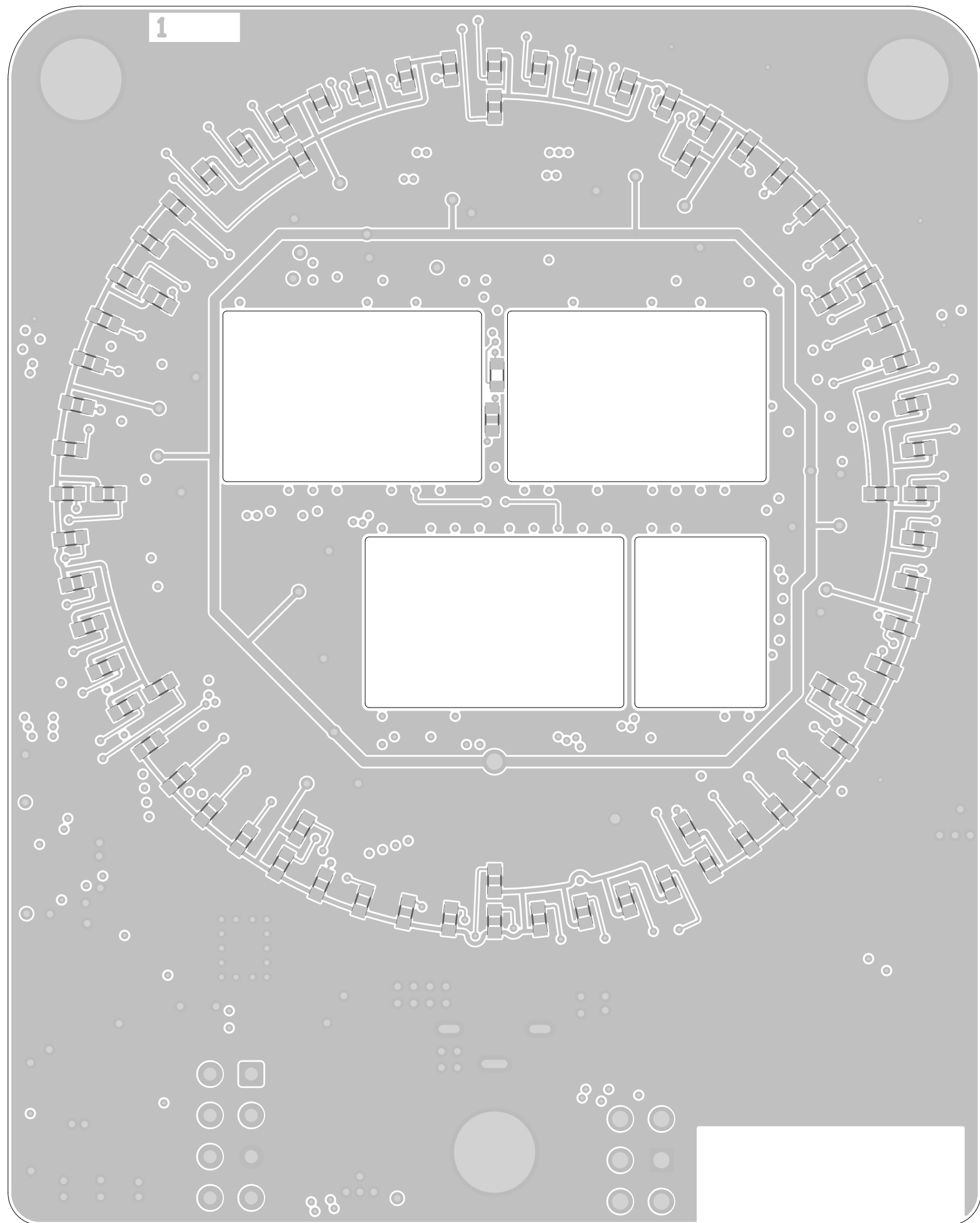


Title		
Display Driver		
Size	Number	Revision
A4		
Date:	11/24/2020	Sheet of
File:	C:\dev\clock\display.SchDoc	Drawn By:

1



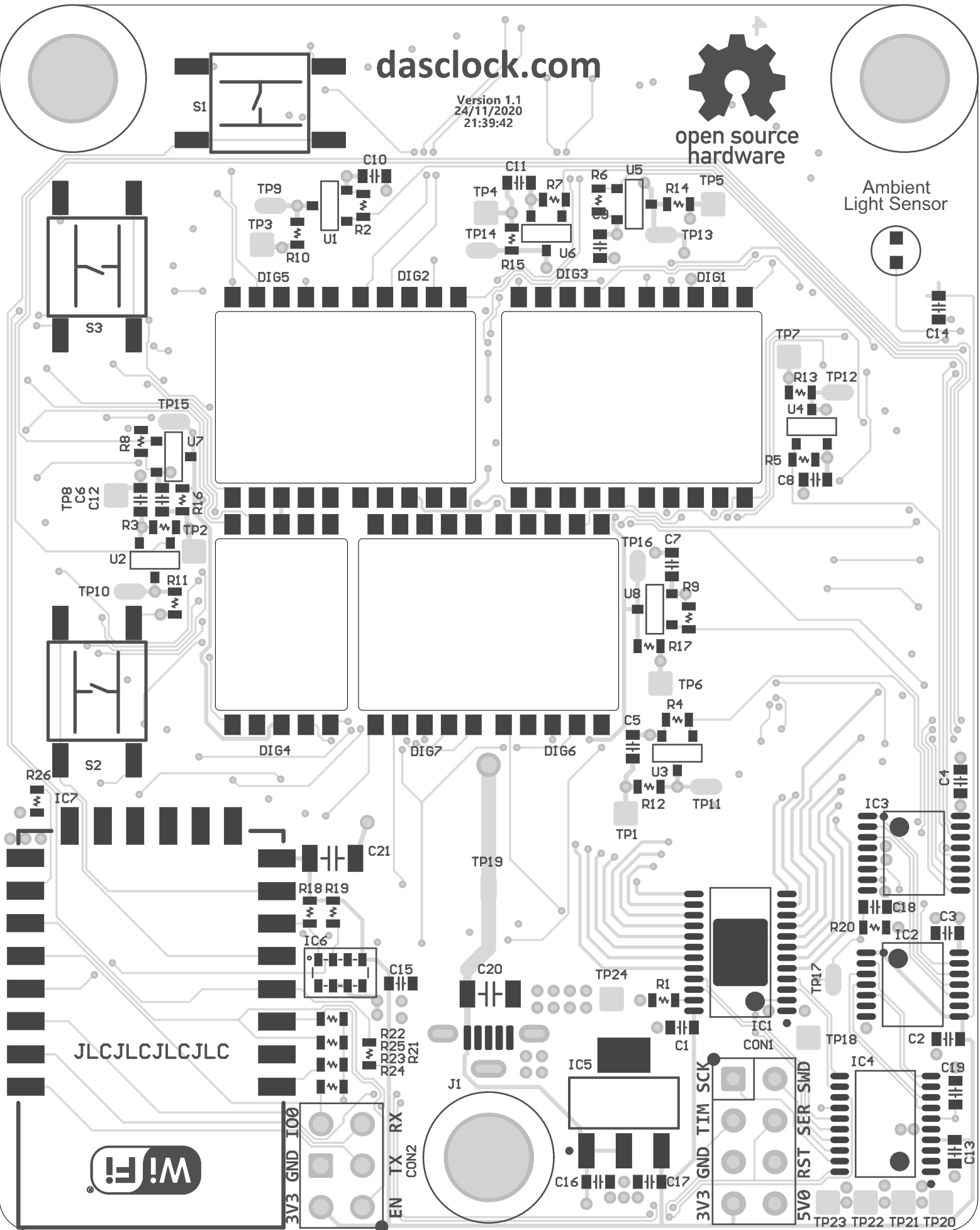
dasclock.com

Version 1.1
24/11/2020
21:39:42



open source
hardware

Ambient
Light Sensor

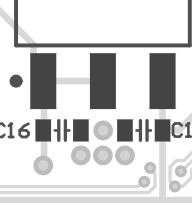
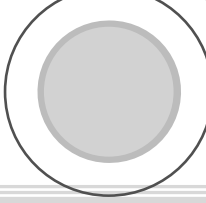


JLCJLCJLCJLC



3V3 GND I00

EN TX RX CON2



3V3 GND TIM SCK

5V0 RST SER SMD

TP23 TP22 TP21 TP20

Designator	Value	Quantity	Name	Footprint	Description
ALS1		1	PHOTOTRANSISTOR	ALS-PT19-315C	Photo transistor
C1-C15, C19	100nF	16	Cap	CAPC_0603_1608X08L	Capacitor
C16, C17	1uF	2	Cap	CAPC_0603_1608X08L	Capacitor
C18	220nF	1	Cap	CAPC_0603_1608X08L	Capacitor
C20	1uF	1	Cap	CAPC_1206_3216X16L	Capacitor
C21	4.7uF	1	Cap	CAPC_1206_3216X16L	Capacitor
D1-D74		74	LED	0603 Chip SMD LED	Red 0603 SMD LED
DIG1-DIG7		7	KCSA03-105	KCSA03105	Low profile 7 segment digit
IC1		1	TLC5949PWP	TSOP65P640X120-24L - POWERPAD	16 channel cc sink led driver
IC2		1	TXB0104PWR	TSOP65P640X120-14L	4 channel level shifter
IC3		1	SN74HC138	TSOP65P640X110-16L	3 -> 8 demux
IC4		1	STM32G030F6P6	TSOP65P630X120-20L	MCU 64MHz tssop20
IC5		1	MC33375ST-3.3T3G	SOT230P700X180-4N	3.3v LDO
IC6		1	RV-8263-C7	RV-8263-C7	
IC7		1	ESP8266 ESP-12-F	ESP8266 ESP-12-E	ESP8266 ESP-12-F
J1		1	USB Micro	USB 1051330011	USB 2.0 Type B Micro vertical SMT
R1	1.6k	1	RES0603	RESC1608X03L	Chip Resistor
R2-R9, R18, R19	20k	10	RES0603	RESC1608X03L	Chip Resistor
R10-R17	4.7k	8	RES0603	RESC1608X03L	Chip Resistor
R20	68k	1	RES0603	RESC1608X03L	Chip Resistor
R21-R26	10k	6	RES0603	RESC1608X03L	Chip Resistor
S1-S3		3	4-1437565-1	FSM-SWITCH	6x6mm SMD tactile switch,SPST-NO
U1-U8		8	MOSFET-P	SOT95P230X110-3L	P channel mosfet 1.2A

Design Rules Verification Report

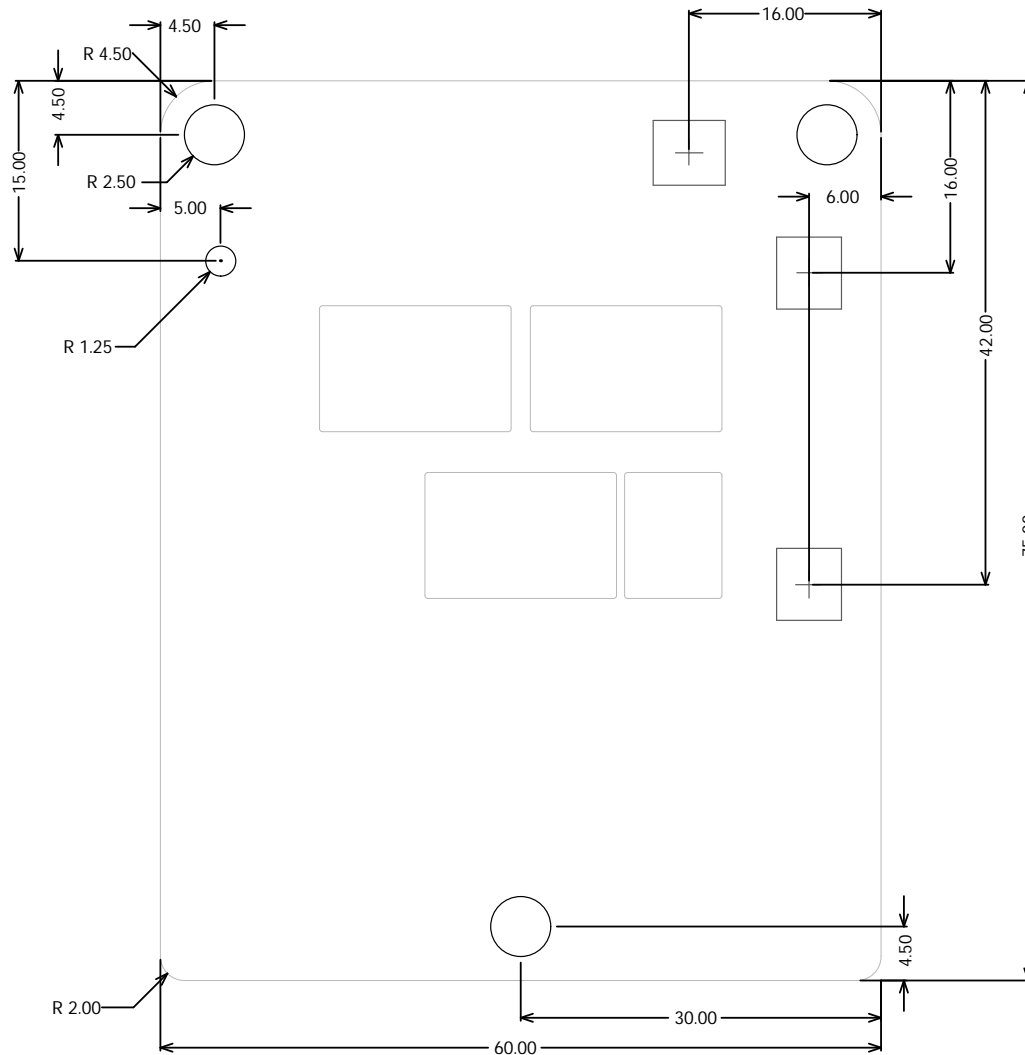
Filename : C:\dev\clock\clock.PcbDoc

Warnings 0
Rule Violations 0

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=7.874mil) (InComponentClass('LED_DIGIT') AND False),(OnLayer('Multi-Layer'))	0
Clearance Constraint (Gap=4mil) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint (All)	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=5mil) (Max = 71497.938mil) (Preferred=8mil) (All)	0
Routing Layers(All)	0
Routing Layers(TouchesRoom('BOTTOM_GND'))	0
Power Plane Connect Rule(Relief Connect)(Expansion=11.811mil) (Conductor Width=4mil) (Air Gap=4mil) (Entries=4)	0
Power Plane Connect Rule(Direct Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Minimum Annular Ring (Minimum=5.118mil) (All)	0
Hole Size Constraint (Min=7.874mil) (Max = 248.031mil) (All)	0
Hole To Hole Clearance (Gap=9.842mil) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0mil) (All),(All)	0
Silk To Solder Mask (Clearance=4mil) (False),(All)	0
Net Antennae (Tolerance=0mil) (False)	0
Board Clearance Constraint (Gap=0mil) (OnLayer('Top Copper') Or OnLayer('Bottom Copper') Or OnLayer('Signal Layer	0
Component Clearance Constraint (Horizontal Gap = 3.937mil, Vertical Gap = 0mil) (All),(All)	0
Height Constraint (Min=0mil) (Max = 71497.938mil) (Preferred=500mil) (All)	0
Total	0

Desktop Studio Clock



For the 60 minute LEDS:

Anode (+) is on the outer side of each LED in the circle (closest to the edge)
Cathode (-) is on the inner side (closest to the middle)

For the 12 hour LEDS:

Anode (+) is on the outer side of each LED in the circle (closest to the edge)
Cathode (-) is on the inner side (closest to the middle)

For the 2 middle LEDS:

Anode (+) is on the high (upper) side, Cathode (-) on the lower side