BGX replacement 지원 명령어

bgx module 에서 일부 명령을 구현 혹은 변경해서 사용한다.

BGX13-1.x Command Reference - v1.0 - Gecko OS API Documentation Silicon Labs

send

Send STREAM data

Description

Sends hex string data to the remote device via the STREAM bus mode. Issuing the following command in local COMMAND mode:

`send 48656c6c6f21` is equivalent to entering STREAM bus mode and sending: `Hello!`

The device must have an active BLE connection for this command to succeed. If there is not an active BLE connection, it returns "Command failed".

Syntax

```
> send <hex string>
```

where:

- `<hex string>` - The string to send to the remote device via STREAM bus mode. Maximum length is 128 characters(binary 64 bytes). ~~If `<string>` includes spaces, the entire string must be surrounded by quotationmarks. Otherwise, each word in `<string>` will be seen as a separate argumentand the command will fail with "Too many args".~~

Send the binary data [0x00, 0x01, 0x02, 0x7F, 0x80, 0xFF] to the remote device.

```
> send 0001027F80FF
 Success
```

adv

Advertise as a peripheral

Description

Turn on advertising as a peripheral at the specified rate. The command `adv off` turns advertising off. If no argument is supplied, the default is `adv high`.
high: 20~~25msec~~
~~low : 500~~874msec
On reset, advertising defaults to high for a duration 30 seconds, then switches to low.
The advertising settings correspond to the following advertising modes.

- `high` - High Duty Cycle Undirected Advertising (duration 30 seconds)
- `low` - Low Duty Cycle Undirected Advertising
- `off` - No Advertising

Syntax

```
> adv [low | high | off]
```

Example

```
> adv high
Success
```

clrb

Clear bonding information

Description

Deletes existing bonding information for the specified BLE device address orfor all previously bonded devices. All cleared and new devices will need tocomplete a pairing procedure on their next connection. See Security.

Note: The bonding information must also be cleared on the previouslybonded devices. If this is not done, then pairing will likely fail on

the nextconnection attempt! See Solving Connection Problems for more information.

Syntax

```
clrb [all | <BD_ADDRESS>]
```

where:

- all (or no parameter) - deletes bonding information for all previously paireddevices
- `<BD_ADDRESS>` - deletes bonding information for this BLE device address only

Example

```
> clrb D0CF5E828EF4
Success
> clrb
Success
```

dtm

Direct Test Mode

Added PHY arguments `125k` and `500k` in `1.1.1229.0`

Description

Places the device into or out of Direct Test Mode (DTM).

DTM can operate in the transmit or the receive direction. In transmit mode, theBluetooth Xpress module's radio will continuously transmit Bluetooth packets ata fixed interval. A Bluetooth tester device should receive and analyze thesepackets. In receive mode, the Bluetooth Xpress module will continuously receivepackets transmitted by a DTM tester device.

Notes

- The `dtm` command will stop advertising before entering DTM. Ifmore time is needed to set up test equipment between the end of

advertisingand the beginning of DTM, the user can manually stop advertising with the `adv off` command.

- A device cannot enter Direct Test Mode if it has an active connection or isscanning.
- Upon exiting DTM, a device that was previously advertising will notresume advertising. After sending `dtm stop`, The user can issue the `adv high` or `adv low` command to resume advertising.

Syntax

```
> dtm <operation> <direction> <channel> <phy> <packet type> <length>
```

where:

- `<operation>` - Operation to perform. May be one of the following values:
  - `start` : Start DTM
  - `stop` : Stop DTM
- `<direction>` - Direction of the test. Only specified if **operation** is **start**. May be one of the following values:
  - `rx` : The module receives packets from the external Bluetooth tester device
  - `tx` : The module transmits packets to the external Bluetooth tester device
- `<channel>` - Bluetooth channel to use in DTM. Only specified if **operation** is **start**. Must be an integer value in the range [0:39] designating the Bluetooth channel that will be used in DTM. The frequency can be derived from channel with: F = ((2 * channel) + 2402) MHz
- `<phy>` - PHY to use in DTM. Only specified if **operation** is **start**. May be one of the following values:
  - `1m` : 1M PHY
  - `2m` : 2M PHY
  - `125k` : Coded PHY(S=8)
  - `500k` : Coded PHY(S=2)

- `<packet type>` - Packet type to transmit. Only specified if **operation** is **start** and **direction** is **tx**. May be one of the following values:
  - `prbs9` : PRBS9 packet payload
  - `f0` : 11110000 packet payload
  - `aa` : 10101010 packet payload
  - `pn9` : PN9
  - `carrier` : Unmodulated carrier
- `<length>` - Packet length in bytes. Only specified if **operation** is **start** and **direction** is **tx**. Must be an integer value in the range [0:255]. Note: The length is ignored if **packet type** is set to **carrier**.

Example 1

Start DTM in RX mode. Puts the device in DTM receive mode on Bluetoothchannel 10, with the 2M PHY.

```
> dtm start rx 10 2m
Success
```

Example 2

Start DTM in TX mode. Puts the device in DTM transmit mode on Bluetooth channel39, with the 1M PHY, packet payload of all 0xF0, and packet length of 37 bytes.

```
> dtm start tx 39 1m f0 37
Success
```

Example 3

Stop DTM. Stops the current DTM operation and take the device out of DTM.After sending `dtm stop` , the user can see how many packets weretransmitted/received while in DTM by reading the Test Mode Number of Packetsvariable (tm n p).

```
> dtm stop
Success
```

```
> get tm n p
0
```

tm n p

Test Mode Number of Packets

Description This variable reports the number of packets that were transmitted or received between the dtm start and dtm stop commands. It is set to 0 when dtm start runs and records total packets when dtm stop runs.

See Direct Test Mode (dtm) for more details.

Attribute	Description
format	integer
units	count
min	0
max	65535
default	0
access	get
save	n/a

Get Example

```
> get tm n p
0
```

fac

Restore factory settings

Description

Performs a factory reset. Return variables to factory default settings bydeleting user configuration (if present). See save.

To avoid accidental factory reset, the BD address of the module must beprovided as an argument. Obtain the BD address with the get bl a command.

Note 1: The default bus mode may change after a factory reset. If you areunable to communicate with the module with serial commands, it may be necessaryto toggle from `STREAM` mode to `COMMAND` mode.

Note 2: Using this command will also cause the BGX to clear its internalbonding table. This means the BGX will forget all devices to which itpreviously connected. If the other device does not also clear its bondinginformation, this can cause a connection problem. See the section about solving connection problems formore information.

Factory reset deletes the entire user dynamic area, including user savedconfigurations.

Syntax

```
> fac <BD_ADDRESS>
```

Example

```
> get bl a
4C55CC129A42
> fac 4C55CC129A42
[COMMAND_MODE]
```

reboot

Restart the device

Description

Reboot the application. Use the `dfu` parameter to reboot in the UART-DFUbootloader mode. If no parameters are specified, the device will reboot inthe main application mode.

Using the `dfu` parameter has the same effect as holding the BOOT pin lowduring a hardware reset.

Note:

- Applications that require to communicate with the UART-DFU bootloader modeshould use the `dfu` parameter.

Syntax

```
> reboot [dfu]
```

Example 1

```
> reboot
[COMMAND_MODE]
```

Example 2

```
> reboot dfu
(possible stray characters, device is in boot loader mode)
```

rssi

Display RSSI value for the current connection

Description

Returns the RSSI value from the latest received packet of the current activeconnection. The returned value will range from -127 to +20 and the units aredBm. The command will return a failure if there is no active connection.

When this command is used via a serial connection, the RSSI value is thesignal strength of the remote device as received by the local device. If theremote device is also a BGX13, it is possible to read the remote RSSI value byplacing the remote device into remote command mode,and then issuing the `rssi` command.

Syntax

```
> rssi
```

Example

```
> rssi
-43
```

save

Save variables

Description

Save the current user configuration value of all variables to non-volatileflash memory. After save completes, user configuration variable settings areautomatically loaded on reboot.

Syntax

```
> save
```

Example

Save user configuration.

```
> save
Success
```

str

Stream mode

Description

Switch to serial bus STREAM mode.

For information on bus modes, see Serial Bus Modes, SerialInterface.

For a description of the Xpress Streaming Service, see BLE Services, XpressStreaming Service. For informationabout using a mobile app to

control and monitor a Bluetooth Xpress module, seethe BGXpress Mobile Framework.

Syntax

```
> str
```

Example

```
> str
STREAM_MODE
```

ver

Version

Description

Returns the Bluetooth Xpress product name, version and other build information.

Notes BGX commander App과 연결을 위해서는 특정 버전 스트링을 유지해야 한다.

Syntax

```
ver
```

Example

```
> ver
BGX220.1.1.1624.1-1524-1524
```

get

Get the value of a variable

Description

Get the value of the specified variable.

Syntax

```
> get <variable>
```

Example

```
> get sy d n
BGX-CDEF
```

set

Set the value of a variable

Description

Sets the value of the specified variable. See the variable documentation for details of valid arguments.

Syntax

```
> set <variable> <args>
```

Example > set sy c e 0 Success

🔵 Variable Description

현재 사용중인 것만 일부 구현함.

bl a

BLE Address

Description

Returns the BLE device address.

Attribute	Description
format	6-byte hex string, big-endian

Attribute	Description
default	unique per device
access	get
save	n/a

Get example

```
> get bl a
D0CF5E35E0D8
```

sy d n

System Device Name

Description

Bluetooth device name, up to 16 characters in length. Up to all 12 digits of the Bluetooth address from BD_ADDR may be substituted by hash `#` wildcard characters. The wildcard characters must be contiguous and the BD address will be right-justified within the field. See the examples below.

Attribute	Description
format	string
min	--
max	16 characters length
default	'BGX-####'
access	get/set
save	yes

Get example

```
> get bl a
4C55CCABCDEF
> get sy d n
BGX-CDEF
```

Set example

In the following examples the BD_ADDR address is `4C55CCABCDEF` (see bl a)

```
> set sy d n ACK-##
Success
> get sy d n
ACK-EF
> set sy d n BGX###
Success
> get sy d n
BGXDEF
> set sy d n my######
Success
> get sy d n
myABCDEF
> set sy d n ###-DEV
Success
> get sy d n
DEF-DEV
```

bl e p

BLE Encryption Pairing (mode)

bgx 에서는 any 로 고정

~~**Description**~~

~~Determines the policy for new pairing requests. When set to `off`, all new pairing requests are rejected. Selecting `secure` enables pairing with LE Secure Connections (BLE 4.2 or newer) only, while `any` enables pairing with either secure or legacy methods. When `any` is selected LE Secure Connections will be used by default if supported by the connecting device. Encryption is always enabled on Bluetooth Xpress modules.~~

~~**Note**: This setting only applies to new pairing requests and does not affect devices that were previously bonded.~~

~~Attribute~~	~~Description~~
~~format~~	~~string enumeration~~
~~units~~	~~'secure'=secure only 'any'=secure or legacy 'off'=disabled~~
~~default~~	~~any~~
~~access~~	~~get/set~~
~~save~~	~~yes~~

Get example

```
> get bl e p
off
```

Set example

```
> set bl e p off
NOT implemented
```

bl c c

BLE Connection Count

Description

Returns the number of centrals that are connected when acting as a peripheral.Will return 0 or 1.

Attribute	Description
format	integer
units	count

Attribute	Description
min	0
max	1
default	0
access	get
save	n/a

Get example

```
> get bl c c
 0
```

bl t c

BLE Transmit Connected (power)

Description

Configures the RF transmit power when connected.

Attribute	Description
format	integer
units	dBm
min	-3
max	8
default	0
access	get/set
save	yes

Note: The BGX uses its low power amplifier when the transmit power setting is below 0 dBm.
The low power amplifier only supports several discrete power settings

below 0 dBm.
For this reason, negative output power values will result in an actual output power that does not exactly match the value specified.
BGM220S TX power 는 최대 6 dBm 이므로 컴파일 시 Soc 에서 정의된 최대 값을 사용한다.

Get example

```
> get bl t c
8
```

Set example

```
> set bl t c 4
Success
```

sy c e

System Command Echo

Description

Enable/disable character echo.

Note! If character echo is turned off, keystrokes that are subsequentlytyped are not echoed to the serial interface (or terminal). This mode isprimarily intended for machine control.

Attribute	Description
format	integer
units	1=true/enabled, 0=false/disabled
min	0
max	1
default	0
access	get/set

Attribute	Description
save	yes

Get example

```
> get sy c e
1
```

Set example

```
> set sy c e 0
Success
```