XT - NANO - SXL

MADE
IN
GERMANY

XT-NANO-SXL

Due to its extremely little dimensions of only **22 x 34 mm** and its compact type, the **XT-NANO-SXL** embedded network module is particularly suitable to be integrated even in very small terminals. A total of **two** bus systems is made available with five switchable interfaces each such as **RS232**, **RS485**, **I2C, SPI** and **TTL-IO**. It is even possible to use a **POE** supply (Power over Ethernet), since all necessary connections are performed. **No** additional Ethernet components such as Phyther, carrier or RJ45 jack are required, since all necessary components were integrated.

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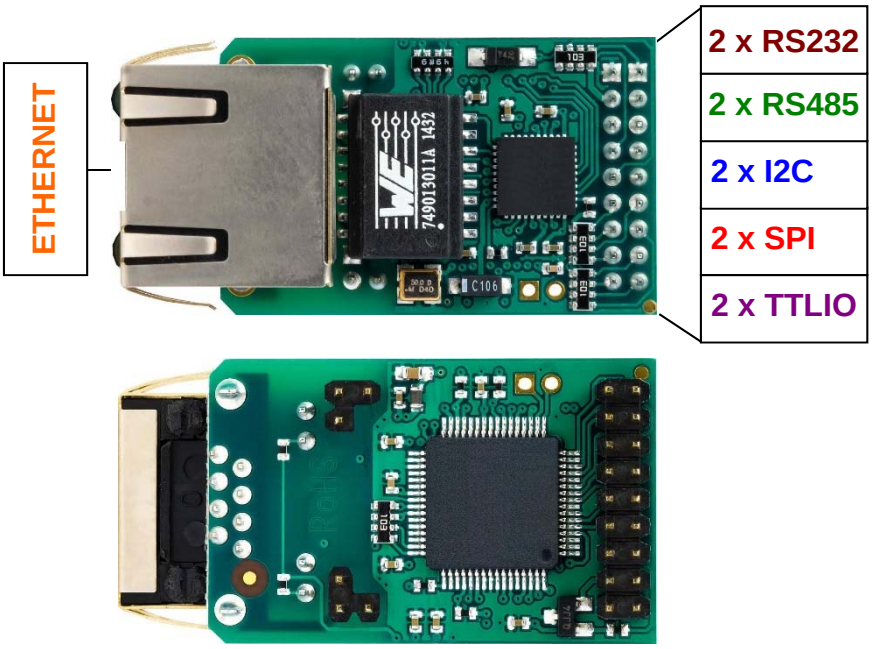
Hardware description



Supported systems

1. Windows
2. Linux
3. UNIX

Supported protocols IP-Dual-Stack

1. IPv4
2. TCP
3. UDP
4. FTP
5. TFTP
6. ICMP
7. ARP
8. SNMP
9. LPR
10. DHCP
11. BOOTP
12. DNS
13. TELNET
14. HTML
15. http
16. DYNDNS
17. SMTP
18. POP3
19. SYSLOG
20. IPv6
21. NDP
22. ICMPv6
23. DHCPv6
24. TCPv6
25. UDPv6
26. Netbios-NS
27. LLMNR
28. ZeroConfig
    -APIPA
    -AutoIP
29. IP-Multicast
30. AK-M2M
31. IEEE802.1x
32. SSL 3.0
33. TLS1.0
34. TLS1.1
35. TLS1.2

Technical data

- **Temperature range:**
  -40°C .. + 85°C
- **Standards**
  CE / WEEE / RoHS
  EN 55022 Class B
  EN 55024 Class A
- **Power supply:**
  3.3 volts
  170 mA
- **Dimensions:**
  22x 34(41)mm
- **Weight:**
  5 grams
- **Ethernet (MDIX)**
  10 Half Duplex
  10 Full Duplex
  100 Half Duplex
  100 Full Duplex
  AutoSensing

- **Interfaces – Features**
  - All data pins 3.3 volts TTL, 10K Pullup
  - All data interfaces are freely selectable

2 x RS232/RS485

Baud rate	: up to 2.5 MBauds
DataBits	: 7.8
Parity	: Odd,Even,None Mark,Space
Signals	: TXD, RXD, RTS, CTS, DSR, DTR, DCD
RS485	ReadWrite

2 x I2C

Mode	: Master
DataBits	: 8
Data rate	: 100KHz up to 2.5 MHz
Signals	: SDA, SCL

2 x SPI

Mode	: Master/Slave
DataBits	: 8
Data rate	: up to 25 MBit(Master) up to 2.5 MBit(Slave)
Signals	: MISO,MOSI,SCK,SS
SD-CARD	CardDetect,CardLock

2 x TTL-IO

Mode	: digital Input/Output
Signals	: 7/8 Pins

Management

1. Telnet
2. Browser
3. serial interface

Emulations and functions

- Modem Emulation
- Connect-On-Data
- Auto-Connect
- Tunnel-Mode
- DYNDNS-Client
- FTP-Server
- FTP-Client
- LPR-Server
- I2C – Master
- SPI – Master / Slave
- TTL – IO
- 512KB internal flashdrive
- Flash-File system
- SD and DF CARD
- 4bit and SPI DISPLAY
- E-Mail – Client
- TCP/UDP -Client
- TCP/UDP –Server
- SYSLOG-Client

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Emulations and functions

RS232 (TTL)
It is possible to use up to 2 independent, individually operating serial interfaces. Each interface can be individually set and it is possible to transfer data rates of up to 2.500.000 bauds. Furthermore, it is possible to additionally set emulations such as modem, Auto-Connect, Connect-On-Data, TCP / UDP client using up to 10 parallel connections, TCP/UDP server, tunnel mode with transfers of the signal modes as well as settings, E-Mail client including sending and receiving of e-mails.

RS485 (TTL)
It is possible to use up to 2 independently operating RS485 interfaces. This mode also supports so-called 2-wire components, e.g. the MAX3072E, since it does not possess a proper control wire. Each interface can be individually set and it is possible to transfer data rates of up to 2.500.000 bauds. Furthermore, it is possible to additionally set emulations such as modem, AutoConnect, Conntect-On-Data, TCP/UDP client using up to 10 parallel connections, TCP/UDP server, tunnel mode with transfer of the signal modes as well as settings, E-Mail client including sending and receiving of e-mails.

I2C
It is possible to use up to 2 independently operating I2C interfaces. A data mode has also been implemented to achieve a maximum of flexibility. The interface can be individually set up and it is possible to transfer data rates of up to 2.500.000 bits/sec. Furthermore, you can additionally set emulations such as modem, AutoConnect, Conntect-On-Data, TCP/UDP client using up to 10 parallel connections, TCP/UDP server, E-Mail client including sending and receiving of e-mails.

SPI
It is possible to use up to 2 independently operating SPI interfaces in the master or slave mode. Each interface can be set up individually and it is possible to transfer data rates of up to 25MBit(Master) and 2.5Mbit(Slave). Furthermore, it is possible to additionally set emulations such as AutoConnect, Conntect-On-Data, TCP/UDP client using up to 10 parallel connections, TCP/UDP server, E-Mail-Client including sending and receiving of e-mails.
By making adjustments in the setup, the SPI interface can directly operate SD cards, DF cards or Data-Flash components. An implemented Flash-File system with FAT12/16/32 structure supports the FTP to save data on it or to read data from it. Now it is possible to save your own homepage or JAVA applet in order to present a proper and individual look to the customers via the WEB server.

SD cards:
- Up to 4 GByte
- FAT12/16/32
- PC-compatible

DF cards / components:
- Up to 4 GByte
- FAT12/16/32
- AT45DB011B,AT45DB021B
  AT45DB041B,AT45DB081B
  AT45DB0161B,AT45DB0321B
  AT45DB0642, AT45DB1282
  will be directly identified.

The SPI interface can also directly control as SPI display, e.g. the EA DOGM162B-A, which you can directly use via TCP/IP.

TTL IO
It is possible to directly control up to 14 pins via two interfaces. To do so, there is a proper control mode which can read the signals, switch them on or off. A tunnel mode allows the automatic transfer of the signal modes.

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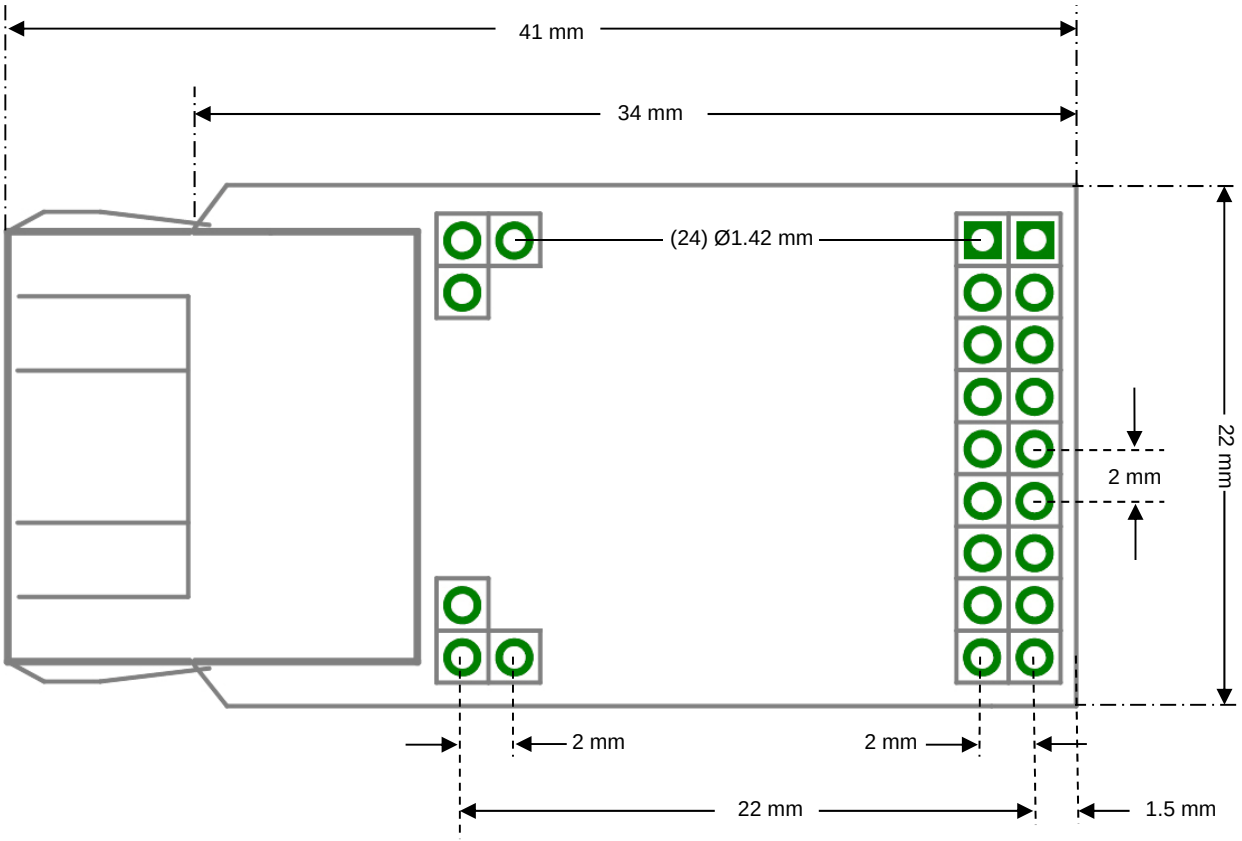
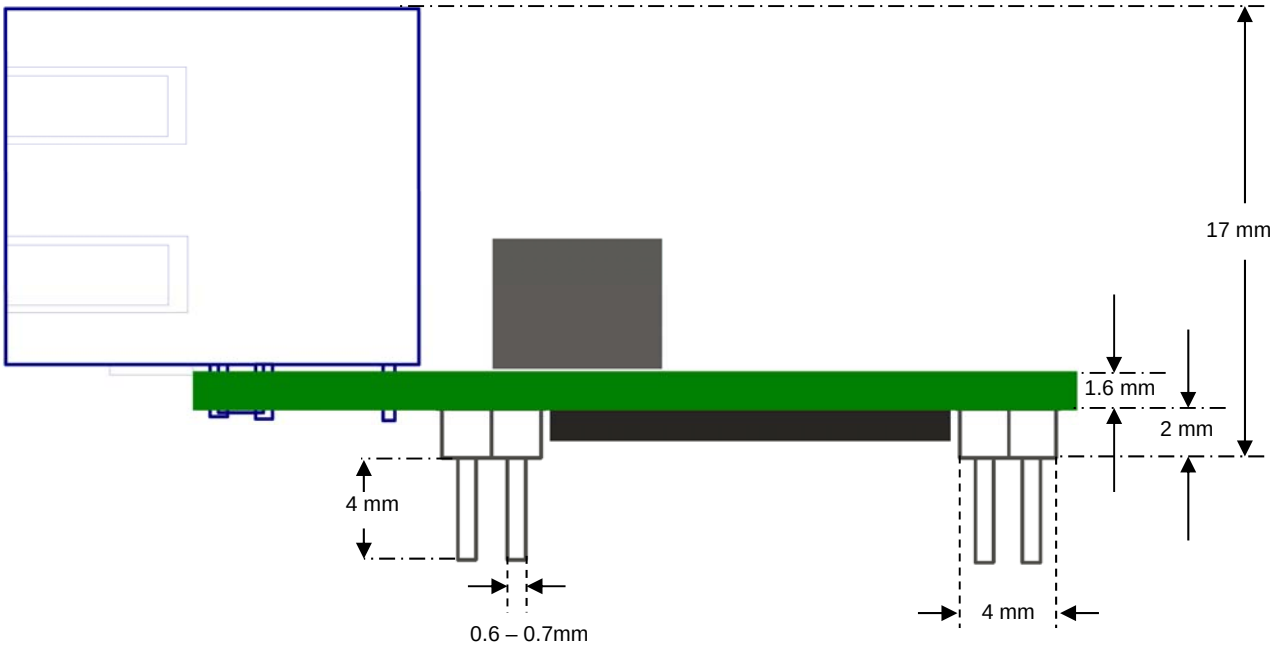
Dimensions

Top view



Side view



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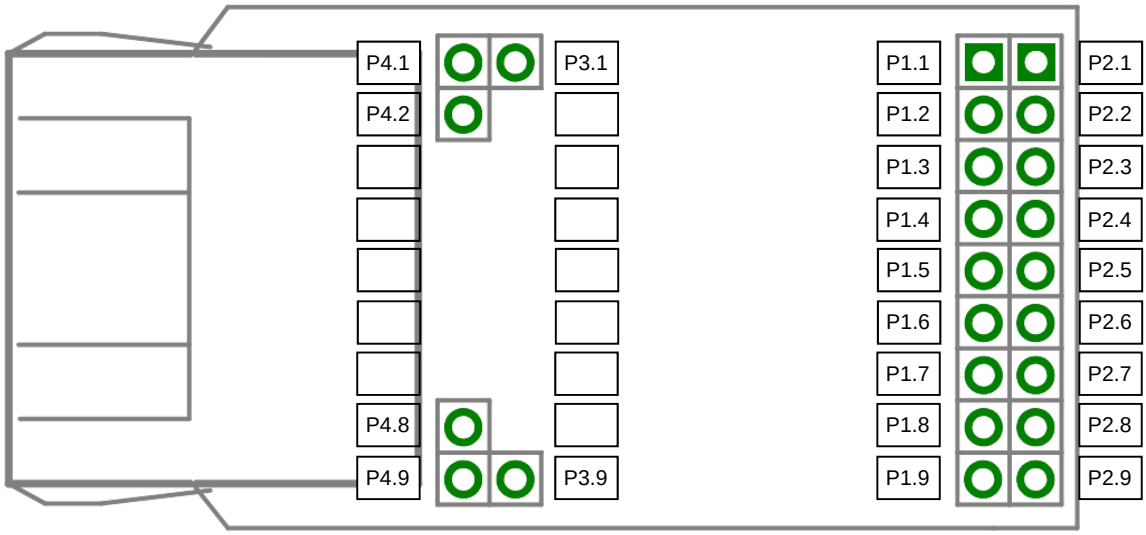
PIN DESCRIPTION

Top view



Absolute Maximum Ratings

Ambient temperature under bias.....	-40°C to +85°C
Storage temperature.....	-65°C to +150°C
Voltage on VDD…….....	-0.3V to +4.0V
Voltage on any 3.3 V pin…….....	-0.3V to (VDD + 0.3V)
Voltage on any 5V tolerant pin ……	-0.3V to +5.5V

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PIN DESCRIPTION

PORT1:

PIN	Power	BUS	RS232	RS485	I2C	SPI	TTL-IO	Pullup	Type	VDD max
P1.1	GND								PWR	0
P1.2	VDD								PWR	+3.3 volts
P1.3	RESET							10K	I	+5V tolerant
P1.4		**1**	CTS0		SDA0		PIN4_0	10K	I/O	+3.3 volts
P1.5		**1**	RTS0		SCL0		PIN3_0	10K	I/O	+3.3 volts
P1.6		**1**	DTR0	R/W0		SS0	PIN5_0	10K	I/O	+3.3 volts
P1.7		**1**	DSR0			SCK0	PIN6_0	10K	I/O	+3.3 volts
P1.8		**1**	TXD0	TXD0		MISO0	PIN1_0	10K	I/O	+3.3 volts
P1.9		**1**	RXD0	RXD0		MOSI0	PIN2_0	10K	I/O	+3.3 volts

PORT2:

PIN	Power	BUS	RS232	RS485	I2C	SPI	TTL-IO	Pullup	Type	VDD max
P2.1		**1**	DCD0				PIN7_0	10K	I/O	+5V tolerant
P2.2		**2**	RI1				PIN8_1	10K	I/O	+3.3 volts
P2.3		**2**	DCD1				PIN7_1	10K	I/O	+5V tolerant
P2.4		**2**	CTS1		SDA1		PIN4_1	10K	I/O	+5V tolerant
P2.5		**2**	RTS1		SCL1		PIN3_1	10K	I/O	+5V tolerant
P2.6		**2**	DTR1	R/W1		SS1	PIN5_1	10K	I/O	+3.3 volts
P2.7		**2**	DSR1			SCK1	PIN6_1	10K	I/O	+3.3 volts
P2.8		**2**	TXD1	TXD1		MISO1	PIN1_1	10K	I/O	+3.3 volts
P2.9		**2**	RXD1	RXD1		MOSI1	PIN2_1	10K	I/O	+3.3 volts

PORT3:

PIN	Ethernet	Type	Beschreibung
P3.1	POE12	O	Connected to (TXCT) of the transformer
….			
P3.9	POE36	O	Connected to (RXCT) of the transformer

PORT4:

PIN	Ethernet	Type	Type
P4.1	Shield		Connected to Shield of the RJ45
P4.2	POE78	O	Connected to PIN7 and PIN8 of the RJ45
….			
P4.8	POE45	O	Connected to PIN4 and PIN5 of the RJ45
P4.9			

= ActivLow

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Connection plan

PIN	RS232	RS485 MAX3072	I2C	SPI	SD-CARD	DataFlash AT45xxx	LCD EADOGM	TTLIO	BUS
P1.4	CTS0		SDA0		WP			PIN4	BUS 1
P1.5	RTS0		SCL0		CD		RS	PIN3	
P1.6	DTR0	RE/DE		SS0\	CS\	CS\	CS\	PIN5	
P1.7	DSR0			SCK0	SCLK	SCLK	SCLK	PIN6	
P1.8	TXD0	DI		MISO0	SO	SO		PIN2	
P1.9	RXD0	RO		MOSI0	SI	SI	MOSI	PIN1	
P2.1	DCD0							PIN7	
P2.2	RI1							PIN8	BUS 2
P2.3	DCD1							PIN7	
P2.4	CTS1		SDA1		WP			PIN4	
P2.5	RTS1		SCL1		CD		RS	PIN3	
P2.6	DTR1	RE/DE		SS1\	CS\	CS\	CS\	PIN5	
P2.7	DSR1			SCK1	CLK	SCLK	SCLK	PIN6	
P2.8	TXD1	DI		MISO1	SO	SO		PIN2	
P2.9	RXD1	RO		MOSI1	SI	SI	MOSI1	PIN1	

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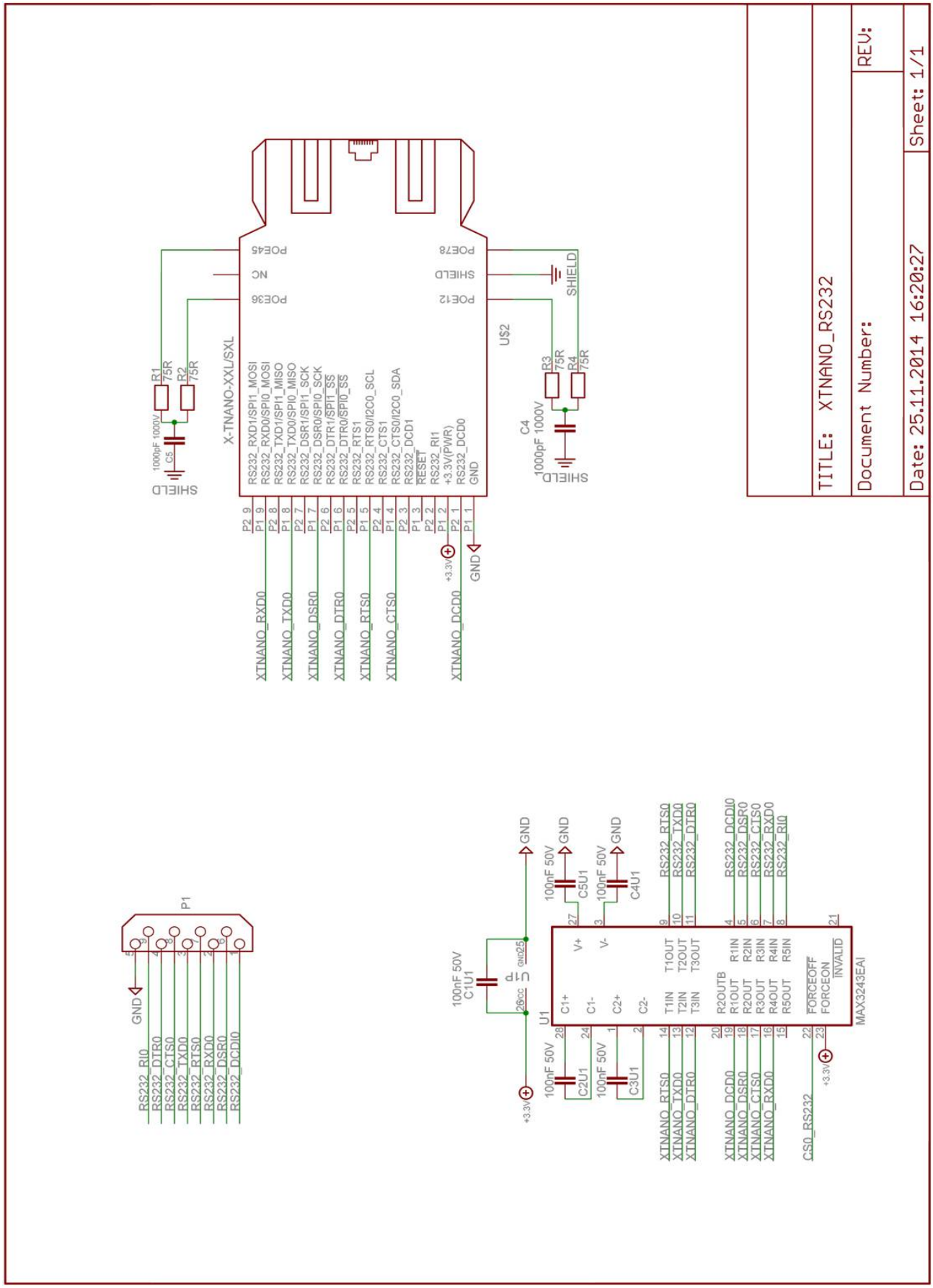
Schematic



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