Quick Start Guide for starting Soft-AP mode

(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>=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 >= 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)