



# **Iridium Core 9523**

Software Release Note

IRDM-1023-SRN-006 v3.1

DB19002



## LEGAL DISCLAIMER AND CONDITIONS OF USE

This "Specification" is provided "AS IS." The purpose of providing such information is to enable an Iridium Partner ("Iridium Partner") to understand the Product/Service and how to integrate it into a solution. Reasonable effort has been made to make the information in this document is reliable and consistent with other specifications, test measurements and other information. However, Iridium Communications Inc. and its affiliated companies, directors, officers, employees, agents, trustees or consultants ("Iridium") assume no responsibility for any typographical, technical, content or other inaccuracies in this Specification. Iridium reserves the right in its sole discretion and without notice to you to change Product/Service specifications and materials and/or revise this Specification or withdraw it at any time. Iridium is not obligated to provide updates, maintenance or technical support to the Product Developer. In no event shall Iridium be obligated to make an Iridium Partner's solution commercially available. The Iridium Partner assumes any and all risks of using the Specification and any other information provided in this Specification. If you are dissatisfied with any portion of the Specification, your sole and exclusive remedy is to discontinue use of the Specification.

Your use of this Specification is restricted to the development activity authorized under the Agreement between you and Iridium and is otherwise subject to all applicable terms and conditions of such Agreement(s), including without limitation software license, limited warranty, conditions of use and confidentiality provisions and the Product Sales Terms and Conditions set forth at [www.iridium.com/findresources/legalnotices.aspx](http://www.iridium.com/findresources/legalnotices.aspx). Please review your Agreement and the Iridium Product Sales Terms and Conditions that govern your relationship with Iridium. This Specification is strictly Proprietary and Confidential to Iridium. Consistent with your Partner Agreement with Iridium, you may not disclose the Specification (or any portion thereof) to others without express prior written permission from Iridium. Any violation of your Agreement's Proprietary and Confidentiality obligations shall result in remedies to the fullest extent available to Iridium at law or in equity.

IRIDIUM MAKES NO REPRESENTATIONS, GUARANTEES, CONDITIONS OR WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, IMPLIED REPRESENTATIONS, GUARANTEES, CONDITIONS OR WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, SATISFACTORY QUALITY, NON-INTERFERENCE, OR ACCURACY OF INFORMATIONAL CONTENT, ARISING FROM THE INFORMATION PROVIDED IN THIS SPECIFICATION OR RELATED TO A COURSE OF DEALING, LAW, USAGE, OR TRADE PRACTICE, OR ARISING FROM OR RELATED TO THE PERFORMANCE OR NONPERFORMANCE OF ANY PRODUCTS AND/OR SERVICES, ACCESSORIES, FACILITIES OR SATELLITE SERVICES EXCEPT AS EXPRESSLY STATED IN THE LIMITED WARRANTY. ANY OTHER STANDARDS OF PERFORMANCE, GUARANTEES, CONDITIONS AND WARRANTIES ARE HEREBY EXPRESSLY EXCLUDED AND DISCLAIMED TO THE FULLEST EXTENT PERMITTED BY LAW. THIS DISCLAIMER AND EXCLUSION SHALL APPLY EVEN IF THE EXPRESS LIMITED WARRANTY FAILS OF ITS ESSENTIAL PURPOSE.

IN NO EVENT SHALL IRIDIUM BE LIABLE, REGARDLESS OF LEGAL THEORY, INCLUDING WITHOUT LIMITATION CONTRACT, EXPRESS OR IMPLIED WARRANTY, STRICT LIABILITY, GROSS NEGLIGENCE OR NEGLIGENCE, FOR ANY DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE SPECIFICATION, IF ANY, OR THE AMOUNT SET FORTH IN YOUR PARTNER AGREEMENT. NOR SHALL IRIDIUM BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF PRIVACY, LOSS OF USE, LOSS OF TIME OR INCONVENIENCE, LOSS OF INFORMATION OR DATA, SOFTWARE OR APPLICATIONS OR OTHER FINANCIAL LOSS CAUSED BY USE OF THE SPECIFICATION OR THE PRODUCT (INCLUDING HARDWARE, SOFTWARE AND/OR FIRMWARE) AND/OR THE IRIDIUM SATELLITE SERVICES, OR ARISING OUT OF OR IN CONNECTION WITH THE ABILITY OR INABILITY TO USE THE PRODUCT/SERVICE (INCLUDING HARDWARE, SOFTWARE AND/OR FIRMWARE) AND/OR THE IRIDIUM SATELLITE SERVICES, TO THE FULLEST EXTENT THESE DAMAGES MAY BE DISCLAIMED BY LAW AND WHETHER IRIDIUM WAS ADVISED OF THE POSSIBILITIES OF SUCH DAMAGES. IRIDIUM IS NOT LIABLE FOR ANY CLAIM MADE BY A THIRD PARTY OR MADE BY YOU FOR A THIRD PARTY.



### **Company Contact Information**

Iridium Satellite LLC  
1750 Tysons Boulevard, Suite  
1400 McLean, VA 22102 USA  
[www.iridium.com](http://www.iridium.com)

Toll Free: +1.866.947.4348 [US Only]  
International: +1.480.752.5155  
[info@iridium.com](mailto:info@iridium.com)

### **Export Compliance Information**

This Product/Service is controlled by the export laws and regulations of the United States of America. The U.S. Government may restrict the export or re-export of this Product/Service to certain individuals and/or destinations. Diversion contrary to U.S. law is prohibited. For further information, contact the U.S. Department of Commerce, Bureau of Industry and Security or visit [www.bis.doc.gov](http://www.bis.doc.gov).



## Table of Contents

<b>1</b>	<b>Introduction.....</b>	<b>5</b>
<b>2</b>	<b>Upgrade Tool .....</b>	<b>5</b>
<b>3</b>	<b>Hardware Compatibility.....</b>	<b>5</b>
<b>4</b>	<b>Change List .....</b>	<b>5</b>
4.1	DB19002 .....	5
4.2	DB17011 .....	6
4.3	DB16009 .....	6
4.4	DB16007 .....	7
4.5	DB15005 .....	7
4.6	DB15002 .....	8
4.7	TM12003.....	8
4.8	TM11001.....	8
4.9	HA11002.....	8



## 1 Introduction

This document details the feature changes contained in the software version DB19002 release for the Iridium Core 9523 and Iridium Core 9523N transceivers.

The primary purpose of this release is to leverage some of the enhancements offered by the new Iridium NEXT constellation to provide customers with ever-better connectivity.

## 2 Upgrade Tool

An upgrade tool is provided to load the revision DB19002 software onto an Iridium Core 9523 or Iridium Core 9523N transceiver. The upgrade tool associated with this release has been tested with Microsoft Windows 10.

To use the upgrade tool connect the Data/Fax port on the transceiver to a PC COM port, launch the upgrade tool, and click Upgrade to perform the upgrade. After the upgrade is complete the transceiver will report version DB19002 when queried with the AT+CGMR command.

## 3 Hardware Compatibility

This software release has been tested to be compatible with the following hardware models;

HARDWARE MODELS			
IRIDN0125A	IRIDN0125B	IRIDN0125D	IRIDN0425G03
IRID0125D11	IRID0125D13	IRID0125D14	IRID0125D20
IRID0125G01	IRID0125G03	IRID0125H	

Iridium may produce and distribute hardware models loaded with software version DB19002 that are not indicated on this list at its sole discretion and without notice.

## 4 Change List

### 4.1 DB19002

DESCRIPTION
Leveraged enhancements offered by the Iridium NEXT constellation to improve network connectivity and improve reception of transceiver ring notifications from the core network.

## 4.2 DB17011

DESCRIPTION
The SMS capacity of the SIM card is no longer assumed to be 30 messages. Capacity reported by the SIM to the Iridium Core 9523 is now utilized up to a maximum of 50 messages and is reflected appropriately in the AT interface commands that manipulate SMS messages.
Addressed an issue in both telephony and push-to-talk mode where channel assignments were inadvertently being discarded.
The frame number indicated in the Network Status Indicator message now continues to increase monotonically through a period of loss in network connectivity while in push-to-talk mode.
A fix was applied to prevent the transceiver from becoming inoperable in push-to-talk mode due to errant frequency measurements.
While in push-to-talk mode the transceiver now indicates changes to the state of the antenna position detection pin on the Iridium Core 9523. This is accomplished via a new API message as detailed in the push-to-talk SDK that adds this feature to the push-to-talk Transceiver Interface Library.
The push-to-talk API minor revision has been incremented to bring the interface version to 1.1 due to the change that adds the antenna detection API.
Greatly improved the RSSI calculation and reporting algorithm in push-to-talk mode to provide signal strength more contemporaneously. Changed from a periodic single-sample method to a method that averages all samples taken over 1 second while a push-to-talk call is active and over 2 seconds in most other nominal situations.
Resolved a pair of issues in push-to-talk mode where an infrequent race condition and failure mode in the over-the-air provisioning of the transceiver could result in the talkgroups indicated on the transceiver control interface being out-of-sync with the push-to-talk gateway elements.
Fixed a set of memory leaks in push-to-talk mode that could cause the Iridium Core 9523 to become unstable when operated for long periods of time.
Fixed an edge-case issue in push-to-talk mode that could cause the Iridium Core 9523 to stop indicating the current received signal strength.

## 4.3 DB16009

DESCRIPTION
Adds support for the Iridium Core 9523N hardware platform.

## 4.4 DB16007

DESCRIPTION
Changed the behavior of signal strength reporting when no SIM is connected to the transceiver. Signal quality indication commands AT+CSQ[F] and AT+CIEV:0 now report RSSI without a SIM.
Changed the behavior of SBD ring alert processing when no SIM is connected to the transceiver. SBD ring alerts are now detected and reported to the host application without a SIM.
Extended the implementation of the AT+CIER command to accept requests for Antenna Fault (AT+CIEV:2) and SV Information (AT+CIEV:3). The Antenna Fault request is included to maintain compatibility with the interface specification; there is no hardware support in the Iridium Core 9523 to indicate antenna faults.
Extended the implementation of the AT+CIEV command to report SV information.
Fixed an issue that prevented correct operation when used in conjunction with the Value Added Manufacturer End-of-Line Test Tool on the Iridium Core 9523N product variant.
Modified the behavior of RSSI reporting when using AT+CIER/AT+CIEV:0 to suppress a network connectivity warning which was previously indicated by issuing an AT+CIEV:0 value of 0. This change reduces the frequency of RSSI indications of 0 that may mislead a host application to believe a connection cannot be established.
Corrected an issue where audio muted using the AT+CAR command could be unmuted by DTMF tone processing.
Corrected the formatting of the response to the AT+SBDDSC? command to match the interface document.
Corrected an issue where formatting errors in the argument string passed to the AT+CLCK command could cause the interface to appear to stop processing command input.
Fixed a regression that prevented the upgrade tool from connecting to transceivers configured to communicate with the host using a non-default baud rate.

## 4.5 DB15005

DESCRIPTION
First production release of transceiver firmware with Iridium Push-to-Talk capabilities.

## 4.6 DB15002

DESCRIPTION
Added support for the Value Added Manufacturer End-of-Line Test Tool.
Extended the Intelligent Peripheral protocol with calling line identification functions and call setup failure reporting.
Fixed reading of ICC ID from the SIM over the Intelligent Peripheral protocol.
Added support for simultaneous send and receive of SMS.
Added support for bottom-boot and top-boot flash memory in manufacturing images, boot-loader and upgrade tool.
Calls to the emergency services number “000” are now are permitted when no SIM card is attached to the transceiver.

## 4.7 TM12003

DESCRIPTION
Fixed issue of the ISU getting stuck presenting an active call with no data/voice going through after failed inter-SV hand-off.
Updated vocoder to version 1.2.
Fixed issue of voice/data call blocking after invocation of SBD functionality immediately following first radio signal reception.

## 4.8 TM11001

DESCRIPTION
Added Iridium Core 9523 network identifier to allow the reception of SBD ring alerts.

## 4.9 HA11002

DESCRIPTION
First production release.