



Cattle Rider User Manual



Overview

The Vence Cattle Rider (CR) is a livestock collar used for tracking and managing cattle. The CR is a battery powered device utilizing the following sensors to gather animal data: accelerometer, magnetometer, gyroscope, temperature sensor, GPS module. Sensor measurements are gathered and reported to the Vence Herd Manager (HM) management system via a LoraWan embedded radio. The Vence HM provides the user a means to create containment areas utilizing a Web Application and communicates those areas to the Cattle Rider. The Cattle Rider provides sound and electrical stimulus to manage animals to the virtual containment areas.

Installation Guidelines:

Cattle Rider collar is adjustable for neck circumference via metal slides on either side of the counter weight.

Care should be taken to ensure collar will be centered on the animals neck. With proper adjustment, the counter weight will sit slightly offset from the bottom of neck.

See following figures for example adjustment and fitment:



Figure 1: Collar Adjustment Off Animal



Figure 2: Proper Fitting Collar Right Side View



Figure 3: Proper Fitting Collar Left Side View

Cattle Rider Specifications:

Mechanical/Environmental	
Operating Temperature	-40C to 85C (up to 100% RH)
Rugged Enclosure	4.4" W x 7.4" L x H
Electrical Power	
Replaceable Tadiran TL-4930 D Cell (Note: 2)	2.5V to 3.6V
Accelerometer/Magnetometer/Gyroscope	
Accelerometer Scale	$\pm 2/\pm 4/\pm 8/\pm 16$ g linear acceleration full scale
Magnetometer Scale	$\pm 4/\pm 8/\pm 12/\pm 16$ gauss magnetic full scale
Gyroscope Scale	$\pm 245/\pm 500/\pm 2000$ dps angular rate full scale
GPS	
Internal Patch Antenna	
Constellation Support	GPS / GLONASS / BeiDou / Galileo
Cold Start/Hot Start/Reacquisition/Tracking and Nav	-148dBm/-157dBm/-160dBm/-167dBm
Radio Frequency	
LoraWan w/Internal Chip Antenna	
Restricted to AUS and US Frequency Bands (Note: 1)	902Mhz to 928Mhz
LoraWan Transmit Power	Up to 22dBm

Note 1: Vence operates its own LoraWan Systems and restricts operation to SF9 (US:DR1/AUS:DR3) for all traffic except Join which happens on SF10-US/SF12-AUS (US: DR0/AUS: DR0)

Note 2: The Tadiran TL-4930 battery is not shipped directly with Cattle Rider Collars. Batteries (including replacements) can be ordered direct from Vence. Please contact support@vence.io for further details.

Federal Communication Commission Interference Statement

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

IMPORTANT NOTE:

Radiation Exposure Statement:

The product comply with the US portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada statement:

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.*

Radiation Exposure Statement:

The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Déclaration d'exposition aux radiations:

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé. Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.