

## SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\loc tumor brain  
TA:0:27 PAT:Off Voxel size:0.5x0.5x8.0 mm Rel. SNR:1.00 :fl

### Properties

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	Off
Start measurements	single

### Routine

Nr. of slice groups	3
Slices	3
Dist. factor	200 %
Position	L0.0 P30.0 H0.0 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	280 mm
FoV phase	100.0 %
Slice thickness	8.0 mm
TR	7.0 ms
TE	2.50 ms
Averages	2
Concatenations	9
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HE1-4

## Contrast

TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude
Multiple series	Off

## Resolution

Base resolution	256
Phase resolution	80 %
Phase partial Fourier	Off
Interpolation	On
PAT mode	None
Image Filter	Off
Distortion Corr.	On
TD	0 ms
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	On
Mode	Inplane

## Geometry

Nr. of slice groups	3
Slices	3
Dist. factor	200 %
Position	L0.0 P30.0 H0.0 mm
Phase enc. dir.	A >> P
Phase oversampling	0 %
Multi-slice mode	Sequential
Series	Interleaved
Saturation mode	Standard
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	---
Coil Select Mode	Default
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.137628 MHz
Correction factor	1
SRFExcit 1H	109.040 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Segments	1
Magn. preparation	None
Dark blood	Off
Resp. control	Off

## Inline

Inline Composing	Off
Distortion correction	Off

## Sequence

Introduction	On
Dimension	2D
Averaging mode	Short term
Multi-slice mode	Sequential
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	290 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Fast
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
Liver registration	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Contrasts	1
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\sag t2  
 TA:1:33 PAT:2 Voxel size:0.8x0.8x4.0 mm Rel. SNR:1.00 :tse

**Properties**

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	Off
Start measurements	single

## Routine

Nr. of slice groups	1
Slices	30
Dist. factor	25 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	Head > Basis
Phase oversampling	0 %
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	4.0 mm
TR	3500.0 ms
TE	92.0 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HE1-4

## Contrast

TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

## Resolution

Base resolution	320
Phase resolution	85 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	39
Reference scan mode	Integrated
Image Filter	Off
Distortion Corr.	On
TD	0.0 ms
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	On
Mode	Inplane

## Geometry

Nr. of slice groups	1
Slices	30
Dist. factor	25 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off
Restore magn.	Off



## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Basis
Coil Select Mode	Default
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.137628 MHz
Correction factor	1
VExcit 1H	179.539 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Magn. preparation	None
Dark blood	Off
Trajectory	Cartesian
Resp. control	Off

## Inline

Inline Composing	Off
Distortion correction	Off

## Sequence

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Averaging mode	Short term
Multi-slice mode	Interleaved
Reduce Motion Sens.	On
Contrasts	1
Bandwidth	220 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	10.2 ms
Define	Turbo factor
Turbo factor	13
Echo trains per slice	12
RF pulse type	Low SAR
Gradient mode	Normal
Hyperecho	Off
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Contrasts	1
Save original images	On

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\ax spgr  
 TA:4:04 PAT:2 Voxel size:1.0×1.0×1.0 mm Rel. SNR:1.00 :tfl\_rs

**Properties**

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	On
Start measurements	single

## Routine

Nr. of slab groups	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	R >> L
AutoAlign	Head > Basis
Phase oversampling	0 %
Slice oversampling	8.3 %
FoV read	256 mm
FoV phase	81.3 %
Slice thickness	1.00 mm
TR	2110.0 ms
TE	3.95 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HE1-4

## Contrast

Magn. preparation	Slice-sel. IR
TI	1100 ms
Flip angle	10 deg
Fat suppr.	None
Water suppr.	None
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

## Resolution

Base resolution	256
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Integrated
Image Filter	Off
Distortion Corr.	On
Accel. factor 3D	1
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	Off
Slice resolution	98 %
Slice partial Fourier	Off

## Geometry

Nr. of slab groups	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Phase enc. dir.	R >> L
Phase oversampling	0 %
Slice oversampling	8.3 %
Slices per slab	192
Multi-slice mode	Sequential
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Basis
Coil Select Mode	Default
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.137628 MHz
Correction factor	1
SLoopIRsel 1H	399.506 V
Gain	Low
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Magn. preparation	Slice-sel. IR
TI	1100 ms
Dark blood	Off
Resp. control	Off

## Inline

Inline Composing	Off
Distortion correction	Off

## Sequence

Introduction	On
Dimension	3D
Elliptical scanning	Off
Averaging mode	Short term
Multi-slice mode	Sequential
Reordering	Linear
Asymmetric echo	Allowed
Bandwidth	200 Hz/Px
Flow comp.	Slice
Echo spacing	8.4 ms
Turbo factor	204
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	On
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Save original images	On

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\ax diff  
 TA:2:21 PAT:2 Voxel size:1.3x1.3x4.0 mm Rel. SNR:1.00 :epse

**Properties**

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	On
Start measurements	single



## Routine

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	P >> A
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	4.0 mm
TR	8200 ms
TE	98.0 ms
Averages	2
Concatenations	1
Filter	Raw filter, Distortion Corr.(2D), Prescan Normalize
Coil elements	HE1-4

## Contrast

MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Weak
Averaging mode	Long term
Measurements	1
Delay in TR	0 ms
Reconstruction	Magnitude

## Resolution

Base resolution	192
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	40
Reference scan mode	Separate
Distortion Corr.	On
Mode	2D
Prescan Normalize	On
Normalize	Off
Raw filter	On
Intensity	Weak
Slope	25
Elliptical filter	Off
Dynamic Field Corr.	Off

## Geometry

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	P >> A
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	Fat sat.
Special sat.	None
Fat sat. mode	Weak
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Brain
Coil Select Mode	On - AutoCoilSelect
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	180.00 deg
R >> L	240 mm
A >> P	240 mm
F >> H	160 mm
Frequency 1H	123.137628 MHz
Correction factor	1
AddCSaCSatNS 1H	98.604 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Magn. preparation	None
Resp. control	Off

**Inline**

Inline Composing	Off
Distortion correction	Off

**Sequence**

Introduction	On
Averaging mode	Long term
Multi-slice mode	Interleaved
Bandwidth	1042 Hz/Px
Optimization	None
Free echo spacing	Off
Echo spacing	1.04 ms
EPI factor	192
RF pulse type	Normal
Gradient mode	Fast
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms

**BOLD**

Delay in TR	0 ms
Diffusion mode	3-Scan Trace
Diff. weightings	3
b-value 1	0 s/mm <sup>2</sup>
Diff. weighted images	Off
Trace weighted images	On
ADC maps	On
FA maps	Off
Mosaic	Off
Tensor	Off
Distortion Corr.	On
Mode	2D
b-Value >=	0 s/mm <sup>2</sup>
Exponential ADC Maps	On
Invert Gray Scale	Off
Calculated Image	Off

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\ax flair  
TA:3:02 PAT:2 Voxel size:0.8×0.8×4.0 mm Rel. SNR:1.00 :tir\_rs

## Properties

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	On
Start measurements	single

## Routine

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	R >> L
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	240 mm
FoV phase	93.8 %
Slice thickness	4.0 mm
TR	9000.0 ms
TE	119.0 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HE1-4

## Contrast

TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	2500 ms
Freeze suppressed tissue	Off
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

## Resolution

Base resolution	320
Phase resolution	80 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	30
Reference scan mode	Integrated
Image Filter	Off
Distortion Corr.	On
TD	0.0 ms
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	On
Mode	Inplane

## Geometry

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	R >> L
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off
Restore magn.	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Brain
Coil Select Mode	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	90.00 deg
A >> P	240 mm
R >> L	225 mm
F >> H	160 mm
Frequency 1H	123.137628 MHz
Correction factor	1
Excit 1H	246.418 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000



## Physio

1st Signal/Mode	None
Magn. preparation	Slice-sel. IR
TI	2500 ms
Dark blood	Off
Trajectory	Cartesian
Resp. control	Off

## Inline

Inline Composing	Off
Distortion correction	Off

## Sequence

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Averaging mode	Short term
Multi-slice mode	Interleaved
Reduce Motion Sens.	On
Contrasts	1
Bandwidth	170 Hz/Px
Flow comp.	Slice
Allowed delay	30 s
Echo spacing	11.9 ms
Define	Turbo factor
Turbo factor	15
Echo trains per slice	9
RF pulse type	Normal
Gradient mode	Fast
Hyperecho	Off
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Contrasts	1
Save original images	On

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\ax t2 +c  
 TA:1:59 PAT:2 Voxel size:0.8x0.8x4.0 mm Rel. SNR:1.00 :tse\_rs

**Properties**

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	On
Start measurements	single

## Routine

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	R >> L
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	4.0 mm
TR	4200.0 ms
TE	103.0 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HE1-4

## Contrast

TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	120 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Averaging mode	Long term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

## Resolution

Base resolution	320
Phase resolution	94 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	35
Reference scan mode	Integrated
Image Filter	Off
Distortion Corr.	On
TD	0.0 ms
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	On
Mode	Inplane

## Geometry

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	R >> L
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	Parallel F
Gap	10 mm
Thickness	50 mm
Special sat.	Parallel F
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off
Restore magn.	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Brain
Coil Select Mode	Default
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.137628 MHz
Correction factor	1
SLoop1RSatSS 1H	488.379 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Magn. preparation	None
Dark blood	Off
Trajectory	Cartesian
Resp. control	Off

## Inline

Inline Composing	Off
Distortion correction	Off

## Sequence

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Averaging mode	Long term
Multi-slice mode	Interleaved
Reduce Motion Sens.	On
Contrasts	1
Bandwidth	248 Hz/Px
Flow comp.	Slice
Allowed delay	30 s
Echo spacing	11.4 ms
Define	Turbo factor
Turbo factor	13
Echo trains per slice	13
RF pulse type	Low SAR
Gradient mode	Fast
Hyperecho	Off
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Contrasts	1
Save original images	On

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\ax spgr +c  
 TA:4:04 PAT:2 Voxel size:1.0×1.0×1.0 mm Rel. SNR:1.00 :tfl\_rs

**Properties**

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	On
Start measurements	single



## Routine

Nr. of slab groups	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	R >> L
AutoAlign	Head > Basis
Phase oversampling	0 %
Slice oversampling	8.3 %
FoV read	256 mm
FoV phase	81.3 %
Slice thickness	1.00 mm
TR	2110.0 ms
TE	3.95 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HE1-4

## Contrast

Magn. preparation	Slice-sel. IR
TI	1100 ms
Flip angle	10 deg
Fat suppr.	None
Water suppr.	None
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

## Resolution

Base resolution	256
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Integrated
Image Filter	Off
Distortion Corr.	On
Accel. factor 3D	1
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	Off
Slice resolution	98 %
Slice partial Fourier	Off

## Geometry

Nr. of slab groups	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Phase enc. dir.	R >> L
Phase oversampling	0 %
Slice oversampling	8.3 %
Slices per slab	192
Multi-slice mode	Sequential
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Basis
Coil Select Mode	Off - All
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.137628 MHz
Correction factor	1
SLoopIRsel 1H	399.506 V
Gain	Low
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Magn. preparation	Slice-sel. IR
TI	1100 ms
Dark blood	Off
Resp. control	Off

## Inline

Inline Composing	Off
Distortion correction	Off

## Sequence

Introduction	On
Dimension	3D
Elliptical scanning	Off
Averaging mode	Short term
Multi-slice mode	Sequential
Reordering	Linear
Asymmetric echo	Allowed
Bandwidth	200 Hz/Px
Flow comp.	Slice
Echo spacing	8.4 ms
Turbo factor	204
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	On
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Save original images	On

**SIEMENS MAGNETOM Skyra syngo MR D13**

\\USER\BRAIN\BRAIN ADULT\BRAIN TUMOR\ax t1 +c  
TA:3:21 Voxel size:0.4x0.4x4.0 mm Rel. SNR:1.00 :se

**Properties**

Prio Recon	Off
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Wait for user to start	On
Start measurements	single

## Routine

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	R >> L
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	240 mm
FoV phase	81.3 %
Slice thickness	4.0 mm
TR	500.0 ms
TE	13.0 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HE1-4

## Contrast

TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle 1	70 deg
Fat suppr.	None
Water suppr.	None
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

## Resolution

Base resolution	320
Phase resolution	75 %
Phase partial Fourier	Off
Interpolation	On
Image Filter	Off
Distortion Corr.	On
TD	0.0 ms
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	On
Mode	Inplane

## Geometry

Nr. of slice groups	1
Slices	40
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	R >> L
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Special sat.	None
Set-n-Go Protocol	Off
Table position	P
Inline Composing	Off

## System

Body	Off
HE1	On
HE3	On
NE1	Off
HE2	On
HE4	On
NE2	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	L >> R
Coronal	P >> A
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Brain
Coil Select Mode	Default
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.137628 MHz
Correction factor	1
VExcit 1H	50.271 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

## Physio

1st Signal/Mode	None
Magn. preparation	None
Dark blood	Off



**Inline**

Inline Composing	Off
Distortion correction	Off

**Sequence**

Introduction	On
Averaging mode	Short term
Multi-slice mode	Interleaved
Asymmetric echo	Off
Contrasts	1
Bandwidth	230 Hz/Px
Allowed delay	0 s
RF pulse type	Low SAR
Gradient mode	Fast
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HE1-4
Acquisition duration	0 ms
Mode	Off

**BOLD**

Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Contrasts	1
Save original images	On