



EIZO Corporation  
% Hiroaki Hashimoto  
Senior Manager  
153 Shimokashiwano  
Hakusan, Ishikawa 924-8566  
Japan

April 20, 2023

Re: K223768  
Trade/Device Name: RadiForce RX270 and RX270-AR  
Regulation Number: 21 CFR 892.2050  
Regulation Name: Medical Image Management And Processing System  
Regulatory Class: Class II  
Product Code: PGY  
Dated: January 25, 2023  
Received: January 30, 2023

Dear Hiroaki Hashimoto:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. Although this letter refers to your product as a device, please be aware that some cleared products may instead be combination products. The 510(k) Premarket Notification Database located at <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpmn/pmn.cfm> identifies combination product submissions. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part

801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803) for devices or postmarketing safety reporting (21 CFR 4, Subpart B) for combination products (see <https://www.fda.gov/combination-products/guidance-regulatory-information/postmarketing-safety-reporting-combination-products>); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820) for devices or current good manufacturing practices (21 CFR 4, Subpart A) for combination products; and, if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21 CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to <https://www.fda.gov/medical-devices/medical-device-safety/medical-device-reporting-mdr-how-report-medical-device-problems>.

For comprehensive regulatory information about medical devices and radiation-emitting products, including information about labeling regulations, please see Device Advice (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance>) and CDRH Learn (<https://www.fda.gov/training-and-continuing-education/cdrh-learn>). Additionally, you may contact the Division of Industry and Consumer Education (DICE) to ask a question about a specific regulatory topic. See the DICE website (<https://www.fda.gov/medical-devices/device-advice-comprehensive-regulatory-assistance/contact-us-division-industry-and-consumer-education-dice>) for more information or contact DICE by email ([DICE@fda.hhs.gov](mailto:DICE@fda.hhs.gov)) or phone (1-800-638-2041 or 301-796-7100).

Sincerely,

A handwritten signature in black ink that reads "Jessica Lamb". The signature is written in a cursive style. Behind the signature, there is a large, light blue watermark of the letters "FDA".

Jessica Lamb, Ph.D.  
Assistant Director  
Imaging Software Team  
DHT8B: Division of Radiological Imaging Devices  
and Electronic Products  
OHT8: Office of Radiological Health  
Office of Product Evaluation and Quality  
Center for Devices and Radiological Health

Enclosure

## Indications for Use

510(k) Number (if known)  
K223768

Device Name  
RadiForce RX270, RX270-AR

### Indications for Use (Describe)

This Product is indicated for use in displaying radiological images for review, analysis, and diagnosis by trained medical practitioners. The display is not intended for mammography.

Type of Use (Select one or both, as applicable)

Prescription Use (Part 21 CFR 801 Subpart D)

Over-The-Counter Use (21 CFR 801 Subpart C)

### CONTINUE ON A SEPARATE PAGE IF NEEDED.

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## 510(k) Summary K223768

### 1. Submitter

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Contact Person: Hiroaki Hashimoto  
Date of Prepared: December 9<sup>th</sup>, 2022

### 2. Device

- Name of Device: RadiForce RX270, RX270-AR
- Common or Usual Name: 21.3 inch (54.0 cm) Color LCD Monitor
- Classification Name: Medical image management and processing system (21 CFR 892.2050)
- Regulatory Class: II
- Product Code: PGY

### 3. Predicate Device

- Name of Device: RadiForce RX250, RX250-AR (K160247)
- Common or Usual Name: 2MP Color LCD Monitor
- Classification Name: Medical image management and processing system (21 CFR 892.2050)
- Regulatory Class: II
- Product Code: PGY
  
- Name of Device: RadiForce RX360, RX360-AR (K182591)
- Common or Usual Name: 54.1 cm (21.3 inch) class Color LCD Monitor
- Classification Name: Picture archiving and communications system (21 CFR 892.2050)
- Regulatory Class: II
- Product Code: PGY

#### **4. Device Description**

RadiForce RX270 is a color LCD monitor for viewing medical images other than those of mammography. The color panel employs in-plane switching (IPS) technology allowing wide viewing angles and the matrix size (or resolution) is 1,200 x 1,600 pixels (2MP) with a pixel pitch of 0.270 mm.

Since factory calibrated display modes, each of which is characterized by a specific tone curve (including DICOM GSDF), a specific luminance range and a specific color temperature, are stored in lookup tables within the monitor, the tone curve is e.g. DICOM compliant regardless of the display controller used.

There are two model variations, RX270 and RX270-AR. The difference of the two variations is the surface treatment of the display screens; the surface treatment of the RX270 is Anti-Glare (AG) treatment and that of the RX270-AR is Anti-Reflection (AR) coating.

RadiCS is application software to be installed in each workstation offering worry-free quality control of the diagnostic monitors including the RadiForce RX270 based on the QC standards and guidelines and is capable of quantitative tests and visual tests defined by them. The RadiCS and its subset, RadiCS LE, are included in this 510(k) submission as an accessory to the RadiForce RX270.

RadiCS is of Minor level of concern and that it's being used unchanged from the predicate software. RadiCS supports the functions of the monitor RadiForce RX270 and it's not a medical imaging software.

#### **5. Indications for use**

This Product is indicated for use in displaying radiological images for review, analysis, and diagnosis by trained medical practitioners. The display is not intended for mammography.

## 6. Comparison of Technological Characteristics with the predicate device

The comparison table below enumerates information derived from the product brochure and measured values of the each device and different technological characteristics are discussed in it:

Attributes	Proposed Device: RadiForce RX270	Predicate Device: RadiForce RX250
<b>Indications for Use</b>		
	This Product is indicated for use in displaying radiological images for review, analysis, and diagnosis by trained medical practitioners. The display is not intended for mammography.	This product is intended to be used in displaying and viewing digital images for review, analysis and diagnosis by trained medical practitioners. It does not support the display of mammography images for diagnosis.
<b>Display Technology</b>		
	TFT Color LCD Panel (IPS)	TFT Color LCD Panel (IPS)
<b>Screen size</b>		
	54.0cm / 21.3" Aspect ratio: 3 : 4	54.0cm / 21.3" Aspect ratio: 3 : 4
<b>Backlight type</b>		
	LED	LED
<b>Frame rate and refresh rate</b>		
Digital Scanning Frequency (H / V)	31 - 100 kHz / 59 - 61 Hz (VGA TEXT: 69 - 71 Hz) Frame synchronous mode: 59 – 61 Hz	31 - 100 kHz / 59 – 61 Hz (VGA Text: 69 - 71 Hz) Frame synchronous mode: 59 - 61 Hz
<b>Display Interface</b>		
Input video signals	DVI-D x 1, DisplayPort x 2	DVI-D x 1, DisplayPort x 1
Output video signals	DisplayPort x 1 (daisy chain)	DisplayPort x 1 (daisy chain)
<b>Video bandwidth</b>		
	DVI : 25 - 164.5MHz DisplayPort : 25 - 164.5MHz	DVI : 25 - 164.5MHz DisplayPort : 25 - 164.5MHz
<b>Ambient light sensing</b>		
Ambient light sensor	Photo Diode Position: In the upper bezel of the screen Software tool: RadiCS	Photo Diode Position: In the upper bezel of the screen Software tool: RadiCS
<b>Luminance calibration tools</b>		
	Integrated optical sensor External optical sensor Calibration software: RadiCS	Integrated optical sensor External optical sensor Calibration software: RadiCS

Quality-control procedures		
	Software: RadiCS	Software: RadiCS
New functions		
Hybrid Gamma PXL	This function is implemented on the 510(k) cleared RadiForce MX216: K190153 or later. This function is user selectable and default: off. Even turn on, this function does not affect monochrome images.	-
LEA (Life Expectancy Analyzer)	This function is implemented on the 510(k) cleared RadiForce RX350: K153354 or later. This function is to calculate the product life and it does not affect images.	-
USB Selection for KVM Switch	This function is implemented on the 510(k) cleared RadiForce RX660: K163335 or later. This function is a USB switching function and it does not affect images.	-

It is clear that the technological characteristics differences discussed above are substantially equivalent and new functions do not affect the safety and the effectiveness of the RX270.

## 7. Performance Testing

The bench tests below were performed on the RadiForce RX270 following the instructions in “*Guidance for Industry and FDA Staff: Display Devices for Diagnostic Radiology*” issued on September 28,2022:

- Measurement of spatial resolution expressed as modulation transfer function (MTF)
- The maximum number allowed for each type of pixel defects/faults
- Visual check of presence or absence of miscellaneous artifacts on the display screen as specified in TG18 guideline
- Measurement of temporal response
- Measurement of Luminance
- Verification of the conformance to DICOM GSDF as specified in *Assessment of Display Performance for Medical Imaging Systems* by AAPM Task Group 18 (TG18 guideline)
- Measurement of Color tracking

The test results showed that the RadiForce RX270 has display characteristics equivalent to those of the predicate device, RadiForce RX250.

Besides, the display characteristics of the RadiForce RX270 meet the pre-defined criteria when criteria are set.

No animal or clinical testing was performed on the RadiForce RX270.

## 8. Conclusion

The RadiForce RX270 was determined to be substantially equivalent to the predicate device due to the following reasons:

- The stated intended use is substantially the same as that of the predicate device.
- It was confirmed that the technological characteristics differences from those of the predicate device do not affect the safety or the effectiveness.
- The bench tests demonstrated that the display characteristics are equivalent to those of the predicate device.