

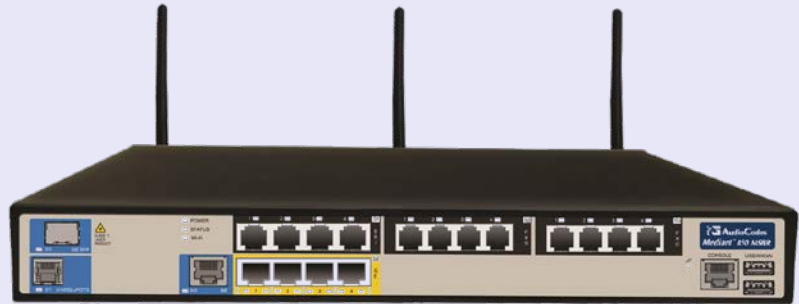
Multi-Service Business Router (MSBR)

Mediant™ 850 MSBR

Mediant™ 800 MSBR

# Configuration Note

## Connecting MSBR to WAN through 3G Cellular Modem



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## Reader's Notes

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This document shows how to connect the Mediant 800 MSBR and Mediant 850 MSBR to the Internet through a 3G cellular modem.

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## Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used.



**Note:** Throughout this document, unless otherwise specified, the term *device* refers to the Mediant 800 MSBR and the Mediant 850 MSBR.

## Reader's Notes

# 1 Introduction

This Configuration Note shows the possibilities of how to connect the Mediant 800/850 MSBR to the Internet using a cellular modem connected to the MSBR's USB port.

Many cellular operators worldwide provide a wireless Internet connection service. Connection speeds vary, depending upon the technology used by the operator and the load on the base stations. While a cellular Internet connection typically costs more than a landline service, it is common practice to configure a cellular modem as *backup* to the enterprise's fixed connection.

The cellular connection feature requires software version 6.4 and hardware revision 1 (CPLD version 0A). The USB port on supporting hardware is marked "USB/WWAN".

## Reader's Notes



## 2 Supported 3G Cellular Modems

The device supports the following third-party 3G cellular modems:

- ZTE MF190
- ZTE MF626
- ZTE MF637
- Huawei E160
- Huawei E173
- Huawei E1756
- Huawei E182E
- Huawei E392
- Alcatel X220
- Sierra 308

## Reader's Notes

## 3 Configuring 3G Cellular Modems using CLI

This section shows how to configure a 3G cellular modem using CLI.

➤ **To configure a 3G cellular modem using CLI:**

1. Establish a CLI session with the device.
2. Enter the *configure data* mode.

```
(configure-data)#
```

3. At the prompt, enter the following command:

```
# interface cellular 0/0
```

This command allows you to use the following commands :

CLI Command	Default	Description
<code>initstr</code>	AT&F	Defines the initialization string for the modem. The default string <b>AT&amp;F</b> restores factory defaults.
<code>apn</code>	uinternet	Defines the Access Point Name (APN) used by the cellular operator.
<code>phone</code>	*99#	Defines the phone number for the dial-up data service. Most networks use the default <b>*99#</b> .
<code>ppp user</code>	<i>(blank)</i>	Defines the user-name and password for the PPP connection.
<code>[no] pin</code>	<i>(none)</i>	PIN code to unlock the SIM card. Requires version 6.40.043.001 or later.
<code>[no] shutdown</code>	shutdown	Brings the connection up or down.
<code>backup monitoring</code>	<i>(no)</i>	Defines Backup mode; the cellular connection is used only when the primary interface fails.
<code>[no] napt</code>	<i>(yes)</i>	Enables NAPT mode. This setting is mandatory unless your service provider supports routable addresses for your LAN hosts.
<code>mtu</code>	<i>(automatic)</i>	Controls the Maximum Transmission Unit (MTU) of the cellular interface. The value is usually negotiated automatically.

4. To enable the interface, enter the following command:

```
no shutdown
```

5. Exit the configuration mode, and then enter the following command:

```
# write
```

6. Connect the 3G cellular modem to the MSBR's USB port.

7. To display the modem's up/down state, enter the following command:

```
show data cellular status
```

The typical modem setup time is 1-2 minutes.

## 4 Configuring Backup Mode

This section shows how to configure backup mode. By default, the 3G cellular modem connection is created as a primary WAN, i.e., the link is always active and may be used in parallel with the landline connection. Normal routing rules and metrics control the link through which packets are sent.

The cellular connection may, however, be configured as a *backup* to another WAN interface. In this mode, the modem is up and registered with the 3G network but the PPP link remains down. Any failure of the primary link will bring the PPP connection up. When the primary link is restored, the cellular PPP connection goes down again. Configuration allows selecting which primary interface is to be monitored - this can be an Ethernet connection, a DSL-ATM PVC, a PPPoE tunnel, etc.

To set up backup mode, first configure the primary connection to be monitored; ensure that this interface is in *Connected* state.

### 4.1 Defining a Backup Group

The example below shows how to configure a backup group using the CLI. The example monitors Ethernet WAN; replace the interface name and port as required.

➤ **To define a backup group:**

1. Establish a CLI session with the device.
2. Define a backup group.

```
(configure)# backup-group wangroup primary-wan
(backup-group)# description WAN-group
(backup-group)# exit
```

3. Add the interfaces to monitor according to priority:

```
(configure)# interface GigabitEthernet 0/0
(conf-GE0/0)# backup monitoring group wangroup priority 1
(conf-GE0/0)# exit
(configure)# interface Cellular 0/0
(conf-cellular)# backup monitoring group wangroup priority 2
(conf-cellular)# exit
```

## Reader's Notes

## 5 Troubleshooting

If a cellular connection cannot be established, check the following:

- The cellular modem must be *fully inserted* into the USB port. Use a short USB extension cable if the modem is too large, or if the RS-232 connector is in the way.
- The modem must be equipped with a valid SIM card suitable for 3G networks.
- Check the LEDs on the modem; power is applied to the USB port at approximately 1 minute after system start-up. The LEDs should indicate that the modem is active and registered to the cellular network (refer to the modem's manual for the status that each LED indicates).
- On the Mediant 800 MSBR, verify that the front panel is marked "USB/WWAN" indicating support of 3G modems.
- Make sure that the cellular modem is supported. Only the modems listed under Section 2 on page 9 are supported.



## Configuration Note