

## Application Note : RAN1760001

### How to control RWC5020A using remote control commands

**General Description** This document describes how to control RWC5020A LoRa tester using remote control commands through RJ45 port of RWC5020A

You can control RWC5020A with simple command string not API. It can make quite easy to control RWC5020A.

#### Test Environment

- 1) PC and RWC5020A

Connect PC and RWC5020A with cross LAN cable.



[Figure 1] Connection between PC and RWC5020A

- 2) PC program

- a. Opening Ethernet

Open ethernet SOCKET with COMMAND PORT 5001 on UDP layer

- b. Configure IP address same to RWC5020A

- 3) Setup RWC5020A

Configure IP address on SETUP screen

Commands : refer example case.



[Figure 2] SETUP screen of RWC5020A

#### 4) Setup LoRa DUT

Make the LoRa DUT activated before starting test.

the LoRa DUT must send a confirmed UL message periodically while test.

**Example** To measure PER (Sensitivity of End-Device) using EDT(End Device Test) function

##### 1) Setup RWC5020A

###### a. Test requirement

Measurement Item : Sensitivity

Measure Power Range : -133~139dBm

Power Step : 2dBm

Step Number : 4

Packet numbers for each power : 20

Region : Korea 922

###### b. Command sequence

Example command sequence and responses for measuring PER using RWC5020A

```
CONF:TESTER_MODE EDT      // set RWC5020A as an EDT MODE
ACK
EXEC:LINK:CLEAR           // clear link message buffer
ACK
CONF:SENSITIVITY:MODE POWER // change RWC5020A's mode to POWER
```

```

ACK
CONF:PROTOCOL:REGION KR_922 // change region
ACK
CONF:SENSITIVITY:STEP_NUM 4 // set the number of measure point
ACK
CONF:SENSITIVITY:REPEAT 20 // set packet number per each power
ACK
CONF:SENSITIVITY:START_POW -133 // start from START_POW
ACK
CONF:SENSITIVITY:STEP_POW 2 // measure every STEP POW
ACK
CONF:SENSITIVITY:TARGET_PER 0.5 // set TARGET_PER for verdict
ACK
CONF:MOVE_SCREEN SENSITIVITY // move screen if you want
ACK
EXEC:SENSITIVITY:RUN // run sensitivity measurement
ACK
READ:SENSITIVITY:STATUS? // read current status of measurement
BUSY
READ:SENSITIVITY:STATUS? // read current status of measurement
IDLE // read status until "IDLE"
// if test is finished RWC5020A will return "IDLE"
READ:SENSITIVITY:LEVEL? // read sensitivity level under TARGET_PER
-135

```

c. CAUTION

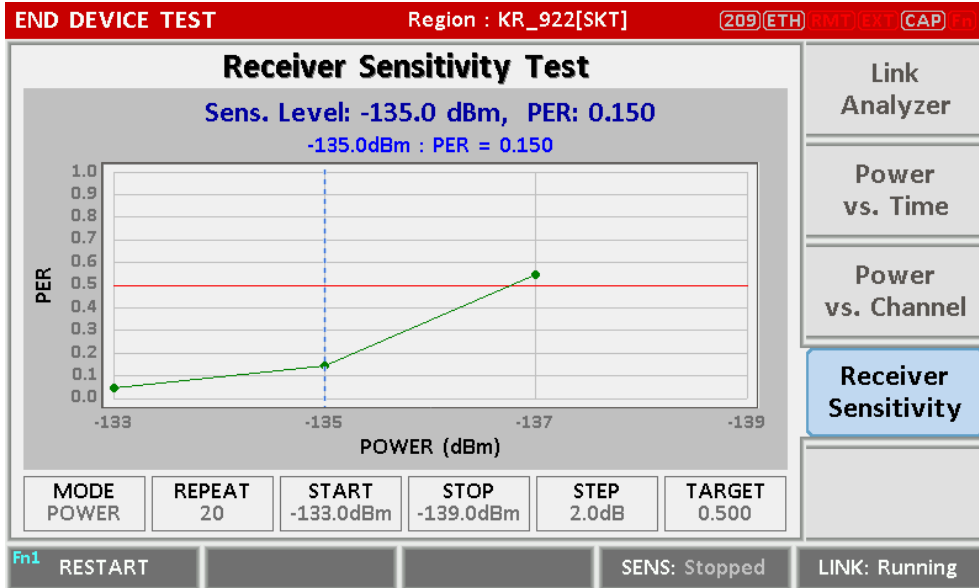
- Delimiter of RWC5020A command : 'Wn'
- Recommended time out for query : greater than 5000ms
- All response type is string adding 'Wn' : "ACKWn", "NAKWn", "-136Wn".

2) Setup DUT(End-Device)

Send Jon request Send a confirmed data periodically while test

3) Result

a. Result screen



[Figure 3] Receiver sensitivity test result of RWC5020A

b. Commands to get result values and responses.

READ:SENSITIVITY:LEVEL?

-135

READ:POWER:ALL:MAX?

9.9

READ:POWER:ALL:MIN?

5.4

READ:SENSITIVITY:PER?

0.150