280042-002 X4M07

PCBA Manufacturing Documentation

Radar module based on X4SIP02 and X4A04

By Novelda AS
2018–02–05

Document description

This document decribes the assembly specifications for the current PCBA.

Contents of this document

- Notes to Manufacturer
- BOM-changes
- Release Notes
- Schematic prints
- Assembly Drawings
- PCB Dimensions
- Testpoints placement

Notes to Manufacturer

None

BOM-changes

Revision 2

- Changed M1 to X4SIP02 Rev.4. MPN: 280022-004, Manufacturer: Novelda
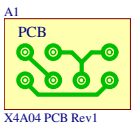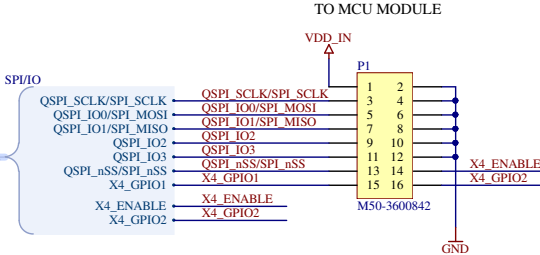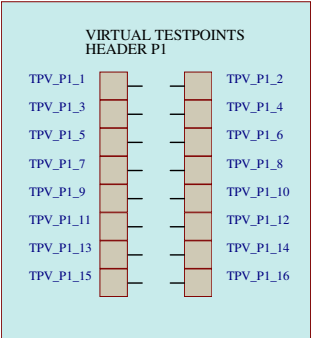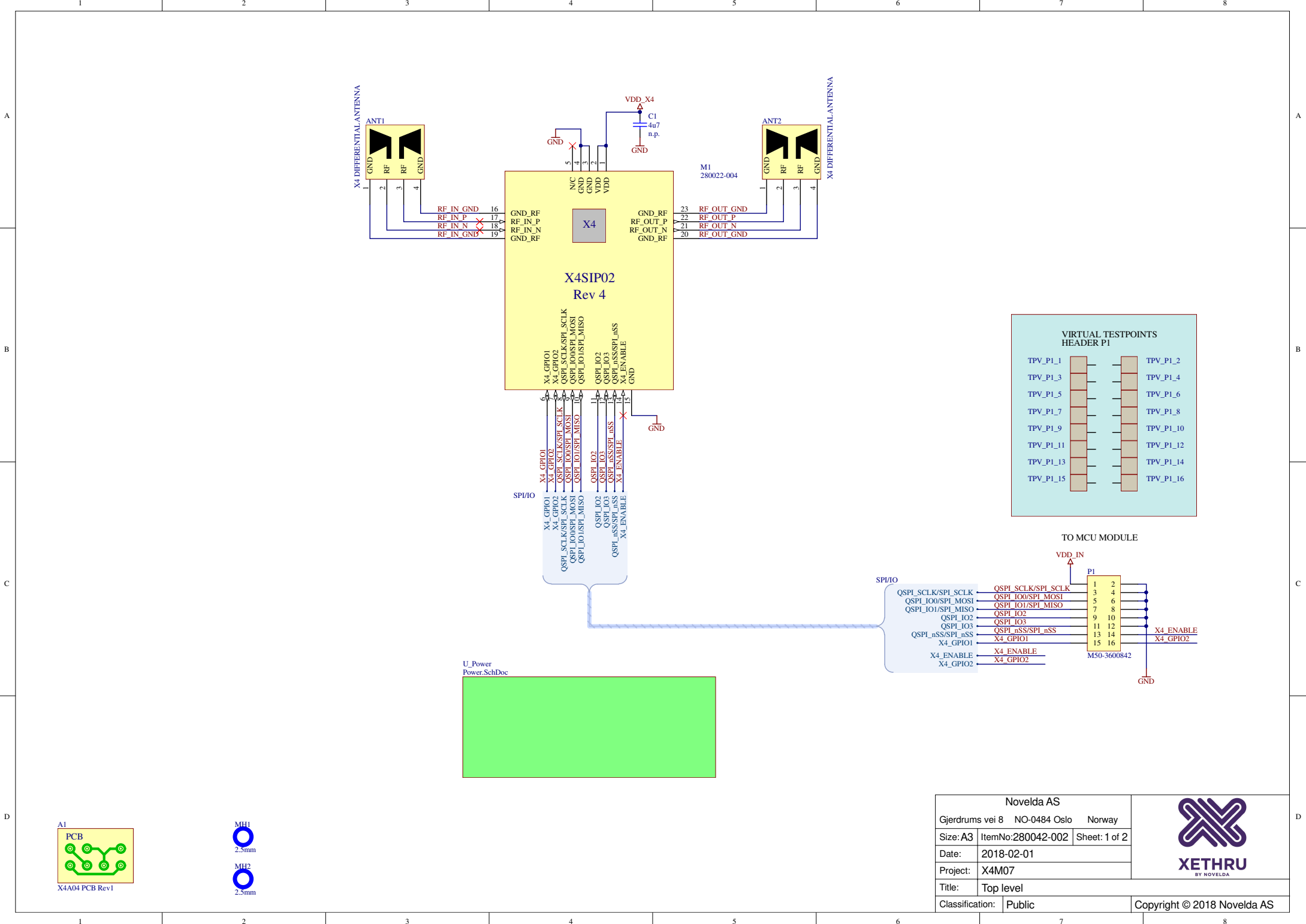
Revision 1

- First revision.

Release Notes

Revision 2
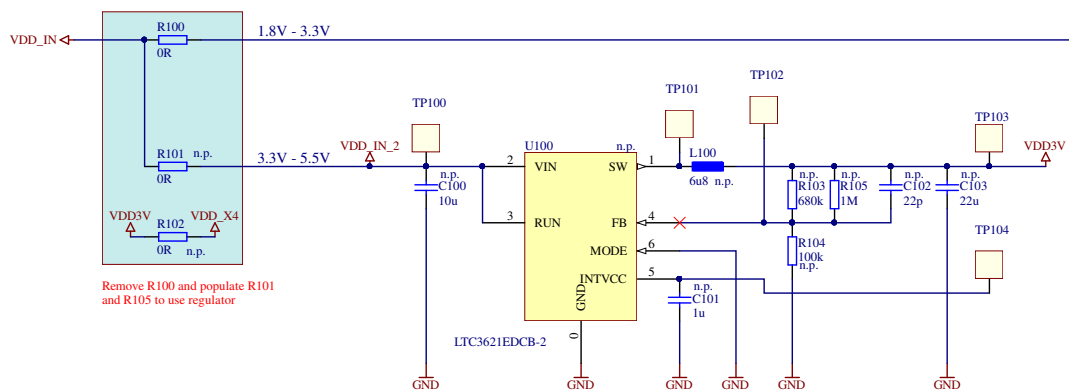
- Changed X4SIP02 to revision 4.

Revision 1

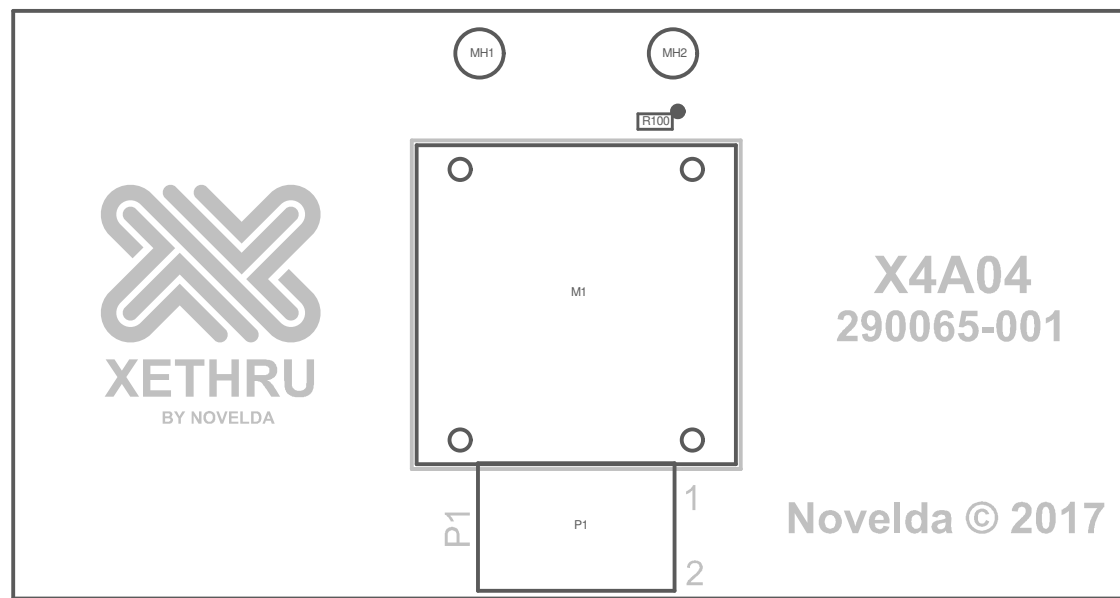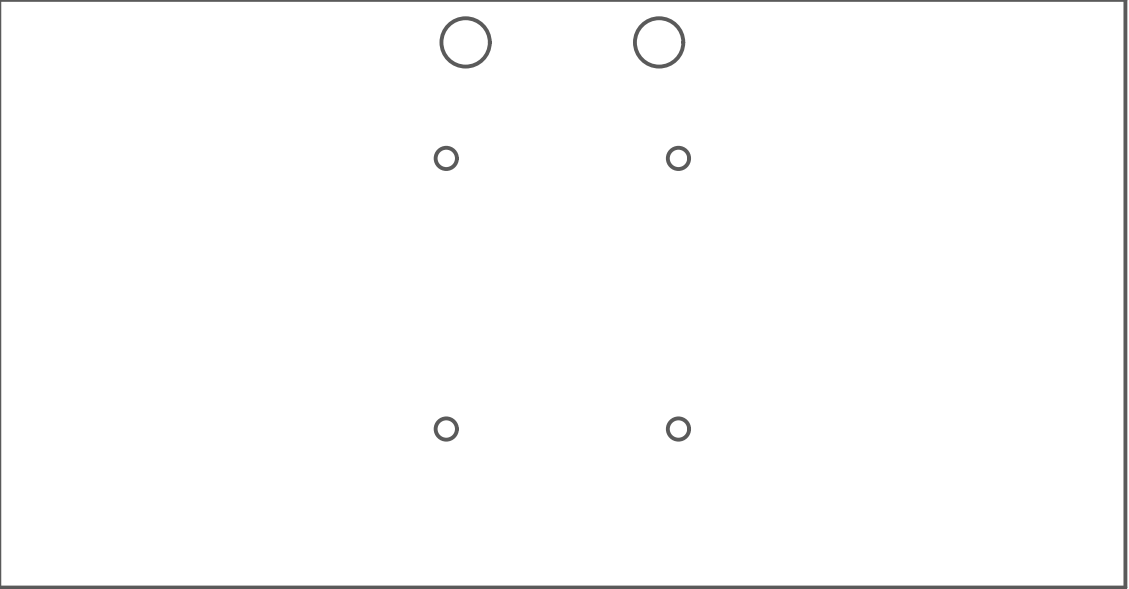- First revision.

X4 DIFFERENTIAL ANTENNA
ANT1
GND RF RF GND

X4 DIFFERENTIAL ANTENNA
ANT2
GND RF RF GND

M1
280022-004

VDD_X4
C1
4u7
n.p.
GND
GND

N/C
GND
GND
VDD
VDD

X4SIP02
Rev 4
X4

RF_IN_GND 16 GND_RF
RF_IN_P   17 RF_IN_P
RF_IN_N   18 RF_IN_N
RF_IN_GND 19 GND_RF

23 GND_RF RF_OUT_GND
22 RF_OUT_P RF_OUT_P
21 RF_OUT_N RF_OUT_N
20 GND_RF RF_OUT_GND

X4_GPIO1
X4_GPIO2
QSPI_SCLK/SPI_SCLK
QSPI_IO0/SPI_MOSI
QSPI_IO1/SPI_MISO
QSPI_IO2
QSPI_IO3
QSPI_nSS/SPI_nSS
X4_ENABLE
GND
GND

SPI/IO
X4_GPIO1
X4_GPIO2
QSPI_SCLK/SPI_SCLK
QSPI_IO0/SPI_MOSI
QSPI_IO1/SPI_MISO
QSPI_IO2
QSPI_IO3
QSPI_nSS/SPI_nSS
X4_ENABLE

U_Power
Power.SchDoc

VIRTUAL TESTPOINTS
HEADER P1

TPV_P1_1   TPV_P1_2
TPV_P1_3   TPV_P1_4
TPV_P1_5   TPV_P1_6
TPV_P1_7   TPV_P1_8
TPV_P1_9   TPV_P1_10
TPV_P1_11   TPV_P1_12
TPV_P1_13   TPV_P1_14
TPV_P1_15   TPV_P1_16

TO MCU MODULE
VDD_IN
P1

SPI/IO
QSPI_SCLK/SPI_SCLK   QSPI_SCLK/SPI_SCLK   1   2
QSPI_IO0/SPI_MOSI   QSPI_IO0/SPI_MOSI   3   4
QSPI_IO1/SPI_MISO   QSPI_IO1/SPI_MISO   5   6
QSPI_IO2   QSPI_IO2   7   8
QSPI_IO3   QSPI_IO3   9   10
QSPI_nSS/SPI_nSS   QSPI_nSS/SPI_nSS   11 12   X4_ENABLE
X4_GPIO1   X4_GPIO1   13 14   X4_GPIO2
                                          15 16
X4_ENABLE   X4_ENABLE
X4_GPIO2   X4_GPIO2
M50-3600842
GND

A1
PCB
X4A04 PCB Rev1
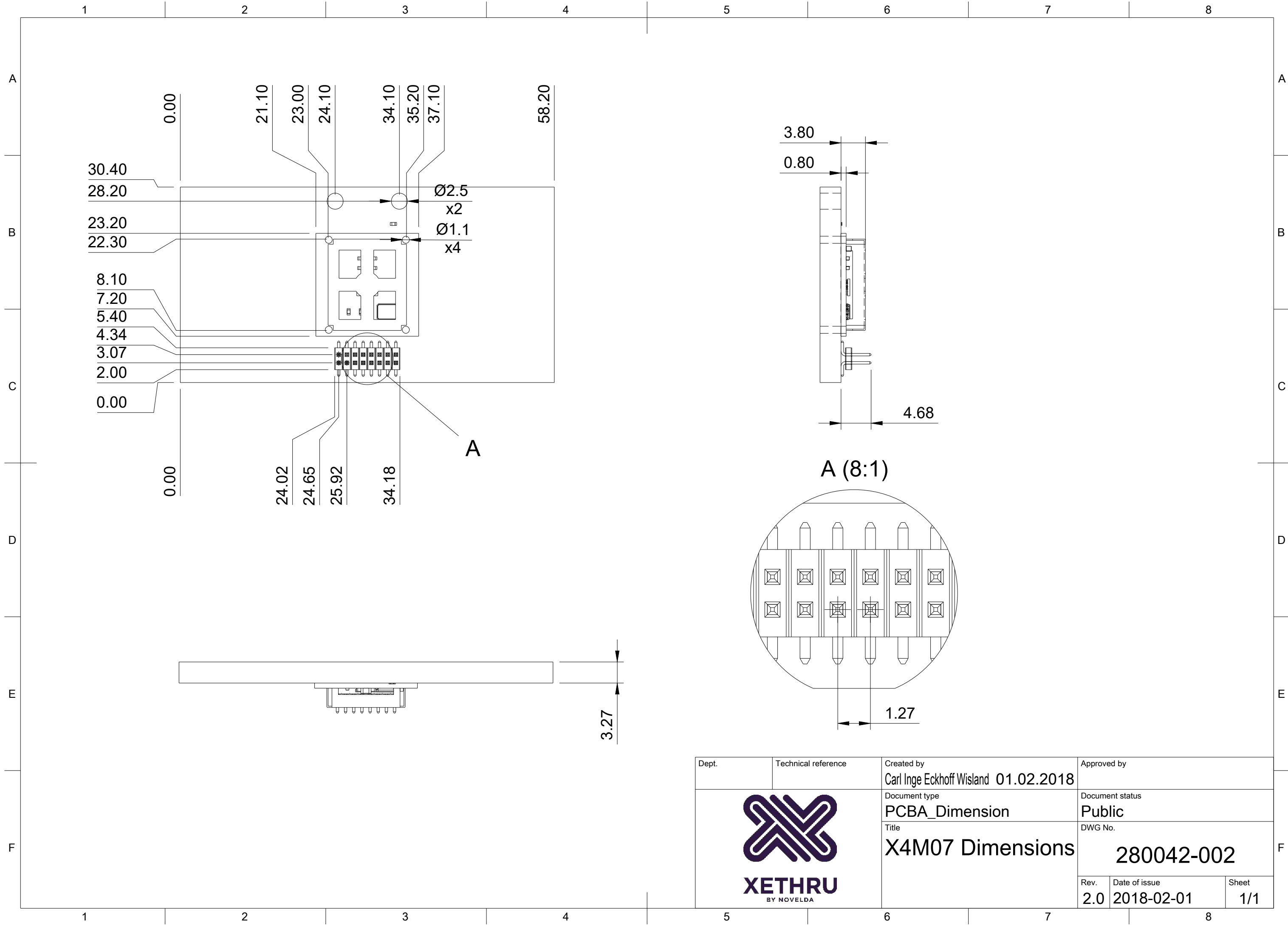
MH1
2.5mm

MH2
2.5mm

Novelda AS
Gjerdrums vei 8   NO-0484 Oslo   Norway
Size: A3 | ItemNo: 280042-002 | Sheet: 1 of 2
Date: 2018-02-01
Project: X4M07
Title: Top level
Classification: Public

XETHRU
BY NOVELDA

Copyright © 2018 Novelda AS

VDD_IN ◁

R100
0R

1.8V - 3.3V

VDD_X4 ▷

R101 n.p.
0R

3.3V - 5.5V

VDD_IN_2 △

VDD3V R102 VDD_X4 △
0R n.p.

Remove R100 and populate R101
and R105 to use regulator

TP100

n.p.
C100
10u

U100

2 VIN   SW 1
3 RUN   FB 4
          MODE 6
   INTVCC 5
GND
0

LTC3621EDCB-2

GND   GND

TP101

n.p.

L100
6u8 n.p.

n.p.
C101
1u

TP102

n.p.   n.p.
R103   R105
680k   1M

R104
100k
n.p.

n.p.   n.p.
C102   C103
22p   22u

TP103

VDD3V
△

TP104

GND   GND   GND   GND

XETHRU
BY NOVELDA

MH1 MH2

R100

M1

X4A04
290065-001

P1

P1

1

2

Novelda © 2017

XETHRU
BY NOVELDA

ItemNo	290065-001
Date	2017-09-19
Project	X4M07
Layer	Top Designator and Assembly Top Overlay
Classification	Public
Copyright (c) Novelda 2018	

ItemNo	2900065-001
Date	2017-09-19
Project	X4M07
Layer	Bottom Designator and Assembly Bottom Overlay
Classification	Public
Copyright (c) Novelda 2018	

Dimensions Drawing

Horizontal dimensions (top): 0.00, 21.10, 23.00, 24.10, 34.10, 35.20, 37.10, 58.20

Left dimensions (upper): 30.40, 28.20, 23.20, 22.30

Left dimensions (lower): 8.10, 7.20, 5.40, 4.34, 3.07, 2.00, 0.00

Bottom dimensions: 0.00, 24.02, 24.65, 25.92, 34.18

Ø2.5 x2

Ø1.1 x4

A

Side view dimensions: 3.80, 0.80, 4.68

Bottom view dimension: 3.27

A (8:1)

1.27

ItemNo	290065-001
Date	2017-09-19
Project	X4M07
Layer	Testpoints Top
Classification	Public
Copyright (c) Novelda 2018	

TP101 TP103 TP104 TP102 TP100
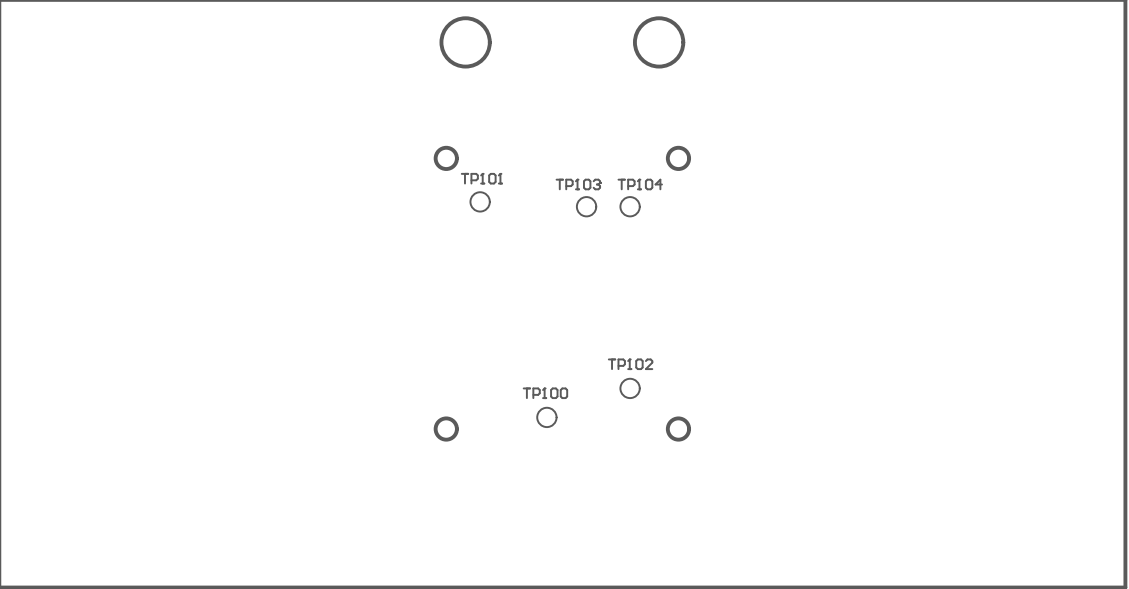
ItemNo	290065-001
Date	2017-09-19
Project	X4M07
Layer	Testpoints Bottom
Classification	Public
Copyright (c) Novelda 2018	