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Head
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Epilepsy
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sola_xa61_Brain_headaches
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\\User\Head\Epilepsy\isola\_xa61\_Brain\_headaches\loc\_3Plane\_HASTE \*

TA: 12 sec Coil Selection: Auto Voxel Size: 0.9×0.9×5.0 mm<sup>3</sup> Acc:: None Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	On
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

### Contrast - Common

Flip Angle 1	160 deg
Flip Angle 2	90 deg
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

### Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

### Routine

Slice Group	1
Slices	3
Distance Factor	100 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slice Group	2
Slices	3
Distance Factor	100 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slice Group	3
Slices	3
Distance Factor	100 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	5.0 mm
TR	1550.0 ms
TE	67.00 ms
Averages	1
Concatenations	3
AutoAlign	---

### Resolution - Common

FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	5.0 mm
Base Resolution	256
Phase Resolution	90 %
Interpolation	1.00

### Resolution - Acceleration

Acceleration Mode	None
Deep Resolve	Off
Phase Partial Fourier	4/8

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Off
Image Filter	Off

### Geometry - Common

Slice Group	1
Slices	3
Distance Factor	100 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slice Group	2
Slices	3
Distance Factor	100 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slice Group	3
Slices	3
Distance Factor	100 %

### Contrast - Common

TR	1550.0 ms
TE	67.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle Mode	Constant

**Geometry - Common**

Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	5.0 mm
TR	1550.0 ms
Multi-Slice Mode	Single Shot
Series	Interleaved
Concatenations	3

**Geometry - AutoAlign**

Slice Group	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slice Group	2
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slice Group	3
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	0.00 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	1550.0 ms
Concatenations	3

**Physio - Cardiac**

Fat-Water Contrast	Fat Saturation
Magn. Preparation	None
Dark Blood	Off
FOV Read	240 mm
FOV Phase	100.0 %
Phase Resolution	90 %
Motion Correction	None

**Physio - PACE**

Resp. Control	Off
Concatenations	3

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off

**Inline - MIP**

Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Sequence - Part 1**

Sequence Name	h
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	195 Hz/Px
Echo Spacing	7.46 ms
Turbo Factor	230

**Sequence - Part 2**

Introduction	On
Motion Correction	None

**Sequence - Assistant**

SAR Assistant	Flip Angle > RF Pulse Type > TR
Min Flip Angle	130 deg
Max. TR	1700.0 ms
Allowed Delay	29 s

\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\T2\_qtse\_tra \*

TA: 1:46 min Coil Selection: Auto Voxel Size: 0.3×0.3×4.0 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Resolution - Common**

FOV Read	230 mm
FOV Phase	90.6 %
Slice Thickness	4.0 mm
Base Resolution	448
Phase Resolution	75 %
Interpolation	On

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	33
Deep Resolve	On
Phase Partial Fourier	Off

**Routine**

Slice Group	1
Slices	28
Distance Factor	25 %
Position	R2.9 P13.6 F0.8 mm
Orientation	T > C-4.0 > S-2.0
Phase Encoding Dir.	R >> L
Phase Oversampling	100 %
FOV Read	230 mm
FOV Phase	90.6 %
Slice Thickness	4.0 mm
TR	6550.0 ms
TE	100.00 ms
Averages	1
Concatenations	1
AutoAlign	---

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slice Group	1
Slices	28
Distance Factor	25 %
Position	R2.9 P13.6 F0.8 mm
Orientation	T > C-4.0 > S-2.0
Phase Encoding Dir.	R >> L
Phase Oversampling	100 %
FOV Read	230 mm
FOV Phase	90.6 %
Slice Thickness	4.0 mm
TR	6550.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Contrast - Common**

TR	6550.0 ms
TE	100.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle 1	150 deg
Flip Angle 2	90 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

**Geometry - AutoAlign**

Slice Group	1
Position	R2.9 P13.6 F0.8 mm
Orientation	T > C-4.0 > S-2.0
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	R2.9 P13.6 F0.8
R	2.9 mm
P	13.6 mm
F	0.8 mm
Initial Orientation	T > C
T > C	-4.00

**Geometry - AutoAlign**

> S	-2.00
Initial Rotation	90.00 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	1 mm
Table Position	F
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	6550.0 ms
Concatenations	1

**Physio - Cardiac**

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FOV Read	230 mm
FOV Phase	90.6 %
Phase Resolution	75 %
Motion Correction	None

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Sequence - Part 1**

Sequence Name	qtse
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	130 Hz/Px
Echo Spacing	12.4 ms
Free Echo Spacing	On
Define	Turbo Factor
Turbo Factor	15
Echo Trains per Slice	15

**Sequence - Part 2**

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	On

**Sequence - Part 2**

Reduce Motion Sens.	Off
Motion Correction	None

**Sequence - Assistant**

SAR Assistant	Flip Angle > TR > RF Pulse Type
Min Flip Angle	130 deg
Max. TR	7500.0 ms
Allowed Delay	30 s

\\User\\Head\\Epilepsy\\Isola\_xa61\_Brain\_headaches\\T2\_FLAIR\_tra\_320\_FS \*

TA: 2:01 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm<sup>3</sup> Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	30
Distance Factor	25 %
Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Phase Encoding Dir.	R >> L
Phase Oversampling	50 %
FOV Read	230 mm
FOV Phase	94.4 %
Slice Thickness	4.0 mm
TR	8500.0 ms
TE	108.00 ms
Averages	1
Concatenations	2
AutoAlign	---

**Contrast - Common**

TR	8500.0 ms
TE	108.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	2440 ms
Freeze Suppr. Tissue	On
Flip Angle 1	150 deg
Flip Angle 2	90 deg
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
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**Contrast - Dynamic**

Measurements	1
Multiple Series	Each Measurement

**Resolution - Common**

FOV Read	230 mm
FOV Phase	94.4 %
Slice Thickness	4.0 mm
Base Resolution	288
Phase Resolution	80 %
Interpolation	On

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	44
Deep Resolve	On
Phase Partial Fourier	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	On
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slice Group	1
Slices	30
Distance Factor	25 %
Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Phase Encoding Dir.	R >> L
Phase Oversampling	50 %
FOV Read	230 mm
FOV Phase	94.4 %
Slice Thickness	4.0 mm
TR	8500.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice Group	1
Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	L0.5 P23.9 H24.1
L	0.5 mm

**Geometry - AutoAlign**

P	23.9 mm
H	24.1 mm
Initial Orientation	T > S
T > S	0.30
> C	-0.10
Initial Rotation	89.35 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	Parallel F
Gap	10.00 mm
Thickness	50.00 mm

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	24 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Rotation	89.35 deg
R >> L	218 mm
A >> P	230 mm
F >> H	149 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	8500.0 ms
Concatenations	2

**Physio - Cardiac**

Fat-Water Contrast	Fat Saturation
Magn. Preparation	Slice-sel. IR
TI	2440 ms
Dark Blood	Off
FOV Read	230 mm
FOV Phase	94.4 %
Phase Resolution	80 %
Motion Correction	None

**Physio - PACE**

Resp. Control	Off
Concatenations	2

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Sequence - Part 1**

Sequence Name	qtir_rs
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	Slice
Bandwidth	189 Hz/Px
Echo Spacing	12.0 ms
Free Echo Spacing	On
Define	Turbo Factor
Turbo Factor	19
Echo Trains per Slice	6

**Sequence - Part 2**

Introduction	On
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**Sequence - Part 2**

Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	On
Reduce Motion Sens.	On
Motion Correction	None

**Sequence - Assistant**

SAR Assistant	Off
Allowed Delay	30 s

\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\T2\_FLAIR\_cor\_320\_FS \*

TA: 2:18 min Coil Selection: Auto Voxel Size: 0.4x0.4x4.0 mm<sup>3</sup> Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	28
Distance Factor	25 %
Position	Isocenter
Orientation	Coronal
Phase Encoding Dir.	R >> L
Phase Oversampling	50 %
FOV Read	230 mm
FOV Phase	93.8 %
Slice Thickness	4.0 mm
TR	8500.0 ms
TE	84.00 ms
Averages	1
Concatenations	2
AutoAlign	---

**Contrast - Common**

TR	8500.0 ms
TE	84.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	2440 ms
Freeze Suppr. Tissue	On
Flip Angle 1	150 deg
Flip Angle 2	90 deg
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
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**Contrast - Dynamic**

Measurements	1
Multiple Series	Each Measurement

**Resolution - Common**

FOV Read	230 mm
FOV Phase	93.8 %
Slice Thickness	4.0 mm
Base Resolution	256
Phase Resolution	100 %
Interpolation	On

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	29
Deep Resolve	On
Phase Partial Fourier	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	On
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slice Group	1
Slices	28
Distance Factor	25 %
Position	Isocenter
Orientation	Coronal
Phase Encoding Dir.	R >> L
Phase Oversampling	50 %
FOV Read	230 mm
FOV Phase	93.8 %
Slice Thickness	4.0 mm
TR	8500.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice Group	1
Position	Isocenter
Orientation	Coronal
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm

**Geometry - AutoAlign**

P	0.0 mm
H	0.0 mm
Initial Orientation	Coronal
Initial Rotation	0.00 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Coronal
Rotation	0.00 deg
R >> L	216 mm
F >> H	230 mm
A >> P	139 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	8500.0 ms

**Physio - Signal**

Concatenations	2
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**Physio - Cardiac**

Fat-Water Contrast	Fat Saturation
Magn. Preparation	Slice-sel. IR
TI	2440 ms
Dark Blood	Off
FOV Read	230 mm
FOV Phase	93.8 %
Phase Resolution	100 %
Motion Correction	None

**Physio - PACE**

Resp. Control	Off
Concatenations	2

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Sequence - Part 1**

Sequence Name	qtir
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	188 Hz/Px
Echo Spacing	12.0 ms
Free Echo Spacing	On
Define	Turbo Factor
Turbo Factor	16
Echo Trains per Slice	7

**Sequence - Part 2**

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off

**Sequence - Part 2**

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	On
Reduce Motion Sens.	On
Motion Correction	None

**Sequence - Assistant**

SAR Assistant	Off
Allowed Delay	30 s

\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\t2\_qswi3d\_tra\_p2\_2.0mm brain \*

TA: 4:17 min Coil Selection: Auto Voxel Size: 0.4×0.4×2.0 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	Isocenter
Orientation	T > C9.1
Phase Encoding Dir.	R >> L
Slices per Slab	72
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	230 mm
FOV Phase	81.3 %
Slice Thickness	2.00 mm
TR	48.0 ms
TE	40.00 ms
Averages	1
Concatenations	1
AutoAlign	---

**Contrast - Common**

TR	48.0 ms
TE	40.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	15 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
SWI	On
Reconstruction	Magn./Phase

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

**Resolution - Common**

FOV Read	230 mm
FOV Phase	81.3 %
Slice Thickness	2.00 mm
Base Resolution	256
Phase Resolution	79 %
Slice Resolution	78 %
Interpolation	On

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	Off
Slice Partial Fourier	Off
Asymmetric Echo	Off
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	Isocenter
Orientation	T > C9.1
Phase Encoding Dir.	R >> L
Slices per Slab	72
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	230 mm
FOV Phase	81.3 %
Slice Thickness	2.00 mm
TR	48.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	Isocenter
Orientation	T > C9.1
Phase Encoding Dir.	R >> L
AutoAlign	---

**Geometry - AutoAlign**

Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	T > C
T > C	9.10
> S	0.00
Initial Rotation	90.00 deg

**Geometry - Saturation**

Saturation Mode	Standard
Special Saturation	None

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	T > C9.1
Rotation	90.00 deg
R >> L	187 mm
A >> P	230 mm
F >> H	144 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	48.0 ms
Segments	1
Concatenations	1

**Physio - Cardiac**

Tagging	None
Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FOV Read	230 mm
FOV Phase	81.3 %
Phase Resolution	79 %

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Liver**

Liver Registration	Off
Save Original Images	On

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Soft Tissue**

Wash-in	Off
Wash-out	Off
TTP	Off
PEI	Off
MIP Time	Off
Measurements	1

**Inline - Composing**

Inline Composing	Off
------------------	-----

**Inline - MapIt**

MapIt	None
Flip Angle	15 deg
Measurements	1

**Inline - MapIt**

Contrasts	1
TE	40.00 ms
TR	48.0 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	qswi_r
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	On
Bandwidth	80 Hz/Px
Asymmetric Echo	Off
Segments	1

**Sequence - Part 2**

Introduction	On
RF Spoiling	On
Acoustic noise reduction	On

**Sequence - Assistant**

SAR Assistant	Off
---------------	-----

\\User\Head\Epilepsy\Isola\_xa61\_Brain\_headaches\resolve\_4scan\_trace\_tra\_p2\_s2\_192 \*

TA: 2:36 min Coil Selection: Auto Voxel Size: 0.6x0.6x4.0 mm<sup>3</sup> Acc:: 4 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	28
Distance Factor	30 %
Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FOV Read	220 mm
FOV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3100.0 ms
TE 1	61 ms
TE 2	99 ms
Concatenations	1
AutoAlign	---

**Contrast - Common**

TR	3100.0 ms
TE 1	61 ms
TE 2	99 ms
MTC	Off
Magn. Preparation	None
Flip Angle	180 deg
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Contrasts	2
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1

**Resolution - Common**

FOV Read	220 mm
----------	--------

**Resolution - Common**

FOV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	192
Phase Resolution	80 %
Interpolation	On

**Resolution - Acceleration**

Accel. Mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	77
SMS Factor	2
FOV Shift Factor	4
Phase Partial Fourier	Off
Readout Partial Fourier	Off
Readout Segments	7

**Resolution - Filter**

Raw Filter	On
Distortion Correction	2D
Normalize	Prescan
Noise Masking	Off

**Geometry - Common**

Slice Group	1
Slices	28
Distance Factor	30 %
Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FOV Read	220 mm
FOV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3100.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice Group	1
Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L0.5 P23.9 H24.1
L	0.5 mm
P	23.9 mm
H	24.1 mm
Initial Orientation	T > S

**Geometry - AutoAlign**

T > S	0.30
> C	-0.10
Initial Rotation	-0.65 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	24 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	L0.5 P23.9 H24.1 mm
Orientation	T > S0.3 > C-0.1
Rotation	-0.65 deg
A >> P	220 mm
R >> L	220 mm
F >> H	145 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	3100.0 ms
Concatenations	1

**Diff**

Diffusion Mode	4-Scan Trace
Diff. Directions	4
Diffusion Scheme	Monopolar
Diff. Weightings	2
b-value 1	0 s/mm <sup>2</sup>
b-value 2	1000 s/mm <sup>2</sup>
Averages 1	1
Averages 2	1
Invert Gray Scale	Off
Diff. Weighted Images	Off
Trace Weighted Images	On
Tensor	Off
FA Maps	Off
ADC Maps	On
Exponential ADC Maps	Off
b-value >=	0 s/mm <sup>2</sup>
ADC Noise Threshold	50
Noise Masking	Off
Calculated Image	Off

**Sequence - Part 1**

Sequence Name	resolve
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Bandwidth	723 Hz/Px
Echo Spacing	0.34 ms
Optimization	Min. TE
EPI Factor	77

**Sequence - Part 2**

Introduction	On
Reacquisition Mode	On

**Sequence - Assistant**

SAR Assistant	Off
Optimization	Min. TE

\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\T1\_3D sag \*

TA: 4:24 min Coil Selection: Auto Voxel Size: 0.9×0.9×0.9 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	50 %
Position	R5.9 P27.2 H7.2 mm
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	176
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	0.94 mm
TR	1900.0 ms
TE	3.28 ms
Averages	1
Concatenations	1
AutoAlign	---

**Contrast - Common**

TR	1900.0 ms
TE	3.28 ms
Magn. Preparation	Non-sel. IR
TI	1100 ms
Flip Angle	9 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement
Reordering	Linear

**Resolution - Common**

FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	0.94 mm
Base Resolution	256
Phase Resolution	100 %
Slice Resolution	70 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	Off
Slice Partial Fourier	Off
Asymmetric Echo	Allowed
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	On
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	50 %
Position	R5.9 P27.2 H7.2 mm
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	176
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	0.94 mm
TR	1900.0 ms
Multi-Slice Mode	Single Shot
Series	Ascending
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	R5.9 P27.2 H7.2 mm
Orientation	Sagittal
Phase Encoding Dir.	A >> P
AutoAlign	---

**Geometry - AutoAlign**

Initial Position	R5.9 P27.2 H7.2
R	5.9 mm
P	27.2 mm
H	7.2 mm
Initial Orientation	Sagittal
Initial Rotation	0.00 deg

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	R5.9 P27.2 H7.2 mm
Orientation	Sagittal
Rotation	0.00 deg
A >> P	240 mm
F >> H	240 mm
R >> L	166 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	1900.0 ms
Concatenations	1

**Physio - Cardiac**

Fat-Water Contrast	Standard
Magn. Preparation	Non-sel. IR
TI	1100 ms
Dark Blood	Off
FOV Read	240 mm
FOV Phase	100.0 %
Phase Resolution	100 %
Motion Correction	None

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Inline - MapIt**

MapIt	None
Flip Angle	9 deg
Measurements	1
Contrasts	1
TE	3.28 ms
TR	1900.0 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	tfl
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Normal
Gradient Mode	Whisper
Flow Compensation	None
Reordering	Linear
Bandwidth	130 Hz/Px
Echo Spacing	9.70 ms
Asymmetric Echo	Allowed
Turbo Factor	124

**Sequence - Part 2**

Introduction	Off
RF Spoiling	On
Incr. Gradient Spoiling	Off
Motion Correction	None

**Sequence - Assistant**

SAR Assistant	Off
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\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\T1\_3D sag Gd \*

TA: 4:24 min Coil Selection: Auto Voxel Size: 0.9×0.9×0.9 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	50 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	176
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	0.94 mm
TR	1900.0 ms
TE	3.28 ms
Averages	1
Concatenations	1
AutoAlign	---

**Contrast - Common**

TR	1900.0 ms
TE	3.28 ms
Magn. Preparation	Non-sel. IR
TI	1100 ms
Flip Angle	9 deg
Fat-Water Contrast	Fast Water Excitation
Dark Blood	Off
Contrasts	1
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement
Reordering	Linear

**Resolution - Common**

FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	0.94 mm
Base Resolution	256
Phase Resolution	100 %
Slice Resolution	70 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	Off
Slice Partial Fourier	Off
Asymmetric Echo	Allowed
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	On
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	50 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	176
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	0.94 mm
TR	1900.0 ms
Multi-Slice Mode	Single Shot
Series	Ascending
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
AutoAlign	---

**Geometry - AutoAlign**

Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	0.00 deg

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Sagittal
Rotation	0.00 deg
A >> P	240 mm
F >> H	240 mm
R >> L	166 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	1900.0 ms
Concatenations	1

**Physio - Cardiac**

Fat-Water Contrast	Fast Water Excitation
Magn. Preparation	Non-sel. IR
TI	1100 ms
Dark Blood	Off
FOV Read	240 mm
FOV Phase	100.0 %
Phase Resolution	100 %
Motion Correction	None

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Inline - MapIt**

MapIt	None
Flip Angle	9 deg
Measurements	1
Contrasts	1
TE	3.28 ms
TR	1900.0 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	tfl
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Normal
Gradient Mode	Whisper
Flow Compensation	None
Reordering	Linear
Bandwidth	130 Hz/Px
Echo Spacing	12.08 ms
Asymmetric Echo	Allowed
Turbo Factor	124

**Sequence - Part 2**

Introduction	Off
RF Spoiling	On
Incr. Gradient Spoiling	Off
Motion Correction	None

**Sequence - Assistant**

SAR Assistant	Off
---------------	-----

**\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\PC\_2D\_projection \***

TA: 6 sec Coil Selection: Auto Voxel Size: 0.9×0.9×60.0 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

### Routine

Slice Group	1
Slices	1
Distance Factor	20 %
Position	L0.0 P9.3 F14.9 mm
Orientation	Coronal
Phase Encoding Dir.	R >> L
Phase Oversampling	0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	60.0 mm
TR	21.7 ms
TE	6.13 ms
Averages	2
Concatenations	1
AutoAlign	---

### Contrast - Common

TR	21.7 ms
TE	6.13 ms
Flip Angle	15 deg
Contrasts	1
Reconstruction	Magnitude

### Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

### Resolution - Common

FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	60.0 mm
Base Resolution	256
Phase Resolution	75 %

### Resolution - Common

Interpolation	Off
---------------	-----

### Resolution - Acceleration

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Phase Partial Fourier	Off
Asymmetric Echo	Weak

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	On
Distortion Correction	2D
Normalize	Off
Image Filter	Off

### Geometry - Common

Slice Group	1
Slices	1
Distance Factor	20 %
Position	L0.0 P9.3 F14.9 mm
Orientation	Coronal
Phase Encoding Dir.	R >> L
Phase Oversampling	0 %
FOV Read	240 mm
FOV Phase	100.0 %
Slice Thickness	60.0 mm
TR	21.7 ms
Multi-Slice Mode	Sequential
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice Group	1
Position	L0.0 P9.3 F14.9 mm
Orientation	Coronal
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	L0.0 P9.3 F14.9
L	0.0 mm
P	9.3 mm
F	14.9 mm
Initial Orientation	Coronal
Initial Rotation	0.00 deg

### Geometry - Saturation

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	L0.0 P9.3 F14.9 mm
Orientation	Coronal
Rotation	0.00 deg
R >> L	240 mm
F >> H	240 mm
A >> P	60 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	21.7 ms
Segments	1
Concatenations	1

**Flow**

Flow Mode	Free
Encodings	1
Velocity Enc.	30 cm/s
Direction	F >> H
Rephased Images	Off
Magnitude Images	On
Magnitude Sum	Off

**Flow**

Phase Images	Off
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**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
------------------	-----

**Sequence - Part 1**

Sequence Name	pc
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Whisper
Flow Compensation	None
Bandwidth	212 Hz/Px
Asymmetric Echo	Weak
Segments	1

**Sequence - Part 2**

Introduction	On
RF Spoiling	On

**Sequence - Assistant**

SAR Assistant	Off
---------------	-----

\\User\Head\Epilepsy\sola\_xa61\_Brain\_headaches\tof\_cs\_acc5.9 \*

TA: 3:56 min Coil Selection: Auto Voxel Size: 0.5×0.5×0.4 mm<sup>3</sup> Acc:: 6.2 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

### Routine

Slab Group	1
Slabs	4
Distance Factor	-18 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	R >> L
Slices per Slab	60
Phase Oversampling	0 %
Slice Oversampling	20.0 %
FOV Read	190 mm
FOV Phase	100.0 %
Slice Thickness	0.40 mm
TR	23.12 ms
TE	7.12 ms
Averages	1
Concatenations	4
AutoAlign	Head > Brain

### Contrast - Common

TR	23.12 ms
TE	7.12 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle Mode	Constant
Flip Angle	20 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

### Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1

### Contrast - Dynamic

Multiple Series	Off
Reordering	Linear

### Contrast - Angio

Flow Direction	F >> H
TONE Ramp	70 %

### Resolution - Common

FOV Read	190 mm
FOV Phase	100.0 %
Slice Thickness	0.40 mm
Base Resolution	256
Phase Resolution	100 %
Slice Resolution	72 %
Trajectory	Cartesian
Interpolation	1.50

### Resolution - Acceleration

Acceleration Mode	CS
Total Factor	6.2
Reference Scans	Integrated
Reference Lines PE	24
Reference Lines 3D	32
Phase Partial Fourier	Off
Slice Partial Fourier	Off
Asymmetric Echo	Strong
Elliptical Scanning	Off

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
POCS	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

### Geometry - Common

Slab Group	1
Slabs	4
Distance Factor	-18 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	R >> L
Slices per Slab	60
Phase Oversampling	0 %
Slice Oversampling	20.0 %
FOV Read	190 mm
FOV Phase	100.0 %
Slice Thickness	0.40 mm
TR	23.12 ms

**Geometry - Common**

Multi-Slice Mode	Sequential
Series	Descending
Concatenations	4

**Geometry - AutoAlign**

Slab Group	1
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	R >> L
AutoAlign	Head > Brain
Initial Position	L0.0 P0.0 H1.0
L	0.0 mm
P	0.0 mm
H	1.0 mm
Initial Orientation	Transversal
Initial Rotation	90.00 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	Tracking H
Gap	10.00 mm
Thickness	40.00 mm

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	1 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg

**System - Adjust Volume**

A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.665005 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	23.12 ms
Segments	1
Concatenations	4

**Physio - Cardiac**

Tagging	None
Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FOV Read	190 mm
FOV Phase	100.0 %
Phase Resolution	100 %
Cine	Off
Trajectory	Cartesian
Dummy Heartbeats	1

**Physio - PACE**

Resp. Control	Off
Concatenations	4

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - Cardiac**

Inline Evaluation	Off
Magn. Preparation	None
Save Original Images	On
Contrasts	1
TE	7.12 ms
TR	23.12 ms

**Inline - MIP**

MIP Sag	On
MIP Cor	On
MIP Tra	On
MIP Time	Off
Radial MIP	On
Number of Radial Views	12

**Inline - MIP**

Axis of Radial Views	H-F
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Sequence - Part 1**

Sequence Name	fl_r
Dimension	3D
Sequence Type	Gre
Excitation	TONE
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	Slice/Read
Reordering	Linear
Bandwidth	100 Hz/Px
Echo Spacing	14.82 ms
Asymmetric Echo	Strong
Optimization	None
Define	Segments
Segments	1

**Sequence - Part 2**

Introduction	On
RF Spoiling	On
Phase Enc. Rewinder	On

**Sequence - Assistant**

SAR Assistant	Flip Angle
Min Flip Angle	15 deg
Allowed Delay	0 s
Optimization	None