HHMS Ex
USER MANUAL

U136.0.0 NOV 2026



CERVIS INC.

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FCC Statements

15.19 – Two-Part Warning

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference and
- This device must accept any interference received, including interference that may cause undesired operation.

15.21 – Unauthorized Modification

NOTICE: The manufacturer is not responsible for any unauthorized modifications to this equipment made by the user. Such modifications could void the user's authority to operate the equipment.

15.105(b) – Note:

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.

Industry Canada Statement

This device complies with Industry Canada RSS-210.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website https://www.canada.ca/en/health- canada/services/environmental-workplace-health/reports-publications/radiation/safety-code-6-health-canada-radiofrequency-exposure-guidelines- environmental-workplace-health-health-canada.html.

Le présent appareil est conforme à la norme CNR-210 d'Industrie Canada.

Le programme d'installation de cet équipement radio doit s'assurer que l'antenne est située ou fait telle qu'elle n'émet pas de champ RF dépassant les limites de Santé Canada pour la population générale ; consulter le Code de sécurité 6, disponible auprès de Santé Canada site Web https://www. canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/radiation/safety-code-6-health-canada- radiofrequency- exposure-guidelines-environmental-workplace-health-health-canada.html.

Industry Canada Statement

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.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Industry Canada Unlicensed Devices EIRP Statements for Removable Antennas

Part 1: 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 (EIRP) 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.

Part 2: This radio transmitter (LOBSRF-310) has been approved by Industry Canada to operate with the antenna type listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (LOBSRF-310) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Cervis, Inc. Safety Precautions

- **Read and follow all instructions.**
- Failure to abide by Safety Precautions may cause equipment failure, loss of authority to operate the equipment, and personal injury.
- Use and maintain proper wiring. Follow equipment manufacturer instructions. Improper, loose, and frayed wiring can cause system failure, equipment damage, and intermittent operation.
- Changes or modifications made to equipment not expressly approved by the manufacturer will void the warranty.
- Equipment owner/operators must abide by all applicable Federal, State, and Local laws concerning equipment installation and operation. Failure to comply could result in penalties and could void user authority to operate the equipment.
- Make sure that the machinery and surrounding area is clear before operating. Do not activate the remote control system until certain that it is safe to do so.
- Turn off the transmitter and disconnect power from the receiver before attempting any maintenance. This will prevent accidental operation of the controlled machinery.
- Use a damp cloth to keep units clean. Remove mud, concrete, dirt, etc. after use to prevent obstructing or clogging the buttons, levers, wiring, and switches.
- Do not allow liquid to enter the transmitter or receiver enclosures. Do not use high-pressure equipment to clean the transmitter or receiver.
- Disconnect the receiver before welding on the machine. Failure to disconnect the receiver may cause destruction of or damage to the receiver.
- Operate and store units only within the specified operation and storage temperatures defined in this document's specifications.
- Keep high-energy radio frequency (RF) devices away from transmitters. For instance, activating high-power communication radios close to transmitters might cause interference and "false" circuit activation.
- Do not key two-way radios while using the transmitter.

RoHS Compliance Statement

Cervis, Inc. complies with the requirements of Restriction of Hazardous Substances (RoHS/ WEEE) Specification based on in-house practice and declaration of compliance from our vendors. For additional information concerning RoHS compliance, please contact Cervis, Inc. at:

Structured Mining Systems d.b.a. Cervis Inc.
170 Thorn Hill Road • Warrendale, PA 15086
Phone: 724.741.9000 • Fax: 724.741.9001



This product may contain material that may be hazardous to human health and the environment. In compliance with EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE):



- Do not dispose of the product as unsorted municipal waste.
- This product should be recycled in accordance with local regulations. Contact local authorities for detailed information.
- This product may be returnable to the distributor for recycling. Contact your distributor for details.

HHMS-Ex Conditions of Use

The conditions of use that are applied to the equipment are as follows:

1. While in hazardous areas, the HHMS Ex model handheld transmitter **MUST** be used with the removable protective boot in place as depicted on the cover page of this manual.
2. The HHMS Ex model handheld transmitter's battery pack **MUST** only be replaced in a non-hazardous atmosphere.
3. The HHMS Ex model handheld transmitter **MUST** only be used with Battery Pack **BA-Ex** supplied by Structured Mining Systems, (D.B.A. Cervis, Inc.).
4. The cells in the battery pack **MUST** only be replaced with certified versions **(Baseefa14ATEX0107U**) of the **Energizer L92 Lithium Iron-Disulfied** AAA-size cells. **NO OTHER CELL TYPES ARE PERMITTED**.
5. Only fresh cells to be used in multi-cell configurations.
6. This battery is manufactured in a charged state. **It is not designed for recharging**. Recharging can cause battery leakage or, in some cases, high pressure rupture. **Inadvertent charging can occur if a battery is installed backwards in a multi-cell configuration**
7. Ordinary locations evaluation was not conducted. The certificate holder is responsible for maintaining an ordinary locations certification in good standing by an NRTL.

1.0 HHMS Ex Introduction

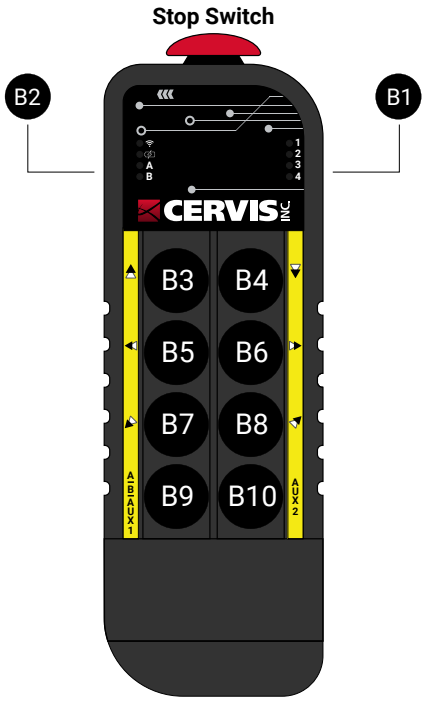
The HHMS-Ex transmitter is a compact transmitter that interfaces with all Cervis receivers. The HHMS-Ex has eight multi-step actuators on its front. These eight actuators are performance-rated at 2.3 lbf (10.23 N) for more than two million operations and available in three different configurations:

- 2-Step: a single-detent switch which provides a tactile sense between steps 1 and 2.
- 3-Step: a two-detent switch indicating three distinct steps.
- Any-Step: a seven-detent switch which can be used for analog output and applications with greater than three steps.

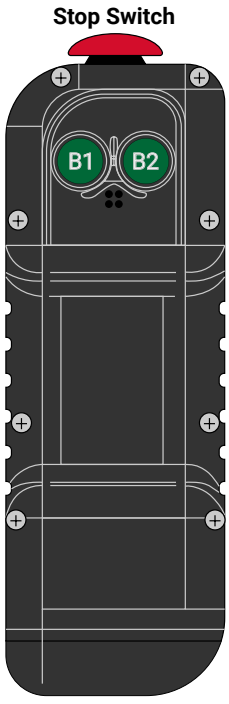
The transmitter's Gore-Tex® vented enclosure is made of a high-impact polymer. The unit has four diagnostic LEDs that indicate radio frequency (RF) communication, battery status, A selection, and B selection.

Channel Hopping Direct Sequence Spread Spectrum (CH DSSS) wireless technology allows HHMS-Ex transmitters to create a robust link with Cervis receivers in congested radio environments. The Cervis system features seamless association between transmitters and receivers without having to physically access the receiver unless the receiver is specifically "locked out" by the user (see Section **Associate a Transmitter with a Receiver** for more details).

A label (far right) identifies this assembly's certifications for use in hazardous locations and must be permanently attached to the back of the unit. This label shows the various hazardous classifications the HHMS Ex has been approved for use in. It is the user's responsibility to verify this product is right for use in their hazardous location.



FRONT



BACK

NOTE
Refer to the receiver manual being used or specific project documentation for relay operation details.

CAUTION
This manual only references information for most standard systems. Refer to project drawings for system-specific information and configurations.

NOTE
Certification label shown below.



CAUTION
Ex pictured to the right is shown without the protective boot. The boot MUST be in place during operation or when present in hazardous locations.

WARNING! TO AVOID INJURY - DO NOT:

- Lift people.
- Lift loads over people.
- Operate the machine when personnel are in close proximity.
- Lift or move load if hook travel is not same direction as shown on control.
- Remove or obscure any of the product labels.
- Leave power on when the machine is not in use.
- Operate equipment if you have not been properly trained.
- **Change Cells in a Hazardous Area** *(Ne remplacez pas les piles en zone dangereuse).*
- **Use in a Hazardous area without the protective boot in place** *(N'utilisez pas l'appareil en zone dangereuse si la gaine de protection n'est pas correctement mise en place).*

ALWAYS

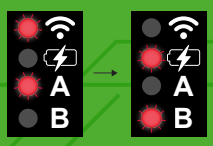
- **ONLY use a BA-Ex Battery pack manufactured by Structured Mining Systems (D.B.A. Cervis, Inc.)***(Utilisez uniquement un bloc-batterie BA-Ex fabriqué par Structured Mining Systems).*
- **ONLY use Energizer L92 Ultimate Lithium AAA batteries that are intrinsically safe**
- Read manufacturer's instructions furnished with the machine and relevant standards.

NOTE

If the STOP switch is already pushed down, all of the LEDs will flash briefly one time when a battery is inserted, and the unit will power down. The transmitter is then ready for the normal startup procedure (see Section 3.0 System Startup).

NOTE

If the STOP switch is already pulled up, the LED sequence indicated below will flash when a battery is inserted (you must cycle the STOP switch to reset).



2.0 HHMS-Ex Battery Installation

A non-rechargeable lithium battery pack powers HHMS-Ex transmitters. When installed, the battery supplies power to the transmitter for 50 continuous operating hours. When installing the battery, be sure that the metallic battery contacts properly align with those inside the unit.



To install the battery pack in the transmitter body:

1. Pinch the clamps on each side of the battery in.
2. Slide the battery pack into the transmitter body until you hear a click.

3.0 System Startup & Shutdown

3.1 System Startup

Action 1

Pull the STOP Switch up.

OBSERVE

LED B lights solid for 1.5 seconds indicating the time period to enter Maintenance Mode (see Section 5.0).

The RF LED will begin to blink rapidly when a link with the receiver is formed (if already associated).

ACTION 2

Press B2 to energize the receiver by pulling in the MLC relays.

Observe receiver to see activation of MLC relay and Horn/Light relay while B2 is pressed.

3.2 System Shutdown

ACTION 1

Push the STOP switch down OR Allow the transmitter to timeout. (10 minute standard default).

OBSERVE

Observe transmitter shutdown.

Note that the receiver will retain power but all receiver relay outputs will return to their inactive state.

ACTION 2

Auto shutdown due to depleted battery

OBSERVE

Observe Battery LED briefly on solid.

Observe transmitter shutdown.

Note that the receiver will retain power but all receiver relay outputs will return to their inactive state.

NOTE

If the RF signal LED is on solid when the STOP switch is pulled up, the handheld may not be associated to a receiver or the receiver it is associated to may not have power.

NOTE

If the transmitter does not have an associated receiver in its memory, it will automatically shut down shortly after startup. See Sections 6.0 – 6.1 for details on how to associate a transmitter to a receiver.

NOTE

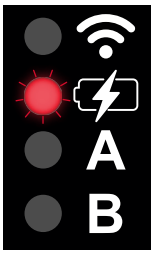
There will be warnings issued prior to Auto-Shutdown. Please see Section 3.3 for more information.

3.3 HHMS-Ex Battery Warning and Shutdown

The HHMS-Ex will alert you if the remaining battery life is getting low or is too low for normal operation.

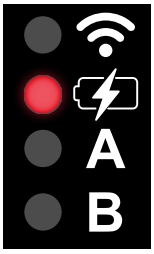
Low Battery Warning

The BATTERY LED flashes once per second, indicating a LOW BATTERY situation is present. The low battery warning is issued when there is approximately 1 hour of battery life remaining.



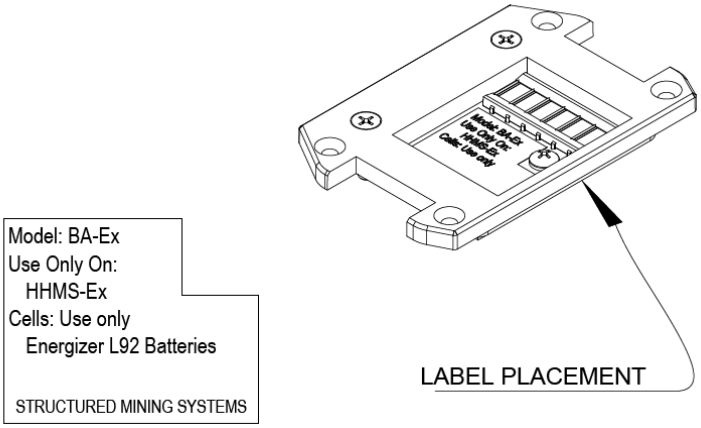
It is recommended to change the battery when the low battery warning is issued. The LED continues to flash either until the battery pack is changed or until the voltage level drops to 6.1V, when Auto-Shutdown occurs.

Auto-Shutdown



At ~2.5V, the BATTERY LED lights solid for approximately 1.25 seconds before the transmitter automatically shuts down. Change the battery pack before using the transmitter again.

> **NOTE**
> When the transmitter battery is low and the transmitter is linked to a receiver, the Horn/ Light output on the receiver will cycle on and off 4 times every minute.



Notes for replacing batteries on HHMS-Ex

1. Battery assembly/cells **MUST NEVER** be replaced in explosive environments. **Only replace batteries when safe to do so.**
2. Remove/partially remove the boot from the HHMS enclosure to expose the battery assembly.



3. To exchange battery assemblies, press the tabs inward and pull on the battery assembly. The battery assembly should slide out of the enclosure without resistance. If the cells are to be changed, follow the steps in the section “Replacing the cells.”

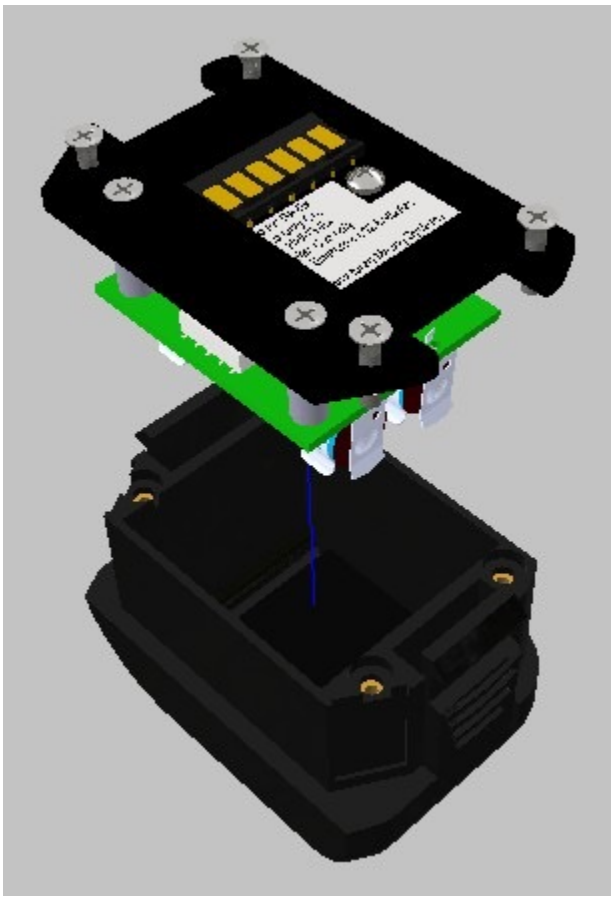
4. Take the assembly with the new cells and slide it into the enclosure until you hear a snap. The battery should now be in place. Tug on the battery without pressing the tabs to make sure it is engaged fully.
5. Replace the boot. The boot must be used to be compliant with intrinsic safety certifications for use in hazardous locations.

Replacing the cells

1. To replace the cells in the battery enclosure, follow the instructions to remove the battery enclosure from the HHMS enclosure.
2. Once removed, loosen the (4) outermost screws. There are (3) screws, (1) recessed, (2) flush with the lid, that form a triangle that should not be unscrewed. These screws hold the PCBs in place. The (4) outermost screws are captive and will not fall away from the enclosure.



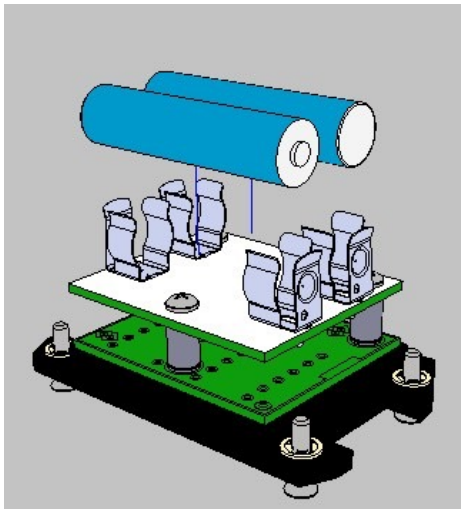
3. Once the outer (4) screws are loose, pull the lid away from the enclosure, exposing the cells.



4. The cells can now be removed from the holders and replaced with new cells. **NOTE: use only Energizer L92 battery cells (Certification # SGS US 800045 and Baseefa 14ATEX0107U).** Ensure that the cells are placed with proper polarity as indicated on the holder PCB.

800045

II 1G
Ex ia IIC Ga
Baseefa 14ATEX0107U



5. Replace the lid onto the enclosure. Screw the (4) screws back into place. Once the screws are snug, the battery enclosure can then be stored or placed back into the HHMS enclosure by following steps 2-5 of section “Replace battery assembly.”

4.0 HHMS-Ex LEDs

The HHMS-Ex has eight red light-emitting diodes (LEDs) that indicate transmitter status and are also used for troubleshooting. The table below describes each LED.

LED	INDICATION	EXPLANATION
 RADIO FREQUENCY (RF) COMMUNICATION	On Solid	Searching for Receiver or Button Pressed
	Flashing	Transmitting and Receiving Signals
 BATTERY	Unlit	Battery Strength Normal
	Flashing	Low Battery
	On Solid	Auto Shutdown
 A SELECTION	Unlit	A Not Active
	On Solid	A Active
 B SELECTION	Unlit	B Not Active
	On Solid	B Active

5.0 Maintenance Mode

Entering Maintenance Mode provides access to the following system features:

- Association (Sections 5.2 — 5.4)
- Clear Receiver IDs (Section 5.5)
- Change the transmitter's inactivity time-out (Section 5.6)

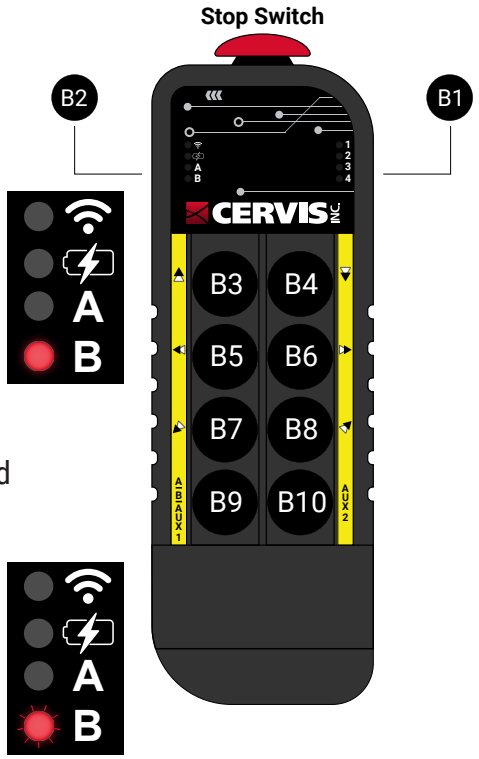
5.1 Enter Maintenance Mode

ACTION 1

- Follow start up procedure from Section 3.0.

OBSERVE

- LED B light solid.
- Note that LED B will only remain active for 1.5 seconds, indicating the time period available to enter Maintenance Mode.
- (Repeat start up procedure if necessary)



ACTION 2

- Immediately press and release buttons B9 and B10 (LED B must be active).

OBSERVE

- The LEDs begin to scroll from bottom to top, indicating that the transmitter is in Maintenance Mode.

NOTE

Press button B5 or STOP switch to exit Maintenance Mode at any point.

NOTE

Find specific receiver details in the following receiver manuals:

- U104.x.x MU-X15 Receiver Manual
- U107.x.x MU-6E Receiver Manual
- U108.x.x MU-X9 Receiver Manual

CAUTION

Ex pictured to the right is shown without the protective boot. The boot MUST be in place during operation or when present in hazardous locations.

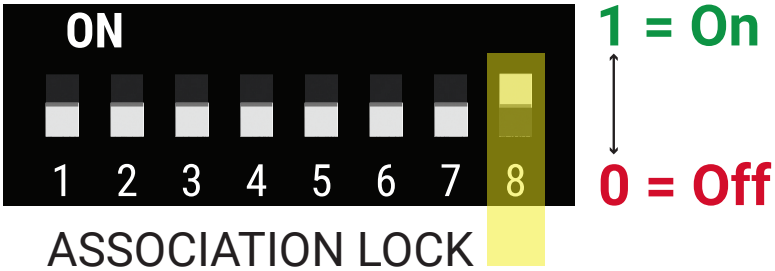
5.2 Associating a Transmitter with a Receiver

A receiver will only communicate with the transmitters it is associated with.

Cervis HHMS systems use First-Come-First-Served (FCFS) protocol. FCFS protocol is a process by which the first associated transmitter to link with a receiver is the ONLY transmitter that can control the receiver until the receiver is deactivated.

Association is required:

- When a transmitter is purchased new to be a spare or replacement for an existing transmitter.
- When a previously-associated transmitter is associated to a different receiver to replace a damaged or lost transmitter, or to troubleshoot that system, its association to the original receiver is lost. If it is to be returned to service with the original receiver, the transmitter must be re-associated to it.
- When a repaired transmitter is returned to service. Repaired transmitters are tested after the repair with a known-good receiver, thus overwriting its original association.
- When a transmitter is reverted to Factory Reset condition (see Section 5.4), it must be associated to a receiver when put back in service.



NOTE

Before attempting association, make sure that receiver DIP Switch #8 (see diagram left) in the target receiver is set to the ON (1) position to unlock the receiver. DIP Switch #8 is defaulted to ON (1) at the factory, but may be set to the OFF (0) position to lock the receiver for security or safety reasons. If the association procedure does not cause the receiver to respond, the receiver may be locked out.

5.3 Association Procedure

Follow these steps to associate a transmitter with the receiver:

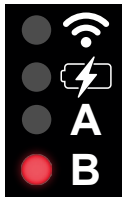
ACTION 1

Follow start up procedure from Section 3.0.

OBSERVE

LED B light solid.

Note that LED B will only remain active for 1.5 seconds, indicating the time period available to enter Maintenance Mode.(Repeat start up procedure if necessary)



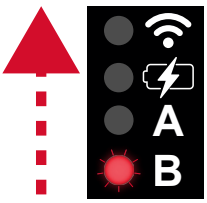
ACTION 2

Immediately press and release buttons B9 and B10.

NOTE: **LED B must be active** when buttons 9 and 10 are pressed.

OBSERVE

The LEDs begin to scroll from bottom to top, indicating that the transmitter is in Maintenance Mode.



ACTION 3

Press and hold buttons B3 and B4 together for five seconds.

OBSERVE

LED A begins blinking.

ACTION 4

Release buttons B3 and B4.

The transmitter now searches for nearby unlocked Cervis receivers to associate with. A list of available receivers is generated and temporarily stored in the transmitter's memory.

OBSERVE

After two seconds, the RF and A LEDs will light indicating that the transmitter has found an available receiver. Observe the strobe light or the pulsing horn sound indicating which receiver the transmitter has found. (MU-6E model receivers will flash a green LED or pulse the horn).

ACTION 5

If the strobe LED is not lit or the horn is not sounding on the receiver, press button B9 to find the next available receiver. Repeat this process until the desired receiver is found.

OBSERVE

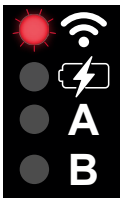
Observe receiver strobe light (or green LED for MU-6E) flashing, or listen for pulsing horn to sound to identify target receiver.

ACTION 6

When the desired receiver does respond, press button B10 to select and confirm the target receiver.

OBSERVE

Observe rapid blinking of the RF signal LED to confirm RF link with the target receiver.



ACTION 7

Press B2 to energize the receiver by pulling in the MLC relays.

WARNING: ALL FUNCTIONS—INCLUDING STOP— MUST BE TESTED AFTER ASSOCIATION

OBSERVE

Observe receiver to see activation of MLC relay and Horn/Light relay while B2 is pressed.

5.4 Clearing HHMS-Ex Stored Receiver ID (Factory Reset)

NOTE

Factory Reset will not reset the inactivity timeout. See Section 6.3 to adjust the inactivity timeout if you desire a different setting.

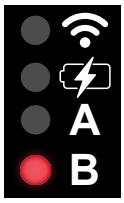
HHMS-Ex transmitter stores its associated receiver ID in its internal memory. During instances of severe interference—or perhaps when troubleshooting—it may become necessary to break the established communications link between the transmitter and the system receiver. This is called “clearing the stored ID” or “Factory Reset.”

ACTION 1

Follow start up procedure from Section 3.0.

OBSERVE

LED B light solid. Note that LED B will only remain active for 1.5 seconds, indicating the time period available to enter Maintenance Mode. Repeat start up procedure if necessary.

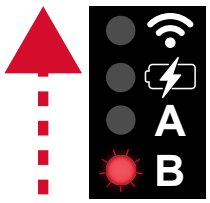


ACTION 2

Enter maintenance Mode (see Section 5.0).

OBSERVE

LEDs should be scrolling bottom to top.

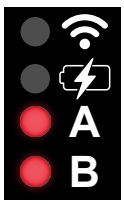


ACTION 3

Press and hold buttons B3 and B4, and then press and hold button B2.

OBSERVE

Observe LED A and LED B on solid, indicating that the reset is complete.

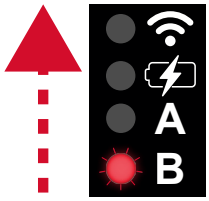


ACTION 4

Release all buttons. The transmitter clears its memory of all linked receivers and returns to Maintenance Mode.

OBSERVE

LEDs should be scrolling bottom to top.



ACTION 5

Push the STOP switch down.

OBSERVE

Observe transmitter shutdown.

Note that the receiver will retain power but all receiver relay outputs will return to their inactive state (de-energized).

5.5 HHMS-Ex Inactivity Timeout Configuration

The HHMS-Ex is shipped from the factory with a 10-minute inactivity timeout period. If no buttons are pressed within this time period the transmitter will shut itself down to conserve battery life. The timeout period can be reconfigured by the user to a period of 4 minutes, 10 minutes (default), 20 minutes, or infinite (no timeout). The following procedure can be performed to change the timeout period.

CAUTION

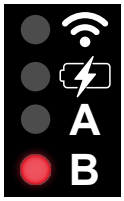
Time out feature should only be changed by trained individuals.

ACTION 1

Follow start up procedure from Section 3.0.

OBSERVE

LED B light solid. Note that LED B will only remain active for 1.5 seconds, indicating the time period available to enter Maintenance Mode. Repeat start up procedure if necessary.

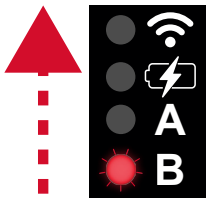


ACTION 2

Enter maintenance Mode (see Section 5.0).

OBSERVE

LEDs should be scrolling bottom to top.

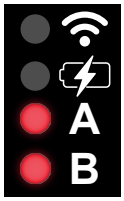


ACTION 3

Press and hold button B6, then release once LEDs A & B light solid.

OBSERVE

Observe LED A and LED B on solid.

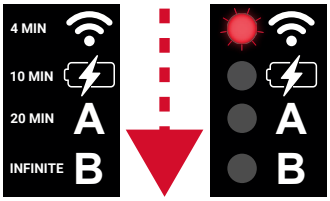


ACTION 4

Press button B9 to cycle through the LEDs.

OBSERVE

The LED indicates the current timeout period. LEDs should scroll top to bottom during selection process.

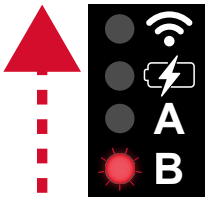


ACTION 5

Press button B10 to confirm selection. The device will return to Maintenance Mode.

OBSERVE

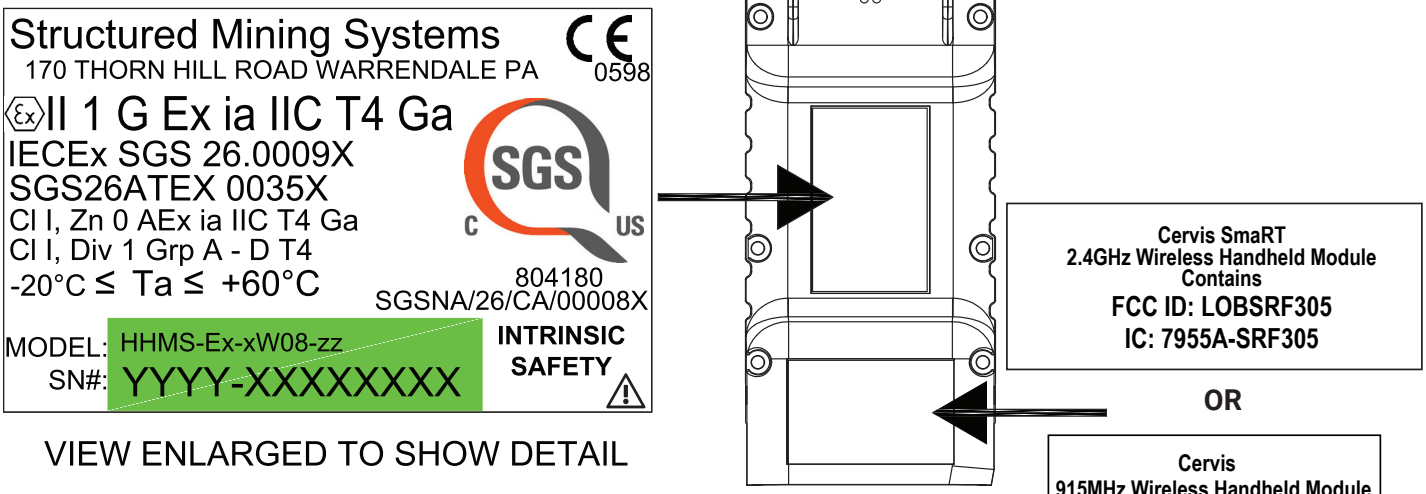
LEDs indicate transmitter has returned to Maintenance Mode.



6.0 HHMS-Ex Accessories

Accessory	CERVIS Part Number
Battery Pack	20200531
Energizer L92 Ultimate Lithium AAA batteries cells	
HHMS Top Label (standard)	24205407
HHMS Rail Labels (standard)	15205422
Carrying Strap	2101004
Boot	15205135
Strap Kit (Includes carrying strap and boot)	15205398

Appendix: Agency Identification Label Locations



VIEW ENLARGED TO SHOW DETAIL

NOTE:
Model Number Format:
HHMS-Ex-xW08-zz
-The "x" wildcard designates the radio, either 2H (specifies 2.4 GHz) or 9X (specifies 900MHz)
-The "zz" suffix designates Customer Specific Configuration options that do not affect certification
Serial Number Format: -YYYY- Manufacturing Year -XXXXXXXX = Unspecified Alphanumeric Sequence

HHMS-Ex Data Sheet



HHMS-Ex Transmitter

POWER

- **Batteries:** Lithium battery pack auto shutdown
  - 10 min. of button inactivity (user adjustable) or low battery auto shutdown

RADIO

- **Frequency:** 906–924 MHz or 2405–2480 MHz
- **RF Power:** 900 MHz @ 100 mW; 2.4 GHz @ 100 mW
- **License:** License-Free
- **Modulation:** DSSS
- **Antenna:** Internal

ENVIRONMENT

- **Operating Temperature:** -20°C to 60°C (-4°F to 140°F)
- **Storage Temperature:** -30°C to 70°C (-22°F to 158°F)
- **Humidity:** 0 to 95% non-condensing

CONTROLS

- **Stepped Pushbuttons:** Eight 2-Step, 3-Step, or Any-Step

LED INDICATORS

- Transmit
- Battery Status
- A Selection
- B Selection
- 1 Auxiliary 1
- 2 Auxiliary 2
- 3 Auxiliary 3
- 4 Auxiliary 4

ENCLOSURE

- **Dimensions:**
  - mm: 76.2 x 220.98 x 42.67
  - Inches: 3.0 x 8.7 x 1.68
- **Total Weight:** 650g/1.43lb. (with lanyard)
- **Durability:**
  - High Impact Polymer Case
  - Anti-static, Impact-Absorbing Rubber Bumper
  - Shoulder strap (optional)

STANDARDS

- ATEX/IECEx is Ex ia IIC T4 Ga (-20 °C ≤ Ta ≤ +60 °C)
- UL/CSA 913 Class I, Division 1 Groups A, B, C and D T4; UL/CSA 60079-0
- UL/CSA 60079-11 Class I, Zone 0 AEx.ia IIC T4 Ga (US) and Ex ia IIC T4 Ga (Canada)