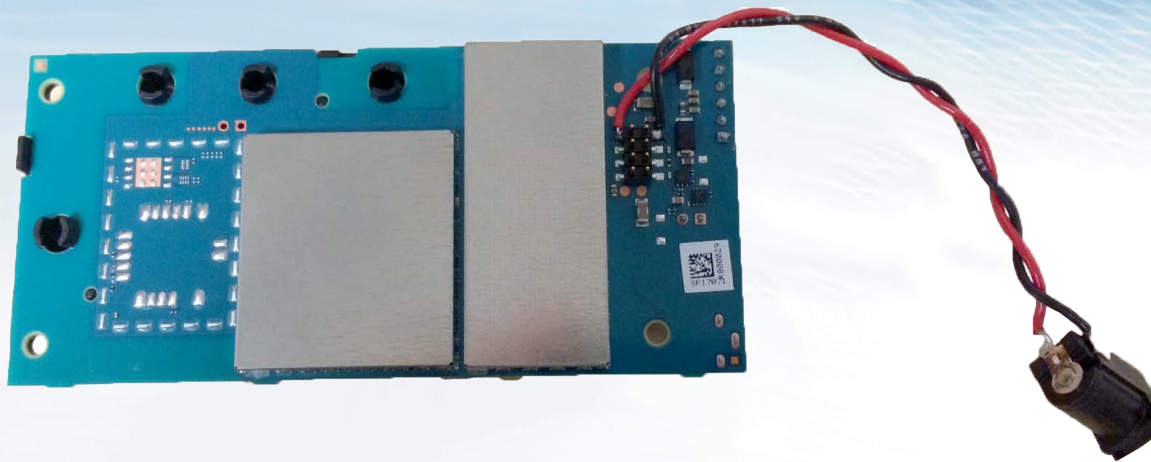


SA1100X-UG001

SA 1100



User Guide

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1

Introduction

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Device Overview

The SA 1100 Communications Board incorporates the Novatel Wireless HS 3002 cellular module for data connectivity and messaging. The SA 1100 Communications Board supports only incoming voice calls and SMS messages. The device does not include a dial pad interface to make outbound calls.

The SA 1100 Communications Board includes a USB port to allow access to the module's AT command interface.

This is an integrated product designed to be used in conjunction with a third party end product. An 8-pin adapter between the SA 1100 Communications Board and the third party end product provides for power and data transfer.

This device is intended for professional installation and not for consumer use.

Versions

The SA 1100 Communications Board is available in the following configurations:

- SA 1100-00-AT
- SA 1100-20-AT
- SA 1100-30-AT

Label



Technical Specifications

Interfaces

Host Interface:	Serial Interface
Data input/output interface:	100 position 0.4 mm pitch connector (Molex P/N 55909-1074)
Primary serial port:	V.24 protocol, 1.8V levels, UART implementation, Hardware flow control
USB port:	USB serial port and USB Debug (USB Debug is Novatel Wireless Use only)
Antenna Interface:	B2B Spring contact
Command protocol:	Novatel Wireless Packet API, AT Command set
Reference clock:	32 kHz output reference clock (accessible via 100-pin connector)
ADC:	2 ADC inputs
Logic:	<ul style="list-style-type: none">• UART1• PCM• Digital Audio• PWON• Power Control

Outputs

Simon XT

Mechanical: Storage And Transportation

Transportation vibration, packaged:	ASTM D999
Drop, packaged:	ASTM D775 method A, 10 drops

Mechanical: Operational

Operational vibration	Random IEC60068-2-64 / MIL-STD-202G Method 214A
	50-2000 Hz, 7.56 GRMS, 3 Axis, 8 Hours per axis

Application Interface

USB:	3.4 to 4.4 Vdc (vbat)
VBUS:	Supply Vripple must be less than 25 mV across all frequencies

Power

Input Voltage Range:	Minimum: +6.0 Vdc Nominal: +12.0 Vdc Maximum: +24.0 Vdc
----------------------	---

Radio Features

Frequency bands:	HSDPA/WCDMA: B1 (2100MHz) and B8 (900 MHz) GPRS/EDGE: 900 and 1800
Air Interfaces:	UMTS/WCDMA – R99 – HSDPA category 5/6 plus equalizer (3.6 Mbps peak rate) GSM/GPRS/EDGE – GSM Release 4 – GPRS/EDGE Multislot Class 12, Release 4 – DTM Multislot Class 11

Audio Features

Phone Jack

Environmental

Compliant Operating Temperature:	-20 °C to 60 °C
Operating Temperature:	-30 °C to 70 °C
Storage Temperature:	-40 °C to 85 °C
Humidity:	Up to 95% non condensing
Emissions:	FCC 47 CFR Parts 2,15,22 & 24

Packet Data Transfer

Protocol	
Short Message Services:	Text, MO/MT

Regulatory

Agency approvals:	FCC Certification
	Industry Canada
	PTCRB
	CE
	GCF

Reference Documents

CNN0401xAT001 - HS 3002 AT Command Reference

CNN0401xTG001 - HS 3002 Transition Guide

ENF0000SD001 - HDK Guide

CNN0401AN001 - Using Digital Audio on the HS 3002

Operating Power

SA 1100 Communications Board Input Power

The SA 1100 Communications Board receives 6-12 VDC power from an external power supply using a ferrite bead dressed coaxial cable.

HS 3002 Chipset Typical Input Current

Typical Results @ 3.7 V, 25 deg C, with 1000 μ F at connector input on V_{BAT} and RF terminated into a 50 Ω resistive load.

Band		Mode	Avg (mA)	Peak (mA)	Notes
B2	HSPA	WCDMA Radio Access Bearer channel of RMC12 Max Power 23 dBm	540		
B5	HSPA	WCDMA Radio Access Bearer channel of RMC12 Max Power 23 dBm	525		
GSM850	GPRS			2000	
GSM850	EGPRS			1200	
GSM1900	GPRS			1300	
GSM1900	EGPRS			900	
*4:1 VSWR					

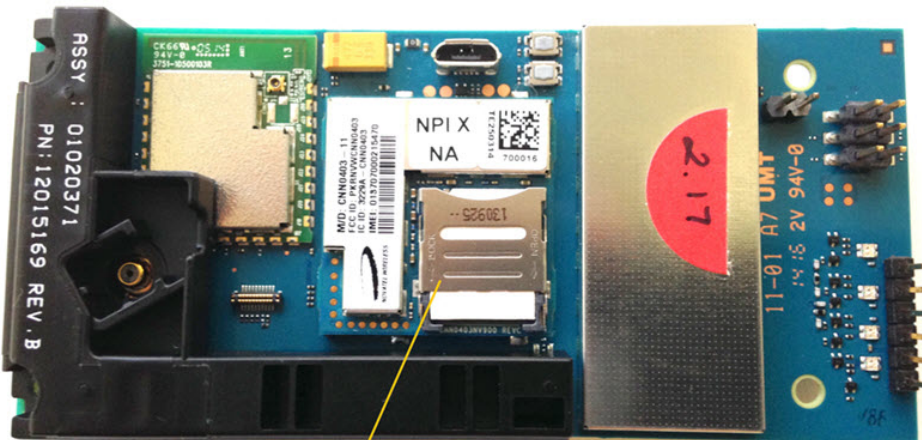
2

Using the Device

Installing the SIM Card
Powering the Device

Installing the SIM Card

In the SA 1100, the SIM card slot is located on the Communications board.



SIM card holder

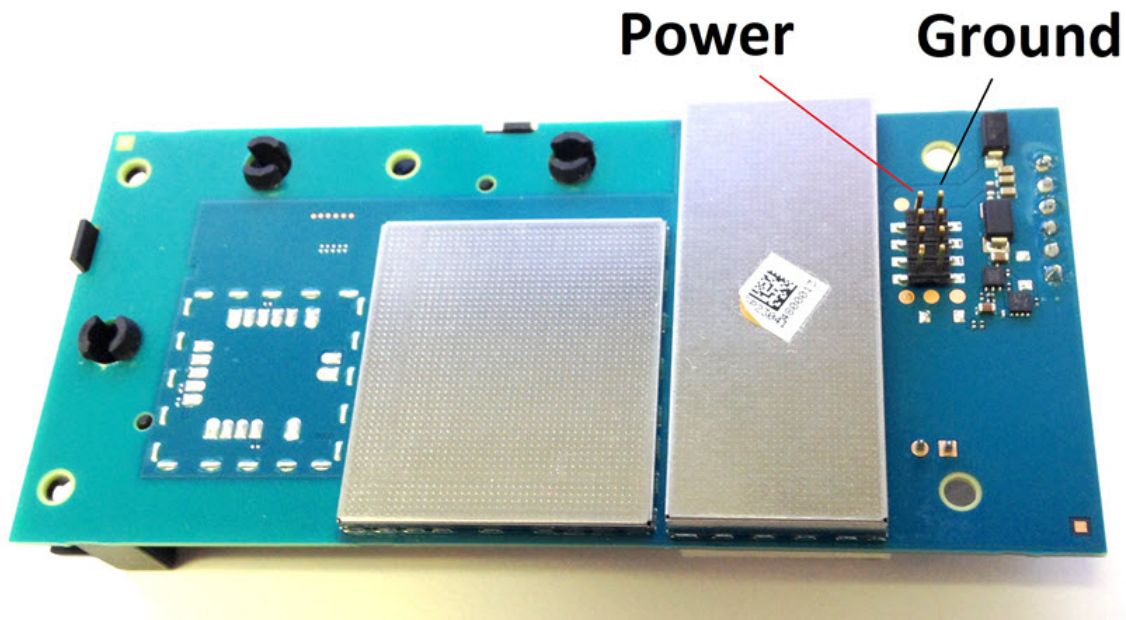
To install the SIM card:

1. Unlock the SIM card holder by sliding the holder in the "open" direction as marked on the SIM card holder.
2. Insert the SIM card into the holder, making sure the gold contact points on the SIM card are facing down (toward the board).
3. Slide the holder in the "lock" direction as marked on the SIM card holder to lock it into position.

Powering the Device

The SA 1100 requires 6-12 VDC power. The 8-pin adapter between the SA 1100 Communication Board and the third party end device provides both power and data.

The SA 1100 power pins are shown in the image below.



To power the SA 1100:

- ▶ Connect the 8-pin connector to the Security Panel Main Board connector.

Simon XT Connector

The Simon XT connector provides for data connectivity between the SA 1100 Communications Board and the third party end product.

USB

USB is provided solely for the communication with the module.

Radio Connectivity

Radio connectivity is provided solely by a Novatel Wireless HS 3002 module, which has all APIs integrated with the module software.

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Compliance and Regulatory

[General Disclaimer](#)
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General Disclaimer

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Version Verification

Please ensure you have the latest version of this document by downloading it from www.novatelwireless.com

Warranty Information

This warranty applies to (a) products sold directly by Novatel Wireless, unless a different warranty is specified in a written agreement between Novatel Wireless and the purchaser; and (b) products sold to end users through a distributor authorized by Novatel Wireless, but only where the authorized distributor does not provide a separate warranty on such products, and Novatel Wireless has agreed to provide this warranty to such end users. If you purchased the product from an authorized distributor, please check whether this warranty from Novatel Wireless, or a separate warranty from the distributor, applies to your purchase. This warranty does not apply to any (i) accessories or batteries for the products; or (ii) demonstration samples or prototypes of the products. Unless otherwise provided in a written agreement between Novatel Wireless and the purchaser, all such accessories, batteries, samples or prototypes are provided by Novatel Wireless AS IS without any warranty of any kind.

Novatel Wireless warrants to the original purchaser of the product from Novatel Wireless or its authorized distributor (as applicable) that, for a period of one (1) year from the date of shipment of the product from Novatel Wireless, the product hardware will be substantially free from defects in material or workmanship under normal operation, and the product firmware will perform substantially in accordance with the product documentation provided by Novatel Wireless. Novatel Wireless does not warrant that (a) the product hardware or firmware will meet the purchaser's requirements; (b) the operation of the product hardware or firmware will be uninterrupted or error-free; or (c) the product, when integrated in, or combined with, other products or software not supplied by Novatel Wireless, will continue to perform substantially in accordance with the product documentation. This limited warranty is for the benefit of the original purchaser, and is not transferable.

During the warranty period, Novatel Wireless, at its expense and in its sole discretion, will repair the product, or replace the product with a corresponding or equivalent product, if it is determined to have a covered defect, provided that the purchaser first notifies Novatel Wireless (directly or through its authorized distributor from which the product was purchased) of any such defect, furnishes Novatel Wireless with a proof of purchase (if required), requests and obtains a return merchandise authorization (RMA) number from Novatel Wireless, and returns the product under that RMA to Novatel Wireless (or, at Novatel Wireless's option, to its authorized distributor), with the shipping charges being prepaid by purchaser. If, upon reasonable examination of the returned product, Novatel Wireless does not substantiate the defect claimed by purchaser, or determines that the defect is not covered under this limited warranty, Novatel Wireless will not be required to repair or replace the product, but may instead reship the product to the purchaser (or, at Novatel Wireless's option, to its authorized distributor where the product can be made available to purchaser), in which case the purchaser shall be responsible for paying Novatel Wireless's cost for reshipping the product to purchaser (or to Novatel Wireless's authorized distributor), and Novatel Wireless's usual charges for unpacking, testing, and repacking the product for reshipment to purchaser (or to Novatel Wireless's authorized distributor). Purchaser shall bear the risk of loss or damage in transit to any product returned by purchaser to Novatel Wireless, or any returned product not found to be defective or covered under this warranty, and reshipped by Novatel Wireless to purchaser (or to Novatel Wireless's authorized distributor). In the event Novatel Wireless repairs or replaces a defective product covered by this limited warranty, the repaired or replacement product will be covered under this limited warranty for the remainder of the original

warranty period on the defective product, or a period of ninety (90) days, whichever is longer. If Novatel Wireless is unable to repair or replace a defective product covered by this limited warranty, Novatel Wireless will provide to purchaser a credit or a refund (at Novatel Wireless's option) of the original purchase price (excluding taxes and shipping charges). Any returned and replaced product, or any product for which Novatel Wireless has furnished a credit or a refund, becomes the property of Novatel Wireless.

Novatel Wireless shall not have any obligation to provide any firmware bug fixes, upgrades or new releases except as may be necessary to correct any covered defect of which purchaser notifies Novatel Wireless in writing during the warranty period. Novatel Wireless, from time to time and in its sole discretion, may make available for download on its website (www.nvtl.com), or may provide via email, certain firmware bug fixes, upgrades or new releases for the product. Download and use of any such bug fixes, upgrades or new releases is subject to all of the applicable terms and conditions of Novatel Wireless's technical support policy as posted and updated on its website. Novatel Wireless shall have no obligation under this limited warranty for (a) normal wear and tear; (b) the cost of procurement of substitute products; or (c) any defect that is (i) discovered by purchaser during the warranty period but for which purchaser does not request an RMA number from Novatel Wireless, as required above, until after the end of the warranty period, (ii) caused by any accident, misuse, abuse, improper installation, handling or testing, or unauthorized repair or modification of the product, (iii) caused by use of any materials not supplied by Novatel Wireless, or by use of the product other than in accordance with its documentation, or (iv) the result of electrostatic discharge, electrical surge, fire, flood or similar causes. The purchaser (or its customers, as applicable) shall be solely responsible for the proper configuration, testing and verification of the Novatel Wireless product prior to deployment in the field, and for ensuring that any end user product or system into which the Novatel Wireless product is integrated or incorporated operates as intended and meets the requirements of purchaser (or its customers). Novatel Wireless shall have no responsibility whatsoever for the integration, configuration, testing, verification, installation, upgrade, support or maintenance of any such end user product or system, or for any liabilities, damages, costs or expenses associated therewith.

NOVATEL WIRELESS'S SOLE RESPONSIBILITY AND PURCHASER'S SOLE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE FOR NOVATEL WIRELESS TO REPAIR OR REPLACE THE PRODUCT (OR IF REPAIR OR REPLACEMENT IS NOT POSSIBLE, PROVIDE A CREDIT OR REFUND OF THE PURCHASE PRICE) AS PROVIDED ABOVE. NOVATEL WIRELESS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, SATISFACTORY PERFORMANCE AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL NOVATEL WIRELESS BE LIABLE FOR ANY INDIRECT, SPECIAL, EXEMPLARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOSS OR INTERRUPTION OF USE, DATA, REVENUES OR PROFITS) RESULTING FROM A BREACH OF THIS WARRANTY OR BASED ON ANY OTHER LEGAL THEORY, EVEN IF NOVATEL WIRELESS HAS BEEN ADVISED OF THE POSSIBILITY OR LIKELIHOOD OF SUCH DAMAGES.

Some jurisdictions may require a longer warranty period than specified above and, accordingly, for products sold in those jurisdictions the applicable warranty period shall be extended as required under the laws of those jurisdictions. Furthermore, some jurisdictions may not allow the disclaimer of implied warranties or the exclusion or limitation of incidental or consequential damages, so the above disclaimer, limitation or exclusion may not apply to products sold in those jurisdictions. This limited

warranty gives the purchaser specific legal rights and the purchaser may have other legal rights that vary from jurisdiction to jurisdiction. This limited warranty shall be governed by the laws of the State of Texas, United States of America, without regard to conflict of laws principles. This limited warranty shall not be governed in any respect by the United Nations Convention on Contracts for the International Sale of Goods.

Regulatory Compliance

Regulatory Compliance

This section summarizes the responsibilities and actions required of manufacturers and integrators who incorporate OEM versions of the Novatel Wireless HS 3002 module into their products. In certain situations and applications, these products will require additional FCC, CE, GCF, PTCRB or other regulatory approvals prior to sale or operation. Appropriate instructions, documentation and labels are required for all products. For more information concerning regulatory requirements, please contact Novatel Wireless.

PTCRB APPROVAL (FORMERLY FTA)

The Novatel Wireless HS 3002 module is type approved in accordance with the requirements of and through the procedures set forth by the GSM industry association. The relevant conformance specification is 3GPP TS 51010-1. Any OEM changes in the SIM interface, antenna port, software or the physical makeup of the unit may require an incremental FTA to ensure continued compliance with the above-mentioned standard. For more information concerning type approval, please contact Novatel Wireless.

FCC CERTIFICATION

Novatel Wireless certifies that the HS 3002 Radio Module (FCC ID: PKRNVWSA1100) complies with the RF requirements applicable to broadband PCS equipment operating under the authority of 47 CFR Part 24, Subpart E and Part 22 Subpart H of the FCC Rules and Regulations. This certification is contingent upon installation, operation and use of the HS 3002 module and its host product in accordance with all instructions provided to both the OEM and end user. When installed and operated in a manner consistent with the instructions provided, the HS 3002 module meets the maximum permissible exposure (MPE) limits for general population / uncontrolled exposure at defined in Section 1.1310 of the FCC Rules and Regulations.

The HS 3002 modem is designed for use in a variety of host units, "enabling" the host platform to perform wireless data communications. However, there are certain criteria relative to integrating the modem into a host platform such as a PC, laptop, hand held, monitor and control unit, etc. that must be considered to ensure continued compliance with FCC compliance requirements.

Important Information for Canada/USA OEM Integrators

This section provides guidance for using the SA 1100 in host devices through the FCC Permissive Change process. When utilizing the permissive change process, Novatel Wireless, the grantee, is responsible for all integrations and must be consulted on all regulatory matters involving the SA 1100.

The SA 1100 is granted with FCC/IC as a certified transmitter for mobile¹ and fixed use applications, and may be installed as a standalone² transmitter in final products meeting the following conditions. If the following conditions are followed, it may be used in final products without additional FCC/IC certification. Otherwise, additional FCC/IC approvals must be obtained.

- The SA 1100 transmitter antennas must be installed to provide at least 20cm separation from the human body at all times.
- The SA 1100 transmitter antennas must not be co-located with any other transmitter or antenna within a host device, except in accordance with FCC/IC multi-transmitter RF Exposure procedures.
- The transmitter antennas used with the SA 1100 must not exceed the following levels:
 - GSM850/WCDMA Band 5: the maximum gain is 6.9dBi.
 - GSM1900/WCDMA Band 2: the maximum gain is 2.0dBi.
 - Z-Wave 900MHz: the maximum gain is 0.0dBi.
- Only antennas of the same type and with equal or less gains as shown below may be used with this WLAN device. Other types of antennas and/or higher gain antennas may require additional testing and/or authorization for operation.
 - WLAN 2.4GHz: the maximum gain is 3.62dBi.
 - PIFA Antenna Type for 802.11 b/g/n.
- To comply with the aspects of KDB 996369, strict adherence to the design parameters in the Section Antenna and RF Signal Trace must be observed. This Section provides PCB RF trace design guidelines for the coplanar micro strip between the transmitters RF compression pads and the SMA coaxial connector.

¹Mobile Device Definition – FCC defines as a transmitting antenna located at a distance ≥ 20 cm from the user.

²Standalone is defined as a single transmitter transmitting as opposed to 2 or more transmitters transmitting simultaneously.

- A label containing the SA 1100 FCC ID and Industry Canada certification number must be permanently affixed to the exterior of the host device into which the SA 1100 transmitter is installed. The label may also be in a user accessible location such as under a panel or battery pack if it is a handheld device, readily accessible, not placed on a removable part and the FCC ID and Industry Canada certification number are visible at the time of purchase. The label must contain a statement similar to the following:
 - This device contains FCC ID: PKRNWSA1100.
 - This device contains IC: 3229A-SA1100.

If the SA 1100 certified transmitter is intended for use in a portable use device, the OEM integrator is responsible to design the product to comply with RF exposure requirements, and must work with Novatel Wireless (the grantee) to satisfy FCC/IC SAR requirements. Refer to Industry Canada RSS-102 and FCC KDB publication 447498 D01 and the applicable SAR/RF Exposure KDB publications available at: <https://apps.fcc.gov/oetcf/kdb/reports/GuidedPublicationList.cfm>.¹

The system user manuals and other documentation must clearly indicate operating conditions that must be observed to ensure compliance with FCC/IC RF exposure guidelines and also include appropriate caution and warning statements and information.

The host device containing the SA 1100 certified transmitter may also require compliance to FCC Part 15 Subpart B – Unintentional Radiator rule part as well as Industry Canada ICES-003.

Cette section fournit des conseils pour l'utilisation de la SA 1100 dans des dispositifs d'accueil à travers le changement à autorisation FCC processus . Lors de l'utilisation du processus de changement permissive , Novatel Wireless , le bénéficiaire est responsable de tous les intégrations et doivent être consultés sur toutes les questions réglementaires touchant la SA 1100 .

Le SA 1100 est accordée aux normes FCC / IC comme un émetteur certifié pour mobile² et utilisez les applications fixes , et peut être installé comme un émetteur de standalone³ dans les produits finaux répondant aux conditions suivantes . Si les conditions suivantes sont respectées, il peut être utilisé dans les produits finaux sans certification FCC / IC supplémentaire . Sinon , les approbations FCC / IC supplémentaires doivent être obtenues .

- Les SA 1100 antennes d'émission doivent être installés pour fournir au moins 20 cm la séparation du corps humain à tout moment.
- Les SA 1100 antennes émettrices ne doivent pas être co- localisés avec un autre émetteur ou antenne dans un dispositif d'accueil , sauf en conformité avec la FCC / IC procédures d'exposition RF multi- émetteurs .

¹ Portable Device Definition – FCC defines as a transmitting antenna located at a distance ≤ 20 cm from the user.

²Définition de dispositif mobile – la FCC définit comme une antenne d'émission située à une distance ≥ 20 cm de l'utilisateur.

³Autonome est défini comme un seul émetteur transmettant au lieu de deux ou plusieurs émetteurs émettant simultanément.

- Les antennes d'émission utilisés avec la SA 1100 ne doivent pas dépasser les niveaux suivants :
 - GSM850 / WCDMA Bande 5 : le gain maximum est 6.9dBi.
 - GSM1900 / WCDMA Band 2 : le gain maximum est 2.0dBi.
 - Z-Wave 900MHz: le gain maximum est 0.0dBi.
- Seuls les antennes du même type et avec des gains égaux ou moins , comme indiqué ci-dessous peuvent être utilisés avec cet appareil WLAN . Autres types d'antennes et / ou des antennes à gain plus élevés peuvent nécessiter des tests et / ou autorisation supplémentaire pour operation.
 - WLAN 2,4 GHz : le gain maximum est 3.62dBi.
 - Type d'antenne PIFA pour 802.11b / g / n.
- Pour se conformer aux aspects de la KDB 996 369 , le strict respect des paramètres de conception de la section de l'antenne et du signal RF Trace doit être respectée. Cette section fournit des lignes directrices de conception de traces de PCB RF pour la bande coplanaire micro entre les plaquettes de compression émetteurs RF et le connecteur coaxial SMA .
- Une étiquette contenant la FCC ID et Industrie Canada nombre SA 1100 certification doit être apposée de façon permanente à l'extérieur de l'appareil hôte dans laquelle le SA 1100 émetteur est installé . L'étiquette peut également être dans un endroit accessible à l'utilisateur comme sous un paquet de panneau ou de la batterie si elle est un appareil portable , facilement accessible , pas placé sur une partie amovible et le numéro de certification de la FCC ID et Industrie Canada sont visibles au moment de l'achat . L'étiquette doit contenir une déclaration semblable à la suivante :
 - Cet appareil contient FCC ID : PKRNVWSA1100.
 - Cet appareil contient des IC : 3229A - SA1100.

Si l'émetteur certifiée SA 1100 est destiné à être utilisé dans un dispositif à usage portable , l'intégrateur OEM est responsable de la conception du produit à se conformer aux exigences d'exposition RF et doit travailler avec Novatel Wireless (le bénéficiaire) pour satisfaire aux exigences de la FCC / IC SAR . Reportez-vous à Industrie Canada RSS -102 et FCC KDB publication 447498 D01 et la SAR applicable / publications KDB d'exposition RF disponibles à :<https://apps.fcc.gov/oetcf/kdb/reports/GuidedPublicationList.cfm> . ¹

Les manuels d'utilisation du système et d'autres documents doivent indiquer clairement les conditions de fonctionnement qui doivent être respectées pour assurer la conformité avec les lignes directrices d'exposition de la FCC / IC RF et comprennent également des déclarations et informations avertissements et consignes appropriées .

¹Définition de dispositif portable – la FCC définit comme une antenne d'émission située à une distance ≤ 20cm de l'utilisateur.

Le dispositif hôte contenant l'émetteur certifiée SA 1100 peut également exiger le respect de la FCC Partie 15 Sous-partie B - Source de rayonnement involontaire partie de la règle ainsi que Industrie Canada ICES-003.

Industry Canada

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil est conforme aux normes d'Industrie Canada exempts de license(s) RSS. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas provoquer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant provoquer un fonctionnement indésirable de l'appareil.

Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

FCC NOTICE TO USERS

Novatel Wireless has not approved any changes or modifications to this device by the user. Any changes or modifications could void the users authority to operate the device. See 47 CFR Sec. 15.21. The device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. See 47 CFR Sec. 15.19.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

If the FCCID of the module is not visible when installed in the host platform, then a permanently attached or marked label must be displayed on the host unit referring to the module.

The label should contain wording such as:

Contains FCC ID: Mxxxxxxx

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

REGULATORY REQUIREMENTS FOR OTHER COUNTRIES

In most other countries there are similar rules and regulations that may need to be met for importing the HS 3002 module and for placing it on the market in the integrated device. Each country may require a different mark of approval as an acceptance requirement. For each of these cases the country should be identified, and the appropriate steps should be taken to meet the requirements set forth in the intended market.

ROHS COMPLIANCE

As a part of Novatel Wireless's corporate policy of environmental protection, Novatel Wireless takes every step to ensure that the HS 3002 modules are designed and manufactured to comply to the European Union Directive 2002/95/EC for the Restriction of Hazardous Substances (RoHS).