

DICOM Embedded Printing Function User's Guide

OKI DICOM Embedded Printer Version 4 Series

C911/C931 DICOM
ES9411/ES9431 DICOM
Pro9431 DICOM

IMPORTANT:

This manual describes all the functionalities available in the full-option version of OKI DICOM **Embedded Printer V4.00**. Available functionalities of your product may be different from those described in this manual.

Introduction

This manual describes how to print from OKI DICOM Embedded Printer supporting DICOM Protocol.

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

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

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 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 in accordance with the Setup Guide/User's Guide/Network Guide supplied on CD/DVD with the printer.

- (1) Unpack 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.
- (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, which is provided by your network administrator, using the printer control panel.
- (8) Perform test printing, and confirm that the IP address is set for the printer correctly.
- (9) Connect the network cable to the printer.

Next, set up the printer from your PC (Personal Computer) as instructed as follows. Prepare a PC connected to the same network as the printer.

Caution: OKI DICOM Embedded Printer does not move from Power Save mode to Sleep mode.

1-2 Open DICOM Embedded Printer home page

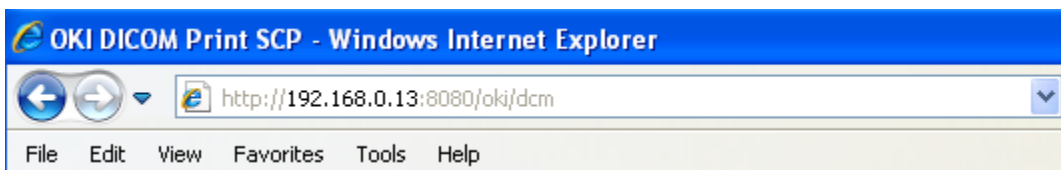
Open the web browser on your PC.

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

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

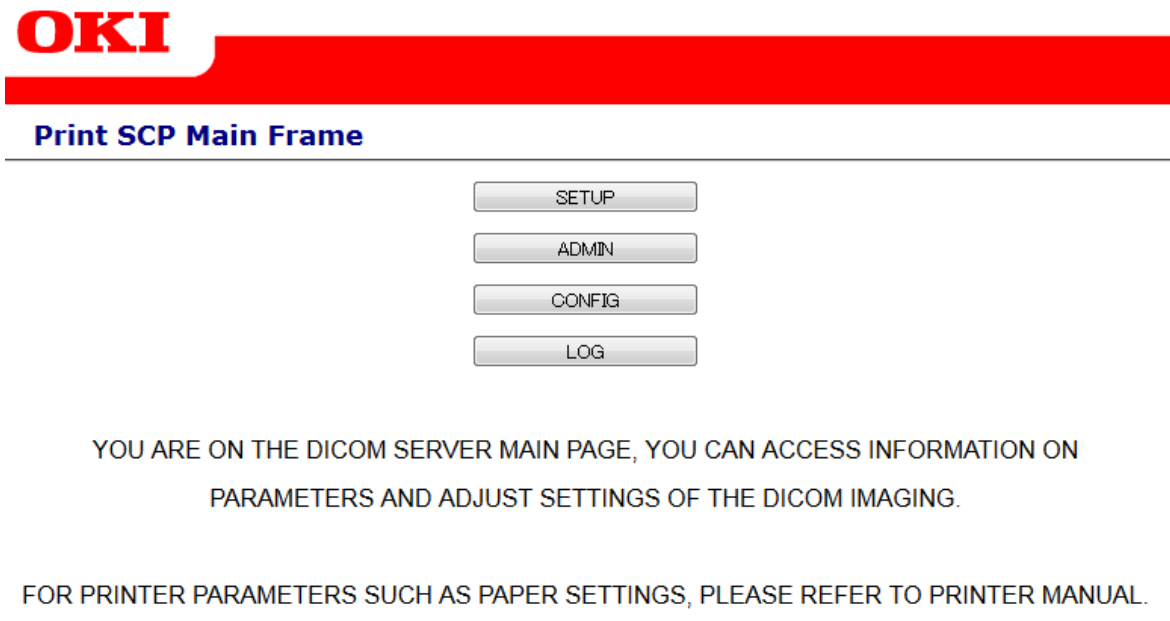
Example:

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.

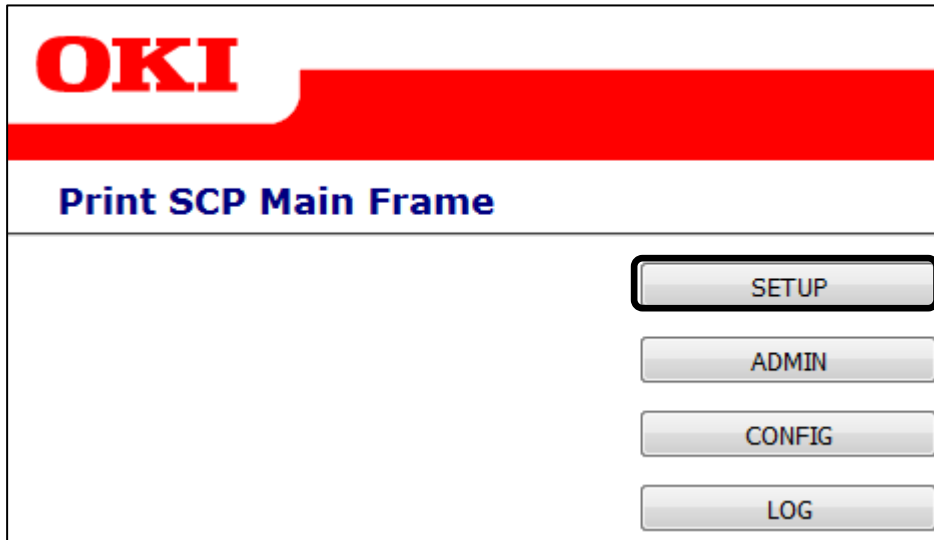
DICOM Embedded Printer home page is displayed.



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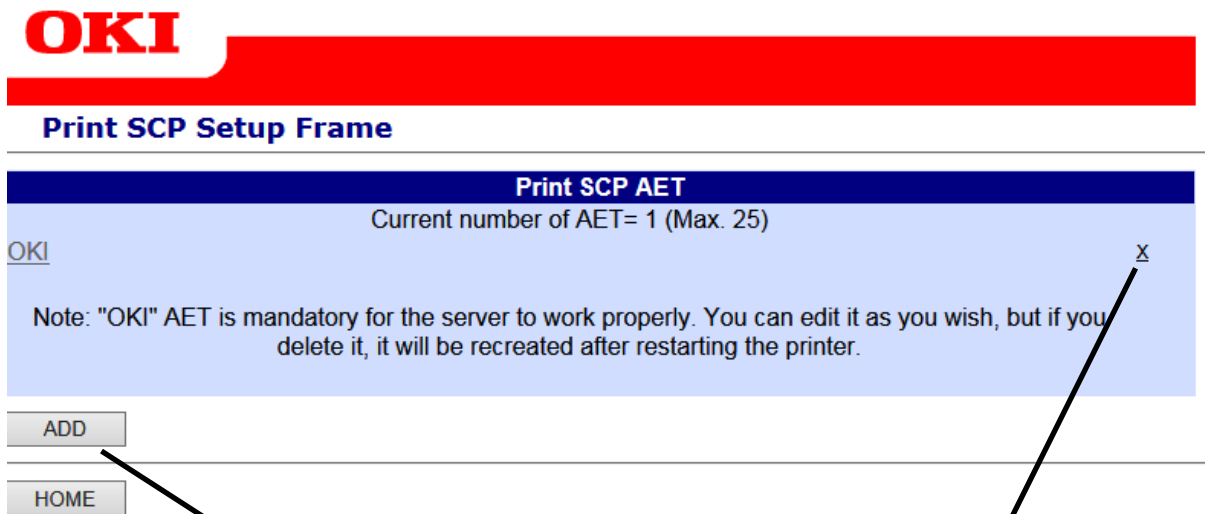
1-3 Setup of AETs

(1) Click [**SETUP**].



(2) The print rules represented by the AET (Application Entity Title) will be listed. You can create as many as 25 rules to match your requirements.

You can edit the rules by clicking the rule names (in this case [**OKI**]).



Delete the rule by clicking.

Add the new rule by clicking [**ADD**].

Return to the home page by clicking [**HOME**].

(3) Click [ADD] to get a new AET.

Example of new AET screen

OKI

Print SCP Setup Frame

Print SCP AET Configuration

AET Name: NEW_AET_1

Activate Max DICOM Log:

Paper (Use US Format Paper)

Printer Tray: Auto Tray1 Tray2 Tray3 Tray4 Tray5 MPTray

Copy: CLIENT

Page Format: Client A4/Letter A3/Tabloid A3 Nobi 215 x 900 mm 215 x 1200 mm
 297 x 900 mm 297 x 1200 mm 328 x 900 mm 328 x 1200 mm

Page Layout

Replace Header by Logo: Using Logo as Header reduce image printing area

Header: _____

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

Border Density: Client White Black

Empty Image Density: Client White Black

Image Background: White Black

Polarity: Client Normal Reverse

Smoothing Filter: Client Normal Sharp

Smoothing Level: Low Medium Strong

Image Adjustment

Black & White Mode: Standard Fine Ultrafine CMYK Black

Color Mode: Standard High Quality Economy Color Disable

Contrast: (-128 to +128) 0.0

Brightness: (-128 to +128) 0.0

X Scale: (10 to 1000 %) 100.0

Y Scale: (10 to 1000 %) 100.0

X Offset: (-200 to 200 mm) 0.0

Y Offset: (-200 to 200 mm) 0.0

Black Gamma: (0.01 to 2.99) 1.0

Cyan Gamma: (0.01 to 2.99) 1.0

Magenta Gamma: (0.01 to 2.99) 1.0

Yellow Gamma: (0.01 to 2.99) 1.0

SAVE CANCEL

HOME

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(4) Edit the parameters to fulfill your requirements.

Example of customized menu with all options activated

OKI

Print SCP Setup Frame

Print SCP AET Configuration

AET Name: OKI

Activate Max DICOM Log:

Print Destination: Local Remote1 Remote2
WARNING you must define the remote IP-address in the ADMIN menu.

Paper (Use US Format Paper)

Printer Tray: Auto Tray1 Tray2 Tray3 Tray4 Tray5 MPTray

Copy: CLIENT

Page Format: Client A4/Letter A3/Tabloid A3 Nobi 215 x 900 mm 215 x 1200 mm
 297 x 900 mm 297 x 1200 mm 328 x 900 mm 328 x 1200 mm

Page Layout

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

Booklet Print Mode: WARNING You must refer to the manual for avoid any issue regarding this feature.

Booklet on A3/Tabloid paper:

Add a CD Page on Booklet:

Border Density: Client White Black

Empty Image Density: Client White Black

Image Background: White Black

Polarity: Client Normal Reverse

Smoothing Filter: Client Normal Sharp

Smoothing Level: Low Medium Strong

Layout Format: STANDARD#2,4
Layout Format is only dedicated to the "Store to Print" functionality

Image Adjustment

Black & White Mode: Standard Fine Ultrafine CMYK Black

Color Mode: Standard High Quality Economy Color Disable

Contrast: (-128 to +128) 0.0

Brightness: (-128 to +128) 0.0

X Scale: (10 to 1000 %) 100.0

Y Scale: (10 to 1000 %) 100.0

X Offset: (-200 to 200 mm) 0.0

Y Offset: (-200 to 200 mm) 0.0

Black Gamma: (0.01 to 2.99) 1.0

Cyan Gamma: (0.01 to 2.99) 1.0

Magenta Gamma: (0.01 to 2.99) 1.0

Yellow Gamma: (0.01 to 2.99) 1.0

SAVE CANCEL

HOME

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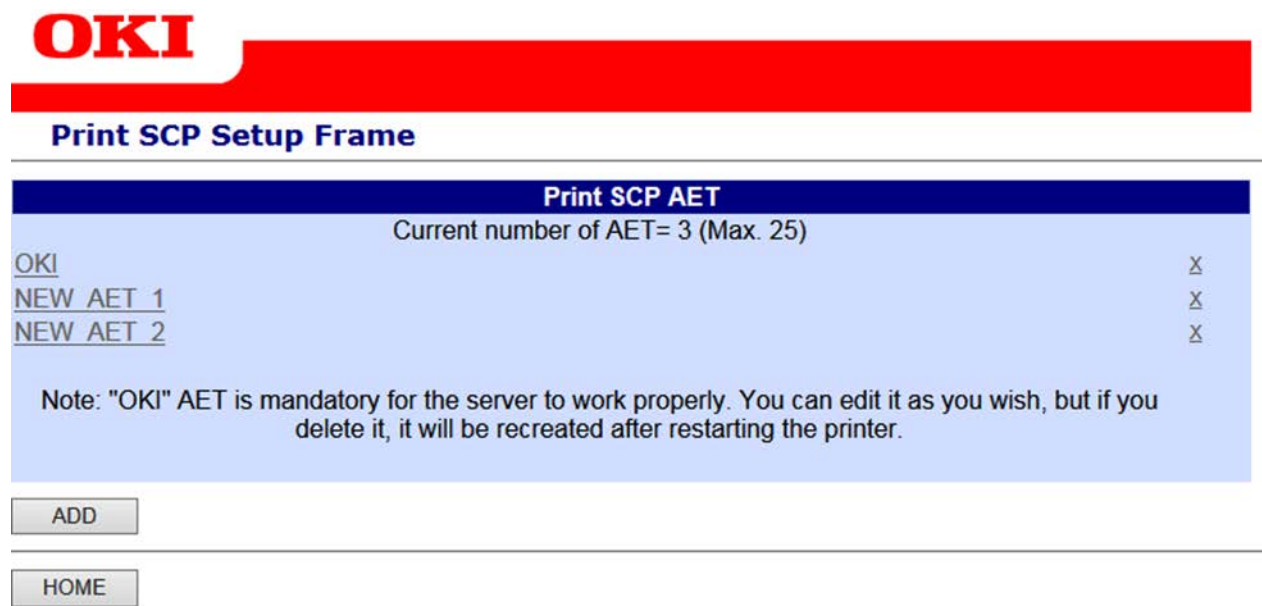
(5) Save the edited settings.

When you have finished editing the values, click [**SAVE**].



Memo: Click [**CANCEL**] to undo your editing.

(6) Click [**HOME**] on the AET list screen to return to the home page.



The screenshot shows the OKI Print SCP Setup Frame. At the top left is the OKI logo in red. Below it is a red horizontal bar. The main title is "Print SCP Setup Frame" in blue. Below the title is a blue header bar with "Print SCP AET" and "Current number of AET= 3 (Max. 25)". The main content area is light blue and contains a table with three rows: "OKI", "NEW AET 1", and "NEW AET 2", each with an "X" in the right column. Below the table is a note: "Note: 'OKI' 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 after restarting the printer." At the bottom left are two buttons: "ADD" and "HOME".

Print SCP AET	
Current number of AET= 3 (Max. 25)	
OKI	X
NEW AET 1	X
NEW AET 2	X

Note: "OKI" 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 after restarting the printer.

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1-4 Options for print rules on AETs (Table)

Here is presented the full set of options for print rules on AETs.
Depending on the model you purchased, some options may not be available.

Options for [OKI] print rules on AETs/Models		C911 DICOM C931 DICOM ES9411 DICOM ES9431 DICOM Pro9431 DICOM	Remarks
AET Name	"OKI" (Default)	X	Maximum 25 AETs.
Activate Max DICOM Log	ON/OFF (checkbox)	X	
Print Destination	Local	X	For "Remote Print Mode". "Local" is for the printer itself. "Remote1" and "Remote2" are for remote standard printers to which DICOM Printer transfers images.
	Remote1		
	Remote2		
Use US format paper	ON/OFF (checkbox)	X	For LETTER and TABLOID.
Printer Tray	Auto	X	Auto Paper Size Selection.
	Tray1		Tray1 is standard cassette tray.
	Tray2 ~		Tray2 (and later) are optional tray(s).
	MPTray		Standard Multi-Purpose Tray (banner print).
Copy	Client	X	To use Print SCU's (sender's) indication.
	1 ~ 10		
Page Format	Client	X	To use Print SCU's (sender's) indication.
	A4 or Letter	X	Standard paper of OKI Printer.
	A3 or Tabloid	X	
	A3 Nobi	X	
	215 x 900 mm	X	Banner paper for banner print.
	215 x 1200 mm	X	
	297 x 900 mm	X	
	297 x 1200 mm	X	
	328 x 900 mm	X	Note: Only "Black & White Mode" is available for banner print.
328 x 1200 mm	X		
Replace Header by Logo	ON/OFF (checkbox)	X	Please refer to "Graphic Elements Creation Manual for DICOM Embedded Printer".
Header	[text box]	X	Text header.
Footer	[text box]	X	Text footer. Default message is a caution.
Booklet Print Mode	ON/OFF (checkbox)	X	
	Booklet on A3/Tabloid	X	
	Add a CD page	X	
Border Density	Client	X	To use Print SCU's (sender's) indication.
	White		
	Black		
Empty Image Density	Client	X	To use Print SCU's (sender's) indication.
	White		
	Black		

Options for [OKI] print rules on AETs/Models		C911 DICOM C931 DICOM ES9411 DICOM ES9431 DICOM Pro9431 DICOM	Remarks
Image Background	<i>White</i>	X	
	<i>Black</i>		
Polarity	<i>Client</i>	X	To use Print SCU's (sender's) indication.
	<i>Normal</i>		
	<i>Reverse</i>		
Smoothing Filter	<i>Client</i>	X	To use Print SCU's (sender's) indication.
	<i>Normal</i>		
	<i>Sharp</i>		
Smoothing Level	<i>Low</i>	X	To adjust print quality of smoothing.
	<i>Medium</i>		
	<i>Strong</i>		
Layout Format	<i>STANDARD\1,1</i>	X	For "Store to Print Mode".
	<i>STANDARD\1,2</i>		
	<i>STANDARD\2.2</i>		
	<i>STANDARD\2,3</i>		
	<i>STANDARD\2,4</i>		
	<i>STANDARD\3,3</i>		
	<i>STANDARD\3,4</i>		
	<i>STANDARD\4,4</i>		
Black & White Mode	<i>Standard</i>	X	Mainly for X-Ray (K toner only).
	<i>Fine</i>	X	Mainly for X-Ray (K toner only).
	<i>Ultrafine</i>	X	Mainly for CT and MRI (K toner only).
	<i>CMYK Black</i>	X	Rich and Glossy black with CMYK toner.
Color Mode	<i>Standard</i>	X	Balanced mode between quality and cost.
	<i>High Quality</i>	X	High quality with sufficient toner.
	<i>Economy</i>	X	Good quality at the lowest toner cost.
	<i>Color Disable</i>	X	To prevent color print.
Contrast	<i>-128 ~ +128</i>	X	To adjust contrast.
Brightness	<i>-128 ~ +128</i>	X	To adjust brightness.
X Scale	<i>10 ~ 1000 (%)</i>	X	To enlarge/reduce print image.
Y Scale	<i>10 ~ 1000 (%)</i>	X	
X Offset	<i>-200 ~ 200 (mm)</i>	X	To shift printed area of medical image.
Y Offset	<i>-200 ~ 200 (mm)</i>	X	
Black Gamma	<i>0.01 ~ 2.99</i>	X	To adjust print quality with gamma values.
Cyan Gamma	<i>0.01 ~ 2.99</i>	X	
Magenta Gamma	<i>0.01 ~ 2.99</i>	X	
Yellow Gamma	<i>0.01 ~ 2.99</i>	X	

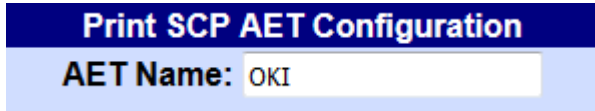
* Options in yellow rows are shown if the features are activated in ADMIN menu.

* Options in orange rows are shown if "Economy Mode" is not activated in ADMIN menu.

1-5 Options for [OKI] print rules on AETs (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:

(1) AET Name:



Print SCP AET Configuration
AET Name: OKI

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

The AETs defined in this rule have a maximum length of 16 characters (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.

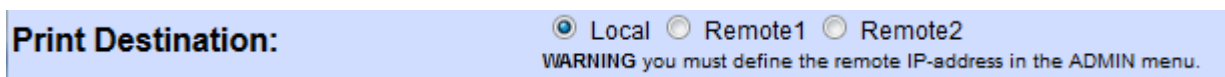
(2) Activate Max DICOM Log:



Activate Max DICOM Log:

Check this box if you want DICOM Embedded Printer to report all details of DICOM exchange. This is useful in case of trouble.

(3) Print Destination:

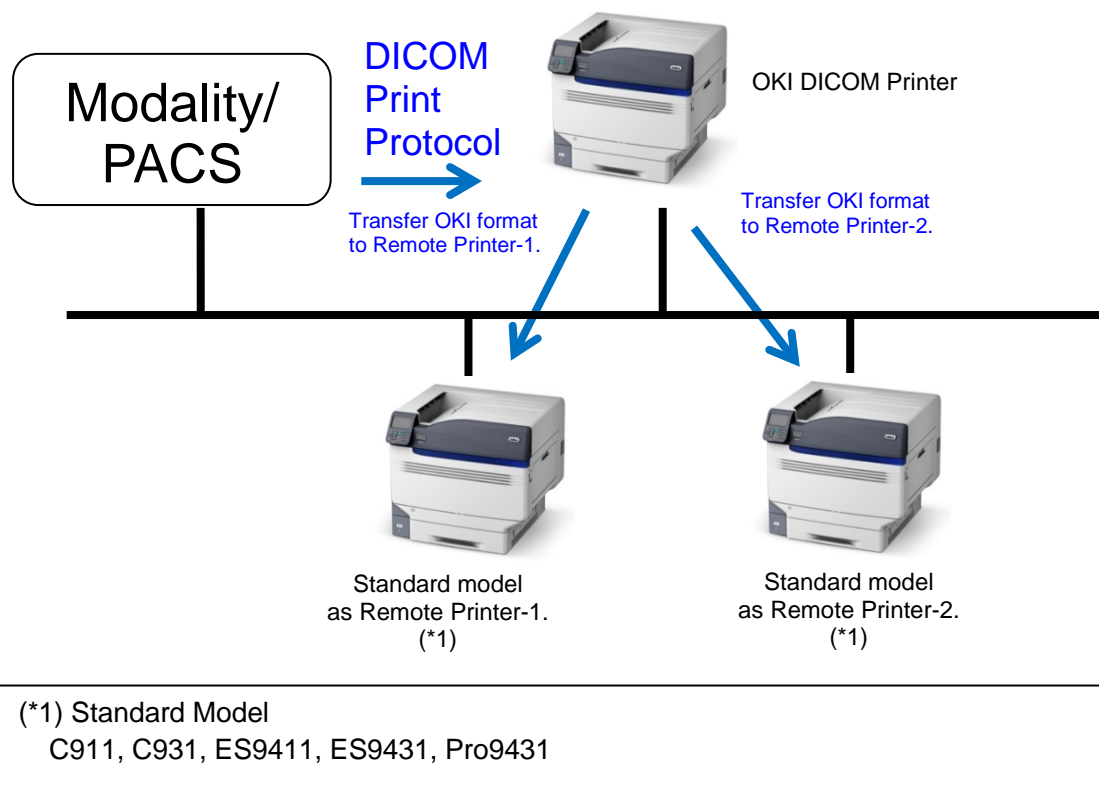


Print Destination: Local Remote1 Remote2
WARNING you must define the remote IP-address in the ADMIN menu.

Select if you want to print locally or to a remote standard printer.

Note: • You must define the remote printers in ADMIN menu.

- To avoid any quality issue on print out, you must use the indicated standard printer family on the following diagrams.

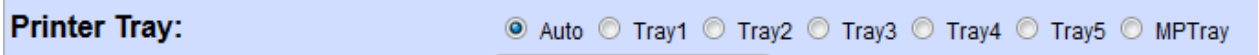


(4) Use US format paper:



Check this box if you want DICOM Embedded Printer to print in Letter/Tabloid size.

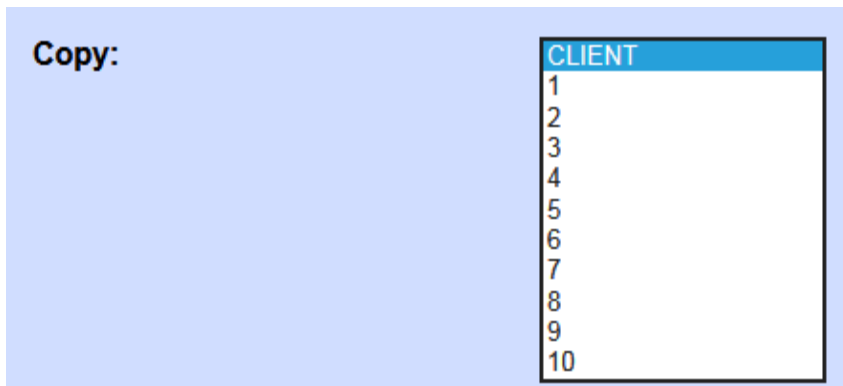
(5) Printer Tray:



Auto: Allows DICOM Embedded Printer to select the suitable tray up to the needed size.

Tray#: Forces the printer to use the selected tray regardless of the needed format. This is useful when paper of different quality is loaded in the different trays.

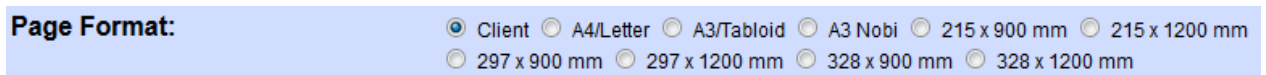
(6) Copy:



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

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

(7) Page Format:



If the printer supports different paper formats, you can force the printout into the format you wish. In [**Client**] mode, the printout will be resized to the nearest paper size. Refer to DCS (DICOM Conformance Statement) for more details.

(8) Replace Header by Logo:

Replace Header by Logo:



Using Logo as Header reduce image printing area

This function is used to customize the header of your printouts.

This function allows free creation. Refer to "Graphic Elements Creation Manual for DICOM Embedded Printer".

WARNING:

- This function disables the Header in text mode function.
- This function is deactivated when "Booklet Print Mode" is activated.

(9) Header:

Header:

This function is used to quickly customize the header of your printouts. (When "Replace Header by Logo" or "Booklet Print Mode" is not activated.)

This customization is limited to one line of text only. Typeface is Courier at 18 points size, available length is the width of the page minus 10mm. (For example, 52 characters for A4 of which width is 210 mm.)

(10) Footer:

Footer:

DICOM Embedded Printer - Not for diagnostic use - Oki Data Corporation

This function 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, it is possible to edit font size in ADMIN menu, and the available length is the width of the page minus 10mm.

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

(11) Booklet Print Mode:

Booklet Print Mode:	<input checked="" type="checkbox"/>	WARNING You must refer to the manual for avoid any issue regarding this feature.
Booklet on A3/Tabloid paper:	<input type="checkbox"/>	
Add a CD Page on Booklet:	<input type="checkbox"/>	

When “Booklet Print Mode” is enabled, the printer equipped with a duplex unit will add a cover page and a back page to your job, and then print all pages in a booklet. 16 pages (4 sheets) is the maximum number, as Booklet Print.

- Note:
- Once this mode is enabled, the maximum of simultaneous DICOM print association is set to 1.
 - When “Booklet Print Mode” is enabled, “Header” function is not available.

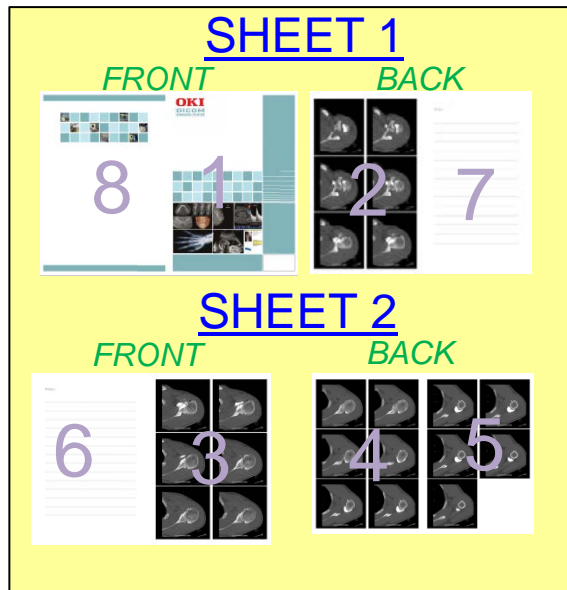
“Booklet on A3/Tabloid paper” will print on A3/Tabloid paper.

“Add a CD Page on Booklet” will insert a page to stick a CD holder. This page is the first one just after the cover page.

WARNING:

- Booklets will be produced on A4/Letter paper whatever format you ask for on the modality.
- If your printer supports A3/Tabloid and you activate the selection, all booklets will be printed on A3/Tabloid paper.
- YOU NEED TO HAVE ONE TRAY CONFIGURED WITH THE DESIRED PAPER FORMAT. If not, the printout will be discarded WITHOUT WARNING.

To customize the cover page and the back page of your booklets, please refer to “Graphic Elements Creation Manual for DICOM Embedded Printer”.



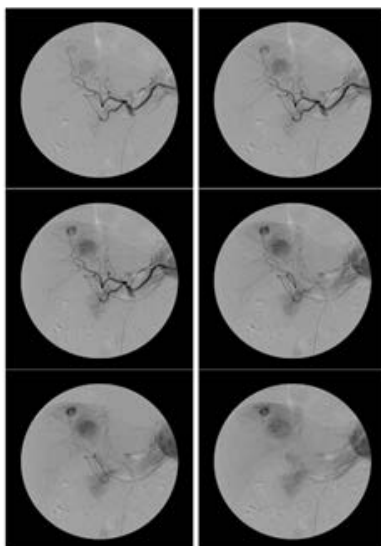
EXAMPLE of DICOM Booklet Print
 Booklet: Maximum 16 pages (4 sheets) A3/A4



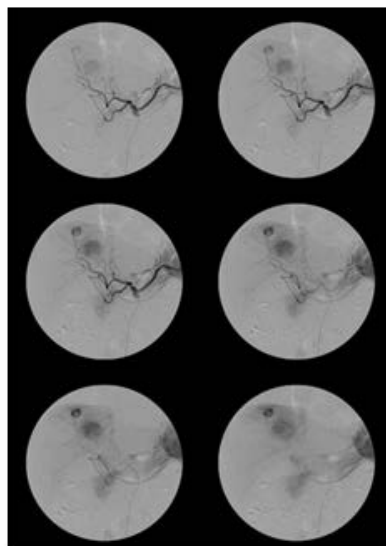
(12) Border Density

Border Density: Client White Black

This function is used to define the border images to black or white.
 [Client]: Manages the settings from the DICOM console.



Border: White



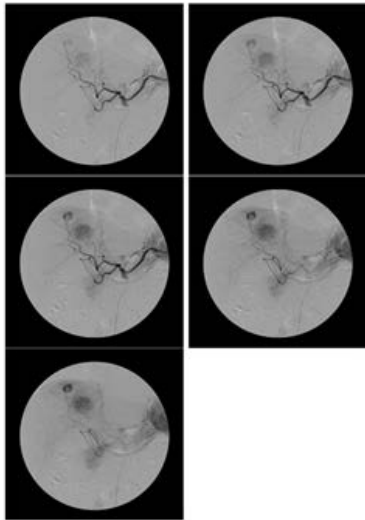
Border: Black

(13) Empty Image Density:

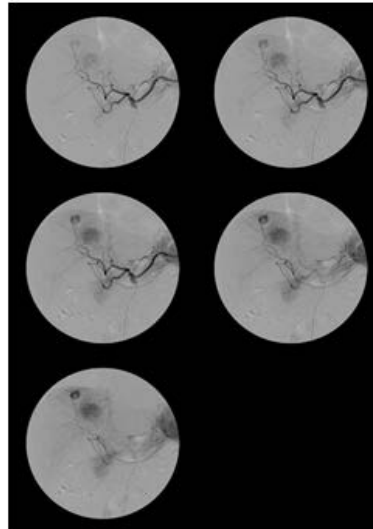
Empty Image Density: Client White Black

This function is used to define an image-free zone in black or white.

[**Client**]: Manages the settings from the DICOM console.



Empty Image: White

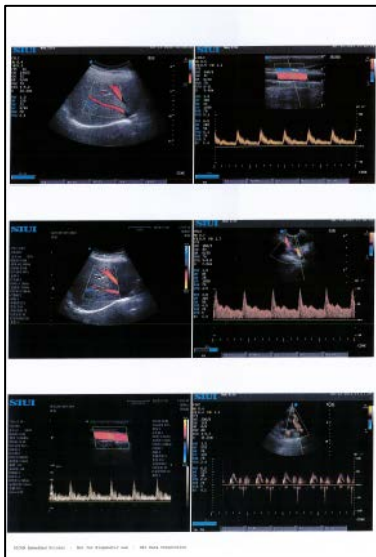


Empty Image: Black

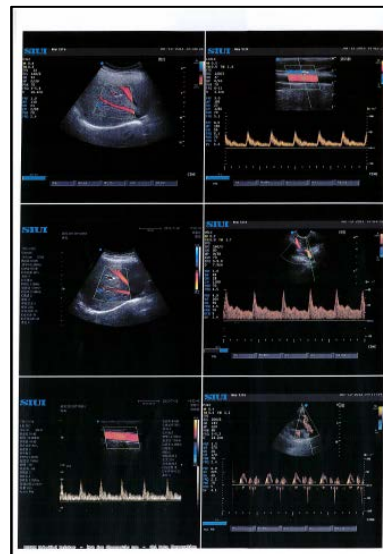
(14) Image Background:

Image Background: White Black

This function is used to define the background of the image zone in black or white and adds a thin line to define the image area. The choices are [**White**] and [**Black**].



Background Density: White



Background Density: Black

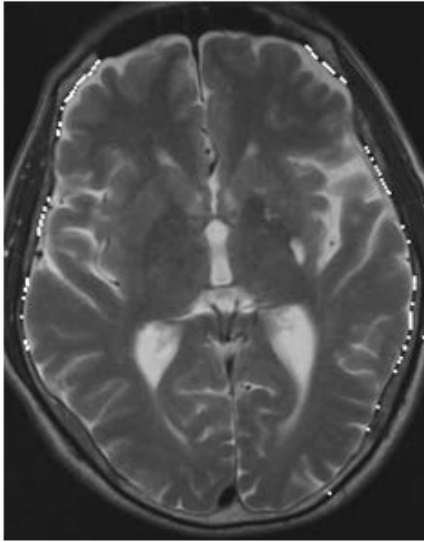
(15) Polarity:

Polarity:

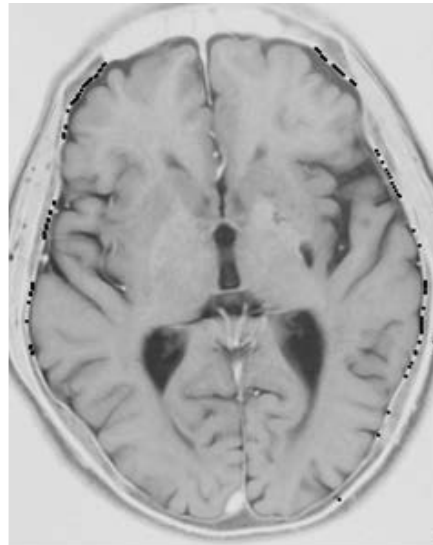
Client Normal Reverse

Select [**Normal**] or [**Reverse**] mode to print images in positive or negative.

[**Client**]: Manages the settings from the DICOM console.



Normal



Reverse

(16) Smoothing Filter:

Smoothing Filter:

Client Normal Sharp

This function is used to define the aspect rendering of the printed image. The choices are [**Client**], [**Normal**] and [**Sharp**]. As default, [**Client**] is selected.

[**Client**]: Manages the settings from the DICOM console.

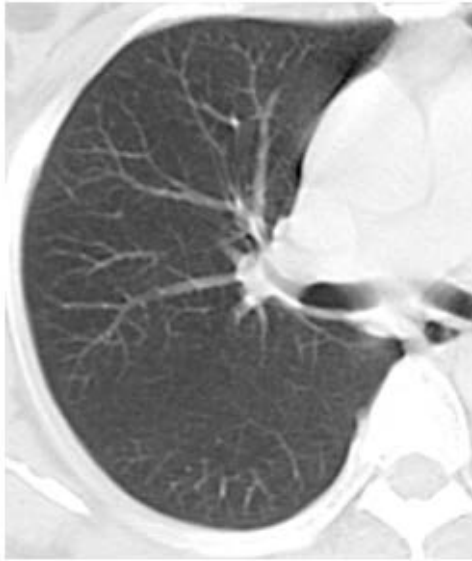
[**Normal**]: Normal mode.

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

(17) Smoothing Level:

Smoothing Level: Low Medium Strong

This function is used to define the level of action of the filter. The choices are [Low], [Medium] and [Strong]. As default, [Low] is selected.



Low



Medium

(18) Layout Format:

Layout Format:

STANDARD\1,1
STANDARD\1,2
STANDARD\2,2
STANDARD\2,3
STANDARD\2,4
STANDARD\3,3
STANDARD\3,4
STANDARD\4,4

If you use DICOM Store Protocol from your modality to print to DICOM Embedded Printer, you need to define the layout for the images to be printed on the paper.

WARNING:

DICOM Store Protocol supported for printing is restricted to images from Ultrasound, Eye Care and Endoscopic modalities.

(19) Black & White Mode:

Black & White Mode: Standard Fine Ultrafine CMYK Black

This function is used to define the level of action of the filter.

The choices are [**Standard**], [**Fine**], [**Ultrafine**] and [**CMYK Black**].

As default, [**Standard**] is selected.

[**Standard**]: Defines printing monochrome images in pure black.

[**Fine**]: Defines printing monochrome images in pure black with more detailed images.

[**Ultrafine**]: Defines printing monochrome images in pure black with high detailed images.

[**CMYK Black**]: Defines printing monochrome images in Composite black (CMYK). When "Economy" is selected in "Color Mode", the image is printed with only black toner.

(20) Color Mode:

Color Mode: Standard High Quality Economy Color Disable

This function is used to define the level of action of the filter.

The choices are [**Standard**], [**High Quality**], [**Economy**] and [**Color Disable**]. As default, [**Standard**] is selected.

[**Standard**]: Defines printing color images in color (CMYK) with average usage of toner.

[**High Quality**]: Defines printing color images in high color quality (CMYK).

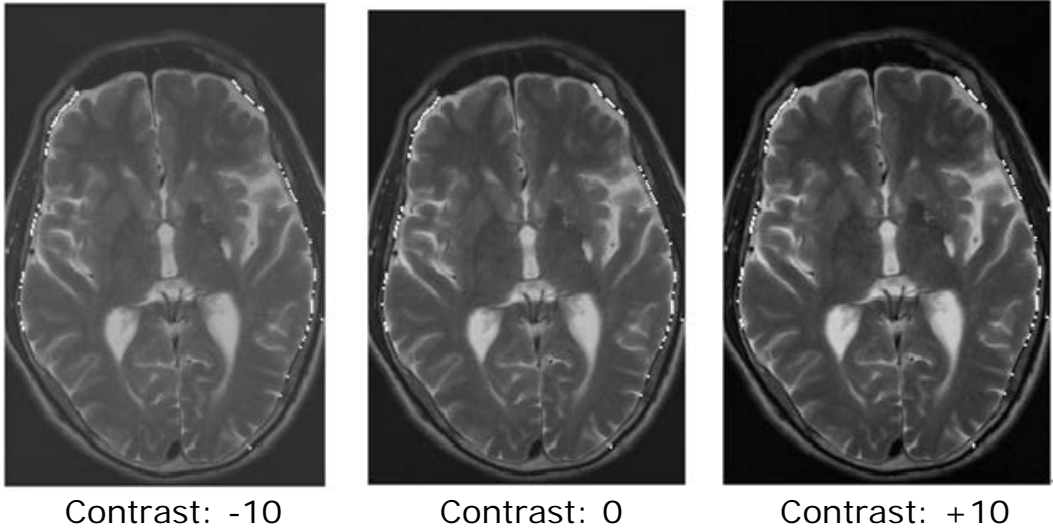
[**Economy**]: Defines printing color images in color (CMYK) with low usage of toner.

[**Color Disable**]: Disables Color DICOM Print Protocol so that the AET will only support Monochrome DICOM Print Protocol.

(21) Contrast:

Contrast: (-128 to +128)

This function is used to change the level of contrast of the printouts. The choices are from [-128] to [+128]. Negative values reduce contrast to flatten the image, 0 doesn't change the level of contrast, and positive values increase contrast to enhance the image.



(22) Brightness:

Brightness: (-128 to +128)

This function is used to change the level of brightness of the printouts. The choices are from [-128] to [+128]. Negative values reduce light to darken the image, 0 doesn't change the level of brightness, and positive values increase light to lighten the image.



(23) X Scale:

X Scale: (10 to 1000 %)

This function is used to define the level of zoom for X from 10 % to 1000%, values less than 100% reduce size for X, and values more than 100% enlarge size for X.

As default, [**100.0**] is selected.

(24) Y Scale:

Y Scale: (10 to 1000 %)

This function is used to define the level of zoom for Y from 10 % to 1000%, values less than 100% reduce size for Y, and values more than 100% enlarge size for Y.

As default, [**100.0**] is selected.

(25) X Offset:

X Offset: (-200 to 200 mm)

This function is used to define the level of offset for X in millimeter, negative values do offset to the left, and positive values do offset to the right.

The range is from -200(mm) to 200(mm). As default, [**0.0**] is selected.

(26) Y Offset:

Y Offset: (-200 to 200 mm)

This function is used to define the level of offset for Y in millimeter, negative values do offset down, and positive values do offset up.

The range is from -200(mm) to 200(mm). As default, [**0.0**] is selected.

(27) Black Gamma:

Black Gamma: (0.01 to 2.99)

This function is used to adjust the gamma for Black, when grey images are printed in pure black. Values can be within a range from 0.01 to 2.99, in increments of 0.01. Values below 1.00 will lighten the Black component of the image, and values above 1.00 will darken it.

(28) Cyan Gamma:

Cyan Gamma: (0.01 to 2.99)

This function is used to adjust the gamma for Cyan. Values can be within a range from 0.01 to 2.99, in increments of 0.01. Values below 1.00 will lighten the Cyan component of the image, and values above 1.00 will darken it.

(29) Magenta Gamma:

Magenta Gamma: (0.01 to 2.99)

This function is used to adjust the gamma for Magenta. Values can be within a range from 0.01 to 2.99, in increments of 0.01. Values below 1.00 will lighten the Magenta component of the image, and values above 1.00 will darken it.

(30) Yellow Gamma:

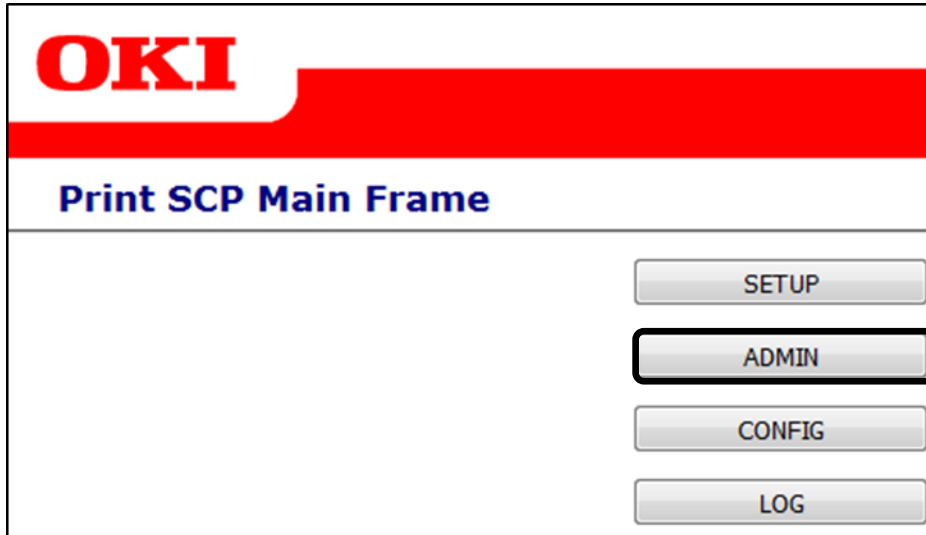
Yellow Gamma: (0.01 to 2.99)

This function is used to adjust the gamma for Yellow. Values can be within a range from 0.01 to 2.99, in increments of 0.01. Values below 1.00 will lighten the Yellow component of the image, and values above 1.00 will darken it.

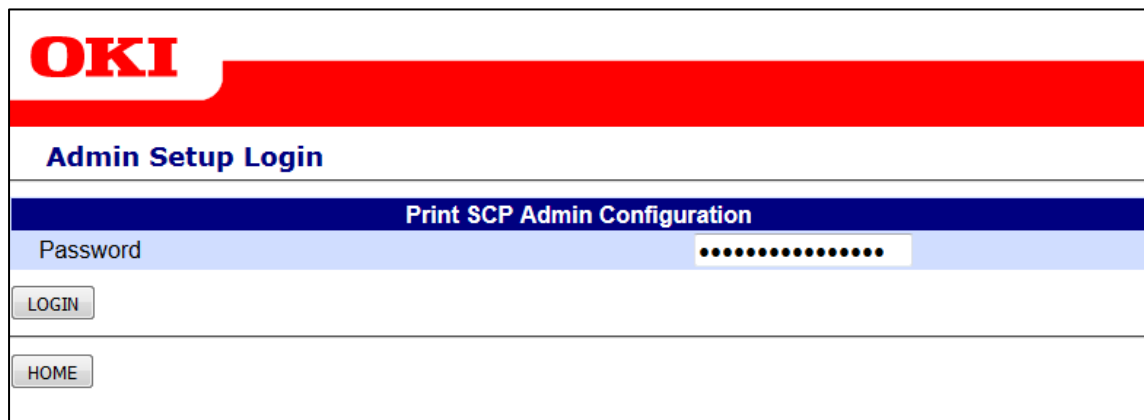
Make appropriate settings for test printing.

1-6 Customize ADMIN menu

(1) Click [**ADMIN**] on DICOM Embedded Printer home page.



(2) The Admin Setup Login page is displayed. Enter the OKI Administrator password and Click [**LOGIN**]. To edit or change the password, please refer to the printer manual.



Return to the home page by clicking [**HOME**].

- (3) The Print SCP Admin Frame page is displayed. This will give you a summary of all options.

OKI

Print SCP Admin Frame

Admin Setup

Activate Economy Mode
WARNING when "Activate Economy Mode" is enabled, it remove the possibility to use "Remote Print Mode" and force the printer to use "Economy Mode".

Activate Max DICOM Log Mode

Activate DICOM Store to Print Mode
WARNING to avoid any issue regarding the DICOM Store to Print Mode, you must please refer to the manual.

Activate Booklet Print Mode
WARNING to avoid any issue regarding the Booklet Print Mode, you must please refer to the manual.

Activate Remote Print Mode
WARNING to avoid any issue regarding the Remote Print Mode, you must use this feature only with OKI C911, Pro9431, Pro9541 or Pro9542 Standard Printers, and please refer to the manual.

Remote Printer 1

Remote Printer 2

Footer Font Size (2 to 24)

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- (4) Save the edited settings.

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

Memo: Click [**CANCEL**] to restore to the last saved settings.

1-7 ADMIN menu (Description)

(1) Activate Economy Mode

Activate Economy Mode

WARNING when "Activate Economy Mode" is enabled, it remove the possibility to use "Remote Print Mode" and force the printer to use "Economy Mode".

This function is used to define the level of features of the printer. When "Active Economy Mode" is enabled, the items in ovals in the following descriptions are disabled in AET setup options.

■ Activate Economy Mode: OFF

(When "Remote Print Mode" is activated.)

[AET Setup Menu]

Print SCP AET Configuration

AET Name: OKI

Activate Max DICOM Log:

Print Destination: Local Remote1 Remote2

WARNING you must define the remote IP-address in the ADMIN menu.

Image Adjustment

Black & White Mode: Standard Fine Ultrafine CMYK Black

Color Mode: Standard High Quality Economy Color Disable

■ Activate Economy Mode: ON

[AET Setup Menu]

Print SCP AET Configuration

AET Name: OKI

Activate Max DICOM Log:

"Print Destinations" is removed from AET Setup Menu.

Image Adjustment

Black & White Mode: Standard Fine Ultrafine

Color Mode: Economy Color Disable

"Black & White Mode" provides B/W print with only K toner in AET Setup Menu. "Color Mode" provides only "Economy Mode" in AET Setup Menu.

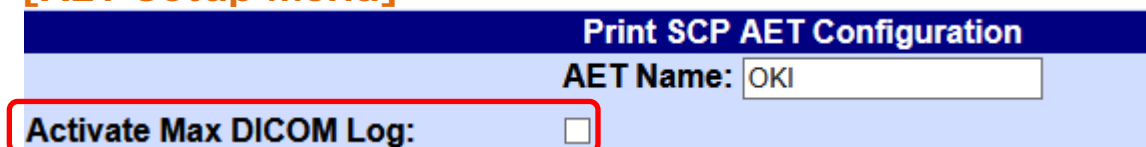
WARNING: When you activate "Economy Mode", all AETs will be deleted.

(2) Activate Max DICOM Log Mode

Activate Max DICOM Log Mode

This function is used to define whether to show or hide [Activate Max DICOM Log Mode] in the AET Print rules. As default, the setting is enabled.

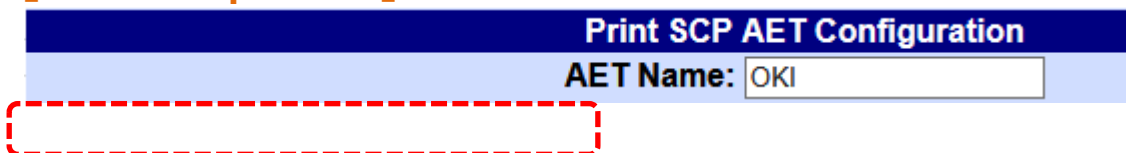
■ Activate Max DICOM Log Mode: ON [AET Setup Menu]



Print SCP AET Configuration
AET Name: OKI

Activate Max DICOM Log:

■ Activate Max DICOM Log Mode: OFF [AET Setup Menu]



Print SCP AET Configuration
AET Name: OKI

[Red dashed box indicates the 'Activate Max DICOM Log' option is missing]

“Activate Max DICOM Log” is removed from AET Setup Menu.

(3) Activate DICOM Store to Print Mode

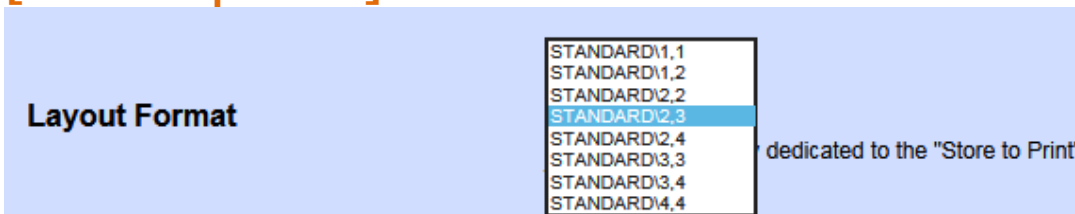
Activate DICOM Store to Print Mode



WARNING to avoid any issue regarding the DICOM Store to Print Mode, you must please refer to the manual.

This function is used to define whether to show or hide [Layout Format] in the AET Print rules, and gives the possibility to the printer to support DICOM Store Protocol to print images. As default, the setting is disabled.

■ Activate DICOM Store to Print Mode: ON [AET Setup Menu]



Layout Format

- STANDARD\1,1
- STANDARD\1,2
- STANDARD\2,2
- STANDARD\2,3
- STANDARD\2,4
- STANDARD\3,3
- STANDARD\3,4
- STANDARD\4,4

dedicated to the "Store to Print"

This function defines the layout in use of Store to Print Protocol.

■ Activate DICOM Store to Print Mode: OFF [AET Setup Menu]

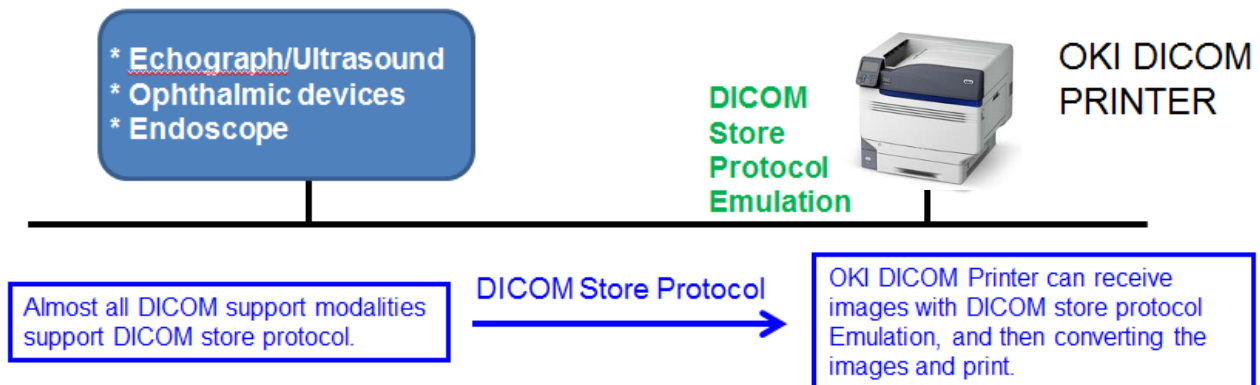
“Layout Format” is removed from AET Setup Menu.

Note:

- Only Echography, Ophthalmic and Endoscopy images are supported in DICOM Store Protocol. Details of supported classes are as follows.

1.2.840.10008.5.1.4.1.1.6 UltrasoundImage Storage SOP Class (old version)
1.2.840.10008.5.1.4.1.1.6.1 UltrasoundImage Storage SOP Class
1.2.840.10008.5.1.4.1.1.7 Secondary Capture Image Storage SOP Class
1.2.840.10008.5.1.4.1.1.77.1.1 Endoscopic Image Storage SOP Class
1.2.840.10008.5.1.4.1.1.77.1.4 Photographic Image Storage SOP Class
1.2.840.10008.5.1.4.1.1.77.1.5.1 Ophthalmic Photography 8-Bit Image Storage SOP Class

- The layout is “Portrait” except for Standard\1,1, Standard\2,2, Standard\3,3 and Standard\4,4 which print images in “Landscape”.



(4) Activate Booklet Print Mode

Activate Booklet Print Mode



WARNING to avoid any issue regarding the Booklet Print Mode, you must please refer to the manual.

This function is used to define whether to show or hide [**Activate Booklet Print Mode**] in the AET print rules, and gives the possibility to the printer to print images in a booklet.

As default, this setting is disabled.

- Note:
- To avoid any issue regarding printing in booklet, you must use this feature only with the printer equipped with a duplex unit.
 - It is for demo purpose only. No support will be provided by OKI.

■ Activate Booklet Print Mode: ON [AET Setup Menu]

Booklet Print Mode



WARNING to avoid any issue regarding this feature, you must refer to the manual.

■ Activate Booklet Print Mode: OFF [AET Setup Menu]

“Booklet Print Mode” is removed from AET Setup Menu.

(5) Activate Remote Print Mode

Activate Remote Print Mode



WARNING to avoid any issue regarding the Remote Print Mode, you must use this feature only with OKI C610 or C711 Standard Printers, and please refer to the manual.

This function is used to define whether to show or hide [**Print Destination**] in the AET print rules, and gives the possibility to the printer to send jobs to a remote standard OKI printer. As default, the setting is disabled.

- Note:
- To avoid any issue regarding remote printing, you must only use this feature with the same standard OKI printers model as the DICOM one.
 - It is for demo purpose only. No support will be provided by OKI.

(5-1) Remote Printer 1

Remote Printer 1	<input type="text" value="127.0.0.1"/>
------------------	--

Enter the IP address of the 1st remote standard OKI printer.
As default, the setting is [127.0.0.1].

Note: To avoid any issue regarding remote printing, you must only use this feature with the same standard OKI printer model as the DICOM one.

(5-2) Remote Printer 2

Remote Printer 2	<input type="text" value="127.0.0.1"/>
------------------	--

Enter the IP address of the 2nd remote standard OKI printer.
As default, the setting is [127.0.0.1].

Note: To avoid any issue regarding remote printing, you must only use this feature with the same standard OKI printer model as the DICOM one.

■ Activate Remote Print Mode: ON

[AET Setup Menu]

Print Destination:	<input checked="" type="radio"/> Local <input type="radio"/> Remote1 <input type="radio"/> Remote2
<small>WARNING you must define the remote IP-address in the ADMIN menu.</small>	

Select if you want to print locally or to a remote standard printer.

- Note:
- You must define the remote printers in ADMIN menu.
 - To avoid any quality issue on print out, you must use the indicated standard printer family.

■ Activate Remote Print Mode: OFF

[AET Setup Menu]

“Print Destination” is removed from AET Setup Menu.

(6) Footer Font Size

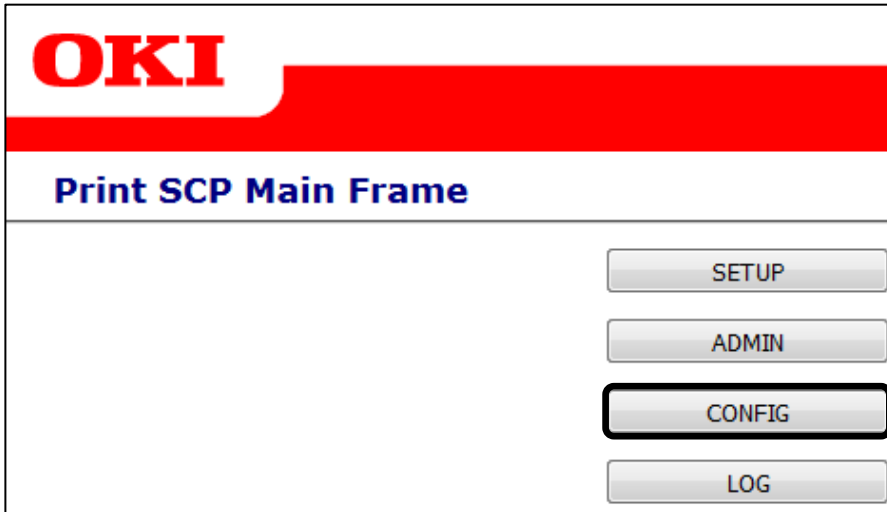
Footer Font Size (2 to 24)	<input type="text" value="6"/>
----------------------------	--------------------------------

This function is used to define the Footer font size for all AETs.
As default, the setting is [6].

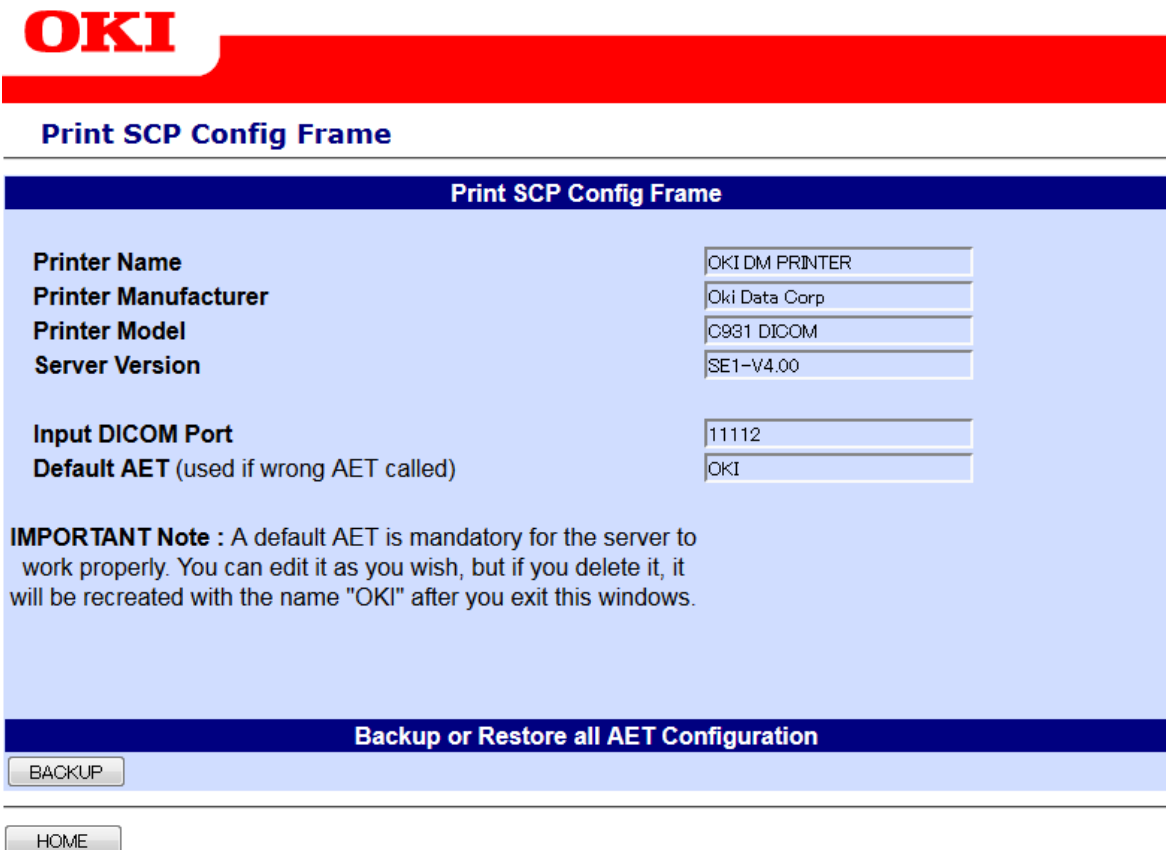
2. Related Settings

2-1 CONFIG menu

(1) Click [CONFIG] on DICOM Embedded Printer home page.



The Print SCP Config Frame page is displayed. This will give you a summary of all information.



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2-2 BACKUP menu

(1) Click [**BACKUP**] on the Print SCP Config Frame page. The BACKUP page is displayed.

Create AET Backup File by clicking [**CREATE**].

Upload AET Backup File by clicking [**UPLOAD**].

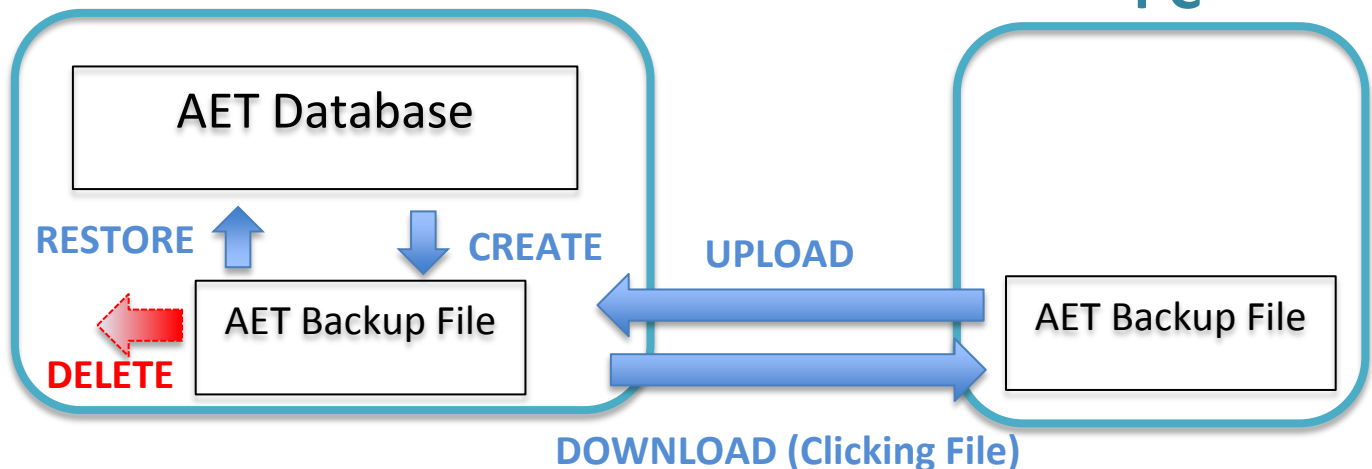
Delete AET Backup File by clicking [**DELETE**].

Click the name of AET Backup File to save it on your PC.
Restore the selected AET Backup File by clicking [**RESTORE**].
Return to the home page by clicking [**HOME**].

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DICOM Embedded Printer

PC



2-2-1 Create & Download AET Backup File from Printer to PC

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

OKI

Print SCP Config Frame

Printer Name	OKIDM PRINTER
Printer Manufacturer	Oki Data Corp
Printer Model	C981 DICOM
Server Version	SE1-V4.00
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

HOME

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(2) Click [**CREATE**].

OKI

Print SCP Restore Frame

CREATE UPLOAD DELETE

Backup or Restore all AET Configuration

Restore Backup File, Click to Download

RESTORE

HOME

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(3) Click [TOP].

OKI

Print SCP Restore Frame

Backup file has been successfully created.

TOP

HOME

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(4) You will see the created file named like: "Printer model + serial number + .oki".
Click the name of the created AET Backup File.
You can download the AET Backup File into your PC.

OKI

Print SCP Restore Frame

CREATE UPLOAD DELETE

Backup or Restore all AET Configuration

Restore Backup File, Click to Download

<input type="checkbox"/>	V4-C931DM_AL36010089.oki
--------------------------	--------------------------

RESTORE

HOME

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2-2-2 Upload AET Backup File from PC to Printer

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

OKI

Print SCP Config Frame

Printer Name	OKIDM PRINTER
Printer Manufacturer	Oki Data Corp
Printer Model	C931 DICOM
Server Version	SE1-V4.00
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

HOME

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(2) Click [**UPLOAD**].

OKI

Print SCP Restore Frame

CREATE **UPLOAD** DELETE

Backup or Restore all AET Configuration

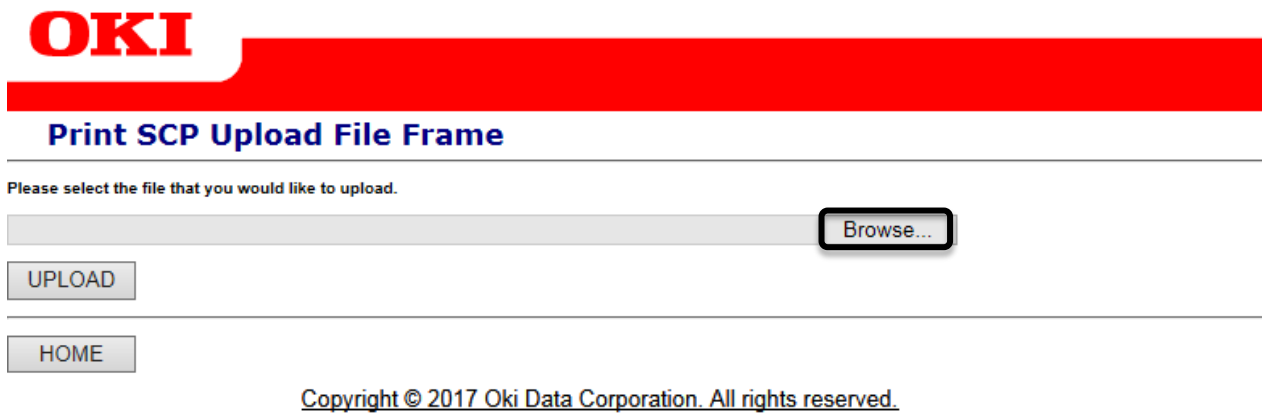
Restore Backup File. Click to Download

RESTORE

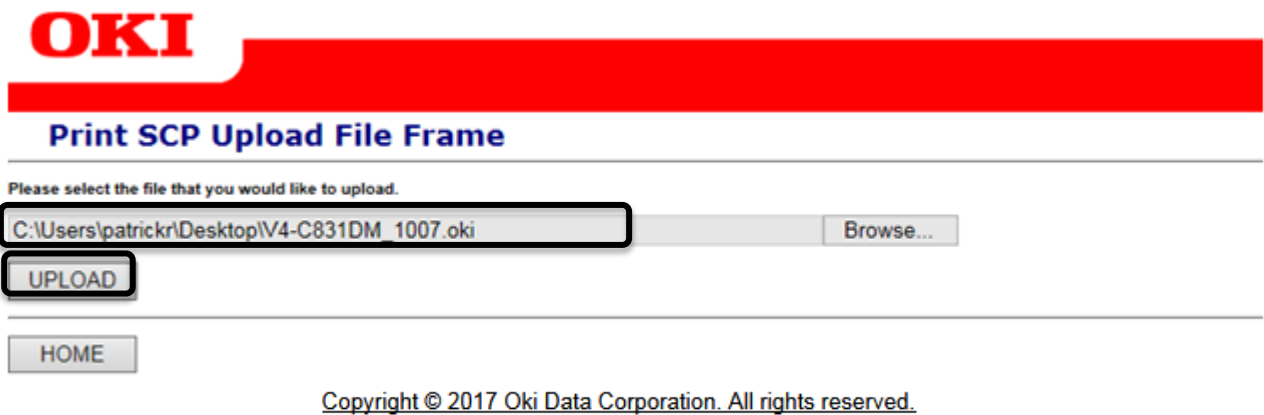
HOME

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(3) Click [**Browse...**] and select a saved AET Backup File.



(4) Click [**UPLOAD**] to upload the selected AET Backup File.



IMPORTANT: You can use only files from the same printer family. Any wrong file is deleted during restoration.

(5) Click [**TOP**].



(6) The AET Backup File is now in the frame.

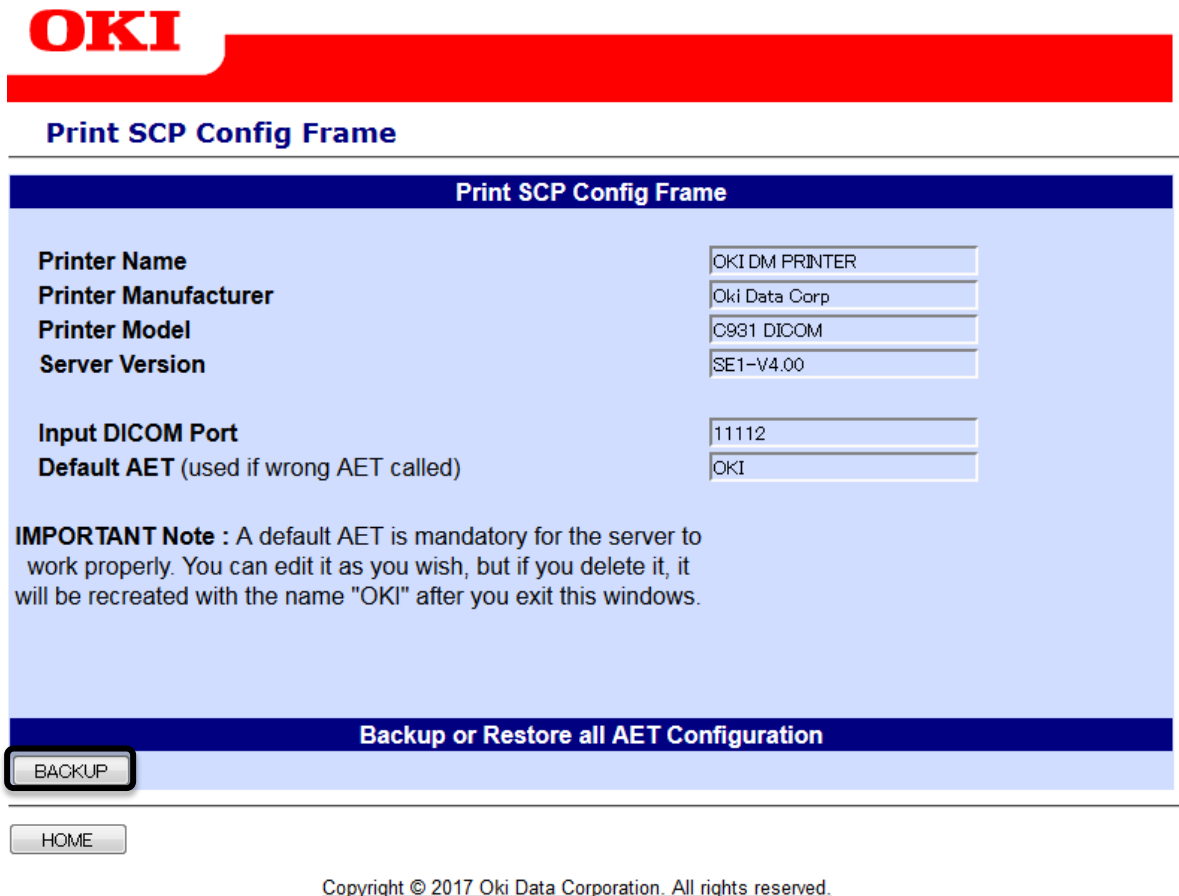
The screenshot shows the OKI SCP Restore Frame interface. At the top left is the OKI logo in red. Below it is a red horizontal bar. The main title is "Print SCP Restore Frame" in blue. Underneath are three buttons: "CREATE", "UPLOAD", and "DELETE". A blue header bar reads "Backup or Restore all AET Configuration". Below this is a table with two columns: "Restore" and "Backup File, Click to Download". The table contains one row with a checkbox and the filename "V4-C931DM_AL36010089.oki". Below the table is a "RESTORE" button. At the bottom of the interface is a "HOME" button.

Restore	Backup File, Click to Download
<input type="checkbox"/>	V4-C931DM_AL36010089.oki

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2-2-3 Restore AET data from AET Backup File to AET database

- (1) Click [**BACKUP**] on the Print SCP Config Frame page.



OKI

Print SCP Config Frame

Printer Name	OKI DM PRINTER
Printer Manufacturer	Oki Data Corp
Printer Model	C931 DICOM
Server Version	SE1-V4.00
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.

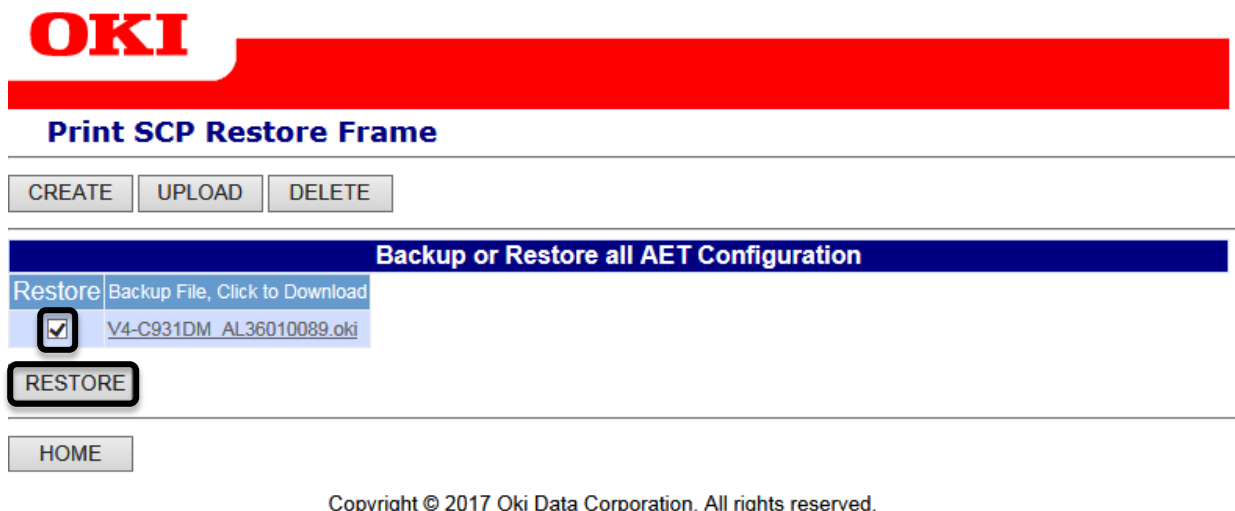
Backup or Restore all AET Configuration

BACKUP

HOME

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- (2) Select the AET Backup File by clicking on the checkbox at the left of the file. Then click [**RESTORE**] to reload the saved settings.



OKI

Print SCP Restore Frame

CREATE UPLOAD DELETE

Backup or Restore all AET Configuration

Restore Backup File, Click to Download
<input checked="" type="checkbox"/> V4-C931DM_AL36010089.oki

RESTORE

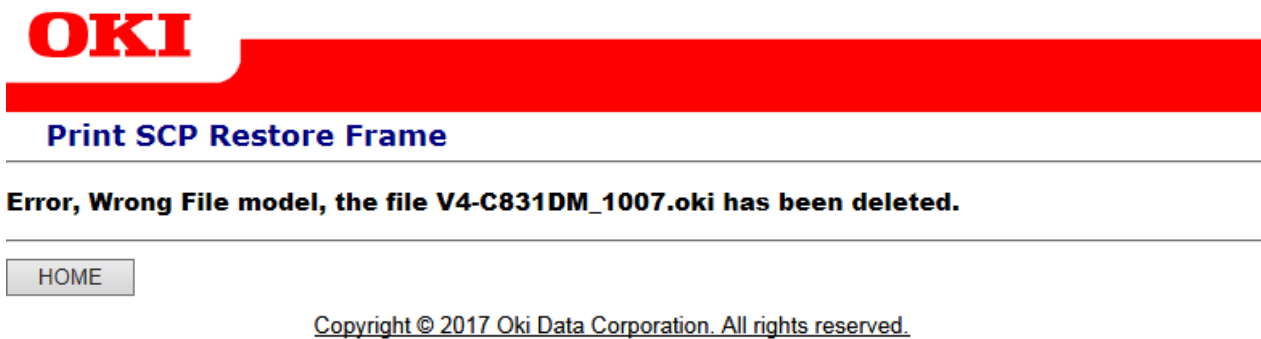
HOME

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(3) When the saved settings have been reloaded, the screen displays the following.

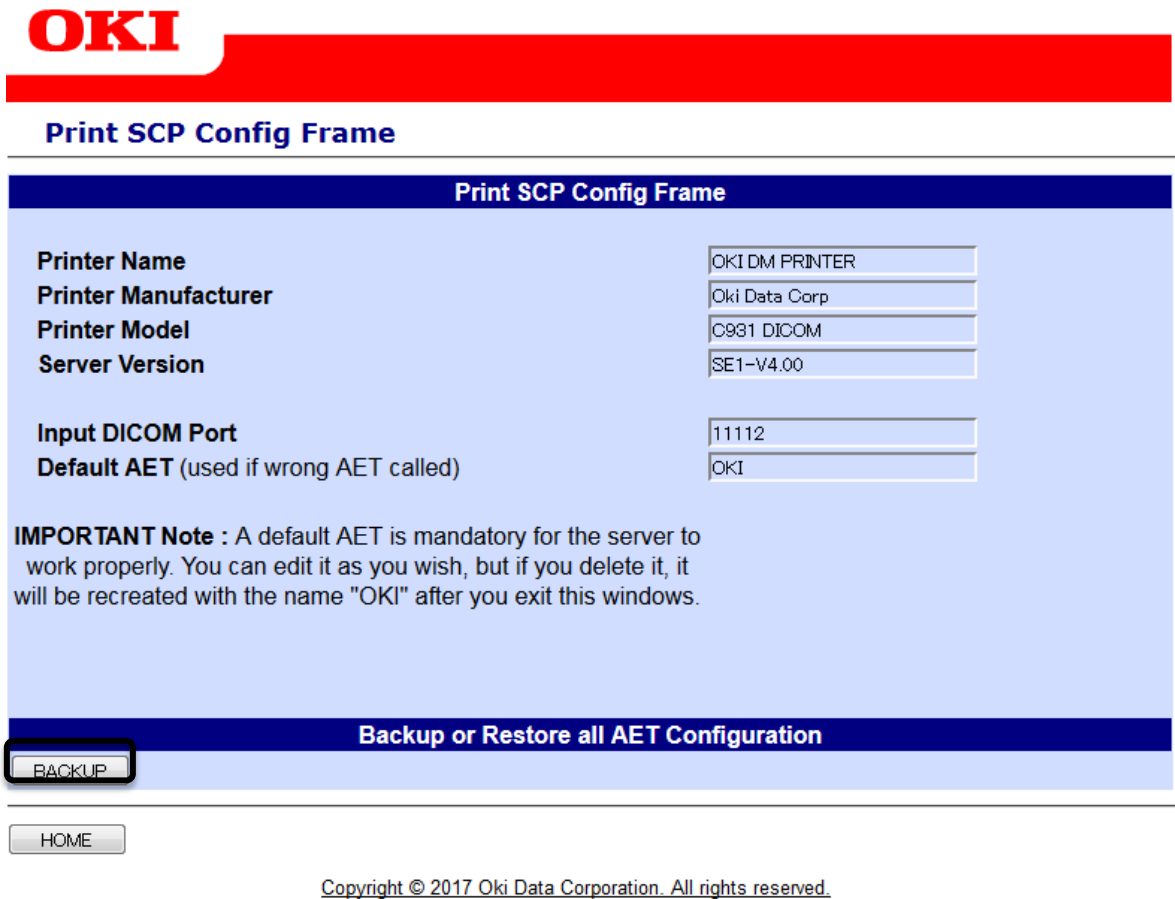


WARNING: In case of wrong AET Backup File, you will see the following message.



2-2-4 Delete AET Backup File from Printer

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



OKI

Print SCP Config Frame

Printer Name	OKI DM PRINTER
Printer Manufacturer	Oki Data Corp
Printer Model	C931 DICOM
Server Version	SE1-V4.00
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.

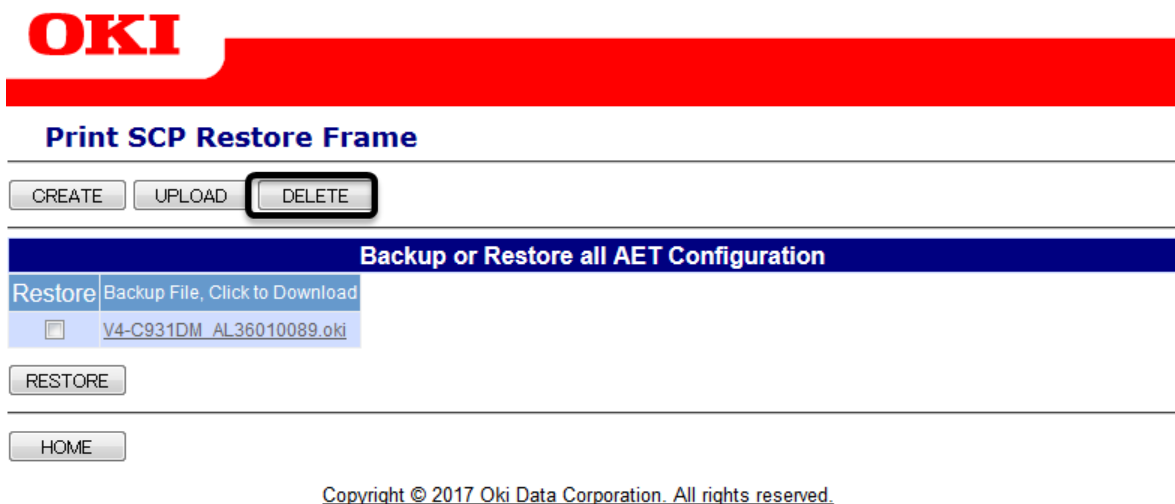
Backup or Restore all AET Configuration

BACKUP

HOME

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(2) Click [**DELETE**].



OKI

Print SCP Restore Frame

CREATE UPLOAD **DELETE**

Backup or Restore all AET Configuration

Restore	Backup File, Click to Download
<input type="checkbox"/>	V4-C931DM_AL36010089.oki

RESTORE

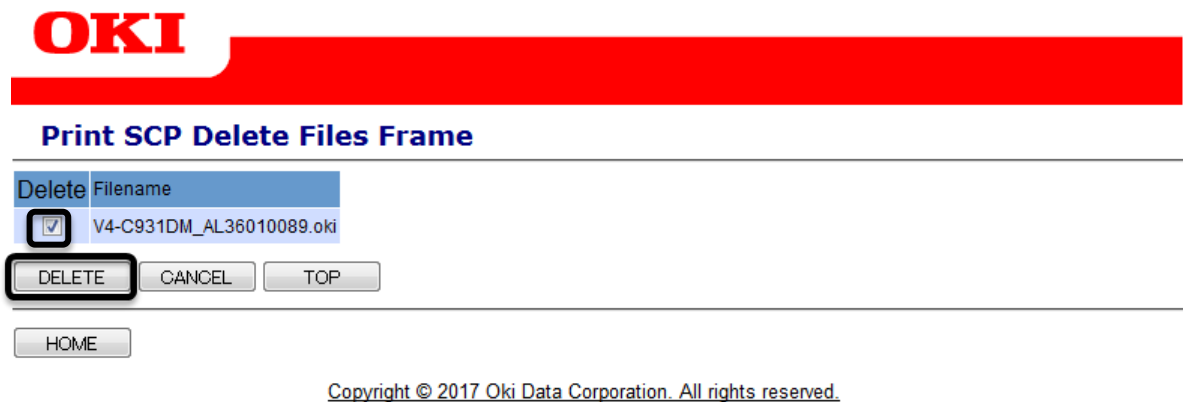
HOME

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- (3) Select the AET Backup File to delete by clicking on the checkbox at the left of the file. Then Click [**DELETE**].

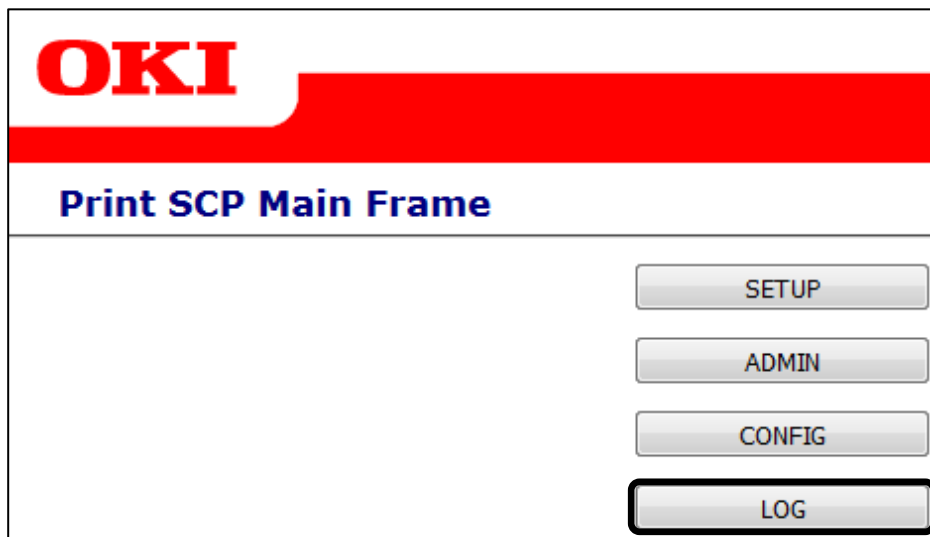


- (4) When the selected AET Backup File has been deleted, the screen displays the following.



3. LOG menu (DICOM Protocol)

(1) Click [LOG] on DICOM Embedded Printer home page.



(2) 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.

4. How to print the test patterns

The test patterns are designed to help you to troubleshoot 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 the black imaging unit.
- (4) The test pattern is printed.

5. Troubleshooting

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

When the printer panel displayed "Power Off/On 002 ~ 005:Error, please do the following action.

- 1) Turn OFF the printer power supply.
- 2) Take OFF the Built-in HDD from the printer.
- 3) Turn ON the printer power supply.
- 4) Update the printer firmware, using "Firmware Update Tool".

Example:

http://global.okiprintingsolutions.com/FWInterface.nsf/frmMain?OpenForm&Seq=1&Lang=en#_RefreshKW_SBUList

- 5) Turn OFF the printer power supply.
- 6) Mount the Built-in HDD into the printer.
- 7) Turn ON the printer power supply.