

# 本 NanoNote™

## Info Guide

气 Qi Hardware Inc.

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[www.qi-hardware.com](http://www.qi-hardware.com)

# Contents

## 1 - The Ben NanoNote

- inside
- left side
- right side
- back side

## 4 - How Tos

- Ethernet over USB
- Forward internet access over USB
- USB Boot
- Reflashing the Ben

## 5 - Dos and Don'ts

- Please do
- Please don't

## 6 - Device Specifications

### 6 - Links

- Qi Hardware
- Software
- Schematics

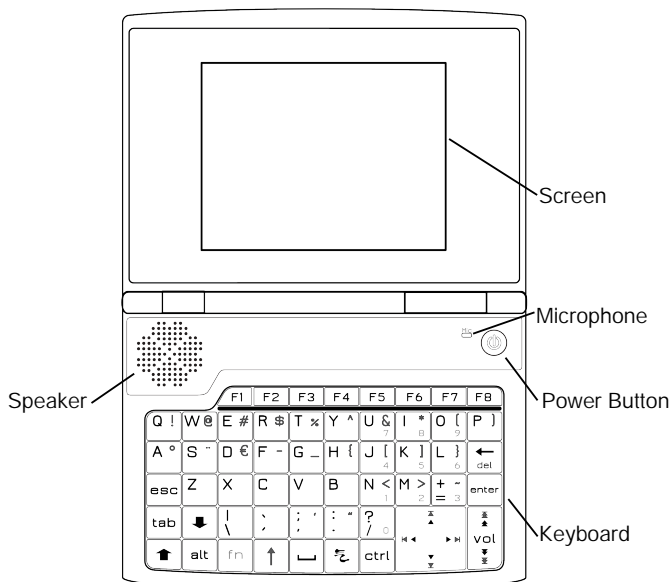
## 7 - Appendix

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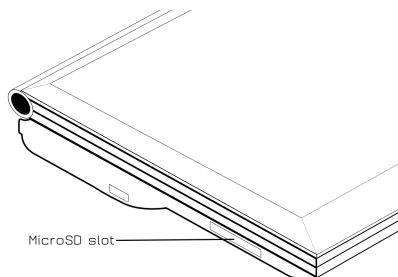
## 15 - Thanks

# The Ben NanoNote

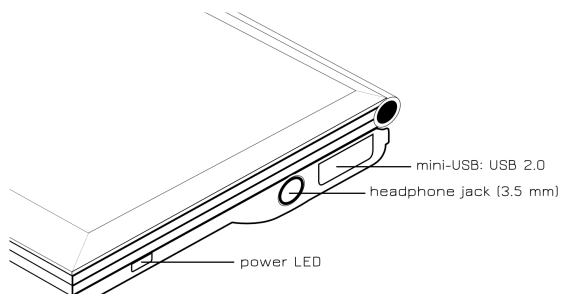
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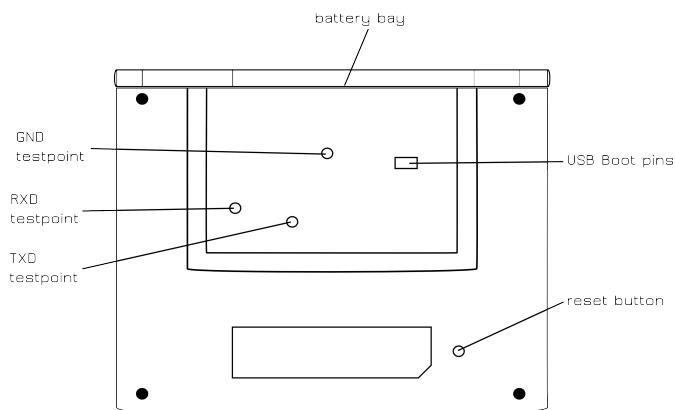
left side



## right side



## back side



# HowTos

## Ethernet over USB

What you need:

- a console on your Ben NanoNote
- a USB connection between your Ben and a PC/Laptop

1) On the NanoNote run (for example):

```
$ ifconfig usb0 192.168.3.2
```

2) On your laptop/PC run:

```
$ ifconfig usb0 192.168.3.1
```

3) Test if you can ping the NanoNote via (on your PC/Laptop):

```
$ ping 192.168.3.2
```

For SSH:

4) Set the password of your Ben's root user. On your Ben type:

```
$ passwd
```

You will be asked for the new password twice (the password can be empty as well).

5) Log in to your NanoNote from your host via:

```
$ ssh root@[IP OF YOUR BEN]
```

After entering your password you are logged in.

## Forward internet access over USB

What you need:

- a PC/Laptop with a GNU operating system connected to the internet
- a mini-USB to USB cable
- a Ben NanoNote with Networking set up as described under "Networking with your Ben NanoNote"

1) Configure NAT (on your PC/Laptop as root):

```
$ modprobe iptable_nat
```

```
$ echo "1" > /proc/sys/net/ipv4/ip_forward
```

```
$ iptables -t nat -A POSTROUTING -o eth0 -j MASQUERADE
```

2) Add your PC/Laptop as the standard gateway on your Ben:

```
$ route add default gw 192.168.3.1
```

```
$ echo "nameserver [DNS SERVER IP]" >> /etc/resolv.conf
```

## USB Boot

What you need:

- a usb to mini-USB cable
- something to shorten two pins (eg. a screw-driver)

1) Remove the battery

2) Connect NanoNote to your computer with a USB cable (NOTE: sometimes the device will turn on by itself when connected to a power source via USB cable, if that happens just unplug and replug the USB cable until it remains off)

3) Turn the device around short the two pins in the battery bay marked with "USB Boot" (NOTE: best results have been achieved using a screw-driver)

4) now while holding the pins shortened press the power button for 2 seconds, the screen should remain black and the LED on the right side will flash a few times

5) if the device is in USB boot mode dmesg should show you a message like:  
Product: JZ4740 USB Boot Device

## Reflashing the Ben

What you need:

- the image (kernel and rootfs) you want to flash (potentially also an uboot image)
- a PC/Laptop with usbboot installed

1) Put the ben into USB Boot mode (see above)

2) open a console and type (as root user):

```
$ usbboot -c "boot"
```

3) IF you want to reflash uboot (NOTE: this should not be necessary) type in the console (as root user):

```
$ usbboot -c "nprog 0 [PATH TO BOATLOADER IMAGE] 0 0 -n"
```

4) to flash the kernel image type in the console (as root user):

```
$ usbboot -c "nprog 1024 [PATH TO KERNEL IMAGE] 0 0 -n"
```

5) to flash the rootfs type in the console (as root user):

```
$ usbboot -c "nprog 2048 [PATH TO ROOTFS IMAGE] 0 0 -n"
```

If everything went ok, remove the cable from the NanoNote, put the battery back in and boot the device. NOTE: Booting the device might take longer the first time after you reflashed

# Dos and Dont's

(warrenty and legal stuff)

## Please do:

- use this device for whatever purpose you want
- share your software with as many people as possible
- feel free to build upon this hardware design
- reflash the software as often as you want
- tell us about your experience and help us to improve it
- feel free to take the device apart, but only if you are qualified
- feel save that there is no spyware whatsoever on this device

## Please don't:

- throw the battery into open fire
- expose the battery to extreme temperatures
- take the battery apart
- use the device in the shower or while taking a bath
- use the device while driving
- leave small parts with unattended children
- expose the device to strong electro-magnetic fields
- expose the device to extreme temperatures
- use the device when handling explosives
- expect us to replace a device if you broke it

# Device Specifications

- \* 336 MHz XBurst Jz4720 MIPS-compatible CPU
- \* display: 3.0" color TFT
- \* resolution: 320 x 240, 16.7M color
- \* dimension (mm): 99 x 75 x 17.5 (lid closed)
- \* weight: 126 g (incl. battery)
- \* DRAM: 32MB Synchronous DRAM
- \* headphone jack (3.5 mm)
- \* SDHC microSD
- \* 850mAh Li-ion battery
- \* 2GB NAND flash memory
- \* mini-USB: USB 2.0 High-Speed Device
- \* speaker and microphone

Storage temperature: -20° C ~ 55° C

Operating temperature: 0° C ~ 40° C

## Links

### Qi Hardware

webpage:

<http://www.qi-hardware.com>

wiki:

<http://wiki.qi-hardware.com>

projects:

<http://projects.qi-hardware.com>

### Software

Qi Hardware:

<http://projects.qi-hardware.com>

OpenWrt:

<http://www.openwrt.org>

### Schematics

<http://projects.qi-hardware.com/index.php/p/board-qi-avt2/source/tree/master/>



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Version 3, 29 June 2007

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