\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\Localizer\_bs\_csc TA: 0:52 PAT: 2 Voxel size: 1.2×1.2×5.0 mm Rel. SNR: 1.00 SIEMENS: gre

| Properties Prio Recon       | Off               | Phase resolution<br>Phase partial Fourier | 100 %<br>Off     |
|-----------------------------|-------------------|---|------------------|
| Before measurement          | Oli               | Interpolation                             | Off              |
| After measurement           |                   | PAT mode                                  | GRAPPA           |
| Load to viewer              | On                | Accel. factor PE                          | 2                |
| Inline movie                | Off               | Ref. lines PE                             | 32               |
| Auto store images           | On                | Reference scan mode                       | Integrated       |
| Load to stamp segments      | Off               | . =16                                     |                  |
| Load images to graphic      | Off               | Image Filter                              | Off              |
| segments                    |                   | Distortion Corr.                          | Off              |
| Auto open inline display    | Off               | Prescan Normalize                         | Off              |
| Start measurement without   | On                | Normalize                                 | Off              |
| further preparation         |                   | B1 filter Raw filter                      | Off<br>Off       |
| Wait for user to start      | Off               | Elliptical filter                         | On               |
| Start measurements          | single            | Mode                                      | Inplane          |
| Routine                     |                   | ļ   | inplane          |
| Slice group 1               |                   | Geometry Multi clica made                 | Cognostial       |
| Slices                      | 9                 | Multi-slice mode                          | Sequential       |
| Dist. factor                | 100 %             | Series                                    | Interleaved      |
| Position                    | Isocenter         | Saturation mode                           | Standard         |
| Orientation                 | Sagittal          | Special sat.                              | None             |
| Phase enc. dir.             | A >> P            |   |                  |
| Rotation                    | 0.00 deg          | Table position                            | Н                |
| Slice group 2               |                   | Table position                            | 0 mm             |
| Slices                      | 33                | Inline Composing                          | Off              |
| Dist. factor                | 100 %             |   |                  |
| Position                    | Isocenter         | Tim CT mode                               | Off              |
| Orientation                 | Transversal       | System                                    |                  |
| Phase enc. dir.             | A >> P            | C15                                       | On               |
| Rotation                    | 0.00 deg          | C16                                       | On               |
| Slice group 3               |                   | C17                                       | On               |
| Slices                      | 15                | C18                                       | On               |
| Dist. factor                | 100 %             | C19                                       | On               |
| Position                    | Isocenter         | C20                                       | On               |
| Orientation                 | Coronal           | C21                                       | On               |
| Phase enc. dir.             | R >> L            | C22                                       | On               |
| Rotation                    | 0.00 deg<br>0 %   | Ch1                                       | On               |
| Phase oversampling FoV read | 300 mm            | Ch2                                       | On               |
| FoV read<br>FoV phase       | 100.0 %           | Ch3                                       | On               |
| Slice thickness             | 5.0 mm            | Ch4                                       | On               |
| TR                          | 6.2 ms            | Ch5                                       | On               |
| TE                          | 2.67 ms           | Ch6                                       | On               |
| Averages                    | 1                 | Ch7                                       | On               |
| Concatenations              | 57                | Ch8                                       | On               |
| Filter                      | Elliptical filter | Ch9                                       | On               |
| Coil elements               | C10-22;Ch1-9      | C10                                       | On               |
| 1                           | , •               | C11<br>C12                                | On<br>On         |
| Contrast                    |                   | C12<br>C13                                | On<br>On         |
| TD                          | 0 ms              | C13                                       | On<br>On         |
| MTC                         | Off               |   | OII              |
| Magn. preparation           | None              | Positioning mode                          | FIX              |
| Flip angle                  | 10 deg            | MSMA                                      | S - C - T        |
| Fat suppr.                  | None              | Sagittal                                  | R >> L           |
| Water suppr.<br>SWI         | None<br>Off       | Coronal                                   | A >> P           |
| 3vvi                        | OII               | Transversal                               | F >> H           |
| Averaging mode              | Short term        | Save uncombined                           | Off              |
| Reconstruction              | Magnitude         | Coil Combine Mode                         | Adaptive Combine |
| Measurements                | 1                 | AutoAlign                                 |                  |
| Multiple series             | Each measurement  | Auto Coil Select                          | Off              |
| Resolution                  |                   | Shim mode                                 | Standard         |
| Base resolution             | 256               | Adjust with body coil                     | Off              |
| 1                           |                   | Confirm freq. adjustment                  | Off              |
|                             | •                 | 1/+                                       |                  |

| Assume Silicone ? Ref. amplitude 1H Adjustment Tolerance Adjust volume Position Orientation Rotation F >> H A >> P R >> L | Off 0.000 V Auto Isocenter Sagittal 0.00 deg 325 mm 301 mm 301 mm |
|---|---|
| Physio  |   |
| 1st Signal/Mode<br>Segments   | None<br>1   |
| Tagging<br>Dark blood   | None<br>Off   |
| Resp. control   | Off   |
| Inline  |   |
| Subtract  | Off   |
| Liver registration Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images | Off                           |
| Wash - In<br>Wash - Out<br>TTP  | Off<br>Off<br>Off   |
| PEI<br>MIP - time   | Off<br>Off  |
| MapIt<br>Contrasts  | None<br>1   |
| Sequence  |   |
| Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth Flow comp.   | On<br>2D<br>Off<br>Allowed<br>320 Hz/Px<br>No                     |
| RF pulse type Gradient mode Excitation  | Normal<br>Normal<br>Slice-sel.                                    |

On

RF spoiling

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\preSatTFL\_satFA80\_sag\_2p5mm\_FOV3 TA: 1:20 PAT: Off Voxel size: 2.5×2.5×2.5 mm Rel. SNR: 1.00 USER: tfl\_WIP543\_B1map B1 filter Off Properties Raw filter Off Prio Recon Off Elliptical filter Off Before measurement After measurement Geometry Multi-slice mode Load to viewer On Interleaved Inline movie Off Series Interleaved Auto store images On Load to stamp segments Off Table position Load images to graphic Off Table position 0 mm segments Inline Composing Off Off Auto open inline display System Start measurement without On C15 On further preparation C16 On Off Wait for user to start C17 On Start measurements single C18 On Routine C19 On Slice group 1 C20 On Slices 28 C21 On Dist. factor 100 % C22 On Position L0.0 A40.0 H0.0 Ch1 On Orientation Sagittal Ch2 On Phase enc. dir. A >> P Ch3 On Rotation 0.00 deg Ch4 On Slice group 2 Ch<sub>5</sub> On Slices 28 Ch6 On Dist. factor 100 % Ch7 On Position L2.5 A40.0 H0.0 Ch8 On Sagittal Orientation Ch9 On A >> P Phase enc. dir. C10 On Rotation 0.00 deg C11 On Phase oversampling 0 % C12 On FoV read 320 mm C13 On FoV phase 68.8 % C14 On Slice thickness 2.5 mm Positioning mode FIX TR 20000 ms **MSMA** S-C-T TE 2.84 ms Sagittal R >> L **Averages** Coronal A >> P Concatenations 2 Transversal F >> H Filter None Save uncombined Off Coil elements C10-22;Ch1-9 Coil Combine Mode Sum of Squares Contrast AutoAlign TD 0 ms Auto Coil Select Default Magn. preparation None Shim mode Standard Flip angle 10 deg Adjust with body coil Off Fat suppr. None Confirm freq. adjustment Off Water suppr. None Assume Silicone Off Averaging mode Long term ! Ref. amplitude 1H 350.000 V Reconstruction Magnitude Adjustment Tolerance Auto Measurements Adjust volume Multiple series Each measurement ! Position L0.0 A40.0 H0.0 ! Orientation Sagittal Resolution ! Rotation 0.00 deg Base resolution 128 !F>>H 320 mm Phase resolution 100 % ! A >> P 228 mm Phase partial Fourier Off !R >> L 140 mm Interpolation Off Physio PAT mode None 1st Signal/Mode None Image Filter Off Off Dark blood Distortion Corr. Off Off Prescan Normalize Off Resp. control Off Normalize Inline

| Subtract             | Off |
|----------------------|-----|
| Std-Dev-Sag          | Off |
| Std-Dev-Cor          | Off |
| Std-Dev-Tra          | Off |
| Std-Dev-Time         | Off |
| MIP-Sag              | Off |
| MIP-Cor              | Off |
| MIP-Tra              | Off |
| MIP-Time             | Off |
| Save original images | On  |
|                      |     |

| _ | oquenoe             |            |
|---|---------------------|------------|
|   | Introduction        | Off        |
|   | Dimension           | 2D         |
|   | Reordering          | Centric    |
|   | Asymmetric echo     | Allowed    |
|   | Bandwidth           | 400 Hz/Px  |
|   | Flow comp.          | No         |
|   | Echo spacing        | 5.7 ms     |
|   | EPI factor          | 1          |
|   | RF pulse type       | Low SAR    |
|   | Gradient mode       | Normal     |
|   | Excitation          | Slice-sel. |
|   | RF spoiling         | On         |
|   | Prep Pulse          | SINC       |
|   | Sat Flip Angle      | 80 deg     |
|   | Sat Thick           | 5.0 mm     |
|   | RF Duration         | 2000 us    |
|   | no ref scans        | 1 #        |
|   |                     |            |
|   | TX array B1 mapping | Off        |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\preSatTFL\_satFA60\_sag\_2p5mm\_FOV3

TA: 1:20 PAT: Off Voxel size: 2.5×2.5×2.5 mm Rel. SNR: 1.00 USER: tfl\_WIP543\_B1map B1 filter Off Properties Raw filter Off Prio Recon Off Elliptical filter Off Before measurement After measurement Geometry Multi-slice mode Load to viewer On Interleaved Inline movie Off Series Interleaved Auto store images On Load to stamp segments Off Table position Load images to graphic Off Table position 0 mm segments Inline Composing Off Off Auto open inline display System Start measurement without On C15 On further preparation C16 On Off Wait for user to start C17 On Start measurements single C18 On Routine C19 On Slice group 1 C20 On Slices 28 C21 On Dist. factor 100 % C22 On Position L0.0 A40.0 H0.0 Ch1 On Orientation Sagittal Ch2 On Phase enc. dir. A >> P Ch3 On Rotation 0.00 deg Ch4 On Slice group 2 Ch<sub>5</sub> On Slices 28 Ch6 On Dist. factor 100 % Ch7 On Position L2.5 A40.0 H0.0 Ch8 On Sagittal Orientation Ch9 On A >> P Phase enc. dir. C10 On Rotation 0.00 deg C11 On Phase oversampling 0 % C12 On FoV read 320 mm C13 On FoV phase 68.8 % C14 On Slice thickness 2.5 mm Positioning mode FIX TR 20000 ms **MSMA** S-C-T TE 2.84 ms Sagittal R >> L **Averages** Coronal A >> P Concatenations 2 Transversal F >> H Filter None Save uncombined Off Coil elements C10-22;Ch1-9 Coil Combine Mode Sum of Squares Contrast AutoAlign TD 0 ms Auto Coil Select Default Magn. preparation None Shim mode Standard Flip angle 10 deg Adjust with body coil Off Fat suppr. None Confirm freq. adjustment Off Water suppr. None Assume Silicone Off Averaging mode Long term ! Ref. amplitude 1H 450.000 V Reconstruction Magnitude Auto Adjustment Tolerance Measurements Adjust volume Multiple series Each measurement ! Position L0.0 A40.0 H0.0 ! Orientation Sagittal Resolution ! Rotation 0.00 deg Base resolution 128 !F>>H 320 mm Phase resolution 100 % ! A >> P 228 mm Phase partial Fourier Off !R >> L 140 mm Interpolation Off Physio PAT mode None 1st Signal/Mode None Image Filter Off Off Dark blood Distortion Corr. Off Off Prescan Normalize Off Resp. control Off Normalize Inline

| Subtract             | Off |
|----------------------|-----|
| Std-Dev-Sag          | Off |
| Std-Dev-Cor          | Off |
| Std-Dev-Tra          | Off |
| Std-Dev-Time         | Off |
| MIP-Sag              | Off |
| MIP-Cor              | Off |
| MIP-Tra              | Off |
| MIP-Time             | Off |
| Save original images | On  |

| Ocquerioc           |            |
|---------------------|------------|
| Introduction        | Off        |
| Dimension           | 2D         |
| Reordering          | Centric    |
| Asymmetric echo     | Allowed    |
| Bandwidth           | 400 Hz/Px  |
| Flow comp.          | No         |
| Echo spacing        | 5.7 ms     |
| EPI factor          | 1          |
| RF pulse type       | Low SAR    |
| Gradient mode       | Normal     |
| Excitation          | Slice-sel. |
| RF spoiling         | On         |
| Prep Pulse          | SINC       |
| Sat Flip Angle      | 60 deg     |
| Sat Thick           | 5.0 mm     |
| RF Duration         | 2000 us    |
| no ref scans        | 1 #        |
| TX array B1 mapping | Off        |
| 1                   |            |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\2DREAM\_sag\_FOV384\_2p5mm\_RefV4{ TA: 1:08 PAT: Off Voxel size: 2.5×2.5×2.5 mm Rel. SNR: 1.00 USER: 3Dream\_2d

| Properties                              |                         | Inline Composing                         | Off              |
|---|-------------------------|--|------------------|
| Properties Prio Recon                   | Off                     | System                                   |                  |
| Before measurement                      | Oil                     | C15                                      | On               |
| After measurement                       |                         | C15                                      | On               |
| Load to viewer                          | On                      | C17                                      | On               |
| Inline movie                            | Off                     | C18                                      | On               |
| Auto store images                       | On                      | C19                                      | On               |
| Load to stamp segments                  | Off                     | C20                                      | On               |
| Load images to graphic                  | Off                     | C21                                      | On               |
| segments                                |                         | C22                                      | On               |
| Auto open inline display                | Off                     | Ch1                                      | On               |
| Start measurement without               | On                      | Ch2                                      | On               |
| further preparation                     |                         | Ch3                                      | On               |
| Wait for user to start                  | Off                     | Ch4                                      | On               |
| Start measurements                      | single                  | Ch5                                      | On               |
| Douting                                 |                         | Ch6                                      | On               |
| Routine                                 |                         | Ch7                                      | On               |
| Slice group 1<br>Slices                 | 11                      | Ch8                                      | On               |
| Dist. factor                            | 11<br>0 %               | Ch9                                      | On               |
| Position                                | 0 %<br>L0.0 A28.0 H10.0 | C10                                      | On               |
|   |                         | C11                                      | On               |
| Orientation Phase enc. dir.             | Sagittal<br>A >> P      | C12                                      | On               |
|   |                         | C13                                      | On               |
| Rotation<br>FoV read                    | 0.00 deg<br>384 mm      | C14                                      | On               |
| FoV read<br>FoV phase                   | 47.4 %                  | Positioning mode                         | FIX              |
| Slice thickness                         | 2.5 mm                  | MSMA                                     | S-C-T            |
| TR                                      | 6000 ms                 | Sagittal                                 | R >> L           |
| TE 1                                    | 2.04 ms                 | Coronal                                  | A >> P           |
| TE 2                                    | 3.15 ms                 | Transversal                              | F >> H           |
| Averages                                | 1                       | Save uncombined                          | Off              |
| Concatenations                          | 11                      | Coil Combine Mode                        | Sum of Squares   |
| Filter                                  | Distortion Corr.(3D)    | AutoAlign                                |                  |
| Coil elements                           | C10-22;Ch1-9            | Auto Coil Select                         | Default          |
| ı                                       | - ,                     |  |                  |
| Contrast                                | FO dog                  | Shim mode                                | Standard         |
| Flip angle 1                            | 50 deg                  | Adjust with body coil                    | Off              |
| Flip angle 2                            | 6 deg                   | Confirm freq. adjustment Assume Silicone | Off<br>Off       |
| Averaging mode                          | Long term               |  | _                |
| Reconstruction                          | Magnitude               | ! Ref. amplitude 1H                      | 450.000 V        |
| Measurements                            | 1                       | Adjustment Tolerance Adjust volume       | Auto             |
| Resolution                              |                         | Position                                 | L0.0 A28.0 H10.0 |
| Base resolution                         | 152                     | Orientation                              | Sagittal         |
| Phase resolution                        | 152<br>100 %            | Rotation                                 | 0.00 deg         |
| Phase resolution  Phase partial Fourier | Off                     | F >> H                                   | 384 mm           |
| Interpolation                           | Off                     | A >> P                                   | 182 mm           |
|   |                         | R >> L                                   | 28 mm            |
| PAT mode                                | None                    | ···· Composing                           |                  |
| Image Filter                            | Off                     |  |                  |
| Distortion Corr.                        | On                      | Sequence                                 |                  |
| Mode                                    | 3D                      | Introduction                             | On               |
| Unfiltered images                       | On                      | Dimension                                | 2D               |
| Prescan Normalize                       | Off                     | Asymmetric echo                          | Off              |
| Normalize                               | Off                     | Contrasts                                | 2                |
| B1 filter                               | Off                     | Bandwidth                                | 910 Hz/Px        |
| Raw filter                              | Off                     | Echo spacing                             | 4.9 ms           |
| Elliptical filter                       | Off                     | Turbo factor                             | 72               |
| Geometry                                |                         | RF pulse type                            | Fast             |
| Multi-slice mode                        | Sequential              | Gradient mode                            | Fast             |
| Series                                  | Ascending               | Excitation                               | Slice-sel.       |
|   |                         | Flip angle mode                          | Constant         |
| Table position                          | H                       | RF spoiling                              | On               |
| Table position                          | 0 mm                    |  |                  |

| Sample T1             | 2000 ms |
|-----------------------|---------|
| Preparation Scans     | 2       |
| Preparation Loops     | 0       |
| RF-Duration           | 800 us  |
| Prep RF-Duration      | 400 us  |
| TimeBandwidthProduct  | 3.2     |
| Timing Schme          | STE*    |
| Mixing Time           | 1000 us |
| Calculate FlipMap     | On      |
| Use IcePAT            | Off     |
| Var FA                | Off     |
| FFT Scale             | 10.0    |
| dSpoilFactor          | 2.0     |
| Scale risetime        | 1.20    |
| TX/RX Nucleus         | 1H      |
| TX/RX delta frequency | 0 Hz    |
| TX Nucleus            | None    |
| TX delta frequency    | 0 Hz    |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\2DREAM\_sag\_FOV200\_2p5mm\_RefV4{ TA: 1:08 PAT: Off Voxel size: 2.5×2.5×2.5 mm Rel. SNR: 1.00 USER: 3Dream\_2d

| Properties   |   | Inline Composing   | Off  |
|--|---|--|--|
| Prio Recon   | Off   | System   |  |
| Before measurement   | Oli   | C15  | On   |
| After measurement  |   | C15  | On   |
| Load to viewer   | On  | C17  | On   |
| Inline movie   | Off   | C18  | On   |
| Auto store images  | On  | C19  | On   |
| Load to stamp segments   | Off   | C20  | On   |
| Load images to graphic   | Off   | C21  | On   |
| segments   |   | C22  | On   |
| Auto open inline display   | Off   | Ch1  | On   |
| Start measurement without  | On  | Ch2  | On   |
| further preparation  |   | Ch3  | On   |
| Wait for user to start   | Off   | Ch4  | On   |
| Start measurements   | single  | Ch5  | On   |
| Routine  |   | Ch6  | On   |
| Slice group 1  |   | _ Ch7  | On   |
| Slice group 1  | 11  | Ch8  | On   |
| Dist. factor   | 0%  | Ch9  | On   |
| Position   | L0.0 A28.0 H10.0  | C10  | On   |
| Orientation  | Sagittal  | C11  | On   |
| Phase enc. dir.  | A >> P  | C12  | On   |
| Rotation   | 0.00 deg  | C13  | On   |
| FoV read   | 200 mm  | C14  | On   |
| FoV phase  | 100.0 %   | Positioning mode   | FIX  |
| Slice thickness  | 2.5 mm  | MSMA   | S - C - T  |
| TR   | 6000 ms   | Sagittal   | R >> L   |
| TE 1   | 2.04 ms   | Coronal  | A >> P   |
| TE 2   | 3.05 ms   | Transversal  | F >> H   |
| Averages   | 1   | Save uncombined  | Off  |
| Concatenations   | 11  | Coil Combine Mode  | Sum of Squares   |
| Filter   | Distortion Corr.(3D)                                      | AutoAlign  |  |
| Coil elements  | C10-22;Ch1-9  | Auto Coil Select   | Default  |
| Contrast   |   | Shim mode  | Standard   |
| Flip angle 1   | 50 deg  | Adjust with body coil  | Off  |
| Flip angle 2   | 6 deg   | Confirm freq. adjustment   | Off  |
|  |   | Assume Silicone  | Off  |
| Averaging mode   | Long term   | ? Ref. amplitude 1H  | 0.000 V  |
| Reconstruction   | Magnitude   | Adjustment Tolerance   | Auto   |
| Measurements   | 1   | Adjust volume  |  |
| Resolution   |   | Position   | L0.0 A28.0 H10.0   |
| Base resolution  | 80  | Orientation  | Sagittal   |
| Phase resolution   | 100 %   | Rotation   | 0.00 deg   |
| Phase partial Fourier  | Off   | F >> H   | 200 mm   |
| Interpolation  | Off   | A >> P   | 200 mm   |
| PAT mode   | None  | R >> L   | 28 mm  |
|  |   | Composing  |  |
|  |   |  |  |
| Image Filter   | Off   | Seguence   |  |
| Distortion Corr.   | On  | Sequence   | On   |
| Distortion Corr.<br>Mode   | On<br>3D  | Introduction   | On<br>2D   |
| Distortion Corr.<br>Mode<br>Unfiltered images  | On<br>3D<br>On  | Introduction Dimension   | 2D   |
| Distortion Corr.<br>Mode<br>Unfiltered images<br>Prescan Normalize   | On<br>3D<br>On<br>Off                                     | Introduction Dimension Asymmetric echo   | 2D<br>Off  |
| Distortion Corr.<br>Mode<br>Unfiltered images<br>Prescan Normalize<br>Normalize  | On<br>3D<br>On<br>Off<br>Off                              | Introduction Dimension Asymmetric echo Contrasts   | 2D<br>Off<br>2   |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter  | On<br>3D<br>On<br>Off<br>Off                              | Introduction Dimension Asymmetric echo Contrasts Bandwidth   | 2D<br>Off<br>2<br>1010 Hz/Px                                 |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter   | On<br>3D<br>On<br>Off<br>Off<br>Off                       | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing  | 2D<br>Off<br>2<br>1010 Hz/Px<br>4.8 ms                       |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter Elliptical filter                                   | On<br>3D<br>On<br>Off<br>Off                              | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing Turbo factor   | 2D<br>Off<br>2<br>1010 Hz/Px<br>4.8 ms                       |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter Elliptical filter                                   | On<br>3D<br>On<br>Off<br>Off<br>Off<br>Off                | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing Turbo factor RF pulse type   | 2D<br>Off<br>2<br>1010 Hz/Px<br>4.8 ms<br>80<br>Fast         |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry  Multi-slice mode       | On 3D On Off Off Off Off Off Off Sequential               | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing Turbo factor RF pulse type Gradient mode                             | 2D Off 2 1010 Hz/Px 4.8 ms 80 Fast Fast                      |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter Elliptical filter                                   | On<br>3D<br>On<br>Off<br>Off<br>Off<br>Off                | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing  Turbo factor RF pulse type Gradient mode Excitation                 | 2D Off 2 1010 Hz/Px 4.8 ms  80 Fast Fast Slice-sel.          |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry Multi-slice mode Series | On 3D On Off Off Off Off Off Off Off Sequential Ascending | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing  Turbo factor RF pulse type Gradient mode Excitation Flip angle mode | 2D Off 2 1010 Hz/Px 4.8 ms  80 Fast Fast Slice-sel. Constant |
| Distortion Corr. Mode Unfiltered images Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry Multi-slice mode        | On 3D On Off Off Off Off Off Off Sequential               | Introduction Dimension Asymmetric echo Contrasts Bandwidth Echo spacing  Turbo factor RF pulse type Gradient mode Excitation                 | 2D Off 2 1010 Hz/Px 4.8 ms  80 Fast Fast Slice-sel.          |

| Sample T1             | 2000 ms |
|-----------------------|---------|
| Preparation Scans     | 2       |
| Preparation Loops     | 0       |
| RF-Duration           | 800 us  |
| Prep RF-Duration      | 400 us  |
| TimeBandwidthProduct  | 3.2     |
| Timing Schme          | STE*    |
| Mixing Time           | 1000 us |
| Calculate FlipMap     | On      |
| Use IcePAT            | Off     |
| Var FA                | Off     |
| FFT Scale             | 10.0    |
| dSpoilFactor          | 2.0     |
| Scale risetime        | 1.20    |
| TX/RX Nucleus         | 1H      |
| TX/RX delta frequency | 0 Hz    |
| TX Nucleus            | None    |
| TX delta frequency    | 0 Hz    |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\2DREAM\_sag\_FOV200\_2p5mm\_RefV32 TA: 1:08 PAT: Off Voxel size: 2.5×2.5×2.5 mm Rel. SNR: 1.00 USER: 3Dream\_2d

| Properties   |  | Inline Composing  | Off   |
|--|--|---|---|
| Properties Prio Recon  | Off  | System  |   |
| Before measurement   | OII  | C15   | On  |
| After measurement  |  | C16   | On  |
| Load to viewer   | On   | C17   | On  |
| Inline movie   | Off  | C18   | On  |
| Auto store images  | On   | C19   | On  |
| Load to stamp segments   | Off  | C20   | On  |
| Load images to graphic   | Off  | C21   | On  |
| segments   |  | C22   | On  |
| Auto open inline display   | Off  | Ch1   | On  |
| Start measurement without  | On   | Ch2   | On  |
| further preparation  |  | Ch3   | On  |
| Wait for user to start   | Off  | Ch4   | On  |
| Start measurements   | single                                       | Ch5   | On  |
| Douting  |  | Ch6   | On  |
| Routine  |  | Ch7   | On  |
| Slice group 1<br>Slices  | 11   | Ch8   | On  |
| Dist. factor   | 11<br>0 %                                    | Ch9   | On  |
| Position   | 0 %<br>L0.0 A28.0 H10.0                      | C10   | On  |
|  |  | C11   | On  |
| Orientation  | Sagittal                                     | C12   | On  |
| Phase enc. dir.  | A >> P                                       | C13   | On  |
| Rotation<br>FoV read   | 0.00 deg<br>200 mm                           | C14   | On  |
| FoV read<br>FoV phase  | 100.0 %                                      | Positioning mode  | FIX   |
| Slice thickness  | 2.5 mm                                       | Positioning mode MSMA   | S - C - T   |
| TR   | 6000 ms                                      | _   | R >> L  |
| TE 1   | 2.04 ms                                      | Sagittal<br>Coronal   | A >> P  |
| TE 2   | 3.05 ms                                      | Transversal   | F >> H  |
|  | 3.05 ms<br>1                                 | Save uncombined   | Off   |
| Averages Concatenations  | 11   | Coil Combine Mode   | Sum of Squares  |
| Filter   | Distortion Corr.(3D)                         | AutoAlign   |   |
| Coil elements  | C10-22;Ch1-9                                 | Auto Coil Select  | Default   |
| 1  | 010-22,0111-9                                |   |   |
| Contrast   |  | Shim mode   | Standard  |
| Flip angle 1   | 50 deg                                       | Adjust with body coil   | Off   |
| Flip angle 2   | 6 deg  | Confirm freq. adjustment  | Off   |
| Averaging mode   | Long term                                    | Assume Silicone   | Off   |
| Reconstruction   | Magnitude                                    | ! Ref. amplitude 1H   | 327.700 V   |
| Measurements   | 1  | Adjustment Tolerance  | Auto  |
| 1  | •  | Adjust volume   |   |
| Resolution   |  | ! Position  | L0.0 A28.0 H10.0  |
| Base resolution  | 80   | ! Orientation   | Sagittal  |
| Phase resolution   | 100 %  | ! Rotation  | 0.00 deg  |
| Phase partial Fourier  | Off  | !F>> H  | 200 mm  |
| Interpolation  | Off  | ! A >> P  | 200 mm  |
| PAT mode   | None   | ! R >> L  | 28 mm   |
| Image Filter   | Off  | Composing   |   |
| Distortion Corr.   | On   | Sequence  |   |
| Mode   | 3D   | Introduction  | On  |
| Unfiltered images  | On   | Dimension   | 2D  |
|  |  | A   | Off   |
| Prescan Normalize  | Off  | Asymmetric echo   | Oli   |
|  |  | Contrasts   | 2   |
| Prescan Normalize  | Off  |   |   |
| Prescan Normalize<br>Normalize   | Off<br>Off                                   | Contrasts   | 2   |
| Prescan Normalize<br>Normalize<br>B1 filter<br>Raw filter  | Off<br>Off<br>Off                            | Contrasts Bandwidth Echo spacing  | 2<br>1010 Hz/Px<br>4.8 ms                                     |
| Prescan Normalize<br>Normalize<br>B1 filter<br>Raw filter<br>Elliptical filter                       | Off<br>Off<br>Off<br>Off                     | Contrasts Bandwidth Echo spacing Turbo factor   | 2<br>1010 Hz/Px<br>4.8 ms                                     |
| Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry                         | Off<br>Off<br>Off<br>Off                     | Contrasts Bandwidth Echo spacing Turbo factor RF pulse type   | 2<br>1010 Hz/Px<br>4.8 ms<br>80<br>Fast                       |
| Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry Multi-slice mode        | Off Off Off Off Off Sequential               | Contrasts Bandwidth Echo spacing Turbo factor RF pulse type Gradient mode                             | 2<br>1010 Hz/Px<br>4.8 ms<br>80<br>Fast<br>Fast               |
| Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry                         | Off<br>Off<br>Off<br>Off                     | Contrasts Bandwidth Echo spacing Turbo factor RF pulse type Gradient mode Excitation                  | 2<br>1010 Hz/Px<br>4.8 ms<br>80<br>Fast<br>Fast<br>Slice-sel. |
| Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry Multi-slice mode Series | Off Off Off Off Off Sequential               | Contrasts Bandwidth Echo spacing  Turbo factor RF pulse type Gradient mode Excitation Flip angle mode | 2 1010 Hz/Px 4.8 ms  80 Fast Fast Slice-sel. Constant         |
| Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry Multi-slice mode        | Off Off Off Off Off Off Sequential Ascending | Contrasts Bandwidth Echo spacing Turbo factor RF pulse type Gradient mode Excitation                  | 2<br>1010 Hz/Px<br>4.8 ms<br>80<br>Fast<br>Fast<br>Slice-sel. |

| Sample T1             | 2000 ms |
|-----------------------|---------|
| Preparation Scans     | 2       |
| Preparation Loops     | 0       |
| RF-Duration           | 800 us  |
| Prep RF-Duration      | 400 us  |
| TimeBandwidthProduct  | 3.2     |
| Timing Schme          | STE*    |
| Mixing Time           | 1000 us |
| Calculate FlipMap     | On      |
| Use IcePAT            | Off     |
| Var FA                | Off     |
| FFT Scale             | 10.0    |
| dSpoilFactor          | 2.0     |
| Scale risetime        | 1.20    |
| TX/RX Nucleus         | 1H      |
| TX/RX delta frequency | 0 Hz    |
| TX Nucleus            | None    |
| TX delta frequency    | 0 Hz    |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\2DREAM\_sag\_FOV200\_2p5mm\_RefV4{ TA: 1:08 PAT: Off Voxel size: 2.5×2.5×2.5 mm Rel. SNR: 1.00 USER: 3Dream\_2d

| Prio Recon   Off   Before measurement   C15  | Properties         |            | Inline Composing | Off               |
|--|--------------------|------------|------------------|-------------------|
| Before measurement   | Prio Recon         | Off        |                  |                   |
| Atter measurement   Load to viewer   On   C17   On   On   Inline movie   Off   C18   On   C19   On   C19   On   C19   On   C20   On   C20   On   C21   On   C22   On   C23   On   C23   On   C24   On   C24   On   C24   On   C24   On   C25   O   |                    | Oii        |                  | On                |
| Load to viewer   On  |                    |            |                  |                   |
| Inline movie   |                    | On         |                  |                   |
| Auto store images   On   C20   |                    |            |                  |                   |
| Load to stamp's segments   |                    |            |                  | _                 |
| Load images to graphic segments   Segments   C22   |                    |            |                  |                   |
| Segments   |                    |            |                  |                   |
| Auto open inline display   |                    |            |                  |                   |
| Start measurement without further preparation  |                    | Off        |                  |                   |
| Turther preparation   Wait for user to start   Start measurements   Single   Ch5   On  |                    |            |                  | On                |
| Walt for user to start   Start measurements   Single   Ch5   |                    |            | Ch3              |                   |
| Routine  |                    | Off        | Ch4              | On                |
| Routine  | Start measurements | single     | Ch5              | On                |
| Slice group 1   Slices   11   Ch8   On   Ch9   Ch9   On   Ch9   Ch   | Douting            |            | Ch6              | On                |
| Slices   |                    |            | Ch7              | On                |
| Dist. factor   |                    | 11         | Ch8              | On                |
| Position   |                    |            |                  | On                |
| Orientation         Sagittal           Phase enc. dir.         A >> P           Rotation         0.00 deg           FoV read         200 mm           FoV phase         100.0 %           Slice thickness         2.5 mm           TR         6000 ms           TE 1         2.04 ms           TE 1         2.04 ms           TE 2         3.05 ms           Averages         1           Concatenations         11           Filter         Distortion Corr.(3D)           Coil elements         C10-22;Ch1-9           Contrast         Shim mode           Sum of Squares           Auto Coil Select         Default           Shim mode         Standard           Adjust with body coil         Off           Confirm freq. adjustment         Off           Assume Silicone         Off           Assume Silicone         Off           Pase resolution         80           Phase partial Fourier         Off           Interpolation         Off           PAT mode         None   |                    |            |                  | On                |
| Phase enc. dir.   A >> P   C13   On  |                    |            |                  | On                |
| Rotation   |                    |            |                  | On                |
| FoV read   |                    |            |                  | On                |
| FoV phase  |                    |            | C14              | On                |
| Slice thickness   2.5 mm   6000 ms   7   |                    |            | Positioning mode | EIV               |
| TR         6000 ms         Sagittal         R >> L           TE 1         2.04 ms         Coronal         A >> P           TE 2         3.05 ms         Transversal         F >> H           Averages         1         Save uncombined         Off           Concatenations         11         Coil Combine Mode         Sum of Squares           Filter         Distortion Corr.(3D)         AutoAlign            Coil elements         C10-22;Ch1-9         Auto Coil Select         Default           Contrast         Shim mode         Standard           Auto Coil Select         Default           Contrast         Shim mode         Standard           Adjust with body coil         Off           Confirm freq. adjustment         Off           Assume Silicone         Off           I Ref. amplitude 1H         450.000 V           Adjust with body coil         Off           I Ref. amplitude 1H         Atto           Adjust volume         I Position         L0.0 A28.0 H10.0           I Position         L0.0 A28.0 H10.0           I Position         I Position         L0.0 A28.0 H10.0           I Position         I Position         L0.0 A28.0 H10.0   | •                  |            |                  |                   |
| TE 1         2.04 ms         Coronal         A >> P           TE 2         3.05 ms         Transversal         F >> H           Averages         1         Save uncombined         Off           Concatenations         11         Coil Combine Mode         Sum of Squares           Filter         Distortion Corr.(3D)         AutoAlign            Coil elements         C10-22;Ch1-9         Auto Coil Select         Default           Contrast           Shim mode         Standard           Adjust with body coil         Off         Off           Averaging mode         Long term         Assume Silicone         Off           Reconstruction         Magnitude         Adjust with body coil         Off           I Ref. amplitude 1H         450.000 V         Adjust ment Tolerance         Adjust volume           I Position         I Position         L0.0 A28.0 H10.0           I Position         I Position         L0.0 A28.0 H10.0           I Position         I Rotation         0.00 deg           I Phase partial Fourier         Off         I Rotation         0.00 deg           I PAT mode         None         I Rotation         28 mm   |                    | _          | _                |                   |
| TE 2   3.05 ms   |                    |            |                  |                   |
| Averages 1 Concatenations 11 Filter Distortion Corr.(3D) Coil elements C10-22;Ch1-9  Contrast  Flip angle 1 Flip angle 2 Averaging mode Reconstruction Measurements  Resolution  Base resolution Phase resolution Phase partial Fourier Interpolation PAT mode  Averages 1 Contrast  Save uncombined Coil Combine Mode Sum of Squares Auto Align Auto Coil Select Default  Shim mode Adjust with body coil Off Confirm freq. adjustment Assume Silicone Off Position Phase resolution Phase resolution Phase partial Fourier Interpolation  None  Save uncombined Off Coil Combine Mode Sum of Squares Auto Align Coff Phase Standard Adjust with body coil Off Confirm freq. adjustment Assume Silicone Off Phase partial Pourier Phase partial Fourier Off Phase partial Fourier Interpolation Off PAT mode None  Save uncombined Off Coil Combine Mode Sum of Squares Auto Align Phate Standard Adjust with body coil Off Confirm freq. adjustment Adjustment Tolerance Adjust with body coil Off Phase partial Phase of the properties of the partial Phase of the partial |                    |            |                  |                   |
| Concatenations 11 Filter Distortion Corr.(3D) Coil elements C10-22;Ch1-9  Contrast  Flip angle 1 50 deg Flip angle 2 6 deg  Averaging mode Reconstruction Measurements 1  Resolution  Resolution  Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode  Coil Combine Mode Sum of Squares  Auto Align Auto Coil Select Default  Shim mode Standard  Adjust with body coil Off Confirm freq. adjustment Off Assume Silicone Off ! Ref. amplitude 1H 450.000 V  Adjust wolume ! Position L0.0 A28.0 H10.0  ! Rotation 0.00 deg ! F >> H 200 mm ! R >> L  Coil Combine Mode Sum of Squares  Auto Adjust with body coil Off Confirm freq. adjustment Off ! Ref. amplitude 1H 450.000 V  Adjust wolume ! Position  |                    |            |                  |                   |
| Filter Distortion Corr.(3D) Coil elements C10-22;Ch1-9  Contrast  Flip angle 1 50 deg Flip angle 2 6 deg  Averaging mode Reconstruction Measurements 1  Resolution  Base resolution Phase partial Fourier Interpolation  PAT mode  Distortion Corr.(3D) Auto Align Auto Coil Select  Default  Shim mode Adjust with body coil Confirm freq. adjustment Off Assume Silicone Pfl   |                    | ·          |                  | _                 |
| Contrast  Flip angle 1 50 deg Flip angle 2 6 deg  Averaging mode Reconstruction Measurements 1  Resolution  Base resolution Phase partial Fourier Interpolation PAT mode  PAT mode  Contrast  Auto Coil Select Default  Adjust with body coil Off  Confirm freq. adjustment Off  Assume Silicone Off  ! Ref. amplitude 1H 450.000 V  Adjust with body coil Off  Adjust with body coil Off  Assume Silicone Off  ! Ref. amplitude 1H 450.000 V  Adjust volume  ! Position L0.0 A28.0 H10.0  ! Orientation Sagittal  ! Rotation 0.00 deg  ! F >> H 200 mm  ! R >> P 200 mm   |                    |            |                  |                   |
| Contrast  Flip angle 1 50 deg Flip angle 2 6 deg  Averaging mode Long term Reconstruction Magnitude Measurements 1  Resolution  Base resolution 100 % Phase partial Fourier Interpolation Off  PAT mode  Shim mode Adjust with body coil Off Confirm freq. adjustment Off Assume Silicone Off Phase resolution Magnitude Adjustment Tolerance Auto Adjustment Tolerance Auto Adjust volume Position L0.0 A28.0 H10.0 Position Sagittal Proposition Off Proposition Off Proposition Off PAT mode  None  Shim mode Standard Adjust with body coil Off Confirm freq. adjustment Off Proposition Off Proposition Off Proposition Off PAT mode  Shim mode Standard Adjust with body coil Off Confirm freq. adjustment Off Proposition Off Proposition Off Proposition Off PAT mode  Shim mode Standard Adjust with body coil Off Proposition Off Pr |                    |            |                  | Default           |
| Flip angle 1 50 deg Flip angle 2 6 deg  Averaging mode Reconstruction Measurements  Resolution  Base resolution Phase partial Fourier Interpolation  PAT mode  Flip angle 1 50 deg Flip angle 2 6 deg  Adjust with body coil Confirm freq. adjustment Assume Silicone ! Ref. amplitude 1H 450.000 V Adjustment Tolerance Adjust volume ! Position Position ! Position Posit | ı                  | - ,        |                  |                   |
| Flip angle 2 6 deg  Averaging mode Reconstruction Measurements  Resolution  Base resolution Phase partial Fourier Interpolation  PAT mode  Averaging mode Reconstruction Magnitude Resolution  Boot Phase partial Fourier PAT mode  Composing  Confirm freq. adjustment Assume Silicone ! Ref. amplitude 1H Aso.000 V Adjustment Tolerance Adjust volume ! Position ! Position ! Porientation ! Rotation ! Rotation ! Rotation ! Roy Domm ! Roy Partial Fourier PAT mode  Composing  |                    | 50 dog     |                  |                   |
| Averaging mode Reconstruction Magnitude Measurements  Resolution  Resolution  Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode  Averaging mode Long term Page in a specific partial form of the page in the  |                    | 9          |                  |                   |
| Averaging mode Reconstruction Magnitude Measurements  Resolution  Resolution  Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode  Long term Magnitude Adjust wellume PRef. amplitude 1H Adjustment Tolerance Adjust volume Plosition Position Positio | riip arigie ∠      | o ueg      |                  |                   |
| Reconstruction Magnitude Adjustment Tolerance Adjust volume  Resolution ! Position L0.0 A28.0 H10.0  Base resolution 80 ! Orientation Sagittal Phase resolution 100 % ! Rotation 0.00 deg Phase partial Fourier Off ! F >> H 200 mm Interpolation Off ! A >> P 200 mm  PAT mode None    PAT mode None   Composing  | Averaging mode     | Long term  |                  | _                 |
| Measurements         1         Adjustment Tolerance Adjust volume           Resolution         ! Position         L0.0 A28.0 H10.0           Base resolution         80         ! Orientation         Sagittal           Phase resolution         100 %         ! Rotation         0.00 deg           Phase partial Fourier         Off         ! F >> H         200 mm           Interpolation         Off         ! R >> P         200 mm           PAT mode         None         ! R >> L         28 mm   | 5 5                | •          |                  |                   |
| Resolution         ! Position         L0.0 A28.0 H10.0           Base resolution         80         ! Orientation         Sagittal           Phase resolution         100 %         ! Rotation         0.00 deg           Phase partial Fourier         Off         ! F >> H         200 mm           Interpolation         Off         ! A >> P         200 mm           PAT mode         None         Composing  | Measurements       | 1          |                  | Auto              |
| Sagittal   Phase resolution   100 %   Rotation   200 mm  | Pacalution         |            |                  | I 0 0 A28 0 H10 0 |
| Phase resolution         100 %         ! Rotation         0.00 deg           Phase partial Fourier         Off         ! F >> H         200 mm           Interpolation         Off         ! A >> P         200 mm           PAT mode         None         ! R >> L         28 mm  |                    | 80         |                  |                   |
| Phase partial Fourier         Off         ! F >> H         200 mm           Interpolation         Off         ! A >> P         200 mm           PAT mode         None         ! R >> L         28 mm   |                    |            |                  |                   |
| Interpolation  |                    |            |                  | •                 |
| ! R >> L   |                    |            |                  |                   |
| PAT mode None Composing  |                    | OII        |                  |                   |
| Live ve Filter   | PAT mode           | None       | ļ                |                   |
|  | Image Filter       | Off        |                  |                   |
| Distortion Corr. On Sequence   | Distortion Corr.   | On         |                  |                   |
| Mode 3D Introduction On  |                    | 3D         |                  |                   |
| Unfiltered images On Dimension 2D  |                    |            |                  |                   |
| Prescan Normalize Off Asymmetric echo Off  |                    |            |                  |                   |
| Normalize Off Contrasts 2  |                    |            |                  |                   |
| B1 filter Off Bandwidth 1010 Hz/Px   |                    |            |                  |                   |
| Raw filter Off Echo spacing 4.8 ms   |                    |            | Echo spacing     | 4.8 ms            |
| Elliptical filter Off Turbo factor 80  | Elliptical filter  | Off        | Turbo factor     | 80                |
| Geometry RF pulse type Fast  | Geometry           |            |                  |                   |
| Multi-slice mode Sequential Gradient mode Fast   |                    | Sequential |                  |                   |
| Series Ascending Excitation Slice-sel.   |                    |            |                  |                   |
| Flip angle mode Constant   |                    |            |                  |                   |
| Table position   |                    |            |                  | _                 |
| Table position 0 mm  | l able position    | υ mm       |                  |                   |

| Sample T1             | 2000 ms |
|-----------------------|---------|
| Preparation Scans     | 2       |
| Preparation Loops     | 0       |
| RF-Duration           | 800 us  |
| Prep RF-Duration      | 400 us  |
| TimeBandwidthProduct  | 3.2     |
| Timing Schme          | STE*    |
| Mixing Time           | 1000 us |
| Calculate FlipMap     | On      |
| Use IcePAT            | Off     |
| Var FA                | Off     |
| FFT Scale             | 10.0    |
| dSpoilFactor          | 2.0     |
| Scale risetime        | 1.20    |
| TX/RX Nucleus         | 1H      |
| TX/RX delta frequency | 0 Hz    |
| TX Nucleus            | None    |
| TX delta frequency    | 0 Hz    |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\CoilQA\_sag\_HF\_FOV384\_1p5x1p5x2p0
TA: 3:27 Voxel size: 1.5×1.5×2.0 mm Rel. SNR: 1.00 USER: NoiseMeasSensitivityMap

|                                  |                   | Table position           | Н                   |
|----------------------------------|-------------------|--------------------------|---------------------|
| Properties                       |                   | Table position           | П<br>0 mm           |
| Prio Recon                       | Off               | Inline Composing         | Off                 |
| Before measurement               |                   |                          |                     |
| After measurement Load to viewer | On                | System C15               | On                  |
| Inline movie                     | Off               | C15                      | On                  |
| Auto store images                | On                | C17                      | On                  |
| Load to stamp segments           | Off               | C18                      | On                  |
| Load images to graphic           | Off               | C19                      | On                  |
| segments                         |                   | C20                      | On                  |
| Auto open inline display         | Off               | C21                      | On                  |
| Start measurement without        | On                | C22                      | On                  |
| further preparation              |                   | Ch1                      | On                  |
| Wait for user to start           | Off               | Ch2                      | On                  |
| Start measurements               | single            | Ch3                      | On                  |
| Routine                          |                   | Ch4                      | On                  |
| Slice group 1                    |                   | Ch5<br>Ch6               | On<br>On            |
| Slices                           | 13                | Cho                      | On<br>On            |
| Dist. factor                     | 20 %              | Ch8                      | On<br>On            |
| Position                         | L0.0 A28.0 H10.0  | Ch9                      | On                  |
| Orientation                      | Sagittal          | C10                      | On                  |
| Phase enc. dir.                  | H >> F            | C11                      | On                  |
| Rotation                         | 90.00 deg         | C12                      | On                  |
| Phase oversampling               | 0 %               | C13                      | On                  |
| FoV read                         | 384 mm            | C14                      | On                  |
| FoV phase<br>Slice thickness     | 100.0 %<br>2.0 mm | Desitioning mode         | FIX                 |
| TR                               | 30 ms             | Positioning mode MSMA    | S - C - T           |
| TE                               | 6.0 ms            | Sagittal                 | 8 - C - 1<br>R >> L |
| Averages                         | 2                 | Coronal                  | A >> P              |
| Concatenations                   | 13                | Transversal              | F >> H              |
| Filter                           | None              | Save uncombined          | Off                 |
| Coil elements                    | C10-22;Ch1-9      | Coil Combine Mode        | Adaptive Combine    |
| Contrast                         | •                 | AutoAlign                |                     |
| TD                               | 0 ms              | Auto Coil Select         | Default             |
| MTC                              | Off               | Shim mode                | Standard            |
| Flip angle                       | 12 deg            | Adjust with body coil    | Off                 |
| Fat suppr.                       | None              | Confirm freq. adjustment | Off                 |
| Water suppr.                     | None              | Assume Silicone          | Off                 |
|                                  |                   | ? Ref. amplitude 1H      | 0.000 V             |
| Averaging mode                   | Short term        | Adjustment Tolerance     | Auto                |
| Reconstruction Measurements      | Magnitude<br>1    | Adjust volume            |                     |
| Multiple series                  | Off               | ! Position               | L2.6 A16.9 F13.6    |
|                                  | On the second     | ! Orientation            | S > T-0.9           |
| Resolution                       | 0.50              | ! Rotation               | 81.15 deg           |
| Base resolution                  | 256               | ! A >> P                 | 48 mm               |
| Phase resolution                 | 100 %             | !F>> H<br>!R>> L         | 194 mm              |
| Phase partial Fourier            | Off               |                          | 26 mm               |
| Interpolation                    | Off               | Physio                   |                     |
| Image Filter                     | Off               | 1st Signal/Mode          | None                |
| Distortion Corr.                 | Off               | Inline                   |                     |
| Prescan Normalize                | Off               | Subtract                 | Off                 |
| Normalize                        | Off               | Std-Dev-Sag              | Off                 |
| B1 filter                        | Off               | Std-Dev-Cor              | Off                 |
| Raw filter                       | Off               | Std-Dev-Tra              | Off                 |
| Elliptical filter                | Off               | Std-Dev-Time             | Off                 |
| Geometry                         |                   | MIP-Sag                  | Off                 |
| Multi-slice mode                 | Sequential        | MIP-Cor                  | Off                 |
| Series                           |                   | I MID Tea                | Off                 |
|                                  | Ascending         | MIP-Tra                  |                     |
| Special sat.                     |                   | MIP-Time                 | Off                 |
| Special sat.                     | Ascending None    |                          |                     |

| Introduction Dimension Contrasts Bandwidth   | Off<br>2D<br>1<br>200 Hz/Px                                |
|--|--|
| Gradient mode RF spoiling  | Fast<br>On   |
| ICE program number of noise lines Optimal SNR GFactor Condition number Rx coil diode switching coil channel reordering | CoilArrayUtil<br>384 lines<br>On<br>On<br>Off<br>On<br>Off |
| TX/RX Nucleus TX/RX delta frequency TX Nucleus TX delta frequency  | 1H<br>0 Hz<br>None<br>0 Hz                                 |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\CoilQA\_sag\_HF\_FOV192\_1p5x1p5x2p0
TA: 1:44 Voxel size: 1.5×1.5×2.0 mm Rel. SNR: 1.00 USER: NoiseMeasSensitivityMap

| Properties                |                         | Table position             | H                |
|---------------------------|-------------------------|----------------------------|------------------|
| Prio Recon                | Off                     | Table position             | 0 mm             |
| Before measurement        | <b>.</b>                | Inline Composing           | Off              |
| After measurement         |                         | System                     |                  |
| Load to viewer            | On                      | C15                        | On               |
| Inline movie              | Off                     | C16                        | On               |
| Auto store images         | On                      | C17                        | On               |
| Load to stamp segments    | Off                     | C18                        | On               |
| Load images to graphic    | Off                     | C19                        | On               |
| segments                  |                         | C20                        | On               |
| Auto open inline display  | Off                     | C21                        | On               |
| Start measurement without | On                      | C22                        | On               |
| further preparation       |                         | Ch1                        | On               |
| Wait for user to start    | Off                     | Ch2                        | On               |
| Start measurements        | single                  | Ch3                        | On               |
| Douting                   | -                       | Ch4                        | On               |
| Routine                   |                         | Ch5                        | On               |
| Slice group 1             | 40                      | Ch6                        | On               |
| Slices                    | 13                      | Ch7                        | On               |
| Dist. factor              | 20 %                    | Ch8                        | On               |
| Position                  | L0.0 A28.0 H10.0        | Ch9                        | On               |
| Orientation               | Sagittal                | C10                        | On               |
| Phase enc. dir.           | H >> F                  | C11                        | On               |
| Rotation                  | 90.00 deg               | C12                        | On               |
| Phase oversampling        | 0 %                     | C13                        | On               |
| FoV read                  | 192 mm                  | C14                        | On               |
| FoV phase                 | 100.0 %                 |                            |                  |
| Slice thickness           | 2.0 mm                  | Positioning mode           | FIX              |
| TR                        | 30 ms                   | MSMA                       | S - C - T        |
| TE                        | 6.0 ms                  | Sagittal                   | R >> L           |
| Averages                  | 2                       | Coronal                    | A >> P           |
| Concatenations            | 13                      | Transversal                | F >> H           |
| Filter                    | None                    | Save uncombined            | Off              |
| Coil elements             | C10-22;Ch1-9            | Coil Combine Mode          | Adaptive Combine |
| Contrast                  |                         | AutoAlign                  | <br>D ( );       |
| TD                        | 0 ms                    | Auto Coil Select           | Default          |
| MTC                       | Off                     | Shim mode                  | Standard         |
| Flip angle                | 12 deg                  | Adjust with body coil      | Off              |
| Fat suppr.                | None                    | Confirm freq. adjustment   | Off              |
| Water suppr.              | None                    | Assume Silicone            | Off              |
|                           |                         | ? Ref. amplitude 1H        | 0.000 V          |
| Averaging mode            | Short term              | Adjustment Tolerance       | Auto             |
| Reconstruction            | Magnitude               | Adjust volume              |                  |
| Measurements              | 1                       | ! Position                 | L2.6 A16.9 F13.6 |
| Multiple series           | Off                     | ! Orientation              | S > T-0.9        |
| Resolution                |                         | ! Rotation                 | 81.15 deg        |
| Base resolution           | 128                     | ! A >> P                   | 48 mm            |
| Phase resolution          | 100 %                   | ! F >> H                   | 194 mm           |
| Phase partial Fourier     | Off                     | ! R >> L                   | 26 mm            |
| Interpolation             | Off                     | ļ                          | <del></del>      |
|                           |                         | Physio                     |                  |
| Image Filter              | Off                     | 1st Signal/Mode            | None             |
| Distortion Corr.          | Off                     | Inline                     |                  |
| Prescan Normalize         | Off                     | Subtract                   | Off              |
| Normalize                 | Off                     | Std-Dev-Sag                | Off              |
| B1 filter                 | Off                     | Std-Dev-Gag<br>Std-Dev-Cor | Off              |
| Raw filter                | Off                     | Std-Dev-Col                | Off              |
| Elliptical filter         | Off                     | Std-Dev-Tra                | Off              |
| Geometry                  |                         | MIP-Sag                    | Off              |
| Geometry Multi-clico mode | Seguential              | MIP-Cor                    | Off              |
| Multi-slice mode          | Sequential<br>Ascending | MIP-Tra                    | Off              |
| Series                    | Ascending               |                            | Off              |
| Special sat.              | None                    | Save original images       | On               |
| [ <del>-</del>            |                         |                            | VII              |
|                           |                         |                            |                  |

| Introduction Dimension Contrasts Bandwidth   | Off<br>2D<br>1<br>200 Hz/Px                                |
|--|--|
| Gradient mode RF spoiling  | Fast<br>On   |
| ICE program number of noise lines Optimal SNR GFactor Condition number Rx coil diode switching coil channel reordering | CoilArrayUtil<br>384 lines<br>On<br>On<br>Off<br>On<br>Off |
| TX/RX Nucleus TX/RX delta frequency TX Nucleus TX delta frequency  | 1H<br>0 Hz<br>None<br>0 Hz                                 |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\CoilQA\_axi\_RL\_FOV192\_0p5x0p5x5p0 TA: 2:53 Voxel size: 0.5×0.5×5.0 mm Rel. SNR: 1.00 USER: NoiseMeasSensitivityMap

|                                      |                         | Table position                 | Н                             |
|--------------------------------------|-------------------------|--------------------------------|-------------------------------|
| Properties                           |                         | Table position                 | 0 mm                          |
| Prio Recon                           | Off                     | Inline Composing               | Off                           |
| Before measurement                   |                         |                                |                               |
| After measurement Load to viewer     | On                      | System C15                     | On                            |
| Inline movie                         | Off                     | C16                            | On                            |
| Auto store images                    | On                      | C17                            | On                            |
| Load to stamp segments               | Off                     | C18                            | On                            |
| Load images to graphic               | Off                     | C19                            | On                            |
| segments                             |                         | C20                            | On                            |
| Auto open inline display             | Off                     | C21                            | On                            |
| Start measurement without            | On                      | C22                            | On                            |
| further preparation                  |                         | Ch1                            | On                            |
| Wait for user to start               | Off                     | Ch2                            | On                            |
| Start measurements                   | single                  | Ch3                            | On                            |
| Routine                              |                         | Ch4                            | On                            |
| Slice group 1                        | _                       | Ch5                            | On                            |
| Slices                               | 7                       | Ch6                            | On                            |
| Dist. factor                         | 300 %                   | Ch7                            | On                            |
| Position                             | L0.0 A28.0 H10.0        | Ch8                            | On                            |
| Orientation                          | Transversal             | Ch9                            | On                            |
| Phase enc. dir.                      | R >> L                  | C10                            | On<br>On                      |
| Rotation                             | 90.00 deg               | C11<br>C12                     | On<br>On                      |
| Phase oversampling                   | 0 %                     | C12                            | On                            |
| FoV read                             | 192 mm                  | C14                            | On                            |
| FoV phase                            | 100.0 %                 |                                |                               |
| Slice thickness                      | 5.0 mm                  | Positioning mode               | FIX                           |
| TR                                   | 30 ms                   | MSMA                           | S - C - T                     |
| TE                                   | 6.0 ms                  | Sagittal                       | R >> L                        |
| Averages                             | 2                       | Coronal                        | A >> P                        |
| Concatenations                       | 7                       | Transversal                    | F >> H                        |
| Filter                               | None                    | Save uncombined                | Off                           |
| Coil elements                        | C10-22;Ch1-9            | Coil Combine Mode              | Adaptive Combine              |
| Contrast                             |                         | AutoAlign<br>Auto Coil Select  | Default                       |
| TD                                   | 0 ms                    |                                |                               |
| MTC                                  | Off                     | Shim mode                      | Standard                      |
| Flip angle                           | 12 deg                  | Adjust with body coil          | Off                           |
| Fat suppr.                           | None                    | Confirm freq. adjustment       | Off                           |
| Water suppr.                         | None                    | Assume Silicone                | Off                           |
| Averaging mode                       | Short term              | ? Ref. amplitude 1H            | 0.000 V                       |
| Reconstruction                       | Magnitude               | Adjustment Tolerance           | Auto                          |
| Measurements                         | 1                       | Adjust volume                  | 1.2.6. A16.0. E12.6           |
| Multiple series                      | Off                     | ! Position<br>! Orientation    | L2.6 A16.9 F13.6<br>S > T-0.9 |
| Resolution                           |                         | ! Rotation                     | 81.15 deg                     |
| Base resolution                      | 384                     | ! A >> P                       | 48 mm                         |
| Phase resolution                     | 100 %                   | !F>> H                         | 194 mm                        |
| Phase partial Fourier                | Off                     | ! R >> L                       | 26 mm                         |
| Interpolation                        | Off                     | 1                              |                               |
|                                      |                         | Physio                         | None                          |
| Image Filter                         | Off                     | 1st Signal/Mode                | None                          |
| Distortion Corr.                     | Off                     | Inline                         |                               |
| Prescan Normalize                    | Off                     | Subtract                       | Off                           |
| Normalize<br>B1 filter               | Off<br>Off              | Std-Dev-Sag                    | Off                           |
| Raw filter                           | Off                     | Std-Dev-Cor                    | Off                           |
| Elliptical filter                    | Off                     | Std-Dev-Tra                    | Off                           |
| 1                                    | <b>U</b> II             | Std-Dev-Time                   | Off                           |
|                                      |                         | MIP-Sag                        | Off                           |
| Geometry                             |                         | •                              |                               |
| Multi-slice mode                     | Sequential              | MIP-Cor                        | Off                           |
|                                      | Sequential<br>Ascending | MIP-Cor<br>MIP-Tra             | Off<br>Off                    |
| Multi-slice mode                     |                         | MIP-Cor<br>MIP-Tra<br>MIP-Time | Off<br>Off<br>Off             |
| Multi-slice mode Series Special sat. | Ascending               | MIP-Cor<br>MIP-Tra             | Off<br>Off                    |

| Introduction Dimension Contrasts Bandwidth   | Off<br>2D<br>1<br>200 Hz/Px                                |
|--|--|
| Gradient mode<br>RF spoiling   | Fast<br>On   |
| ICE program number of noise lines Optimal SNR GFactor Condition number Rx coil diode switching coil channel reordering | CoilArrayUtil<br>384 lines<br>On<br>On<br>Off<br>On<br>Off |
| TX/RX Nucleus TX/RX delta frequency TX Nucleus TX delta frequency  | 1H<br>0 Hz<br>None<br>0 Hz                                 |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\gre\_2D\_2mmIso\_RefV450\_uncombined TA: 1:21 PAT: Off Voxel size: 2.0×2.0×2.0 mm Rel. SNR: 1.00 SIEMENS: gre

| Properties                            |                      | Multi-slice mode Series                        | Interleaved<br>Interleaved |
|---------------------------------------|----------------------|--|----------------------------|
| Prio Recon                            | Off                  |  | inteneaveu                 |
| Before measurement                    |                      | Saturation mode                                | Standard                   |
| After measurement                     |                      | Special sat.                                   | None                       |
| Load to viewer                        | On                   |  |                            |
| Inline movie                          | Off                  | Table position                                 | Н                          |
| Auto store images                     | On                   | Table position                                 | 0 mm                       |
| Load to stamp segments                | Off                  | Inline Composing                               | Off                        |
| Load images to graphic                | Off                  | Tim CT mode                                    | Off                        |
| segments                              |                      | Tilli CT mode                                  | Oli                        |
| Auto open inline display              | Off                  | System   |                            |
| Start measurement without             | On                   | C15  | On                         |
| further preparation                   | •                    | C16  | On                         |
| Wait for user to start                | Off                  | C17  | On                         |
| Start measurements                    | single               | C18  | On                         |
| Routine                               |                      | C19  | On                         |
| Slice group 1                         |                      | - C20  | On                         |
| Slices                                | 44                   | C21  | On                         |
| Dist. factor                          | 0 %                  | C22  | On                         |
| Position                              | L0.0 A28.0 H10.0     | Ch1  | On                         |
| Orientation                           | Sagittal             | Ch2  | On                         |
| Phase enc. dir.                       | A >> P               | Ch3  | On                         |
| Rotation                              | 0.00 deg             | Ch4  | On                         |
| Phase oversampling                    | 0 %                  | Ch5  | On                         |
| FoV read                              | 384 mm               | Ch6  | On                         |
| FoV phase                             | 75.0 %               | Ch7  | On                         |
| Slice thickness                       | 2.0 mm               | Ch8  | On                         |
| TR                                    | 550 ms               | Ch9  | On                         |
| TE                                    | 3.87 ms              | C10  | On                         |
| Averages                              | 1                    | C11  | On                         |
| Concatenations                        | 1                    | C12  | On                         |
| Filter                                | Distortion Corr.(3D) | C13  | On                         |
| Coil elements                         | C10-22;Ch1-9         | C14  | On                         |
| Contrast                              |                      | Positioning mode                               | FIX                        |
| MTC                                   | Off                  | - MSMA   | S - C - T                  |
| Magn. preparation                     | None                 | Sagittal                                       | R >> L                     |
| Flip angle                            | 30 deg               | Coronal  | A >> P                     |
| Fat suppr.                            | None                 | Transversal                                    | F >> H                     |
| Water suppr.                          | None                 | Save uncombined                                | On                         |
| SWI                                   | Off                  | Coil Combine Mode                              | Sum of Squares             |
|                                       |                      | AutoAlign                                      |                            |
| Averaging mode                        | Short term           | Auto Coil Select                               | Default                    |
| Reconstruction                        | Magn./Phase          | Chim made                                      | Ctandard                   |
| Measurements                          | 1                    | Shim mode                                      | Standard<br>Off            |
| Multiple series                       | Each measurement     | Adjust with body coil Confirm freg. adjustment | _                          |
| Resolution                            |                      | Assume Silicone                                | Off<br>Off                 |
| Base resolution                       | 192                  | - 1  |                            |
| Phase resolution                      | 192                  | ? Ref. amplitude 1H<br>Adjustment Tolerance    | 0.000 V<br>Auto            |
| Phase partial Fourier                 | Off                  | Adjust volume                                  | Auto                       |
| Interpolation                         | Off                  | Position                                       | L0.0 A28.0 H10.0           |
|                                       |                      | Orientation                                    | Sagittal                   |
| PAT mode                              | None                 | Rotation                                       | 0.00 deg                   |
| Image Filter                          | Off                  | F >> H   | 384 mm                     |
| Distortion Corr.                      | On                   | A >> P   | 288 mm                     |
| Mode                                  | 3D                   | R >> L   | 88 mm                      |
| Unfiltered images                     | On                   | ļ  | OO IIIIII                  |
| Prescan Normalize                     | Off                  | Physio   |                            |
| Normalize                             | Off                  | 1st Signal/Mode                                | None                       |
| B1 filter                             | Off                  | Segments                                       | 1                          |
| וווונכו                               |                      |  |                            |
| Raw filter                            | Off                  | Tagging  | None                       |
| Raw filter<br>Flliptical filter       | Off<br>Off           | Tagging  Dark blood                            | None<br>Off                |
| Raw filter Elliptical filter Geometry | Off<br>Off           | Tagging  Dark blood                            | None<br>Off                |

#### Inline

| Subtract Liver registration Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time | Off |
|---|---|
| Save original images  Wash - In  Wash - Out  TTP  PEI  MIP - time  MapIt  Contrasts                           | On Off Off Off Off Off Off Off Off      |

| Introduction        | On         |
|---------------------|------------|
| Dimension           | 2D         |
| Phase stabilisation | On         |
| Asymmetric echo     | Off        |
| Bandwidth           | 320 Hz/Px  |
| Flow comp.          | No         |
| RF pulse type       | Normal     |
| Gradient mode       | Fast       |
| Excitation          | Slice-sel. |
| RF spoiling         | On         |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\gre\_2D\_2mmIso\_RefV450\_uncombined\_ TA: 1:21 PAT: Off Voxel size: 2.0×2.0×2.0 mm Rel. SNR: 1.00 SIEMENS: gre

| Properties                      |                  | Saturation mode                 | Standard           |
|---------------------------------|------------------|---------------------------------|--------------------|
| Prio Recon                      | Off              | Special sat.                    | None               |
| Before measurement              |                  |                                 |                    |
| After measurement               |                  | Table position                  | Н                  |
| Load to viewer                  | On               | Table position                  | 0 mm               |
| Inline movie                    | Off              | Inline Composing                | Off                |
| Auto store images               | On               | T: OT                           | 0"                 |
| Load to stamp segments          | Off              | Tim CT mode                     | Off                |
| Load images to graphic          | Off              | System                          |                    |
| segments                        |                  | C15                             | On                 |
| Auto open inline display        | Off              | C16                             | On                 |
| Start measurement without       | On               | C17                             | On                 |
| further preparation             |                  | C18                             | On                 |
| Wait for user to start          | Off              | C19                             | On                 |
| Start measurements              | single           | C20                             | On                 |
|                                 | Single           | C21                             | _                  |
| Routine                         |                  |                                 | On                 |
| Slice group 1                   |                  | — C22                           | On                 |
| Slices                          | 44               | Ch1                             | On                 |
| Dist. factor                    | 0 %              | Ch2                             | On                 |
| Position                        | L0.0 A28.0 H10.0 | Ch3                             | On                 |
| Orientation                     | Sagittal         | Ch4                             | On                 |
| Phase enc. dir.                 | A >> P           | Ch5                             | On                 |
| Rotation                        | 0.00 deg         | Ch6                             | On                 |
| Phase oversampling              | 0.00 deg         | Ch7                             | On                 |
| FoV read                        | 384 mm           | Ch8                             | On                 |
|                                 |                  | Ch9                             | On                 |
| FoV phase                       | 75.0 %           | C10                             | On                 |
| Slice thickness                 | 2.0 mm           | C11                             | On                 |
| TR                              | 550 ms           | C12                             | On                 |
| TE                              | 3.87 ms          | C13                             | On                 |
| Averages                        | 1                | C14                             | On                 |
| Concatenations                  | 1                |                                 | OII                |
| Filter                          | None             | Positioning mode                | FIX                |
| Coil elements                   | C10-22;Ch1-9     | MSMA                            | S - C - T          |
| Contract                        |                  | Sagittal                        | R >> L             |
| Contrast                        | 0"               | Coronal                         | A >> P             |
| MTC                             | Off              | Transversal                     | F >> H             |
| Magn. preparation               | None             | Save uncombined                 | On                 |
| Flip angle                      | 30 deg           | Coil Combine Mode               | Sum of Squares     |
| Fat suppr.                      | None             |                                 |                    |
| Water suppr.                    | None             | AutoAlign                       |                    |
| SWI                             | Off              | Auto Coil Select                | Default            |
| Averaging mode                  | Short term       | Shim mode                       | Standard           |
| 0 0                             |                  | Adjust with body coil           | Off                |
| Reconstruction                  | Magn./Phase      | Confirm freq. adjustment        | Off                |
| Measurements                    | 1 .              | Assume Silicone                 | Off                |
| Multiple series                 | Each measurement | ? Ref. amplitude 1H             | 0.000 V            |
| Resolution                      |                  | Adjustment Tolerance            | Auto               |
| Base resolution                 | 192              | Adjust volume                   | Auto               |
| Phase resolution                | 100 %            |                                 | 1.0.0.400.0.1140.0 |
|                                 |                  | ! Position                      | L0.0 A28.0 H10.0   |
| Phase partial Fourier           | Off<br>Off       | ! Orientation                   | Sagittal           |
| Interpolation                   | Off              | ! Rotation                      | 0.00 deg           |
| PAT mode                        | None             | ···· !F >> H                    | 384 mm             |
|                                 |                  | ! A >> P                        | 288 mm             |
| Image Filter                    | Off              | ! R >> L                        | 88 mm              |
| Distortion Corr.                | Off              | Dhysis                          |                    |
| Prescan Normalize               | Off              | Physio                          | N.                 |
| Normalize                       | Off              | 1st Signal/Mode                 | None               |
| B1 filter                       | Off              | Segments                        | 1                  |
|                                 | Off              | Tagging                         | None               |
| Raw filter                      | OII              | Tagging                         | None               |
| Raw filter                      |                  | David black                     | O#                 |
| Raw filter<br>Elliptical filter | Off              | Dark blood                      | Off                |
|                                 |                  |                                 |                    |
| Elliptical filter               |                  | Dark blood Resp. control Inline | Off                |

|            | Subtract   | Off                                      |
|------------|--|--|
|            | Liver registration   | Off                                      |
|            | Std-Dev-Sag  | Off                                      |
|            | Std-Dev-Cor  | Off                                      |
|            | Std-Dev-Tra  | Off                                      |
|            | Std-Dev-Time   | Off                                      |
|            | MIP-Sag  | Off                                      |
|            | MIP-Cor  | Off                                      |
|            | MIP-Tra  | Off                                      |
|            | MIP-Time   | Off                                      |
|            | Save original images   | On                                       |
|            | Wash - In  | Off                                      |
|            | Wash - Out   | Off                                      |
|            | TTP  | Off                                      |
|            | PEI  | Off                                      |
|            | MIP - time   | Off                                      |
|            |  |  |
|            |  |  |
|            | Maplt  | None                                     |
|            | MapIt<br>Contrasts   | None<br>1                                |
| S          |  |  |
| :::<br>  S | Contrasts  |  |
| S          | Contrasts equence Introduction Dimension   | 1  |
| S          | Contrasts equence Introduction Dimension Phase stabilisation   | 1<br>On                                  |
| S          | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo   | On 2D On Off                             |
| S          | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth   | On<br>2D<br>On<br>Off<br>320 Hz/Px       |
| S          | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo   | On 2D On Off                             |
| S S        | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth Flow comp.                              | On<br>2D<br>On<br>Off<br>320 Hz/Px       |
| S S        | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth   | On<br>2D<br>On<br>Off<br>320 Hz/Px<br>No |
| S S        | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth Flow comp.  RF pulse type               | On<br>2D<br>On<br>Off<br>320 Hz/Px<br>No |
| S          | Contrasts equence Introduction Dimension Phase stabilisation Asymmetric echo Bandwidth Flow comp.  RF pulse type Gradient mode | On 2D On Off 320 Hz/Px No Normal Fast    |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\preSatTFL\_sag\_2p5mm\_FOV320\_RefV4

| TA: 1:20 PAT: Of                        | f Voxel size: 2.5×2.5×2.5 mm | Rel. SNR: 1.00 USE       | R: tfl_WIP543_B1map |
|---|------------------------------|--------------------------|---------------------|
| Properties                              |                              | B1 filter                | Off                 |
| Prio Recon                              | Off                          | Raw filter               | Off                 |
| Before measurement                      |                              | Elliptical filter        | Off                 |
| After measurement                       |                              | Geometry                 |                     |
| Load to viewer                          | On                           | Multi-slice mode         | Interleaved         |
| Inline movie                            | Off                          | Series                   | Interleaved         |
| Auto store images                       | On                           |                          |                     |
| Load to stamp segments                  | Off                          | Table position           | Н                   |
| Load images to graphic                  | Off                          | Table position           | 0 mm                |
| segments                                | 2"                           | Inline Composing         | Off                 |
| Auto open inline display                | Off                          | System                   |                     |
| Start measurement without               | On                           | C15                      | On                  |
| further preparation                     | 0"                           | C16                      | On                  |
| Wait for user to start                  | Off                          | C17                      | On                  |
| Start measurements                      | single                       | C18                      | On                  |
| Routine                                 |                              | C19                      | On                  |
| Slice group 1                           |                              | C20                      | On                  |
| Slices                                  | 28                           | C21                      | On                  |
| Dist. factor                            | 100 %                        | C22                      | On                  |
| Position                                | L0.0 A32.0 H0.0              | Ch1                      | On                  |
| Orientation                             | Sagittal                     | Ch2                      | On                  |
| Phase enc. dir.                         | A >> P                       | Ch3                      | On                  |
| Rotation                                | 0.00 deg                     | Ch4                      | On                  |
| Slice group 2                           | ŭ                            | Ch5                      | On                  |
| Slices                                  | 28                           | Ch6                      | On                  |
| Dist. factor                            | 100 %                        | Ch7                      | On                  |
| Position                                | L2.5 A32.0 H0.0              | Ch8                      | On                  |
| Orientation                             | Sagittal                     | Ch9                      | On                  |
| Phase enc. dir.                         | A >> P                       | C10                      | On                  |
| Rotation                                | 0.00 deg                     | C11                      | On                  |
| Phase oversampling                      | 0 %                          | C12                      | On                  |
| FoV read                                | 320 mm                       | C13                      | On                  |
| FoV phase                               | 68.8 %                       | C14                      | On                  |
| Slice thickness                         | 2.5 mm                       |                          |                     |
| TR                                      | 20000 ms                     | Positioning mode         | FIX                 |
| TE                                      | 2.84 ms                      | MSMA                     | S - C - T           |
| Averages                                | 1                            | Sagittal                 | R >> L              |
| Concatenations                          | 2                            | Coronal                  | A >> P              |
| Filter                                  | None                         | Transversal              | F >> H              |
| Coil elements                           | C10-22;Ch1-9                 | Save uncombined          | Off                 |
| Contrast                                |                              | Coil Combine Mode        | Sum of Squares      |
| TD                                      | 0 ms                         | AutoAlign                | Default             |
| Magn. preparation                       | None                         | Auto Coil Select         | Default             |
| Flip angle                              | 10 deg                       | Shim mode                | Standard            |
| Fat suppr.                              | None                         | Adjust with body coil    | Off                 |
| Water suppr.                            | None                         | Confirm freq. adjustment | Off                 |
|   |                              | Assume Silicone          | Off                 |
| Averaging mode                          | Long term                    | ! Ref. amplitude 1H      | 450.000 V           |
| Reconstruction                          | Magnitude                    | Adjustment Tolerance     | Auto                |
| Measurements                            | 1                            | Adjust volume            |                     |
| Multiple series                         | Each measurement             | Position                 | L1.3 A32.0 H0.0     |
| Resolution                              |                              | Orientation              | Sagittal            |
| Base resolution                         | 128                          | Rotation                 | 0.00 deg            |
| Phase resolution                        | 100 %                        | F >> H                   | 320 mm              |
| Phase resolution  Phase partial Fourier | Off                          | A >> P                   | 220 mm              |
| Interpolation                           | Off                          | R >> L                   | 140 mm              |
|   |                              | Physio                   |                     |
| PAT mode                                | None                         | 1st Signal/Mode          | None                |
| Image Filter                            | Off                          |                          | Ο#                  |
| Distortion Corr.                        | Off                          | Dark blood               | Off                 |
| Prescan Normalize                       | Off                          | Resp. control            | Off                 |
| Normalize                               | Off                          | •                        |                     |
| •                                       |                              | Inline<br>5/+            |                     |

| Subtract             | Off |
|----------------------|-----|
| Std-Dev-Sag          | Off |
| Std-Dev-Cor          | Off |
| Std-Dev-Tra          | Off |
| Std-Dev-Time         | Off |
| MIP-Sag              | Off |
| MIP-Cor              | Off |
| MIP-Tra              | Off |
| MIP-Time             | Off |
| Save original images | On  |

| • | ocquence            |            |
|---|---------------------|------------|
|   | Introduction        | Off        |
|   | Dimension           | 2D         |
|   | Reordering          | Centric    |
|   | Asymmetric echo     | Allowed    |
|   | Bandwidth           | 400 Hz/Px  |
|   | Flow comp.          | No         |
|   | Echo spacing        | 5.7 ms     |
| - | EPI factor          | 1          |
|   | RF pulse type       | Low SAR    |
|   | Gradient mode       | Normal     |
|   | Excitation          | Slice-sel. |
|   | RF spoiling         | On         |
| - | Prep Pulse          | SINC       |
|   | Sat Flip Angle      | 60 deg     |
|   | Sat Thick           | 5.0 mm     |
|   | RF Duration         | 2000 us    |
|   | no ref scans        | 1 #        |
|   | TX array B1 mapping | Off        |
| 1 | in and brinapping   | <b>U</b>   |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\t1\_mp2r\_wip944\_3D\_cor\_0p7iso\_p2\_Re

| roperties                 |                       | Distortion Corr.                 | On                       |
|---------------------------|-----------------------|----------------------------------|--------------------------|
| Prio Recon                | Off                   | Mode                             | 3D                       |
| Before measurement        | Oil                   | Unfiltered images                | On                       |
|                           |                       | Prescan Normalize                | Off                      |
| After measurement         | On                    | Normalize                        | Off                      |
| Load to viewer            | On<br>Off             | B1 filter                        | Off                      |
| Inline movie              |                       | Raw filter                       | Off                      |
| Auto store images         | On<br>O#              | Elliptical filter                | Off                      |
| Load to stamp segments    | Off<br>Off            | Coomotry                         |                          |
| Load images to graphic    | Oli                   | Geometry                         | Cinala abat              |
| segments                  | 0#                    | Multi-slice mode                 | Single shot              |
| Auto open inline display  | Off                   | Series                           | Ascending                |
| Start measurement without | On                    |                                  |                          |
| further preparation       | 0"                    | Table position                   | H                        |
| Wait for user to start    | Off                   | Table position                   | 0 mm                     |
| Start measurements        | single                | Inline Composing                 | Off                      |
| outine                    |                       | System                           |                          |
| Slab group 1              |                       | C15                              | On                       |
| Slabs                     | 1                     | C16                              | On                       |
| Dist. factor              | 50 %                  | C17                              | On                       |
| Position                  | L3.8 A18.3 F7.5       | C18                              | On                       |
| Orientation               | S > T-1.0             | C19                              | On                       |
| Phase enc. dir.           | A >> P                | C20                              | On                       |
| Rotation                  | 0.00 deg              | C21                              | On                       |
| Phase oversampling        | 0 %                   | C22                              | On                       |
| Slice oversampling        | 0.0 %                 | Ch1                              | On                       |
| Slices per slab           | 192                   | Ch2                              | On                       |
| FoV read                  | 260 mm                | Ch3                              | On                       |
| FoV phase                 | 67.9 %                | Ch4                              | On                       |
| Slice thickness           | 0.70 mm               | Ch5                              | On                       |
| TR                        | 5000 ms               | Ch6                              | On                       |
| TE                        | 2.12 ms               | Cho                              |                          |
|                           | 1                     |                                  | On<br>On                 |
| Averages                  | 1                     | Ch8                              | On                       |
| Concatenations            | Distantian Com (2D)   | Ch9                              | On                       |
| Filter                    | Distortion Corr.(3D)  | C10                              | On                       |
| Coil elements             | C10-22;Ch1-9          | C11                              | On                       |
| ontrast                   |                       | C12                              | On                       |
| Magn. preparation         | Non-sel. IR           | — C13                            | On                       |
| TI 1                      | 700 ms                | C14                              | On                       |
| TI 2                      | 2400 ms               | Positioning mode                 | FIX                      |
| Flip angle 1              | 4 deg                 | MSMA                             | S - C - T                |
| Flip angle 2              | 5 deg                 | Sagittal                         | R >> L                   |
| Fat suppr.                | None                  | Coronal                          | A >> P                   |
| Water suppr.              | None                  | Transversal                      | A >> P<br>F >> H         |
| 2nd Inversion Contrast    | On                    |                                  |                          |
| Zna mversion Contrast     | OII                   | Save uncombined                  | Off                      |
| Averaging mode            | Long term             | Coil Combine Mode                | Adaptive Combine         |
| Reconstruction            | Magnitude             | AutoAlign                        | Dofoult                  |
| Measurements              | 1                     | Auto Coil Select                 | Default                  |
| Multiple series           | Each measurement      | Shim mode                        | Standard                 |
| esolution                 |                       | Adjust with body coil            | Off                      |
|                           | 368                   | Confirm freq. adjustment         | Off                      |
| Base resolution           | 368                   | Assume Silicone                  | Off                      |
| Phase resolution          | 100 %                 | ! Ref. amplitude 1H              | 450.000 V                |
| Slice resolution          | 100 %                 | Adjustment Tolerance             | Auto                     |
| Phase partial Fourier     | 6/8                   | Adjust volume                    |                          |
| Slice partial Fourier     | Off                   | ! Position                       | L2.6 A16.9 F13.6         |
| PAT mode                  | GRAPPA                | ! Orientation                    | S > T-0.9                |
| Accel. factor PE          |                       |                                  |                          |
|                           | 2                     | ! Rotation                       | 81.15 deg                |
|                           | 20                    |                                  |                          |
| Ref. lines PE             | 28                    | ! A >> P                         | 48 mm                    |
|                           | 28<br>1<br>Integrated | ! A >> P<br>! F >> H<br>! R >> L | 48 mm<br>194 mm<br>26 mm |

| 1 | 1st Signal/Mode  | None  |
|---|--|---|
|   | Dark blood   | Off   |
|   | Resp. control  | Off   |
| _ | Composing  |   |
|   | Sequence   |   |
|   | Introduction Dimension Elliptical scanning Asymmetric echo Contrasts Bandwidth Flow comp. Echo spacing                                   | Off<br>3D<br>Off<br>Allowed<br>1<br>220 Hz/Px<br>No<br>6.3 ms |
|   | RF pulse type<br>Gradient mode<br>Excitation<br>RF spoiling  | Normal<br>Normal<br>Non-sel.<br>On                            |
|   | FFT Scale Factor LIN/PAR Swap Ext. INV Pulse Flip Angle Uniform Image Head Mask on UNI T1 Map Complex Div. Image Denoise Weighting FLAWS | 100 % Off On 180 On Off On Off On Off On Off                  |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\ep2D\_0p85\_R2PF6\_TE30\_BW1132\_Ref TA: 10:11 PAT: 2 Voxel size: 0.9×0.9×3.0 mm Rel. SNR: 1.00 USER: cmrr\_mbep2d\_bold

| Properties                              |                 | Series                        | Ascending                              |
|---|-----------------|-------------------------------|--|
| Prio Recon                              | Off             | Special sat.                  | None                                   |
| Before measurement                      | <b>.</b>        |                               |  |
| After measurement                       |                 | Table position                | H                                      |
| Load to viewer                          | On              | Table position                | 0 mm                                   |
| Inline movie                            | Off             | Inline Composing              | Off                                    |
| Auto store images                       | On              | System                        |  |
| Load to stamp segments                  | Off             | C15                           | On                                     |
| Load images to graphic                  | Off             | C16                           | On                                     |
| segments                                |                 | C17                           | On                                     |
| Auto open inline display                | Off             | C18                           | On                                     |
| Start measurement without               | On              | C19                           | On                                     |
| further preparation                     | 0"              | C20                           | On                                     |
| Wait for user to start                  | Off             | C21                           | On                                     |
| Start measurements                      | single          | C22                           | On                                     |
| Routine                                 |                 | Ch1                           | On                                     |
| Slice group 1                           |                 | ——— Ch2                       | On                                     |
| Slices                                  | 16              | Ch3                           | On<br>On                               |
| Dist. factor                            | 0 %             | Ch4<br>Ch5                    | On<br>On                               |
| Position                                | L3.1 A36.3 F6.3 | Ch6                           | On<br>On                               |
| Orientation                             | T > C-4.1       | Ch7                           | On                                     |
| Phase enc. dir.                         | A >> P          | Ch8                           | On                                     |
| Rotation                                | 0.00 deg        | Ch9                           | On                                     |
| Phase oversampling                      | 0 %             | C10                           | On                                     |
| FoV read                                | 164 mm          | C11                           | On                                     |
| FoV phase                               | 100.0 %         | C12                           | On                                     |
| Slice thickness                         | 3.00 mm         | C13                           | On                                     |
| TR                                      | 1290 ms         | C14                           | On                                     |
| TE<br>Multi band social factor          | 30 ms           |                               | —————————————————————————————————————— |
| Multi-band accel. factor                | 1<br>Dow filter | Positioning mode              | FIX                                    |
| Filter                                  | Raw filter      | MSMA                          | S-C-T                                  |
| Coil elements                           | C10-22;Ch1-9    | Sagittal                      | R >> L                                 |
| Contrast                                |                 | Coronal                       | A >> P<br>F >> H                       |
| MTC                                     | Off             | Transversal Coil Combine Mode | г >> п<br>Sum of Squares               |
| Magn. preparation                       | None            | AutoAlign                     |  |
| Flip angle                              | 68 deg          | Auto Coil Select              | Default                                |
| Fat suppr.                              | None            |                               |  |
| Averaging mode                          | Long term       | Shim mode                     | Standard                               |
| Reconstruction                          | Magnitude       | Adjust with body coil         | Off                                    |
| Measurements                            | 466             | Confirm freq. adjustment      | Off                                    |
| Delay in TR                             | 0 ms            | Assume Silicone               | Off                                    |
| Multiple series                         | Off             | ? Ref. amplitude 1H           | 0.000 V                                |
| Resolution                              |                 | Adjustment Tolerance          | Auto                                   |
| Base resolution                         | 192             | Adjust volume ! Position      | L3.3 A23.3 F7.6                        |
| Phase resolution                        | 100 %           | ! Position<br>! Orientation   |  |
| Phase resolution  Phase partial Fourier | 6/8             | ! Orientation<br>! Rotation   | Sagittal<br>4.10 deg                   |
| Interpolation                           | Off             | ! Rotation                    | 4.10 deg<br>60 mm                      |
|   |                 | ······· ! A >> P              | 40 mm                                  |
| PAT mode                                | GRAPPA          | ! R >> L                      | 52 mm                                  |
| Accel. factor PE                        | 2               | I                             | 52 mm                                  |
| Ref. lines PE                           | 52              | Physio                        |  |
| Reference scan mode                     | GRE             | 1st Signal/Mode               | None                                   |
| Distortion Corr.                        | Off             | BOLD                          |  |
| Prescan Normalize                       | Off             | GLM Statistics                | Off                                    |
| Raw filter                              | On              | Dynamic t-maps                | Off                                    |
| Intensity                               | Weak            | Starting ignore meas          | 0                                      |
| Slope                                   | 25              | Ignore after transition       | 0                                      |
| Elliptical filter                       | Off             | Model transition states       | Off                                    |
| Hamming                                 | Off             | Temp. highpass filter         | Off                                    |
| Geometry                                |                 | Threshold                     | 4.00                                   |
| Geometry  Multi-slice mode              | Interleaved     | Paradigm size                 | 20                                     |
| Ividiti Siloe IIIOGE                    | intollogved     | 29/+                          |  |

| Meas[1]           | Baseline |
|-------------------|----------|
| Meas[2]           | Baseline |
| Meas[3]           | Baseline |
| Meas[4]           | Baseline |
| Meas[5]           | Baseline |
| Meas[6]           | Baseline |
| Meas[7]           | Baseline |
| Meas[8]           | Baseline |
| Meas[9]           | Baseline |
| Meas[10]          | Baseline |
| Meas[11]          | Active   |
| Meas[12]          | Active   |
| Meas[13]          | Active   |
| Meas[14]          | Active   |
| Meas[15]          | Active   |
| Meas[16]          | Active   |
| Meas[17]          | Active   |
| Meas[18]          | Active   |
| Meas[19]          | Active   |
| Meas[20]          | Active   |
| Motion correction | Off      |
| Spatial filter    | Off      |
|                   |          |

| Sequence  |                                       |
|---|---------------------------------------|
| Introduction  | Off                                   |
| Contrasts   | 1                                     |
| Bandwidth   | 1132 Hz/Px                            |
| Flow comp.  | No                                    |
| Free echo spacing   | Off                                   |
| Echo spacing  | 1 ms                                  |
| EPI factor  | 192                                   |
| Gradient mode   | Fast                                  |
| RF spoiling   | Off                                   |
| Excite pulse duration   | 3840 us                               |
| Slice multiplier  | 1                                     |
| SENSE1 coil combine   | Off                                   |
|   | Oli                                   |
| Invert RO/PE polarity   | Off                                   |
| Invert RO/PE polarity PF omits higher k-space   | * ··                                  |
| , ,   | Off                                   |
| PF omits higher k-space   | Off<br>Off                            |
| PF omits higher k-space<br>Force equal slice timing   | Off<br>Off<br>Off                     |
| PF omits higher k-space<br>Force equal slice timing<br>FFT scale factor                     | Off<br>Off<br>Off<br>1.00             |
| PF omits higher k-space<br>Force equal slice timing<br>FFT scale factor<br>GRE iPAT ref. FA | Off<br>Off<br>Off<br>1.00<br>12.0 deg |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\ep3D\_0p85\_R2x1\_TE11p2\_EPIfac16\_B\
TA: 10:14 PAT: 2 Voxel size: 0.9×0.9×3.0 mm Rel. SNR: 1.00 USER: dzne\_ep3d\_fmri

|                           |                                       | Prescan Normalize               | Off                                    |
|---------------------------|---------------------------------------|---------------------------------|--|
| Properties                |                                       | Normalize                       | Off                                    |
| Prio Recon                | Off                                   | B1 filter                       | Off                                    |
| Before measurement        |                                       | Raw filter                      | On                                     |
| After measurement         |                                       | Intensity                       | Weak                                   |
| Load to viewer            | On                                    | ,                               | 25                                     |
| Inline movie              | Off                                   | Slope                           | Off                                    |
| Auto store images         | On                                    | Elliptical filter               | Oli                                    |
| Load to stamp segments    | Off                                   | Geometry                        |  |
| Load images to graphic    | Off                                   | Multi-slice mode                | Interleaved                            |
| segments                  |                                       | Series                          | Ascending                              |
| Auto open inline display  | Off                                   |                                 | ······································ |
| Start measurement without | On                                    | Saturation mode                 | Standard                               |
| further preparation       | OII                                   | Table position                  | Н                                      |
| Wait for user to start    | Off                                   | Table position                  |  |
| Start measurements        | single                                | Table position Inline Composing | 0 mm                                   |
| I                         | Sirigic                               | 1                               | Off                                    |
| Routine Slab group 1      |                                       | System C15                      |  |
| Slabs                     | 1                                     | C15                             | On<br>On                               |
| Position                  | L3.1 A36.3 F6.3                       |                                 |  |
|                           | T > C-4.1                             | C17                             | On                                     |
| Orientation               | · · · · · · · · · · · · · · · · · · · | C18                             | On                                     |
| Phase enc. dir.           | A >> P                                | C19                             | On                                     |
| Rotation                  | 0.00 deg                              | C20                             | On                                     |
| Slab Scale                | -10 %                                 | C21                             | On                                     |
| Slices per slab           | 16                                    | C22                             | On                                     |
| FoV read                  | 164 mm                                | Ch1                             | On                                     |
| FoV phase                 | 100.0 %                               | Ch2                             | On                                     |
| Slice thickness           | 3.00 mm                               | Ch3                             | On                                     |
| TR                        | 2300 ms                               | Ch4                             | On                                     |
| TE 1                      | 11.2 ms                               | Ch5                             | On                                     |
| Averages                  | 1                                     | Ch6                             | On                                     |
| Multi-echo Shots          | 1                                     | Ch7                             | On                                     |
| Filter                    | Raw filter                            | Ch8                             | On                                     |
| Coil elements             | C10-22;Ch1-9                          | Ch9                             | On                                     |
| Con elements              | 010-22,0111-3                         |                                 |  |
| Contrast                  |                                       | C10                             | On                                     |
| Multi-echo spacing        | 17.18 ms                              | C11                             | On                                     |
| MTC                       | Off                                   | C12                             | On                                     |
| Magn. preparation         | None                                  | C13                             | On                                     |
| TI                        | 900 ms                                | C14                             | On                                     |
| Flip angle                | 11 dea                                | Positioning mode                | FIX                                    |
| Fat suppr.                | None                                  | MSMA                            | S - C - T                              |
|                           |                                       |                                 | R >> L                                 |
| Averaging mode            | Long term                             | Sagittal                        |  |
| Reconstruction            | Magnitude                             | Coronal                         | A >> P                                 |
| Measurements              | 264                                   | Transversal                     | F >> H                                 |
| Pause after meas.         | 0.0 s                                 | Save uncombined                 | Off                                    |
| Deschation                |                                       | Coil Combine Mode               | Sum of Squares                         |
| Resolution                | 400                                   | Auto Ocil Colors                | <br>D-f!t                              |
| Base resolution           | 192                                   | Auto Coil Select                | Default                                |
| Phase resolution          | 100 %                                 | Shim mode                       | Standard                               |
| Slice resolution          | 100 %                                 | Adjust with body coil           | Off                                    |
| Phase partial Fourier     | Off                                   | Freq. adjust                    | Off                                    |
| Slice partial Fourier     | Off                                   | Assume Silicone                 | Off                                    |
| Interpolation             | Off                                   |                                 |  |
| PAT mode                  | CDADDA                                | ? Ref. amplitude 1H             | 0.000 V                                |
|                           | GRAPPA                                | Adjustment Tolerance            | Auto                                   |
| Acc. factor PE            | 2                                     | Adjust volume                   | 100 400 0 57 0                         |
| Ref. lines PE             | 52                                    | ! Position                      | L3.3 A23.3 F7.6                        |
| Acc. factor 3D            | 1                                     | ! Orientation                   | Sagittal                               |
| Ref. lines 3D             | 16                                    | ! Rotation                      | 4.10 deg                               |
| Reference Scan Mode       | GRE/separate                          | ! F >> H                        | 60 mm                                  |
| EmptyIceProgram           | Off                                   | ! A >> P                        | 40 mm                                  |
| Image Filter              | Off                                   | ! R >> L                        | 52 mm                                  |
| Distortion Corr.          | Off                                   | Composing                       |  |
| Distortion Con.           | Oii                                   | Composing                       |  |

|   | 70 4 4 5 1 1 5 5   |  |
|---|--|--|
|   | Introduction Dimension Elliptical scanning Reordering Asymmetric echo Contrasts Bandwidth Echo spacing   | On 3D Off Linear Off 1 1240 Hz/Px 1.01 ms  |
| - | EPI factor Segmentation RF pulse type Gradient mode Excitation RF spoiling   | 16<br>6<br>Normal<br>Fast<br>Slab-sel.<br>On   |
|   | PATRef FA RF duration RF BWT product Ernst T1 PATRef prep. shots Volume dummy shots Dummy Measurements Integrated PC Invert PE Water Exc. Phase Correction EPI rise time factor FFT scale factor Mosaic DICOMs | 5 deg<br>2560 us<br>30<br>1300 ms<br>200<br>0<br>0<br>Off<br>Off<br>-none-<br>per Blade<br>1.10<br>1.0 |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\ep3D\_0p85\_R2x1\_TE8p04\_EPIfac10\_B\

TA: 10:17 PAT: 2 Voxel size: 0.9×0.9×3.0 mm Rel. SNR: 1.00 USER: dzne\_ep3d\_fmri Prescan Normalize Off Properties Normalize Off Prio Recon Off B1 filter Off Before measurement Raw filter On After measurement Intensity Weak Load to viewer On Slope 25 Inline movie Off Elliptical filter Off Auto store images On Geometry Load to stamp segments Off Load images to graphic Off Multi-slice mode Interleaved segments Series Ascending Off Auto open inline display Saturation mode Standard Start measurement without On further preparation Table position Н Off Wait for user to start Table position 0 mm Start measurements single Inline Composing Off Routine System Slab group 1 On C15 Slabs C16 On Position L3.1 A36.3 F6.3 C17 On Orientation T > C-4.1C18 On Phase enc. dir. A >> P C19 On Rotation 0.00 deg C20 On Slab Scale -10 % C21 On Slices per slab 16 C22 On FoV read 164 mm Ch1 On FoV phase 100.0 % Ch2 On Slice thickness 3.00 mm Ch3 On TR 2800 ms Ch4 On TE 1 8.04 ms Ch5 On **Averages** Ch6 On Multi-echo Shots Ch7 On Filter Raw filter Ch8 On Coil elements C10-22;Ch1-9 Ch9 On C10 On Contrast C11 On Multi-echo spacing 11.32 ms C12 On MTC Off C13 On Magn. preparation None C14 On 900 ms Flip angle 9 dea Positioning mode FIX Fat suppr. S-C-T None **MSMA** Sagittal R >> L Averaging mode Long term Coronal A >> P Reconstruction Magnitude Transversal F >> H Measurements 218 Save uncombined Off Pause after meas. 0.0 sCoil Combine Mode Sum of Squares Resolution AutoAlign 192 Base resolution Auto Coil Select Default 100 % Phase resolution Shim mode Standard Slice resolution 100 % Adjust with body coil Off Phase partial Fourier Off Freq. adjust Off Slice partial Fourier Off Assume Silicone Off Interpolation Off ? Ref. amplitude 1H 0.000 V PAT mode **GRAPPA** Adjustment Tolerance Auto Acc. factor PE Adjust volume 2 Ref. lines PE Position 52 L3.3 A23.3 F7.6 Acc. factor 3D ! Orientation Sagittal 1 Ref. lines 3D ! Rotation 4.10 deg Reference Scan Mode GRE/separate !F>>H 60 mm ! A >> P 40 mm **EmptyIceProgram** Off !R >> L 52 mm Image Filter Off Off Composing Distortion Corr.

| 1100   |  |
|--|--|
| oduction   | On   |
| nension  | 3D   |
| otical scanning  | Off  |
| ordering   | Linear   |
|  | Off  |
| ntrasts  | 1  |
|  | 1302 Hz/Px   |
| o spacing  | 1.03 ms  |
| factor   | 10   |
| mentation  | 10   |
|  | Normal   |
|  | Fast   |
| itation  | Slab-sel.  |
| spoiling   | On   |
| . •  |  |
| <br>ΓRef FA  | 5 dea  |
|  | 5 deg<br>2560 us   |
| ΓRef FA  | 5 deg  |
| ΓRef FA<br>duration  | 5 deg<br>2560 us   |
| FRef FA<br>duration<br>BWT product   | 5 deg<br>2560 us<br>30   |
| TRef FA<br>duration<br>BWT product<br>st T1  | 5 deg<br>2560 us<br>30<br>1300 ms  |
| TRef FA duration BWT product st T1 FRef prep. shots  | 5 deg<br>2560 us<br>30<br>1300 ms<br>200   |
| TRef FA duration BWT product st T1 FRef prep. shots ume dummy shots nmy Measurements grated PC   | 5 deg<br>2560 us<br>30<br>1300 ms<br>200   |
| FRef FA duration BWT product st T1 FRef prep. shots ume dummy shots nmy Measurements grated PC ert PE  | 5 deg<br>2560 us<br>30<br>1300 ms<br>200<br>0  |
| FRef FA duration BWT product st T1 FRef prep. shots ume dummy shots nmy Measurements grated PC ert PE ter Exc.                                 | 5 deg<br>2560 us<br>30<br>1300 ms<br>200<br>0<br>0<br>Off<br>Off   |
| TRef FA duration BWT product st T1 TRef prep. shots ume dummy shots mmy Measurements grated PC ert PE ter Exc. ase Correction                  | 5 deg<br>2560 us<br>30<br>1300 ms<br>200<br>0<br>Off<br>Off<br>-none-<br>per Blade   |
| TRef FA duration BWT product st T1 TRef prep. shots ume dummy shots nmy Measurements grated PC ert PE ter Exc. ase Correction rise time factor | 5 deg<br>2560 us<br>30<br>1300 ms<br>200<br>0<br>0<br>Off<br>Off<br>-none-<br>per Blade<br>1.10  |
| TRef FA duration BWT product st T1 TRef prep. shots ume dummy shots mmy Measurements grated PC ert PE ter Exc. ase Correction                  | 5 deg<br>2560 us<br>30<br>1300 ms<br>200<br>0<br>Off<br>Off<br>-none-<br>per Blade   |
|  | oduction nension otical scanning ordering mmetric echo ntrasts ndwidth no spacing factor gmentation pulse type dient mode itation spoiling |

| Properties                |                 | Table position                | 0 mm                |
|---------------------------|-----------------|-------------------------------|---------------------|
| Prio Recon                | Off             | Inline Composing              | Off                 |
| Before measurement        | Oii             | System                        |                     |
| After measurement         |                 | C15                           | On                  |
| Load to viewer            | On              | C16                           | On                  |
| Inline movie              | Off             | C17                           | On                  |
| Auto store images         | On              | C18                           | On                  |
| Load to stamp segments    | Off             | C19                           | On                  |
| Load images to graphic    | Off             | C20                           | On                  |
| segments                  |                 | C21                           | On                  |
| Auto open inline display  | Off             | C22                           | On                  |
| Start measurement without | On              | Ch1                           | On                  |
| further preparation       |                 | Ch2                           | On                  |
| Wait for user to start    | Off             | Ch3                           | On                  |
| Start measurements        | single          | Ch4                           | On                  |
| Douting.                  | 3               | Ch5                           | On                  |
| Routine                   |                 | Ch6                           | On                  |
| Slice group 1             |                 | Ch7                           | On                  |
| Slices                    | 20              | Ch8                           | On                  |
| Dist. factor              | 20 %            | Ch9                           | On                  |
| Position                  | L3.8 A18.3 F7.5 | C10                           | On                  |
| Orientation               | S > T-1.0       | C11                           | On                  |
| Phase enc. dir.           | A >> P          | C12                           | On                  |
| Rotation                  | 0.00 deg        | C13                           | On                  |
| Phase oversampling        | 0 %             | C14                           | On                  |
| FoV read                  | 200 mm          | Desitioning mode              | FIV                 |
| FoV phase                 | 100.0 %         | Positioning mode              | FIX                 |
| Slice thickness<br>TR     | 2.0 mm          | MSMA<br>Societal              | S - C - T<br>R >> L |
|                           | 150.0 ms        | Sagittal                      | A >> L<br>A >> P    |
| TE 1<br>TE 2              | 3.06 ms         | Coronal<br>Transversal        | A >> P<br>F >> H    |
|                           | 4.08 ms         | Save uncombined               | Cff                 |
| Averages                  | 1               |                               |                     |
| Concatenations            | None            | Coil Combine Mode             | Sum of Squares      |
| Filter                    | None            | AutoAlign<br>Auto Coil Select | Defends             |
| Coil elements             | C10-22;Ch1-9    | Auto Coil Select              | Default             |
| Contrast                  |                 | Shim mode                     | Standard            |
| MTC                       | Off             | Adjust with body coil         | Off                 |
| Flip angle                | 19 deg          | Confirm freq. adjustment      | Off                 |
| Fat suppr.                | None            | Assume Silicone               | Off                 |
| Averaging mode            | Short term      | ? Ref. amplitude 1H           | 0.000 V             |
| Reconstruction            | Magn./Phase     | Adjustment Tolerance          | Auto                |
| Measurements              | 1               | Adjust volume                 |                     |
| Multiple series           | Off             | ! Position                    | L3.3 A23.3 F7.6     |
| •                         | <b></b>         | ! Orientation                 | Sagittal            |
| Resolution                |                 | ! Rotation                    | 4.10 deg            |
| Base resolution           | 190             | !F>> H                        | 60 mm               |
| Phase resolution          | 100 %           | ! A >> P                      | 40 mm               |
| Phase partial Fourier     | Off             | ! R >> L                      | 52 mm               |
| Interpolation             | Off             | Composing                     |                     |
| Image Filter              | Off             |                               |                     |
| Distortion Corr.          | Off             | Sequence                      | 0.5                 |
| Prescan Normalize         | Off             | Introduction                  | On                  |
| Normalize                 | Off             | Dimension                     | 2D                  |
| B1 filter                 | Off             | Asymmetric echo               | Off                 |
| Raw filter                | Off             | Contrasts                     | 2<br>707 H=/Dy      |
| Elliptical filter         | Off             | Bandwidth                     | 797 Hz/Px           |
| 1 .                       |                 | Flow comp.                    | No                  |
| Geometry Multi-slice mode | Interlegued     | RF pulse type                 | Normal              |
|                           | Interleaved     | Gradient mode                 | Fast                |
| Series                    | Interleaved     | RF spoiling                   | On                  |
| Special sat.              | None            |                               |                     |
| Table position            | Н               |                               |                     |
| Table position            | ••              |                               |                     |

\\USER\Alan\History\20230811\_1400\_Traveling\_Spine\_CoilQA\_fMRI\gre\_B0\_tra
TA: 0:59 Voxel size: 1.1×1.1×3.0 mm Rel. SNR: 1.00 SIEMENS: gre\_field\_mapping

| Properties                |                 | Table position           | 0 mm            |
|---------------------------|-----------------|--------------------------|-----------------|
| Prio Recon                | Off             | Inline Composing         | Off             |
| Before measurement        |                 | System                   |                 |
| After measurement         |                 | C15                      | On              |
| Load to viewer            | On              | C16                      | On              |
| Inline movie              | Off             | C17                      | On              |
| Auto store images         | On              | C18                      | On              |
| Load to stamp segments    | Off             | C19                      | On              |
| Load images to graphic    | Off             | C20                      | On              |
| segments                  |                 | C21                      | On              |
| Auto open inline display  | Off             | C22                      | On              |
| Start measurement without | On              | Ch1                      | On              |
| further preparation       |                 | Ch2                      | On              |
| Wait for user to start    | Off             | Ch3                      | On              |
| Start measurements        | single          | Ch4                      | On              |
| Routine                   |                 | Ch5                      | On              |
| Slice group 1             |                 | Ch6                      | On              |
| Slices                    | 16              | Ch7                      | On              |
| Dist. factor              | 0 %             | Ch8                      | On              |
| Position                  | L3.1 A36.3 F6.3 | Ch9                      | On              |
| Orientation               | T > C-4.1       | C10                      | On              |
| Phase enc. dir.           | A >> P          | C11                      | On              |
| Rotation                  | 0.00 deg        | C12                      | On<br>On        |
| Phase oversampling        | 0 %             | C13                      | On              |
| FoV read                  | 200 mm          | C14                      | On              |
| FoV phase                 | 100.0 %         | Positioning mode         | FIX             |
| Slice thickness           | 3.0 mm          | MSMA                     | S - C - T       |
| TR                        | 150.0 ms        | Sagittal                 | R >> L          |
| TE 1                      | 3.06 ms         | Coronal                  | A >> P          |
| TE 2                      | 4.08 ms         | Transversal              | F >> H          |
| Averages                  | 1               | Save uncombined          | Off             |
| Concatenations            | 1               | Coil Combine Mode        | Sum of Squares  |
| Filter                    | None            | AutoAlign                |                 |
| Coil elements             | C10-22;Ch1-9    | Auto Coil Select         | Default         |
| Contrast                  |                 | Shim mode                | Standard        |
| MTC                       | Off             | Adjust with body coil    | Off             |
| Flip angle                | 19 deg          | Confirm freq. adjustment | Off             |
| Fat suppr.                | None            | Assume Silicone          | Off             |
|                           | Oh              | ? Ref. amplitude 1H      | 0.000 V         |
| Averaging mode            | Short term      | Adjustment Tolerance     | Auto            |
| Reconstruction            | Magn./Phase     | Adjust volume            |                 |
| Measurements              | 1               | ! Position               | L3.3 A23.3 F7.6 |
| Multiple series           | Off             | ! Orientation            | Sagittal        |
| Resolution                |                 | ! Rotation               | 4.10 deg        |
| Base resolution           | 190             | ! F >> H                 | 60 mm           |
| Phase resolution          | 100 %           | ! A >> P                 | 40 mm           |
| Phase partial Fourier     | Off             | ! R >> L                 | 52 mm           |
| Interpolation             | Off             | Composing                |                 |
| Image Filter              | Off             |                          |                 |
| Distortion Corr.          | Off             | Sequence                 |                 |
| Prescan Normalize         | Off             | Introduction             | On              |
| Normalize                 | Off             | Dimension                | 2D              |
| B1 filter                 | Off             | Asymmetric echo          | Off             |
| Raw filter                | Off             | Contrasts                | 2               |
| Elliptical filter         | Off             | Bandwidth                | 797 Hz/Px       |
| ·                         | Jii             | Flow comp.               | No              |
| Geometry Multipolice mode | Intorionical    | RF pulse type            | Normal          |
| Multi-slice mode          | Interleaved     | Gradient mode            | Fast            |
| Series                    | Interleaved     | RF spoiling              | On              |
| Special sat.              | None            | ,                        |                 |
|                           |                 |                          |                 |
| Table position            | Н               |                          |                 |

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### \\USER | Ala

| Alan |         |   |  |  |
|------|---------|---|--|--|
|      | History |   |  |  |
|      |         | 20230811_1400_Traveling_Spine_CoilQA_fMRI     |  |  |
|      |         | Localizer_bs_csc                              |  |  |
|      |         | preSatTFL_satFA80_sag_2p5mm_FOV320_RefV350V   |  |  |
|      |         | preSatTFL_satFA60_sag_2p5mm_FOV320_RefV450V   |  |  |
|      |         | 2DREAM_sag_FOV384_2p5mm_RefV450V              |  |  |
|      |         | 2DREAM_sag_FOV200_2p5mm_RefV450V              |  |  |
|      |         | 2DREAM_sag_FOV200_2p5mm_RefV328V              |  |  |
|      |         | 2DREAM_sag_FOV200_2p5mm_RefV450V              |  |  |
|      |         | CoilQA_sag_HF_FOV384_1p5x1p5x2p0              |  |  |
|      |         | CoilQA_sag_HF_FOV192_1p5x1p5x2p0              |  |  |
|      |         | CoilQA_axi_RL_FOV192_0p5x0p5x5p0              |  |  |
|      |         | gre_2D_2mmlso_RefV450_uncombined              |  |  |
|      |         | gre_2D_2mmlso_RefV450_uncombined_noDC         |  |  |
|      |         | preSatTFL_sag_2p5mm_FOV320_RefV450V_SatFA60   |  |  |
|      |         | t1_mp2r_wip944_3D_cor_0p7iso_p2_RefV450       |  |  |
|      |         | ep2D_0p85_R2PF6_TE30_BW1132_RefV450           |  |  |
|      |         | ep3D_0p85_R2x1_TE11p2_EPIfac16_BW1240_RefV450 |  |  |
|      |         | ep3D_0p85_R2x1_TE8p04_EPIfac10_BW1302_RefV450 |  |  |
|      |         | gre_B0_sag                                    |  |  |
|      |         | gre_B0_tra                                    |  |  |