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## **Appendix I: Manual**

Please refer to the following pages.



# USER MANUAL

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## Reply<sup>®</sup>

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- Base Station, Model WRS960X



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## 1.0 Reply® Systems

### 1.1 Introduction

The Einstein base unit is designed to provide users with a simple method of using Reply® Worldwide keypads without the need of a PC. Questions can be asked without a PC by using the “Impromptu” feature. An optional USB flash drive allows users to create pre-defined questions on a PC and administer these questions. Voting results will be stored on the base with the option of saving these results to the USB drive for further interpretation.



### 1.2 Applications/Advantages

Many meeting and learning venues require a mechanism for audience interaction. Moreover, many seek a method of automating surveys and grading activities. Reply® meets the need for such an interactive tool, bringing everyone together and instantly allowing measurement of interest, understanding, and involvement.

- Audience members can participate from their seat and personally indicate their opinions, ideas, and knowledge.
- Results of the interaction are immediately available, and their display offers presenters a valuable insight into the opinion and comprehension level of audience members.
- System setup is as simple as handing a Keypad to every participant and optionally connecting the Base to a video display. No Base/Keypad wires or cabling are required prior to use. This allows fast, reliable, safe, and attractive installation.

### 1.3 RF Communication

The Keypads communicate with the Base Station using wireless Radio Frequency (RF) technologies. The patented proprietary design has been rigorously tested and optimized for reliability and collection speed.

### 1.4 Technology Leadership, Patent Protection, and Certification

Fleetwood Group, Inc. maintains a leadership position in wireless development of audience

response solutions. United States Patents 5,093,786, Re. 35,449 and other patents reflect the commitment to wireless technology leadership and the unique position that Fleetwood Group, Inc. brings to the market. Additional United States and foreign patents are pending.

Fleetwood Group, Inc. also maintains a commitment to complying with the United States Federal Communications Commission and various foreign regulatory requirements. In addition to satisfying various FCC requirements, such as Part 15, Part 68, and Part 74, many foreign countries have type approved Fleetwood products. Others are continuously being added. Please contact your reseller or Fleetwood Group, Inc. for more information on certification.

### 1.5 Other Fleetwood Group, Inc.

#### Products

Fleetwood Group, Inc. is a manufacturer of quality electronic products that are sold through a worldwide reseller network. All Reply® products are designed and manufactured in Holland, Michigan.

For more information on these products or our customization capability, please visit our website at [www.repliesystems.com](http://www.repliesystems.com).

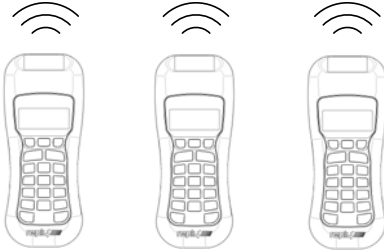
## 2.0 Principles of Operation

This Reply® System uses the latest in 2.4 GHz wireless technology to turn any meeting into a dynamic interactive experience for each participant without having to deal with a nightmare of cables and connectors.

Fleetwood is unique in the marketplace with its patented technology to provide a two-way link with the keypads. This design ensures that no responses are missed by requiring a keypad to retransmit the user's response until it is properly received by the Base Station. The design also allows the system to refuse to acknowledge any invalid entries. This is clearly superior to other technologies using one-way radio or infrared, which do not provide acknowledgment to the keypad when its entry is received and do not have any way of rejecting invalid entries.

### 3.0 How to Use the Keypad

Each keypad is powered by a single chip that contains both a microcontroller and integrated 2.4 GHz wireless transceiver. The keypad contains a fully integrated antenna that eliminates the need for bulky, inconvenient, external antennas



The WRS960X Base Station is the control center for the system. The Base Station can be set to any of the 15 available channels. A Base Station can process responses from up to 50 keypads.

A radio frequency packet is continuously sent, while polling is active, by the base station. Each base station's packet can only be heard by keypads that have been set to the same channel.

#### 2.1 Placement of the Reply® System

The Base Station can be located anywhere in the area where the keypads are to be used. WRS5200 keypads can operate in a room up to 300' x 300' in size. Despite a robust communication system, walls and some other 2.4 GHz devices can moderately to severely limit the WRS960X system's performance. If coverage of a larger area is necessary, elevation of the Base Station or centering in room can usually improve the reception of the keypad signals.

**NOTE:** Due to the properties of signals operating at 2.4 GHz, Fleetwood does not recommend placing any walls between the base station and the keypads. The material in a wall tends to absorb the RF signal and slightly reduced performance might be observed.

#### 3.1 Initial Setup

After the Base Station is turned on, pass out the keypads to the meeting participants and demonstrate how the keypad works. Ask each person to press a numeric key on his or her keypad and observe what happens. When a key on the keypad is pressed, a single digit display will indicate which key was activated.

The digit keys (1 through 10) are used to enter numeric responses, including multiple choice questions (A through E) or yes/no answers, into keypad memory. The key must be released to allow the next key press to occur. Entries are transmitted to and stored on the Reply® WRS960X Base Station. Data can be offloaded from the base, at later time, via USB disk. As keys are pressed, the digits are echoed on the seven-segment display (SSD).

During normal operation, the displayed digit will go out within 3 seconds. This indicates to the user that the Base Station has accepted the entry and the hardware is operational.

If the light blinks and comes back on, this means that the Base Station addressed the keypad but was not able to accept the entry. This could mean one of a few things:

- An invalid choice was made. A key masking function, that rejects entries from certain keys, is used depending on the question type being polled. For example, keys #3 – 9 and 0 will be marked as invalid answers and keys #1 - 2 as valid answers to a Yes/No question. The participant should press the "Clear" key and enter a new valid answer.

To clear a response, the CLEAR key must be pressed and released before the Reply® WRS960X Base Station receives the keypad transmission. This may take 0.5 second. While the "Clear" key is depressed, the keypad will display the letter C on the SSD.

**Comment [B.H.1]:** Is this range correct?



Figure 1-A

- The keypad is out of range of the Base Station. Try moving the keypad closer to the base. An out of range keypad's LED indicator will wink approximately every 2.5 seconds (with 250 keypads polling).
- If the LED indicator on one keypad stays on and never blinks while other keypads are working, check the address and channel of the keypad. If everything appears to be set correctly, then the pad might need factory repair.

There is also a low battery detect circuit built into the keypad to notify the user when the battery is getting low and needs replacement. This causes the LED indicator to flash at a high rate (several times per second) when the battery is getting low and should be replaced. There will, however, still be several hours of usage left in the battery, allowing use of the keypad until the meeting is completed.

### 3.2 Softkeys



A new feature for the WRS5200 keypad is the addition of 3 "Softkeys". These keys can be used as 3 extra general purpose response buttons for non-numeric responses.

### 3.3 Set Keypad Address



Model WRS5200 keypads have a mode that allows the user to change or recall the current keypad address. There are two methods for accessing this mode:

- Enter code 951 (See Section 6 for how to enter 9XX codes).
- Press and hold "Clr" and press "1". Then release both keys. This feature may be disabled from a previous base command. If it is disabled, use the 951 code listed above.

Once one of the above actions has been performed, the two lower horizontal segments will light on the keypad. At this point, you have 5 seconds to do one of the following actions:

- To recall the current address, press the "\*" key. The address will blink out on the display (001 – 250).
- To set a new address, simply type in the new 3-digit address (i.e. "0"- "0"- "1" = address 1, and "2"- "5"- "0" = address 250).

If the address was changed, the keypad will use this new address on the next key press.

### 3.4 Set Keypad Channel Number



The WRS5200 keypads contain a mode that allows the user to recall or change the current channel. There are two different methods of accessing this mode:

- Enter code 973 (See Section 6 for how to enter 9XX codes).
- Press and hold "Clr" and press "2". Then release both keys. This feature may be disabled from a previous base command. If it is disabled, use the 973 code listed above.

Once one of the above actions has been performed, the two lower horizontal segments will light on the keypad. At this point, you have 5 seconds to do one of the following actions:

- To recall the current channel, press the "\*" key. The channel will blink out on the display (01 – 15).
- To set a new channel, simply type in the new 2-digit address (i.e. "0"- "1" = channel 1, and "1"- "5" = channel 15).

If the channel was changed, the keypad will use this new channel on the next keypress.

### 3.5 Changing the Batteries

Each keypad is powered from 2 x "AA" batteries. Fleetwood recommends using alkaline batteries, but rechargeable NiMH batteries work giving a shorter life. In order to use rechargeable batteries, a third party charger must be used since the keypads are not rechargeable. One fresh set of alkaline batteries can last for up to 100,000 votes.



## 4.0 How to Use the Base

### 4.1 System Power

Press the Power key to turn on the WRS960X base. The base will display a Reply<sup>®</sup> splash screen and then default to the Main Menu of the system.

The Power key is also used to turn off the base. Press and hold the Power key, until the “Powering Down” message is displayed, to shut down the base.

The base will turn off automatically after 5 minutes, if no keys are pressed.

### 4.2 Main Menu

Main Menu is the default screen that appears after the base is powered up. The Main Menu can also be accessed directly, from most other screens, by pressing the “Main” button.

The Main Menu allows access to all utility functions needed to operate the base. Functionality accessible from the Main Menu includes: Clearing stored questions and test result data from the base, opening predefined question lists, saving test result data to a USB disk, viewing help screens and accessing the setup menu.

### 4.3 System Help

System Help is accessible from a Main Menu softkey and a direct key on the keypad. The System Help screens provide information on the functionality of all keys on the base.

To access System Help press the “Help” softkey on the Main Menu or the direct Help key located near the bottom of the base membrane. After pressing the Help key press any other key to access a short description of the keys functionality.

### 4.4 System Setup Menu

System setup is accessed with the “Setup” softkey on the Main Menu. Functionality accessible from the System Setup screen includes: channel selection, video output control, backlight control, keypad test screen, video output format, firmware revision and LCD contrast control.

#### 4.4.1 Channel Selection

While in the System Setup Menu select the “Basic” tab with the softkey left/right arrows. Press the “1” key to access Channel Selection. The Channel Selection screen displays the currently selected channel and allows for the selection of different channels. The valid channel range is 1-15.

Use the softkey left/right arrows to cycle through the available channels. Channels are stored in the base memory and are recalled after a power cycle or a change of batteries.

#### 4.4.2 Video Output Control

While in the System Setup Menu select the “Basic” tab with the softkey left/right arrows. Press the “2” key to access Video Output Control. The Video Output Control screen enables/disables the output of a video signal from the base. The video signal can be displayed on devices that support NTSC and PAL/SECAM video signals. This includes most TV’s and video projectors.

To enable Video Output, press the “1” key on the base. To disable Video Output press the “2” key on the base. The current video selection will be highlighted. The Video Output selection is not stored in the base. Video Output will default to disabled after a power cycle or a change of batteries.

**NOTE:** Enabling Video Output significantly decreases battery life. To conserve batteries only enable Video Output when necessary.

#### 4.4.3 Backlight Control

While in the System Setup Menu select the “Basic” tab with the softkey left/right arrows. Press the “3” key to access Backlight Control. The Backlight selection screen enables/disables the LCD backlight. When the backlight is turned on the LCD will be illuminated for 5 seconds after each keypress.

To enable the Backlight, press the “1” key on the base. To disable the Backlight, press the “2” key on the base. The Backlight setting is stored in the base memory and is recalled after a power cycle or a change of batteries.

**NOTE:** Enabling the Backlight option will reduce battery life.

#### 4.4.4 Keypad Test Screen

While in the System Setup Menu select the “Diagnostics” tab with the softkey left/right arrows. Press the “4” key to access Keypad Test Screen. The Keypad Test Screen allows the viewing of responses from keypads that are set to the same channel as the base.

The test grid is setup to display all fifty keypads that can be used with the system. Keypad responses are displayed in a grid format with 10 keypad address

numbers per line. (E.g. Responses for keypad addressed to 1 will be displayed in the upper left corner. Responses for keypad addressed to 50 will be displayed in the lower right corner.)

Keypad responses displayed in reverse text (white text/black background) indicate a low battery on the keypad.

#### 4.4.5 Video System Selection

While in the System Setup Menu select the “Advanced” tab with the softkey left/right arrows. Press the “5” key to access Video System Selection. The Video System Selection screen allows selection of the desired video output type. Two video output formats are supported: NTSC and PAL/SECAM.

To select NTSC video format, press the “1” key on the base. To enable PAL/SECAM video format, press the “2” key on the base. The current video format selection will be highlighted. The Video System Selection is stored in the base memory and is recalled after a power cycle or a change of batteries.

#### 4.4.6 Firmware Revision

While in the System Setup Menu select the “Advanced” tab with the softkey left/right arrows. Press the “6” key to access Firmware Revision. The Firmware Revision screen displays the current version of firmware running on the base.

#### 4.4.7 LCD Contrast Control

While in the System Setup Menu select the “Advanced” tab with the softkey left/right arrows. Press the “7” key to access LCD Contrast Control. Use the softkey left/right arrows to adjust the contrast of the LCD display. Pressing the left arrow softkey turns the contrast down. Pressing the right arrow softkey turns the contrast up.

#### 4.5 Loading Predefined Questions

The WRS960X base supports the ability to load up to 99 predefined questions. Predefined questions are stored in a CSV file format. See additional documentation on creating predefined questions here. The questions are loaded via a USB flash drive. Previously loaded questions will be overwritten with new questions.

To load predefined questions, connect a USB flash drive containing the Question.csv file. From the Main Menu, select the “Open” softkey option. A USB animation will be displayed as the predefined question file is loaded into the base memory.

If the question file is loaded successfully, the first question contained in the Question.csv file will be displayed for polling. If an error occurs while loading a question file the base will return to the Main Menu. Loaded questions are stored in base memory and will be available after a power cycle or a change of batteries.

**WARNING:** Do NOT remove the USB flash drive while the base is loading a question file. Corruption of data on the USB flash drive may occur if the drive is removed while being accessed.

#### 4.6 Saving Test Results

The WRS960X base supports the ability to store up to 99 test results. Test results may be a combination of predefined question results and impromptu question results. Both types of questions may be re-voted up to 10 times. Re-voting a question uses an additional test result storage space. Test results are stored in base memory and will be available after a power cycle or a change of batteries.

To save test results, connect a USB flash drive to the base. From the Main Menu, select the “Save” softkey option. A USB animation will be displayed as the test results file is saved to the USB flash drive. A confirmation screen will be displayed after test results are successfully stored to disk.

**NOTE:** Saving test results can take anywhere from a couple of seconds to a couple of minutes. The time depends on the type of USB flash drive used and the size of the test result file being saved. Test results may be displayed using this software.

**WARNING:** Do NOT remove the USB flash drive while the base is saving test results. Corruption of data on the USB flash drive may occur if the drive is removed while being accessed.

#### 4.7 Clearing Questions and Test Results

All predefined questions and test results are stored in memory on the base. Periodically this data needs to be cleared. From the Main Menu, select the “New” softkey option. Press the “1” key to delete all predefined questions and stored test results from base memory. Press the “2” key to return to Main Menu without deleting any data.

**WARNING:** Make sure test results have been stored to a USB flash disk before deleting. Test results are NOT recoverable after they have been deleted from base memory.

**Comment [B.H.3]:** Need reference to Neil’s software application documentation.

**Comment [B.H.2]:** Need to reference Neil’s software application documentation.

#### 4.8 Voting Predefined Questions

There are two ways to access predefined questions. The first predefined question is automatically displayed after loading from the USB flash drive. Predefined questions, previously stored in the base, can also be accessed with the “Query” key. After pressing the “Query” key a selection between impromptu and predefined question types is displayed. Press the “2” key to access predefined questions.

Predefined questions display a question number in the format: Q01.0. The “Q” denotes a predefined question. The “01” specifies the question number. The “0” specifies the number of times the question has been re-voted. The left/right softkey arrows allow for selection of a specific question. The page up/down softkey will be displayed for questions that have more than five possible answers. Press the page up/down softkey to toggle between possible answers.

To start voting a question, press the “Start” polling key located at the bottom of the base membrane. Notice that the question number displayed at the bottom left of the LCD now shows “#0”. During polling, keypad vote count is displayed instead of question number. Keypad vote count keeps track of how many keypads have responded to the question. Press the “Stop” polling key when finished voting a question. Select the next question to vote by pressing the left/right softkey.

#### 4.9 Voting Impromptu Questions

Impromptu questions allow the presenter to ask a question “on the fly”. These questions can be voted at any time and do not have to be prepared before a meeting. There are nine different types of predefined questions available. They include the following types:

1. Multiple Choice (A-E)
2. Multiple Choice (1-5)
3. Yes/No
4. Yes/No/Abstain
5. Yes/No/Don't Know
6. Strongly Agree – Strongly Disagree (4 point)
7. Strongly Agree – Strongly Disagree (5 point)
8. True/False
9. Softkey Response

Press the “Query” key to display the Impromptu Question/Previously Defined Question selection screen. Press the “1” key to select an impromptu question. The list of question types, corresponding to the description above, is displayed on the screen. Use the page up/down key to view all question types. Select the question type by pressing the associated

numeric key. After selecting question type the Select Correct Answer screen is displayed. The correct answer is used when displaying user responses in graph/grid format and when saving test results to file. Select the correct answer by pressing the associated numeric key.

The impromptu question is now displayed and ready for voting. Notice the question number format: I01.0. The “I” denotes an impromptu type question. The “01” specifies the impromptu question number. The “0” specifies the number of times the question has been re-voted. Impromptu questions can be re-voted until exiting the currently selected impromptu question screen.

#### 4.10 Displaying Test Results

Test results are displayed in the order in which questions are voted. Test results can be displayed in both a graph and grid format directly on the base. The graph format displays the voting results in a bar graph style format. The grid format displays the voting results in a 50 block grid. Each block in the grid represents one keypad.

##### 4.10.1 Graphing Test Results

Graphing test results displays the percentage or count of votes for each possible answer. Press the “Graph” key, located on the left side of the base membrane, to display test results. Test results can be displayed in a percentage format or an actual count format. Pressing the “Graph” key toggles the between displaying a percentage or an actual count. Questions having more than five possible answers will display the page up/down softkey. Press the page up/down softkey to display the rest of the results. Press the left/right softkeys to display results for each question voted.

##### 4.10.2 Grid Display Test Results

Grid display of test results displays results in a 50 block grid. The grid is read left to right, top to bottom. Keypad channels 1-10 are displayed on the first row with additions groups of 10 channels in following rows. Keypads that have voted the correct answer will display a “✓”. Keypads that have voted the incorrect answer will display the numerical value voted. The correct answer for the question is displayed at the bottom of the screen. Press the left/right softkeys to display results for each question voted.

## 5.0 CSV File Data Format

### 5.1 Question.csv File Format

The first record of the CSV file will always contain the number of total questions that have been pre-defined. It will be in this format:

```
<Total Questions>[CR][LF]
```

Total questions will always be 2 bytes of ASCII defining the number of questions (i.e. “03” means there are three questions and “99” means there are 99 questions).

Each pre-defined question will be stored in a CSV file called “Question.CSV” in the following format:

```
<Question Number>,[Question Type (1-9)],[Correct Answer],<Number of Keys Used>,<Text Line 1>,<Text Line 2>,...,<Text Line 12>[CR][LF]
```

Where:

Item	Fixed Length (Characters)	Description
Question Number	2	Question number for the following data (01-99)
Question Type	1	ASCII value representing the question type (same as impromptu list)
Correct Answer	1	Correct answer (numeric keypress expected). For example, if the correct answer is “True” for a True/False Question, “1” would be listed as the correct answer.
Number of Keys Used	2	Used to determine what keys to disable on keypad.
Text Line N	20	ASCII string containing text that will be displayed on line N. Each text line can be up to 20 characters long. Base will automatically pad lines shorter than 20 characters with spaces (0x00).

### 5.2 Results.csv File Format

“Results.CSV” will contain all question information as well as all keypad responses. Each question record will be in the following format:

Each question record will be formatted as follows:

*Question Information*

<Question Number (Major)>,[Question Number (Minor)],[Times Voted],[Question Type],<Correct Answer>,<Text Line 1>,<Text Line 2>,...,<Text Line 12>

*Keypad Voting Information (continuation of the same record but separated for readability)*

<Keypad Address>,<Response Data>,<Status>,<Serial Number>...Repeated for all 50 keypads...[CR][LF]

Where:

Item	Fixed Length (Characters)	Description
Question Configuration Items	Fixed Length (Characters)	Description
Question Number (Major)	2	Question Number (01-99)
Question Number (Minor)	1	Re-Vote Number (0 = initial vote, 1=first re-vote, 2=second re-vote, etc). The limit is 9
Question Type	1	ASCII value representing the question type (same as impromptu list)
Correct Answer	1	Correct answer (numeric keypress expected). For example, if the correct answer is “True” for a True/False Question, “1” would be listed as the correct answer.
Text Line N	20	Text string for line N. Data must be exactly 20 characters long for each line of text. Extra space on each line should be padded with spaces (hex 0x20).
<b>Keypad Vote Items</b>		<b>Items below repeated for all 50 keypads</b>
Keypad Address	2	Keypad Address (01-50)
Response Data	1	
Status	2	Battery status, and other status options TBD
Serial Number	6	Serial Number of the keypad (000000 – FFFFFFF)

## 6.0 Keypad 9XX code Quick Reference Guide

Most of the keypad settings are controlled by a series of 9XX codes, where “XX” represents a two digit number. To enter a 9XX code, press and hold down the “C” key, type in the 3 digit 9XX code, and release the “C” key.

For example, to enter the code “970”, press and hold the “C” key, type “9”-“7”-“0” and then release all keys. In this example, the keypad will blink back the firmware revision.

9XX code	Description
910	Display the key that was pressed.
911	Display a secure character ("-") instead of the key that was pressed. The actual key pressed will still be sent.
920	Disable post acknowledge
921-929	Enable post acknowledge for 1-9 seconds
930	Disable the "*" key.
931	Enable the "*" key.
940	Disable sending low battery message.
941	Enable sending low battery message (A "?" is sent after each response if the battery is low)
951	Setup the keypad's address.
952	Disable the C-1 and C-2 shortcut keys.
953	Enable the C-1 and C-2 shortcut keys.
960	Display the keypad's 6 digit serial number (in Hex)
970	Display the keypad's firmware revision
973	Setup the keypad's channel.
980	Reset EEPROM to default settings.
983	Disable key lockout (Any key can be pressed at any time).
984	Enable key lockout (Only the first key is accepted until an acknowledge is received).

## 7.0 Command List

This device is designed to be simple and portable. In order to keep operation of this base station simple, not all of the keypad features on the Reply<sup>®</sup> Worldwide keypad will be available to be changed. The following table shows all keypad options and the state that these options will be in when running with an Einstein base station:

<b>Option</b>	<b>Status</b>	<b>9XX Code</b>
Local Echo	Always on	910
Asterisk Key Enable	Always on	931
Low Battery Notification	Always on	N/A
Post Acknowledgement	Always on	920
Keypad Shortcut Keys	Always off	N/A
Softkeys	Always on	N/A
Individual Key Lockout	Controlled automatically by question type	N/A
Only Accept First Key	Always Off	983



## 8.0 How To Return Components

If you encounter a problem that requires sending keypad(s) or base(s) to Fleetwood for service, please enclose a cover letter with an itemized list of product being returned with a description detailing the problem with each component. Be as accurate as you can **and be sure to include your Name, Return/Billing address and phone number.**

Before shipping the product back to Fleetwood, the owner should contact our Product Service Coordinator at

1-888-GO REPLY (467-3759)

to obtain a Return Material Authorization (RMA) number prior to shipping the product back to the factory.

**NOTE:** An RMA number **MUST** be obtained before shipping product back to Fleetwood. Fleetwood will not accept any product without a RMA Number

For product under Warranty, see section 10.0 "Limited Product Warranty".

Unless otherwise specified, all parts should be sent to:

**Fleetwood Group, Inc.**

**Electronics Division**

**Product Service Coordinator**

**11832 James Street**

**Holland, MI 49424**

**Phone Support**

To reach **Fleetwood's Technical Support**, call **1-888-467-3759**.

Fleetwood's standard hours are Monday through Friday 7:00 AM to 3:30 PM Eastern Standard Time.



## 9.0 Accessories

Call Fleetwood or an authorized dealer for information on available storage/shipping cases, extra cables or power supply kits.



## 10.0 Limited Product Warranty

Fleetwood Group, Inc. warrants its Reply® Cordless Response System components for a period of 24 months from the date of manufacture for any material or workmanship defect in the product. This warranty does not extend to batteries or any product component, which has been subjected to misuse, neglect, accidental breakage, improper installation, use outside of present guidelines, or alteration outside of our factory.

This product uses internal antennas built directly on the printed circuit board. Modifying this antenna in any way will result in reduced range and will void the warranty. There are no user serviceable parts inside the base or keypad.

Fleetwood Group, Inc. agrees to remedy, at the factory, any product defect, or at its discretion, replace any component or part of the product provided the owner complies with the following procedures:

- 1) The owner is to determine that the problem is not the battery or a faulty or improper connection with the personal computer or power source.

The owner will contact our Product Service Coordinator at

1-888-GO REPLY (467-3759)

to obtain a Return Material Authorization (RMA) number prior to shipping the product back to the factory.

The owner will send the defective component via prepaid freight to:

**Fleetwood Group, Inc.**  
**Electronics Division**  
**Product Service Coordinator**  
**11832 James Street**  
**Holland, MI 49424**

- 2) If the factory determines the defect is due to negligence or oversight on the part of the owner, the owner will be invoiced for the cost of the repair.

## 11.0 FCC Compliance Information

WRS960X Reply<sup>®</sup> Base Station and WRS7200 Reply<sup>®</sup> Keypad  
Responsible Party Pertaining to the Declaration of Conformity

**Fleetwood Group, Inc.**  
**11832 James Street**  
**Holland, MI 49424**  
**Attn: Product Service Coordinator**  
**Phone: 888-467-3759**

*This device complies with Part 15 of the FCC Rules and RSS-210 of the Industry Canada Rules. 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 user is cautioned that changes or modifications to the device that are not approved by the manufacturer could void the user's authority to operate the device.*

### **Notice**

*The base and keypad units may be susceptible to Electrostatic Discharge (ESD) and other similar fast transient events causing system interruption. Should system interruption occur, reset base unit by powering down and powering up. Push any key on keypads which have powered down.*

## 12.0 Technical Specifications

Size (LxWxH) (mm)	147.6 x 72.6 x TBD
Weight	TBD
Enclosure type	Black ABS Plastic
Power Requirements	Battery powered, (3) AAA Alkaline Cells
PC Interface	USB Flash Drive interface
Connectors/Buttons	-USB connector (Type A) for flash drive -23 key membrane
Display:	-132x64 Graphics LCD -Composite TV Output (NTSC, PAL/SECAM)
Bootloader	Main code will be firmware upgradeable
Maximum Keypad Capacity	50
Number of Channels	15
Groups	1 group of 50 keypads per Base ID
Range between keypad and base	TBD
Number of pre-defined test questions	99
Number of times a question can be repeated and stored to memory	Max of 10
Number of impromptu test questions	Max of 99
Answer Length	Single digit only.
Battery Life Expectancy	TBD
Range	Minimum of 100 feet (30.5 m) (with open-air, line-of-sight conditions)
Drop Test Durability	Fleetwood EDP100 Type B compliant

## 13.0 Troubleshooting Procedures

### DO's

- Position the Base Station in a clear, open location such as the top of a desk. This will provide optimal performance.
- Elevate the Base Station to at least keypad height, or higher if possible for best reception.
- Check out the keypads before use. Use a data stream test utility to assure that data is properly flowing to the PC.
- Verify the channel number of each keypad. Make sure it matches the Base Station channel (i.e. Channel #1 pads can only "talk" to a Base Station when it is set to Channel #1).

### DON'Ts

- Avoid placing the Base Station on large, metal areas such as a TV cart. The metal could cause some RF performance deterioration.
- Never position the Base Station inside or near a metal enclosure.
- Avoid positioning the keypad on a metal surface during operation as this may cause the RF performance to deteriorate.
- Never have two Base Stations with the same channel turned "on" at the same time.
- Never have two keypads with the same ID number assigned to avoid overwriting keypad responses.
- Never use a keypad that has a rapidly flashing display. This indicates the battery is low and must be replaced.

*Caution: Use of the system in an outdoor location or different indoor environments can significantly alter the range of the keypads.*

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