Quick Start Guide for ETSI Adaptivity and Carrier Sensing Test ver. 2.0.0

Contents

Release History

2.0.0	2024/02/29	1. Add configuration for driver version >= rtk v5.15.10 or g6 v1.19.10 2. Remove description for document to skip test item “periodic idle time”.
1.1.0	2021/07/19	1. Add configuration of adapting runtime setting with the selection of channel plan
1.0.1	2018/09/28	1. Add periodic idle time declaration.
1.0.0	2014/09/26	1. Add documentation for ADAPTIVITY_VERSION 7.0, 7.1, 7.2

1. Introduction

Realtek Wi-Fi solutions support both ETSI Adaptivity test and Carrier Sense test. This document describes ways to configure Wi-Fi driver for the corresponding test and simple debug methods.

※ According to the test requirement, the Wi-Fi performance will drop at interfering environment. Please enable this function only when you really need it.

2. Driver configuration for driver version >= rtk v5.15.10 or g6 v1.19.10

There are 1 configuration arguments in Makefile to control EDCCA mechanism:

- **CONFIG_RTW_EDCCA_MODE_SEL**
  - **NORMAL**
    Without regulatory consideration
  - **CS**
    Force Carrier Sense
  - **ADAPT**
    Force ETSI Adaptivity
  - **CBP**
    Force Contention Based Protocol
  - **AUTO**
    According to regulatory

2.1. Driver configuration – disable (default setting)

To disable Realtek adaptivity function (also the default setting):

```
CONFIG_RTW_EDCCA_MODE_SEL = NORMAL
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8851bs/wlan0/odm/adaptivity
RTW_EDCCA_NORMAL
```

2.2. Driver configuration – enable for ETSI Adaptivity test

If your product needs to fit the requirement of ETSI Adaptivity test:

```
CONFIG_RTW_EDCCA_MODE_SEL = ADAPT
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8851bs/wlan0/odm/adaptivity
RTW_EDCCA_ADAPT
```

2.3. Driver configuration – enable for Carrier Sense test

If your product needs to fit the requirement of Carrier Sense test:

```
CONFIG_RTW_EDCCA_MODE_SEL = CS
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8851bs/wlan0/odm/adaptivity
RTW_EDCCA_CS
```

2.4. Driver configuration – enable for Contention Based Protocol test

If your product needs to fit the requirement of Contention Based Protocol test:

```
CONFIG_RTW_EDCCA_MODE_SEL = CBP
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8851bs/wlan0/odm/adaptivity
RTW_EDCCA_CBP
```

2.5. Driver configuration – adapt runtime setting with current channel plan

If your product needs to adapt runtime setting with current channel plan:

```
CONFIG_RTW_EDCCA_MODE_SEL = AUTO
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8851bs/wlan0/odm/adaptivity
RTW_EDCCA_AUTO
```

3. Driver configuration for driver version < rtk v5.15.10 or g6 v1.19.10

There are 2 configuration arguments in Makefile to control:

- **CONFIG_RTW_ADAPTIVITY_EN**
  - **disable**

  Disable adaptivity function
  - **enable**

  Enable adaptivity function
  - **auto (driver version >= 5.14)**

  Adapt runtime settings (disable/adaptivity/carrier sense) with the selection of channel plan.

- **CONFIG_RTW_ADAPTIVITY_MODE**
  - **normal**

  For ETSI adaptivity test
  - **carrier_sense**

  For carrier sense test

3.1. Driver configuration – disable (default setting)

To disable Realtek adaptivity function (also the default setting):

```
CONFIG_RTW_ADAPTIVITY_EN = disable
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8723bs/wlan0/odm/adaptivity
ADAPTIVITY_VERSION 9.7.08
RTW_ADAPTIVITY_EN_DISABLE
th_l2h_ini th_edcca_hl_diff
0x2d       7
```

3.2. Driver configuration – enable for ETSI Adaptivity test

If your product needs to fit the requirement of ETSI Adaptivity test:

```
CONFIG_RTW_ADAPTIVITY_EN = enable
CONFIG_RTW_ADAPTIVITY_MODE = normal
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8723bs/wlan0/odm/adaptivity
ADAPTIVITY_VERSION 9.7.08
RTW_ADAPTIVITY_EN_ENABLE
RTW_ADAPTIVITY_MODE_NORMAL
th_l2h_ini th_edcca_hl_diff
0x2d       7
```

3.3. Driver configuration – enable for Carrier Sense test

If your product needs to fit the requirement of Carrier Sense test:

```
CONFIG_RTW_ADAPTIVITY_EN = enable
CONFIG_RTW_ADAPTIVITY_MODE = carrier_sense
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8723bs/wlan0/odm/adaptivity
ADAPTIVITY_VERSION 9.7.08
RTW_ADAPTIVITY_EN_ENABLE
RTW_ADAPTIVITY_MODE_CARRIER_SENSE
th_l2h_ini th_edcca_hl_diff
0x2d       7
```

3.4. Driver configuration – adapt runtime setting with current channel plan (driver version >= 5.14)

If your product needs to adapt runtime setting with current channel plan:

```
CONFIG_RTW_ADAPTIVITY_EN = auto
```

Check the configuration arguments through driver's proc interface at runtime:

```
# cat /proc/net/rtl8723bs/wlan0/odm/adaptivity
ADAPTIVITY_VERSION 9.7.08
RTW_ADAPTIVITY_EN_AUTO
th_l2h_ini th_edcca_hl_diff
0x2d       7
```