OKI
DICOM Embedded Printer
DICOM Printing Function User's Guide

C610 DM / C711 DM / C831 DM / C910 DM
ES6410 DM / ES7411 DM /
ES8431 DM / ES9410 DM

Important note:

This manual describes all the functionalities available in the full options version of OKI DICOM Embedded Server **Version V3.50**. Up to the purchased product, the number of available functionality will vary.

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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. Setting up OKI DICOM Embedded Printer

1-1 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 only A4, Letter and for A3 printer models 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.

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1-2 Open the embedded DICOM server home page

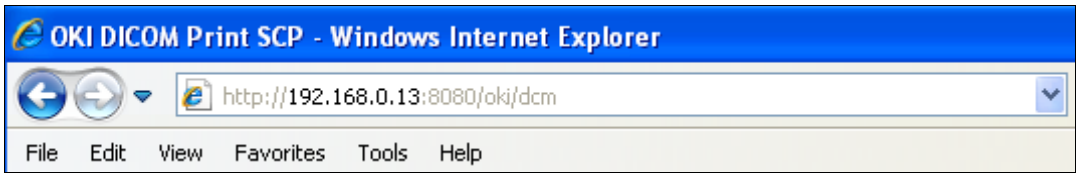
1. Open the web browser on your computer.

   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.

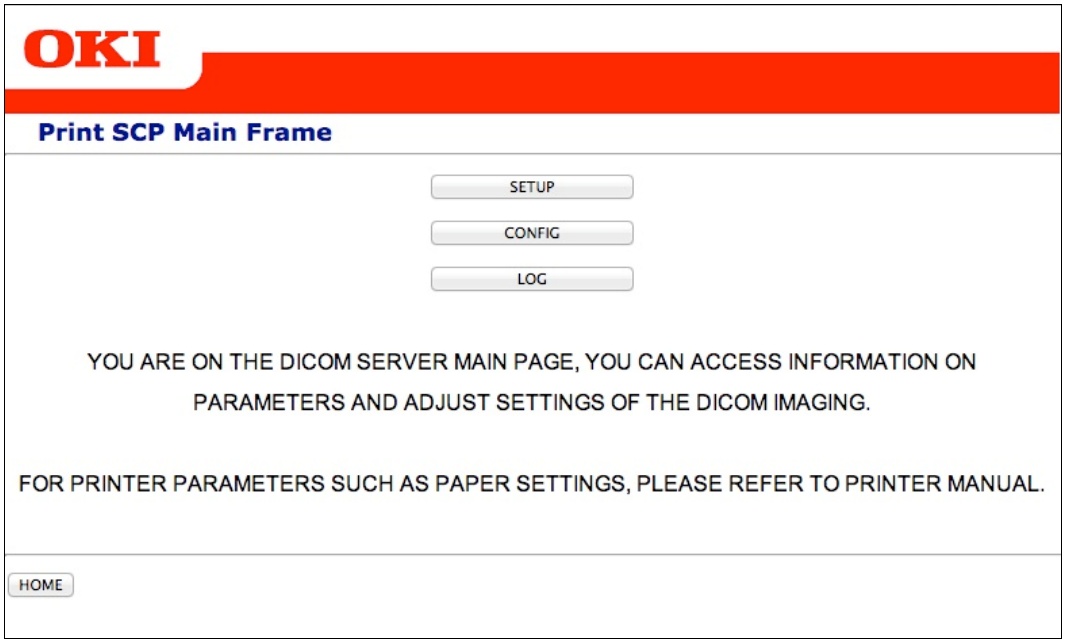
   Example:

   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.



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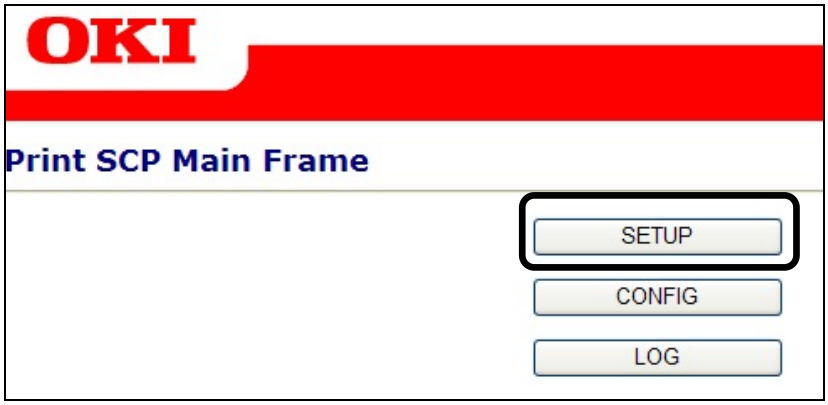
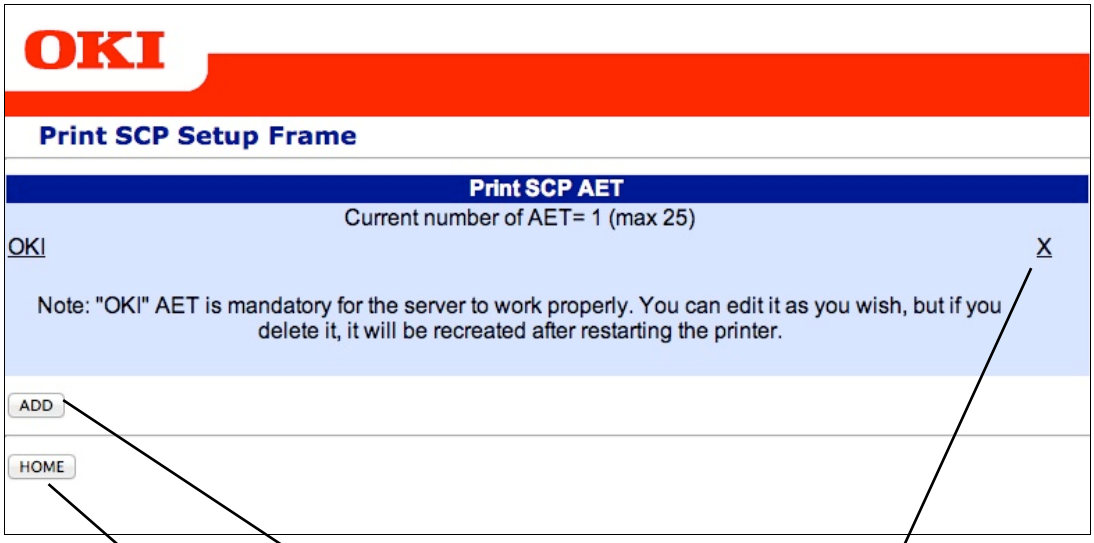
1-3 Open the SETUP menu

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**].

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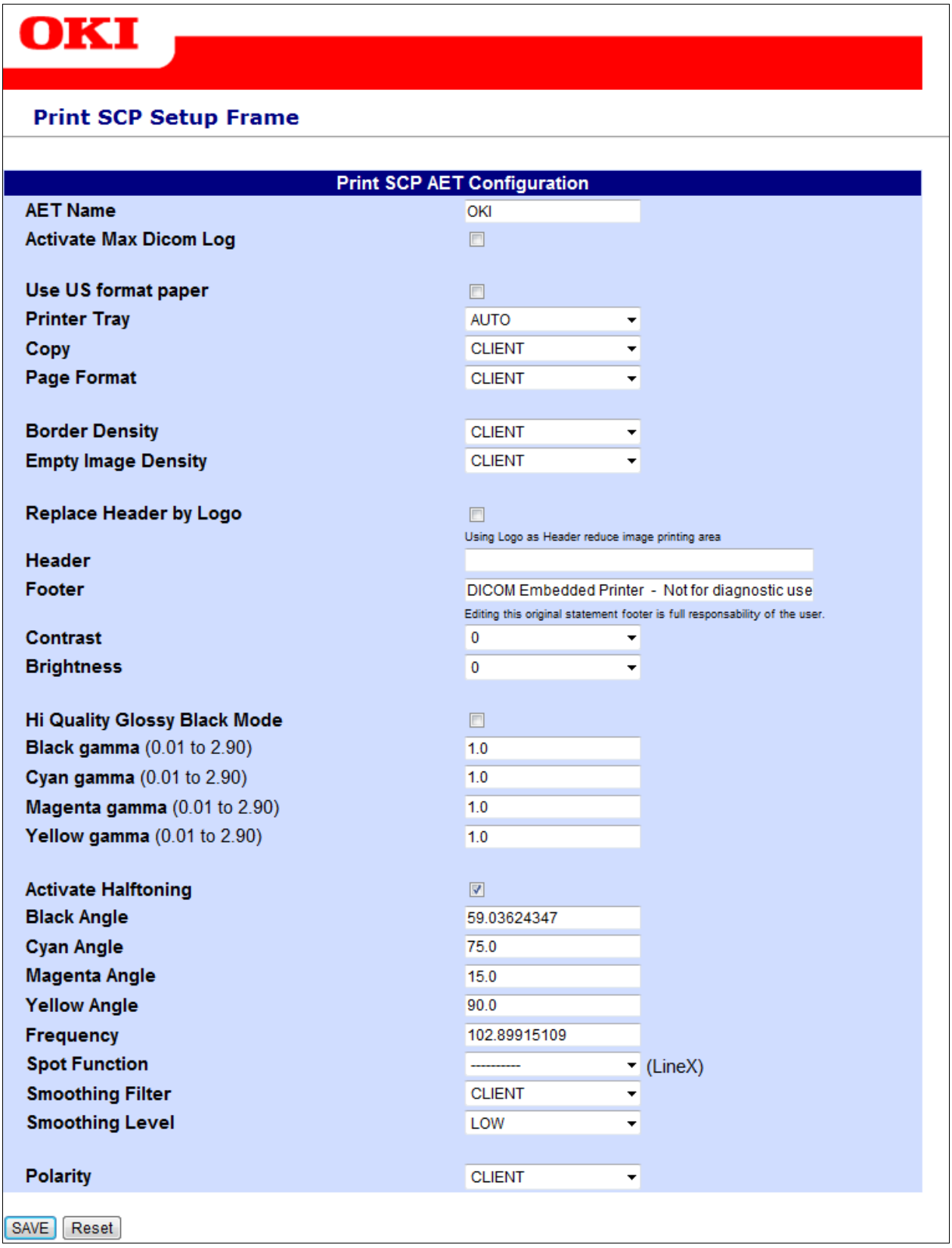
Options for the [OKI] print rule



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Here is presented the full set of option from most advanced server.

Up to the model you purchased some options will not be available, however all the descriptions bellow applies for the described settings.

Options for the [OKI] print rule / Model	ES6410 DM	C610 DM	ES7411 DM	C711 DM	ES8431 DM	C831 DM	ES9410 DM	C910 DM
AET Name	X	X	X	X	X	X	X	X
Activate Max Dicom Log	X	X	X	X	X	X	X	X
Use US format paper	X	X	X	X	X	X	X	X
Printer Tray	X	X	X	X	X	X	X	X
Number Of Copy	X	X	X	X	X	X	X	X
Page Format					X	X	X	X
Border Density	X	X	X	X	X	X	X	X
Empty Image Density	X	X	X	X	X	X	X	X
Replace Header by Logo	X	X	X	X	X	X	X	X
Header	X	X	X	X	X	X	X	X
Footer	X	X	X	X	X	X	X	X
Contrast	X	X	X	X	X	X	X	X
Brightness	X	X	X	X	X	X	X	X
Hi Quality Glossy Black Mode disable		X	X	X	X	X	X	X
Black gamma		X	X	X	X	X	X	X
Cyan gamma	X	X	X	X	X	X	X	X
Magenta gamma	X	X	X	X	X	X	X	X
Yellow gamma	X	X	X	X	X	X	X	X
Activate Halftoning							X	X
Smoothing Filter	X	X	X	X	X	X	X	X
Smoothing Level	X	X	X	X	X	X	X	X
Polarity	X	X	X	X	X	X	X	X

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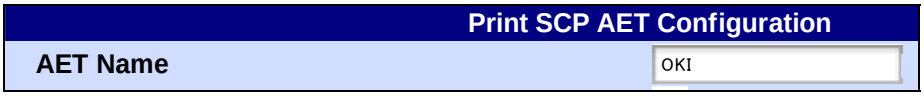
Options description

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

The following information can be configured for each rule:

AET Name:



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).

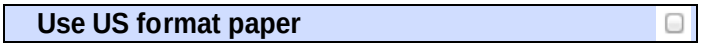
Note!: ● The names are case-sensitive.

● In the event of an error or if a name is not present, the printer will use the default Setting.

Activate Max Dicom Log:

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:



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

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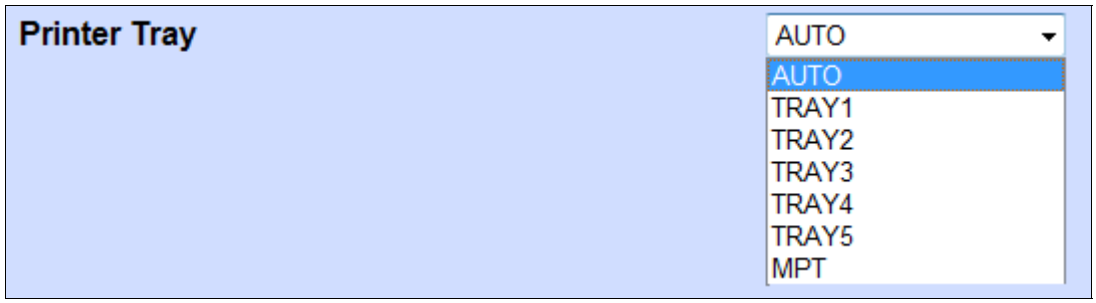
Printer Tray:



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

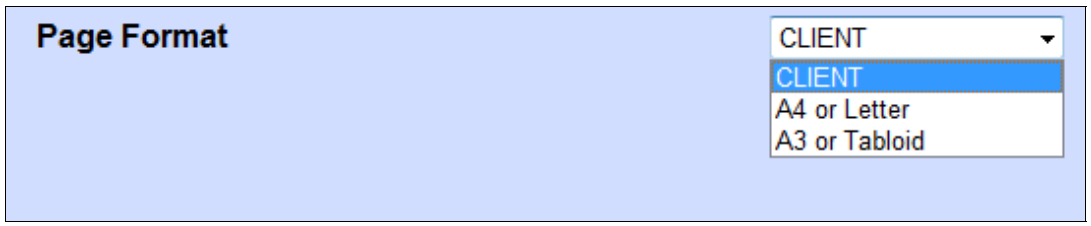
Tray#: Force the printer to use the selected tray whatever the needed format. Useful if different quality of paper are loaded in the different trays.

Number of Copy:

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:



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.

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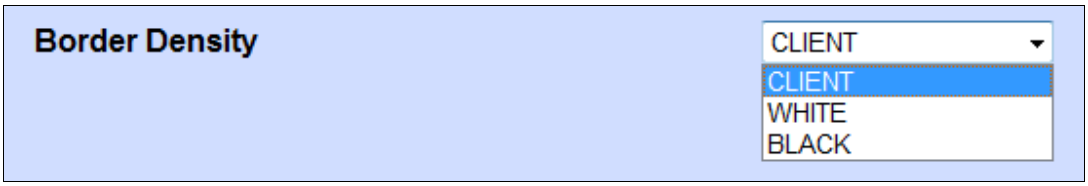
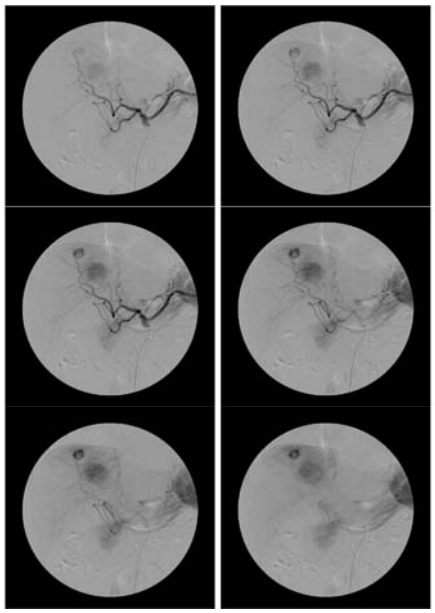
Border Density:



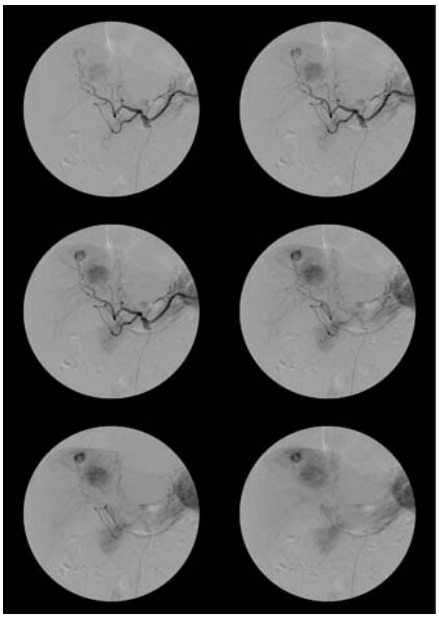
Defines the images background, to black or white.

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

.



Border White



Border Black

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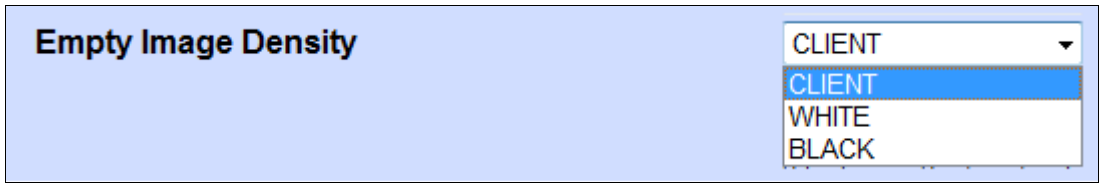
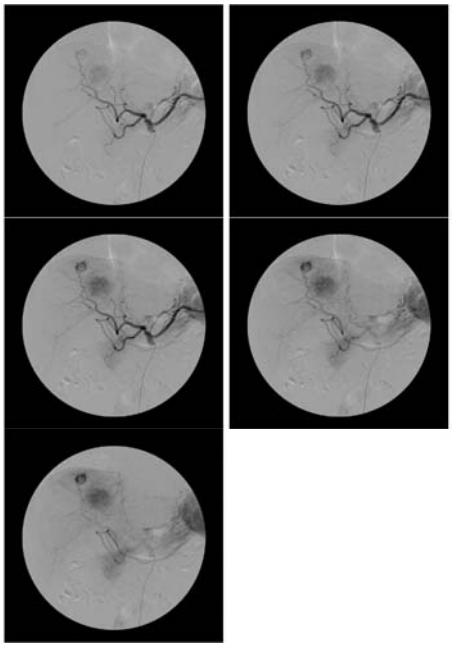
Empty Image Density:

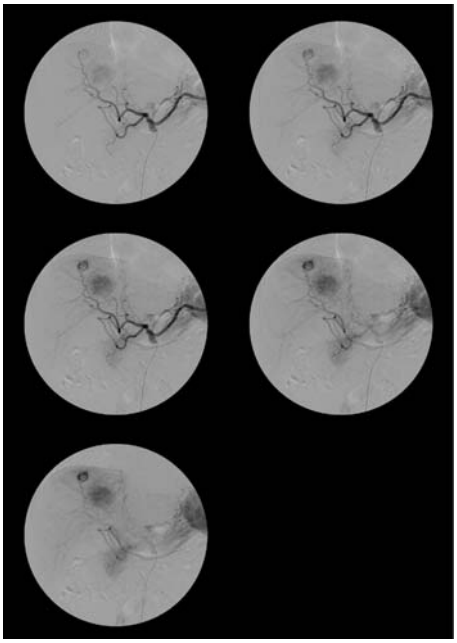


Defines an image-free zone in black or white.

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

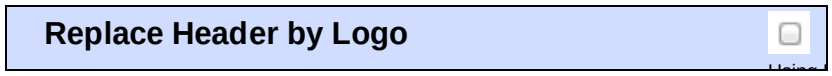


Empty image White



Empty image Black

Replace Header By Logo:



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:

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.

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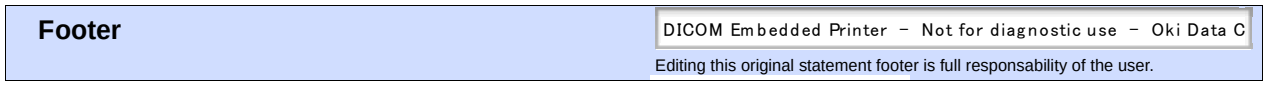
Footer:

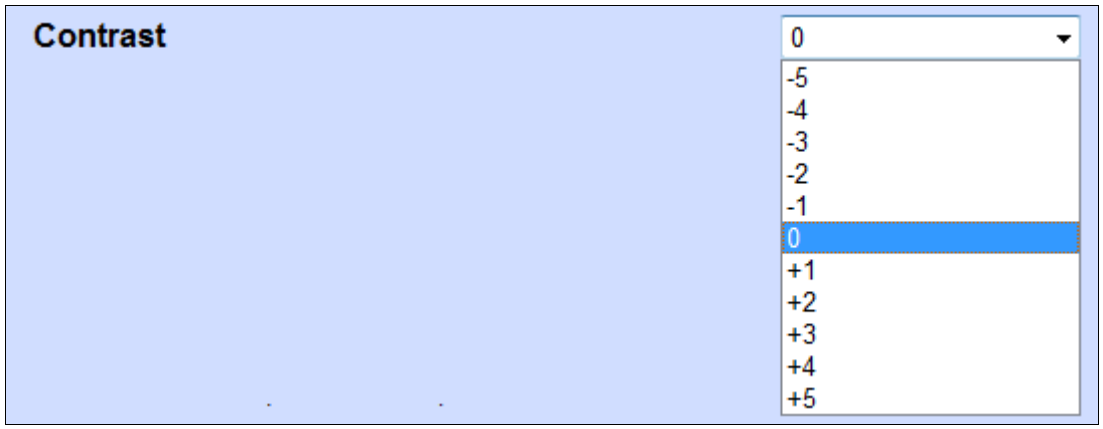


Allows editing the original statement of the footer.

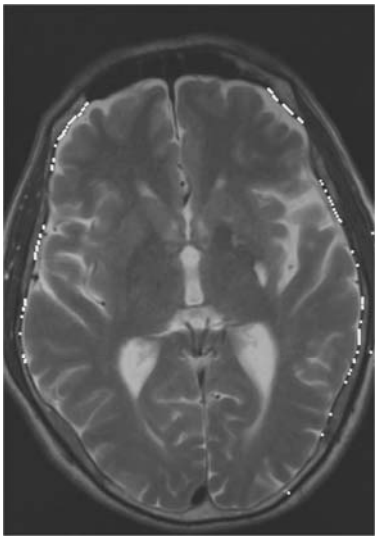
This customization is limited to one line of text only. Typeface is Courier at 6 points size, length available is the width of the page minus 10mm.

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

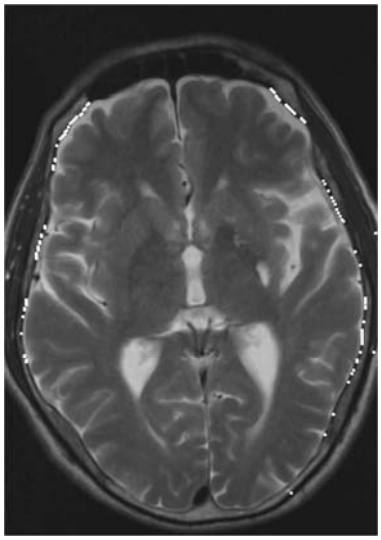
Contrast:



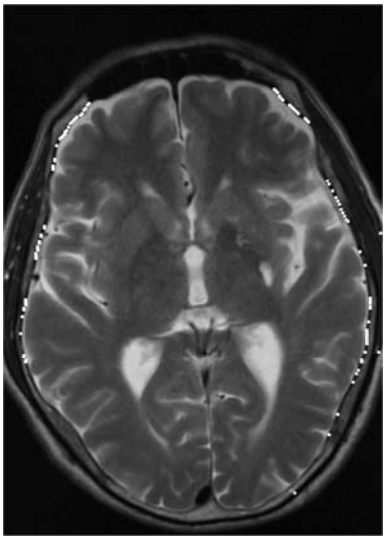
Used to adjusts contrast of the printouts. The choices are from [**-5**] to [**+5**]. Minus values reduces contrast to flatten the image, 0 is no change, positive values increases contrast to enhance the image.



Contrast -1



Contrast 0



Contrast +1

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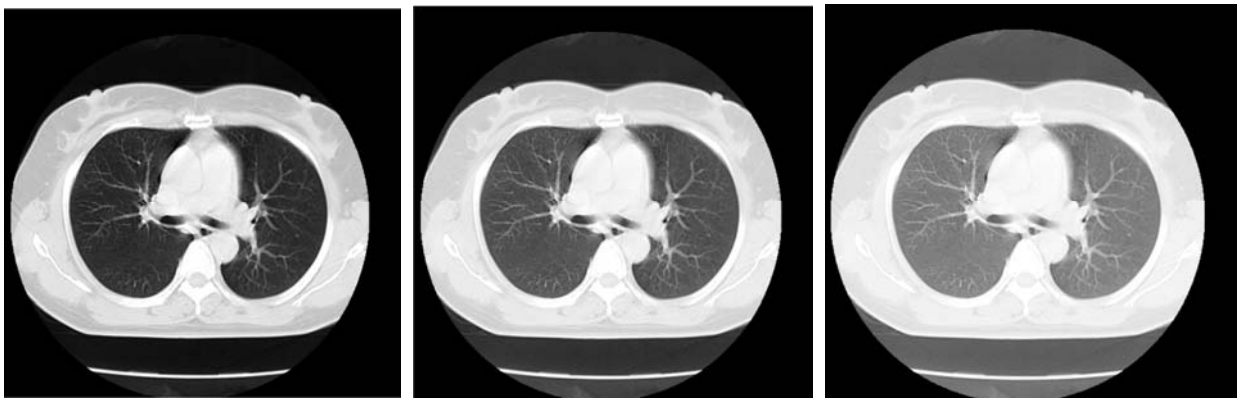
Brightness:

Used to adjusts 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

Hi Quality Glossy Black mode:

Used to force printing black and white images in composite mode.

Activated as default setting, it will give you the best output when printing grey images. No influence on color images.

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Black Gamma:

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:

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:

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:

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.

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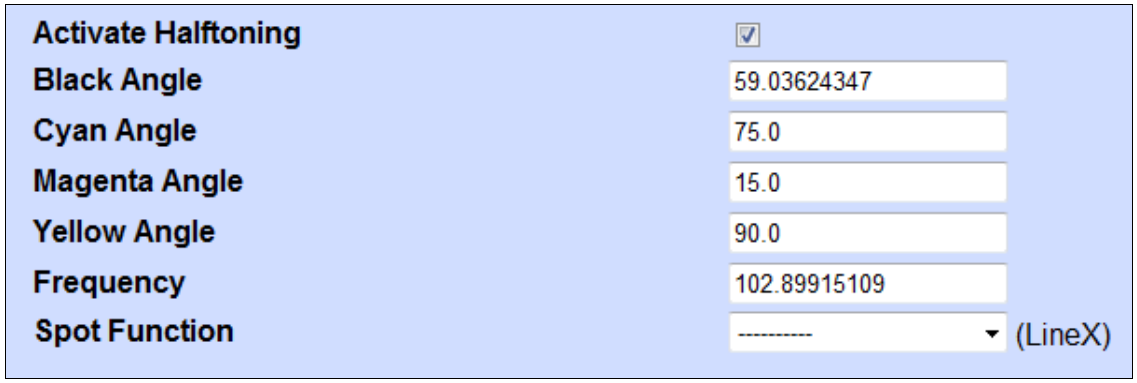
Activate Halftoning:

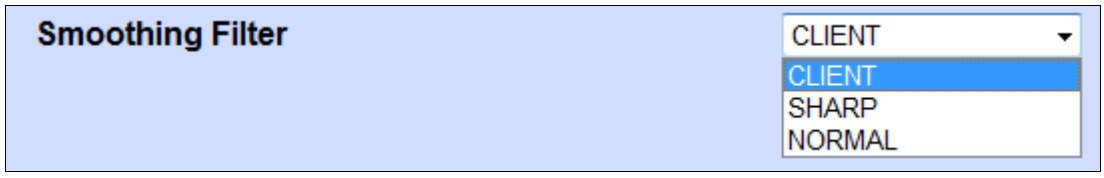


Warning: Unless you are an expert user in printing we do recommend you to let this option untouched.

When halftoning is activated you have access to all screening parameters on the four color of the printer.

These settings will change the printout aspect for worse or better. The result is under full responsibility of the operator. No support will be provided on how to compute or setup the values.

Smoothing Filter:



Define 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.

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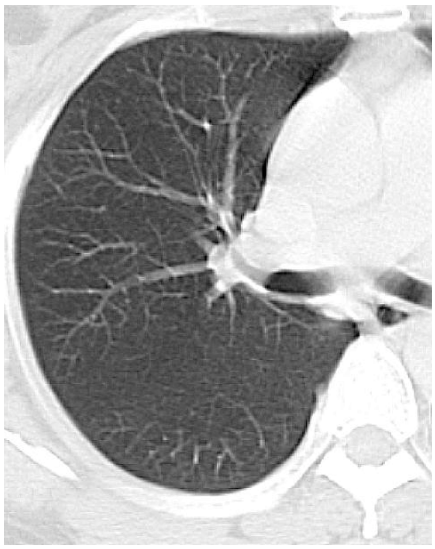
Smoothing Level:

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

No Sharpen



MEDIUM Sharpen

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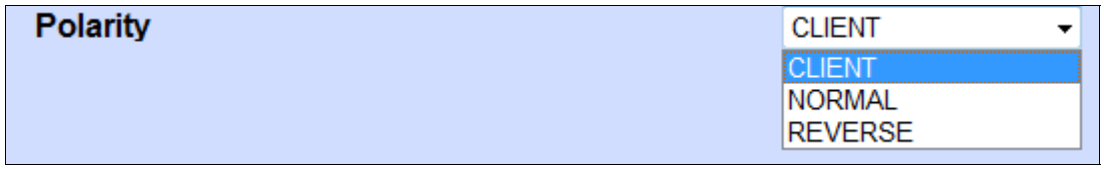
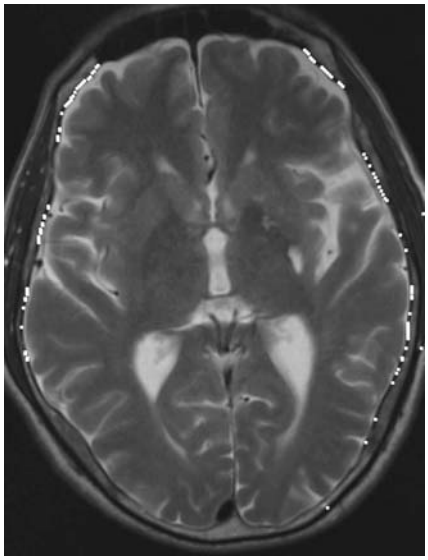
Polarity:

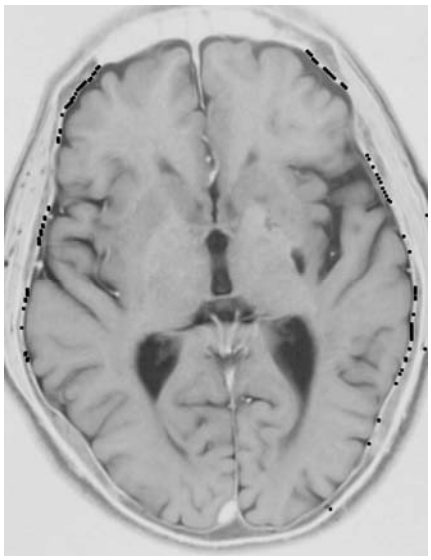


[NORMAL] or **[REVERSE]** mode to print images in positive or negative.

[**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.

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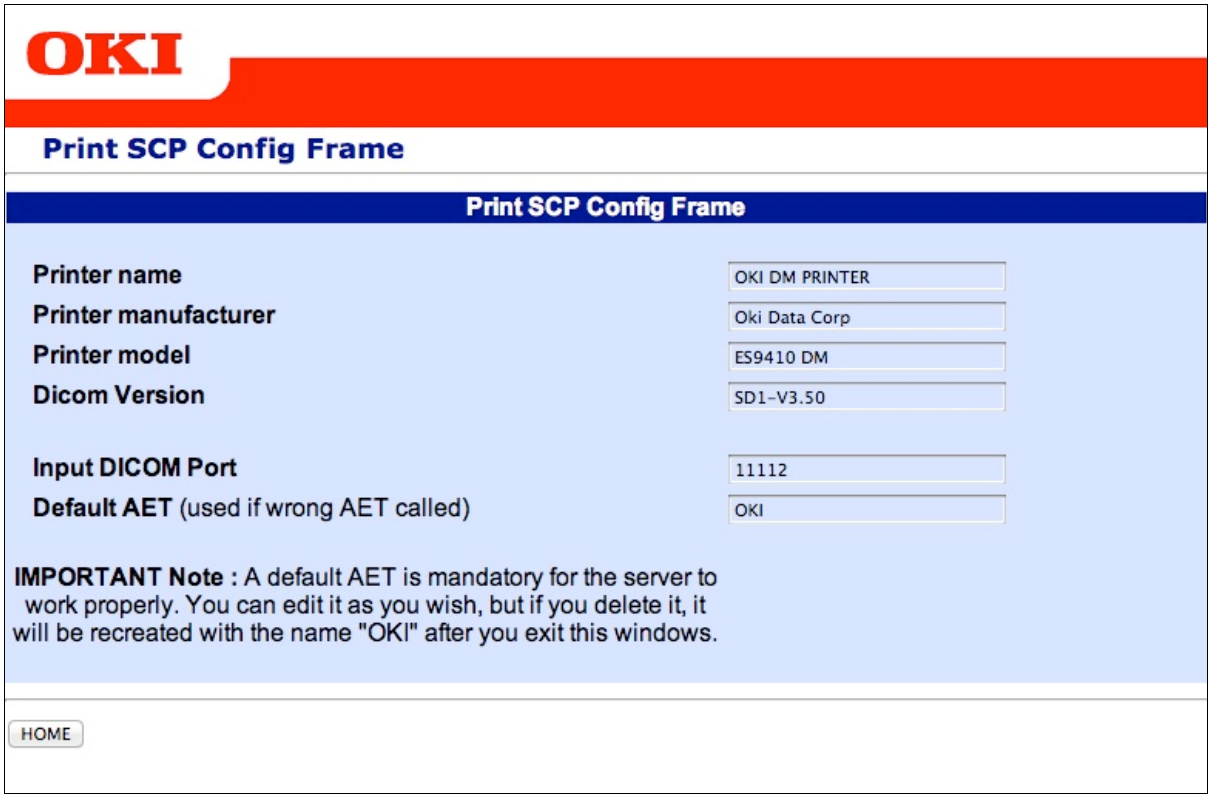
1-4 Open the CONFIG menu

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

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



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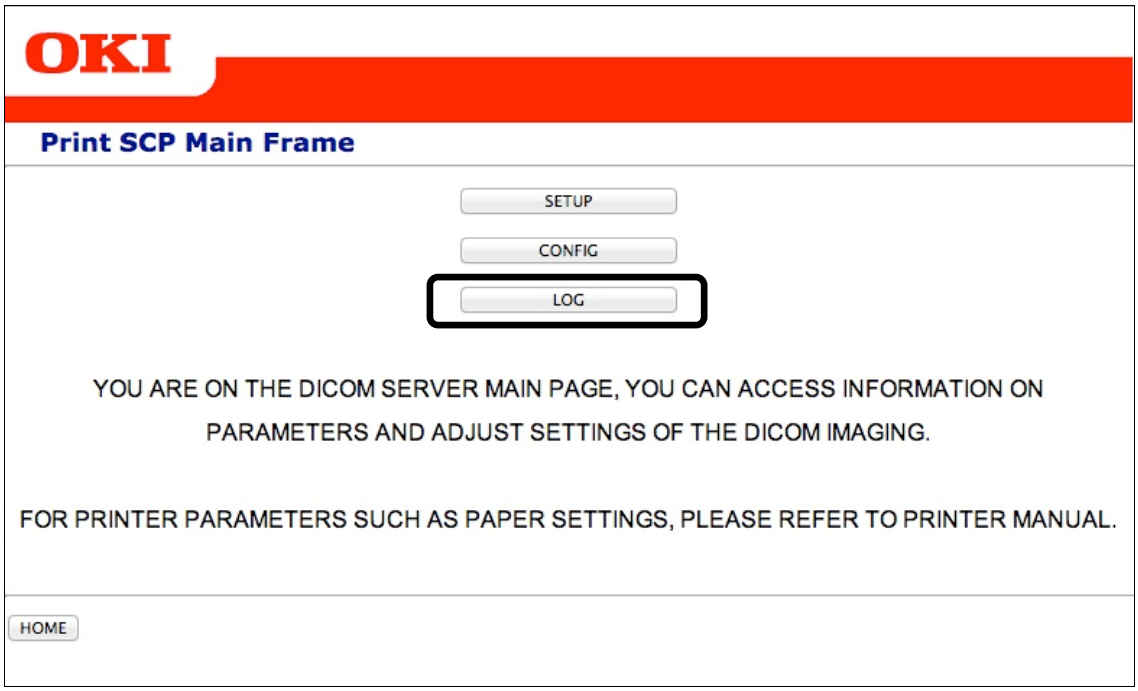
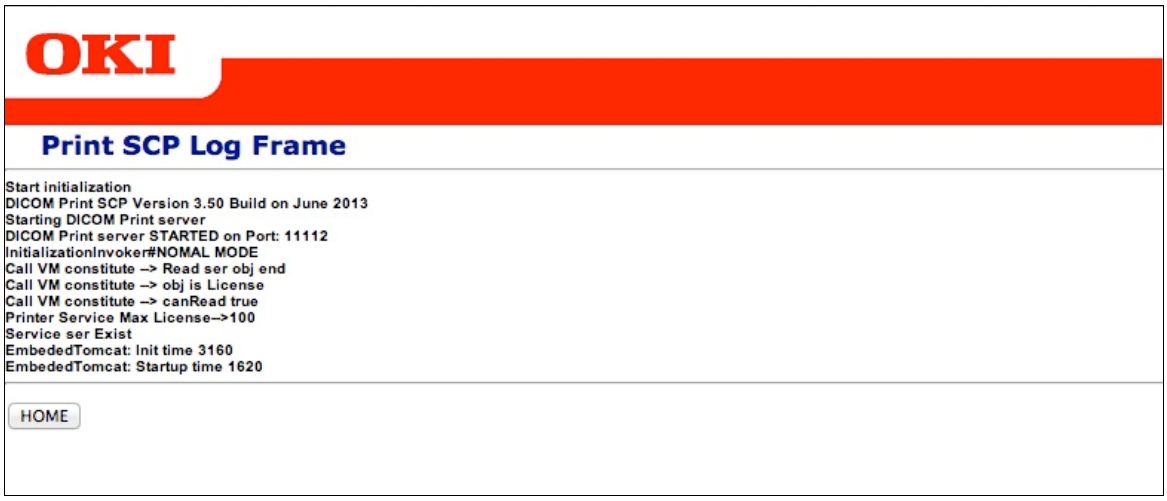
1-5 Open the LOG menu

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.

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1-6 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.

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