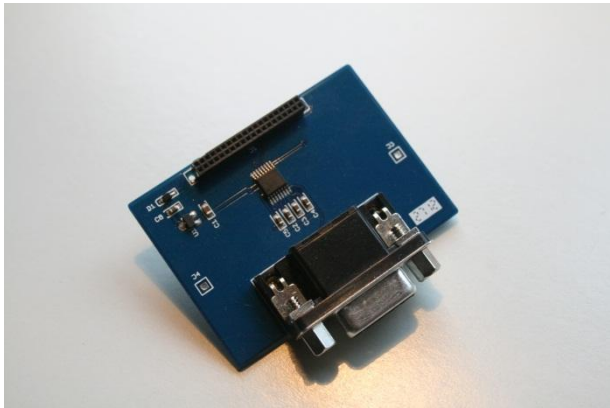


LAY-OUT OF I/O MODULE

I/O module for gateway or MCK4000 application controller



An I/O module handles the physical and protocol conversion between a Ninthway network device and an application controller.

Known modules are:

- Serial module, provides serial access to the NTM radio network.
- USB, provides via USB to serial conversion, access to the NTM radio network.

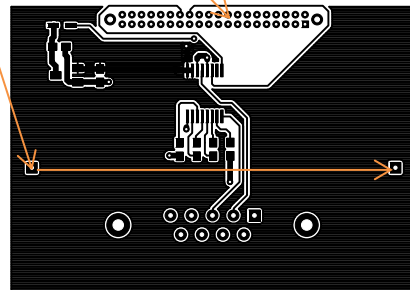
This application sheet provides information for designing your own I/O module.

PCB lay out

Fixed elements:

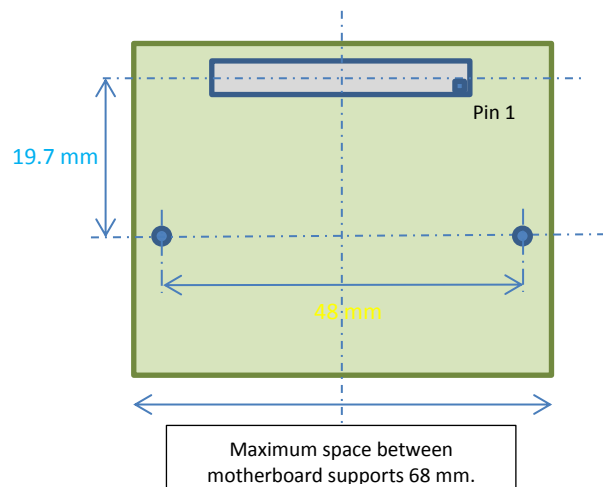
J1: 2 x 20 pin connector

J2, J3: pinhead/socket supports



Example

Mechanical requirements



LAY-OUT OF I/O MODULE

I/O module for gateway or MCK4000 application controller

components

J1: Samtec SFC-120-T1-L-D-A or similar.
J2,J3 pinhead/socket PTH diam 0.9 mm. Both pins tied to ground.

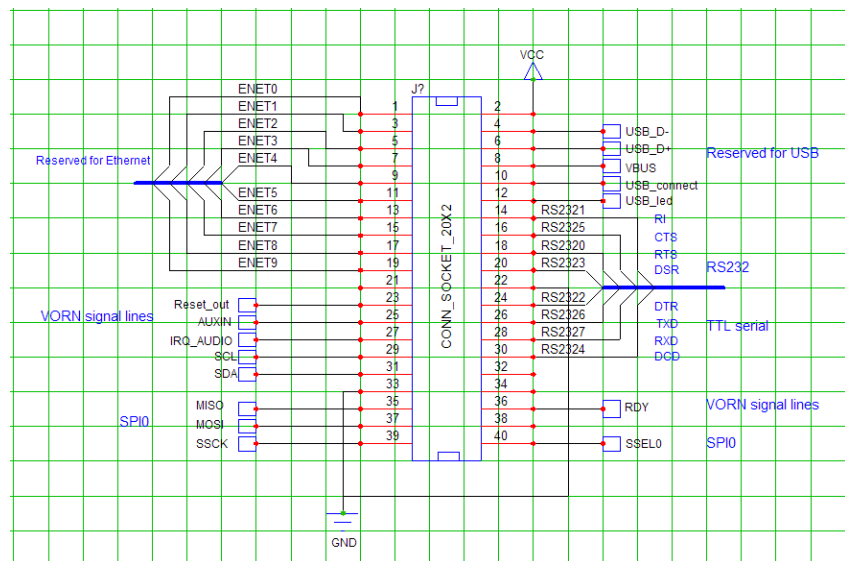


Diagram of J1

The J1 connector is used both in gateways and the MCK4000 application controller. It contains connections that are common to both devices and connections that are specific for one of the devices.

Odd pins 1 -19 are reserved for Ethernet modules connecting to the MCK4000
 Pin 23 Reset_out: reset signal from NTM or MCK4000 to peripheral
 Pin 25 AUXIN: Reserved for VORN applications
 Pin 27 IRQ_AUDIO: connection to wake-up pin NTM
 Pin 29 SCL: I2C clock line connected to NTM SCL pin
 Pin 31 SDA: I2C data line connected to NTM SDA pin

Pin 35, 37, 39 & 40: data and control lines SPI0 bus from NTM
 Pin 36 RDY: input pin on NTM (used by VORN)

Even pins 4 – 12: USB bus connecting to the MCK4000
 Even pins 14 – 30: RS232 bus data and control lines
 Pins 28, 30: data I/O lines for TTL level serial communication

Pin 2 Vcc: 5V power line
 Pin 22,33: Ground line

Maximum voltage on all pins: 5 Vdc
 Standard voltage on signal pins: 3.3 Vdc

LAY-OUT OF I/O MODULE

I/O module for gateway or MCK4000 application controller	
Additional information	Datasheet NTM_3 Application note 1; programming the NTM Application note 2; Ninthway high secure radio network