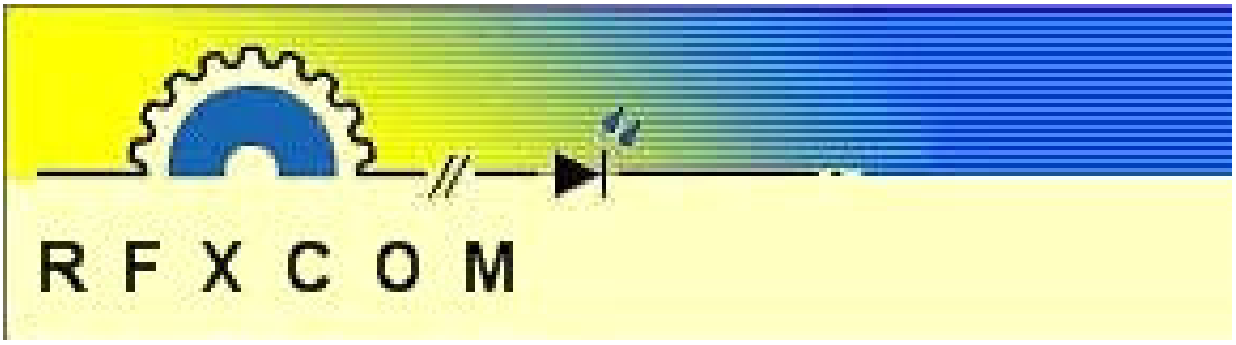

Handshake

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1. Table of Contents

2. Small and Large interfaces.

The small USB interfaces have dimensions of about 9x6x3 cm.

There are 2 main types:

- with a PL2303 USB IC or RS232 interface
  This interface has the text MOD1 RXTXMOD and MOD2 RXTXMOD on the PCB where the receiver/transmitter module is mounted.
- with an FT232 USB IC
  This interface has the text “SLAVE or TRANSMITTER” and “MASTER” on the PCB where the receiver/transmitter module is mounted.

These types of interface is no longer delivered.

The large USB and Ethernet interfaces have dimensions of about 15x9x3cm.

3. Handshake signal.

A handshake cable is connected between a MASTER receiver and a transmitter.
This master receiver must have the same frequency as the transmitter!

Using the handshake cable will inhibit transmission as long as the receiver receives any data. By this collisions are avoided as much as possible. The Master receiver has a Transmit Request input and a Clear to Send output connection. Those signals are used by a transmitter that operates on the same frequency as the Master receiver. Before starting the transmission, the transmitter sends a Transmit Request to the Master receiver. If the Master receiver has not received a signal for about 60ms it responds with a Clear to Send to the transmitter and stops receiving until the Transmit Request is switched of by the transmitter. On the Clear to Send signal the transmitter starts transmitting.

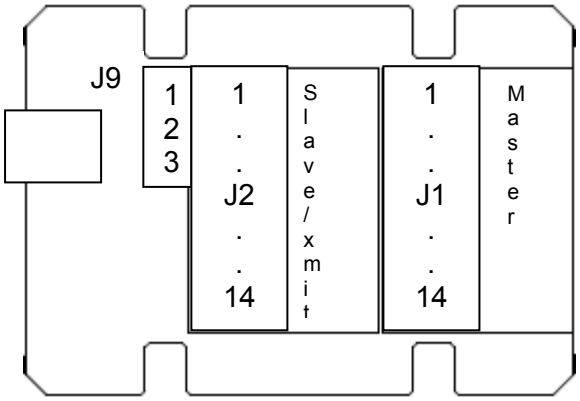
4. Handshake cable.

Handshake cable:
30cm, 3 core cable, 3.5mm outer diameter

4.1. Handshake connection for an USB interface (small to small).

An optional cable between the J9 connectors of two small USB modules connects the handshake signal between the Master receiver and the transmitter USB modules.
Connect:

Receiver USB module J9-3	to	Transmitter USB module J9-3
Receiver USB module J9-1	to	Transmitter USB module J9-1
Receiver USB module J9-2	to	Transmitter USB module J9-2

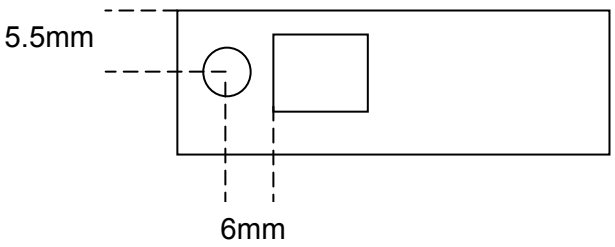


Important note: The receiver must always be connected with the handshake cable to an active transmitter if a connection for a handshake cable is installed. If the transmitter is not used then a jack connector with the top and the middle pin connected together must be installed in the receiver.
The transmitter can operate without a handshake connection if the correct mode is selected.

There must be a connection on J9 if the receiver doesn't have a handshake cable connected.
On the interface with a PL2303 USB IC or RS232 pin 2 and 3 must be connected.
On the interface with a FT232 USB IC pin 1 and 2 must be connected.
The receiver and the transmitter can work then without handshake cable but the transmitter will start transmitting even if there is already another transmitter active and a collision can occur.

4.1.1. If a Jack connector is used on the handshake cable.

Drill a 6.5mm hole in the front plate next to the USB hole.
Position for the jack connector on the small (9x6x3cm) USB interface front plate.



On the interface with a FT232 USB IC pin 1 and 2
Cut the connection on the USB PCB between pin 1 and 2 of J9.
Connect pin1 of the 3-pole jack connector to J9 - 1 on the USB PCB
Connect pin2 of the 3-pole jack connector to J9 - 2 on the USB PCB
Connect the ground pin of the 3-pole jack connector to J9 - 3 on the USB PCB

On the interface with a PL2303 USB IC or RS232.
Remove the connection on the USB PCB between pin 2 and 3 of J9.
Connect pin1 of the 3-pole jack connector to J9 - 3 on the USB PCB
Connect pin2 of the 3-pole jack connector to J9 - 2 on the USB PCB
Connect the ground pin of the 3-pole jack connector to J9 - 1 on the USB PCB

4.2. Handshake connection for an USB interface (small to large).

4.2.1. On the interface with a FT232 USB IC

Cut the connection on the small USB PCB between pin 1 and 2 of J9.

Make a wired connection between:
Small USB module J9-3 to Large USB module JP6-14
Small USB module J9-2 to Large USB module JP6-7
Small USB module J9-1 to Large USB module JP6-3
Note: Receivers will also operate in a large USB interface without the handshake connection.

4.2.2. On the interface with a PL2303 USB IC or RS232

Remove the connection on the small USB PCB between pin 2 and 3 of J9.

Make a wired connection between:
Small USB module J9-1 to Large USB module JP6-14
Small USB module J9-2 to Large USB module JP6-7
Small USB module J9-3 to Large USB module JP6-3
Note: Receivers will also operate in a large USB interface without the handshake connection.

4.3. Handshake connection for an USB interface (large to large).

Make a wired connection between:

Large USB module JP6-14	to	Large USB module JP6-14
Large USB module JP6-7	to	Large USB module JP6-7
Large USB module JP6-3	to	Large USB module JP6-3

5. Revision history.

Version 1.1 – April 25, 2008
Dimensions for small and large interfaces added.
Version 1.2 – December 26, 2008
Connection cut on small PCB added.
Version 2.0 – January 24, 2009
Small USB/RS232 added

6. Copyright notice