RRe-TRAN

USERS GUIDE

For use with firmware version
***1.5a** and above.*

CHANGE 3 INCORPORATED

1 May 2008

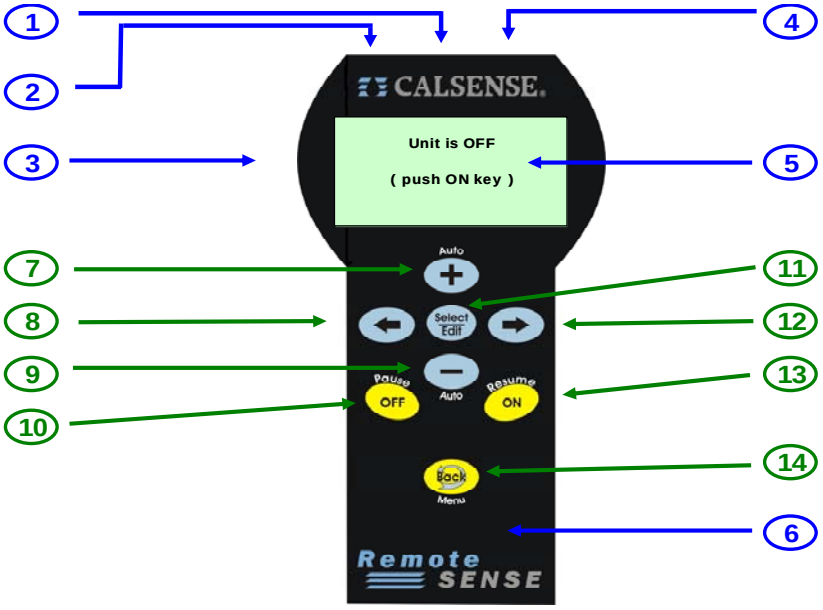
TABLE OF CONTENTS

CHANGES

CHANGE 1 INCORPORATED	Entire manual changed to reflect software changes	10/04/06
CHANGE 2 INCORPORATED	Entire manual changed to reflect software changes	02/22/07
CHANGE 3 INCORPORATED	Entire manual changed to reflect software changes	05/01/08

SECTION 1: RRe-TRAN

1A. RRe-TRAN Description



Note: Item number 6 is a speaker not a reset button. Do not attempt to reset the RRe-TRAN Handheld

Characteristics:

1 **INFRARED TRANSMIT / RECEIVE –** Provides serial communications capability between unit and PC or laptop via the RRe-IR Interface adapter provided.

2 **ANTENNA** - SMA connector for 6 ¾ inch whip antenna.

3 **BATTERY COMPARTMENT –** Located on the back of the unit, capacity four (4) 2400 mA Hr AA 1.2 Volts DC rechargeable Nickel Metal Hydride batteries.

4 **CHARGER** - Power jack connector 9 volts DC / 1 Amp.

5 **DISPLAY SCREEN –** Liquid crystal display screen 2.6 inches wide by 1.4 inches tall.

6 **SPEAKER –** For keypad feedback. Produces audible keypad clicks.

Button descriptions:

7 **PLUS/AUTO** - This button is used to scroll from bottom to top of a selected screen, also AUTO/UP option allows user to turn off single valve irrigating and turn on next numerically higher valve in sequence. Also used to increase a selected editable value.

8 **LEFT ARROW –** This button is used to navigate the highlight cursor to the next available position to the left of any screen.

9 **MINUS/AUTO –** This button is used to scroll from top to bottom of a selected screen, also AUTO/DOWN option allows user to turn off single valve irrigating and turn on next numerically lower valve in sequence. Also used to decrease a selected editable value.

10 **OFF/PAUSE –** This button is used to turn the RRe-TRAN Handheld Radio Remote OFF, or to PAUSE any highlighted station valve currently irrigating.

11 **SELECT/EDIT –** This button is used to make the choice of a highlighted item, or to select an item for editing.

12 **RIGHT ARROW –** This button is used to navigate the highlight cursor to the next available position to the right of any screen.

13 **ON/RESUME –** This button is used to turn the RRe-TRAN Handheld Radio Remote ON, or to RESUME any highlighted valve currently paused.

14 **BACK/MENU –** This button is used to return to the last screen viewed.

1B. RRe-TRAN Technical Specifications

Transceiver Output: Maximum 2.0 watts
Temperature: -30 degrees to +60 degrees Celsius
Receiver Sensitivity: -110dBm

Construction
Transceiver

Dimensions: 2.3” x 4.4” x 1.3”
Case: Black ABS

Compatibility

ET2000e: All Versions

Model Numbers

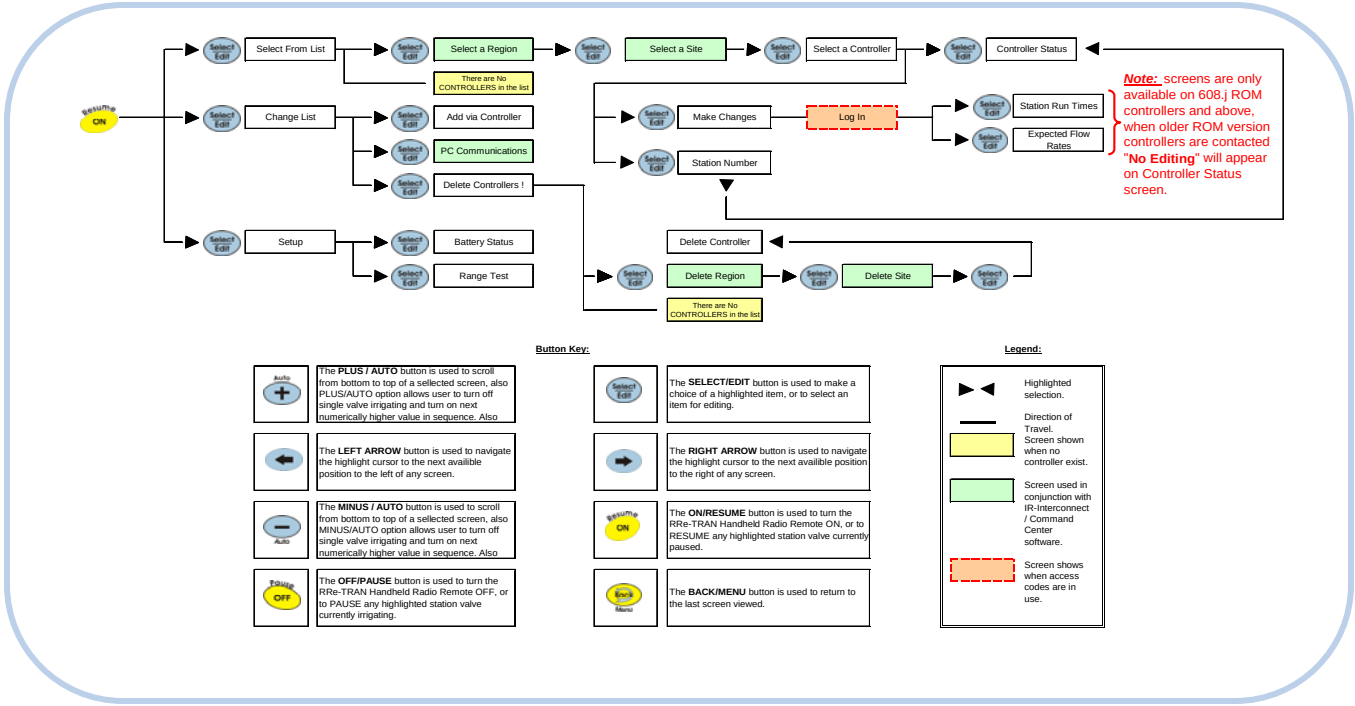
RRe: Calsense enhanced integrated Radio Remote board.

RRe-TRAN: Calsense enhanced transceiver compatible Only with the RRE Radio Remote board.

1C. Equipment Inventory

	Nomenclature	Part Number
1	Carrying Case	RRe-CASE
1	Handheld Radio Remote	RRe-TRAN
1	6 ¾ inch Whip Antenna	RRe-TRAN-ANT
1	9 VDC Charging Adapter	RRe-CHG
1	RRe-Interface Adapter	RRe-IR
1	RRe-TRAN User Guide	PG3-RRe-TRAN-D2
1	RRe-Interface Software Disk	COMM-2

1D. RRe-TRAN Key Map



SECTION 2: BATTERY CHARGING & REPLACEMENT

The RRe-TRAN Handheld Radio Remote will arrive mostly charged. Push the **ON/RESUME** key and scroll down to SETUP. Press the **SELECT/EDIT** button to access the BATTERY STATUS screen. If the battery reads FULL you may use it at this point.

2A. Charging the Handheld

If the Handheld BATTERY STATUS screen reads anything other than FULL. Plug the charging transformer (RRe-CHR) into an approved 110 AC outlet. Attach the 9 VDC charging adapter (RRe-CHG) to the Handheld Radio Remote (RRe-TRAN).

If the Handheld screen reads “Unit is OFF” and does not “Wake-Up” you must turn the Handheld on using the **ON/RESUME** key.

The Handheld Radio Remote must be on to recharge correctly. Normal charge time is 2 to 3 hours.

Charging Guidelines

1. It is best to plug the RRe-TRAN handheld radio remote into the charger and do not disturb until the unit has completed the charging cycle. Disturbances can cause slight changes in the measured voltages and cause charging to false terminate. If the unit charge cycle ends unexpectedly, remove the charger plug, wait 10 seconds, then reinsert to reinitiate charging cycle.

2. If the cells are deeply discharged (i.e. screen is blank) and you begin a charging cycle, you may find that charging could end in less than 1 hour. If this happens you will need to restart charging again in order to fully charge the cells. Remove the charger plug from the unit, wait 10 seconds, and then reinsert the plug to reinitiate charging cycle.

Recharging the Handheld Radio Remote unit should be accomplished by the user any time that the unit is not in use, or the battery level reading is weak.

Note: You should charge the Handheld Radio Remote unit after each use or when battery status reads weak.

CAUTION:

Do not operate Handheld Radio Remote without antenna properly installed. Do not store Radio Remote for long periods of time without charging batteries at least once every 20 days.

The CHARGING STATUS screen is displayed (Figure 2.0.1).

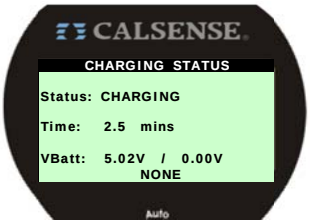


Figure 2.0.1

Status: This entry shows the current condition of the re-charging process it will show as one of the following entries:

- **Charging:** The handheld unit is currently recharging.
- **Problem:** The handheld is experiencing a problem with the recharging process.
- **Full Charge:** The handheld unit has completed its recharging cycle.

Min: This portion of the screen shows the amount of time in minutes and tenths of a minute since this recharging cycle began.

VBatt=: This entry shows the current voltage status of the batteries in volts DC.

Termination Code: This notification is displayed at the bottom center of the screen and will show one of the following entries:

- **None:** Not yet done all normal.
- **NEG V:** Normal termination code when charging partially discharged batteries.
- **Time:** 245 minutes, the normal termination code when charging fully discharged batteries.
- **MAX V:** Greater than 7.2 volts DC. Indicates a questionable battery pack.
- **MIN V:** Less than 5.0 Volts DC after 2 minutes. Indicates a questionable battery pack.

2B. Battery Replacement

To Replace the NiMH (Nickel Magnesium Hydride) batteries remove the battery compartment cover. Replace all four 2500 AA 1.2 Volt batteries as a set and reinstall the battery compartment cover.

Note: Do not use different quality batteries together. Replace all four (4) batteries at one time. Be sure to match the battery polarity with those pictured on the bottom of the battery compartment.

SECTION 3: HANDHELD ON & OFF

3A. Turning Handheld ON

Before you get started make sure that the unit has batteries, and is fully charged.

1. 

Press the **ON/RESUME** key to activate the handheld unit.

The MAIN MENU screen is displayed (Figure 3.0.1).

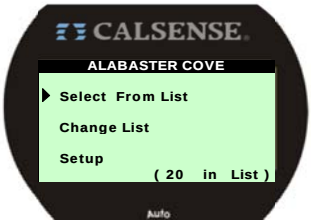


Figure 3.0.1

Note: The RRe-Tran can be personalized to read anything up to 50 characters on the title bar of this screen to aid in identifying owner / operator, by use of the RRe Interface software.

Example: in figure 3.0.1 the hand held has been renamed to ALABASTER COVE from the default MAIN setting.

"X" in List: This is the number of controllers currently stored in the handheld unit.

See Section 4.0 for explanation of menu screen choices.

3B. Turning Handheld OFF

The handheld unit must be returned to the MAIN MENU screen in order to turn it OFF. The Unit will also turn off automatically after 10 minutes of non-use.

1. 

Press the **PAUSE/OFF** key to deactivate the handheld unit.

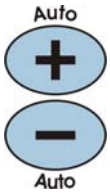
The handheld unit screen will appear as shown (Figure 3.0.2).

Note: The unit will display writing on screen even when in the OFF position.

Figure 3.0.2

SECTION 4: SELECT FROM LIST

From the MAIN MENU screen (Figure 3.0.1).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once the SELECT FROM LIST choice has been made.

When the 'Select From List' choice is selected there are two options that can appear depending on the current condition of your handheld Radio Remote unit.

4A. No Controllers in List

The screen shown in figure 4.0.1 indicates that there are currently no controllers stored in this handheld remote. To add controllers to this unit see Section 5 'Change List' of this manual.

Figure 4.0.1

1. 

Press the **BACK/MENU** key to return to the MAIN MENU screen (Figure 3.0.1).

4B. Select a Controller

This screen allows the user to access a controller that has been added to the handheld unit controller list. The Handheld unit can store up to 270 individual controllers (Figure 4.0.2).

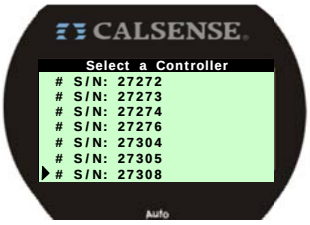
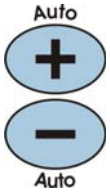


Figure 4.0.2

Note: While using RRe-Interface Software the controller list as shown above may be edited to show controller names instead of serial numbers.

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once a controller has been chosen.

When a controller is selected the SELECT A STATION screen will appear as shown (Figure 4.0.3).

Note: This is the screen from which routine communication commands are initiated to and from the selected controller.

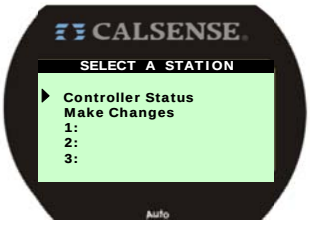


Figure 4.0.3

Note: The **SELECT/EDIT** key serves the same purpose as the **ON/RESUME** key in the SELECT STATION screen.

4B.1 Controller Status:

This screen allows the user to view the following information:

- Controller serial number.
- Individual valves ON or PAUSED.
- Real time gallon per minute flow rate.
- Controller valve amperage draw.
- Valve expected flow rate.

Also displays the following situational information:

- Master Valve Short
- Pump Short
- Mainline Break.
- Rain Detected.
- Freeze Detected
- Stop Switch.
- Pause Switch
- High Wind Pause.
- Master valve Override w/ remaining time.
- Valve ON and reason this controller.

When controller is part of a chain:

- Chain Down.
- Valve On elsewhere in the chain & why.

From the SELECT A STATION screen (Figure 4.0.3).

1. 

Press the **SELECT/EDIT** key once CONTROLLER STATUS has been chosen.

The CONTROLLER STATUS screen is displayed (Figure 4.1.1).

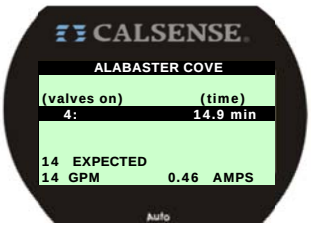


Figure 4.1.1

Note: Figure 4.1.1 shows 'All Stations OFF'. This screen appears when no action is being performed by the controller of choice.

Note: When this screen is displayed the handheld unit will keep in constant communication with the controller selected. This is accompanied by a beeping sound from the handheld unit.

2. 

Press the **BACK/MENU** key to return to the SELECT A STATION screen (Figure 3.0.3).

4B.2 Make Changes:

This section of the handheld unit allows the user to edit the following individual station valve information:

- Total Minutes
- Minutes Per Cycle
- Soak In Time
- Percent Of ET (if % of ET in use)

Also allows the user to compare individual station expected flow rates to the actual station flow rate and edit the following:

- Expected GPM
- Square Footage
- Inches per Hour (adjusted automatically)

The SELECT A STATION screen is displayed (Figure 4.2.1).

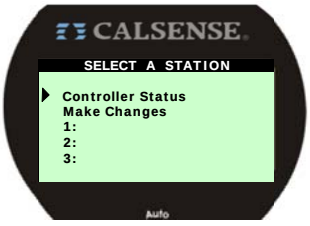


Figure 4.2.1

4B.2.1 Access Control:

If the controller being contacted has Access Control restrictions in place, the user will have to send an Access Code to the controller prior to making any changes to station information or learning expected flow rates for a given station.

When MAKE CHANGES is selected on the SELECT A STATION screen the LOG IN screen will appear as shown (Figure 4.2.1.1).

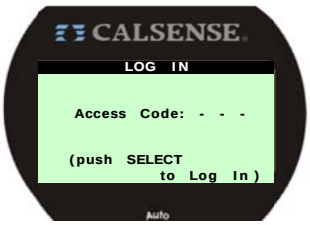
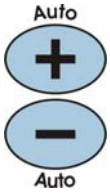


Figure 4.2.1.1

1.  Press the **RIGHT/LEFT ARROW** keys to move the highlight to the desired choice.

2. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to increase of decrease the highlighted section.

3. 

Press the **SELECT/EDIT** key once an access code has been entered.

Once access has been established the SELECT WHAT TO CHANGE screen will be displayed figure 4.2.1.2

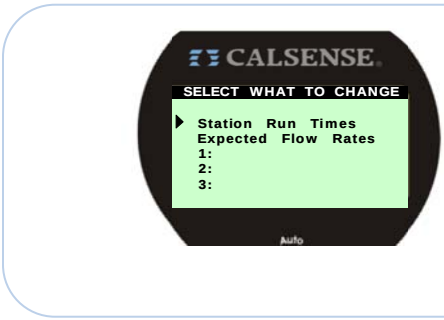
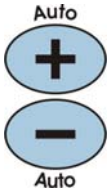


Figure 4.2.1.2

4B.2.2 Station Run Times:

From the SELECT WHAT TO CHANGE screen (Figure 4.2.1.2).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once **STATION RUN TIMES** has been chosen.

Controller individual station screen is displayed (Figure 4.2.2.1).

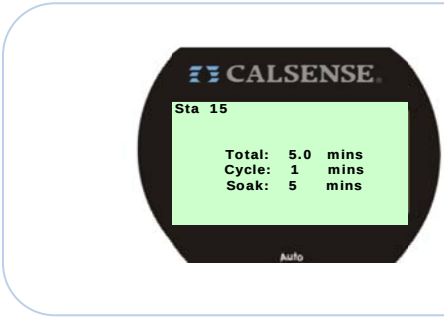
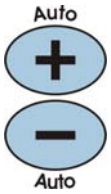


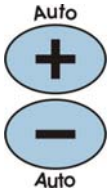
Figure 4.2.2.1

3. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through each of the controller's stations.

4. 

Press the **RIGHT/LEFT ARROW** keys to move the highlight to the desired choice.

5. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to adjust the selected entry.

Note: Once all individual station data has been updated you will be required to send the changes to the controller.

6. 

Press the **BACK/MENU** key to access the **SEND YOUR CHANGES** screen.

The SEND YOUR CHANGES screen is displayed (Figure 4.2.2.2).

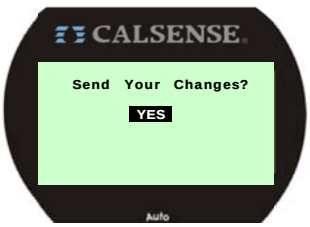
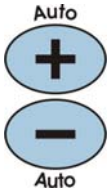


Figure 4.2.2.2

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to select YES or NO.

2. 

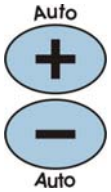
Press the **SELECT/EDIT** key once choice has been made.

Note: If **YES** was selected all changes will be sent to the controller at this time. If **NO** was selected all entries made on the remote will be set back to what they were before this session.

Note: The Radio Remote will loop to the **SEND YOUR CHANGES** screen if any other key is pressed until a choice is made.

4B.2.3 Expected Flow Rates:

From the SELECT WHAT TO CHANGE screen (Figure 4.2.1.2).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once **EXPECTED FLOW RATES** has been chosen.

Controller individual station screen is displayed (Figure 4.2.3.1).

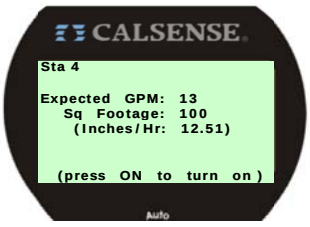
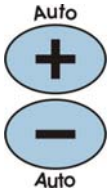


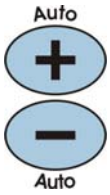
Figure 4.2.3.1

3. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through each of the controller's stations.

4. 

Press the **RIGHT/LEFT ARROW** keys to move the highlight to the desired choice.

5. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to adjust the selected entry.

6. 

Press the **RESUME/ON** key to turn on a selected station to compare the expected flow rate to the actual flow rate of a station.

Note: When a station is activated to check the Expected Flow, all other stations on this controller and the controller chain, if applicable, will be turned **OFF**. Only the selected station will stay **ON** for up to 6.0 minutes. If any other key is pressed on the handheld all controllers will resume there prior activities.

Note: Once all individual station data has been updated you will be required to send the changes to the controller.

6. 

Press the **BACK/MENU** key to access the **SEND YOUR CHANGES** screen.

The SEND YOUR CHANGES screen is displayed (Figure 4.2.3.2).

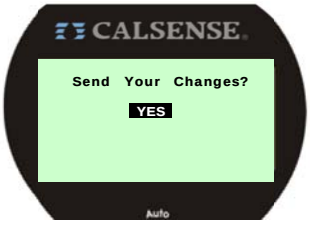


Figure 4.2.3.2

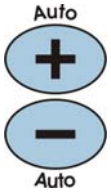
Note: If **YES** was selected all changes will be sent to the controller at this time. If **NO** was selected all entries made on the remote will be set back to what they were before this session.

Note: The Radio Remote will loop to the **SEND YOUR CHANGES** screen if any other key is pressed until a choice is made.

4B.3 Turn Station Valve(s) ON / OFF:

This section of the handheld unit allows the user to turn individual station valve(s) ON and OFF.

From the SELECT A STATION screen (Figure 4.0.3).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **ON/RESUME** key once the station number desired has been chosen.

This will turn the station select ON and display the CONTROLLER STATUS screen (Figure 4.3.1).

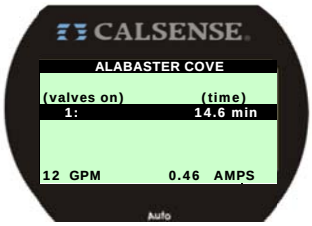


Figure 4.3.1

3. 

Press the **OFF/PAUSE** key two times (2x) to turn the selected station valve OFF.

Note: Pressing the **OFF/PAUSE** key just one time (1x) will pause the selected station. It will still appear in the list and is available to be resumed.

Note: Give the system some time to process your key inputs communications may take time.

To turn ON multiple station valves at one time perform steps 1 and 2 to include step 4 each time.

4. 

Press the **BACK/MENU** key to return to the SELECT A STATION screen (Figure 4.0.3).

Note: You can use this method to have up to four (4) station valves ON at a time per controller. Figure 4.3.2 shows station 1, 2, 4, and 6 ON.

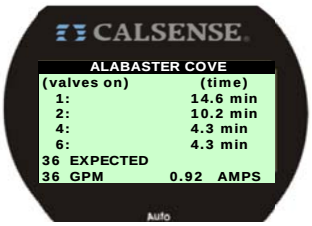
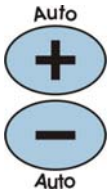


Figure 4.3.2

To turn OFF multiple station valves perform the following steps:

From the CONTROLLER STATUS screen (Figure 3.3.2).

5. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

6. 

Press the **OFF/RESUME** key two times (2x) once the station number desired has been chosen.

Note: Pressing the **OFF/PAUSE** key just one time (1x) will pause the selected station. It will still appear in the list and is available to be resumed.

Note: Repeat steps 5 and 6 until all desired station valves have been turned OFF.

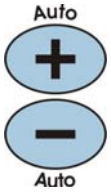
Note: Station run times are fixed at 15.0 minutes and cannot be altered.

Note: The maximum number of stations **ON** or **PAUSED** at one time is limited to no more than four (4).

4B.4 Pause / Resume Station Valve(s):

This section of the handheld unit allows the user to pause and resume individual station valve(s).

From the CONTROLLER STATUS screen (Figure 4.3.2).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **OFF/PAUSE** key one time (1x) to pause the station chosen.

This will pause the station selected and display the CONTROLLER STATUS screen (Figure 4.4.1).

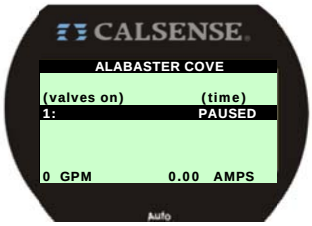


Figure 4.4.1

3. 

Press the **ON/RESUME** key to allow the station to continue its cycle.

To pause multiple station valves at one time perform steps 1 and 2 to include step 4 each time.

4. 

Press the **BACK/MENU** key to return to the SELECT A STATION screen (Figure 4.0.3).

Note: You can use this method to have up to four (4) station valves **PAUSE** at a time per controller. Figure 4.4.2 shows station 1 and 4 paused while 2 and 6 continue to irrigate 14.6 minutes of a 15.0 minute cycle.

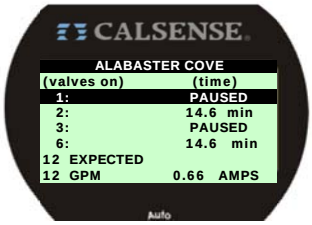
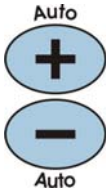


Figure 4.4.2

To RESUME irrigation on multiple station valves perform the following steps:

From the CONTROLLER STATUS screen (Figure 4.4.2).

5. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

6. 

Press the **SELECT/EDIT** key once the SELECT FROM LIST choice has been made.

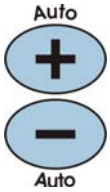
Note: Repeat steps 5 and 6 until all desired stations have been re-activated.

4B.5 Use UP/AUTO and DOWN/AUTO Function When Irrigating One Station Valve:

This section of the handheld unit allows the user to turn off the valve currently irrigating and turn on the next sequentially higher or lower numbered station valve.

Note: These steps will work if only one (1) valve assigned to the selected controller is **ON**. No Stations can be **PAUSED** during this process.

From the SELECT A STATION screen (Figure 4.0.3).

1. 

Press the **UP/AUTO** or **DOWN/AUTO** keys to scroll through the menu choices.

2. 

Press the **ON/RESUME** key once the station number desired has been chosen.

The CONTROLLER STATUS screen is displayed (Figure 4.5.1).

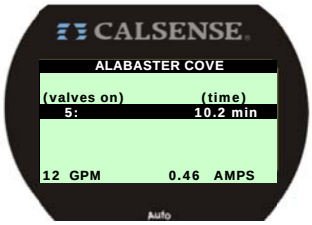


Figure 4.5.1

See examples of PLUS/AUTO and MINUS/AUTO functions on the next page

Using PLUS/AUTO feature:

3. 

Press the **PLUS /AUTO** key While the selected station is ON.

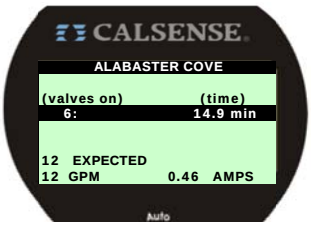
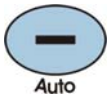


Figure 4.5.2

Example:

In Figure 4.5.1 Station 5 is irrigating 10.2 minutes of a 15.0 minute cycle. Once the **PLUS/AUTO** key is pressed, Station 5 will turn OFF. Station 6 will turn ON and begin a 15.0 minute cycle (Figure 4.5.2).

Using MINUS/AUTO feature:

4. 

Press the **MINUS /AUTO** key while the selected station is ON.

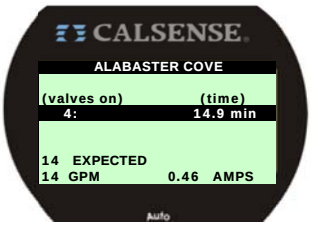


Figure 4.5.3

Example:

In Figure 4.5.1 Station 5 is irrigating 10.3 minutes of a 15.0 minute cycle. Once the **MINUS / AUTO** key is pressed, Station 5 will turn OFF. Station 4 will turn ON and begin a 15.0 minute cycle (Figure 4.5.3).

SECTION 5: CHANGE LIST

This section allows the user to add or delete a controller from the handheld unit.

From the MAIN MENU screen (Figure 5.0.1).

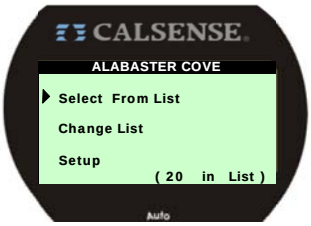
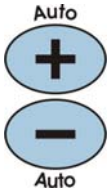


Figure 5.0.1

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once the CHANGE LIST choice has been made.

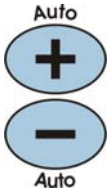
The CHANGE LIST screen is displayed (Figure 5.0.2).

Figure 5.0.2

5A. Add Via Controller

This option allows the user to download controller information directly from the field controller into the handheld unit.

From the CHANGE LIST screen (Figure 5.0.2).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once the ADD VIA CONTROLLER choice has been made.

The ADD A CONTROLLER screen is displayed (Figure 5.0.3).

Figure 5.0.3

At the (ET2000e) irrigation controller:

3. 

Press the **MAIN MENU** key.

4. 
Press the **RADIO REMOTE** menu key.

5. 
Press the **WITH THE HANDHELD ON THE ADD A CONTROLLER SCREEN PUSH THIS BUTTON** menu key.

Note: If you do not see the RADIO REMOTE option on the MAIN MENU screen of the ET2000e irrigation controller then you do not have the Radio Remote option.

The controller screen will be displayed (Figure 5.0.4).

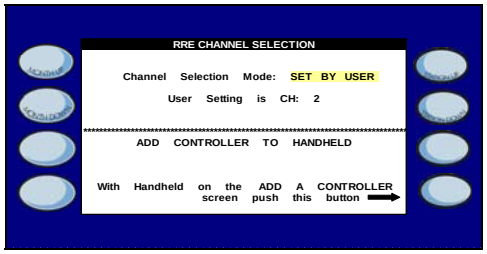


Figure 5.0.4

Set By User: This setting is used when a customer needs to force the radio remote to operate on one of the three channels provided.

User Setting is CH: This setting is used for entering one of three channel choices.

Automatic: This setting is used when the customer wants the controller to search for an open channel and communicate to a RRe-Tran.

Automatic Setting CH: This setting will display the channel that the controller has selected automatically, or can be entered as the default channel that the user wants the controller to begin the scanning process from.

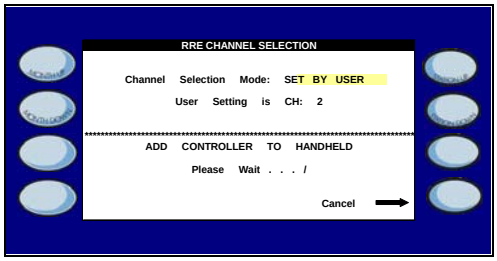


Figure 5.0.4

When the data transfer has been completed successfully the Controller screen will be displayed (Figure 5.0.5).

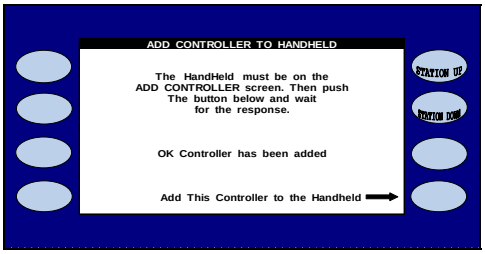


Figure 5.0.5

The handheld unit will be displayed (Figure 5.0.6).

Figure 5.0.6

Note: Write down each controller's serial number and the physical location or controller name that you want to assign to it later. This will aid you in entering the information when using the IR-Interface software on your PC or laptop computer.

6. 

Press the **BACK/MENU** key to return to the CHANGE LIST screen (Figure 5.0.2).

5B. PC Communications

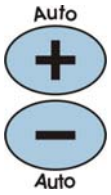
This option allows the user to obtain a controllers information from a desktop computer using the IR-Interface Software program (or by use of Command Center Software) and an RRe-IR Interface unit.

The RRe-Interconnect software allows the user to assign individual names to each Hand Held remote and Regions, Sites, and Controllers assigned to the handheld remote.

See the CC4 Water Management Manual Section 33 IR-Interconnect or IR-Interconnect Software Users Guide for more information.

5C. Delete Controllers !

From the CHANGE LIST screen (Figure 5.0.2).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once The DELETE CONTROLLERS ! Choice has been made.

The DELETE !! AREA screen is displayed (Figure 5.0.7).

Figure 5.0.7

3. 

Press the **SELECT/EDIT** key once More to chose the region shown.

The DELETE !! SITE screen is displayed (Figure 5.0.8).

Figure 5.0.8

CAUTION:

The next step will delete this site and every single controller assigned to this site. If you only want to delete an individual controller skip to step 5.

4. 

Press the **OFF/PAUSE** key once to delete the entire site.

If you do not want to delete the entire site:

5. 

Press the **SELECT/EDIT** key.

The DELETE ! ! CONTROLLER screen is displayed (Figure 5.0.9).

Figure 5.0.9

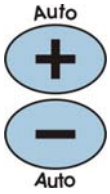
6. 

Press the **OFF/PAUSE** key once to delete the controller.

Note: The Handheld Radio Remote will "beep" once for each controller as it is being deleted.

SECTION 6: SETUP

From the MAIN MENU screen (Figure 5.0.1).

1. 

Press the **PLUS/AUTO** or **MINUS/AUTO** keys to scroll through the menu choices.

2. 

Press the **SELECT/EDIT** key once The SETUP choice has been made.

The SETUP screen is displayed (Figure 6.0.1).

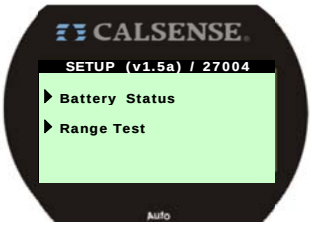


Figure 6.0.1

Note: The Handhelds current ROM version and serial number are displayed in the bar at the top of the screen (Figure 6.0.1).

3. 

Press the **SELECT/EDIT** key once The BATTERY STATUS choice has been made.

The BATTERY STATUS screen is displayed (Figure 6.0.2).

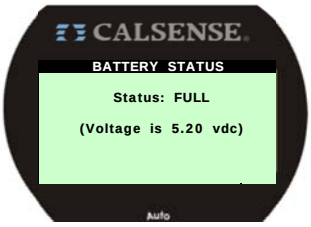


Figure 6.0.2

6A. Battery Status

The Battery Status screen allows the user to quickly check on the real time voltage of the handhelds battery supply.

Status: This entry shows the current condition of the re-charging process it will show as one of the following entries:

- **Full:** This reading shows that the batteries have a charge of 5.00 VDC or better.
- **Good:** This reading shows that the batteries have a charge of between 4.75 and 4.99 VDC.
- **Weak:** This reading shows that the batteries have a charge of less than 4.74 VDC.

Voltage: This entry shows the current voltage on the battery supply in volts DC.

CAUTION:

When battery power reaches 4.7 VDC, the hand held will display the **BATTERY STATUS** screen prompting the user to charge the batteries. If ignored, the handheld unit will display "**DEAD BATTERY!!!** " at the screen title of most screens until charging takes place.

6B. Range Test

This screen allows the user to monitor communication signal strength between the selected controller and the handheld unit.

From the SETUP screen
(Figure 6.0.4).

1. 

Press the **SELECT/ EDIT** key once RANGE TEST has been chosen.

The TESTING S/N ##### screen is displayed
(Figure 4.2.1).

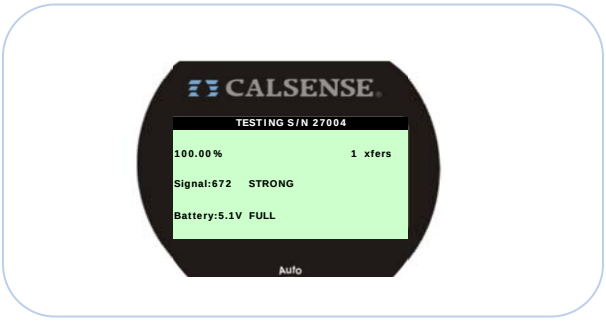


Figure 4.2.1

Testing S/N: This entry on the screen shows the user the name of the controller currently being tested for a signal.

Percentage: This entry shown in the upper left hand side of the screen shows the percentage of successful transfers.

Xfers: This entry shows the number of test packets transmitted successfully or not.

Signal: This entry shows the signal strength using a numerical scale:

Strong	is greater than	550
Good	is greater than	400
Weak	is greater than	0

Battery: This entry shows the battery strength using a numerical scale:

Full	is greater than	5 VDC
Good	is greater than	4.75 VDC
Weak	is greater than	0 VDC

SECTION 7: FCC INFORMATION

7A. FCC I.D. Number

The FCC I.D. number is located on the back cover of the battery compartment (Figure 7.0.1).

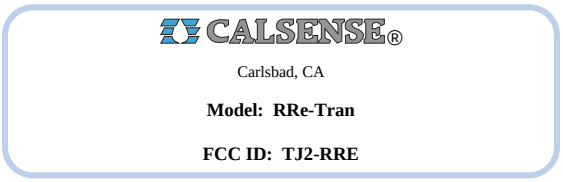


Figure 7.0.1

7B. License Requirements

There is no FCC licensing requirement for operating the RRe-TRAN Handheld Radio Remote.

7C. Antenna Compliance

1. Use only manufacturer or dealer supplied antenna.
2. **Antenna Minimum Safe Distance:** 20cm.
3. **Antenna Gain:** Zero dBd referenced to a dipole.
4. The Federal Communications Commission has adopted a safety standard for human exposure to RF (Radio Frequency) energy which is below the OSHA (Occupational Safety and health Act) limits.
5. **Antenna Mounting:** The antenna supplied by the manufacturer or radio dealer must not be mounted at a location such that during radio transmission, any person or persons can come closer than the above indicated minimum safe distance to the antenna i.e. 20cm.
6. To comply with current FCC RF Exposure limits, the antenna must be installed at or exceed the minimum safe distance shown above, and in accordance with the requirements of the antenna manufacturer or supplier.
7. **Antenna Substitution:** Do not substitute any antenna for the one supplied or recommended by the manufacturer or radio dealer. You may be exposing person or persons to excess radio frequency radiation. You may contact your radio dealer or the manufacturer for further instructions.
8. You, as the qualified end-user of the radio device must control the exposure conditions of bystanders to ensure the minimum separation distance (above) is maintained between the antenna and nearby persons for satisfactory RF Exposure compliance. The operator of this transmitter must satisfy the requirements of Occupational/Controlled Exposure Environment, for work-related use. Transmit only when person(s) are at least the minimum distance from the properly installed, externally mounted antenna.

7D. FCC Part 15

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 generate 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 the interference will 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 receiver antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer for technical assistance.

7E. FCC Warning

FCC WARNING:

Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

SECTION 8: WARRANTY INFORMATION

8A. Warranty Information

The California Sensor Corporation warranties the purchaser of its manufactured products against defects in material and workmanship for a period of ten (10) years from the date of original purchase by the owner.

California Sensor Corporation liability is limited solely to the replacement or repair of defective parts. There are no other express warranties. This warranty does not apply where the equipment is used, or installation performed, in any manner contrary to California Sensor Corporation's specifications and instructions, nor where equipment is altered, modified, misused or neglected.

California Sensor Corporation is not liable for indirect, incidental or consequential damages in connection with the use of equipment, including but not limited to, vegetation loss, property damage or personal injury from installer's negligence.

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