

# **Quick Start Guide for starting Soft-AP mode**

Realtek

(A) How to start Soft-AP mode:

- (1) Disable network management or other wireless tools, e.g. wpa\_supplicant
- (2) Uncompress the driver and then compile the driver

**./make**

**P.S.** If the driver uses CFG80211, there are several steps below need to do:

I. If the driver package is for single interface

1. Uncomment the definition “`//#define CONFIG_IOCTL_CFG80211`” of the file “`include/autoconf.h`” to “`#define CONFIG_IOCTL_CFG80211`”
2. If the Linux kernel version is greater than 3.2.0 (kernel $\geq$ 3.2.0), user must uncomment the definition “`//#define RTW_USE_CFG80211_STA_EVENT`” of file `include/autoconf.h` to “`#define RTW_USE_CFG80211_STA_EVENT`”

II. If the driver package is for multiple interfaces

1. user should modify the definition in the “`autoconf_XXX_yyy_linux.h`” file but not “`include/autoconf.h`”. The “XXX” is IC type and the “yyy” is interface type. For example, the IC type is RTL8192C and the interface type is USB, the file name is “`autoconf_rtl8192c_usb_linux.h`”.

III. If the driver uses CFG80211 and the Linux kernel version  $\geq$  3.2.0, the SOFTAP must use the

“`wpa_supplicant_8_jb_4.2_rtw_zzzzz.20130821.tar.gz`” or

“`wpa_supplicant_8_kk_4.4_rtw_zzzzz.20140220.tar.gz`” package. In contrast, the SOFTAP should use

“`wpa_supplicant_hostapd-0.8_rtw_zzzzz.20130812.tar.gz`” package for

WEXT. The zzzz is version number. If the driver using CFG80211 but

kernel  $<$  3.2.0, wpa\_supplicant are not available in driver package so far, and please contact us.

(3) **insmod 8192cu.ko**

(4) **ifconfig wlan0 up**

(5) **ifconfig wlan0 192.168.0.1** (using the static ip for testing)

(6) Compile SOFTAP, unpack `wpa_supplicant_hostapd-0.8_rtw_20120803.zip` in the folder (`wpa_supplicant_hostapd-0.8\hostapd`)

**./make**

(7) start hostapd daemon:

**./hostapd rtl\_hostapd.conf -B**

(B) Configure file for Soft-AP mode setting:

(1) rtl\_hostapd.conf is the configure file for functions setting.

(2) The major variable setting in the rtl\_hostapd.conf configure file,

(i) basic configuration

interface=wlan0

ssid=rtwap

# channel 1-14 is 2.4 GHz ; channel 36, 40, 44, 46, 48, 52, 56, 60,

# 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149,

# 153, 157, 161 is 5GHz

# The channels that are available for use in a particular country differ

# according to the regulations of that country.

channel=6

# Operation mode (a = IEEE 802.11a, b = IEEE 802.11b, g = IEEE

# 802.11g, Default: IEEE 802.11b )

hw\_mode=g

#If the wireless interface is included in a bridge,

#an additional configuration parameter, bridge, is needed

bridge=br0

# set "driver=rtl871xdrv" for WEXT, or "driver=nl80211" for

# CFG80211

driver=rtl871xdrv

(ii) security mode configuration

# This field is a bit field that can be used to enable WPA

# (IEEE 802.11i/D3.0)

# and/or WPA2 (full IEEE 802.11i/RSN):

# bit1 = IEEE 802.11i/RSN (WPA2) (dot11RSNAEnabled)

wpa=2

# wpa\_passphrase=secret passphrase

wpa\_passphrase=87654321

```
# Set of accepted key management algorithms
# (WPA-PSK, WPA-EAP, or both).
wpa_key_mgmt=WPA-PSK
```

```
# Set of accepted cipher suites (encryption algorithms)
# for pairwise keys
wpa_pairwise=CCMP
```

(iii) IEEE 802.11n related configuration

```
# ieee80211n: Whether IEEE 802.11n (HT) is enabled
# 0 = disabled (default)
# 1 = enabled
ieee80211n=1
# ht_capab: HT capabilities (list of flags)
# Supported channel width set: [HT40-] = both 20 MHz and 40 MHz
# with secondary channel below the primary channel;
# [HT40+] = both 20 MHz and 40 MHz with secondary channel upon
# the primary channel
# Note: There are limits on which channels can be used with HT40- and
# HT40+. Following table shows the channels that may be available for
# HT40- and HT40+ use per IEEE 802.11n Annex J:
# freq          HT40-          HT40+
# 2.4 GHz       5-13           1-7 (1-9 in Europe/Japan)
# 5 GHz         40,48,56,64      36,44,52,60
# Short GI for 20 MHz: [SHORT-GI-20] (disabled if not set)
# Short GI for 40 MHz: [SHORT-GI-40] (disabled if not set)
ht_capab=[SHORT-GI-20][SHORT-GI-40][HT40+]
```

(iv) Check the station connected to softap using hostapd\_cli:

```
./hostapd_cli all_sta
```

(v) How to start WPS process as internal registrar?

1. for PIN code = 12345670

```
./hostapd_cli wps_pin any 12345670
```

2. for PBC

```
./hostapd_cli wps_pbc
```

(C) How to get the best channel?

1. Assume the WLAN interface is wlan0 and the IC is RTL8192DU-VS:

**ifconfig wlan0 up**

**iwlist wlan0 scan**

**cat /proc/net/rtl819xD/wlan0/best\_channel**

Notes: If your WLAN interface is not wlan0, please change it to your used interface. (ex: wlan51)

If your driver IC is not RTL8192DU-VS, please change the rtl819xD to your used IC. (ex: rtl819xC, rtl8188eu ...etc)