You have just purchased a precision data logger system.

To ensure proper installation of the WiZARD Wireless System, please read this manual in its entirety and follow the steps listed closely.

IMPORTANT PLEASE READ: Before you begin installation, have the Receiver, Logger(s) and any Repeater(s) at the base computer where you plan to install the WiZARD Software and Receiver. DO NOT turn on any of the WiZARD devices until instructed in the startup instructions.

Definitions

Host PC:
- PC where the Wizard Software and WR100 Receiver are installed and Loggers and Repeaters are setup.
- Only one Wizard System can operate on one PC at any time.
- Logged data can only be viewed from Host PC.
- This PC must be on 24/7 in order for the Wizard system to operate properly.

Wizard Software:
- Software included with the WR100 Receiver required to setup, manage and view all loggers and repeaters.
- Stores all logged data points for viewing via graphs and tables.
- Must run 24/7 on host PC in order for Wizard system to operate properly.

Receiver (WR100):
- The Receiver forwards data packets from the loggers to the Wizard software.
- Must always be connected to the PC via a USB cable and should be powered via the AC adapter.
- The Receiver must always be on and connected to the host PC in order for the Wizard system to operate properly.

Logger (WT100/WT120/WH120):
- Take temperature or temperature/humidity sample points at regular intervals and send those readings to the receiver at regular transmission intervals.
- Loggers must be at the host PC for setup.
- Have a practical operating range of up to 300 ft from Receiver. Any metal infrastructure or other wireless devices will significantly reduce operating range.

Repeater (WA100):
- Extends the distance of a logger from the Receiver by forwarding the data packet from the logger to the Receiver.
- Must be setup in the Wizard Software in order to operate.
- Logger(s) must be told to send data packet to the Repeater not the Receiver.
- Repeater can forward data packets for multiple loggers.

Signal Sensor (WS100):
- Allows the user to determine the signal strength of the Receiver and any setup Repeaters at a current or potential Logger or Repeater location.
- Highly recommended for users with multiple loggers or loggers over 100 ft. from the Receiver.

Wizard Manual Index

The following steps must be completed in order and followed closely. Failure to do so may result in having to completely uninstall the system and starting from step one.

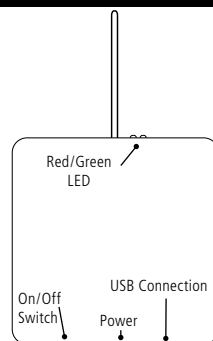## 1 - Installing WiZARD Software

1. Insert CD – CD installation file opens
2. "Welcome" window opens. Click on NEXT
3. "Destination Folder" window opens. Accept Defaults. Click NEXT
4. "Ready to install" windows opens click "Install"
5. Program begins installation – View progress bar.
6. Installation complete. Click FINISH.
7. Software is now installed and the Dickson Wireless shortcut is on your desktop.

Note: If a DotNet DS.exe error occurs or if you are unable to open the software once installed do the following:

1. Open folder dotnetfx on the WiZARD software CD
2. Double click on dotnetfx.exe file and follow installation prompts.
3. Software should now open.

2 - Install Receiver (WR100)

1. Receivers and Repeaters look very similar. Make sure you are installing the Receiver. Check the serial number on the back of the unit, it should start with WR.
2. Insert 2 AA batteries (included with instrument) into battery compartment on back of unit.
3. Plug in AC adapter to Receiver.
4. Connect USB cable to Receiver and available USB port on PC
5. Turn on Receiver via toggle switch on the bottom of the Receiver case (slide to the left). When turned on the Green LED will blink three times, Red LED will remain on.
6. Within a minute, the "Found New Hardware" pop up will appear. Wait until pop up confirms installation of Wizard receiver.

The receiver is now installed. If WiZARD software is not yet open, double click on the WiZARD shortcut to open and wait for "Connected" to show in the lower left hand corner of the screen. This may take up to 3 minutes.

Did you purchase a Signal Sensor (WS100)?

**Yes**: follow the steps in section 3 to use the Signal Sensor for Logger and Repeater placement.

No: Did you purchase a Repeater(s)?

- **Yes**: Review the Network Layout Example in Section 4 then move to Section 5 Installing Repeaters
- **No**: Skip to Section 6 Installing Loggers

3 - Signal Sensor (WS100)

1. Save time and possible lost data by using the Signal Sensor before installing Loggers/ Repeaters.
2. Once the Receiver has been installed, go to each designated logger location, with the Signal Sensor, to determine if the Receiver signal strength will be strong enough to reach the Logger. (See Signal Sensor Operating Instructions below.)
3. The display will indicate if the Receiver can be found and how strong the signal is.
4. If two or less bars show or if the signal strength changes frequently a Repeater will be required to ensure consistent communication of the Logger to the Receiver.
5. Repeat for all logger placement locations.
6. If it has been determined that a Repeater(s) is required, install the Repeater(s) first and link each logger to its designated Repeater when installing.
7. See the Network Layout Example below to see how the Loggers and Repeaters work together to create a robust system.
8. The Signal Sensor is ideal for determining if the target Logger location is within range of the Receiver or Repeater.
9. **Operation**:
   Hold down any button on your signal sensor for 3 seconds to turn on and move to the location where you wish to place the logger or repeater. The Signal Sensor will tell you if it can see the receiver or other repeaters and display signal strength. If a repeater or receiver is found and more a two bars are displayed, the target location is good. If a repeater or receiver can not be located or displays two or less bars, move closer to known repeater or receiver locations until a stronger signal is found.


Unit Type:
RCV = Receiver;
RPT = Repeater

ID   SIGNAL

RCV 633B   � IIII

Unit ID

Signal strength
- up to 4 bars
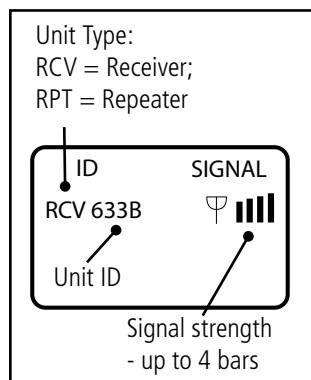
Example of WiZARD Network layout

1. Only one receiver on base PC
2. Loggers 215A, 458G, 321M, & 785K are close enough to communicate directly with the receiver
3. Logger 385X needs to forward its signal through repeater 269H in order to reach the receiver
4. Logger 862T needs to forward its signal through 2 repeaters (245O & 125L) to reach the receiver
5. Note: Repeater 125L can forward a signal from multiple loggers and other repeaters
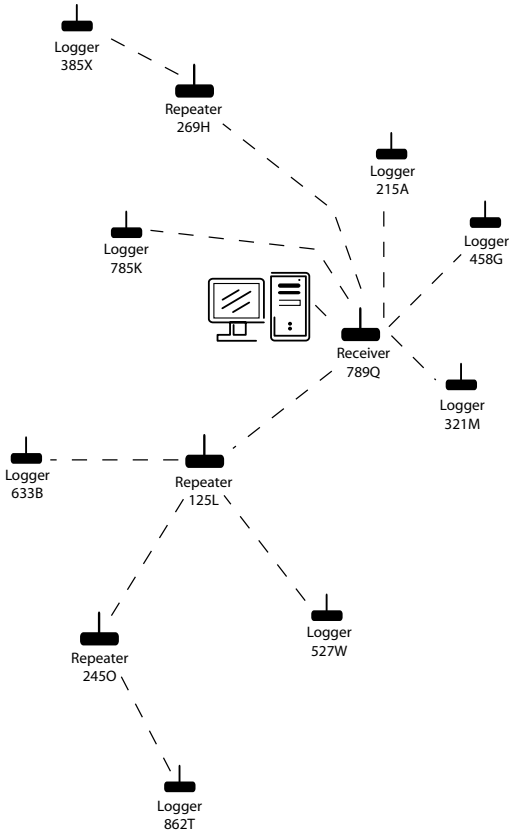
Below is a diagram detailing a wireless network set-up and how it appears under the Structure menu option
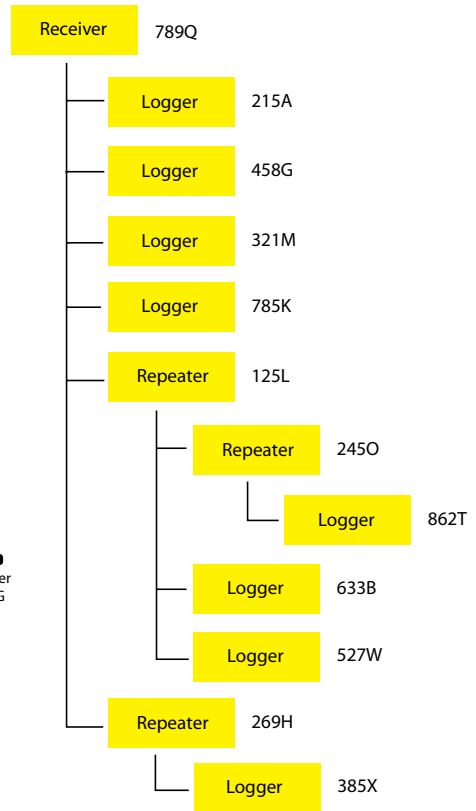
1. If a logger is found to be out of range by the Signal Sensor, will be more than 100 feet from the receiver, or if there are several signal obstacles between the receiver and logger, a repeater can be installed between the receiver and logger.

2. Insert two AA batteries (included with instrument) into battery compartment on back of unit.

3. Plug in AC adapter to Repeater.

4. From the Wizard Status Screen click on SETUP and ADD Logger/Repeater.

5. The Repeater installation screen is the same as the logger installation screen but only requires the following information (go to page 9 for detailed descriptions of logger setup fields):
   a. Unit type: Select Repeater
   b. Unit ID: 4 character alpha/numeric ID number on back of logger case.
   c. Name: Any name you wish to give a logger: Alpha/numeric field 15 characters.
   d. Location: Location description of where logger is to be placed: Alpha/numeric field 15 characters.
   e. Status: Active

6. Once screen is complete, click on SAVE CHANGES AND START button.

7. **A window will pop up "Turn on Unit and click OK". Turn on the Repeater via On/Off switch located on the bottom of the case (slide switch to the left). Green LED will blink, Red LED will remain solid. Then click on the OK button.**
   Note: The Repeater must be turned on before OK is clicked or the Repeater will not install

8. Wizard software will search for the repeater and tell you when it has been installed.

9. The Repeater now shows up in the Wizard logger table and can be placed at the desired logging location.

10. If the Repeater did not install, make sure the Repeater was turned on before the OK button was pressed and that the Unit ID matches the last 4 characters of the serial number.

1. Insert 2 standard AA batteries (included with instrument) into battery compartment on back of unit. **DO NOT TURN ON LOGGER**

2. Open WiZARD software

3. Click on the link in the Welcome window to install loggers or Add Logger in the logger set-up screen.

4. The Add Logger/Repeater screen requires the following information (go to page 6 for detailed descriptions of logger setup fields):
   a. Connect Via: Tells the logger where to send its signal. Select Reciever or an installed Repeater
   b. Unit type: Logger = Sensor
   c. Setting Way: leave at Near
   d. Unit ID: Last 4 digits of serial number (can be alpha and/or numeric).
   e. Name: Any name you wish to give a logger: Alpha/numeric field 15 characters.
   f. Location: Location description of where logger is to be placed: Alpha/numeric field 15 characters.
   g. Status: Active
   h. Push to Start:
      i. No: Logger will automatically start logging once logger is setup.
      ii. Yes: Will delay logging till push to start button on logger is pressed. Logger Status Screen will display "no data" until Push-to-Start button is pressed and Logger sends signal based on Transmission Frequency
   i. Sample Rate: Select a sample rate between 30 seconds and 15 minutes in 1 second intervals. Sample Rate can not exceed Transmission Frequency
   j. Transmission Frequency: Select 5, 10 or 15 minutes (tells the Loggers how frequently to send the data to the receiver
   k. Alarm Temp/Humidity: Set min and max alarm conditions for logger if desired.
   l. Alarm Delay: If desired an alarm delay of up to 999 minutes can be set.

5. Once screen is complete, click on "Save Changes & Start".

6. **A window will pop up "Turn on Unit and click OK". Turn on the logger via On/Off switch located on the bottom of the logger (slide switch to the right - Red LED will blink) and click on the OK button. Note: The logger must be turned on before OK is clicked or the logger will not install.**

7. Wizard software will search for the logger and tell you when it has been installed.

8. The logger now shows up in the Wizard logger table and can be placed at the desired logging location. Signal Sensor is recommended for proper location of Loggers and Repeaters. See Signal Sensor.
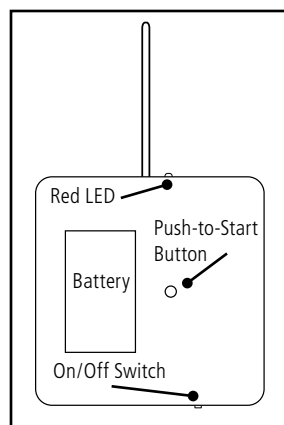
9. NOTE: If the logger will not install (Logger Not Found) please do the following:
   a. Did the LED flash Red when the logger was turned on?
      i. NO: Replace the batteries and try again
      ii. YES: Try the steps below again.
         a. Stay in Setup screen.
         b. Double check Unit ID. Should match last 4 digits of serial number.
         c. Turn the logger off (LED's should not be lit).
         d. Click on SAVE CHANGES AND START button.
         e. Wait for the pop up "Turn on Unit and click OK".
         f. Turn on logger and make sure the Red LED flashes. If the Red LED does not flash, please replace batteries.
         g. Click OK on the pop up window.
         h. The logger should install. If it does not, please contact technical support 800.323.2448
   b. Full administrative permissions are required to run this system. Limited permissions can prevent a logger from installing or communicating.

The Wizard System Installation is now complete. Sections 7 and 8 will guide you through modifying logger setup and layout. Section 9 contains system uninstallation instructions. The remainder of the manual will provide an overview of Wizard software features.

7 - Modifying Logger Setup

To change logger setup such as Sample Rate and Transmission Frequency (do not use to modify Connect Via - see Modifying Logger/Repeater Network Structure in section 8)):
1. From the Status Screen, right click on the target logger and select Edit. If you are in the Setup Screen, double click on the Logger to Edit.
2. Modify desired settings
3. Click on SAVE CHANGES AND START
4. A window will pop up "Online Setting OK". Click OK
5. The changes will take affect after the next scheduled logger transmission.

8 - Modify Logger/Repeater Network Structure

Once a Repeater has been installed existing loggers can be modified to send data to the receiver via the repeater.
The Logger/Repeater must be brought to the base PC.
1. From the Status Screen, right click on the target logger/repeater and select Edit. If you are in the Setup Screen, double click on Logger or Repeater to edit.
2. The Edit Logger/Repeater window will pop up.
3. Change Setting Way to Near
4. Change Status to Inactive
5. Save Changes and turn off logger/repeater
6. Open Edit Logger/Repeater window again for same logger
7. Change Setting Way to Near
8. Change Connect Via from Receiver to the target Repeater
9. Change Status to Active

10. Click on SAVE CHANGES AND START

11. A window will pop up "Turn on Unit and click OK" turn on Logger/Repeater and press OK.

Note: More than one repeater can be linked together to extended the range of the network.

9 - Setup Screen Definitions

1. **Connect Via**: Allows you to tell the logger where to send its signal to. If you are using repeaters, you can tell the logger to send its data to a specific repeater or directly to the receiver.

2. **Unit type**: Tells the software if a repeater or logger is being installed.

3. **Setting Way**: Near (recommended) - the Logger or Repeater is next to the PC during setup or edit so that you can turn the unit on within a few seconds of being instructed by the Wizard software; Far – the logger/receiver has been placed in the logging location and is not next to the PC. Setup and recognition of the logger/receiver will take longer in these cases. The Logger Status screen will display "no data" while waiting for communication from the Logger or Receiver.

4. **Unit ID**: A 4 digit alpha numeric ID# on the back of the Logger case.

5. **Name**: Any name you wish to give the device to help identify it.

6. **Location**: Where the device should be placed.

7. **Temp Units**: All devices will either read temperature in F or C. This can be changed under Tools/System Settings.

8. **Status**: This should read Active for any newly installed device. Change a device to Inactive when it is taken out of service.

9. **Push to Start**: Loggers only. Setup logger, but delay logging until the device is placed in logging location and the start button on the back of the unit has been pressed..

10. **Sample Rate**: Loggers only. User can determine in minutes & seconds how frequently samples are taken. Sample rate can range from 30 seconds to 15 minutes in 1 second intervals.

11. **Transmission Frequency**: Loggers only. Tells the logger how frequently to send logged data.

12. **Next Calibration Date**: Loggers only. Due date of next calibration.

13. **Alarm Temperature/Humidity**: Set Min and Max alarm limits for each sensor.

14. **Alarm Delay**: Loggers only: Delays alarm notification in minutes.

10 - Uninstallation

1. Loggers and Repeaters can not be uninstalled from the Wizard Software. If a Logger is returned for calibration or a Logger or Repeater is taken out of service, Edit the affected unit and change Logger Status to InActive.

2. The Receiver can be disconnected without affecting existing installed loggers and repeaters and saved logged data.

3. The Software can be uninstalled and reinstalled with out affecting installed Loggers and Repeaters (the Receiver should be uninstalled and reinstalled along with the software. Saved logged data will not be affected.
   a. Uninstall Software
      i. Start, Control Panel, Add or Remove Programs
      ii. Click on Dickson Wireless and Click on Change/Remove
      iii. An uninstall utility will pop up. Select Uninstall – follow commands

4. Uninstalling the database will delete all saved logged data. If loggers will not install, contact technical support 800.323.2448

11 - Software Summary

Wizard Software is user friendly and feature packed. (see page 5 for detailed description)

1. Status Screen:
   a. View all installed loggers and repeaters
   b. Alarm Conditions for: Low Battery, Min/Max Alarm, Calibration Due, Lost Transmission
   c. Displays: Current/Min/Max Readings, Active Status, Battery Level and Calibration Due Date
   d. Right Click on any logger in the table to view logged data in a Graph, Table or Edit logger setup

2. Graph Mode:
   a. Allows for multiple loggers to be viewed on one graph.
   b. Multiple graphs can be opened and viewed at the same time.
   c. Easy export to Excel, save as .jpg or print.
   d. Quick reference of summary data.

3. Table Mode:
   a. Multiple tables can be opened and viewed at the same time.
   b. Easy export to Excel

4. Structure Screen:
   a. View relationship between Receiver, Repeaters and Loggers

5. Setup:
   a. View all installed Loggers and Repeaters
   b. Edit Logger Setup
   c. Add new Loggers/Repeaters

1. Status Screen

Name	Location	Last Transmission	Current		Minimum		Maximum		Reset Min/Max	Battery Level	Calibration Due Date	Status	Clear Alarm
			Temp	RH	Temp	RH	Temp	RH					
Logger A	desk	11/19/07; 15:37:19	77.40 °F	34.70 %	70.50 °F	30.10 %	79.90 °F	47.00 %		Good	05/14/08	Inactive	
Logger B	file cabinet	11/21/07; 10:32:26	70.10 °F	38.90 %	70.10 °F	34.80 %	82.10 °F	93.50 %		Good	05/19/08	Active	■
Repeater A	table											Active	

  a. View real time status of all Loggers and Repeaters.

  b. Right click on any Logger to view logged data in a Graph, Table or Edit Unit setup

  c. Data included in the table:

    i. Name: Name of Logger/Repeater

    ii. Location: Location of Logger/Repeater

    iii. Last Transmission: Date and Time of last transmission. Will show in red if communications with a logger or repeater are lost. Will display "no data" if logger is waiting for push-to-start or setup with Setting Way of Far and unit has not yet made first transmission.

    iv. Current Temp/RH: Most current reading displayed

    v. Minimum and Maximum Temp/RH: Displays Min/Max readings taken since logger was activated or since Min/Max was reset. Out of range conditions will show in red.

    vi. Reset Min/Max: Min/Max readings can be reset by clicking on the box in the column.

    vii. Battery Level: A battery level of Good or Low will display. A Low reading will show in red and batteries should be changed.

    viii. Calibration Due Date: The calibration due date is 6 months from the last date of calibration. An item due for calibration will display the due date in red. The Calibration Due Date can be modified in the Logger/Repeater Edit screen.

    ix. Status: All units should show as Active unless taken out of service and made InActive by the user.

    x. Clear Alarm: Box will show in red when any of the below alarm conditions shown exist. Clicking on the box will temporarily clear the alarm until the next transmission.

  d. Alarm Conditions:

    i. Lost Transmission

    ii. Low Battery

    iii. Calibration Due

    iv. High/Low Alarm

  e. Sort table by clicking on any column header.

  f. Alarm Conditions automatically move to the top of the table.

2. Setup Screen:

Name	Location	Logger ID	Min Alarm Setting		Max Alarm Setting		Alarm Delay		Last Modified	Status
			Temp	RH	Temp	RH	Temp	RH		
Logger A	desk	6013	-40	0	302	95	1	1	11/21/07; 10:12:13	Inactive
Logger B	file cabinet	600B	-40	0	70	95	1	1	11/21/07; 10:12:33	Active
Repeater A	table	1006							11/21/07; 10:04:45	Active

  a. View a setup summary of all Loggers and Repeaters

b. Double click on any Logger or Repeater to Edit Setup
c. Add Logger button brings up Add a New Logger window
3. Add a New Logger Window:
   a. Add/Edit a Logger or Repeater
   b. Summary of Fields:
      i. Connect Via: Allows you to tell the logger where to send its signal to. If you are using repeaters, you can tell the logger to send its data to a specific repeater or directly to the receiver.
      ii. Unit type: Tells the software if a repeater or logger is being installed.
      iii. Setting Way: Near (recommended) - the Logger or Repeater is next to the PC during setup or edit so that you can turn the unit on within a few seconds of being instructed by the Wizard software; Far – the logger/receiver has been placed in the logging location and is not next to the PC. Setup and recognition of the logger/receiver will take longer in these cases. The Logger Status screen will display "no data" while waiting for communication from the Logger or Receiver.
      iv. Unit ID: A 4 digit alpha numeric ID# on the back of the Logger case.
      v. Name: Any name you wish to give the device to help identify it.
      vi. Location: Where the device should be placed.
      vii. Temp Units: All devices will either read temperature in F or C. This can be changed under Tools/System Settings.
      viii. Status: This should read Active for any newly installed device. Change a device to Inactive when it is taken out of service.
      ix. Push to Start: Loggers only. Setup logger, but delay logging until the device is placed in logging location.
      x. Sample Rate: Loggers only. User can determine in minutes & seconds how frequently samples are taken. Sample Rate can range from 30 seconds to 15 minutes in 1 second intervals. The Sample Rate selected can not exceed the Transmission Frequency selected. For example a Sample Rate of 7 minutes can not have a Transmission Frequency of 5 minutes. Must select 10 minutes.
      xi. Transmission Frequency: Loggers only. Tells the logger how frequently to send logged data. User can select intervals of 5, 10 or 15 minutes
      xii. Next Calibration Date: Loggers only. Due date of next calibration. Can be modified by the user.
      xiii. Alarm Temperature/Humidity: Set Min and Max alarm limits for each sensor.
      xiv. Alarm Delay: Loggers only: Delays alarm notification in minutes. Alarm starts after transmission.
4. Structure:
   a. This screen displays the relationship of all Loggers and Repeaters to the Receiver.

Wizard Wireless Network - Structure Screen

Home Setup Help ▾

Receiver	**Receiver** Receiver	
Receiver	**Logger** Logger B	
	Repeater Repeater A	
Repeater	**Logger** Logger B	

5. Tools/Dataset Backup:

Wizard Wireless Network - Tool Screen

Home Help ▾

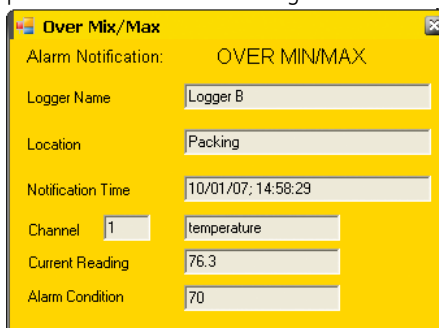Backup Dataset to this Location   [ ]   Browse   Backup
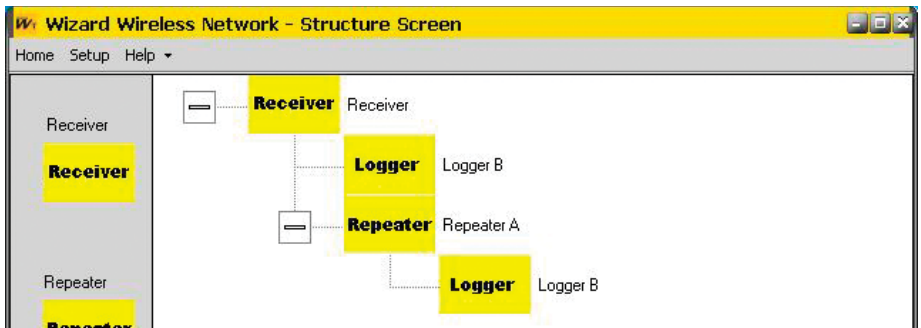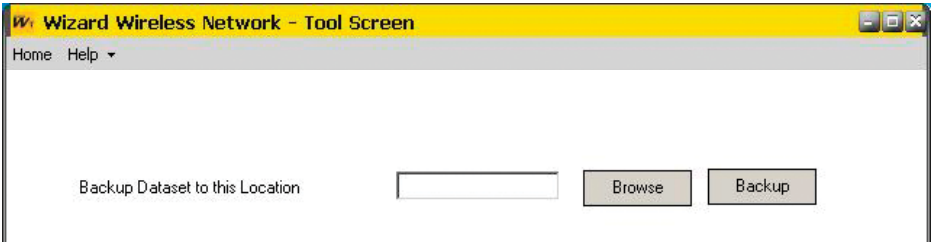
    a. A copy of the database (all logged data) can be stored in another location – recommended.

6. Tools/System Settings:

System Settings
Temperature Unit Setting
   C   ● F

Log File Setting
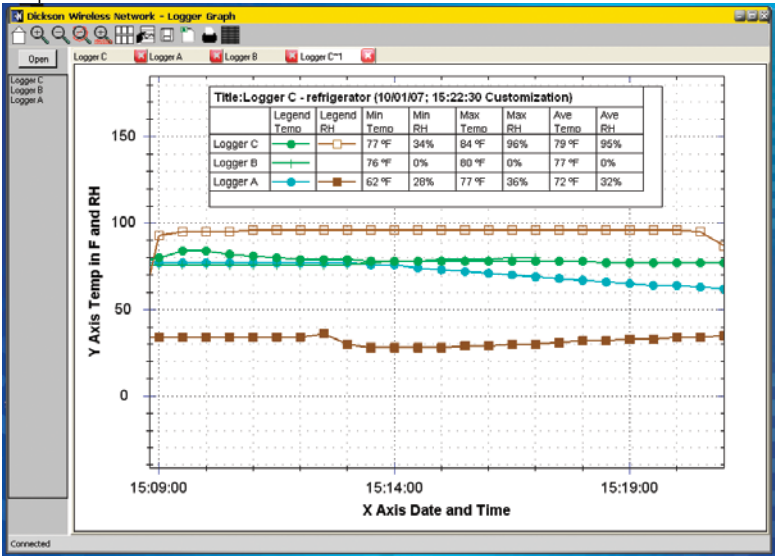   ☐ Keep Log File

OK   Cancel
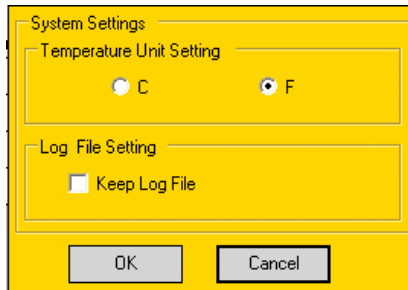
    a. Changes temperature units between F or C
    b. Creates a log file of all Wizard activity. This feature takes up a lot of memory and is not recommended unless required by the user.

7. Alarm Pop-Up appears when unit is out of range or communications have been lost.

Over Mix/Max

| Alarm Notification:	OVER MIN/MAX
Logger Name	Logger B
Location	Packing
Notification Time	10/01/07; 14:58:29
Channel 1	temperature
Current Reading	76.3
Alarm Condition	70

13

8. Graph:

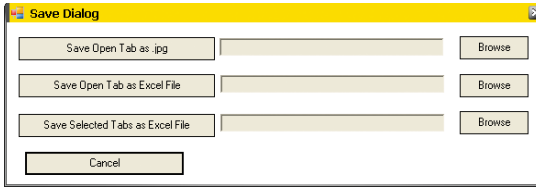NOTE: Graphed data does not update with most current readings. Real time data can be viewed in the Status Screen.

a. View logged data in a graph by right clicking on any logger on the Status Screen and selecting Graph.

b. A column of all loggers will appear on the left side of the screen. Multiple loggers can be viewed on the same graph:

   i. Select each logger while holding the CNTL key. Click on Open to see selected logger on the same graph.

c. More than one graph can be opened at a time. Tabs across the top of the graph area will show all open graphs.

d. Zoom: Zoom In/Out, UnZoom and Zoom by Date. The logged data can also be dragged from right to left to scroll back and forth through time.

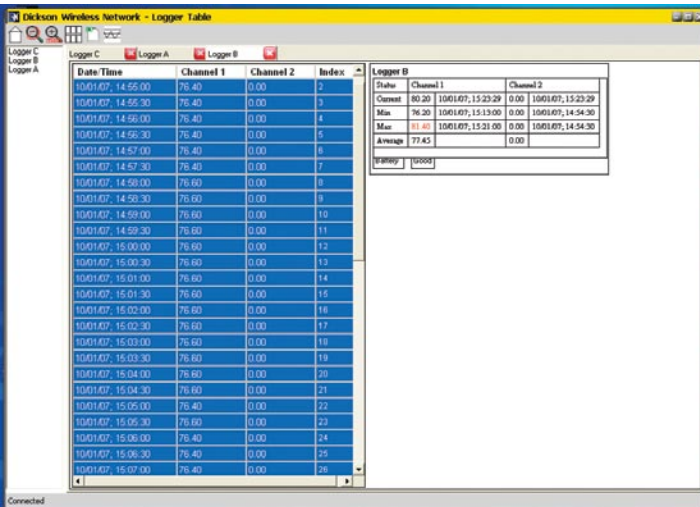e. All open graphs can be viewed at the same time in tile view.
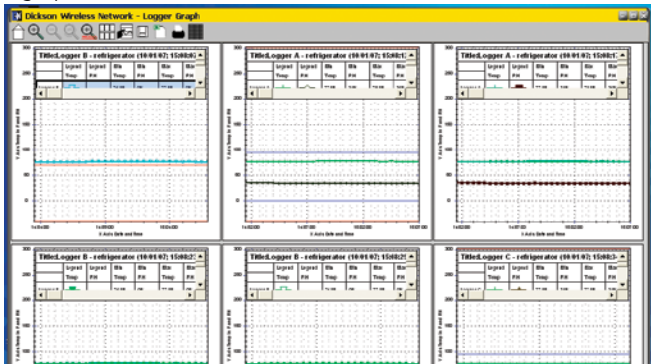
f. Graph titles, font type, Axis scales, and Line and Point styles can be customized for a graph.

g. A single graph or multiple graphs can be saved as: .jpg or Excel files.

h. Graph(s) can also be exported directly to Excel.

i. Graph(s) can be printed.

j. All loggers open in graph view can be viewed as a table.

9. Tables:

a. View logged data in a table by right clicking on any logger on the Status Screen and selecting Table

b. A column of all loggers will appear on the left side of the screen. Only one logger can be viewed in a table at one time, but multiple tables can be opened at the same time.

c. The tabular data does not update as new logged data is received from the logger, but the Logger summary table to the right does.

d. All open tables can be viewed at the same time in tile view.

e. Tabular data can be saved as an Excel file

f. All open tables can be viewed in graph view

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

This device has been designated to operate with the antennas listed below, and having a maximum gain of 2 dB. Antennas not included in this list or having a gain greater than 2 dB are strictly prohibited for use with this device. The required antenna impedence is 50 ohms.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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Telephone: 630.543.3747 • **Fax:** 630.543.0498 • **E-mail:** DicksonCSR@Dicksondata.com

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