BlueRS+ - SPP

User Manual add-on

Firmware Version 1.1.054 and newer

(Default parameters are printed in bold letters.)

**BSMODE sniff support

AT-Syntax: **AT**BSMODE | AT**BSMODE=<mode>**
Configurator-Syntax: **bsmode | bsmode=<mode>**

Using this command sniffing can be enabled on the Bluetooth link. Sniffing is used to reduce power consumption during an active Bluetooth connection.
When a Bluetooth link is in the sniff state both connected devices can enter a power saving state. This is done for short time intervals. The length of this interval is called "sniff interval" and is negotiated between the connected devices. The maximum and minimum acceptable values for the sniff interval can be set using appropriate AT commands.
The sniff interval value has an impact on the propagation delay and maximum throughput on the Bluetooth link. Take note that to enter sniff mode both devices needs to support sniff mode.

AT**BSMODE	Show sniff mode support level
AT**BSMODE=**0**	No sniff support
AT**BSMODE=1	Passive sniff support
AT**BSMODE=2	Active sniff support

Passive sniff support means that the device accepts sniff requests from the remote device with an interval between the values of BSMIN and BSMAX. To accept sniff requests from the remote device bit 2 of the parameter BLINKP must to be set.
If active sniff support is enabled the device tries to setup a sniff interval with the value of BSMAX.

Note: The performance of the command is influenced by the parameters BLINKP, BSMIN and BSMAX.

Examples:

AT**BSMODE=1 and AT**BLINKP=5	Sniff requests from remote devices will be accepted
AT**BSMODE=2 and AT**BLINKP=1	Device tries to initiate sniff mode on the Bluetooth link

**BROLE device role

AT-Syntax: **AT**BROLE | AT**BROLE=<mode>**
Configurator-Syntax: **brole | brole=<mode>**

With this command the role the device requests for a new Bluetooth link can be controlled. Without any action the device that initiates the connection is the master. The terminating device (the one accepting a connection) is the slave.

AT**BROLE=0	Slave required
AT**BROLE=1	Slave preferred
AT**BROLE=**2**	Don't care
AT**BROLE=3	Master preferred
AT**BROLE=4	Master required

If the role is set to "required" the device enforces a switch. If this fails the link is disconnected.
"Preferred" means that the device tries to perform a switch but doesn't care about the result.

**BLINKP link policy

AT-Syntax: **AT**BLINKP | AT**BLINKP=n**
Configurator-Syntax: **blinkp | blinkp=n**

With this command (bit mask) the link policy the device requests for a new Bluetooth link can be defined.

bit 0	ENABLE_SWITCH
bit 2	ENABLE_SNIFF

Examples:

AT**BLINKP=**1**	Device processes role switch from remote device
AT**BLINKP=4	Device processes sniff requests from remote device
AT**BLINKP=5	Device processes role switch and sniff requests from remote device

**BSUPTIM supervision timeout

AT-Syntax: **AT**BSUPTIM | AT**BSUPTIM=n**
Configurator-Syntax: **bsuptim | bsuptim=n**

This command defines the supervision timeout the device requests for a new Bluetooth link. Possible values are between 1 and 65535 (in 0,625ms steps).

Note: The supervision timeout can only be set by the Piconet master.

Example:

AT**BSUPTIM=**32000**	20 sec's.

**BSMIN minimum sniff interval

AT-Syntax: **AT**BSMIN | AT**BSMIN=n**
Configurator-Syntax: **bsmin | bsmin=n**

This command defines the minimum of accepted sniff interval in ms for a new Bluetooth link. The default value is **100** (ms). Possible values are profile dependent.

Note: Currently the value must be divisible by 5. Other values are accepted but sniff will not work.

**BSMAX maximum sniff interval

AT-Syntax: **AT**BSMAX | AT**BSMAX=n**
Configurator-Syntax: **bsmax | bsmax=n**

This command defines the maximum of accepted sniff interval in ms for a new Bluetooth link. The default value is **300** (ms). Possible values are profile dependent.

Note: Currently the value must be divisible by 5. Other values are accepted but sniff will not work.

**BNDSIZE bonded devices list size

AT-Syntax: **AT**BNDSIZE | AT**BNDSIZE=n**
Configurator-Syntax: **bndsize | bndsize=n**

With this command the number of entries the bonded device list can hold may be reduced. The default size depends on product for which the Firmware is build. Currently it is 4 for SPP versions and 1 for versions that support audio profiles (HS-HS/HS-AG)

This may be used in combination with a reference to the bonded device list from a dial string to setup connection to a bonded device.

Example:

AT**BNDSIZE=1	Limit the number of bonded devices to 1.

**BNAME local device name

AT-Syntax: **AT**BNAME | AT**BNAME=<name>**
Configurator-Syntax: **bname | bname=<name>**

This command allows the modification of the local device name. The device name is shown on a remote Bluetooth device during device/service discovery.

The device name can contain a format string to include the own device address or parts of it in the name.

Format: "%[<s>][<d>]a"

"%" ==> Identifier start format string
<s> ==> Char separator on byte border (optional)
<d> ==> Number (1-12) of digits included in device name (optional, default is 4)
"a" ==> Identifier end format string

Example: Device address = "0123456789AB"

AT**BNAME=BlueRS+E %:4a	Display on remote side: BlueRS+E 89:AB
AT**BNAME=BlueRS+E %4a	Display on remote side: BlueRS+E 89AB
AT**BNAME=BlueRS+E %:3a	Display on remote side: BlueRS+E 9:AB
AT**BNAME=BlueRS+E %3a	Display on remote side: BlueRS+E 9AB
AT**BNAME=BlueRS+E %:12a	Display on remote side: BlueRS+E 01:23:45:67:89:AB

**BSTPOLL update interval for radio statistics

AT-Syntax: **AT**BSTPOLL | AT**BSTPOLL=<interval>**
Configurator-Syntax: **bstpoll | bstpoll=<interval>**

This parameter allows the configuration of the updating interval for Bluetooth radio specific statistics like RSSI etc. the interval can be configured in ms. If set to 0 no statistics are performed.

Example:

AT**BSTPOLL	Show actual setting
AT**BSTPOLL =500	Update statistics every 500 ms

**BARSSI read absolute rssi value

AT-Syntax: **AT**BARSSI**
Configurator-Syntax: **barssi**

This read-only parameter contains the absolute receive signal strength value acquired on the last poll interval (see parameter bstpoll). The value is returned as a signed byte in hexadecimal format. If the update interval is 0 the returned value is 0.

The result for the barssi command is a signed byte in hexadezimal notation. That means if the highest bit (bit 7) is 1 the number is negativ and you get the value by building the two's complement see http://www.duke.edu/~twf/cps104/twoscomp.html

Conversion table:
0x10 = 10 dBm
0x00 = 0 dBm
0xFF = - 1 dBm
0xFE = - 2 dBm
0xFD = - 3 dBm
0xFC = - 4 dBm
0xFB = - 5 dBm
0xFA = - 6 dBm
0xF9 = - 7 dBm
0xF8 = - 8 dBm
0xF7 = - 9 dBm
0xF6 = -10 dBm
0xF5 = -11 dBm
0xF4 = -12 dBm
0xF3 = -13 dBm
0xF2 = -14 dBm
0xF1 = -15 dBm
0xF0 = -16 dBm
0xEF = -17 dBm
..
0xBA = -70 dBm
..
0xB5 = -75 dBm
..
0xB0 = -80 dBm
..
0xA6 = -85 dBm

The higher the value (hex value) the better the receive signal. Most common results are in the range of –20dBm to –80dBm.

When there is no Bluetooth connection the result isn't defined, amongst other things thats because there is no "neutral" value.

Example:

AT**BARSSI	Show actual receive signal strength indication

**BACCL serial port access level

AT-Syntax: **AT**BACCL | AT** BACCL=<access level>**
Configurator-Syntax: **baccl | baccl =<access level>**

Defines the accessibility and visibility of the Bluetooth serial port. The following values are applicable:

AT**BACCL=0	Serial port is not accessible nor visible
AT**BACCL=1	Serial port is accessible but not visible
AT**BACCL=**2**	Serial port is accessible and visible

Extended dial string feature

The syntax of the dial string has been extended to the following format:

<brad>,[cn] | remdev, [service]

with
remdev = dx | bx

bx: reference to bonded device list entry

Please refer the manual for the unchanged parameters.

The dial string can be used with commands/parameters ATD, BRAD, BRAD2 and BRAD3

Example:

ATDb1,c2	Connect to first entry in bonded device list on server channel 2