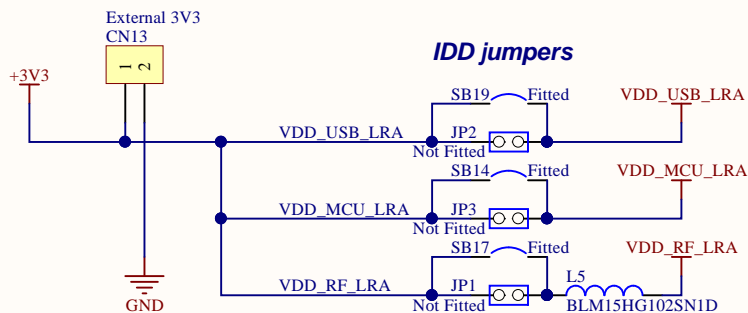
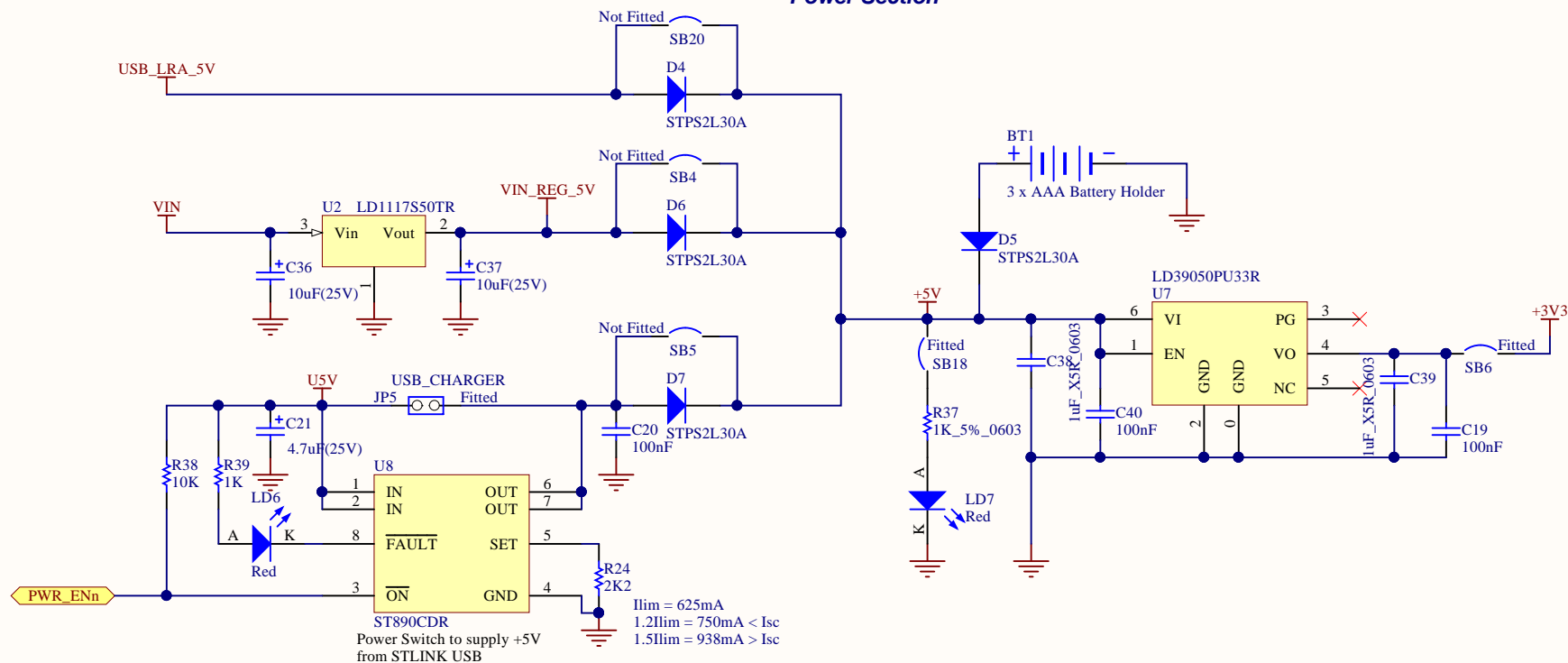


Internal/External Power Supply Selection



IDD jumpers

Power Section



Title: **Power**

Project: **STM32 LoRa Discovery**

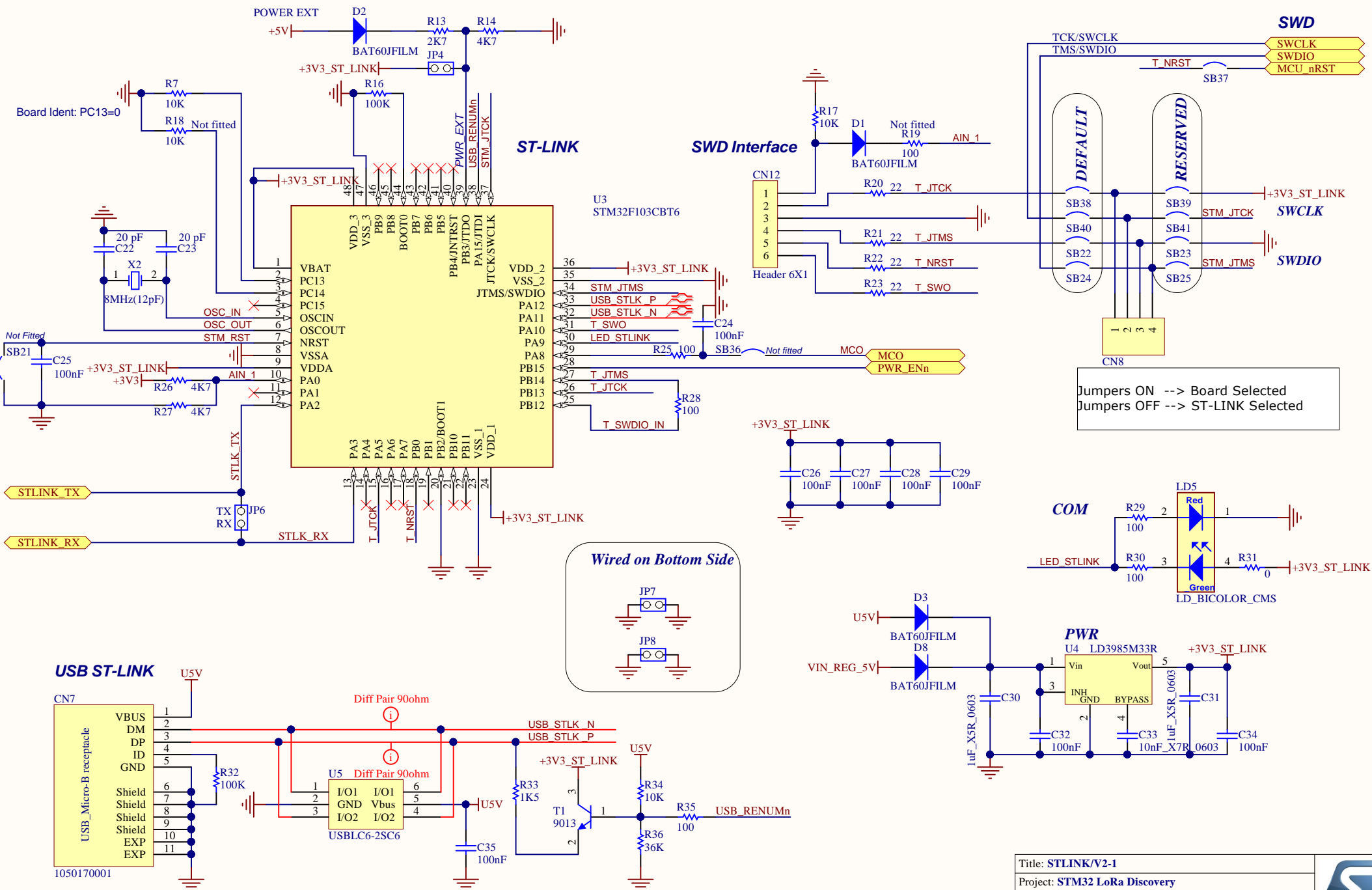
Size: **A4**

Reference: **MB1296**

Revision: **C-01**

Date: **25/11/2016**

Sheet: **2** of **6**



Title: **STLINK/V2-1**

Project: **STM32 LoRa Discovery**

Size: **A4**

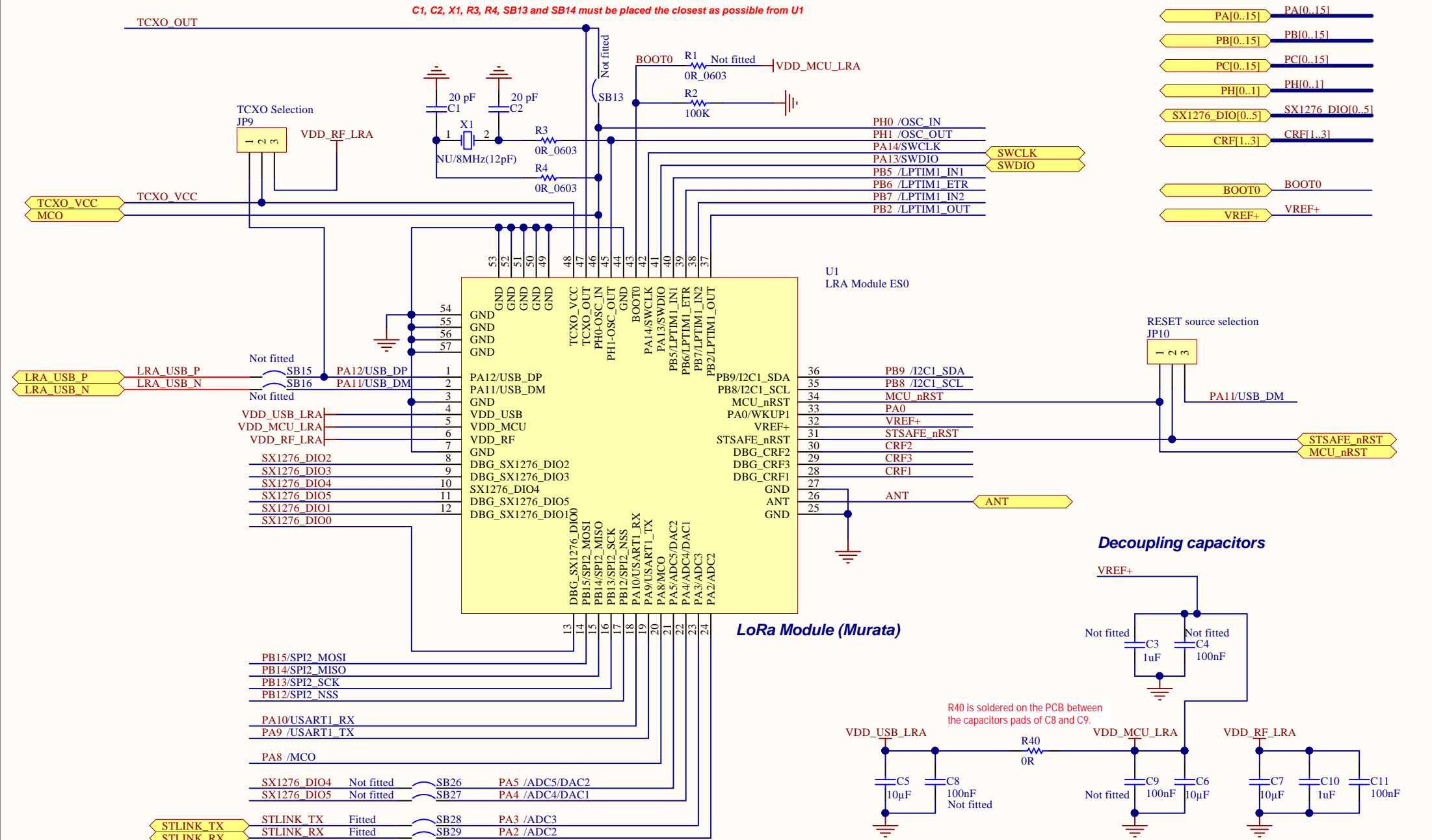
Reference: **MB1296**

Revision: **C-01**

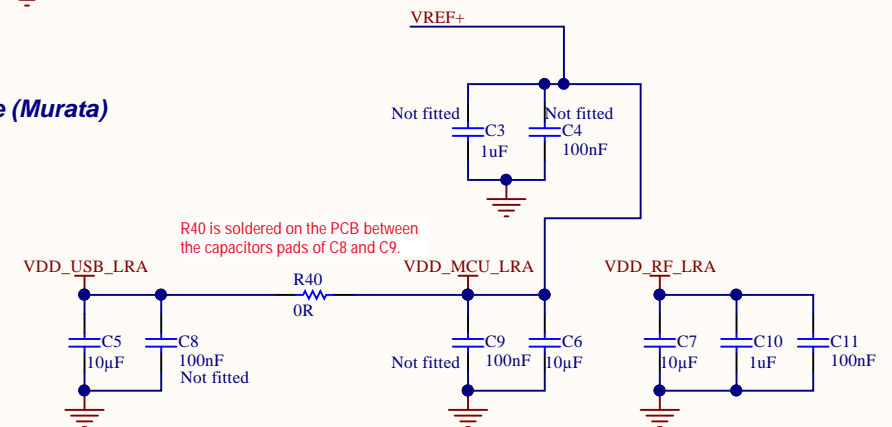
Date: **01/12/2016**

Sheet: **3** of **6**

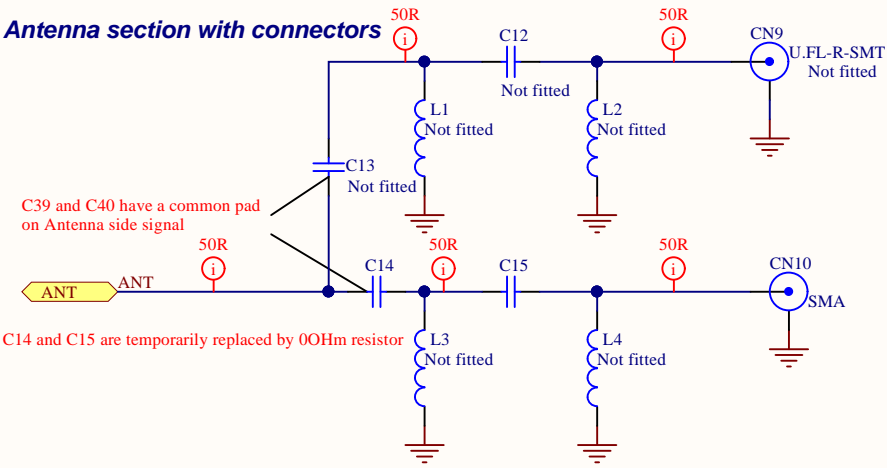
C1, C2, X1, R3, R4, SB13 and SB14 must be placed the closest as possible from U1



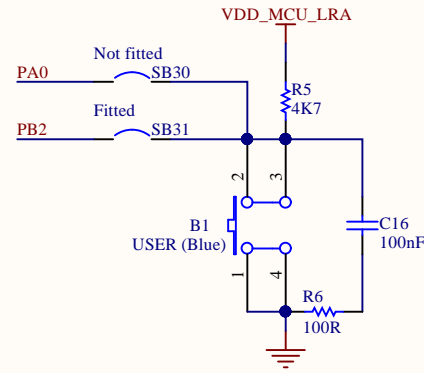
Decoupling capacitors



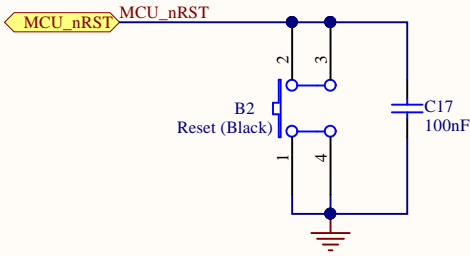
Antenna section with connectors



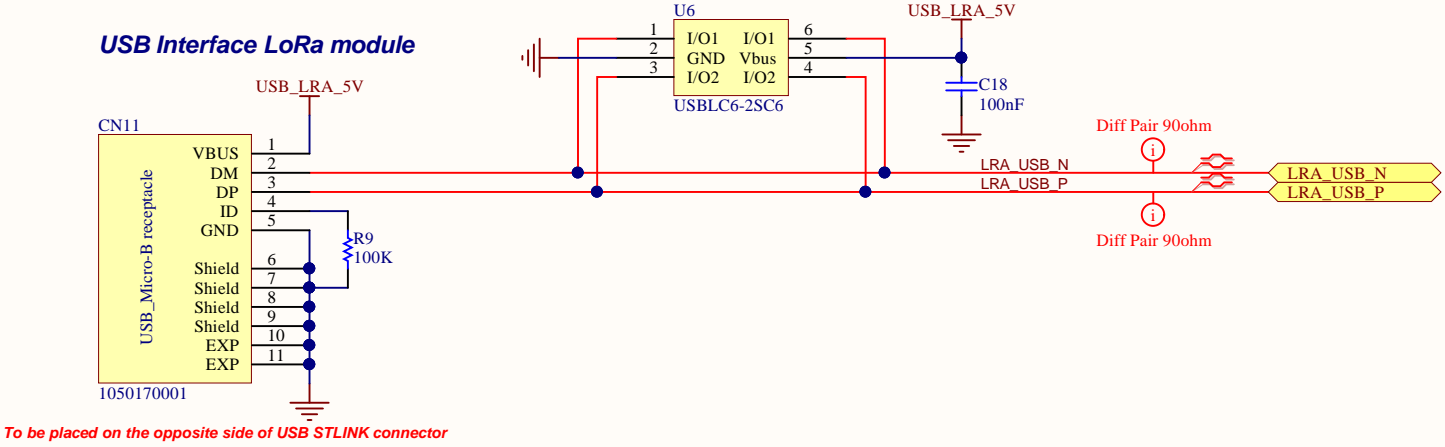
General purpose User Button (or LoRa Wake Up)



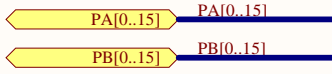
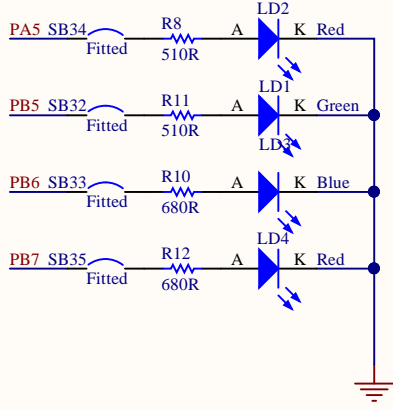
RESET button

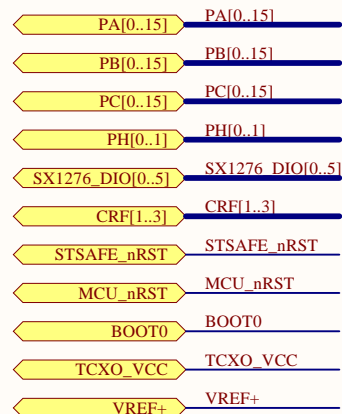


USB Interface LoRa module

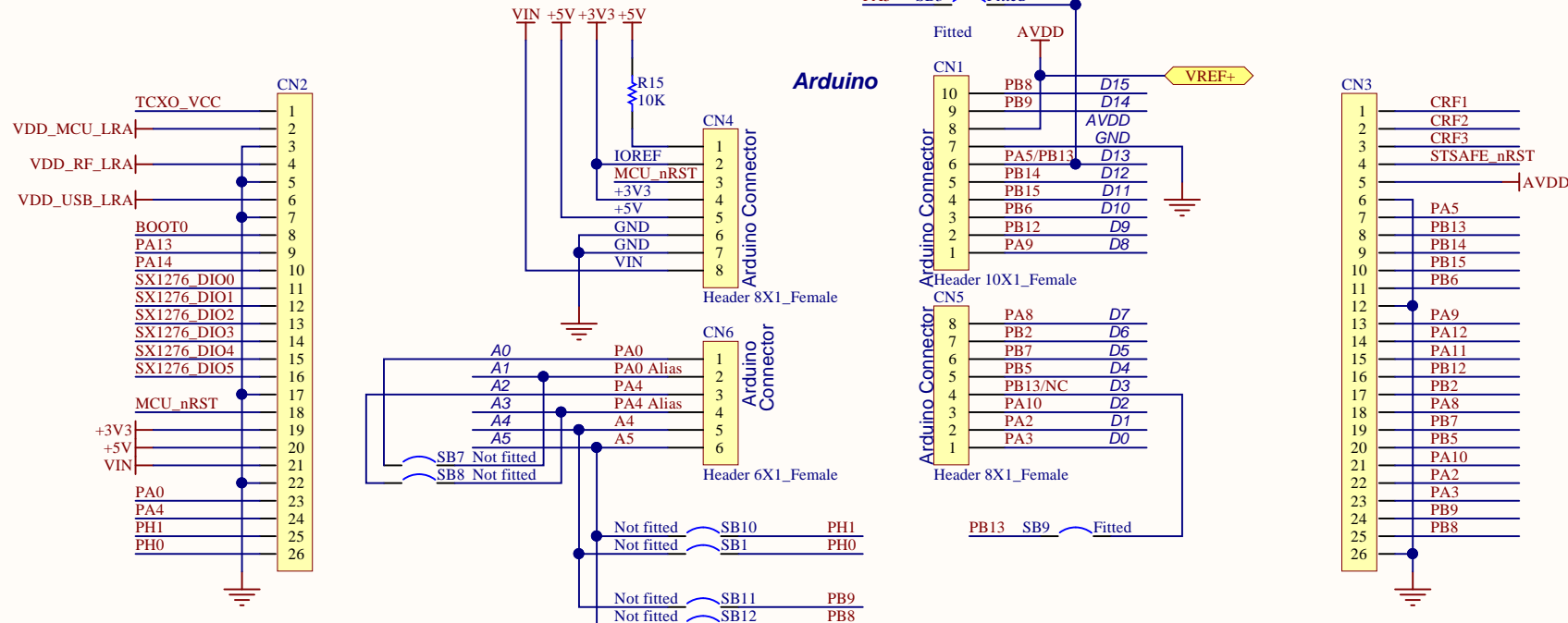


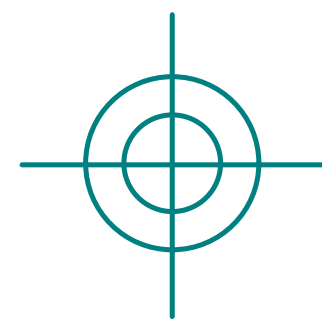
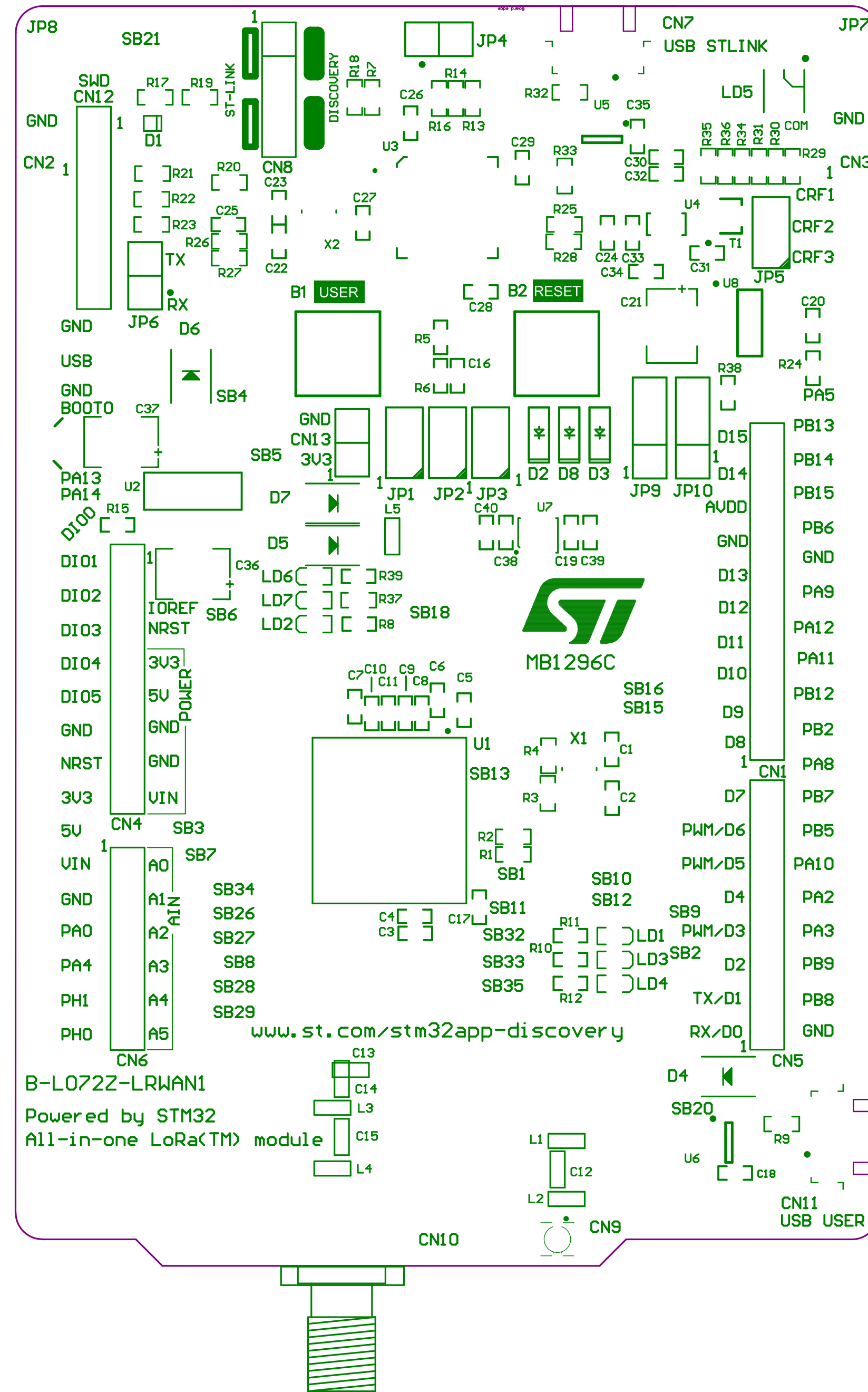
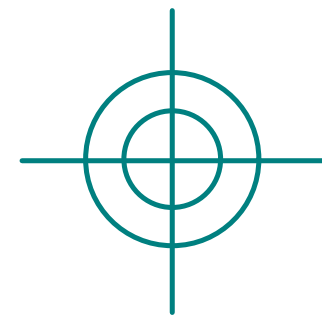
General purpose LEDs





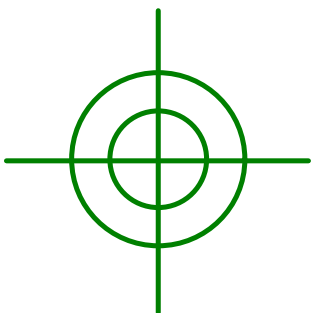
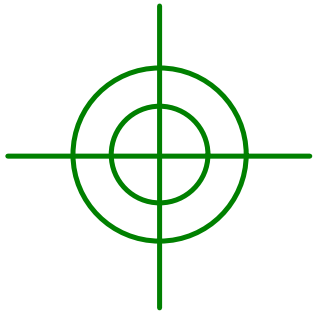
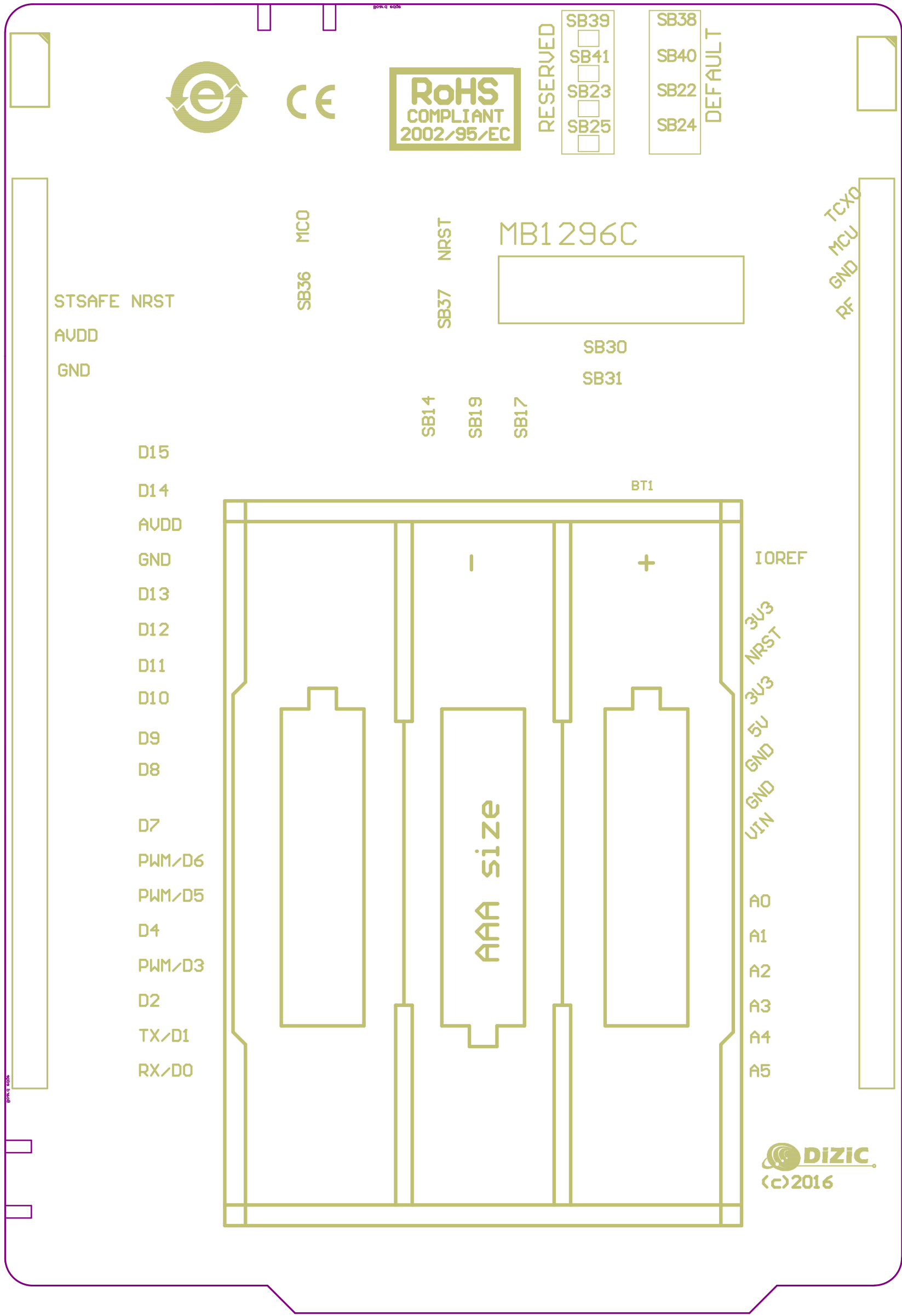
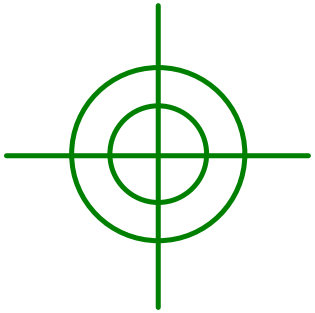
Extension connectors





| | | | |
|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: TOP SILKSCREEN | | Ref: MB1296 | |
| Gerber: .GTO | Date: 18-AUG-2016 | Size: A4 | Rev: C |
















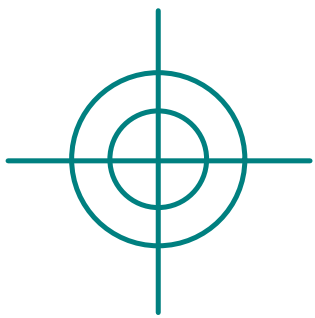
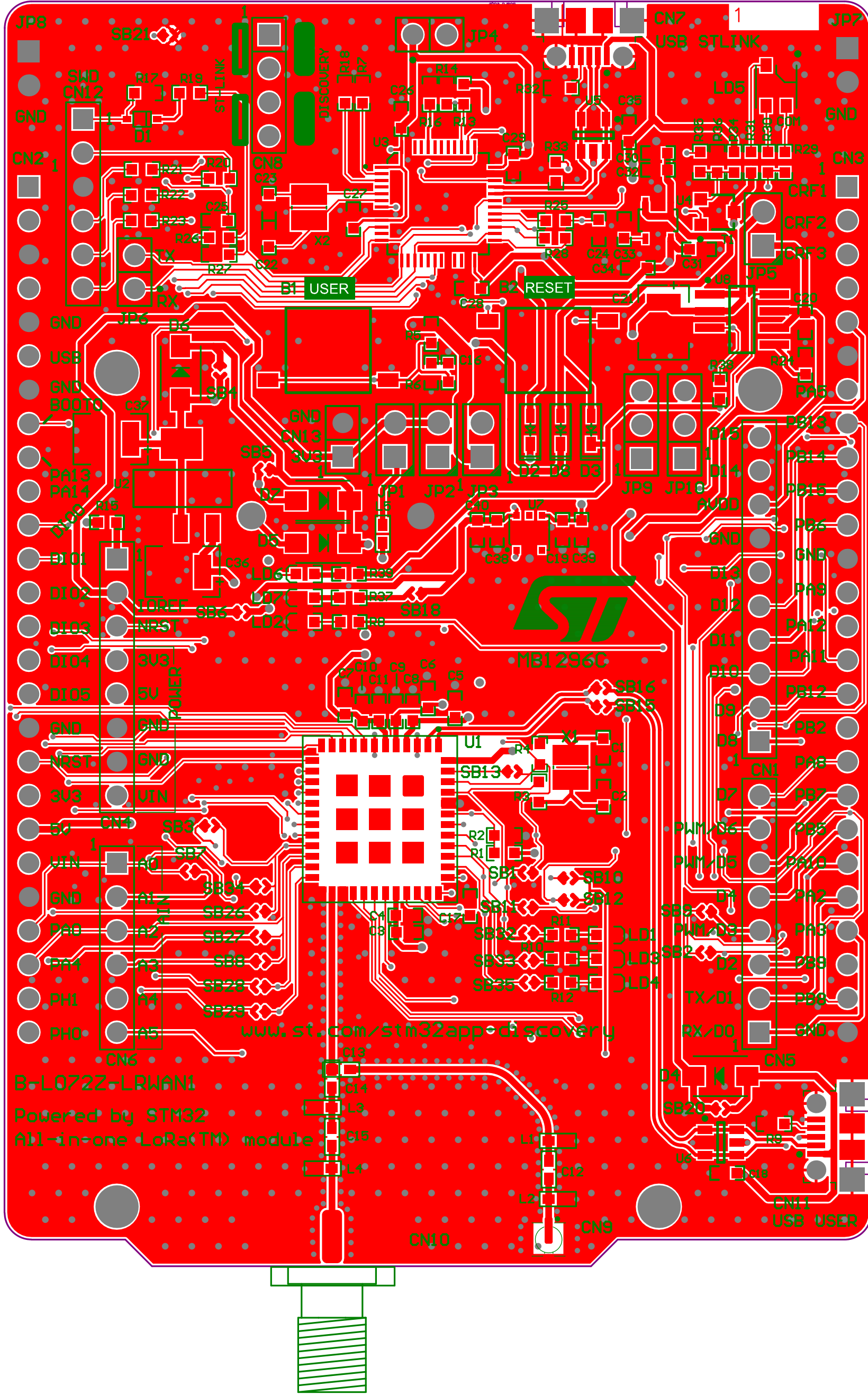
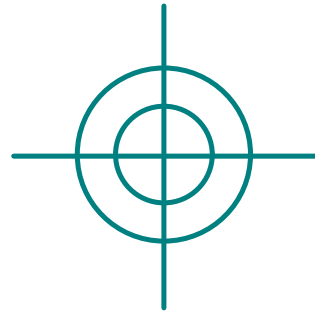
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: BOTTOM SILKSCREEN | | Ref: MB1296 | |
| Gerber: .GBO | Date: 18-AUG-2016 | Size: A4 | Rev: C |



Board Stack Report

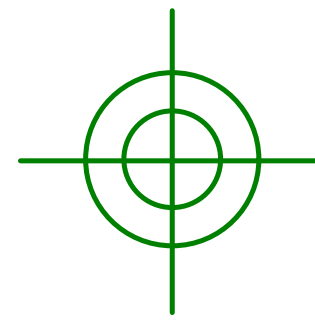
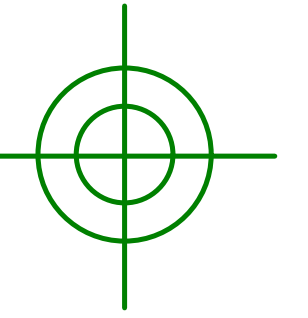
| Stack Up | | Layer Stack | | | |
|----------|---|----------------|---------------|-----------|----------|
| Layer | Board Layer Stack | Name | Material | Thickness | Constant |
| 1 |  | Top Paste | | | |
| 2 |  | Top Overlay | | | |
| 3 |  | Top Solder | Solder Resist | 0,018mm | 3,5 |
| 4 | | Top Layer | Copper | 0,041mm | |
| 5 |  | Dielectric1 | FR-4 | 0,508mm | 4,2 |
| 6 |  | GND | Copper | 0,030mm | |
| 7 |  | Dielectric2 | FR-4 | 0,381mm | 4,8 |
| 8 |  | VCC | Copper | 0,030mm | |
| 9 |  | Dielectric3 | FR-4 | 0,508mm | 4,8 |
| 10 |  | Bottom Layer | Copper | 0,041mm | |
| 11 | | Bottom Solder | Solder Resist | 0,018mm | 3,5 |
| 12 |  | Bottom Overlay | | | |
| 13 |  | Bottom Paste | | | |
| | Height : 1,575mm | | | | |





| | | | |
|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: TOP SCREEN | | Ref: MB1296 | |
| Gerber: .GTO | Date: 18-AUG-2016 | Size: A4 | Rev: C |





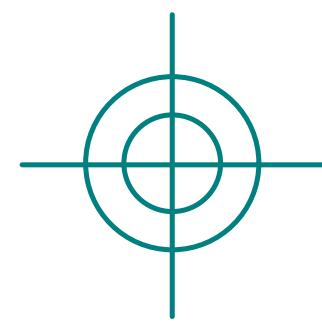
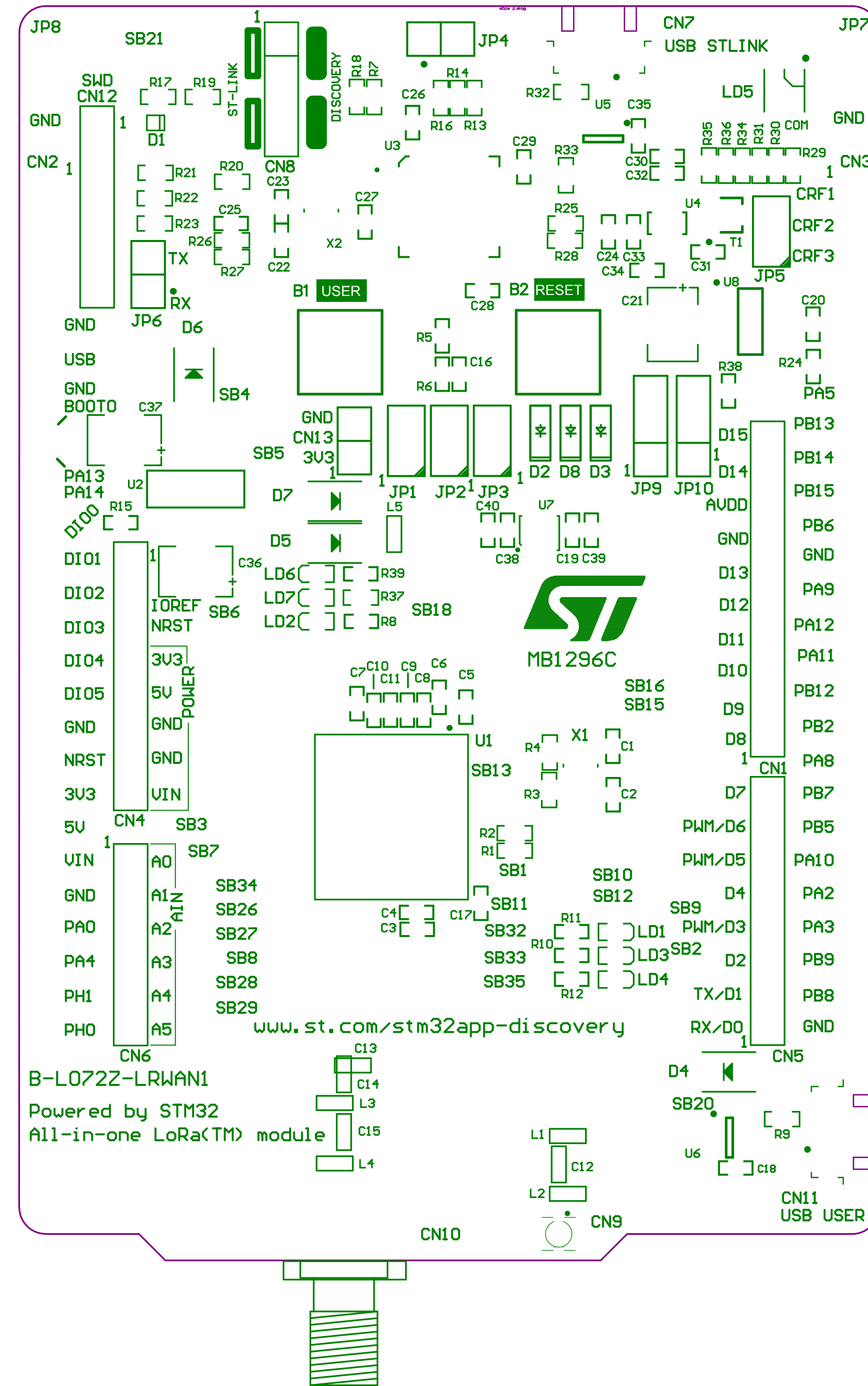
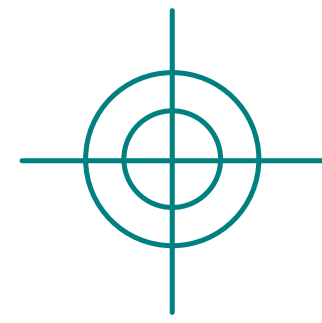
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: BOTTOM LAYER | | Ref: MB1296 | |
| Gerber: .GBD | Date: 18-AUG-2016 | Size: A4 | Rev: C |





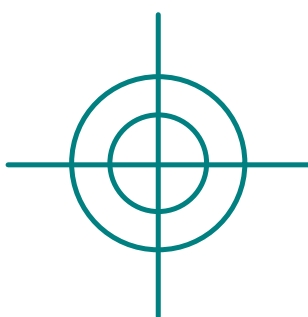
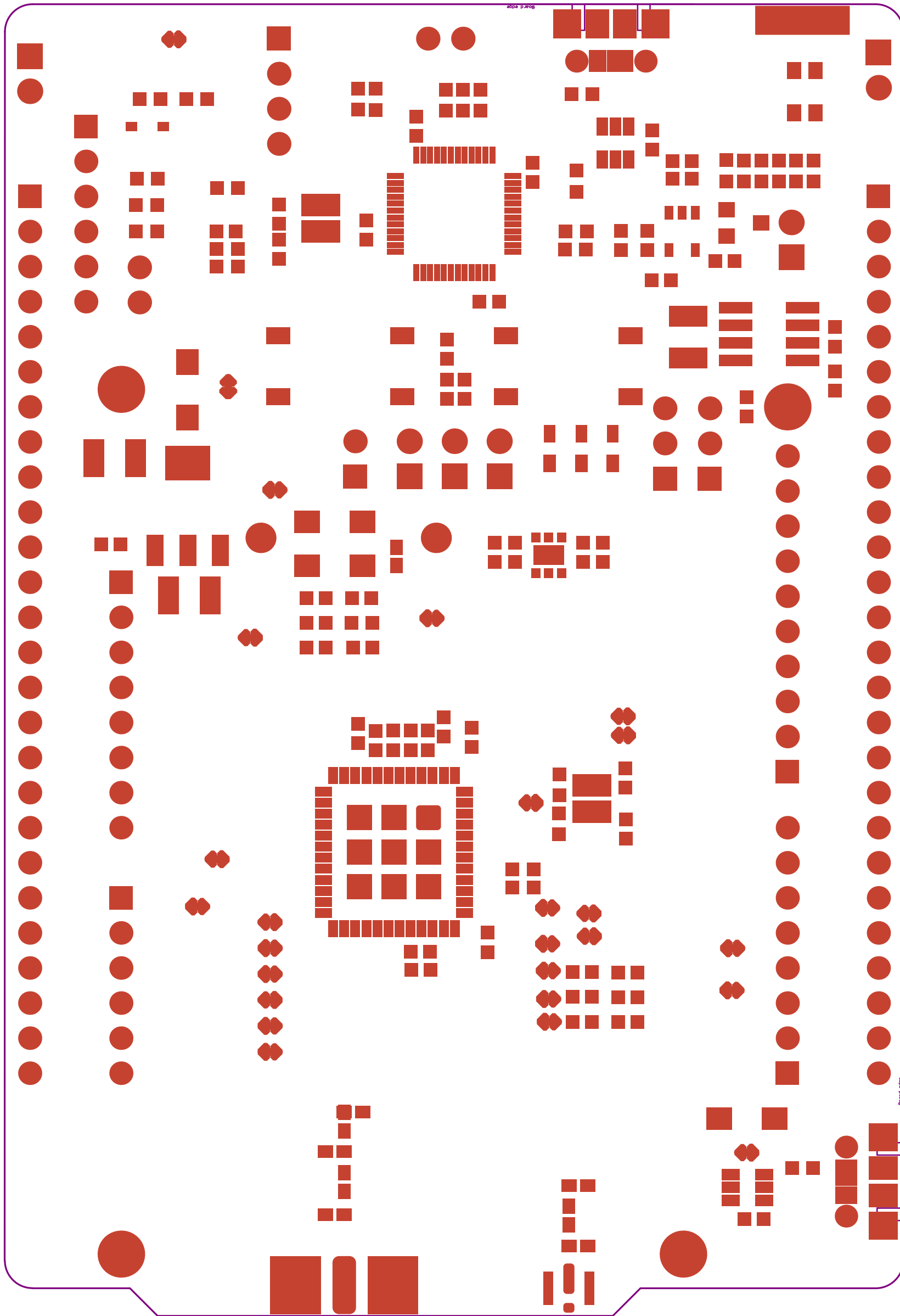
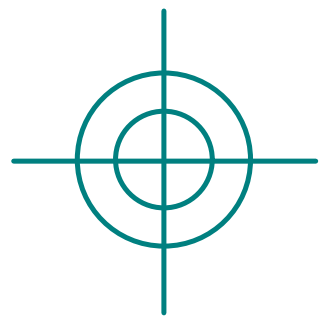
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|--------------------------|-------------------|----------|-------------|--|
| Project: STM32 LRA Disco | | | | |
| Layer: TOP PASTE | | | Ref: MB1296 | |
| Gerber: .GTP | Date: 18-AUG-2016 | Size: A4 | Rev: C | |





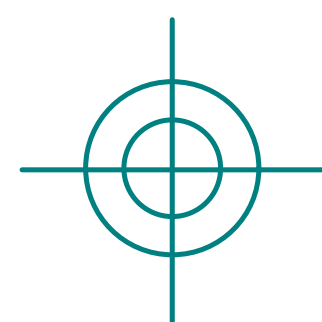
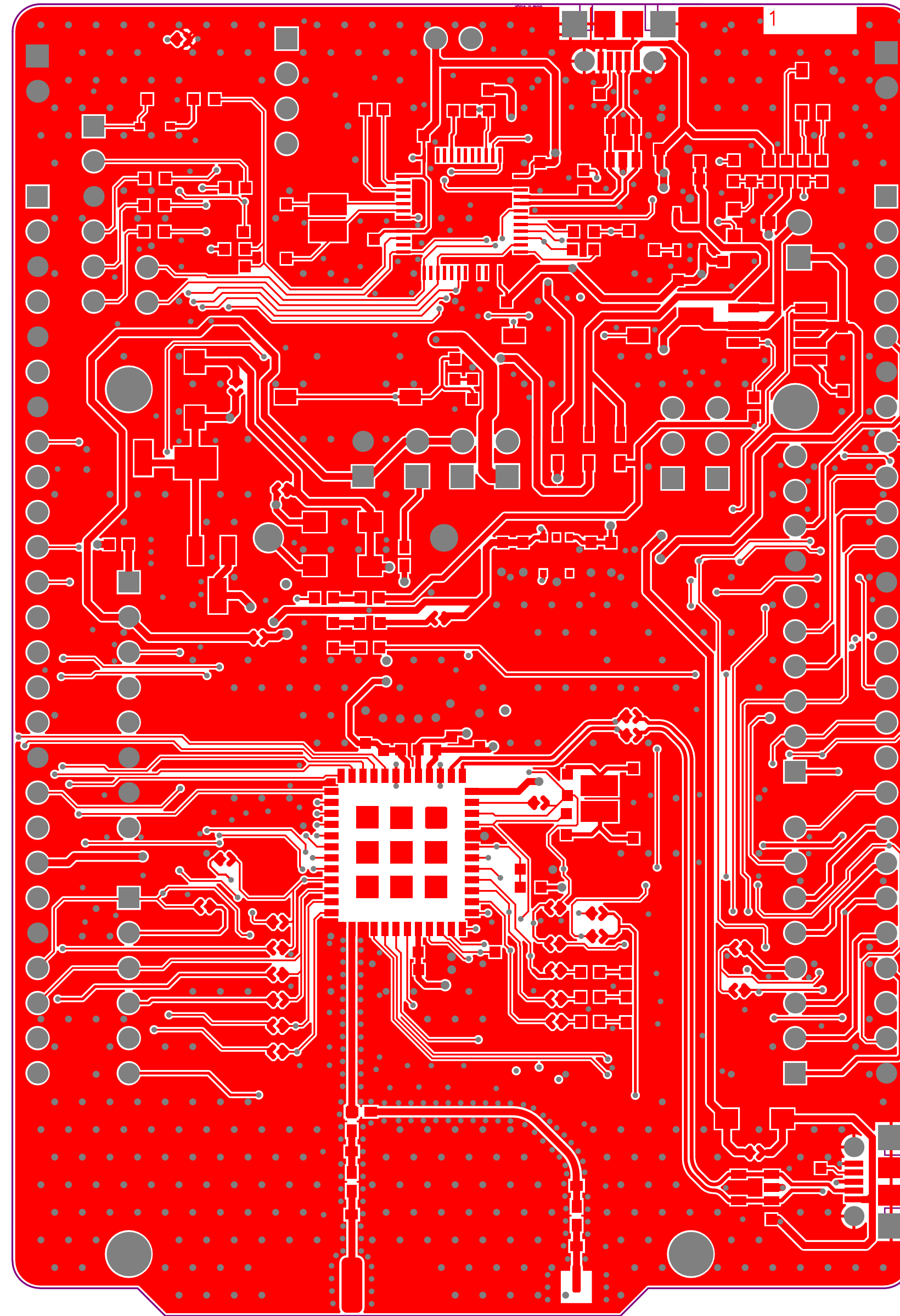
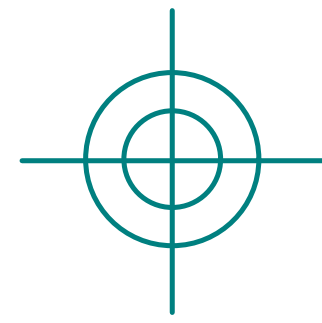
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: TOP SILKSCREEN | | Ref: MB1296 | |
| Gerber: .GTO | Date: 18-AUG-2016 | Size: A4 | Rev: C |





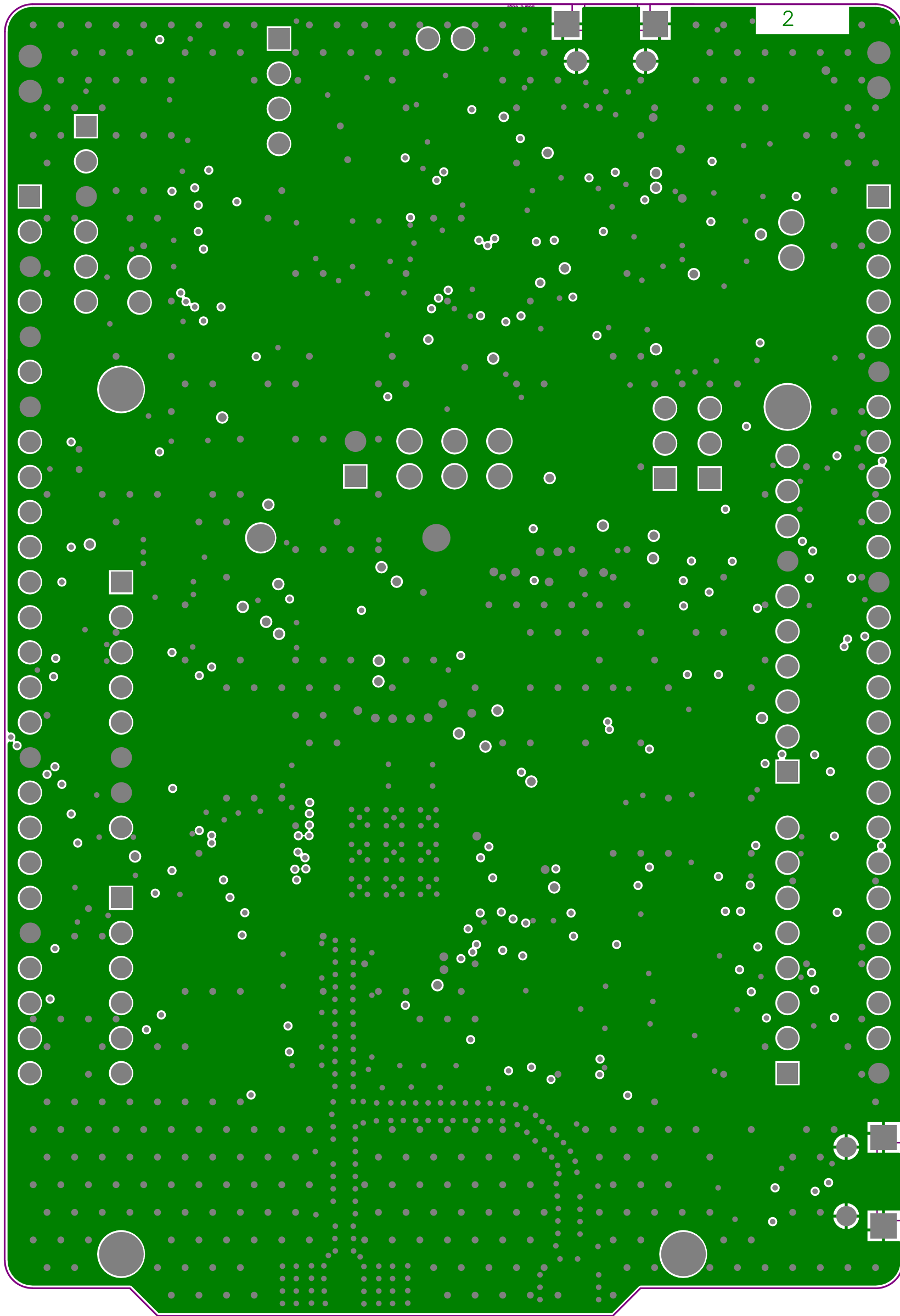
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: TOP SOLDER | | Ref: MB1296 | |
| Gerber: .GTS | Date: 18-AUG-2016 | Size: A4 | Rev: C |





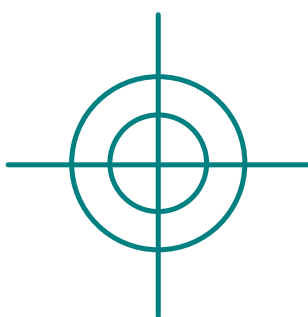
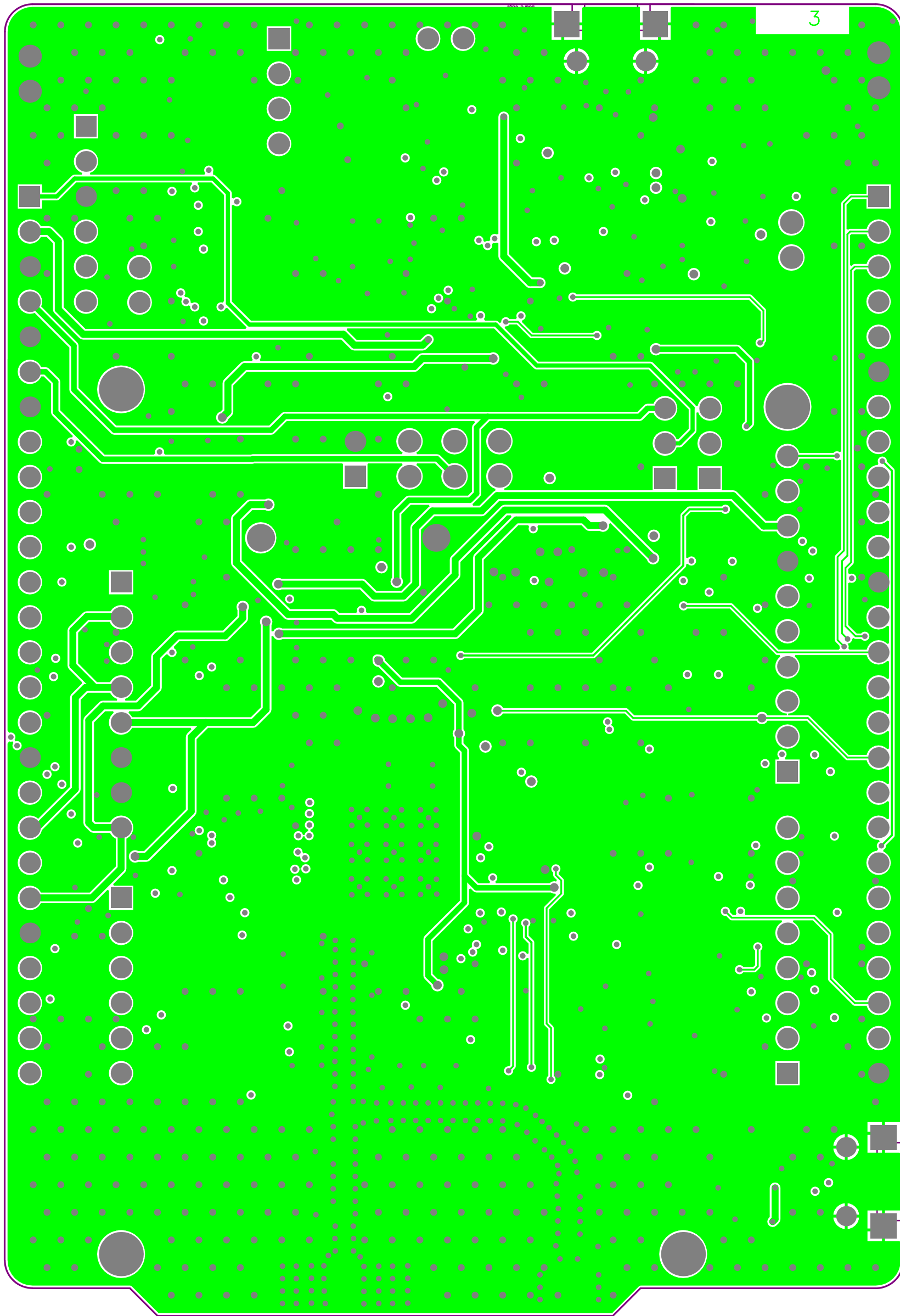
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: TOP LAYER | | Ref: MB1296 | |
| Gerber: .GTL | Date: 18-AUG-2016 | Size: A4 | Rev: C |





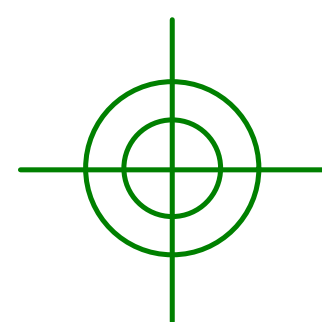
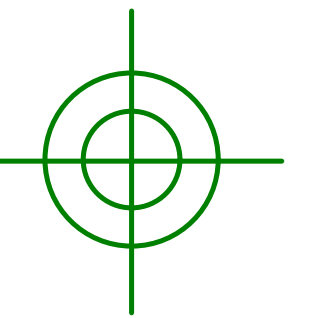
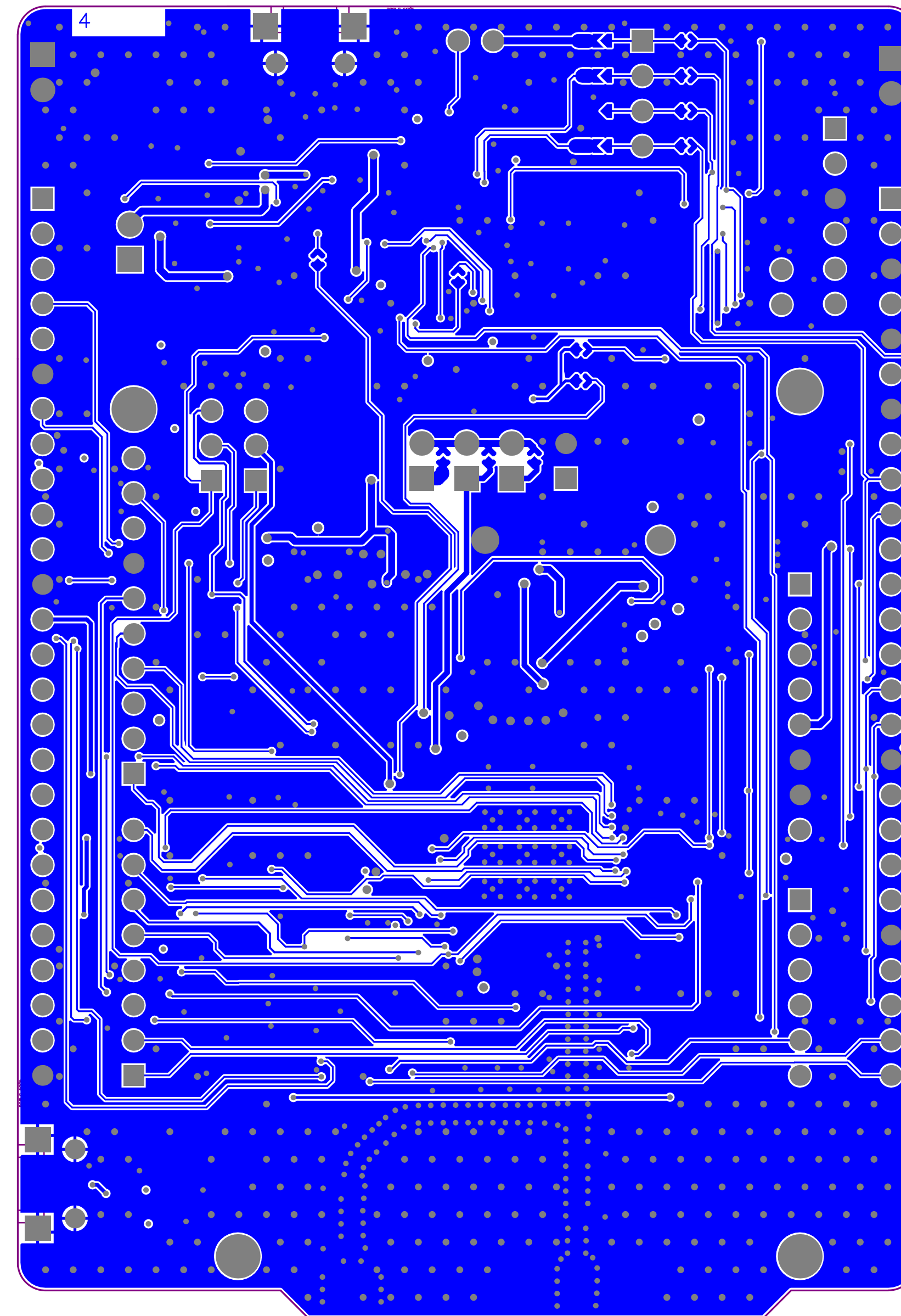
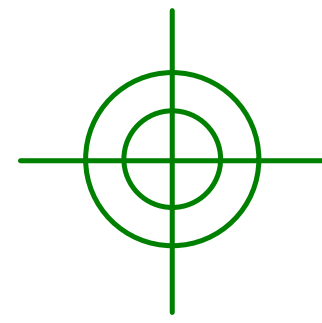
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: GND LAYER | | Ref: MB1296 | |
| Gerber: .G1 | Date: 18-AUG-2016 | Size: A4 | Rev: C |





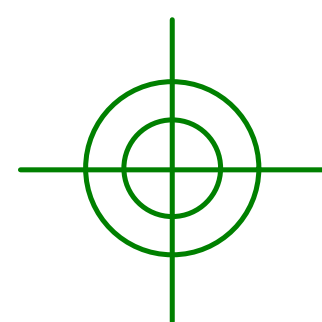
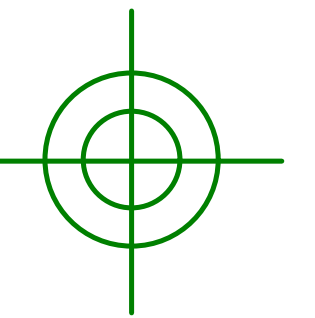
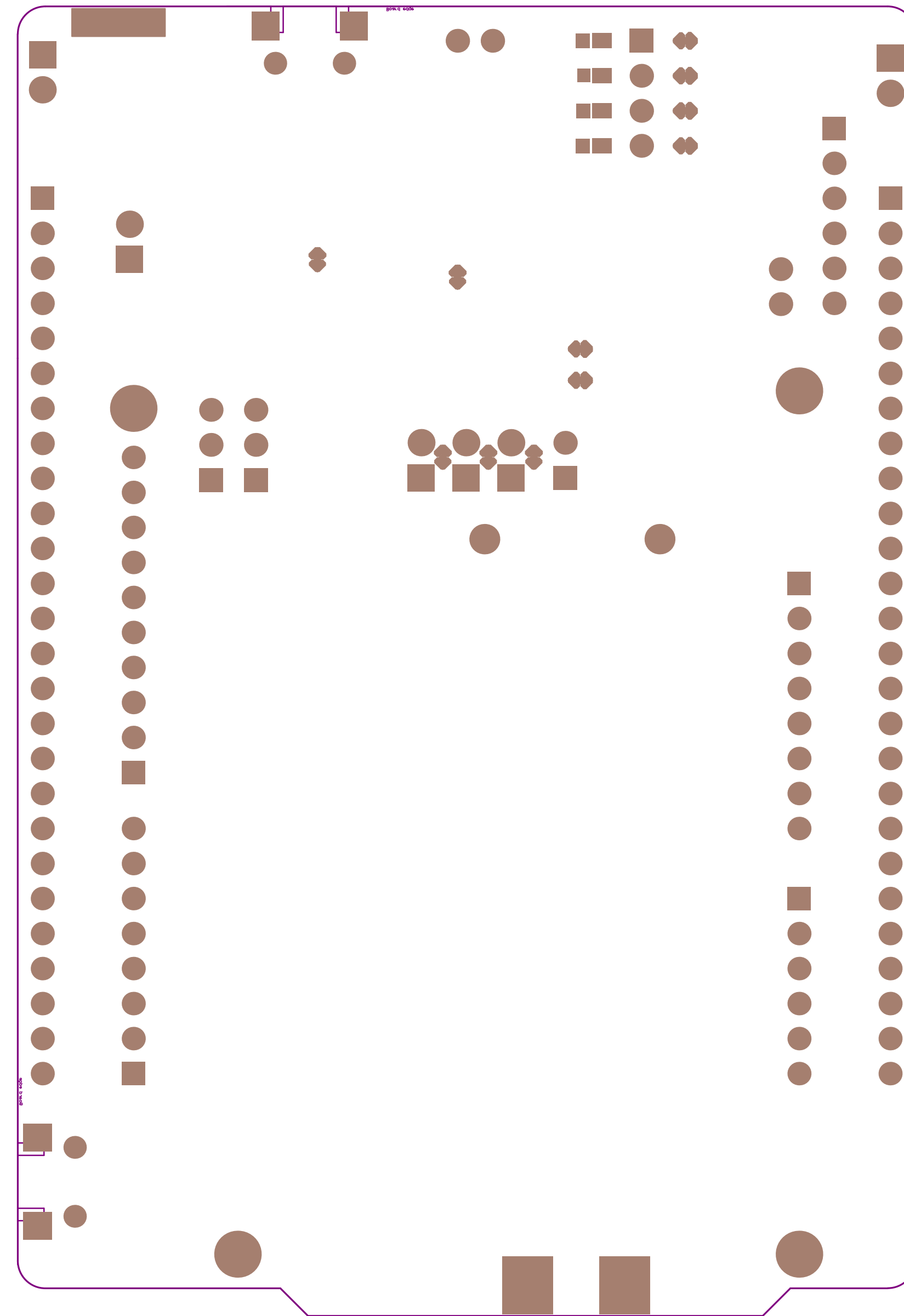
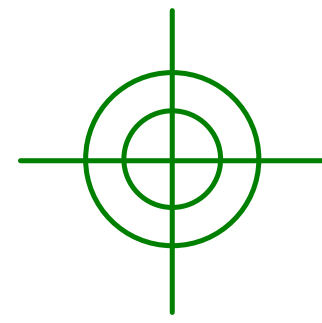
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: UCC LAYER | | Ref: MB1296 | |
| Gerber: .G2 | Date: 18-AUG-2016 | Size: A4 | Rev: C |





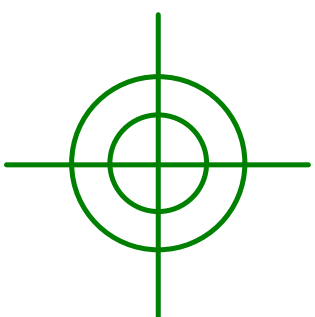
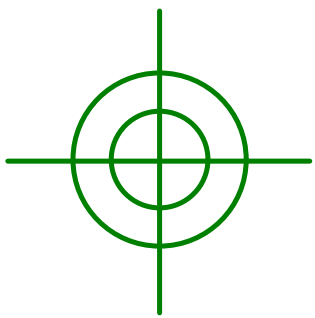
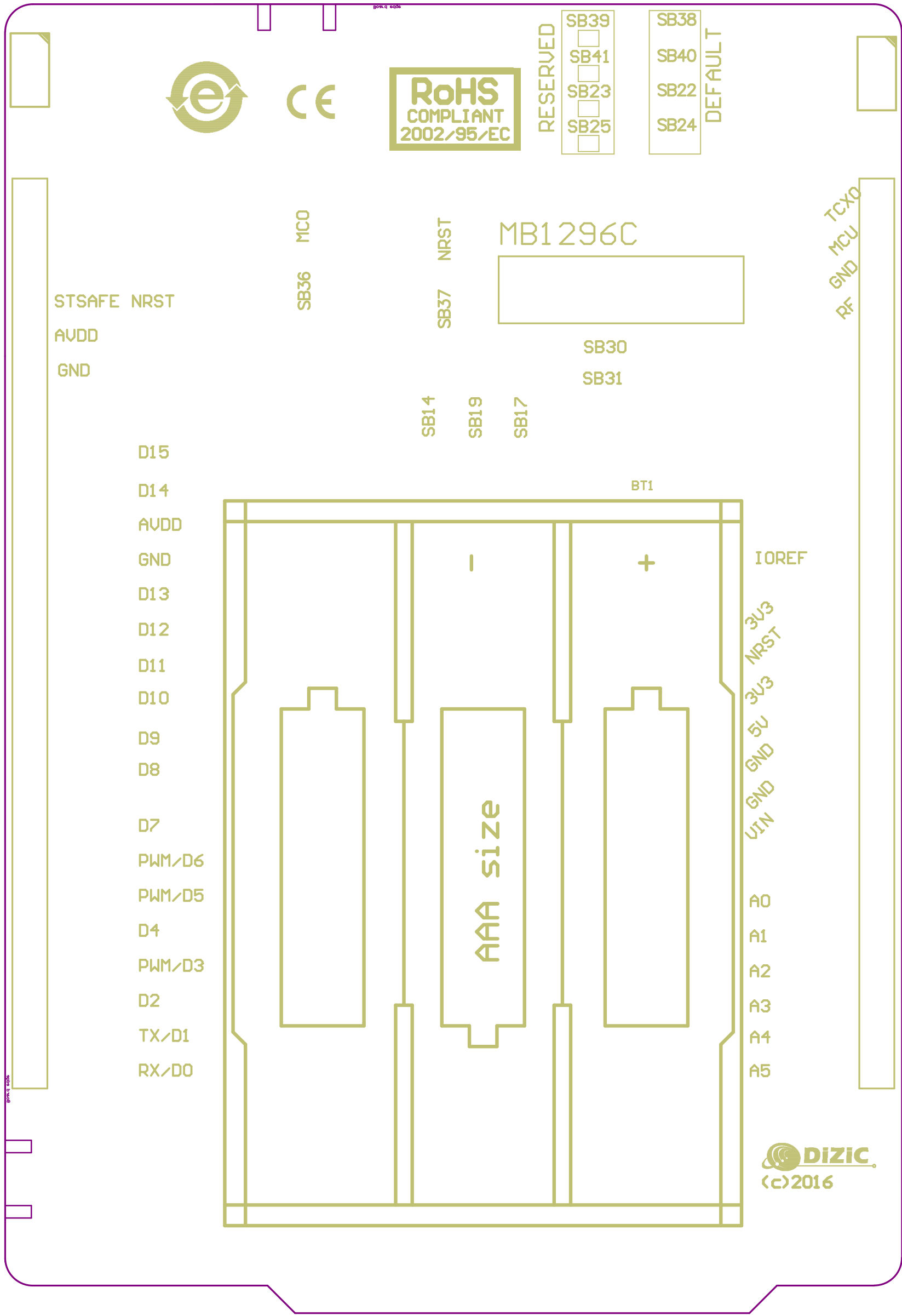
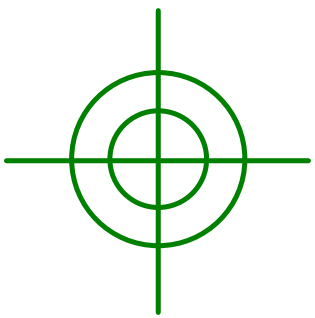
| | | | |
|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: BOTTOM LAYER | | Ref: MB1296 | |
| Gerber: .GBL | Date: 18-AUG-2016 | Size: A4 | Rev: C |





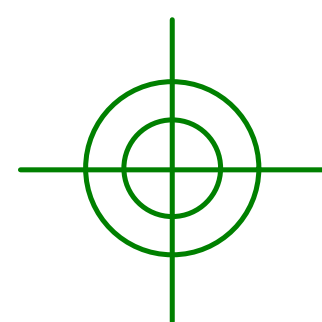
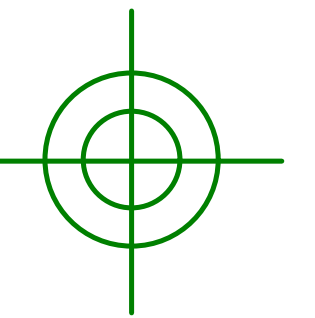
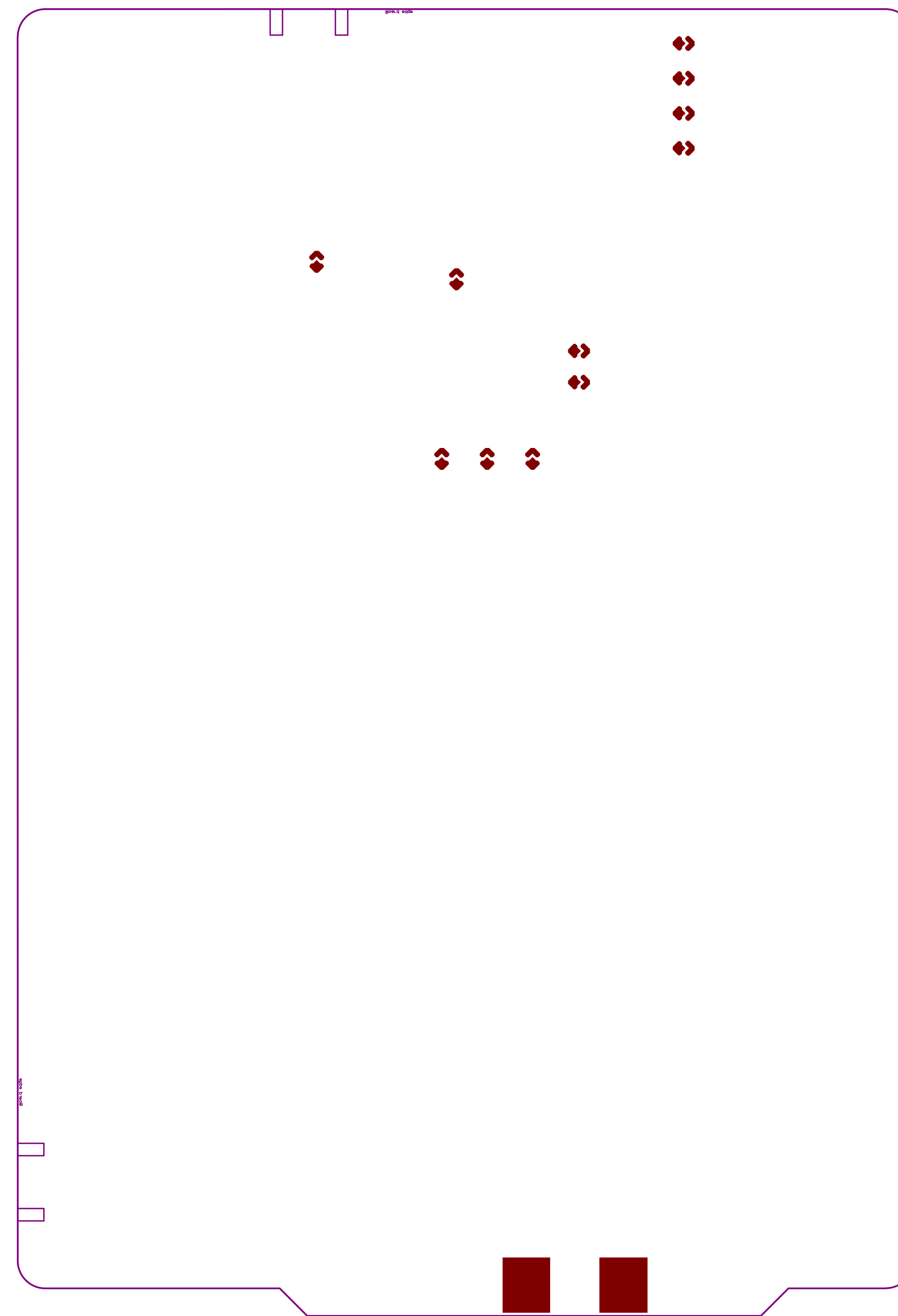
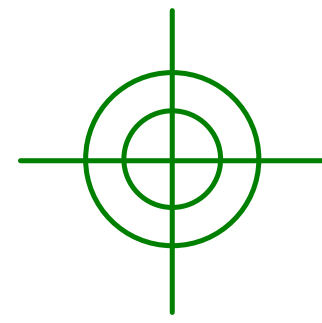
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: BOTTOM SOLDER | | Ref: MB1296 | |
| Gerber: .GBS | Date: 18-AUG-2016 | Size: A4 | Rev: C |





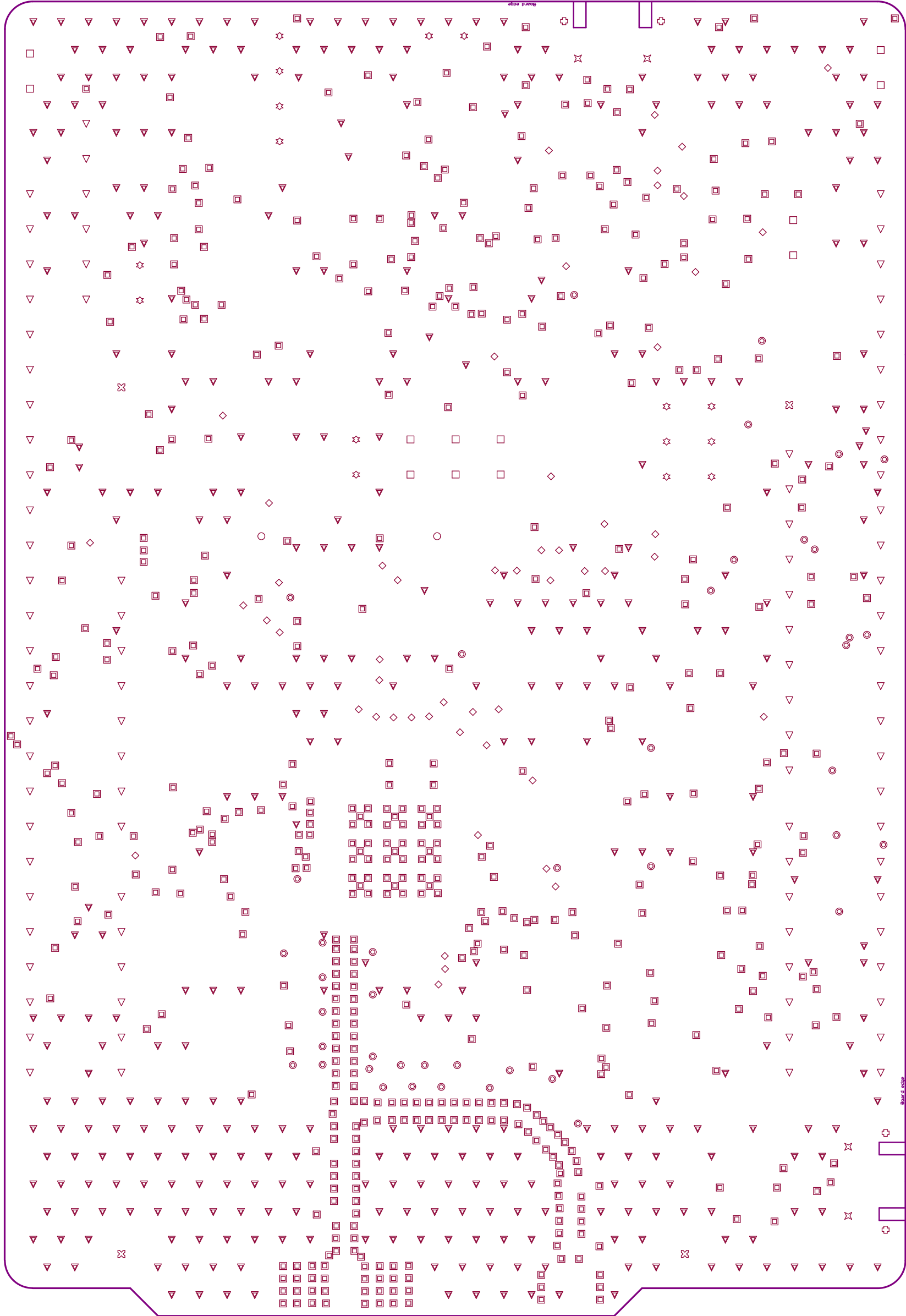
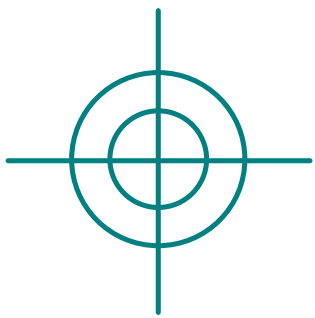
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|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: BOTTOM SILKSCREEN | | Ref: MB1296 | |
| Gerber: .GBO | Date: 18-AUG-2016 | Size: A4 | Rev: C |





| | | | |
|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: BOTTOM PASTE | | Ref: MB1296 | |
| Gerber: .GBP | Date: 18-AUG-2016 | Size: A4 | Rev: C |

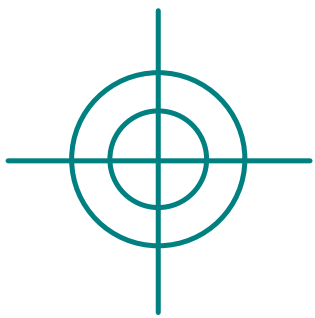




| Symbol | Count | Hole Size | Hole Length | Routed Path Length | Plated | Hole Type |
|--------|-------|--------------------|-------------------|--------------------|--------|-----------|
| ○ | 2 | 1,20mm (47,24mil) | - | - | PTH | Round |
| ⊕ | 4 | 0,60mm (23,62mil) | 1,30mm (51,18mil) | 0,70mm (27,56mil) | PTH | Slot |
| ⊗ | 4 | 0,85mm (33,47mil) | - | - | PTH | Round |
| ⊠ | 4 | 3,20mm (125,98mil) | - | - | NPTH | Round |
| □ | 12 | 1,04mm (41,00mil) | - | - | PTH | Round |
| ☆ | 16 | 1,02mm (40,00mil) | - | - | PTH | Round |
| ⊙ | 43 | 0,20mm (7,99mil) | - | - | PTH | Round |
| ◇ | 53 | 0,33mm (13,00mil) | - | - | PTH | Round |
| ▽ | 90 | 0,90mm (35,43mil) | - | - | PTH | Round |
| ▼ | 413 | 0,25mm (9,84mil) | - | - | PTH | Round |
| ▣ | 496 | 0,20mm (8,00mil) | - | - | PTH | Round |

| Symbol | Count | Hole Size | Hole Length | Routed Path Length | Plated | Hole Type |
|--------|-------|--------------------|-------------------|--------------------|--------|-----------|
| ○ | 2 | 1,20mm (47,24mil) | - | - | PTH | Round |
| ⊕ | 4 | 0,60mm (23,62mil) | 1,30mm (51,18mil) | 0,70mm (27,56mil) | PTH | Slot |
| ⊗ | 4 | 0,85mm (33,47mil) | - | - | PTH | Round |
| ⊠ | 4 | 3,20mm (125,98mil) | - | - | NPTH | Round |
| □ | 12 | 1,04mm (41,00mil) | - | - | PTH | Round |
| ☆ | 16 | 1,02mm (40,00mil) | - | - | PTH | Round |
| ⊙ | 43 | 0,20mm (7,99mil) | - | - | PTH | Round |
| ◇ | 53 | 0,33mm (13,00mil) | - | - | PTH | Round |
| ▽ | 90 | 0,90mm (35,43mil) | - | - | PTH | Round |
| ▼ | 413 | 0,25mm (9,84mil) | - | - | PTH | Round |
| ▣ | 496 | 0,20mm (8,00mil) | - | - | PTH | Round |

Slot definition: 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



| | | | |
|--------------------------|-------------------|-------------|--------|
| Project: STM32 LRA Disco | | | |
| Layer: DRILL DRAWING | | Ref: MB1296 | |
| Gerber: .DRL | Date: 18-AUG-2016 | Size: A4 | Rev: C |

