I. CLINICAL IMAGES

A. Selecting Clinical Images

1. For all submissions
   a. All images for each 4-view exam must be from the same patient
   b. Select cases consisting of CC and MLO images of both breasts.
      a. Only submit 4 images for each examination.
      b. Only select cases where the entire breast can be imaged in a single exposure on each projection
      c. Do not submit images that are performed on models or volunteers.
      c. Do not anonymize your images. Images must be labeled with the MQSA-required image identification information; ACR reviewers will evaluate this.
      d. The images must be of “final interpretation quality”.

2. For initial accreditation, accreditation renewal, or a reinstatement,
   a. The clinical and phantom images from each unit must be taken within 30 days of each other, and from the current testing cycle (the date the testing packet was issued).
   b. One fatty case and one dense case
   c. BI-RADS® Assessment Category 1, negative. If you cannot submit “negative” images (e.g., you do diagnostic exams only), call the ACR. If ACR reviewers determine that any submitted cases require additional evaluation or follow-up the Lead interpreting Physician must attest that they will review the findings and follow up with the patient as appropriate before a final accreditation report is issued.
   d. For accreditation, select examples of your facility’s best work. The ACR reviewers will evaluate them accordingly. (See the “Clinical Image Evaluation” section of the 1999 ACR Mammography Quality Control Manual for the review criteria.)

3. For a validation image check submission,
   a. The images must be from the date specified in the validation image check instruction email (clinical images only).
   b. This is a review of your facility’s everyday work.
      a. If available on the specified day, one fatty and dense breast examples, if available.

4. Digital Breast Tomosynthesis (DBT)
   a. If you are accrediting both DBT and FFDM on a single mammography unit, you will test that unit twice, once for DBT and once for FFDM. You must enter the exact same serial number, model name, year manufacture date and room number for both units.
   b. If your unit has 2D synthesized images available, submit either the entire case as 2D synthesized images, or submit a combination of 2D synthesized or 2D acquired images.
      a. 2D-Syn clinical set (cc and mlo), or
      b. 2D cc and 2D-Syn mlo clinical set, or
      c. 2D-Syn cc and 2D mlo clinical set
   c. If your unit does not have 2D synthesized images available, submit 2D acquired images.
   d. Do not submit tomosynthesis slices for accreditation purposes.
B. Selecting Fatty and Dense Clinical Images for accreditation

In order for the ACR Clinical Image Reviewers to assess your image quality for a range of breast types, you must submit one complete exam of fatty breasts and one complete exam of dense breasts. If the ACR Reviewers do not believe that your images are of an appropriate density, we will return them to you and request another examination. (Note: Validation Image Check images may be of any breast density.)

Examples of Fatty Breast Images

Images submitted for the fatty examination should be at least as fatty as the images above.

Fatty breast images must meet one of the two fatty BI-RADS® Breast Composition Categories: “the breasts are almost entirely fatty” or “there are scattered areas of fibroglandular density.”

Examples of Dense Breast Images

Images submitted for the dense examination should be at least as dense as the images above.

Dense breast images must meet one of the two dense BI-RADS® Breast Composition Categories: “the breasts are heterogeneously dense, which may obscure small masses” or “the breasts are extremely dense, which lowers the sensitivity of mammography.”
II. PHANTOM IMAGE

<table>
<thead>
<tr>
<th>DBT: If you are accrediting both DBT and FFDM on a single mammography unit, you will test that unit twice, once for DBT and once for FFDM. You must enter the exact same serial number, model name, year manufacture date and room number for both units.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR units: If you are accrediting both FFDM computed radiography (CR) and screen-film on a single mammography unit, you will test that unit twice, once for CR and once for screen-film.</td>
</tr>
</tbody>
</table>

A. Procedure

1. You must use an approved accreditation mammographic phantom. See ACR Mammography Accreditation Program Requirements for the list of approved phantoms.
2. The phantom image must be from the current testing cycle (the date the testing packet was issued forward) and taken following the instructions below.
3. The phantom image from each unit must be taken within 30 days of the clinical images.
4. When positioning the ACR phantom, center it laterally on the image receptor so that the chest-wall edge of the phantom is aligned with the chest-wall edge of the image receptor. (Follow the Phantom Exposure Instructions below that are specific to your unit.)
5. Submit only one image for each unit
   a. FFDM and Screen-Film: Submit one 2D phantom image for each unit
   b. DBT: Submit one 3D best-slice phantom image. “Best-slice” is defined as the slice where the test objects are best visualized.

B. PHANTOM EXPOSURE INSTRUCTIONS

All Systems Using the ACR Digital Mammography Phantom and the ACR Digital Mammography Quality Control Manual

1. Position the phantom as shown. The chest wall side of the phantom must be completely flush with the chest wall side of the image receptor.
2. Lower the compression paddle to approximately 5 daN (or 12 pounds) of compression force.
3. If applicable, position the AEC sensor so that it is under the center of the wax insert.
4. Set the imaging mode and technique (AEC mode, target, filter, kVp, density control setting, etc.) currently used for a 4.2-cm compressed breast of average density.
5. Make an exposure.
6. Record the technical factors on the Test Image Data form.

General Electric (GE) FFDM Units (except the GE Pristina and SenoClaire DBT) Using the Small ACR Mammography Phantom

1. If you are using the Automatic Optimization of Parameters (AOP) AEC mode (which involves auto-timing with auto kVp and/or auto selection of target and filter) for your clinical examinations, the phantom will not appropriately simulate the attenuation of an average breast due to the nature of the unit’s automatic parameter selection and exposure control. Consequently, you must first use GE’s 4.0 cm thick acrylic plates to find a manual technique to expose the phantom.
   1. Position the acrylic plates on the image receptor as typically done for the AOP and SNR Check.
   2. Lower the compression paddle onto the acrylic plates and apply moderate compression force.
   3. Make an exposure under routine clinical AOP conditions (CNT, STD or DOSE) currently used for a 4.2 cm compressed breast of average density.
4. Make a note of the technical factors (AOP mode, kVp, mAs, focal spot size, target and filter). These will be used to set a manual technique to expose the phantom.

2. Position the phantom as shown in the photo of the small phantom below. The chest wall side of the phantom must be completely flush with the chest wall side of the image receptor.

3. Do NOT use an acrylic disk on the phantom.

4. Lower the compression paddle until it just touches the phantom.

5. Reproduce the kVp, focal spot size, target and filter, and select a manual mAs as close as possible to the one determined by the acrylic plates in the first step. Do not use the technical factors in the GE QC Manual.

6. Make an exposure.

7. Record the technical factors on the Test Image Data form.

All Other FFDM Systems (Including CR and the GE Pristina and SenoClaire DBT) Using the Small ACR Mammography Phantom

1. Follow your manufacturer directions for exposing the phantom with the imaging mode and technique (AEC mode, target, filter, kVp, density control setting, etc.) currently used for a 4.2-cm compressed breast of average density for the modality that you are applying for accreditation (i.e., if applying for 2D accreditation you must submit a 2D phantom).

2. Position the phantom as shown in the photo. The chest wall side of the phantom must be completely flush with the chest wall side of the image receptor.

3. Follow your manufacturer’s directions for your weekly phantom QC for using the acrylic disc. If your manufacturer requires you to use the acrylic disc, place the acrylic disk on the phantom, as it would be for routine QC. Be sure that the disk does not cover any test object locations. (If your manufacturer’s QC manual specifies that the acrylic disk not be used, don’t use it.)

4. Lower the compression paddle until it just touches the phantom.

5. If applicable, position the AEC detector so that it is under the center of the wax insert.

6. Make an exposure.

7. Record the technical factors on the Test Image Data form.

All Screen-Film Units

1. Position the phantom as shown in the photo above for the small ACR Mammography Phantom.

2. Place the acrylic disk on the phantom as it would be for routine QC. Be sure that the disk does not cover any test object locations.

3. Take preliminary images of the phantom to ensure correct positioning of the phantom.

4. Lower the compression device until it just touches the phantom.

5. Move the AEC detector so that it is under the center of the wax insert.

6. Set the clinical technical factors (AEC mode, target, filter, kVp, density control setting, etc.) currently used for a 4.2-cm compressed breast of average density.

7. Make an exposure.

8. Record the technical factors on the Test Image Data form.
III. Submitting Material for Accreditation

1. Electronic Submission
   a. Process the images as typically done for digital mammography.
   b. Clinical Submission
      a. Upload the DICOM image into your online Testing Package using TRIAD Windows Client or TRIAD Web Client (see User Instructions for Electronic Submission of Images).
      b. Your supervising radiologist must review and approve the DICOM image selection prior to submitting your online Testing Package.
      c. Fill out the Test Image Data Form in your online Testing Package.
   c. Phantom Submission
      a. Upload the phantom image into your online Testing Package using TRIAD Windows Client or TRIAD Web Client (see User Instructions for Electronic Submission of Images).
         i. FFDM - DICOM Image only
         ii. DBT - DICOM, JPEG, JPG, PNG, GIF, TIFF, BMP
      b. Your supervising radiologist must review and approve the phantom image prior to submitting your online Testing Package.
      c. Fill out the Phantom Data Form in your online Testing Package.

IMPORTANT: All sites are now required to upload their images for accreditation. In addition to decreasing the turnaround time for receiving an accreditation final report, uploading images mitigates the risk of losing images during transit. If your facility has a technical limitation that prohibits you from uploading images electronically, please contact ACR staff at 800-227-6440 for assistance.

Note the following regarding electronic image submission:

- DBT units-
  o Clinical - Tomo images should not be submitted.
  o Phantom - only the single best tomo slice image should be submitted.
- FFDM units-
  o Clinical - Only 2D or synthesized images should be submitted for the clinical cases.
  o Phantom - only submit one 2D DICOM image taken in the 2D mode of the unit (i.e.- ACR Conventional- Lorad/Hologic, GE Essential – GE)
- There should be only 1 phantom image for each unit
- Anonymized images should not be submitted for accreditation purposes
- Only post processed images (not raw) should be submitted for accreditation
- Do not submit lossy compressed images for accreditation
- Do not upload patient reports with images being uploaded
- ACRedit Web Client should be used when uploading images that are saved on the computer, disk or thumbdrive
- TRIAD Windows Client must be used if uploading images directly from PACS to our system
- All images should be viewed within the testing package prior to submission to ensure all and only required images are uploaded successfully and are viewable
- Ensure that a measurement can be taken using the ruler tool in the Nif DICOM viewer within the ACRedit Web Client prior to submission. The measurement must display in mm.

2. FFDM and Screen-film Hard Copy Film Submission
   a. Instructions for preparing, submitting and labeling all material along with barcode labels can be found in the physical testing packet mailed to your facility

3. Upload all images, forms and required documentation (see table below) into your online testing packet in the ACRedit database; https://acredit.acr.org
### IV. Required Forms and Documents

Determine the type of accreditation cycle that your facility is currently undergoing from the online accreditation system and follow the column to see the items required for submission:

<table>
<thead>
<tr>
<th>Form Description</th>
<th>Initial</th>
<th>Renewal</th>
<th>Reinstatement</th>
<th>New Unit Reinstate</th>
<th>New Unit Addendum</th>
<th>Repeat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personnel Summary Form</strong> (Enter Data Online)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Personnel Forms:</strong> (Forms Available at <a href="http://www.acr.org">www.acr.org</a>)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, if this is your facility's 1st submission for a new modality</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Medical Physicist Summary</strong> (Include a completed Evaluation of Site’s Tech QC Program Summary)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Full Physicist Report</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
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<tr>
<td><strong>Equipment QC Section J</strong> (Enter Data Online)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Test Image Data</strong> (Enter Data Online)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Mammography QC Checklists</strong></td>
<td></td>
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</tr>
<tr>
<td>Daily and Weekly Checklist (send 1 month, must include the dates that the accreditation clinical and phantom images were taken. (if this is a new unit, send all available)</td>
<td>Yes</td>
<td>No</td>
<td>New units only</td>
<td>New units only</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td>Monthly, Quarterly and Semi-Annual Checklist (send previous calendar 12 months. (if this is a new unit, send all available)</td>
<td>(Forms Available at <a href="http://www.acr.org">www.acr.org</a>)</td>
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