



Mini Console Box Remote

MCB User Manual

U092.3.0

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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:

- (1) This device may not cause harmful interference and
- (2) 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 Canadian 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.

L'installateur de cet équipement radio doit s'assurer que l'antenne est située ou orientée de façon à ne pas émettre un champ RF dépassant les limites de Santé Canada pour la population générale; consulter le Code de sécurité 6, disponible sur le site Web de Santé Canada <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. Le fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris les interférences susceptibles de causer un fonctionnement non désiré de l'appareil.

IC 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 (e.i.r.p.) is not more than that necessary for successful communication.

Partie 1 : 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-305 or LOBSRF-309) 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.

Partie 2 : Cet émetteur radio (LOBSRF-305 ou LOBSRF-309) a été approuvé par Industrie Canada pour fonctionner avec le type d'antenne indiqué ci-dessous avec le gain maximal admissible et l'impédance d'antenne requise pour chaque type d'antenne indiqué. Il est strictement interdit d'utiliser avec cet appareil un type d'antenne ne figurant pas dans cette liste ou ayant un gain supérieur au gain maximum indiqué pour ce type.

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:

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.

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Cervis, Inc. Safety Precautions

- ✓ *Read and follow all instructions.*
- ✓ *Failure to abide by Safety Precautions may result in 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 handheld remote and remove power from the base unit before attempting any maintenance. This will prevent accidental operation of the controlled machinery.*
- ✓ *Remove power from a base unit either by detaching the 12-pin cable(s) from the base unit connectors or by removing the source power from the circuit.*
- ✓ *Use a damp cloth to keep units clean. Remove mud, concrete, dirt, etc. after use to prevent obstructing or clogging the buttons, joysticks, wiring, and switches.*
- ✓ *Do not allow liquid to enter the handheld or base unit enclosures. Do not use high-pressure equipment to clean the handheld remote or base unit.*
- ✓ *Disconnect the radio base unit before welding on the machine. Failure to disconnect the base unit may cause destruction of or damage to the base unit.*
- ✓ *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 handheld remotes. Activating high-power communication radios—for instance—in close proximity to handheld remotes can cause interference and "false" circuit activation.*
- ✓ *Do not key two-way radios while using the handheld remote.*

SmaRT MCBs communicate with and control a variety of SmaRT base units in either the 900 MHz or 2.4 GHz frequency ranges. MCB frequency range options are:

- 906–924 MHz @ 100 mW (900 MHz)
- 2405–2480 MHz @ 100 mW (2.4 GHz)

Using line-of-sight Channel-Hopping Direct Sequence Spread Spectrum (DSSS) technology, both broadcast ranges offer a generous control distance in crowded radio environments. Plus, neither broadcast range requires a license for use. The rugged enclosure and water-resistant components ensure reliable operation in harsh weather environments and temperatures as low as -20°C (-4°F) and as high as 55°C (131°F). Standard SmaRT mini console boxes broadcast using an internal antenna. You can also connect a Control Area Network (CAN) Bus umbilical cable to a base unit when the MCB is engineered to do so. Users receive setup and operation status via a bank of four Light-Emitting Diodes (LEDs).

Custom Versatility

The SmaRT Mini Console Box offers a variety of factory configured joystick and switch options. Joystick choices range from one to four single or dual-axis bi-directional (per plane of operation) joysticks for digital or proportional control. The MCB can have up to five toggle switches with the possibility of six toggle switches at the expense of a joystick position. As previously mentioned, Cervis, Inc. also offers the choice of a CAN communication connector for use with an umbilical cable for backup control.

MCB (Mini Console Box) Features

- ✓ *Four Dual- or Single-Axis Joysticks for Proportional or Digital Control*
- ✓ *Five Toggles or Optional Button Controls (Custom Optional Six Toggles Available)*
- ✓ *900 MHz @ 100 mW or 2.4 GHz @ 100 mW Operation*
- ✓ *Push/Pull Professional Machine Stop Button*
- ✓ *Four System Status/Diagnostic LEDs*
- ✓ *CAN Umbilical Connection Available*
- ✓ *Operates Using Four AA Cell Batteries*
- ✓ *Magnets for Convenient Attachment to Ferrous Surfaces*
- ✓ *Belt Loops to Securely Attach to Belt or Harness*

✓ **Note:** *When using four joysticks, only three of the four joysticks can be used as dual-axis; the fourth is limited as a single-axis control function.*

2.0 Mini Console Box Layout

2.1 Standard Joysticks, Toggle Switches, and Pushbuttons

Table 1 lists the standard MCB switches.

Table 1. Mini Console Box Switches

Switch	Function	Type	Switch Type/Description
J1 through J4	Factory Programmable	Variable Joystick	Single- or Dual-Axis
S1 through S5 (with an S6 custom option)	Factory Programmable	Toggle	3-Position, Center Detent, Momentary or Latch
Red Push Button	Machine STOP	2-position maintained	Pull up to ENABLE; Push down to STOP
Green Push Button	On/Off	Pushbutton	Toggle Pushbutton
Umbilical	Connection to SmaRT Base Unit	Hardwire	Four Socket Connector with Four Color-Coded Wire Leads

2.2 LEDs

Table 2 lists the MCB LEDs.

Table 2. Mini Console Box LEDs







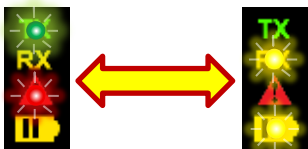
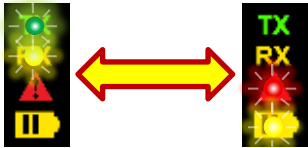







LED	Symbol	Function	Basic Actions
LED 1		Transmit LED	Flashes when transmitting messages
LED 2		Receive LED	Flashes when receiving messages
LED 3		Error LED	Active when errors detected
LED 4		Battery Indication LED	Periodic flashes – Low battery warning

Table 3. Mini Console Box Advanced LED Diagnostics

LEDs	Indication	Diagnostic
TX	TX Solid 	Transmitting, command active.
	TX/RX Flashing 	Transmitting to and receiving from the mounted receiver.
	TX/ERR ↔ RX/BAT 	M-Stop Check: Cycle M-Stop, Blinks back-and-forth.
	TX/RX ↔ ERR/BAT 	Stuck switch: Check switches/proportional not neutral.
	TX→RX→ERR→BAT→TX→RX 	Scrolling: Tilt Mode active.
RX	BAT 	Blinking: Batteries low, replace with fresh batteries soon.
	TX/RX/ERR/BAT 	Shutting Off: Unit is shutting down: Inactivity timeout M-Stop engaged
	BAT 	Shutting Off: Batteries below operating level; unit shutting down; replace batteries with fresh set.
ERR		

LEDs	Indication	Diagnostic
 <p>BAT</p>	<p>ERR/BAT</p> 	<p>Shutting Off: Joystick/Lever command reached out-of-bounds. Condition unsafe, operation turning off.</p>

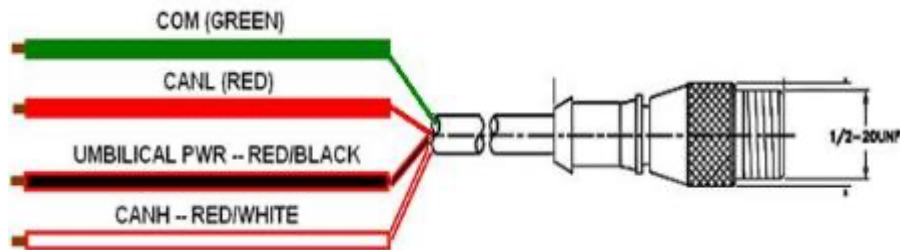
2.3 Optional Mini Console Box Umbilical Connection

A CAN communications umbilical connection is an available option that can be used for backup control of base unit(s). The MCB radio frequency (RF) shuts off when an umbilical is connected to the MCB.

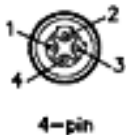
Figure 2 illustrates the CAN communications umbilical cable wiring.



Capped CAN umbilical connector.
Turn cap CCW to remove it.



Standard CAN Umbilical to Base Unit P1 Connector



1 – +5V*	RED/BLK	—————	BU Type Defined
2 – CAN H	RED/WHT	—————	BU CAN H
3 – CAN L	RED	—————	BU CAN L
4 – COMMON	GREEN	—————	BU Type Defined

*7 – 32V if supplied by an external power supply.

Figure 2. Standard Mini Console Box CAN Umbilical

2.4 Neck/Shoulder Harness

The 1¼" wide neck/shoulder harness lets you conveniently and comfortably strap the MCB around your neck or shoulder for easy access and operation. Adjustable to lengths up to 60 inches (~1.5 m), the harness conforms to most body lengths; and its rugged, heavy-duty construction and quick-release fasteners keep a single MCB securely against your body. Plus, its polypropylene webbing resists wear, and its bright orange color gives it high visibility against even the lightest colored garments.

2.4.1 Adjusting the Harness

Before you attach the harness to your MCB, adjust the blue strap to the most comfortable operating length for your individual body type.



The harness' left strap features a 6" (152mm) long quick release hook-and-loop Nylon rip cord.



Connect the two parts of the rip cord together, and press down to secure the connection.



2.4.2 Attaching the Harness to the MCB

Both ends of the high-visibility orange straps feature a pair of heavy-duty metal button snaps at the ends.



To attach the harness to your MCB-9XL, locate the two T-shaped harness clips on the front of your MCB.



Thread the high visibility orange straps through the harness mounts—snap side up—past the first two (female) snaps.



Fold the strap over onto itself, and fasten the female snaps to their male counterparts.



✓ **Note:** You'll know the snaps are secured when you hear a clicking sound.



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When you have the harness securely together, hang it around your neck—or drape it over your shoulder—and begin operating your MCB.



3.0 Mini Control Box Battery

3.1 Battery Installation and Replacement

Four size “AA” cell batteries power the Smart MCB. When installing batteries, observe proper polarity as marked on the inside of the compartment to avoid damaging the unit. To replace or install batteries in the MCB:

1. Loosen the four Phillips battery compartment cover screws on the rear of the remote, and lift the cover from the MCB.
2. Install (or replace with) four fresh “AA” cell batteries. Observe proper polarity by positioning the batteries as shown in Figure 3.
3. Replace the compartment cover and tighten the four Phillips screws.

Caution!



Observe proper polarity when placing batteries in the MCB battery compartment.

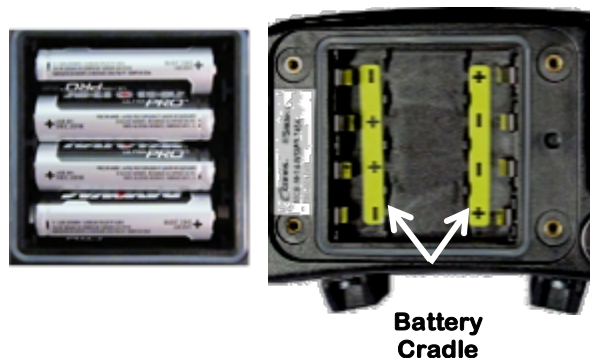


Figure 3. MCB-9H02JS Battery Installation

✓ **Note:** Tighten the cover screws enough to compress the sealing gasket. Do not over-tighten the screws.

3.2 Low Battery and Auto Shutdown

Low Battery Warning

The MCB Low Battery Warning is factory set to activate when the power voltage reaches 2.0 V. At this time, the Battery LED begins to blink once per second until the voltage reaches the Auto-Shutdown voltage. Cervis, Inc. recommends replacing the batteries as soon as possible once the Battery LED begins flashing. Replacement batteries must be four new “AA” cell batteries, all made by the same manufacturer.

Caution!



Do not mix battery manufacturers when replacing the MCB batteries. Batteries must be fresh and all from the same manufacturer.

Auto-Shutdown

Auto-Shutdown occurs when the power voltage drops to 2.0 V. The MCB shuts down when the voltage reaches 2.0 V and will not activate until the used batteries are removed and a fresh set of four “AA” batteries are installed using the Section 3.1 guidelines.

4.0 MCB ON/OFF

Enable and Turn ON

1. Pull up the red Professional Stop button.
2. Push the green Start/Stop button until MCB wakes up.

Disable or Turn Off

The following are methods of activating/deactivating the MCB.

- Push the large red Stop button DOWN. This immediately shuts down the MCB and all base unit outputs.
- Allow the unit Inactivity Timer to “time out.” Shutdown occurs after ten minutes¹ of button inactivity. Only the MCB powers down.
- Press the green On/Off button for 1 second while the MCB is active.

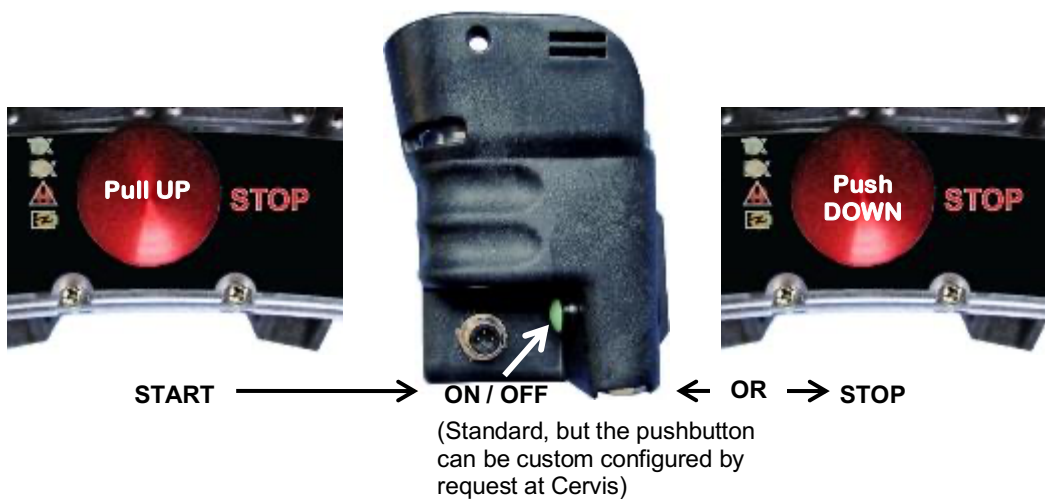


Figure 4. Turn MCB On and Off

¹ Cervis, Inc. Engineering can custom configure the MCB inactivity timer. Ten minutes is the standard setting for an MCB.

5.0 MCB Associate Mode

✓ **Note:** Remote units and base units are associated at the factory. Only use the following procedure if a unit is replaced, or communications between the base unit and remote have been compromised.

“Associate” Mode establishes the communications link between the MCB remote and base unit. (SmaRT systems are Associated before leaving Cervis, Inc.) To associate, have a clear line of sight between the MCB and the base, and both units must be OFF (powered down). Turn off the MCB by pushing in the professional STOP button. Safely power down the SmaRT base unit by removing the power source from the unit.

Caution!



To prevent inadvertent machine movement, be sure to remove power from the Base Unit by disconnecting P1 before attempting to enter Associate Mode.



Figure 5. MCB Switch Activation for Associate Mode

To Associate

1. Stand near the base unit with the remote **OFF** and **power removed** from the base unit (disconnect P1 and P2 or turn the source power OFF).
2. Release the **STOP** button on the handheld by pulling up (Figure 5).
3. Push and hold switch **S1 UP**, then press the **Power ON** button (Figure 5). All four LEDs light solid.



4. Observe the LEDs. All LEDs go out and **TX** starts to blink.



5. Power-up the base unit.
6. When all LEDs illuminate, release switch **S1** and the green pushbutton.



Association is successful when the TX and RX LEDs blink rapidly while the Battery and Error LEDs are unlit.



6.0 MCB Joystick Adjustments

What You Need to Know Before You Adjust the Output Minimum and Maximum

- Operators must make sure the area around the controlled machine is safe to operate before performing dynamic MIN and MAX adjustments.
- The base unit must be powered for dynamic adjustment.
- The base unit LEDs and display should be close enough to be easily read.
- Adjust Mode timeout defaults to a ten-second window of opportunity. The unit returns to normal operating mode if none of the switches are operated within the ten-second window. The timer resets to ten seconds each time a joystick is operated while in Adjust Mode.
- Each joystick is adjusted using the following steps.

✓ **Note:** The base unit used for adjustment reference is the most common Smart base unit.

6.1 Enter Adjust Mode

✓ **Note:** The MCB will not shut down while attempting to preform joystick adjustments.

1. Both the MCB handheld and base unit must be powered ON and communicating with each other.
2. To enter Adjust Mode, push and hold switch **S1** UP, then press the green push button for approximately four to five seconds until the bottom three base unit LEDs begin flashing (Figure 6).
3. Release switch **S1** and green push button.



Figure 6. Enter Adjust Mode

Caution!



Be aware of joystick activation during this process. Base Unit outputs may be active or activated during the adjustment process.

6.1.1 Minimum Adjustment

LED 8 on the standard base unit lights solid (see right), indicating lever or joystick select mode (minimum).

1. To select the minimum activation of the lever or joystick to be adjusted, move the desired switch beyond 50% deflection and release it back to neutral. LED 8 on the standard base unit flashes, indicating Adjust Mode (min).
 - To retain the current minimum value, flip the Associate switch (**S1**) UP.
 - To set the minimum to 0%, press the green horn/start pushbutton (**PB9**) to store that value.
 - To adjust the current value, slowly move the switch again until machine movement is initiated. Continue to hold in position, and press the green horn/start pushbutton (**PB9**) to store the value, then release the lever or joystick to neutral. Base unit LED 6 lights solid, indicating that the value is stored.



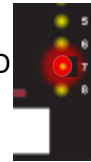
Note: To cancel adjustment of the lever or joystick and return to Select Mode (minimum), allow the lever or joystick to return to neutral – LED 8 on the base unit will light solid.

2. LED 8 goes out and LED 7 lights solid after storing, indicating Select Mode (maximum). Continue to Section 6.1.2 to set maximum lever or joystick activation.

6.1.2 Maximum Adjustment

LED 7 on the standard base unit lights solid (see right), indicating Select Mode (maximum).

1. To select the maximum activation of the lever or joystick to be adjusted, move the desired lever or joystick beyond 50% deflection, and release it back to neutral. LED 7 on the standard base unit flashes, indicating Adjust Mode (max).
 - To retain the current minimum value, flip the Associate switch (**S1**) UP.
 - To set the maximum value at one increment above the minimum value, press the green horn/start pushbutton (**PB9**) to store that value.
 - Or, to adjust, slowly move the lever or joystick again until machine movement is to the desired point. Continue to hold in position and press the green horn/start pushbutton (**PB9**) to store the value, then release the lever or joystick to neutral. Base unit LED 6 lights solid, indicating that the value is stored.



Note: To cancel adjustment of the lever or joystick and return to Select Mode (maximum), allow the lever or joystick to return to neutral – LED 7 on the base unit will light solid.

2. LED 7 goes out and LED 8 lights solid after storing, indicating a return to Select Mode (minimum). Return to Section 6.1.1 to set minimum lever activation.

Note: Flipping the Associate switch (S1) UP toggles between MIN and MAX while in Adjust Mode.

6.2 To Abandon Adjust Mode

Abandon Adjust Mode at any point during adjustment by holding switch **S1** UP and then pressing the green horn/start pushbutton (**PB9**).

6.3 Exit Adjust Mode

Exit Adjustment Mode by either:

- Releasing the joystick and waiting approximately ten seconds for the handheld to timeout, when in **select modes** only.
- Pressing the MCB STOP button.
- Pressing the green horn/start pushbutton for about 3–4 seconds.

7.0 MCB Product Family Listing

Table 4. Common MCB Product Family Features

Discrete Inputs and Type	Dedicated M-Stop	Magnets	Belt Loops	Activation
Six Momentary 3-Position Toggle	Yes	Yes	Yes	Power Button

Table 5. MCB Model-Specific Features

Model Name	Freq.	RF Power	Proportional Inputs Prop. Input Type	Umbilical
MCB-9X02JS-DIS	900 MHz	100 mW	4-Dual Axis	No
MCB-9X02JS-DIS-UMB	900 MHz	100 mW	4-Dual Axis	Yes
MCB-9X02JS-1	900 MHz	100 mW	4-Dual Axis	No
MCB-9X02JS-UMB-1	900 MHz	100 mW	4-Dual Axis	Yes
MCB-9X02JS-2	900 MHz	100 mW	4-Dual Axis	No
MCB-9X02JS-UMB-2	900 MHz	100 mW	4-Dual Axis	Yes
MCB-9X04JS	900 MHz	100 mW	8-Dual Axis	No
MCB-9X04JS-UMB	900 MHz	100 mW	8-Dual Axis	Yes
MCB-2H04JS	2.4 GHz	100 mW	8-Dual Axis	No
MCB-2H04JS-UMB	2.4 GHz	100 mW	8-Dual Axis	Yes
MCB-2H02JS-1	2.4 GHz	100 mW	4-Dual Axis	No
MCB-2H02JS-UMB-1	2.4 GHz	100 mW	4-Dual Axis	Yes
MCB-2H02JS-2	2.4 GHz	100 mW	4-Dual Axis	No
MCB-2H02JS-UMB-2	2.4 GHz	100 mW	4-Dual Axis	Yes
MCB-2H02JS-DIS	2.4 GHz	100 mW	4-Dual Axis	No
MCB-2H02JS-DIS-UMB	2.4 GHz	100 mW	4-Dual Axis	Yes

Custom Configurations by Request
Call Cervis, Inc. at (724) 741-9000 and ask for Inside Sales.

8.0 Mini Console Box Specifications

Table 6. MCB Specifications

Item	Description	
Power	V_{in}	+2.0 V to +3.2 VDC
	Batteries	Four "AA"
	Battery Life	175 to 200 hours (ADJUSTED)
	Low V Shutdown	≈2.0 VDC
	Auto-shutdown	10 min. of button inactivity or Low V
Environment	Operating Temp	-20° C to 55° C (-4° F to 131° F)
	Storage Temp	-40° C to 55° C (-40° F to 131° F)
	Humidity	0 to 100%
Radio	Frequency	2405–2480 MHz @ 100 mW 906MHz–924 MHz @ 100 mW
	License	License-free
	Modulation	Channel Hopping DSSS
	Antenna	Internal
Enclosure	Dimensions	mm: 230.6 x 133.9 x 146.9 inch: 9.1 x 5.3 x 5.8
	Total Weight	3 lbs
	Durability	High Impact Glass-Filled Polymer case
	Faceplate	Aluminum or Polycarbonate
LED Indicators	TX	Flashing – transmitting, no switch active Solid – transmitting, switch active
	RX	Flashing – receiving, no output of interest active Solid – receiving, output of interest active
	ERR	Indicates error with handheld remote
	BATT	Low battery indication
Control Switches	Toggles	Two- or three-position momentary or maintained
	Joysticks	Up to 6 single- or dual-axis (depending on configuration)
	M-Stop	Professional Machine Stop
	Power	Green pushbutton
Umbilical Connector	See Section 2.3	

Appendix A: Exposure to Radio Frequency Energy

SmaRT mini console box remote units contain radio transceivers. When active, an MCB remote sends out radio frequency (RF) energy through its internal antenna. The SmaRT handheld remote complies with limits set by the United States Federal Communications Commission (FCC) for operating distance from human tissue.

Appendix B: Agency Identification Label Locations



Figure 7. Agency Identification Label Locations

Appendix C: Declaration of Conformity for MCB-2H0xJS



Declaration of Conformity

EU DECLARATION OF CONFORMITY

Manufacturer: Structured Mining Systems, Inc.
 (d.b.a. Cervis, Inc.)
 170 Thorn Hill Road
 Warrendale, PA 15086 USA
 Telephone No. (724) 741-9000

Date: February 14, 2018

This declaration of conformity is issued under the sole responsibility of the manufacturer. The undersigned hereby declares, on behalf of Structured Mining Systems, Inc. (d.b.a. Cervis, Inc.) of Warrendale, Pennsylvania, that the below referenced list of Industrial (ISM) radio equipment products, to which this declaration relates, is in conformity with the provision of the following European Union harmonization legislation:

- Council Directive 1999/5/EC (R&TTE)
- Council Directive 2006/95/EC (Low Voltage)
- Council Directive 2004/108/EC (Electromagnetic Compatibility)
- Council Recommendation 1999/519/EC (Human Exposure to Electromagnetic Fields)

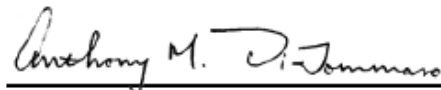
Relevant Harmonized Standards or Other Technical Specifications:

- | | |
|--------------------------------|--------------------------------|
| ETSI EN 300 328 v1.7.1:2006 | ETSI EN 301 489-17 v2.2.1:2012 |
| IEC 60950-1 Ed 2.2; 2013-05-28 | BS EN 62311:2008 |
| ETSI EN 301 489-1 v1.9.2:2011 | BS EN 62209-2:2010 |

The technical documentation is maintained at the corporate headquarters of Structured Mining Systems, Inc. (d.b.a. Cervis, Inc.), 170 Thorn Hill Road, Warrendale, PA.

Products: (see other sections/areas of the product user manual for product images, accessories, components, and software, which allow the radio equipment to operate as intended)

MODEL NUMBER	PART NUMBER	BATCH OR SERIAL NUMBER RANGE
MCB-2H04JS	07402500	_____ to _____
MCB-2H04JS-UMB	07402501	_____ to _____
MCB-2H02JS-1	07402502	_____ to _____
MCB-2H02JS-UMB-1	07402503	_____ to _____
MCB-2H02JS-2	07402504	_____ to _____
MCB-2H02JS-UMB-2	07402505	_____ to _____
MCB-2H02JS-DIS	07450506	_____ to _____
MCB-2H02JS-DIS-UMB	07450507	_____ to _____



Anthony M. Di Tommaso
 Director of Product Development, Quality, & Finance

February 14, 2018

Date

Figure 8. Declaration of Conformity for MCB-2H0xJS

