

# Vocera C-Series Minibadge Operations Guide

Version 1.0.0



# Notice

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Vocera Communications, Inc.

[www.vocera.com](http://www.vocera.com)

tel :: +1 408 882 5100

fax :: +1 408 882 5101

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# Introduction

This section introduces you to the operational details covered in this document, the Minibadge overview, product applicability, and the documentation related to the Minibadge.

## Minibadge Overview

The design of your Minibadge is simple. You can communicate quickly by calling or chatting. The information in this section will help you familiarize yourself with the main features of your Minibadge.

Minibadge is a small, lightweight, wearable communication device designed to simplify hospital communication and workflow and improve staff safety. You can "wake up" and operate the Minibadge using your voice to stay connected even under restrictive PPE. The Minibadge can be used as a smartphone companion or by itself.

You also have the following features:

- Making and receiving calls
- Listening and responding to messages and alarm notifications.
- Using visual indicators that enable fast triaging of events.
- Using a dedicated panic button provides a direct connection to security personnel.

## About This Document

This document describes the operational information required to use your Minibadge, the features, system specifications, and regulatory notices.

## Product Applicability

This section provides information about the applicable products, the supported firmware release, and the supported Vocera Software.

Supported Badge	Vocera Firmware	Supported Vocera Software
Minibadge	Firmware Release 1.0.0 or later	Vocera Voice Server 5.6.0 or later

## Related Documentation

Documents supporting the Vocera C1000 Minibadge Operations Guide is listed in this topic.

The following documents support the Vocera C1000 Minibadge Operations Guide:

- *Vocera Infrastructure Planning Guide*—Specifies the recommended configuration of infrastructure to support Vocera.
- *Vocera Voice Commands Reference Guide*—Specifies the details of the voice commands that you can use on your Vocera device and smartphones to communicate.
- *Vocera Device Configuration Guide*—Specifies how to configure Minibadge by using the Badge Properties Editor (BPE) and the Badge Configuration Utility (BCU). It also provides details of the updates to the badge properties and firmware.
- *Vocera Minibadge User Guide*—Specifies how to use your Minibadge. It starts with the basics, such as placing and receiving calls.
- *Vocera Device Safety and Regulatory Guide*—Specifies the safety details for electrical, magnetic, radio, wireless, chemical, chargers, along with your power supply safety.

## Using the Vocera 8-bay Charger

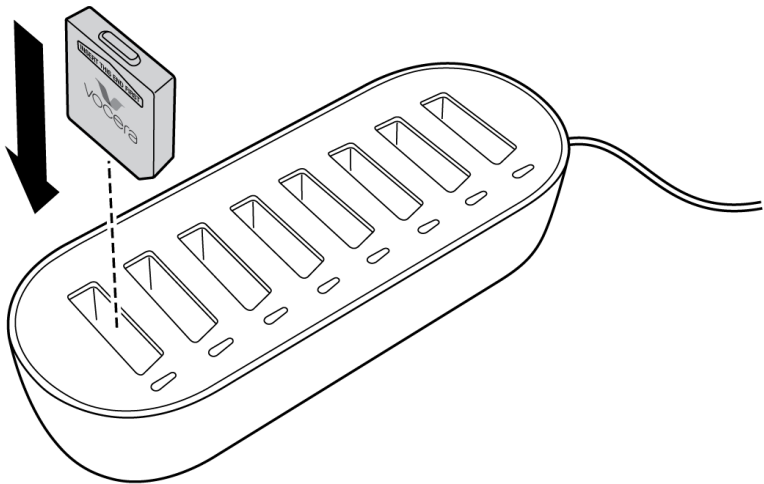
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To charge the battery using a Vocera 8-bay charger, perform the following steps:

1. Slide back the battery latch with one finger and simultaneously use another finger to lift and remove the battery.



2. Insert the battery into the charger, and press the battery down.



3. Wait until you see the amber indicator light turn on.  
Your Minibadge starts charging.

**Minibadge 8-Bay Charger LED Indicator**

The Minibadge 8-Bay charger has an LED indicator that represents the different charging status.

LED Color	Indication
Amber	Charging
Green	Charged
Red	Charging error



## Powering On the Minibadge

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1. Insert a charged battery into your Minibadge.  
The Minibadge boots up.
2. After the Minibadge boots up, the Genie prompts you to login.



**Note:** When you are not in the network, the Minibadge enunciates "Could not connect to network."



## Powering Off the Minibadge

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You can power off a Minibadge by removing the battery. Press and hold the **Hold/DND** button for 10 seconds to put the Minibadge to a low power state.





## Log In and Log Out

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Use the log in and log out commands to access and exit from the Minibadge. You can also use the log in commands to log in to the site you are visiting.

Press the **Call** button on your Minibadge and then say the following commands to log in and log out of the Minibadge when prompted.

Action	Recommended Commands
Log in	Say your first and last name.
Find out who is logged in to your device	Who am I?
Log in at a site you are visiting	Connect to <i>&lt;Home Site Name&gt;</i> . For example: Connect to <i>Santa Cruz</i> . Wait for the next log-in prompt, then say or spell your name. For example: <i>Bridget Duffy</i> .
Log out	Log me out.



## Waking up the Minibadge

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You can wake your Minibadge using the phrase “OK Vocera” and say the command you wish to use.



**Note:** This feature is available only if your administrator enables it.

You can also wake up the Minibadge by pressing the [Call](#) button.

## System Specifications

This document describes the Minibadge specifications, network specifications, electrical specifications, environmental specifications, storage specifications, and drop specification for your Minibadge.

### Minibadge Specifications

Specifications	Details
Dimensions	62 mm x 52 mm x 17 mm
Weight	62 g, with battery and accessories
Display	No display
LED Indicators	LED state indicators for calls, DND, alerts, and messages
Controls	Call button
	Hold/Do Not Disturb (DND) button
	Volume control
	Emergency call button
Wired Headset Support	USB-C charging and headset port
Salient Features	Microphone array Hands-free speaker Bluetooth-enabled Removable battery 8-Bay charging station Ruggedized for the healthcare environment

### Network Specifications

Specifications	Details
Network Standard	IEEE 802.11a, 802.11b, 802.11g, 802.11n, and 802.11ac
	IEEE 802.11w, 802.11k, 802.11d, 802.11h, and 802.11r
Frequency Band	2400–2483.5 MHz, 5180–5835 MHz
Data Rates Supported	1, 2, 5.5, 11, 6, 9, 12, 18, 24, 36, 48, 54 Mbps, MCS0-MCS9
Wireless Medium	Direct Sequence Spread Spectrum (DSSS)
	Orthogonal Frequency Division Multiplexing (OFDM)
	Single Input Single Output (SISO)
	HT40 and VHT80 support, at 5 GHz only
Media Access Protocol	Carrier sense multiple access with collision avoidance (CSMA/CA)
Modulation 2.4 GHz	DBPSK, DQPSK, CCK, BPSK, QPSK, 16-QAM, 64-QAM
Modulation 5GHz (HT20)	MCS0-MCS7
Modulation 5GHz (HT40)	MCS0-MCS8
Modulation 5GHz (VHT80)	MCS0-MCS9
Operating Channels (2.4GHz)	11 channels (FCC)

Specifications	Details
Operating Channels (5 GHz)	13 channels (ETSI)
	25 channels HT20 (FCC)
	12 channels HT40 (FCC)
	6 channels VHT80 (FCC)
Roaming	56 channels ETSI (Varies by country)
	IEEE 802.11a compliant
	IEEE 802.11b compliant
	IEEE 802.11g compliant
	IEEE 802.11k compliant
	IEEE 802.11n compliant
Authentication	IEEE 802.11r compliant
	Open
	PSK
	PEAP
	EAP-FAST
	EAP-TLS
Encryption	LEAP
	AES-CCMP

## Battery Specification

Specifications	Details
Battery Type	Lithium-ion Polymer
Battery Life	3 hours talk time, active (U-APSD enabled); 41 hours of standby time.



**Note:** Results for RF output power (2.4 GHz and 5 GHz) and RF Receive Sensitivity (2.4 GHz and 5 GHz) is based on a controlled test environment. For information on network design guidelines, refer to Vocera Infrastructure Planning Guide.

## Electrical Specifications

Specifications	Details
RF Output Power (2.4 GHz)	+17.25 dBm maximum at 802.11b
	+15.5 dBm maximum at 802.11g
	+15.75 dBm maximum at 802.11n
RF Output Power (5 GHz)	+17.25 dBm maximum at 802.11a
	+16.25 dBm maximum at 802.11n/ac, 20MHz BW
	+15.5 dBm maximum at 802.11n/ac, 40MHz BW
	+14.25 dBm maximum at 802.11ac, 80MHz BW
RF Receive Sensitivity (2.4 GHz)	-85 dBm at 11 Mbps
	-75 dBm at 54 Mbps
	-73 dBm at HT20 MCS7
RF Receive Sensitivity (5 GHz)	-75 dBm at 6 Mbps
	-73 dBm at 54 Mbps
	-70 dBm at HT20 MCS7
	-63 dBm at HT40 MCS9
Microphone Frequency Range	350 Hz to 3.75 KHz

Specifications	Details
Microphone Directionality	Tripple MEMS Microphone array
Speaker Frequency Range	500 Hz to 3.75 KHz
Peak Speaker Loudness	87 dBSPL at 10 cm



**Note:** Results for RF output power (2.4 GHz and 5 GHz) and RF Receive Sensitivity (2.4 GHz and 5 GHz) is based on a controlled test environment. For information on network design guidelines, refer to *Vocera Infrastructure Planning Guide*.

## Environmental Specifications

Specifications	Details
Temperature Range	-3° to 104° F (0° to 40° C)
Humidity Range	5% to 95% relative humidity, non-condensing
Ingress Protection	IP54

## Storage Specifications

Specifications	Details
Temperature Range	-86° to 140° F (-30° to 60°C)
Humidity Range	5% to 95% relative humidity, non-condensing

## Drop Specifications

Specification	Details
Drop	1.2 meters onto linoleum

## Regulatory Notices

This section provides details regarding the regulatory compliance of Minibadge.

### Minibadge Regulatory Notices

This section describes the regulatory notices for different regions.

#### Regulatory Conformance Marks



#### FCC Compliance for United States Users

This device 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. If not installed and used in accordance with the instructions, it may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and 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.



**Caution:** Changes or modifications not expressly approved by Vocera could void the FCC compliance and negate your authority to operate the product.

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

#### French Translation

Conformité aux normes FCC Cet équipement a été testé et trouvé conforme aux limites pour un dispositif numérique de classe B, conformément à la Partie 15 des règlements de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre des fréquences radio et, s'il n'est pas installé et utilisé conformément aux instructions du fabricant, peut causer des interférences nuisibles aux communications radio. Rien ne garantit cependant que l'interférence ne se produira pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou de télévision, qui peut être déterminé en comparant et en l'éteignant, l'utilisateur est encouragé à essayer de corriger l'interférence par une ou plusieurs des mesures suivantes:

1. Réorienter ou déplacer l'antenne de réception

2. Augmenter la distance entre l'équipement et le récepteur
3. Branchez l'appareil dans une prise sur un circuit différent de celui auquel le récepteur est connecté
4. Consultez votre revendeur ou un technicien radio / TV pour assistance

**Précaution :** Les changements ou modifications à cet appareil sans expressément approuvée par la partie responsable de conformité pourraient annuler l'autorité de l'utilisateur de faire fonctionner cet équipement.

Son fonctionnement est soumis aux deux conditions suivantes:

1. Ce dispositif ne peut causer des interférences, et
2. Ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.

## European Union Declaration of Conformity (DoC)

*Standards:* 

- EN 300 328
- EN 301 893
- EN 301 440
- EN 301 489
- EN 61000
- EN 55032
- EN 55035

*Responsible Party:*

Responsible Party contact information is available at [www.vocera.com/legal/regulatory.aspx](http://www.vocera.com/legal/regulatory.aspx).

*CE Mark Restrictions:*

- United Kingdom: System provider for third-party traffic may require a Wireless Telegraphy and/or Telecommunications Act License.
- France: French regulations require that you do not use this device outdoors.

## English

Hereby, Vocera, Inc. declares that all CE Marked Vocera products incorporating Radio and Telecoms Terminal Equipment functionality are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

## Français

Par la présente, Vocera, Inc. déclare que tous les produits Vocera incorporant la fonctionnalité d'Équipement terminal Radio et télécommunications et marqués du symbole CE sont conformes aux exigences essentielles et autres dispositions pertinentes de la Directive 1999/5/EC.

## Notice to Canada Users

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

Cet équipement est conforme à l'exposition aux rayonnements IC RSS-102 des limites définies pour un environnement non contrôlé.

This device complies with the RSS-247 requirement for 5 GHz radios. This device operates in the 5150–5250 MHz band and is only for indoor use to reduce potential harmful interference to co-channel mobile satellite systems.

**Notice:** The Industry Canada regulations provide that changes or modifications not expressly approved by Vocera, Inc. could void your authority to operate this equipment.

**Avis:** Dans le cadre des réglementations d'Industry Canada, vos droits d'utilisation de cet équipement peuvent être annulés si des changements ou modifications non expressément approuvés par Dell Inc. y sont apportés.

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## Canada Safety Code 6 Guidelines for Exposure to Radio Waves

THIS DEVICE MEETS HEALTH CANADA SAFETY CODE 6 GUIDELINES FOR EXPOSURE TO RADIO WAVES.

CET APPAREIL EST CONFORME AUX DIRECTIVES DU CODE 6 DE SÉCURITÉ DE LA SANTÉ CANADA POUR L'EXPOSITION AUX ONDES RADIO.

Your Minibadge device is a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) recommended by international guidelines. The guidelines were developed by Health Canada and include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

Votre appareil Minibadge est un émetteur-récepteur radio. Il est conçu pour ne pas dépasser les limites d'exposition aux ondes radio (champs électromagnétiques de fréquence radio) recommandées par les directives internationales. Les lignes directrices ont été élaborées par Santé Canada et comprennent une marge de sécurité importante destinée à assurer la sécurité de toutes les personnes, indépendamment de l'âge et de la santé.

The radio wave exposure guidelines use a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit for radio devices is 1.6W/kg.

Les lignes directrices pour l'exposition aux ondes radio utilisent une unité de mesure appelée Débit d'Absorption Spécifique, ou DAS. La limite DAS pour les appareils radio est 1,6W/kg.

Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands.

Les tests de DAS sont effectués en utilisant des positions standards de fonctionnement quand l'appareil fonctionne à son niveau de puissance maximum certifié dans toutes les bandes de fréquences testées.

During use, the actual SAR value for this device may be well below the value stated above. In general, the lower the power output by the device, the lower its SAR value.

En cours d'utilisation, la valeur de DAS réel de ce dispositif peut être bien inférieur à la valeur indiquée cidessus. En général, plus la puissance de sortie par le dispositif, plus sa valeur DAS.

The World Health Organization has stated that present scientific information does not indicate the need for any special precautions for the use of mobile devices. They recommend that if you are interested in further reducing your exposure then you can easily do so by limiting your usage or simply using a handsfree kit to keep the device away from the head and body.

L'Organisation mondiale de la Santé (OMS) a déclaré que l'information scientifique actuelle n'indique pas la nécessité de prendre des précautions particulières pour l'utilisation de dispositifs radio. Ils recommandent que si vous êtes intéressé à réduire encore davantage votre exposition, vous pouvez facilement le faire en limitant votre consommation ou tout simplement en utilisant un kit mains-libres pour maintenir le dispositif éloigné de la tête et du corps.

## IC RSS-Gen, Sec. 8.4

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



## Notice to Australia and New Zealand Users

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to the Australian/New Zealand standard AS/NZS CISPR22: 2009 (Class B) set out by the Australian Communications and Media Authority and Radio Spectrum Management Agency.

New Zealand telecommunication statement (for products fitted with Telepermit approved modems):

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment shall not be set up to make automatic calls to the Telecom '111' Emergency Service.



**Important:** Under power failure conditions, this telephone may not operate. Make sure that a separate telephone, not dependent on local power, is available for emergency use.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's specifications:

1. There shall be no more than 10 calls to the same number within any 30-minute period for any single manual call initiation, and
2. The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

The equipment shall be set to make sure that automatic calls to different numbers are spaced such that there is no less than 5 seconds between the end of one call attempt and the beginning of another.

The equipment shall be set to make sure that calls are answered between 3 and 30 seconds of receipt of ringing.

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## Electrical Standards and FCC Regulations

This section describes the electrical and FCC regulations for Minibadge. It also describes the compliance information for Minibadge 8-bay Battery Charger.

### General

Our products emit radio frequency energy in the 2.4 and 5.0 GHz spectrum bands for which licensing by the U.S. and other regulatory authorities is not required, provided that the products conform to certain requirements. For example maximum power output and tolerance of interference from other devices sharing that spectrum band. We subject our products to testing by independent testing laboratories for compliance with the relevant standards issued by various U.S. and international bodies, including the EU (concerning CE), the International Electrotechnical Commission, the Australian Communications and Media Authority, Underwriters Laboratories, and CSA International.

### US and California Regions

The Minibadge 8-bay Battery Charger complies with the performance parameters of Section 1605.3(w) paragraphs 2 and 4 for Battery Backup and Uninterruptible Power Supplies per the CEC-400-2017-002 standard Section 1605.3(w) Table W-2 Standards for Small Battery Charger Systems.

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## National Safety Statement of Compliance – CE Marking

This section describes the national safety statement of compliance for Minibadge.

### EN 60950 Statement:

This is to certify that the Minibadge chassis and components installed within the chassis comply with the requirements of EN 60950 by the Low Voltage Directive. Additional national differences for all European Union countries have been evaluated for compliance. Some components installed within the Minibadge chassis may use a nickel-metal hydride (NiMH) and lithium-ion battery. The NiMH and lithium-ion batteries are long-life batteries, and it is possible that you will never need to replace them. However, if you need to replace them, refer to the individual component manual for directions on replacement and disposal of the battery.

## Wireless Safety—SAR

This section describes information related to the safety of Wi-Fi technology used in Minibadge.

*THIS MINIBADGE MEETS THE FCC REQUIREMENTS FOR EXPOSURE TO RADIO FREQUENCY ENERGY (SAR).*

Various organizations and countries have developed standards for exposure to radio frequency energy. These standards recommend safe levels of exposure for both the general public and for workers. In the United States, the Federal Communications Commission (FCC) has issued safety guidelines for RF environmental exposure since 1985. In Canada, Industry Canada (IC) likewise establishes these safety guidelines for RF environmental exposure.

The FCC guidelines for human exposure to RF electromagnetic fields are derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). In both cases, the recommendations were developed by scientific and engineering experts drawn from industry, government, and academia after extensive reviews of the scientific literature related to the biological effects of RF energy.

The Vocera Communications Devices meet the FCC and IC requirements for human exposure to radio frequency energy. For further information on RF Emissions Safety, refer to the following sites:

- [www.fcc.gov](http://www.fcc.gov)
- [www.fda.gov](http://www.fda.gov)
- <http://www.fda.gov/cellphones/qa.html#3a>

Your wireless Minibadge is a radio transmitter and receiver. It uses low-power Wi-Fi wireless technology in the 2.4 GHz and 5 GHz spectrum and is subject to wireless safety and operating standards established by the US Federal Communications Commission (FCC), Industry Canada (IC), and the European Commission (EC.) It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy.

All Vocera Minibadge designs have been tested by independent laboratories and are certified to meet all relevant standards and guidelines established by these regulatory bodies. These standards provide specific guidelines and limits for the amount of wireless radio frequency (RF) energy that can be absorbed safely by the human body and include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. The quantity used to measure the amount of RF energy absorbed by the body is called the SAR (Specific Absorption Rate.)

The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions, as applicable to this device, specified by the FCC. The standard incorporates a substantial margin of safety to give additional protection to the public and to account for any variations in measurement. Before a Minibadge is available for sale to the public, sample units must be tested by a certified regulatory lab to verify that they do not exceed the limit established by the government-adopted requirement for safe exposure.

The Minibadge in normal operating conditions has a SAR rating of 0.847 W/Kg when worn on the body.

In all cases, SAR ratings are well below the limits of 1.6 W/Kg defined by the FCC for use in the US, and the ICRSS for use in Canada, and the 2.0 W/Kg limit for use in the EU and Australia.

Vocera is committed to maintaining the safety of our users and regularly tests and certifies all its products to meet required regulatory and safety guidelines.

## USE ONLY APPROVED ACCESSORIES

RF exposure (SAR) tests have been performed on the Minibadge when it is being worn correctly and used with the approved accessories. The SAR test results show that the Minibadge complies with all FCC exposure requirements. When a properly-oriented Minibadge is operated with the appropriate accessories recommended by Vocera, the level of RF exposure is well below the FCC limit of 1.6W/Kg.

Therefore, to ensure compliance with FCC RF exposure guidelines when wearing the Minibadge, the user should only use Vocera approved accessories. For example, lanyard or universal clip. Accessories that have not been tested for RF exposure compliance with this product may not comply with the FCC RF exposure safety guidelines and should not be used.

To ensure RF exposure compliance of the Minibadge when using the lanyard, position and maintain the call button, the speaker, and the antenna facing away from the body. The Minibadge and lanyard attachment has been designed specifically to maintain proper orientation during normal usage. Additionally, the lanyard clip can be secured to clothing to provide additional stability. Wearing the Minibadge with the antenna facing the body may result in non-compliance with FCC RF exposure guidelines and must be avoided.

Use only the internal antenna, which is part of this product. Any use of unauthorized antennas, any modifications to the supplied antenna, or any use of unauthorized attachments could damage the Minibadge, violate FCC regulations, and void the authority of the user to operate the product.

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## Minibadge Safety

This section describes information related to the safety of the Minibadge device.

- Conforms To UL STDS 60950-1 & 62368-1
- Certified To CSA STD C22.2 # 60950-1 & 62368-1



## Download PDF Documentation

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For your convenience, the Vocera C-Series Minibadge Operations Guide is also available as a PDF that you can download.

[\*Vocera C-Series Minibadge Operations Guide\*](#)