

SIM HOLDER DESIGN GUIDES

Application Note

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1 Introduction

1.1 Scope

Aim of this document is to give basic design guide lines to integrate a SIM holder in applications that uses Telit modules.

1.2 Audience

This document is intended for Telit customers, who are integrators, about to add SIM holder functionality on their applications.

1.3 Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit's Technical Support Center (TTSC) at:

TS-EMEA@telit.com
TS-NORTHAMERICA@telit.com
TS-LATINAMERICA@telit.com
TS-APAC@telit.com

Alternatively, use:

<http://www.telit.com/en/products/technical-support-center/contact.php>

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

<http://www.telit.com>

To register for product news and announcements or for product questions contact Telit's Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.



1.4 Document Organization

This document contains the following chapters:

Chapter 1: “Introduction” provides a scope for this document, target audience, contact and support information, and text conventions.

Chapter 2: “Overview”

Chapter 3: “Schematics “

Chapter 4: “List of acronyms”

1.5 Text Conventions



Danger – This information MUST be followed or catastrophic equipment failure or bodily injury may occur.



Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.



1.6 Related Documents

- GM862 Family Hardware User Guide, 1v0300794
- GC864 Hardware User Guide, 1v0300733
- GE863 Family Hardware User Guide, 1v0300783
- GE864 Hardware User Guide, 1v0300694
- GE865 Hardware User Guide, 1v0300799

1.7 Document History

| Revision | Date | Changes |
|----------|------------|---|
| ISSUE#0 | 2006-09-29 | Release First ISSUE# 0 |
| ISSUE#1 | 2007-09-04 | Updated applicability table |
| ISSUE#2 | 2009-05-29 | Applied new layout Updated applicability table |



2 Overview

In all Telit modules there are five pins for SIM card holder connection
These lines are:

| | |
|---------------|------------------------|
| SIMVCC | (SIM Power supply) |
| SIMRST | (SIM Reset) |
| SIMIO | (SIM Data) |
| SIMIN | (SIM Presence/Absence) |
| SIMCLK | (SIM Clock) |

SIM connection must take in account of **four** key issues:

- 1) **Data Integrity:** standard rules for digital layout and routing must be followed taking in consideration that SIMCLK has frequency of 3.57 MHz and SIMIO has 9600Bps baud rate.
- 2) **EMI/EMC:** this is a key aspect to consider designing an application based on TELIT modules with internal antenna and/or without a proper-shielded box. Some of these conditions may occur:
 - Antenna picks-up digital noise coming from SIM card lines.
 - Antenna radiated field may interfere digital lines.
 - Digital lines (in particular clock) may radiate spurious in the surrounding space.

To overcome all these potential problems, connection lines must be kept as short as possible and shielded.

SIM-holder position has to be as far as possible from antenna.

RF bypass capacitors (10pF...33pF) closed to SIM card SIM-holder are another good care.

When connection is not short, insertion of 10..100ohm resistor with 10..33pF capacitor (RC filter) is a good caution to improve EMI from SIMCLK line.

Do not insert resistor on SIMVCC, SIMRST and SIMIO lines, their use is not supported by SIM electrical interface.



3 SCHEMATICS



