NanoRIP DICOM dongle

User Manual

For SHARP MX-C303, BP-20C25, BP-30C25 and BP-70C31 MFP

MX-C303W

BP-20C25 or BP-30C25

BP-70C31

IMPORTANT:

SHARP Printers/MFP must support Adobe PostScript©

This manual describes all the functionalities available in the full-option version of NanoRIP Ver 1.0.0.x. Available functionalities of your product may be different from those described in this manual.

Notes

IP Address:……

Serial Number: ……

Default DICOM Print SCP port Number: 11112

Default DICOM Store SCP port Number: 11114

Notes : ……

……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……
……

License, manual and trademark information :

NanoRIP, Printing Program License Agreement.

The details of the software license agreement described below must be agreed by you before using the software.

Software License Agreement

IMPORTANT

Please read this Software License Agreement (Agreement) carefully before using RB3L NanoRIP (Licensed Software) with a printer (Product).

This Licensed Software is intended to work only in conjunction with the Product

By using the Licensed Software with the Product, you are indicating your acceptance of these terms and conditions and this Agreement is deemed effective between you (Licensee) and RB3L FRANCE SAS (Licensor).

If you do not agree to the terms of this Agreement, you may not use the Licensed Software.

1. Scope of the license

Licensor grants, and Licensee accepts, a non-exclusive license to use the Licensed Software solely in conjunction with the Product.

2. Ownership and Restriction

(1) Licensor or its suppliers own all the copyright and proprietary rights in and to the Licensed Software. The structure, organization and code contained in Licensed Software are the valuable trade secrets of Licensor and its suppliers.

Licensed Software is also protected by United States Copyright Law and

International Treaty provisions. Licensee must treat the Licensed Software just as Licensee would treat any other copyrighted material, such as a book.

(2) Licensee may not make copies rent, lease, distribute, transfer or reprint the Licensed Software, in whole or in part.

(3) Licensee agrees not to modify, alter, translate, reverse engineer, decompile, disassemble, extract in part or separate in part the Licensed Software.

(4) Licensee agrees not to change the file names for the Licensed Software.

(5) Except as stated in this Agreement, Licensor does not grant Licensee any intellectual property rights in or to the Licensed Software.

3. Term and Termination

(1) This Agreement is effective until the Product is destroyed.

(2) Licensor may terminate this Agreement if Licensee fails to comply with any of the terms and conditions of this Agreement. Upon termination, Licensee shall destroy Licensed Software and its copies in Licensee's possession and control.

4. Warranty

THE LICENSED SOFTWARE IS PROVIDED "AS IS". NEITHER LICENSOR NOR ITS SUPPLIERS WARRANT THAT THE OPERATION OF THE LICENSED SOFTWARE WILL BE UNINTERRUPTED, ERROR FREE, OR WILL MEET LICENSEES NEEDS. LICENSOR AND ITS SUPPLIERS MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO NONINFRINGEMENT OF ANY THIRD PARTY'S RIGHTS, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE.

5. Disclaimer of Liability

IN NO EVENT WILL LICENSOR OR ITS SUPPLIERS BE LIABLE TO LICENSEE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF SAVINGS, OR LOSS OF DATA, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE NOR FOR ANY CLAIM BY ANY THIRD PARTY (IES) IN ANY WAY ARISING OUT OF OR RELATING TO THE LICENSED SOFTWARE, WHETHER THE CLAIM ALLEGES TORTIOUS CONDUCT (INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE) OR ANY OTHER LEGAL THEORY, OR FOR ANY CLAIM BY ANY THIRD PARTY.

6. Governing Law

The license with respect to the Licensed Software will be governed by the laws in force in FRANCE.

7. Severability

If any part of this Agreement is found void and unenforceable, it will not affect the validity of the balance of the Agreement, which shall remain valid and enforceable according to its terms.

8. Export Restriction

Licensee agrees that the Licensed Software will not be shipped, transferred, exported or re-exported into any country or used in any manner prohibited by U.S., Europe or any other applicable export laws or regulations. Licensee agrees that it will not export or re-export the Licensed Software or products produced therefrom in any form without appropriate U.S., Europe or any other governmental licenses.

This Agreement shall automatically terminate upon failure by Licensee to comply with this Section 8.

9. Entire Agreement

Licensee represents that Licensee reads and understands this Agreement and that this Agreement constitutes the entire understanding and agreement between Licensor and Licensee as to the license relating to the Licensed Software, and supersedes and replaces any prior agreement, written or oral.

The Licensees obligations in this Agreement constitute the obligations to Licensor and all owners of the right licensed to Licensee under this Agreement.

10. Notice to U.S. Government End Users

All Software provided to the U.S. Government pursuant to solicitations issued on or after December 1, 1995 is provided with the commercial license rights and restrictions described elsewhere herein. All Software provided to the U.S. Government pursuant to solicitations issued prior to December 1, 1995 is provided with “Restricted Rights” as provided for in FAR, 48 CFR 52.227-14 (JUNE 1987) or

DFAR, 48 CFR 252.227-7013 (OCT 1988), as applicable.

“Software” in this section is deemed to be the Licensed Software defined in this Agreement.

Some of the Licensed Software may include a separate software license agreement and if you agree to the separate software license agreement, the terms of such agreement shall prevail for the use of the software.

11. Licensee acknowledges and agrees that Licensors suppliers are third party beneficiaries of this Agreement, with the right to enforce the obligations set forth herein with respect to the respective technology of such suppliers and/or Licensor.

DCMTK - A DICOM library in C

1. Presentation:

1.1 Introduction.

NanoRIP DICOM dongle transforms a SHARP MX-C303W, BP-20C25, BP-30C25 and/or BP-70C31 MFP into DICOM imagers in order to produce high quality low-cost prints, on paper with different sizes (A6, A5, A4, A3, etc. ..) for all medical imaging modalities. This imager can generate both GSDF compatible grayscale or colour pages, and match them to the screen rendering.

1.2 Functions.

*** High print quality with 9600x600 multi-level dpi**
*** DICOM 3.0 Embedded with advanced features**
*** Reliability**
*** Ergonomics**
*** Cost reduction.**

This document describes how to manage the DICOM Imager (NanoRIP with a SHARP printer or MFP).

1.3 Document terms.

The license, control panel and web interface messages are all provided in English in this document.

1.4 FDA Classification.

Printer or MFP using NanoRIP is classified as a medical image hardcopy device (class 2 Exempt, Sec. 892.2040)

2. Start

To perform the operations described in this guide, you must have a NanoRIP dongle as well and a SHARP printer or MFP.

This section describes the procedure for configuring and using the NanoRIP with a SHARP printer.

NanoRIP DICOM dongle Configuration Guide for the SHARP Printers Series

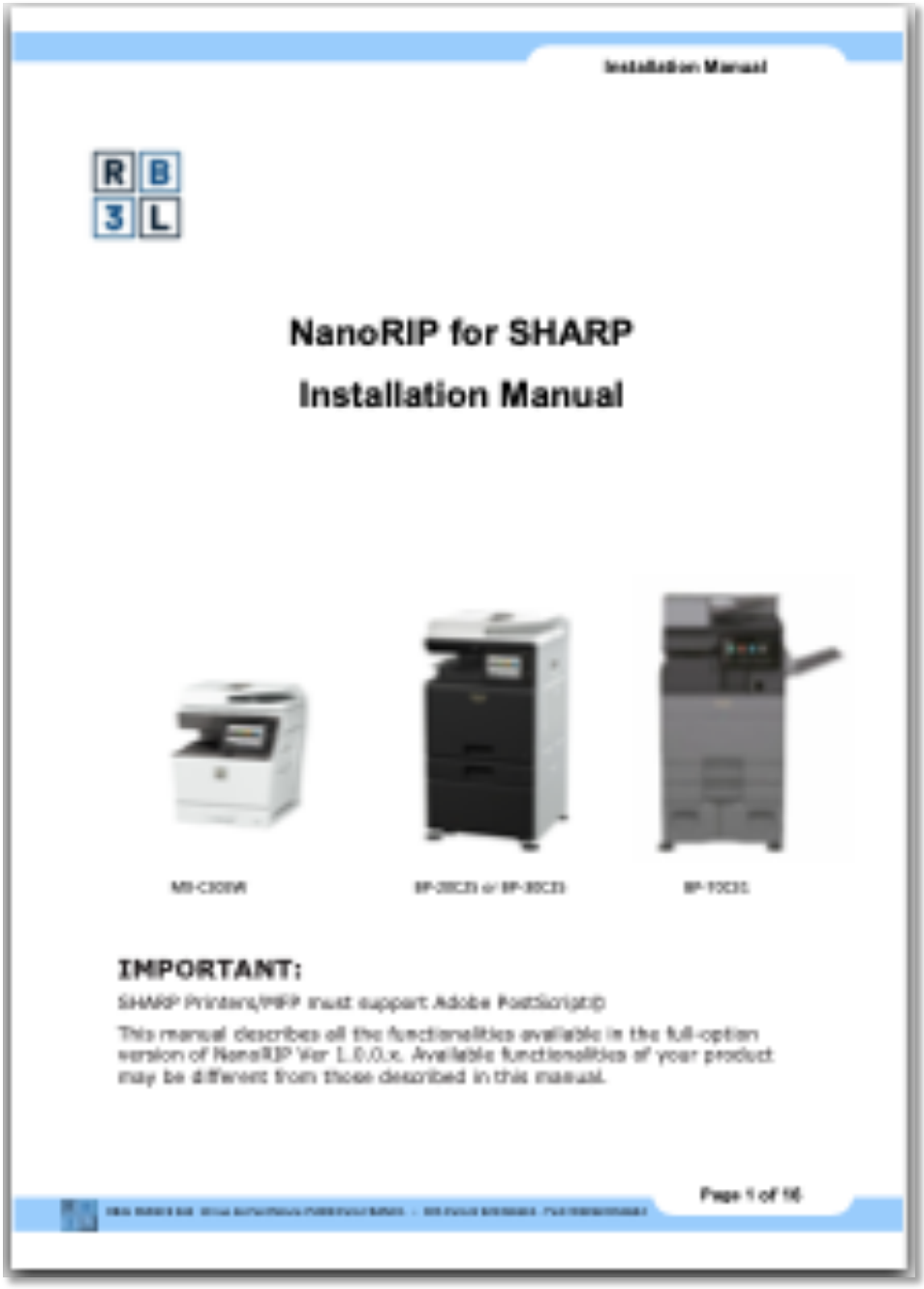
Prerequisites:

- A computer connected to the same network as the printer. (See step 1)
- Graphics software such as Adobe **Photoshop**©, **MS Paint**©, **GIMP**©, etc.... (See step 6)
- Charruasoft **TestSCU** software(See step 6)
- Downloadable from this link https://www.charruasoft.com/products/free/testscu.zip

Index:

Step 1: Setting up NanoRIP and the printer.

Let's start by making sure that the printer and NanoRIP is correctly installed with all consumables and paper. Please follow the procedure describe in the "**NANORIP for SHARP Installation Manual**".



Step 2: Access to the DICOM server home page.

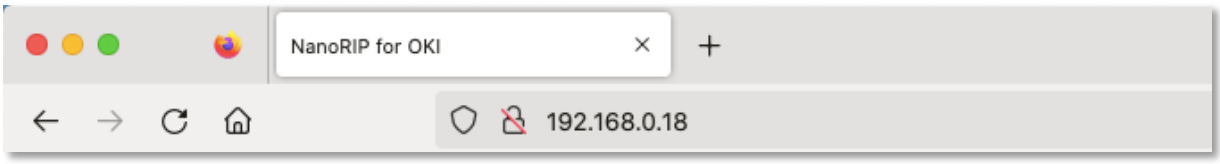
Once step 1 has been validated, we can access the NanoRIP management interface. To do this, from a computer connected to the same network as NanoRIP, please launch an internet browser (Internet Explorer, Firefox etc.)

In your web browser [address bar] enter the NanoRIP IP address:

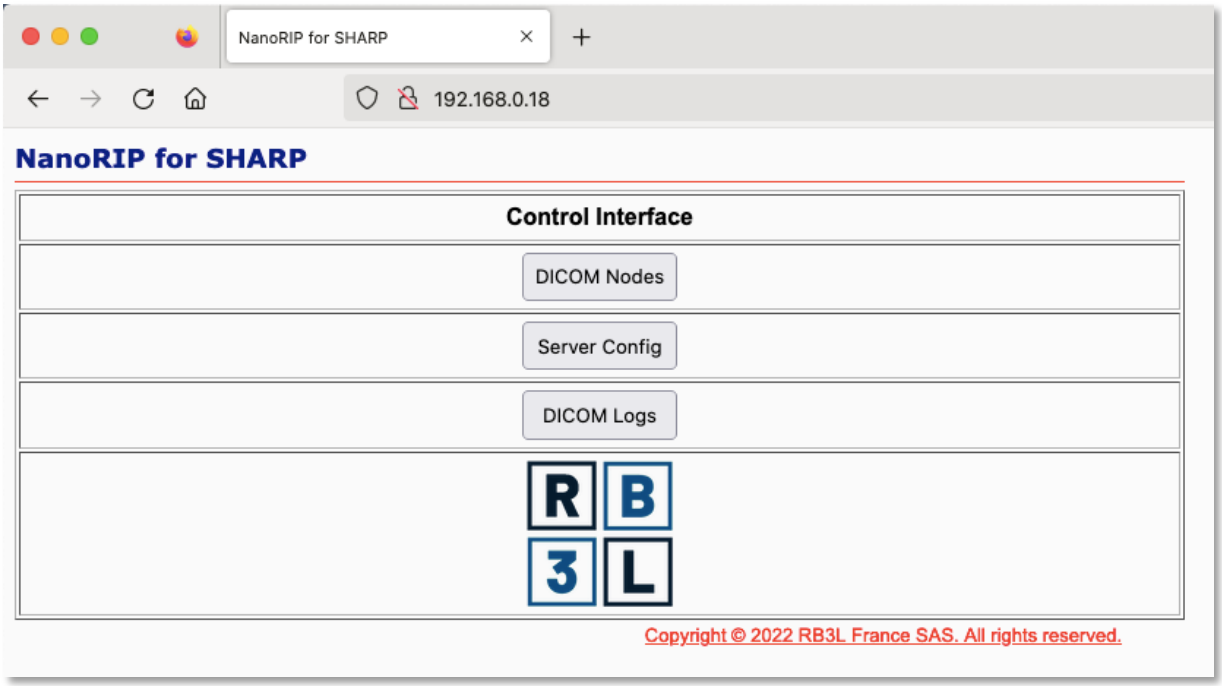
http://<<Printer IP>>

(For our example, our printer's IP address is 192.168.0.18)

Either in our case: http://192.168.0.18

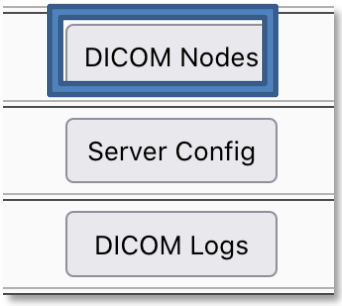


NanoRIP configuration page will be displayed:



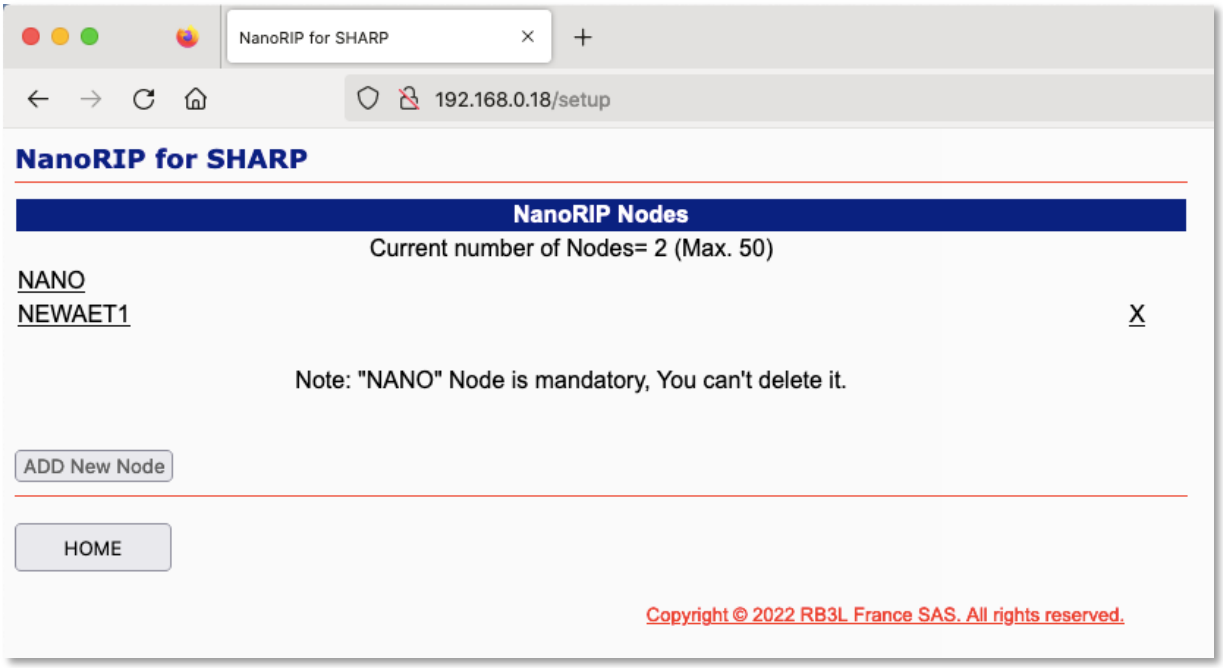
NanoRIP Home Page.

Step 3: Description of [DICOM Nodes] menu

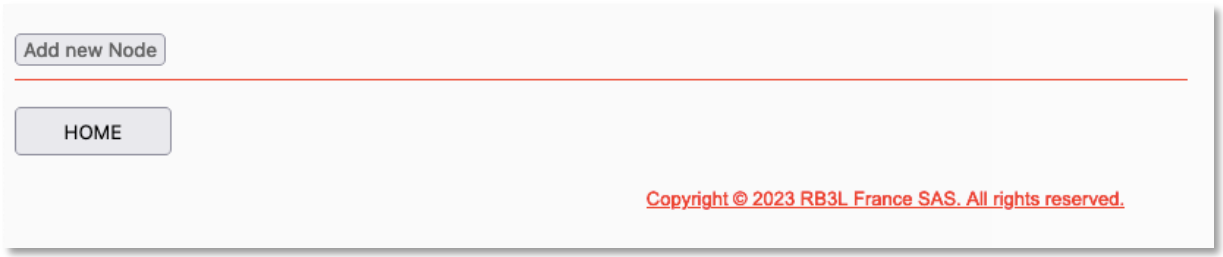


To open the Setup menu, click on the [**DICOM Nodes**] button.

This will show us the list of printing rules represented by their AETitle.



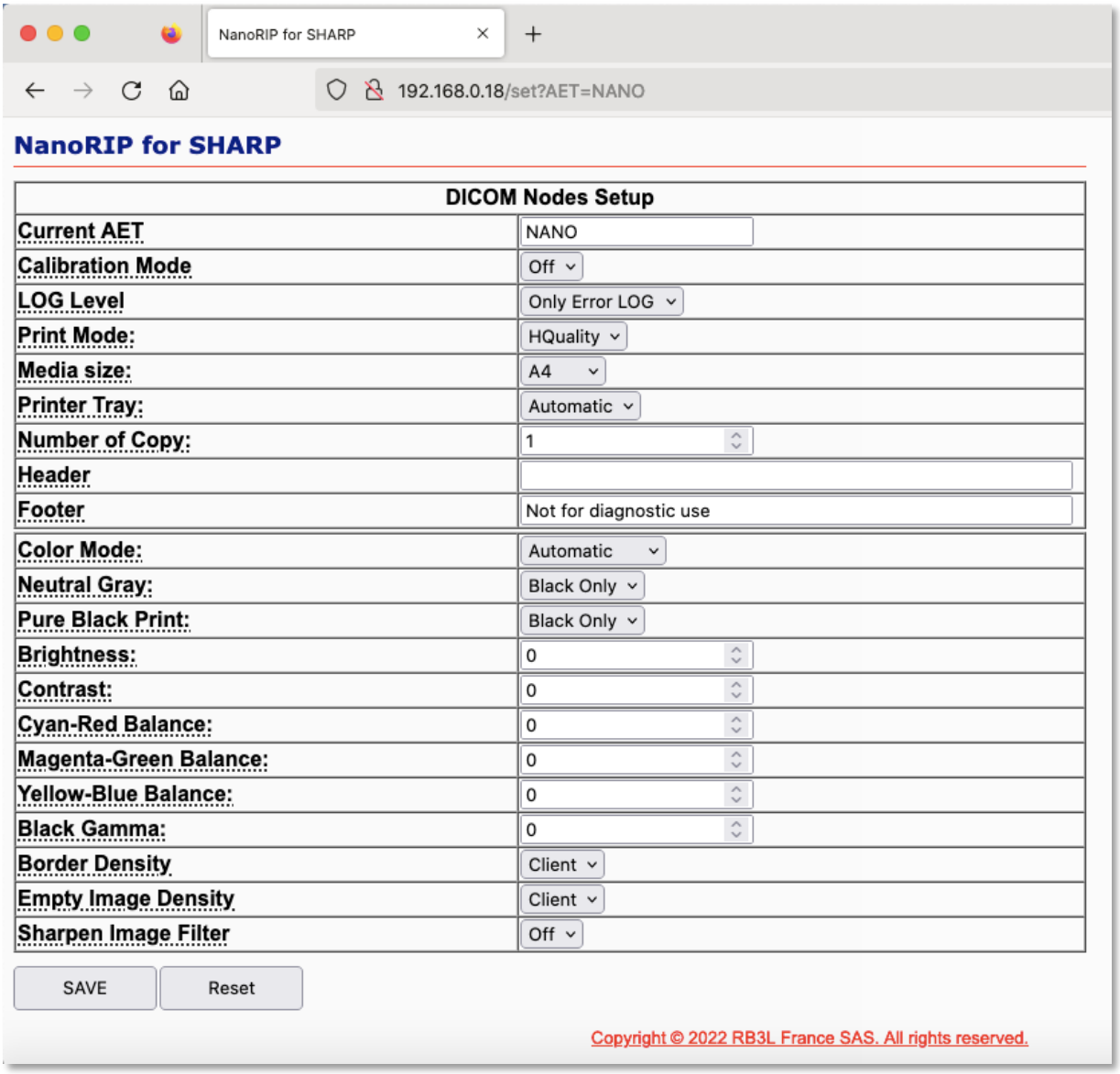
You can add new rules by clicking on [**Add new Node**], edit them by click on their name (in our case, [**NANO**]), or delete them by click on [**X**] in back of their name.



Please note [NANO] AET is mandatory for NanoRIP work properly and cannot be deleted.

Any time you can go back to home page by click on [**HOME**]

Click on NANO to edit this printing rule.



Description of the different options for the printing rules:

A large number of rules can be added to the system, and for each, the following information is configurable:

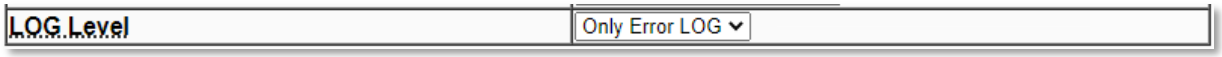
[Current AET]**:** AET is an abbreviation for Application Entity Title. The invocation method is assumed to conform to the DICOM Print SCU protocol.

AETs defined in this rule have a maximum length of 16 characters (a - z, A - Z, 0 - 9).

Note:
- Names are case sensitive.
- the AET is only definable and modifiable when creating a rule.
- In error case, the printer will use the default AET [NANO] and print the overlay text: "**This AET** (with the name of the AET) **does not exist**".

[Calibration Mode]: Once this function is enabled, when the modality send one image to this AET, it print a 3x3 matrix with different Brightness and Contrast values of this image.

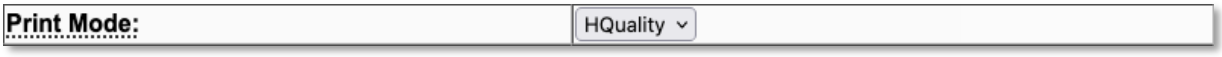
This option allow choosing visually the best output..



[Log Level]: This function is used to display the DICOM dialog logs when printing. This is useful for identifying the source of an error in case of problems. You can manage 3x logs level, [Only Error LOG], and [High Level Msg].

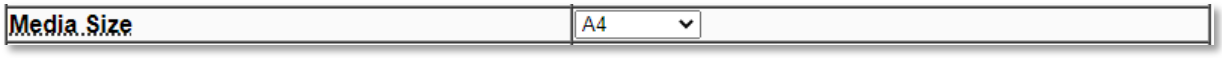
[Only Error LOG] only display error messages.
[High Level Msg] displays all DICOM Tag messages.

Note: ● This menu is only available in **"NANO"**AET **only.**



[Print Mode]: This function allows you to select printing resolution. Choices are [Normal], [HQuality] or [Fine] By default, [Normal] is selected.

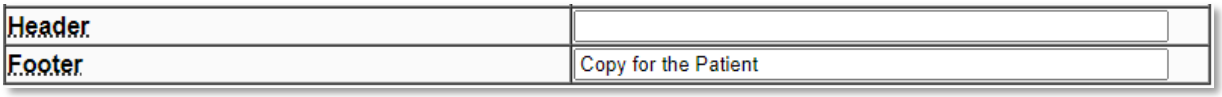
[Normal]: Set printing resolution to 600x600 dpi.
[HQuality]: Set printing resolution to 9600x600 dpi in multi-level.
[Fine]: Set printing resolution to 1200x1200 dpi.



[Media Size]: This function allows you to select the printout paper size, the sizes range from [A6] to [A3Wide] depending the printer model used.

[Printer Tray]: This function allows you to choose the paper tray used for printing
[Automatic]: the printer will select the paper tray according to the requested format.

[Number of Copy]: This function allows you to choose the number of copies. Copies numbers varies from [1] to [20].



[Header] : This function allows you to customize printout header.
Note: ● Customization is a single line of text only.

[Footer] : This function allows you to customize the footer of your prints
Note: ● Customization is a single line of text only.

[Color Mode]: This function sets the filter action level. Choices are [Automatic] [Colour] or [Monochrome]. By default, [Automatic] is selected.

[Automatic], Sets printing colour images in colour (CMYK) and monochrome image in monochrome (K toner only).

[Colour], Sets printing colour and monochrome images in colour.

[Monochrome], Sets printing colour images in monochrome.

[Neutral Gray]: This function define the grayscale rendering. Choices are [Black Only] or [CMYK]. By default, [Black Only] is selected.

[Black Only], Sets printing grayscale in monochrome (K toner only).

[CMYK], Sets printing grayscale in colour (CMYK).

[Pure Black Print]: This function define the monochrome image rendering. Choices are [Black Only] or [CMYK]. By default, [Black Only] is selected.

[Black Only], Sets printing monochrome image in monochrome (K toner only).

[CMYK], Sets printing monochrome image in composite black (CMYK).

Contrast:	0
Brightness:	0

[Contrast]: This function allows you to modify printout contrast. The choices range from [-10] to [+10]. Negative values reduce contrast to flatten the image, [0] means no change, positive values increase contrast to improve the image.

[Brightness] : This function is used to change printout brightness. The choices range from [-10] to [+10]. Negative values reduce light to darken the image, [0] means no change, positive values increase light to brighten the image.

Cyan-Red Balance:	0
Magenta-Green Balance:	0
Yellow-Blue Balance:	0

[Cyan-Red Balance]: This function is used to adjust printout cyan balance channel from Cyan to Red. The range choices are from [-30] to [+30].

[Magenta-Green Balance]: This function is used to adjust printout magenta balance channel from Magenta to Green. The range choices are from [-30] to [+30].

[Yellow-Blue Balance]: This function is used to adjust printout yellow balance channel from Yellow to Blue. The range choices are from [-30] to [+30].

Black Gamma:	0

[Black Gamma] : This function is used to adjust printout black gamma channel. The choices range from [-30] to [+30].

Border Density	Client
Empty Image Density	Client

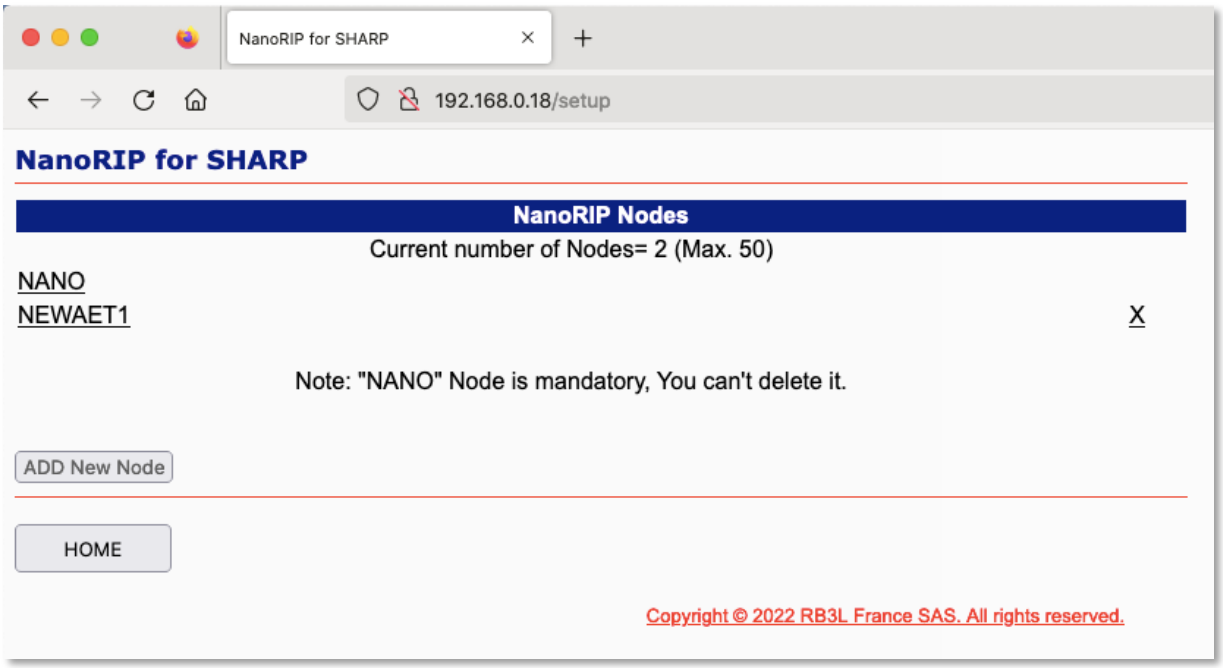
[Border Density]: This option defines the background images, in black or white. Choices are [Black] [White] or [Client]. [Client] means that the settings will be managed by the DICOM calling modality

[Empty Image Density]: This option defines the image-free zone in black or white. Choices are [Black] [White] or [Client]. [Client] means that the settings will be managed by the DICOM calling modality

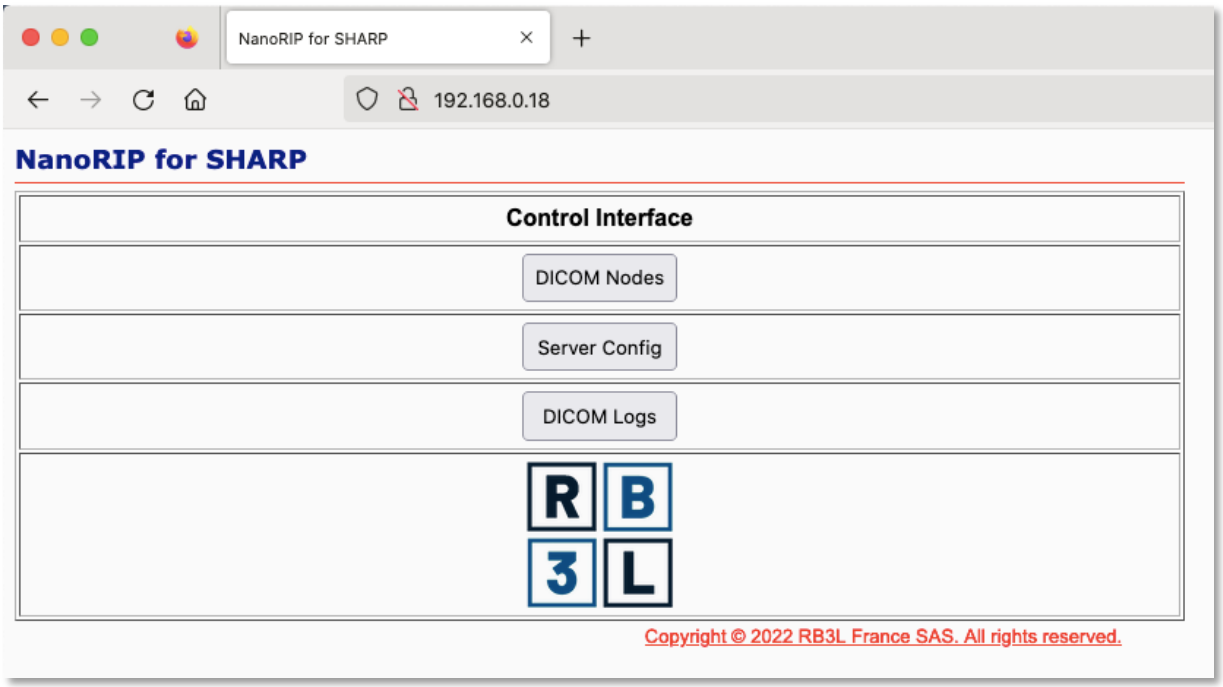
Sharpen Image Filter	Off

[Sharpen Image Filter]: This function is used to change level of black & white images sharpen. Choice varies from [Off] to [6], positives values increase the sharpening level to enhance the images.

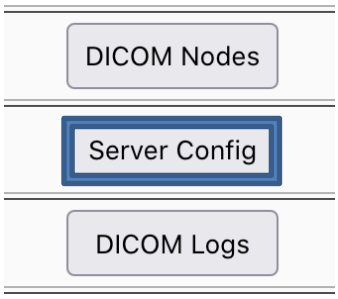
Once the values have been edited, you can save this configuration by click on [**SAVE**] or return to the previous values by click on [**Reset**]. Click on [**SAVE**] to saves and sends you to the AETs list page.



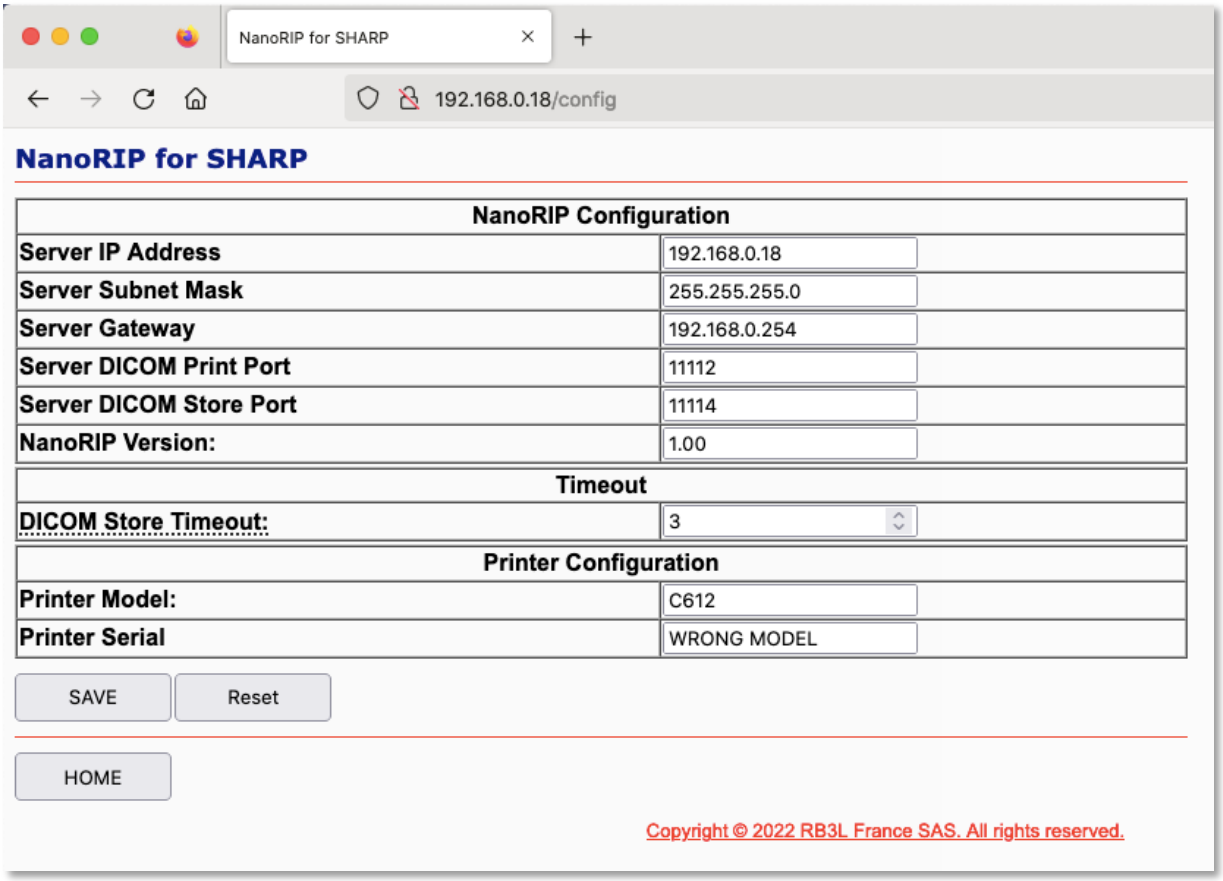
Click on [**HOME**] to go back to the home page.

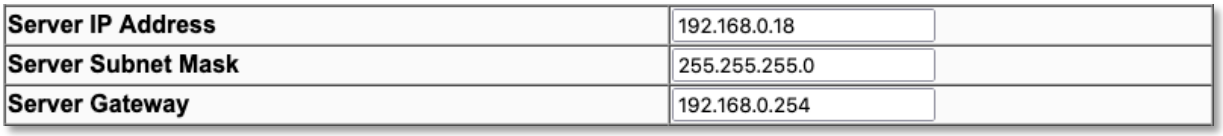


Step 4: Description of [Server Config] menu



Click on [Server Config] to enter in the config menu.





[Server IP Address]: To set and displays the NANORIP IP address.
[Server IP Subnet Mask]: to set and displays the NANORIP subnet mask.
[Server IP Gateway]: To set and displays the NANORIP gateway.

Server DICOM Print Port	11112
Server DICOM Store Port	11114

[Server DICOM Print Port] This function is used to display the input DICOM PrintSCP port.
[Server DICOM Store Port] This function is used to display the input DICOM StoreSCP port.

DICOM Store Timeout:	3

[DICOM Store Timeout] : This function is used for StoreSCP to set the timeout to get all images before sending DICOM printing request. The choices are from [1] to [60] seconds.

Printer Model:	C612
Printer Serial	WRONG MODEL

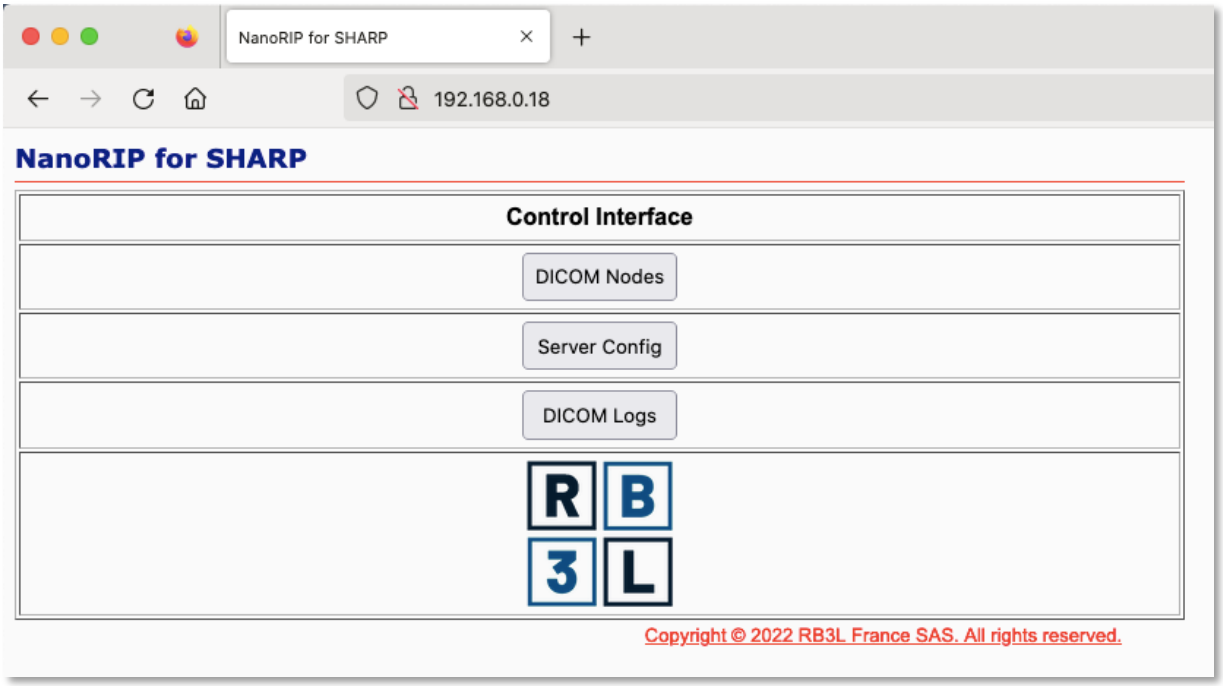
[Printer Model] : This function is used to display the connected printer model.
[Printer Serial] : This function is used to display the printer serial number.

SAVE Reset

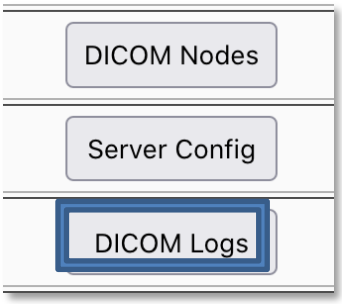
Once the values have been edited (IP address or Timeout), you can save this configuration by click on [SAVE] or return to the previous values by click on [Reset].

Note: ● Click on [SAVE] **request printer information** and saves these data.

Click on [HOME] to go back to the home page.

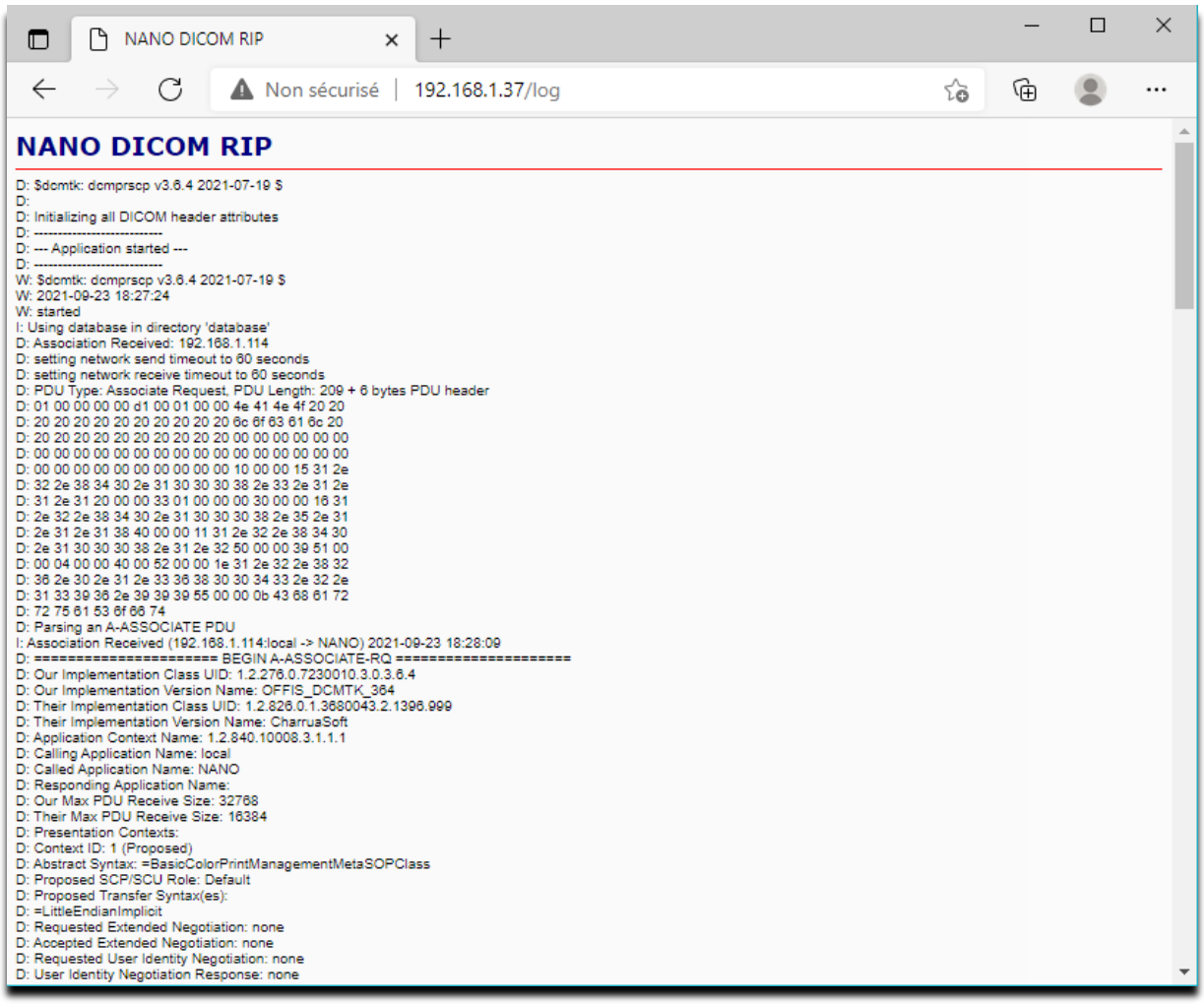


Step 5 : Description of [LOGS] menu



Click on [**DICOM Logs**] to enter in the logs menu.

Note: ● You can only enable full DICOM logs by clicking on [**LOG Level**] and select [**High Level Msg**] **in the "NANO"AET only.**



This page displays the Logs of DICOM exchanges during printing, it is useful to debug in a problem event in order to identify the error source.

Dealer's stamp:

RB3L France SAS
10 rue de Penthièvre
75008 Paris
France
RCS: Paris B 922354642
TVA: FR34922354642
info@rb3l .com
http:/www.rb3l.com