SRM100A Test Manual

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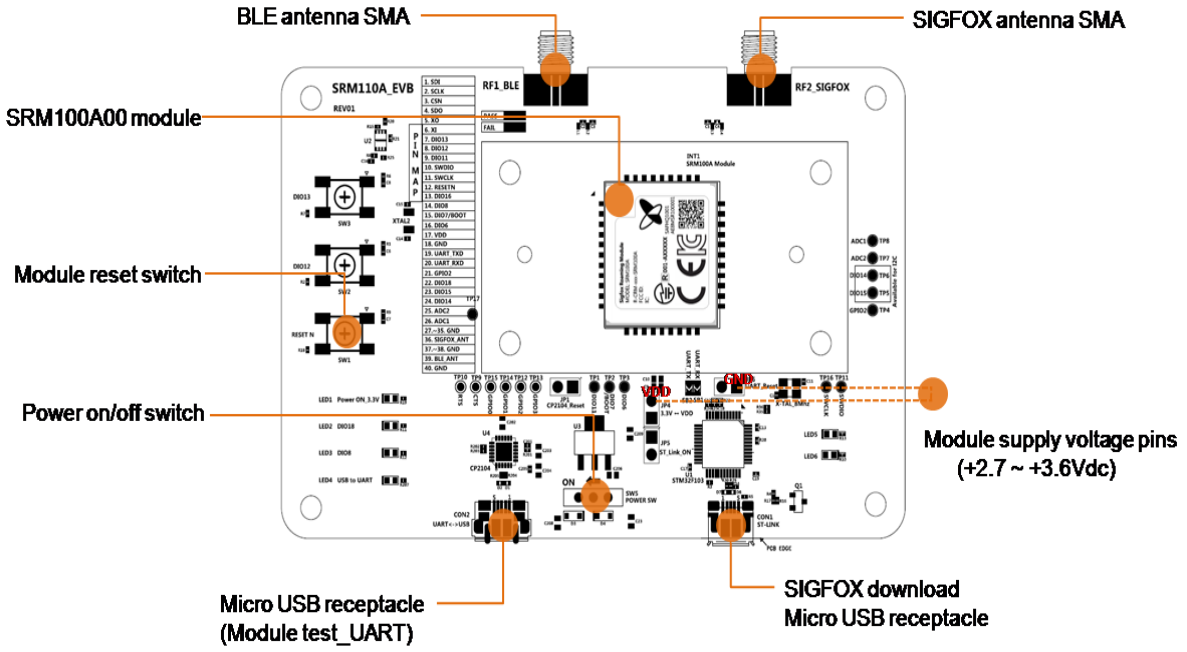
Contents

Model	F/W
SRM100A	V01

Hardware

SRM100A EVB



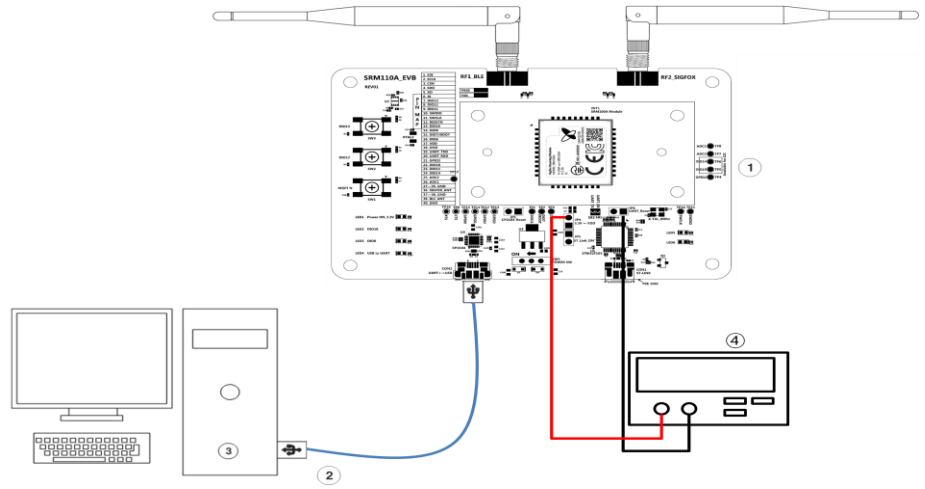
[Fig. SRM100A_EVB]

- SRM100A module
  - SIGFOX Quad-mode module
- Antenna SAM connector
  - SIGFOX antenna
  - BLE antenna : 2.4GHz antenna
- SIGFOX download Micro USB receptacle
  - USB connector of SIGFOX and BLE for firmware writing
- Module reset switch
  - push to reset module
- Micro USB receptacle
  - Micro USB receptacle for power supply into the EVB and command interface between windows PC and Module
- Power on/off switch
  - EVB power on or off switch

Test Program

Test SRM100A_EVB Connection

1. Connect EVBSRM100A board to windows OS PC via micro USB cable

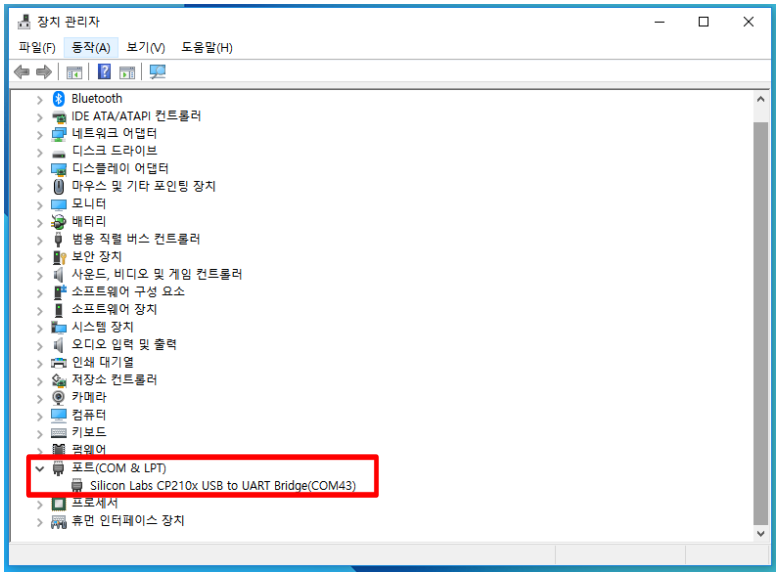


(1) EVMSRM100A
(2) Micro USB cable
(3) Windows PC
(4) Power Supply

[Fig. SRM100A_EVB connection]

Program execution

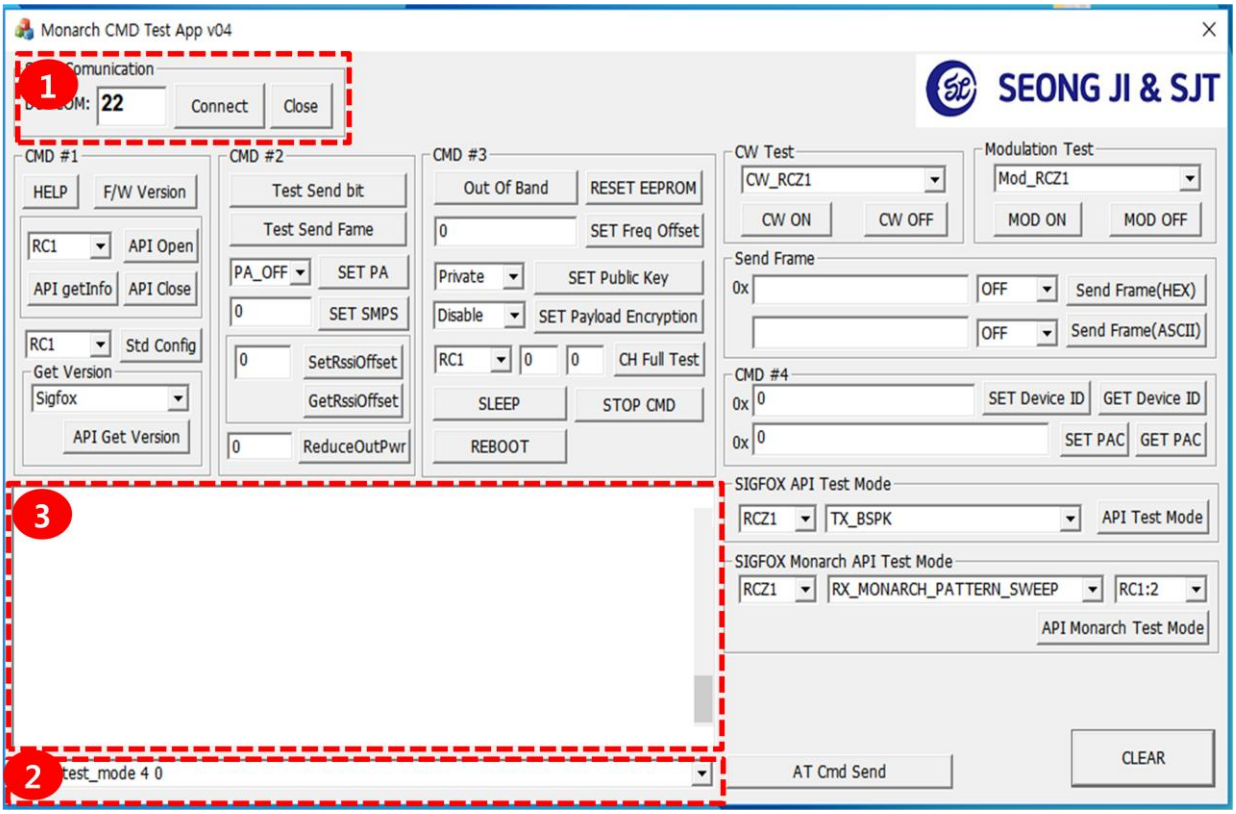
1. Connect SRM100A_EVB to Windows PC via USB cable.
   - SRM100A_EVB support USB COM & LPT driver which will be already installed in most OS.



[Fig. Device manager]

2. Run test program “Monarch_CMD_Tool_v04.exe”

Test program Description



[Fig. Test program SRM200A_APP]

1. Connect / Close button
   - Connect : Connect test program and EVB.
   - Close : Disconnect test program from EVB.
2. Command window : Display response message for command
3. Log : Display log message

Test program start

1. Run test program
2. Connect Windows PC to EVB board via USB cable
3. Click Connect button
4. Run the test by entering the command

   Example)

   Command: switch_public_key 1<CR><LF> (1:publickey 0: private key)

Sigfox CLI commands

Name	Arg	Arguments description	Description
node_close		None	Closes the Sigfox library, resetting its state
node_open	u	**rc**: pointer to sfx_rc_t type representing the RC number (RC1=1, RC2=2, RC3C=3, RC4=4, RC5=5 or RC6=6).	
Node_open_with_zone	u		
node_get_info		None	
node_get_version	u	**type**: The type of version (0=Sigfox, 1=MCU, 2=RF, 5=Monarch, 6=Device)	
node_send_bit	uuu	**bit_value**: bit value to send (0 or 1) **tx_repeat**: tx repeat value (default : 2) **initiate_downlink_flag**: wait for a response after transmitting. (0 or 1)	This function is used to send a single bit. It is mainly used when the node seeks downlink data (and not to transmit).
node_send_frame	buu	**cust_data**: pointer to the data to transmit ex) ASCII : "12345678" Hexa : {0102030405060708} **tx_repeat**: tx repeat value (default : 2) **initiate_downlink_flag**: wait for a response after transmitting. (0 or 1)	DM00365435.pdf Please refer to page 9 of the "DM00365435.pdf" file
Node_execute_monarch_scan	uuu	**rc_capability**: rc 6 5 4 3 2 1 bit 5 4 3 2 1 0 **time**: scan time **time_unit**: 0: ms, 1:sec, 2:min, 3:hour	Execute Monarch scan. rc_capability, time, unit
Node_stop_monarch_scan		None	This function stops any ongoing RC scan
node_set_std_config	wwwv	**config_word1**: ch1 ~ 32 for RC2,4 **config_word2:** ch33~64 for RC2,4 **config_word3:** ch65~86 for RC2,4 **timer_enable :** (0,1) for RC2,4	DM00365435.pdf Please refer to page 10 of the "DM00365435.pdf" file
Node_get_std_config		none	Get std_config value.
start_continuous_transmission	wu	**frequency**: Frequency at which the signal has to be generated **type**: Type of modulation to use in continuous mode (SFX_NO_MODULATION=0 SFX_DBPSK_100BPS=1 SFX_DBPSK_600BPS=2)	Executes a continuous wave or modulation depending on the parameter type
stop_continuous_transmission		None	Stop the current continuous transmission
node_test_mode	uu	**rc** : pointer to sfx_rc_t type representing the RC number (0, 1, 2, 3, 4, 5 or 6). **test_mode** : (SFX_TEST_MODE_TX_BPSK =0 SFX_TEST_MODE_TX_PROTOCOL =1 SFX_TEST_MODE_RX_PROTOCOL =2 SFX_TEST_MODE_RX_GFSK =3 SFX_TEST_MODE_RX_SENSI =4 SFX_TEST_MODE_TX_SYNTH =5 SFX_TEST_MODE_TX_FREQ_DISTRIBUTION =6 SFX_TEST_MODE_TX_BIT=11 SFX_TEST_MODE_PUBLIC_KEY=12 SFX_TEST_MODE_NVM=13)	Sigfox test mode rc : 0 : RC1 1 : RC2 2 : RC3A 3 : RC3C 4 : RC4 5 : RC5 6 : RC6
node_monarch_test_mode	uuu	**rc** : pointer to sfx_rc_t type representing the RC number (0, 1, 2, 3, 4, 5 or 6). **test_mode** : (SFX_TEST_MODE_RX_MONARCH_PATTERN_LISTENING_SWEEP=7 SFX_TEST_MODE_RX_MONARCH_PATTERN_LISTENING_WINDOW=8 SFX_TEST_MODE_RX_MONARCH_BEACON=9 SFX_TEST_MODE_RX_MONARCH_SENSI=10) **rc_capability**: rc 6 5 4 3 2 1 bit 5 4 3 2 1 0	Sigfox monarch test mode rc : 0 : RC1 1 : RC2 2 : RC3A 3 : RC3C 4 : RC4 5 : RC5 6 : RC6

switch_public_key	u	**key** : private=0, public=1	Switch device on public or private key.
Switch_test_credentials	u	**credentials :** 1 : test ID,PAC 0 : module ID, PAC	Set test credentials 1=On, 0=Off
set_payload_encryption	u	**enc** : encryption enable : 1 disable : 0	Payload encription
switch_pa	u	**pa** : set external power amplifiler (1 if a PA, 0 if not.).	Instructs the library to configure the S2-LP for a external PA (Power Amplifier).
set_smps_voltage	u	**smps**: smps voltage of the device (1.2V=1…. 1.8V=7) The default is to use the S2-LP at 1.8V	Instructs the library to configure the S2-LP with a user defined smps frequency
get_smps_voltage		None	Get SMPS voltage
set_rssi_offset	u	**rssi_value** : Rssi offset value in dB	Set an RSSI offset for the RSSI. Very useful if the RF frontend has an LNA or to calibrate the RSSI measurement.
get_rssi_offset		None	Get the RSSI offset for the RSSI
set_xtal_frequency	w	**xtal** : xtal value in Hz	Sets the XTAL frequency of the S2-LP in Hertz (default is 50MHz).
get_xtal_frequency		None	Get xtal frequency
set_xtal_frequency_offset	w	**freq_offset**: RF offset value in Hz	Sets the RF frequency offset in Hertz (default is 0 Hz).
get_xtal_frequency_offset		None	Get xtal frequency offset
reduce_output_power	v	**o_pwr**: power reduction in half dB	Reduces the output power of the transmitted signal by a facor (reduction*0.5dB against the actual value)
get_reduce_output_power		None	Get reduce output power
set_lbt_thr_offset	u	**lbt** : LBT threshold offset	Set LBT threshold offset
get_lbt_thr_offset		None	Get LBT threshold offset
get_id		None	ID stored in the current node
get_pac		None	PAC stored in the current node
get_rcz		None	RCZ stored in the current node
get_lib_version	u	**lib_ver** : 0 : Sigfox, 1 : MCU_API 2 : RF_API, 5 : MONARCH_API 6 : DEVICE_CONFIG_API	Get version of specified module
_set_rcz	u	**rc**: pointer to sfx_rc_t type representing the RC number (RC1=1, RC2=2, RC3C=3, RC4=4, RC5=5 or RC6=6).	Set rc