

# HOW TO USE PACS MEASUREMENT FEATURE

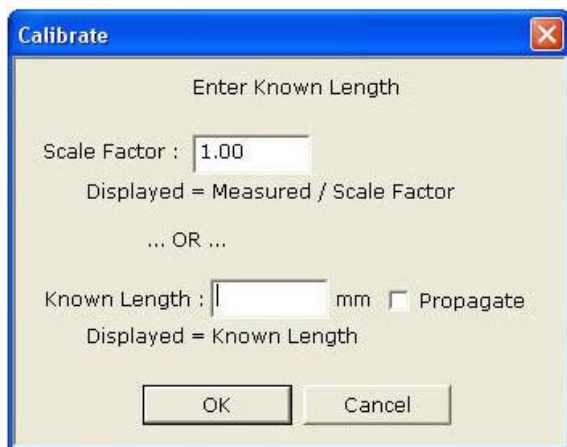
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## DESCRIPTION

There are many customizable workstation settings found in the Synapse Properties. Two different types of calibration are supported by Synapse.

If the image does not have pixel length information, the ruler shows 0.0 mm/inch or the area shows 0.00 mm<sup>2</sup>/inch<sup>2</sup>. If there is a known length object in the image, the ruler can be calibrated using the object as a reference. This calibration affects all other measurement units. If "Propagate" is selected, the calibration will propagate to all images.

For the projection X-Ray (CR or DR), the size of the object may be magnified depending on the distance from the detector. If the scale factor is known, the ruler can be calibrated using this factor. This calibration also affects all other measurement units.



## ESTIMATED RADIOGRAPHIC MAGNIFICATION FACTOR

Some X-ray equipment sends a magnification factor. The DICOM definition is the "Estimated Radiographic Magnification Factor (ERMF)", group and element (0018, 1114). Although this is an optional value in DICOM, Synapse automatically uses this value in the measurement calculation.

The conditions are:

If a Workstation displayed image contains (in its DICOM header) the DICOM tag: Estimated Radiographic Magnification Factor (0018, 1114) tag,

AND the tag value is in the range from .1 to 10,  
AND there is no current "Scale Factor" from manual calibration,  
THEN the ERMF value will be used as the default "Scale Factor".

The ERMF Scale factor can appear in Images of the DX, MG, RF and IO modalities and is used to provide a better estimated real size of the object being displayed.

The presence of a Scale Factor in the image is the same as when a "Scale Factor" is a manually set during calibration: The scale marker and annotation measurements affected by calibration have a \* displayed to the right of them. If the user manually calibrates the image, then the ERMF value is overridden with the new user defined "Scale Factor" value.

## INSTRUCTIONS

### Calibrate the pixel length

1. Measure the known length using Ruler.
2. Right mouse-click on the measured line and select Calibrate.
3. Type the known length with the selected unit. Click Propagate to propagate the value to all images in the same group.
4. Once the calibration is applied, the measurement result will display a "\*" in the right corner of the measurement.

### Calibrate the scale factor

1. Measure the length using the Ruler.
2. Right mouse-click on the measured line and select Calibrate.
3. Change the scale factor. The length will be divided by this scale factor.
4. Once the scale factor is modified to a value other than 1.00, the measurement result will display a "\*" in the right corner of the measurement.

