

## iPod/iPhone/iTouch pin-out diagram

On older versions not all pins may be used nor have the function indicated below.

Full diagram as shown below is used in 3rd and later generation iPods for charging, connecting to a PC via USB or Firewire, to a stereo via line-out, to a serial device (controlled via the Apple Accessory Protocol). This connector exists in most Apple iPod MP3 players (iPod 3G, 4G, 5G Video, 5.5G Video, Nano (1G, 2G, 3G, 4G), Mini, Classic, Touch, Touch 2G, and iPhone (1G and 3G))

Pin	Signal	Description
1	GND	Ground (-), internally connected with Pin 2 on iPod motherboard
2	GND	Audio & Video ground (-), internally connected with Pin 2 on iPod motherboard
3	Right	Line Out - R (+) (Audio output, right channel)
4	Left	Line Out - L(+) (Audio output, left channel)
5	Right In	Line In - R (+)
6	Left In	Line In - L (+)
8	Video Out	Composite video output (only when slideshow active on iPod Photo)
9	S-Video Chrominance output	for iPod Color, Photo only
10	S-Video Luminance output	for iPod Color, Photo only
11	GND	Serial GND
12	Tx	ipod sending line, Serial TxD
13	Rx	ipod receiving line, Serial RxD
14	RSVD	Reserved
15	GND	Ground (-), internally connected with pin 16 on iPod motherboard
16	GND	USB GND (-), internally connected with pin 15 on iPod motherboard
17	RSVD	Reserved
18	3.3V	3.3V Power (+) Stepped up to provide +5 VDC to USB on iPod Camera Connector. If iPod is put to sleep while Camera Connector is present, +5 VDC at this pin slowly drains back to 0

		VDC.
19,20	+12V	FireWire Power 12 VDC (+)
21	Accessory Indicator/Serial enable	Different resistances indicate accessory type: 1kOhm - iPod docking station, beeps when connected 10kOhm - Takes some iPods into photo import mode 500kOhm - related to serial communication / used to enable serial communications Used in Dension Ice Link Plus car interface 1MOhm - Belkin auto adaptor, iPod shuts down automatically when power disconnected Connecting pin 21 to ground with a 1MOhm resistor does stop the ipod when power (i.e. Firewire-12V) is cut. Looks to be that when this pin is grounded it closes a switch so that on loss of power the Ipod shuts off. Dock has the same Resister.
22	TPA (-)	FireWire Data TPA (-)
23	5 VDC (+)	USB Power 5 VDC (+)
24	TPA (+)	FireWire Data TPA (+)
25	Data (-)	USB Data (-)
26	TPB (-)	FireWire Data TPB (-)
27	Data (+)	USB Data (+) Pins 25 and 27 may be used in different manner. To force the iPod 5G to charge in any case, when "USB Power 5 VDC" (pin 23) is fed, 25 must be connected to 5V through a 10kOhm resistor, and 27 must be connected to the Ground (for example: pin 1) with a 10kOhm resistor.  To charge an iPhone 3G / iPod Touch 2nd gen, usb data-(25) should be at 2.8v, usb data+(27) should be at 2.0v. This can be done with a few simple resistors: 33k to +5v (23) and 22k to gnd(16) to obtain 2v and 33k to +5v and 47k to gnd to obtain 2.8v. This is a "notification" to the iphone that it is connected to the external charger and may drain amps from the usb.
28	TPB (+)	FireWire Data TPB (+)
29,30	GND	FireWire Ground (-)

Looking at Back/Soldering side of dock connector, iPod screen upwards;

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30  
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29