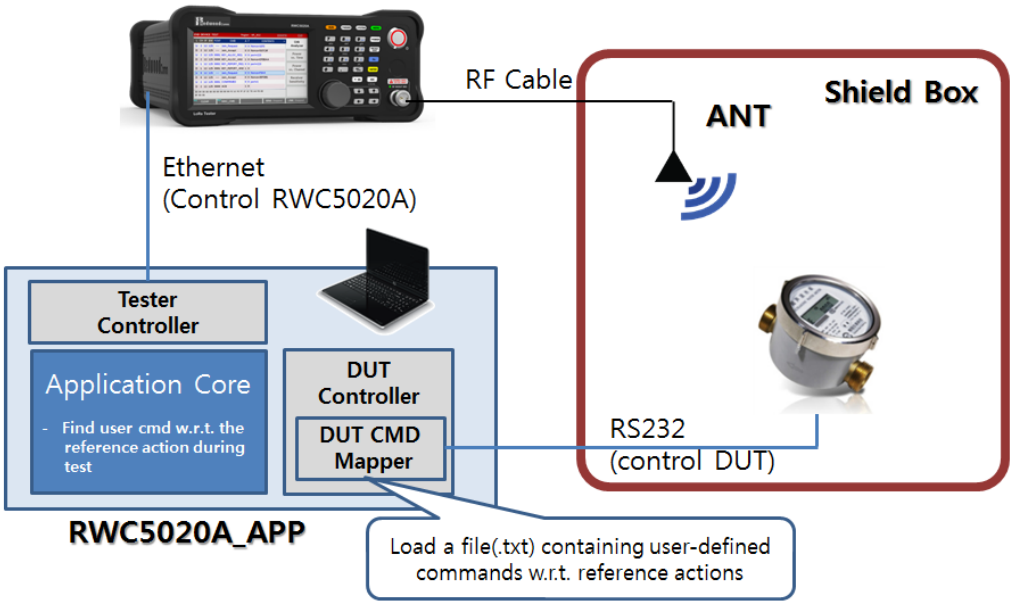
DUT control using 'user command' function of RWC5020A_APP utility.

1. Concept diagram of DUT control using user commands through RS232.



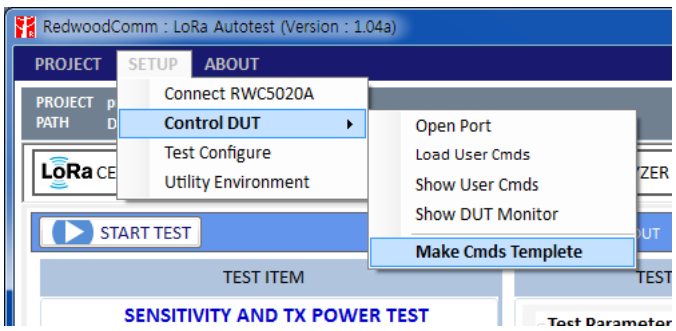
2. How to make a user command file.

A. Create a User Command file using template function.

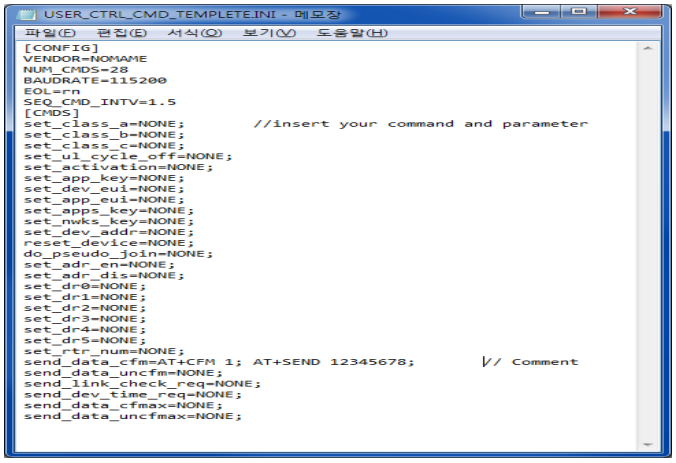
i. [SETUP]/[Control DUT]/[Make Cmds Template]

ii. A template text file will be pop up.

iii. Modify using your own commands and save



Ex) my_user_command_file.txt



3. How to modify the user command file

A. Guide for modifying user command file.

i. No space between '=' character

Ex) `set_class_a=AT CLS A; (O),`

`set_class_a = AT CLS A; (X)`

ii. No single comment line allowed.

```
Ex) set_class_a=AT+CLS 0;     //0=class A, 1=class B    (O)

   //0=class A, 1=class B    (X)
```

iii. Multiple commands are allowed for one reference command. But Multiple commands should be separated with ';'(semicolon)

```
Ex) set_class_a=AT+CLS 0; AT+RST;   // two commands are needed for setup class.
```

iv. Comment is allowed for [CMDS] category but not for [CONFIG].

B. Example and comment for user command file.

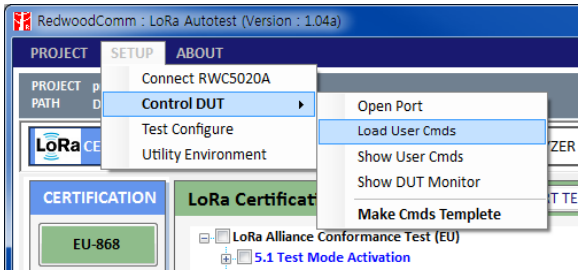
```
[CONFIG]
VENDOR=SEMTECH
NUM_CMDS=28                 the number of the following commands
BAUDRATE=115200             the baud rate of your DUT
EOL=rn                      end of line character of your DUT   // n, r, rn, rn
SEQ_CMD_INTV=1.5            the time interval of consequential commands for one reference action
[CMDS]
set_class_a=AT+ CLASS 0;    //setup class of LoRa DUT
set_class_b= AT+ CLASS 1;
set_class_c= AT+ CLASS 2;
set_ul_cycle_off=NONE;      // ref command for "set ul cycle off" action
```

```
set_activation=NONE;          // ref command for "activation mode" action
                                    // ex) AT+ACT ABP; AT_ACT OTAA
set_app_key=NONE;             // ref commands for "Setup Application key" action
                              // ex) AT+AKEY 00000000000000000000000000000001;
set_dev_eui=NONE;             // ref commands for "Setup Application key" action
                              // ex) AT+DEUI 00000000000000002;
set_app_eui=NONE;             // ref commands for "Setup Application Session key" action
                              // ex) AT+AEUI 00000000000000003;
set_apps_key=NONE;            // ref commands for "Setup Application Session key" action
                              // ex) AT+ASKEY 00000000000000000000000000000001
set_nwks_key=NONE;            //ref commands for "Setup Network Session key" action
                              // ex) AT+NSKEY 00000000000000000000000000000001
set_dev_addr=NONE;            // ref commands for "Setup Application Session key" action
                              // ex) AT+AEUI 00000000000000003;
reset_device=NONE;            // ref commands for "Reset DUT device" actions
                              // ex) AT+RESET;
do_pseudo_join=NONE;          // ref commands for "Pesudo Join for SKT" actions
set_adr_en=NONE;              // ref commands for "Set ADR enabled" actions
set_adr_dis=NONE;             // ref commands for "Set ADR disabled" actions
set_dr0=NONE;                 // ref commands for " Set dataRate 0" actions
set_dr1=NONE;                 // ref commands for " Set dataRate 1" actions
set_dr2=NONE;                 // ref commands for " Set dataRate 2" actions
set_dr3=NONE;                 // ref commands for " Set dataRate 3" actions
set_dr4=NONE;                 // ref commands for " Set dataRate 4" actions
set_dr5=NONE;                 // ref commands for " Set dataRate 5" actions
set_rtr_num=NONE;             // ref commands for " Set retransmission number" actions
send_data_cfm=AT+CFM 1; AT+SEND 12345678;
                              // ref commands for "Let DUT to send confirmed up data",
                              // the length is up to you.
send_data_uncfm= AT+CFM 0; AT+SEND 12345678; // ref commands for "Let DUT to send Unconfirmed
up data" action
send_link_check_req=NONE;     // ref commands for "Let DUT to send link check request frame"
send_dev_time_req=NONE;       // ref commands for "Let DUT to send dev time request frame"
send_data_cfmax=NONE;         // ref commands for "Let DUT Send maximum sized confirmed up data"
send_data_uncfmax=NONE;       // ref commands for "Let DUT Send maximum sized unconfirmed up
data"
```

4. Load user command data

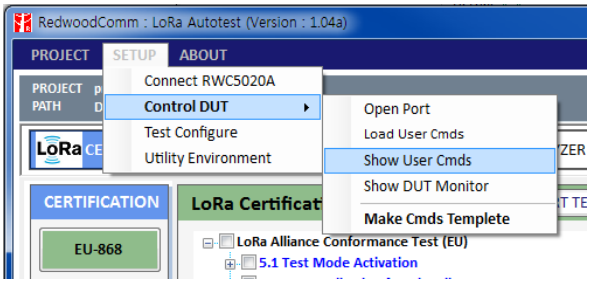
A. How to load user cmds

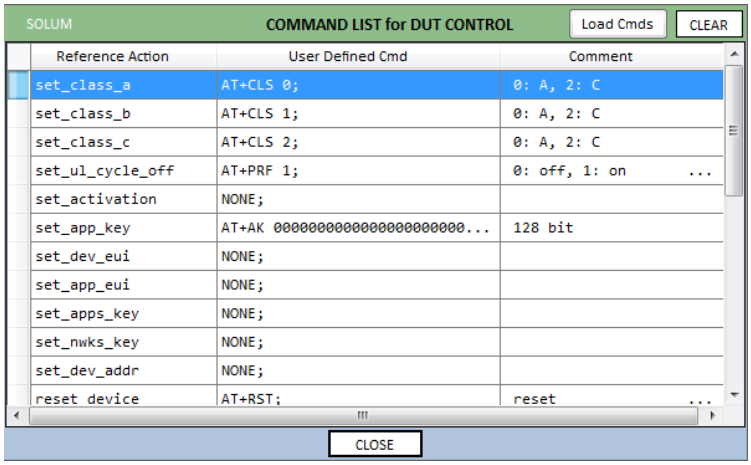
Click [Load User Cmds]



B. How to see the loaded commands

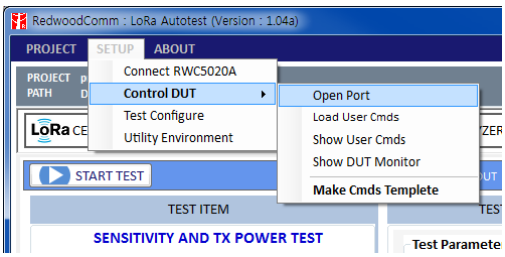
Click [show user cmds]

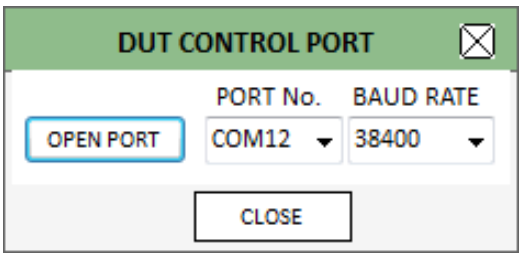




C. How to open RS232 Port

Click [Open Port]





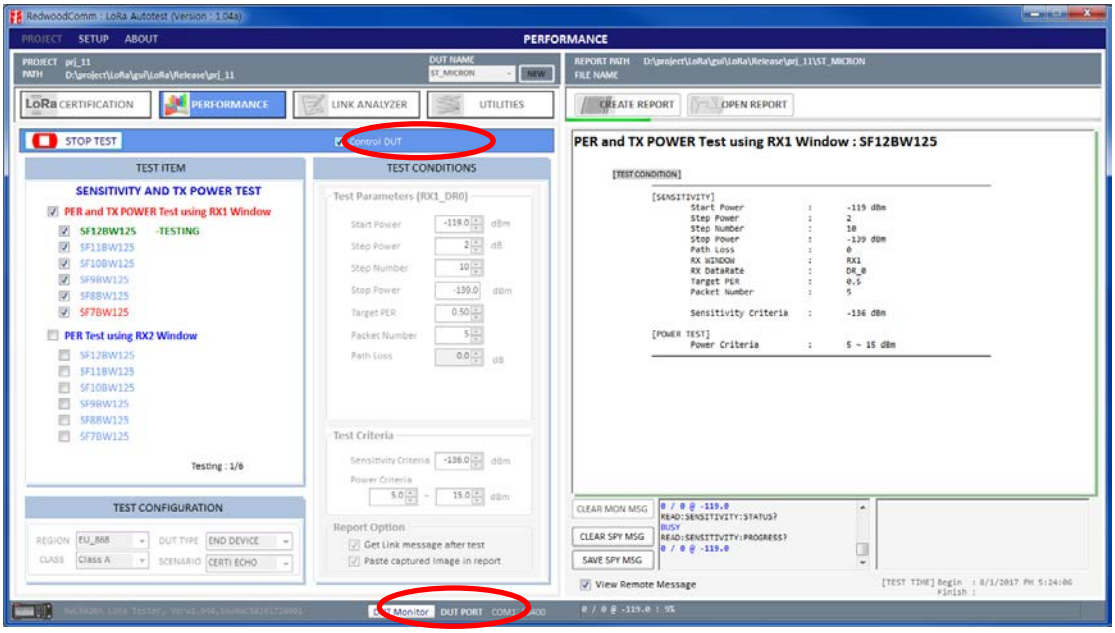
5. How to control DUT using loaded user command w.r.t. the reference action

RWC5020A_APP will send 'user commands' if you make 'control DUT' checked.

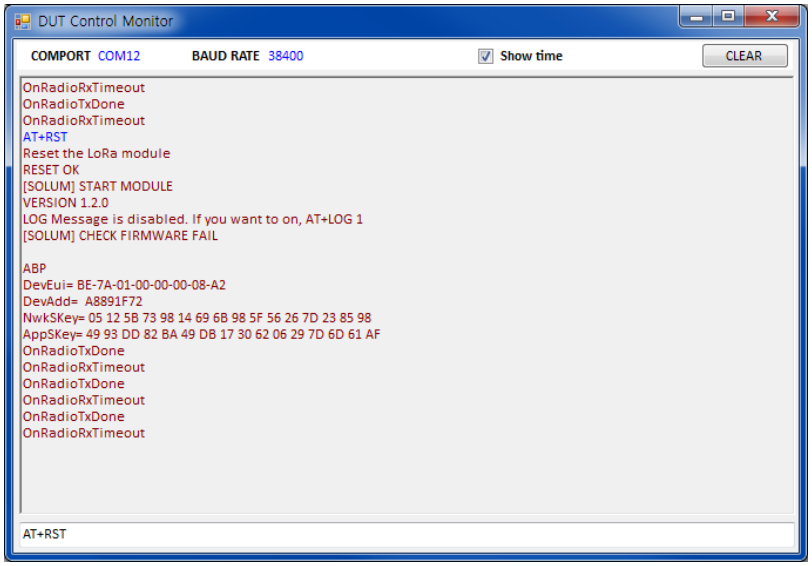
It finds adequate user command matched to the reference needed for actions during certification test or performance test.

[Caution]

- It will not send 'user commands' if you don't load a user command file even though you make 'control DUT' checked.
- It will not send 'user commands' if you make 'control DUT' unchecked even though you loaded the user commands.
- It will not send 'user commands' if you didn't open RS232 port correctly even though you make 'control DUT' checked.



You can see the transmitted user commands using 'DUT control Monitor' by clicking [DUT Monitor] button.


DUT Control Monitor
COMPORT COM12
BAUD RATE 38400
Show time
CLEAR
OnRadioRxTimeout
OnRadioTxDone
OnRadioRxTimeout
AT+RST
Reset the LoRa module
RESET OK
[SOLUM] START MODULE
VERSION 1.2.0
LOG Message is disabled. If you want to on, AT+LOG 1
[SOLUM] CHECK FIRMWARE FAIL
ABP
DevEui= BE-7A-01-00-00-00-08-A2
DevAdd= A8891F72
NwkSKey= 05 12 5B 73 98 14 69 6B 98 5F 56 26 7D 23 85 98
AppSKey= 49 93 DD 82 BA 49 DB 17 30 62 06 29 7D 6D 61 AF
OnRadioTxDone
OnRadioRxTimeout
OnRadioTxDone
OnRadioRxTimeout
OnRadioTxDone
OnRadioRxTimeout
AT+RST