



Realtek Start Guide Wake on WLAN Control Tool

Date: 2012/06/06

Version: 0.2

Files:

All the necessary files are available in the “wake_on_wlan_tool” folder of Realtek software package.

1 Requirement

- 1.1 Make sure the USB interface support the remote wake up feature. Ex: Use command “lsusb -v” to check the USB interface. If the interface support remote wake up feature, you can see it.

Bus 001 Device 005: ID 0bda:8194 Realtek Semiconductor Corp.

Configuration Descriptor:

bLength	9
bDescriptorType	2
wTotalLength	32
bNumInterfaces	1
bConfigurationValue	1
iConfiguration	0
bmAttributes	0xa0

(Bus Powered)

Remote Wakeup

- 1.2 The USB host driver can manage hardware wakeup events, which make the system leave the low-power state. This feature should be enabled .

Ex: lsusb -v, the 92du dongle is 1-7.

lsusb -t

```
/: Bus 05.Port 1: Dev 1, Class=root_hub, Driver=uhci_hcd/2p, 12M
/: Bus 04.Port 1: Dev 1, Class=root_hub, Driver=uhci_hcd/2p, 12M
/: Bus 03.Port 1: Dev 1, Class=root_hub, Driver=uhci_hcd/2p, 12M
/: Bus 02.Port 1: Dev 1, Class=root_hub, Driver=uhci_hcd/2p, 12M
/: Bus 01.Port 1: Dev 1, Class=root_hub, Driver=ehci_hcd/8p, 480M
   |__ Port 7: Dev 5, If 0, Class=vend., Driver=rtl8192du, 480M
```

Use `echo enabled > /sys/bus/usb/devices/1-7/power/wakeup` to enable wakeup feature.

```
# cat /sys/bus/usb/devices/1-7/power/wakeup
disabled
# echo enabled > /sys/bus/usb/devices/1-7/power/wakeup
# cat /sys/bus/usb/devices/1-7/power/wakeup
enabled
```

It also needs to enable USB1 in `/proc/acpi/wakeup`.

```
# cat /proc/acpi/wakeup
Device  S-state  Status  Sysfs node
USB0    S4        *enabled pci:0000:00:1d.0
USB1    S4        *disabled pci:0000:00:1d.1
...
# echo USB1 > /proc/acpi/wakeup
# cat /proc/acpi/wakeup
Device  S-state  Status  Sysfs node
USB0    S4        *enabled pci:0000:00:1d.0
USB1    S4        *enabled pci:0000:00:1d.1
...
```

The all examples in 1.1 and 1.2 are tested on Ubuntu PC linux.

- 1.3 Make sure the USB interface will supply the power during suspend/hibernate.
- 1.4 Before the system enters suspend, the dongle should be associated with AP.
- 1.5 Modify the Makefile to enable wake on wlan
CONFIG_WAKE_ON_WLAN = y

2 wowlan

- 2.1 In the “wake_on_wlan_tool” folder, you can execute make to get execution command “wowlan”.
- 2.2 The command format:

```
#!/wowlan wlan# Subcode Val
```

If the interface is wlan0, the command will be “./wowlan wlan0 Subcode

Val”.

Subcode:

2: Set magic packet (Val 0: means turn off, 1: means turn on)

8: Get wake up reason (Val don't care)

10: GPIO test mode (Val 0: means low ,1: means high)

Ex: Turn on the Magic packet functionality

#./wowlan wlan0 2 1

Turn off the Magic packet functionality

#./wowlan wlan0 2 0

2.3 The wake up reason table:

Reason value	Description
0	Other (push power button ...etc)
1	When pairwisekey update
2	When group temporal key update
4	Receive disassociation packet
8	Receive deauthentication packet
16	Detect disconnection
32	Receive magic packet