

# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\localizer

Scan Time: 0:17    Voxel size: 2.5x1.3x7.0 [mm]    Rel. SNR: 1.00    SIEMENS: gre

## Routine

Slice group 1	
Slices	1
Dist. factor	20 [%]
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0 [deg]
Slice group 2	
Slices	1
Dist. factor	20 [%]
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
Rotation	0 [deg]
Slice group 3	
Slices	1
Dist. factor	20 [%]
Position	Isocenter
Orientation	Coronal
Phase enc. dir.	R >> L
Rotation	0 [deg]
Phase oversampling	0 [%]
FoV read	320 [mm]
FoV phase	100.0 [%]
Slice thickness	7 [mm]
TR	20 [ms]
TE	5 [ms]
Averages	2
Concatenations	3
Filter	Elliptical filter
Coil elements	PH1,PH2,PH3,...

## Contrast

TD	0 [ms]
MTC	0
Magn. preparation	None
Flip angle	40 [deg]
Reconstruction	Magnitude
Fat suppr.	None
Water suppr.	None
Measurements	1

## Resolution

Base resolution	256
Phase resolution	50 [%]
Phase partial Fourier	Off
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	On
Interpolation	1
-----	
PAT mode	None

## Geometry

Multi-slice mode	Sequential
Series	Interleaved
-----	
Saturation mode	Standard
Special sat.	None
-----	

## System

Save uncombined	0
Scan at current TP	1
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
8 Channel Head / PH5	1
8 Channel Head / PH6	1
8 Channel Head / PH7	1
8 Channel Head / PH8	1
CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	0
CP Spine Array / SP2	0
8 Channel Head / PH1	1
8 Channel Head / PH2	1
8 Channel Head / PH3	1
8 Channel Head / PH4	1
Body	0
-----	
Shim mode	Tune up
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0 [deg]
R >> L	350 [mm]
A >> P	263 [mm]
F >> H	350 [mm]

## Physio

1st Signal/Mode	None
Segments	1
-----	
Tagging	None
Dark blood	0
-----	
Resp. control	Off

## Inline

Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	0
MIP-Cor	0
MIP-Tra	0
MIP-Time	0
Save original images	1
-----	
Wash - In	0
Wash - Out	0
TTP	0
PEI	0
MIP - time	0

## Sequence

Introduction	1
Dimension	2D
Phase stabilisation	0

# SIEMENS MAGNETOM Sonata syngo MR 2004A

Averaging mode	Short term
Asymmetric echo	Off
Contrasts	1
Bandwidth	180 [Hz/Px]
Flow comp.	No

---

RF pulse type	Fast
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	1

# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\SWI\_1X.5X2\_HEAD\_NECK

+ Scan Time: 11:33    Voxel size: 1.0x0.5x2.0 [mm]    Rel. SNR: 1.00    USER: swiIPAT

## Routine

Slab group 1	
Slabs	1
Dist. factor	20 [%]
Position	L0.0 A37.0 F30.1 [mm]
Orientation	T > C-5.7
Phase enc. dir.	R >> L
Rotation	90 [deg]
Phase oversampling	0 [%]
Slice oversampling	0 [%]
Slices per slab	128
FoV read	256 [mm]
FoV phase	75.0 [%]
Slice thickness	2 [mm]
TR	50 [ms]
TE	40 [ms]
Averages	1
Concatenations	1
Filter	None
Coil elements	PH1,PH2,PH3,...

## Contrast

MTC	0
Magn. preparation	None
Flip angle	15 [deg]
Reconstruction	Magn./Phase
Fat suppr.	None
Water suppr.	None
Measurements	1

## Resolution

Base resolution	512
Phase resolution	50 [%]
Slice resolution	100 [%]
Phase partial Fourier	Off
Slice partial Fourier	Off
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	Off
Interpolation	0
-----	
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24

## Geometry

Multi-slice mode	Interleaved
Series	Interleaved
-----	
Saturation mode	Standard
Special sat.	None

## System

Save uncombined	0
Scan at current TP	0
Scan region position	H
Scan region position	0 [mm]
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H

8 Channel Head / PH5	1
8 Channel Head / PH6	1
8 Channel Head / PH7	1
8 Channel Head / PH8	1
CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	0
CP Spine Array / SP2	0
8 Channel Head / PH1	1
8 Channel Head / PH2	1
8 Channel Head / PH3	1
8 Channel Head / PH4	1
Body	0

Shim mode	Standard
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	L0.0 A37.0 F30.1 [mm]
Orientation	T > C-5.7
Rotation	90 [deg]
A >> P	256 [mm]
R >> L	192 [mm]
F >> H	256 [mm]

## Physio

1st Signal/Mode	None
Segments	1
-----	
Tagging	None
Dark blood	0
-----	
Resp. control	Off

## Inline

## Sequence

Introduction	1
Dimension	3D
Elliptical scanning	0
Phase stabilisation	0
Averaging mode	Short term
Asymmetric echo	Off
Contrasts	1
Bandwidth	80 [Hz/Px]
Flow comp.	Yes
-----	
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	1
-----	
RO polarity	bipolar
SWI	Off

# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\tof\_fl2d\_tra

+ Scan Time: 5:11    Voxel size: 1.0x0.5x2.5 [mm]    Rel. SNR: 1.00    SIEMENS: fl\_tof

## Routine

Slice group 1	
Slices	128
Dist. factor	-33.00 [%]
Position	L0.0 A37.0 F30.1 [mm]
Orientation	T > C-5.7
Phase enc. dir.	R >> L
Rotation	90 [deg]
Phase oversampling	0 [%]
FoV read	256 [mm]
FoV phase	75.0 [%]
Slice thickness	2.5 [mm]
TR	26 [ms]
TE	7.2 [ms]
Averages	1
Concatenations	128
Filter	None
Coil elements	PH1,PH2,PH3,...

## Contrast

TD	0 [ms]
MTC	0
Flip angle	70 [deg]
Reconstruction	Magnitude
Fat suppr.	None
Water suppr.	None
Measurements	1

## Resolution

Base resolution	512
Phase resolution	50 [%]
Phase partial Fourier	6/8
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	Off
Interpolation	0
-----	
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24

## Geometry

Multi-slice mode	Sequential
Series	Ascending
-----	
Special sat.	Tracking F
Gap	10 [mm]
Thickness	40 [mm]

## System

Save uncombined	0
Scan at current TP	0
Scan region position	H
Scan region position	0 [mm]
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
8 Channel Head / PH5	1
8 Channel Head / PH6	1
8 Channel Head / PH7	1
8 Channel Head / PH8	1

CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	0
CP Spine Array / SP2	0
8 Channel Head / PH1	1
8 Channel Head / PH2	1
8 Channel Head / PH3	1
8 Channel Head / PH4	1
Body	0

-----	
Shim mode	Tune up
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0 [deg]
R >> L	350 [mm]
A >> P	263 [mm]
F >> H	350 [mm]

## Physio

1st Signal/Mode	None
-----	
Dark blood	0

## Angio

-----	
Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	1
MIP-Cor	1
MIP-Tra	0
MIP-Time	0
Save original images	1

## Sequence

Introduction	1
Dimension	2D
Averaging mode	Short term
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	81 [Hz/Px]
Flow comp.	Yes
-----	
Gradient mode	Fast
RF spoiling	1

# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\flash\_50\_through-plane

Scan Time: 1:23    Voxel size: 0.6x0.6x4.0 [mm]    Rel. SNR: 1.00    SIEMENS: fl\_fq\_shphs

## Routine

Slice group 1	
Slices	1
Dist. factor	20 [%]
Position	L0.0 P14.6 F31.1 [mm]
Orientation	T > C37.0
Phase enc. dir.	A >> P
Rotation	0 [deg]
Phase oversampling	0 [%]
FoV read	256 [mm]
FoV phase	75.0 [%]
Slice thickness	4 [mm]
TR	32 [ms]
TE	4.2 [ms]
Averages	1
Concatenations	1
Filter	None
Coil elements	PH1,PH2,PH3,...

## Contrast

Flip angle	30 [deg]
Reconstruction	Magnitude
Measurements	1

## Resolution

Base resolution	448
Phase resolution	100 [%]
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	Off

## Geometry

Multi-slice mode	Sequential
Series	Ascending
Special sat.	None

## System

Scan at current TP	0
Scan region position	H
Scan region position	0 [mm]
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
8 Channel Head / PH5	1
8 Channel Head / PH6	1
8 Channel Head / PH7	1
8 Channel Head / PH8	1
CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	0
CP Spine Array / SP2	0
8 Channel Head / PH1	1
8 Channel Head / PH2	1
8 Channel Head / PH3	1
8 Channel Head / PH4	1
Body	0
Shim mode	Tune up

Adjust with body coil	1
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0 [deg]
R >> L	350 [mm]
A >> P	263 [mm]
F >> H	350 [mm]

## Physio

1st Signal/Mode	Pulse/Trigger
Average cycle	No Signal [ms]
Acquisition window	700 [ms]
Trigger pulse	1
Trigger delay	0 [ms]
Segments	3
Phases	21

## Angio

Flow mode	Single dir.
Encodings	1
Velocity enc.	50 [cm/s]
Direction	Through plane
Rephased images	1
Magnitude images	1
Phase images	1
-----	
Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	0
MIP-Cor	0
MIP-Tra	0
MIP-Time	0
Save original images	1

## Sequence

Introduction	0
Averaging mode	Long term
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	385 [Hz/Px]
Flow comp.	No
-----	
RF pulse type	Fast
Gradient mode	Normal
RF spoiling	1

# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\localizer-CENTER AT CHIN

Scan Time: 0:11    Voxel size: 3.1x1.6x10.0 [mm]    Rel. SNR: 1.00    SIEMENS: gre

## Routine

Slice group 1	
Slices	2
Dist. factor	50 [%]
Position	Isocenter
Orientation	Coronal
Phase enc. dir.	R >> L
Rotation	0 [deg]
Slice group 2	
Slices	1
Dist. factor	20 [%]
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0 [deg]
Phase oversampling	0 [%]
FoV read	400 [mm]
FoV phase	100.0 [%]
Slice thickness	10 [mm]
TR	24 [ms]
TE	6 [ms]
Averages	1
Concatenations	3
Filter	Elliptical filter
Coil elements	NE1,NE2,SP1,SP2

## Contrast

TD	0 [ms]
MTC	0
Magn. preparation	None
Flip angle	30 [deg]
Reconstruction	Magnitude
Fat suppr.	None
Water suppr.	None
Measurements	1

## Resolution

Base resolution	256
Phase resolution	50 [%]
Phase partial Fourier	Off
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	On
Interpolation	1
-----	
PAT mode	None

## Geometry

Multi-slice mode	Sequential
Series	Interleaved
-----	
Saturation mode	Standard
Special sat.	None

## System

Save uncombined	0
Scan at current TP	1
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H

CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	1
CP Spine Array / SP2	1
CP Neck Array / NE1	1
CP Neck Array / NE2	1
Body	0

Shim mode	Tune up
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0 [deg]
R >> L	350 [mm]
A >> P	263 [mm]
F >> H	350 [mm]

## Physio

1st Signal/Mode	None
Segments	1
-----	
Tagging	None
Dark blood	0
-----	
Resp. control	Off

## Inline

Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	0
MIP-Cor	0
MIP-Tra	0
MIP-Time	0
Save original images	1
-----	
Wash - In	0
Wash - Out	0
TTP	0
PEI	0
MIP - time	0

## Sequence

Introduction	1
Dimension	2D
Phase stabilisation	0
Averaging mode	Short term
Asymmetric echo	Off
Contrasts	1
Bandwidth	130 [Hz/Px]
Flow comp.	No
-----	
RF pulse type	Fast
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	1

# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\tof\_fl2d\_tra-neck

Scan Time: 8:47    Voxel size: 1.0x0.5x2.5 [mm]    Rel. SNR: 1.00    SIEMENS: fl\_tof

## Routine

Slice group 1	
Slices	128
Dist. factor	-33.00 [%]
Position	L0.0 A20.3 F1.0 [mm]
Orientation	Transversal
Phase enc. dir.	R >> L
Rotation	90 [deg]
Phase oversampling	0 [%]
FoV read	256 [mm]
FoV phase	75.0 [%]
Slice thickness	2.5 [mm]
TR	26 [ms]
TE	7.2 [ms]
Averages	1
Concatenations	128
Filter	None
Coil elements	HE,NE1,NE2,...

## Contrast

TD	0 [ms]
MTC	0
Flip angle	70 [deg]
Reconstruction	Magnitude
Fat suppr.	None
Water suppr.	None
Measurements	1

## Resolution

Base resolution	512
Phase resolution	50 [%]
Phase partial Fourier	6/8
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	Off
Interpolation	0
-----	
PAT mode	None

## Geometry

Multi-slice mode	Sequential
Series	Ascending
-----	
Special sat.	Tracking F
Gap	10 [mm]
Thickness	40 [mm]

## System

Save uncombined	0
Scan at current TP	0
Scan region position	H
Scan region position	0 [mm]
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	1
CP Spine Array / SP2	1

CP Neck Array / NE1	1
CP Neck Array / NE2	1
CP Head Array / HE	1
Body	0
-----	
Shim mode	Tune up
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0 [deg]
R >> L	350 [mm]
A >> P	263 [mm]
F >> H	350 [mm]

## Physio

1st Signal/Mode	None
-----	
Dark blood	0

## Angio

Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	1
MIP-Cor	1
MIP-Tra	1
MIP-Time	0
Save original images	1

## Sequence

Introduction	1
Dimension	2D
Averaging mode	Short term
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	81 [Hz/Px]
Flow comp.	Yes
-----	
Gradient mode	Fast
RF spoiling	1

SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\DYNAMIC\_fl3d\_ce\_cor-15

Scan Time: 4:02 Voxel size: 0.9x0.9x0.9 [mm] Rel. SNR: 1.00 SIEMENS: fl3d\_ce

Routine

Slab group 1	
Slabs	1
Dist. factor	20 [%]
Position	L0.0 A37.6 F13.9 [mm]
Orientation	C > T6.8
Phase enc. dir.	R >> L
Rotation	0 [deg]
Phase oversampling	0 [%]
Slice oversampling	0 [%]
Slices per slab	96
FoV read	340 [mm]
FoV phase	75.0 [%]
Slice thickness	0.9 [mm]
TR	3.66 [ms]
TE	1.36 [ms]
Averages	1
Concatenations	1
Filter	None
Coil elements	HE,NE1,NE2,...

Contrast

Magn. preparation	None
Flip angle	30 [deg]
Reconstruction	Magnitude
Fat suppr.	None
Water suppr.	None
Measurements	15
Pause after meas. 1	0 [s]
Pause after meas. 2	0 [s]
Pause after meas. 3	0 [s]
Pause after meas. 4	0 [s]
Pause after meas. 5	0 [s]
Pause after meas. 6	0 [s]
Pause after meas. 7	0 [s]
Pause after meas. 8	0 [s]
Pause after meas. 9	0 [s]
Pause after meas. 10	0 [s]
Pause after meas. 11	0 [s]
Pause after meas. 12	0 [s]
Pause after meas. 13	0 [s]
Pause after meas. 14	0 [s]
Multiple series	1

Resolution

Base resolution	384
Phase resolution	100 [%]
Slice resolution	60 [%]
Phase partial Fourier	6/8
Slice partial Fourier	6/8
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	Off
Interpolation	0
PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	24

Geometry

Multi-slice mode	Sequential
------------------	------------

Series Ascending

Special sat.	None
--------------	------

System

Save uncombined	0
Scan at current TP	0
Scan region position	H
Scan region position	0 [mm]
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0
CP Spine Array / SP6	0
CP Spine Array / SP1	1
CP Spine Array / SP2	1
CP Neck Array / NE1	1
CP Neck Array / NE2	1
CP Head Array / HE	1
Body	0

Shim mode	Tune up
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0 [deg]
R >> L	350 [mm]
A >> P	263 [mm]
F >> H	350 [mm]

Physio

1st Signal/Mode	None
Segments	1

Angio

3D centric reordering	1
Time to center	0.5 [s]

Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	0
MIP-Cor	1
MIP-Tra	0
MIP-Time	0
Save original images	1

Sequence

Introduction	0
Dimension	3D
Elliptical scanning	0
Averaging mode	Short term
Asymmetric echo	Allowed
Bandwidth	420 [Hz/Px]
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	1



# SIEMENS MAGNETOM Sonata syngo MR 2004A

\\USER\ZAHID RESEARCH001\HAACKE\_MS\_092809\Haacke\_ms\_8ch\_01192010\HI RES COR 3D POST GAD

+ Scan Time: 7:20    Voxel size: 0.6x0.6x1.3 [mm]    Rel. SNR: 1.00    SIEMENS: fl\_tof

## Routine

Slab group 1	
Slabs	1
Dist. factor	-11.25 [%]
Position	L0.0 A37.6 F13.9 [mm]
Orientation	C > T6.8
Phase enc. dir.	R >> L
Rotation	0 [deg]
Phase oversampling	0 [%]
Slice oversampling	10 [%]
Slices per slab	80
FoV read	400 [mm]
FoV phase	100.0 [%]
Slice thickness	1.25 [mm]
TR	15 [ms]
TE	3.77 [ms]
Averages	1
Concatenations	1
Filter	None
Coil elements	HE,NE1,NE2,...

## Contrast

MTC	0
Flip angle	30 [deg]
Reconstruction	Magnitude
Fat suppr.	None
Water suppr.	None
Measurements	1

## Resolution

Base resolution	640
Phase resolution	100 [%]
Slice resolution	100 [%]
Phase partial Fourier	Off
Slice partial Fourier	Off
Filter 1	
Raw filter	Off
Filter 2	
Large FoV	Off
Filter 3	
Normalize	Off
Filter 4	
Elliptical filter	Off
Interpolation	0
-----	
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24

## Geometry

Multi-slice mode	Sequential
Series	Descending
-----	
Special sat.	None

## System

Save uncombined	0
Scan at current TP	0
Scan region position	H
Scan region position	0 [mm]
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
CP Spine Array / SP3	0
CP Spine Array / SP4	0
CP Spine Array / SP5	0

CP Spine Array / SP6	0
CP Spine Array / SP1	1
CP Spine Array / SP2	1
CP Neck Array / NE1	1
CP Neck Array / NE2	1
CP Head Array / HE	1
Body	0

-----	
Shim mode	Standard
Adjust with body coil	0
Confirm freq. adjustment	0
Assume Silicone	0
Ref. amplitude [1H]	180.000 [V]
Adjust volume	
Position	L0.0 A37.6 F13.9 [mm]
Orientation	C > T6.8
Rotation	0 [deg]
F >> H	400 [mm]
R >> L	400 [mm]
A >> P	100 [mm]

## Physio

1st Signal/Mode	None
-----	
Dark blood	0

## Angio

Inflow	Slow
Flow direction	A >> P
-----	
Subtract	0
Std-Dev-Sag	0
Std-Dev-Cor	0
Std-Dev-Tra	0
Std-Dev-Time	0
MIP-Sag	1
MIP-Cor	1
MIP-Tra	1
MIP-Time	0
Save original images	1

## Sequence

Introduction	1
Dimension	3D
Elliptical scanning	0
Averaging mode	Short term
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	100 [Hz/Px]
Flow comp.	Yes
-----	
Gradient mode	Fast
RF spoiling	1

Table of contents

\\USER	ZAHID RESEARCH001	HAACKE_MS_092809	Haacke_ms_8ch_01192010	localizer
				SWI_1X.5X2_HEAD_NECK
				tof_fl2d_tra
				flash_50_through-plane
				localizer-CENTER AT CHIN
				tof_fl2d_tra-neck
				inject contrast
				DYNAMIC_fl3d_ce_cor-15
				HI RES COR 3D POST GAD