XETHRU
BY NOVELDA

X4A02 Datasheet

X4 Antenna Board

XeThru Datasheet **by Novelda AS**

B Preliminary - October 31. 2017

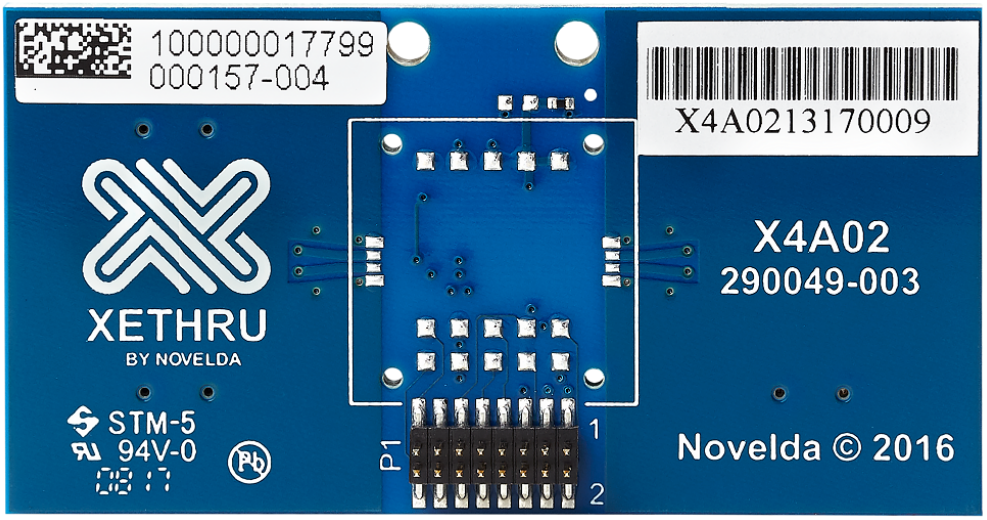
Summary

X4A02 is an antenna board for the X4SIP02 System-in-Package with the X4 SoC

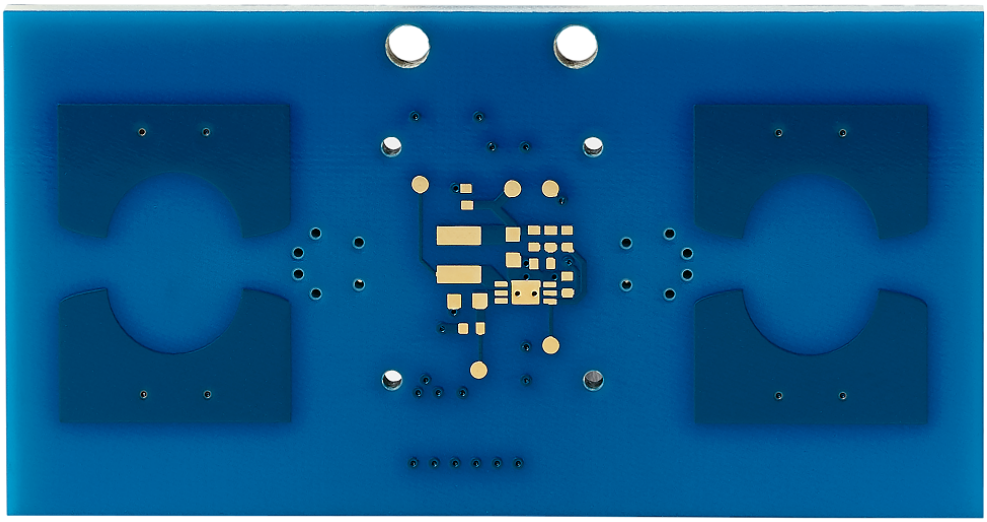
Table of Contents

1 List of Features

- Differential directional patch antenna
- Designed for ETSI/FCC/IC compliant TX center frequency
- Footprint for X4SIP02
- 16-pin XeThru radar connector
- Footprint for optional voltage regulator (not mounted)



X4A02 top view



X4A02 bottom view

1.1 Order Information

X4A02 is not sold separately. X4A02 is included in the X4M03 and X4M05 products. Refer to X4M03 and X4M05 datasheets for Order Information.

2 Antenna

X4A02 has two differential antennas optimized for the X4 UWB radar SoC, one for transmit and one for receive. The antennas are directional patch antennas with integrated WiFi filter (filtenna) optmized for frequencies between 6.0 and 8.5 GHz with a typical opening angle of 65° azimuth and elevation.

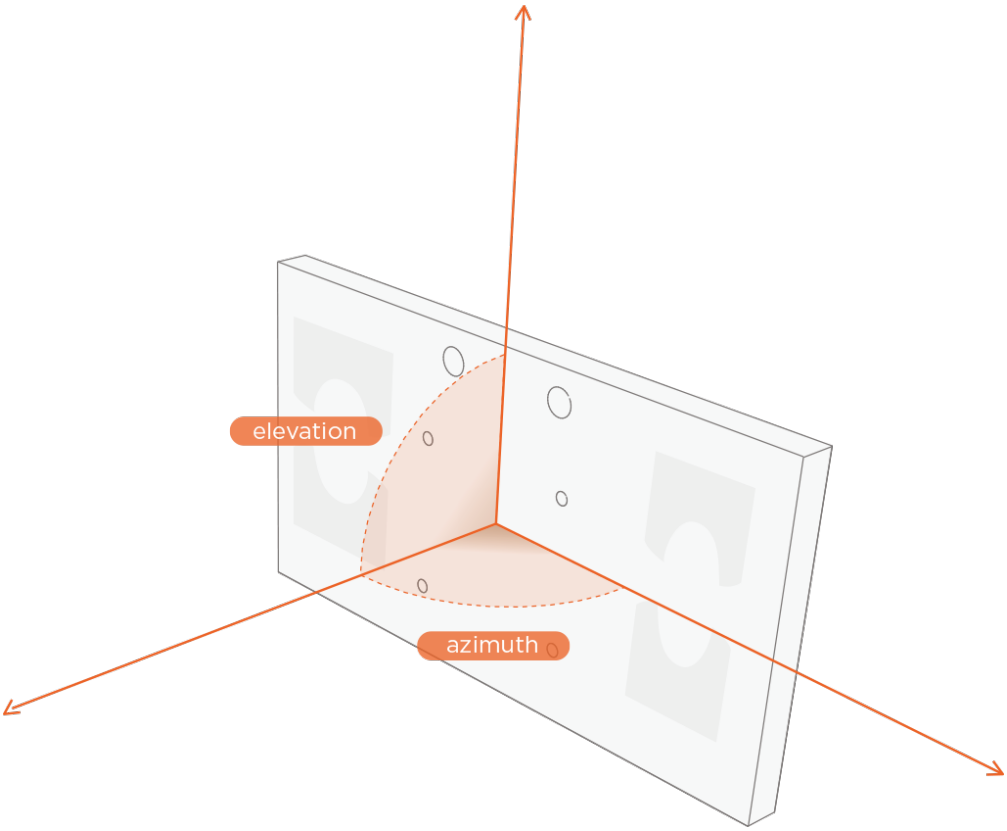
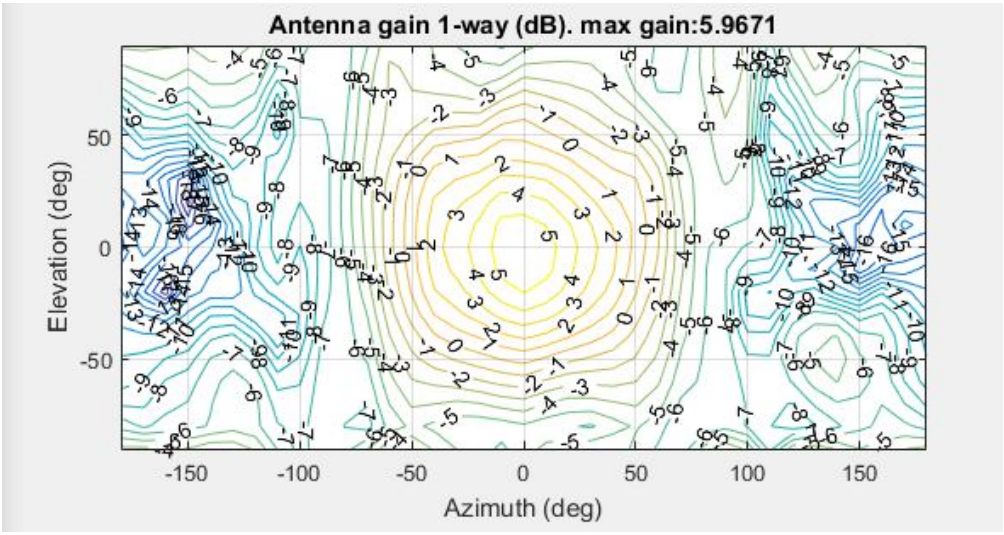
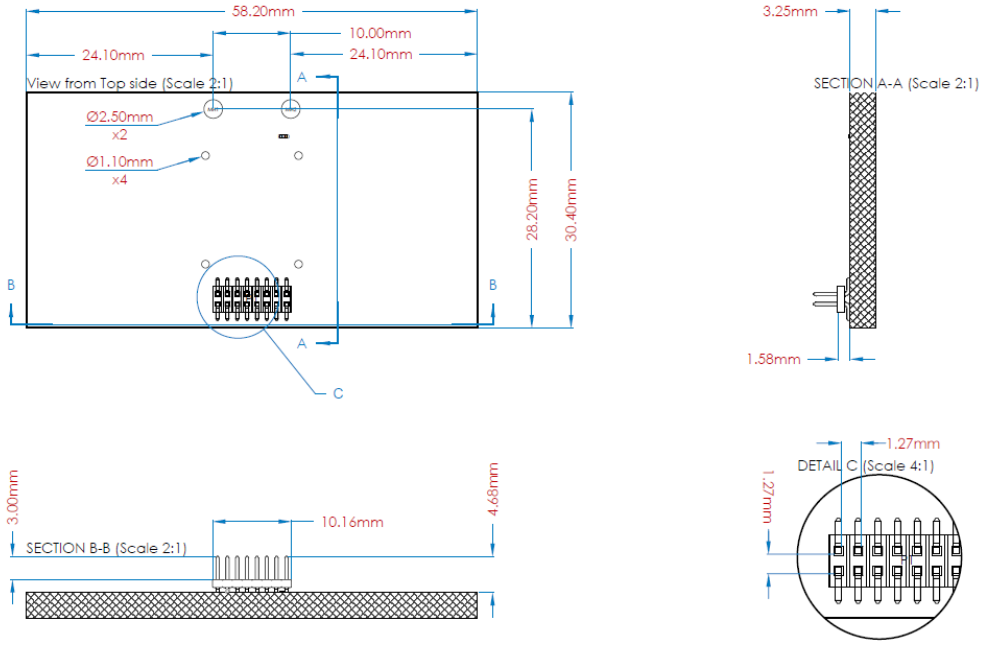


Illustration of 0° azimuth and 0° elevation



X4A02 Antenna plot

3 Physical Dimensions



X4A02 Physical dimensions

4 Connectors

4.1 16-pin XeThru Radar Connector

The 16-pin header is intended for connection to a processing unit.

Pin descriptions

Pin	Name	Pin	Name
1	VDD3V	2	GND
3	QSPI_SCLK/SPI_SCLK	4	GND
5	QSPI_IO0/SPI_MOSI	6	GND
7	QSPI_IO1/SPI_MISO	8	GND
9	QSPI_IO2	10	GND
11	QSPI_IO3	12	GND
13	QSPI_nSS/SPI_nSS	14	X4_ENABLE
15	X4_GPIO1	16	X4_GPIO2

4.2 Pin-out of PCB pad connectors

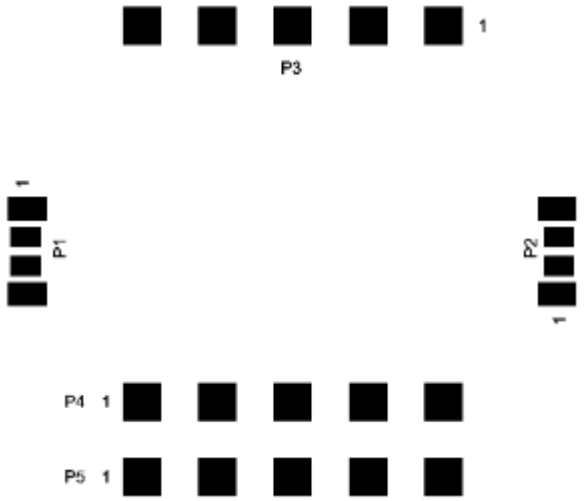
Connector pin	Signal name
P1-1	GND
P1-2	RFIN_P
P1-3	RFIN_N
P1-4	GND

Connector pin	Signal name
P2-1	GND
P2-2	RFOUT_N
P2-3	RFOUT_P
P2-4	GND

Connector pin	Signal name
P3-1	VDD3V
P3-2	VDD3V
P3-3	GND
P3-4	GND
P3-5	NC

Connector pin	Signal name
P4-1	X4_IO1
P4-2	QSPI_SCLK/SPI_SCLK
P4-3	QSPI_IO1/SPI_MISO
P4-4	QSPI_IO3
P4-5	X4_ENABLE

Connector pin	Signal name
P5-1	X4_IO2
P5-2	QSPI_IO0/SPI_MOSI
P5-3	QSPI_IO2
P5-4	QSPI_NSS/SPI_NSS
P5-5	GND



X4SIP02 pad placement - seen from above

5 Schematics, bill of material and PCB layout

Schematics, bill of material and PCB layout files for X4A02 can be downloaded from www.xethru.com.

6 Support and Resources

Development support, resources, links to development partners and resellers can be found on Novelda's web site www.xethru.com.

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