Verizon SIM Card

Datasheet

NimbeLink Corp

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Table of Contents

Table of Contents 2

Introduction 3
  Orderable Part Numbers 3
  Additional Resources 3
  Product Overview 3
  Compatible Products 3
    NimbeLink Compatible Products 3
  Mechanical Diagram 4

Technical Specifications 5
  Electrical Specifications 5
    Absolute Maximum Ratings 5
    Recommended Ratings for Contacts C1-C7 5
  Other Specifications 5

Compliance Requirements 6
  UICC Standards 6
  USIM Standards 6
  ISIM Standards 6
  CSIM Standards 6
  RoHS Compliance 7
1. Introduction

1.1 Orderable Part Numbers

<table>
<thead>
<tr>
<th>Orderable Device</th>
<th>Operating Temperature</th>
<th>Description</th>
<th>Network Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL-SIM-COM</td>
<td>-35°C to +85°C</td>
<td>Micro-Sim, 3FF size, Commercial Temp Sim Card</td>
<td>Verizon</td>
</tr>
<tr>
<td>NL-SIM-IND</td>
<td>-40°C to +105°C</td>
<td>Micro-Sim, 3FF size, Industrial Temp Sim Card</td>
<td>Verizon</td>
</tr>
</tbody>
</table>

1.2 Additional Resources

The following documents or documentation resources are referenced within this document.

- ETSI TS 102 221 Technical Specification
- Verizon UICC Product Sheet

1.3 Product Overview

A 4G LTE connected devices require a SIM card in order to connect to the network. The NL-SIM-COM and the NL-SIM-IND from NimbeLink are Verizon approved SIM cards.

1.4 Compatible Products

The NL-SIM-COM and the NL-SIM-IND from NimbeLink are compatible with all devices designed to work on the Verizon network, including non-NimbeLink modems.

1.4.1 NimbeLink Compatible Products

<table>
<thead>
<tr>
<th>Orderable Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL-SW-LTE-TSVG-B</td>
<td>Skywire® 4G LTE CAT3 w/ GNSS</td>
</tr>
<tr>
<td>NL-SW-LTE-GELS3-C</td>
<td>Skywire® 4G LTE CAT1</td>
</tr>
<tr>
<td>NL-SW-LTE-S7588-V</td>
<td>Skywire® 4G LTE CAT4</td>
</tr>
</tbody>
</table>
1.5 Mechanical Diagram

*Front of Verizon SIM card

*Side View

*Back of Verizon SIM card

15mm ±0.1mm

12mm ±0.1mm

0.76mm ±0.1mm
2. Technical Specifications

2.1 Electrical Specifications

2.1.1 Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Signal</th>
<th>Maximum Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Power Supply</td>
<td>VCC</td>
<td>5.5V</td>
</tr>
<tr>
<td>I/O Voltage Reference</td>
<td>VREF</td>
<td>5.5V</td>
</tr>
</tbody>
</table>

2.1.2 Recommended Ratings for Contacts C1-C7

<table>
<thead>
<tr>
<th>Name</th>
<th>Direction</th>
<th>Description</th>
<th>Contact</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCC</td>
<td>Input</td>
<td>Supply voltage</td>
<td>C1</td>
<td>4.5V</td>
<td>5.5V</td>
</tr>
<tr>
<td>RST</td>
<td>Input</td>
<td>Reset (RST), VIH</td>
<td>C2</td>
<td>VCC - 0.7V</td>
<td>VCC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reset (RST), VIL</td>
<td>C2</td>
<td>0V</td>
<td>0.6V</td>
</tr>
<tr>
<td>CLK</td>
<td>Input</td>
<td>Clock (CLK), VIH</td>
<td>C3</td>
<td>0.7V x VCC</td>
<td>VCC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clock (CLK), VIL</td>
<td>C3</td>
<td>0V</td>
<td>0.5V</td>
</tr>
<tr>
<td>IO</td>
<td>I/O</td>
<td>Input for logic high</td>
<td>C7</td>
<td>0.7V x VCC</td>
<td>VCC + 0.3V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Input for logic low</td>
<td>C7</td>
<td>-0.3V</td>
<td>0.15V x VCC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Output for logic high</td>
<td>C7</td>
<td>3.8V</td>
<td>VCC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Output for logic low</td>
<td>C7</td>
<td>0V</td>
<td>0.4V</td>
</tr>
</tbody>
</table>

2.2 Other Specifications

<table>
<thead>
<tr>
<th>Orderable Device</th>
<th>Parameter</th>
<th>Typical</th>
<th>Min Temp</th>
<th>Max Temp</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dimensions</td>
<td>15 x 12 x 0.76</td>
<td></td>
<td></td>
<td>mm</td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>&gt; 0.20</td>
<td></td>
<td></td>
<td>Grams</td>
</tr>
<tr>
<td>NL-SIM-COM</td>
<td>Operating Temperature</td>
<td>-35</td>
<td>+85</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-COM</td>
<td>Storage Temperature</td>
<td>-35</td>
<td>+85</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-IND</td>
<td>Operating Temperature</td>
<td>-40</td>
<td>+105</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-IND</td>
<td>Storage Temperature</td>
<td>-40</td>
<td>+105</td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>
3. Compliance Requirements

3.1 UICC Standards

The UICC is compliant to ETSI TS 102 2211 Rel 8 and 3GPP 31.101 Rel 8
Except the following:

- No environmental condition TLV response to select
- 4 logical channel only supported
- No Inter-Chip USB
- No Terminal capability
- No secure channel

3.2 USIM Standards

The USIM is compliant to 3GPP 31.102 Rel 8.
Except the following commands:

- Key Establishment mechanism
- OMA BCAST
- MBMS security
- Authentication of GBA
- Addition of I-WLAN related files and procedures
- HPLMN Direct Access Indicator for I-WLAN
- I-WLAN Steering of Roaming Refresh Command
- Geographical Location
- Introduction of AES and automatic detection of application data format
- Introduction of AES and deprecation of DES
- USSD

3.3 ISIM Standards

The ISIM is compliant to 3GPP 31.103 R8.0.1
Except for the following commands:

- Key establishment mechanism
- Authentication of GBA

3.4 CSIM Standards

The CSIM is compliant to 3GPP2 specifications as specified in C.S0065-A v1.0
OTAF command support only the following commands:

- OTAPA request
- Commit and Validate
- Generic Configuration
- Configuration Request and Response Management
  - SSPR Download Request and Response Message
- Generic Download Request
  - Download Request and Response Message
  - SSPR Download Request and Response Message
- OTAPA request
- Commit
- Generic Configuration
  - SSPR Configuration Request
- Generic Download Request
  - SSPR Download Request
- BCMCS-related commands are not supported
- AKA-related commands are not supported
- LCS-related commands are not supported
- IP-based Location Service Procedures are not supported

### 3.5 RoHS Compliance

This product complies with the requirements of 2012/19/EC of the European Parliament by satisfying the stipulated limits on restricted substances.