

This hcp7t\_ret Session 2 includes:

Localizer  
AAHScout\_32ch  
Localizer\_aligned  
==== resting ====  
BOLD\_REST2\_AP  
BOLD\_PA\_SE  
BOLD\_AP\_SE  
==== retinotopy ====  
BOLD\_RET1\_AP  
BOLD\_RET2\_PA  
BOLD\_RET3\_AP  
BOLD\_RET4\_PA  
BOLD\_PA\_SE  
BOLD\_AP\_SE  
BOLD\_RET5\_AP  
BOLD\_RET6\_PA  
FieldMap

Notes:

1. "Raw Filter" is listed as "On" in PDF throughout. But it was "Off". That is a bug in the protocol printout under VB17.
2. Phase enc. dir. for "PA" scans is left as "A >> P", and the polarity inversion is accomplished by setting "Invert RO/PE polarity" flag to "On" in the Sequence:Special tab.

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\Localizer

TA: 5.8 s PAT: Off Voxel size: 1.1x1.0x5.0 mm Rel. SNR: 1.00 SIEMENS: gre

Properties		Phase resolution	90 %
Prio Recon	Off	Phase partial Fourier	Off
Before measurement		Interpolation	On
After measurement		PAT mode	None
Load to viewer	On	Image Filter	Off
Inline movie	Off	Distortion Corr.	Off
Auto store images	On	Prescan Normalize	Off
Load to stamp segments	Off	Normalize	Off
Load images to graphic segments	Off	B1 filter	Off
Auto open inline display	Off	Raw filter	Off
Start measurement without further preparation	On	Elliptical filter	On
Wait for user to start	Off	Mode	Inplane
Start measurements	single	Geometry	
Routine		Multi-slice mode	Sequential
Slice group 1		Series	Interleaved
Slices	1	Saturation mode	Standard
Dist. factor	20 %	Special sat.	None
Position	L0.0 A50.0 H0.0	Table position	H
Orientation	Sagittal	Table position	0 mm
Phase enc. dir.	A >> P	Inline Composing	Off
Rotation	0.00 deg	Tim CT mode	Off
Slice group 2		System	
Slices	1	V32	Off
Dist. factor	20 %	A32	On
Position	Isocenter	Positioning mode	FIX
Orientation	Transversal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Slice group 3		Transversal	F >> H
Slices	1	Save uncombined	Off
Dist. factor	20 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	---
Orientation	Coronal	Auto Coil Select	Off
Phase enc. dir.	R >> L	Shim mode	Tune up
Rotation	0.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
FoV read	250 mm	Assume Silicone	Off
FoV phase	100.0 %	? Ref. amplitude 1H	0.000 V
Slice thickness	5.0 mm	Adjustment Tolerance	Auto
TR	6.2 ms	Adjust volume	
TE	2.67 ms	Position	Isocenter
Averages	1	Orientation	Transversal
Concatenations	3	Rotation	0.00 deg
Filter	Elliptical filter	R >> L	350 mm
Coil elements	A32	A >> P	263 mm
Contrast		F >> H	350 mm
TD	0 ms	Physio	
MTC	Off	1st Signal/Mode	None
Magn. preparation	None	Segments	1
Flip angle	10 deg	Tagging	None
Fat suppr.	None	Dark blood	Off
Water suppr.	None	Resp. control	Off
SWI	Off	Inline	
Averaging mode	Short term	Subtract	Off
Reconstruction	Magnitude	Liver registration	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement		
Resolution			
Base resolution	256		

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

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
<hr/>	
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
<hr/>	
MapIt	None
Contrasts	1
<hr/>	
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Bandwidth	320 Hz/Px
Flow comp.	No
<hr/>	
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\AAHScout\_32ch

TA: 8.9 s PAT: 4 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 SIEMENS: AALScout

## Properties

Prio Recon	Off
Before measurement	
After measurement	
Load to viewer	On
Inline movie	Off
Auto store images	On
Load to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	single

## Routine

Slab group 1	
Slabs	1
Dist. factor	20 %
Position	L0.0 A50.0 H0.0
Orientation	Sagittal
Phase enc. dir.	A >> P
Rotation	0 deg
AutoAlign	Head
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	128
FoV read	260 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
TR	2.90 ms
TE	1.2 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	A32

## Contrast

Flip angle	9.0 deg
Averaging mode	Short term
Reconstruction	Magnitude
Measurements	1

## Resolution

Base resolution	160
Phase resolution	100 %
Slice resolution	69 %
Phase partial Fourier	6/8
Slice partial Fourier	6/8
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Accel. factor 3D	2
Ref. lines 3D	24
Reference scan mode	Integrated

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	Sum of Squares
Auto Coil Select	Off
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 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

## Inline

Time to center	4.5 s
Maplt	None
Contrasts	1

## Sequence

Introduction	On
Dimension	3D
Asymmetric echo	Weak
Bandwidth	550 Hz/Px
RF pulse type	Fast
Gradient mode	Normal
Excitation	Non-sel.
RF spoiling	On

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\Localizer\_aligned

TA: 0:23 PAT: Off Voxel size: 1.1x1.0x5.0 mm Rel. SNR: 1.00 SIEMENS: gre

Properties		Phase resolution	90 %
Prio Recon	Off	Phase partial Fourier	Off
Before measurement		Interpolation	On
After measurement		PAT mode	None
Load to viewer	On	Image Filter	Off
Inline movie	Off	Distortion Corr.	Off
Auto store images	On	Prescan Normalize	Off
Load to stamp segments	On	Normalize	Off
Load images to graphic segments	On	B1 filter	Off
Auto open inline display	Off	Raw filter	Off
Start measurement without further preparation	Off	Elliptical filter	On
Wait for user to start	Off	Mode	Inplane
Start measurements	single	Geometry	
Routine		Multi-slice mode	Sequential
Slice group 1		Series	Interleaved
Slices	5	Saturation mode	Standard
Dist. factor	400 %	Special sat.	None
Position	Isocenter	Table position	H
Orientation	Sagittal	Table position	0 mm
Phase enc. dir.	A >> P	Inline Composing	Off
Rotation	0.00 deg	Tim CT mode	Off
Slice group 2		System	
Slices	5	V32	Off
Dist. factor	600 %	A32	On
Position	Isocenter	Positioning mode	FIX
Orientation	Transversal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Slice group 3		Transversal	F >> H
Slices	5	Save uncombined	Off
Dist. factor	300 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	Head > Brain
Orientation	Coronal	Auto Coil Select	Off
Phase enc. dir.	R >> L	Shim mode	Tune up
Rotation	0.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
FoV read	250 mm	Assume Silicone	Off
FoV phase	100.0 %	? Ref. amplitude 1H	0.000 V
Slice thickness	5.0 mm	Adjustment Tolerance	Auto
TR	6.2 ms	Adjust volume	
TE	2.67 ms	Position	Isocenter
Averages	1	Orientation	Transversal
Concatenations	15	Rotation	0.00 deg
Filter	Elliptical filter	R >> L	350 mm
Coil elements	A32	A >> P	263 mm
Contrast		F >> H	350 mm
TD	0 ms	Physio	
MTC	Off	1st Signal/Mode	None
Magn. preparation	None	Segments	1
Flip angle	10 deg	Tagging	None
Fat suppr.	None	Dark blood	Off
Water suppr.	None	Resp. control	Off
SWI	Off		
Averaging mode	Short term	Inline	
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Liver registration	Off
Multiple series	Each measurement	Std-Dev-Sag	Off
Resolution			
Base resolution	256		

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
MapIt	None
Contrasts	1
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Bandwidth	320 Hz/Px
Flow comp.	No
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_REST2\_AP

TA: 16:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

Properties		Special sat.	None
Prio Recon	Off	Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	System	
Inline movie	Off	V32	Off
Auto store images	On	A32	On
Load to stamp segments	Off	Positioning mode	FIX
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	On	Sagittal	R >> L
Start measurement without further preparation	On	Coronal	A >> P
Wait for user to start	On	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation	T > C-20.0	Assume Silicone	Off
Phase enc. dir.	A >> P	? Ref. amplitude 1H	0.000 V
Rotation	-0.52 deg	Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	208 mm	! Position	L0.7 P13.2 H9.5
FoV phase	100.0 %	! Orientation	T > C-15.6 > S0.3
Slice thickness	1.60 mm	! Rotation	0.00 deg
TR	1000 ms	! R >> L	130 mm
TE	22.2 ms	! A >> P	170 mm
Multi-band accel. factor	5	! F >> H	120 mm
Filter	None	Physio	
Coil elements	A32	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude	Temp. highpass filter	On
Measurements	900	Threshold	4.00
Delay in TR	0 ms	Paradigm size	3
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	130	Meas[3]	Active
Phase resolution	100 %	Motion correction	Off
Phase partial Fourier	7/8	Spatial filter	Off
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1924 Hz/Px
Ref. lines PE	96	Flow comp.	No
Reference scan mode	GRE	Free echo spacing	Off
Distortion Corr.	Off	Echo spacing	0.64 ms
Prescan Normalize	Off	SIR accel. factor	1
Raw filter	On	EPI factor	130
Elliptical filter	Off	Gradient mode	Normal
Hamming	Off	RF spoiling	Off
Geometry		Excite pulse duration	5760 us
Multi-slice mode	Interleaved	Slice multiplier	1
Series	Interleaved	Multi-band PE shift	3 1/FoV
		zBlip scheme	0
		MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_PA\_SE

TA: 1:26 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_se

## 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	On
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	85
Dist. factor	0 %
Position	L0.0 P12.0 H13.0
Orientation	T > C-20.0
Phase enc. dir.	A >> P
Rotation	-0.51 deg
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.60 mm
TR	3000 ms
TE	60 ms
Multi-band accel. factor	5
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Magn. preparation	None
Flip angle	90 deg
Refocus flip angle	180 deg
Fat suppr.	None
Grad. rev. fat suppr.	Disabled
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	3
Delay in TR	0 ms
Multiple series	Off

## Resolution

Base resolution	130
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	96
Reference scan mode	GRE
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On
Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
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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	Head > Brain
Auto Coil Select	Default
Shim mode	Advanced
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L0.7 P13.2 H9.5
! Orientation	T > C-15.6 > S0.3
! Rotation	0.00 deg
! R >> L	130 mm
! A >> P	170 mm
! F >> H	120 mm
Physio	
1st Signal/Mode	None
BOLD	
GLM Statistics	Off
Dynamic t-maps	Off
Starting ignore meas	0
Ignore after transition	0
Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	3
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Active
Motion correction	Off
Spatial filter	Off
Sequence	
Introduction	Off
Bandwidth	1924 Hz/Px
Free echo spacing	Off
Echo spacing	0.64 ms
SIR accel. factor	1
EPI factor	130
Gradient mode	Normal
RF spoiling	Off
Excite pulse duration	4480 us
Refocus pulse duration	10240 us
Slice multiplier	1
Multi-band PE shift	3 1/FoV
zBlip scheme	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB kernel size	5
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	Off
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	2
Multiplier	1
Step [1]	1
Step [2]	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_AP\_SE

TA: 1:26 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_se

Properties		Series	Interleaved
Prio Recon	Off	Special sat.	None
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		
Auto store images	On		
Load to stamp segments	Off		
Load images to graphic segments	Off		
Auto open inline display	On	System	
Start measurement without further preparation	On	V32	Off
Wait for user to start	Off	A32	On
Start measurements	single	Positioning mode	FIX
		MSMA	S - C - T
Routine		Sagittal	R >> L
Slice group 1		Coronal	A >> P
Slices	85	Transversal	F >> H
Dist. factor	0 %	Coil Combine Mode	Sum of Squares
Position	L0.0 P12.0 H13.0	AutoAlign	Head > Brain
Orientation	T > C-20.0	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Advanced
Rotation	-0.51 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
FoV read	208 mm	Assume Silicone	Off
FoV phase	100.0 %	? Ref. amplitude 1H	0.000 V
Slice thickness	1.60 mm	Adjustment Tolerance	Auto
TR	3000 ms	Adjust volume	
TE	60 ms	! Position	L0.7 P13.2 H9.5
Multi-band accel. factor	5	! Orientation	T > C-15.6 > S0.3
Filter	None	! Rotation	0.00 deg
Coil elements	A32	! R >> L	130 mm
		! A >> P	170 mm
Contrast		! F >> H	120 mm
MTC	Off		
Magn. preparation	None	Physio	
Flip angle	90 deg	1st Signal/Mode	None
Refocus flip angle	180 deg	BOLD	
Fat suppr.	None	GLM Statistics	Off
Grad. rev. fat suppr.	Disabled	Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	3	Model transition states	On
Delay in TR	0 ms	Temp. highpass filter	On
Multiple series	Off	Threshold	4.00
Resolution		Paradigm size	3
Base resolution	130	Meas[1]	Baseline
Phase resolution	100 %	Meas[2]	Baseline
Phase partial Fourier	7/8	Meas[3]	Active
Interpolation	Off	Motion correction	Off
PAT mode	GRAPPA	Spatial filter	Off
Accel. factor PE	2		
Ref. lines PE	96	Sequence	
Reference scan mode	GRE	Introduction	Off
Distortion Corr.	Off	Bandwidth	1924 Hz/Px
Prescan Normalize	Off	Free echo spacing	Off
Raw filter	On	Echo spacing	0.64 ms
Elliptical filter	Off	SIR accel. factor	1
Hamming	Off	EPI factor	130
Geometry		Gradient mode	Normal
Multi-slice mode	Interleaved	RF spoiling	Off
		Excite pulse duration	4480 us
		Refocus pulse duration	10240 us
		Slice multiplier	1
		Multi-band PE shift	3 1/FoV
		zBlip scheme	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB kernel size	5
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	Off
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	2
Multiplier	1
Step [1]	1
Step [2]	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_RET1\_AP

TA: 6:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

## 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	On
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	85
Dist. factor	0 %
Position	L0.0 P12.0 H13.0
Orientation	T > C-20.0
Phase enc. dir.	A >> P
Rotation	-0.52 deg
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.60 mm
TR	1000 ms
TE	22.2 ms
Multi-band accel. factor	5
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Magn. preparation	None
Flip angle	45 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	300
Delay in TR	0 ms
Multiple series	Off

## Resolution

Base resolution	130
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	96
Reference scan mode	GRE
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	Head > Brain
Auto Coil Select	Default

Shim mode	Advanced
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L0.7 P13.2 H9.5
! Orientation	T > C-15.6 > S0.3
! Rotation	0.00 deg
! R >> L	130 mm
! A >> P	170 mm
! F >> H	120 mm

## Physio

1st Signal/Mode	None
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## BOLD

GLM Statistics	Off
Dynamic t-maps	Off
Starting ignore meas	0
Ignore after transition	0
Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	3
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Active
Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	Off
Bandwidth	1924 Hz/Px
Flow comp.	No
Free echo spacing	Off
Echo spacing	0.64 ms
SIR accel. factor	1
EPI factor	130
Gradient mode	Normal
RF spoiling	Off
Excite pulse duration	5760 us
Slice multiplier	1
Multi-band PE shift	3 1/FoV
zBlip scheme	0
MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_RET2\_PA

TA: 6:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

Properties		Special sat.	None
Prio Recon	Off	Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	System	
Inline movie	Off	V32	Off
Auto store images	On	A32	On
Load to stamp segments	Off	Positioning mode	FIX
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	On	Sagittal	R >> L
Start measurement without further preparation	On	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation	T > C-20.0	Assume Silicone	Off
Phase enc. dir.	A >> P	? Ref. amplitude 1H	0.000 V
Rotation	-0.52 deg	Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	208 mm	! Position	L0.7 P13.2 H9.5
FoV phase	100.0 %	! Orientation	T > C-15.6 > S0.3
Slice thickness	1.60 mm	! Rotation	0.00 deg
TR	1000 ms	! R >> L	130 mm
TE	22.2 ms	! A >> P	170 mm
Multi-band accel. factor	5	! F >> H	120 mm
Filter	None	Physio	
Coil elements	A32	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude	Temp. highpass filter	On
Measurements	300	Threshold	4.00
Delay in TR	0 ms	Paradigm size	3
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	130	Meas[3]	Active
Phase resolution	100 %	Motion correction	Off
Phase partial Fourier	7/8	Spatial filter	Off
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1924 Hz/Px
Ref. lines PE	96	Flow comp.	No
Reference scan mode	GRE	Free echo spacing	Off
Distortion Corr.	Off	Echo spacing	0.64 ms
Prescan Normalize	Off	SIR accel. factor	1
Raw filter	On	EPI factor	130
Elliptical filter	Off	Gradient mode	Normal
Hamming	Off	RF spoiling	Off
Geometry		Excite pulse duration	5760 us
Multi-slice mode	Interleaved	Slice multiplier	1
Series	Interleaved	Multi-band PE shift	3 1/FoV
		zBlip scheme	0
		MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_RET3\_AP

TA: 6:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

Properties		Special sat.	None
Prio Recon	Off	Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	System	
Inline movie	Off	V32	Off
Auto store images	On	A32	On
Load to stamp segments	Off	Positioning mode	FIX
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	On	Sagittal	R >> L
Start measurement without further preparation	On	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation	T > C-20.0	Assume Silicone	Off
Phase enc. dir.	A >> P	? Ref. amplitude 1H	0.000 V
Rotation	-0.52 deg	Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	208 mm	! Position	L0.7 P13.2 H9.5
FoV phase	100.0 %	! Orientation	T > C-15.6 > S0.3
Slice thickness	1.60 mm	! Rotation	0.00 deg
TR	1000 ms	! R >> L	130 mm
TE	22.2 ms	! A >> P	170 mm
Multi-band accel. factor	5	! F >> H	120 mm
Filter	None	Physio	
Coil elements	A32	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude	Temp. highpass filter	On
Measurements	300	Threshold	4.00
Delay in TR	0 ms	Paradigm size	3
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	130	Meas[3]	Active
Phase resolution	100 %	Motion correction	Off
Phase partial Fourier	7/8	Spatial filter	Off
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1924 Hz/Px
Ref. lines PE	96	Flow comp.	No
Reference scan mode	GRE	Free echo spacing	Off
Distortion Corr.	Off	Echo spacing	0.64 ms
Prescan Normalize	Off	SIR accel. factor	1
Raw filter	On	EPI factor	130
Elliptical filter	Off	Gradient mode	Normal
Hamming	Off	RF spoiling	Off
Geometry		Excite pulse duration	5760 us
Multi-slice mode	Interleaved	Slice multiplier	1
Series	Interleaved	Multi-band PE shift	3 1/FoV
		zBlip scheme	0
		MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_RET4\_PA

TA: 6:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

Properties		Special sat.	None
Prio Recon	Off	Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	System	
Inline movie	Off	V32	Off
Auto store images	On	A32	On
Load to stamp segments	Off	Positioning mode	FIX
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	On	Sagittal	R >> L
Start measurement without further preparation	On	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation	T > C-20.0	Assume Silicone	Off
Phase enc. dir.	A >> P	? Ref. amplitude 1H	0.000 V
Rotation	-0.52 deg	Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	208 mm	! Position	L0.7 P13.2 H9.5
FoV phase	100.0 %	! Orientation	T > C-15.6 > S0.3
Slice thickness	1.60 mm	! Rotation	0.00 deg
TR	1000 ms	! R >> L	130 mm
TE	22.2 ms	! A >> P	170 mm
Multi-band accel. factor	5	! F >> H	120 mm
Filter	None	Physio	
Coil elements	A32	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude	Temp. highpass filter	On
Measurements	300	Threshold	4.00
Delay in TR	0 ms	Paradigm size	3
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	130	Meas[3]	Active
Phase resolution	100 %	Motion correction	Off
Phase partial Fourier	7/8	Spatial filter	Off
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1924 Hz/Px
Ref. lines PE	96	Flow comp.	No
Reference scan mode	GRE	Free echo spacing	Off
Distortion Corr.	Off	Echo spacing	0.64 ms
Prescan Normalize	Off	SIR accel. factor	1
Raw filter	On	EPI factor	130
Elliptical filter	Off	Gradient mode	Normal
Hamming	Off	RF spoiling	Off
Geometry		Excite pulse duration	5760 us
Multi-slice mode	Interleaved	Slice multiplier	1
Series	Interleaved	Multi-band PE shift	3 1/FoV
		zBlip scheme	0
		MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_PA\_SE

TA: 1:26 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_se

## 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	On
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	single

## Routine

Slice group 1	
Slices	85
Dist. factor	0 %
Position	L0.0 P12.0 H13.0
Orientation	T > C-20.0
Phase enc. dir.	A >> P
Rotation	-0.51 deg
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.60 mm
TR	3000 ms
TE	60 ms
Multi-band accel. factor	5
Filter	None
Coil elements	A32

## Contrast

MTC	Off
Magn. preparation	None
Flip angle	90 deg
Refocus flip angle	180 deg
Fat suppr.	None
Grad. rev. fat suppr.	Disabled
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	3
Delay in TR	0 ms
Multiple series	Off

## Resolution

Base resolution	130
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	96
Reference scan mode	GRE
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On
Elliptical filter	Off
Hamming	Off

## Geometry

Multi-slice mode	Interleaved
------------------	-------------

## Series

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	Head > Brain
Auto Coil Select	Default
Shim mode	Advanced
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Silicone	Off
? Ref. amplitude 1H	0.000 V
Adjustment Tolerance	Auto
Adjust volume	
! Position	L0.7 P13.2 H9.5
! Orientation	T > C-15.6 > S0.3
! Rotation	0.00 deg
! R >> L	130 mm
! A >> P	170 mm
! F >> H	120 mm

## Physio

1st Signal/Mode	None
BOLD	
GLM Statistics	Off
Dynamic t-maps	Off
Starting ignore meas	0
Ignore after transition	0
Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	3
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Active
Motion correction	Off
Spatial filter	Off

## Sequence

Introduction	Off
Bandwidth	1924 Hz/Px
Free echo spacing	Off
Echo spacing	0.64 ms
SIR accel. factor	1
EPI factor	130
Gradient mode	Normal
RF spoiling	Off
Excite pulse duration	4480 us
Refocus pulse duration	10240 us
Slice multiplier	1
Multi-band PE shift	3 1/FoV
zBlip scheme	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB kernel size	5
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	Off
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	2
Multiplier	1
Step [1]	1
Step [2]	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_AP\_SE

TA: 1:26 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_se

Properties		Series	Interleaved
Prio Recon	Off	Special sat.	None
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		
Auto store images	On		
Load to stamp segments	Off		
Load images to graphic segments	Off		
Auto open inline display	On	System	
Start measurement without further preparation	On	V32	Off
Wait for user to start	Off	A32	On
Start measurements	single	Positioning mode	FIX
		MSMA	S - C - T
Routine		Sagittal	R >> L
Slice group 1		Coronal	A >> P
Slices	85	Transversal	F >> H
Dist. factor	0 %	Coil Combine Mode	Sum of Squares
Position	L0.0 P12.0 H13.0	AutoAlign	Head > Brain
Orientation	T > C-20.0	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Advanced
Rotation	-0.51 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
FoV read	208 mm	Assume Silicone	Off
FoV phase	100.0 %	? Ref. amplitude 1H	0.000 V
Slice thickness	1.60 mm	Adjustment Tolerance	Auto
TR	3000 ms	Adjust volume	
TE	60 ms	! Position	L0.7 P13.2 H9.5
Multi-band accel. factor	5	! Orientation	T > C-15.6 > S0.3
Filter	None	! Rotation	0.00 deg
Coil elements	A32	! R >> L	130 mm
		! A >> P	170 mm
Contrast		! F >> H	120 mm
MTC	Off		
Magn. preparation	None	Physio	
Flip angle	90 deg	1st Signal/Mode	None
Refocus flip angle	180 deg	BOLD	
Fat suppr.	None	GLM Statistics	Off
Grad. rev. fat suppr.	Disabled	Dynamic t-maps	Off
Averaging mode	Long term	Starting ignore meas	0
Reconstruction	Magnitude	Ignore after transition	0
Measurements	3	Model transition states	On
Delay in TR	0 ms	Temp. highpass filter	On
Multiple series	Off	Threshold	4.00
Resolution		Paradigm size	3
Base resolution	130	Meas[1]	Baseline
Phase resolution	100 %	Meas[2]	Baseline
Phase partial Fourier	7/8	Meas[3]	Active
Interpolation	Off	Motion correction	Off
PAT mode	GRAPPA	Spatial filter	Off
Accel. factor PE	2		
Ref. lines PE	96	Sequence	
Reference scan mode	GRE	Introduction	Off
Distortion Corr.	Off	Bandwidth	1924 Hz/Px
Prescan Normalize	Off	Free echo spacing	Off
Raw filter	On	Echo spacing	0.64 ms
Elliptical filter	Off	SIR accel. factor	1
Hamming	Off	EPI factor	130
Geometry		Gradient mode	Normal
Multi-slice mode	Interleaved	RF spoiling	Off
		Excite pulse duration	4480 us
		Refocus pulse duration	10240 us
		Slice multiplier	1
		Multi-band PE shift	3 1/FoV
		zBlip scheme	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB kernel size	5
MB knockout band	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	Off
Time-shifted MB RF	Off
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	2
Multiplier	1
Step [1]	1
Step [2]	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_RET5\_AP

TA: 6:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

Properties		Special sat.	None
Prio Recon	Off	Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	System	
Inline movie	Off	V32	Off
Auto store images	On	A32	On
Load to stamp segments	Off	Positioning mode	FIX
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	On	Sagittal	R >> L
Start measurement without further preparation	On	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation	T > C-20.0	Assume Silicone	Off
Phase enc. dir.	A >> P	? Ref. amplitude 1H	0.000 V
Rotation	-0.52 deg	Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	208 mm	! Position	L0.7 P13.2 H9.5
FoV phase	100.0 %	! Orientation	T > C-15.6 > S0.3
Slice thickness	1.60 mm	! Rotation	0.00 deg
TR	1000 ms	! R >> L	130 mm
TE	22.2 ms	! A >> P	170 mm
Multi-band accel. factor	5	! F >> H	120 mm
Filter	None	Physio	
Coil elements	A32	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude	Temp. highpass filter	On
Measurements	300	Threshold	4.00
Delay in TR	0 ms	Paradigm size	3
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	130	Meas[3]	Active
Phase resolution	100 %	Motion correction	Off
Phase partial Fourier	7/8	Spatial filter	Off
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1924 Hz/Px
Ref. lines PE	96	Flow comp.	No
Reference scan mode	GRE	Free echo spacing	Off
Distortion Corr.	Off	Echo spacing	0.64 ms
Prescan Normalize	Off	SIR accel. factor	1
Raw filter	On	EPI factor	130
Elliptical filter	Off	Gradient mode	Normal
Hamming	Off	RF spoiling	Off
Geometry		Excite pulse duration	5760 us
Multi-slice mode	Interleaved	Slice multiplier	1
Series	Interleaved	Multi-band PE shift	3 1/FoV
		zBlip scheme	0
		MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	Off
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\BOLD\_RET6\_PA

TA: 6:20 PAT: 2 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: hcp\_v2\_mbep2d\_bold

Properties		Special sat.	None
Prio Recon	Off	Table position	H
Before measurement		Table position	0 mm
After measurement		Inline Composing	Off
Load to viewer	On	System	
Inline movie	Off	V32	Off
Auto store images	On	A32	On
Load to stamp segments	Off	Positioning mode	FIX
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	On	Sagittal	R >> L
Start measurement without further preparation	On	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Coil Combine Mode	Sum of Squares
Routine		AutoAlign	Head > Brain
Slice group 1		Auto Coil Select	Default
Slices	85	Shim mode	Advanced
Dist. factor	0 %	Adjust with body coil	Off
Position	L0.0 P12.0 H13.0	Confirm freq. adjustment	Off
Orientation	T > C-20.0	Assume Silicone	Off
Phase enc. dir.	A >> P	? Ref. amplitude 1H	0.000 V
Rotation	-0.52 deg	Adjustment Tolerance	Auto
Phase oversampling	0 %	Adjust volume	
FoV read	208 mm	! Position	L0.7 P13.2 H9.5
FoV phase	100.0 %	! Orientation	T > C-15.6 > S0.3
Slice thickness	1.60 mm	! Rotation	0.00 deg
TR	1000 ms	! R >> L	130 mm
TE	22.2 ms	! A >> P	170 mm
Multi-band accel. factor	5	! F >> H	120 mm
Filter	None	Physio	
Coil elements	A32	1st Signal/Mode	None
Contrast		BOLD	
MTC	Off	GLM Statistics	Off
Magn. preparation	None	Dynamic t-maps	Off
Flip angle	45 deg	Starting ignore meas	0
Fat suppr.	Fat sat.	Ignore after transition	0
Averaging mode	Long term	Model transition states	On
Reconstruction	Magnitude	Temp. highpass filter	On
Measurements	300	Threshold	4.00
Delay in TR	0 ms	Paradigm size	3
Multiple series	Off	Meas[1]	Baseline
Resolution		Meas[2]	Baseline
Base resolution	130	Meas[3]	Active
Phase resolution	100 %	Motion correction	Off
Phase partial Fourier	7/8	Spatial filter	Off
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1924 Hz/Px
Ref. lines PE	96	Flow comp.	No
Reference scan mode	GRE	Free echo spacing	Off
Distortion Corr.	Off	Echo spacing	0.64 ms
Prescan Normalize	Off	SIR accel. factor	1
Raw filter	On	EPI factor	130
Elliptical filter	Off	Gradient mode	Normal
Hamming	Off	RF spoiling	Off
Geometry		Excite pulse duration	5760 us
Multi-slice mode	Interleaved	Slice multiplier	1
Series	Interleaved	Multi-band PE shift	3 1/FoV
		zBlip scheme	0
		MB kernel size	5

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

MB knockout band	0
No. of interleaved TEs	0
RF pulse shape	1
EPI noise scans	0
EPI full reference scan	0
Single-band images	On
MB LeakBlock kernel	Off
MB RF phase scramble	On
SENSE1 coil combine	Off
Log physiology to file	Off
Invert RO/PE polarity	On
Save reduced raw data	On
Readout slice trace	Off
Disable ramp sampling	Off
PF omits higher k-space	Off
Online multi-band recon.	Online
FFT scale factor	0.60
GRE iPAT ref. FA	12.0 deg
Send B1 shim trigger	Never
Triggering scheme	Standard
Starting ignore meas	0
Paradigm size	0
Multiplier	0

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

\USER\HCP\HCP\_Phase2\_7T\_autoAlign\Session 2 (ret\_7T)\FieldMap

TA: 2:09 Voxel size: 1.6x1.6x1.6 mm Rel. SNR: 1.00 USER: gre\_field\_mapping

Properties		Table position	0 mm
Prio Recon	Off	Inline Composing	Off
System			
Before measurement		V32	Off
After measurement		A32	On
Load to viewer	Off	Positioning mode	FIX
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic segments	Off	Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without further preparation	On	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	Head > Brain
Start measurements	single	Auto Coil Select	Default
Routine		Shim mode	Advanced
Slice group 1		Adjust with body coil	Off
Slices	85	Confirm freq. adjustment	Off
Dist. factor	0 %	Assume Silicone	Off
Position	L0.0 P12.0 H13.0	? Ref. amplitude 1H	0.000 V
Orientation	T > C-20.0	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	
Rotation	0.00 deg	! Position	L0.7 A13.2 H9.5
Phase oversampling	0 %	! Orientation	T > C-15.6 > S0.3
FoV read	208 mm	! Rotation	0.00 deg
FoV phase	100.0 %	! R >> L	130 mm
Slice thickness	1.6 mm	! A >> P	170 mm
TR	642.0 ms	! F >> H	120 mm
TE 1	4.08 ms	Composing	
TE 2	5.1 ms	Sequence	
Averages	1	Introduction	On
Concatenations	1	Dimension	2D
Filter	None	Asymmetric echo	Off
Coil elements	A32	Contrasts	2
Contrast		Bandwidth	401 Hz/Px
MTC	Off	Flow comp.	Yes
Flip angle	32 deg	RF pulse type	
Fat suppr.	None	Gradient mode	Normal
Averaging mode		RF spoiling	Fast
Reconstruction	Short term	RF pulse type	
Measurements	Magn./Phase	Gradient mode	On
Multiple series	1	RF spoiling	
Resolution			
Base resolution	130		
Phase resolution	100 %		
Phase partial Fourier	6/8		
Interpolation	Off		
Image Filter			
Distortion Corr.	Off		
Prescan Normalize	Off		
Normalize	Off		
B1 filter	Off		
Raw filter	Off		
Elliptical filter	Off		
Geometry			
Multi-slice mode	Interleaved		
Series	Interleaved		
Special sat.	None		
Table position	H		

# SIEMENS MAGNETOM Investigational\_Device\_7T syngo MR B17

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\USER

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