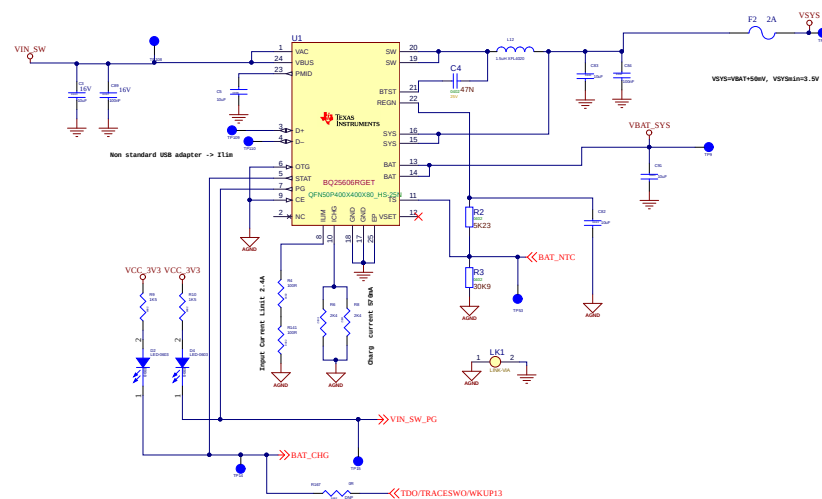


DC/DC POWER



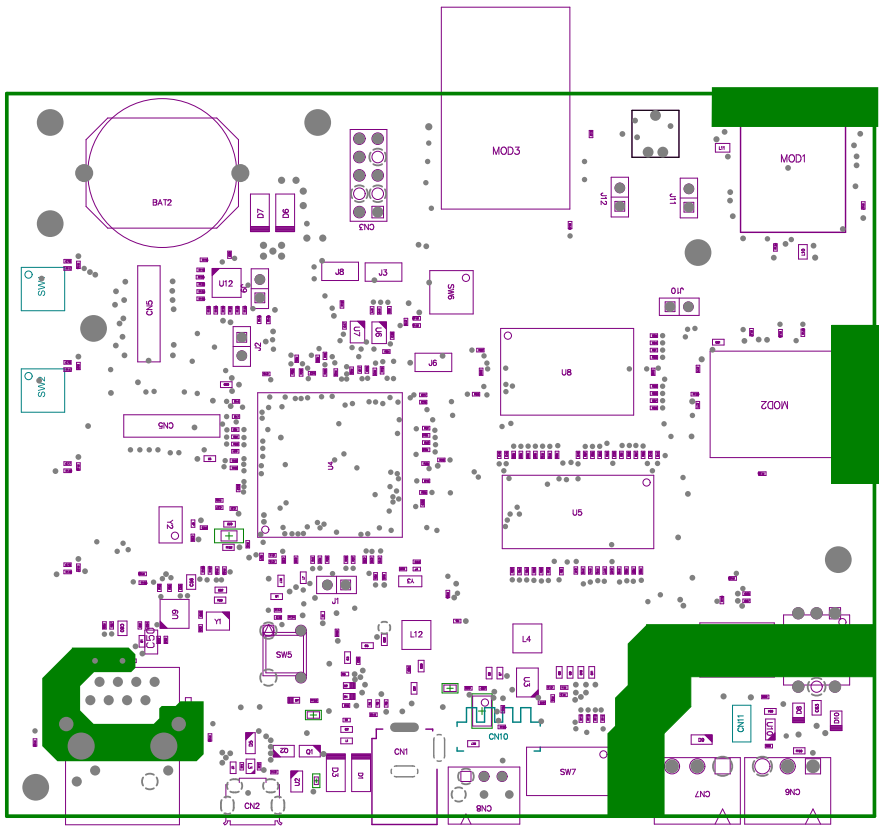
Title		GlenDimplex Gateway HUB		Copyright © 2018 GlenDimplex	
Code	GDHUBMC01	File Name	02 - Power Management.SchDoc	 www.glendimplexireland.com	
Description	DC/DC POWER	Classification	Restricted		
Drawn by	P.J.PT/MW	Status	Released	Revision	Count
Checked by	FB/BZ	Date	31/5/2021	Page Size	A3 Sheet 2 of 10

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05 – L2 Inner Plane (Negative)

13 – Assembly Drawing Top

14 – Assembly Drawing Bottom



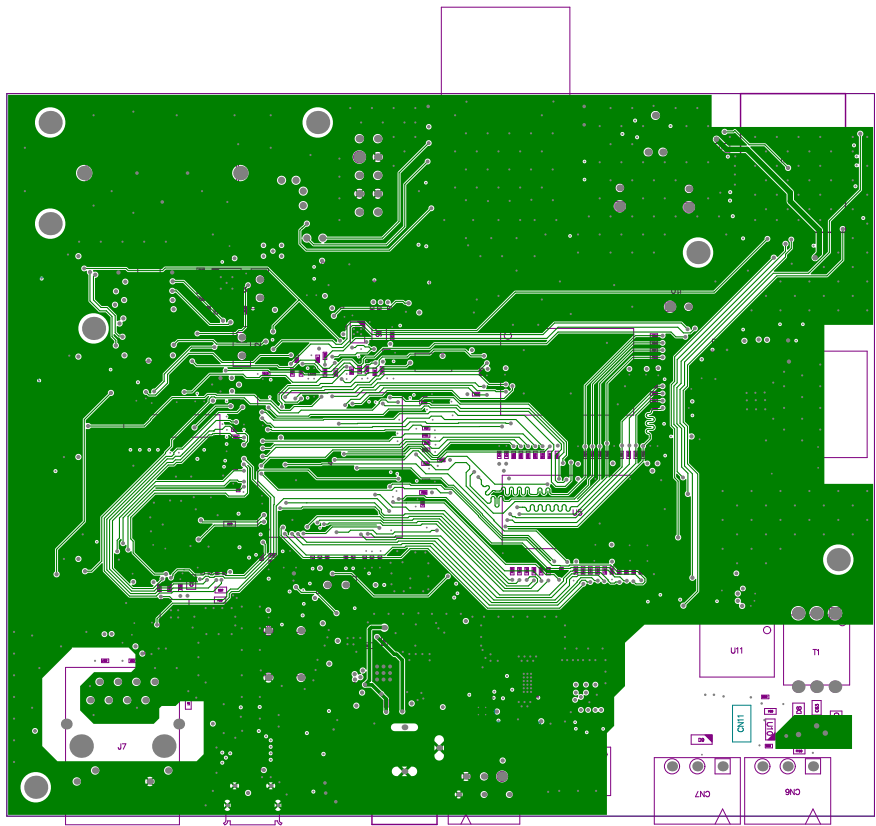
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P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F	ANGLES	HOLES			
Schematics P.T./W.M./P.J.	DATE	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
APPROVED TBD	DATE	FINISH (See Drill Drawing For Details) RoHS ENIG			PRODUCT GlenDimplex_IoT_Gateway_pG		
TITLE GlenDimplex IoT Gateway					DRG. NO. GDHUBMBWH01 G		
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					A4		

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06 – L3 Tracking

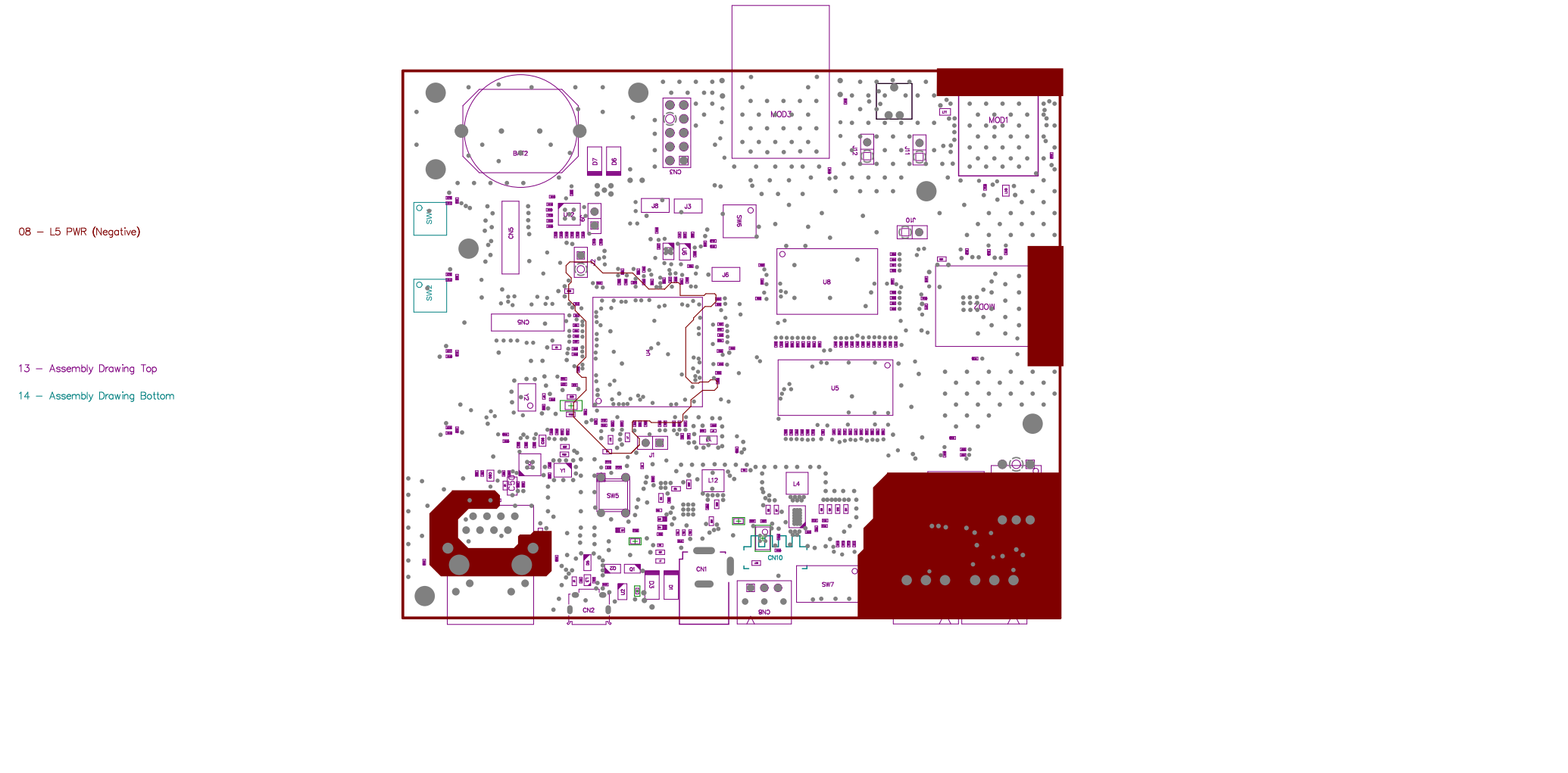
13 – Assembly Drawing Top

14 – Assembly Drawing Bottom



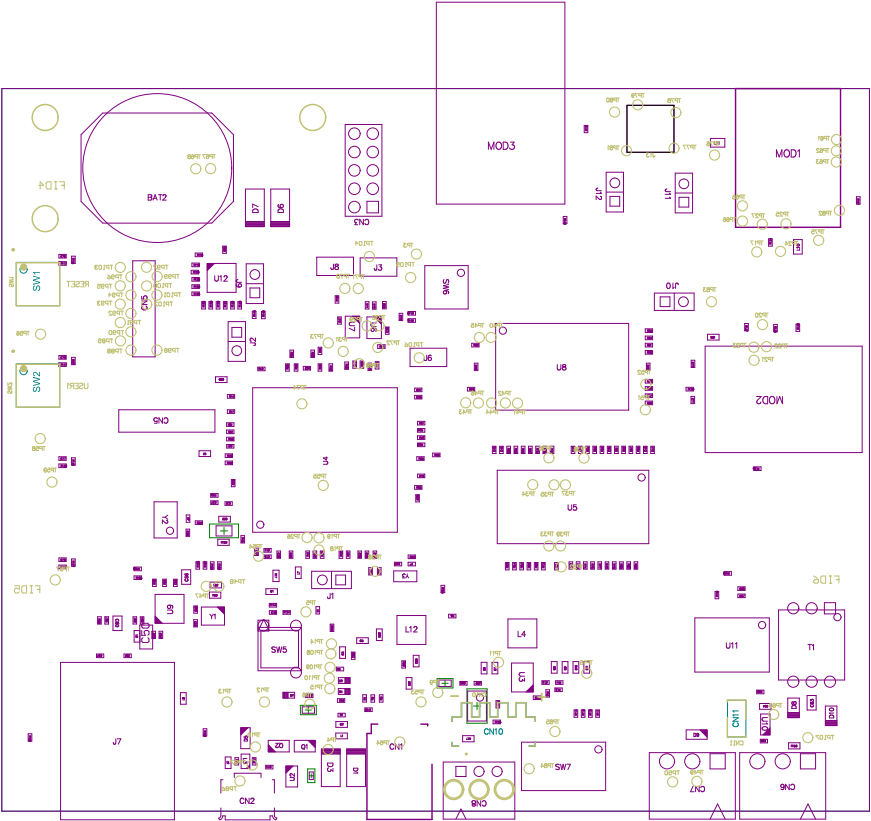
Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION
	3/17/2021	Schematic Revision F	ANGLES	HOLES			THIRD ANGLE
P.T./P.J./B.Z. W.M.							
Schematics	DATE	MATERIAL (See Drill Drawing For Details)			1 : 1	MM	
P.T./W.M./P.J.	25/01/2018	FR4 1.6mm 1oz Ext, 0.5oz Int.					
APPROVED	DATE	FINISH (See Drill Drawing For Details)			PRODUCT		
TBD	30/01/2018	RoHS ENIG			GlenDimplex_IoT_Gateway_pG		
TITLE					DRG. NO.		
GlenDimplex IoT Gateway					GDHUBMBWH01 G		
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					A4		

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								Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE	
								P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F		ANGLES				HOLES
								Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext, 0.5oz Int.			1 : 1	MM		
								APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG						PRODUCT GlenDimplex IoT Gateway_pG
ISSUE	Rev A	Rev B	Rev C	Rev D	Rev E	Rev F	Rev G	TITLE GlenDimplex IoT Gateway			DRG. NO. GDHUBMBWH01 G					
ECO / RELEASE	Rel.1.2	Rel.1.2	Rel.1.3	Rel.1.0	Rel. 1.0	Rel. 1.0	Rel. 1.0									
CERTIFIED	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	TBD	Designed by Firmwave Limited Innovation House DCU Alpha Old Finglas Road , Dublin 11 , Ireland D11 KXN4			Generated using ALTUM Ver 14.3/17.1 software.					A4

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- 11 – Bottom Silkscreen
- 13 – Assembly Drawing Top
- 14 – Assembly Drawing Bottom

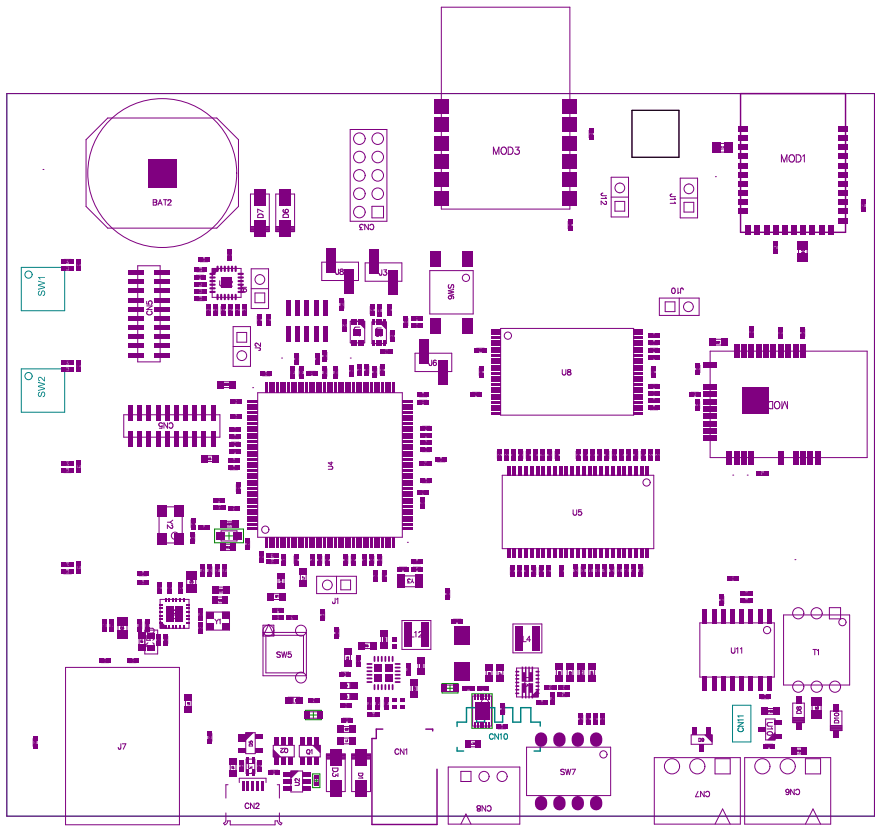
								Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE
								P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F		ANGLES			
								Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
								APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG					
ISSUE	Rev A	Rev B	Rev C	Rev D	Rev E	Rev F	Rev G	DRG. NO.							
ECO / RELEASE	Rel.1.2	Rel.1.2	Rel.1.3	Rel.1.0	Rel. 1.0	Rel. 1.0	Rel. 1.0	GDHUBMBWH01 G							
CERTIFIED	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	TBD	Designed by Firmwave Limited Innovation House DCU Alpha Old Finglas Road , Dublin 11 , Ireland D11 KXN4			Generated using ALTUM Ver 14.3/17.1 software.		A4		

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01 — Top Solder Paste

13 — Assembly Drawing Top

14 — Assembly Drawing Bottom

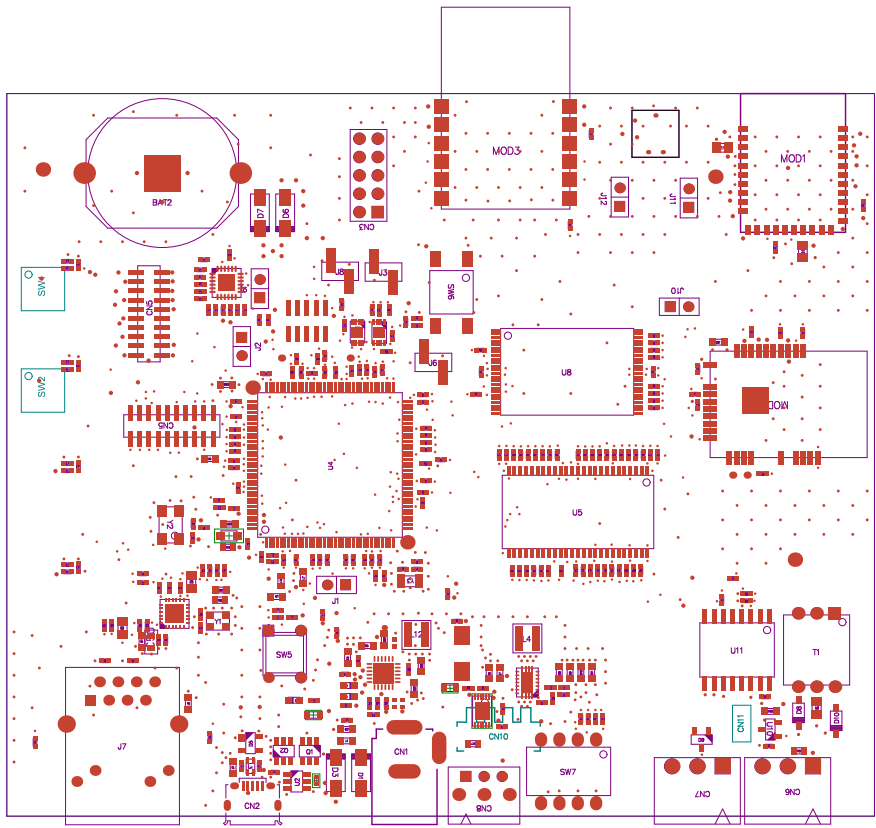


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03 – Top Solder Mask

13 – Assembly Drawing Top

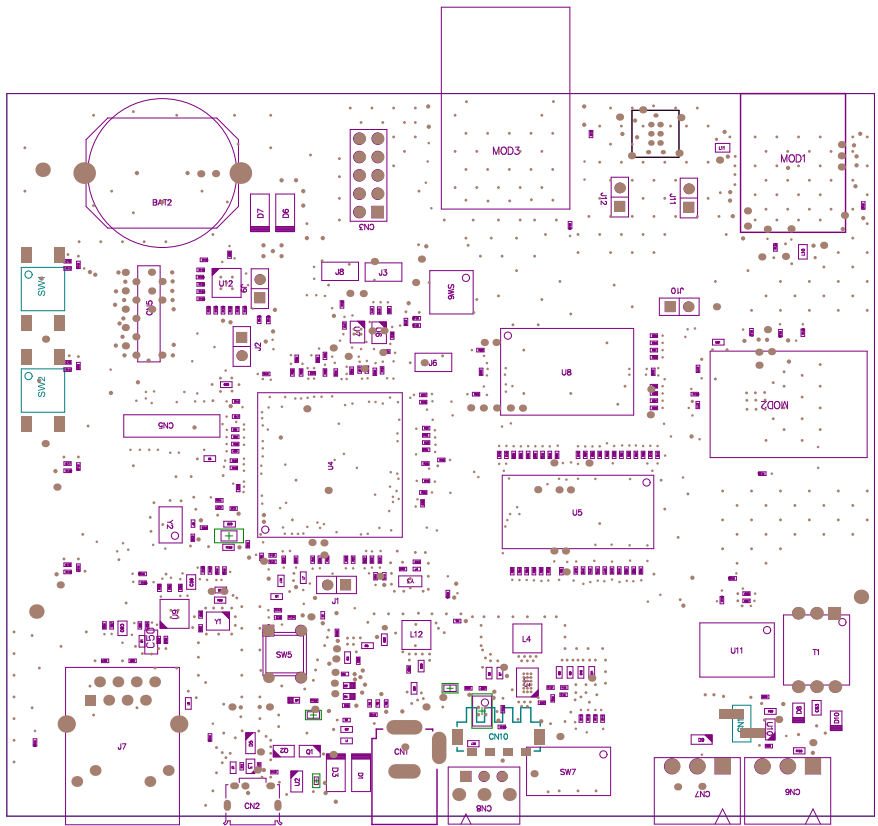
14 – Assembly Drawing Bottom



Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION
	3/17/2021	Schematic Revision F	ANGLES	HOLES			THIRD ANGLE
P.T./P.J./B.Z. W.M.							
Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG			PRODUCT GlenDimplex_IoT_Gateway_pG		
TITLE GlenDimplex IoT Gateway					DRG. NO. GDHUBMBWH01 G		
Designed by Firmwave Limited Innovation House DCU Alpha Old Finglas Road , Dublin 11 , Ireland D11 KXN4					Generated using ALTUM Ver 14.3/17.1 software.		A4

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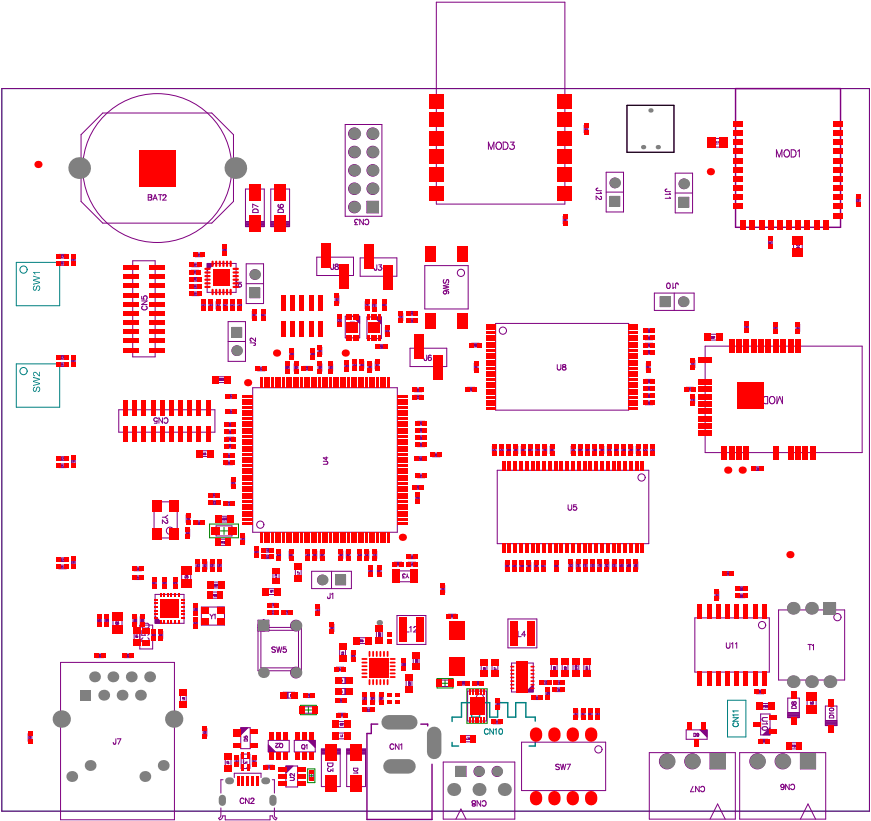
- 10 – Bottom Solder Mask
- 13 – Assembly Drawing Top
- 14 – Assembly Drawing Bottom



								Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE
								P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F		ANGLES			
								Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
								APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG					
								ISSUE							
ECO / RELEASE	Rev A	Rev B	Rev C	Rev D	Rev E	Rev F	Rev G	GlenDimplex IoT Gateway			GDHUBMBWH01 G				
CERTIFIED	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	TBD								
								Designed by Firmwave Limited Innovation House DCU Alpha Old Finglas Road , Dublin 11 , Ireland D11 KXN4			Generated using ALTUM Ver 14.3/17.1 software.			A4	

Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE 
P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F	ANGLES	HOLES			
Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.					
APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG			PRODUCT GlenDimplex_loT_Gateway_pG		
TITLE GlenDimplex IoT Gateway					DRG. NO. GDHUBMBWH01 G		
Designed by Firmwave Limited Innovation House DCU Alpha Old Finglas Road . Dublin 11 . Ireland. D11 KXN4					Generated using ALTUM Ver 14.3/17.1 software.		A4

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13 – Assembly Drawing Top
14 – Assembly Drawing Bottom

								Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE
								P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F		ANGLES			
								Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
								APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG					
ISSUE	Rev A	Rev B	Rev C	Rev D	Rev E	Rev F	Rev G	TITLE GlenDimplex IoT Gateway			DRG. NO.				
ECO / RELEASE	Rel.1.2	Rel.1.2	Rel.1.3	Rel.1.0	Rel. 1.0	Rel. 1.0	Rel. 1.0				GDHUBMBWH01 G				
CERTIFIED	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	W.Magnin	TBD	Designed by Firmwave Limited Innovation House DCU Alpha Old Finglas Road , Dublin 11 , Ireland D11 KXN4			Generated using ALTUM Ver 14.3/17.1 software.		A4		

Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE 
P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F	ANGLES	HOLES			
Schematics P.T./W.M./P.J.	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.					
APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG			PRODUCT GlenDimplex_loT_Gateway_pG		
TITLE GlenDimplex IoT Gateway					DRG. NO. GDHUBMBWH01 G		
Designed by Firmwave Limited Innovation House DCU Alpha Old Finalas Road . Dublin 11 . Ireland. D11 KXN4					Generated using ALTUM Ver 14.3/17.1 software.		A4

15 – Drill & Manufacturing



Fab. notes - important
Layer 2 and layer 5 are negative.

Symbol	Ht	Count	Finished Hole Size	Plated	Hole Type	Physical Length	Root Path Length
⌀	1	0.400m (15.75in)	PTH	Round	-	-	-
⌀	1	0.800m (31.50in)	PTH	Slot	3.500m (137.79in)	2.700m (106.30in)	-
⌀	2	0.500m (19.69in)	PTH	Slot	1.650m (65.25in)	0.650m (25.99in)	-
⌀	2	0.900m (35.43in)	PTH	Slot	0.800m (31.49in)	0.300m (11.81in)	-
⌀	2	1.500m (59.06in)	PTH	Slot	3.000m (118.11in)	2.200m (86.61in)	-
⌀	2	2.000m (78.74in)	PTH	Round	-	-	-
⌀	2	3.250m (127.95in)	NPTH	Round	-	-	-
⌀	3	0.700m (27.56in)	PTH	Round	-	-	-
X	4	0.200m (7.87in)	PTH	Round	-	-	-
H	6	1.200m (47.24in)	PTH	Round	-	-	-
VI	6	1.400m (55.12in)	PTH	Round	-	-	-
⌀	7	1.000m (39.37in)	PTH	Round	-	-	-
⌀	7	3.200m (125.98in)	NPTH	Round	-	-	-
F	8	0.300m (11.81in)	PTH	Round	-	-	-
▼	10	1.050m (41.34in)	PTH	Round	-	-	-
⌀	12	0.950m (37.40in)	PTH	Round	-	-	-
⌀	15	0.900m (35.43in)	PTH	Round	-	-	-
B	16	0.350m (13.78in)	PTH	Round	-	-	-
E	21	0.900m (35.43in)	PTH	Round	-	-	-
C	402	0.250m (9.84in)	PTH	Round	-	-	-
D	669	0.300m (11.81in)	PTH	Round	-	-	-

Slot definitions : $\text{Rout Path Length} = \text{Calculated from tool start centre position to tool end centre position.}$
 $\text{Physical Length} = \text{Rout Path Length} + \text{Tool Size} = \text{Slot length as defined in the PCB layout.}$

- 1: Fabricate PCB in accordance with IPC-6012, Class 2, with the following additions / changes:
- 2: Finished board to be RoHS compliant as per EU Directive 2002/95/EC
- 3: Materials:
- 1. Material: FR4 suitable for min. four lead-free thermal cycles
 - 2. Copper foil to be in accordance with IPC-MF-150,
 - External Layers 18um copper plated to 35um
 - Internal Layers 18um copper
 - 3. For suggested Stack-up and impedance control see "GD-Hub Board Stack Request (wip2).xsm"
- 4: Tolerances:
- 1. **All holes shall be located within 0.15mm (0.006") Diameter of True Position.**
 - Layer to layer registration **shall be within 0.08mm (0.003").**
 - 2. **All hole sizes are finished hole sizes**
 - 3. Standard tolerance on finished PCB outline = $\pm 0.15\text{mm}$
 - 4. Standard tolerance on finished PCB for bow and twist = 0.75% of longest edge
 - 5. Board thickness to be 1.1mm $\pm 10\%$
 - 6. Board Outline Routing - Internal Radii = Max. 0.8mm
- 5: Finish:
- 1. Where specified, ENIG finishes are to use IPC-4552
 - 2. Apply liquid photo imageable solder mask (colour GREEN) per IPC-SM-840, class H, to both sides of the board over bare copper. Via holes covered with solder mask are not to be plugged. Only solder mask images that are the same size as the component pads may be enlarged, and shall not be enlarged beyond 0.08mm (0.003") per side or 0.15mm (0.006") overall. **All other solder mask images shall not be enlarged.**
 - 3. Silkscreen shall be white, permanent, organic, non-conductive ink.
 - 4. Remove silkscreen from component pads / test pads.
 - 5. V-score check pattern may be added on break-off area only.
- 6: Marking:
- 1. UL logo and date/batch code required on silkscreen only in location indicated
 - 2. NO Manufacturer's ID except as part of UL/Batch/DateCode and only on silkscreen layer.
- 7: Test requirements:
- 100% net list electrical verification using customer supplied IPC-D-356A net list for opens and shorts
- 8: No copper to be added to PCB by manufacturer without prior approval by Firmwave

Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE
P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F	ANGLES	HOLES			
Schematics P.T./W.M./P.J	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG			PRODUCT GlenDimplex_IoT_Gateway_pG		
TITLE GlenDimplex IoT Gateway					DRG. NO. GDHUBMBWH01 G		
Designed by Firmwave Limited Innovation House (ICU), Alpha Old Ennals Road, Dublin 11, Ireland, D11 KXN4					Generated using ALTUM Ver 14.3/17.1 software.		A4

16 – Drill Guide

Layout	DATE	TOLERANCE: See Drill Drawing			SCALE (ORIGINAL DRAWING)	UNIT OF MEASURE	PROJECTION THIRD ANGLE
P.T./P.J./B.Z. W.M.	3/17/2021	Schematic Revision F	ANGLES	HOLES			
Schematics P.T./W.M./P.J	DATE 25/01/2018	MATERIAL (See Drill Drawing For Details) FR4 1.6mm 1oz Ext., 0.5oz Int.			1 : 1	MM	
APPROVED TBD	DATE 30/01/2018	FINISH (See Drill Drawing For Details) RoHS ENIG			PRODUCT GlenDimplexIoT_Gateway_pG		
TITLE GlenDimplex IoT Gateway					DRG. NO. GDHUBMBWH01 G		
Designed by Firmware Limited Innovation House DCU Alpha Old Finalas Road, Dublin 11, Ireland, D11 KXN4					Generated using ALTUM Ver 14.3/17.1 software.		A4