Skywire® NL-SW-LTE-QBG96 and NL-SW-LTE-QBG95 SMS Application Note

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1. Introduction

1.1. Scope

This document serves as a guide for implementing SMS functionality on the NL-SW-LTE-QBG96 and NL-SW-LTE-QBG95 Skywire modems.

1.2. Orderable Part Numbers

Orderable Device	Description	Carrier	Network Type
NL-SWDK	Skywire Development Kit	Any	Any
NL-SW-LTE-QBG96	LTE-M (CATM1)	Any	LTE-M, GSM
NL-SW-LTE-QBG95	LTE-M (CAT M1), NB-IoT (NB1, NB2)	Any	LTE-M, NB-IoT, GSM

1.3. Prerequisites

This document assumes that the initial setup of the requisite modem and development kit has been completed using the Skywire® Development Kit User Manual.

If these steps are incomplete, please refer to the link above and complete the modem setup before proceeding

1.4. Notes

Verizon users can send and receive SMS messages to and from personal cell phones and other CAT M1 devices.

AT&T users do not have the ability to send SMS messages at this time. AT&T CAT M1 SIM's utilize a network that is dedicated exclusively to IoT devices, and are not associated with a phone number, which is required to send SMS messages. However, SMS messages can be sent using AT&T's RESTful API. Refer to the following link:

https://marketplace.att.com/docs#/

2. SMS Message

2.1. Send SMS Message

In the terminal program, type the command:

```
AT+CMGF=1
```

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

```
OK
```

To send a message, type the following command, substituting "**15554443333**" with the desired phone number:

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

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

```
>
```

Enter up to 160 characters after the "**>**" appears. To send the message, press the **CTRL** and **Z** keys at the same time. If successful, the terminal should respond with:

```
+CMGS: xx
```

2.2. Receive SMS 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 in the form:

```
+CMGL=index, message_status, address, [address_text],
[time_stamp] [,address_type, body_length] <CR> <LF>
sms_message_body[<CR> <LF> +CMGL: ...]
```

This is an example:

```
+CMGL: 2,"REC UNREAD","+15554443333",,"19/06/18,15:58:35-28"

<SMS message contents>
```

2.3. Delete Received SMS Messages

To delete all received SMS messages, type the following letters 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 letters 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
```

2.4. Example SMS AT Command Log

The following is a log of a NL-SW-LTE-QBG95 modem configuring SMS and communicating. Comments on each step are in red text and start with "//". User-entered AT commands are in bold.

// Wait for boot
APP RDY

// Verify firmware version
AT+CGMR
BG95M3LAR02A03

```
OK
// Set SMS Format to Text
AT+QMGF=1
OK

// Send SMS Message
AT+CMGS="15554443333"
> Hello World!


+CMGS: 0

// Read SMS Messages
AT+CMGL="REC UNREAD"

+CMGL: 1,"REC UNREAD","+15554443333",,"8/14/20,12:58:35-28"
Hello Modem!

// Delete SMS Message
AT+CMGD=1,4
OK
```

3. 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 2.1:

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

If you are not able to receive SMS messages, issue:

```
AT+CPMS="ME","ME","ME"
```

and try again. This changes the SMS storage from the SIM card to the Skywire.

4. Document Version Information

Version	Notes	Date
4	-Updated document to include QBG95 support.	2020-09-02
5	-Fixed spacing in Table 1.2	2020-09-29