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**XT2004R Wireless Remote Transceiver**  
**418 MHZ**

**FCC ID: S9FXT2004R**

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 received, including interference that may cause undesired operation

**IC: 5877A-XT2004R**

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The XT2004R is a 418 MHZ wireless hand held transceiver used for the control, programming and extraction of control data from the RC2004 series receiver(s).

This system provides complete programming of the RC2004 series receivers for, Trap shooting, Skeet shooting, Five Stand, Sporting Clays, Custom, and Outdoor (Personal back yard systems), etc. The system is designed to provide Clubs and Individuals significant benefits over the current systems available.

The XT2004R transceiver is the size of a credit card and a little over one quarter of an inch thick. It contains an "LCD" (Liquid Crystal Display) for the displaying of data to the Club or individual and a 16 position "Keypad" for control and data entry. Access to any given transceiver is through a personal "PIN" number limiting access to the appropriate Club or individual. It is powered by 2 ea. "2450" button cell batteries, available from most all grocery stores, drug stores, Wal-Mart, Target stores etc. Life expectancy is approximately 1 year.

This system provides a Club or appropriate individual with the ability to reprogram their RC2004 series receivers without having to remove them and connect them to a PC.

## Battery replacement:

- 1) To change the batteries first remove, if any, the Velcro clip from the back side and set it aside.
- 2) Remove the screw in the back of the unit and set it aside.
- 3) **CAREFULLY** separate the two halves of the case using you finger nail or a thin knife blade to approximately 1/4". If you are using a metal object, such as a knife blade, do **NOT** allow the blade to enter the case. You may short out a component and kill the unit.

**Note:** You must separate the two halves equally or you will damage the alignment posts in each corner of the case. The top half will stay attached to the bottom half via the flexible interconnects between the keypad and the printed circuit board. **DO NOT PULL ON THESE CONNECTIONS.**

- 4) Using your fingers, carefully lift the end corners (opposite from antenna), of the battery packs to lift the printed circuit board out of the bottom case. This will tilt the printed circuit board in the bottom case and allow you to remove the batteries. The antenna end of the pc board will still be in the bottom case with the antenna still passing thru the case.
- 5) Using an **NON** conductive item such as a q-tip push each battery out from the middle of the pc board. **MAKE** note of the **DIRECTION**, that is, top and bottom, of how the batteries are installed. **IF YOU INSTALL ONE OR BOTH OF THE BATTERIES UPSIDE DOWN IN THE UNIT YOU WILL VOID THE WARRANTY AND KILL THE UNIT.**
- 6) Pull the batteries out and install two (2) new CR2450 or equivalent batteries. **MAKE SURE** you install them with the (+) facing up as marked on the battery packs.

**Note:** There are a couple nonessential items that are not stored and will be reset when the batteries are removed. If you wish to retain these items push one of the old batteries partially out and remove the other completely. Upon installing the new battery in the open slot, **IMMEDIATELY** pull the other old battery out and replace it. By doing this the unit will never loose power and even the nonessential items will be retained.

- 7) Reassemble the unit.

## Functions include:

How to get started when the unit is in the "SLEEP" mode. Touch any key to wake the unit up and go to the section on (PIN\*N) Pin Number.

\*\*\* SEL (Select key)

**Enters/Exits** the menu.

Use the (U/D/R/L) arrow keys to move through the menu.

\*\*\* (EDT) key (Edit key)

Typically used to **ACCEPT** or **ENTER** a functions.

\*\*\* MODE (Mode)

Allows the user to select from any of the following modes.

\*\*\* NORMAL (Standard mode)

\*\*\* JUDGE (Judge mode)

This is a SPECIAL mode available from the "Club" and MAYBE used by "Clubs/Judges" to control fields during competitions. This is NOT a mandatory mode for shooting competitions. To access this function the unit must be linked to the a P.C. using the module control software XT2004-xx and cable CA2004-xx from E R A D. Once in this mode the unit will function as a "JUDGE" unit until such time as it goes to sleep (resets to 5.5 hours each time a key is depressed when logged onto a field) or is put to sleep, is removed from this mode, the "CLUB" is changed, or the "GAME" is changed.

NOTE !!!!!

Do not change the "CLUB" or "GAME" after placing the unit into the "JUDGE" mode. If these are changed after the unit is put into the "JUDGE" mode it will returned to the "NORMAL" mode.

\*\*\* GAME (Game selected)

Allows the cLUB to select the "GAME" they are controlling.  
NOTE !!!!!

It is mandatory that the "GAME" be selected BEFORE placing the unit into the "JUDGE" mode. If the "GAME" is changed after the unit is put into the "JUDGE" mode it will returned to the "NORMAL" mode.

- \*\*\* Skeet
- \*\*\* Skeet international (Sets a 3.0 second random delay)
- \*\*\* Skeet doubles
- \*\*\* Trap
- \*\*\* Trap doubles
- \*\*\* Five stand beginner
- \*\*\* Five stand intermediate
- \*\*\* Five stand professional
- \*\*\* Sporting clays
- \*\*\* Custom

Note: The Custom mode allows the user to program up an explicit set of commands to produce a custom game.

\*\*\* PIN\*NB (Pin number)

Touching the (EDT) key allows for the unlocking/loading of the pin number for security purposes. Note that the unit knows which mode it is in and displays the opposite mode upon entering this function. If the unit is locked it will ask you first if you want to "UNLOCK" itself. By touching (EDT) you can accept this and then type in the "Pin Number", followed by touching the (EDT) key again to accept the number. If the unit accepts the code it will display "STD\*BY" (Stand By) and you are ready to use the unit. Note that if no keys are touched or no birds are thrown, it will go back to sleep in approximately 5 minutes. If the unit fails to accept the code it will display "FAILURE" and you must retype the code and touch (EDT) again.

Note, use the (EDT) "edit" key to accept the selected/entered data. Use the (SEL) "select" key to exit the current function.

By using the (ARROW) keys you may select any of the other two functions. If you wish to "EDIT" the "Pin Number" it will ask you to enter the current "Pin Number" before you can enter a "NEW" pin

number. Upon entering the "NEW" pin number it will ask you to verify it a second time. If you fail to properly "VERIFY" it, it will return to asking for a "NEW" pin number and expect you to properly "VERIFY" the number. At any time touching the (SEL) key will exit you from the function.

\*\*\* UNLOCK (Unlock mode)

Allows the Club to enter their pin number.

\*\*\* LOCK (Lock mode)

Allows the Club to lock the unit eliminating unwanted use.

\*\*\* EDIT (Edit mode)

Allows the Club to change the pin number. One must have the current pin number to be able to complete this function.

\*\*\* SEQ\*FR (Sequence \* Fixed or Random, CUSTOM game only)

Allows the user to select up whether the (Sequence of programmed commands see "LD\*CMD" below) is run in the fixed order as programmed or in a random order until all the commands have been used.

\*\*\* SQ\*FIX (Sequence fixed mode)

The system will release the birds in the exact sequence programmed under the "LD\*CMD" function.

\*\*\* SQ\*RND (Sequence random mode)

The system will randomly release the birds programmed under the "LD\*CMD" function until all the birds have been released.

\*\*\* LD\*CMD (Load Command, Custom game only)

Allows the Club to program their unit for the (CUSTOM) game.

\*\*\* POS\*99 (Position of command in game)

Using the (L/R/U/D) arrow keys, select the position 1,2,3,4,5, etc that you wish to load a command into. Touch the (EDT) key to accept the position and display the current command that is loaded in that position. Using the (L/R/U/D) arrow keys, select, change, the command you wish to load. Touch the (EDT) key to accept the command. The unit will automatically advance expecting you to load a time using the (L/R/U/D) arrow keys. Note that the LEFT and RIGHT arrow keys will change the time in 0.20 second steps while the UP and DOWN arrow keys will change the value in 0.02 second steps. This "Time" is how long the system will delay before releasing the bird when the command is called. Typically a time value other than zero would only be loaded if the CUSTOM game was going to be run in the automatic sequence mode. If you want to slow down the release of the bird you would normally use the DELAY mode to enter a release delay. Touching the (EDT) key will accept the time even if it is zero (0) and the unit will advance to the next position. You may repeat this procedure up to 73 times. At any given position you may load a station command allowing you to jump to that station to start or change the game. The last command loaded must be a (END) command identifying the end of the game. See appendix (A) for commands/order/position.

\*\*\* AUTO\*R (Automatic Run/Stop mode, Custom game only)

If the "Run" mode is selected, the XT2004R transmitter will automatically run through the command/time sequence until the end of the sequence or until placed into the "Stop" mode.

\*\*\* UPLOAD (Up Load command)

Touching the (EDT) key allows for the entering of the "FIELD" number and the uploading of the command data.

\*\*\* FIELD (Field number)

By entering the field number you wish to upload and pressing the (EDT) key again the receiver (transceiver) of the field you typed in, will transmit its command data. The screen of the XT2004R will display the data when it is received.

\*\*\* \*LIFE\* (Life time birds)

By pressing the (OPT) key when NOT logged onto a field the unit will display and allows the keeping/programming of a running total of birds released. By pressing the (OPT) key a second time the Club can enter their pin number and reset the value to zero (0).

\*\*\* NO\*BRD (No birds)

By pressing the (N/B) key when NOT logged onto a field the unit will display the number of times the (N/B) key was pressed while logged onto a field. By pressing the (N/B) key a second time the Club can enter their pin number and reset the value to zero (0).

\*\*\* CLUB (Club select ID)

With the use of a P.C. **or** the proper codes and information the "Club" can perform the following functions. By touching the (EDT) key again you can enter the club pin number. Touching (EDT) again, will allow you to enter the "CLUB" function.

\*\*\* CLUB (Club ID change)

This function allows the editing of the "Club ID". By touching (EDT) the unit will display the current "Club ID" and will allow you to edit it using the (L/R/U/D) arrow keys. The (L/R) arrows change which character position you are at and the (U/D) arrow keys change the actual character. Note that when finished you must press the (EDT) key to accept the changes. At this point the unit will CLEAR the current CLUB position and install the new "Club ID". To exit the function WITHOUT making any changes touch the (SEL) key.

NOTE: To change the "Club ID" of a receiver, sequence to this function "CLUB" and touch the (FLD) key **instead** of the (EDT) key. The unit will ask you for the "FIELD" number of the receiver you wish to change the "Club ID" in. Type in the field number and touch the (FLD) key again. The unit will transmit the new information to the receiver and return to the \*FIELD\* function.

\*\*\* FIELD (Changing field number stored in receiver)

Upon entering this function by touching the (EDT) key the unit will ask you for the "OLD" field number. Type in the current field number of the field (receiver) you wish to change and touch (EDT). The unit will ask you to enter the "NEW" field number you wish to assign to the receiver. Enter the number and touch (EDT). At this point the receiver will change the stored field number within the itself to the new field number and the unit will return to the "FIELD" function waiting for additional field changes. To exit the function touch the (SEL) key or use the (U/D/L/R) arrow keys to select a different function.

NOTE: **IMPORTANT**, if you have a receiver that you DO NOT know the current field number of, you may load field number 251 as the "Old Field" number and it will automatically accept **any** "NEW" field number between 1 and 250.

**HOWEVER, REMEMBER**, any Field (receiver) that is powered up and see this command **WILL** be changed to the "NEW" field number. **MAKE** sure that you shut off ALL "Fields" (receivers) that you do not want to change.

NOTE: **IMPORTANT!** It is very likely that you may have a Trap field, Skeet field, etc. with the same "Field Number". This is legal, therefore make sure you power DOWN the fields (receivers) that you DO NOT want to change, other wise any field that has the same "Old Field" number that you type in and that sees the command to change to the new field will be change at the same time.

\*\*\* COMNDS (Adds, removes commands from receiver)

Upon entering this function by touching the (EDT) key the unit will ask you for the "FIELD" number. Type in the current field number of the field (receiver) you wish to add or remove old command from and touch (EDT).

NOTE: **IMPORTANT**, it is very likely that you may have a Trap field, Skeet field, etc. with the same "Field

Number". This is legal, therefore make sure you power DOWN the fields (receivers) that you DO NOT want to change, other wise any field that has the same "FIELD" number that you type in and that sees the command to add or remove "commands" from the receiver will change as the new "commands" are down loaded.

At this point the unit will ask you for the relay that you wish to change commands in (RLY\*01 - RLY\*08). Use the (U/D/L/R) arrow keys to select the relay. Touch (EDT) to enter the relay function and the unit will ask you if you wish to "ADD, REMOVE, or MCLEAR" (master clear). Use the (U/D/L/R) arrow keys to select the function and touch (EDT). If you selected the "MCLEAR" function and touch (EDT) the receiver will clear ALL commands loaded into that relay, other wise based on whether you selected "ADD or REMOVE" it will ask you which "command", See Attachment (B), you wish to add or remove. Use the (U/D/L/R) arrow keys to move through the commands. Touch the (EDT) key to complete the change. The unit will return to the "RLY\*xx" function waiting for additional changes. Repeat this procedure until all changes have been made and then touch the (SEL) key to exit the function.

\*\*\* COST (Cost of a bird type)

Upon entering this function with the (EDT) key the unit will ask you for the "Game type" you wish to load the cost per bird of,

|            |                         |
|------------|-------------------------|
| *** SKET*S | Skeet                   |
| *** SKET*I | Skeet international     |
| *** SKET*D | Skeet doubles           |
| *** TRAP*S | Trap singles            |
| *** TRAP*D | Trap doubles            |
| *** 5STD*B | Five stand beginner     |
| *** 5STD*I | Five stand intermediate |
| *** 5STD*P | Five stand professional |
| *** SPRT*C | Sporting clays          |
| *** CUST*G | Custom game             |

Using the (U/D/L/R) arrow keys and select the "Game type" and touch (EDT). The unit will display the current price in dollars and cents that the shooter is charged for that "Game type" each time

they call for a bird or manually release a bird. Use the (U/D/L/R) arrow keys to change the value and touch (EDT) to accept the changes. Note that the (U/D) arrow keys change the amount in 1 cent steps while the (L/R) arrow keys change the amount in 25 cent steps. When the (EDT) key has been pressed the unit will return to the "Game type" function allowing for the selection and loading of a different "Game type" cost. When finished touch the (SEL) key to exit the function.

\*\*\* TIMER (Sleep function)

By touching the (EDT) key the unit will enter this function allowing the Club to "UNLOCK" or "LOCK" the timer using the (U/D/L/R) arrow keys. If the timer is set to "LOCK" then once the "Pin number" is entered when the unit is awakened, it will never go to sleep and the "LIFE" bird function (See (OPT) key) will display the amount in dollars and cents that the unit has released. The value can only be cleared to zero if you know the pin number. This allows the monitoring of released birds by this unit, and by first clearing the "LIFE" value to zero, when returned, will provide the actual dollars and cents worth of released birds. Since the "COST" of each type of bird is stored in the unit then whatever game the is, selected, the appropriate value for each release of a bird will be added to the "LIFE" value. If set to "UNLOCK" then the unit will function with the automatic sleep mode taking effect anytime the timer times out. In this mode the "LIFE" birds displays the numbers of birds released and not the dollar value. Remember that if the unit is in the "LOCK" mode the Club MUST put the unit to sleep upon being returned or at the end of the day. Failure to do so will allow anyone to pick up the unit and release birds, and will run down the batteries.

\*\*\* RECVER (Receiver sensitivity)

Upon entering this function with the (EDT) key, the unit will ask you for the "FIELD" you wish to adjust the sensitivity on. Type in the field number, for example ... 12 ... and press (EDT) key. The display will show "LEVEL" and at this time you would type in the sensitivity level (1 - 100, 1 being the **most** sensitivity). For example enter 25 (a typical setting for a trap or skeet field) and then touch the (EDT) key again to complete the function. The display will return to the "RECVER" position and you may repeat the function. Touching the (SEL) key will exit the function. By

making the receiver as insensitive as possible and still accept commands you minimize the chances of outside interference causing random failure to release birds.

NOTE: If you set the receiver to its **minimum** sensitivity level (**maximum** number) and you can no longer communicate with the unit there are a couple of options. Walk right up to the receiver, (literally as close as possible), **and** or put a FRESH set of batteries in the XT2004 that you are using for the programming function and reprogram to a more sensitive level, or, if you have the software take the receiver into the Club house and via your PC, connect it to the "Receiver software" and reprogram the sensitivity level.

## Keys include:

\*\*\* (OPT) key (Option key)

(\*LIFE\*) function for additional information.

\*\*\* (N/B) key (No bird key)

When running a custom game in the auto run mode and you depress this key the unit will repeat the previous command and log the count to the No Bird function. Note that each time this key is pressed the unit must throw a bird before the key will function again.

\*\*\* (FLD) key (Field key)

By pressing this key (FLD), and entering the field number you are at, and then pressing (FLD) again you will log "ON" to a field. For example, by touching (FLD)(7)(FLD) you have just logged onto field seven and that is the only field that the unit will communicate with. By touching (FLD)(FLD) again you have logged off the field. When logged OFF the field the display will show "STD\*BY". You **cannot** log OFF a field if you have entered the menu function.

\*\*\* (STA) key (Station key)

By pressing this key, when logged onto a field, and typing the station number and touching (STA) again the unit will position itself to the first bird of that station.

\*\*\* (1/H) key (Number (1), High)

Loads the number one into the screen.

\*\*\* (2/D) key (Number (2), Doubles)

Loads the number two into the screen.

\*\*\* (3/L) key (Number (3), Low)

Loads the number two into the screen.

\*\*\* (4) key (Number (4))

Loads the number one into the screen.

\*\*\* (5) key (Number (5))

Loads the number two into the screen.

\*\*\* (6) key (Number (6))

Loads the number two into the screen.

\*\*\* (7) & (LEFT ARROW) (L/A)

Loads the number seven into screen. Moves thought the menu items, selects certain values.

\*\*\* (8) & (DOWN ARROW) (D/A)

Loads the number eight into screen. Moves thought the menu items, selects certain values.

\*\*\* (9) & (UP ARROW) (U/A)

Loads the number nine into screen. Moves thought the menu items, selects certain values.

\*\*\* (0) & (RIGHT ARROW) (R/A)

Loads the number zero into screen. Moves thought the menu items, selects certain values.

## **APPENDIX (B): FCC instructions to the User:**

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 different circuit.
- \* Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. Operation with non-approved equipment may 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.