iVIEW™ PC Version 5.0

Operating Manual

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1. Introduction

iVIEW™ PC for the XLG3™, XL PRO™ Plus, XL PRO VideoProbe® and Ca-Zoom® PTZ systems is the most advanced and versatile re-measurement tool available today. This package provides a user-friendly interface that allows:

- Viewing and re-measurement of all images captured by the VideoProbe systems.
- Image format conversion between Bitmap and JPEG
- Tile/Cascade of images for orderly display and comparison
- Image annotation
- Playback of audio .WAV files associated with images
- Playback of MPEG video clips

2. Installation

Minimum System Requirements

- 333 MHz Processor
- 32MB RAM (64MB RAM recommended)
- Windows® 2000, Windows XP
- Microsoft® Word
- 15MB of available hard disk memory space
- Microsoft® .NET Framework (Included on iVIEW PC software CD-ROM)
- MPEG2 codec*

Software Installation

- Insert the iVIEW PC software CD-ROM into your PC's CD/DVD-ROM drive. The installation will automatically start. Follow the onscreen instructions to install iVIEW PC.

Getting Started

- To start iVIEW PC, either double click on the iVIEW PC icon located on your desktop or in the Start Menu ▶ Programs ▶ GEIT Rhythm ▶ iVIEW PC.

Note: Microsoft .NET Framework must be installed to run iVIEW PC. Installation will detect if Microsoft .NET Framework is installed on your system. If Microsoft .NET Framework is not installed, then software installer will prompt you to install.

*** Note:** Playback of MPEG2 videos requires the MPEG2 codec. This codec can be found on the Power DVD CD-ROM included with the iVIEW PC Plus kit. To load Power DVD, insert the Power DVD software CD-ROM into your PC's CD/DVD-ROM drive and follow the onscreen instructions.

3. User Interface

3.1 APPEARANCE

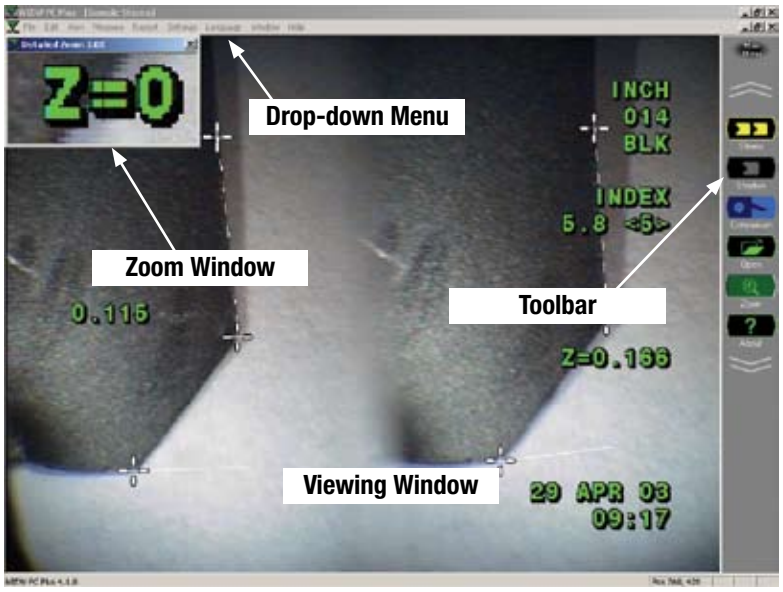

Figure 1

3.2 OPTIONS

The following modifications to the user interface are available under the **View** drop-down menu. This allows the user to customize the interface to best serve his/her needs.

- The following functions can be toggled ON/OFF.
  - Toolbar
  - Status Bar
  - Move Cursor Bar
  - Audio Playback Bar

- Image Size allows the user to toggle between Original Size (1:1) and Maximized Image. Maximized Image increases the image size to fill the screen.

- The Zoom Window is a detailed 3x magnification of the area surrounding the cursor. It can be toggled ON/OFF. The zoom window can be enlarged by dragging the corner, or moved by dragging the heading bar.

4. Settings

Several options can be configured to the user's needs with iVIEW PC. These options are listed under the **Settings** drop-down menu.

- ***Products*** – Allows user to setup user interface for either VideoProbe or PTZ.
- ***Units*** – Allows selection of either inches or millimeters for measurement data.
- ***Color*** – Allows the selection of color for both displayed text and graphics. The user can choose between red, green, blue, white and black.
- ***JPEG Quality*** – Allows the user to choose between super high, high and low JPEG quality when saving images. Stereo images, however, are limited to Bitmap, super high or high quality JPEG to maintain measurement accuracy.
- ***Display Index*** – Toggles the display of the accuracy index when making Shadow or Stereo measurements.
- ***Display Segment*** – When point-to-line or stereo depth measurements are performed, lines are created to establish references for the measurement. The lengths of these lines can be displayed in the bottom right hand corner of the image by enabling the Display Segments option.
- ***Display Tutorial*** - When the Display Tutorial setting is on, the tutorial guides the user through the software. The instructions follow the cursor and instruct the user on a step-by-step basis.
- ***Video Settings*** - Please see the "Video Playback" section on page 6.

5. File Management

All file management options are listed under the **File** drop-down menu. Many of these options can also be performed using the Thumbnail Viewer (Figure 2). Image files can be transferred to a PC by any form of media (i.e. CompacFlash® card, USB thumb drive, etc). Additionally, a network enabled XLG3 VideoProbe system allows image transfer over a network.

- ***Open*** – Used to open image files. When Open  is selected the thumbnail gallery displays all images available in the chosen directory. File navigation and organization is easily accomplished using this thumbnail viewer.
- ***Save*** – Saves the current image with any changes that have been made under the same file name and same file format. A Save button  appears on the toolbar when in measurement mode.
- ***Save As*** – Saves the current image with any changes that have been made under a new file name that the user enters. If the image has an associated audio file, the audio file will also be saved using the filename entered by the user. This option allows the image format to be changed. The original image and audio files will not be affected.
- ***Rename*** – Changes the name of the image file and its associated audio file if one exists. The image format cannot be changed with this option.

XLG3 ViDEOPROBE SYSTEM NETWORK FEATURES

Note: The XLG3 VideoProbe system must be connected directly to a PC's network port via an ethernet cable from the XLG3's network port **OR** the PC can be connected to the XLG3 VideoProbe system using a local area networked connection.

- **Open Remotely from XLG3** - Used to "open file remotely" on the XLG3 system for viewing in iVIEW PC, such as image or video files located on the XLG3 system.

  - Enter the IP address from the XLG3 system.
  - Click "OK."
  - Click on the "/internal/" folder to gain visibility to all folders.
  - Select folder and highlight selected file and click "OK".
  - "Browse For Folder" box opens allowing user to select the destination to copy to, including "Make New Folder" option.

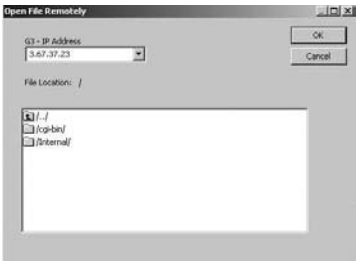

Figure 2

- **Export to XLG3** - Allows user to select files on PC and save selected files such as .jpg or .bmp images onto the XLG3 system. All images are uploaded to the "Internal / Upload" folder. The destination folder is not user selectable.

  - Enter the IP address from the XLG3 system if it has not been previously.
  - Click "OK."
  - When the message in the "G3 – IP address selection" appears click "OK" again.

Figure 3

- **Import to XLG3** - Allows user to select multiple files from any folder on the XLG3 system and save them onto their PC in the selected location or desired folder.

  - Enter the IP address from the XLG3 system if it has not been previously.
  - Click "OK."
  - Click on the "/internal/" folder to gain visibility to all folders.
  - Select folder and highlight selected file and click "OK."
  - Choose your file location.

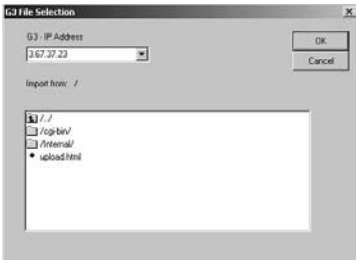

Figure 4

THUMBNAIL VIEWER

The thumbnail viewer allows for intuitive file management. The thumbnails allow the user to efficiently select files for viewing/measurement.

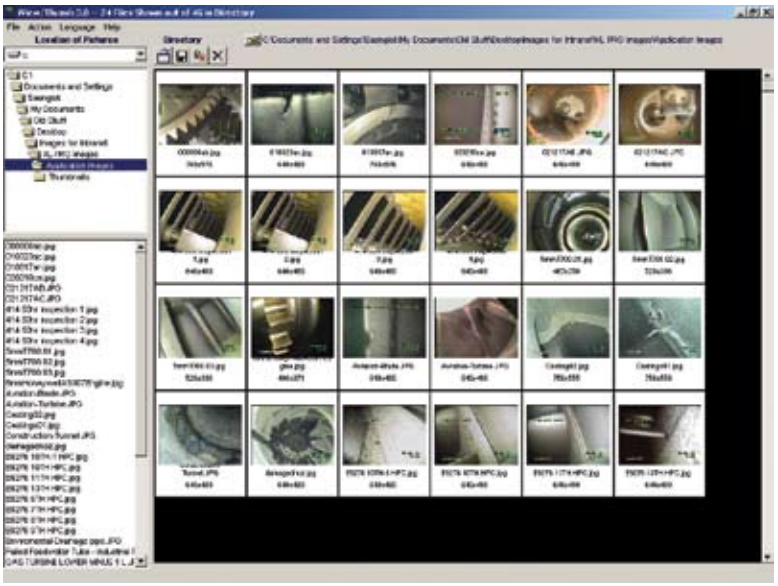

Figure 5

- ***File Navigation*** - Search image files using the file navigation box in the upper left hand corner of the screen. Find the folder in which your image files are saved to have them dis played on the thumbnail viewer.
- ***Renaming a File*** - To Rename a file, highlight the appropriate image (by clicking once on its thumbnail) then press the save button . This will open a screen that allows for image renaming.
- ***Save Image to a New Location -*** To save a file to different folder, press the button. A screen will appear to allow you to select a new file name and location.
- ***Refreshing the Image*** - To refresh the image so the thumbnail view reflects any changes made, press the refresh button , or right-click on the image and select refresh.
- ***Deleting an Image*** - To delete an image, highlight the image you would like to delete and press the delete button .

6. Audio Playback

When an image is opened, the software automatically searches the directory in which the image is located for an audio file (.WAV) with the same name as the image. This is how audio files are stored by the XL PRO/ XL PRO Plus VIdeoProbe and Ca-Zoom PTZ systems. If an audio file is found, an audio playback toolbar will be displayed.

Support for the XLG3 VideoProbe system audio file is not available at this time.

7. Video Playback

iVIEW PC allows for the video playback of the MPEG1 and MPEG2 video files taken with the XL PRO/XL PRO Plus, XLG3 VideoProbe and Ca-Zoom PTZ systems. The playback interface is represented in Figure 6 below.

Figure 6

Playback features include:

Play – Initiates the start of a video playback
Stop – Stops video playback and resets the video back to the beginning of the clip
Pause – Stops video playback and holds the video at the current frame
Forward – Advances the video clip ahead one frame
Backward – Moves the video clip back one frame
Snapshot – Creates a still image (BITMAP or JPEG) from the video clip

- For Snapshot settings access the Video Setting (Figure 4) from Settings in the drop-down menu
- In addition to allowing you to choose your save location and file type, the Video Settings window allows you to:
  - · Append the file names for the easy creation of multiple files
  - · Set playback speed
- Change snapshot size

Figure 7

8. Image Edit

There are several edit options available with the iVIEW PC software. These edit options are located under the Edits drop-down menu and/or in the Toolbar (Figure 1).

- ***Clear Last Measurement*** – This function clears the last measurement made on the image.
- ***Clear Measurements*** – This function clears all the measurements on the image. There is also a Clear All button  on the toolbar when in measurement mode.
- ***Text Annotation*** – This allows the user to add text annotation to the image. When Text Annotation is selected a text box will appear. Type the desired text into the dialog box and click save. The entered text will then follow the mouse cursor until the user left-clicks to inserts it in the desired location. Text annotation can only be cleared using Edit > Annotation > Clear All Annotation from the drop-down menu. There is a text annotation button 

when in measurement mode.
- ***Arrow Annotation*** – This allows the user to place arrows on the image. When Arrow Annotation is selected an arrow follows the mouse cursor until the user inserts it in its desired location. The last arrow placed can be rotated using Edit Arrow > Annotation > Rotate Arrow. Arrow Annotation can only be cleared using Edit > Annotation > Clear All Arrows.
- ***Move Cursor*** – This option is used to make fine adjustments to the locations of the measurement cursors.
- ***PROVIEW*** – transforms the onscreen measurement image to invert the brightness and enhance the image (only available through the Toolbar).

9. Measurement

There are four-measurement modes possible with iVIEW PC: Shadow, Stereo, Laser and Comparison. Shadow and Stereo measurements can only be made if the images were taken on an XLG3 or XL PRO/XL PRO Plus ShadowProbe or StereoProbe systems. Laser measurement images must be taken with a Ca-Zoom PTZ system. Comparison measurements can be preformed on any BITMAP or JPEG image. Please refer to the XLG3, XL PRO/XL PRO Plus VideoProbe or Ca-Zoom PTZ system operating manual for detailed measurement instructions.

9.1 SHADOW MEASUREMENT

To start a shadow measurement either select **Measure > Shadow Measurement** from the drop-down menu or click the Shadow button  on the toolbar. The accuracy of measurements which can be made by a trained user on an image which is of acceptable quality to perform shadow measurements using ShadowProbe measurement methods.

- If the image file does not contain shadow tip calibration data, shadow measurement will be unavailable.

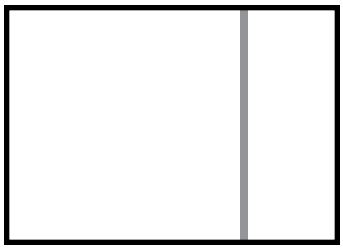

Figure 8

9.1.1 Distance Measurement

Distance measurements are made from point-to-point on a surface that is being viewed from a perpendicular perspective. This perspective will result in a straight and vertical shadow (Figure 8).

Distance Measurement Steps

- **Select Distance measurement.** Distance measurement can be selected in two ways. Either select **Measure > Shadow Measurement > Shadow Length** from the drop-down menu or select the Length button  from the toolbar.

- **Identify the shadow position.** Once distance measurement has been selected, a vertical line will follow the cursor as it is moved across the image. Place the line in the center of the shadow on the image. The position of this line tells the program the distance from the probe tip to the surface to be measured. It must, therefore, be centered on the shadow.
  - If the entire image is not flat the shadow should be marked on the surface on which the measurement is to be made.

- **Select cursors for measurement.** Place the cursors for measurement by clicking the mouse in the desired location. The displayed result is the straight-line distance between the cursors.
  - A straight vertical shadow indicates that the tip and surface are perpendicular in the vertical direction. If performing distance measurements away from the shadow, other visual cues must be used to ensure that the tip and surface are perpendicular in the horizontal direction. If you are unsure, both cursors should be placed on or near the shadow to minimize the risk of error.

9.1.2 Point-to-Line Measurement

Point-to-line measurement measures the perpendicular distance from a point to a straight line previously established on the image. As with distance shadow measurements, the image must be of a perpendicular perspective. The shadow line must therefore appear vertical (Figure 8).

Point-to-Line Measurement Steps

- **Select Point-to-Line measurement.** Point-to-line measurements can be selected in two ways. Either select **Measure > Shadow > Shadow Point to Line** in the drop-down menu or select the Point-to-Line button  on the toolbar.

- Identify the shadow position. Once point-to-line measurement has been selected, a vertical line will follow the cursor as it is moved across the image. Place the line in the center of the shadow on the image. The position of this line tells the program the distance from the probe tip to the surface to be measured. It must, therefore, be centered on the shadow.
  - If the entire image is not flat the shadow should be marked on the surface on which the measurement is to be made.

- Select cursors for measurement. Cursors are placed by clicking the cursor on the image. Three cursors must be placed to make a point to line measurement. The first two cursors placed create the reference line. The third cursor is placed at the desired position off the reference line. The resulting measurement is the line from the third point placed perpendicular to the line created by the first two points.
  - A straight vertical shadow indicates that the tip and surface are perpendicular in the vertical direction. If performing distance measurements away from the shadow, other visual cue must be used to ensure that the tip and surface are perpendicular in the horizontal direction. If you are unsure, all cursors should be placed on or near the shadow to minimize the risk of error.

9.1.3 Depth Measurement

Depth measurements are used to measure the depth between two surfaces that are both perpendicular to the probe tip. An appropriate image for a depth measurement will have a shadow line in different horizontal positions on the two surfaces (Figure 9).

Figure 9

Depth measurement steps

- **Select Depth measurement.** Depth measurements can be selected in two ways. Either select **Measure > Shadow Measurement > Shadow Depth** from the drop-down menu or select the Depth button  from the toolbar.

- **Select cursors for measurement.** Place cursors by clicking the mouse in their desired locations. Cursors for depth measurements must be placed in the center of the shadow. Placing a cursor off the center of the shadow itself tells the program that the tip-to-target distance is either smaller or larger than it actually is.

9.1.4 Skew Measurement

Skew measurements allow you to measure objects that are not perpendicular to the probe head. A skew measurement is necessary when the shadow does not sit vertically on the image (Figure 10).

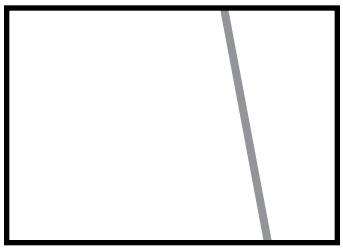

Figure 10

Skew Measurement Steps

- Select Skew Measurement. Skew measurement can be selected in two ways. Either select **Measurement > Shadow > Shadow Skew** from the drop-down menu, or select the Skew Button  on the toolbar.

- Select cursors for measurements. Place cursors by clicking the mouse in their desired locations. Cursors for skew measurements must be placed in the center of the shadow. Placing a cursor off the center of the shadow itself tells the software that the tip-to-target distance is either smaller or larger than it actually is.

9.1.5 Area Measurement

Area measurement measures the area within the perimeter established by the cursors placed by the user. To make an accurate area measurement, the image must be taken from a perpendicular perspective and have a vertical shadow (Figure 8).

Area Measurement Steps

- **Select Area Measurement.** Area measurement can be selected in two ways. Either select **Measurement > Shadow Measurement > Shadow Area** from the drop-down menu, or select the Area Button  from the toolbar.

- **Identify the shadow position.** Once area measurement has been selected, a vertical line will follow the cursor as it is moved across the image. Place the line in the center of the shadow on the image. The position of this line tells the program the distance from the probe tip to the surface to be measured. It must, therefore, be centered on the shadow.
  - If the entire image is not flat the shadow should be marked on the surface on which the measurement is to be made.

- **Select cursors for measurement.** The first of up to twenty-four cursors will appear. Use the mouse to place the cursors around the perimeter of the object being measured. When placing the final cursor double-click the mouse. The area result will then be displayed.

9.1.6 Multi-Segment Length Measurement

Multi-Segment Length measurement measures the lengths of multiple contiguous line segments to yield a cumulative length. To make an accurate multi-segment length measurement, the image must be taken from a perpendicular perspective and therefore have a vertical shadow (Figure 8).

- **Select Multi-Segment Length Measurement.** Multi-Segment Length Measurement can be selected in two ways. Either select **Measurement > Shadow Measurement > Shadow Multi-Segment** from the drop-down menu, or select the Multi-Segment Button  from the toolbar.

- **Identify the shadow position.** Once multi-segment measurement has been selected, a vertical line will follow the cursor as it is moved across the image. Place the line in the center of the shadow on the image. The position of this line tells the program the distance from the probe tip to the surface to be measured. It must, therefore, be centered on the shadow.
  - If the entire image is not flat the shadow should be marked on the surface on which the measurement is to be made.

- **Select cursors for measurement.** The first of up to twenty-four cursors will appear. Use the mouse to place the cursors along the object being measured. When placing the final cursor double-click the mouse. The total length will then be displayed.

9.1.7 Circle Gauge Measurement

Circle Gauge provides a quick means of checking to see if a defect is within allowable limits. When using circle gauge measurement the image must have been taken from a perpendicular perspective. This will result in a vertical shadow as depicted in Figure 8.

Circle gauge measurement steps

- **Select Circle Gauge measurement.** Circle gauge measurement can be selected in two ways. Either select **Measure > Shadow Measurement > Shadow Circle Gauge** from the drop-down menu, or select the Circle Gauge button  from the toolbar.

- **Identify the shadow position.** Once circle gauge measurement has been selected, a vertical line will follow the cursor as it is moved across the image. Place the line in the center of the shadow on the image. The position of this line tells the program the distance from the probe tip to the surface to be measured. It must, therefore, be centered on the shadow.
  - If the entire image is not flat, the shadow should be marked on the surface on which the measurement is to be made.

- **Enter gauge dimension.** Once the shadow line is placed, click the mouse on the image. A box appears prompting for a gauge dimension. Enter the dimension of the circle you would like to create, and click the OK button with your mouse.

- **Place the gauge.** A circle will now follow the cursor of the mouse. Place it on the defect in question.

9.2 STEREO MEASUREMENT

To start a stereo measurement, either select **Measure > Stereo Measurement** from the drop-down menu, or select the Stereo button  . Stereo measurements can only be made with images taken with an Everest VIT StereoProbe. The accuracy of measurements which can be made by a trained user on an image which is of acceptable quality to perform stereo measurements using the StereoProbe measurement methods.

- If the image file does not contain stereo tip calibration data, stereo measurement will be unavailable.

Cursor Selection for All Stereo Measurements

The user selects cursors on the left-hand image and a matching point is found in the right-hand image. The software does this by searching for similar characteristics on the right image as surround the selected point on the left image. To find good matching points the surface to be measured must, therefore, have distinguishing characteristics. The software will express its confidence in its cursor matching using a scale of < 0 > to < 5>. This "Match Strength" number will appear next to the cursor that the computer places on the right image. The higher the number the more confident the software is in its cursor placement. Points with a match strength of < 4 > or greater are recommended to insure measurement accuracy.

- If you think that the software has not picked the correct matching point, it can be altered manually. This is done with the use of the Modify button  on the tool bar. To choose a cursor to modify, click on it with the mouse. Either drag the cursor with the mouse or use the directional buttons on your keyboard to change the cursor location. The appearance of the cursor will change when a cursor is moved manually. This is to indicate to a user that the measurement results were achieved using human judgment, not the judgment of the software.

9.2.1 Length Measurements

A length measurement is a linear measurement of the distance between points on a surface of an object.

Length Measurement Steps

- Select Length measurement. Length measurement can be selected in two ways. Either select **Measure > Stereo Measurement > Stereo Length** in the drop-down menu or select the Length button  on the toolbar.

- Select cursors for measurement. Place the cursors by left-clicking on the left-hand image. The displayed result is a straight line distance between the two points.

9.2.2 Point-to-Line Measurement

Point-to-line measurements measure the perpendicular distance from a point to a straight line on the image.

Point-to-Line Measurement Steps

- **Select Point-to-Line measurement.** Point to line measurement can be selected in two ways. Either select **Measure > Stereo Measurement > Stereo Point-to-Line** or select the Point-to-Line  button on the toolbar.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the left-hand image. Three cursors must be placed to make a point to line measurement. The first two cursors placed create the reference line. The third cursor is placed at the desired position off the reference line. The resulting measurement is the line from the third point placed perpendicular to the line created by the first two points.

9.2.3 Depth Measurement

Depth measurement measures the perpendicular distance from a flat plane established by the user to another point on the image.

Depth Measurement Steps

- **Select Depth measurement.** Depth measurement can be select in two ways. Either select **Measure > Stereo Measurement > Stereo Depth** from the drop-down menu, or select the Depth button  on the toolbar.

- **Select cursors for measurement.** Four cursors must be placed to perform a depth measurement. The first three points establish a reference plane. The fourth cursor is placed at the desired position off the reference plane. The result is the perpendicular distance between the fourth cursor and the reference plane.

9.2.4 Area Measurement

An area measurement measures the area within the perimeter established by the cursors placed by the user.

Area Measurement Steps

- **Select Area Measurement.** Area measurement can be selected in two ways. Either select **Measurement > Stereo Measurement > Stereo Area** from the drop-down menu, or select the Area Button  from the toolbar.

- **Select cursors for measurement.** The first of up to twenty-four cursors will appear. Use the mouse to place the cursors around the perimeter of the object being measured. When placing the final cursor double-click the mouse. The area result will then be displayed.

9.2.5 Multi-Segment Length Measurement

Multi-Segment length measurements add the lengths of multiple contiguous line segments to yield a cumulative length.

- **Select Multi-Segment Distance Measurement.** Multi-Segment Length measurement can be selected in two ways. Either select **Measurement > Stereo Measurement > Stereo Multi-Segment** from the drop-down menu, or select the Multi-Segment Length Button  from the toolbar.

- **Select cursors for measurement.** The first of up to twenty-four cursors will appear. Use the mouse to place the cursors along the object being measured. When placing the final cursor double-click the mouse. The total length will be displayed.

9.3 COMPARISON MEASUREMENT

There are five types of measurements in Comparison Measurement Mode: distance, point-to-line, area, multi-segment length, and circle gauge. To start a comparison measurement either select Measure > Comparison Measurement in the drop-down menu, or select the comparison button  on the toolbar. Comparison measurements can be made with any image.

9.3.1 Distance Measurement

Distance measurement measures the straight-line distance between two selected points.

Distance Measurement Steps

- **Select distance measurement.** Distance Measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Length** from the drop-down menu or select the Length button  from the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** The measurement data received is the distance between cursors. Place the cursors for measurement by clicking the mouse in the desired location.

9.3.2 Point-to-Line Measurement

Point-to-line measurement measures the distance from a point to a straight line previously established on the image. The image must be of a perpendicular perspective.

Point-to-Line Measurement Steps

- **Select point to line measurement.** Point-to-line measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Point-to-Line** from the drop-down menu or select the Point-to-Line button  on the toolbar,

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the image. Three cursors must be placed to make a point to line measurement. The first two lines placed create the line from which the third line is placed. The resulting measurement is the line from the third point placed perpendicular to the line created by the first two points.

9.3.3 Circle Gauge Measurement

Circle Gauge provides a quick means of checking to see if a defect is within allowable limits. When using circle gauge measurement the image must have been taken from a perpendicular perspective.

Circle Gauge Measurement Steps

- **Select Circle Gauge Measurement.** Circle gauge measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Circle Gauge** on the drop-down menu, or select the Circle Gauge button  on the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Enter gauge dimension.** After the reference dimension is entered, click on the image with the mouse A textbox appears onscreen prompting a gauge dimension. Enter the diameter of the circle you would like to create and click the OK button with your mouse.

- **Place the gauge.** A circle will now follow the cursor of the mouse. Place it on the defect in question.

9.3.4 Multi-Segment Length Measurement

Multi-Segment Length measurement measures the lengths of multiple contiguous line segments to yield a cumulative length.

Multi-Segment Length Measurement Steps

- **Select multi-segment measurement.** Multi-segment length measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Multi-Segment** from the drop-down menu, or select the Multi-Segment button  from the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the image. Up to 24 cursors can be placed for measurement. When placing the last cursor, double-click to display the measurement result.

9.3.5 Area Measurement

An area measurement measures the area within the perimeter established by the cursors placed by the user.

Area Measurement Steps

- **Select area measurement.** Area measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Area** from the drop-down menu, or select the Area button  on the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the image. Up to 24 cursors can be used to encircle the defect for measurement. When placing the last cursor, double-click to display the measurement result.

9.4 LASER MEASUREMENT

Length Measurements are available in Laser Measurement. For accurate measurements the camera must be perpendicular the surface. To start a laser measurement either select **Measure > Laser** in the drop-down menu, or select the laser button on the toolbar.

9.4.1 Length Measurement

A length measurement is a linear measurement of the distance between points on a surface of an object.

Length Measurement Steps

- **Select Length Measurement** Length measurements can be selected in two ways. Either select **Measure > Laser Measurement > Length** from the drop-down menu of select the length button  from the toolbar.

- **Place Reference Points** Select the Set Reference  Set your reference points in the center of the laser dots. Place Measurement Cursors Place two measurement cursors on the image. iVIEW PC will display the result of the measurement.

- **Place Measurement Cursors** Place two measurement cursors on the image. iVIEW PC will display the result of the measurement.

9.5 COMPARISON MEASUREMENT

There are five types of measurements in Ca-Zoom PTZ Comparison Measurement Mode: distance, point-to-line, area, multi-segment length, and circle gauge. To start a comparison measurement either select **Measure > Comparison Measurement** in the drop-down menu, or select the comparison button  on the toolbar. Comparison measurements can be made with any image.

9.5.1 Distance Measurement

Distance measurements measure the straight-line distance between two selected points.

Distance Measurement Steps

- **Select distance measurement.** Distance Measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Length** from the drop-down menu or select the Length button  from the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** The measurement data received is the distance between cursors. Place the cursors for measurement by clicking the mouse in the desired location.

9.5.2 Point-to-Line Measurement

Point-to-line measurements measure the distance from a point to a straight line previously established on the image. The image must be of a perpendicular perspective.

Point-to-Line Measurement Steps

- **Select point to line measurement.** Point-to-line measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Point-to-Line** from the drop-down menu or select the Point-to-Line button  on the toolbar,

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the image. Three cursors must be placed to make a point to line measurement. The first two lines placed create the line from which the third line is placed. The resulting measurement is the line from the third point placed perpendicular to the line created by the first two points.

9.5.3 Circle Gauge Measurement

Circle Gauge provides a quick means of checking to see if a defect is within allowable limits. When using circle gauge measurement the image must have been taken from a perpendicular perspective.

Circle Gauge Measurement Steps

- **Select Circle Gauge Measurement.** Circle gauge measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Circle Gauge** on the drop-down menu, or select the Circle Gauge button  on the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Enter gauge dimension.** After the reference dimension is entered, click on the image with the mouse A textbox appears onscreen prompting a gauge dimension. Enter the diameter of the circle you would like to create and click the OK button with your mouse.

- **Place the gauge.** A circle will now follow the cursor of the mouse. Place it on the defect in question.

9.5.4 Multi-Segment Length Measurement

Multi-Segment Length measurement measures the lengths of multiple contiguous line segments to yield a cumulative length.

Multi-Segment Length Measurement Steps

- **Select multi-segment measurement.** Multi-segment length measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Multi-Segment** from the drop-down menu, or select the Multi-Segment button  from the toolbar.

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the image. Up to 24 cursors can be placed for measurement. When placing the last cursor, double-click to display the measurement result.

9.5.5 Area Measurement

An area measurement measures the area within the perimeter established by the cursors placed by the user.

Area Measurement Steps

- **Select area measurement.** Area measurement can be selected in two ways. Either select **Measure > Comparison Measurement > Area** from the drop-down menu, or select the Area button  on the toolbar,

- **Enter known reference dimension.** Before any measurements can be made, the user must first enter a reference dimension. Place two cursors on an object of known size. A box will then appear prompting you to enter a known dimension. Enter known size of the object.

- **Select cursors for measurement.** Cursors are placed by clicking the cursor on the image. Up to 24 cursors can be used to encircle the defect for measurement. When placing the last cursor, double-click to display the measurement result.

10. Report Generator

Image reports can be easily organized and distributed using the built-in Microsoft® Word based report generator. The iVIEW PC Report Generator imports the image with the report data (i.e. results, index values and units) to an intuitive template. Because the report generator is built on the Microsoft Word platform it can be customized to fit your specific reporting needs.

Report Generation Options

- **Generate New Word Report** - A new report can be created in Microsoft Word from any JPEG or BITMAP image. When the image is active onscreen, simply select **Report > Generate New Report** from the drop-down menu.

- **Adding to an Existing Word Report** - If you already have a report open on your Desktop, you can add an image with its associated data. Select Report **> Add to Existing Word Report**. The new image and associated data will be inserted in a new page below your existing report.

- **Modifying Your Report** - Because the iVIEW PC Report Generator is Microsoft Word based, the document can be customized to fit your specific needs.

Report Template

- **Modify Report Template** - Allows user to create a different template and save as "iViewCurrentReport.dot." This file cannot be renamed. This template file resides within the Word program and is located by following the file path directory of "Document and Settings / Application Data / Microsoft / Templates / iViewCurrentReport.dot."

- **Reset Report Template** - Used to reset Word template to default setting.

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