

Detects PCI wireless devices by scanning <path?>

Checks rfkill status (if possible) by reading <path?>.

Lists all wireless interfaces by checking <path?>.

Prints driver info for each interface (via <path?>).

can you tell which paths are used in the code

and list any other paths which are missing

Here's a breakdown of the **paths used in your code** for each function, along with any other common system paths related to Wi-Fi bring-up that you might want to know about:

1. Detects PCI Wireless Devices

Path used:

- `/sys/bus/pci/devices/*/class` (to check device class)
- `/sys/bus/pci/devices/*/vendor` (to get vendor ID)

Other related paths:

- `/sys/bus/pci/devices/*/device` (device ID)
- `/sys/bus/pci/devices/*/subsystem_vendor` and `/sys/bus/pci/devices/*/subsystem_device` (subsystem info)
- `/sys/bus/pci/devices/*/uevent` (device info)
- `/sys/bus/pci/devices/*/driver` (driver symlink)
- `/proc/bus/pci/` (legacy PCI info)
- `lspci` command parses `/proc/bus/pci/` and `/sys/bus/pci/devices/` [\[1\]](#) [\[2\]](#) [\[3\]](#) [\[4\]](#)

2. Checks rfkill Status

Path used:

- `/sys/class/rfkill/rfkill*/type` (to find type "wlan")
- `/sys/class/rfkill/rfkill*/soft` (software block status)
- `/sys/class/rfkill/rfkill*/hard` (hardware block status)

Other related paths:

- `/dev/rfkill` (device file for rfkill events, not for state queries) [\[5\]](#) [\[6\]](#)

3. Lists All Wireless Interfaces

Path used:

- `/sys/class/net/` (directory of all network interfaces)
- `/sys/class/net/<iface>/wireless` (exists if interface is wireless)
- `/sys/class/net/<iface>/uevent` (contains `DEVTYPE=wlan` for wireless)

Other related paths:

- `/proc/net/wireless` (summary of wireless interfaces and their stats)
- `/sys/class/net/<iface>/operstate` (interface operational state)
- `/sys/class/net/<iface>/device/driver` (driver symlink)
- `/sys/class/net/<iface>/address` (MAC address)
- `/sys/class/net/<iface>/device` (PCI device symlink)
- `/sys/class/net/<iface>/statistics/` (various interface stats) [\[7\]](#) [\[8\]](#)

4. Prints Driver Info for Each Interface

Path used:

- `/sys/class/net/<iface>/device/driver` (symlink to kernel driver)

Other related paths:

- `/sys/class/net/<iface>/device/` (PCI device directory)
- `/sys/class/net/<iface>/device/uevent` (device info)
- `/sys/class/net/<iface>/device/modalias` (for module auto-loading)

5. Firmware Check

Path used:

- `/lib/firmware/ath10k/QCA9377/hw1.0/firmware-5.bin` (firmware file for QCA9377)

Other related paths:

- `/lib/firmware/` (directory for all firmware files)
- `/lib/firmware/<driver>/<chip>/` (subdirectories for other chipsets)
- `dmesg | grep -i firmware` (to see what firmware files the kernel requests)

Summary Table

Functionality	Path(s) used in code	Other useful paths
PCI wireless detection	<code>/sys/bus/pci/devices/*/class, /vendor</code>	<code>/device,</code> <code>/subsystem_vendor,</code> <code>/uevent, /driver</code>
rfkill status	<code>/sys/class/rfkill/rfkill*/type, /soft, /hard</code>	<code>/dev/rfkill</code> (for events, not state)
Wireless interface detection	<code>/sys/class/net/, /wireless, /uevent</code>	<code>/proc/net/wireless,</code> <code>/operstate, /address</code>
Driver info	<code>/sys/class/net/<iface>/device/driver</code>	<code>/device,</code> <code>/device/uevent,</code> <code>/device/modalias</code>
Firmware check	<code>/lib/firmware/ath10k/QCA9377/hw1.0/firmware-5.bin</code>	<code>/lib/firmware/, dmesg grep firmware</code>

Paths missing in your code but commonly useful:

- `/proc/net/wireless` (for interface stats)
- `/sys/class/net/<iface>/operstate` (for interface state like UP/DOWN/DORMANT)
- `/sys/class/net/<iface>/address` (for MAC)
- `/sys/class/net/<iface>/statistics/` (for RX/TX stats)
- `/sys/class/net/<iface>/device/uevent` (for PCI device info)
- `/lib/firmware/` (for other firmware files)
- `/dev/rfkill` (for monitoring rfkill events, not state)

References:

- [\[1\]](#) [\[2\]](#) [\[3\]](#) [\[5\]](#) [\[7\]](#) [\[4\]](#) [\[6\]](#) [\[8\]](#)

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1. <https://www.namehero.com/blog/how-do-i-check-what-pci-devices-are-connected-on-my-linux-system/>
2. <https://askubuntu.com/questions/654820/how-to-find-pci-address-of-an-ethernet-interface>
3. <https://phoenixnap.com/kb/lspci-command>
4. <https://wiki.debian.org/HowToIdentifyADevice/PCI>
5. <https://github.com/systemd/systemd/blob/main/src/rfkill/rfkill.c>
6. <https://superuser.com/questions/819547/how-do-i-stop-rfkill-module-from-hardblocking-my-wifi-without-rfkill-command>
7. <https://askubuntu.com/questions/405508/how-to-find-name-of-currently-active-network-interface>

8. <https://stackoverflow.com/questions/9458570/how-to-determine-if-youre-on-a-wireless-interface-under-linux>