TRACKER® Maxima Complete Receiver

TRACKET

GLOSSARY

Antenna: an electrical device that sends or receives radio or television signals and, for the purpose of this manual, is the complete or all inclusive antenna being comprised of four antenna elements.

Antenna Elements: each part that makes up the antenna (Tracker's receivers have a total of four antenna elements mounted to the receiver)

Arc: any unbroken part of the circumference of a circle or other curved line

Bearing: the physical direction from which a signal is coming from (your signal bearing is coming from the North, the bearing of the signal will not change no matter which direction or where the receiver moves)

Bounced Signal: very common in radio frequency tracking; is a signal that has bounced off an object (i.e. hills, power lines, wet vegetation, buildings, vehicles, etc.). A bounced signal is often times still a strong signal and once the signal has bounced off an object, will not be coming from the original (or accurate) bearing. It is important to take visible objects into consideration when tracking a signal, otherwise you will track the signal to the object it bounced from instead of tracking it from the transmitter.

Back Signal: a signal received from the exact opposite bearing of the true signal

Effective Gain: the lowest possible gain setting while still picking up a signal (one or two lights or bars on the receiver), this is the best way to track with Tracker receivers

False Signal: a bounced signal and back signal are false signals; any signal besides the true signal

Gain: a measure of the increase in signal amplitude produced by an amplifier, expressed as the ratio of output to input. In laymen's terms, the gain is simply how sensitive your receiver is or how much of the signal your receiver picks up. Example: a lower gain setting will pick up less of the signal allowing you to filter out possible bounced or false signals; gain set very high will most likely pick up a signal from every direction because the receiver is now very sensitive.

Line-of-Sight: A situation where there are absolutely no obstructions (hills, trees, etc.) between the receiver and transmitter

Receiver: A device that receives a radio frequency (i.e. Tracker's Classic or Maxima)

Transmitter: A device that transmits a radio frequency to be picked up by a receiver



Tracker's Maxima Complete receiver system provides you with state of the art radio location technology for hunting dogs, military, law enforcement applications and more This User's Guide provides you with information on operation of the equipment and radio location tracking techniques to help you get the most out of your system.

IMPORTANT

Read all instructions carefully before operating the receiver.

Warnings

- Never connect the unit to a power source through the external power jack using anything but Tracker's external power jack (sold separately). Never connect the receiver to an AC power source or reverse the polarization on a DC source.
- 2. Never operate the unit with the headset (sold separately) at high volumes.
- 3. Keep the receiver dry and minimize exposure to rain, snow or other liquids.
- Changes or modifications to this receiver not approved by Tracker Radio Systems, Inc. could void your authority to operate this receiver under FCC regulations, and will void your warranty with Tracker Radio.
- 5. Use Tracker approved external antennas only!

The Maxima Complete is designed to power the Tracker Xtenna through the SMA connector. The connector will work for most types of commercial antennas. However, if your Maxima Complete turns off when attaching your antenna, or will not turn on, the antenna is incompatible with the circuitry. DO NOT hold down the ON/OFF button if this occurs. Trying to override the safety circuit by holding down on the ON/OFF button will damage the electronics and will void the receiver warranty. Contact Tracker at (800) 900-2113 if you have questions.

TABLE OF CONTENTS

About the Maxima Complete	2	
Integrated Antenna		
Optional Long Range Antenna	3	
Simplified Operation and New Features	3	
Features	4	
Basic Operation		
Unfolding the Antenna	4	
Holding the Receiver	5	
Turning the Receiver On	5	
Turning the Receiver Off	5	
Automatic Shut Off	5	
Scanning Frequencies	7	
Setting the Gain	7	
Hi/Lo Mode for Near Tracking Ability	7	
Changing the Batteries	9	
Programming	9	
Adding a Frequency	10	
Selecting the Memory Location	11	
Removing a Frequency from Memory	12	
Using Your System	12	
Basics of Tracking with Radio Frequency	12	
Beginning Practice	13	
Advanced Practice	14	
Understanding Range and Distance Estimation	15	
Overcoming Challenging Tracking Situations	16	
Back Signal	16	
Signal bounce	16	
Obstacles	16	
Matching Antenna Orientation	17	
Power lines and Overhead Utilities	17	
Use In and Around a Vehicle	18	
Triangulation	18	
Accessories	19	
Maintenance	20	
Troubleshooting	21	
Tracker Repairs		
Specifications		

FEATURE SUMMARY

- Fully synthesized receiver with programmable memory slots
- Available in 3 frequency ranges (150Mhz through 157Mhz, 216Mhz through 220Mhz, and 432Mhz through 434Mhz)
- Fully programmable with up to 100 memory locations
- Manual and automatic gain control modes
- Large custom-designed liquid crystal display (LCD)
- Microprocessor controlled functions
- Backlit screen-with automatic light sensor to automatically activate backlighting when required
- Low battery indicator
- Automatic shut-off
- External power jack
- Headphone jack
- Virtually unbreakable antenna elements with 10 year warranty incorporating steel hinges
- External antenna connector for yagi or roof top omni
- Rugged body, CNC milled from a solid aluminum bar and powder coated

RECEIVER UPGRADES

Most Maxima receivers are upgradeable to monitor additional frequencies and memory locations (up to 100) by sending the unit to Tracker. Charges are assessed for upgrading and shipping.

ABOUT THE MAXIMA COMPLETE

The Tracker Maxima Complete is a directional receiver for tracking in the 150.000 - 156.999, 216.000-220.999 and 432.000-434.999 MHz frequency bands. The Maxima Complete is based on the same great design as Tracker's previous field tested and proven receivers.

Tracker continues to offer the smallest and most durable receiver on the market with integrated folding antenna that can easily be transported and used in the field. The receiver can store up to 100 transmitter frequencies.



Base Frequency, model number and serial number are indicated on left rear antenna.

Models	Number of Frequencies/channels in 1 kHz steps	Memory locations
Duo	1000	2
1000/5	1000	5
1000/10	1000	10
2000/15	2000	15
2000/25	2000	25
5000/25	5000	25
5000/50	5000	50
5000/100	5000	100

Tracker's most popular Maxima models:

Call Tracker Radio for rates to upgrade your Maxima Complete.

Integrated antenna

A key feature of Tracker's Maxima Complete receiver is the integrated folding antenna. The antenna elements are made of virtually unbreakable circuit board material, making them durable in even the most extreme conditions. Additionally, the antenna design allows the mechanical length of the antenna to be significantly shorter than the required electrical length. The four antenna elements on the Maxima Complete fold down to make the complete receiver system no larger than flashlight size for carrying in the field. The onboard antenna is powerful and reliable for 95% of tracking situations.

Optional Long Range Antenna

The receiver can operate using the integrated folding antenna, or a variety of directional (Yagi) and nondirectional (Omni) antennas using the SMA connector. When you need to track from extremely long distances, couple your Maxima Complete with Tracker's Yagi antenna.



Simplified Operation and New Features

The Maxima Complete receiver is the latest generation of Tracker's Maxima receiver line. Tracker developed the Complete based on feedback from customers who sought to combine the flexibility of the Maxima with several advanced features.

- Frequency fine tune
- Near button
- Manual tracking mode only
- Programmable

FEATURES

- Fully synthesized receiver with up to 100 programmable memory slots
- Frequency fine tuning to accommodate for transmitter frequency drift
- Hi/Lo mode for near tracking ability
- External SMA connector for optional yagi or roof top antennas
- Available in a variety of frequency ranges
- Backlit LCD screen with automatic light sensor
- Low battery indicator
- Automatic shut off to protect battery life
- Optional external power jack and headphones
- Virtually unbreakable antenna elements
- 3-year warranty on manufacturers defects on electronics

BASIC OPERATION

Unfolding the Antenna

To use the receiver, unfold the antenna elements before turning the device on. The receiving antenna elements are located to the front of the receiver. The reflecting antenna elements are located to the back. All four elements must be extended when tracking.



Holding the Receiver

Grasp the receiver in one hand with your thumb close to the gain wheel. For best results, be careful not to touch the antenna as you track, as it can negatively affect the bearing accuracy.



Correct way to hold receiver

Turning the Receiver On

Press and hold the ON/OFF switch for 1-2 seconds. During power, up the receiver will perform a short self-test. Following the self-test, the unit will be ready to use. Current frequency and gain setting will display.

Turning the Receiver Off

Press and hold the ON/OFF switch for 1-2 seconds. When the LCD screen is blank the unit is off.

Automatic Shut Off

The receiver will automatically shut off if no buttons are pushed for

15 minutes. This helps protect battery life if the receiver is inadvertently left on. Automatic shut-off can be disabled, or the time limit can be changed, per customer request, when the unit is sent in for service.

NOTE: When the receiver is turned on it will always return to the last memory location when it was shut off.



Scanning Frequencies

Use the \blacktriangle and \blacktriangledown buttons to move between memory locations. Memory storage slots start at 0.

Setting the Gain

Gain should be set carefully to detect the transmitter. A gain setting that is too high will make it difficult to determine a bearing to the transmitter. If gain is set too low the receiver will not be able to pick up the transmitter.

For best tracking results adjust the gain wheel to the lowest level where an audible beep is heard and two or three bars appear on the LCD screen.

More on setting the gain will be discussed on page 12 in the Basics of Tracking with Radio Frequency section.

Hi/Lo Mode for Near Tracking

Near mode is useful when seeking to locate a transmitter that is very close or when you are getting a very strong signal on the receiver. Near mode makes it easier to set the gain level by reducing the receiver's sensitivity.

To activate the near mode on the Maxima Complete, quickly press the ENTER button. LO will show on the display to indicate the attenuator is active. To return to normal tracking mode, quickly press the ENTER button again and HI will show on the display.



Frequency Fine Tune

All transmitters exhibit a certain amount of frequency drift based on temperature and atmospheric conditions. To accommodate for this, Tracker's Maxima Complete features a frequency fine tuning programming feature. Adding the option to tune the "seventh" digit of the frequency allows the tracker to accommodate for the drift in very small steps.



To fine tune frequency:

- Use the ▲ or ▼ buttons to select the frequency that you suspect may have drifted.
- Press the ENTER button for 1 to 2 seconds the seventh digit will flash when you have entered the fine tuning programming mode.
- Use the ▲ or ▼ buttons to adjust the frequency until you get the strongest signal.
- Press the ENTER button for 1 to 2 seconds to save the frequency and exit the fine tuning mode.

NOTE: Once you have initiated the frequency fine tune you will not be able to use other features of the Maxima Complete until you have completely closed out by holding the ENTER button the second time.

Changing the Batteries

- 1. Turn the receiver upside down and loosen the retaining screw on the battery cover.
- 2. Remove the battery cover.
- 3. Remove existing batteries and replace with two new and identical 9 Volt batteries. Tracker recommends 9 Volt alkaline batteries for best performance.
- 4. Replace the battery compartment cover by inserting the forward edge in the slot at the front of the compartment.
- 5. Tighten the retaining screw.



Retaining screw

NOTE: When removing batteries from the Maxima Complete do not allow the batteries to dangle from the wire to protect from possible loosening to the battery wires. Hold the battery clip in one hand and remove the first battery, then reverse for the second.

PROGRAMMING

Each collar (or transmitter) has a designated 6 digit frequency. The first 3 numbers (to the left of the decimal point) refers to the frequency band and the last 3 digits (to the right of the decimal point) refer to the specific frequency within that band. For example, a 217.125 collar is on the 217 band and has a specified frequency of 125. The Maxima Complete allows you to program a seventh digit in for the frequency. This is the fine tune digit which will allow you to program in the best frequency to receive your transmitter signal. It is not necessary for the collar to be turned on

when programming the receiver, but can be helpful since you will be able to adjust the fine tune digit for the best signal.

Adding a Frequency

- Press and hold the ON/OFF button on your receiver until it turns on.
- Press the MODE button, the screen will display a "CH" followed by 4 numbers, the first number will be blinking (see Figure 3).



- For Maxima Complete Duo or 1000 press ENTER. Now the second number will be blinking.
- For Maxima Complete 2000 or 5000 press the

 ▲ button to change between frequency bands. Note that as you change the first blinking digit at the top of the screen, the frequency band displayed at the bottom of the screen will also change. Once the correct band is displayed, press ENTER. Now the second digit will be blinking.



Use the ▲ or ▼ button to enter the fourth digit of your collar's frequency (the first number after the decimal point). Notice that the frequency displayed across the bottom of the screen is the full seven digit frequency. Press ENTER to move to the next digit. The third number will now be blinking.

- Press the ▲ or ▼ button to enter the fifth digit of your collar's frequency (the second number after the decimal point). Press ENTER to move to the next digit. The fourth and final number will now be blinking.
- Check to make sure that the frequency displayed at the bottom of the screen matches the frequency of your collar. If any changes need to be made, ENTER will always move the blinking digit to the right and MODE will move the blinking digit to the left. Once the correct frequency is displayed at the bottom of the screen, press ENTER.
- This will take you to the bottom frequency and the seventh digit will be flashing. The final digit will default to "0" but can be changed to obtain a better signal. Press enter to accept "0" as the fine tune value, or use the ▲ or ▼ buttons to change the value. For more information on frequency drift and fine tuning, see page 8.

Selecting the Memory Location

- The screen will now display an "M" followed by a single blinking digit. In this screen, you will assign a memory slot, "M", to the collar frequency.
- The first available memory slot will be "0". Press the ▲ or ▼ button until the desired memory slot is displayed. Press ENTER to save. The screen will return to the original view.



- Now your first collar is programmed, repeat this process for each collar.
- Once all collars are programmed into the receiver, push the
 ▲ and ▼ button to switch between memory slots and their
 assigned collars.

Removing a Frequency from Memory

- Select the collar you want removed by pressing the ▲ or ▼ button until the desired frequency is at the bottom of the screen.
- Press the MODE button, the screen will display a "CH" followed by 4 numbers. The frequency to be deleted should be displayed at the bottom of the screen.



• Press the ▼ button until four flashing dashes are displayed after the "CH." Press ENTER twice.

USING YOUR SYSTEM

Tracker Radio Systems highly recommends that you acquaint yourself with the features and operation of the Maxima Complete before having to track in an emergency situation.

Basics of Tracking with Radio Frequency

A tracking transmitter broadcasts a distinctive "beep" in all directions, similar to a radio station. The Maxima receives this signal and provides the user an indication of the strength that the signal is coming from in various directions. Signal strength depends on many factors such as:

- Distance to the transmitter
- Obstacles and obstructions such as trees, buildings or power lines
- Signal bounce
- Antenna polarization
- Weather conditions

The Maxima Complete is designed to favor reception from one direction, the bearing of the transmitter.

Beginning Practice

Practice is the best way to become comfortable with your Maxima Complete, and a proficient tracker.

Activate a transmitter and have someone hide it in an open area, free from obstructions, several hundred yards away.

- Turn on the receiver and select the correct frequency.
- Adjust the gain so that only 2 or 3 bars show on the LCD screen in the direction of the strongest signal.
- Walk in the direction of the strongest signal sweeping slowly, and continuously, in the 180 degree arc that contains the strongest signal.
- Continue to reduce the gain as you get closer, so that only 2 or 3 bars are displayed in the direction of the strongest signal.
- Locate the transmitter.

After a little practice in this simple line-of-sight situation you will be ready to practice in more challenging landscapes.

In this exercise you should have noted several characteristics of the signal:

TIP: The speed of your sweep is very important. If you sweep too fast it will be difficult to get an accurate reading. A steady sweep is best to get an initial reading. Once you have an initial bearing, verify by making a few sweeps in other directions. Practice will provide you with the correct technique.



Figure 7: Typical receiver behavior in line-of-sight situations

- · Bearing of the strongest signal was fairly consistent
- Signal strength diminished in a consistent pattern as the sweep moved 30 degrees or more right or left of the true bearing to the transmitter

ADVANCED PRACTICE

Follow a similar procedure as in the previous example. Have someone hide the transmitter in an area that will provide a range of obstructions (natural and man made) and special situations (inside a building, adjacent to metal equipment, etc.). By this point you should have mastered the receiver controls so focus on analyzing the signal. You may notice that your signal is weaker at a similar distance, compared to your line-of-sight practice. This is the effect of obstructions and topography, and will require additional skills to pinpoint the location of your transmitter. Please review the Overcoming Challenging Tracking Situations section for more information.

Understanding Range and Distance Estimation

Distance can be estimated after you have acquired experience tracking in the similar terrain using the same transmitter and receiver. Three factors affect the range of your tracking system:

- Transmitter Location: The location of the transmitter will affect how far you can detect it on your receiver. There is a reason why TV and radio station transmitters are located on hilltops and towers - to provide maximum range for the signal. Conversely, the closer to the ground the transmitter is situated, the shorter the effective range. Unfortunately, in real world situations the location of the transmitter is largely out of the hands of the tracker.
- Receiver Location: Similar to the location of the transmitter, any given signal can be received at greater distance if the receiving antenna is high in the air, therefore, a stronger signal may be obtained by positioning the receiver high off the ground. During searches it is best to start at high points such as hills or rooftops. NOTE: It is much worse for the receiver to be in a depression than the transmitter.
- Terrain and Obstacles: Tree cover, buildings, vehicles and mountains all have negative effect on the effective range of your tracking system. These obstructions can block, deflect and absorb the transmitter's radio pulse.

A signal is not required to be line-of-sight to yield a good bearing. In gentle rolling topography with few obstructions, radio waves can follow the contour of the ground and provide a good bearing. However, distance estimation is complicated as the signal is attenuated while following ground contours. Often the bearing will change slightly as you approach the transmitter.

OVERCOMING CHALLENGING TRACKING SITUATIONS

Most real tracking situations will not be as simple as the controlled practice situations. The following are some tips and tricks to help you overcome challenging tracking situations.

Back Signal

One of the most common tracking problems is back signal. This occurs when you are getting a strong signal in two opposite directions. The transmitter is located behind you but the receiver is still receiving a strong signal in the opposite direction. Back signal can be managed by:

- 1. Reducing the gain.
- 2. Taking readings from several locations.
- 3. In difficult situations you may have to reduce the gain until you can barely hear it.

Signal Bounce

Rock, vegetation and large structures will reflect radio waves from your transmitter. This is commonly referred to as a bounced signal. Bounce complicates radio location as the signal will be affected by the composition and shape of the reflecting object, and as a result you may have strong signal from several discrete locations.

The single best way to overcome signal bounce is to go to a higher location, such as a rooftop or hilltop. In extreme conditions, use the receiver from an airplane or helicopter. By eliminating the object causing the bounce you should regain your strong bearing to the transmitter.

Obstacles

Think about what happens to the signal of a radio station when your vehicle enters a tunnel—it gets very faint or you lose it altogether. Radio waves have difficulty penetrating rock and other solid objects. Therefore it's generally more challenging to locate an object in rugged terrain rather than on a flat plain. If you feel that obstructions are reducing your range and reception go to a higher elevation such as a hilltop or the roof of a building and try to get a line-of-sight reading.

Matching Antenna Orientation

The receiving signal will be strongest when the orientation of the receiver's antenna matches the orientation of the transmitting antenna. For example, if the transmitting antenna is perpendicular to the ground, the signal detected by the receiver will be greatest when the receiving antenna are positioned vertically.

To improve your signal strength, try rotating the receiver in your hand from the antenna being parallel to the ground, to 45 degrees to 90 degrees.



Figure 8: Transmitter/receiver polarization

Power lines and Overhead Utilities

Power lines are excellent re-radiators of radio waves and can complicate radio-location. Often, the signal seems strongest when the receiver is pointed directly at the power lines. The best strategy to determine which side of the power lines the transmitter is to:

- Walk to the power lines and with your back to them, set the gain of the receiver when sweeping away from the power lines.
- Without changing the gain setting, move to the opposite side and do it again.

After a few attempts you should be able to tell what side of the power lines the transmitter is located.

Use in and around a vehicle

The Maxima Complete receiver can be operated from a motor vehicle, however, reception may be poor inside the vehicle, particularly if the engine is running. Improve signal strength, by deploying Tracker's rooftop antenna using the SMA connector. This can be a time efficient approach if the exact location of the transmitter is not known and a road network is available. The roof top antenna will not provide signal direction, but a strengthening signal will indicate that the vehicle is approaching the transmitter.

- Drive until a strong signal is heard
- Shut off the vehicle, remove the external antenna and exit the vehicle
- Move at least 20 feet away from the vehicle to minimize signal bounce
- It may be necessary to take readings from different points from around the vehicle to get a good bearing
- Use the tracking skills you have learned to locate the transmitter

Triangulation

Before embarking on a cross country search for a transmitter, you may want to take readings from several locations. This is often called triangulation.

- Select 3 to 5 listening points that are a reasonable distance from each other. If possible, select locations with higher altitudes where obstructions are at a minimum.
- Travel to each point and identify the bearing to the transmitter.
- You may want to use a map to note the bearing, particularly in an unfamiliar area. Identify the area of overlap; this is your most likely location where you will find the transmitter.

• Now you should be able to choose the best starting point to quickly locate the transmitter.



Figure 9: Plotting triangulation bearings on a topo map. The circle defines the most likely location of transmitter

ACCESSORIES

In some cases the use of accessories can facilitate the location of the transmitter and extend the battery life of your receiver.



Yagi Antenna

The antenna connects to the SMA connector on the Maxima receiver for added range.

Rooftop Omni Antenna

The rooftop antenna has a magnetic base to attach to the roof of a vehicle to simplify tracking from a moving vehicle.

Headphones with Ear Cups

Block external sounds and has separate volume controls for each ear. Suitable for use in a vehicle or aircraft.

Power Adapter

Car adapter that can be used to power the Maxima receiver from a vehicle or ATV power point to extend the battery life of your Maxima receiver

SMA Metal Dust Cap with Chain

Protects the Maxima's SMA connector from damage and dirt.

Battery Tester

Provides reliable load testing of batteries to indicate when batteries in Tracker equipment need to be replaced.

MAINTENANCE

You can prolong the life and reduce maintenance needs of your Maxima complete by following these simple suggestions:

- 1. Store the unit in a dry place at room temperature when not in use.
- 2. Minimize contact with water. Tracker receivers are among the most water resistant on the market, but no unit is waterproof. Do not store the receiver in a wet holster. If the device is submerged in water or becomes soaked, immediately remove the batteries and ship the device to Tracker where it can be chemically cleaned and dried.
- 3. When batteries are weak, replace both at the same time. Both batteries should be identical type and brand. Alkaline

batteries are recommended. Rechargeable batteries may be used but, if employed, the low battery indicator may not provide much, if any, warning. Lithium batteries are recommended.

TROUBLESHOOTING

Receiver will not turn on

- 1. Make sure you are holding the ON/OFF button for 1-2 seconds
- 2. Remove the battery cover and check to see that both batteries and the battery clip wires are connected. If wires are broken or frayed, send the unit in for service.
- 3. Use a Tracker Battery Tester, not a Multi-meter/Volt meter, to assure that both batteries have sufficient strength.
- 4. Replace batteries.
- 5. If device still doesn't turn on, send the Maxima in for service.
- If your Maxima Complete turns off when connecting to an external antenna, such as a yagi or rooftop, you receiver may not be compatible with the antenna. Do not hold the ON/OFF button to turn the unit back on. Contact Tracker for receiver/antenna compatibility.

Receiver is on, but no sound is heard from the speaker

- 1. Make sure the gain control is set high enough to be able to activate the speaker.
- 2. If still no sound coming from the speaker, send the device in for service.

Distorted audio or loss of signal

Send your Maxima Complete in for service if you experience any of the following problems:

- 1. If audio distorts when the backlight comes on
- 2. If audio is distorted and the backlight won't come on
- 3. If audio is distorted all the time

Antenna/s too loose or too tight

- 1. DO NOT try to tighten or adjust the front antenna elements. This can damage the circuit board and will void your warranty.
- 2. Rear antenna elements can be adjusted with a screwdriver. Screws are located under the battery retaining cover. Antenna elements should be snug, but move smoothly in and out. Front antenna elements can not be adjusted; send the unit in for repair. NOTE: These are steel screws in an aluminum body, so please be careful not to strip the threads. (Note: if stripped, this is not covered under warranty).

DO NOT oil or try to lubricate any of the antenna elements, this can damage the internal electronics and will void your warranty.

Poor direction accuracy

- 1. Insure all antenna elements are fully extended.
- 2. Insure that the back/reflecting elements are not resting on your forearm or any part of your body.
- 3. Evaluate surroundings. If obstructions exist try to establish line-of-sight with the transmitter.
- 4. If rear elements are loose, adjust with a screw driver for smooth, but snug, operation.
- 5. Check for corrosion on antenna rotating point/hinges. If present, send the unit in for service.
- 6. If none of the above causes are apparent, and the problem persists, send the device in for service.

NOTE: DO NOT put any metal, metallic tape or stickers on the antenna elements.

Reduced reception

1. Fine tune the transmitter frequency in the receiver. See page 8 for details.

- 2. If the low battery indicator is on (BAT), change batteries in the receiver.
- 3. Replace battery/ies in the transmitter.
- 4. If available, compare receiver performance using another Maxima receiver with the same transmitter. If range is considerable less, send unit in for repair.

Display screen flashes on and off

This is a programmed response. The number of flashes indicates the specific error the receiver's self check system has discovered. This requires the receiver to be sent to Tracker Radio for service.

Gain control numbers jump in value or change significantly

The gain control potentiometer is defective or the gain program levels are corrupted. Send the receiver in for service.

Other problems requiring the device be sent in for service:

- 1. Missing segment on display or broken display
- 2. Broken antenna element
- 3. Malfunctioning or non-operational buttons
- 4. Broken battery clip
- 5. Squeal coming from the speaker sounds like a bomb dropping - indicate the frequency this occurs on
- 6. If the unit is submerged or soaked remove batteries before sending for repair

WARNING: If you allow a wet receiver to dry, the unit may initially work, but internal electronics will continue to corrode and the unit will eventually fail. In this extreme case it may cost upwards of \$500 to repair and the warranty will be voided. Therefore, Tracker strongly recommends that you send the receiver in for service if you think any moisture may have gotten inside the receiver case.

TRACKER REPAIRS

To send your receiver in for service, package your receiver in the holster and pack in the original box. Include a note with the following information:

- Name
- Contact information including address, phone number, email, etc.
- Copy of warranty paperwork or receipt of purchase
- Detailed description of the problem
- Or visit www.trackerradio.com and download our printable repair form

Tracker recommends that you insure the unit.

MAXIMA RECEIVER SPECIFICATIONS

Weight with Batteries 13.5 oz (420g) Dimensions (antenna folded) 8¹/₄" x 2" x 1¹/₂" (210 x 48 x 35 mm) Dimensions (antenna unfolded) 8¼" x 16" x 1½" (210 x 405 x 35 mm) Spurious emission < 2 nW Intercept point -20 dBm > 2 dB Operating voltage 7 - 10 V DC Battery types (2 pcs) 91/ Current consumptions 50 - 100 mA Sensitivity -130 dB /.078°V Modulation A 1 DAAA (digital automatic amplification adjustment) >130 dB Audio frequency power max, 70 mW +14 to 122° F Operating temperature $(-10 \text{ to} + 45^{\circ} \text{ C})$ -27 to +131° F Storage temperature $(-30 \text{ to} + 55^{\circ} \text{ C})$ Frequency Bands: 150.000-156.999 MHz 213.000-223.000 MHz 433.000-434.999 MHz

Tracker reserves the right for any specification changes.

10 TIPS TO ORGANIZING A SEARCH USING RF IN REMOTE AREAS

- 1. If the signal is not heard from your initial location, consult maps and devise your plan.
- 2. If tracking with a group, break up into several groups, each with a tracking receiver, cell phone or radio, and start covering the area by horseback, vehicle, ATV or foot.
- 3. Develop a communication plan with your search group with numbers or radio channels and when to report.
- 4. Search allotted areas and report back.
- 5. Seek high points, such as hilltops to "listen" for the transmitter
- 6. When checking for the transmitter signal, keep in mind the potential for frequency drift. Check above and below the labeled frequency.
- 7. Eliminate areas where no signal is heard from your search.
- 8. Focus additional searches (if no signal is heard) in areas not covered.
- 9. Once the signal is heard take bearings from multiple locations (triangulation) to reduce search area.
- 10. Continue to refine the search until the transmitter is found.

10 TIPS TO ORGANIZING A SEARCH USING RF IN AREAS WITH A ROAD STRUCTURE

- 1. If the signal is not heard from your initial location, consult maps and devise your plan.
- 2. If tracking with a group, break up into several groups, each with a tracking receiver, roof top antenna, and cell phone and start covering the area in your vehicle.
- 3. With the rooftop antenna deployed cover the area in a grid until you hear the transmitter

- 4. Consider the effect of obstructions, such as cars, buildings, dense forest and underbrush, to your signal.
- 5. Seek high points, such as hilltops or rooftops to "listen" for the transmitter
- 6. When checking for the transmitter signal, keep in mind the potential for frequency drift. Check above and below the labeled frequency.
- 7. Eliminate areas where no signal is heard from your search.
- 8. Focus additional searches (if no signal is heard) in areas not covered.
- 9. Once the signal is heard take bearings from multiple locations (triangulation) to reduce search area.
- 10. Continue to refine the search until the transmitter is found.

- **FC** 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 that may cause undesired operation.
- **CE** This equipment complies to the essential requirements of EU directive. 1999/5/E4.



Tracker Radio Location Systems 150 S. Adkins Way Suite 100 Meridian, Idaho 83642

> (208) 514-4719 (800) 900-2113

www.trackerradio.com