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Oscar

HCPH\_PA

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TA: 14 sec Coil Selection: Auto Voxel Size: 1.6×1.6×1.6 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	Off
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Resolution - Acceleration**

Acceleration Factor 3D	1
Phase Partial Fourier	6/8
Slice Partial Fourier	6/8
Asymmetric Echo	Weak

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	3D
Normalize	Prescan
Noise Masking	Off
Image Filter	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	128
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	3.2 ms
TE	1.37 ms
Averages	1
Concatenations	1
AutoAlign	Head

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	128
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	3.2 ms
Multi-Slice Mode	Sequential
Series	Ascending
Concatenations	1

**Contrast - Common**

TR	3.2 ms
TE	1.37 ms
Flip Angle	8 deg
Fat-Water Contrast	Standard
Contrasts	1
Reconstruction	Magnitude

**Geometry - AutoAlign**

Slab Group	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
AutoAlign	Head
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Time to Center	6.2 s

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**Resolution - Common**

FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
Base Resolution	160
Phase Resolution	100 %
Slice Resolution	69 %
Trajectory	Cartesian

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	24

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Non-sel.

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Dynamic**

Dynamic Mode	Standard
Flip Angle	8 deg
Measurements	1
Time to Center	6.2 s

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - Cardiac**

Save Original Images	On
Contrasts	1
TE	1.37 ms
TR	3.2 ms

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Inline - MapIt**

MapIt	None
Flip Angle	8 deg
Measurements	1
Contrasts	1
TE	1.37 ms
TR	3.2 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	fl
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Fast
Gradient Mode	Normal
Bandwidth	540 Hz/Px
Asymmetric Echo	Weak

**Sequence - Part 2**

Introduction	On
RF Spoiling	On
Breast Application	Off

**Sequence - Assistant**

SAR Assistant	Off
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\\RESEARCH\RESEARCH\Oscar\HCPH\_PA\anat-T1w\_\_t1\_mprage\_tra\_p2\_iso\_siemens\_axial

TA: 5:03 min Coil Selection: Auto Voxel Size: 0.8×0.8×0.8 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	50 %
Position	L0.0 A27.4 H15.0 mm
Orientation	Transversal
Phase Encoding Dir.	R >> L
Slices per Slab	192
Phase Oversampling	0 %
Slice Oversampling	16.7 %
FoV Read	230 mm
FoV Phase	87.5 %
Slice Thickness	0.8 mm
TR	2200.0 ms
TE	2.55 ms
Averages	1
Concatenations	1
AutoAlign	---

**Contrast - Common**

TR	2200.0 ms
TE	2.55 ms
Magn. Preparation	Non-sel. IR
TI	900 ms
Flip Angle	8 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement
Reordering	Linear

**Resolution - Common**

FoV Read	230 mm
FoV Phase	87.5 %
Slice Thickness	0.8 mm
Base Resolution	288
Phase Resolution	100 %
Slice Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
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**Resolution - Acceleration**

Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	Off
Slice Partial Fourier	Off
Asymmetric Echo	Allowed
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	On

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	50 %
Position	L0.0 A27.4 H15.0 mm
Orientation	Transversal
Phase Encoding Dir.	R >> L
Slices per Slab	192
Phase Oversampling	0 %
Slice Oversampling	16.7 %
FoV Read	230 mm
FoV Phase	87.5 %
Slice Thickness	0.8 mm
TR	2200.0 ms
Multi-Slice Mode	Single Shot
Series	Ascending
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	L0.0 A27.4 H15.0 mm
Orientation	Transversal
Phase Encoding Dir.	R >> L
AutoAlign	---
Initial Position	L0.0 A27.4 H15.0
L	0.0 mm
A	27.4 mm
H	15.0 mm
Initial Orientation	Transversal
Initial Rotation	90.00 deg

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P

**System - Miscellaneous**

Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Slab-sel.

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	2200.0 ms
Concatenations	1

**Physio - Cardiac**

Fat-Water Contrast	Standard
Magn. Preparation	Non-sel. IR
TI	900 ms
Dark Blood	Off
FoV Read	230 mm
FoV Phase	87.5 %
Phase Resolution	100 %
Dynamic Mode	Standard

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - Cardiac**

Magn. Preparation	Non-sel. IR
Save Original Images	On
TE	2.55 ms

**Inline - Cardiac**

TR	2200.0 ms
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**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Inline - Maplt**

Maplt	None
Flip Angle	8 deg
Measurements	1
TE	2.55 ms
TR	2200.0 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	tfl
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Fast
Gradient Mode	Normal
Flow Compensation	None
Reordering	Linear
Bandwidth	260 Hz/Px
Echo Spacing	7.46 ms
Asymmetric Echo	Allowed
Turbo Factor	224

**Sequence - Part 2**

Introduction	On
RF Spoiling	On
Incr. Gradient Spoiling	On

**Sequence - Assistant**

SAR Assistant	Off
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\\RESEARCH\RESEARCH\Oscar\HCPH_PA\map-epi_acq-b0_dir-LR__6dir_monopolar_HR1_2mm_B W
TA: 53 sec Coil Selection: Auto Voxel Size: 1.3×1.3×1.2 mm <sup>3</sup> Acc:: 6 Rel. SNR: 1.00

**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	114
Distance Factor	0 %
Position	R3.8 A20.9 H13.6 mm
Orientation	T > C-14.4 > S2.0
Phase Encoding Dir.	L >> R
Phase Oversampling	0 %
FoV Read	248 mm
FoV Phase	73.7 %
Slice Thickness	1.2 mm
TR	5300.0 ms
TE	90.00 ms
Concatenations	1
AutoAlign	Head > Brain

**Contrast - Common**

TR	5300.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Multiple Series	Off
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	248 mm
FoV Phase	73.7 %
Slice Thickness	1.2 mm
Base Resolution	190
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	40
SMS Factor	3
Advanced Reconstruction	Off

**Resolution - Acceleration**

Phase Partial Fourier	7/8
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**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	114
Distance Factor	0 %
Position	R3.8 A20.9 H13.6 mm
Orientation	T > C-14.4 > S2.0
Phase Encoding Dir.	L >> R
Phase Oversampling	0 %
FoV Read	248 mm
FoV Phase	73.7 %
Slice Thickness	1.2 mm
TR	5300.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice Group	1
Position	R3.8 A20.9 H13.6 mm
Orientation	T > C-14.4 > S2.0
Phase Encoding Dir.	L >> R
AutoAlign	Head > Brain
Initial Position	L0.1 A0.5 H5.7
L	0.1 mm
A	0.5 mm
H	5.7 mm
Initial Orientation	T > C
T > C	-14.60
> S	-2.10
Initial Rotation	-90.42 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance

**System - Miscellaneous**

Coil Focus	Flat
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**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R3.7 A21.5 H11.3 mm
! Orientation	T > C-14.4 > S2.0
! Rotation	-88.20 deg
! R >> L	169 mm
! A >> P	228 mm
! F >> H	140 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	5300.0 ms
Concatenations	1

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Diff**

Diffusion Mode	Free
Diff. Directions	6
Diffusion Scheme	Monopolar
Diff. Weightings	1
b-value	0 s/mm <sup>2</sup>
Averages	3
Dynamic Field Correction	Off
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	Off
Tensor	Off
FA Maps	Off
ADC Maps	Off
Exponential ADC Maps	Off
Calculated Image	Off

**Sequence - Part 1**

Sequence Name	epse
Excitation	Standard
RF Pulse Type	Low SAR
Gradient Mode	Performance*
Bandwidth	1462 Hz/Px

**Sequence - Part 1**

Echo Spacing	0.93 ms
Free Echo Spacing	On
Optimization	None
EPI Factor	140

**Sequence - Part 2**

Introduction	Off
Phase Correction	Internal

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W

TA: 53 sec Coil Selection: Auto Voxel Size: 1.3×1.3×1.2 mm<sup>3</sup> Acc:: 6 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

### Routine

Slice Group	1
Slices	114
Distance Factor	0 %
Position	R3.8 A20.9 H13.6 mm
Orientation	T > C-14.4 > S2.0
Phase Encoding Dir.	R >> L
Phase Oversampling	0 %
FoV Read	248 mm
FoV Phase	73.7 %
Slice Thickness	1.2 mm
TR	5300.0 ms
TE	90.00 ms
Concatenations	1
AutoAlign	Head > Brain

### Contrast - Common

TR	5300.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Reconstruction	Magnitude

### Contrast - Dynamic

Dynamic Mode	Standard
Multiple Series	Off
Delay in TR	0.00 ms

### Resolution - Common

FoV Read	248 mm
FoV Phase	73.7 %
Slice Thickness	1.2 mm
Base Resolution	190
Phase Resolution	100 %
Interpolation	Off

### Resolution - Acceleration

Acceleration mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	40
SMS Factor	3
Advanced Reconstruction	Off

### Resolution - Acceleration

Phase Partial Fourier	7/8
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### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off

### Geometry - Common

Slice Group	1
Slices	114
Distance Factor	0 %
Position	R3.8 A20.9 H13.6 mm
Orientation	T > C-14.4 > S2.0
Phase Encoding Dir.	R >> L
Phase Oversampling	0 %
FoV Read	248 mm
FoV Phase	73.7 %
Slice Thickness	1.2 mm
TR	5300.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice Group	1
Position	R3.8 A20.9 H13.6 mm
Orientation	T > C-14.4 > S2.0
Phase Encoding Dir.	R >> L
AutoAlign	Head > Brain
Initial Position	L0.1 A0.5 H5.7
L	0.1 mm
A	0.5 mm
H	5.7 mm
Initial Orientation	T > C
T > C	-14.60
> S	-2.10
Initial Rotation	89.58 deg

### Geometry - Navigator

### Geometry - Saturation

Special Saturation	None
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### Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

### System - Miscellaneous

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance



**System - Miscellaneous**

Coil Focus	Flat
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**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R3.7 A21.5 H11.3 mm
! Orientation	T > C-14.4 > S2.0
! Rotation	-88.20 deg
! R >> L	169 mm
! A >> P	228 mm
! F >> H	140 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	5300.0 ms
Concatenations	1

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Diff**

Diffusion Mode	Free
Diff. Directions	6
Diffusion Scheme	Monopolar
Diff. Weightings	1
b-value	0 s/mm <sup>2</sup>
Averages	3
Dynamic Field Correction	Off
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	Off
Tensor	Off
FA Maps	Off
ADC Maps	Off
Exponential ADC Maps	Off
Calculated Image	Off

**Sequence - Part 1**

Sequence Name	epse
Excitation	Standard
RF Pulse Type	Low SAR
Gradient Mode	Performance*
Bandwidth	1462 Hz/Px

**Sequence - Part 1**

Echo Spacing	0.93 ms
Free Echo Spacing	On
Optimization	None
EPI Factor	140

**Sequence - Part 2**

Introduction	Off
Phase Correction	Internal

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TA: 40 sec Coil Selection: Auto Voxel Size: 1.3×1.3×1.6 mm<sup>3</sup> Acc:: 6 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

### Routine

Slice Group	1
Slices	87
Distance Factor	0 %
Position	L0.0 A1.9 H1.8 mm
Orientation	T > C-14.6 > S-2.1
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	4000.0 ms
TE	90.00 ms
Concatenations	1
AutoAlign	Head > Brain

### Contrast - Common

TR	4000.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Reconstruction	Magnitude

### Contrast - Dynamic

Dynamic Mode	Standard
Multiple Series	Off
Delay in TR	0.00 ms

### Resolution - Common

FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
Base Resolution	180
Phase Resolution	100 %
Interpolation	Off

### Resolution - Acceleration

Acceleration mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	54
SMS Factor	3
Advanced Reconstruction	Off
Phase Partial Fourier	7/8

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off

### Geometry - Common

Slice Group	1
Slices	87
Distance Factor	0 %
Position	L0.0 A1.9 H1.8 mm
Orientation	T > C-14.6 > S-2.1
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	4000.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice Group	1
Position	L0.0 A1.9 H1.8 mm
Orientation	T > C-14.6 > S-2.1
Phase Encoding Dir.	A >> P
AutoAlign	Head > Brain
Initial Position	L0.0 A1.9 H1.8
R	0.0 mm
A	1.9 mm
H	1.8 mm
Initial Orientation	T > C
T > C	-14.60
> S	-2.10
Initial Rotation	-0.42 deg

### Geometry - Navigator

### Geometry - Saturation

Special Saturation	None
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### Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

### System - Miscellaneous

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance
Coil Focus	Flat

### System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard

**System - Adjustments**

B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**Sequence - Part 2**

Introduction	Off
Phase Correction	Internal

**System - Adjust Volume**

! Position	L0.0 A1.9 H1.8 mm
! Orientation	T > C-14.6 > S-2.1
! Rotation	179.58 deg
! A >> P	239 mm
! R >> L	239 mm
! F >> H	140 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	4000.0 ms
Concatenations	1

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Diff**

Diffusion Mode	Free
Diff. Directions	6
Diffusion Scheme	Monopolar
Diff. Weightings	1
b-value	0 s/mm <sup>2</sup>
Averages	3
Dynamic Field Correction	Off
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	Off
Tensor	Off
FA Maps	Off
ADC Maps	Off
Exponential ADC Maps	Off
Calculated Image	Off

**Sequence - Part 1**

Sequence Name	epse
Excitation	Standard
RF Pulse Type	Low SAR
Gradient Mode	Performance
Bandwidth	1634 Hz/Px
Echo Spacing	0.70 ms
Free Echo Spacing	On
Optimization	None
EPI Factor	180

\\RESEARCH\RESEARCH\Oscar\HCPH\_PA\map-epi\_acq-b0\_dir-PA\_6dir\_monopolar

TA: 40 sec Coil Selection: Auto Voxel Size: 1.3×1.3×1.6 mm<sup>3</sup> Acc:: 6 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	87
Distance Factor	0 %
Position	L0.0 A1.9 H1.8 mm
Orientation	T > C-14.6 > S-2.1
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	4000.0 ms
TE	90.00 ms
Concatenations	1
AutoAlign	Head > Brain

**Contrast - Common**

TR	4000.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Multiple Series	Off
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
Base Resolution	180
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	54
SMS Factor	3
Advanced Reconstruction	Off
Phase Partial Fourier	7/8

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	87
Distance Factor	0 %
Position	L0.0 A1.9 H1.8 mm
Orientation	T > C-14.6 > S-2.1
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	4000.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice Group	1
Position	L0.0 A1.9 H1.8 mm
Orientation	T > C-14.6 > S-2.1
Phase Encoding Dir.	A >> P
AutoAlign	Head > Brain
Initial Position	L0.0 A1.9 H1.8
R	0.0 mm
A	1.9 mm
H	1.8 mm
Initial Orientation	T > C
T > C	-14.60
> S	-2.10
Initial Rotation	-0.42 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard

**System - Adjustments**

B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**Sequence - Part 2**

Introduction	Off
Phase Correction	Internal

**System - Adjust Volume**

! Position	L0.0 A1.9 H1.8 mm
! Orientation	T > C-14.6 > S-2.1
! Rotation	179.58 deg
! A >> P	239 mm
! R >> L	239 mm
! F >> H	140 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	4000.0 ms
Concatenations	1

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Diff**

Diffusion Mode	Free
Diff. Directions	6
Diffusion Scheme	Monopolar
Diff. Weightings	1
b-value	0 s/mm <sup>2</sup>
Averages	3
Dynamic Field Correction	Off
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	Off
Tensor	Off
FA Maps	Off
ADC Maps	Off
Exponential ADC Maps	Off
Calculated Image	Off

**Sequence - Part 1**

Sequence Name	epse
Excitation	Standard
RF Pulse Type	Low SAR
Gradient Mode	Performance
Bandwidth	1634 Hz/Px
Echo Spacing	0.70 ms
Free Echo Spacing	On
Optimization	None
EPI Factor	180

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TA: 33:11 min Coil Selection: Auto Voxel Size: 1.6×1.6×1.6 mm<sup>3</sup> Acc.: 6 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

### Routine

Slice Group	1
Slices	87
Distance Factor	0 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	7000.0 ms
TE	98.00 ms
Concatenations	1
AutoAlign	Head > Brain

### Contrast - Common

TR	7000.0 ms
TE	98.00 ms
MTC	Off
Magn. Preparation	None
Fat-Water Contrast	Fat Saturation
Fat Saturation	Strong
Reconstruction	Magnitude

### Contrast - Dynamic

Dynamic Mode	Standard
Multiple Series	Off
Delay in TR	0.00 ms

### Resolution - Common

FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
Base Resolution	146
Phase Resolution	100 %
Interpolation	Off

### Resolution - Acceleration

Acceleration mode	SMS
Reference Scans	EPI/Separate
Acceleration Factor PE	2
Reference Lines PE	54
SMS Factor	3
Advanced Reconstruction	Off
Phase Partial Fourier	7/8

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off

### Geometry - Common

Slice Group	1
Slices	87
Distance Factor	0 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	234 mm
FoV Phase	100.0 %
Slice Thickness	1.6 mm
TR	7000.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice Group	1
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	P >> A
AutoAlign	Head > Brain
Initial Position	L0.0 P0.0 F5.0
L	0.0 mm
P	0.0 mm
F	5.0 mm
Initial Orientation	Transversal
Initial Rotation	179.83 deg

### Geometry - Navigator

### Geometry - Saturation

Special Saturation	None
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### Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	5 mm
Table Position	F
Inline Composing	Off

### System - Miscellaneous

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance
Coil Focus	Flat

### System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm
CoilShim	Off

**System - Adjustments**

Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**Sequence - Part 2**

Introduction	Off
Phase Correction	Internal

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	179.83 deg
A >> P	234 mm
R >> L	234 mm
F >> H	140 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	7000.0 ms
Concatenations	1

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Diff**

Diffusion Mode	Free
Diff. Directions	279
Diffusion Scheme	Monopolar
Diff. Weightings	2
b-value 1	0 s/mm <sup>2</sup>
b-value 2	3000 s/mm <sup>2</sup>
Averages 1	1
Averages 2	1
Dynamic Field Correction	Off
Invert Gray Scale	Off
Diff. Weighted Images	On
Trace Weighted Images	On
Tensor	Off
FA Maps	Off
ADC Maps	Off
Exponential ADC Maps	Off
Calculated Image	Off

**Sequence - Part 1**

Sequence Name	epse
Excitation	Standard
RF Pulse Type	Low SAR
Gradient Mode	Performance
Bandwidth	1630 Hz/Px
Echo Spacing	0.70 ms
Free Echo Spacing	Off
Optimization	None
EPI Factor	146

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TA: 2:31 min Coil Selection: Auto Voxel Size: 2.0×2.0×2.0 mm<sup>3</sup> Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	72
Distance Factor	0 %
Position	R5.2 A24.2 H12.6 mm
Orientation	T > C-14.5 > S3.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	228 mm
FoV Phase	100.0 %
Slice Thickness	2.0 mm
TR	324.0 ms
TE 1	4.45 ms
TE 2	6.91 ms
Averages	1
Concatenations	2
AutoAlign	Head > Brain

**Contrast - Common**

TR	324.0 ms
TE 1	4.45 ms
TE 2	6.91 ms
MTC	Off
Flip Angle	55 deg
Fat-Water Contrast	Standard
Contrasts	2
Reconstruction	Magn./Phase

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

**Resolution - Common**

FoV Read	228 mm
FoV Phase	100.0 %
Slice Thickness	2.0 mm
Base Resolution	114
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Phase Partial Fourier	Off
Asymmetric Echo	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slice Group	1
Slices	72
Distance Factor	0 %
Position	R5.2 A24.2 H12.6 mm
Orientation	T > C-14.5 > S3.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	228 mm
FoV Phase	100.0 %
Slice Thickness	2.0 mm
TR	324.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice Group	1
Position	R5.2 A24.2 H12.6 mm
Orientation	T > C-14.5 > S3.7
Phase Encoding Dir.	P >> A
AutoAlign	Head > Brain
Initial Position	L0.0 A2.5 H1.7
R	0.0 mm
A	2.5 mm
H	1.7 mm
Initial Orientation	T > C
T > C	-14.60
> S	-2.10
Initial Rotation	179.57 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm



**System - Adjustments**

CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R5.2 A24.2 H12.6 mm
! Orientation	T > C-14.5 > S3.7
! Rotation	-89.30 deg
! R >> L	169 mm
! A >> P	228 mm
! F >> H	140 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
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**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Sequence - Part 1**

Sequence Name	fm_r
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	On
Bandwidth	1218 Hz/Px
Asymmetric Echo	Off

**Sequence - Part 2**

Introduction	On
RF Spoiling	On

**Sequence - Assistant**

SAR Assistant	Off
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TA: 3:07 min Coil Selection: Auto Voxel Size: 2.2x2.2x2.2 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	1600.0 ms
TE 1	12.60 ms
TE 2	33.04 ms
TE 3	53.48 ms
TE 4	73.92 ms
Averages	1
Multi-band accel. factor	4
AutoAlign	Head > Brain

**Contrast - Common**

TR	1600.0 ms
TE 1	12.60 ms
TE 2	33.04 ms
TE 3	53.48 ms
TE 4	73.92 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	4
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	99
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
Base Resolution	96
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	22
Phase Partial Fourier	6/8

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	1600.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	4

**Geometry - AutoAlign**

Slice Group	1
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
AutoAlign	Head > Brain
Initial Position	R0.6 P3.8 F0.3
R	0.6 mm
P	3.8 mm
F	0.3 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	179.77 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares

**System - Miscellaneous**

Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Rotation	179.77 deg
A >> P	211 mm
R >> L	211 mm
F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	1600.0 ms
Multi-band accel. factor	4

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore

**BOLD**

Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	99
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Performance
Flow Compensation	None
Bandwidth	2264 Hz/Px
Echo Spacing	0.55 ms
Free Echo Spacing	Off
EPI Factor	96

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
Min. prep scans SB	0
Inter-TE delay	0 us
Single-band images	Off
MB LeakBlock kernel	On
MB dual kernel	Off
MB RF phase scramble	Off
Opt. MB RF pulse BW	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

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TA: 27 sec Coil Selection: Auto Voxel Size: 2.2×2.2×2.2 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R6.0 A22.8 H14.0 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	L >> R
Phase Oversampling	0 %
FoV Read	224 mm
FoV Phase	74.5 %
Slice Thickness	2.2 mm
TR	3811.0 ms
TE	35.00 ms
Averages	1
Multi-band accel. factor	1
AutoAlign	Head > Brain

**Contrast - Common**

TR	3811.0 ms
TE	35.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	1
Reconstruction	Magn./Phase

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	4
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	224 mm
FoV Phase	74.5 %
Slice Thickness	2.2 mm
Base Resolution	102
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	18
Phase Partial Fourier	6/8

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R6.0 A22.8 H14.0 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	L >> R
Phase Oversampling	0 %
FoV Read	224 mm
FoV Phase	74.5 %
Slice Thickness	2.2 mm
TR	3811.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	1

**Geometry - AutoAlign**

Slice Group	1
Position	R6.0 A22.8 H14.0 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	L >> R
AutoAlign	Head > Brain
Initial Position	R0.6 A1.1 H3.2
R	0.6 mm
A	1.1 mm
H	3.2 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	-90.22 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm

**System - Adjustments**

CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R5.8 A23.1 H12.1 mm
! Orientation	T > C-16.7 > S5.7
! Rotation	-88.88 deg
! R >> L	167 mm
! A >> P	224 mm
! F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	3811.0 ms
Multi-band accel. factor	1

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore
Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	4
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	1960 Hz/Px
Echo Spacing	0.65 ms
Free Echo Spacing	Off
EPI Factor	76

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Force Maxwell corr.	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

\\RESEARCH\RESEARCH\Oscar\HCPH\_PA\map-epi\_acq-bold\_dir-RL\_cmrr\_me4\_sms1

TA: 27 sec Coil Selection: Auto Voxel Size: 2.2×2.2×2.2 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 A1.1 H3.2 mm
Orientation	T > C-16.7
Phase Encoding Dir.	R >> L
Phase Oversampling	0 %
FoV Read	224 mm
FoV Phase	74.5 %
Slice Thickness	2.2 mm
TR	3811.0 ms
TE	35.00 ms
Averages	1
Multi-band accel. factor	1
AutoAlign	Head > Brain

**Contrast - Common**

TR	3811.0 ms
TE	35.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	1
Reconstruction	Magn./Phase

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	4
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	224 mm
FoV Phase	74.5 %
Slice Thickness	2.2 mm
Base Resolution	102
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	18
Phase Partial Fourier	6/8

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 A1.1 H3.2 mm
Orientation	T > C-16.7
Phase Encoding Dir.	R >> L
Phase Oversampling	0 %
FoV Read	224 mm
FoV Phase	74.5 %
Slice Thickness	2.2 mm
TR	3811.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	1

**Geometry - AutoAlign**

Slice Group	1
Position	R0.6 A1.1 H3.2 mm
Orientation	T > C-16.7
Phase Encoding Dir.	R >> L
AutoAlign	Head > Brain
Initial Position	R0.6 A1.1 H3.2
R	0.6 mm
A	1.1 mm
H	3.2 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	89.77 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares
Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm

**System - Adjustments**

CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R0.6 A1.4 H1.3 mm
! Orientation	T > C-16.7
! Rotation	-90.22 deg
! R >> L	167 mm
! A >> P	224 mm
! F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	3811.0 ms
Multi-band accel. factor	1

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore
Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	4
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	1960 Hz/Px
Echo Spacing	0.65 ms
Free Echo Spacing	Off
EPI Factor	76

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Force Maxwell corr.	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

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TA: 27 sec Coil Selection: Auto Voxel Size: 2.2×2.2×2.2 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

### Routine

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R5.9 A18.9 H12.8 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	3808.0 ms
TE	35.00 ms
Averages	1
Multi-band accel. factor	1
AutoAlign	Head > Brain

### Contrast - Common

TR	3808.0 ms
TE	35.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	1
Reconstruction	Magn./Phase

### Contrast - Dynamic

Dynamic Mode	Standard
Measurements	4
Delay in TR	0.00 ms

### Resolution - Common

FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
Base Resolution	96
Phase Resolution	100 %
Interpolation	Off

### Resolution - Acceleration

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	22
Phase Partial Fourier	6/8

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

### Geometry - Common

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R5.9 A18.9 H12.8 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	3808.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	1

### Geometry - AutoAlign

Slice Group	1
Position	R5.9 A18.9 H12.8 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	P >> A
AutoAlign	Head > Brain
Initial Position	R0.6 P2.8 H2.0
R	0.6 mm
P	2.8 mm
H	2.0 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	179.77 deg

### Geometry - Saturation

Special Saturation	None
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### Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

### System - Miscellaneous

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares
Matrix Optimization	Off
Coil Focus	Flat

### System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm



**System - Adjustments**

CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R5.7 A17.9 H10.5 mm
! Orientation	T > C-16.7 > S5.7
! Rotation	1.12 deg
! A >> P	211 mm
! R >> L	211 mm
! F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	3808.0 ms
Multi-band accel. factor	1

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore
Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	4
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Performance
Flow Compensation	None
Bandwidth	2264 Hz/Px
Echo Spacing	0.53 ms
Free Echo Spacing	Off
EPI Factor	96

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Force Maxwell corr.	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

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TA: 27 sec Coil Selection: Auto Voxel Size: 2.2×2.2×2.2 mm<sup>3</sup> Acc:: 2 Rel. SNR: 1.00

### Properties

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

### Routine

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R5.9 A18.9 H12.8 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	3808.0 ms
TE	35.00 ms
Averages	1
Multi-band accel. factor	1
AutoAlign	Head > Brain

### Contrast - Common

TR	3808.0 ms
TE	35.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	1
Reconstruction	Magn./Phase

### Contrast - Dynamic

Dynamic Mode	Standard
Measurements	4
Delay in TR	0.00 ms

### Resolution - Common

FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
Base Resolution	96
Phase Resolution	100 %
Interpolation	Off

### Resolution - Acceleration

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	22
Phase Partial Fourier	6/8

### Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

### Geometry - Common

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R5.9 A18.9 H12.8 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	A >> P
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	3808.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	1

### Geometry - AutoAlign

Slice Group	1
Position	R5.9 A18.9 H12.8 mm
Orientation	T > C-16.7 > S5.7
Phase Encoding Dir.	A >> P
AutoAlign	Head > Brain
Initial Position	R0.6 P2.8 H2.0
R	0.6 mm
P	2.8 mm
H	2.0 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	-0.23 deg

### Geometry - Saturation

Special Saturation	None
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### Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

### System - Miscellaneous

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares
Matrix Optimization	Off
Coil Focus	Flat

### System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm

**System - Adjustments**

CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R5.7 A17.9 H10.5 mm
! Orientation	T > C-16.7 > S5.7
! Rotation	1.12 deg
! A >> P	211 mm
! R >> L	211 mm
! F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	3808.0 ms
Multi-band accel. factor	1

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore
Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	4
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Performance
Flow Compensation	None
Bandwidth	2264 Hz/Px
Echo Spacing	0.53 ms
Free Echo Spacing	Off
EPI Factor	96

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Force Maxwell corr.	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

\\RESEARCH\RESEARCH\Oscar\HCPH\_PA\func-bold\_task-rest\_dir-PA\_cmrr\_me4\_sms4

TA: 20:29 min Coil Selection: Auto Voxel Size: 2.2×2.2×2.2 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	1600.0 ms
TE 1	12.60 ms
TE 2	33.04 ms
TE 3	53.48 ms
TE 4	73.92 ms
Averages	1
Multi-band accel. factor	4
AutoAlign	Head > Brain

**Contrast - Common**

TR	1600.0 ms
TE 1	12.60 ms
TE 2	33.04 ms
TE 3	53.48 ms
TE 4	73.92 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	4
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	750
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
Base Resolution	96
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	22
Phase Partial Fourier	6/8

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	1600.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	4

**Geometry - AutoAlign**

Slice Group	1
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
AutoAlign	Head > Brain
Initial Position	R0.6 P3.8 F0.3
R	0.6 mm
P	3.8 mm
F	0.3 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	179.77 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares

**System - Miscellaneous**

Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Rotation	179.77 deg
A >> P	211 mm
R >> L	211 mm
F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	1600.0 ms
Multi-band accel. factor	4

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore

**BOLD**

Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	750
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Performance
Flow Compensation	None
Bandwidth	2264 Hz/Px
Echo Spacing	0.55 ms
Free Echo Spacing	Off
EPI Factor	96

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
Min. prep scans SB	0
Inter-TE delay	0 us
Single-band images	Off
MB LeakBlock kernel	On
MB dual kernel	Off
MB RF phase scramble	Off
Opt. MB RF pulse BW	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

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TA: 6:00 min Coil Selection: Auto Voxel Size: 2.2x2.2x2.2 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	1600.0 ms
TE 1	12.60 ms
TE 2	33.04 ms
TE 3	53.48 ms
TE 4	73.92 ms
Averages	1
Multi-band accel. factor	4
AutoAlign	Head > Brain

**Contrast - Common**

TR	1600.0 ms
TE 1	12.60 ms
TE 2	33.04 ms
TE 3	53.48 ms
TE 4	73.92 ms
MTC	Off
Magn. Preparation	None
Flip Angle	64 deg
Fat-Water Contrast	Fat Saturation
Contrasts	4
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	207
Delay in TR	0.00 ms

**Resolution - Common**

FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
Base Resolution	96
Phase Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Reference scan mode	Single-shot
Acceleration Factor PE	2
Reference Lines PE	22
Phase Partial Fourier	6/8

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Hamming	Off
Distortion Correction	2D
Normalize	Off

**Geometry - Common**

Slice Group	1
Slices	60
Distance Factor	0 %
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
Phase Oversampling	0 %
FoV Read	211 mm
FoV Phase	100.0 %
Slice Thickness	2.2 mm
TR	1600.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Multi-band accel. factor	4

**Geometry - AutoAlign**

Slice Group	1
Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Phase Encoding Dir.	P >> A
AutoAlign	Head > Brain
Initial Position	R0.6 P3.8 F0.3
R	0.6 mm
P	3.8 mm
F	0.3 mm
Initial Orientation	T > C
T > C	-16.70
> S	0.00
Initial Rotation	179.77 deg

**Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	Auto Coil Select
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Sum of Squares

**System - Miscellaneous**

Matrix Optimization	Off
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Standard
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	R0.6 P3.8 F0.3 mm
Orientation	T > C-16.7
Rotation	179.77 deg
A >> P	211 mm
R >> L	211 mm
F >> H	132 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Standard

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
TR	1600.0 ms
Multi-band accel. factor	4

**BOLD**

GLM Statistics	Off
Ignore Meas. at Start	0
Ignore After Transition	0
Model Transition States	On
Temp. Highpass Filter	On
Threshold	4.00
Paradigm Size	20
Meas[1]	Active
Meas[2]	Active
Meas[3]	Active
Meas[4]	Active
Meas[5]	Active
Meas[6]	Active
Meas[7]	Active
Meas[8]	Active
Meas[9]	Active
Meas[10]	Active
Meas[11]	Ignore
Meas[12]	Ignore
Meas[13]	Ignore
Meas[14]	Ignore
Meas[15]	Ignore
Meas[16]	Ignore
Meas[17]	Ignore
Meas[18]	Ignore
Meas[19]	Ignore

**BOLD**

Meas[20]	Ignore
Motion Correction	Off
Spatial Filter	Off
Measurements	207
Delay in TR	0.00 ms

**Sequence - Part 1**

Sequence Name	epfid
Dimension	2D
Excitation	Standard
Gradient Mode	Performance
Flow Compensation	None
Bandwidth	2264 Hz/Px
Echo Spacing	0.55 ms
Free Echo Spacing	Off
EPI Factor	96

**Sequence - Part 2**

Introduction	Off
RF Spoiling	Off

**Sequence - Special**

Excite pulse duration	4000 us
Min. prep scans	0
Min. prep scans SB	0
Inter-TE delay	0 us
Single-band images	Off
MB LeakBlock kernel	On
MB dual kernel	Off
MB RF phase scramble	Off
Opt. MB RF pulse BW	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
PF omits higher k-space	Off
Disable freq. update	Off
Suppress 16-bit DICOM	On
Force equal slice timing	Off
Online multi-band recon.	Online
FFT scale factor	1.00
Fat saturation FA	110.00 deg
Fat sat. offset	0.00 Hz
Sinc exc. pulse BWTP	5.20
Physio recording	Off
Triggering scheme	Standard

\\RESEARCH\RESEARCH\Oscar\HCPH\_PA\anat-T2w\_\_space

TA: 5:44 min Coil Selection: Auto Voxel Size: 0.8×0.8×0.8 mm<sup>3</sup> Acc.: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Routine**

Slab Group	1
Slabs	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	240
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FoV Read	256 mm
FoV Phase	100.0 %
Slice Thickness	0.80 mm
TR	3200.0 ms
TE	413.00 ms
Averages	1.0
Concatenations	1
AutoAlign	Head > Basis

**Contrast - Common**

TR	3200.0 ms
TE	413.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle Mode	T2 Var
Fat-Water Contrast	Standard
Dark Blood	Off
Blood Suppression	Off
Wrap-up Magn.	Restore
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement
Reordering	Linear

**Resolution - Common**

FoV Read	256 mm
FoV Phase	100.0 %
Slice Thickness	0.80 mm
Base Resolution	320
Phase Resolution	100 %
Slice Resolution	100 %
Interpolation	Off

**Resolution - Acceleration**

Acceleration mode	GRAPPA
Total Factor	3
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	Allowed
Slice Partial Fourier	Off
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	On
Elliptical Filter	Off
Distortion Correction	3D
Normalize	Prescan
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	240
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FoV Read	256 mm
FoV Phase	100.0 %
Slice Thickness	0.80 mm
TR	3200.0 ms
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	A >> P
AutoAlign	Head > Basis
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	0.00 deg

**Geometry - Navigator****Geometry - Saturation**

Special Saturation	None
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H
Inline Composing	Off

**System - Miscellaneous**

Coil Selection	ACS All but spine
MSMA	S - C - T
Sagittal	R >> L



**System - Miscellaneous**

Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Performance
Coil Focus	Flat

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
B1 Shim	TrueForm
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Non-sel.

**System - Tx/Rx**

Frequency 1H	123.248216 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

**Physio - Signal**

1st Signal/Mode	None
Trigger Delay	0 ms
TR	3200.0 ms
Concatenations	1

**Physio - Cardiac**

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	256 mm
FoV Phase	100.0 %
Phase Resolution	100 %
Dynamic Mode	Standard

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - Cardiac**

Magn. Preparation	None
Save Original Images	On

**Inline - Cardiac**

TE	413.00 ms
TR	3200.0 ms

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Composing**

Inline Composing	Off
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**Sequence - Part 1**

Sequence Name	spcR
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	None
Reordering	Linear
Bandwidth	710 Hz/Px
Echo Spacing	3.86 ms
Turbo Factor	282
Echo Train Duration	961 ms

**Sequence - Part 2**

Introduction	On
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**Sequence - Assistant**

SAR Assistant	Off
Allowed Delay	30 s