



# Operation and Maintenance Manual

Supplemental Information

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## **Regulatory Compliance Information for Cat® Command for Underground**

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MXZ 1-UP (Machine Control  
& Guidance Products)

Language: Original Instructions



Scan to access the latest service information, purchase additional media, and buy genuine Cat® parts.



## Important Safety Information

Most accidents that involve product operation, maintenance and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards, including human factors that can affect safety. This person should also have the necessary training, skills and tools to perform these functions properly.

**Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.**

**Do not operate or perform any lubrication, maintenance or repair on this product, until you verify that you are authorized to perform this work, and have read and understood the operation, lubrication, maintenance and repair information.**

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "DANGER", "WARNING" or "CAUTION". The Safety Alert "WARNING" label is shown below.



The meaning of this safety alert symbol is as follows:

**Attention! Become Alert! Your Safety is Involved.**

The message that appears under the warning explains the hazard and can be either written or pictorially presented.

A non-exhaustive list of operations that may cause product damage are identified by "NOTICE" labels on the product and in this publication.

**Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are, therefore, not all inclusive. You must not use this product in any manner different from that considered by this manual without first satisfying yourself that you have considered all safety rules and precautions applicable to the operation of the product in the location of use, including site-specific rules and precautions applicable to the worksite. If a tool, procedure, work method or operating technique that is not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that you are authorized to perform this work, and that the product will not be damaged or become unsafe by the operation, lubrication, maintenance or repair procedures that you intend to use.**

The information, specifications, and illustrations in this publication are on the basis of information that was available at the time that the publication was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service that is given to the product. Obtain the complete and most current information before you start any job. Cat dealers have the most current information available.

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### NOTICE

**When replacement parts are required for this product Caterpillar recommends using original Caterpillar® replacement parts.**

**Other parts may not meet certain original equipment specifications.**

**When replacement parts are installed, the machine owner/user should ensure that the machine remains in compliance with all applicable requirements.**

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**In the United States, the maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual of the owner's choosing.**

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## **Foreword**

### **Literature Information**

This manual should be stored in the operator's compartment in the literature holder or seat back literature storage area.

This manual contains safety information, operation instructions, and maintenance recommendations.

Some photographs or illustrations in this publication show details or attachments that can be different from your product.

Continuing improvement and advancement of product design might have caused changes to your product which are not included in this publication. Read, study and keep this manual with the product.

Whenever a question arises regarding your product, or this publication, please consult your Cat dealer for the latest available information.

### **Safety**

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning signs and labels used on the machine.

### **Operation**

The operation section is a reference for the new operator and a refresher for the experienced operator. This section includes a discussion of gauges, switches, product controls, attachment controls, and programming information.

Photographs and illustrations guide the operator through correct procedures of checking, starting, operating and stopping the product.

Operating techniques outlined in this publication are basic. Skill and techniques develop as the operator gains knowledge of the product and its capabilities.

### **Maintenance**

The maintenance section is a guide to equipment care.

# Operation Section

## Operation

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### General Information

**SMCS Code:** 4490; 7000; 7008; 7490; 7602; 7606; 7620; 7631

This Regulatory Information Supplement contains additional regulatory information for certain markets, and/or specific components. This Document should be used along with the product-specific Operation and Maintenance Manual that was supplied with the product.

This Regulatory Information Supplement is applicable to the family of products listed on the cover.

Your specific product may not be equipped with all the components that are described in this Regulatory Information Supplement.

For questions regarding your specific product, or this publication, consult the Cat<sup>®</sup> dealer for the latest available information.

### Installation

This radio kit includes a multi-function wireless access point (490 - 8925 Communication Radio Gp, also referred to as "RAILBOX/11A0-CA1"), capable of operating on 2.4GHz and 5.8GHz frequencies. After the radio kit has been installed on a machine or in a mine operations area, the radio kit will give the functionality to operate the machine from a remote location and transfer data from the machine to an off-board server.

**Note:** The quantity and configuration of radios required for successful system operation depends on the system being installed and the machine/operations area configuration. Refer to the System Operation manual for the machine or product being used.

For system-specific installation instructions, refer to SIS Web by searching for a Special Instruction under the machine serial number prefix or guidance product serial number prefix.

### Reference Section

#### Locating the Operation and Maintenance Manual (OMM)

Downloads of the Operation and Maintenance Manual (OMM) associated with the machine/product being used are currently available for no cost at:

<https://catpublications.com>

When at the website, use the product serial number prefix to locate the proper OMM. The product serial number prefix is the first 3 digits of the product serial number.

For mobile equipment or equipment that is located in areas where direct internet access is not available while the product is in use, a paper copy of the OMM must be printed and kept with the product. A paper copy of the manual may be sourced at the link above or through the local Cat Dealer. If the OMM is not found properly at the link posted above, contact the local Cat Dealer.

#### Additional Information on Dealer.cat.com

For additional information on software, releases, warranty, and other useful information relating to this radio kit, follow the website link below:

<https://dealer.cat.com/en/products/technology/minestar-solutions-underground/command/underground.html>

Select the appropriate page relating to the product or machine being used with this radio kit.

### Specifications

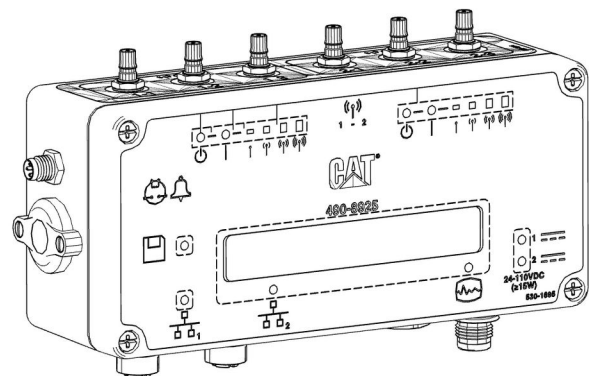


Illustration 1

g06436782

490 - 8925 Communication Radio Gp, also referred to as "RAILBOX/11A0-CA1"

#### Features

- Dual radio 3T/3R
- Dual 10/100/1000 Mbps autosensing Ethernet LAN
- M12 LAN and Power input connections
- Input Power 24 to 110 V DC
- EN50155 Class T3 rating

- IP66 rated shock and vibration proof cast aluminum housing

Table 1

<b>490-8925 Communication Radio Gp Specifications</b>		
Frequency Range	2.412 to 2.484 GHz	5.150 to 5.850 GHz
Radio Power	12 to 24 dBm	
Max Operating Range	200 m (656.17 ft)	
IP Rating	66	
Weight	1.2 kg (2.64 lb)	
Operating Temperature	-25° C (-13.0 ° F) to 70° C (158.0 ° F)	

# Regulatory Compliance Information

## Radio Frequency Components

### Wireless Device (RailBox Communication Radio)

SMCS Code: 7008; 7600-ZM

#### sDoC

(Simplified Declaration of Conformity)

#### European Union



**Caterpillar Inc. 100 NE Adams Peoria, IL 61529 USA**

Hereby, Caterpillar Inc. declares this radio equipment is in compliance with directive "2014/53/EU". The full text of the European Declaration of Conformity is available at the following web address:

<https://www.cat.com/radio-compliance>

#### Great Britain



**Caterpillar Inc. 100 NE Adams Peoria, IL 61529 USA**

Hereby, Caterpillar Inc. declares this radio equipment is in compliance with the relevant statutory requirements. The full text of the Great Britain Declaration of Conformity is available at the following web address:

<https://www.cat.com/radio-compliance>

**Caterpillar suggests that the Declaration of Conformity is obtained shortly after purchase.**

### Specifications

The following communication device specifications are provided to aid in conducting any related hazard assessment and to ensure compliance with all local regulations:

Table 2

Specifications (Wi-fi)		
Radio Mode	802.11a/h	6 Mbps - 54 Mbps
	802.11b	1 Mbps - 11 Mbps
	802.11g	1 Mbps - 54 Mbps
	802.11n	up to 450 Mbps
Antenna Plugs	QMA-type female antenna plugs	

Table 3

Frequency Range (Wi-fi)		
802.11a/n/ac	5 GHz	5.150 GHz - 5.850 GHz
802.11b/g/n	2.4 GHz	2.412 GHz - 2.484 GHz

## Certification Notices

### Canada Notice to Users

This device complies with Industry Canadas license exempt RSSs. Operation is subject to the following two conditions:

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

The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems. However, original equipment manufacturer (OEM) devices which are installed in vehicles by vehicle manufacturers are permitted.

The radio transmitter, IC: 11820A-4908925, has been approved by Industry Canada to operate with antenna types listed below with the maximum permissible gain 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.

This device has been designed to operate with the antenna(s) listed below, and having a maximum gain of 2 dBi. Antennas not included in this list or having a gain greater than 2 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

- 305 - 3925 Antenna
- 491 - 6095 Antenna
- 559 - 1885 Antenna As

This equipment complies with ISED Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (7.87 inch) between the radiator and people or animals.

## FCC Notice

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

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

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

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm (7.87 inch) between the radiator and people or animals.

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

Changes or modifications to this device without the express approval of Caterpillar may void the users authority to use this device.

## Certification Markings



**Australia** – This device is approved for use in Australia and complies with the following: AS/NZS 4268:2017, AS/NZS 2772.2:2011, EN 55011



**Brazil** – This device is approved for use in Brazil. Certificate ID 01471-20-04723.



**Burkina Faso** – This device is approved for use in Burkina Faso and complies with 2019-000129/ARCEP/SG/DGSN

**Canada** – This device is approved for use in Canada. IC ID 11820A-4908925

**Chile** – This device is approved for use in Chile and complies with 8452/39715/F26

**Colombia** – This device is approved for use in Colombia. Certificate ID 2019212250.

**Republic of the Congo** – This device is approved for use in the Republic of the Congo. Certificate ID 051/ARPCE-DG/DAJI/DRSCE/20.

**Ecuador** – This device is approved for use in Ecuador. Certificate ID ARCOTEL-2019-029118.

**Egypt** – This device is approved for use in Egypt and complies with the following: EN300 328, EN301 893, EN301 489-1/-17, EN60950-1, EN62311. Certificate ID NB 0978.

**Ghana** – This device is approved for use in Ghana. Certificate ID NCA WRG-M7-7E3-24A.

**Guatemala** – This device is approved for use in Guatemala. Certificate ID SIT-DH-147-2019.

**India** – This device is approved for use in India. Certificate ID ETA-SD-20200201747.

**Indonesia** – This device is approved for use in Indonesia. Certificate ID 58830/SDPPI/2018.



**Mexico** – This device is approved for use in Mexico. NYCE ID NYC-CT162419C0. IFETEL ID IFT/223/UCS/DG-AUSE/49334/2019.

**Peru** – This device is approved for use in Peru. Certificate ID TRSS43494.



**Philippines** – This device is approved for use in Philippines. Certificate ID ESD-CPE-1919854C.

**Saudi Arabia** – This device is approved for use in Saudi Arabia. Certificate ID TA 2020-70.



**South Africa** – This device is approved for use in South Africa. Certificate ID TA-2019/5273.

**Tanzania** – This device is approved for use in Tanzania. Certificate ID TCRA/TAC/452/2019.



**Thailand** – This telecommunication equipment conforms to NTC technical requirements 1012-2551





**United States – This device is approved for use in the United States. FCC ID W23-JWX6082.**



**Zambia – This device is approved for use in Zambia. Certificate ID ZMB/ZICTA/TA/2019/11/4**

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# Product and Dealer Information

Note: For product identification plate locations, see the section “Product Identification Information” in the Operation and Maintenance Manual.

Delivery Date: \_\_\_\_\_

## Product Information

Model: \_\_\_\_\_

Product Identification Number: \_\_\_\_\_

Engine Serial Number: \_\_\_\_\_

Transmission Serial Number: \_\_\_\_\_

Generator Serial Number: \_\_\_\_\_

Attachment Serial Numbers: \_\_\_\_\_

Attachment Information: \_\_\_\_\_

Customer Equipment Number: \_\_\_\_\_

Dealer Equipment Number: \_\_\_\_\_

## Dealer Information

Name: \_\_\_\_\_ Branch: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

	<u>Dealer Contact</u>	<u>Phone Number</u>	<u>Hours</u>
Sales:	_____	_____	_____
Parts:	_____	_____	_____
Service:	_____	_____	_____

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