Verizon SIM Card
Datasheet
NimbeLink Corp
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1. Introduction

This document serves as the datasheet for NimbeLink Verizon SIM cards.

1.1 Orderable Part Numbers

<table>
<thead>
<tr>
<th>Orderable Device</th>
<th>Operating Temp</th>
<th>Description</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL-SIM-VER-TRI</td>
<td>-40°C to +85°C</td>
<td>Mini/Micro/Nano (2FF/3FF/4FF), Commercial Temp Sim Card</td>
<td>Verizon</td>
</tr>
<tr>
<td></td>
<td>-40°C to +85°C</td>
<td>Micro-Sim, 3FF size, Commercial Temp Sim Card</td>
<td>Verizon</td>
</tr>
<tr>
<td>NL-SIM-COM</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

1.3 Product Images

Below are product images for the SIM cards documented in this datasheet. The SIM’s branding may change over time.
1.4 Product Overview

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.

1.5 Compatible Products

The NL-SIM-COM, NL-SIM-IND and NL-SIM-VER-TRI from NimbeLink are compatible with all devices designed to work on the Verizon network, including non-NimbeLink modems. These SIMs are meant for use with LTE CAT1 or greater devices.

1.6 Mechanical Diagram
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>1.8V</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>NL-SIM-COM</td>
<td>Operating Temperature</td>
<td></td>
<td>-35</td>
<td>+85</td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-COM</td>
<td>Storage Temperature</td>
<td></td>
<td>-35</td>
<td>+85</td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-IND</td>
<td>Operating Temperature</td>
<td></td>
<td>-40</td>
<td>+105</td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-IND</td>
<td>Storage Temperature</td>
<td></td>
<td>-40</td>
<td>+105</td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-VER-TRI</td>
<td>Operating Temperature</td>
<td></td>
<td>-35</td>
<td>+85</td>
<td>°C</td>
</tr>
<tr>
<td>NL-SIM-VER-TRI</td>
<td>Storage Temperature</td>
<td></td>
<td>-35</td>
<td>+85</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.

4. Regulatory Information

4.1 Export Control Classification Number (ECCN)

ECCNs are five character alphanumeric designations used on the Commerce Control List (CCL) to identify dual-use items for export control purposes. An ECCN categorizes items based on the nature of the product, i.e. type of commodity, software, or technology and its respective technical parameters.

**NL-SIM-IND, NL-SIM-COM, NL-SIM-VER-TRI ECCN: 5A992.c**
## 5. Version Information

<table>
<thead>
<tr>
<th>Revision</th>
<th>Notes</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Initial Release</td>
<td>2016/07/01</td>
</tr>
<tr>
<td>2</td>
<td>Added ECCN information</td>
<td>2021/02/01</td>
</tr>
<tr>
<td>3</td>
<td>Added NL-SIM-VER-TRI</td>
<td>2021/02/02</td>
</tr>
</tbody>
</table>