

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\Quin\_pilot\_250V

TA: 1:12 PAT: Off Voxel size: 1.0x1.0x5.0 mm Rel. SNR: 1.00 SIEMENS: tfl

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	7
Dist. factor	180 %
Position	R1.0 A29.5 F23.2
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0.00 deg
Slice group 2	
Slices	8
Dist. factor	75 %
Position	R3.5 A29.4 H30.5
Orientation	Transversal
Phase enc. dir.	A >> P
Rotation	0.00 deg
Slice group 3	
Slices	5
Dist. factor	100 %
Position	L0.0 A6.8 F24.4
Orientation	Coronal
Phase enc. dir.	R >> L
Rotation	0.00 deg
Phase oversampling	0 %
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	3500 ms
TE	3.17 ms
Averages	1
Concatenations	20
Filter	None
Coil elements	A32

## Contrast

TD	0 ms
Magn. preparation	Slice-sel. IR
TI	1100 ms
Flip angle	5 deg
Fat suppr.	None
Water suppr.	None
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

## Resolution

Base resolution	192
Phase resolution	100 %
Phase partial Fourier	Off

Interpolation Off

PAT mode None

Image Filter Off  
Distortion Corr. Off  
Prescan Normalize Off  
Normalize Off  
B1 filter Off  
Raw filter Off  
Elliptical filter Off

## Geometry

Multi-slice mode Sequential  
Series Ascending

Table position H  
Table position 0 mm  
Inline Composing Off

## System

V32 Off  
A32 On  
Positioning mode REF  
MSMA S - C - T  
Sagittal R >> L  
Coronal A >> P  
Transversal F >> H  
Save uncombined Off  
Coil Combine Mode Adaptive Combine  
AutoAlign ---  
Auto Coil Select Default  
Shim mode Tune up  
Adjust with body coil Off  
Confirm freq. adjustment Off  
Assume Silicone Off  
! Ref. amplitude 1H 220.000 V  
Adjustment Tolerance Auto  
Adjust volume  
Position Isocenter  
Orientation Transversal  
Rotation 0.00 deg  
R >> L 350 mm  
A >> P 263 mm  
F >> H 350 mm

## Physio

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

## 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

## Sequence

## SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

Introduction	On
Dimension	2D
Asymmetric echo	Off
Bandwidth	240 Hz/Px
Flow comp.	No
Echo spacing	6.4 ms
<hr/>	
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\MP2RAGE\_0.70iso\_800\_2700\_from\_Kanny

TA: 10:08

PAT: 3

Voxel size: 0.7x0.7x0.7 mm

Rel. SNR: 1.00

USER: tfl\_wip900b17a

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	50 %
Position	L0.3 A25.2 F13.8
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
Slice oversampling	7.1 %
Slices per slab	224
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	0.70 mm
TR	6000 ms
TE 1	2.96 ms
TE 2	7.28 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

Magn. preparation	Non-sel. IR
TI 1	750 ms
TI 2	2800 ms
Flip angle 1	4 deg
Flip angle 2	5 deg
Fat suppr.	None
Water suppr.	None
2nd Inversion Contrast	On
Averaging mode	Long term
Reconstruction	Magn./Phase
Measurements	1
Multiple series	Each measurement

## Resolution

Base resolution	320
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	6/8
Slice partial Fourier	6/8
PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	32
Accel. factor 3D	1
Reference scan mode	Integrated

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off

## Geometry

Multi-slice mode	Single shot
Series	Interleaved
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	277.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	R1.3 A18.8 H20.2
! Orientation	T > C-2.0
! Rotation	0.00 deg
! R >> L	160 mm
! A >> P	196 mm
! F >> H	109 mm

## Physio

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

## Composing

## Sequence

Introduction	On
Dimension	3D
Elliptical scanning	Off
Asymmetric echo	Off
Contrasts	2
Bandwidth 1	250 Hz/Px
Bandwidth 2	240 Hz/Px
Flow comp.	No
Readout mode	Bipolar
Echo spacing	11.3 ms
RF pulse type	Fast
Gradient mode	Fast*
Excitation	Non-sel.
RF spoiling	On
FFT Scale Factor	150 %

## SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

Morphometry Analysis	Off
FID MoCo Logging	Off
FID Coil Phase Corr.	On
LIN/PAR Swap	Off
Ext. INV Pulse	On
Flip Angle	700
Phase Filter	0 px
Uniform Image	On
Head Mask on UNI	On
T1 Map	On
Complex Div. Image	On
Denoise Weighting	200
FLAWS	Off
Echo Averaging	On

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\3DVASO\_16\_slices\_2\_flash\_PF68/78\_whole\_slice

TA: 14:52

PAT: 2

Voxel size: 0.9x0.9x1.3 mm

Rel. SNR: 1.00

USER: VASO\_109

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	50 %
Position	L1.5 A19.3 H39.9
Orientation	T > C-8.1
Phase enc. dir.	R >> L
Rotation	90.00 deg
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	16
FoV read	142.0 mm
FoV phase	75.9 %
Slice thickness	1.30 mm
TR	1846.80 ms
TE	31 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

Perfusion mode	Picore Q2TIPS
TI2	900 ms
TI1	50 ms
TI1s	50 ms
Flip angle	21 deg
Fat suppr.	Fat sat.
Fat sat. mode	Strong
Averaging mode	Long term
Reconstruction	Magn./Phase
Measurements	483
Delay in TR	0 ms
Multiple series	Off
Perfusion mode	PICORE Q2T
Inversion time 1	50 ms
Saturation stop time	50 ms
Inversion time 2	900.0 ms
Flow limit	100.0 cm/s

## Resolution

Base resolution	166
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	7/8
Slice partial Fourier	6/8
Interpolation	Off

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Accel. factor 3D	1
Ref. lines 3D	12
Reference scan mode	Separate

Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
Series	Ascending
Special sat.	Parallel F
Gap	25.0 mm
Thickness	100 mm
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Sum of Squares
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L0.8 A15.6 H39.1
! Orientation	S > T0.7 > C0.1
! Rotation	7.34 deg
! F >> H	23 mm
! A >> P	156 mm
! R >> L	108 mm

## Physio

1st Signal/Mode	None
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## BOLD

Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	On
Dimension	3D
Reordering	Linear
Contrasts	1
Bandwidth	1158 Hz/Px
Free echo spacing	Off
Echo spacing	0.99 ms
EPI factor	126

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

RF pulse type	Normal
Gradient mode	Normal
Excitation	Slab-sel.
RF spoiling	On
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Ampl	95
BWDTH	150 3.1kHz
thickness	30
use Ernst angle	Off
Maxwell Correction	Off
log physio files	Off
FFT scale	0.50
dummy prepscan time	3 s
z shim	0.00 mT/m*ms
RF duration	5120 us
RF BWTP	25.0
EFFECTIVE TR	22161 ms
PatPartitions	12
EPI phase correction	local
PAT refscan mode	Flash
FlashRef BaseRes	166
FlashRef BW	1000 Hz/px
FlashRef TE	4800 us
FlashRef FA	5 deg
use CAIPI	Off

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\3DVASO\_ONE\_Hemisphere\_GRAPPA2\_PF68\_10Slices\_SOS

TA: 0:19 PAT: 2 Voxel size: 0.7x0.7x1.8 mm Rel. SNR: 1.00 USER: VASO\_109

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	50 %
Position	L29.8 P1.9 H31.0
Orientation	T > S-22.8 > C-5.5
Phase enc. dir.	R >> L
Rotation	120.00 deg
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	12
FoV read	32.8 mm
FoV phase	300.0 %
Slice thickness	1.80 mm
TR	1697.80 ms
TE	24 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

Perfusion mode	Picore Q2TIPS
TI2	800 ms
TI1	50 ms
TI1s	50 ms
Flip angle	27 deg
Fat suppr.	Fat sat.
Fat sat. mode	Strong
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	11
Delay in TR	0 ms
Multiple series	Off
Perfusion mode	PICORE Q2T
Inversion time 1	50 ms
Saturation stop time	50 ms
Inversion time 2	800.0 ms
Flow limit	100.0 cm/s

## Resolution

Base resolution	44
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	6/8
Slice partial Fourier	Off
Interpolation	Off

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Accel. factor 3D	1
Ref. lines 3D	8
Reference scan mode	Separate

Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
Series	Ascending
Special sat.	Parallel F
Gap	25.0 mm
Thickness	100 mm
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Sum of Squares
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L24.9 P2.2 H31.4
! Orientation	S > T0.7
! Rotation	-0.26 deg
! F >> H	60 mm
! A >> P	72 mm
! R >> L	85 mm

## Physio

1st Signal/Mode	None
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## BOLD

Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	On
Dimension	3D
Reordering	Linear
Contrasts	1
Bandwidth	1042 Hz/Px
Free echo spacing	Off
Echo spacing	1.08 ms
EPI factor	132

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

RF pulse type	Normal
Gradient mode	Normal
Excitation	Slab-sel.
RF spoiling	On
<hr/>	
Ampl	110
BWDTH	150 3.1kHz
thickness	30
use Ernst angle	Off
Maxwell Correction	Off
log physio files	Off
FFT scale	1.00
dummy prepSCAN time	3 s
z shim	0.00 mT/m*ms
RF duration	2560 us
RF BWTP	25.0
EFFECTIVE TR	20373 ms
PatPartitions	12
EPI phase correction	local
PAT refscan mode	Flash
FlashRef BaseRes	44
FlashRef BW	1000 Hz/px
FlashRef TE	4800 us
FlashRef FA	5 deg
use CAIPI	Off



# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\quick\_Tx\_calib\_250V

TA: 0:11

Voxel size: 3.9x3.9x5.0 mm

Rel. SNR: 1.00

USER: b1map\_658

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	1
Dist. factor	150 %
Position	R0.6 A31.6 F21.7
Orientation	T > C0.2
Phase enc. dir.	A >> P
Rotation	0.00 deg
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	5 mm
TR	100 ms
TE 1	14 ms
TE 2	14 ms
Averages	1
Filter	None
Coil elements	A32

## Contrast

Flip angle 1	90 deg
Flip angle 2	120 deg
Flip angle 3	60 deg
Flip angle 4	135 deg
Flip angle 5	45 deg
Measurements	1

## Resolution

Base resolution	64
Phase resolution	100 %
Raw filter	Off

## Geometry

Series	Interleaved
Navigator 1	
Position	L3.1 A32.2 F19.2
Orientation	Transversal
Rotation	0.00 deg
Base size phase	50 mm
Base size read	50 mm
Thickness	50 mm
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On

## Positioning mode

MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	---
Auto Coil Select	Default

## Shim mode

Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	200.000 V
Adjustment Tolerance	Auto
Adjust volume	
Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm

## Composing

## Sequence

Contrasts	2
Bandwidth	260.416667 Hz/Px
T1 Compensation	Mean T1
Mean T1	500.0 ms
Angles	1
Amplitude Weighting	Linear
Scale Bar	Enabled
Raw Data	Disabled

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\MAFI\_6mm

TA: 2:17

Voxel size: 6.0x6.0x6.0 mm

Rel. SNR: 1.00

USER: Renzo\MAFI

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	0 %
Position	R1.4 A37.3 F30.9
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	28
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	6.00 mm
TR	150 ms
TE 1	1.080 ms
TE 2	1.080 ms
TE 3	2.09 ms
TE 4	3.100 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Flip angle	90 deg
Fat suppr.	None
Water suppr.	None
Averaging mode	Short term
Reconstruction	Magn./Phase
Measurements	1
Multiple series	Off

## Resolution

Base resolution	32
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	Off

## Geometry

Multi-slice mode	Sequential
Series	Ascending
Special sat.	None
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	REF
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	270.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	R1.3 A35.6 H4.8
! Orientation	T > C-2.0
! Rotation	0.00 deg
! R >> L	160 mm
! A >> P	196 mm
! F >> H	49 mm

## Physio

1st Signal/Mode	None
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## 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

## Sequence

Introduction	Off
Dimension	3D
Contrasts	4
Bandwidth	1560 Hz/Px
Gradient mode	Fast
RF spoiling	On
Online ICE	Off
RF pulse type	square
Pulse duration	500 us
Spoil me!	On
TR2/TR1	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

N dummy TRs	20
Sample T1	1800 ms
Diffusion damping d= bD	0.6000
Diffusion coefficient D	2.2000 $\mu\text{m}^2/\text{ms}$
RF spoil phase increment	129.3 deg
Number of pulse shapes	1
<hr/>	
TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\epi\_sms3\_ip2\_2mm\_10\_20GLM

TA: 2:18 PAT: 2 Voxel size: 2.0x2.0x2.0 mm Rel. SNR: 1.00 USER: ep2d\_bold\_sms\_mgh\_v22

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	57
Dist. factor	0 %
Position	L0.0 A13.7 F9.3
Orientation	Transversal
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
FoV read	195 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	1000 ms
TE	23 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Flip angle	65 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	120
Delay in TR	0 ms
Multiple series	Off

## Resolution

Base resolution	98
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Separate
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On
Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
Series	Interleaved

Special sat. None

Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	---
Auto Coil Select	Default

Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L0.0 A27.9 H1.2
! Orientation	Transversal
! Rotation	0.00 deg
! R >> L	120 mm
! A >> P	150 mm
! F >> H	93 mm

## Physio

1st Signal/Mode	None
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## BOLD

GLM Statistics	On
Dynamic t-maps	Off
Starting ignore meas	0
Ignore after transition	1
Model transition states	Off
Temp. highpass filter	On
Threshold	4.00
Paradigm size	30
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]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Active
Meas[21]	Active
Meas[22]	Active

Meas[23]	Active
Meas[24]	Active
Meas[25]	Active
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	Off
Bandwidth	1890 Hz/Px
Free echo spacing	Off
Echo spacing	0.63 ms
<hr/>	
EPI factor	98
RF pulse type	Normal
Gradient mode	Fast
<hr/>	
Dummy Scans	3
Dummy Scans	4
SMS Factor	3
RF Clip	0
VERSE Factor	1.00
SMS Shift	2
Kernel Size	5x5
Compression Factor	1.00

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\1.2\_SMS\_VASO\_79\_24slic\_noPF

TA: 0:24 PAT: 2 Voxel size: 1.2x1.2x2.0 mm Rel. SNR: 1.00 UNKNOWN:

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	24
Dist. factor	0 %
Position	L0.0 A13.5 H28.6
Orientation	T > C-10.0
Phase enc. dir.	P >> A
Rotation	180.00 deg
Phase oversampling	0 %
FoV read	180 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	1809.1 ms
TE	35 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

Perf / VASO mode	SS-SI VASO
TI2	1000 ms
TI1	50 ms
TI1s	50 ms
Flip angle	80 deg
Fat suppr.	Fat sat.
Fat sat. mode	Weak

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	10
Delay in TR	0 ms
Multiple series	Off

Perfusion mode	PICORE Q2T
Inversion time 1	50 ms
Saturation stop time	50 ms
Inversion time 2	1000 ms
Flow limit	100.0 cm/s

## Resolution

Base resolution	150
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	48
Reference scan mode	Separate

Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
Series	Ascending
Special sat.	Parallel F
Gap	25.0 mm
Thickness	100 mm

Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Sum of Squares
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
! Ref. amplitude 1H	220.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	R1.4 A13.3 H27.0
! Orientation	Sagittal
! Rotation	10.86 deg
! F >> H	86 mm
! A >> P	166 mm
! R >> L	157 mm

## Physio

1st Signal/Mode	None
-----------------	------

## BOLD

## Sequence

Introduction	On
Contrasts	1
Bandwidth	1666 Hz/Px
Free echo spacing	Off
Echo spacing	0.76 ms
EPI factor	150
RF pulse type	Normal
Gradient mode	Normal
Ampl	90
BWDTH	300 3.1kHz
thickness	100
Phase skip	30
Opt. TI2	1106
Volumes per TI	1
FatSat flip angle	110 deg
SMS factor	2

## SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

CAIPI shift	3
SMS online recon	On
SMS-RF phase optim.	On
log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	normal
PAT refscan mode	segmented
RF pulse duration	5120 us
FFT scale	0.5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\Wong\_Sequence\_TR10\_5slices

TA: 0:10 PAT: 3 Voxel size: 1.2x1.2x2.5 mm Rel. SNR: 1.00 USER: tfl\_wip900b17a

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	5
Dist. factor	50 %
Position	R3.9 A13.0 H9.7
Orientation	T > C-5.4
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.5 mm
TR	2000 ms
TE 1	2.02 ms
TE 2	4.79 ms
TE 3	8.24 ms
TE 4	11.69 ms
TE 5	15.14 ms
TE 6	18.59 ms
TE 7	22.04 ms
TE 8	25.49 ms
TE 9	28.94 ms
TE 10	32.39 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

Magn. preparation	None
Flip angle 1	10 deg
Fat suppr.	None
Water suppr.	None
2nd Inversion Contrast	Off
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

## Resolution

Base resolution	160
Phase resolution	100 %
Phase partial Fourier	6/8
PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	24
Reference scan mode	Integrated

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off

## Geometry

Multi-slice mode	Single shot
Series	Interleaved
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L0.3 A14.2 H40.1
! Orientation	S > T0.5
! Rotation	-0.26 deg
! F >> H	43 mm
! A >> P	149 mm
! R >> L	134 mm

## Physio

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

## Composing

## Sequence

Introduction	Off
Dimension	2D
Asymmetric echo	Off
Contrasts	10
Bandwidth 1	600 Hz/Px
Bandwidth 2	300 Hz/Px
Bandwidth 3	300 Hz/Px
Bandwidth 4	300 Hz/Px
Bandwidth 5	300 Hz/Px
Bandwidth 6	300 Hz/Px
Bandwidth 7	300 Hz/Px
Bandwidth 8	300 Hz/Px
Bandwidth 9	300 Hz/Px
Bandwidth 10	300 Hz/Px
Flow comp.	No
Readout mode	Bipolar



# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

Echo spacing	35 ms
RF pulse type	Fast
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
Morphometry Analysis	Off
FID MoCo Logging	Off
FID Coil Phase Corr.	Off
LIN/PAR Swap	Off
Echo Averaging	Off

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\ep3d\_TIM\_0.8iso

TA: 0:32 PAT: 4 Voxel size: 0.8x0.8x0.8 mm Rel. SNR: 1.00 USER: ep3d\_bold\_WIP1080

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	50 %
Position	R5.1 A8.5 H3.1
Orientation	T > C-7.0
Phase enc. dir.	P >> A
Rotation	180.00 deg
Phase oversampling	0 %
Slice oversampling	8.3 %
Slices per slab	96
FoV read	192 mm
FoV phase	98.3 %
Slice thickness	0.80 mm
TR	62 ms
TE	18 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Flip angle	15 deg
Fat suppr.	Water excit. normal
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	3
Delay in TR	0 ms
Multiple series	Off

## Resolution

Base resolution	232
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	5/8
Slice partial Fourier	Off
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	4
Ref. lines PE	48
Accel. factor 3D	1
Ref. lines 3D	12
Reference scan mode	Separate
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On

Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
Series	Interleaved
Special sat.	None
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	R5.1 A18.6 H0.3
! Orientation	Transversal
! Rotation	90.00 deg
! A >> P	149 mm
! R >> L	179 mm
! F >> H	103 mm

## Physio

1st Signal/Mode	None
-----------------	------

## BOLD

Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	Off
Dimensioning	3D
Reordering	Linear
Contrasts	1
Bandwidth	828 Hz/Px
Free echo spacing	Off
Echo spacing	1.33 ms
EPI factor	228
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	On
Use Ernst angle?	On
Log physio?	Off
FFT scale	1.00
RF BWTP	25.0
bipolar water excite?	Off
EFFECTIVE TR	6448 ms
PatPartitions	104

## SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

EPI phase correction	local
PAT refscan mode	Flash
FlashRef BaseRes	232
FlashRef BW	1000 Hz/px
FlashRef TE	4800 us
FlashRef FA	5 deg
use CAIPI	On
CAIPI shift kz	0
CAIPI shift ky	2
dummy prepsan time	3 s

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\\USER\UserProtocols\Renzo\Basic\_templates\ep3d\_whole\_brain

TA: 0:58 PAT: 4 Voxel size: 0.8x0.8x0.8 mm Rel. SNR: 1.00 USER: ep3d\_bold\_WIP1080

## Properties

Prio Recon	Off
Before measurement	
After measurement	
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
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	50 %
Position	R5.1 A8.5 H3.1
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
Slice oversampling	8.3 %
Slices per slab	192
FoV read	192 mm
FoV phase	98.3 %
Slice thickness	0.80 mm
TR	62 ms
TE	18 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Flip angle	15 deg
Fat suppr.	Water excit. normal
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	3
Delay in TR	0 ms
Multiple series	Off

## Resolution

Base resolution	232
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	5/8
Slice partial Fourier	Off
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	4
Ref. lines PE	48
Accel. factor 3D	1
Ref. lines 3D	12
Reference scan mode	Separate
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On

Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
Series	Interleaved
Special sat.	None
Table position	H
Table position	0 mm
Inline Composing	Off

## System

V32	Off
A32	On
Positioning mode	FIX
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	---
Auto Coil Select	Default
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	R5.1 A18.6 H0.3
! Orientation	Transversal
! Rotation	90.00 deg
! A >> P	149 mm
! R >> L	179 mm
! F >> H	103 mm

## Physio

1st Signal/Mode	None
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## BOLD

Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	Off
Dimensioning	3D
Reordering	Linear
Contrasts	1
Bandwidth	828 Hz/Px
Free echo spacing	Off
Echo spacing	1.33 ms
EPI factor	228
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	On
Use Ernst angle?	On
Log physio?	Off
FFT scale	1.00
RF BWTP	25.0
bipolar water excite?	Off
EFFECTIVE TR	12896 ms
PatPartitions	208

## SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

EPI phase correction	local
PAT refscan mode	Flash
FlashRef BaseRes	232
FlashRef BW	1000 Hz/px
FlashRef TE	4800 us
FlashRef FA	5 deg
use CAIPI	On
CAIPI shift kz	0
CAIPI shift ky	2
dummy prepscan time	3 s