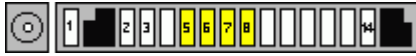# Nokia Pop-port pinout

This external connector for Nokia 2112, 2115(i), 2116i, 2125i, 2126i, 2128i, 2270, 2272, 2280, 2285, 3100, 3105, 3108, 3120, 3125, 3200, 3205, 3220, 3300, 3570, 3580, 3585(i), 3586(i), 3587(i), 3588i, 3589i, 3220, 5100, 5140, 6011i, 6012, 6015(i), 6016i, 6019i, 6020, 6100, 6101, 6102, 6108, 6200, 6220, 6225, 6560, 6585(i), 6610, 6610i, 6800, 6810, 6820, 6822, 6200, 7200, 7210, 7250, 7250i, 7260, 7360, 7610, 9300 and some other models. full pinout.

14 pin Nokia pop-port cellphone special connector at the cellular phone

The port contains signals for handsfree microphone, stereo speakers, FBus Rx/Tx or USB signals for the phones supporting them, power output for feeding the accessories that don"t have their own batteries, and the Accessory Control Interface (ACI), a bidirectional serial control bus for connection of phone accessories, with a proprietary protocol.

Pin Number	Pin Name	Description
1	Vin	Charger input
2	GND	Charger ground
3	ACI	Accessory Control Interface
4	V Out	Connected to pin 3 in DKU-2 usb data cable
5	USB Vbus	Also act as USB power detection? Should be connected to USB pin 1 in usb data cable.
6	FBus Rx/USB D+	USB exists in some models only*. Should be connected to USB pin 2 in usb data cable.
7	FBus Tx/USB D-	USB exists in some models only*. Should be connected to USB pin 3 in usb data cable.
8	GND	Data GND
9	X Mic-	Audio in - Ext. Mic input negativ
10	X Mic+	Audio in - Ext. Mic input positiv
11	HS Ear L-	Audio out - Ext. Audio out - left, negativ
12	HS Ear L+	Audio out - Ext. Audio out - left, positiv
13	HS Ear R-	Audio out - Ext. audio out - right, negativ
14	HS Ear R+	Audio out - Ext. audio out - right, positiv
	GND	shield GND in cavities

* Nokia N70, N90, N91, 3230, 3300, 6155, 6170, 6230, 6230i, 6235, 6255, 6260, 6630, 6650, 6670, 6680, 6681, 7270, 7600, 7610, 7700, 7710, 9300, 9500 and some others. It"s possible to connect this phones directly to computer USB port with straight cable (see DKU-2 cable above).

This external connector may be found on variety Nokia cell phones.

Some Nokia cellphones are built with two connectors - external (this) and internal, so it may be 2 different connectors and 2 different pinouts for them.

Nokia N60, N70, N90, N91, 3155i, 3230, 3300, 6155, 6170, 6230, 6230i, 6235, 6236i, 6255, 6256i, 6260, 6620, 6630, 6650, 6651, 6670, 6680, 6681, 7210, 7270, 7600, 7610, 7700, 7710, 9300, 9500 pop-port DKU-2 usb cable schematic pinout

14 pin Nokia pop-port cellphone special connector to the mobile phone

| Pin	Signal	Description
5	Vcc +5V	PC USB pin 1
6	USB DATA+	PC USB pin 3
7	USB DATA-	PC USB pin 2
8	GND	PC USB pin 4

A

B

4 pin USB A or USB B plug connector to the computer´s cable

Nokia 2112, 2115, 2115i, 2270, 2272, 2280, 2285, 3100, 3105, 3108, 3120, 3125, 3200, 3200b, 3205, 3220, 3585, 3585i, 3586, 3586i, 3587, 3587i, 3588, 3588i, 3589i, 5100, 5140, 6011i, 6012, 6015, 6015i, 6016i, 6019i, 6020 pop-port LIKE-DKU-5 cable schematic pinout

serial cable (original DKU-5 is an USB cable with complicated schematic).

Serial. Not tested

9 pin D-SUB female connector to the computer´s cable
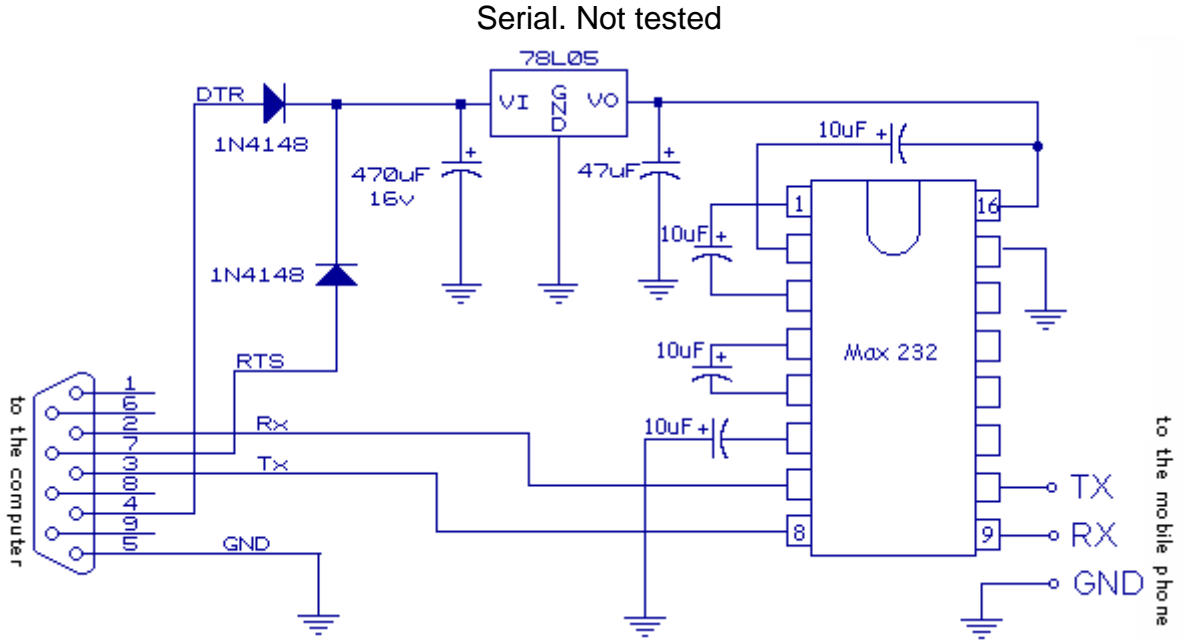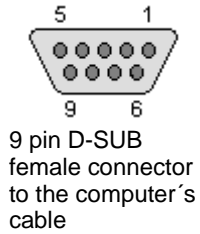
Rx is at Nokia pop-port pin 6
Tx is at Nokia pop-port pin 7
GND is at Nokia pop-port pin 8

Not tested
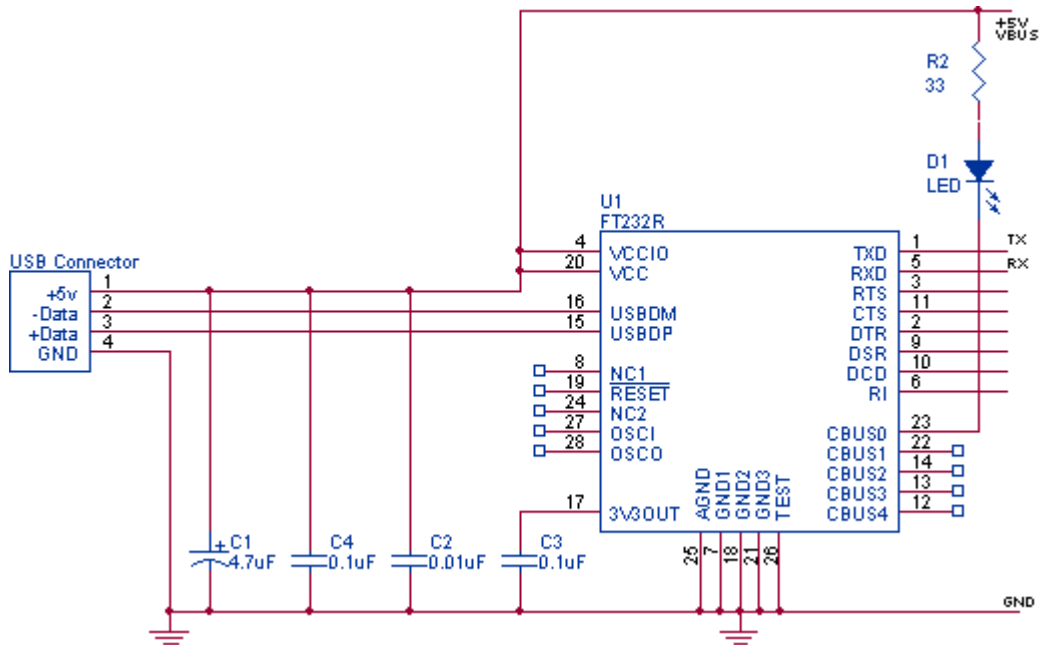
check http://www.ftdichip.com for usb port converter drivers

USB pinout

USB (Universal Serial Bus) designed to connect peripherals such as mice, keyboards, scanners, digital cameras, printers, hard disks, and networking components to PC. It becames standard connection method for scanners, digital cameras and for some printers.

4 pin USB A or USB B plug connector at the peripherals

The Universal Serial Bus is host controlled and there can be only one host per bus. An USB system consist of a host controller and multiple devices connected in a tree-like fashion using special hub devices. Hubs may be cascaded, up to 5 levels. Up to 127 devices may be connected to a single host controller. USB interface aimed to remove the need for adding expansion cards into the computer's PCI or PCI-E bus, and improve plug-and-play capabilities by allowing devices to be hot swapped or added to the system without rebooting the computer. When the new device first plugs in, the host enumerates it and loads the device driver necessary to run it. The loading of the appropriate driver is done using a PID/VID (Product ID/Vendor ID) combination supplied by attached hardware. The USB host controllers has their own specifications: UHCI (Universal Host Controller Interface) and OHCI (Open Host Controller Interface) are used with USB 1.1, EHCI (Enhanced Host Controller Interface) is used with USB 2.0

4 pin USB A / USB B / mini-USB jack connector at the controller

Pin	Name	Cable color	Description
1	VCC	Red	+5 VDC
2	D-	White	Data -
3	D+	Green	Data +
4	GND	Black	Ground

USB pinout signals

USB is a serial bus. It uses 4 shielded wires: two for power (+5v & GND) and two for differential data signals (labelled as D+ and D- in pinout). NRZI (Non Return to Zero Invert) encoding scheme used to send data with a sync field to synchronise the host and receiver clocks. In USB data cable Data+ and Data- signals are transmitted on a twisted pair. No termination needed. Half-duplex differential signaling helps to combat the effects of electromagnetic noise on longer lines. Contrary to popular belief, D+ and D- operate together; they are not separate simplex connections.

USB transfer modes

Univeral serial bus supports Control, Interrupt, Bulk and Isochronous transfer modes.

USB transfer rates: Low Speed, Full Speed, Hi-speed.

USB supports three data rates: Low Speed (1.5 Mbit per second) that is mostly used for Human Input Devices (HID) such as keyboards, mice, joysticks and often the buttons on higher speed devices such as printers or scanners; Full Speed (12 Mbit per second) which is widely supported by USB hubs, assumes that devices divide the USB bandwidth between them in a first-come first-serve basis - it"s easy to run out of bandwidth with several devices; Hi-Speed (480 Mbit per second) was added in USB 2.0 specification. Not all USB 2.0 devices are Hi-Speed. A USB device must indicate its speed by pulling either the D+ or D- line high to 3.3 volts. These pull up resistors at the device end will also be used by the host or hub to detect the presence of a device connected to its port. Without a pull up resistor, USB assumes there is nothing connected to the bus.
In order to help user to identify maximum speed of device, USB device often specify it's speed on it's cover with one of USB special marketing logos.

USB Hi-speed devices

Hi-Speed devices should fall back to the slower data rate of Full Speed when plugged into a Full Speed hub. Hi-Speed hubs have a special function called the Transaction Translator that segregates Full Speed and Low Speed bus traffic from Hi-Speed traffic.

USB powered devices

The USB connector provides a single 5 volt wire from which connected USB devices may power themselves. A given segment of the bus is specified to deliver up to 500 mA. This is often enough to power several devices, although this budget must be shared among all devices downstream of an unpowered hub. A bus-powered device may use as much of that power as allowed by the port it is plugged into. Bus-powered hubs can continue to distribute the bus provided power to connected devices but the

USB specification only allows for a single level of bus-powered devices from a bus-powered hub. This disallows connection of a bus-powered hub to another bus-powered hub. Many hubs include external power supplies which will power devices connected through them without taking power from the bus. Devices that need more than 500 mA or higher than 5 volts must provide their own power. When USB devices (including hubs) are first connected they are interrogated by the host controller, which enquires of each their maximum power requirements. However, seems that any load connected to USB port may be treated by operating system as device. The host operating system typically keeps track of the power requirements of the USB network and may warn the computer's operator when a given segment requires more power than is available and may shut down devices in order to keep power consumption within the available resource.

USB power usage:

Bus-powered hubs: Draw Max 100 mA at power up and 500 mA normally.
Self-powered hubs: Draw Max 100 mA, must supply 500 mA to each port.
Low power, bus-powered functions: Draw Max 100 mA.
High power, bus-powered functions: Self-powered hubs: Draw Max 100 mA, must supply 500 mA to each port.
Self-powered functions: Draw Max 100 mA.
Suspended device: Max 0.5 mA

USB voltage:

Supplied voltage by a host or a powered hub ports is between 4.75 V and 5.25 V. Maximum voltage drop for bus-powered hubs is 0.35 V from it's host or hub to the hubs output port. All hubs and functions must be able to send configuration data at 4.4 V, but only low-power functions need to be working at this voltage. Normal operational voltage for functions is minimum 4.75 V.

USB cable shielding:

Shield should only be connected to Ground at the host. No device should connect Shield to Ground.

USB cable wires:

Shielded:
Data: 28 AWG twisted
Power: 28 AWG - 20 AWG non-twisted

Non-shielded:
Data: 28 AWG non-twisted
Power: 28 AWG - 20 AWG non-twisted

Power Gauge	Max length
28	0.81 m
26	1.31 m
24	2.08 m
22	3.33 m
20	5.00 m