Step 1: Select the Protocol from the GE Protocol Library

- C.8 TAGS Stripe
- C.9 TAGS Grid

Step 2: Prepare and Position the Patient

- Patient entry is SUPINE FEET first
- Choose the appropriate coil (Cardiac or 8-Channel Cardiac Coil).
- Apply Cardiac Leads and respiratory bellows
- Position the anterior element of the coil
- Landmark to the mid-sternum

Step 3: Perform Localizer Images

- Scan a true axial localizer image
- Prescribe an oblique 2-Chamber Long Axis view on the true axial (Fig. A)
- Prescribe a oblique 4-Chamber view on the 2-Chamber oblique image (Fig. B)

True Axial Loc.   2-Chamber View   4-Chamber View
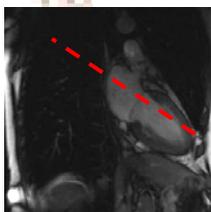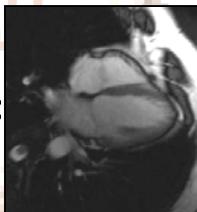
Fig. A   Fig. B   Fig. C

Step 4: Prescribe Short Axis 2-Chamber FGRE Cine w/ Tagging

- Select Short Axis Fast Cine GRE w/ Tagging Series from GE Protocol Library
- Prescribe short axis tagging scan locations on the 4-Chamber long axis localizer from "base to apex" (Fig. D)
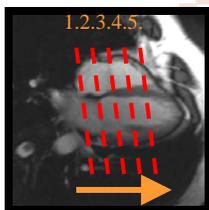
Fig. D

Step 5: Enter Cardiac Gating/Triggering Parameters

- Select the Cardiac Gating Triggering Icon
- Select the lead with the strongest signal as the "Trigger Type"
- Enter a value for "Arrhythmia Rejection Window"
- Enter a value for "Trigger Delay" (Minimum)
- Enter a value for "Number of Phases to Reconstruct" (20)
- Enter a value for 'Views Per Segment'
- Update the heart rate
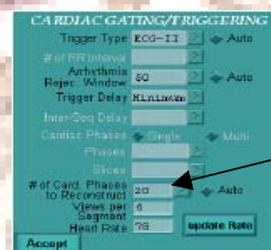
Entering a value in the "# of cardiac phases to reconstruct" field will create a **FastCine** scan. Selecting "Auto" will create a **FastCard** scan.

Step 6: Enter User CVs

- Select Manual Arrhythmia Monitoring on (1) to manually monitor triggers that fall outside of the Arrhythmia Rejection Window.

Step 7: Select Tag Type/Spacing

- Select the **SAT** Icon
- Select the Tag Type (Grid- recommended for axial wall motion studies)
- Enter the Spacing Value (7) Min value= 2 , Max Value = X-RES/2

Step 8: Scan

- **Select Save Series** > **Prepare to Scan** > **Pre-Scan**
- Instruct patient to breath-hold
- Select **Scan**

Optimizing Cardiac Gating/Triggering Parameters

Trigger Type-

Select ECG1,ECG II or ECG III. PG is for use with the peripheral gating sensor. Select the lead that produces the least noise and highest R-Wave. Do not rely on AUTO for lead selection. Auto selects the highest signal, but not necessarily the optimal R-Wave.

Trigger Type ECG-II > ◇ Auto
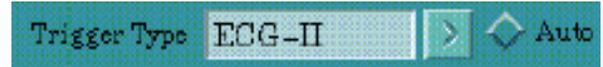
VPS- Views Per Segment–

This defines the number of K-space lines that are filled per RR interval. This defaults to 8 VPS. As the VPS increases, scan time decreases, temporal resolution decreases, and the maximum number of phases allowed decreases.

Heart Rate	Views Per Segment
<60	8
61-95	6
96-125	2
126-155	4
>156	1

Arrhythmia Rejection Window–

Is defined as a percentage of the RR interval, outside of which the system will reject data from any detected triggers. In FASTCINE and FASTCINE PC, the rejection window encompasses time before and after the expected trigger; therefore, data is discarded when either early and late triggers are detected.*Widening the window is recommended for patients with irregular heart rates*. If too many rejections occur, the acquisition aborts when Manual Arrhythmia Monitoring is off. Scans under 25 seconds will allow up to 4 arrhythmias and those over 25 seconds allow up to 10 arrhythmias before aborting. Typically the ARW is set to 50%.
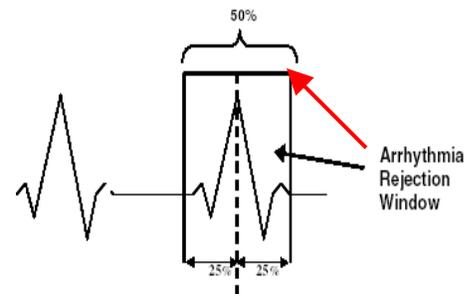
Cardiac Trigger Delay-

The Cardiac Trigger Delay determines the delay time from the detection of the trigger (R-wave) to the start of data acquisition. *Minimum* sets the delay to shortest value possible after trigger detection. This selection results in the largest AIT. *Recommended* selects the optimal delay based on imaging options and should provide optimal image quality this is strongly recommended for use with Fat or Spatial Sat. *Manual* allows the user to enter any delay longer than the minimum value. Note: As trigger delay is increased, image data is not collected in the early part of the cardiac cycle.
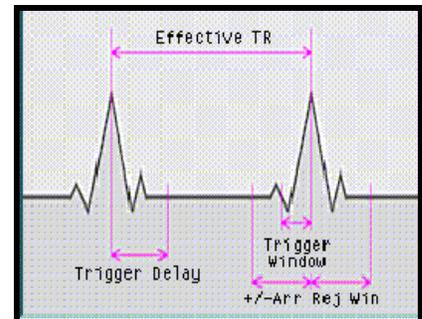
Cardiac Tagging –*Something To Think About*

Tagging is the application of a spatial sat pulse inside the FOV over the entire image. The tagging sat pulse is applied once per R-R interval before data acquisition begins immediately following the R-Wave trigger.

There are two tag types: Stripe and grid. Stripe provides better visualization of anatomy, but grid provides more robust visualization of motion in two directions. Tagging is NOT compatible with Spatial Sat, Chemical Sat and may only be used with FASTCINE/CARD GRE
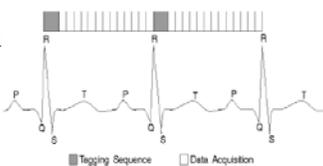
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