

# **MX900030A Connector Master Operation Manual**

**Fourth Edition**

**For safety and warning information, please read this manual before attempting to use the equipment.  
Keep this manual with the equipment.**

**ANRITSU CORPORATION**

# Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Ensure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following symbols may be used on all Anritsu equipment. In addition, there may be other labels attached to products that are not shown in the diagrams in this manual.

## Symbols used in manual



### **DANGER**

This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.



### **WARNING**

This indicates a hazardous procedure that could result in serious injury or death if not performed properly.



### **CAUTION**

This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

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This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.



This indicates an obligatory safety precaution. The obligatory operation is indicated symbolically in or near the circle.



This indicates a warning or caution. The contents are indicated symbolically in or near the triangle.



This indicates a note. The contents are described in the box.



These indicate that the marked part should be recycled.

MX900030A  
Connector Master  
Operation Manual

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When using this software and connecting with the measuring instrument

- Copying files and data

On your computer, do not save any copies other than the following:

- Files and data provided by Anritsu
- Files created by this software
- Files specified in this document

Before copying these files and/or data, run a virus scan, including removable media (e.g. USB memory stick and CF memory card).

- Connecting to network

Connect your computer to the network that provides adequate protection against computer viruses.

## Cautions on Proper Operation of Software

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This software may not operate normally if any of the following operations are performed on your computer:

- Simultaneously running any software other than that recommended or approved by Anritsu
- Closing the lid (Laptop computer)
- Turning on the screen saver function
- Turning on the battery-power saving function (Laptop computer)

For how to turn off the functions, refer to the operation manual that came with your computer.

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When you dispose of export-controlled items, the products/manuals need to be broken/shredded so as not to be unlawfully used for military purpose.





## About This Manual

This manual explains how to use the MX900030A Connector Master. For safety precautions and operation of the fiber scope, refer to the *G0306A Visual Inspection Probe Operation Manual* or *G0306B Visual Inspection Probe Operation Manual*.

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# Chapter 1 Outline

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This chapter explains the outline and configuration of the MX900030A Connector Master.

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## 1.1 Outline

The MX900030A Connector Master (hereafter this software) is the software to observe, analyze, and make a pass-fail judgment of the fiber optic connector endface by personal computer (hereafter PC) using the G0306A/B Video Inspection Probe (hereafter VIP).



**Figure 1.1-1 Example Use of This Software**

This software has the following functions.

- Real time display of fibre optic connector endfaces.
- Save images of fibre optic connector endfaces in png, jpeg, or bmp formats.
- Automatic analysis of fibre optic connector endfaces.
- Making test report in pdf format.

This software analyzes fibre optic connector endfaces according to the standards below.

IEC 61300-3-35 *Fibre optic interconnecting devices and passive components - Basic test and measurement procedures – Part 3-35: Examinations and measurements – Fibre optic connector endface visual and automated inspection*

This software can read the VIPI files that were made by the products below.

- MT9083 Series ACCESS Master
- MU909014x/MU909015x  $\mu$ OTDR
- MT1000A Network Master Pro
- MT1100A Network Master Flex

**Note:**

This software only supports the G0306A/B VIP. It cannot analyze the VIPI files saved by other microscopes.

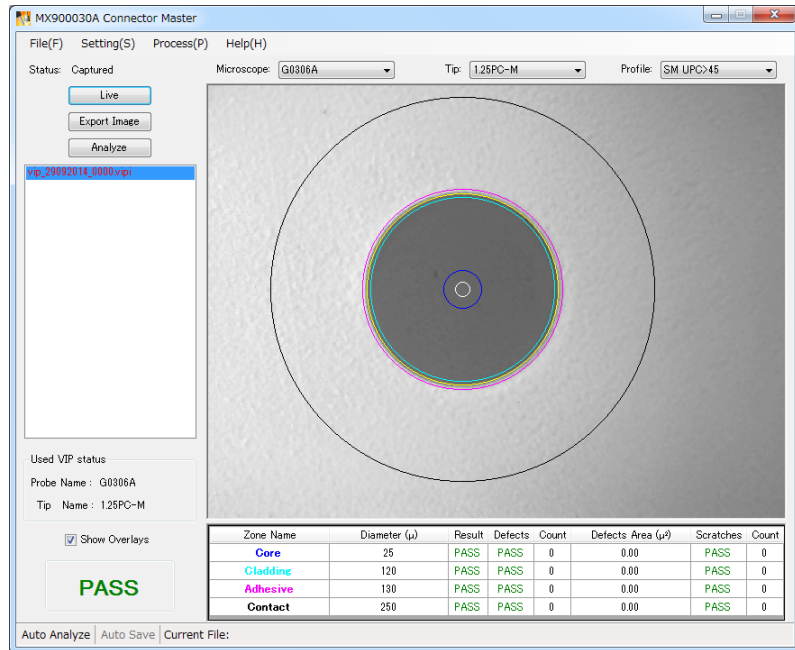


Figure 1.1-2 Example of Analysis Result

## 1.2 Recommendable Operating Environment

The Recommendable Operating Environment of the MX900030A is shown below.

**Table 1.2-1 Recommendable Operating Environment**

Item	Specifications
OS	Windows XP Professional Service Pack 3 Windows 7 (32/64 bit) Windows 8 (32/64 bit)
CPU	Processor of 1 GHz or more
Memory	2 GB or more
Free hard disk space	100 MB or more
Interface	USB 2.0
Display	1024 × 768 or more
Others	.NET Framework 4.0* <sup>1</sup> .NET Framework 4.5* <sup>2</sup> Adobe Reader 9.0 or later

\*1: For Windows XP or Windows 7.

\*2: For Windows 8.

## 1.3 Configuration

The product configuration of the MX900030A is shown below.

**Table 1.3-1 Configuration**

Model/Ordering Number	Name
MX900030A	Connector Master*
W3690AE	Operation Manual*

\*: Download from Anritsu web site.

## *Chapter 2 Installation*

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This chapter describes the process of installing and uninstalling the MX900030A by taking Windows 7 as an example.

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## **2.1 Installation**

Perform the following steps to install this software on the PC.

1. Extract the downloaded file.
2. Move the MX900030A folder from the decompressed MX900030A\_vxxx\_E folder to an arbitrary folder.  
xxx is replaced by the version number.  
If the previous version is installed, overwrite the whole folder.
3. Right-click and drag the Connector Master. exe from the MX900030A folder and drop it on the place where you want to create the shortcut.  
If the shortcut has been already created, you do not need to create it again.
4. Click “Create shortcut here” from the displayed menu.
5. If NET Framework 4.0 is not installed on your PC, double-click dotNetFx40\_Client\_x86\_x64. exe in the Runtime folder of decompressed MX900030A\_vxxx\_E folder.
6. Proceed the installation according to the instructions displayed in the dialog box.
7. Double-click the Connector Master shortcut to verify that the application starts.



## 2.2 Uninstallation

Perform the following steps to uninstall this software from the PC.

1. Delete the MX900030A folder.
2. Delete the shortcut of Connector Master.exe.
3. To delete all data completely, delete the following folder.  
C:\Users\*(user name)*\AppData\Roaming\Anritsu\Connector\_  
Master.exe\_Url\_XXXX~



## Chapter 3 Operation

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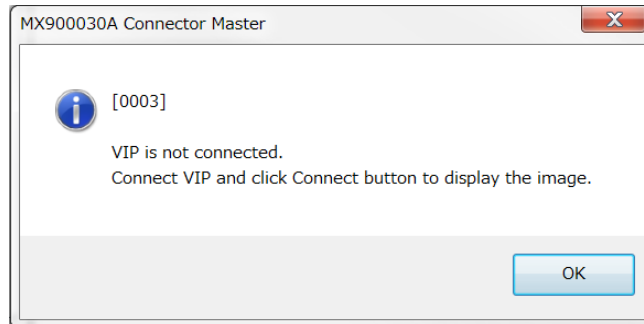
This chapter explains how to operate this software.

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## 3.1 Starting and Quitting Software

Starting the software

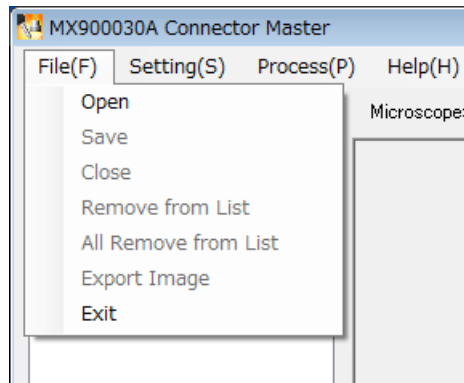
1. Click **Connector Master** in the Windows Start menu.
2. The following message is displayed if the G0306A/B VIP is not connected to the PC. Click **OK**.



3. The main window of this software is displayed.

Quitting the software

Click on **File > Exit**.



## 3.2 Main Window

The components of the Main window are as below.

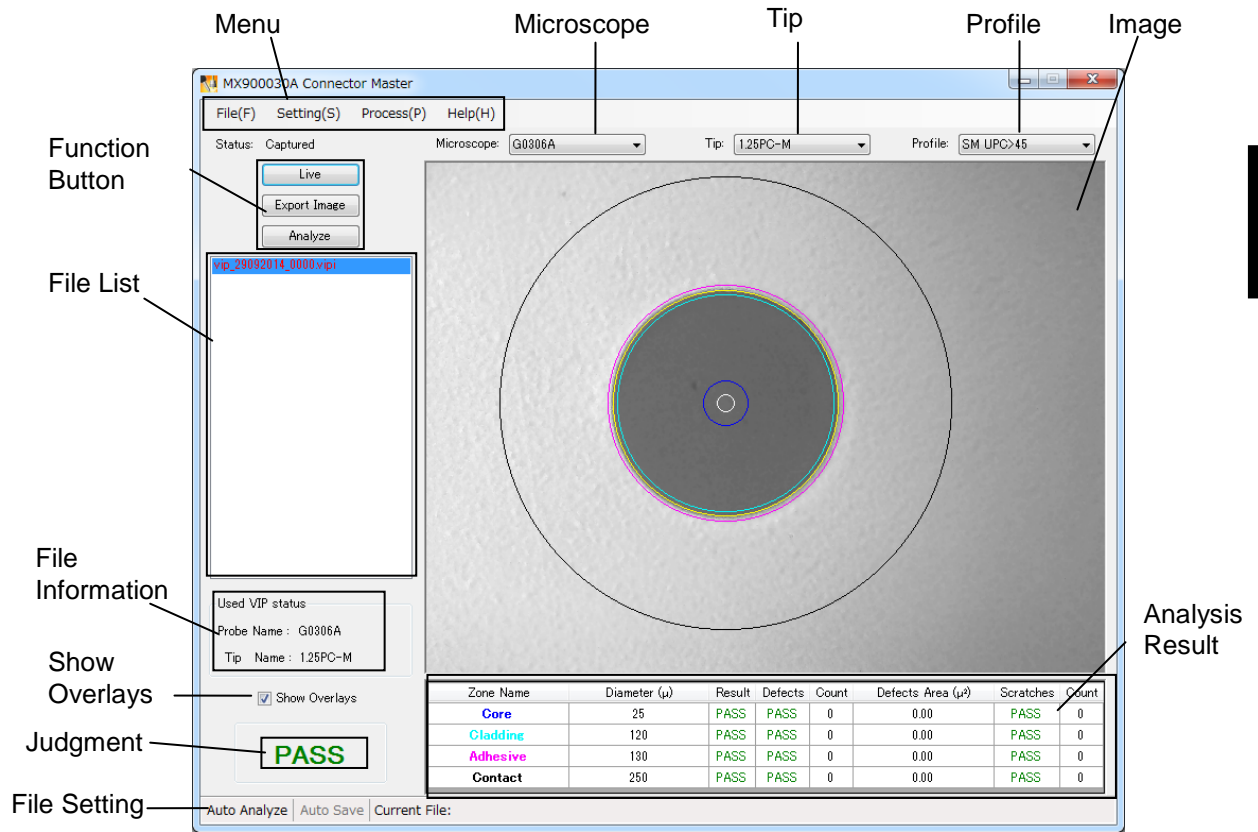


Figure 3.2-1 Components of the Main Window

The table below shows the menu list.

**Table 3.2-1 Menu**

<b>Display</b>	<b>Explanation</b>
File	
Open	Loads the VIP image files to display in the file list.
Save	Saves the images of the fiber optic connector endface and the analysis results in the selected file.
Close	Hides the image displayed on the monitor.
Remove from List	Removes the selected file from the file list.
All Remove from List	Remove all files from the file list.
Export Image	Saves the image of the fiber optic connector endface in the image file.
Exit	Exits from this software.
Setting	
Auto File Setting	Sets the file automatic saving.
PDF Report Setting	Sets the contents to output on the report.
Process	
Generate Report	Makes a report of the selected file.
Generate Report(Folder)	Generates reports from all the files in the selected folder.
Analyze	Analyzes the selected image of the fiber optic connector endface.
Help	
Manual	Displays the English operation manual. *
About	Displays the version of this software.

\*: Adobe Reader needs to be installed.

Table 3.2-2 Explanation of the Main Window

Display	Explanation
Menu	
Microscope	Select a microscope to use.
Tip	Selects a tip for the VIP to use.
Profile	Selects a fiber optic connector type.
Function Button	Connect: Connect the PC to the VIP.*1 Live: Displays the image of the fiber optic connector endface in real time.*2 Capture: Acquire and save the live image in the file.*2 Export Image: Save the image of the optic fiber connector endface currently displayed on the monitor in the image file.*3 Analyze: Executes analysis.
File List	Displays the captured or loaded VIP image files.*4
File Information	Displays the information of the selected file.
Show Overlays	The overlays to show the fiber evaluation are placed on the image, if checked.
Image	The image captured by the VIP is displayed.
Analysis Result	Displays the analysis results per zone.*5
Judgment	Displays the judgment of the image analysis.*5
File Setting	The current auto file setting is displayed. (Displayed in black when it is checked, and in grey when unchecked.)

\*1: Appears when the VIP is not connected.

\*2: Appears when the VIP is connecting.

\*3: The function is unavailable during the live.

\*4: Displays up to 100 files.

\*5: Displays the analysis and evaluation results when the analysis is performed.

The table below shows how to operate the main window by using a mouse.

Table 3.2-3 Mouse Operation

Mouse Operation	Main Window Operation
Left Click	Left-click to select items and operate buttons as below. Menu items, tip, profile, files in the file list, Show Overlays
Right Click	Right-click on the image to restore its default position and size.
Scroll	Up To enlarge the image.
	Down To downsize the image.
Drag	To move the image to a desired direction.
Double Click	Double-click a file in the file list to display its images and analysis results.

## 3.3 Fiber Endface Display

### 3.3.1 Image display of VIP

1. When this software starts, the image being taken by the VIP is displayed. The status of the window shows “Live” at that time.  
Click **Connect** if **Connect** is displayed on the function button.
2. Adjust the focus by turning the adjustment knob of the VIP.
3. Click **Capture** to capture the image. The status of the window shows “Captured”. The file is added automatically to the file list in the following name. When File Save of Auto Function is selected in Auto File Setting, the captured image is saved automatically.

(Default: C:\Users\USER\Documents\Anritsu\MX900030A)

The current user name will be displayed in the “USER”.

vip\_DDMMYYYY\_####.vpi Example: vip\_13092013\_0000.vpi

DD: day

MM: month

YYYY: year

####: number (4 digits)

**Note:**

If the setting is changed in the Auto File Setting dialog box, the file is saved with a name according to the setting.

When **Auto Function Analyze** is selected in the Auto File Setting dialog box, the fiber endface image is automatically analyzed. Then the zoned image of the fiber endface is displayed with the detected contaminations or scratches marked in colors as below.

Green: Unimportant scratches and contaminations.

Red: Important scratches and contaminations that may cause a problem.

4. If clicked, the image of the fiber optic connector endface can be enlarged or downsized by moving the mouse wheel. If right-clicked, the image is displayed in the original size. Also, the image can be moved by dragging.
5. If click **Live**, the image is displayed in real time.



### 3.3.2 File operation

#### <Saving Files>

Perform the following steps to save the image of the fiber optic connector endface and the analysis result in the VIP image file.

1. Double-click on the file you want to save in the file list to display.
2. Click on **File > Save**.
3. Input the destination folder and file name.
4. Click **Save**.

Perform the following steps to save the image of the fiber optic connector endface in the image file.

1. Double-click on the file you want to save in the file list to display.
2. Click **Export Image**.  
Or click on **File > Export Image**.
3. Input the destination folder and file name.
4. Select the file type and click **Save**.

#### **Note:**

When the image is enlarged, it is saved as it is. The parts of the image outside the main window are not output.

#### <Loading Files>

1. Click on **File > Open**.  
Or drag and drop a desired file onto the file list.
2. Input the reference folder and file name.
3. Click **Open**. The loaded file is added to the file list.
4. If double-click the file in the file list, the image and file information are displayed. Additionally, the status of the window shows "Loaded".

## 3.4 Analyzing Image of Fiber Endface

### 3.4.1 Executing analysis

Perform the following steps to set the analysis conditions.

1. Double-click the desired file in the file list and display the image.
2. Selects the ferrule adapter installed to the VIP from the Tip pull-down menu.
  - 1.25PC-M:  $\phi$ 1.25 mm PC Universal
  - 2.5APC-M:  $\phi$ 2.5 mm APC Universal
  - 2.5PC-M:  $\phi$ 2.5 mm PC Universal
  - FC-PC-F: For FC connector
  - LC-PC-F: For LC connector
  - SC-PC-F: For SC connector
  - SC-APC-F: For SC connector (APC)
  - 60-LC-PC-F: For 60 degree LC connector  
(Selectable when Microscope is set to G0306B)
3. Select the fiber type from the Profile pull-down menu.
  - SM UPC>45: Single-mode fiber, PC connector with return loss >45 dB
  - SM APC: Single-mode fiber, Angled PC connector
  - SM PC>26: Single-mode fiber, PC connector with return loss >26 dB
  - MM PC 62.5: Multi-mode fiber, Core diameter 62.5  $\mu$ m
  - MM PC 50.0: Multi-mode fiber, Core diameter 50  $\mu$ m
4. Click **Analyze** to display the analysis results and evaluation results.
5. If check **Show Overlays**, the evaluation diagram (circle) for analysis is displayed on the monitor.

**Table 3.4.1-1 Analysis Results**

Name	Description
Zone Name	Name of the analyzed zone
Diameter ( $\mu$ )	Measurement result of the diameter The unit is micrometer ( $\mu$ m).
Result	Evaluation result of the diameter
Defects	Evaluation result of contaminations or defects of the fiber connector endface
Count	Count of the detected contaminations or defects
Defects Area ( $\mu^2$ )	Total area of the detected defects The unit is square micrometer ( $\mu$ m <sup>2</sup> ).
Scratches	Evaluation result of scratches
Count	Count of the detected scratches on the fiber connector endface

If the analysis results of Result, Defects, and Scratches are all PASS, the total judgment is PASS. If the judgment is FAIL, the parts in trouble are shown in red in the analysis result.

When the fiber endface is too contaminated or the image is out of focus, the image cannot be analyzed properly. When the below message is displayed, clean the connector or adjust the focus of the VIP.

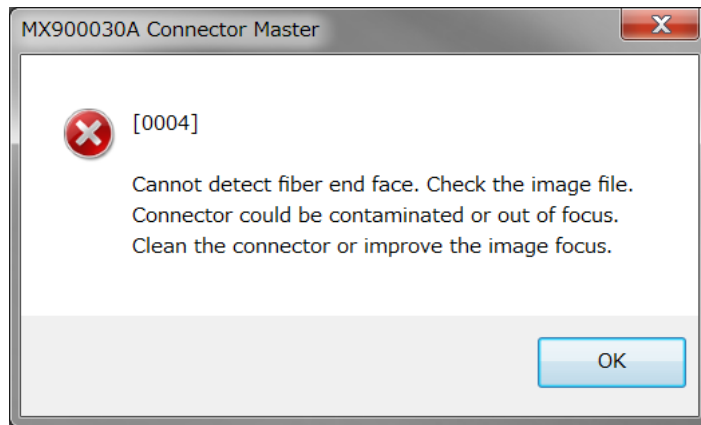


Figure 3.4.1-1 Error Message

**Note:**

The MX900030A cannot analyze VIP image files acquired by a microscope other than the G0306A/B.

### 3.4.2 Setting automatic file saving

This software can save analysis results in a file automatically. Perform the following steps for the setting.

1. Click on **Setting > Auto File Setting** to display the Auto File Setting dialog box.
2. To analyze the fiber optic connector endfaces automatically by clicking **Capture** button, check **Analyze** of Auto Function.
3. To save files automatically by clicking **Capture** button, check **File Save** of Auto Function.
4. To change the destination folder, click **Browse...** Select a new folder and click **OK**. The default destination folder is the document folder.
5. Set a file name as below.  
Input the file name in **File Name Prefix** textbox.  
Up to 15 characters can be entered when **Include Date** is selected, and up to 24 characters if it is not.  
Input the start number in **Sequence Number** textbox.  
To add the date to a file name, check **Include Date**.  
For example, if the date is August 12<sup>th</sup>, 2013, the word string “\_12082013” is added to the file name.  
The destination folder and the first file to save are displayed.
6. Click **OK**.

The settings in the Auto File Setting dialog box are not reset by reinstalling this software. The defaults of the setting items are as below.

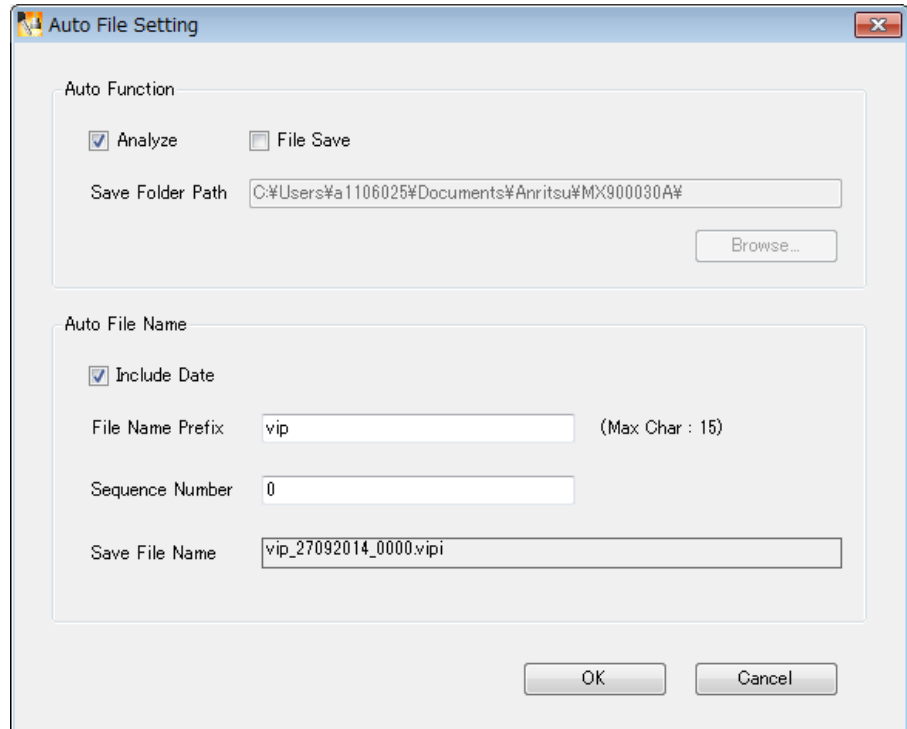


Figure 3.4.2-1 Auto File Setting Dialog Box

**Note:**

0 to 9999 can be input to the Sequence Number field. If the file with the same name already exists in the destination folder, the file is saved with the Sequence Number automatically incremented.

When the text input in the File Name Prefix textbox exceed the maximum characters, the **OK** button is greyed out and disabled. Edit the text so that it will be within the maximum characters.

## 3.5 Creating a Report

This software allows the user to create a report in PDF format in the following steps. Adobe Reader needs to be installed to read PDF reports.

To change the report contents to output, perform the following steps.

1. Click on **Setting > PDF Report Settings**. The PDF Report Setting dialog box is displayed.
2. Check **Include Analysis Results** to show the analysis results in the report.  
Check **Include Analysis Details** to show the details of the analysis results in the report.
3. Input the information in **Customer, Location, Operator, and Notes** textboxes to print on the report. Up to 30 characters can be entered.
4. Check **Include Logo** to include a logo in the report.
5. To change the logo, click **Browse**. Select a folder, input a file name, and click **Open**.
6. Click **OK**.

To make a report from the selected file, perform the following steps.

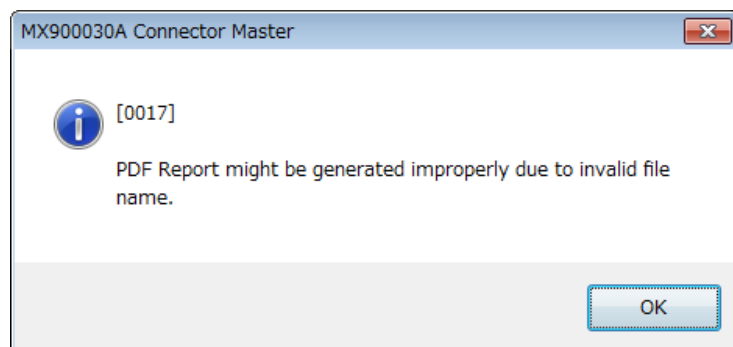
1. Click on **Process > Generate Report**.
2. Select a destination folder and input a file name.
3. Click **Save**.

To make reports from all the files in the selected folder, perform the following steps.

1. Click **Process -> Generate Report (Folder)** on the menu.
2. Select the folder where the desired file is saved, and click **OK**.

**Note:**

When selecting a folder that contains no vipi files, the error message below appears.



3. Select a destination folder to save the report and input a file name.
4. Click **Save**.

The settings in the Auto File Setting dialog box are not reset by reinstalling this software. Click **Restore Defaults** to set the items to defaults in the PDF Report Setting dialog box as below.

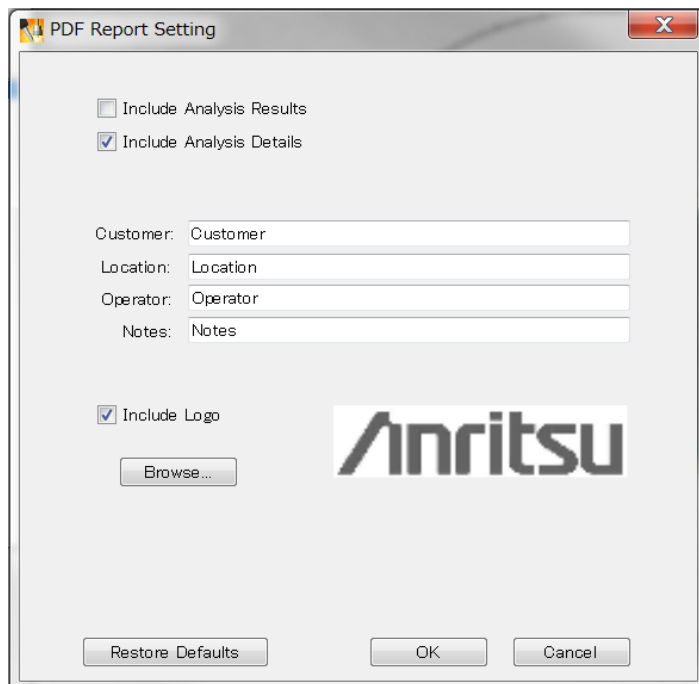


Figure 3.5-1 PDF Report Setting Dialog Box

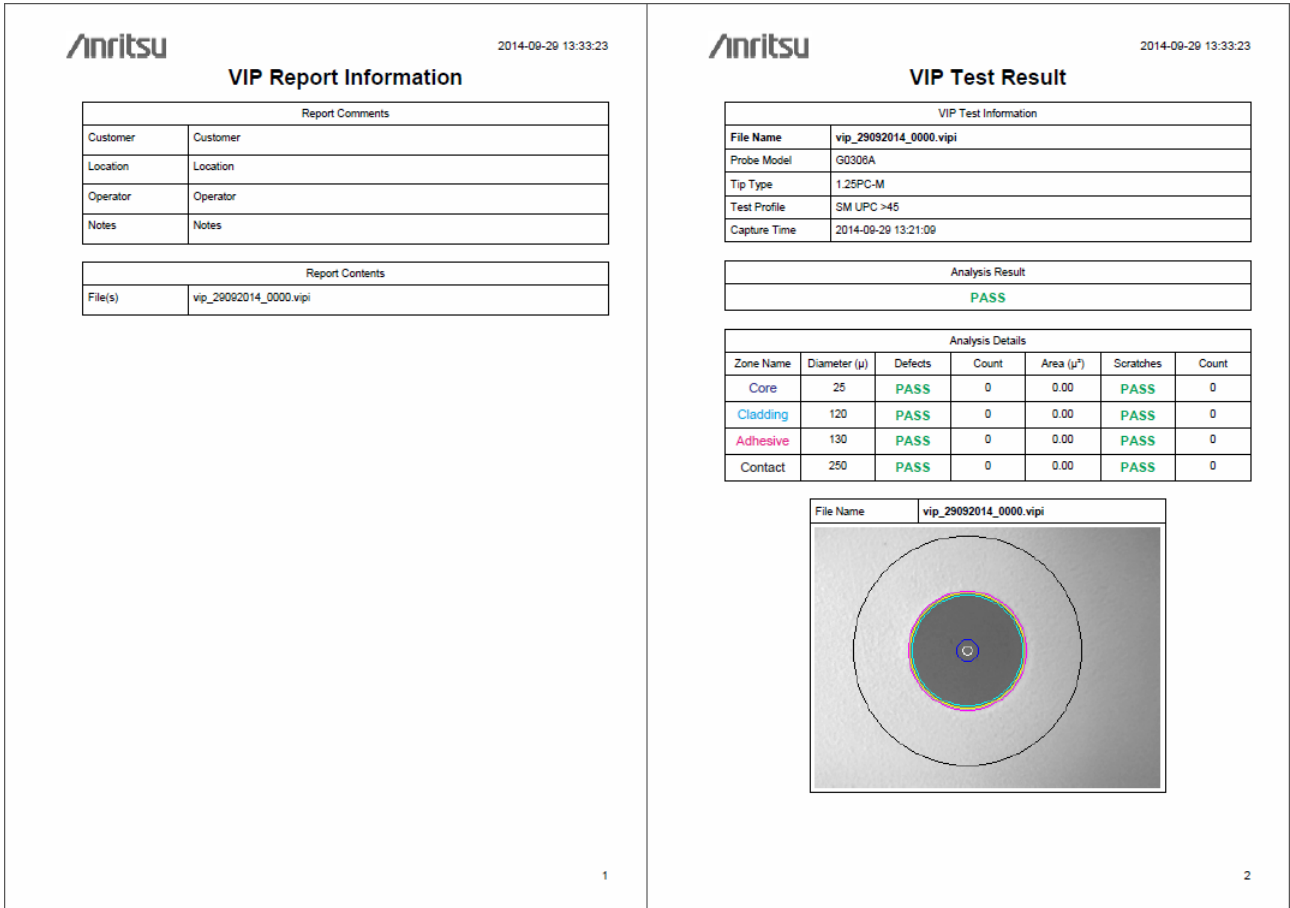


Figure 3.5-2 Example of Report with Detailed Analysis Results

**Note:**

The image on the report and the same image displayed on the screen may look a little different. However, the analysis results are exactly the same in the report and on the screen.