

PCB Production Specification

LMP LOFAR 2.0

PCB nr.: 03118-01

Organisatie / Organization		Datum / Date
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Class.:

Distribution list:

Group:	Others:
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Document history:

Revision	Date	Chapter / Page	Modification / Change
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1.0	30-4-2021	-	Update production version.
1.1	10-08-2021	-	Update rev 2b

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1 Introduction

1.1 Document Scope

This document presents technical PCB production specification for the LMP, LOFAR2.0 Mid-Plane. For all specification is the **ODB++ DATA IS LEADING**

1.2 Applicable documents (AD)

Ref.nr.	Document number	Rev.	Title	File name
AD.1	PPD00067	0.1	PCB Production data LMP (ODB++ file)	apspu.tgz

1.3 Reference documents (RD)

Ref.nr.	Document number	Title	Author
RD.1	PMS00047	PMS LMP, LOFAR2.0 MID PLANE, LOFAR 2.0, PCB-03118-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 3 (Multilayer Printed Board without blind and/or buried vias)
IPC 2221A	Performance Class 2 (Dedicated Service Electronic Products). Reducibility Level B (High Design Complexity - Standard)
IPC A-600	Class 2 (Dedicated Service Electronic Products)
IPC SM-840	Solder Resist
IPC 4101	Laminate Material



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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

Remarks

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

3 Specifications

PCB nr.	03118-01
Title	LMP
Number of Layers	16
Size of the PCB	435.3 X 395.25 (mm) +/- 0.1 mm
Placement components	SMD Top/Bottom, Through-hole Top/Bottom
Number of signal layers	4
Number of plane layers	12
Number of Non-signal layers	2 (mask)
Silkscreen	top and bottom (user layer)
Number of Pins	6154
Number of Nets	605
Number of Components	145
Number of Vias	808
Vias filling	N.A.
Total number of Trough Holes	7098
Smallest hole diameter	0.4 mm Through Hole (finished size)
Smallest route size	0.125mm
Smallest Isolation / clearance	0.1mm
PCB material and type	ISOLA I-SPEED
Material thickness	Total 3.3 mm
Copper thickness	See Figure 1
Etch Tolerance	10%
Via Plating	Through >20um
Finishing	LF HASL
Impedance trace on layer	See section appendix
Hole tolerances	See drill drawing.
Reports	All reports showing correct production have to be delivered. See Master Drawing notes pag. 6
PCB Testing	Electrical test (open circuit/short circuit)



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4 List of Files

ODB++	Imp.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 2

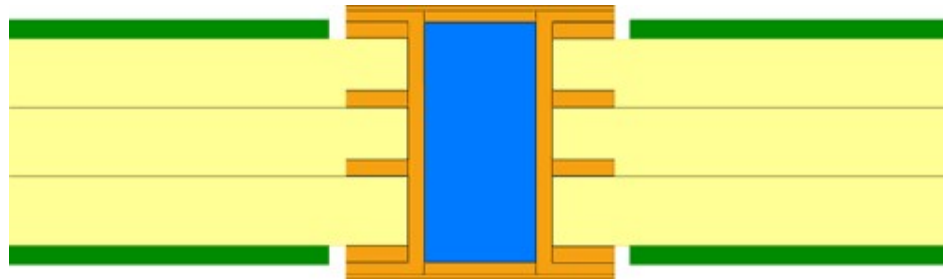


Figure 1 Filled and capped via

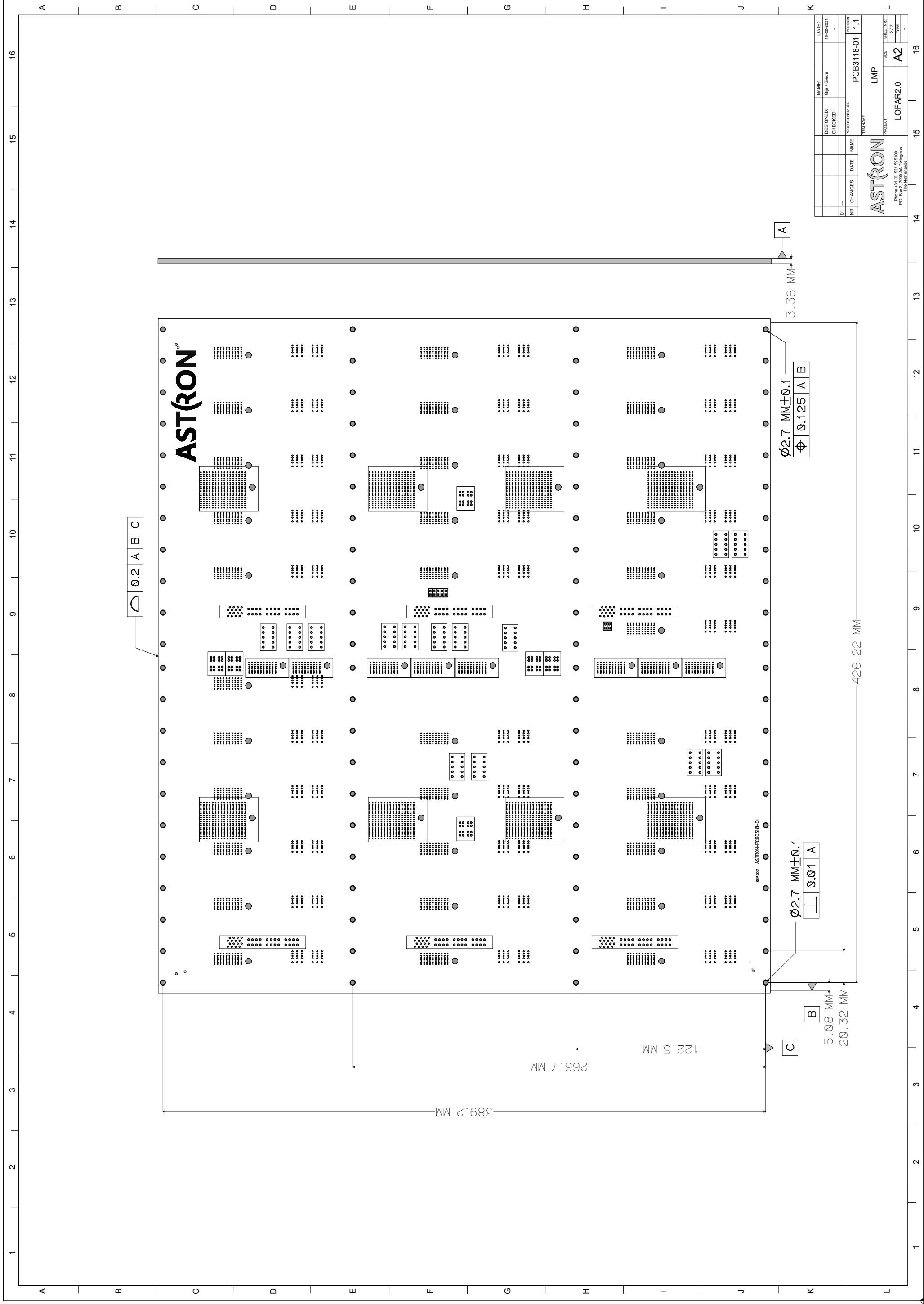
6 General

For technical information contact can be made with;

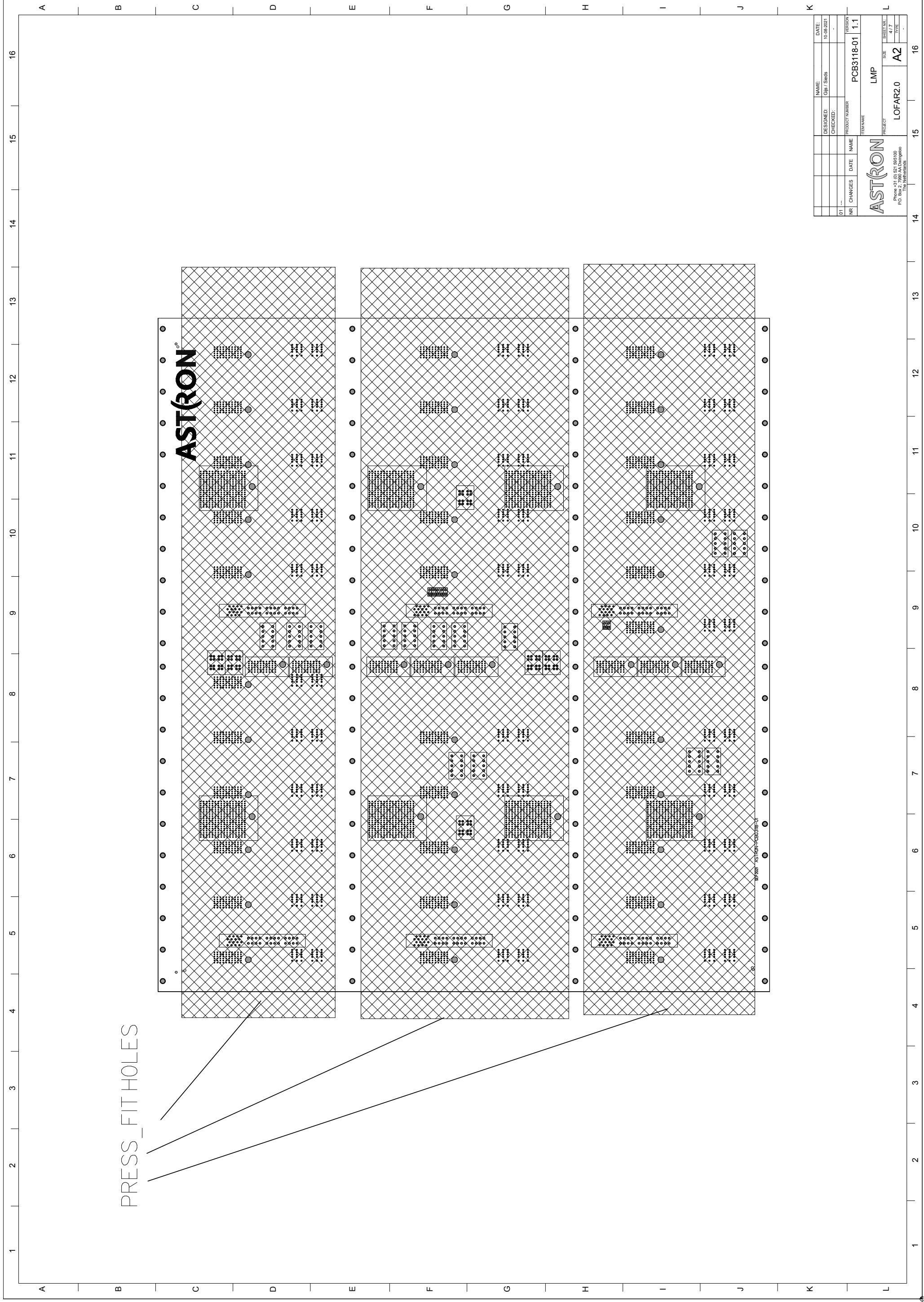
Designer: *Gijs Schoonderbeek (ASTRON)*
 Phone; (+31) (0)521 595 110
 E-mail; schoonderbeek@astron.nl

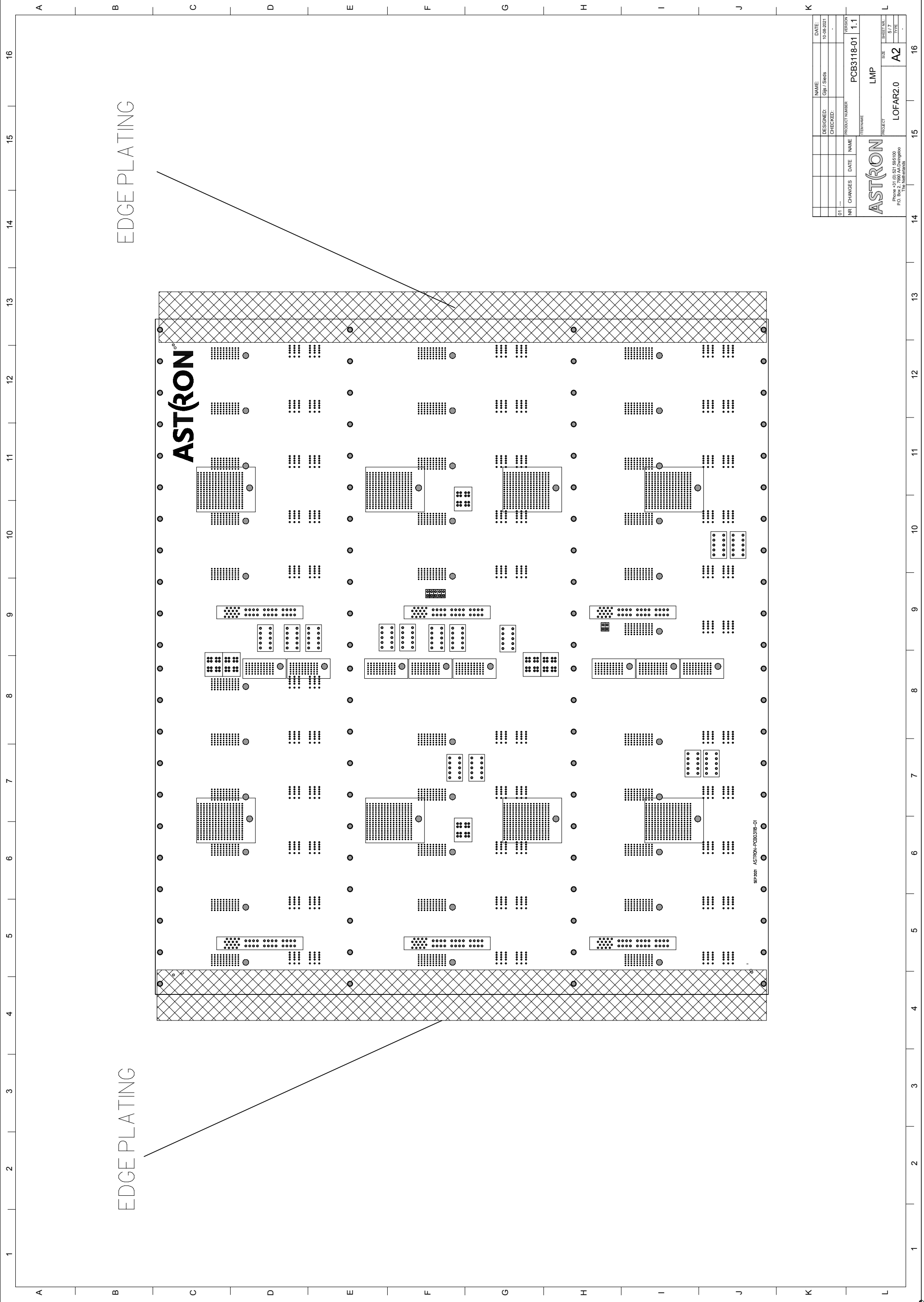
Manufacture notes

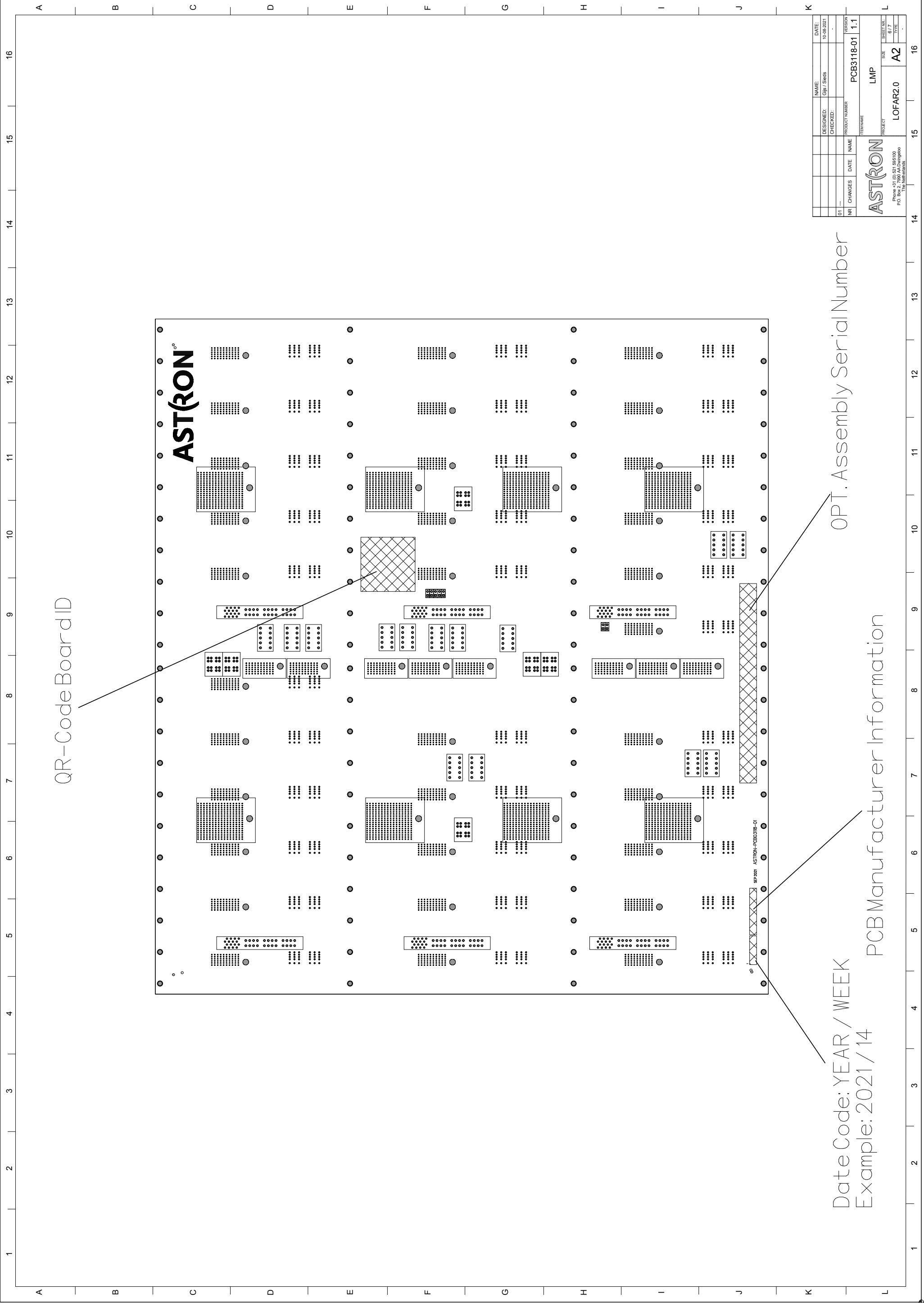
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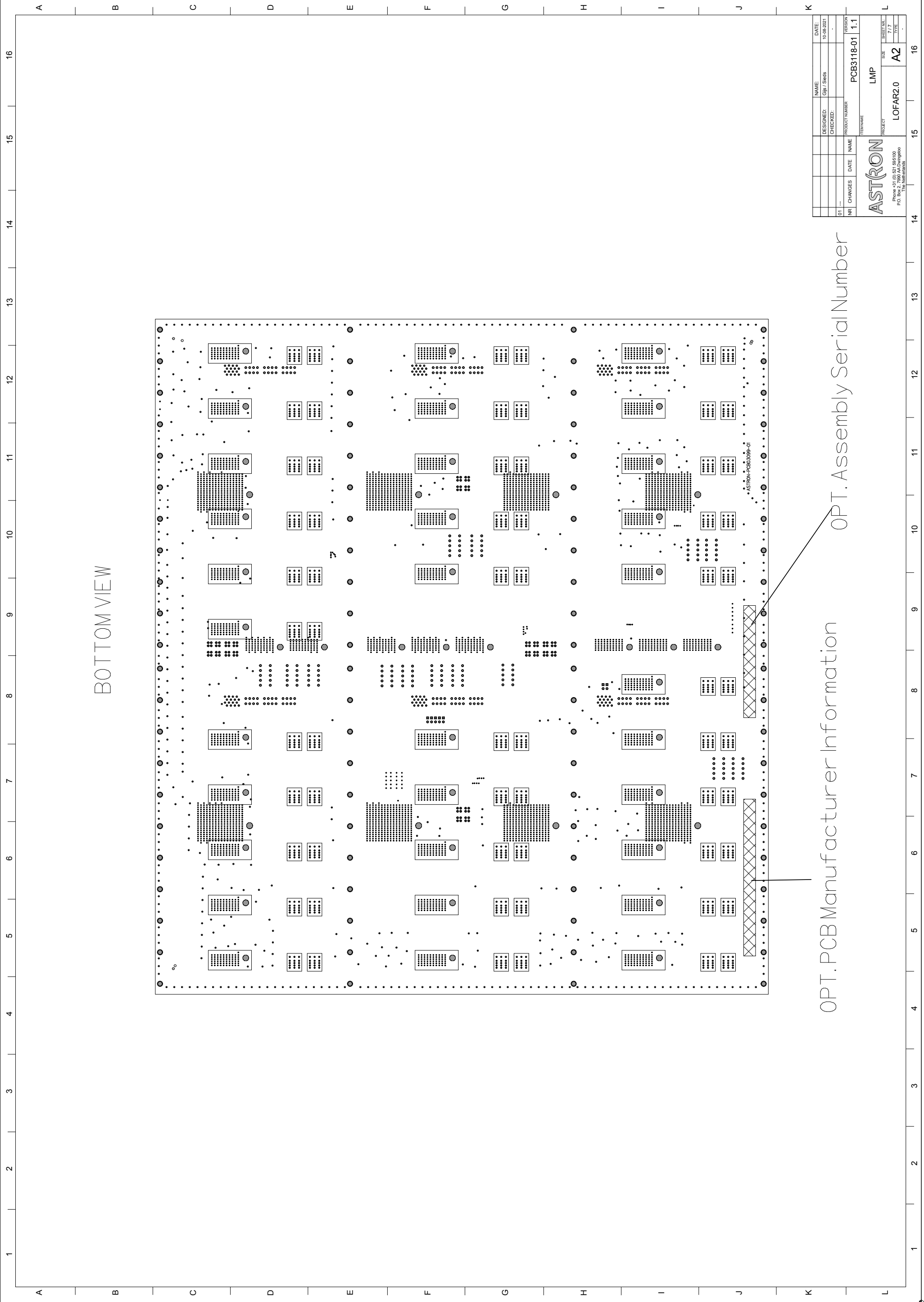


ASTRON										ITEM NAME		PCB3118-01		VERSION		1.1	
PROJEKT LMP										SIZE		SIZE UNIT		317		TYPE	
										A2							
LOFAR2.0										PRODUCT NUMBER		NAME		DATE		CHANGES	
DESIGNED CHECKED:										NAME		DATE		CHANGES		NR	
Gips / Sticks -																	
NAME										DATE		CHANGES		NR		01	
DATE										CHANGES		NR		01			

[illegible]







BOTTOM VIEW

OPT.PCB Manufacturer Information

OPT.Assembly SerialNumber

NAME	DATE
DESIGNED: GJM / Smds	10-09-2021
CHECKED:	-
PRODUCT NUMBER	PCB3118-01
ITEM NAME	LMP
PROJECT	LOFAR2.0
SIZE	A2
SHEET NO.	7 / 7
TYPE	-

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