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#### SIEMENS MAGNETOM Prisma

SMS\_MenRot\_129vol

## \\USER\MBS\_lab\Chen\Retinotopy\Inline\_Anatomy\_t1

TA: 4:42 PM: ISO Voxel size: 1.1×1.1×2.0 mmPAT: 2 Rel. SNR: 1.00 : tfl

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slab group	1
Slabs	1
Dist. factor	50 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
Slice oversampling	75.0 %
Slices per slab	64
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2530.0 ms
TE	2.87 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D),
	Prescan Normalize
Coil elements	HC1-7

#### **Contrast - Common**

TR	2530.0 ms
TE	2.87 ms
Magn. preparation	Slice-sel. IR
ті	1100 ms
Flip angle	7 deg
Fat suppr.	None
Water suppr.	None

#### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	192
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	Off
Slice partial Fourier	Off

#### **Resolution - Common**

Interpolation Off
-------------------

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Accel. factor 3D	1
Reference scan mode	Integrated

#### **Resolution - Filter Image**

Image Filter	Off	
_		
Distortion Corr.	On	
Mode	2D	
Unfiltered images	Off	
Prescan Normalize	On	
Unfiltered images	Off	
Normalize	Off	
B1 filter	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

#### **Geometry - Common**

Slab group	1
Slabs	1
Dist. factor	50 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
Slice oversampling	75.0 %
Slices per slab	64
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2530.0 ms
Multi-slice mode	Single shot
Series	Interleaved
Concatenations	1

## Geometry - AutoAlign

Slab group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Navigator**

#### System - Miscellaneous

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T

#### **System - Miscellaneous**

Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

## **System - Adjustments**

B0 Shim mode	Standard
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

## System - Adjust Volume

Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	128 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2530.0 ms
Concatenations	1

## Physio - Cardiac

Magn. preparation	Slice-sel. IR
TI	1100 ms
Fat suppr.	None
Dark blood	Off
FoV read	208 mm
FoV phase	100.0 %
Phase resolution	100 %

## Physio - PACE

Resp. control	Off	
Concatenations	1	

## Inline - Common

Subtract	Off
	Oli
Measurements	1
StdDev	Off
Save original images	On

#### Inline - MIP

MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

## Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

## Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Single shot
Echo spacing	7.1 ms
Bandwidth	180 Hz/Px

## Sequence - Part 2

RF pulse type	Fast
Gradient mode	Performance
Excitation	Slab-sel.
RF spoiling	On
Incr. Gradient spoiling	Off
Turbo factor	112

## **Sequence - Assistant**

Mode	Off	

## \\USER\MBS\_lab\Chen\Retinotopy\cmrr\_ReadLoc\_97vol

TA: 3:34 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
TE	30.00 ms
Multi-band accel. factor	2
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR TE	2000 ms
TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	82 deg
Fat suppr.	Fat sat.

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	104
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	2

#### Geometry - AutoAlign

Slice group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat	None

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	

Assume Silicone	Off
Adjustment Tolerance	Auto

## **System - Adjust Volume**

Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	124 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Multi-band accel. factor	2

## **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	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
Measurements	97
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2090 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	3500 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\Retinotopy\cmrr\_Retinotopy\_154vol

TA: 5:28 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
TE	30.00 ms
Multi-band accel. factor	2
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	2000 ms
TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	82 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	154
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	104
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	2

#### Geometry - AutoAlign

	<u> </u>
Slice group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

#### System - Miscellaneous

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	

Assume Silicone	Off	
Adjustment Tolerance	Auto	

## System - Adjust Volume

Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	124 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Multi-band accel. factor	2

#### **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	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
Measurements	154
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2090 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	3500 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\Retinotopy\ep2d\_diff\_64dir\_iso1.7\_BigFOV

TA: 8:24 PM: ISO Voxel size: 1.7×1.7×1.7 mmPAT: 2 Rel. SNR: 1.00 : epse

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	76
Dist. factor	0 %
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7200 ms
TE	57.0 ms
Concatenations	1
Filter	Prescan Normalize
Coil elements	HC1-6

#### **Contrast - Common**

TR	7200 ms
TE	57.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Strong

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
Base resolution	122
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

#### **Resolution - iPAT**

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	EPI/separate

#### **Resolution - Filter Image**

Distortion Corr.	Off
Prescan Normalize	On
Dynamic Field Corr.	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

#### **Geometry - Common**

Slice group	1
Slices	76
Dist. factor	0 %
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7200 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### Geometry - AutoAlign

Slice group	1
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal
	Position Orientation Phase enc. dir. AutoAlign Initial Position L P F Initial Rotation

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Special sat.	None

#### **Geometry - Navigator**

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off

Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

## **System - Adjust Volume**

Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Rotation	0.00 deg
A >> P	208 mm
R >> L F >> H	208 mm
F >> H	130 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	7200 ms
Concatenations	1

## Physio - PACE

Resp. control	Off
Concatenations	1

#### **Diff - Neuro**

Diffusion mode	MDDW
	=
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm <sup>2</sup>
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	On
ADC maps	On
FA maps	On
Mosaic	On
Tensor	On
Noise level	40

## Diff - Body

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On

## Diff - Body

Trace weighted images	On
ADC maps	On
Exponential ADC Maps	Off
FA maps	On
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm²
Noise level	40

## **Diff - Composing**

Distortion Corr.	Off	

## Sequence - Part 1

Introd	duction	Off
Optin	nization	Min. TE
Multi-	-slice mode	Interleaved
Free	echo spacing	Off
Echo	spacing	0.6 ms
Band	width	1952 Hz/Px

## Sequence - Part 2

EPI factor	122
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

## Sequence - pTX Pulses

## \\USER\MBS\_lab\Chen\Retinotopy\cmrr\_SpeechLoc\_95vol

TA: 3:30 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
TE	30.00 ms
Multi-band accel. factor	2
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	2000 ms
TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	82 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	95
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	104
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	2

#### Geometry - AutoAlign

, ,	
Slice group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

## **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat	None

#### System - Miscellaneous

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	

Assume Silicone	Off
Adjustment Tolerance	Auto

## **System - Adjust Volume**

Position	L0.0 A11.2 H6.1 mm
Orientation	Transversal
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	124 mm
A >> P R >> L F >> H Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Multi-band accel. factor	2

#### **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	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
Measurements	95
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.56 ms
Bandwidth	2290 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	3500 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\Functional Localizer\ep2d\_diff\_64dir\_iso1.7\_BigFOV

TA: 8:24 PM: ISO Voxel size: 1.7×1.7×1.7 mmPAT: 2 Rel. SNR: 1.00 : epse

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	76
Dist. factor	0 %
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7200 ms
TE	57.0 ms
Concatenations	1
Filter	Prescan Normalize
Coil elements	HC1-6

#### **Contrast - Common**

TR TE	7200 ms
TE	57.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Strong

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
Base resolution	122
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

#### **Resolution - iPAT**

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	EPI/separate

#### **Resolution - Filter Image**

Distortion Corr.	Off
Prescan Normalize	On
Dynamic Field Corr.	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

#### **Geometry - Common**

Slice group	1
Slices	76
Dist. factor	0 %
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7200 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### Geometry - AutoAlign

,	
Slice group	1
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
F	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Special sat.	None

#### **Geometry - Navigator**

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off

Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	
Assume Silicone	Off	
Adjustment Tolerance	Auto	

## **System - Adjust Volume**

Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	130 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	7200 ms
Concatenations	1

## Physio - PACE

Resp. control	Off
Concatenations	1

#### **Diff - Neuro**

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	On
ADC maps	On
FA maps	On
Mosaic	On
Tensor	On
Noise level	40

## Diff - Body

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On

## Diff - Body

Trace weighted images	On
ADC maps	On
Exponential ADC Maps	Off
FA maps	On
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm²
Noise level	40

## **Diff - Composing**

Distortion Corr.	Off	

## Sequence - Part 1

Introduction	Off
Optimization	Min. TE
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.6 ms
Bandwidth	1952 Hz/Px

## Sequence - Part 2

EPI factor	122
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

#### **Sequence - pTX Pulses**

## \\USER\MBS\_lab\Chen\Functional Localizer\cmrr\_Retinotopy\_97vol

TA: 3:34 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
TE	30.00 ms
Multi-band accel. factor	2
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	2000 ms
TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	82 deg
Fat suppr.	Fat sat.

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	104
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	62
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	2

#### Geometry - AutoAlign

, ,	
Slice group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat	None

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	

Assume Silicone	Off	
Adjustment Tolerance	Auto	

## **System - Adjust Volume**

Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	124 mm
A >> P R >> L F >> H Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Multi-band accel. factor	2

#### **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	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
Measurements	97
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.56 ms
Bandwidth	2290 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	3500 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\Letter Positioning\ep2d\_diff\_64dir\_iso1.7\_BigFOV

TA: 8:24 PM: ISO Voxel size: 1.7×1.7×1.7 mmPAT: 2 Rel. SNR: 1.00 : epse

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	76
Dist. factor	0 %
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7200 ms
TE	57.0 ms
Concatenations	1
Filter	Prescan Normalize
Coil elements	HC1-6

#### **Contrast - Common**

TR	7200 ms
TE	57.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Strong

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
Base resolution	122
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

#### **Resolution - iPAT**

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	EPI/separate

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	On	
Dynamic Field Corr.	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

#### **Geometry - Common**

Slice group	1
Slices	76
Dist. factor	0 %
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7200 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### **Geometry - AutoAlign**

Slice group	1
Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal
	Position Orientation Phase enc. dir. AutoAlign Initial Position L P F Initial Rotation

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Special sat.	None

#### **Geometry - Navigator**

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off

Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	
Assume Silicone	Off	
Adjustment Tolerance	Auto	

## **System - Adjust Volume**

Position	L1.8 A10.9 F6.3 mm
Orientation	T > C-3.0 > S1.5
Rotation	0.00 deg
A >> P	208 mm
A >> P R >> L F >> H	208 mm
F >> H	130 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	7200 ms
Concatenations	1

## Physio - PACE

Resp. control	Off
Concatenations	1

#### **Diff - Neuro**

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	On
ADC maps	On
FA maps	On
Mosaic	On
Tensor	On
Noise level	40

## Diff - Body

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On

## Diff - Body

Trace weighted images	On	
ADC maps	On	
Exponential ADC Maps	Off	
FA maps	On	
Invert Gray Scale	Off	
Calculated Image	Off	
b-Value >=	0 s/mm²	
Noise level	40	

## **Diff - Composing**

Distortion Corr.	Off	

## Sequence - Part 1

Introd	duction	Off
Optin	nization	Min. TE
Multi-	-slice mode	Interleaved
Free	echo spacing	Off
Echo	spacing	0.6 ms
Band	width	1952 Hz/Px

## Sequence - Part 2

EPI factor	122
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

## Sequence - pTX Pulses

## \\USER\MBS\_lab\Chen\Letter Positioning\cmrr\_LetterPos\_MB3\_188vol

TA: 5:07 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	1500 ms
TE	30.00 ms
Multi-band accel. factor	3
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	1500 ms
TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	70 deg
Fat suppr.	Fat sat.

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	104
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off
Prescan Normalize	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	3

#### Geometry - AutoAlign

Slice group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat	None

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	

Assume Silicone	Off
Adjustment Tolerance	Auto

## **System - Adjust Volume**

Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Rotation	0.00 deg
A >> P	208 mm
R >> L	208 mm
F >> H	144 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Multi-band accel. factor	3

#### **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	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
Measurements	188
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2090 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	4000 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\Letter Positioning\cmrr\_LetterPos\_MB2\_188vol

TA: 4:59 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	48
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	1500 ms
TE	30.00 ms
Multi-band accel. factor	2
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR TE	1500 ms
TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	70 deg
Fat suppr.	Fat sat.

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
Base resolution	104
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	48
Dist. factor	0 %
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
FoV read	208 mm
FoV phase	100.0 %
Slice thickness	2.00 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	2

#### Geometry - AutoAlign

, ,	
Slice group	1
Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	Н
Table position	6 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	
Only after freq. change	Off	
Assume Dominant Fat	Off	

Assume Silicone	Off
Adjustment Tolerance	Auto

## **System - Adjust Volume**

Position	L0.0 A11.2 H6.1 mm
Orientation	T > C11.3 > S1.2
Rotation	0.00 deg
A >> P	208 mm
R >> L F >> H	208 mm
F >> H	96 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Multi-band accel. factor	2

#### **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	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
Measurements	188
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2090 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	3500 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\VE11C\localizer\_3D (9X5X5)

TA: 0:46 PM: REF Voxel size: 0.5×0.5×6.0 mmPAT: Off Rel. SNR: 1.00 : fl

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	On
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Noutine	
Slice group	1
Slices	9
Dist. factor	150 %
Position	L0.6 A17.1 H0.7 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	5
Dist. factor	150 %
Position	L3.9 A13.3 F0.2 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Slices	5
Dist. factor	150 %
Position	L4.7 A8.9 H10.5 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
TR	10.0 ms
TE	3.04 ms
Averages	1
Concatenations	19
Filter	Distortion Corr.(2D),
	Prescan Normalize,
Cail alamanta	Elliptical filter
Coil elements	HC1-7;NC1

#### **Contrast - Common**

TR	10.0 ms
TE	3.04 ms
TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

## **Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magnitude

#### **Contrast - Dynamic**

Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

FoV read	250 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
Base resolution	256
Phase resolution	91 %
Phase partial Fourier	Off
Interpolation	On

#### **Resolution - iPAT**

PAT mode	None
----------	------

### **Resolution - Filter Image**

Image Filter	Off	
Distortion Corr.	On	
Mode	2D	
Unfiltered images	Off	
Prescan Normalize	On	
Unfiltered images	Off	
Normalize	Off	
B1 filter	Off	

## Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	On

#### **Geometry - Common**

Slice group	1
Slices	9
Dist. factor	150 %
Position	L0.6 A17.1 H0.7 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	5
Dist. factor	150 %
Position	L3.9 A13.3 F0.2 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Slices	5
Dist. factor	150 %
Position	L4.7 A8.9 H10.5 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
TR	10.0 ms
Multi-slice mode	Sequential
Series	Interleaved
Concatenations	19

## Geometry - AutoAlign

Slice group	1
Position	L0.6 A17.1 H0.7 mm
Orientation	Sagittal

#### **Geometry - AutoAlign**

Phase enc. dir.	A >> P
Slice group	2
Position	L3.9 A13.3 F0.2 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Position	L4.7 A8.9 H10.5 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

## **Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None
Special sat.	None

#### System - Miscellaneous

Positioning mode	REF
Table position	Н
Table position	0 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

## **System - Adjustments**

B0 Shim mode	Tune up
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

#### **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 Volumes

B1 Shim mode	TrueForm
Excitation	Slice-sel.

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000

#### System - Tx/Rx

Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	10.0 ms
Concatenations	19
Segments	1

#### Physio - Cardiac

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	250 mm
FoV phase	100.0 %
Phase resolution	91 %

#### Physio - PACE

Resp. control	Off	
Concatenations	19	

#### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Liver registration	Off
Save original images	On

#### Inline - MIP

MIP-Sag	Off	
MIP-Cor	Off	
MIP-Tra	Off	
MIP-Time	Off	
Save original images	On	

### Inline - Soft Tissue

Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Measurements	1

## Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

## Sequence - Part 1

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Sequential
Bandwidth	320 Hz/Px

#### Sequence - Part 2

Segments	1
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Normal

## SIEMENS MAGNETOM Prisma

## Sequence - Part 2

Excitation	Slice-sel.
RF spoiling	On

## Sequence - Assistant

Mode	Off
Allowed delay	0 s

## \\USER\MBS\_lab\Chen\VE11C\MPRAGE\_EnchancedContrast

TA: 5:21 PM: ISO Voxel size: 1.0×1.0×1.0 mmPAT: 2 Rel. SNR: 1.00 : tfl

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slab group	1
Slabs	1
Dist. factor	50 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
Slice oversampling	45.5 %
Slices per slab	176
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	1.00 mm
TR	2530.0 ms
TE	2.99 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D),
	Prescan Normalize
Coil elements	HC1-7;NC1

#### **Contrast - Common**

TR	2530.0 ms
TE	2.99 ms
Magn. preparation	Slice-sel. IR
ті	1100 ms
Flip angle	7 deg
Fat suppr.	None
Water suppr.	None

#### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

224 mm
100.0 %
1.00 mm
224
100 %
100 %
Off
Off

#### **Resolution - Common**

Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Accel. factor 3D	1
Reference scan mode	Integrated

#### **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

#### **Geometry - Common**

Slab group	1
Slabs	1
Dist. factor	50 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
Slice oversampling	45.5 %
Slices per slab	176
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	1.00 mm
TR	2530.0 ms
Multi-slice mode	Single shot
Series	Interleaved
Concatenations	1

## Geometry - AutoAlign

Slab group	1
	<u> </u>
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A27.4 F19.8
R	1.8 mm
Α	27.4 mm
F	19.8 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

#### **Geometry - Navigator**

### System - Miscellaneous

Positioning mode	ISO
Table position	F

#### System - Miscellaneous

Table position	20 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

### **System - Adjustments**

B0 Shim mode	Standard
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

#### **System - Adjust Volume**

R1.8 A27.4 F19.8 mm
T > C4.5 > S1.2
0.00 deg
224 mm
224 mm
176 mm
Off

#### System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2530.0 ms
Concatenations	1

## Physio - Cardiac

Magn. preparation	Slice-sel. IR
ТІ	1100 ms
Fat suppr.	None
Dark blood	Off
FoV read	224 mm
FoV phase	100.0 %
Phase resolution	100 %

## Physio - PACE

Resp. control	Off	
Concatenations	1	

#### **Inline - Common**

Subtract	Off
Measurements	1

#### Inline - Common

StdDev	Off	
Save original images	On	

#### Inline - MIP

MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

## Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

## Sequence - Part 1

Introduction	Off
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Single shot
Echo spacing	8.1 ms
Bandwidth	170 Hz/Px

#### Sequence - Part 2

RF pulse type	Fast
Gradient mode	Performance
Excitation	Slab-sel.
RF spoiling	On
Incr. Gradient spoiling	On
Turbo factor	256

#### **Sequence - Assistant**

ſ	Mode	Off

## \\USER\MBS\_lab\Chen\VE11C\t2\_tirm\_tra\_dark-fluid\_FLAIR

TA: 1:52 PM: ISO Voxel size: 0.7×0.7×4.0 mmPAT: 2 Rel. SNR: 1.00 : tir

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	44
Dist. factor	0 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	R >> L
AutoAlign	
Phase oversampling	0 %
FoV read	224 mm
FoV phase	75.0 %
Slice thickness	4.0 mm
TR	8000.0 ms
TE	81 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Normalize, Elliptical filter
Coil elements	HC1-7;NC1

#### **Contrast - Common**

TR	8000.0 ms
TE	81 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
ТΙ	2400 ms
Flip angle	150 deg
Fat suppr.	Fat sat.
Fat sat. mode	Strong
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	On

## **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

### **Resolution - Common**

FoV read	224 mm
FoV phase	75.0 %
Slice thickness	4.0 mm
Base resolution	320
Phase resolution	70 %

#### **Resolution - Common**

Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Integrated

#### **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	On
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	On	

#### **Geometry - Common**

Slice group	1
Slices	44
Dist. factor	0 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	R >> L
FoV read	224 mm
FoV phase	75.0 %
Slice thickness	4.0 mm
TR	8000.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

#### Geometry - AutoAlign

Slice group	1
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	R >> L
AutoAlign	
Initial Position	R1.8 A27.4 F19.8
R	1.8 mm
A	27.4 mm
F	19.8 mm
Initial Rotation	90.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

## **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Water suppr.	None
Restore magn.	Off
Special sat.	None

## **Geometry - Navigator**

## **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	20 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

## **System - Adjustments**

B0 Shim mode	Standard
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

## **System - Adjust Volume**

Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	168 mm
A >> P	224 mm
F >> H	176 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
•	

#### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	8000.0 ms
Concatenations	2

## Physio - Cardiac

Magn. preparation	Slice-sel. IR
TI	2400 ms
Fat suppr.	Fat sat.
Dark blood	Off
FoV read	224 mm
FoV phase	75.0 %
Phase resolution	70 %
Trajectory	Cartesian

#### Physio - PACE

Resp. control	Off
Concatenations	2

#### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

#### Inline - MIP

MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

## **Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

#### Sequence - Part 1

Introduction	Off
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	9.02 ms
Bandwidth	240 Hz/Px

#### Sequence - Part 2

Define	Turbo factor
Echo trains per slice	6
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
Hyperecho	Off
WARP	Off
Red. EC sensitivity	Off
Turbo factor	16

#### Sequence - Assistant

Mode	Off
Allowed delay	60 s

## \\USER\MBS\_lab\Chen\VE11C\cmrr\_Retinotopy\_97vol

TA: 3:35 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 2 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	66
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.00 mm
TR	2000 ms
TE	30.00 ms
Multi-band accel. factor	2
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	2000 ms
TR TE	30.00 ms
MTC	Off
Magn. preparation	None
Flip angle	82 deg
Fat suppr.	Fat sat.

#### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.00 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Reference scan mode	GRE

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	66
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.00 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Multi-band accel. factor	2

#### **Geometry - AutoAlign**

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

#### System - Miscellaneous

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced	
B1 Shim mode	TrueForm	
Adjust with body coil	Off	
Confirm freq. adjustment	On	

Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

## System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
R >> L A >> P F >> H	208 mm
F >> H	132 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
System - Tx/Rx	
Frequency 1H	123.259965 MHz
Frequency 1H Correction factor	1
0 - 1 -	1.121.

#### 

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Multi-band accel. factor	2

#### **BOLD**

GLM Statistics Dynamic t-maps Off Ignore meas. at start Ignore after transition Model transition states On Temp. highpass filter On Threshold Paradigm size 20 Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[10] Meas[11] Meas[10] Meas[11] Meas[10] Meas[11] Meas[11] Meas[11] Meas[11] Meas[12] Meas[12] Meas[13] Meas[14] Meas[14] Meas[15] Meas[15] Meas[15] Meas[16] Meas[16] Meas[16] Meas[17] Meas[17] Meas[18] Meas[18] Meas[19] Meas[19] Meas[19] Meas[19] Meas[10] Meas[10	BOLD	
Ignore meas. at start   Ignore after transition   Ignore after transition   O	GLM Statistics	Off
Ignore after transition  Model transition states  On  Temp. highpass filter  Threshold  Paradigm size  Meas[1]  Meas[2]  Meas[3]  Meas[4]  Meas[5]  Meas[6]  Meas[6]  Meas[7]  Meas[8]  Meas[8]  Meas[9]  Meas[10]  Meas[11]  Meas[11]  Meas[12]  Meas[11]  Meas[11]  Meas[12]  Meas[11]  Meas[12]  Meas[13]  Meas[14]  Meas[15]  Meas[15]  Meas[16]  Meas[16]  Meas[17]  Meas[16]  Meas[17]  Meas[18]  Meas[19]  Meas[19]  Meas[10]  Meas	Dynamic t-maps	Off
Model transition states Temp. highpass filter Threshold Paradigm size 20 Meas[1] Meas[2] Meas[3] Meas[4] Meas[5] Meas[6] Meas[6] Meas[7] Meas[8] Meas[9] Meas[10] Meas[11] Meas[11] Meas[12] Meas[12] Meas[13] Meas[14] Meas[15] Meas[15] Meas[16] Meas[17] Meas[16] Meas[17] Meas[18] Meas[18] Meas[18] Meas[18] Meas[18] Meas[16] Meas[17] Meas[18] Meas[18] Meas[18] Meas[19] Meas[19] Meas[19] Meas[10] Mea	Ignore meas. at start	0
Temp. highpass filter         On           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           Measurements         97           Delay in TR         0 ms	Ignore after transition	0
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[19]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Model transition states	On
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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Temp. highpass filter	On
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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Threshold	4.00
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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Paradigm size	20
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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[1]	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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[2]	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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[3]	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[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[4]	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           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[5]	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           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[6]	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           Measurements         97           Delay in TR         0 ms	Meas[7]	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           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[8]	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           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[9]	Baseline
Meas[12]       Active         Meas[13]       Active         Meas[14]       Active         Meas[15]       Active         Meas[16]       Active         Meas[17]       Active         Meas[18]       Active         Meas[19]       Active         Motion correction       Off         Spatial filter       Off         Measurements       97         Delay in TR       0 ms	Meas[10]	Baseline
Meas[13]         Active           Meas[14]         Active           Meas[15]         Active           Meas[16]         Active           Meas[17]         Active           Meas[18]         Active           Meas[19]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[11]	Active
Meas[14]         Active           Meas[15]         Active           Meas[16]         Active           Meas[17]         Active           Meas[18]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[12]	Active
Meas[15]         Active           Meas[16]         Active           Meas[17]         Active           Meas[18]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[13]	Active
Meas[16]         Active           Meas[17]         Active           Meas[18]         Active           Meas[19]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[14]	Active
Meas[17]         Active           Meas[18]         Active           Meas[19]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[15]	Active
Meas[18]         Active           Meas[19]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[16]	Active
Meas[19]         Active           Meas[20]         Active           Motion correction         Off           Spatial filter         Off           Measurements         97           Delay in TR         0 ms	Meas[17]	Active
Meas[20] Active  Motion correction Off Spatial filter Off Measurements 97  Delay in TR 0 ms	Meas[18]	Active
Motion correction Off Spatial filter Off Measurements 97 Delay in TR 0 ms	Meas[19]	Active
Spatial filter Off Measurements 97 Delay in TR 0 ms	Meas[20]	Active
Measurements 97 Delay in TR 0 ms	Motion correction	Off
Delay in TR 0 ms	Spatial filter	Off
	Measurements	97
Multiple series Off	Delay in TR	0 ms
	Multiple series	Off

## Sequence - Part 1

Introduction	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.56 ms
Bandwidth	2136 Hz/Px

## Sequence - Part 2

EPI factor	104
Gradient mode	Performance*
RF spoiling	Off

## Sequence - Special

Excite pulse duration	3500 us
Single-band images	On
MB LeakBlock kernel	Off
MB dual kernel	Off
MB RF phase scramble	Off
SENSE1 coil combine	Off
Invert RO/PE polarity	Off
Disable freq. update	Off
Online multi-band recon.	Online
FFT scale factor	1.00
GRE iPAT ref. FA	12.0 deg
Physio recording	Off
Triggering scheme	Standard

## \\USER\MBS\_lab\Chen\VE11C\SMS\_Retinotopy\_97vol

TA: 3:26 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 4 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	2000 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	82 deg	
Fat suppr.	Fat sat.	

#### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	180 mm	
FoV phase	115.6 %	
Slice thickness	2.0 mm	
Base resolution	90	
Phase resolution	100 %	
Phase partial Fourier	Off	
Interpolation	Off	

#### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	2
Reference scan mode	EPI/separate

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

## **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

## **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

## System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	128 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Concatenations	1

## **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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
	Baseline
Meas[20]	Baseline

#### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	97
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.55 ms
Bandwidth	2136 Hz/Px

## Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

## Sequence - pTX Pulses

## \\USER\MBS\_lab\Chen\VE11C\SMS\_Retinotopy\_97vol\_S3p1

TA: 3:24 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 3 Rel. SNR: 1.00 : epfid

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	78
Dist. factor	0 %
Position	R1.8 A15.3 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC1-7;NC1

#### **Contrast - Common**

TR	2000 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	82 deg	
Fat suppr.	Fat sat.	

#### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

#### **Resolution - iPAT**

1	Accel. mode	Slice accel.
	Accel. factor PE	1
	Ref. lines PE	12

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

#### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

#### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

#### **Geometry - Common**

Slice group	1
Slices	78
Dist. factor	0 %
Position	R1.8 A15.3 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.3 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.3 F19.8
R	1.8 mm
A	15.3 mm
F	19.8 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

#### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

## **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	20 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

## System - Adjust Volume

Position	R1.8 A15.3 F19.8 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	156 mm
Reset	Off

## System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

## System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

## Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Concatenations	1

#### **BOLD**

DOLD	
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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Baseline

#### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	97
Delay in TR	0 ms
Multiple series	Off

## Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.55 ms
Bandwidth	2136 Hz/Px

## Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

## Sequence - pTX Pulses

## \\USER\MBS\_lab\Chen\VE11C\ep2d\_diff\_64dir\_1.6\_S3P1

TA: 4:44 PM: ISO Voxel size: 1.6×1.6×1.6 mmPAT: 3 Rel. SNR: 1.00 : epse

#### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

#### Routine

Slice group	1
Slices	90
Dist. factor	0 %
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	205 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
TR	4000 ms
TE	73.0 ms
Concatenations	1
Filter	Prescan Normalize
Coil elements	HC1-7

#### **Contrast - Common**

TR	4000 ms
TE	73.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Strong

### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	205 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off

#### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	1
Ref. lines PE	14
Accel. factor slice	3

# Resolution - iPAT Reference scan mode

Dynamic Field Corr.

Resolution - Filter Image	
Distortion Corr.	Off
Prescan Normalize	On

EPI/separate

Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

#### **Geometry - Common**

Slice group	1
Slices	90
Dist. factor	0 %
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
FoV read	205 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
TR	4000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

#### **Geometry - AutoAlign**

-	
Slice group	1
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A13.3 F14.9
R	1.8 mm
Α	13.3 mm
F	14.9 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	-8.4
> S	1.2

## **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Special sat.	None

#### **Geometry - Navigator**

#### **System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	15 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

### **System - Adjust Volume**

Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Rotation	0.00 deg
A >> P	205 mm
R >> L	205 mm
F >> H	144 mm
A >> P R >> L F >> H Reset	Off

### System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	4000 ms
Concatenations	1

### Physio - PACE

Resp. control	Off
Concatenations	1

### **Diff - Neuro**

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	On
Tensor	On
Noise level	40

#### Diff - Body

c.,	
Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>

### Diff - Body

b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm²
Noise level	40

### **Diff - Composing**

Distortion Corr.	Off	

### Sequence - Part 1

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.64 ms
Bandwidth	2056 Hz/Px

### Sequence - Part 2

EPI factor	128
RF pulse type	Low SAR
Gradient mode	Performance*
Excitation	Standard

### \\USER\MBS\_lab\Chen\VE11C\ep2d\_diff\_64dir\_1.6\_S1P2

TA: 10:23 PM: ISO Voxel size: 1.6×1.6×1.6 mmPAT: 2 Rel. SNR: 1.00 : epse

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

- · ·	
Slice group	1
Slices	90
Dist. factor	0 %
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	205 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
TR	8900 ms
TE	61.0 ms
Concatenations	1
Filter	Prescan Normalize
Coil elements	HC1-7

#### **Contrast - Common**

TR	8900 ms
TE	61.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Strong

### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	205 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	28
Accel. factor slice	1

# Resolution - iPAT Reference scan mode

Resolution - Filter Image	
Distortion Corr.	Off
Prescan Normalize	On
Dynamic Field Corr.	Off

EPI/separate

### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

### **Geometry - Common**

Slice group	1
Slices	90
Dist. factor	0 %
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
FoV read	205 mm
FoV phase	100.0 %
Slice thickness	1.6 mm
TR	8900 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### **Geometry - AutoAlign**

Slice group	1
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A13.3 F14.9
R	1.8 mm
A	13.3 mm
F	14.9 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	-8.4
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Special sat.	None

### **Geometry - Navigator**

System - Miscenaneou	ıs
Positioning mode	ISO
Table position	F
Table position	15 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Rotation	0.00 deg
A >> P R >> L F >> H	205 mm
R >> L	205 mm
F >> H	144 mm
Reset	Off

### System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	8900 ms
Concatenations	1

### Physio - PACE

Resp. control	Off
Concatenations	1

### Diff - Neuro

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm <sup>2</sup>
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	On
Tensor	On
Noise level	40

### Diff - Body

c.,	
Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>

### Diff - Body

b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	40

### **Diff - Composing**

Distortion Corr.	Off	

### Sequence - Part 1

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.62 ms
Bandwidth	1860 Hz/Px

### Sequence - Part 2

EPI factor	128
RF pulse type	Low SAR
Gradient mode	Performance
Excitation	Standard

### $\verb|\USER\MBS_lab\Chen\VE11C\ep2d_diff_64dir_1.7_S1P2| \\$

TA: 9:13 PM: ISO Voxel size: 1.7×1.7×1.7 mmPAT: 2 Rel. SNR: 1.00 : epse

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	85
Dist. factor	0 %
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	204 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7900 ms
TE	58.0 ms
Concatenations	1
Filter	Prescan Normalize
Coil elements	HC1-7

#### **Contrast - Common**

TR	7900 ms
TE	58.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	Fat sat.
Fat sat. mode	Strong

### **Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

#### **Resolution - Common**

FoV read	204 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
Base resolution	120
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	28
Accel. factor slice	1

# Resolution - iPAT Reference scan mode

Resolution - Filter Imag	e
Distortion Corr.	Off
Prescan Normalize	On
Dynamic Field Corr.	Off

EPI/separate

### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

### **Geometry - Common**

Slice group	1
Slices	85
Dist. factor	0 %
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
FoV read	204 mm
FoV phase	100.0 %
Slice thickness	1.7 mm
TR	7900 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### **Geometry - AutoAlign**

Slice group	1
Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A13.3 F14.9
R	1.8 mm
A	13.3 mm
F	14.9 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	-8.4
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Special sat.	None

# **Geometry - Navigator**

<u> </u>	
Positioning mode	ISO
Table position	F
Table position	15 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

### **System - Adjust Volume**

Position	R1.8 A13.3 F14.9 mm
Orientation	T > C-8.4 > S1.2
Rotation	0.00 deg
A >> P	204 mm
R >> L	204 mm
F >> H	145 mm
Reset	Off

### System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	7900 ms
Concatenations	1

### Physio - PACE

Resp. control	Off
Concatenations	1

### **Diff - Neuro**

Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>
b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	On
Tensor	On
Noise level	40

### Diff - Body

c.,	
Diffusion mode	MDDW
Diff. directions	64
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm²
b-value 2	1000 s/mm <sup>2</sup>

### Diff - Body

b-value 1	3
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm²
Noise level	40

### **Diff - Composing**

Distortion Corr.	Off	

### Sequence - Part 1

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.61 ms
Bandwidth	1894 Hz/Px

### Sequence - Part 2

EPI factor	120
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\localizer\_3D (9X5X5)

TA: 0:46 PM: REF Voxel size: 0.5×0.5×6.0 mmPAT: Off Rel. SNR: 1.00 : fl

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further	On
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Noutine	
Slice group	1
Slices	9
Dist. factor	150 %
Position	L0.6 A17.1 H0.7 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	5
Dist. factor	150 %
Position	L3.9 A13.3 F0.2 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Slices	5
Dist. factor	150 %
Position	L4.7 A8.9 H10.5 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
TR	10.0 ms
TE	3.04 ms
Averages	1
Concatenations	19
Filter	Distortion Corr.(2D),
	Prescan Normalize,
O. T. alamanta	Elliptical filter
Coil elements	HC2,4,6,7;NC2

### **Contrast - Common**

TR	10.0 ms
TE	3.04 ms
TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

### **Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magnitude

### **Contrast - Dynamic**

Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

FoV read	250 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
Base resolution	256
Phase resolution	91 %
Phase partial Fourier	Off
Interpolation	On

#### **Resolution - iPAT**

PAT mode	None
I AT IIIOUC	INOTIC

### **Resolution - Filter Image**

Image Filter	Off	
Distortion Corr.	On	
Mode	2D	
Unfiltered images	Off	
Prescan Normalize	On	
Unfiltered images	Off	
Normalize	Off	
B1 filter	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	On	

### **Geometry - Common**

<u> </u>	
Slice group	1
Slices	9
Dist. factor	150 %
Position	L0.6 A17.1 H0.7 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	5
Dist. factor	150 %
Position	L3.9 A13.3 F0.2 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Slices	5
Dist. factor	150 %
Position	L4.7 A8.9 H10.5 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
TR	10.0 ms
Multi-slice mode	Sequential
Series	Interleaved
Concatenations	19

### Geometry - AutoAlign

Slice group	1
Position	L0.6 A17.1 H0.7 mm
Orientation	Sagittal

### **Geometry - AutoAlign**

Phase enc. dir.	A >> P
Slice group	2
Position	L3.9 A13.3 F0.2 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Position	L4.7 A8.9 H10.5 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	Isocenter
L	0.0 mm
Р	0.0 mm
Н	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

### **Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None
Special sat.	None

### System - Miscellaneous

Positioning mode	REF
Table position	Н
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

### **System - Adjustments**

B0 Shim mode	Tune up
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

### **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 Volumes

B1 Shim mode	TrueForm
Excitation	Slice-sel.

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000

### System - Tx/Rx

Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	10.0 ms
Concatenations	19
Segments	1

### Physio - Cardiac

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	250 mm
FoV phase	100.0 %
Phase resolution	91 %

### **Physio - PACE**

Resp. control	Off	
Concatenations	19	

### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Liver registration	Off
Save original images	On

#### Inline - MIP

MIP-Sag	Off	
MIP-Cor	Off	
MIP-Tra	Off	
MIP-Time	Off	
Save original images	On	

### Inline - Soft Tissue

Wash - In	Off	
Wash - Out	Off	
TTP	Off	
PEI	Off	
MIP - time	Off	
Measurements	1	

### Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

### Sequence - Part 1

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Sequential
Bandwidth	320 Hz/Px

### Sequence - Part 2

Segments	1
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Normal

### SIEMENS MAGNETOM Prisma

# Sequence - Part 2

Excitation	Slice-sel.
RF spoiling	On

### Sequence - Assistant

Mode	Off	
Allowed delay	0 s	

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC1-7

#### **Contrast - Common**

TR	1500 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	70 deg	
Fat suppr.	Fat sat.	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Baseline

### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	188
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	70 deg	
Fat suppr.	Fat sat.	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **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         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline           Meas[19]         Baseline	DOLD	
Ignore meas. at start         0           Ignore after transition         0           Model transition states         On           Temp. highpass filter         On           Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	GLM Statistics	Off
Ignore after transition	Dynamic t-maps	Off
Model transition states         On           Temp. highpass filter         On           Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Ignore meas. at start	0
Temp. highpass filter         On           Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Ignore after transition	0
Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Model transition states	On
Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Temp. highpass filter	On
Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Threshold	4.00
Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Paradigm size	50
Meas[3]       Baseline         Meas[4]       Baseline         Meas[5]       Baseline         Meas[6]       Baseline         Meas[7]       Baseline         Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[1]	Baseline
Meas[4]       Baseline         Meas[5]       Baseline         Meas[6]       Baseline         Meas[7]       Baseline         Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[2]	Baseline
Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[3]	Baseline
Meas[6]       Baseline         Meas[7]       Baseline         Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[4]	Baseline
Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[5]	Baseline
Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[6]	Baseline
Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline		Baseline
Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[8]	Baseline
Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[9]	Baseline
Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[10]	Baseline
Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[11]	Baseline
Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[12]	Baseline
Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[13]	Baseline
Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[14]	Baseline
Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[15]	Baseline
Meas[18] Baseline Meas[19] Baseline	Meas[16]	Baseline
Meas[19] Baseline	Meas[17]	Baseline
• •	Meas[18]	Baseline
Meas[20] Baseline		Baseline
	Meas[20]	Baseline

### **BOLD**

Meas[22]         Baseline           Meas[24]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Measuremen	M [04]	D l'
Meas[23]         Baseline           Meas[24]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Meas[50]         Active           Meas[49]         Active           Meas[50]	Meas[21]	Baseline
Meas[24]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in		
Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms		
Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms		
Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms		
Meas[28]       Active         Meas[30]       Active         Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms		
Meas[29]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[27]	Active
Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[28]	Active
Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[29]	Active
Meas[32]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[30]	Active
Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[31]	Active
Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[32]	Active
Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Metal [50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[33]	Active
Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[34]	Active
Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[35]	Active
Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[36]	Active
Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[37]	Active
Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[38]	Active
Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[39]	Active
Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[40]	Active
Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[41]	Active
Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[42]	Active
Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[43]	Active
Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[44]	Active
Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[45]	Active
Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[46]	Active
Meas[49] Active Meas[50] Active Motion correction Off Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[47]	Active
Meas[50] Active  Motion correction Off  Spatial filter Off  Measurements 188  Delay in TR 0 ms	Meas[48]	Active
Motion correction Off Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[49]	Active
Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[50]	Active
Measurements 188 Delay in TR 0 ms	Motion correction	Off
Delay in TR 0 ms	Spatial filter	Off
	Measurements	188
	Delay in TR	0 ms
	Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\SMS\_ReadLoc\_97vol

TA: 3:26 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 4 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	2000 ms
TE MTC	30.0 ms
MTC	Off
Flip angle	82 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	2
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	128 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Concatenations	1

### **BOLD**

DOLD	
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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Baseline

### **BOLD**

5025	
Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	97
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2058 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms	
TE	30.0 ms	
MTC	Off	
Flip angle	70 deg	
Fat suppr.	Fat sat.	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
Α	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **BOLD**

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	50	
Meas[1]	Baseline	
Meas[2]	Baseline	
Meas[3]	Baseline	
Meas[4]	Baseline	
Meas[5]	Baseline	
Meas[6]	Baseline	
Meas[7]	Baseline	
Meas[8]	Baseline	
Meas[9]	Baseline	
Meas[10]	Baseline	
Meas[11]	Baseline	
Meas[12]	Baseline	
Meas[13]	Baseline	
Meas[14]	Baseline	
Meas[15]	Baseline	
Meas[16]	Baseline	
Meas[17]	Baseline	
Meas[18]	Baseline	
Meas[19]	Baseline	
Meas[20]	Baseline	

### **BOLD**

Meas[21]         Baseline           Meas[22]         Baseline           Meas[23]         Baseline           Meas[24]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[49]         Active           Meas[49] <th>BOLD</th> <th></th>	BOLD	
Meas[23]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Meas[50]         Active           Meas[50]         Active           Measurements         188           Delay in TR	Meas[21]	Baseline
Meas[24]       Baseline         Meas[25]       Baseline         Meas[26]       Active         Meas[27]       Active         Meas[28]       Active         Meas[29]       Active         Meas[30]       Active         Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[22]	Baseline
Meas[25]         Baseline           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[23]	Baseline
Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[24]	Baseline
Meas[27]       Active         Meas[28]       Active         Meas[29]       Active         Meas[30]       Active         Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[25]	Baseline
Meas[28]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[26]	Active
Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[27]	Active
Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[28]	Active
Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[29]	Active
Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[30]	Active
Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[31]	Active
Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[32]	Active
Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[33]	Active
Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[34]	Active
Meas[37]       Active         Meas[38]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[35]	Active
Meas[38]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[36]	Active
Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[37]	Active
Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[38]	Active
Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[39]	Active
Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[40]	Active
Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[41]	Active
Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[42]	Active
Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[43]	Active
Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[44]	Active
Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[45]	Active
Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[46]	Active
Meas[49] Active Meas[50] Active Motion correction Off Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[47]	Active
Meas[50]ActiveMotion correctionOffSpatial filterOffMeasurements188Delay in TR0 ms	Meas[48]	Active
Motion correction Off Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[49]	Active
Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[50]	Active
Measurements 188 Delay in TR 0 ms	Motion correction	Off
Delay in TR 0 ms	Spatial filter	Off
•	Measurements	188
Multiple series Off	Delay in TR	0 ms
	Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms
TE	30.0 ms
MTC	Off
Flip angle	70 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
	Baseline
Meas[20]	Baseline

### **BOLD**

Meas[21]         Baseline           Meas[22]         Baseline           Meas[23]         Baseline           Meas[24]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[49] <th></th> <th></th>		
Meas[23]         Baseline           Meas[24]         Baseline           Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measure	Meas[21]	Baseline
Meas[24]       Baseline         Meas[25]       Baseline         Meas[26]       Active         Meas[27]       Active         Meas[28]       Active         Meas[29]       Active         Meas[30]       Active         Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[22]	Baseline
Meas[25]         Baseline           Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[23]	Baseline
Meas[26]         Active           Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[24]	Baseline
Meas[27]         Active           Meas[28]         Active           Meas[29]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[25]	Baseline
Meas[28]         Active           Meas[30]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[26]	Active
Meas[29]         Active           Meas[31]         Active           Meas[32]         Active           Meas[33]         Active           Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[27]	Active
Meas[30]       Active         Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[28]	Active
Meas[31]       Active         Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[29]	Active
Meas[32]       Active         Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[30]	Active
Meas[33]       Active         Meas[34]       Active         Meas[35]       Active         Meas[36]       Active         Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[31]	Active
Meas[34]         Active           Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[32]	Active
Meas[35]         Active           Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[33]	Active
Meas[36]         Active           Meas[37]         Active           Meas[38]         Active           Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[34]	Active
Meas[37]       Active         Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[35]	Active
Meas[38]       Active         Meas[39]       Active         Meas[40]       Active         Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[36]	Active
Meas[39]         Active           Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[37]	Active
Meas[40]         Active           Meas[41]         Active           Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[38]	Active
Meas[41]       Active         Meas[42]       Active         Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[39]	Active
Meas[42]         Active           Meas[43]         Active           Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[40]	Active
Meas[43]       Active         Meas[44]       Active         Meas[45]       Active         Meas[46]       Active         Meas[47]       Active         Meas[48]       Active         Meas[49]       Active         Meas[50]       Active         Motion correction       Off         Spatial filter       Off         Measurements       188         Delay in TR       0 ms	Meas[41]	Active
Meas[44]         Active           Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[42]	Active
Meas[45]         Active           Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[43]	Active
Meas[46]         Active           Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[44]	Active
Meas[47]         Active           Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[45]	Active
Meas[48]         Active           Meas[49]         Active           Meas[50]         Active           Motion correction         Off           Spatial filter         Off           Measurements         188           Delay in TR         0 ms	Meas[46]	Active
Meas[49]ActiveMeas[50]ActiveMotion correctionOffSpatial filterOffMeasurements188Delay in TR0 ms	Meas[47]	Active
Meas[50] Active Motion correction Off Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[48]	Active
Motion correction Off Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[49]	Active
Spatial filter Off Measurements 188 Delay in TR 0 ms	Meas[50]	Active
Measurements 188 Delay in TR 0 ms	Motion correction	Off
Delay in TR 0 ms	Spatial filter	Off
,	Measurements	188
Multiple series Off	Delay in TR	0 ms
	Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\SMS\_MenRot\_129vol

TA: 4:30 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 4 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	2000 ms
TE MTC	30.0 ms
MTC	Off
Flip angle	82 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	129
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	2
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
Α	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	128 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Concatenations	1

### **BOLD**

DOLD	
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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Baseline

### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	129
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2058 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\MPRAGE\_EnchancedContrast

TA: 5:21 PM: ISO Voxel size: 1.0×1.0×1.0 mmPAT: 2 Rel. SNR: 1.00 : tfl

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slab group	1
Slabs	1
Dist. factor	50 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
Slice oversampling	45.5 %
Slices per slab	176
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	1.00 mm
TR	2530.0 ms
TE	2.99 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D),
	Prescan Normalize
Coil elements	HC1-7;NC1

#### **Contrast - Common**

TR TE	2530.0 ms
TE	2.99 ms
Magn. preparation	Slice-sel. IR
ті	1100 ms
Flip angle	7 deg
Fat suppr.	None
Water suppr.	None

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

#### **Resolution - Common**

224 mm
100.0 %
1.00 mm
224
100 %
100 %
Off
Off

#### **Resolution - Common**

Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Accel. factor 3D	1
Reference scan mode	Integrated

### **Resolution - Filter Image**

	0"
Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	

#### **Geometry - Common**

,	
Slab group	1
Slabs	1
Dist. factor	50 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
Slice oversampling	45.5 %
Slices per slab	176
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	1.00 mm
TR	2530.0 ms
Multi-slice mode	Single shot
Series	Interleaved
Concatenations	1

### **Geometry - AutoAlign**

01.1	4
Slab group	1
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A27.4 F19.8
R	1.8 mm
Α	27.4 mm
F	19.8 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Navigator**

Positioning mode	ISO
Table position	F

### System - Miscellaneous

Table position	20 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

### **System - Adjustments**

B0 Shim mode	Standard
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

### **System - Adjust Volume**

R1.8 A27.4 F19.8 mm
T > C4.5 > S1.2
0.00 deg
224 mm
224 mm
176 mm
Off

### System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	2530.0 ms
Concatenations	1

### Physio - Cardiac

Magn. preparation	Slice-sel. IR
TI	1100 ms
Fat suppr.	None
Dark blood	Off
FoV read	224 mm
FoV phase	100.0 %
Phase resolution	100 %

### Physio - PACE

Resp. control	Off	
Concatenations	1	

### **Inline - Common**

Subtract	Off
Measurements	1

#### Inline - Common

StdDev	Off	
Save original images	On	

### Inline - MIP

MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

### **Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

### Sequence - Part 1

Introduction	Off
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Single shot
Echo spacing	8.1 ms
Bandwidth	170 Hz/Px

### Sequence - Part 2

RF pulse type	Fast
Gradient mode	Performance
Excitation	Slab-sel.
RF spoiling	On
Incr. Gradient spoiling	On
Turbo factor	256

### **Sequence - Assistant**

П	Mode	Off

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\t2\_tirm\_tra\_dark-fluid\_FLAIR

TA: 1:52 PM: ISO Voxel size: 0.7×0.7×4.0 mmPAT: 2 Rel. SNR: 1.00 : tir

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	44
Dist. factor	0 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	R >> L
AutoAlign	
Phase oversampling	0 %
FoV read	224 mm
FoV phase	75.0 %
Slice thickness	4.0 mm
TR	8000.0 ms
TE	81 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Normalize, Elliptical filter
Coil elements	HC1-7;NC1

#### **Contrast - Common**

TR	8000.0 ms
TE	81 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
ті	2400 ms
Flip angle	150 deg
Fat suppr.	Fat sat.
Fat sat. mode	Strong
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	On
<u> </u>	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

### **Resolution - Common**

FoV read	224 mm
FoV phase	75.0 %
Slice thickness	4.0 mm
Base resolution	320
Phase resolution	70 %

#### **Resolution - Common**

Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

#### **Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	Integrated

### **Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	On
B1 filter	Off

#### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	On	

### **Geometry - Common**

-	
Slice group	1
Slices	44
Dist. factor	0 %
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	R >> L
FoV read	224 mm
FoV phase	75.0 %
Slice thickness	4.0 mm
TR	8000.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	R >> L
AutoAlign	
Initial Position	R1.8 A27.4 F19.8
R	1.8 mm
Α	27.4 mm
F	19.8 mm
Initial Rotation	90.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Water suppr.	None
Restore magn.	Off
Special sat.	None

### **Geometry - Navigator**

### **System - Miscellaneous**

Positioning mode	ISO
=	
Table position	F
Table position	20 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

### **System - Adjustments**

B0 Shim mode	Standard
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

### **System - Adjust Volume**

Position	R1.8 A27.4 F19.8 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	168 mm
A >> P F >> H	224 mm
F >> H	176 mm
Reset	Off

### System - pTx Volumes

B1 Shim mode	TrueForm

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	8000.0 ms
Concatenations	2

### Physio - Cardiac

Magn. preparation	Slice-sel. IR
ТІ	2400 ms
Fat suppr.	Fat sat.
Dark blood	Off
FoV read	224 mm
FoV phase	75.0 %
Phase resolution	70 %
Trajectory	Cartesian

### Physio - PACE

Resp. control	Off
Concatenations	2

#### Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

### Inline - MIP

MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

### **Inline - Composing**

Distortion Corr.	On	
Mode	2D	
Unfiltered images	Off	

### Sequence - Part 1

Introduction	Off
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	9.02 ms
Bandwidth	240 Hz/Px

### Sequence - Part 2

Define	Turbo factor
Echo trains per slice	6
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
Hyperecho	Off
WARP	Off
Red. EC sensitivity	Off
Turbo factor	16

### Sequence - Assistant

Mode	Off
Allowed delay	60 s

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	70 deg	
Fat suppr.	Fat sat.	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P F >> H	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **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         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline           Meas[19]         Baseline	DOLD	
Ignore meas. at start         0           Ignore after transition         0           Model transition states         On           Temp. highpass filter         On           Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	GLM Statistics	Off
Ignore after transition	Dynamic t-maps	Off
Model transition states         On           Temp. highpass filter         On           Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Ignore meas. at start	0
Temp. highpass filter         On           Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Ignore after transition	0
Threshold         4.00           Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Model transition states	On
Paradigm size         50           Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Temp. highpass filter	On
Meas[1]         Baseline           Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Threshold	4.00
Meas[2]         Baseline           Meas[3]         Baseline           Meas[4]         Baseline           Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Paradigm size	50
Meas[3]       Baseline         Meas[4]       Baseline         Meas[5]       Baseline         Meas[6]       Baseline         Meas[7]       Baseline         Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[1]	Baseline
Meas[4]       Baseline         Meas[5]       Baseline         Meas[6]       Baseline         Meas[7]       Baseline         Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[2]	Baseline
Meas[5]         Baseline           Meas[6]         Baseline           Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[3]	Baseline
Meas[6]       Baseline         Meas[7]       Baseline         Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[4]	Baseline
Meas[7]         Baseline           Meas[8]         Baseline           Meas[9]         Baseline           Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[5]	Baseline
Meas[8]       Baseline         Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[6]	Baseline
Meas[9]       Baseline         Meas[10]       Baseline         Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline		Baseline
Meas[10]         Baseline           Meas[11]         Baseline           Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[8]	Baseline
Meas[11]       Baseline         Meas[12]       Baseline         Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[9]	Baseline
Meas[12]         Baseline           Meas[13]         Baseline           Meas[14]         Baseline           Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[10]	Baseline
Meas[13]       Baseline         Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[11]	Baseline
Meas[14]       Baseline         Meas[15]       Baseline         Meas[16]       Baseline         Meas[17]       Baseline         Meas[18]       Baseline         Meas[19]       Baseline	Meas[12]	Baseline
Meas[15]         Baseline           Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[13]	Baseline
Meas[16]         Baseline           Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[14]	Baseline
Meas[17]         Baseline           Meas[18]         Baseline           Meas[19]         Baseline	Meas[15]	Baseline
Meas[18] Baseline Meas[19] Baseline	Meas[16]	Baseline
Meas[19] Baseline	Meas[17]	Baseline
• •	Meas[18]	Baseline
Meas[20] Baseline		Baseline
	Meas[20]	Baseline

### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	188
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	70 deg	
Fat suppr.	Fat sat.	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

# **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P F >> H	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
	Baseline
Meas[20]	Baseline

### **BOLD**

5025	
Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	188
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\SMS\_ReadLoc\_97vol

TA: 3:26 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 4 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	2000 ms
TE	30.0 ms
MTC	Off
Flip angle	82 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	97
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	2
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	128 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

### Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Concatenations	1

### **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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
	Baseline
Meas[20]	Baseline

### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	97
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2058 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms	
TE MTC	30.0 ms	
MTC	Off	
Flip angle	70 deg	
Fat suppr.	Fat sat.	

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off	
Elliptical filter	Off	
Hamming	Off	

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **BOLD**

DOLD	
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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Baseline

### **BOLD**

Meas[21] Baseline Meas[22] Baseline	
Meas[23] Baseline	
Meas[24] Baseline	
Meas[25] Baseline	
Meas[26] Active	
Meas[27] Active	
Meas[28] Active	
Meas[29] Active	
Meas[30] Active	
Meas[31] Active	
Meas[32] Active	
Meas[33] Active	
Meas[34] Active	
Meas[35] Active	
Meas[36] Active	
Meas[37] Active	
Meas[38] Active	
Meas[39] Active	
Meas[40] Active	
Meas[41] Active	
Meas[42] Active	
Meas[43] Active	
Meas[44] Active	
Meas[45] Active	
Meas[46] Active	
Meas[47] Active	
Meas[48] Active	
Meas[49] Active	
Meas[50] Active	
Motion correction Off	
Spatial filter Off	
Measurements 188	
Delay in TR 0 ms	
Multiple series Off	

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

TA: 4:55 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 6 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further	Off
preparation	
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR	1500 ms
TE	30.0 ms
MTC	Off
Flip angle	70 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	188
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	3
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	72
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	1500 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	144 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	1500 ms
Concatenations	1

### **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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
	Baseline
Meas[20]	Baseline

### **BOLD**

Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	188
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2136 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard

### \\USER\MBS\_lab\Chen\Letter Positioning VE11C\SMS\_MenRot\_129vol

TA: 4:30 PM: ISO Voxel size: 2.0×2.0×2.0 mmPAT: 4 Rel. SNR: 1.00 : epfid

### **Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	On
Auto close inline display	On
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

### Routine

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Phase oversampling	0 %
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
TE	30.0 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	HC2,4,6,7;NC2

#### **Contrast - Common**

TR TE MTC	2000 ms
TE	30.0 ms
MTC	Off
Flip angle	82 deg
Fat suppr.	Fat sat.

### **Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	129
Delay in TR	0 ms
Multiple series	Off

### **Resolution - Common**

FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
Base resolution	90
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

### **Resolution - iPAT**

Accel. mode	Slice accel.
Accel. factor PE	2
Ref. lines PE	24

#### **Resolution - iPAT**

Accel. factor slice	2
Reference scan mode	EPI/separate

### **Resolution - Filter Image**

Distortion Corr.	Off	
Prescan Normalize	Off	

### **Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off
Hamming	Off

### **Geometry - Common**

Slice group	1
Slices	64
Dist. factor	0 %
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
FoV read	180 mm
FoV phase	115.6 %
Slice thickness	2.0 mm
TR	2000 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Phase enc. dir.	A >> P
AutoAlign	
Initial Position	R1.8 A15.9 F11.4
R	1.8 mm
A	15.9 mm
F	11.4 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	4.5
> S	1.2

### **Geometry - Saturation**

Fat suppr.	Fat sat.
Special sat.	None

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S-C-T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Performance
AutoAlign	
Coil Select Mode	On - AutoCoilSelect

B0 Shim mode	Advanced
B1 Shim mode	TrueForm
Adjust with body coil	Off
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

# System - Adjust Volume

Position	R1.8 A15.9 F11.4 mm
Orientation	T > C4.5 > S1.2
Rotation	90.00 deg
R >> L	180 mm
A >> P	208 mm
F >> H	128 mm
Reset	Off

# System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Standard

### System - Tx/Rx

Frequency 1H	123.259965 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

# Physio - Signal1

1st Signal/Mode	None
TR	2000 ms
Concatenations	1

### **BOLD**

DOLD	
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	50
Meas[1]	Baseline
Meas[2]	Baseline
Meas[3]	Baseline
Meas[4]	Baseline
Meas[5]	Baseline
Meas[6]	Baseline
Meas[7]	Baseline
Meas[8]	Baseline
Meas[9]	Baseline
Meas[10]	Baseline
Meas[11]	Baseline
Meas[12]	Baseline
Meas[13]	Baseline
Meas[14]	Baseline
Meas[15]	Baseline
Meas[16]	Baseline
Meas[17]	Baseline
Meas[18]	Baseline
Meas[19]	Baseline
Meas[20]	Baseline

### **BOLD**

5025	
Meas[21]	Baseline
Meas[22]	Baseline
Meas[23]	Baseline
Meas[24]	Baseline
Meas[25]	Baseline
Meas[26]	Active
Meas[27]	Active
Meas[28]	Active
Meas[29]	Active
Meas[30]	Active
Meas[31]	Active
Meas[32]	Active
Meas[33]	Active
Meas[34]	Active
Meas[35]	Active
Meas[36]	Active
Meas[37]	Active
Meas[38]	Active
Meas[39]	Active
Meas[40]	Active
Meas[41]	Active
Meas[42]	Active
Meas[43]	Active
Meas[44]	Active
Meas[45]	Active
Meas[46]	Active
Meas[47]	Active
Meas[48]	Active
Meas[49]	Active
Meas[50]	Active
Motion correction	Off
Spatial filter	Off
Measurements	129
Delay in TR	0 ms
Multiple series	Off

# Sequence - Part 1

Introduction	Off
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.57 ms
Bandwidth	2058 Hz/Px

# Sequence - Part 2

EPI factor	104
RF pulse type	Normal
Gradient mode	Performance
Excitation	Standard