

OKI

ES8431DM

DICOM Embedded Printer

DICOM Printing Function User's Guide

Important note:

This manual describes all the functionalities available in the version of OKI DICOM Embedded Server **Version V3.50.06**.

Introduction

This manual describes how to print from devices supporting the DICOM protocol using the DICOM embedded Server in the OKI DICOM Embedded Printer.

Refer to the user manual of the standard printer model for instructions on tasks such as how to load paper and replace consumables with the OKI DICOM Embedded Printer.

The OKI DICOM Embedded printer prints DICOM format images sent via a network from medical imaging applications and medical devices.

The OKI DICOM Embedded Printer can generate pages in both grayscale and color.

CAUTION!

This is not medical equipment. Do not use the printed images from this equipment for medical diagnosis.

Features of the OKI DICOM Embedded printer

- High quality printing with ProQ2400 © multi-level technology
- Compliant with the DICOM 3.0 standard
- Reliability
- Ergonomic features
- Achieves low-cost DICOM-compatible printing

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Document Terminology

Control panel and web interface messages are all provided in English in this document.

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1 Install the printer

The following procedures are performed while referencing the Setup Guide/User's Guide/Network Guide supplied on CD/DVD with the printer.

1. Remove the OKI DICOM Embedded Printer (hereinafter referred to as "printer") from the packing box and install it.
2. Remove the protective tapes and the protective sheets from the printer.
3. Open the top cover, and remove the stopper (orange) of the fuser unit.
4. Install the image drum.
5. Load paper on the paper tray. (For DICOM format image printing, A4, Letter, A3 and Tabloid are supported.)
6. Connect the AC cord to the printer, and turn on the power.

Note!: Do not connect the network cable to the printer yet.

7. Enter the IP address provided by your network administrator with the printer control panel.

Perform test printing, and confirm that the IP address is set for the printer correctly.

8. Connect the network cable to the printer.

Next, set up the printer from your computer.

Prepare a computer connected to the same network as the printer.

2 Open the embedded DICOM server home page

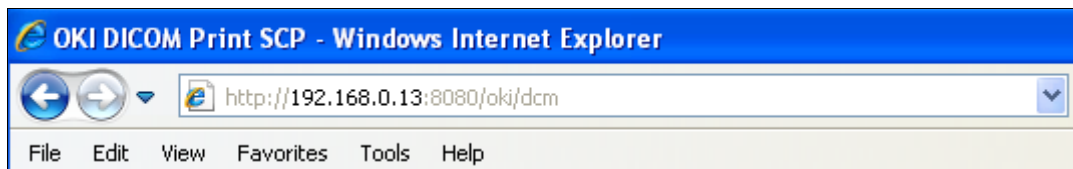
1. Open the web browser on your computer.

Note!: This will work even if the computer is not connected to the Internet.

2. In the address bar of your web browser, enter the IP address set to the printer as follows.

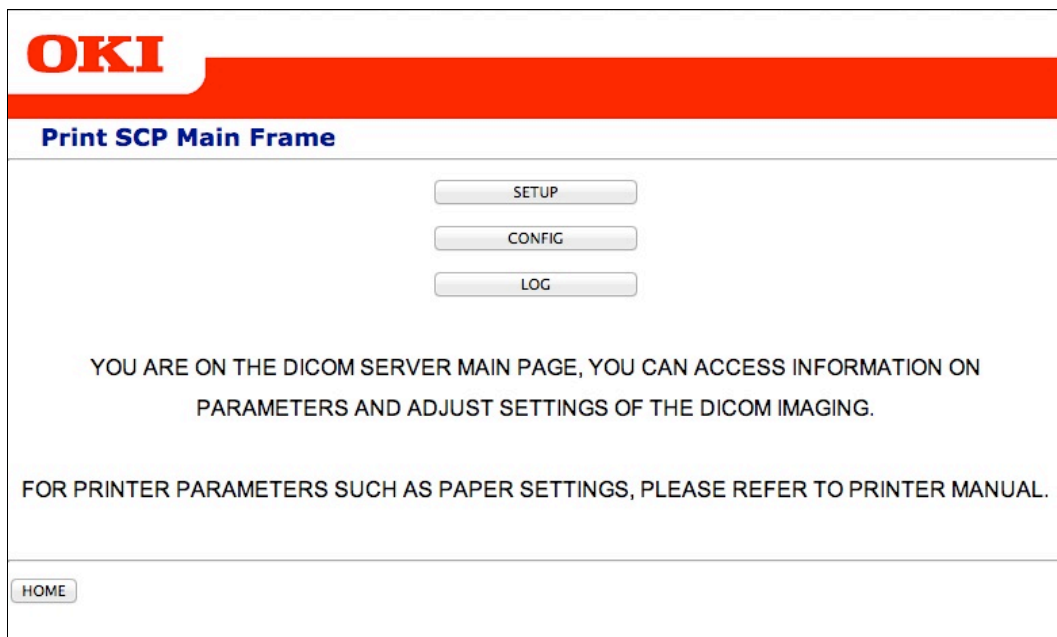
Example:

When the IP address set to the printer is 192.168.0.13, enter "http://192.168.0.13:8080/oki/dcm" in the address bar.



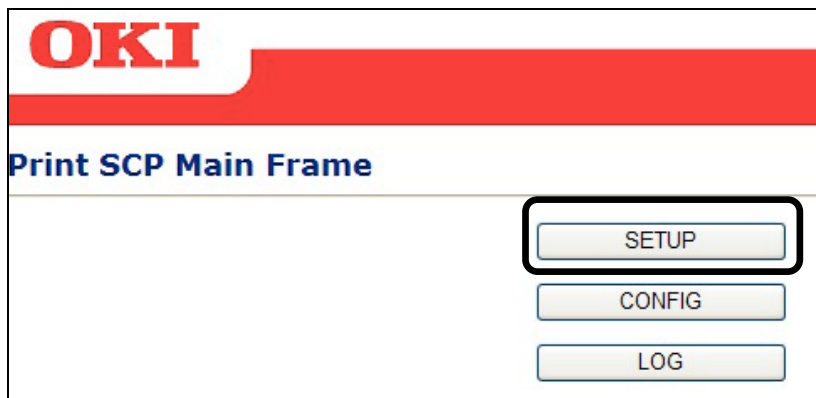
Note!: This action might not be successful if done just after "Ready" is displayed on the printer control panel. In this event, wait for 5 to 10 seconds and try again.

The embedded DICOM server home page is displayed.

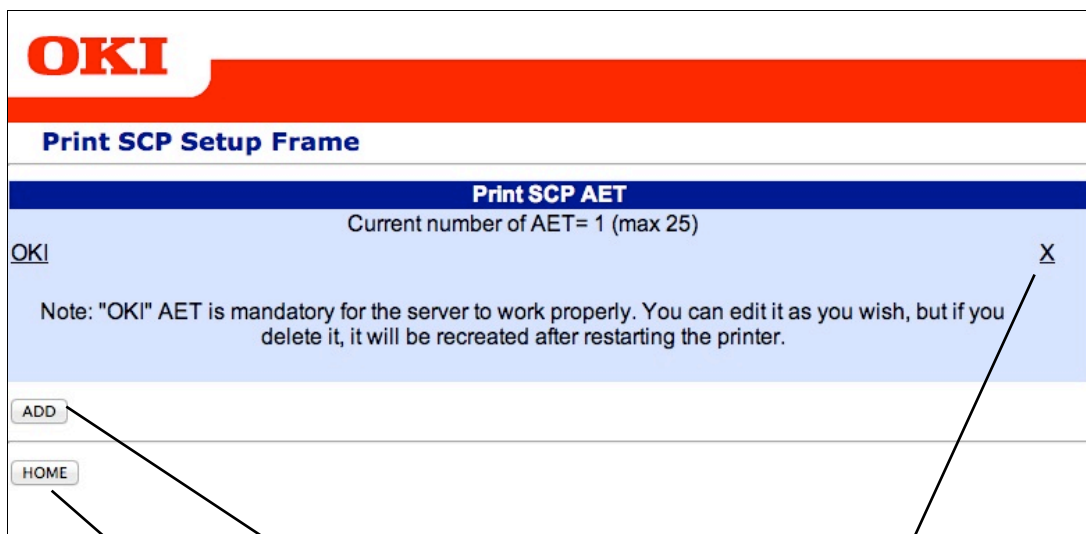


3 Open the SETUP menu

1. Click [**SETUP**]



2. The print rules represented by the AET will be listed (AET is an abbreviation for Application Entity Title). You can create up to 25 rules to match your requirements.
3. You can edit the rules by clicking the rule names (in this case [**OKI**]).



- Delete the rule by clicking [**X**].
- Add new rule by clicking [**ADD**].
- Return to the home page by clicking [**HOME**].

Options for the [OKI] print rule

OKI

Print SCP Setup Frame

Print SCP AET Configuration	
AET Name	OKI
Activate Max Dicom Log	<input type="checkbox"/>
Use US format paper	<input type="checkbox"/>
Printer Tray	AUTO
Copy	CLIENT
Page Format	CLIENT
Border Density	CLIENT
Empty Image Density	CLIENT
Replace Header by Logo	<input type="checkbox"/>
Header	
Footer	DICOM Embedded Printer - Not for diagnostic use - O
Contrast	0
Brightness	0
Black gamma (0.01 to 2.90)	1.0
Cyan gamma (0.01 to 2.90)	1.0
Magenta gamma (0.01 to 2.90)	1.0
Yellow gamma (0.01 to 2.90)	1.0
Smoothing Filter	CLIENT
Smoothing Level	LOW
Polarity	CLIENT

SAVE Reset

HOME

Options description

A number of rules can be added to the system. The maximum number of AETs is 25.

The following information can be configured for each rule:

AET Name:

Print SCP AET Configuration	
AET Name	<input type="text" value="OKI"/>

AET is an abbreviation for Application Entity Title. The call method is assumed to be compliant with the DICOM Print SCU protocol.

The AETs defined in this rule have a maximum length of 16 characters. Only the following range of characters are allowed (a - z, A - Z, 0 - 9).

- Note!:
- The names are case-sensitive.
 - In the event of an error or if a name is not present, the printer will use the default Setting.

Activate Max Dicom Log:

Activate Max Dicom Log	<input type="checkbox"/>
------------------------	--------------------------

Check this box if you want the DICOM Server to report all details of DICOM exchange. Useful in case of trouble.

Use US format paper:

Use US format paper	<input type="checkbox"/>
---------------------	--------------------------

Check this box if you want the DICOM Server to print in Letter/Tabloid size.

Printer Tray:

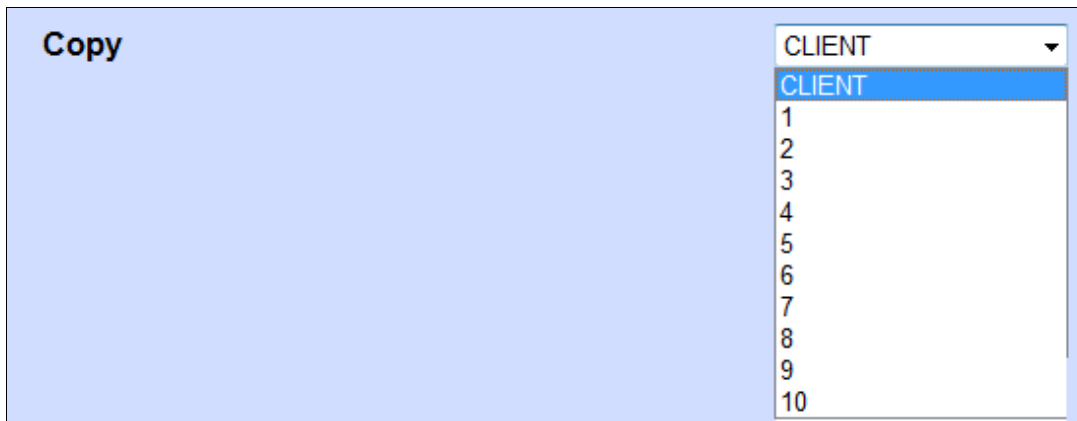


The screenshot shows a light blue rectangular box with the text "Printer Tray" in the top left corner. On the right side of the box is a dropdown menu. The menu is currently open, showing a list of options: "AUTO" (highlighted in blue), "TRAY1", "TRAY2", "TRAY3", "TRAY4", "TRAY5", and "MPT".

Auto: allows the DICOM Server to select the suitable tray up to the needed size.

Tray#: Force the printer to use the selected tray whatever the needed format. Useful if different quality of paper is loaded in the different trays.

Number of Copy:



The screenshot shows a light blue rectangular box with the text "Copy" in the top left corner. On the right side of the box is a dropdown menu. The menu is currently open, showing a list of options: "CLIENT" (highlighted in blue), "1", "2", "3", "4", "5", "6", "7", "8", "9", and "10".

Client: Lets the modality ask for the desired number of copy.

1 to 10: Overrides the modality value and always outputs de desired value.

Page Format:



The screenshot shows a light blue rectangular box with the text "Page Format" in the top left corner. On the right side of the box is a dropdown menu. The menu is currently open, showing a list of options: "CLIENT" (highlighted in blue), "A4 or Letter", and "A3 or Tabloid".

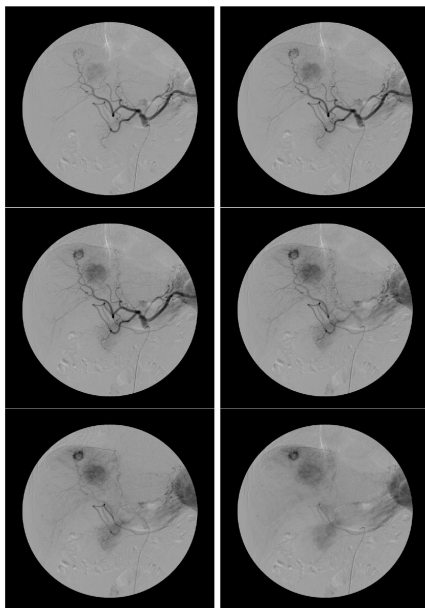
For the A3/Tabloid printer models, you can force the printout on the format you wish, A4/Letter or A3/Tabloid. [**CLIENT**] means that the printout will be managed by the DICOM console and/or resized to the nearest paper size. Refer to DCS for more details.

Border Density:

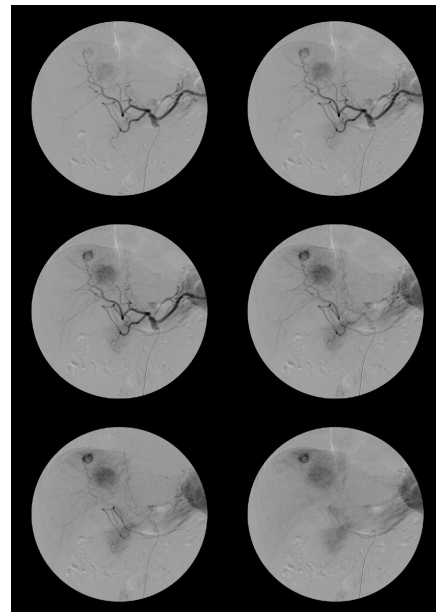
Border Density	CLIENT ▾ CLIENT WHITE BLACK
-----------------------	--------------------------------------

Defines the images background, to black or white.

[**CLIENT**] means that the settings will be managed by the DICOM console.



Border White



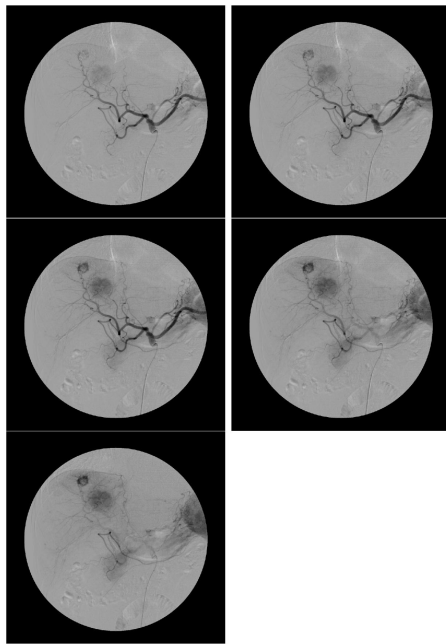
Border Black

Empty Image Density:

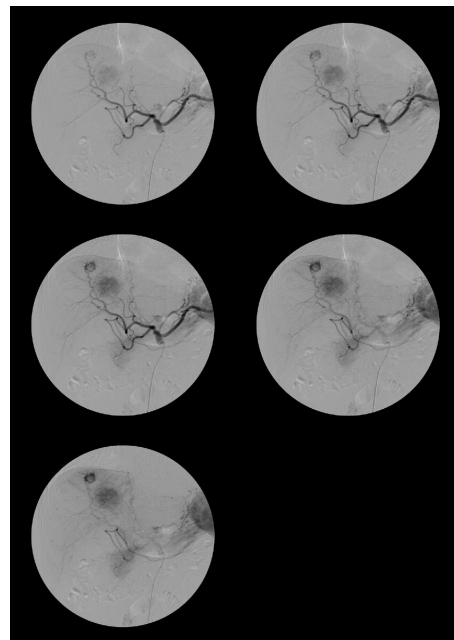
Empty Image Density	CLIENT ▾ CLIENT WHITE BLACK
----------------------------	--------------------------------------

Defines an image-free zone in black or white.

[**CLIENT**] means that the settings will be managed by the DICOM console.



Empty image White



Empty image Black

Replace Header By Logo:

Replace Header by Logo <input type="checkbox"/>
--

Used to customize the header of your printouts, you can replace the text header by a logo. Free creation is possible. Refer to Logo Creation manual.

Header:

Header <input type="text"/>

Used to quickly customize the header of your printouts.

This customization is limited to one line of text only. Typeface is Courier at 18 points size, length available is the width of the page minus 10mm.

Footer:

Footer	DICOM Embedded Printer - Not for diagnostic use - Oki Data C Editing this original statement footer is full responsibility of the user.
---------------	--

Allows editing the original statement of the footer.

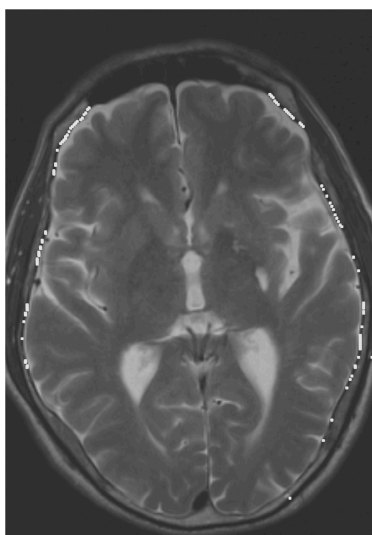
This customization is limited to one line of text only. Typeface is Courier at 6 points size, length available is the width of the page minus 10mm.

Warning: Editing this original statement footer is full responsibility of the user

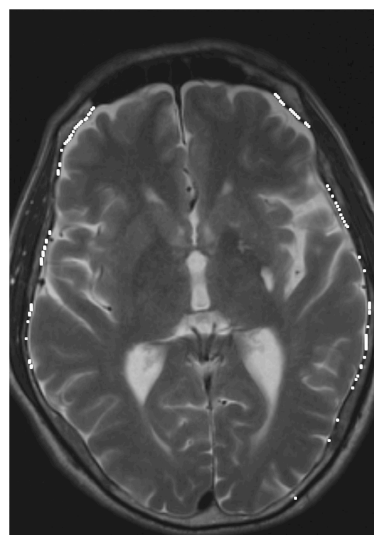
Contrast:

Contrast	0 ▾ -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5
-----------------	--

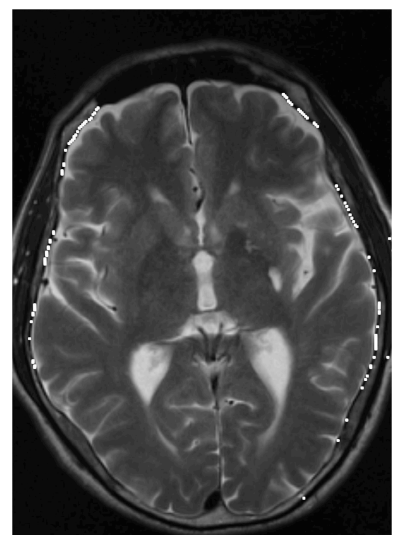
Used to adjust contrast of the printouts. The choices are from [-5] to [+5]. Minus values reduces contrast to flatten the image, 0 is no change, positive values increases contrast to enhance the image.



Contrast -1

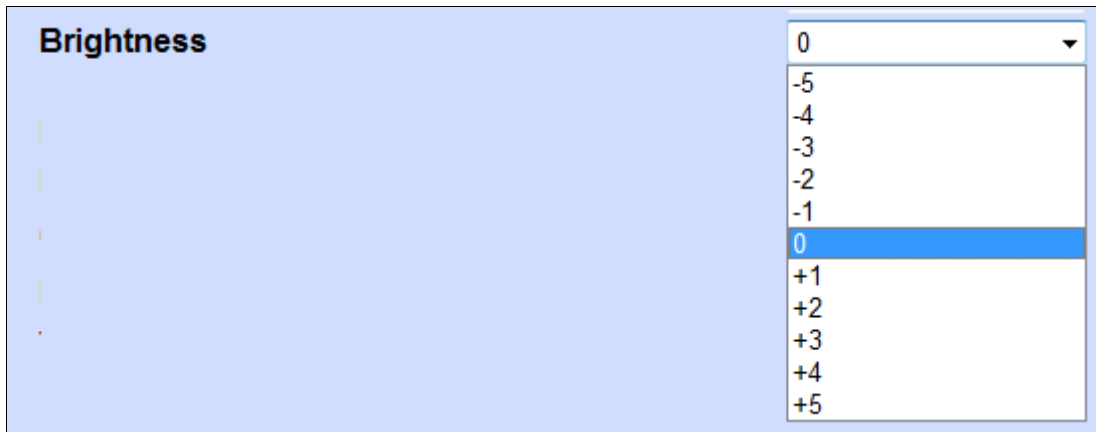


Contrast 0



Contrast +1

Brightness:



Used to adjust brightness of the printouts. The choices are from [-5] to [+5]. Minus values reduces light to darken the image, 0 is no change, positive values increases light to lighten the image.



Brightness -2



Brightness 0



Brightness +2

Black Gamma:

Black gamma (0.01 to 2.90)	<input type="text" value="1.0"/>
-----------------------------------	----------------------------------

Adjusts the gamma for Black when grey images are printed in pure black. Values can be within a range from 0.01 to 2.90, with increments of 0.01. Values below 1.00 will lighten the Black component of the image and values above 1.00 will darken it.

Cyan Gamma:

Cyan gamma (0.01 to 2.90)	<input type="text" value="1.0"/>
----------------------------------	----------------------------------

Adjusts the gamma for Cyan. Values can be within a range from 0.01 to 2.90, with increments of 0.01. Values below 1.00 will lighten the Cyan component of the image and values above 1.00 will darken it.

Magenta Gamma:

Magenta gamma (0.01 to 2.90)	<input type="text" value="1.0"/>
-------------------------------------	----------------------------------

Adjusts the gamma for Magenta. Values can be within a range from 0.01 to 2.90, with increments of 0.01. Values below 1.00 will lighten the Magenta component of the image and values above 1.00 will darken it.

Yellow Gamma:

Yellow gamma (0.01 to 2.90)	<input type="text" value="1.0"/>
------------------------------------	----------------------------------

Adjusts the gamma for Yellow. Values can be within a range from 0.01 to 2.90, with increments of 0.01. Values below 1.00 will lighten the Yellow component of the image and values above 1.00 will darken it.

Smoothing Filter:

Smoothing Filter	CLIENT ▾ CLIENT SHARP NORMAL
-------------------------	---------------------------------------

Defines the aspect rendering of the printed image. The choices are [**CLIENT**], [**NORMAL**] or [**SHARP**]. By default, [**CLIENT**] is selected.

[**SHARP**]: Force the use of the image sharpening filter (which only works on monochrome images).

[**CLIENT**]: Manage the settings from the DICOM console.

[**NORMAL**]: No Sharpen even if asked by client.

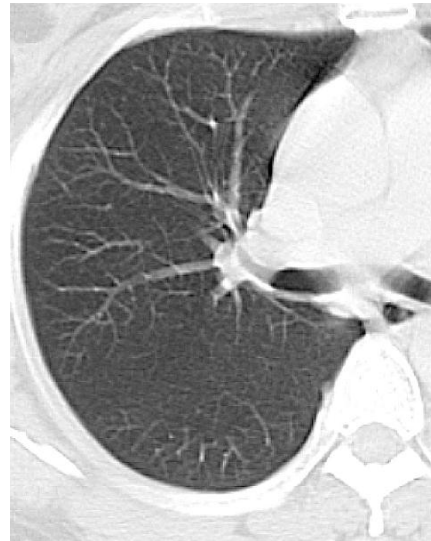
Smoothing Level:

Smoothing Level	LOW
	LOW
	MEDIUM
	STRONG

Defines the level of action of the filter. The choices are [**LOW**], [**MEDIUM**] or [**STRONG**]. By default, [**LOW**] is selected.



No Sharpen



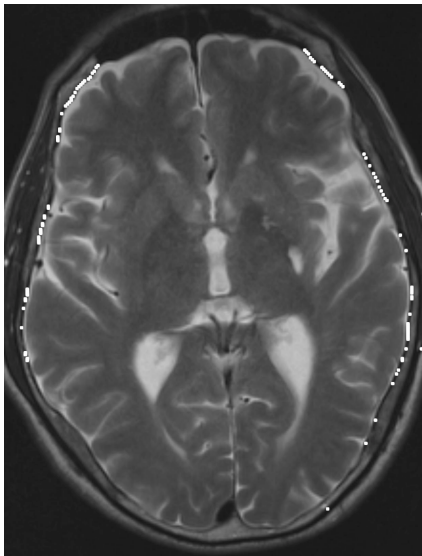
MEDIUM Sharpen

Polarity:

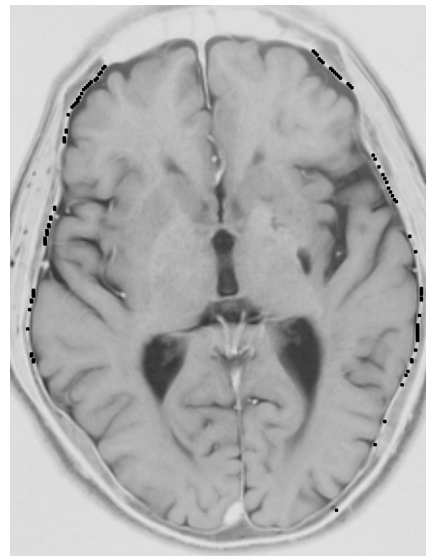
Polarity	CLIENT ▾
	CLIENT
	NORMAL
	REVERSE

[NORMAL] or **[REVERSE]** mode to print images in positive or negative.

[CLIENT]: Manage the settings from the DICOM console.



Normal

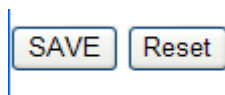


Reverse

Make whatever setting you feel appropriate for the kind of exam you have to print.

4. Save the edited settings.

When you have finished editing the values, save the settings by clicking **[SAVE]**.



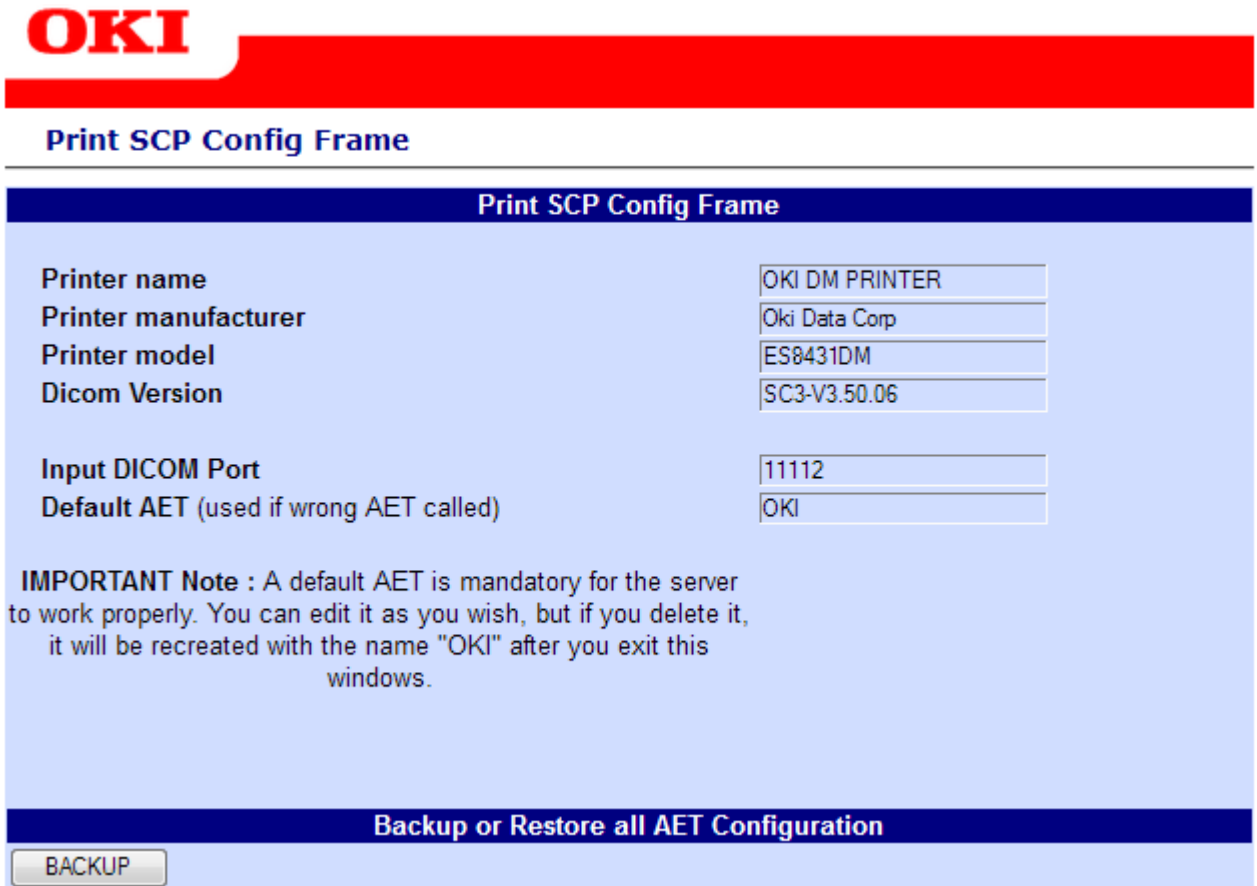
Memo: Click **[Reset]** to restore to the past saved settings.

5. Click **[HOME]** on the AET list screen to return to the home page.

4 Open the CONFIG menu

1. Click [**CONFIG**] on the DICOM server home page.

The CONFIG page is displayed. This will give you a summary of all information.



The screenshot shows the OKI configuration interface. At the top left is the OKI logo. Below it is a red horizontal bar. Underneath is the title "Print SCP Config Frame" in blue. The main content area has a light blue background and is titled "Print SCP Config Frame" in a dark blue header. It contains a table of configuration parameters with text labels on the left and input fields on the right. Below the table is an important note. At the bottom, there is a dark blue bar with the text "Backup or Restore all AET Configuration" and a "BACKUP" button.

Print SCP Config Frame	
Printer name	OKI DM PRINTER
Printer manufacturer	Oki Data Corp
Printer model	ES8431DM
Dicom Version	SC3-V3.50.06
Input DICOM Port	11112
Default AET (used if wrong AET called)	OKI

IMPORTANT Note : A default AET is mandatory for the server to work properly. You can edit it as you wish, but if you delete it, it will be recreated with the name "OKI" after you exit this windows.

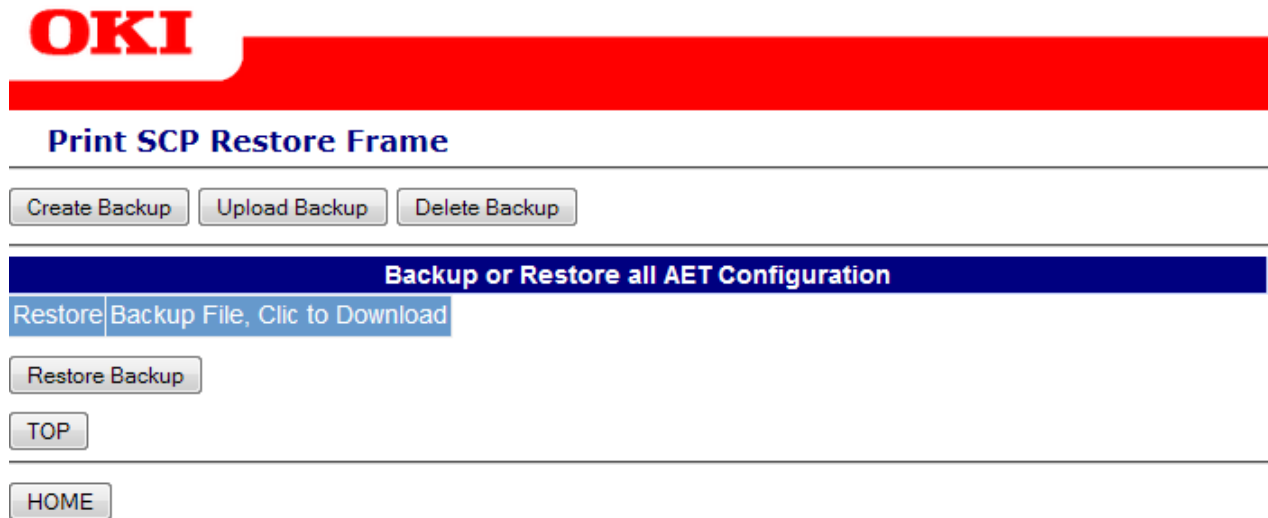
Backup or Restore all AET Configuration

BACKUP

5 Open the Backup menu

1. Click [**BACKUP**] on the Print SCP Config Frame.

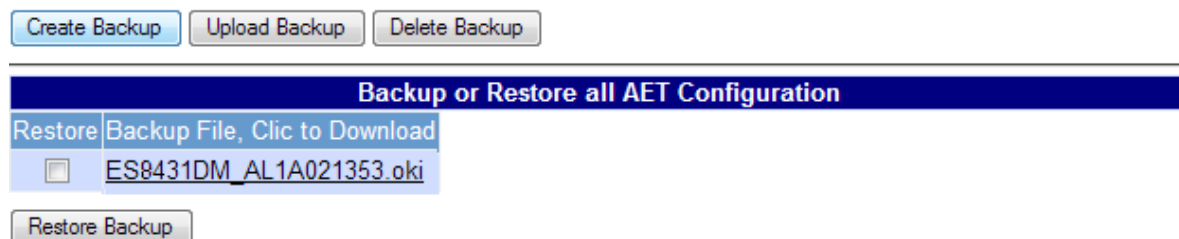
The Backup page is displayed.



Create Backup:

[Create Backup](#)

Use this button to create the backup of the current server configuration. Once the backup is created you will see the file named upon Machine Model and Serial Number.



Save Backup File

- By clicking on the file name, you'll open the download dialog of your web browser to save on your computer.
- Backup files can only be used on same printer model.
- Do not rename the file nor change extension.

Upload Backup:

Upload Backup

Use this button to upload a locally saved backup file to the DICOM server. You will be prompted to select the file and then upload it.

Print SCP Upload File Frame

Please select the file that you would like to upload.

Parcourir... Aucun fichier sélectionné.

Upload

Reset

x if you want the DICOM Server to report all details of DICOM exchange. Useful in case of trouble.

Print SCP Upload File Frame

Please select the file that you would like to upload.

Parcourir... ES8431DM_AL1A021353.oki

Upload

Reset

Restore Backup:

Print SCP Restore Frame

Create Backup

Upload Backup

Delete Backup

Backup or Restore all AET Configuration

Restore Backup File, Clic to Download

ES8431DM_AL1A021353.oki

Restore Backup

TOP

Just Select the wanted file and click [**Restore Backup**].

Delete backup:

Delete Backup

Use this button if you want to delete files on the server
You'll be directed to the "Delete Files Frame".

Print SCP Delete Files Frame

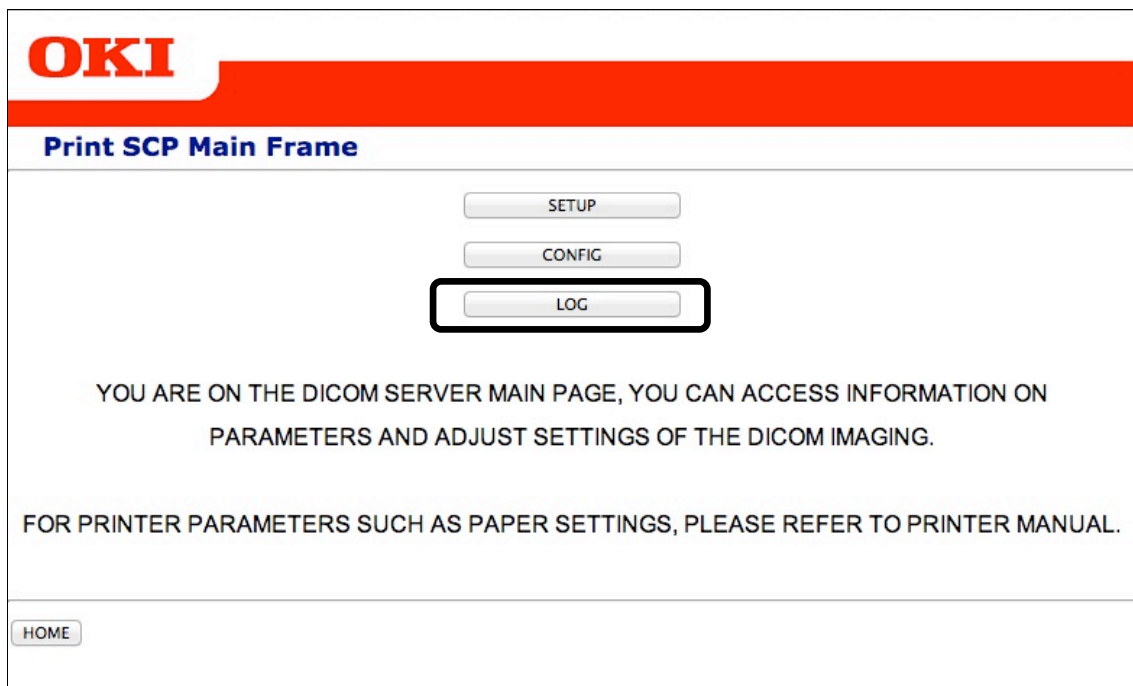
Delete	Filename
<input type="checkbox"/>	ES8431DM_AL1A021353.oki

Delete Reset TOP

Select the file(s) you want to delete and click [Delete]

6 Open the LOG menu

1. Click [**LOG**] on the DICOM server home page.



The log menu is displayed.



This page lists the DICOM dialogue logs during printing. This is useful for identifying the source of an error in the event of problems.

7 How to print the test pattern

Those test patterns are designed to help you troubleshooting your printer consumables quality.

1. Select [**Print Information**] on the printer control panel.
2. Select [**Demo Page**].
3. Select [**CMY test**] to check the color imaging units or [**K test**] for black unit.
4. The test pattern is printed.