

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\AAHead_Scout_32ch-head-coil
TA:0:14 PAT:3 Voxel size:1.6×1.6×1.6 mm Rel. SNR:1.00 :fl

Properties

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

Routine

Nr. of slab groups	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Phase oversampling	0 %
Slice oversampling	0.0 %
FoV read	260 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
TR	3.15 ms
TE	1.37 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HEA;HEP
AutoAlign	Head

Contrast

Flip angle	8 deg
Averaging mode	Short term
Measurements	1
Reconstruction	Magnitude

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.	On
Accel. factor 3D	1
Mode	2D
Unfiltered images	Off
Unfiltered images	Off
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	Off
Slice resolution	69 %
Slice partial Fourier	6/8

Geometry

Nr. of slab groups	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	128
Multi-slice mode	Sequential
Series	Ascending
Nr. of sat. regions	0
Position mode	L-P-H
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
SP5	Off
SP6	Off
SP7	Off
SP8	Off
SP1	Off
SP2	Off
SP3	Off
SP4	Off
Position mode	L-P-H
Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
Coil Select Mode	On - AutoCoilSelect
Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	350 mm
A >> P	263 mm
F >> H	350 mm
Frequency 1H	123.251654 MHz
Correction factor	1
SRFExcit 1H	59.556 V
Gain	Low
Table position	0 mm
Img. Scale. Cor.	1.000

Physio

Inline

Distortion correction	Off
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Sequence

Introduction	On
Dimension	3D
Averaging mode	Short term
Multi-slice mode	Sequential
Asymmetric echo	Weak
Contrasts	1
Bandwidth	540 Hz/Px
RF pulse type	Fast
Gradient mode	Normal
Excitation	Non-sel.
RF spoiling	On
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms
Mode	Off

BOLD

Time to center	6.2 s
Subtract	Off
StdDev	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Contrasts	1
Save original images	On

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\T1_p2_1mm_fov256_sag_TI_880
 TA:4:54 PAT:2 Voxel size:1.0×1.0×1.0 mm Rel. SNR:1.00 :tfl

Properties

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

Routine

Nr. of slab groups	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	Head > Basis
Phase oversampling	5 %
Slice oversampling	0.0 %
FoV read	256 mm
FoV phase	100.0 %
Slice thickness	1.00 mm
TR	2000.0 ms
TE	2.01 ms
Averages	1
Concatenations	1
Filter	Prescan Normalize
Coil elements	HEA;HEP

Contrast

Magn. preparation	Non-sel. IR
TI	880 ms
Flip angle	8 deg
Fat suppr.	None
Water suppr.	None
Averaging mode	Long term
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

Resolution

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

Geometry

Nr. of slab groups	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	5 %
Slice oversampling	0.0 %
Slices per slab	208
Multi-slice mode	Single shot
Series	Ascending
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
SP5	Off
SP6	Off
SP7	Off
SP8	Off
SP1	Off
SP2	Off
SP3	Off
SP4	Off
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Basis
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
F >> H	256 mm
A >> P	256 mm
R >> L	208 mm
Frequency 1H	123.251654 MHz
Correction factor	1
SLoopIRns1 1H	602.255 V
Gain	Low
Table position	0 mm
Img. Scale. Cor.	6.000

Physio

1st Signal/Mode	None
Magn. preparation	Non-sel. IR
TI	880 ms
Dark blood	Off
Resp. control	Off

Inline

Distortion correction	Off
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Sequence

Introduction	Off
Dimension	3D
Elliptical scanning	Off
Averaging mode	Long term
Multi-slice mode	Single shot
Reordering	Linear
Asymmetric echo	Allowed
Bandwidth	240 Hz/Px
Flow comp.	No
Echo spacing	6.1 ms
Turbo factor	208
RF pulse type	Fast
Gradient mode	Fast*
Excitation	Non-sel.
RF spoiling	On
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms
Mode	Off

BOLD

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

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\MB8_FMRI_fov210_2.4mm_resting
TA:6:10 PAT:Off Voxel size:2.4×2.4×2.4 mm Rel. SNR:1.00 :epfid

Properties

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

Routine

Nr. of slice groups	1
Slices	64
Dist. factor	0 %
Position	Isocenter
Orientation	T > C-16.0
Phase enc. dir.	A >> P
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	210 mm
FoV phase	100.0 %
Slice thickness	2.40 mm
TR	735 ms
TE	39.00 ms
Multi-band accel. factor	8
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Magn. preparation	None
Flip angle	52 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Measurements	490
Delay in TR	0 ms
Reconstruction	Magnitude
Multiple series	Off

Resolution

Base resolution	88
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	None
Distortion Corr.	Off
Hamming	Off
Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off

Geometry

Nr. of slice groups	1
Slices	64
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	Fat sat.
Special sat.	None
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	Head > Brain
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Maximum
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	210 mm
A >> P	210 mm
F >> H	154 mm
Frequency 1H	123.251654 MHz
Correction factor	1
MBExc 1H	621.738 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	2.000

Physio

1st Signal/Mode	None
Magn. preparation	None

Inline

Distortion correction	Off
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Sequence

Introduction	Off
Averaging mode	Long term
Multi-slice mode	Interleaved
Bandwidth	2030 Hz/Px
Echo spacing	0.64 ms
EPI factor	88
Gradient mode	Fast
Online multi-band recon.	Online
Triggering scheme	Standard
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms

BOLD

GLM Statistics	Off
Dynamic t-maps	Off
Ignore meas. at start	0
Ignore after transition	0
Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	3
Motion correction	Off
Spatial filter	Off
Delay in TR	0 ms
Distortion Corr.	Off

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\MB8_FMRI_fov210_2.4mm_task
TA:4:13 PAT:Off Voxel size:2.4x2.4x2.4 mm Rel. SNR:1.00 :epfid

Properties

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

Routine

Nr. of slice groups	1
Slices	64
Dist. factor	0 %
Position	Isocenter
Orientation	T > C-16.0
Phase enc. dir.	A >> P
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	210 mm
FoV phase	100.0 %
Slice thickness	2.40 mm
TR	735 ms
TE	39.00 ms
Multi-band accel. factor	8
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Magn. preparation	None
Flip angle	52 deg
Fat suppr.	Fat sat.
Averaging mode	Long term
Measurements	332
Delay in TR	0 ms
Reconstruction	Magnitude
Multiple series	Off

Resolution

Base resolution	88
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off
PAT mode	None
Distortion Corr.	Off
Hamming	Off
Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off

Geometry

Nr. of slice groups	1
Slices	64
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	Fat sat.
Special sat.	None
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
SP5	Off
SP6	Off
SP7	Off
SP8	Off
SP1	Off
SP2	Off
SP3	Off
SP4	Off
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	Head > Brain
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Maximum
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	210 mm
A >> P	210 mm
F >> H	154 mm
Frequency 1H	123.251654 MHz
Correction factor	1
MBExc 1H	621.738 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	2.000

Physio

1st Signal/Mode	None
Magn. preparation	None

Inline

Distortion correction	Off
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Sequence

Introduction	Off
Averaging mode	Long term
Multi-slice mode	Interleaved
Bandwidth	2030 Hz/Px
Echo spacing	0.64 ms
EPI factor	88
Gradient mode	Fast
Online multi-band recon.	Online
Triggering scheme	Standard
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms

BOLD

GLM Statistics	Off
Dynamic t-maps	Off
Ignore meas. at start	0
Ignore after transition	0
Model transition states	On
Temp. highpass filter	On
Threshold	4.00
Paradigm size	3
Motion correction	Off
Spatial filter	Off
Delay in TR	0 ms
Distortion Corr.	Off

SIEMENS MAGNETOM Skyra syngo MR D13

\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\t2_flair_sag_p2_1mm_FS_ellip_pf78 TA:5:52 PAT:2 Voxel size:1.0×1.0×1.1 mm Rel. SNR:1.00 :spcir

Properties

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

Routine

Nr. of slab groups	1
Slabs	1
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	Head > Basis
Phase oversampling	0 %
Slice oversampling	0.0 %
FoV read	256 mm
FoV phase	100.0 %
Slice thickness	1.05 mm
TR	5000 ms
TE	395.0 ms
Concatenations	1
Filter	Raw filter, Prescan Normalize
Coil elements	HEA;HEP

Contrast

MTC	Off
Magn. preparation	Non-sel. T2-IR
TI 1	1800 ms
Fat suppr.	Fat sat.
Fat sat. mode	Strong
Restore magn.	Off
Measurements	1
Reconstruction	Magnitude
Multiple series	Each measurement

Resolution

Base resolution	256
Phase resolution	100 %
Phase partial Fourier	Allowed
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Integrated
Image Filter	Off
Distortion Corr.	Off
Accel. factor 3D	1
Unfiltered images	On
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	On
Intensity	Weak
Slope	25
Elliptical filter	Off
Slice resolution	100 %
Slice partial Fourier	7/8

Geometry

Nr. of slab groups	1
Slabs	1
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	192
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	Fat sat.
Special sat.	None
Fat sat. mode	Strong
Special sat.	None
Table position	P
Restore magn.	Off

System

Body	Off
HEP	On
HEA	On
SP5	Off
SP6	Off
SP7	Off
SP8	Off
SP1	Off
SP2	Off
SP3	Off
SP4	Off
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	Off
Coil Combine Mode	Adaptive Combine
AutoAlign	Head > Basis
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Maximum
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
F >> H	256 mm
A >> P	256 mm
R >> L	202 mm
Frequency 1H	123.251654 MHz
Correction factor	1
SLoopFCSatNS 1H	99.097 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	5.000

Physio

1st Signal/Mode	None
Trigger delay	0 ms
Magn. preparation	Non-sel. T2-IR
TI 1	1800 ms
Dark blood	Off
Resp. control	Off

Inline

Distortion correction	Off
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Sequence

Introduction	On
Dimension	3D
Elliptical scanning	On
Reordering	Linear
Bandwidth	781 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	3.53 ms
Adiabatic-mode	Off
Turbo factor	284
Echo train duration	893
RF pulse type	Normal
Gradient mode	Fast
Excitation	Non-sel.
Flip angle mode	T2 var
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms
Organ under exam.	Standard
Tissue T1	940 ms
Tissue T2	100 ms

BOLD

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

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\diff_PA_MPopt_MB3_3b0_lowflip
TA:0:36 PAT:Off Voxel size:2.0×2.0×2.0 mm Rel. SNR:1.00 :epse

Properties

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

Routine

Nr. of slice groups	1
Slices	72
Dist. factor	0 %
Position	Isocenter
Orientation	T > C-16.0
Phase enc. dir.	A >> P
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	210 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	3600 ms
TE	92.00 ms
Multi-band accel. factor	3
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Magn. preparation	None
Flip angle	78 deg
Fat suppr.	Fat sat.
Grad. rev. fat suppr.	Disabled
Averaging mode	Long term
Measurements	1
Delay in TR	0 ms
Reconstruction	Magnitude
Multiple series	Off

Resolution

Base resolution	104
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off
PAT mode	None
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off
Dynamic Field Corr.	Off

Geometry

Nr. of slice groups	1
Slices	72
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	Fat sat.
Special sat.	None
Grad. rev. fat suppr.	Disabled
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	Head > Brain
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Maximum
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	210 mm
A >> P	210 mm
F >> H	144 mm
Frequency 1H	123.251654 MHz
Correction factor	1
AddCSaCSatNS 1H	99.097 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

Physio

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

Inline

Distortion correction	Off
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Sequence

Introduction	Off
Averaging mode	Long term
Multi-slice mode	Interleaved
Bandwidth	1780 Hz/Px
Echo spacing	0.67 ms
EPI factor	104
Gradient mode	Fast
Online multi-band recon.	Online
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms

BOLD

Delay in TR	0 ms
Diffusion mode	Free
Diff. weightings	1
b-value	2000 s/mm ²
Diff. weighted images	On
Trace weighted images	Off
ADC maps	Off
FA maps	Off
Mosaic	Off
Tensor	Off
Distortion Corr.	Off
b-Value >=	0 s/mm ²
Exponential ADC Maps	Off
Invert Gray Scale	Off
Calculated Image	Off

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0
 \diff_AP_MPopt_MB3_50b1000_50b2000_8b0_lowflip
 TA:6:32 PAT:Off Voxel size:2.0×2.0×2.0 mm Rel. SNR:1.00 :epse

Properties

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

Routine

Nr. of slice groups	1
Slices	72
Dist. factor	0 %
Position	Isocenter
Orientation	T > C-16.0
Phase enc. dir.	A >> P
AutoAlign	Head > Brain
Phase oversampling	0 %
FoV read	210 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	3600 ms
TE	92.00 ms
Multi-band accel. factor	3
Filter	None
Coil elements	HEA;HEP

Contrast

MTC	Off
Magn. preparation	None
Flip angle	78 deg
Fat suppr.	Fat sat.
Grad. rev. fat suppr.	Disabled
Averaging mode	Long term
Measurements	1
Delay in TR	0 ms
Reconstruction	Magnitude
Multiple series	Off

Resolution

Base resolution	104
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off
PAT mode	None
Distortion Corr.	Off
Prescan Normalize	Off
Raw filter	Off
Elliptical filter	Off
Dynamic Field Corr.	Off

Geometry

Nr. of slice groups	1
Slices	72
Dist. factor	0 %
Position	Isocenter
Phase enc. dir.	A >> P
Phase oversampling	0 %
Multi-slice mode	Interleaved
Series	Interleaved
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	Fat sat.
Special sat.	None
Grad. rev. fat suppr.	Disabled
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
AutoAlign	Head > Brain
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Maximum
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	0.00 deg
R >> L	210 mm
A >> P	210 mm
F >> H	144 mm
Frequency 1H	123.251654 MHz
Correction factor	1
AddCSaCSatNS 1H	99.097 V
Gain	High
Table position	0 mm
Img. Scale. Cor.	1.000

Physio

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

Inline

Distortion correction	Off
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Sequence

Introduction	Off
Averaging mode	Long term
Multi-slice mode	Interleaved
Bandwidth	1780 Hz/Px
Echo spacing	0.67 ms
EPI factor	104
Gradient mode	Fast
Online multi-band recon.	Online
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms

BOLD

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

SIEMENS MAGNETOM Skyra syngo MR D13

\\USER\head\UK Biobank_v4.0_0001\protocol_v4.0\SWI_3mm_Updated_v1.1
 TA:2:34 PAT:2 Voxel size:0.8×0.8×3.0 mm Rel. SNR:1.00 :fl_r

Properties

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

Routine

Nr. of slab groups	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	T > C-16.0
Phase enc. dir.	R >> L
AutoAlign	Head > Brain
Phase oversampling	0 %
Slice oversampling	8.3 %
FoV read	230 mm
FoV phase	88.9 %
Slice thickness	3.00 mm
TR	27.0 ms
TE 1	9.42 ms
Averages	1
Concatenations	1
Filter	Prescan Normalize, Elliptical filter, Image Filter
Coil elements	HEA;HEP

Contrast

MTC	Off
Magn. preparation	None
Flip angle	15 deg
Fat suppr.	None
Water suppr.	None
SWI	Off
Averaging mode	Short term
Measurements	1
Reconstruction	Magn./Phase
Multiple series	Each measurement

Resolution

Base resolution	288
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off
PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Integrated
Image Filter	On
Intensity	Medium
Edge Enhancement	3
Smoothing	3
Unfiltered images	Off
Distortion Corr.	Off
Accel. factor 3D	1
Unfiltered images	On
Prescan Normalize	On
Normalize	Off
B1 filter	Off
Raw filter	Off
Elliptical filter	On
Mode	Inplane
Slice resolution	100 %
Slice partial Fourier	7/8

Geometry

Nr. of slab groups	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Phase enc. dir.	R >> L
Phase oversampling	0 %
Slice oversampling	8.3 %
Slices per slab	48
Multi-slice mode	Interleaved
Series	Interleaved
Saturation mode	Standard
Nr. of sat. regions	0
Position mode	L-P-H
Fat suppr.	None
Water suppr.	None
Special sat.	None
Special sat.	None
Table position	P

System

Body	Off
HEP	On
HEA	On
Position mode	L-P-H
Positioning mode	REF
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Save uncombined	On
Coil Combine Mode	Sum of Squares
AutoAlign	Head > Brain
Coil Select Mode	Off - All
Shim mode	Standard
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Maximum
? Ref. amplitude 1H	0.000 V
Position	Isocenter
Rotation	89.90 deg
A >> P	230 mm
R >> L	205 mm
F >> H	144 mm
Frequency 1H	123.251654 MHz
Correction factor	1
SRFExcit 1H	170.313 V
Gain	Low
Table position	0 mm
Img. Scale. Cor.	1.000

Physio

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

Inline

Distortion correction	Off
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Sequence

Introduction	On
Dimension	3D
Elliptical scanning	Off
Averaging mode	Short term
Multi-slice mode	Interleaved
Asymmetric echo	Off
Contrasts	2
Bandwidth 1	140 Hz/Px
Flow comp. 1	Yes
Readout mode	Bipolar
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
RF spoiling	On
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	HEA;HEP
Acquisition duration	0 ms
Mode	Off

BOLD

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

SIEMENS MAGNETOM Skyra syngo MR D13

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  |      |      |      | AAHead_Scout_32ch-head-coil
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  |      |      |      | T1_p2_1mm_fov256_sag_TI_880
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  |      |      |      | MB8_FMRI_fov210_2.4mm_resting
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  |      |      |      | MB8_FMRI_fov210_2.4mm_task
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  |      |      |      | t2_flair_sag_p2_1mm_FS_ellip_pf78
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  |      |      |      | diff_PA_MPopt_MB3_3b0_lowflip
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  |      |      |      | diff_AP_MPopt_MB3_50b1000_50b2000_8b0_lowflip
```

```
  |      |      |      | SWI_3mm_Updated_v1.1
```