

# Forearm Tumor DISCOVERY MR750w

## Technical Instructions

**RT-3-PLANE LOC**

**LT-3-PLANE LOC**

**Cor STIR**

**Ax T2 dk fat**

**Sag STIR**

**Cor T1**

**Ax T1**

**Sag T1**

**Pre Ax T1 fat**

**+C Ax T1 fat**

**+C Cor T1 fat**

**+C Sag T1 fat**

**--optional--**

**Calibration**

**Cor T2 dk fat**

**Sag T2 dk fat**

# RT-3-PLANE LOC

## RT-3-PLANE LOC

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | 3-PLANE          |

---

### IMAGING PARAMETERS

|                  |                              |
|------------------|------------------------------|
| Imaging Mode:    | 2D                           |
| Pulse Sequence:  | Spin Echo                    |
| Imaging Options: | Seq, EDR, TRF, Fast, SS, ARC |
| Phase:           | 2.00                         |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | NONE |

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### FMRI

|                          |           |
|--------------------------|-----------|
| Brain Wave Real Time:    | None      |
| PSD Trigger:             | Internal  |
| View Order:              | Bottom/Up |
| # of Repetitions REST:   | 0         |
| # of Repetitions ACTIVE: | 0         |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|

Tag Type: None

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### USER CVS

User CV1: 1.00  
User CV16: None  
User CV39: 1.00  
User CV Mask2: 256

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### DIFFUSION

Multi b-values: 1000.0;  
Multi NEX Values: 1;  
# Synthetic b-values: 1  
Synthetic b-value: 1000.0;  
Recon All Images: On

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### SCAN TIMING

TE: 85.0  
Number of Echoes: 1  
TR: Minimum  
Receiver Bandwidth: 62.50

---

### GATING/TRIGGER

Auto Trigger Type: Off

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### MULTI-PHASE

Seperate Series: 0  
Mask Phase: 0  
Mask Pause: 0

Preserve: 0

---

### SCAN RANGE

FOV: 30.0  
Slice Thickness: 5.0  
Slice Spacing: 5.0  
Table Delta: 0.00

---

### ACQ TIMING

Freq: 384  
Phase: 256  
Freq DIR: Unswap  
# of Acq. Before Pause: 0  
Phase FOV: 1.00  
Auto Shim: Auto  
Phase Correct: Off  
RF Drive Mode: Preset  
Excitation Mode: Selective

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### CONTRAST

Contrast Yes/No: No

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### TRICKS

Pause On/Off: On  
Auto Subtract: 0

---

### OTHERS

3D Geometry Correction: Off

Anatomical Region:

Forearm bone

# LT-3-PLANE LOC

## LT-3-PLANE LOC

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | 3-PLANE          |

---

### IMAGING PARAMETERS

|                  |                              |
|------------------|------------------------------|
| Imaging Mode:    | 2D                           |
| Pulse Sequence:  | Spin Echo                    |
| Imaging Options: | Seq, EDR, TRF, Fast, SS, ARC |
| Phase:           | 2.00                         |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | NONE |

---

### FMRI

|                          |           |
|--------------------------|-----------|
| Brain Wave Real Time:    | None      |
| PSD Trigger:             | Internal  |
| View Order:              | Bottom/Up |
| # of Repetitions REST:   | 0         |
| # of Repetitions ACTIVE: | 0         |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|

Tag Type: None

---

### **USER CVS**

User CV1: 1.00  
User CV16: None  
User CV39: 1.00  
User CV Mask2: 256

---

### **DIFFUSION**

Multi b-values: 1000.0;  
Multi NEX Values: 1;  
# Synthetic b-values: 1  
Synthetic b-value: 1000.0;  
Recon All Images: On

---

### **SCAN TIMING**

TE: 85.0  
Number of Echoes: 1  
TR: Minimum  
Receiver Bandwidth: 62.50

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0  
Mask Phase: 0  
Mask Pause: 0

Preserve: 0

---

### SCAN RANGE

FOV: 30.0  
Slice Thickness: 5.0  
Slice Spacing: 5.0  
Table Delta: 0.00

---

### ACQ TIMING

Freq: 384  
Phase: 256  
Freq DIR: Unswap  
# of Acq. Before Pause: 0  
Phase FOV: 1.00  
Auto Shim: Auto  
Phase Correct: Off  
RF Drive Mode: Preset  
Excitation Mode: Selective

---

### CONTRAST

Contrast Yes/No: No

---

### TRICKS

Pause On/Off: On  
Auto Subtract: 0

---

### OTHERS

3D Geometry Correction: Off



Anatomical Region:

Forearm bone

# Cor STIR

## Cor STIR

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                                   |
|------------------|-----------------------------------|
| Imaging Mode:    | 2D                                |
| Pulse Sequence:  | FSE-XL                            |
| Imaging Options: | FC, NPW, Seq, EDR, TRF, Fast, IrP |
| PSD Name:        | frfse-xl                          |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | NONE |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|                 |      |
|-----------------|------|
| SAT Location S: | 9990 |
| SAT Location I: | 9990 |
| Tag Spacing:    | None |
| Tag Type:       | None |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV7:      | None |
| User CV15:     | None |
| User CV18:     | None |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                     |        |
|---------------------|--------|
| Flip Angle:         | 111    |
| TE:                 | 44.0   |
| Number of Echoes:   | 1      |
| TR:                 | 3400.0 |
| TI:                 | 180    |
| Echo Train Length:  | 8      |
| Receiver Bandwidth: | 41.67  |

---

## **GATING/TRIGGER**

Auto Trigger Type: Off

---

## **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

## **SCAN RANGE**

FOV: 20.0

Slice Thickness: 3.0

Slice Spacing: 1.0

Number of Slices: 11

Table Delta: 0.00

---

## **ACQ TIMING**

Freq: 320

Phase: 192

Freq DIR: S/I

NEX: 2.00

Auto Shim: Auto

Phase Correct: Off

Flow Comp Direction: Freq

RF Drive Mode: Quadrature

Excitation Mode: Selective

Fat Shift DIR: Normal (I)

---

## **CONTRAST**

Contrast Yes/No: No

---

## **TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

## **OTHERS**

Anatomical Region: Forearm bone

# Ax T2 dk fat

## Ax T2 dk fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                    |
|------------------|--------------------|
| Imaging Mode:    | 2D                 |
| Pulse Sequence:  | FSE-XL             |
| Imaging Options: | EDR, TRF, Fast, FR |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|

|                       |      |
|-----------------------|------|
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                    |        |
|--------------------|--------|
| Flip Angle:        | 111    |
| TE:                | 85.0   |
| Number of Echoes:  | 1      |
| TR:                | 3500.0 |
| Echo Train Length: | 16     |

Receiver Bandwidth: 41.67

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

### **SCAN RANGE**

FOV: 16.0

Slice Thickness: 5.0

Slice Spacing: 1.0

Number of Slices: 15

Table Delta: 0.00

---

### **ACQ TIMING**

Freq: 288

Phase: 256

Freq DIR: Unswap

NEX: 2.00

Phase FOV: 0.90

Auto Shim: Auto

Phase Correct: On

RF Drive Mode: Quadrature

Excitation Mode: Selective



Fat Shift DIR: Normal

---

**CONTRAST**

Contrast Yes/No: No

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# Sag STIR

## Sag STIR

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                              |
|------------------|------------------------------|
| Imaging Mode:    | 2D                           |
| Pulse Sequence:  | FSE-XL                       |
| Imaging Options: | FC, Seq, EDR, TRF, Fast, IrP |
| PSD Name:        | frfse-xl                     |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | NONE |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|                 |      |
|-----------------|------|
| SAT Location S: | 9990 |
| SAT Location I: | 9990 |
| Tag Spacing:    | None |
| Tag Type:       | None |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV7:      | None |
| User CV15:     | None |
| User CV18:     | None |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                     |        |
|---------------------|--------|
| Flip Angle:         | 111    |
| TE:                 | 44.0   |
| Number of Echoes:   | 1      |
| TR:                 | 3400.0 |
| TI:                 | 180    |
| Echo Train Length:  | 8      |
| Receiver Bandwidth: | 41.67  |

---

## GATING/TRIGGER

Auto Trigger Type: Off

---

## MULTI-PHASE

Seperate Series: 0  
Mask Phase: 0  
Mask Pause: 0  
Preserve: 0

---

## SCAN RANGE

FOV: 20.0  
Slice Thickness: 3.0  
Slice Spacing: 1.0  
Number of Slices: 11  
Table Delta: 0.00

---

## ACQ TIMING

Freq: 320  
Phase: 192  
Freq DIR: S/I  
NEX: 2.00  
Phase FOV: 0.80  
Auto Shim: Auto  
Phase Correct: Off  
Flow Comp Direction: Freq  
RF Drive Mode: Quadrature  
Excitation Mode: Selective  
Fat Shift DIR: Normal (I)

**CONTRAST**

Contrast Yes/No: No

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# Cor T1

## Cor T1

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | CORONAL          |

---

### IMAGING PARAMETERS

|                  |                          |
|------------------|--------------------------|
| Imaging Mode:    | 2D                       |
| Pulse Sequence:  | FSE-XL                   |
| Imaging Options: | NPW, EDR, TRF, Fast, ARC |
| Phase:           | 1.50                     |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
| Tag Type:    | None |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV16:     | None |
| User CV18:     | None |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                    |       |
|--------------------|-------|
| Flip Angle:        | 111   |
| TE:                | 16.0  |
| Number of Echoes:  | 1     |
| TR:                | 800.0 |
| Echo Train Length: | 4     |

Receiver Bandwidth: 41.67

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

### **SCAN RANGE**

FOV: 20.0

Slice Thickness: 3.0

Slice Spacing: 1.0

Table Delta: 0.00

---

### **ACQ TIMING**

Freq: 320

Phase: 224

Freq DIR: S/I

NEX: 2.00

Auto Shim: Auto

Phase Correct: On

RF Drive Mode: Quadrature

Excitation Mode: Selective

Fat Shift DIR: Normal (I)

---

### **CONTRAST**



Contrast Yes/No: No

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# Ax T1

## Ax T1

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                     |
|------------------|---------------------|
| Imaging Mode:    | 2D                  |
| Pulse Sequence:  | FSE-XL              |
| Imaging Options: | EDR, TRF, Fast, ARC |
| Phase:           | 1.50                |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
| Tag Type:    | None |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV16:     | None |
| User CV18:     | None |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                    |       |
|--------------------|-------|
| Flip Angle:        | 111   |
| TE:                | 16.0  |
| Number of Echoes:  | 1     |
| TR:                | 800.0 |
| Echo Train Length: | 4     |

Receiver Bandwidth: 41.67

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

### **SCAN RANGE**

FOV: 16.0

Slice Thickness: 5.0

Slice Spacing: 1.0

Table Delta: 0.00

---

### **ACQ TIMING**

Freq: 320

Phase: 224

Freq DIR: Unswap

NEX: 2.00

Phase FOV: 1.00

Auto Shim: Auto

Phase Correct: On

RF Drive Mode: Quadrature

Excitation Mode: Selective

Fat Shift DIR: Normal

---

## **CONTRAST**

Contrast Yes/No: No

---

## **TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

## **OTHERS**

Anatomical Region: Forearm bone

# Sag T1

## Sag T1

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | SAGITTAL         |

---

### IMAGING PARAMETERS

|                  |                     |
|------------------|---------------------|
| Imaging Mode:    | 2D                  |
| Pulse Sequence:  | FSE-XL              |
| Imaging Options: | EDR, TRF, Fast, ARC |
| Phase:           | 1.50                |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

Tag Spacing: None

Tag Type: None

---

### **USER CVS**

User CV6: None

User CV7: None

User CV8: None

User CV9: None

User CV15: None

User CV16: None

User CV18: None

User CV21: None

User CV22: 1.00

User CV30: 1.00

User CV39: 1.00

User CV Mask2: 256

---

### **DIFFUSION**

# Synthetic b-values: 1

Synthetic b-value: 1000.0;

Recon All Images: On

---

### **SCAN TIMING**

Flip Angle: 111

TE: 16.0

Number of Echoes: 1

TR: 800.0

Echo Train Length: 4

Receiver Bandwidth: 41.67

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

### **SCAN RANGE**

FOV: 20.0

Slice Thickness: 3.0

Slice Spacing: 1.0

Table Delta: 0.00

---

### **ACQ TIMING**

Freq: 320

Phase: 224

Freq DIR: S/I

NEX: 2.00

Phase FOV: 1.00

Auto Shim: Auto

Phase Correct: On

RF Drive Mode: Quadrature

Excitation Mode: Selective

Fat Shift DIR: Normal (S)

---



**CONTRAST**

Contrast Yes/No: No

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# Pre Ax T1 fat

## Pre Ax T1 fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                     |
|------------------|---------------------|
| Imaging Mode:    | 2D                  |
| Pulse Sequence:  | FSE-XL              |
| Imaging Options: | EDR, TRF, Fast, ARC |
| Phase:           | 1.50                |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|                       |      |
|-----------------------|------|
| Tag Spacing:          | None |
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV16:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                   |       |
|-------------------|-------|
| Flip Angle:       | 111   |
| TE:               | 16.0  |
| Number of Echoes: | 1     |
| TR:               | 800.0 |

|                     |       |
|---------------------|-------|
| Echo Train Length:  | 4     |
| Receiver Bandwidth: | 41.67 |

---

### **GATING/TRIGGER**

|                    |     |
|--------------------|-----|
| Auto Trigger Type: | Off |
|--------------------|-----|

---

### **MULTI-PHASE**

|                  |   |
|------------------|---|
| Seperate Series: | 0 |
| Mask Phase:      | 0 |
| Mask Pause:      | 0 |
| Preserve:        | 0 |

---

### **SCAN RANGE**

|                  |      |
|------------------|------|
| FOV:             | 16.0 |
| Slice Thickness: | 5.0  |
| Slice Spacing:   | 1.0  |
| Table Delta:     | 0.00 |

---

### **ACQ TIMING**

|                  |            |
|------------------|------------|
| Freq:            | 320        |
| Phase:           | 224        |
| Freq DIR:        | Unswap     |
| NEX:             | 1.00       |
| Phase FOV:       | 1.00       |
| Auto Shim:       | Auto       |
| Phase Correct:   | On         |
| RF Drive Mode:   | Quadrature |
| Excitation Mode: | Selective  |

Fat Shift DIR: Normal

---

**CONTRAST**

Contrast Yes/No: No

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# +C Ax T1 fat

## +C Ax T1 fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                     |
|------------------|---------------------|
| Imaging Mode:    | 2D                  |
| Pulse Sequence:  | FSE-XL              |
| Imaging Options: | EDR, TRF, Fast, ARC |
| Phase:           | 1.50                |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|                       |      |
|-----------------------|------|
| Tag Spacing:          | None |
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV16:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                   |       |
|-------------------|-------|
| Flip Angle:       | 111   |
| TE:               | 16.0  |
| Number of Echoes: | 1     |
| TR:               | 800.0 |

|                     |       |
|---------------------|-------|
| Echo Train Length:  | 4     |
| Receiver Bandwidth: | 41.67 |

---

### **GATING/TRIGGER**

|                    |     |
|--------------------|-----|
| Auto Trigger Type: | Off |
|--------------------|-----|

---

### **MULTI-PHASE**

|                  |   |
|------------------|---|
| Seperate Series: | 0 |
| Mask Phase:      | 0 |
| Mask Pause:      | 0 |
| Preserve:        | 0 |

---

### **SCAN RANGE**

|                  |      |
|------------------|------|
| FOV:             | 16.0 |
| Slice Thickness: | 5.0  |
| Slice Spacing:   | 1.0  |
| Table Delta:     | 0.00 |

---

### **ACQ TIMING**

|                  |            |
|------------------|------------|
| Freq:            | 320        |
| Phase:           | 224        |
| Freq DIR:        | Unswap     |
| NEX:             | 2.00       |
| Phase FOV:       | 1.00       |
| Auto Shim:       | Auto       |
| Phase Correct:   | On         |
| RF Drive Mode:   | Quadrature |
| Excitation Mode: | Selective  |



Fat Shift DIR: Normal

---

**CONTRAST**

Contrast Yes/No: Yes

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# +C Cor T1 fat

## +C Cor T1 fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | CORONAL          |

---

### IMAGING PARAMETERS

|                  |                          |
|------------------|--------------------------|
| Imaging Mode:    | 2D                       |
| Pulse Sequence:  | FSE-XL                   |
| Imaging Options: | NPW, EDR, TRF, Fast, ARC |
| Phase:           | 1.50                     |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|                       |      |
|-----------------------|------|
| Tag Spacing:          | None |
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV16:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                   |       |
|-------------------|-------|
| Flip Angle:       | 111   |
| TE:               | 16.0  |
| Number of Echoes: | 1     |
| TR:               | 800.0 |

|                     |       |
|---------------------|-------|
| Echo Train Length:  | 4     |
| Receiver Bandwidth: | 41.67 |

---

### **GATING/TRIGGER**

|                    |     |
|--------------------|-----|
| Auto Trigger Type: | Off |
|--------------------|-----|

---

### **MULTI-PHASE**

|                  |   |
|------------------|---|
| Seperate Series: | 0 |
| Mask Phase:      | 0 |
| Mask Pause:      | 0 |
| Preserve:        | 0 |

---

### **SCAN RANGE**

|                  |      |
|------------------|------|
| FOV:             | 20.0 |
| Slice Thickness: | 3.0  |
| Slice Spacing:   | 1.0  |
| Table Delta:     | 0.00 |

---

### **ACQ TIMING**

|                  |            |
|------------------|------------|
| Freq:            | 320        |
| Phase:           | 224        |
| Freq DIR:        | S/I        |
| NEX:             | 2.00       |
| Auto Shim:       | Auto       |
| Phase Correct:   | On         |
| RF Drive Mode:   | Quadrature |
| Excitation Mode: | Selective  |
| Fat Shift DIR:   | Normal (I) |

---

## **CONTRAST**

Contrast Yes/No: Yes

---

## **TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

## **OTHERS**

Anatomical Region: Forearm bone

# +C Sag T1 fat

## +C Sag T1 fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | SAGITTAL         |

---

### IMAGING PARAMETERS

|                  |                     |
|------------------|---------------------|
| Imaging Mode:    | 2D                  |
| Pulse Sequence:  | FSE-XL              |
| Imaging Options: | EDR, TRF, Fast, ARC |
| Phase:           | 1.50                |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|                       |      |
|-----------------------|------|
| Tag Spacing:          | None |
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV16:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                   |       |
|-------------------|-------|
| Flip Angle:       | 111   |
| TE:               | 16.0  |
| Number of Echoes: | 1     |
| TR:               | 800.0 |

|                     |       |
|---------------------|-------|
| Echo Train Length:  | 4     |
| Receiver Bandwidth: | 41.67 |

---

### **GATING/TRIGGER**

|                    |     |
|--------------------|-----|
| Auto Trigger Type: | Off |
|--------------------|-----|

---

### **MULTI-PHASE**

|                  |   |
|------------------|---|
| Seperate Series: | 0 |
| Mask Phase:      | 0 |
| Mask Pause:      | 0 |
| Preserve:        | 0 |

---

### **SCAN RANGE**

|                  |      |
|------------------|------|
| FOV:             | 20.0 |
| Slice Thickness: | 3.0  |
| Slice Spacing:   | 1.0  |
| Table Delta:     | 0.00 |

---

### **ACQ TIMING**

|                  |            |
|------------------|------------|
| Freq:            | 320        |
| Phase:           | 224        |
| Freq DIR:        | S/I        |
| NEX:             | 2.00       |
| Phase FOV:       | 1.00       |
| Auto Shim:       | Auto       |
| Phase Correct:   | On         |
| RF Drive Mode:   | Quadrature |
| Excitation Mode: | Selective  |



Fat Shift DIR: Normal (S)

---

**CONTRAST**

Contrast Yes/No: Yes

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone

# --optional--

## --optional--

### **PATIENT POSITION**

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | 3-PLANE          |

---

### **IMAGING PARAMETERS**

|                  |                    |
|------------------|--------------------|
| Imaging Mode:    | 2D                 |
| Pulse Sequence:  | Spin Echo          |
| Imaging Options: | Seq, EDR, Fast, SS |

---

### **Image Recon**

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | NONE |

---

### **FMRI**

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### **SAT**

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|

Tag Type: None

---

### **USER CVS**

User CV1: 1.0  
User CV2: 240.00  
User CV13: 1.00  
TR Min: -  
TR Max: -

---

### **DIFFUSION**

Multi b-values: 1000.0;  
Multi NEX Values: 1;  
Recon All Images: On

---

### **SCAN TIMING**

TE: 85.0  
TR: Minimum  
Receiver Bandwidth: 62.50

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0  
Mask Phase: 0  
Mask Pause: 0

---

### **SCAN RANGE**

FOV: 30.0

---

|                  |      |
|------------------|------|
| Slice Thickness: | 5.0  |
| Slice Spacing:   | 5.0  |
| Table Delta:     | 0.00 |

---

### **ACQ TIMING**

|                         |        |
|-------------------------|--------|
| Freq:                   | 384    |
| Phase:                  | 256    |
| Freq DIR:               | Unswap |
| # of Acq. Before Pause: | 0      |
| Phase FOV:              | 1.00   |
| Auto Shim:              | Auto   |
| Phase Correct:          | Off    |
| RF Drive Mode:          | Preset |

---

### **CONTRAST**

|                  |    |
|------------------|----|
| Contrast Yes/No: | No |
|------------------|----|

---

### **TRICKS**

|                |    |
|----------------|----|
| Pause On/Off:  | On |
| Auto Subtract: | 0  |

---

### **OTHERS**

|                         |              |
|-------------------------|--------------|
| 3D Geometry Correction: | Off          |
| Anatomical Region:      | Forearm bone |

# Calibration

## Calibration

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | AXIAL            |

---

### IMAGING PARAMETERS

|                  |                        |
|------------------|------------------------|
| Imaging Mode:    | 3D                     |
| Pulse Sequence:  | SPGR                   |
| Imaging Options: | Fast, Calib, ZIP2, EDR |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | NONE |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|

Tag Type: None

---

### **DIFFUSION**

Recon All Images: On

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

---

### **SCAN RANGE**

FOV: 35.0

Table Delta: 0.00

Number of Slices: 1

Overlap Locations: 0

Slice Thickness: 11.0

---

### **ACQ TIMING**

Freq DIR: R/L

Auto Shim: Auto

Phase Correct: Off

RF Drive Mode: Preset

---

### **CONTRAST**

Contrast Yes/No: No

---

## TRICKS

|                |    |
|----------------|----|
| Pause On/Off:  | On |
| Auto Subtract: | 0  |

---

## OTHERS

|                         |              |
|-------------------------|--------------|
| 3D Geometry Correction: | Off          |
| Anatomical Region:      | Forearm bone |

---

## USER CVS

|         |   |
|---------|---|
| TR Min: | - |
| TR Max: | - |

# Cor T2 dk fat

## Cor T2 dk fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                         |
|------------------|-------------------------|
| Imaging Mode:    | 2D                      |
| Pulse Sequence:  | FSE-XL                  |
| Imaging Options: | NPW, EDR, TRF, Fast, FR |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|



|                       |      |
|-----------------------|------|
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                    |        |
|--------------------|--------|
| Flip Angle:        | 111    |
| TE:                | 85.0   |
| Number of Echoes:  | 1      |
| TR:                | 3500.0 |
| Echo Train Length: | 16     |

Receiver Bandwidth: 41.67

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

### **SCAN RANGE**

FOV: 20.0

Slice Thickness: 3.0

Slice Spacing: 1.0

Number of Slices: 15

Table Delta: 0.00

---

### **ACQ TIMING**

Freq: 384

Phase: 224

Freq DIR: Unswap

NEX: 2.00

Auto Shim: Auto

Phase Correct: On

RF Drive Mode: Quadrature

Excitation Mode: Selective

Fat Shift DIR: Normal

---

## CONTRAST

Contrast Yes/No: No

---

## TRICKS

Pause On/Off: On

Auto Subtract: 0

---

## OTHERS

Anatomical Region: Forearm bone

# Sag T2 dk fat

## Sag T2 dk fat

### PATIENT POSITION

|                     |                  |
|---------------------|------------------|
| Coil Configuration: | GEM Flex LG Full |
| Plane:              | OBLIQUE          |

---

### IMAGING PARAMETERS

|                  |                    |
|------------------|--------------------|
| Imaging Mode:    | 2D                 |
| Pulse Sequence:  | FSE-XL             |
| Imaging Options: | EDR, TRF, Fast, FR |

---

### Image Recon

|                       |      |
|-----------------------|------|
| Intensity Filter:     | None |
| Intensity Correction: | SCIC |

---

### FMRI

|                          |             |
|--------------------------|-------------|
| Brain Wave Real Time:    | None        |
| PSD Trigger:             | Internal    |
| Slice Order:             | Interleaved |
| View Order:              | Bottom/Up   |
| # of Repetitions REST:   | 0           |
| # of Repetitions ACTIVE: | 0           |

---

### SAT

|              |      |
|--------------|------|
| Tag Spacing: | None |
|--------------|------|

|                       |      |
|-----------------------|------|
| Tag Type:             | None |
| Fat/Water Saturation: | Fat  |

---

### **USER CVS**

|                |      |
|----------------|------|
| User CV6:      | None |
| User CV7:      | None |
| User CV8:      | None |
| User CV9:      | None |
| User CV15:     | None |
| User CV18:     | None |
| User CV19:     | 1.00 |
| User CV21:     | None |
| User CV22:     | 1.00 |
| User CV30:     | 1.00 |
| User CV39:     | 1.00 |
| User CV Mask2: | 256  |

---

### **DIFFUSION**

|                       |         |
|-----------------------|---------|
| # Synthetic b-values: | 1       |
| Synthetic b-value:    | 1000.0; |
| Recon All Images:     | On      |

---

### **SCAN TIMING**

|                    |        |
|--------------------|--------|
| Flip Angle:        | 111    |
| TE:                | 85.0   |
| Number of Echoes:  | 1      |
| TR:                | 3500.0 |
| Echo Train Length: | 16     |

Receiver Bandwidth: 41.67

---

### **GATING/TRIGGER**

Auto Trigger Type: Off

---

### **MULTI-PHASE**

Seperate Series: 0

Mask Phase: 0

Mask Pause: 0

Preserve: 0

---

### **SCAN RANGE**

FOV: 20.0

Slice Thickness: 3.0

Slice Spacing: 1.0

Number of Slices: 15

Table Delta: 0.00

---

### **ACQ TIMING**

Freq: 384

Phase: 224

Freq DIR: Unswap

NEX: 2.00

Phase FOV: 0.90

Auto Shim: Auto

Phase Correct: On

RF Drive Mode: Quadrature

Excitation Mode: Selective

Fat Shift DIR: Normal

---

**CONTRAST**

Contrast Yes/No: No

---

**TRICKS**

Pause On/Off: On

Auto Subtract: 0

---

**OTHERS**

Anatomical Region: Forearm bone