



Hi3861 V100 / Hi3861L V100 Mesh AT Commands

User Guide

Issue	01
Date	2020-04-30

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About This Document

Purpose

This document describes the Mesh AT command formats, scenarios, and parameter examples of Hi3861 V100/Hi3861L V100.

NOTE

This document describes only the new AT commands related to Mesh. For details about other commands or AT commands, see the *Hi3861 V100/Hi3861L V100 AT Commands User Guide*.

Related Versions

The following table lists the product versions related to this document.

Product Name	Version
Hi3861	V100
Hi3861L	V100


Intended Audience

This document is intended for:




- Software development engineers
- Technical support engineers

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



Symbol	Description
 WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
 NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

Issue	Date	Change Description
01	2020-04-30	This issue is the first official release.
00B01	2020-04-10	This issue is the first draft release.



Contents

About This Document.....	i
1 Mesh AT Commands.....	1
1.1 Overview.....	1
1.2 Description.....	1
1.2.1 AT+MAUTOJOIN.....	1
1.2.2 AT+MEXIT.....	2
1.2.3 AT+MSETRSSI.....	3
1.2.4 AT+MSETBW.....	3
2 Application Scenario Samples.....	5
2.1 Starting Automatic Mesh Networking.....	5
2.2 Exiting Automatic Mesh Networking.....	5
2.3 Starting Automatic Mesh Networking Repeatedly.....	5



1 Mesh AT Commands

[1.1 Overview](#)

[1.2 Description](#)

1.1 Overview

Command	Description
AT+MAUTOJOIN	Starts automatic mesh networking.
AT+MEXIT	Exits automatic mesh networking.
AT+MSETRSSI	Sets the received signal strength indicator (RSSI) threshold for the mesh border router (MBR) to connect to another router.
AT+MSETBW	Sets the bandwidth for automatic mesh networking.

1.2 Description

1.2.1 AT+MAUTOJOIN

Format	AT+MAUTOJOIN=<type>,<ssid>,<priv> [,<passwd>]
Response	If the execution succeeds, the networking result and node role are displayed. If the execution fails, "FAILED" is displayed.



Parameter Description	<p><type>: node type</p> <p>0: specified MBR node</p> <p>1: specified MG node</p> <p>2: specified Mesh-STA node</p> <p>3: automatically elected node</p> <p><ssid>: service set identifier, that is, the router name. The parameter value must be enclosed in double quotation marks (" ").</p> <p><priv>: whether the router is encrypted</p> <p>0: not encrypted</p> <p>1: encrypted</p> <p><passwd>: password. The parameter value must be enclosed in double quotation marks.</p>
Sample	<p>AT+MAUTOJOIN=3,"meshnetwork",1,"12345678"</p> <p>AT+MAUTOJOIN=1,"meshnetwork",0</p>
Note	<ul style="list-style-type: none">• When <priv> is set to 0, the <passwd> parameter does not exist.• If <ssid> is in non-ASCII format (for example, the SSID is China), type the SSID of China in the following format: P"\xe4\xb8\xad\xe5\x9b\xbd"• The maximum length of <passwd> is 63 characters.• If <type> is set to 3, only the MBR and MG roles are elected, and the Mesh-STA role is not elected. The mesh network identifier is the same as the router <ssid>, and the password is the same as the router <passwd>.• The command execution cannot exit during the election process or virtual access point (VAP) startup/exit process. A failure occurs if the AT+MAUTOJOIN command is run repeatedly.

1.2.2 AT+MEXIT

Format	AT+MEXIT
Response	Command output. If the operation is successful, "OK" is displayed. If the operation fails, "ERROR" is displayed.
Parameter Description	-
Sample	AT+MEXIT



Note	<ul style="list-style-type: none">• This command can be used only with AT+MAUTOJOIN. It cannot be used with other commands such as AT+STARTSTA and AT+STARTAP.• The command execution cannot exit during the election process or virtual access point (VAP) startup/exit process. A failure occurs if the AT+MEXIT command is run.
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1.2.3 AT+MSETRSSI

Format	AT+MSETRSSI=<RSSI>
Response	Current Router Rssi threshold[<RSSI>] OK <i>or</i> ERROR
Parameter Description	<RSSI> : RSSI threshold for the MBR to connect to another router. Value range: [-127, +10]
Sample	AT+MSETRSSI=-30
Note	<ul style="list-style-type: none">• The RSSI threshold takes effect only when the MBR connects to another router.• If the RSSI threshold is too high, the MBR may fail to connect to another router, causing a mesh network setup failure.

1.2.4 AT+MSETBW

Format	AT+MSETBW=<bw>
Response	Current Mesh Network BW[<bw>] OK <i>or</i> ERROR
Parameter Description	<bw> : bandwidth for starting the automatic mesh networking module. The default value is 20 . 5 : 5 MHz bandwidth 10 : 10 MHz bandwidth 20 : 20 MHz bandwidth
Sample	AT+MSETBW=5



Note

- This command must be issued before the **AT+MAUTOJOIN** command is executed.
- The default bandwidth is 20 MHz. This command is not required if the bandwidth does not need to be changed.
- Running **AT+MEXIT** does not change the bandwidth.



2 Application Scenario Samples

[2.1 Starting Automatic Mesh Networking](#)

[2.2 Exiting Automatic Mesh Networking](#)

[2.3 Starting Automatic Mesh Networking Repeatedly](#)

2.1 Starting Automatic Mesh Networking

Sample
AT+MAUTOJOIN=3,"meshnetwork",1,"12345678"
Note: -

2.2 Exiting Automatic Mesh Networking

Sample
AT+MEXIT
Note: -

2.3 Starting Automatic Mesh Networking Repeatedly

Sample
AT+MAUTOJOIN=3,"meshnetwork",1,"12345678"
AT+MAUTOJOIN=1,"meshnetwork",1,"12345678"



Sample
Note: The command execution cannot exit during the election process or VAP startup/exit process. A failure occurs if the AT+MAUTOJOIN command is run repeatedly.