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Subject ZA-P20 RF TEST MANUAL	Doc Class Test Manual		

ZigBee Adaptor(ZA-P20)

Subject: Test Manual

1 Operation Method

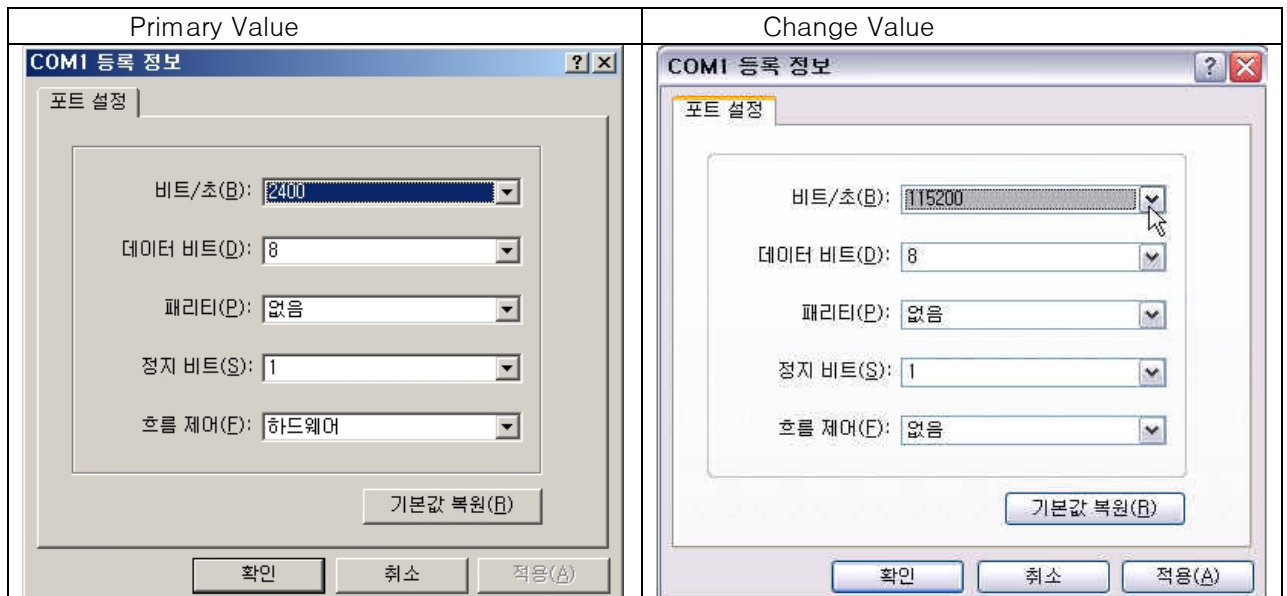
1. Connect DUT and Power Supply, and Turn on PC.

- 1) Connect Sample' s RS232C Port and PC' s RS232C Port with RS232 serial Cable.
- 2) DUT' s Power and GND Line at Power Supply(+12V), and Turn on Switch.

2. DUT and PC serial communication setting

2.1 Hyper Terminal setting

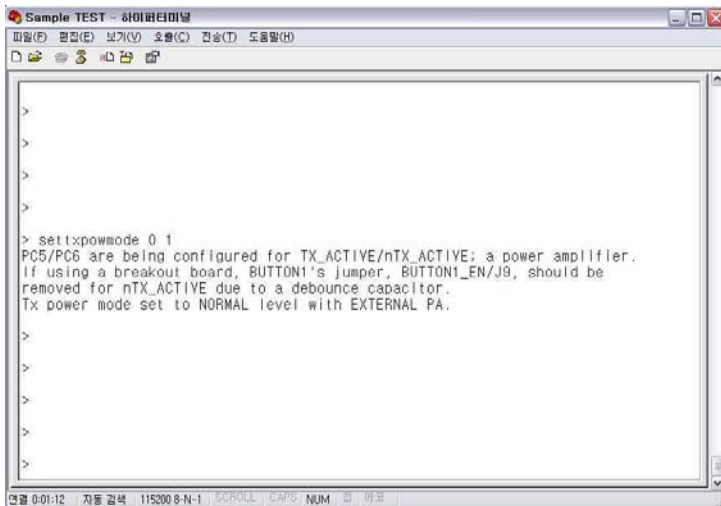
BIT/Sec(B) : 115200
 DATA BIT(D) : 8
 PARITY(P) : NONE
 STOP BIT(S) : 1
 FLOW CONTROL : NONE



3. TEST COMMAND

3.1 settxpowmode l p – POWER Mode Setting Command

- 1) Operation Method
 - > Command Setting Mode
- 2) Setting Mode
 - l p → 0 0: Normal-mode, PA-internal
 - 0 1: Normal-mode, PA-External**
 - 1 0: Boost-mode, PA-internal
 - 1 1: Boost-mode, PA-External
- 3) Execution Scene

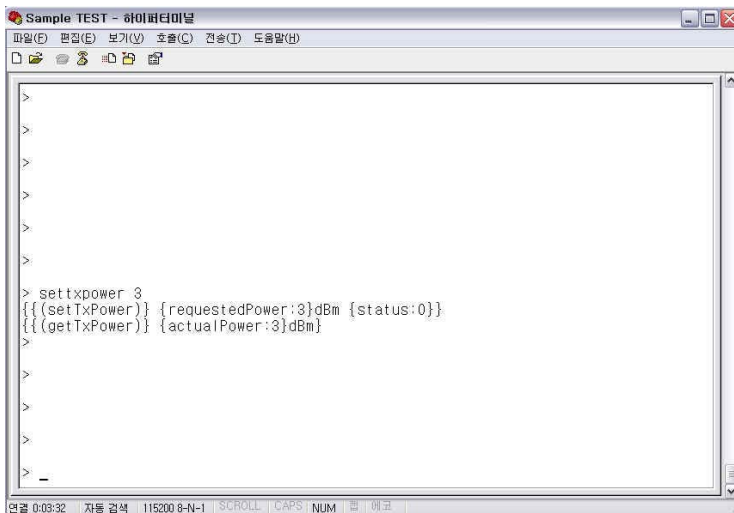


```

>
>
>
>
> settxpowmode 0 1
PCS/PC6 are being configured for TX_ACTIVE/nTX_ACTIVE; a power amplifier.
If using a breakout board, BUTTON1's jumper, BUTTON1_EN/J9, should be
removed for nTX_ACTIVE due to a debounce capacitor.
Tx power mode set to NORMAL level with EXTERNAL PA.
>
>
>
>
  
```

3.2 settxpower p – Output Power Setting Command

- 1) Operation Method
 - > Command Setting Mode
- 2) Power Range : +8 ~ -32
- 3) Execution Scene



```

>
>
>
>
> settxpower 3
{{{setTxPower}} {requestedPower:3}dBm {status:0}}
{{{getTxPower}} {actualPower:3}dBm}
>
>
>
>
  
```

3.3 setchannel c – Channel setting Command

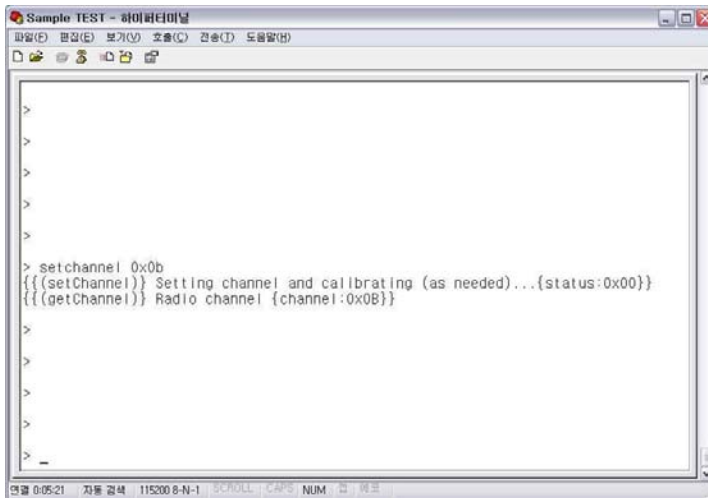
1) Operation Method

- > Command Setting Mode (Range: 0x0B ~ 0x1A)
- > Channel 0x0B -> Change the 0x0B channel, Channel value must be hexadecimal.

2) Channel Table

Channel 0x0B	2405 MHz
Channel 0x0C	2410 MHz
Channel 0x0D	2415 MHz
Channel 0x0E	2420 MHz
Channel 0x0F	2425 MHz
Channel 0x10	2430 MHz
Channel 0x11	2435 MHz
Channel 0x12	2440 MHz
Channel 0x13	2445 MHz
Channel 0x14	2450 MHz
Channel 0x15	2455 MHz
Channel 0x16	2460 MHz
Channel 0x17	2465 MHz
Channel 0x18	2470 MHz
Channel 0x19	2475 MHz
Channel 0x1A	2480 MHz

3) Execution Scene



```

>
>
>
>
>
> setchannel 0x0b
{{{setChannel}}} Setting channel and calibrating (as needed)...{status:0x00}
{{{getChannel}}} Radio channel {channel:0x0B}
>
>
>
>
_
  
```

3.3 txtone – Un-modulated Singnal Command

1) Operation Method

> Command Setting Mode

> txtone

Transmitting Carrier frequency. Press 'e'xit to stop

2) txtone (Unmodulated Singnal) TEST

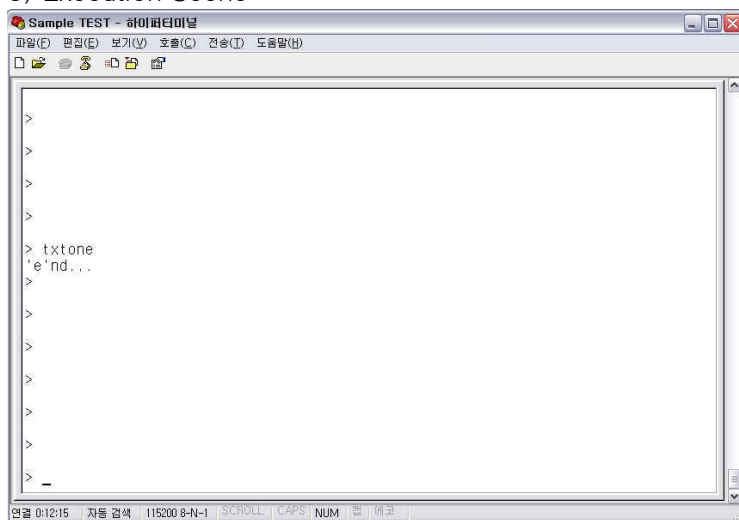
A. settxpowmode 0 1

B. settxpower 0

C. setchannel 0x0B (see the Channel Table)

D. txtone Command Execution

3) Execution Scene

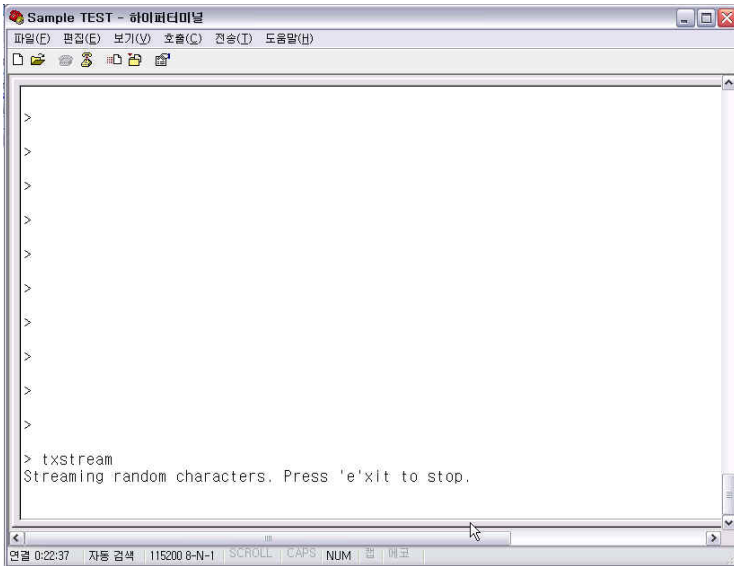


```
Sample TEST - 하이퍼터미날
>
>
>
>
> txtone
'e'nd...
>
>
>
>
>
>
>
>
>
> _
```

3.4 txstream – Modulated signal's Maximum rate transmission mode

- 1) Operation Method
 - > Command Setting Mode
 - > txstream
 - 'e'nd...
- 2) txstream(Modulated Signal) TEST
 - A. settxpowmode 0 1
 - B. settxpower 0
 - C. setchannel 0x0B (see the Channel Table)
 - D. txstream Command Execution

3) Execution Scene



3.5 rx - rx mode

- 1) Operation Method
 - > Command Setting Mode
 - > rx
 - Entering RX mode, press c to reset, press e to exit
- 2) rx TEST
 - A. settxpowmode 0 1
 - B. settxpower 0
 - C. setchannel 0x0B (see the Channel Table)
 - D. rx Command Execution

3) Execution Scene

```

>
>
>
>
> rx
{{{rx}} test start ('e'nd}}
#{{{rx}}
{num} {of io} {seq} {per} {err} {lqi} {rssi}{ed} {gain} {status} {time}
{fp}{length}}
{{{rx}} test end
>
>
>
>
>
>
  
```

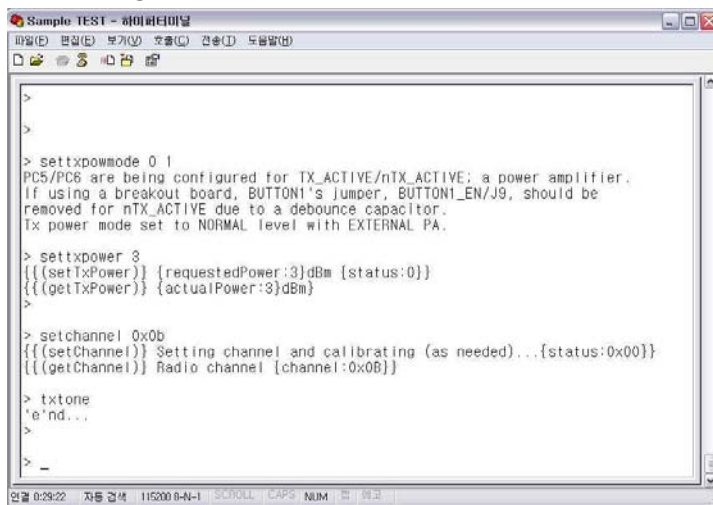
4. RF TEST Method

4.1 un-modulated CW Signal Test

1) Command input for un-modulated signal test(txtone)

- A. settxpowmode 0 1
- B. settxpower 0
- C. setchannel 0x0B (see the Channel Table)
- D. txtone Command Execution

2) Execution Scene



```
>
>
> settxpowmode 0 1
PC5/PC6 are being configured for TX_ACTIVE/nTX_ACTIVE; a power amplifier.
If using a breakout board, BUTTON1's jumper, BUTTON1_EN/J9, should be
removed for nTX_ACTIVE due to a debounce capacitor.
Tx power mode set to NORMAL level with EXTERNAL PA.

> settxpower 3
{{{setTxPower}} {requestedPower:3}dBm {status:0}}
{{{getTxPower}} {actualPower:3}dBm}

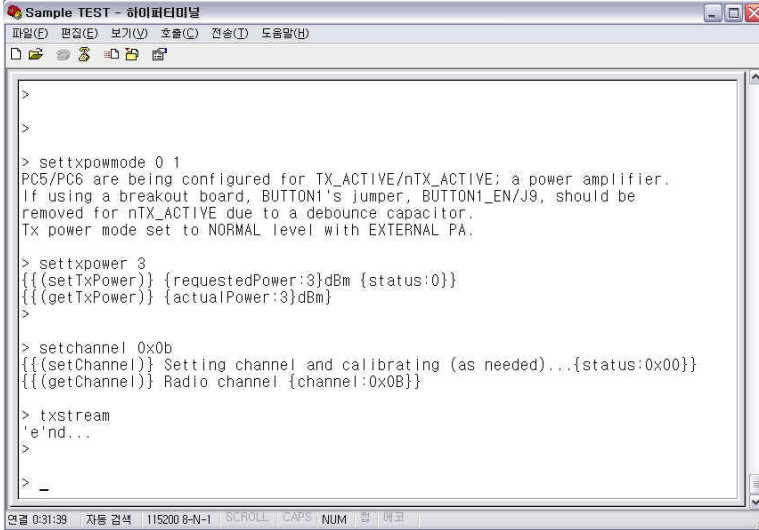
> setchannel 0x0b
{{{setChannel}} Setting channel and calibrating (as needed)...{status:0x00}}
{{{getChannel}} Radio channel [channel:0x0B]}

> txtone
'e'nd...
>
_
```


4.2 Modulated Signal Test

- 1) Command input for TEST (txstream)
 - A. settxpowmode 0 1
 - B. settxpower 0
 - C. setchannel 0x0B (see the Channel Table)
 - D. txstream Command Execution

2) Execution Scene



```
>
>
> settxpowmode 0 1
PC5/PC6 are being configured for TX_ACTIVE/nTX_ACTIVE; a power amplifier.
If using a breakout board, BUTTON1's jumper, BUTTON1_EN/J9, should be
removed for nTX_ACTIVE due to a debounce capacitor.
Tx power mode set to NORMAL level with EXTERNAL PA.

> settxpower 3
{{(setTxPower)} {requestedPower:3}dBm {status:0}}
{{(getTxPower)} {actualPower:3}dBm}

>
> setchannel 0x0b
{{(setChannel)} {Setting channel and calibrating (as needed)...{status:0x00}}
{{(getChannel)} {Radio channel {channel:0x0B}}

> txstream
'e'nd...
>
> -
```

4.3 rx Mode Setting

1) Command input for receive TEST

- A. settxpowmode 0 1
- B. settxpower 0
- C. setchannel 0x0B (see the Channel Table)
- D. rx Command execution

2) Execution Scene

```

> settxpowmode 0 1
PC5/PC6 are being configured for TX_ACTIVE/nTX_ACTIVE; a power amplifier.
If using a breakout board, BUTTON1's jumper, BUTTON1_EN/J9, should be
removed for nTX_ACTIVE due to a debounce capacitor.
Tx power mode set to NORMAL level with EXTERNAL PA.

> settxpower 3
{{{setTxPower}}} {requestedPower:3}dBm {status:0}}
{{{getTxPower}}} {actualPower:3}dBm
>

> setchannel 0x0b
{{{setChannel}}} Setting channel and calibrating (as needed)...{status:0x00}}
{{{getChannel}}} Radio channel {channel:0x0B}}
>

> rx
{{{rx}}} test start ('e'nd)}
#{{{rx}}}
{num} {oflo} {seq} {per} {err} {lqi} {rssi}{ed} {gain} {status} {time}
{fp}{length}}
{{{rx}}} test end
>

```

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum 20 cm between the radiator and your body.