

COBRE Scan Information

Below is more information on the directory structure for the COBRE imaging data. Also below are the imaging parameters for each series.

Directory structure:

var/www/html/dropbox/1139_anonymized/human: internal directory structure

/dicom OR /behavioral: this directory is the data type. **/dicom** contains DICOM files and **/behavioral** contains timing and log files for the GATE functional task.

/triotim: scanner name

/vcalhoun: PI

/cobre_07325: Study Name and Study Number

/A000XXXX: Participant ID

/Session_1: scan session number. Due to the fact that COBRE data was collected across several different sub studies, some participants have more than one scan session. The scan session numbers are chronological.

Series Label Description

dti_35dir

Diffusion tensor imaging (DTI) is a magnetic resonance imaging technique that enables the measurement of the restricted diffusion of water in tissue in order to produce neural tract images instead of using this data solely for the purpose of assigning contrast or colors to pixels in a cross sectional image.

GATE_V01_R01, GATE_V01_R02, GATE_V01_R03, GATE_V01_R04

During the gating task, participants passively listened to single tones (2000 or 3000 Hz) or pairs of identical (two 2000 Hz tones) or pairs of non-identical (2000 and 3000 Hz) tones. The gating task therefore exhibits the brain's ability to inhibit repetitive versus novel stimuli.

mprage_5e/mprage_5e_RMS

T1-weighted scans refer to a set of standard scans that depict differences in the spin-lattice (or T1) relaxation time of various tissues within the body. T1 weighted images can be acquired using either spin echo or gradient-echo sequences.

RSTpre_V01_R01

Subjects rest passively with their eyes open or closed. Often used as a baseline for comparison for other tasks.

t1_midline_Sag

T1-weighted scans refer to a set of standard scans that depict differences in the spin-lattice (or T1) relaxation time of various tissues within the body. T1 weighted images can be acquired using either spin echo or gradient-echo sequences.

t2_tse_tra_192

Image made with a sequence with long TR and TE to show contrast in tissues with varying T2 relaxation times; water gives a strong signal.

TA: 6:03 PAT: 2 Voxel size: 1.0x1.0x1.0 mm Rel. SNR: 1.00 USER: tfl_mgh_multiecho

Properties		Reference scan mode	Integrated
Prio Recon	Off	Image Filter	Off
Before measurement		Distortion Corr.	Off
After measurement		Unfiltered images	Off
Load to viewer	On	Prescan Normalize	On
Inline movie	Off	Normalize	Off
Auto store images	On	B1 filter	Off
Load to stamp segments	Off	Raw filter	Off
Load images to graphic segments	Off	Elliptical filter	Off
Auto open inline display	Off	Geometry	
Start measurement without further preparation	On	Multi-slice mode	Single shot
Wait for user to start	Off	Series	Interleaved
Start measurements	single	System	
Routine		Body	Off
Slab group 1		HEP	On
Slabs	1	HEA	On
Dist. factor	50 %	Positioning mode	
Position	R2.7 A35.1 H10.8	Table position	H
Orientation	S > T-2.8 > C2.6	Table position	0 mm
Phase enc. dir.	A >> P	MSMA	S - C - T
Rotation	0.00 deg	Sagittal	R >> L
Phase oversampling	0 %	Coronal	A >> P
Slice oversampling	0.0 %	Transversal	F >> H
Slices per slab	192	Save uncombined	Off
FoV read	256 mm	Coil Combine Mode	Adaptive Combine
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness	1.00 mm	Shim mode	
TR	2530 ms	Position	Tune up
TE 1	1.64 ms	Adjust with body coil	Off
TE 2	3.5 ms	Confirm freq. adjustment	Off
TE 3	5.36 ms	Assume Silicone	Off
TE 4	7.22 ms	? Ref. amplitude 1H	0.000 V
TE 5	9.08 ms	Adjustment Tolerance	Auto
Averages	1	Adjust volume	
Concatenations	1	Position	Isocenter
Filter	Prescan Normalize	Orientation	Transversal
Coil elements	HEA;HEP	Rotation	0.00 deg
Contrast		R >> L	350 mm
Magn. preparation	Non-sel. IR	A >> P	263 mm
TI	1200 ms	F >> H	350 mm
Flip angle	7.0 deg	Physio	
Fat suppr.	None	1st Signal/Mode	None
Water suppr.	None	Dark blood	Off
Averaging mode	Long term	Inline	
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Slice resolution	100 %	MIP-Cor	Off
Phase partial Fourier	Off	MIP-Tra	Off
Slice partial Fourier	Off	MIP-Time	Off
Interpolation	Off	Save original images	On
PAT mode	GRAPPA	Sequence	
Accel. factor PE	2	Introduction	On
Ref. lines PE	32	Dimension	3D
Accel. factor 3D	1	Elliptical scanning	Off
Matrix Coil Mode	Auto (Triple)	Asymmetric echo	Off
		Contrasts	5

SIEMENS MAGNETOM TrioTim syngo MR B17

Bandwidth 1	651 Hz/Px
Bandwidth 2	651 Hz/Px
Bandwidth 3	651 Hz/Px
Bandwidth 4	651 Hz/Px
Bandwidth 5	651 Hz/Px
Flow comp. 1	No
Flow comp. 2	No
Flow comp. 3	No
Flow comp. 4	No
Flow comp. 5	No
Echo spacing	12.2 ms
RF pulse type	Fast
Gradient mode	Fast
Excitation	Non-sel.
RF spoiling	On
Readout polarity	Positive
Readout trajectory	Bipolar
Add. scale factor	4.0
Gradient spoiling	Integral
Gradient moment factor	3.0
Siemens reconstruction	On
Save raw k-space data	Off
Averaging	RMS

TA: 3:48 PAT: Off Voxel size: 3.8 x3.8x3.5 mm Rel. SNR: 1.00 USER: ep2d_complex

Properties		Body	Off
Prio Recon	Off	HEP	On
Before measurement		HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic segments	Off	Coronal	A >> P
Auto open inline display	Off	Transversal	F >> H
Start measurement without further preparation	On	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	33	Assume Silicone	Off
Dist. factor	30 %	? Ref. amplitude 1H	0.000 V
Position	L1.9 A8.8 H38.5	Adjustment Tolerance	Auto
Orientation	T > C-22.5 > S3.4	Adjust volume	
Phase enc. dir.	A >> P	Position	L1.9 A8.8 H38.5
Rotation	0.00 deg	Orientation	T > C-22.5 > S3.4
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	240 mm	R >> L	240 mm
FoV phase	100.0 %	A >> P	240 mm
Slice thickness	3.5 mm	F >> H	150 mm
TR	2000 ms	Physio	
TE	29 ms	1st Signal/Mode	None
Averages	1	BOLD	
Concatenations	1	GLM Statistics	Off
Filter	None	Dynamic t-maps	Off
Coil elements	HEA;HEP	Starting ignore meas	0
Contrast		Ignore after transition	0
MTC	Off	Model transition states	Off
Flip angle	75 deg	Temp. highpass filter	Off
Fat suppr.	Fat sat.	Threshold	4.00
Averaging mode		Paradigm size	20
Reconstruction	Long term	Meas[1]	Baseline
Measurements	Magnitude	Meas[2]	Baseline
Delay in TR	112	Meas[3]	Baseline
Multiple series	0 ms	Meas[4]	Baseline
Resolution		Meas[5]	Baseline
Base resolution	64	Meas[6]	Baseline
Phase resolution	100 %	Meas[7]	Baseline
Phase partial Fourier	Off	Meas[8]	Baseline
Interpolation	Off	Meas[9]	Baseline
PAT mode		Meas[10]	Baseline
Matrix Coil Mode	None	Meas[11]	Active
Distortion Corr.	Off	Meas[12]	Active
Prescan Normalize	Off	Meas[13]	Active
Raw filter	On	Meas[14]	Active
Elliptical filter	Off	Meas[15]	Active
Hamming	Off	Meas[16]	Active
Geometry		Meas[17]	Active
Multi-slice mode	Interleaved	Meas[18]	Active
Series	Ascending	Meas[19]	Active
Special sat.	None	Meas[20]	Active
System		Motion correction	Off
		Spatial filter	Off
Sequence		Introduction	Off
		Bandwidth	2170 Hz/Px

SIEMENS MAGNETOM TrioTim syngo MR B17

Free echo spacing	Off
Echo spacing	0.53 ms
EPI factor	64
RF pulse type	Normal
Gradient mode	Fast

TA: 3:48 PAT: Off Voxel size: 3.8 ×3.8×3.5 mm Rel. SNR: 1.00 USER: ep2d_complex

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	33
Dist. factor	30 %
Position	L1.9 A8.8 H38.5
Orientation	T > C-22.5 > S3.4
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	3.5 mm
TR	2000 ms
TE	29 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Flip angle	75 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	112
Delay in TR	0 ms
Multiple series	Off

Resolution

Base resolution	64
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	None
Matrix Coil Mode	Triple
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On
Elliptical filter	Off
Hamming	Off

Geometry

Multi-slice mode	Interleaved
Series	Ascending
Special sat.	None
System	

Body	Off
HEP	On
HEA	On
Positioning mode	FIX
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
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	L1.9 A8.8 H38.5
Orientation	T > C-22.5 > S3.4
Rotation	0.00 deg
R >> L	240 mm
A >> P	240 mm
F >> H	150 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	Off
Temp. highpass filter	Off
Threshold	4.00
Paradigm size	20
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]	Active
Meas[12]	Active
Meas[13]	Active
Meas[14]	Active
Meas[15]	Active
Meas[16]	Active
Meas[17]	Active
Meas[18]	Active
Meas[19]	Active
Meas[20]	Active
Motion correction	Off
Spatial filter	Off
Sequence	
Introduction	Off
Bandwidth	2170 Hz/Px

SIEMENS MAGNETOM TrioTim syngo MR B17

Free echo spacing	Off
Echo spacing	0.53 ms
EPI factor	64
RF pulse type	Normal
Gradient mode	Fast

TA: 3:48 PAT: Off Voxel size: 3.8 ×3.8×3.5 mm Rel. SNR: 1.00 USER: ep2d_complex

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	33
Dist. factor	30 %
Position	L1.9 A8.8 H38.5
Orientation	T > C-22.5 > S3.4
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	3.5 mm
TR	2000 ms
TE	29 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Flip angle	75 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	112
Delay in TR	0 ms
Multiple series	Off

Resolution

Base resolution	64
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	None
Matrix Coil Mode	Triple
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On
Elliptical filter	Off
Hamming	Off

Geometry

Multi-slice mode	Interleaved
Series	Ascending
Special sat.	None

System

Body	Off
HEP	On
HEA	On
Positioning mode	FIX
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
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	L1.9 A8.8 H38.5
Orientation	T > C-22.5 > S3.4
Rotation	0.00 deg
R >> L	240 mm
A >> P	240 mm
F >> H	150 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	Off
Temp. highpass filter	Off
Threshold	4.00
Paradigm size	20
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]	Active
Meas[12]	Active
Meas[13]	Active
Meas[14]	Active
Meas[15]	Active
Meas[16]	Active
Meas[17]	Active
Meas[18]	Active
Meas[19]	Active
Meas[20]	Active
Motion correction	Off
Spatial filter	Off
Sequence	
Introduction	Off
Bandwidth	2170 Hz/Px

SIEMENS MAGNETOM TrioTim syngo MR B17

Free echo spacing	Off
Echo spacing	0.53 ms
EPI factor	64
RF pulse type	Normal
Gradient mode	Fast

TA: 5:04 PAT: Off Voxel size: 3.8 ×3.8×3.5 mm Rel. SNR: 1.00 USER: ep2d_complex

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	33
Dist. factor	30 %
Position	L1.9 A8.8 H38.5
Orientation	T > C-22.5 > S3.4
Phase enc. dir.	A >> P
Rotation	0.00 deg
Phase oversampling	0 %
FoV read	240 mm
FoV phase	100.0 %
Slice thickness	3.5 mm
TR	2000 ms
TE	29 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Flip angle	75 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	150
Delay in TR	0 ms
Multiple series	Off

Resolution

Base resolution	64
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	None
Matrix Coil Mode	Triple
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	On
Elliptical filter	Off
Hamming	Off

Geometry

Multi-slice mode	Interleaved
Series	Ascending
Special sat.	None

System

Body	Off
HEP	On
HEA	On
Positioning mode	FIX
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
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	L1.9 A8.8 H38.5
Orientation	T > C-22.5 > S3.4
Rotation	0.00 deg
R >> L	240 mm
A >> P	240 mm
F >> H	150 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	Off
Temp. highpass filter	Off
Threshold	4.00
Paradigm size	20
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]	Active
Meas[12]	Active
Meas[13]	Active
Meas[14]	Active
Meas[15]	Active
Meas[16]	Active
Meas[17]	Active
Meas[18]	Active
Meas[19]	Active
Meas[20]	Active
Motion correction	Off
Spatial filter	Off
Sequence	
Introduction	Off
Bandwidth	2170 Hz/Px

SIEMENS MAGNETOM TrioTim syngo MR B17

Free echo spacing	Off
Echo spacing	0.53 ms
EPI factor	64
RF pulse type	Normal
Gradient mode	Fast

TA: 3:08 PAT: 2 Voxel size: 1.1x1.1x1.5 mm Rel. SNR: 1.00 SIEMENS: tse

Properties		Normalize	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	Geometry	
Auto store images	On	Multi-slice mode	Interleaved
Load to stamp segments	Off	Series	Interleaved
Load images to graphic segments	Off	Special sat.	None
Auto open inline display	Off	Tim CT mode	Off
Start measurement without further preparation	On	System	
Wait for user to start	Off	Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		Positioning mode	REF
Slices	120	Table position	H
Dist. factor	0 %	Table position	0 mm
Position	L0.9 A32.1 H4.9	MSMA	S - C - T
Orientation	T > C-4.3 > S1.7	Sagittal	R >> L
Phase enc. dir.	R >> L	Coronal	A >> P
Rotation	90.00 deg	Transversal	F >> H
Phase oversampling	12 %	Save uncombined	Off
FoV read	220 mm	Coil Combine Mode	Adaptive Combine
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness	1.5 mm	Shim mode	
TR	15500 ms	Standard	
TE	77 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1	Assume Silicone	Off
Filter	Prescan Normalize, Elliptical filter	? Ref. amplitude 1H	0.000 V
Coil elements	HEA;HEP	Adjustment Tolerance	Auto
Contrast		Adjust volume	
MTC	Off	Position	L0.9 A32.1 H4.9
Magn. preparation	None	Orientation	T > C-4.3 > S1.7
Flip angle	155 deg	Rotation	90.00 deg
Fat suppr.	None	A >> P	220 mm
Water suppr.	None	R >> L	220 mm
Restore magn.	Off	F >> H	180 mm
Averaging mode		Physio	
Reconstruction	Short term	1st Signal/Mode	None
Measurements	Magnitude	Dark blood	Off
Multiple series	1	Resp. control	Off
Resolution		Inline	
Base resolution	192	Subtract	Off
Phase resolution	100 %	Std-Dev-Sag	Off
Phase partial Fourier	Off	Std-Dev-Cor	Off
Trajectory	Cartesian	Std-Dev-Tra	Off
Interpolation	Off	Std-Dev-Time	Off
PAT mode		MIP-Sag	Off
Accel. factor PE	GRAPPA	MIP-Cor	Off
Ref. lines PE	2	MIP-Tra	Off
Matrix Coil Mode	26	MIP-Time	Off
Reference scan mode	Auto (Triple)	Save original images	On
Image Filter		Sequence	
Distortion Corr.	Off	Introduction	On
Unfiltered images	Off	Dimension	2D
Prescan Normalize	On	Compensate T2 decay	Off
		Reduce Motion Sens.	Off

SIEMENS MAGNETOM TrioTim syngo MR B17

Contrasts	1
Bandwidth	199 Hz/Px
Flow comp.	No
Allowed delay	60 s
Echo spacing	11 ms
Define	Turbo factor
Turbo factor	11
Echo trains per slice	11
RF pulse type	Fast
Gradient mode	Normal

TA: 5:42 PAT: 2 Voxel size: 2.0x2.0x2.0 mm Rel. SNR: 1.00 SIEMENS: ep2d_diff

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Positioning mode	FIX
Auto store images	On	Table position	H
Load to stamp segments	Off	Table position	0 mm
Load images to graphic segments	Off	MSMA	S - C - T
Auto open inline display	Off	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	Adaptive Combine
Routine		Auto Coil Select	Default
Slice group 1		Shim mode	Standard
Slices	72	Adjust with body coil	Off
Dist. factor	0 %	Confirm freq. adjustment	Off
Position	L2.9 A14.8 H9.4	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	L2.9 A14.8 H9.4
FoV read	256 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	2.0 mm	R >> L	256 mm
TR	9000 ms	A >> P	256 mm
TE	84 ms	F >> H	144 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	None
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Diff	
Contrast		Diffusion mode	Free
MTC	Off	Diff. weightings	1
Magn. preparation	None	b-value	800 s/mm
Fat suppr.	Fat sat.	Diff. weighted images	On
Averaging mode	Long term	Trace weighted images	Off
Reconstruction	Magnitude	Average ADC maps	Off
Delay in TR	0 ms	Individual ADC maps	Off
Multiple series	Off	FA maps	Off
Resolution		Mosaic	On
Base resolution	128	Tensor	Off
Phase resolution	100 %	Noise level	40
Phase partial Fourier	6/8	Diff. directions	35
Interpolation	Off	Sequence	
PAT mode	GRAPPA	Introduction	Off
Accel. factor PE	2	Bandwidth	1562 Hz/Px
Ref. lines PE	32	Free echo spacing	Off
Matrix Coil Mode	Auto (Triple)	Echo spacing	0.72 ms
Reference scan mode	Separate	EPI factor	128
Distortion Corr.	Off	RF pulse type	Normal
Prescan Normalize	Off	Gradient mode	Fast
Raw filter	On		
Elliptical filter	Off		
Hamming	Off		
Geometry			
Multi-slice mode	Interleaved		
Series	Interleaved		