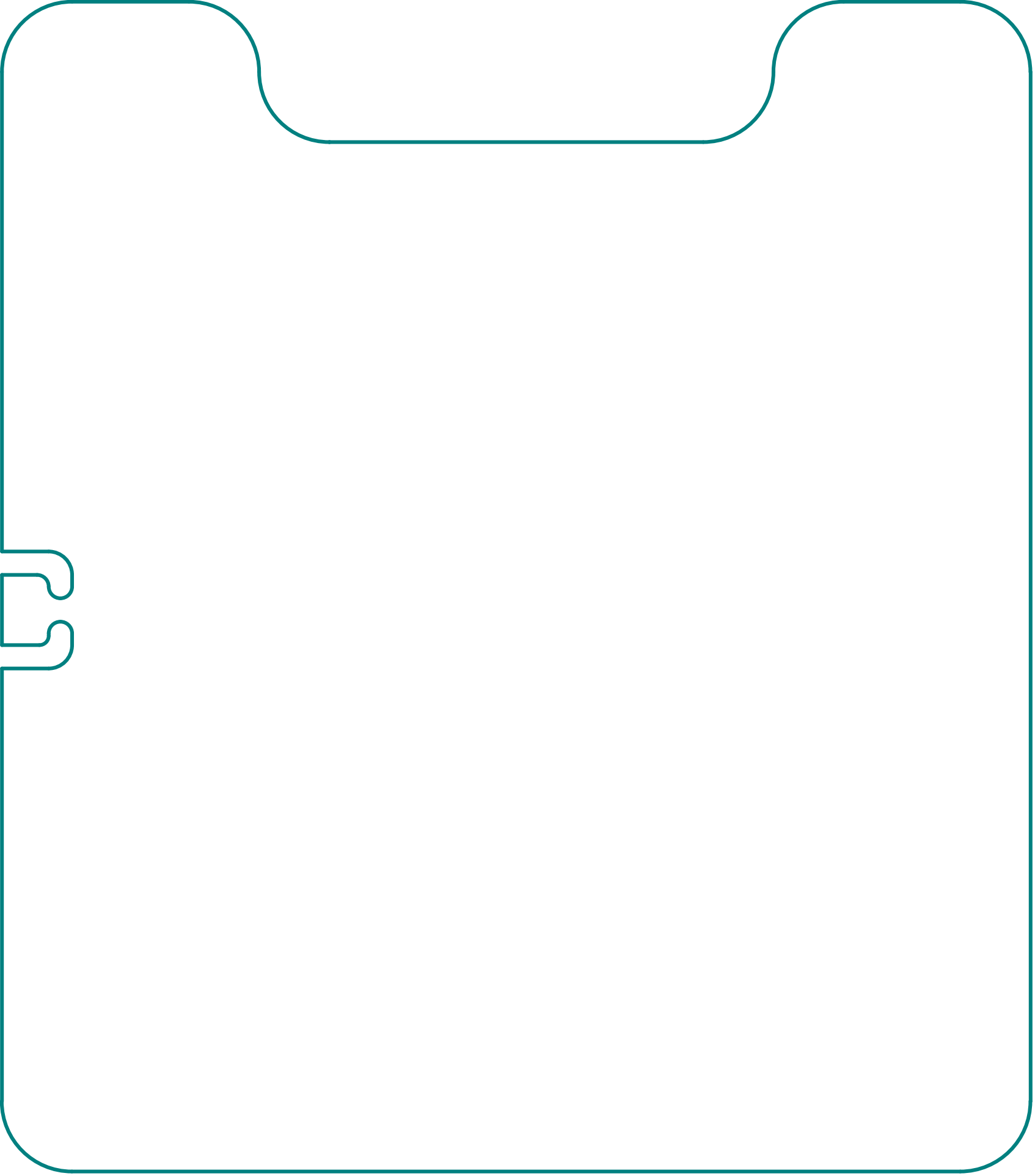

ZENTRI
www.zentri.com
TYPE TOOLS
NAME MOLA
PART# AMWx36-E03.1
I
GND
GND
VDD
Bottom Overlay



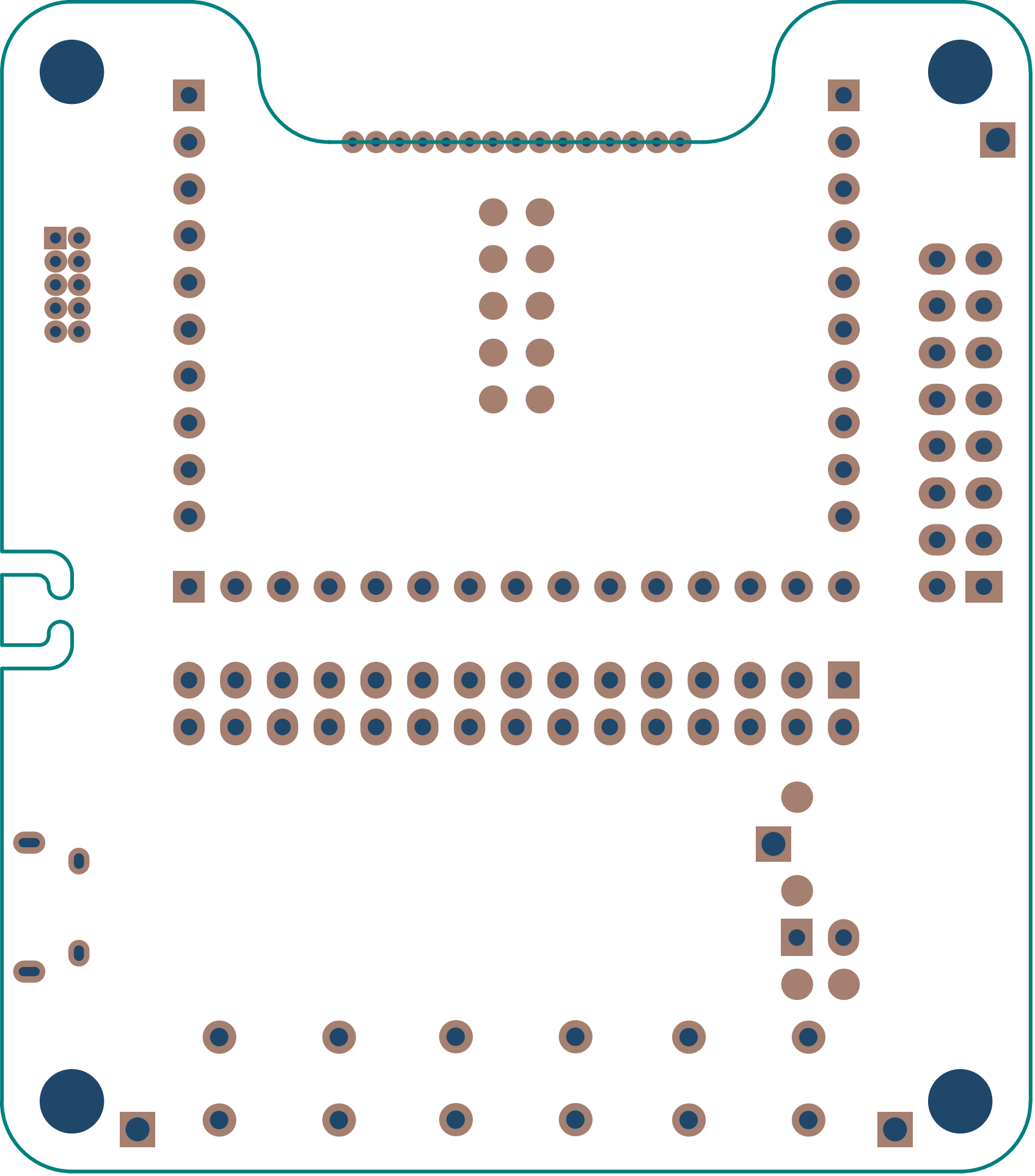
Top Paste



Top Solder



Bottom Paste



Bottom Solder

NOTES: UNLESS OTHERWISE SPECIFIED0
1. SPECIFICATIONS/TOLERANCES:
A. FABRICATE PER IPC-6012, CLASS 2, USING PROVIDED DATA FILES Mola_Rev1.ZIP
B. ALL SPECIFICATIONS USED SHALL BE PER THEIR LATEST REVISIONS.
C. THE DIMENSIONS OF CIRCUIT FEATURES IN THE PROVIDED DATA MAY BE ADJUSTED ONLY TO COMPENSATE FOR PROCESS TOLERANCES; ADDING, REMOVING OR RELOCATING CIRCUIT FEATURES IS NOT ALLOWED
D. REMOVE ALL BURRS AND BREAK SHARP EDGES, .381 [.015] MAX RADIUS.
E. PARENTHETICAL INFORMATION IS FOR REFERENCE ONLY.
F. REPAIR OF PCB DEFECTS IS NOT PERMITTED.

2. DIELECTRIC MATERIAL:
A. DIELECTRIC MATERIAL SHALL BE PER IPC-4101/99, /124, /126 OR /129 (RoHS COMPLIANT EPOXY-GLASS)
B. MINIMUM DIELECTRIC THICKNESS SHALL BE .051 [.002] FOR REFERENCED STACK-UP DIMENSIONS OF.076 [.003] OR GREATER; IPC-6012 REQUIREMENTS SHALL OTHERWISE APPLY. SINGLE-PLY CONSTRUCTION IS ALLOWED.
C. SEE LAYER STACK-UP FOR REQUIRED COPPER WEIGHTS AND THE FINISHED PCB THICKNESS. IF SPECIFIED, 1/3 OZ. STARTING FOIL MAY BE ACHIEVED BY 1/2 OZ. FOIL REDUCTION.
D. FINISHED PCB THICKNESS SHALL BE MEASURED OVER LANDS AND/OR CONDUCTORS NOT COVERED BY SOLDER MASK. IF SPECIFIED, 1/3 OZ. STARTING FOIL MAY BE ACHIEVED BY 1/2 OZ. FOIL REDUCTION.

3. DRILLING:
A. VIA DIAMETERS SHALL BE VERIFIED BEFORE PLATING; ALL OTHER HOLE DIAMETERS ARE FINISHED DIMENSIONS.
B. LAYER-TO-LAYER MISREGISTRATION SHALL BE .127 [.005] MAXIMUM.

4. SOLDER MASK:
A. APPLY LPI SOLDER MASK OVER BARE COPPER USING PROVIDED DATA.
B. SOLDER MASK SHALL BE PER IPC-SM-840, CLASS T, COLOR ORANGE.
C. THE DIMENSIONS OF SOLDER MASK-DEFINED PADS ON PLANES AND/OR WIDE CONDUCTORS SHALL NOT BE MODIFIED.

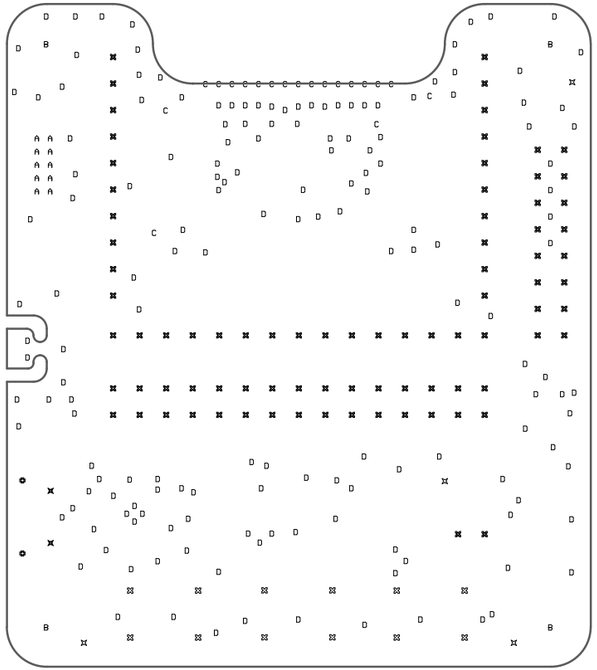
5. SILKSCREEN/MARKING:
A. SILKSCREEN PCB PER PROVIDED DATA USING PERMANENT, NON-CONDUCTIVE INK, COLOR WHITE.
B. SUPPLIER ID AND TRACEABILITY INFORMATION SHALL NOT BE APPLIED TO ANY SIDE OF THE PCB
C. INK SHALL NOT BE APPLIED TO ANY SOLDERABLE SURFACE OR TOP LAYER. USING PROVIDED DATA.

6. ELECTRICAL TEST:
A. DESIGN VERIFICATION SHALL BE DONE PRIOR TO PCB FABRICATION USING GERBER DATA AND AN IPC-D-356 NETLIST.
B. ALL PCBS SHALL BE 100% ELECTRICALLY TESTED FOR OPENS AND SHORTS
C. APPLY TEST STAMP IN NON-LEGEND AREA ON BOTTOM SIDE OF PCB.

7. FINAL FINISH:
7A. FINAL FINISH SHALL BE ELECTROLESS NICKEL/IMMERSION GOLD (ENIG) PER IPC-4552.

8. IMPEDANCE:
A. IMPEDANCE TOLERANCE SHALL BE +/- 10%.
B. SEE LAYER STACK-UP FOR IMPEDANCE REQUIREMENTS.

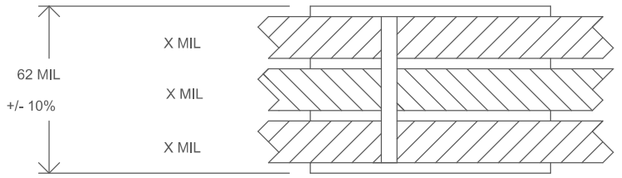
9. IF PANELIZATION SPECIFICATIONS ARE PROVIDED, THE PCBS SHALL BE DELIVERED IN PANEL FORM. HOWEVER, THESE SPECIFICATIONS MAY BE REPLACED BY SUPPLIER PREFERRED (SPECIFICATIONS AS APPROVED).



Drill Drawing

Symbol	Hit Count	Finished Hole Size	Plated	Hole Type
✪	2	19.69mil (0.500mm)	PTH	Slot
✖	2	21.65mil (0.550mm)	PTH	Slot
⌑	4	51.18mil (1.300mm)	PTH	Round
B	4	137.80mil (3.500mm)	NPTH	Round
A	10	23.62mil (0.600mm)	PTH	Round
⊠	12	39.37mil (1.000mm)	PTH	Round
C	19	19.69mil (0.500mm)	PTH	Round
✖	83	35.43mil (0.900mm)	PTH	Round
D	163	11.81mil (0.300mm)	PTH	Round
	299 Total			

Slot definitions : Routed Path Length = Calculated from tool start centre position to tool end centre position.
Hole Length = Routed Path Length + Tool Size = Slot length as defined in the PCB layout



BOARD STACKUP	LAYER DESCRIPTION	START COPPER WT	SE IMP OHMS	SE TRACE WIDTH
	TOP LAYER	0.5 OZ	--	--
	GND PLANE 1	1.0 OZ	--	--
	GND PLANE 2	1.0 OZ	--	--
	BOTTOM LAYER	0.5 OZ	--	--

FILE EXTENSIONS:

*.GTO - Top Overlay (Silkscreen)

*.GTS - Top Solder Mask

*.GTP - Top Solder Paste

*.GBS - Bottom Solder Mask

*.GD1 - Drill Drawing

*.GG1 - Drill Guide

*.GKO - Keep Out

*.TXT - NC Drill Top-Bottom

ZENTRI
CONNECTED EXPERIENCE

Project: Mola (AMWx36-E03)		
Company: Zentri		
Drawn By: Chad O'Neill		
Date: 5/08/2016	Rev: 1	

NOTES: UNLESS OTHERWISE SPECIFIED0
1. SPECIFICATIONS/TOLERANCES:
A. FABRICATE PER IPC-6012, CLASS 2, USING PROVIDED DATA FILES Mola_Rev1.ZIP
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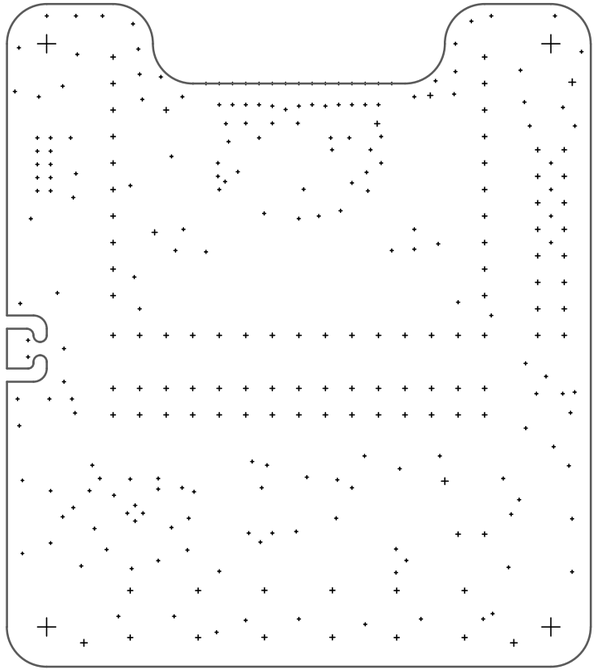
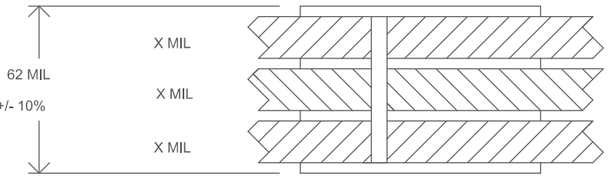


Drill Guide

BOARD STACKUP



LAYER DESCRIPTION	START COPPER WT	SE IMP OHMS	SE TRACE WIDTH
TOP LAYER	0.5 OZ	--	--
GND PLANE 1	1.0 OZ	--	--
GND PLANE 2	1.0 OZ	--	--
BOTTOM LAYER	0.5 OZ	--	--

FILE EXTENSIONS:

*.GTO - Top Overlay (Silkscreen)

*.GTS - Top Solder Mask

*.GTP - Top Solder Paste

*.GBS - Bottom Solder Mask

*.GD1 - Drill Drawing

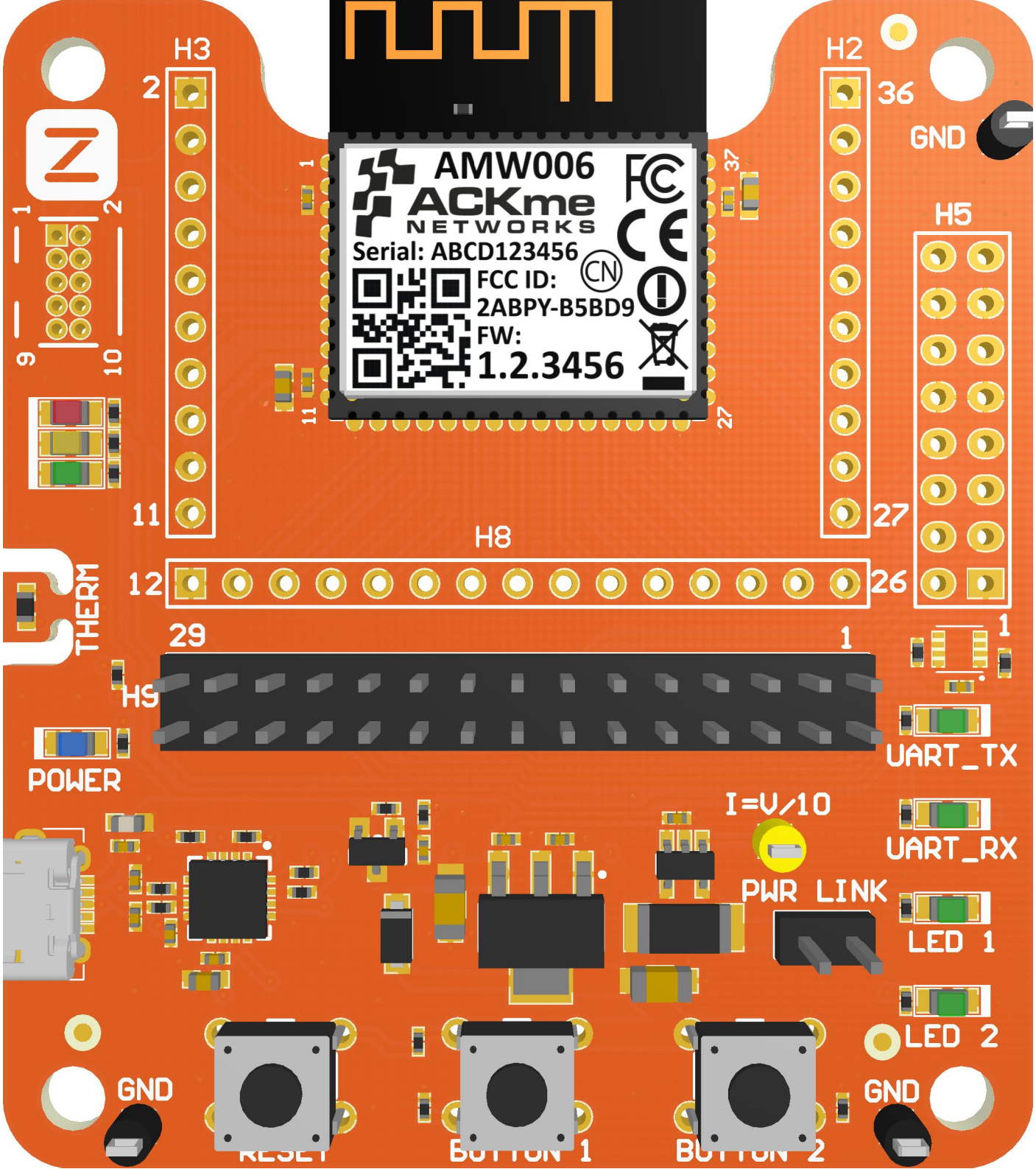
*.GG1 - Drill Guide

*.GKO - Keep Out

*.TXT - NC Drill Top-Bottom

ZENTRI
CONNECTED EXPERIENCE

Project:	Mola (AMWx36-E03)	
Company:	Zentri	
Drawn By:	Chad O'Neill	
Date:	5/08/2016	Rev: 1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ACKme
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FCC ID:
2ABPY-B5BD9
FW:
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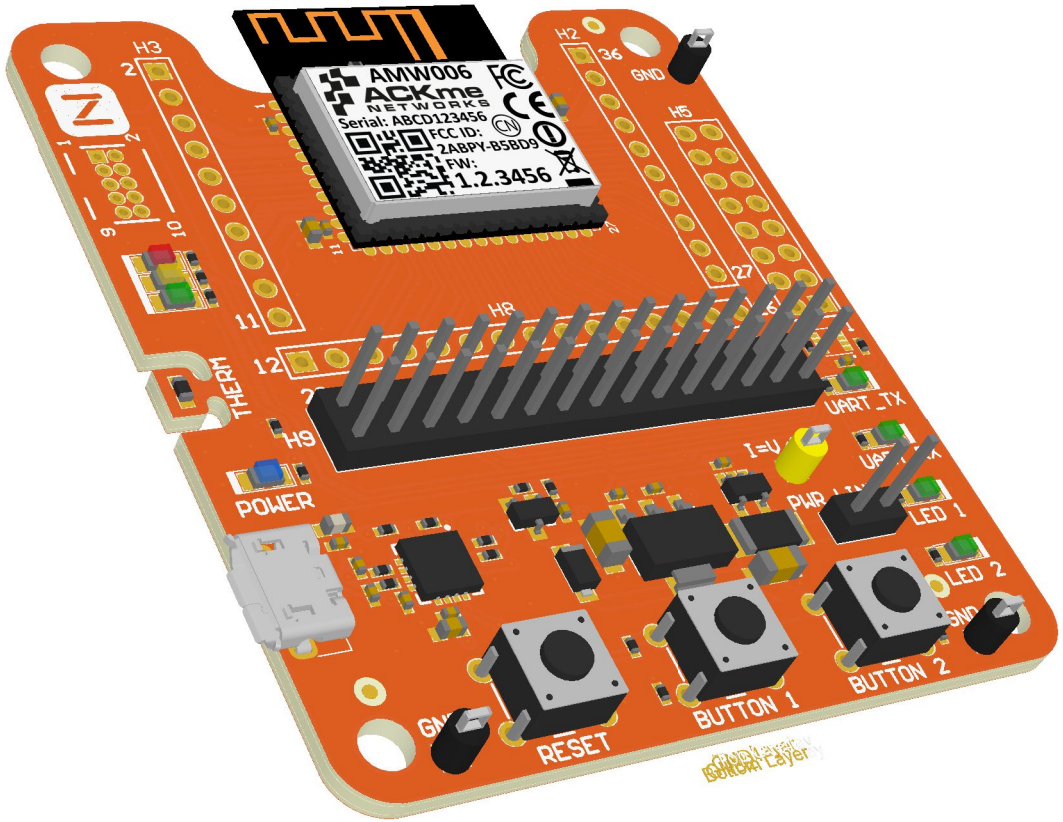
H3
H2
H5
H8
H9
GND
THERM
POWER
UART_TX
UART_RX
I=V/10
PWR LINK
LED 1
LED 2
RESET
BUTTON 1
BUTTON 2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ACKme
NETWORKS
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FCC ID:
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FW:
1.2.3456
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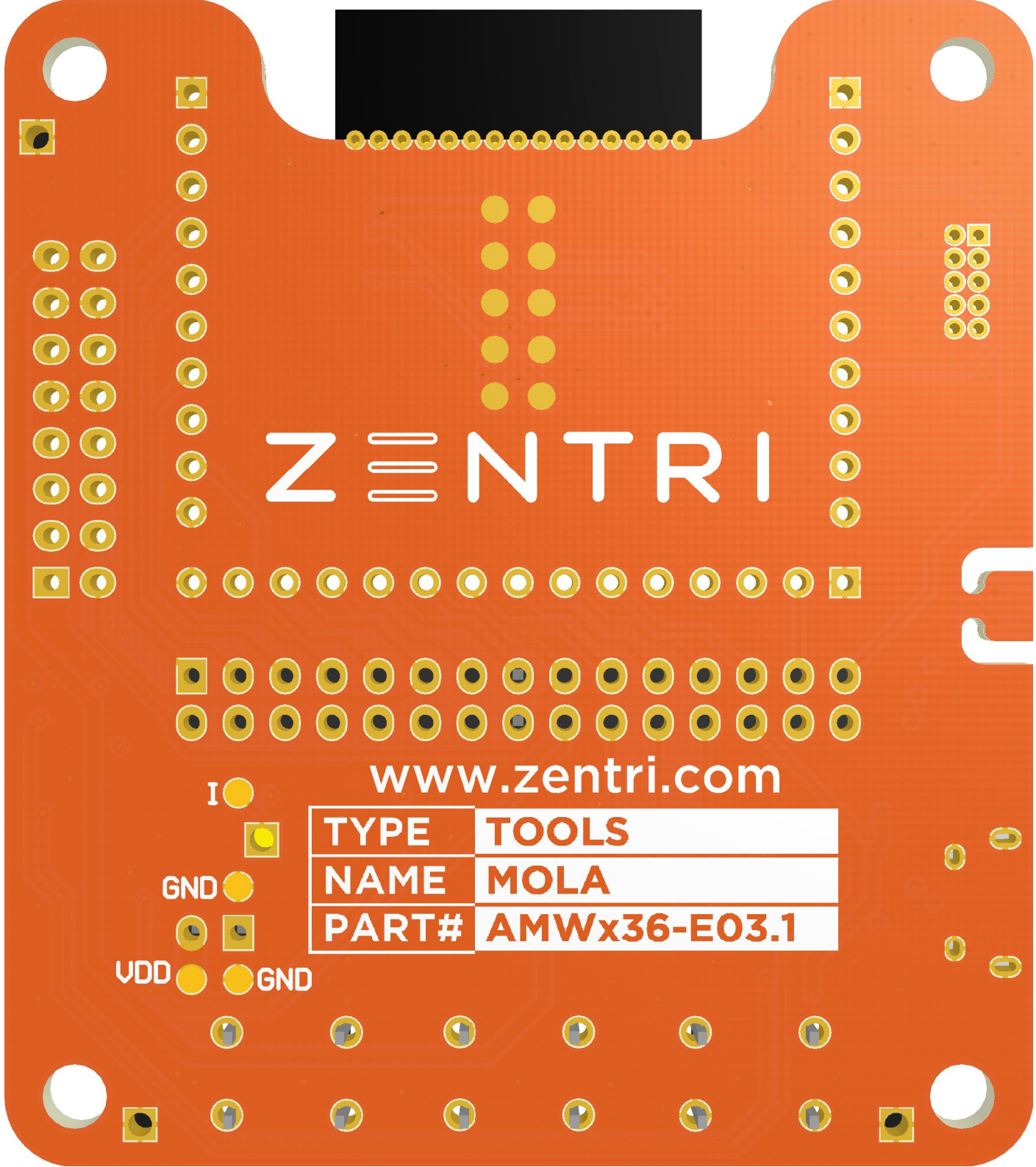
H2
H5
H8
H9
GND
THERM
POWER
UART_TX
LED 1
LED 2
RESET
BUTTON 1
BUTTON 2
Bottom Layer


ZENTRI
www.zentri.com
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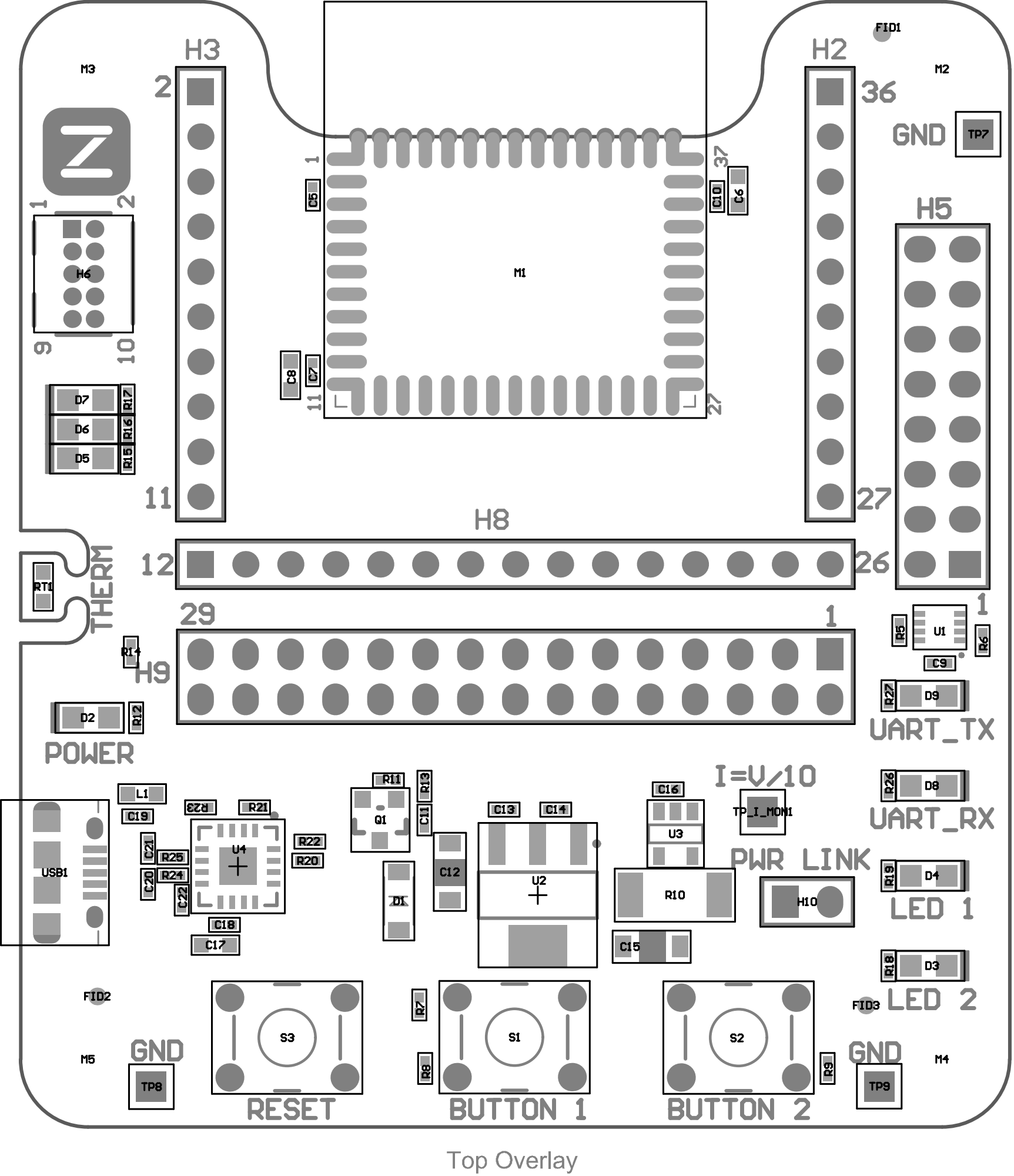
GND
VDD
GND
TYPE
TOOLS
NAME
MOLA
PART#
AMWx36-E03.1


H3
H2
H5
H8
H9
M1
M2
M3
M4
M5
H6
FID1
FID2
FID3
GND
TP7
TP8
TP9
THERM
RT1
POWER
D2
R12
D7
D6
D5
R17
R16
R15
R14
U1
R5
R6
C9
D9
R27
UART_TX
D8
R26
UART_RX
I=V/10
TP_I_MON1
PWR LINK
H10
D4
R19
LED 1
D3
R18
LED 2
USB1
L1
C19
C21
C20
C22
R25
R24
R23
R21
R22
R20
U4
C18
C17
R11
R13
Q1
C11
D1
C12
C13
C14
U2
C16
U3
R10
C15
R7
R8
R9
S3
S1
S2
RESET
BUTTON 1
BUTTON 2
C5
C10
C6
C8
C7
1
2
9
10
11
12
26
27
29
36
37

Top Overlay