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Remora Remote Control operating instructions

Rev A

Good News! Remote controlled volume control for the Manley Shrimp, Steelhead, and Neo-Classic 300B Preamplifier models. The Manley Remora Remote is a two button radio frequency transmitter that will communicate to the Manley Preamplifier and command the motorized volume control to move up or down.

Quick Start:

Your Remora Remote Control system has been configured and tested at the factory to verify that the communication link between the radio frequency transmitter and the mating receiver-decoder inside the Shrimp, Steelhead, or Neo-Classic 300B Preamplifier has been properly established.

Before beginning, ensure that a fresh 9V alkaline battery has been installed in the Remora Remote transmitter. Yes, we installed a new 9V battery in the Remora Remote when it left the factory.

Turn on the Manley Shrimp, Steelhead, or Neo-Classic 300B Preamplifier and after a few seconds, push and hold either the up or down command buttons. The command is sent via radio signal to the preamplifier and the motorized volume control should react by moving as directed by the remote key closure, with motor action occurring as long as a command key is depressed. The Remora Remote transmitter's multi-colored LED lamp will glow bright GREEN when a command is being sent.

Notice that the volume control motion will stop when the control reaches the travel end-stops, just as it does when the knob is turned by hand. Also notice that the remote will stop transmitting if either the up or down buttons are pressed for more than 30 seconds.

The multi-colored LED lamp on the face of the remote will tell you when the 9V battery needs to be replaced. The battery is GOOD when the lamp is bright GREEN while the transmitter is active. As the battery voltage wanes, the green light may flash RED briefly when the transmitter is switched on; that's when the load on the battery is heaviest. When the battery is nearing exhaustion, the time interval of the RED flash will expand, and eventually and the battery nears life end, the lamp may stay RED more or less continuously. When the LED lamp stays RED, then the moment has arrived for mandatory replacement of the battery.

You may replace the battery at your leisure, since all the Remora Remote transmitter's settings are held safely and indefinitely, in the microprocessor's non-volatile flash memory.

More details:

Here are some details about the features included with your new Remora Remote system. Some are pretty obvious; others are riding just below the surface.

First, the Remora radio-frequency remote control system consists of four parts.

1. The microprocessor-controlled battery-operated hand-held RF transmitter
2. The line-operated RF receiver
3. The microprocessor-controlled decoder and motor drive amplifier
4. The dual-deck motorized volume control

Using computer-based hardware on both sides of the system adds flexibility and allows enhanced features to be added with little impact on system cost. For example, one such feature is the ability of the receiver-decoder to discriminate between interfering signals, or other Manley Remora Remote enabled preamplifier models so that it will react only to the prescribed remote transmitter. More below:

Features!

1. Remote transmitter and receiver operate under crystal-clocked microprocessor control for maximum signal discrimination, flexibility, and system range.
2. System may be easily be reprogrammed by the user with a new I.D. user-number to eliminate possible undesired operation due to remote command collisions.
3. Multi-color LED displays battery condition when the transmitter is in use, as well as two-digit user-number programming status when in program mode.
4. Internal antennas contribute to sleek design aesthetics and eliminate possibility of damage to them had they been subject to external exposure, while still providing good range.
5. Transmitter uses readily-available 9V battery.
6. Transmitter shell made of tough Lexan® for years of dependable operation.
7. Real compression-dome push buttons, not short-lived conductive silicone membrane pads, for even more years of dependable operation.
8. Highest quality motorized attenuator employed for critical audio path with very good inter-channel matching (no silicon attenuators here!)
9. Two-step attenuator rotation speed: Press and hold a button; for the first half second the attenuator motor runs slowly so the user may “nibble” at the volume setting. After half of a second, the motor rotation rate doubles to move things right along.
10. Remote transmitter keep-alive interval keeps Remora Remote awake for a few seconds AFTER either button is released, as indicated by the LED lamp glowing DIM green or red. Keeping the microprocessor awake shaves a few dozen milliseconds off of the wake-up time, and helps to make the remote system more responsive.
11. Flash memory inside both the transmitter's and the receiver-decoder's CPU eliminates the need for back-up batteries or super-caps, etc.
12. Clever system architecture and user-programming procedure eliminates the need for dip-switches and associated fiddling with awkward dip switch arrays.
13. Remora Remote consumes very little power which yields long battery life.
14. Electrically quiet operation preserves low noise floor of the preamplifier's audio path.

15. Discrete passive volume control offers highest headroom option over silicon-based devices.

Precautions when using the Remora Remote system:

Use only fresh alkaline 9-volt (006P) batteries in the remote transmitter. The power draw is small during transmit events, and nil when on standby. Unless the transmitter is used very heavily, the battery should last for at least a year, or for about 10 hours of continuous transmit time. If the remote not used very often then the battery life should equal its shelf life.

The remote transmitter operates on 433.9 MHz, and features a tuned antenna for reasonable efficiency and extended battery life. As with other RF equipment of this sort, the range can be influenced if the antennas on either side of the link are hampered by obstructions that deflect or attenuate the radio signal. Neither the transmitter nor the receiver should be used or placed behind conductive surface planes, or on top of large metal cabinetry, since this can effectively reduce or block the radio signals.

The tuned antenna is positioned at the top or “nose” of the transmitter housing. Best range can be obtained by keeping your hand clear of the top of the enclosure during operation. Range may be severely cut if the remote is placed on a conductive (metal) surface, such as a filing cabinet or other piece of equipment, since the metal plane will grossly detune the antenna. When the transmitter is operated in the palm of your hand, you may expect the remote range to be at least 15 meters line-of-sight, typically 20 meters (or more) in most settings.

Radio-based systems can be affected by noise or interference occurring on the operating channel. Various government bureaucracies dictate what radio channels may be used depending on several factors such as country where the remote system is to be operated, the exact nature of the transmitted information and so forth. Because of these limitations, the channels used for remote controls of this sort can be crowded, especially where population density is high. In addition to on-channel interference, the desired radio signal may be received perfectly when the remote transmitter is in one location, but mysteriously “drop out” when the transmitter is move a few inches one way or another. The transmitter may need to be rotated or relocated slightly to avoid RF “null” points.

The Remora system is highly resistant to false operation due to noise or other remote signals, but the range will be reduced if the competing signals or noise is very strong. If you experience intermittently poor range, briefly try operating the equipment at another location free of possible sources of interference before contacting your dealer or Manley Labs.

Keep the remote and all other parts of the system away from rain or moisture of any sort. The Remora Remote's circuitry is extremely intolerant of moisture intrusion. In the event the remote transmitter gets wet, remove the battery immediately, disassemble the case and try to remove as much moisture as possible as soon as you can. Then let the assembly air-dry in a warm place for a day before re-assembling and testing. DO NOT disturb any trimpot settings or move the antenna components.

Remove the battery promptly when it becomes weak or discharged or if the remote transmitter is not going to be used for a protracted period of time. This will help prevent corrosion due to battery leakage

The motorized volume attenuator may safely be actuated by hand, or by the motor under remote command. The attenuator has a slip-clutch transmission, so it is safe to occasionally over-ride the motorized action by hand, or let the clutch slip after the attenuator reaches its end stop. However, the motorized attenuator assembly will last longer if these actions are avoided.

How to establish the digital link (pairing) between the Remora transmitter and the receiver:

Each transmitter and receiver-decoder set is designed to respond to a specific data string as programmed into the transmitter and later acknowledged by the receiver-decoder. A small set of user-defined numbers is used as part of the data string so that the remote system can be programmed to avoid unwanted operation of another Remora-enabled Manley preamplifier that may be nearby, in range of the transmitter.

If necessary, you may alter the specific short user number of the transmitter. When you do so, the receiver can easily be reprogrammed to follow the changes and react to the new number. Having unique handshake ID codes is important for RF remotes since unlike infrared systems, the remote's RF commands can penetrate walls, floors, and doors, which might operate other Manley Remora-enabled gear if they all had the same ID codes!

The user numbers are a pair of single-digit numbers created by hitting the up and down buttons during a remote transmitter programming session. How to program the user-numbers is one of those procedures that is harder to write down than to actually do physically.

To get acquainted with the remote transmitter itself, we'll start with a simple matter of determining the Remora Remote's user number setting *without changing the number*. This requires only one action by you, the user. You'll get to see some of the Remora Remote's "modes" as indicated by the LED lamp.

How to query the Remora transmitter to see what user number is already programmed:

Press and hold both the up and down buttons for about 0.5 seconds. Release the buttons when you see the LED change from dim green to flashing dim yellow.

The LED will flash dim yellow for about three seconds. Be careful not to touch any buttons while the LED is flashing dim yellow as the remote is in the program mode during this time.

The flashing dim yellow LED will time out and will then go dark for a moment. Then the LED will recite the user number by flashing a string of GREEN (up) blinks, then a string of RED (down) blinks. The user number may range from the smallest value of 1 green, 1 red (1,1) up to a maximum of 7 green and 7 red (7,7).

Once the user number readout event lapses, the remote falls back to normal operation.

How many GREEN blinks? (---- , ----) How many RED blinks?
UP This is your user number. DOWN

How to change the user numbers and re-pair the system:

Ordinarily there will seldom be a need to change the user number. Changing the number requires a few more ballet steps, as listed below. Some steps are time-window sensitive to help prevent pairing errors due to interference from other signals on the radio channel.

Please read over the list of required actions and LED reactions completely before attempting to reprogram your Remora system user number.

1. Make sure the Manley Shrimp, Neo-Classic 300B Preamplifier is plugged into the mains power line, but **turned off**, and make sure that the battery in the Remora Remote transmitter is healthy. For the Steelhead, make sure its power supply is powered up but the audio unit is in SLEEP mode.

2. Put the Remora Remote into the programming mode by pressing the up and down buttons simultaneously for about a half second. The LED will blink yellow to indicate that it is in programming mode.
3. While the LED is blinking yellow, enter the new number by tapping the “UP” button 1 to 7 times, followed by pressing the “DOWN” button 1 to 7 times. Example: 3 “ups” and 2 “downs” will set a new user code of (3,2). After it has accepted your new code, yellow blinking LED will stop blinking and will then read back the new number you set by displaying 3 GREEN blinks followed by 2 RED blinks. BE CAREFUL NOT to touch the buttons once the read-back has happened; the remote knows you have reprogrammed it, and it is “armed” with a special data string to tell the receiver-decoder that a number change has happened.
4. With the Remora Remote in this “armed” state and with it in your hand with your thumb hovering over either button, power on your Manley Shrimp or Neo-Classic 300B Preamplifier by turning the power switch to the “ON” position, or turn on the SLEEP button on the Steelhead to awaken it. Once the preamplifier’s badge lamp is lit, you have about 1.5 seconds to press either button on the remote. The preamplifier should now respond by rotating the volume control in the direction of which ever button has been pressed. Pairing is now complete.

For the first 1.5 seconds after power-up, the Shrimp, Steelhead, or Neo-Classic 300B Preamplifier’s receiver-decoder is configured to be in programming mode looking for any new number changes. If the decoder detects the new number programming string from an “armed” remote during this 1.5 second interval, the decoder will immediately discard the old user number and adopt the new one before resuming normal operation.

In the event that you lose or damage your Remora Remote, a new one can be supplied pre-programmed with your user-number if you provide it to us. Otherwise, it is a straightforward matter to observe, note, and re-pair the Remora Remote’s user number to the preamplifier using the query and programming procedure described earlier.

Please direct any comments or questions to your dealer or to Manley Labs for further assistance.
www.manleylabs.com

- FCC STATEMENT -

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.

Operation with non-approved equipment is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

