



LR70 Command Reference Guide

Amp'ed RF Technology, Inc.

Preliminary

1. AT Commands

- All AT commands should terminate with a CRLF.
- AT commands may be sent over the BLE link (typical) or the main module UART.
- Commands are non-case sensitive, except when device names or passwords/passcodes are involved.
- Command parameters use ASCII format, unless stated in ASCII hex format. ASCII hex uses 2 characters per hex byte.

1.1. BLESend

The `BLESend` command is used to send data over the BLE link, from an existing active connection.

Syntax

```
AT+AB BLESend [Address] [Value] [Length]
```

[Address] is the destination Node or Group, ASCII hex format.

[Value] is the hex data, ASCII hex format.

[Length] from 1 to 100 bytes

Example

```
AT+AB BLESend C001 31323334 4
```

1.2. FlashloaderStart

The `FlashloaderStart` command is used to execute the flash loader firmware when the application is running. Note, the “default” application selection is automatically removed when this command is used. This command is NOT allowed over the BLE link

Syntax

```
AT+AB FlashloaderStart
```

Responses

If the operation is successful, the flashloader menu will appear.

1.3. LeDisconnect

The `LeDisconnect` command is used to disconnect from a remote LE device once connected.

Syntax

```
AT+AB LeDisconnect
```

Responses

If the operation is successful, the response is:

AT-AB -BLE-ConnectionDown

1.4. LeDiscovery

The LeDiscovery command is used to scans for remote devices.
This command is valid in central mode (ProfileRole = c).

Syntax

AT+AB LeDiscovery

Responses

If the operation is successful, the response is:

AT-AB lescan pending
0. P [bd address] [Remote Device Name]
1. P [bd address] [Remote Device Name]
Total 2 devices found

Where [bd address] is the remote device's address.

1.5. Reset

The Reset command is used to reset the abSerial interface.

Syntax

AT+AB Reset

Responses

If the operation is successful, the response is:

AT-AB ResetPending

1.6. Send

The Send command is used to send data over BLE or serial UART.

Syntax

AT+AB Send [Address] [Value] [Length]

[Address] is the destination Node or Group, ASCII hex format.

[Value] is the hex data, ASCII hex format.

[Length] from 1 to 100 bytes

Example

AT+AB Send C001 31323334 4

1.7. SetBdAddress

The SetBdAddress command is used to change the Bluetooth Address.
The BD Address may only be changed one time from it's default setting.

Syntax

```
AT+AB SetBdAddress [mac address]
```

Where [mac address] is the new 6 byte MAC Address which will be set, ASCII hex format.

Responses

If the operation is successful, the response is:

```
AT-AB ResetPending  
AT-AB -CommandMode-  
AT-AB MACAddress [mac address]
```

1.8. Sleep

The Sleep command is used to switch a device from normal mode to low power mode.

Syntax

```
AT+AB Sleep [When HostDeepSleepEn = 1]
```

Responses

No response

1.9. Unprovision

The Unprovision command is used to remove a node from the mesh network.

Syntax

```
AT+AB Unprovision [Node ID]
```

Where [Node ID] is the node to be removed from the mesh network.

Responses

```
AT-AB Node [ID] removed
```

2. Configuration Commands

The section describes the system configuration variables of with their defaults and ranges. These values are stored in the non-volatile memory of the module. A reset is necessary for any new parameters to take effect.

2.1. Set/update

To set a configuration variable enter:

```
at+ab config xxxx = yyyy
```



Where "xxxx" is the variable name and "yyyy" is the value to set. A variable name may also be specified as "varzz". Where zz is the sequence number of the variable.

2.2. Inquiry

An inquiry may be made using:

```
at+ab config xxxx
```

Where “xxxx” is the variable name. The reply will be the current setting.

2.3. Configuration Parameters

Name	Default	Description
BuildVersion	220829A	Date code of the firmware (read only).
DeviceName	ART[node address]	Up to 15 characters are allowed (case sensitive).
BDADDR	00043e261122	device BD address (read only).
MeshKey	12345678	Code used for secure connection.Up to 20 characters are allowed (case sensitive).
AuthType	0	0=NONE, 1=AES-128
UartBaudrate	115200	Main UART baudrate: 1200 to 921,600 baud.
UartParity	none	Enable/disable parity on the main UART.
UartDataBits	8	Main UART data bits per character.
UartStopBits	1	Main UART number of stop bits.
UartFlowControl	false	Enabled use RTS/CTS flow control, disabled does not uses flow control.
MeshRelay	true	true: enables Relay feature False: disables Relay feature
MeshProxy	true	true: enables Proxy feature False: disables Proxy feature
MeshBle	true	true: enables BLE feature False: disables BLE feature
MeshFriend	false	true: enables Friend feature False: disables Friend feature
MeshLPN	false	true: enables LPN feature False: disables LPN feature
ProvisionStatus	false	true: provisioned false: unprovisioned
BLETxPower	10	dBm
LoraTxPower	28	dBm, 0-28
LoraChannel	45	0-60, sets operating frequency at 780 MHz + N * 3 MHz A value of 45 is 780 + 45*3 = 915 MHz
LoraCADInterval	500	100 -5000ms, CAD interval.
LoraLoraBand	915	Operating frequency, MHz (read only).
LoraPreambleLength	8	6-64
LoraAirDataRate	1200	1200-62500
LoraSF	9	Spreading Factor, 5-11 5:32 6:64 7: 128 8:256 9:512 10:1024 11:2048
LoraBW	7	Bandwidth, 7-9 (KHz) 7:125 8:250 9:500
LoraCodeRate	4	1-4 1:4/5, 2: 4/6, 3: 4/7, 4: 4/8
LoraPANID	255	255- 65280
LoraPayloadLen	128	0 - 256 bytes
HostEvents	true	All host events are sent when True.

HardwareType	LR70	Module part number (read only).
BLEChannel	1	BLE channel 1-7
MaxTTL	4	Time-to-live, maximum number of mesh node hops, 0-63.
HostDeepSleepEn	false	Enables deep sleep mode.
NodeAddr	0001	Unique unicast address. Value is 0001 – 7FFF (ASCII hex format, 4 characters each, zero padded).
PublishAddr	C001	Publish address. Value is C000 – FFEF, (ASCII hex format, 4 characters each, zero padded).
SubscribeAddr	C001	Subscribe addresses. Value is 0xC000 – FFEF, up to 8 addresses, comma separated, may be entered: C001,C002,C003,etc... (ASCII hex format, 4 characters each, zero padded).