



Food and Drug Administration
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Silver Spring, MD 20993-0002

EIZO Corporation
Hiroaki Hashimoto
Manager Medical System Standards
153 Shimokashiwano, Hakusan
Ishikawa 924-8566
JAPAN

April 27, 2017

Re: K170949
Trade/Device Name: RadiForce MX315W
Regulation Number: 21 CFR 892.2050
Regulation Name: Picture Archiving And Communications System
Regulatory Class: Class II
Product Code: PGY
Dated: March 27, 2017
Received: March 31, 2017

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. 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); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address

<http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>. 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

<http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm> for the CDRH's Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Industry and Consumer Education at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address

<http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm>.

Sincerely,

A handwritten signature in black ink that reads "Robert Ochs". The signature is written in a cursive style and is positioned above the printed name and title.

Robert Ochs, Ph.D.
Director
Division of Radiological Health
Office of In Vitro Diagnostics
and Radiological Health
Center for Devices and Radiological Health

Enclosure

Indications for Use

510(k) Number (if known)

Device Name

RadiForce MX315W

Indications for Use (Describe)

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.

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 (in accordance with 21 CFR 807.92)

1. Company

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2. Contact Person

Hiroaki Hashimoto

3. Date of Summary

March 27th, 2017

4. Device Information

- Device Name: RadiForce MX315W
- Trade Name/Model: RadiForce MX315W
- Common Name: 79.0 cm (31.1 inch) class Color LCD Monitor
- Classification Name: Display, Diagnostic Radiology
- Regulation Number: 21 CFR 892.2050, Product Code PGY

5. Predicate Device

8MP Color LCD Monitor, RadiForce RX840 (K113226)

6. Device Description

RadiForce MX315W 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 4,096 x 2,160 pixels (8MP) with a pixel pitch of 0.1704 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.

RadiCS is application software to be installed in each workstation offering worry-free quality control of the diagnostic monitors including the RadiForce MX315W 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 MX315W.

7. Indications for use

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.

8. Comparison of Technological Characteristics

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

Attributes	RadiForce MX315W	RadiForce RX840	Explanation of Differences
Display Performance/Specifications			
Screen technology	TFT Color LCD Panel (IPS)	TFT Color LCD Panel (IPS)	-
Viewing angle (H, V)	H: 178°, V: 178°	H: 176°, V: 176°	-
Resolution	8MP (4,096 x 2,160)	8MP (4,096 x 2,160)	-
Aspect ratio	17 : 9	17 : 9	
Active screen size	697.9 mm x 368.0 mm	817.1 mm x 430.9 mm	
Pixel pitch	0.1704 mm x 0.1704 mm	0.1995 mm x 0.1995 mm	-
Maximum luminance	450 cd/m ²	700cd/m ²	Both devices' Maximum and DICOM calibrated luminance are greater than 171cd/m ² which is required for primary displays in AAPM On-line Report No. 03:2005 (Sec. 4.3.4.2.1) with enough margin.
DICOM calibrated luminance	270 cd/m ²	400 cd/m ²	
Contrast ratio	1300 : 1	1000:1	-
Response Time (typical)	20 ms (On/Off)	25 ms (On/Off)	-
Backlighting	LED	LED	-
Display Colors	10-bit colors (DisplayPort) : 1.07 billion (maximum) colors 8-bit colors: 16.77 million from a palette of 68 billion colors	10-bit colors (DisplayPort) : 1.07 billion (maximum) colors 8-bit colors: 16.77 million from a palette of 68 billion colors	-
Luminance non-uniformity compensation	Digital Uniformity Equalizer	Digital Uniformity Equalizer	-
Video Signals			
Input video signals	DVI-D (dual link) x 1, DisplayPort x 2	DVI-D (dual link) x 2, DisplayPort x 2	-

Output video signals	DisplayPort x 1 (daisy chain)	-	-
Scanning Frequency (H, V)	31 - 134 kHz / 14 - 61 Hz, (VGA Text: 69 - 71 Hz) Frame synchronous mode: 29.5 - 30.5 Hz, 59 - 61 Hz	31 - 140 kHz / 29.5 - 30.5 Hz (2048 x 2160, 1920 x 2160), 59 - 61 Hz, (VGA Text: 69 - 71 Hz) Frame synchronous mode: 29.5 - 30.5 Hz, 59 - 61 Hz	-
Power Related Specifications			
Power Requirements	AC 100 - 240 V: 50 / 60 Hz	AC 100 - 120 V, 200 - 240 V: 50 / 60 Hz	-
Power Consumption / Save Mode	125 W / Less than 1.6 W	350 W / Less than 6 W	-
Power Management	DVI DMPM, DisplayPort 1.2a	DVI DMPM, DisplayPort 1.1a	-
Miscellaneous Features/Specifications			
QC software	RadiCS	RadiCS	-
Sensors	Backlight Sensor, Integrated Front Sensor, Presence Sensor, Ambient Light Sensor	Backlight Sensor, Integrated Front Sensor, Presence Sensor, Ambient Light Sensor	-
USB Ports / Standard	2 upstream, 3 downstream / Rev. 2.0	1 upstream, 2 downstream / Rev. 2.0	-
Dimensions w/o stand (W x H x D)	733 x 408 x 64.5 mm	896 x 527 x 157 mm	-

It is clear that the technological characteristics differences discussed above do not affect the safety and the effectiveness of the MX315W.

9. Performance Testing

The following bench tests were performed on the RadiForce MX315W.

- 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 the luminance non-uniformity characteristics of the display screen as specified in TG18 guideline
- Measurement of the chromaticity non-uniformity characteristics of the display screen as specified in TG18 guideline
- Measurement of the chromaticity at the center of the display screen at 5%, 50% and 95% of the maximum luminance
- Visual check of presence or absence of miscellaneous artifacts on the display screen as specified in TG18 guideline
- Measurement of spatial resolution expressed as modulation transfer function (MTF)
- The maximum number allowed for each type of pixel defects/faults

The test results showed that the RadiForce MX315W has display characteristics equivalent to those of the predicate device, RadiForce RX840.

Besides, the display characteristics of the RadiForce MX315W meet the pre-defined criteria when criteria are set.

No animal or clinical testing was performed on the RadiForce MX315W.

10. Conclusion

The RadiForce MX315W 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.