

# D420 TUE User's Manual

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**Call 800•711•7317 For Assistance**



## **TO THE USER**

Thank you for purchasing this digital/analog two-way radio designed and manufactured by Black Diamond Radio/REE Engineering. This product is designed and developed according to US military standards and advanced international technologies. The radio has an ergonomic design and a comprehensive set of functions to deliver an advanced communications solution. Reliable communications will bring an entirely new dimension to your business, saving you time and money. Our radios are tested to strict and rigorous test procedures and are covered for 2 years under our "If You Can Break It We Will Replace It" warranty. We stand by our product, and answer our phones. If you ever have a radio issue or question call us at 800-711-7317 for speedy assistance.



This manual should be read and studied to ensure that the user understands the operation of the D420 HUE. Please read the safety and warning information on page 2 before use.

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## **USER NOTICES**

### **SAFETY:**

The user should be aware of and understand the general hazards of operating a two-way radio transceiver. We cannot guarantee the safety and operation of our transceiver with aftermarket accessories unless they have been tested and sold by us.

Our transceiver should be maintained and serviced by a qualified two-way radio dealer and their technical staff. Any attempted repair not sanctioned by Black Diamond Radio will void your warranty.

### **WARNING:**

No two-way radio transceiver including ours shall be operated, including powered on, in hazardous areas such as explosive atmospheres, including flammable gas, dust particles, metallic powders, grain, dust, etc. This shall include confined spaces where these hazards exist, in areas where flammable or explosive products

are in use or stored, and while fueling at refueling centers. In any of these conditions or where hazards exist, the transceiver shall be powered off.

## **PRECAUTIONS**

Observe the following precautions to prevent fire, personal injury and transceiver damage.

- Do not modify or attempt to adjust this transceiver for any reason.
- Do not expose the transceiver to direct sunlight for long periods and do not place it close to a heat source.
- Do not place the transceiver in a dusty, humid or wet area, nor place on unstable surface.
- If an abnormal odor or smoke is detected coming from the transceiver, switch OFF immediately and remove the battery pack from the transceiver. Contact Black Diamond Radio at 800-711-7317 right away.

## **About This User Manual**

This manual introduces the basic operation of the Black Diamond Radio D420 HUE handheld transceiver. Unless you asked for a custom channel table it has been programmed with our default settings which this guide adheres to. If you did ask for a custom channel configuration then not everything in this manual will apply to your radios. If ever there is a question in regards to the functionality feel free to call us at 800-711-7317.

# Contents

Packing List	4
Radio Controls	5
LED Indicator	6
Setup	6
Charging the Battery	7
Using An Earpiece	7
Basic Operation	8
Default Channel Guide	8
Troubleshooting	9
Cleaning and Maintenance	10

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## Packing List

The following items are contained in the box. If any item is missing or damaged call 800-711-7317.

Radio	1	Antenna	1
Battery Pack	1	Belt Clip	1
Charger	1	Hand Strap	1
Power Supply	1	User Manual	1

## Radio Controls



①	Antenna	⑤	Channel Selector	⑨	Earpiece Jack	⑬	Battery Latch
②	Push-To-Talk	⑥	Power / Volume	⑩	Microphone		
③	Zone Switch (long press)	⑦	LED Indicator	⑪	Belt Clip		
④	No Function	⑧	Speaker	⑫	Battery Pack		

## LED Indicator

LED Color	Radio Status
Slow Blue Blinking	Digital Mode
Slow Green Blinking	Analog Mode
Fast Blue Blinking	Receiving Digital Call
Fast Green Blinking	Receiving Analog Call
Solid Blue	Transmitting Digital Call
Solid Green	Transmitting Analog Call

## Setup

### Install the Battery

Position the battery against the back of the radio lower than it's normal position, it will rest inside of the battery cavity flush with the radio. Push the battery toward the volume knob until it clicks and locks firmly in place.



Note: To remove battery turn off radio and press release on top of radio to slide battery down.

### Install the Belt Clip

1. Remove screws from back of battery.
2. Line up holes on belt clip with threads on battery.
3. Insert and tighten both screws.



Note: Screws should be firmly tightened. Over-tightening screws could damage the threading.

## Charging Battery

### **Warning**

- Only charge radio with supplied charger
- If battery is ever unusually hot remove from radio immediately and call 800-711-7317

Plug the power supply cable into a wall outlet.

Plug the other end of the cable into the charging base.

Slide radio into charging base making sure to align the tabs in the charging base with the tracks on the left and right of the battery.

Light will be red as unit charges, green when complete.

Battery can be placed in charger without radio using the same tab/track system inside the charging base.



Note: Battery can charge without radio allowing for a second backup battery (sold separately).

## Using an Earpiece

### **Warning**

- High volumes for extended periods through an earpiece can damage your hearing. Always be cautious of where you set your volume.

Open the rubber cover on the right side of the radio.

Insert the earpiece connector into the earpiece jack that is now exposed.

Wire the earpiece through clothing as desired, clip it to your clothing and insert the eartip into your ear.

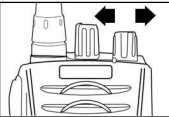
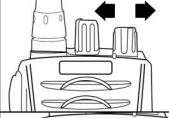

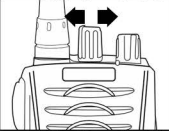
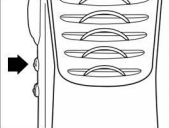
You can use the PTT button on the earpiece or the PTT button on the radio to talk.

The microphone is often in the earpiece's PTT button, so clip it on your collar or chest where it can pick up your speech.



Note: For more on earpieces and fitting a coiled tube or earmold search Black Diamond Radio on YouTube.

## Basic Operation

	<p><b>Power on:</b> Turn dial clockwise</p> <p><b>Power off:</b> Turn dial counter-clockwise until it clicks</p>
	<p><b>Volume:</b> Clockwise for up, counter-clockwise for down.</p>
	<p><b>Transmit:</b> Hold the top button on the left and keep radio 6 inches from face to speak.</p>
	<p><b>Change Channel:</b> Clockwise to go up one channel per click, counter-clockwise to move down one channel. Voice will announce channel number.</p>
	<p><b>Change Zone:</b> Press and hold the bottom button until the voice announces zone. Each long press will move up one zone.</p>

## Default Channel Guide

Unless you've requested a custom channel table the channel layout is as follows:

### Zone 1: Digital (same frequency every channel)

**Channel 1-9:** Standard. 1 calls all radios on channel 1, 2 calls all radios on channel 2, and so forth.

**Channel 10:** All Call. Calls ALL radios regardless of their current channel. Good for emergencies or announcements. Every user has 6 seconds to respond.

**Channel 11-16:** Private Calling. 11 calls radio 1, 12 calls radio 2, etc. The user being called has 6 seconds to respond privately, then calling will return to normal.

### Zone 2: Digital (same frequency every channel)

Channels work the same as Zone 1, but on a different frequency in the event of interference.

### Zone 3: Analog (different frequency on each channel)

**Channels 1-16:** Standard. Channel 1 calls all radios on channel 1, channel 2 calls all radios on channel 2, and so forth.

## Troubleshooting

Symptom	Possible Cause	Possible Solution
Radio fails to power on	Battery is improperly installed	Remove and re-install battery
	Battery power is low	Charge battery
	Battery contacts not connecting	Remove battery, clean contacts with isopropyl alcohol, ensure radio contacts are meeting with battery contacts
	Battery has reached end of life	Replace battery with new unit
Receive signal decreases, is unclear, or is interrupted	Battery power is low	Charge Battery
	Volume is turned down	Increase volume using knob
	Interference nearby	Relocate or change to a different channel or zone
	Earpiece is faulty or damaged	Replace earpiece with new unit
Unable to contact other radios	Radio is on the wrong channel	Switch to correct channel
	Radio is set to wrong zone	Switch to correct zone
	Radio is out of range of others	Move within range
	Interference nearby	Relocate or change to a different channel or zone

If none of these steps resolve your issue please call Black Diamond Radio right away at 800-711-7317

## **Maintenance and Cleaning**

To ensure the best performance and to prolong the life of your D420 HUE radios please follow the below instructions to properly care for your new equipment.

### **Maintenance**

- Do not scratch or puncture the device with hard or sharp objects.
- Do not leave the device in direct sunlight. Electronics create heat, additional heat from the sun can damage them.
- Do not carry the device by the antenna or earpiece.
- Close the earpiece jack cover when not using an earpiece to prevent dust and water from getting in the radio.

### **Cleaning**

- Wipe down device regularly using a warm DAMP cloth. Never use a cloth that drips. Drops can get in the radio and will damage it.
- For detailed cleaning to get cracks and crevices use isopropyl alcohol and a toothbrush when buildup is visible.
- Also use a DAMP cloth to regularly wipe down chargers
- Disinfecting wipes may be used once they have been rung out. Never use a cloth that drips, damp is acceptable.

## **FCC STATEMENTS WARNING AND COMPLIANCE**

### **STATEMENT:**

#### **FCC Part 15.19 Warning Statement**

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 including received interference that may cause undesired operation.

#### **FCC Part 15.21 Warning Statement**

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

Replacement of any transmitter component (crystal, semiconductor, etc) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

#### **FCC Part 15.121(f) Warning Statement**

**WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.**

#### **FCC Part 15.105(b) Warning Statement**

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.
- Consult the dealer or an experienced radio/TV technician for help.

### **RF Exposure Statement**

Our radio generators RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only" meaning it must be used only during the course of employment by individuals aware of the hazards and the ways to Minimize Such hazards.

This radio is NOT intended for use by the "General Population" in an uncontrolled environment. This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only".

In addition, our radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

---IEEE Std. 1528:2013 and KDB447498, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.

---American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields 3 kHz to 300 GHz.

---American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields-RF and Microwave.

The information listed above provides the user with the information needed to make him or her aware of RF exposure and what to do to as-sure that this radio operates

### **Electromagnetic Interference/Compatibility**

During transmissions, The radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so.

**DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft and blasting sites.

## **Occupational/Controlled Use**

The radio transmitter is used in situations in which persons are exposed as consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

## **Attention**

This radio complies with IEEE and ICNIRP exposure limits for occupational/controlled RF exposure environment at operating duty factors of up to 50% and is authorized by the FCC for Occupational Use Only. An appropriate warning label is affixed to all units. In order to comply with RF exposure requirements, a minimum distance of 2.5 cm must be maintained when held-to-face, and body-worn operations are restricted to the approved original accessories (belt clip), a minimum distance of 0 cm. Do not use this device when antenna shows obvious damages.

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