

PCB Production Specification

Receiver Unit 2 Low RCU2L

PCB nr.: 03114

	Organisatie / Organization	Datum / Date
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3.1	01-03-2022		Update PCB material
3.2	11-03-2022		Update after review

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1 Introduction

1.1 Document Scope

This document presents technical PCB production specification for the RCU2.0-LOW LOFAR2.0. For all specification is the **ODB++ DATA IS LEADING**

1.2 Applicable documents (AD)

Ref.nr.	Document number	Rev.	Title	File name
AD.1				

1.3 Reference documents (RD)

Ref.nr.	Document number	Title	Author
RD.1	PMS00048	PMS RCU2.0 LOW BAND LOFAR 2.0_PCB-03114-XX	G.W. Schoonderbeek

1.4 List of Terms and acronyms

BOM	Bill Of Material
IPC	Association Connecting Electronics Industries
PCB	Printed Circuit Board

2 IPC Quality Requirements

The board have the following IPC requirements:

2.1 Board:

IPC requirement	Comment
IPC 2222B	Board type 4 (Multilayer Printed Board with blind and/or buried vias)
IPC 2221A	Performance Class 2 (Dedicated Service Electronic Products). Producibility Level C (High Design Complexity - Standard)
IPC A-600	Class 2 (Dedicated Service Electronic Products)
IPC SM-840	Solder Resist
IPC 4101	Laminate Material

2.1.1 Bare board testing

- Impedances on all impedance layer shall be tested according IPC-TM-650 2.5.5.7. Both single ended and differential impedance will be <10% with the specified impedance. A report showing compliance shall be delivered with the board or send to schoonderbeek@astron.nl



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Remarks

PCB supplier should send ASTRON the test results after board testing.

3 Specifications

PCB nr.	03114-01
Title	Receiver Unit 2 Low
Number of Layers	8
Size of the PCB	280 X 100 (mm) +/- 0.1 mm
Placement components	SMD Top/Bottom, Through-hole Top/Bottom
Number of signal layers	4
Number of plane layers	4
Number of Non-signal layers	2 (mask)
Silkscreen	top and bottom (user layer)
Number of Pins	2761
Number of Nets	496
Number of Components	1075
Number of Differential Pairs	17
Number of Vias	3152
Vias filling	3103, via in pad is used. Holes < 0.4mm are filled and capped.
Total number of Trough Holes	3319
Smallest hole diameter	0.3 mm Through Hole (finished size)
Smallest route size	0.15mm
Smallest Isolation / clearance	0.15mm
PCB material and type	ISOLA FR408HR
Material thickness	Total 2.4mm
Copper thickness	See master drawings
Etch Tolerance	10%
Via Plating	Through: >20um
Finishing	Gold (ENIG)
Impedance trace on layer	See section appendix
Hole tolerances	Press fit connectors are placed on the board, see drill drawing for hole tolerances.
Reports	All reports showing correct production have to be delivered. This includes impedances, layer and copper thickness and electrical test reports.
PCB Testing	Electrical test (open circuit/short circuit)



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4 List of Files

ODB++	rcu2_lb_rev3.tgz
Statistics	On request

5 Filled & capped via

The via's should be filled according **IPC4761 TYPE VII** via (filled and capped via), see Figure 1

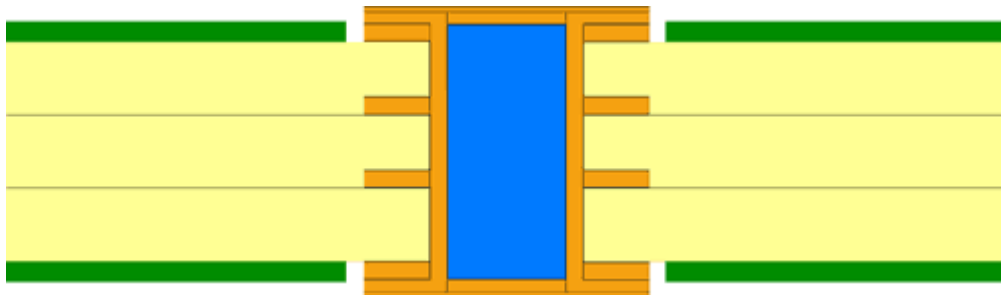


Figure 1 Filled and capped via

6 General

For technical information contact can be made with;

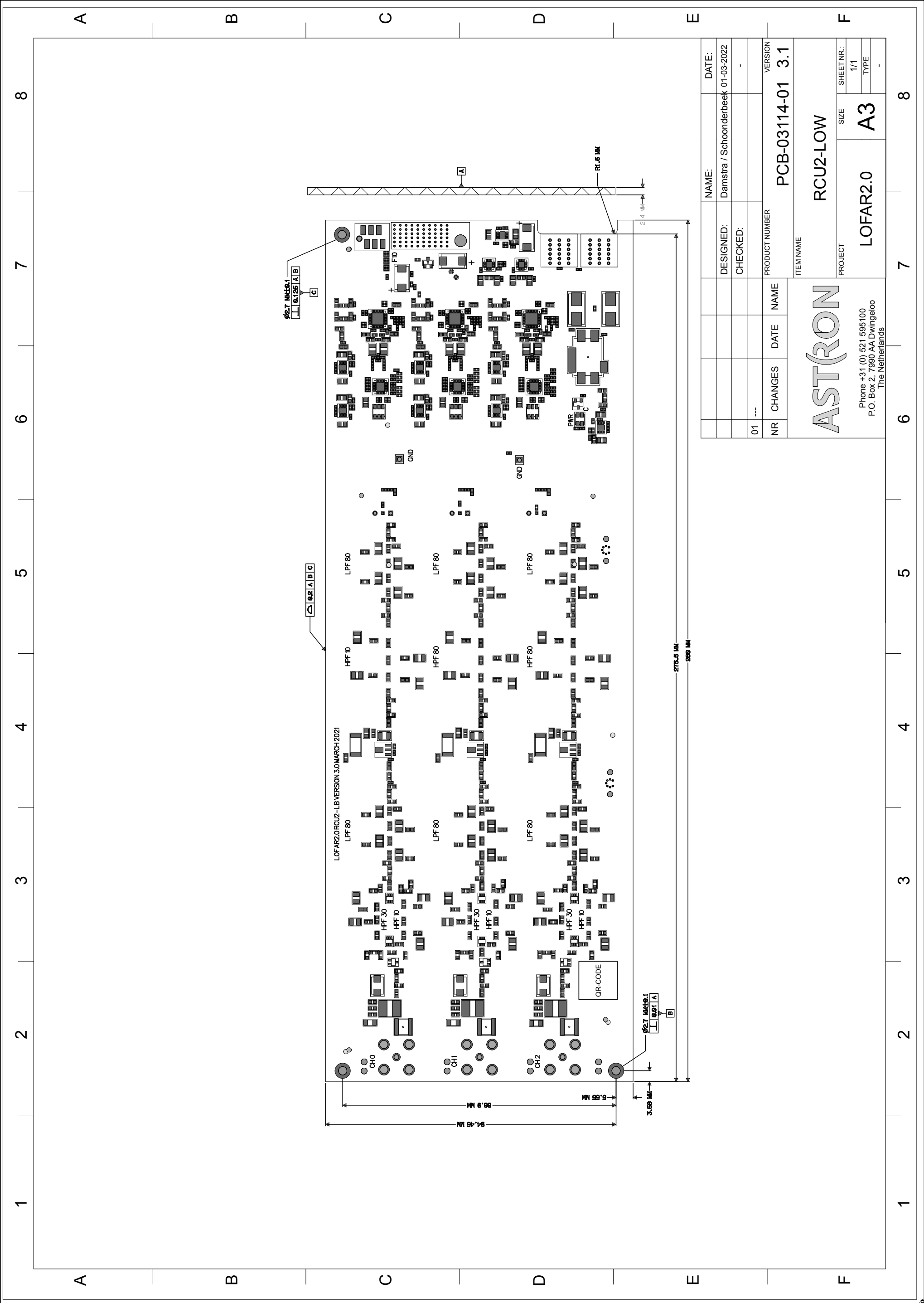
Designer: *Gijs Schoonderbeek (ASTRON)*
 Phone; (+31) (0)521 595 110
 E-mail; schoonderbeek@astron.nl

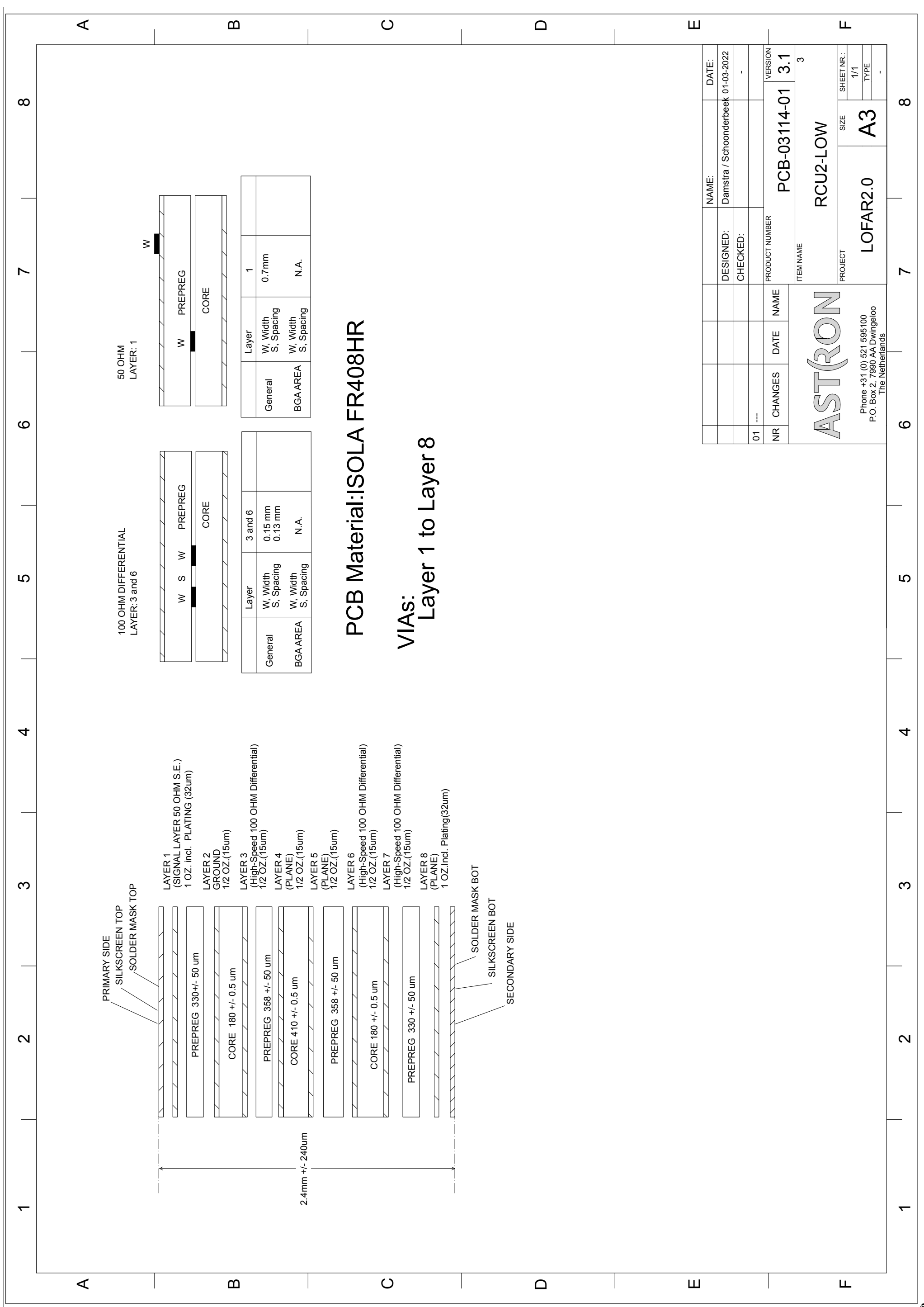


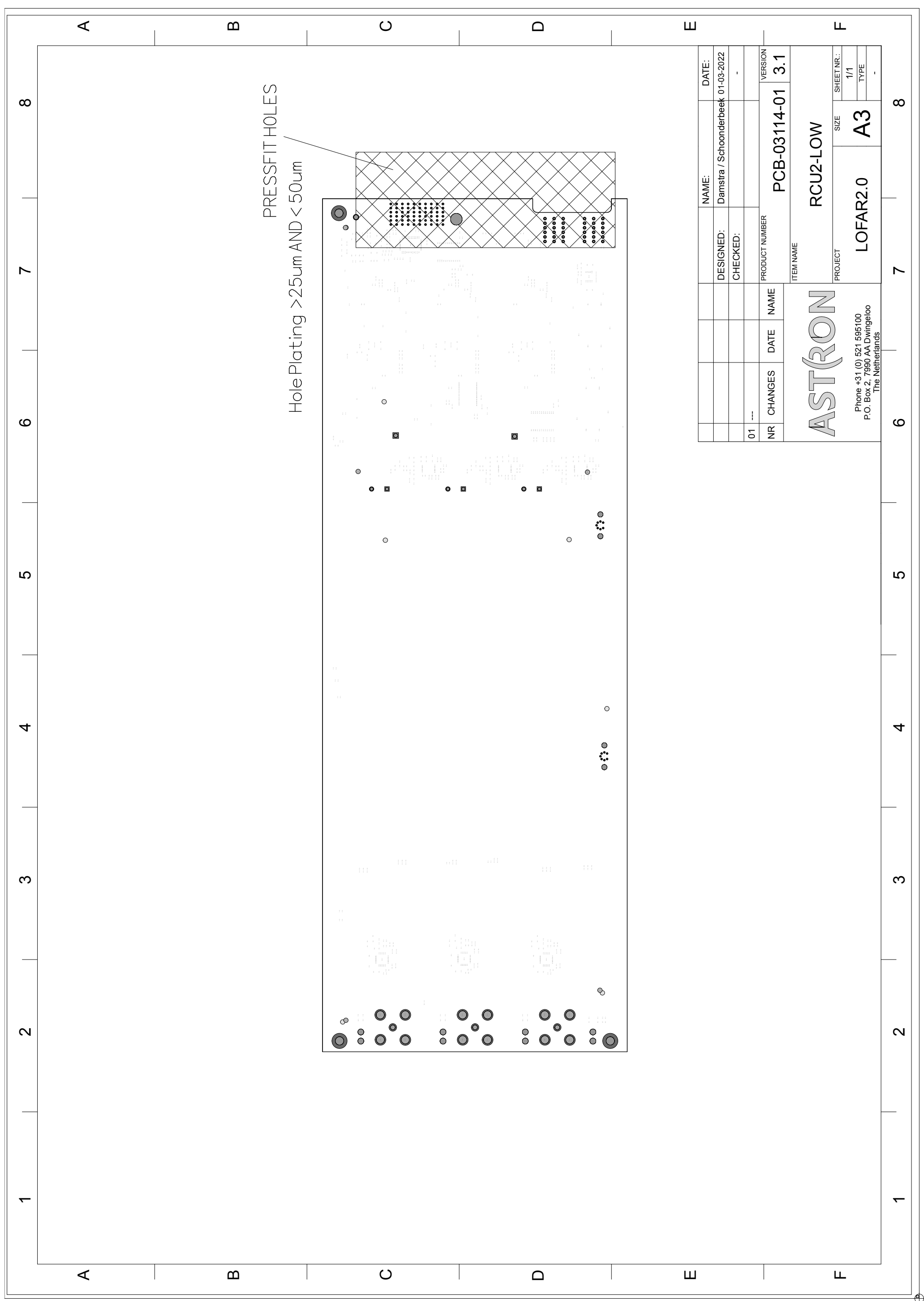
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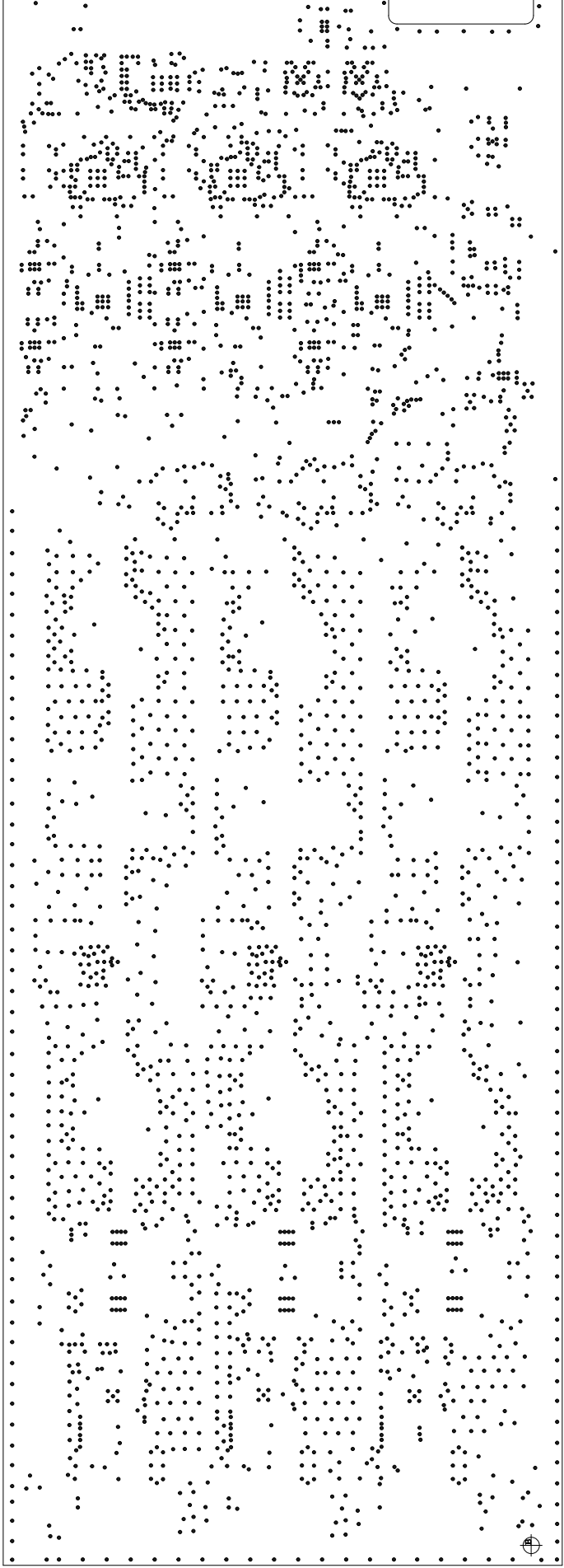
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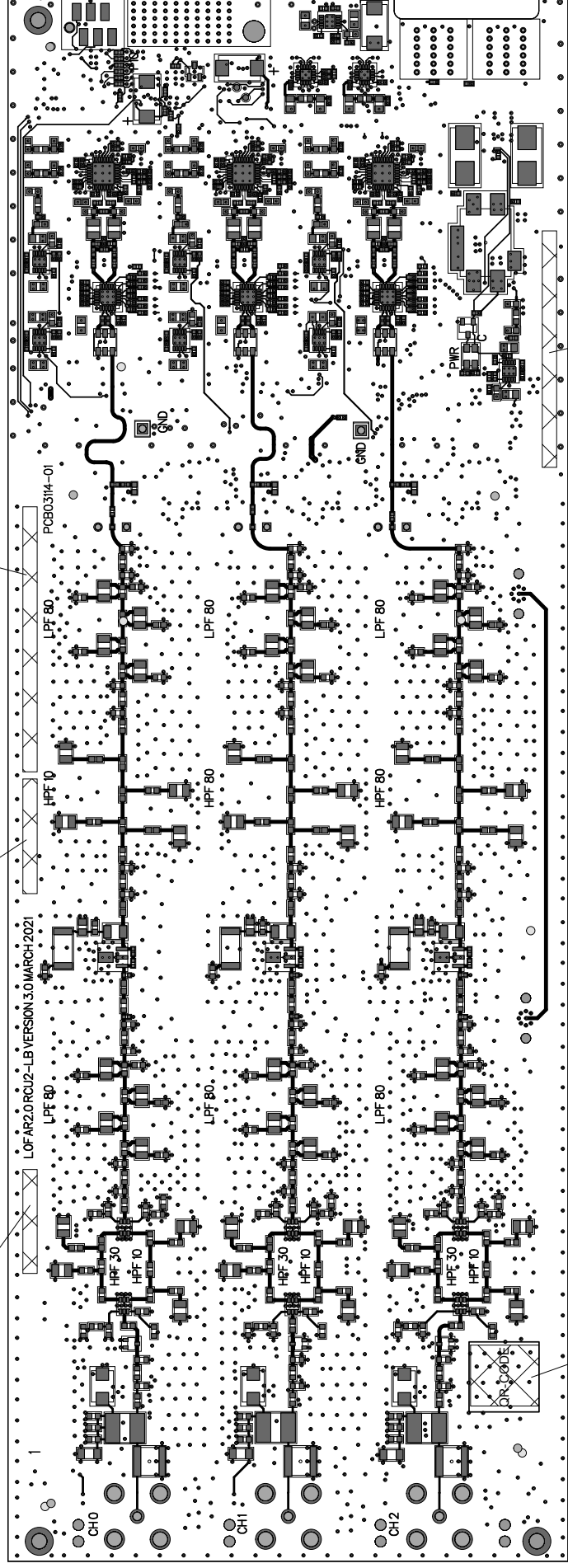








AST(ron				RCU2-LOW			
PROJECT				SIZE		SHEET NR.:	
LOFAR2.0				A3		1/1	
TYPE						-	
ITEM NAME				PCB-03114-01			
VERSION				3.1			
PRODUCT NUMBER				DATE:			
01				Damstra / Schoonderbeek 01-03-2022			
CHECKED:				-			
DESIGNED:							
NAME:							
NR				CHANGES			
DATE							



Manufacture Date Code: YEAR / WEEK

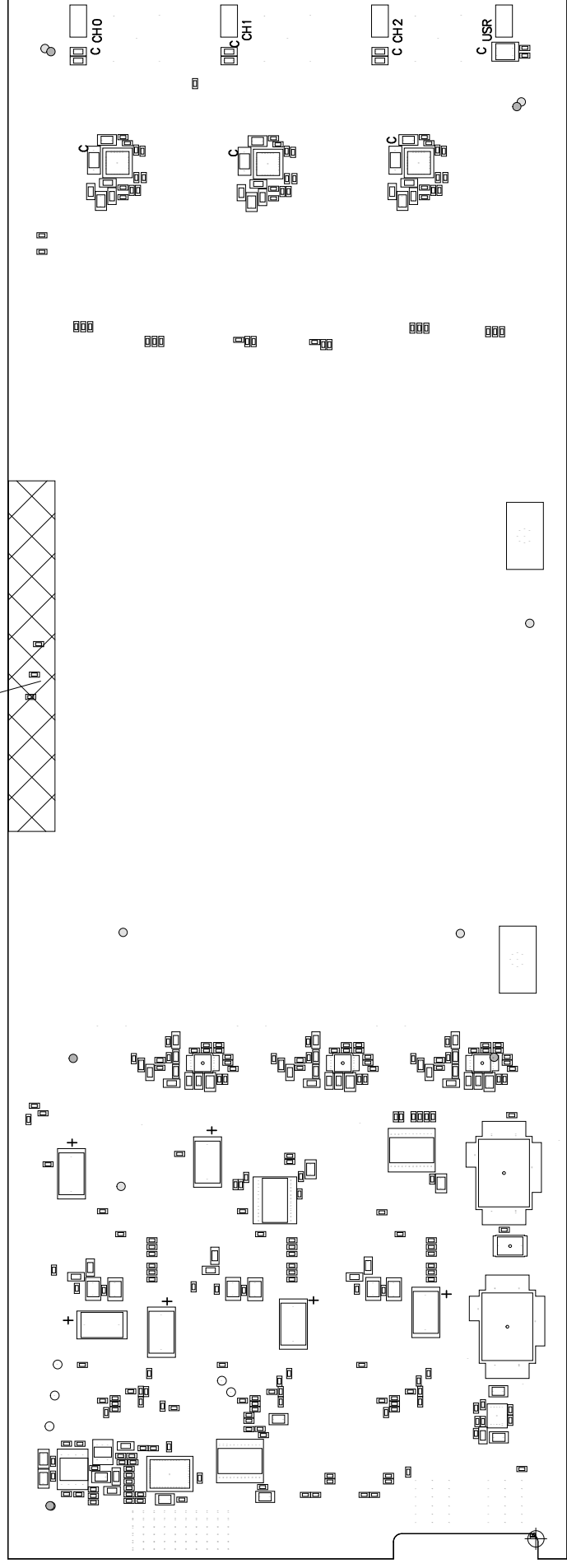
PCBManufacturerInformation(ProductNumber)

URL Marking

ASTRON Serial Number

Assembly Information Batch and Serial Number

[illegible]



Optional Manufacture Information

[illegible]