

# Skywire<sup>®</sup> LTE CAT1 Sending and Receiving SMS Messages

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# 1. Introduction

## 1.1 Orderable Part Numbers

Orderable Device	Description	Carrier	Network Type
NL-SWDK	Skywire Development Kit	Any	Any
NL-SW-LTE-GELS3	Skywire LTE CAT1 Modem	Verizon	LTE
NL-SW-LTE-GELS3-B	Skywire LTE CAT1 Modem	Verzion	LTE
NL-SW-LTE-GELS3-C	Skywire LTE CAT1 Modem	Verizon	LTE
NL-SIM-COM	3FF Commercial Temp Range SIM Card	Verizon	LTE

## 1.3 Prerequisites



**This document assumes you have completed the initial setup of your modem and development kit. If you have not completed those steps, refer to the Skywire® Development Kit User Manual and complete the modem setup before proceeding.**

## 2. SMS Message

### 2.1 Verify Skywire Firmware Version

An issue has been identified related to sending and receiving SMS messages certain firmware versions of the NL-SW-LTE-GELS3 Skywire modem. It is recommended that you verify your firmware version and update if necessary before continuing.

To verify your firmware, issue the following AT command:

**ATI1**

followed by the Enter key, and the terminal should respond with something similar to:

```
Cinterion  
ELS31-V  
REVISION 4.3.2.0  
A-REVISION 4.3.2.0-2xxxx  
L-REVISION 3.7.6
```

**OK**

where **2xxxx** is your firmware version. If your firmware version is lower than:

**25421**

please contact NimbeLink at [product.support@nimbelink.com](mailto:product.support@nimbelink.com) for assistance with a firmware upgrade.

If the terminal responds with:

**ERROR**

issue the command:

**ATI**

and the terminal should respond with something similar to:

```
Cinterion  
ELS31-V  
REVISION 4.3.1.0c
```

**OK**

If this is the case, please contact NimbeLink at [product.support@nimbelink.com](mailto:product.support@nimbelink.com) for assistance with a firmware upgrade.

For all other responses from either ATI or ATI1, please contact [product.support@nimbelink.com](mailto:product.support@nimbelink.com) for assistance.

If your firmware version is larger than **25421** but smaller than **29632**, complete Section 2.2 and continue to Section 3.

If your firmware version is **29632** or larger, complete Section 2.2 and continue to Section 4.

## 2.2 Verify PDP Context

Before you begin, double-check that the PDP context is set correctly. To check this, type the following command into your terminal program:

**AT+CGDCONT?**

followed by the Enter key, and the terminal should respond with something similar to:

```
+CGDCONT: 1,"IPV4V6","VZWIMS",,,,0,0,1,1,0
+CGDCONT: 2,"IPV4V6","VZWADMIN",,,,0,0,0,0,0
+CGDCONT: 3,"IP","[Your APN]",,,,0,0,0,0,0
+CGDCONT: 4,"IPV4V6","VZWAPP",,,,0,0,0,0,0
+CGDCONT: 8,"IPV4V6","",,,,0,1,1,1,0
```

**OK**

Verify that the first line reads:

```
+CGDCONT: 1,"IPV4V6","VZWIMS",,,,0,0,1,1,0
```

If it does not, type the following command into your terminal program:

```
AT+CGDCONT=1,"IPV4V6","VZWIMS"
```

followed by the Enter key, and the terminal program should respond with:

**OK**

In addition, check that the third line reads:

```
+CGDCONT: 3,"IP","[Your APN]",,,,0,0,0,0,0
```

where “Your APN” is your Verizon APN. For example, if your APN is “vzwinternet”, the third line should read:

```
+CGDCONT: 3,"IP","vzwinternet",,,,0,0,0,0,0
```

If it does not read that, type the following into the terminal program:

```
AT+CGDCONT=3,"IP","[Your APN]"
```

where [Your APN] is your Verizon APN, followed by the Enter key, and your terminal program should respond with:

**OK**

For example, if your Verizon APN is “vzwinternet”, you would type:

```
AT+CGDCONT=3,"IP","vzwinternet"
```

Followed by the Enter key, and the terminal should respond with:

**OK**

# 3 SMS Messages - GELS3 and GELS3-B Firmware

## 3.1 Send SMS Message

To begin, we need to put the modem in the correct mode to send and receive text messages. In the terminal program, type the following command:

```
AT+CMGF=1
```

followed by the Enter key, and the terminal should respond with:

```
OK
```

Next, we need to enter the destination phone number. For this example, we will use the phone number 555-444-3333. Substitute your destination phone number in for this phone number. In the terminal program, type the following command:

```
AT+CMGS="15554443333"
```

followed by the Enter key, and the terminal should respond with the cursor on a new line or a ">" sign, depending on your firmware version.

With firmware version 4.3.1.0c (which you can check with the command **ATI**), you will not see the ">" sign. Depending on the terminal program you are using, the cursor may stay on the same line, but move the cursor to the beginning of the line.

With firmware version 4.3.2.0, you will see a ">" sign.

At this point you can type a custom message (keep to less than 160 characters).

To send the message, press the **CTRL** and **Z** keys at the same time.

If successful, the terminal should respond with:

```
+CMGS: xx
```

## 3.2 Receive SMS Messages

Again, we need to make sure that the modem is in the correct mode to send and receive text messages. In the terminal program, type the letters:

```
AT+CMGF=1
```

followed by the Enter key, and the terminal should respond with:

```
OK
```

Then type:

```
AT+CMGL="REC UNREAD"
```

followed by the Enter key,

If the terminal responds with

**OK**

then there are no messages.

Otherwise, the terminal responds with the first message similar to the example below:

**+CMGL: 0,"REC UNREAD","7124908388",,"10/03/10,10:22:07+00"**

Followed by the content of the received text message.

### 3.3 Delete Received SMS Messages

To delete all received SMS messages, type the following command in the terminal program:

**AT+CMGD=1,4**

followed by the Enter key, and the terminal should respond with:

**OK**

To delete a specific SMS message, type the following command in the terminal program:

**AT+CMGD=x**

where **x** is the index of the SMS message you would like to delete, and hit the Enter key. For instance, to delete the SMS message located at index position 2, type:

**AT+CMGD=2**

followed by the Enter key, and the terminal should respond with:

**OK**

## 4 SMS Messages - GELS3-C Firmware

### 4.1 Send SMS Message

To begin, we need to put the modem in the correct mode to send and receive text messages. In the terminal program, type the following command:

**AT^SIMSCFGSMS="3GPP2","ASCII",0**

followed by the Enter key, and the terminal should respond with:

**OK**

Next, we need to set the character set that the Skywire will use. To do so, type the following command:

**AT+CSCS="GSM"**

followed by the Enter key, and the terminal should respond with:

**OK**

Next, we need to enter the destination phone number and message. For this example, we will use the phone number 555-444-3333. Make sure to keep your message below 160 characters. Substitute your destination phone number in for this phone number. In the terminal program, type the following command:

**AT^SMGSIMS="15554443333","Hello world"**

followed by the Enter key, and the terminal should respond with something similar to:

**^SMGSIMS: ID,0**

**OK**

**^SMGSIMS: SENT OK,0,0**

## 4.2 Receive SMS Messages

Again, we need to make sure that the modem is in the correct mode to send and receive text messages. In the terminal program, type the following command:

**AT^SIMSCFGSMS="3GPP2","ASCII",0**

followed by the Enter key, and the terminal should respond with:

**OK**

Next, we need to set the character set that the Skywire will use. To do so, type the following command:

**AT+CSCS="GSM"**

followed by the Enter key, and the terminal should respond with:

**OK**

In addition, it may be beneficial to see receive a unsolicited response code (URC) when you receive a text message. To enable this, type the command:

**AT+CNMI=1,1**

followed by the Enter key, and the terminal should respond with:

**OK**

Please see the AT Commands Manual for the NL-SW-LTE-GELS3-C Skywire for more information about these URCs.

When you receive a text message, you'll receive a URC similar to:

**+CMTI: "ME",x**

where x is the index of text message.

To read the text message, type:



## **AT^SMGRIMS=x**

where *x* is the index of the message, followed by the Enter key, and the terminal should respond with:

```
^SMGRIMS: "REC UNREAD","UNUSED","xxxyyyzzzz","17/05/01,17:08:50+0",  
"00/00/00,00:00:00+0",0,""  
[message]
```

**OK**

where *xxxyyyzzzz* is the received phone number, and **[message]** is the text message.

## **4.3 Delete Received SMS Messages**

To delete all received SMS messages, type the following command in the terminal program:

```
AT+CMGD=1,4
```

followed by the Enter key, and the terminal should respond with:

**OK**

To delete a specific SMS message, type the following command in the terminal program:

```
AT+CMGD=x
```

where *x* is the index of the SMS message you would like to delete, and hit the Enter key. For instance, to delete the SMS message located at index position 2, type:

```
AT+CMGD=2
```

followed by the Enter key, and the terminal should respond with:

**OK**

## **5 Troubleshooting**

- When sending a text message from the Skywire modem, if you get a successful send message but never receive the SMS message, try adding a plus sign (+) before the phone number when you get to the AT+CMGS command in Section 2.2:

```
AT+CMGS="+15554443333"
```

- If you receive errors about "No network", or if your SMS messages are failing in general, issue the following AT commands:

```
AT+CGATT=0
```

Wait for OK, and then issue:

### **AT+CGATT=1**

And you should receive an unsolicited response code (URC) that says:

**+SQNREGISTEREDIMPU: sip:+1xxxxyyyzzzz@vzims.com,tel:+1xxxxyyyzzzz**

where **xxxxyyyzzzz** is the phone number associated with your Skywire. Try sending the SMS message again.

- If you are having issues with a network connection, verify that AT+CFUN is set correctly. If

### **AT+CFUN?**

returns 0, then issue:

### **AT+CFUN=1**

Wait for a line similar to below from the modem:

**+SQNREGISTEREDIMPU: sip:+1xxxxyyyzzzz@vzims.com,tel:+1xxxxyyyzzzz**

where **xxxxyyyzzzz** is the phone number associated with your Skywire, and try again.