**Micro-USB is a standard connector for a wide range of portable devices, including cell phones and smart phones**

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| --- | --- | --- | --- |
| **Pin** | **Name** | **Cable color** | **Description** |
| 1 | VCC | Red | +5 VDC |
| 2 | D- | White | Data - |
| 3 | D+ | Green | Data + |
| 4 | ID |  | May be N/C, GND or used as an attached device presence indicator (shorted to GND with resistor) |
| 5 | GND | Black | Ground |

**USB pinout signals**

[USB is a serial bus](http://pinouts.ru/Slots/USB_pinout.shtml). 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.