\\USER\AMRIT\Liyong\20150420\localizer

SIEMENS: gre

PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00

TA: 0:13

	711. 611 - 10761 3126. 1.171.07	TOIL CIVIC 1.00	
Properties Properties	0#	Phase resolution Phase partial Fourier	90 % Off
Prio Recon	Off	Interpolation	On
Before measurement			
After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off	Imaga Filtor	
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation	<del></del>	Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
ı	S910	Geometry	
Routine		Geometry Multi slice mode	Soguential
Slice group 1	-	- Multi-slice mode	Sequential
Slices	1	Series	Interleaved
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir.	A >> P	Tim CT mode	Off
Rotation	0.00 deg		Oil
Slice group 2		System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Transversal		
		Positioning mode	REF
Phase enc. dir.	A >> P	Table position	Н
Rotation	0.00 deg	Table position	0 mm
Slice group 3	4	MSMA	S - C - T
Slices	1	Sagittal	R >> L
Dist. factor	20 %	Coronal	A >> P
Position	Isocenter	Transversal	F >> H
Orientation	Coronal	Save uncombined	Off
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	250 mm		
FoV phase	100.0 %	Shim mode	Tune up
Slice thickness	7.0 mm	Adjust with body coil	Off
TR	8.6 ms	Confirm freq. adjustment	Off
TE	4.00 ms	Assume Silicone	Off
Averages	2	? Ref. amplitude 1H	0.000 V
Concatenations	3	Adjustment Tolerance	Auto
Filter	Prescan Normalize, Elliptical	Adjust volume	
	filter	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
I 	, <del></del>	Rotation	0.00 deg
Contrast		R >> L	350 mm
TD	0 ms	A >> P	263 mm
MTC	Off	F >> H	350 mm
Magn. preparation	None	I	- · · · · · · · · · · · · · · · · · · ·
Flip angle	20 deg	Physio	
Fat suppr.	None	1st Signal/Mode	None
Water suppr.	None	Segments	1
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Post control	Off
Measurements	1	Resp. control	Off
Multiple series	Each measurement	Inline	
		Subtract	Off
Resolution		Liver registration	Off
Base resolution	256	Std-Dev-Sag	Off
		1 July Day	<b>5</b>

Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

#### Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
. •	

\\USER\AMRIT\Liyong\20150420\t2\_haste\_sag\_p2

TA: 0:41 P	AT: 2 Voxel size: 1.0×1.0×	2.0 mm Rel. SNR: 1.00 S	SIEMENS: haste
Properties		Width	4
Prio Recon	Off	Unfiltered images	Off
	Oli	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	1	
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments		Chasial ast	None
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation		Tim CT mode	Off
Wait for user to start	Off	System	
Start measurements	single		Off
	Single	Body	
Routine		HEP	On
Slice group 1		—   HEA	On
Slices	100	Positioning mode	FIX
Dist. factor	0 %		H
Position	L3.2 A12.5 H46.9	Table position  Table position	0 mm
Orientation	Sagittal		_
Phase enc. dir.	A >> P	MSMA	S-C-T
		Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	2.0 mm	AutoAlign	
TR	395 ms	Auto Coil Select	Default
TE	76 ms		<u>-</u>
Averages	1	Shim mode	Tune up
Concatenations	1	Adjust with body coil	Off
Filter	Normalize, Elliptical filter	Confirm freq. adjustment	Off
Coil elements	HEA;HEP	Assume Silicone	Off
I		? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	
Magn. preparation	None	Position	Isocenter
Flip angle	110 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
		F >> H	350 mm
Averaging mode	Long term	F >> 11	330 11111
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement		
1		Dark blood	Off
Resolution		Resp. control	Off
Base resolution	192	Resp. control	Oli
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
	OD A DD A	Std-Dev-Gag Std-Dev-Cor	Off
PAT mode	GRAPPA	Std-Dev-Coi Std-Dev-Tra	Off
Accel. factor PE	2		
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
les en Ett		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Prescan Normalize	Off		
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
Cut off	20	Dimension	2D
I		•	

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

 $\verb|\USER\AMRIT\Liyong\20150420\t2\_haste\_tra\_p2|$ 

TA: 0:33 PA	AT: 2 Voxel size: 1.0×1.0×	2.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	Off	Unfiltered images	Off
Before measurement	OII	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	Oli		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
	On	Tim CT mode	Off
further preparation Wait for user to start	Off		
		System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		—   HEA	On
Slices	80	Positioning mode	FIX
Dist. factor	0 %	Table position	H
Position	R1.7 A19.6 H49.1	Table position  Table position	П 0 mm
Orientation	Transversal	MSMA	S - C - T
Phase enc. dir.	A >> P		8 -> L
Rotation	0.00 deg	Sagittal	K >> L A >> P
Phase oversampling	0.00 deg 0 %	Coronal	
FoV read	192 mm	Transversal	F >> H
	192 11111	Save uncombined	Off
FoV phase Slice thickness	2.0 mm	Coil Combine Mode	Adaptive Combine
	-	AutoAlign	
TR	395 ms	Auto Coil Select	Default
TE	76 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	1	Confirm freq. adjustment	Off
Filter	Normalize, Elliptical filter	Assume Silicone	Off
Coil elements	HEA;HEP		0.000 V
Contrast		? Ref. amplitude 1H	
MTC	Off	Adjustment Tolerance	Auto
Magn. preparation	None	Adjust volume	lanantan
Flip angle	117 deg	Position	Isocenter
Fat suppr.	None	Orientation	Transversal
Water suppr.	None	Rotation	0.00 deg
Restore magn.	Off	R >> L	350 mm
		A >> P	263 mm
Averaging mode	Long term	F >> H	350 mm
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement		
•		Dark blood	Off
Resolution	100	Resp. control	Off
Base resolution	192	1	Jii
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode		MIP-Cor	Off
reletence scan mode	Integrated	MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.		_	
Distortion Con.	Off	Save original images	On
Prescan Normalize	Off Off	Save original images	On
		Sequence	On
Prescan Normalize	Off	1	On 2D

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

\\USER\AMRIT\Liyong\20150420\ep2d\_venc10\_fast\_TP\_SS\_EPI

Voxel size: 1.5×1.5×5.0 mm Rel. SNR: 1.00

PAT: 2

TA: 1:20:54

USER: ep2d\_venc\_ms\_sbmb\_SAT

		·	
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement		Position	L0.0 A87.4 H53.5
After measurement		Orientation	C > T-14.6
Load to viewer	On	Sat. region 2	0 7 1 11.0
Inline movie	Off	Thickness	50 mm
		Position	L0.0 P63.3 H92.8
Auto store images	On O"		
Load to stamp segments	Off	Orientation	C > T-14.6
Load images to graphic	Off	Special sat.	None
segments		System	
Auto open inline display	Off	Body	Off
Start measurement without	On		
further preparation		HEP	On
Wait for user to start	Off	HEA	On
Start measurements	single	Positioning mode	REF
	5g.5	Table position	H
Routine			
Slice group 1		Table position	0 mm
Slices	3	MSMA	S - C - T
Dist. factor	700 %	Sagittal	R >> L
Position	L0.0 A11.2 H73.4	Coronal	A >> P
Orientation	T > C14.6	Transversal	F >> H
Phase enc. dir.	A >> P	Coil Combine Mode	Sum of Squares
		AutoAlign	
Rotation	0.00 deg	Auto Coil Select	Default
Phase oversampling	0 %		
FoV read	192 mm	Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	5.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	Adio
Filter	None	Position	100 044 2 1172 4
Coil elements	HEA;HEP		L0.0 A11.2 H73.4
Con elements	пеа,пер	Orientation	T > C14.6
Contrast		Rotation	0.00 deg
MTC	Off	——   R >> L	192 mm
Flip angle	25 deg	A >> P	192 mm
Fat suppr.	Fat sat.	F >> H	85 mm
- aι suppι.	rai sai. 	Dhuain	
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	820	Angio	
Delay in TR	0 ms	Flow mode	Cinalo dir
•	Off		Single dir.
Multiple series	Oli	Encodings	1
Resolution		Velocity enc.	10 cm/s
Base resolution	128	—— Direction	Through plane
Phase resolution	100 %	Magnitude sum	Off
		Comunica	
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
PAT mode	GRAPPA	Bandwidth	1776 Hz/Px
Accel. factor PE	2	Free echo spacing	Off
Ref. lines PE	24	Echo spacing	0.94 ms
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
Distortion Corr.	Off	Gradient mode	Fast
		RF spoiling	On
Prescan Normalize	Off		
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	3
Hamming	Off	DummyScan Number	5
Geometry		FOV Shift Number	3
Geometry	Interiory	Shift K0 Center	1
Multi-slice mode Series	Interleaved Ascending	Every Other Slice	1

SER Number	1
Venc Repetition	800
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	- 1
00++)	

 $\verb|\USER\AMRIT\Liyong\20150420\ep\_seg_fid33_venc10\_centric| \\$ 

roperties		Body	Off
Prio Recon	Off	—— HEP HEA	On On
Before measurement		ПЕА 	On 
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Shim mode	Standard
outine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L0.0 A11.2 H73.4	Adjustment Tolerance	Auto
Orientation	T > C14.6	Adjust volume	Adio
Phase enc. dir.	A >> P	Position	L0.0 A11.2 H73.4
Rotation	0.00 deg	Orientation	T > C14.6
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	I	
TE	18 ms	Physio	
Averages	1	1st Signal/Mode	None
Concatenations	1	Segments	4
Filter	None	Resp. control	Off
Coil elements	HEA;HEP		0.11
	,	Sequence	
ontrast	0#	Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EPI factor	33
Measurements	512	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
·			
esolution Page resolution	120	Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	100
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
-			
Seometry Multi alice mode	Seguential	<u></u>	
Multi-slice mode	Sequential Assending		
Series	Ascending		
Special sat.	None		

\\USER\AMRIT\Liyong\20150420\ep\_seg\_fid33\_venc10\_ncentric

TA: 1:32	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
D (		Body	Off
Properties		- HEP	On
Prio Recon	Off	HEA	On
Before measurement			FIV
After measurement	0-	Positioning mode	FIX
Load to viewer	On Off	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On O"	MSMA	S-C-T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments	0"	Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation	0"	AutoAlign	 D ( )
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L0.0 A11.2 H73.4	Adjustment Tolerance	Auto
Orientation	T > C14.6	Adjust volume	Adio
Phase enc. dir.	A >> P	Position	L0.0 A11.2 H73.4
	0.00 deg	Orientation	
Rotation			T > C14.6
Phase oversampling	0 % 180 mm	Rotation R >> L	0.00 deg 180 mm
FoV read		A >> P	
FoV phase	100.0 %		180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Physio	
TE Access as a	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations	1		
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
·····		Echo spacing	0.87 ms
Averaging mode	Long term	Line spacing	
Reconstruction	Magnitude	EPI factor	33
Measurements	512	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Resolution			
	120	Flow Compensation	Off
Base resolution	128	Centric Reorder	Off
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	100
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
	J.1		
· ·			
· ·	Sequential	-	
Geometry	Sequential Ascending	-	
Geometry Multi-slice mode	Sequential Ascending None	-	

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		Rel. SNR: 1.00 USER: e	
Properties		Body	Off
Prio Recon	Off	HEP	On
Before measurement		HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	·
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single		
louting	-	Shim mode	Standard
Clica group 1		Adjust with body coil	Off
Slice group 1	4	Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L0.0 A13.1 H6.9	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	10004041100
Phase enc. dir.	A >> P	Position	L0.0 A13.1 H6.9
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Physio	
TE A	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations Filter	1 Name		
	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
	Langutama	Echo spacing	0.87 ms
Averaging mode	Long term		
Reconstruction	Magnitude 512	EPI factor	33
Measurements Pause after meas.		RF pulse type	Normal
	0.0 s Off	Gradient mode	Fast
Multiple series	Oil	RF spoiling	On
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	10
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)	'	
Distortion Corr.	Off		
	Off		
Prescan Normalize			
Raw filter	Off		
Elliptical filter Hamming	Off Off		
Seometry			
Multi-slice mode	Sequential		
Series	Ascending		
	g		
Special sat.	None		

\\USER\AMRIT\Liyong\20150420\ep\_seg\_fid33\_venc1\_centric\_up1

TA: 1:32	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
Properties Properties		Body	Off
Prio Recon	Off	HEP	On
Before measurement	Oli	HEA	On
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	H
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments	<b>.</b>	Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single		
	3	Shim mode	Standard
outine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L0.0 A16.3 H32.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L0.0 A16.3 H32.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Physio	
TE	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations	1		
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None	Free echo spacing	Off
		Echo spacing	0.87 ms
Averaging mode	Long term		
Reconstruction	Magnitude	EPI factor	33
Measurements	512	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
esolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	10
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)	1 2	
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter	Off		
Elliptical filter	Off		
Hamming	Off		
eometry			
Multi-slice mode	Sequential		
Series	Ascending		
Special sat.			
	None		

 $\label{local-cond} $$\USER\AMRIT\Liyong\20150420\fl_fq_mb1_second\_up1$$ Voxel size: 1.4×1.4×4.0 mm Rel. SNR: 1.00

USER: fl\_fq\_mb

TA: 1:45

PAT: Off

1A. 1.45 FA	1. OII VOXEI SIZE. 1.4X1.2	1X4.0 IIIII Rei. SNR. 1.00	USER. II_Iq_IIIb
		HEP	On
Properties		HEA	On
Prio Recon	Off		
Before measurement		Positioning mode	FIX
After measurement	0.5	Table position	H
Load to viewer	On O"	Table position	0 mm
Inline movie	Off	MSMA	S-C-T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments	0"	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	 D ( )
Start measurement without	On	Auto Coil Select	Default
further preparation	0"	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	1	Adjustment Tolerance	Auto
Dist. factor	20 %	Adjust volume	
Position	L0.0 A16.3 H32.0	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0.00 deg 0 %	A >> P	263 mm
FoV read	180 mm	F >> H	350 mm
FoV phase	100.0 %		300 11111
Slice thickness	4.0 mm	Physio	
TR	19.10 ms	1st Signal/Mode	Pulse/Trigger
TE	5.77 ms	Average cycle	No Signal ms
Averages	1	Captured cycle	-not set-
Concatenations	1	Acquisition window	800 ms
Filter	None	Trigger pulse	1
Coil elements		Trigger delay	0 ms
Con elements	HEA;HEP	Segments	1
Contrast		Phases	41
Flip angle	15 deg	Angio	
Averaging mode	Short term	Flow mode	Single dir.
Reconstruction	Magnitude	Encodings	1
Measurements	1	Velocity enc.	90 cm/s
Multiple series	Each measurement	Direction	Through plane
·		Rephased images	On
Resolution		Magnitude images	On
Base resolution	128	Phase images	On
Phase resolution	100 %		
Phase partial Fourier	Off	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
PAT mode	None	Std-Dev-Cor	Off
Matrix Coil Mode	Auto (CP)	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	Sequence	
Elliptical filter	Off		02
		Introduction	On Off
Geometry		Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1 260 Hz/Dy
Series	Interleaved	Bandwidth	260 Hz/Px
Special sat.	None	Flow comp.	No
		RF pulse type	Normal
System		Gradient mode	Fast
Body	Off	i e e e e e e e e e e e e e e e e e e e	

RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	40

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Rel. SNR: 1.00

SIEMENS: gre

Voxel size: 0.9×0.8×3.0 mm

TA: 1:01

PAT: Off

Properties		Mode	Inplane
Prio Recon	Off	Geometry	
Before measurement		Multi-slice mode	Sequential
After measurement		Series	Interleaved
Load to viewer	On		
Inline movie	Off	Saturation mode	Standard
Auto store images	On	Special sat.	None
Load to stamp segments	Off		
Load images to graphic	Off	Tim CT mode	Off
segments		System	
Auto open inline display	Off	Body	Off
Start measurement without	On	HEP	On
further preparation		HEA	On
Wait for user to start	Off		
Start measurements	single	Positioning mode	REF
Douting	-	Table position	Н
Routine		Table position	0 mm
Slice group 1	20	MSMA	S - C - T
Slices	30	Sagittal	R >> L
Dist. factor	20 %	Coronal	A >> P
Position	L0.0 A24.2 H5.4	Transversal	F >> H
Orientation	Transversal	Save uncombined	Off
Phase enc. dir.	A >> P	Coil Combine Mode	Adaptive Combine
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	200 mm	Shim mode	Tune up
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	3.0 mm	Confirm freq. adjustment	Off
TR	8.6 ms	Assume Silicone	Off
TE	4.00 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	30	Adjust volume	Adio
Filter	Prescan Normalize, Elliptical	Position	Isocenter
0-11-1	filter	Orientation	Transversal
Coil elements	HEA;HEP	Rotation	0.00 deg
Contrast		R >> L	350 mm
TD	0 ms	A >> P	263 mm
MTC	Off	F >> H	350 mm
Magn. preparation	None	1	000 111111
Flip angle	20 deg	Physio	
Fat suppr.	None	1st Signal/Mode	None
Water suppr.	None	Segments	1
A	Ch and to man	Dark blood	Off
Averaging mode	Short term		
Reconstruction Measurements	Magnitude	Resp. control	Off
	Took magaziroment	Inline	
Multiple series	Each measurement	Subtract	Off
Resolution		Liver registration	Off
Base resolution	256	Std-Dev-Sag	Off
Phase resolution	90 %	Std-Dev-Sag Std-Dev-Cor	Off
Phase partial Fourier	Off	Std-Dev-Col	Off
Interpolation	On	Std-Dev-Time	Off
		MIP-Sag	Off
PAT mode	None	MIP-Cor	Off
Matrix Coil Mode	Auto (CP)	MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Unfiltered images	Off		——————————————————————————————————————
Prescan Normalize	On	Wash - In	Off
Normalize	Off	Wash - Out	Off
B1 filter	Off	TTP	Off
Raw filter	Off	PEI	Off
Elliptical filter	On	MIP - time	Off

#### Sequence

Introduction Dimension Phase stabilisation Asymmetric echo Contrasts Bandwidth Flow comp.	On 2D Off Allowed 1 320 Hz/Px No
Allowed delay  RF pulse type Gradient mode Excitation RF spoiling	0 s  Normal  Normal  Slice-sel. On

\\USE	ER\AMRIT\Liyong\20150420\	ep_seg_fid33_venc10_cen	tric_fast
TA: 2:24	Voxel size: 1.4x1.4x4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
Properties		Body	Off
Prio Recon	Off	- SP4	Off
	Oil	SP2	On
Before measurement		SP8	Off
After measurement	_	SP6	Off
Load to viewer	On	SP3	Off
Inline movie	Off	SP1	On
Auto store images	On	SP7	Off
Load to stamp segments	Off		
Load images to graphic	Off	SP5	Off
segments		Positioning mode	FIX
	Off	Table position	Н
Auto open inline display			
Start measurement without	On	Table position	0 mm
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
	•	Transversal	F >> H
Routine		- Save uncombined	Off
Slice group 1		Coil Combine Mode	Sum of Squares
Slices	1		Julii of Oquales
Dist. factor	50 %	AutoAlign	 D-flt
Position	L0.0 P19.7 H35.8	Auto Coil Select	Default
Orientation	Transversal	Shim mode	Standard
Phase enc. dir.	A >> P	Adjust with body coil	Off
Rotation	0.00 deg	Confirm freq. adjustment	Off
Phase oversampling	0 %	Assume Silicone	Off
FoV read	180 mm	? Ref. amplitude 1H	0.000 V
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness	4.0 mm	Adjust volume	
TR	36 ms	Position	L0.0 P19.7 H35.8
TE	18 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	180 mm
Filter	None	A >> P	180 mm
Coil elements	SP1,2	F >> H	4 mm
Contrast		Dhysia	
	0"	Physio Physio	Name
MTC	Off	1st Signal/Mode	None
Flip angle	15 deg	Segments	4
Fat suppr.	None	Resp. control	Off
Λ	Langtage	Resp. control	Oli
Averaging mode	Long term	Sequence	
Reconstruction	Magnitude	Introduction	Off
Measurements	800	Dimension	2D
Pause after meas.	0.0 s	Bandwidth	1502 Hz/Px
Multiple series	Off		
Decelution		Free echo spacing	Off
Resolution		Echo spacing	0.87 ms
Base resolution	128	EPI factor	33
Phase resolution	100 %		Normal
Phase partial Fourier	Off	RF pulse type	
Interpolation	Off	Gradient mode	Fast
		RF spoiling	On
Matrix Coil Mode	Auto (CP)	Flow Compensation	Off
Distortion Corr.	Off	Centric Reorder	On
Prescan Normalize	Off	Pat Ref Scan	On
Raw filter	Off	VENC value	100
Elliptical filter	Off		On
		Undersampled	Oil
Hamming	Off		
Geometry			
Multi-slice mode	Sequential	<del>-</del>	
Series	Ascending		
	, 1000Hallig		
Special sat.	None		
System			
•		-	

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TA: 2:24	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
Properties		Body	Off
Prio Recon	Off	- SP4	Off
Before measurement	Oli	SP2	On
After measurement		SP8	Off
Load to viewer	On	SP6	Off
Inline movie	Off	SP3	Off
Auto store images	On	SP1	On
Load to stamp segments	Off	SP7	Off
Load in stamp segments  Load images to graphic	Off	SP5	Off
	Oli	Positioning mode	FIX
segments	Off		H
Auto open inline display Start measurement without	On	Table position Table position	П 0 mm
	On	MSMA	S - C - T
further preparation Wait for user to start	Off		R >> L
		Sagittal Coronal	K >> L A >> P
Start measurements	single		
Routine		Transversal	F >> H
Slice group 1		- Save uncombined	Off
Slices	1	Coil Combine Mode	Sum of Squares
Dist. factor	50 %	AutoAlign	 D ( )
Position	L0.0 P19.7 H35.8	Auto Coil Select	Default
Orientation	Transversal	Shim mode	Standard
Phase enc. dir.	A >> P	Adjust with body coil	Off
Rotation	0.00 deg	Confirm freq. adjustment	Off
Phase oversampling	0.00 deg 0 %	Assume Silicone	Off
FoV read	180 mm	? Ref. amplitude 1H	0.000 V
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness	4.0 mm	Adjust volume	L 0 0 P40 7 H05 0
TR	36 ms	Position	L0.0 P19.7 H35.8
ŢE	18 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	180 mm
Filter	None	A >> P	180 mm
Coil elements	SP1,2	F >> H	4 mm
Contrast		Physio	
MTC	Off	1st Signal/Mode	None
Flip angle	15 deg	Segments	4
Fat suppr.	None	Resp. control	Off
Averaging mode	Long term	· ·	Oli
Reconstruction	Magnitude	Sequence	0,1
Measurements	800	Introduction	Off
Pause after meas.	0.0 s	Dimension	2D
Multiple series	Off	Bandwidth	1502 Hz/Px
·		Free echo spacing	Off
Resolution		Echo spacing	0.87 ms
Base resolution	128	EPI factor	33
Phase resolution	100 %	RF pulse type	Normal
Phase partial Fourier	Off	Gradient mode	Fast
Interpolation	Off	RF spoiling	On
Matrix Coil Mode	Auto (CP)		
Distortion Corr		Flow Compensation	Off
Distortion Corr.	Off Off	Centric Reorder	On
Prescan Normalize	Off Off	Pat Ref Scan	On 400
Raw filter	Off	VENC value	100
Elliptical filter Hamming	Off Off	Undersampled	On
_	Oii		
Geometry Multi slice mode	Seguential	_	
Multi-slice mode	Sequential		
Series	Ascending		
Special sat.	None		
Custom			
System		_	

\\USER\AMRIT\Liyong\20150420\localizer

TA: 0:13 P	AT: Off Voxel size: 1.1×1.0×	7.0 mm Rel. SNR: 1.00	SIEMENS: gre
		Phase resolution	90 %
Properties		Phase partial Fourier	Off
Prio Recon	Off	Interpolation	On
Before measurement			Nama
After measurement	0.5	PAT mode	None
Load to viewer Inline movie	On Off	Matrix Coil Mode	Auto (CP)
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments	Oll	Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation		Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
I	39.0	Geometry	
Routine		- Multi-slice mode	Sequential
Slice group 1		Series	Interleaved
Slices	1		
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir. Rotation	A >> P	Tim CT mode	Off
Slice group 2	0.00 deg	System	
Slice group 2	1	Body	Off
Dist. factor	20 %	SP4	Off
Position	Isocenter	SP2	On
Orientation	Transversal	SP8	Off
Phase enc. dir.	A >> P	SP6	Off
Rotation	0.00 deg	SP3	On
Slice group 3	0.00 dog	SP1	On
Slices	1	SP7	Off
Dist. factor	20 %	SP5	Off
Position	Isocenter	Desitioning mode	DEE
Orientation	Coronal	Positioning mode	REF H
Phase enc. dir.	R >> L	Table position  Table position	0 mm
Rotation	0.00 deg	MSMA	S-C-T
Phase oversampling	0 %	Sagittal	R >> L
FoV read	250 mm	Coronal	A >> P
FoV phase	100.0 %	Transversal	F >> H
Slice thickness	7.0 mm	Save uncombined	Off
TR	8.6 ms	Coil Combine Mode	Adaptive Combine
TE	4.00 ms	AutoAlign	
Averages	2	Auto Coil Select	Default
Concatenations	3		
Filter	Prescan Normalize, Elliptical	Shim mode	Tune up
	filter	Adjust with body coil	Off
Coil elements	SP1-3	Confirm freq. adjustment Assume Silicone	Off Off
Contrast		? Ref. amplitude 1H	0.000 V
TD	0 ms	Adjustment Tolerance	Auto
MTC	Off	Adjust volume	Auto
Magn. preparation	None	Position	Isocenter
Flip angle	20 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Averaging mode	Short term	A >> P	263 mm
Averaging mode Reconstruction	Magnitude	F >> H	350 mm
Measurements	1	ļ	·
Multiple series	Each measurement	Physio	N.
	Laon moasarement	1st Signal/Mode	None
Resolution		Segments	1
Base resolution	256	Dark blood	Off
		i	

Resp. control	Off
Inline	
Subtract	Off
Liver registration	Off
Std-Dev-Sag	Off
Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
•	

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		Width	4
operties		— Unfiltered images	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On O"	Mode	Inplane
Inline movie	Off	ı	•
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	0"	Special sat.	None
Auto open inline display	Off	-1	
Start measurement without	On	Tim CT mode	Off
further preparation	0#		<b>.</b>
Wait for user to start	Off	System	
Start measurements	single	Body	Off
outine		SP4	Off
Slice group 1		— SP2	On
Slices	80	SP8	Off
Dist. factor	0 %	SP6	Off
Position	L3.2 A12.5 H46.9	SP3	Off
Orientation	Sagittal	SP1	On
Phase enc. dir.	A >> P	SP7	Off
Rotation	0.00 deg	SP5	Off
Phase oversampling	0 %	Positioning mode	FIX
FoV read	192 mm	Table position	ria H
FoV phase	100.0 %	Table position	0 mm
Slice thickness	2.0 mm	MSMA	S - C - T
TR	395 ms	Sagittal	8 -> L
TE	76 ms	Coronal	A >> P
Averages	1	Transversal	F >> H
Concatenations	1	Save uncombined	г >> п Off
Filter	Normalize, Elliptical filter	Coil Combine Mode	Adaptive Combine
Coil elements	SP1,2	AutoAlign	
	•	Auto Coil Select	Default
ontrast	0"		
MTC	Off	Shim mode	Tune up
Magn. preparation	None	Adjust with body coil	Off
Flip angle	110 deg	Confirm freq. adjustment	Off
Fat suppr.	None	Assume Silicone	Off
Water suppr.	None	? Ref. amplitude 1H	0.000 V
Restore magn.	Off	Adjustment Tolerance	Auto
Averaging mode	Long term	Adjust volume	
Reconstruction	Magnitude	Position	Isocenter
Measurements	1	Orientation	Transversal
Multiple series	Each measurement	Rotation	0.00 deg
•		R >> L	350 mm
esolution	100	A >> P	263 mm
Base resolution	192	F >> H	350 mm
Phase resolution	100 %	Physio	
Phase partial Fourier	5/8	1st Signal/Mode	None
Interpolation	Off		
PAT mode	GRAPPA	Dark blood	Off
Accel, factor PE	2	Peen control	Off
Ref. lines PE	24	Resp. control	Off
Matrix Coil Mode	Auto (Triple)	Inline	
Reference scan mode	Integrated	Subtract	Off
		Std-Dev-Sag	Off
Image Filter	Off	Std-Dev-Cor	Off
Distortion Corr.	Off	Std-Dev-Tra	Off
Prescan Normalize	Off	Std-Dev-Time	Off
Normalize	On	MIP-Sag	Off
Intensity	Medium	MIP-Cor	Off
	20	MIP-Tra	Off

	MIP-Time Save original images	Off On
	Sequence	
Γ	Introduction	On
	Dimension	2D
	Contrasts	1
	Bandwidth	592 Hz/Px
	Flow comp.	No
	Allowed delay	30 s
	Echo spacing	5.82 ms
	Turbo factor	192
	RF pulse type	Fast
	Gradient mode	Fast

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TA: 0:33 PA	AT: 2 Voxel size: 1.0×1.0×	22.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Droportion		Width	4
Properties	0"	Unfiltered images	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off		·
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments		Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Tim CT mode	Off
further preparation		1 mode	Oli
Wait for user to start	Off	System	
Start measurements	single	Body	Off
Routine		SP4	On
Slice group 1		─ SP2	On
Slices	80	SP8	Off
Dist. factor	0 %	SP6	Off
Position	R1.7 A19.0 F23.0	SP3	On
Orientation	Transversal	SP1	Off
Phase enc. dir.	ransversai A >> P	SP7	Off
		SP5	On
Rotation	0.00 deg		
Phase oversampling	0 %	Positioning mode	FIX
FoV read	192 mm	Table position	Н
FoV phase	100.0 %	Table position	0 mm
Slice thickness	2.0 mm	MSMA	S - C - T
TR	395 ms	Sagittal	R >> L
TE	76 ms	Coronal	A >> P
Averages	1	Transversal	F >> H
Concatenations	1	Save uncombined	Off
Filter	Normalize, Elliptical filter	Coil Combine Mode	Adaptive Combine
Coil elements	SP2-5	AutoAlign	
Contrast		Auto Coil Select	Default
MTC	Off	Shim mode	Tuno un
Magn. preparation	None	Adjust with body coil	Tune up Off
Flip angle	117 deg		Off
Fat suppr.	None	Confirm freq. adjustment	
Water suppr.	None	Assume Silicone	Off
Restore magn.	Off	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Averaging mode	Long term	Adjust volume	In a contact
Reconstruction	Magnitude	Position	Isocenter
Measurements	1	Orientation	Transversal
Multiple series	Each measurement	Rotation	0.00 deg
•		R >> L	350 mm
Resolution	400	A >> P	263 mm
Base resolution	192	F >> H	350 mm
Phase resolution	100 %	Physio	
Phase partial Fourier	5/8	1st Signal/Mode	None
Interpolation	Off		
PAT mode	GRAPPA	Dark blood	Off
Accel. factor PE	2	Pesa control	Off
Ref. lines PE	24	Resp. control	Oil
Matrix Coil Mode	Auto (Triple)	Inline	
Reference scan mode	Integrated	Subtract	Off
		Std-Dev-Sag	Off
Image Filter	Off	Std-Dev-Cor	Off
Distortion Corr.	Off	Std-Dev-Tra	Off
<b>D</b> 11 11			_
Prescan Normalize	Off	Std-Dev-Time	Off
Prescan Normalize Normalize	Off On		Off Off
		Std-Dev-Time MIP-Sag MIP-Cor	

MIP-Time Save original images	Off On
Sequence	
Introduction	On
Dimension	2D
Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms
Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

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TA: 3:00	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc
Droportion		Body	Off
Properties	0"	SP4	Off
Prio Recon	Off	SP2	On
Before measurement		SP8	Off
After measurement		SP6	Off
Load to viewer	On	SP3	On
Inline movie	Off	SP1	Off
Auto store images	On	SP7	Off
Load to stamp segments	Off	SP5	Off
Load images to graphic	Off		
segments		Positioning mode	FIX
Auto open inline display	Off	Table position	Н
Start measurement without	On	Table position	0 mm
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
Davitina		Transversal	F >> H
Routine		Save uncombined	Off
Slice group 1		Coil Combine Mode	Sum of Squares
Slices	1	AutoAlign	
Dist. factor	50 %	Auto Coil Select	Default
Position	L0.0 A13.0 F65.9		
Orientation	Transversal	Shim mode	Standard
Phase enc. dir.	A >> P	Adjust with body coil	Off
Rotation	0.00 deg	Confirm freq. adjustment	Off
Phase oversampling	0 %	Assume Silicone	Off
FoV read	180 mm	? Ref. amplitude 1H	0.000 V
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness	4.0 mm	Adjust volume	
TR	36 ms	Position	L0.0 A13.0 F65.9
TE	18 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	180 mm
Filter	None	A >> P	180 mm
Coil elements	SP2,3	F >> H	4 mm
	J. 2,0	ı	
Contrast MTC	Off	Physio 1st Signal/Mode	None
		•	
Flip angle	15 deg	Segments	4
Fat suppr.	None	Resp. control	Off
Averaging mode	Long term	Sequence	
Reconstruction	Magnitude	Introduction	Off
Measurements	1000	Dimension	2D
Pause after meas.	0.0 s		
Multiple series	Off	Bandwidth Free echo spacing	1502 Hz/Px Off
Resolution			
Base resolution	128	Echo spacing	0.87 ms
Phase resolution	100 %	EPI factor	33
		RF pulse type	Normal
Phase partial Fourier	Off	Gradient mode	Fast
Interpolation	Off	RF spoiling	On
Matrix Coil Mode	Auto (CP)	Flow Compensation	Off
Distortion Corr.	Off	Centric Reorder	On
Prescan Normalize	Off	Pat Ref Scan	On
Raw filter	Off	VENC value	100
Elliptical filter	Off	Undersampled	On
Hamming	Off	Ondersampled	OII
-			
Geometry Multi-slice mode	Sequential		
Series	Ascending		
Special sat.	None		
System			
System		-	

TA: 1:48	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e <sub>l</sub>	o_seg_fid_venc
		l Pody	Off
Properties		Body - SP4	On
Prio Recon	Off	SP2	Off
Before measurement		SP8	Off
After measurement		SP6	On
Load to viewer	On	SP3	On
Inline movie	Off	SP1	Off
Auto store images	On	SP7	Off
Load to stamp segments	Off	SP5	On
Load images to graphic	Off		
segments		Positioning mode	FIX
Auto open inline display	Off	Table position	Н
Start measurement without	On	Table position	0 mm
further preparation		MSMA	S - C - T
Wait for user to start	Off	Sagittal	R >> L
Start measurements	single	Coronal	A >> P
outine		Transversal	F >> H
		Save uncombined	Off
Slice group 1	1	Coil Combine Mode	Sum of Squares
Slices	1	AutoAlign	
Dist. factor	50 %	Auto Coil Select	Default
Position	L0.0 A13.0 F141.4	Chim mada	Ctondord
Orientation	Transversal	Shim mode	Standard
Phase enc. dir.	A >> P	Adjust with body coil	Off
Rotation	0.00 deg	Confirm freq. adjustment	Off
Phase oversampling	0 %	Assume Silicone	Off
FoV read	180 mm	? Ref. amplitude 1H	0.000 V
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness	4.0 mm	Adjust volume	
TR	36 ms	Position	L0.0 A13.0 F141.4
TE	18 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	180 mm
Filter	None	A >> P	180 mm
Coil elements	SP3-6	F >> H	4 mm
ontrast		Physio	
MTC	Off	1st Signal/Mode	None
Flip angle	15 deg	Segments	4
Fat suppr.	None		0"
		Resp. control	Off
Averaging mode	Long term	Sequence	
Reconstruction	Magnitude	Introduction	Off
Measurements	600	Dimension	2D
Pause after meas.	0.0 s	Bandwidth	1502 Hz/Px
Multiple series	Off	Free echo spacing	Off
esolution		Echo spacing	0.87 ms
Base resolution	128		
Phase resolution	100 %	EPI factor	33
Phase partial Fourier	Off	RF pulse type	Normal
Interpolation	Off	Gradient mode	Fast
Matrix Coil Mode		RF spoiling	On
	Auto (CP)	Flow Compensation	Off
Distortion Corr.	Off	Centric Reorder	On
Prescan Normalize	Off	Pat Ref Scan	On
Raw filter	Off	VENC value	100
Elliptical filter	Off	Undersampled	On
Hamming	Off		
eometry			
Multi-slice mode	Sequential	-	
Series	Ascending		
	~		
Special sat.	None		

\\USER\AMRIT\Liyong\20150420\localizer

TA: 0:13 PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00 SIEMENS: gre				
Droportion		Phase resolution	90 %	
Prio Pocon	Off	- Phase partial Fourier	Off	
Prio Recon Before measurement	Oli	Interpolation	On	
After measurement		PAT mode	None	
Load to viewer	On	Matrix Coil Mode	Auto (CP)	
Inline movie	Off			
Auto store images	On	Image Filter	Off Off	
Load to stamp segments	Off	Distortion Corr. Unfiltered images	Off	
Load images to graphic	Off	Prescan Normalize	On	
segments	0#	Normalize	Off	
Auto open inline display	Off	B1 filter	Off	
Start measurement without further preparation	Off	Raw filter	Off	
Wait for user to start	Off	Elliptical filter	On	
Start measurements	single	Mode	Inplane	
	- · · <del>- ·</del>	Geometry		
Routine		- Multi-slice mode	Sequential	
Slice group 1 Slices	1	Series	Interleaved	
Dist. factor	1 20 %	Saturation mode		
Position	Isocenter	Saturation mode Special sat.	Standard None	
Orientation	Sagittal			
Phase enc. dir.	A >> P	Tim CT mode	Off	
Rotation	0.00 deg	1	Oll	
Slice group 2	-	System		
Slices	1	Body	Off	
Dist. factor	20 %	HEP HEA	On On	
Position	Isocenter	ПЕА	On	
Orientation	Transversal	Positioning mode	REF	
Phase enc. dir. Rotation	A >> P 0.00 deg	Table position	Н	
Slice group 3	0.00 ueg	Table position	0 mm	
Slices	1	MSMA Societal	S-C-T	
Dist. factor	20 %	Sagittal Coronal	R >> L A >> P	
Position	Isocenter	Transversal	A >> P F >> H	
Orientation	Coronal	Save uncombined	Off	
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine	
Rotation	0.00 deg	AutoAlign		
Phase oversampling	0 %	Auto Coil Select	Default	
FoV read	250 mm	Shim mode	Tune up	
FoV phase Slice thickness	100.0 % 7.0 mm	Adjust with body coil	Off	
TR	8.6 ms	Confirm freq. adjustment	Off	
TE	4.00 ms	Assume Silicone	Off	
Averages	2	? Ref. amplitude 1H	0.000 V	
Concatenations	3	Adjustment Tolerance	Auto	
Filter	Prescan Normalize, Elliptical	Adjust volume		
	filter	Position	Isocenter	
Coil elements	HEA;HEP	Orientation	Transversal	
Contrast		Rotation	0.00 deg	
TD	0 ms	_	350 mm 263 mm	
MTC	Off	F >> H	350 mm	
Magn. preparation	None	l	330 11111	
Flip angle	20 deg	Physio	N.	
Fat suppr.	None	1st Signal/Mode	None	
Water suppr.	None	Segments	1 	
Averaging mode	Short term	Dark blood	Off	
Reconstruction	Magnitude	Peen control	Off	
Measurements	1	Resp. control	Oii	
Multiple series	Each measurement	Inline		
Resolution		Subtract	Off	
Base resolution	256	Liver registration	Off	
1		Std-Dev-Sag	Off	

Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off Off Off Off Off Off Off On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

#### Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
II	

\\USER\AMRIT\Liyong\20150420\t2\_haste\_sag\_p2

TA: 0:41 PA		20130420 (t2_flaste_sag_p2  <2.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Description		Width	4
Properties		Unfiltered images	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	ı	1
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments		Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Tim CT mode	Off
further preparation		Tim CT mode	Oli
Wait for user to start	Off	System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		— HEA	On
Slices	100	SP4	Off
Dist. factor	0 %	SP2	Off
Position	L3.2 A12.5 H46.9	SP8	Off
Orientation		SP6	Off
	Sagittal	SP3	Off
Phase enc. dir.	A >> P	SP1	Off
Rotation	0.00 deg	SP7	Off
Phase oversampling	0 %	SP5	Off
FoV read	192 mm		
FoV phase	100.0 %	Positioning mode	FIX
Slice thickness	2.0 mm	Table position	Н
TR	395 ms	Table position	0 mm
TE	76 ms	MSMA	S - C - T
Averages	1	Sagittal	R >> L
Concatenations	1	Coronal	A >> P
Filter	Normalize, Elliptical filter	Transversal	F >> H
Coil elements	HEA;HEP	Save uncombined	Off
Contrast		Coil Combine Mode	Adaptive Combine
MTC	Off	— AutoAlign	
Magn. preparation	None	Auto Coil Select	Default
Flip angle	110 deg	China manda	T
Fat suppr.	None	Shim mode	Tune up
Water suppr.	None	Adjust with body coil	Off
Restore magn.	Off	Confirm freq. adjustment	Off
		Assume Silicone	Off
Averaging mode	Long term	? Ref. amplitude 1H	0.000 V
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	1	Adjust volume	
Multiple series	Each measurement	Position	Isocenter
Resolution		Orientation	Transversal
	102	Rotation	0.00 deg
Base resolution	192	R >> L	350 mm
Phase resolution	100 %	A >> P	263 mm
Phase partial Fourier	5/8	F >> H	350 mm
Interpolation	Off	Physio	
PAT mode	GRAPPA	1st Signal/Mode	None
Accel. factor PE	2		
Ref. lines PE	24	Dark blood	Off
Matrix Coil Mode	Auto (Triple)	Peen control	Off
Reference scan mode	Integrated	Resp. control	OII
		- Inline	
Image Filter	Off	Subtract	Off
Distortion Corr.	Off	Std-Dev-Sag	Off
Prescan Normalize	Off	Std-Dev-Cor	Off
Normalize	On	Std-Dev-Tra	Off
Intensity	Medium	Std-Dev-Time	Off
Cut off	20	MIP-Sag	Off
Į.		349	

MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Sequence	
Introduction	On
Dimension	2D
Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s

5.82 ms

Echo spacing

 $\verb|\USER\AMRIT\Liyong\20150420\t2\_haste\_tra\_p2|$ 

TA: 0:33 P.		22.0 mm Rel. SNR: 1.00 S	IEMENS: haste
		Width	4
Properties		Unfiltered images	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	O a superatura	•
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	<b>~</b> "	Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Tim CT mode	Off
further preparation	0"		<b>5</b>
Wait for user to start	Off	System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		—   HEA	On
Slices	80	SP4	Off
Dist. factor	0 %	SP2	Off
Position	R1.7 A19.6 H49.1	SP8	Off
Orientation	Transversal	SP6	Off
Phase enc. dir.	A >> P	SP3	Off
Rotation	0.00 deg	SP1	Off
Phase oversampling	0 %	SP7	Off
FoV read	192 mm	SP5	Off
FoV phase	100.0 %		
Slice thickness	2.0 mm	Positioning mode	FIX
TR	395 ms	Table position	Н
TE	76 ms	Table position	0 mm
	70 IIIS	MSMA	S-C-T
Averages	1	Sagittal	R >> L
Concatenations	Name die a Ellistical filter	Coronal	A >> P
Filter	Normalize, Elliptical filter	Transversal	F >> H
Coil elements	HEA;HEP	Save uncombined	Off
Contrast		Coil Combine Mode	Adaptive Combine
MTC	Off	— AutoAlign	
Magn. preparation	None	Auto Coil Select	Default
Flip angle	117 deg	Shim mode	Tune un
Fat suppr.	None	Adjust with body coil	Tune up Off
Water suppr.	None	Confirm freq. adjustment	Off
Restore magn.	Off	Assume Silicone	Off
		? Ref. amplitude 1H	0.000 V
Averaging mode	Long term		Auto
Reconstruction	Magnitude	Adjustment Tolerance	Auto
Measurements	1	Adjust volume Position	laccenter
Multiple series	Each measurement		Isocenter
Resolution		Orientation	Transversal
Base resolution	192	Rotation	0.00 deg
		R >> L	350 mm
Phase resolution	100 %	A >> P	263 mm
Phase partial Fourier	5/8	F >> H	350 mm
Interpolation	Off	Physio	
PAT mode	GRAPPA	1st Signal/Mode	None
Accel. factor PE	2		
Ref. lines PE	24	Dark blood	Off
Matrix Coil Mode	Auto (Triple)	Resp. control	Off
Reference scan mode	Integrated	Lesp. control	OII
		Inline	
Image Filter	Off	Subtract	Off
Distortion Corr.	Off	Std-Dev-Sag	Off
Prescan Normalize	Off	Std-Dev-Cor	Off
Normalize	On	Std-Dev-Tra	Off
Intensity	Medium	Std-Dev-Time	Off
Cut off	20	MIP-Sag	Off
ı		1 229	<del>-</del> ··

MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off On
Sequence	
Introduction	On
Dimension	2D
Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms

 $\verb|\USER\AMRIT\Liyong\20150420\gre|$ 

TA: 0:45 F	AT: 2 Voxel size: 0.9×0.8×	3.0 mm Rel. SNR: 1.00	SIEMENS: gre
Properties		B1 filter	Off
Prio Recon	Off	- Raw filter	Off
Before measurement	Oll	Elliptical filter	On
After measurement		Mode	Inplane
Load to viewer	On	Geometry	
Inline movie	Off	Multi-slice mode	Sequential
Auto store images	On	Series	Interleaved
Load to stamp segments	Off		
Load images to graphic	Off	Saturation mode	Standard
segments	Oli	Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Tim CT mode	Off
further preparation	Oli	0	
Wait for user to start	Off	System	
Start measurements		Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		- SP4	Off
Slices	40	SP2	Off
Dist. factor	20 %	SP8	Off
Position	R3.6 A23.6 F6.7	SP6	Off
Orientation	Transversal	SP3	Off
Phase enc. dir.	A >> P	SP1	Off
Rotation	0.00 deg	SP7	Off
Phase oversampling	0 %	SP5	Off
FoV read	200 mm	Desitioning models	DEE
FoV phase	100.0 %	Positioning mode	REF
Slice thickness	3.0 mm	Table position	H
TR	8.6 ms	Table position	0 mm
TE	4.00 ms	MSMA	S-C-T
Averages	1	Sagittal	R >> L
Concatenations	40	Coronal	A >> P
	_	Transversal	F >> H
Filter	Prescan Normalize, Elliptical	Save uncombined	Off
Cail alamanta	filter	Coil Combine Mode	Adaptive Combine
Coil elements	HEA;HEP	AutoAlign	
Contrast		Auto Coil Select	Default
TD	0 ms	Shim mode	Tune up
MTC	Off	Adjust with body coil	Off
Magn. preparation	None	Confirm freq. adjustment	Off
Flip angle	20 deg	Assume Silicone	Off
Fat suppr.	None	? Ref. amplitude 1H	0.000 V
Water suppr.	None	Adjustment Tolerance	Auto
A	Oh	Adjust volume	
Averaging mode	Short term	Position	Isocenter
Reconstruction	Magnitude	Orientation	Transversal
Measurements	Took management	Rotation	0.00 deg
Multiple series	Each measurement	Rotation R >> L	350 mm
tesolution		A >> P	263 mm
Base resolution	256	-	350 mm
Phase resolution	90 %		550 mm
Phase partial Fourier	Off	Physio	
Interpolation	On	1st Signal/Mode	None
	<u></u>	Segments	1
PAT mode	GRAPPA		O#
Accel. factor PE	2	Dark blood	Off
Ref. lines PE	24	Resp. control	Off
Matrix Coil Mode	Auto (Triple)		<del></del>
Reference scan mode	Integrated	Inline	
		Subtract	Off
Image Filter	Off	Liver registration	Off
	( ) <del>(</del> (	Std-Dev-Sag	Off
Distortion Corr.	Off	Siu-Dev-Sag	Oli
Unfiltered images	Off	Std-Dev-Sag Std-Dev-Cor	Off

Off	
Off	
Off	
Off	
On	
Off	
	Off Off Off On Off Off Off Off Off Off

#### Sequence

-	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
 RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
-1 - 3	_

\\USER\AMRIT\Liyong\20150420\ep2d\_venc10\_fast\_TP\_shallow

Rel. SNR: 1.00

USER: ep2d\_venc\_ms\_sbmb\_SAT

Voxel size: 1.5×1.5×4.0 mm

PAT: 2

TA: 1:01:10

Properties		Sat. region 1			
Prio Recon	Off	Thickness	50 mm		
	Oll	Position	L0.0 A85.2 H45.4		
Before measurement					
After measurement		Orientation	C > T-10.2		
Load to viewer	On	Sat. region 2			
Inline movie	Off	Thickness	50 mm		
Auto store images	On	Position	L0.0 P68.0 H72.9		
Load to stamp segments	Off	Orientation	C > T-10.2		
Load images to graphic	Off		None		
	Oil	Special sat.	None		
segments		System			
Auto open inline display	Off		Off		
Start measurement without	On	Body			
further preparation		HEP	On		
Wait for user to start	Off	HEA	On		
		SP4	Off		
Start measurements	single	SP2	Off		
Routine		SP8	Off		
Slice group 1		SP6	Off		
Slices	3	SP3	Off		
Dist. factor	700 %	SP1	Off		
Position	L0.0 A7.8 H59.3	SP7	Off		
Orientation	T > C10.2	SP5	Off		
		353	Oli		
Phase enc. dir.	A >> P	Positioning mode	REF		
Rotation	0.00 deg		H		
Phase oversampling	0 %	Table position			
FoV read	192 mm	Table position	0 mm		
FoV phase	100.0 %	MSMA	S - C - T		
		Sagittal	R >> L		
Slice thickness	4.0 mm	Coronal	A >> P		
TR	5920 ms	Transversal	F>> H		
TE	38.0 ms				
Averages	1	Coil Combine Mode	Sum of Squares		
Concatenations	1	AutoAlign			
	•	Auto Coil Select	Default		
Filter	None				
Coil elements	HEA;HEP	Shim mode	Standard		
Contrast		Adjust with body coil	Off		
		Confirm freq. adjustment	Off		
MTC	Off	Assume Silicone	Off		
Flip angle	25 deg				
Fat suppr.	Fat sat.	? Ref. amplitude 1H	0.000 V		
. с. серг.		Adjustment Tolerance	Auto		
Averaging mode	Long term	Adjust volume			
Reconstruction	Magnitude	Position	L0.0 A7.8 H59.3		
Measurements	620	Orientation	T > C10.2		
Delay in TR	0 ms	Rotation	0.00 deg		
Multiple series	Off	R >> L	192 mm		
Pacalutian		A >> P	192 mm		
Resolution	100	F >> H	68 mm		
Base resolution	128	ı			
Phase resolution	100 %	Physio			
Phase partial Fourier	6/8	1st Signal/Mode	None		
Interpolation	Off	gg			
	·····	Angio			
PAT mode	GRAPPA	Flow mode	Single dir.		
Accel. factor PE	2	Encodings	1		
Ref. lines PE	24		10 cm/s		
		Velocity enc.			
Matrix Coil Mode	Auto (Triple)	Direction	Through plane		
Reference scan mode	Separate	Magnitude sum	Off		
B					
Distortion Corr.	Off	Sequence			
Prescan Normalize	Off	Introduction	Off		
Raw filter	Off	Bandwidth	1776 Hz/Px		
Elliptical filter	Off	Free echo spacing	Off		
		· -	_		
Hamming	Off	Echo spacing	0.94 ms		
Geometry EPI factor 128					
Multi-slice mode	Interleaved	RF pulse type	Normal		
Series	Ascending	Gradient mode	Fast		

RF spoiling	On
RF90 duration	5120
MB Number	3
DummyScan Number	5
FOV Shift Number	3
Shift K0 Center	1
Every Other Slice	1
SER Number	1
Venc Repetition	600
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	1
00++)	
Every Other Slice SER Number Venc Repetition Spoil factor Skew Direction DualBand Sat FOV Dir Venc Type(0off,1+-,20+,3on,4	

		20\fl_fq_mb3_second_venct	
TA: 0:13 PA	T: Off Voxel size: 1.5×1.5	×4.0 mm Rel. SNR: 1.00	USER: fl_fq_mb
Properties		HEP	On
Prio Recon	Off	HEA	On
Before measurement	Oli	SP4	Off
After measurement		SP2	Off
Load to viewer	On	SP8	Off
	Off	SP6	Off
Inline movie		SP3	Off
Auto store images	On O"	SP1	Off
Load to stamp segments	Off	SP7	Off
Load images to graphic	Off	SP5	Off
segments			
Auto open inline display	Off	Positioning mode	FIX
Start measurement without	On	Table position	Н
further preparation		Table position	0 mm
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
		Coronal	A >> P
outine		Transversal	F >> H
Slice group 1		Coil Combine Mode	Adaptive Combine
Slices	3	AutoAlign	
Dist. factor	700 %	Auto Coil Select	Default
Position	L0.0 A7.8 H59.3		
Orientation	T > C10.2	Shim mode	Tune up
Phase enc. dir.	A >> P	Adjust with body coil	Off
Rotation	0.00 deg	Confirm freq. adjustment	Off
Phase oversampling	0 %	Assume Silicone	Off
FoV read	192 mm	? Ref. amplitude 1H	0.000 V
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness	4.0 mm	Adjust volume	, tato
TR	26.65 ms	Position	Isocenter
TE		Orientation	Transversal
	9.56 ms		
Averages	1	Rotation	0.00 deg
Concatenations	3	R >> L	350 mm
Filter	None	A >> P	263 mm
Coil elements	HEA;HEP	F >> H	350 mm
ontrast		Physio	
Flip angle	15 deg	1st Signal/Mode	None
Averaging mode	Short term	Segments	1
Reconstruction		Angio	
	Magnitude	_	Cinale dia
Measurements	Tools as a second and	Flow mode	Single dir.
Multiple series	Each measurement	Encodings	T =/-
esolution		Velocity enc.	5 cm/s
Base resolution	128	_ Direction	Through plane
Phase resolution	100 %	Rephased images	On
Phase partial Fourier	Off	Magnitude images	On
Interpolation	Off	Phase images	On
	·····	Subtract	Off
PAT mode	None		_
Matrix Coil Mode	Auto (CP)	Std-Dev-Sag	Off Off
		Std-Dev-Cor	Off
Image Filter	Off	Std-Dev-Tra	Off
Distortion Corr.	Off	Std-Dev-Time	Off
Prescan Normalize	Off	MIP-Sag	Off
Normalize	Off	MIP-Cor	Off
B1 filter	Off	MIP-Tra	Off
Raw filter	Off	MIP-Time	Off
Elliptical filter	Off	Save original images	On
eometry		Sequence	
Multi-slice mode	Sequential	Introduction	On
Series	Interleaved	Asymmetric echo	Off
		Contrasts	1
Special sat.	None	Bandwidth	260 Hz/Px
ystem		Flow comp.	No
/ J l G			

RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

\\USER\AMRIT\Liyong\20150420\fl_fq_mb3_second_venc5			
	AT: Off Voxel size: 1.5×1.5×4	•	USER: fl_fq_mb
Droportion		HEP	On
Properties	~"	HEA	On
Prio Recon	Off	SP4	Off
Before measurement		SP2	Off
After measurement	0	SP8	Off
Load to viewer	On Off	SP6	Off
Inline movie	Off	SP3	Off
Auto store images	On Off	SP1	Off
Load to stamp segments Load images to graphic	Off	SP7	Off
segments	Oil	SP5	Off
Auto open inline display	Off	Positioning mode	FIX
Start measurement without	On	Table position	Н
further preparation	011	Table position	0 mm
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
ı	Single	Coronal	A >> P
Routine		Transversal	F >> H
Slice group 1		Coil Combine Mode	Adaptive Combine
Slices	1	AutoAlign	
Dist. factor	20 %	Auto Coil Select	Default
Position	L0.0 A3.6 H25.4		
Orientation	T > C10.2	Shim mode	Tune up
Phase enc. dir.	A >> P	Adjust with body coil	Off
Rotation	0.00 deg	Confirm freq. adjustment	Off
Phase oversampling	0 %	Assume Silicone	Off
FoV read	192 mm	? Ref. amplitude 1H	0.000 V
FoV phase	100.0 %	Adjustment Tolerance	Auto
Slice thickness	4.0 mm	Adjust volume	
TR	26.65 ms	Position	Isocenter
TE	9.56 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	T Name	R >> L	350 mm 263 mm
Filter Coil elements	None	A >> P F >> H	
	HEA;HEP	I	350 mm
Contrast	45.1	Physio	D.L. /T:
Flip angle	15 deg	1st Signal/Mode	Pulse/Trigger
Averaging mode	Short term	Average cycle	No Signal ms
Reconstruction	Magnitude	Captured cycle	-not set-
Measurements	1	Acquisition window Trigger pulse	750 ms
Multiple series	Each measurement	Trigger pulse  Trigger delay	1 0 ms
Resolution		Segments	1
Base resolution	128	Phases	28
Phase resolution	128 100 %	ı	20
Phase partial Fourier	Off	Angio	
Interpolation	Off	Flow mode	Single dir.
		Encodings	1
PAT mode	None	Velocity enc.	5 cm/s
Matrix Coil Mode	Auto (CP)	Direction	Through plane
Image Filter	Off	Rephased images	On
Distortion Corr.	Off	Magnitude images	On
Prescan Normalize	Off	Phase images	On
Normalize	Off	Subtract	Off
B1 filter	Off	Std-Dev-Sag	Off
Raw filter	Off	Std-Dev-Cor	Off
Elliptical filter	Off	Std-Dev-Tra	Off
	ŬII	Std-Dev-Time	Off
Geometry		MIP-Sag	Off
Multi-slice mode	Sequential	MIP-Cor	Off
Series	Interleaved	MIP-Tra	Off
Special sat.	None	MIP-Time	Off
	Hono	Save original images	On
System	0#	Sequence	
Body	Off	Gequence	

Introduction	On
Asymmetric echo	Off
Contrasts	1
Bandwidth	260 Hz/Px
Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	3
FOV Shift	3
Distance22	32

\\USER\AMRIT\Liyong\20150420\ep2d_venc10_sag_fh_shallow				
TA: 59:24 PAT: 2	Voxel size: 1.5×1.5×4.0 mm	Rel. SNR: 1.00 USER: ep	2d_venc_ms_sbmb_SAT	
D .:				
Properties		_ Sat. region 1		
Prio Recon	Off	Thickness	50 mm	
Before measurement		Position	L0.0 A85.2 H45.4	
After measurement		Orientation	C > T-10.2	
Load to viewer	On	Sat. region 2		
Inline movie	Off	Thickness	50 mm	
Auto store images	On	Position	L0.0 P68.0 H72.9	
Load to stamp segments	Off	Orientation	C > T-10.2	
Load images to graphic	Off	Special sat.	None	
segments	Oli	Opeciai sat.	None	
Auto open inline display	Off	System		
Start measurement without	On	Body	Off	
	On	HEP	On	
further preparation	0"	HEA	On	
Wait for user to start	Off	SP4	Off	
Start measurements	single	SP2	Off	
Routine		SP8	Off	
Slice group 1		SP6	Off	
Slices	1	SP3	Off	
Dist. factor	700 %	SP1	Off	
Position	L0.0 A7.8 H59.3	SP7	Off	
Orientation	Sagittal	SP5	Off	
Phase enc. dir.	A >> P			
Rotation	0.00 deg	Positioning mode	REF	
Phase oversampling	0 %	Table position	Н	
FoV read	192 mm	Table position	0 mm	
FoV phase	100.0 %	MSMA	S - C - T	
Slice thickness		Sagittal	R >> L	
	4.0 mm	Coronal	A >> P	
TR	5920 ms	Transversal	F >> H	
TE	38.0 ms	Coil Combine Mode	Sum of Squares	
Averages	1	AutoAlign		
Concatenations	1	Auto Coil Select		
Filter	None	Auto Coil Select	Default	
Coil elements	HEA;HEP	Shim mode	Standard	
O- intro- of		Adjust with body coil	Off	
Contrast	~"	Confirm freq. adjustment	Off	
MTC	Off	Assume Silicone	Off	
Flip angle	25 deg	? Ref. amplitude 1H	0.000 V	
Fat suppr.	Fat sat.	Adjustment Tolerance	Auto	
Averaging made	Long torm	Adjust volume	Auto	
Averaging mode	Long term		100 47 8 450 3	
Reconstruction	Magnitude	Position	L0.0 A7.8 H59.3	
Measurements	620	Orientation	Sagittal	
Delay in TR	0 ms	Rotation	0.00 deg	
Multiple series	Off	F >> H	192 mm	
Resolution		A >> P	192 mm	
Base resolution	128	_ R >> L	4 mm	
		Physic		
Phase resolution	100 %	Physio		
Phase partial Fourier	6/8	1st Signal/Mode	None	
Interpolation	Off	Angio		
PAT mode	GRAPPA	Flow mode	Single dir.	
Accel. factor PE	2	Encodings	Single dir. 1	
			-	
Ref. lines PE	24	Velocity enc.	10 cm/s	
Matrix Coil Mode	Auto (Triple)	Direction	F >> H	
Reference scan mode	Separate	Magnitude sum	Off	
Distortion Corr.	Off	Sequence		
Prescan Normalize	Off	Introduction	Off	
Raw filter	Off	Bandwidth	1776 Hz/Px	
Elliptical filter	Off	Free echo spacing	Off	
Hamming	Off	Echo spacing	0.94 ms	
Geometry		EPI factor	128	
Multi-slice mode	Interleaved	RF nulse type	Normal	

RF pulse type

Gradient mode

Normal

Fast

Multi-slice mode

Series

Interleaved

Ascending

RF spoiling	On
RF90 duration	5120
MB Number	1
DummyScan Number	1
FOV Shift Number	1
Shift K0 Center	1
Every Other Slice	1
SER Number	1
Venc Repetition	600
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	1
00++)	

\\USER\AMRIT\Liyong\20150420\ep\_seg\_fid33\_venc120\_carotid\_shallow

	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	o_seg_fid_venc
Properties		Body	Off
Properties	0"	_ HEP	On
Prio Recon	Off	HEA	On
Before measurement		SP4	Off
After measurement	02	SP2	Off
Load to viewer	On Off	SP8	Off
Inline movie	Off	SP6	Off
Auto store images	On Off	SP3	Off
Load to stamp segments	Off	SP1	Off
Load images to graphic	Off	SP7	Off
segments	0#	SP5	Off
Auto open inline display	Off	Desitioning mode	FIV
Start measurement without	On	Positioning mode	FIX
further preparation	0#	Table position	H
Wait for user to start	Off	Table position	0 mm
Start measurements	single	MSMA	S-C-T
outine		Sagittal	R >> L
Slice group 1		_ Coronal	A >> P
Slices	1	Transversal	F >> H
Dist. factor	50 %	Save uncombined	Off
Position	L0.0 A46.5 F44.3	Coil Combine Mode	Sum of Squares
Orientation	Transversal	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0.00 deg 0 %	Adjust with body coil	Off
FoV read	180 mm	Confirm freq. adjustment	Off
FoV phase	100.0 %	Assume Silicone	Off
Slice thickness	4.0 mm		0.000 V
TR	4.0 mm	? Ref. amplitude 1H	
		Adjustment Tolerance	Auto
TE Averages	18 ms	Adjust volume	100 146 5 544 2
Averages	1	Position	L0.0 A46.5 F44.3
Concatenations Filter	] Name	Orientation	Transversal
	None	Rotation	0.00 deg
Coil elements	HEA;HEP	R >> L	180 mm
Contrast		A >> P	180 mm
MTC	Off	_	4 mm
Flip angle	15 deg	Physio	
Fat suppr.	None	1st Signal/Mode	None
		Segments	4
Averaging mode	Long term		·
Reconstruction	Magnitude	Resp. control	Off
Measurements	600	Sequence	
Pause after meas.	0.0 s	Introduction	Off
Multiple series	Off	Dimension	2D
esolution			
	400	Bandwidth	1502 Hz/Px
Base resolution	128	Free echo spacing	Off
Phase resolution	100 %	Echo spacing	0.87 ms
Phase partial Fourier	Off	EPI factor	33
Interpolation	Off	RF pulse type	Normal
Matrix Coil Mode	Auto (CP)	Gradient mode	Fast
······································	, (ato (Ot )	RF spoiling	On
Distortion Corr.	Off		——————————————————————————————————————
Prescan Normalize	Off	Flow Compensation	Off
Raw filter	Off	Centric Reorder	On
Elliptical filter	Off	Pat Ref Scan	On
	Off	VENC value	1200
		Undersampled	On
Hamming			-
Hamming eometry		<u> </u>	
Hamming leometry Multi-slice mode	Sequential	_ '	
Hamming Geometry	Sequential Ascending	_ '	
Hamming leometry Multi-slice mode		_ '	

\\USER\AMRIT\Liyong\20150420\ep\_seg\_fid33\_venc120\_hr\_cow\_shallow

TA: 1:57	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: ep	p_seg_fid_venc
Properties		Body	Off
	0#	HEP	On
Prio Recon	Off	HEA	On
Before measurement		SP4	Off
After measurement	0.5	SP2	Off
Load to viewer	On Off	SP8	Off
Inline movie	Off	SP6	Off
Auto store images	On Off	SP3	Off
Load to stamp segments	Off	SP1	Off
Load images to graphic	Off	SP7	Off
segments	Off	SP5	Off
Auto open inline display Start measurement without	On	Desitioning mode	FIV
	On	Positioning mode	FIX H
further preparation Wait for user to start	Off	Table position	П 0 mm
Start measurements		Table position MSMA	S - C - T
Start measurements	single		8-0-1 R>>L
Routine		Sagittal	
Slice group 1		Coronal	A >> P
Slices	1	Transversal	F >> H
Dist. factor	50 %	Save uncombined	Off
Position	L0.0 A18.2 H56.6	Coil Combine Mode	Sum of Squares
Orientation	Transversal	AutoAlign Auto Coil Select	 Default
Phase enc. dir.	A >> P	Auto Coii Select	Delauit
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
FoV read	174 mm	Confirm freq. adjustment	Off
FoV phase	100.0 %	Assume Silicone	Off
Slice thickness	4.0 mm	? Ref. amplitude 1H	0.000 V
TR	39 ms	Adjustment Tolerance	Auto
TE	19 ms	Adjust volume	
Averages	1	Position	L0.0 A18.2 H56.6
Concatenations	1	Orientation	Transversal
Filter	None	Rotation	0.00 deg
Coil elements	HEA;HEP	R >> L	174 mm
No. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		A >> P	174 mm
Contrast	0"	. F >> H	4 mm
MTC	Off	Dhysis	
Flip angle	15 deg	Physio	Nana
Fat suppr.	None	1st Signal/Mode	None
Averaging mode	Long term	Segments	4
Reconstruction	Magnitude	Resp. control	Off
Measurements	600	•	
Pause after meas.	0.0 s	Sequence	
Multiple series	Off	Introduction	Off
Deselution		Dimension	2D
Resolution	400	Bandwidth	1502 Hz/Px
Base resolution	128	Free echo spacing	Off
Phase resolution	100 %	Echo spacing	0.97 ms
Phase partial Fourier	Off	EPI factor	33
Interpolation	Off	RF pulse type	Normal
Matrix Coil Mode	Auto (CP)	Gradient mode	Fast
		RF spoiling	On
Distortion Corr.	Off		
Prescan Normalize	Off	Flow Compensation	Off
Raw filter	Off	Centric Reorder	On
Elliptical filter	Off	Pat Ref Scan	On
Hamming	Off	VENC value	1200
Seometry		Undersampled	On
Multi-slice mode	Sequential	-	
Series	Ascending		
	, 1900 runing		
	NI		
Special sat.	None		

\\USER\AMRIT\Liyong\20150420\localizer

TA: 0:13 P/	AT: Off Voxel size: 1.1×1.0×	7.0 mm Rel. SNR: 1.00	SIEMENS: gre
Droportion		Phase resolution	90 %
Prio Page	Off	Phase partial Fourier	Off
Prio Recon Before measurement	Oli	Interpolation	On
After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off		Adio (Ci )
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation		Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
Routine		Geometry	
		- Multi-slice mode	Sequential
Slice group 1 Slices	1	Series	Interleaved
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir.	A >> P	Tim CT mode	
Rotation	0.00 deg	Tim C1 mode	Off
Slice group 2	0.00 dog	System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Transversal	Positioning mode	REF
Phase enc. dir.	A >> P	Table position	H
Rotation	0.00 deg	Table position	0 mm
Slice group 3		MSMA	S - C - T
Slices	1	Sagittal	R >> L
Dist. factor	20 %	Coronal	A >> P
Position	Isocenter	Transversal	F >> H
Orientation	Coronal	Save uncombined	Off
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine
Rotation	0.00 deg	AutoAlign	·
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	250 mm	Shim mode	Tuno un
FoV phase	100.0 %	Adjust with body coil	Tune up Off
Slice thickness	7.0 mm	Confirm freq. adjustment	Off
TR TE	8.6 ms	Assume Silicone	Off
Averages	4.00 ms 2	? Ref. amplitude 1H	0.000 V
Concatenations	3	Adjustment Tolerance	Auto
Filter	Prescan Normalize, Elliptical	Adjust volume	
Titter	filter	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
ı		Rotation	0.00 deg
Contrast		_ R >> L	350 mm
TD	0 ms	A >> P	263 mm
MTC	Off	F >> H	350 mm
Magn. preparation	None	Physic	
Flip angle	20 deg	Physio 1st Signal/Mode	None
Fat suppr.	None	Segments	None 1
Water suppr.	None		
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Resp. control	Off
Measurements	1		
Multiple series	Each measurement	Inline	
Resolution		Subtract	Off
Base resolution	256	Liver registration	Off
2000.0001011		Std-Dev-Sag	Off

Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off Off Off Off Off Off Off
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

#### Sequence

•	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
II.	

\\USER\AMRIT\Liyong\20150420\t2\_haste\_sag\_p2

TA: 0:41 PA	AT: 2 Voxel size: 1.0×1.0×	2.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	Off	— Unfiltered images	Off
Before measurement	OII	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	Oll		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
	On	Tim CT mode	Off
further preparation Wait for user to start	Off		
		System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		—   HEA	On
Slices	100	Positioning mode	FIX
Dist. factor	0 %	Table position	H
Position	L3.2 A12.5 H46.9	Table position	0 mm
Orientation	Sagittal	MSMA	S - C - T
Phase enc. dir.	A >> P		R >> L
Rotation	0.00 deg	Sagittal Coronal	K >> L A >> P
Phase oversampling	0 %		* * * * *
FoV read	192 mm	Transversal	F >> H
FoV phase	100.0 %	Save uncombined	Off
Slice thickness	2.0 mm	Coil Combine Mode	Adaptive Combine
TR	395 ms	AutoAlign	 
TE	76 ms	Auto Coil Select	Default
Averages	1	Shim mode	Tune up
Concatenations	1	Adjust with body coil	Off
Filter	Normaliza Elliptical filter	Confirm freq. adjustment	Off
	Normalize, Elliptical filter	Assume Silicone	Off
Coil elements	HEA;HEP	? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	Adio
Magn. preparation	None	Position	Isocenter
Flip angle	110 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
		F >> H	350 mm
Averaging mode	Long term	1 >>11	330 111111
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement	Dark blood	Off
Resolution		- Door control	
Base resolution	192	Resp. control	Off
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel, factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode		MIP-Sag	Off
Reference scan mode	Auto (Triple)	MIP-Cor	Off
	Integrated	MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Prescan Normalize	Off	1	<del></del>
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
Cut off	20	Dimension	2D
·			

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	5.82 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

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TA: 0:45	PAT: 2 Voxel size: 0.9×0.8×	3.0 mm Rel. SNR: 1.00	SIEMENS: gre
Droportion		B1 filter	Off
Properties	0#	Raw filter	Off
Prio Recon	Off	Elliptical filter	On
Before measurement		Mode	Inplane
After measurement	0.5	Coometry	
Load to viewer	On Off	Geometry	O til
Inline movie	Off	Multi-slice mode	Sequential
Auto store images	On O"	Series	Interleaved
Load to stamp segments	Off	Saturation mode	Standard
Load images to graphic	Off	Special sat.	None
segments	0"		
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On	1 mode	Oli
further preparation		System	
Wait for user to start	Off	Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		_	
Slices	40	Positioning mode	REF
Dist. factor	20 %	Table position	Н
Position	R3.6 A27.0 H52.1	Table position	0 mm
Orientation		MSMA	S-C-T
Phase enc. dir.	Transversal A >> P	Sagittal	R >> L
		Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Save uncombined	Off
FoV read	200 mm	Coil Combine Mode	Adaptive Combine
FoV phase	100.0 %	AutoAlign	
Slice thickness	3.0 mm	Auto Coil Select	Default
TR	8.6 ms	Chim made	Tung up
TE	4.00 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off Off
Concatenations	40	Confirm freq. adjustment	Off
Filter	Prescan Normalize, Elliptical	Assume Silicone	Off
	filter	? Ref. amplitude 1H	0.000 V
Coil elements	HEA;HEP	Adjustment Tolerance	Auto
Contrast		Adjust volume	la a a a a ta a
TD	0 ms	_ Position	Isocenter
MTC	Off	Orientation	Transversal
Magn. preparation	None	Rotation	0.00 deg
Flip angle	20 deg	R >> L	350 mm
Fat suppr.	None	A >> P	263 mm
Water suppr.	None	F >> H	350 mm
		Physio	
Averaging mode	Short term	1st Signal/Mode	None
Reconstruction	Magnitude	Segments	1
Measurements	1		
Multiple series	Each measurement	Dark blood	Off
Posalution		Resp. control	Off
Resolution	256	_ ' '	<b>5</b>
Base resolution	256	Inline	
Phase resolution	90 %	Subtract	Off
Phase partial Fourier	Off	Liver registration	Off
Interpolation	On	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Unfiltered images	Off		
Prescan Normalize	On	Wash - In	Off
Normalize	Off	Wash - Out	Off
inormalize	Oπ	Wasii - Out	OII

TTP PEI MIP - time	Off Off Off
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

 $\verb|\USER\AMRIT\Liyong\20150420\t2\_haste\_tra\_p2|$ 

TA: 0:17 P	AT: 2 Voxel size: 1.0×1.0×	4.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	0#	Unfiltered images	Off
	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement	_	Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	Wede	прило
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments			
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation	OII	Tim CT mode	Off
	Off	1	
Wait for user to start		System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		─ HEA	On
Slices	40		
	_	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	L0.0 A10.6 H50.0	Table position	0 mm
Orientation	T > C7.3	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	4.0 mm	AutoAlign	Adaptive Combine
TR	395 ms	•	Default
TE TE	76 ms	Auto Coil Select	Default
	1	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	1	Confirm freq. adjustment	Off
Filter	Normalize, Elliptical filter	Assume Silicone	Off
Coil elements	HEA;HEP		
Contrast		? Ref. amplitude 1H	0.000 V
MTC	Off	Adjustment Tolerance	Auto
		Adjust volume	
Magn. preparation	None	Position	Isocenter
Flip angle	117 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
		F >> H	350 mm
Averaging mode	Long term	1	333 11111
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement		
Desclution		Dark blood	Off
Resolution	100	Resp. control	Off
Base resolution	192	Resp. control	Oli
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
	OD A DD A	Std-Dev-Gag Std-Dev-Cor	Off
PAT mode	GRAPPA	Std-Dev-Col	
Accel. factor PE	2		Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Prescan Normalize	Off		
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
Cut off	20	Dimension	2D
1		1	

Contrasts Bandwidth Flow comp. Allowed delay Echo spacing	1 592 Hz/Px No 30 s 4.78 ms
Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

\\USER\AMRIT\Liyong\20150420\ep2d\_venc8\_fast\_TP\_pos2

Voxel size: 1.4×1.4×4.0 mm Rel. SNR: 1.00

TA: 1:20:25

PAT: 2

USER: ep2d\_venc\_ms\_sbmb\_SAT

Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement	<b></b>	Position	L0.0 A90.7 H17.5
After measurement		Orientation	C > T-4.3
	0		C > 1-4.3
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P59.2 H84.9
Load to stamp segments	Off	Orientation	C > T-7.3
Load images to graphic	Off	Special sat.	None
segments	-		
Auto open inline display	Off	System	
		Body	Off
Start measurement without	On	HEP	On
further preparation		HEA	On
Wait for user to start	Off	TIEA	
Start measurements	single	Positioning mode	FIX
	3 -	Table position	H
Coutine			
Slice group 1		Table position	0 mm
Slices	2	MSMA	S - C - T
Dist. factor	1200 %	Sagittal	R >> L
		Coronal	A >> P
Position	L0.0 A17.1 H75.1	Transversal	F >> H
Orientation	T > C7.3	Coil Combine Mode	Sum of Squares
Phase enc. dir.	A >> P		
Rotation	0.00 deg	AutoAlign	 D ( )
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	180 mm	Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	4.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	71010
Filter	None		100047411754
		Position	L0.0 A17.1 H75.1
Coil elements	HEA;HEP	Orientation	T > C7.3
Contrast		Rotation	0.00 deg
MTC	Off	R >> L	180 mm
		A >> P	180 mm
Flip angle	25 deg	F >> H	56 mm
Fat suppr.	Fat sat.	1 22 11	00 111111
Λ		Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	1	,
Measurements	820	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
·		Velocity enc.	16 cm/s
Resolution		1	
Base resolution	128	—— Direction	Through plane
Phase resolution	100 %	Magnitude sum	Off
Phase partial Fourier	6/8	Soguence	
•		Sequence	0"
Interpolation	Off	Introduction	Off
PAT mode	GRAPPA	Bandwidth	1628 Hz/Px
	-	Free echo spacing	Off
Accel. factor PE	2	Echo spacing	0.96 ms
Ref. lines PE	24		
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
		Gradient mode	Fast
Distortion Corr.	Off		
Prescan Normalize	Off	RF spoiling	On
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off		
•		MB Number	2
Hamming	Off	DummyScan Number	5
eometry		FOV Shift Number	3
-	Interlegued	Shift K0 Center	1
Multi-slice mode Series	Interleaved Ascending	Every Other Slice	1

SER Number	1
Venc Repetition	800
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,	,4 1
00++)	

\\USER\AMRIT\Liyong\20150420\ep2d\_venc8\_fast\_sag\_pos2

Voxel size: 1.4×1.4×4.0 mm Rel. SNR: 1.00

TA: 1:19:55

PAT: 2

USER: ep2d\_venc\_ms\_sbmb\_SAT

		1	
Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement	<b>.</b>	Position	L1.2 A92.4 F59.0
After measurement		Orientation	C > T-5.4 > S0.9
Load to viewer	On	Sat. region 2	0 > 1-3.4 > 30.9
		•	FO
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L1.8 P62.0 F38.4
Load to stamp segments	Off	Orientation	C > T-5.4 > S0.9
Load images to graphic	Off	Special sat.	None
segments		System	
Auto open inline display	Off	Body	Off
Start measurement without	On	HEP	On
further preparation			_
Wait for user to start	Off	HEA	On
Start measurements	single	Positioning mode	REF
	o .	Table position	H
Routine		Table position	0 mm
Slice group 1		MSMA	S - C - T
Slices	1		
Dist. factor	1000 %	Sagittal	R >> L
Position	L3.0 A24.1 H54.7	Coronal	A >> P
Orientation	S > C-0.9 > T-0.1	Transversal	F >> H
Phase enc. dir.	A >> P	Coil Combine Mode	Sum of Squares
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0.%	Auto Coil Select	Default
FoV read	180 mm	Chim made	Ctandard
		Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	4.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	
Filter	None	Position	L3.0 A24.1 H54.7
Coil elements	HEA;HEP	Orientation	S > C-0.9 > T-0.1
0		Rotation	0.00 deg
Contrast		— F>> H	180 mm
MTC	Off	A >> P	180 mm
Flip angle	25 deg	R >> L	4 mm
Fat suppr.	Fat sat.	I( >> L	7 111111
Averaging mode	Long torm	Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude		
Measurements	820	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
Resolution		Velocity enc.	16 cm/s
Base resolution	128	—— Direction	F >> H
		Magnitude sum	Off
Phase resolution	100 %	1	
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
PAT mode	GRAPPA	Bandwidth	1628 Hz/Px
Accel. factor PE	2	Free echo spacing	Off
		Echo spacing	0.96 ms
Ref. lines PE	24		
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
Distortion Corr.	Off	Gradient mode	Fast
Prescan Normalize	Off	RF spoiling	On
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	1
Hamming	Off	DummyScan Number	5
Geometry		FOV Shift Number	1
Multi-slice mode	Interleaved	Shift K0 Center	1
	Ascending	Every Other Slice	1
Series			

SER Number	1
Venc Repetition	800
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	1
00++)	

\\USER\AMRIT\Liyong\20150420\ep\_seg\_fid33\_venc90\_carotid\_shallow

	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e	p_seg_fid_venc 
Proportion		Body	Off
Properties	0"	- HEP	On
Prio Recon	Off	HEA	On
Before measurement		SP4	Off
After measurement	0	SP2	Off
Load to viewer	On O"	SP8	Off
Inline movie	Off	SP6	Off
Auto store images	On	SP3	Off
Load to stamp segments	Off	SP1	Off
Load images to graphic	Off	SP7	Off
segments	0"	SP5	Off
Auto open inline display	Off		
Start measurement without	On	Positioning mode	FIX
further preparation	0"	Table position	Н
Wait for user to start	Off	Table position	0 mm
Start measurements	single	MSMA	S - C - T
Routine		Sagittal	R >> L
Slice group 1		- Coronal	A >> P
Slices	1	Transversal	F >> H
Dist. factor	50 %	Save uncombined	Off
Position	L0.0 A46.5 F44.3	Coil Combine Mode	Sum of Squares
Orientation	Transversal	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation		Chim made	Ctondord
	0.00 deg 0 %	Shim mode	Standard Off
Phase oversampling		Adjust with body coil	_
FoV read	180 mm	Confirm freq. adjustment	Off
FoV phase	100.0 %	Assume Silicone	Off
Slice thickness	4.0 mm	? Ref. amplitude 1H	0.000 V
TR	36 ms	Adjustment Tolerance	Auto
TE	18 ms	Adjust volume	100 140 5 544 0
Averages	1	Position	L0.0 A46.5 F44.3
Concatenations	1	Orientation	Transversal
Filter	None	Rotation	0.00 deg
Coil elements	HEA;HEP	R >> L	180 mm
Contrast		A >> P	180 mm
MTC	Off	-   F >> H	4 mm
Flip angle	15 deg	Physio	
Fat suppr.	None	1st Signal/Mode	None
		Segments	4
Averaging mode	Long term		·····
Reconstruction	Magnitude	Resp. control	Off
Measurements	600	Sequence	
Pause after meas.	0.0 s		O#
Multiple series	Off	Introduction	Off
Resolution		Dimension	2D
	100	Bandwidth	1502 Hz/Px
Base resolution	128	Free echo spacing	Off
Phase resolution	100 %	Echo spacing	0.87 ms
Phase partial Fourier	Off	EPI factor	33
Interpolation	Off	RF pulse type	Normal
Matrix Coil Mode	Auto (CP)	Gradient mode	Fast
······································	, (ato (O1 )	RF spoiling	On
Distortion Corr.	Off		
Prescan Normalize	Off	Flow Compensation	Off
Raw filter	Off	Centric Reorder	On
Elliptical filter	Off	Pat Ref Scan	On
Hamming	Off	VENC value	1800
		Undersampled	On
-		1	
Geometry		=	
Geometry Multi-slice mode	Sequential	-	
Geometry	Sequential Ascending		
Geometry  Multi-slice mode			

\\USER\AMRIT\Liyong\20150420\localizer

SIEMENS: gre

PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00

TA: 0:13

1A. 0.13 P.	A1. OII VOXel SIZE. 1.1X1.03	C7.0 IIIII Rei. SINK. 1.00	SIEMENS. gre
		Phase resolution	90 %
Properties		Phase resolution	90 % Off
Prio Recon	Off	Phase partial Fourier     Interpolation	
Before measurement		Interpolation	On
After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off		
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation	Oli	Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
Start measurements	Sirigie	Coometry	
Routine		Geometry	Cognestial
Slice group 1		- Multi-slice mode	Sequential
Slices	1	Series	Interleaved
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal	1	
Phase enc. dir.	A >> P	Tim CT mode	Off
Rotation	0.00 deg		<b>5</b>
Slice group 2		System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Transversal		
Phase enc. dir.	A >> P	Positioning mode	REF
Rotation	0.00 deg	Table position	H
Slice group 3	0.00 deg	Table position	0 mm
Slices	1	MSMA	S-C-T
Dist. factor	20 %	Sagittal	R >> L
Position	Isocenter	Coronal	A >> P
Orientation	Coronal	Transversal	F >> H
Phase enc. dir.	R >> L	Save uncombined	Off
Rotation		Coil Combine Mode	Adaptive Combine
	0.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	250 mm	Shim modo	Tuno un
FoV phase	100.0 %	Shim mode	Tune up Off
Slice thickness	7.0 mm	Adjust with body coil	Off
TR	8.6 ms	Confirm freq. adjustment	
TE .	4.00 ms	Assume Silicone	Off
Averages	2	? Ref. amplitude 1H	0.000 V
Concatenations	3	Adjustment Tolerance	Auto
Filter	Prescan Normalize, Elliptical	Adjust volume	lacconton
	filter	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
Contrast		Rotation	0.00 deg
TD	0 ms	_ R >> L	350 mm
MTC	Off	A >> P	263 mm
Magn. preparation	None	F >> H	350 mm
Flip angle		Physio	
. •	20 deg	1st Signal/Mode	None
Fat suppr.	None	Segments	1
Water suppr.	None		I
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Poor control	Off
Measurements	1	Resp. control	Off
Multiple series	Each measurement	Inline	
•		Subtract	Off
Resolution	050	Liver registration	Off
Base resolution	256	Std-Dev-Sag	Off
		1	-

Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off

#### Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
Excitation	Normal

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perties		Width	4
Prio Recon	Off	Unfiltered images	Off
Before measurement	Oli	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	0.11		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation	<b></b>	Tim CT mode	Off
Wait for user to start	Off	System	
Start measurements	single	Body	Off
	<b>3</b> -	HEP	On
outine		—   HEA	On
Slice group 1			
Slices	100	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	R1.7 A12.5 H12.4	Table position	0 mm
Orientation	Sagittal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	2.0 mm	AutoAlign	
TR	395 ms	Auto Coil Select	Default
TE	76 ms	Chim made	Tuno un
Averages	1	Shim mode	Tune up Off
Concatenations	1	Adjust with body coil	Off
Filter	Normalize, Elliptical filter	Confirm freq. adjustment Assume Silicone	Off
Coil elements	HEA;HEP		
ontrast		? Ref. amplitude 1H	0.000 V Auto
MTC	Off	Adjustment Tolerance Adjust volume	Auto
Magn. preparation	None	Position	Isocenter
Flip angle	110 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
		F>> H	350 mm
Averaging mode	Long term	1 >> 11	JJU 111111
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement	Dark blood	Off
esolution		Daik blood	
Base resolution	192	Resp. control	Off
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8		Off
Interpolation	Off	Subtract	Off Off
		Std-Dev-Sag	
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off Off
Image Filter	Off	MIP-Tra	Off
Distortion Corr.	Off	MIP-Time	Off
Prescan Normalize	Off	Save original images	On
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
ппопопу	MEGIUIII	Dimension	2D

Contrasts Bandwidth Flow comp. Allowed delay	1 592 Hz/Px No 30 s
Echo spacing Turbo factor RF pulse type Gradient mode	5.82 ms 192 Fast Fast

 $\verb|\USER\AMRIT\Liyong\20150420\t2\_haste\_tra\_p2|$ 

TA: 0:17 PA	AT: 2 Voxel size: 1.0×1.0×	4.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	Off	— Unfiltered images	Off
Before measurement	OII	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	Oll		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
	On	Tim CT mode	Off
further preparation Wait for user to start	Off	ı	
		System	
Start measurements	single	Body	Off
Routine		HEP	On
Slice group 1		—   HEA	On
Slices	40	Positioning mode	FIX
Dist. factor	0 %	Table position	H
Position	L0.0 A10.6 H5.4	Table position	0 mm
Orientation	T > C7.3	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm		
FoV phase	100.0 %	Save uncombined	Off
Slice thickness	4.0 mm	Coil Combine Mode	Adaptive Combine
TR	395 ms	AutoAlign	D-f!!
TE	76 ms	Auto Coil Select	Default
Averages	1	Shim mode	Tune up
Concatenations	1	Adjust with body coil	Off
Filter	Normalize, Elliptical filter	Confirm freq. adjustment	Off
Coil elements	HEA;HEP	Assume Silicone	Off
Coll elements	I ILA,I ILI	? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	
Magn. preparation	None	Position	Isocenter
Flip angle	117 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
Averaging made	l on a town	F >> H	350 mm
Averaging mode Reconstruction	Long term	ļ	
	Magnitude	Physio	
Measurements	I Fach magairement	1st Signal/Mode	None
Multiple series	Each measurement	Dark blood	Off
Resolution  Base resolution	102	Resp. control	Off
	192		J.,
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Prescan Normalize	Off	1	
Normalize	On	Sequence	On
Intensity	Medium	Introduction Dimension	On 2D
Cut off	20	Dillicusion	20

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	4.78 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

TA: 0:45	PAT: 2 Voxel size: 0.9×0.8×	4.0 mm Rel. SNR: 1.00	SIEMENS: gre
Proportion		B1 filter	Off
Properties	0#	- Raw filter	Off
Prio Recon	Off	Elliptical filter	On
Before measurement		Mode	Inplane
After measurement	0.5	Coomotru	
Load to viewer	On Off	Geometry	O a more at its I
Inline movie	Off	Multi-slice mode	Sequential
Auto store images	On O"	Series	Interleaved
Load to stamp segments	Off	Saturation mode	Standard
Load images to graphic	Off	Special sat.	None
segments	0"		
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On		
further preparation	0"	System	
Wait for user to start	Off	Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
Slice group 1		Positioning mode	REF
Slices	40	Table position	H H
Dist. factor	0 %	Table position	0 mm
Position	R1.2 A14.0 F16.3	MSMA	S - C - T
Orientation	Transversal		8 -> L
Phase enc. dir.	A >> P	Sagittal	
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0.00 deg 0 %	Transversal	F >> H
FoV read	200 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	4.0 mm	AutoAlign	 D ( )
TR	8.6 ms	Auto Coil Select	Default
TE	4.00 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	40	Confirm freq. adjustment	Off
Filter	Prescan Normalize, Elliptical	Assume Silicone	Off
Filler	filter	? Ref. amplitude 1H	0.000 V
Cail alamenta	HEA;HEP	Adjustment Tolerance	Auto
Coil elements	пса,псР	Adjust volume	71010
Contrast		Position	Isocenter
TD	0 ms	Orientation	Transversal
MTC	Off	Rotation	0.00 deg
Magn. preparation	None	R >> L	350 mm
Flip angle	20 deg	A >> P	263 mm
Fat suppr.	None	F >> H	350 mm
Water suppr.	None	1	
Averaging mode	Short term	Physio	
Averaging mode Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	mayriituu <del>e</del> 1	Segments	1
	I Fach messurement	Dark blood	Off
Multiple series	Each measurement		
Resolution		Resp. control	Off
Base resolution	256	_ Inline	
Phase resolution	90 %	Subtract	Off
Phase partial Fourier	Off	Liver registration	Off
Interpolation	On	Std-Dev-Sag	Off
PAT mode	CDADDA	Std-Dev-Cor	Off
	GRAPPA	Std-Dev-Tra	Off
Accel. factor PE	2	Std-Dev-Time	Off
Ref. lines PE	24 Auto (Triplo)	MIP-Sag	Off
Matrix Coil Mode	Auto (Triple)	MIP-Cor	Off
Reference scan mode	Integrated	MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Unfiltered images	Off	Jave Oligiliai ililayes	OII
Prescan Normalize	On	Wash - In	Off
Normalize	Off	Wash - Out	Off
NOTHALLE	Oil	1	<del></del>

TTP PEI MIP - time	Off Off Off
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

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Voxel size: 1.4×1.4×4.0 mm Rel. SNR: 1.00

TA: 1:20:25

PAT: 2

USER: ep2d\_venc\_ms\_sbmb\_SAT

Properties		Sat. region 1	
Prio Recon	Off	Thickness	50 mm
Before measurement	<b>.</b>	Position	L0.0 A92.5 H32.4
After measurement		Orientation	C > T-4.3
	0.5		C > 1-4.3
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	L0.0 P57.4 H99.8
Load to stamp segments	Off	Orientation	C > T-7.3
Load images to graphic	Off	Special sat.	None
segments		1 '	
Auto open inline display	Off	System	
		Body	Off
Start measurement without	On	HEP	On
further preparation		HEA	On
Wait for user to start	Off		
Start measurements	single	Positioning mode	FIX
_	9	Table position	Н
outine			
Slice group 1		Table position	0 mm
Slices	2	MSMA	S - C - T
Dist. factor	800 %	Sagittal	R >> L
Position	L0.0 A12.4 H20.3	Coronal	A >> P
		Transversal	F >> H
Orientation	T > C7.3	Coil Combine Mode	Sum of Squares
Phase enc. dir.	A >> P	AutoAlign	
Rotation	0.00 deg		
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	180 mm	Shim mode	Standard
FoV phase	100.0 %		
		Adjust with body coil	Off
Slice thickness	4.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	- 1010
Filter	None		100 442 41120 2
		Position	L0.0 A12.4 H20.3
Coil elements	HEA;HEP	Orientation	T > C7.3
Contrast		Rotation	0.00 deg
	Off	—— R >> L	180 mm
MTC	Off	A >> P	180 mm
Flip angle	25 deg	F >> H	40 mm
Fat suppr.	Fat sat.		<del>1</del> 0 IIIIII
		Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	13t Olgilai/Mode	NOTIC
Measurements	820	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
Manupic ocheo	Jii		· · · · · · · · · · · · · · · · · · ·
esolution		Velocity enc.	16 cm/s
Base resolution	128	—— Direction	Through plane
Phase resolution	100 %	Magnitude sum	Off
Phase partial Fourier	6/8	Sequence	<u> </u>
Interpolation	Off	Introduction	Off
DAT	OD A DD A	Bandwidth	1628 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	2		0.96 ms
Ref. lines PE	24	Echo spacing	U.30 III 3
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
Distortion Corr.	Off	Gradient mode	Fast
Prescan Normalize	Off	RF spoiling	On
			F400
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	2
Hamming	Off	DummyScan Number	5
ta a maratim .		FOV Shift Number	3
eometry		Shift K0 Center	1
Multi-slice mode	Interleaved	Every Other Slice	1

SER Number	1
Venc Repetition	800
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on,4	- 1
00++)	

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Rel. SNR: 1.00

USER: ep2d\_venc\_ms\_sbmb\_SAT

Voxel size: 1.4×1.4×4.0 mm

PAT: 2

TA: 1:19:55

Properties		Sat. region 1	
Prio Recon	Off		50 mm
	Oli	Thickness	50 mm
Before measurement		Position	R1.1 A81.7 F99.5
After measurement		Orientation	C > T-5.4 > S0.9
Load to viewer	On	Sat. region 2	
Inline movie	Off	Thickness	50 mm
Auto store images	On	Position	R0.5 P72.7 F78.8
Load to stamp segments	Off	Orientation	C > T-5.4 > S0.9
Load images to graphic	Off	Special sat.	None
segments		Cyatam	
Auto open inline display	Off	System	0"
Start measurement without	On	Body	Off
further preparation		HEP	On
Wait for user to start	Off	HEA	On
Start measurements	single	Positioning mode	REF
	Single	Table position	H
Routine		Table position	0 mm
Slice group 1			-
Slices	1	MSMA	S-C-T
Dist. factor	1000 %	Sagittal	R >> L
Position	L0.7 A13.4 H14.3	Coronal	A >> P
Orientation	S > C-0.9 > T-0.1	Transversal	F >> H
Phase enc. dir.	A >> P	Coil Combine Mode	Sum of Squares
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0.00 deg 0 %	Auto Coil Select	Default
FoV read	180 mm	Chim made	Ctandard
FoV phase	100.0 %	Shim mode	Standard
		Adjust with body coil	Off
Slice thickness	4.0 mm	Confirm freq. adjustment	Off
TR	5920 ms	Assume Silicone	Off
TE	38.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	
Filter	None	Position	L0.7 A13.4 H14.3
Coil elements	HEA;HEP	Orientation	S > C-0.9 > T-0.1
Contrast		Rotation	0.00 deg
MTC	Off	—— F >> H	180 mm
		A >> P	180 mm
Flip angle	25 deg	R >> L	4 mm
Fat suppr.	Fat sat.	Di :	
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Measurements	820	Angio	
Delay in TR	0 ms	Flow mode	Single dir.
Multiple series	Off	Encodings	1
·	<b></b>	Velocity enc.	16 cm/s
Resolution		—— Direction	F >> H
Base resolution	128	Magnitude sum	Off
Phase resolution	100 %	Magnitude Sum	Oli
Phase partial Fourier	6/8	Sequence	
Interpolation	Off	Introduction	Off
		Bandwidth	1628 Hz/Px
PAT mode	GRAPPA	Free echo spacing	Off
Accel. factor PE	2	Echo spacing	0.96 ms
Ref. lines PE	24		•
Matrix Coil Mode	Auto (Triple)	EPI factor	128
Reference scan mode	Separate	RF pulse type	Normal
Distortion Corr	O#	Gradient mode	Fast
Distortion Corr.	Off Off	RF spoiling	On
Prescan Normalize	Off		
Raw filter	Off	RF90 duration	5120
Elliptical filter	Off	MB Number	1
Hamming	Off	DummyScan Number	5
Geometry		FOV Shift Number	1
Multi-slice mode	Interleaved	Shift K0 Center	1
ividii-Siice Hiode	iiileiieaveu	F 0/1 011	4
Series	Ascending	Every Other Slice	1

SER Number	1
Venc Repetition	800
Spoil factor	5
Skew Direction	1
DualBand Sat	0
FOV Dir	0
Venc Type(0off,1+-,20+,3on	,4 1
00++)	

\\USER\AMRIT\Liyong\20150420\ep\_seg\_fid33\_venc90\_carotid\_shallow

TA: 1:48	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: ep	o_seg_fid_venc
Proportion		Body	Off
Properties Prio Recon	Off	- HEP	On
Before measurement	Oli	HEA	On
		Positioning mode	FIX
After measurement Load to viewer	On	Positioning mode	H
Inline movie	Off	Table position	
		Table position	0 mm S - C - T
Auto store images	On Off	MSMA	
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments	2"	Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation	2"	AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L0.0 A14.0 F46.1	Adjustment Tolerance	Auto
		Adjust volume	Auto
Orientation	Transversal	1 .	L0.0 A14.0 F46.1
Phase enc. dir.	A >> P	Position	
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	Physio	
TE	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations	1		<del>-</del>
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg	Bandwidth	1502 Hz/Px
Fat suppr.	None		
		Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EPI factor	33
Measurements	600	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
•			
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Phase resolution	100 %	Pat Ref Scan	On
Phase partial Fourier	Off	VENC value	1800
Interpolation	Off	Undersampled	On
Matrix Coil Mode	Auto (CP)	,	
Distortion Corr.	Off		
Prescan Normalize	Off		
Raw filter			
Elliptical filter	Off		
Emplical intel	Off		
	O#		
Hamming	Off		
Hamming Geometry		-	
Hamming Geometry Multi-slice mode	Sequential	-	
Hamming Geometry		-	
Hamming Geometry Multi-slice mode	Sequential	-	

System

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TA: 1:48	Voxel size: 1.4×1.4×4.0 mm	Rel. SNR: 1.00 USER: e <sub>l</sub>	o_seg_fid_venc
Proportion		Body	Off
Properties	0"	HEP	On
Prio Recon	Off	HEA	On
Before measurement		Desitioning	FIV
After measurement		Positioning mode	FIX
Load to viewer	On	Table position	Н
Inline movie	Off	Table position	0 mm
Auto store images	On	MSMA	S - C - T
Load to stamp segments	Off	Sagittal	R >> L
Load images to graphic	Off	Coronal	A >> P
segments		Transversal	F >> H
Auto open inline display	Off	Save uncombined	Off
Start measurement without	On	Coil Combine Mode	Sum of Squares
further preparation		AutoAlign	
Wait for user to start	Off	Auto Coil Select	Default
Start measurements	single	Oh in an a de	0
Sautia -	•	Shim mode	Standard
Routine		Adjust with body coil	Off
Slice group 1		Confirm freq. adjustment	Off
Slices	1	Assume Silicone	Off
Dist. factor	50 %	? Ref. amplitude 1H	0.000 V
Position	L0.0 A11.2 H18.0	Adjustment Tolerance	Auto
Orientation	Transversal	Adjust volume	
Phase enc. dir.	A >> P	Position	L0.0 A11.2 H18.0
Rotation	0.00 deg	Orientation	Transversal
Phase oversampling	0 %	Rotation	0.00 deg
FoV read	180 mm	R >> L	180 mm
FoV phase	100.0 %	A >> P	180 mm
Slice thickness	4.0 mm	F >> H	4 mm
TR	36 ms	F >> 11	4 111111
		Physio	
TE	18 ms	1st Signal/Mode	None
Averages	1	Segments	4
Concatenations	1		
Filter	None	Resp. control	Off
Coil elements	HEA;HEP	Sequence	
Contrast		Introduction	Off
MTC	Off	Dimension	2D
Flip angle	15 deg		
	None	Bandwidth	1502 Hz/Px
Fat suppr.		Free echo spacing	Off
Averaging mode	Long term	Echo spacing	0.87 ms
Reconstruction	Magnitude	EPI factor	33
Measurements	600	RF pulse type	Normal
Pause after meas.	0.0 s	Gradient mode	Fast
Multiple series	Off	RF spoiling	On
Multiple Series	Oli	Kr spoiling	OII
Resolution		Flow Compensation	Off
Base resolution	128	Centric Reorder	On
Dasc resolution	120	Centilic Redider	=
Phase resolution	100 %		On
Phase resolution	100 %	Pat Ref Scan	On 600
Phase resolution Phase partial Fourier	100 % Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation	100 % Off Off	Pat Ref Scan	
Phase resolution Phase partial Fourier Interpolation Matrix Coil Mode	100 % Off Off Auto (CP)	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr.	100 % Off Off Auto (CP) Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize	100 % Off Off Auto (CP) Off Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter	100 % Off Off Auto (CP) Off Off Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter Elliptical filter	100 % Off Off Auto (CP) Off Off Off Off Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming	100 % Off Off Auto (CP) Off Off Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming  Geometry	100 % Off Off Auto (CP) Off Off Off Off Off Off Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming  Geometry Multi-slice mode	100 % Off Off Auto (CP) Off Off Off Off Off Off Off Sequential	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming  Geometry	100 % Off Off Auto (CP) Off Off Off Off Off Off Off	Pat Ref Scan VENC value	600
Phase resolution Phase partial Fourier Interpolation  Matrix Coil Mode  Distortion Corr. Prescan Normalize Raw filter Elliptical filter Hamming  Geometry  Multi-slice mode	100 % Off Off Auto (CP) Off Off Off Off Off Off Off Sequential	Pat Ref Scan VENC value	600

System

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SIEMENS: gre

PAT: Off Voxel size: 1.1×1.0×7.0 mm Rel. SNR: 1.00

TA: 0:13

IA. 0.13 P	AT. OII VOXEI SIZE. T. TX T.OX	C7.0 IIIII Rei. SINK. 1.00	SIEMENS. gre
		Phase resolution	90 %
Properties		Phase resolution	90 % Off
Prio Recon	Off	Phase partial Fourier     Interpolation	
Before measurement		Interpolation	On
After measurement		PAT mode	None
Load to viewer	On	Matrix Coil Mode	Auto (CP)
Inline movie	Off		
Auto store images	On	Image Filter	Off
Load to stamp segments	Off	Distortion Corr.	Off
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	On
Auto open inline display	Off	Normalize	Off
Start measurement without	Off	B1 filter	Off
further preparation		Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
ļ	53.2	Geometry	
Routine		- Multi-slice mode	Sequential
Slice group 1		Series	Interleaved
Slices	1		
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir.	A >> P	Tim CT mode	Off
Rotation	0.00 deg	System	
Slice group 2		System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Transversal	Positioning mode	REF
Phase enc. dir.	A >> P	Table position	H
Rotation	0.00 deg	Table position	0 mm
Slice group 3		MSMA	S - C - T
Slices	1	Sagittal	R >> L
Dist. factor	20 %	Coronal	A >> P
Position	Isocenter	Transversal	F >> H
Orientation	Coronal	Save uncombined	Off
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	250 mm	Auto Coil Select	Delauit
FoV phase	100.0 %	Shim mode	Tune up
Slice thickness	7.0 mm	Adjust with body coil	Off
TR	8.6 ms	Confirm freq. adjustment	Off
TE	4.00 ms	Assume Silicone	Off
Averages	2	? Ref. amplitude 1H	0.000 V
Concatenations	3	Adjustment Tolerance	Auto
Filter	Prescan Normalize, Elliptical	Adjust volume	
	filter	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
I	·	Rotation	0.00 deg
Contrast		_ R >> L	350 mm
TD	0 ms	A >> P	263 mm
MTC	Off	F >> H	350 mm
Magn. preparation	None	I	
Flip angle	20 deg	Physio	
Fat suppr.	None	1st Signal/Mode	None
Water suppr.	None	Segments	1
Averaging mode	Short torm	Dark blood	Off
Averaging mode	Short term		OII
Reconstruction	Magnitude	Resp. control	Off
Measurements	I Fook magazzarana	Inlina	
Multiple series	Each measurement	Inline	Off
Resolution		Subtract	Off
Base resolution	256	Liver registration	Off
1	- <del>-</del>	Std-Dev-Sag	Off

Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off
Wash - In Wash - Out TTP PEI MIP - time	Off Off Off Off Off

#### Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
1 3	

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TA: 0:41 P	AT: 2 Voxel size: 1.0×1.0×	2.0 mm Rel. SNR: 1.00 S	IEMENS: haste
Properties		Width	4
Prio Recon	Off	Unfiltered images	Off
Before measurement	<b>.</b>	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	<b>.</b>		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation	311	Tim CT mode	Off
Wait for user to start	Off	Cyatam	
Start measurements	single	System	0"
Otan measurements	Sirigie	Body	Off
Routine		HEP	On
Slice group 1		—   HEA	On
Slices	100	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	R1.7 A17.3 H6.4	Table position	0 mm
Orientation	Sagittal	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	2.0 mm	AutoAlign	Adaptive Combine
TR	395 ms	Auto Coil Select	Default
TE	76 ms		
Averages	1	Shim mode	Tune up
Concatenations	1	Adjust with body coil	Off
Filter	Normalize, Elliptical filter	Confirm freq. adjustment	Off
Coil elements	HEA;HEP	Assume Silicone	Off
1		? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	
Magn. preparation	None	Position	Isocenter
Flip angle	110 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
Averaging mode	Long term	F >> H	350 mm
Reconstruction	Magnitude	Dhysia	
Measurements	1	Physio	Maria
Multiple series	Each measurement	1st Signal/Mode	None
Resolution	Lacit moadaromone	Dark blood	Off
Base resolution	192	Resp. control	Off
Phase resolution	100 %	1 .	
Phase partial Fourier	5/8	Inline	
Interpolation	Off	Subtract	Off
	OII	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
Inches Eller		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Prescan Normalize	Off	Sequence	
Normalize	On	Introduction	On
Intensity	Medium	Dimension	2D
Cut off	20	J. Dimonolori	

Contrasts Bandwidth Flow comp. Allowed delay Echo spacing	1 592 Hz/Px No 30 s 5.82 ms
Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

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perties		Width	4
Prio Recon	Off	Unfiltered images	Off
Before measurement	Oli	B1 filter	Off
After measurement		Raw filter	Off
Load to viewer	On	Elliptical filter	On
Inline movie	Off	Mode	Inplane
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Single shot
Load images to graphic	Off	Series	Interleaved
segments	<b>.</b>		
Auto open inline display	Off	Special sat.	None
Start measurement without	On		
further preparation		Tim CT mode	Off
Wait for user to start	Off	System	
Start measurements	single	Body	Off
		HEP	On
outine		—   HEA	On
Slice group 1	40		
Slices	40	Positioning mode	FIX
Dist. factor	0 %	Table position	Н
Position	L0.0 A15.7 H2.2	Table position	0 mm
Orientation	T > C2.4	MSMA	S - C - T
Phase enc. dir.	A >> P	Sagittal	R >> L
Rotation	0.00 deg	Coronal	A >> P
Phase oversampling	0 %	Transversal	F >> H
FoV read	192 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Adaptive Combine
Slice thickness	4.0 mm	AutoAlign	
TR	395 ms	Auto Coil Select	Default
TE	76 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	1	Confirm freq. adjustment	Off
Filter	Normalize, Elliptical filter	Assume Silicone	Off
Coil elements	HEA;HEP	? Ref. amplitude 1H	0.000 V
ontrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	Auto
Magn. preparation	None	Position	Isocenter
Flip angle	117 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R >> L	350 mm
Restore magn.	Off	A >> P	263 mm
		F>> H	350 mm
Averaging mode	Long term	I	300 111111
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Each measurement	Dark blood	Off
esolution			
Base resolution	192	Resp. control	Off
Phase resolution	100 %	Inline	
Phase partial Fourier	5/8	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
	OD 4 DD 4	Std-Dev-Sag Std-Dev-Cor	Off
PAT mode	GRAPPA	Std-Dev-Cor Std-Dev-Tra	Off
Accel. factor PE	2	Std-Dev-Time	Off
Ref. lines PE	24	MIP-Sag	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag MIP-Cor	Off
Reference scan mode	Integrated	MIP-Cor MIP-Tra	Off
Image Filter	Off	MIP-Tra MIP-Time	Off
Distortion Corr.	Off		
Prescan Normalize	Off	Save original images	On
Normalize	On	Sequence	
Intensity	Medium	Introduction	On
	20	Dimension	2D

Contrasts	1
Bandwidth	592 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	4.78 ms
 Turbo factor	192
RF pulse type	Fast
Gradient mode	Fast

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TA: 0:45 F	PAT: 2 Voxel size: 0.9×0.8×	4.0 mm Rel. SNR: 1.00	SIEMENS: gre
Properties		B1 filter	Off
Properties Properties	0#	- Raw filter	Off
Prio Recon	Off	Elliptical filter	On
Before measurement		Mode	Inplane
After measurement	0.5	Coomotru	
Load to viewer	On Off	Geometry	O artial
Inline movie	Off	Multi-slice mode	Sequential
Auto store images	On O"	Series	Interleaved
Load to stamp segments	Off	Saturation mode	Standard
Load images to graphic	Off	Special sat.	None
segments			
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On	1 mode	Oli
further preparation		System	
Wait for user to start	Off	Body	Off
Start measurements	single	HEP	On
Routine		HEA	On
		_	
Slice group 1	40	Positioning mode	REF
Slices	40	Table position	Н
Dist. factor	0 %	Table position	0 mm
Position	L1.8 A22.3 F39.5	MSMA	S - C - T
Orientation	Transversal	Sagittal	R >> L
Phase enc. dir.	A >> P	Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Save uncombined	Off
FoV read	200 mm	Coil Combine Mode	Adaptive Combine
FoV phase	100.0 %	AutoAlign	
Slice thickness	4.0 mm	Auto Coil Select	Default
TR	8.6 ms		
TE	4.00 ms	Shim mode	Tune up
Averages	1	Adjust with body coil	Off
Concatenations	40	Confirm freq. adjustment	Off
Filter	Prescan Normalize, Elliptical	Assume Silicone	Off
	filter	? Ref. amplitude 1H	0.000 V
Coil elements	HEA;HEP	Adjustment Tolerance	Auto
	1127 (,1121	Adjust volume	
Contrast		Position	Isocenter
TD	0 ms	Orientation	Transversal
MTC	Off	Rotation	0.00 deg
Magn. preparation	None	R >> L	350 mm
Flip angle	20 deg	A >> P	263 mm
Fat suppr.	None	F >> H	350 mm
Water suppr.	None	1	
	Chart torre	Physio	
Averaging mode	Short term	1st Signal/Mode	None
Reconstruction	Magnitude	Segments	1
Measurements	1 ====================================	Dark blood	Off
Multiple series	Each measurement		OII
Resolution		Resp. control	Off
Base resolution	256	_ '	
Phase resolution	90 %	Inline	0"
Phase partial Fourier	Off	Subtract	Off
Interpolation	On	Liver registration	Off
mierpolation	OII	Std-Dev-Sag	Off
PAT mode	GRAPPA	Std-Dev-Cor	Off
Accel. factor PE	2	Std-Dev-Tra	Off
Ref. lines PE	24	Std-Dev-Time	Off
Matrix Coil Mode	Auto (Triple)	MIP-Sag	Off
Reference scan mode	Integrated	MIP-Cor	Off
		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off	Save original images	On
Unfiltered images	Off		
Prescan Normalize	On	Wash - In Wash - Out	Off Off

TTP PEI MIP - time	Off Off Off
Sequence	
Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Bandwidth	320 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

TA: 1:33

 $USER: fl\_fq\_mb$ 

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Desitioning	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	<b>.</b>	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Sirigio	Auto Coil Select	Default
outine		—— Shim mode	Tune un
Slice group 1			Tune up Off
Slices	1	Adjust with body coil	
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A19.9 F64.7	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness		R >> L	350 mm
	4.0 mm	A >> P	263 mm
TR	19.10 ms	F >> H	350 mm
TE A	5.77 ms	DI :	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
contrast		Acquisition window	650 ms
	15 deg	—— Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1		-
Multiple series	Each measurement	Angio	
'		Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
	004004	···· Phase images	On
PAT mode	GRAPPA		
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Imaga Filtor	Off	Std-Dev-Time	Off
Image Filter	Off Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	<b>3</b> 11
Elliptical filter	Off	Sequence	
eometry		Introduction	On
eometry	Coguantial	Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Contrasts	•

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	3 3
Distance22	32

Voxel size: 0.8x0.8x4.0 mm Rel. SNR: 1.00

USER: fl\_fq\_mb

TA: 0:18

Properties		HEP	On
Prio Recon	Off	—— HEA	On
Before measurement	Oli	Positioning mode	FIX
After measurement		Positioning mode Table position	H
Load to viewer	On	Table position	0 mm
	Off	•	S - C - T
Inline movie		MSMA	
Auto store images	On O#	Sagittal	R >> L
Load to stamp segments	Off Off	Coronal	A >> P F >> H
Load images to graphic	Off	Transversal	
segments	0"	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	 D ( )
Start measurement without	On	Auto Coil Select	Default
further preparation	0"	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	3	Adjustment Tolerance	Auto
Dist. factor	700 %	Adjust rolume	Auto
Position	L0.0 A19.9 F32.7	Position	Isocenter
Orientation Phase enc. dir.	Transversal A >> P	Orientation Rotation	Transversal
			0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	None
TR	19.10 ms	Segments	1
TE	5.77 ms	1	·
Averages	1	Angio	
Concatenations	3	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Culpturent	~#
Measurements	1	Subtract	Off
Multiple series	Each measurement	Std-Dev-Sag	Off
Decelution		Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
PAT mode	None	MIP-Time	Off
Matrix Coil Mode	Auto (CP)	Save original images	On
·····	, , , , , , , , , , , , , , , , , , ,	Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off		Off
Prescan Normalize	Off	Asymmetric echo Contrasts	1
Normalize	Off		-
B1 filter	Off	Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
•		Gradient mode	Fast
Geometry		— RF spoiling	On
Multi-slice mode	Sequential		<del></del>
Series	Interleaved	MB Number	1
		FOV CF:#	4
Special set	None	FOV Shift	1
Special sat.	None	Distance22	32
Special sat. System	None		

TA: 2:49

USER: fl\_fq\_mb

TA. 2.49 PA	AT. OII VOXEI SIZE. U.OXU	7.6x4.0 IIIII Rei. SNR. 1.00	USER. II_Iq_IIIb
		l HED	On
Properties		HEP HEA	On On
Prio Recon	Off	TILA	
Before measurement		Positioning mode	FIX
After measurement	_	Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S-C-T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments	0#	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off On	AutoAlign Auto Coil Select	 Default
Start measurement without	On	Auto Coil Select	Delauit
further preparation Wait for user to start	Off	Shim mode	Tune up
Start measurements	single	Adjust with body coil	Off
Start measurements	Single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	1	Adjustment Tolerance	Auto
Dist. factor	700 %	Adjust volume	
Position	L0.0 A19.9 F64.7	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	Pulse/Trigger
TR	19.10 ms	Average cycle	No Signal ms
TE Averages	5.77 ms 1	Captured cycle	-not set-
Averages Concatenations	1	Acquisition window	650 ms
Filter	None	Trigger pulse	1
Coil elements	HEA;HEP	Trigger delay	0 ms
Con elements	HEA,HEI	Segments	1
Contrast		Phases	34
Flip angle	15 deg	Angio	
Averaging mode	Short term	Flow mode	Single dir.
Reconstruction	Magnitude	Encodings	1
Measurements	1	Velocity enc.	90 cm/s
Multiple series	Each measurement	Direction	Through plane
Resolution		Rephased images	On
Base resolution	256	Magnitude images	On
Phase resolution	100 %	Phase images	On
Phase partial Fourier	Off	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
		Std-Dev-Cor	Off
PAT mode	None	Std-Dev-Tra	Off
Matrix Coil Mode	Auto (CP)	Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	, -	
Elliptical filter	Off	Sequence	02
•		Introduction	On Off
Geometry Multiplica mode	Cognantial	Asymmetric echo Contrasts	Oπ 1
Multi-slice mode	Sequential	Bandwidth	1 260 Hz/Px
Series	Interleaved	Flow comp.	No
Special sat.	None		
System		RF pulse type	Normal
Body	Off	Gradient mode	Fast
Dody	JII	83/1	

RF spoiling	On
MB Number	3
FOV Shift	3
Distance22	32

Voxel size: 0.8x0.8x4.0 mm Rel. SNR: 1.00

 $USER: fl\_fq\_mb$ 

PAT: 2

TA: 1:33

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	_	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	O.I.	MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
	OII	Transversal	F >> H
further preparation Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
		AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine			
Slice group 1		—— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 F66.1	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0.00 deg 0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
	-	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.10 ms	F >> H	350 mm
TE	5.77 ms	ļ	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Contrast		Acquisition window	650 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
	••••••••••••••••••••••••••••••••••••••	Phase images	On
PAT mode	GRAPPA		<b>∵</b> ⊓
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Land and Eth		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	- Cave Original Images	VII
Elliptical filter	Off	Sequence	
Geometry		Introduction	On
,	Cognential	Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift Distance22	2 2 32

Voxel size: 0.8x0.8x4.0 mm Rel. SNR: 1.00

USER: fl\_fq\_mb

TA: 0:12

Properties		HEP	On
Prio Recon	Off	—— HEA	On
Before measurement	Oli	Positioning mode	FIX
After measurement		Positioning mode Table position	H
Load to viewer	On	Table position	0 mm
	Off	•	S - C - T
Inline movie		MSMA	
Auto store images	On O#	Sagittal	R >> L
Load to stamp segments	Off Off	Coronal	A >> P F >> H
Load images to graphic	Off	Transversal	
segments	0#	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	 D ( )
Start measurement without	On	Auto Coil Select	Default
further preparation	0#	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	2	Adjustment Tolerance	Auto
Dist. factor	700 %	Adjust volume	
Position	L0.0 A31.4 F50.1	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0.00 deg	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	1 >> 11	330 11111
Slice thickness	4.0 mm	Physio	
TR	19.10 ms	1st Signal/Mode	None
TE	5.77 ms	Segments	1
Averages	1	Angio	
Concatenations	2	Angio	Cio alo dia
Filter	None	Flow mode	Single dir.
Coil elements	HEA;HEP	Encodings	1
Con elements	пса,псе	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
A	Ch aut tauma	Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
		MIP-Time	Off
PAT mode	None	Save original images	On
Matrix Coil Mode	Auto (CP)	, -	<b>3</b>
Image Filter	Off	Sequence	
Distortion Corr.	Off	Introduction	On
Prescan Normalize	Off	Asymmetric echo	Off
Normalize		Contrasts	1
Normalize B1 filter	Off	Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
	Off	DE pulso time	Normal
Elliptical filter	Off	RF pulse type	Normal
Geometry		Gradient mode	Fast
Multi-slice mode	Sequential	—— RF spoiling	On
	Interleaved	MB Number	1
Series			
Series		FOV Shift	1
Series Special sat.	None	FOV Shift Distance22	
		FOV Shift Distance22	1 32

TA: 2:49

USER: fl\_fq\_mb

Properties Prio Recon Before measurement	Off	HEP HEA	On On
Prio Recon Before measurement	Off		
Before measurement	Off	TILA	OII
After measurement		Positioning mode	FIX
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation		Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
		? Ref. amplitude 1H	0.000 V
Slice group 1 Slices	4		
Dist. factor	1 700 %	Adjustment Tolerance	Auto
Dist. factor Position	700 % L0.0 A31.4 F66.1	Adjust volume Position	Isocontor
			Isocenter
Orientation	Transversal	Orientation Rotation	Transversal
Phase enc. dir.	A >> P		0.00 deg
Rotation	0.00 deg	R >> L	350 mm 263 mm
Phase oversampling	0 %	A >> P	_**
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	Pulse/Trigger
TR	19.10 ms	Average cycle	No Signal ms
TE	5.77 ms	Captured cycle	-not set-
Averages	1	Acquisition window	650 ms
Concatenations	1 Name	Trigger pulse	1
Filter	None	Trigger delay	0 ms
Coil elements	HEA;HEP	Segments	1
Contrast		Phases	34
Flip angle	15 deg	' Angio	
Averaging mode	Short term	Flow mode	Single dir.
Reconstruction	Magnitude	Encodings	1
Measurements	1	Velocity enc.	90 cm/s
Multiple series	Each measurement	Direction	Through plane
Multiple Selles	Lacitificasurement	Rephased images	On
Resolution		—— Magnitude images	On
Base resolution	256	Phase images	On
Phase resolution	100 %	· ····································	OII
Phase partial Fourier	Off	Subtract	Off
Interpolation	Off	Std-Dev-Sag	Off
DAT mede	Nama	Std-Dev-Cor	Off
PAT mode	None	Std-Dev-Tra	Off
Matrix Coil Mode	Auto (CP)	Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	
Elliptical filter	Off	Sequence	
•	<b>5</b>	Introduction	On
Geometry		Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
	Interleaved	Bandwidth	260 Hz/Px
Series	interieaveu	l	
Series		··· Flow comp.	No
Series Special sat.	None		
Series		Flow comp.  RF pulse type  Gradient mode	No Normal Fast

RF spoiling	On
MB Number	2
FOV Shift	2
Distance22	32

TA: 1:33

USER: fl\_fq\_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Desitioning	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation	<b>.</b>	Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Single	Auto Coil Select	Default
outine		—— Shim mode	Tuno un
Slice group 1			Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 F66.1	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
		Dharais	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
ontrast		Acquisition window	650 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1	Angio	
Multiple series	Each measurement	Angio Flow mode	Cinala dia
			Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
		Cubtract	O#
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Distortion Corr.	Off	MIP-Sag	Off
Prescan Normalize	Off	MIP-Cor	Off
		MIP-Tra	Off
Normalize	Off Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	
Elliptical filter	Off	Sequence	
eometry		Introduction	On
Multi-slice mode	Sequential	Asymmetric echo	Off
	Interleaved	Contrasts	1
Series			

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	4
Distance22	32

Voxel size: 0.8x0.8x4.0 mm Rel. SNR: 1.00

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TA: 0:23

Properties		HEP	On
Prio Recon	Off	—— HEA	On
	Oli	Desitioning	FIV
Before measurement		Positioning mode	FIX
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation			
Wait for user to start	Off	Shim mode	Tune up
Start measurements	single	Adjust with body coil	Off
	5g.5	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	4	Adjustment Tolerance	Auto
Dist. factor	700 %	Adjust volume	
Position	L0.0 A31.4 F18.1	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
	0.00 deg 0 %	A >> P	263 mm
Phase oversampling			
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	None
TR	19.10 ms	Segments	1
TE	5.77 ms	Ocginents	•
Averages	1	Angio	
Concatenations	4	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
O- inter- of		Direction	Through plane
Contrast		Rephased images	On
Flip angle	15 deg	Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude		
Measurements	1	Subtract	Off
	<u>.</u> .	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
interpolation		···· MIP-Time	Off
PAT mode	None		
Matrix Coil Mode	Auto (CP)	Save original images	On
		Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Asymmetric echo	Off
Prescan Normalize	Off	Contrasts	1
Normalize	Off	Bandwidth	260 Hz/Px
B1 filter	Off		
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
·	<del></del>	Gradient mode	Fast
Geometry	<u></u>	— RF spoiling	On
Multi-slice mode	Sequential	- 10 35011119	
Series	Interleaved	MB Number	1
		EOV / OL :#	
	N1	FOV Shift	1
Special sat.	None	Distance22	1 32
	None		

TA: 1:33

 $USER: fl\_fq\_mb$ 

roperties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		—
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	Oli	MSMA	S - C - T
	O#	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	a.,,	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
outine		Auto Con Select	
		Shim mode	Tune up
Slice group 1	4	Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A31.4 F66.1	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P		Auto
Rotation	0.00 deg	Adjust volume	la a a a mt a m
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
contrast		Acquisition window	650 ms
	15 dog	—— Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1	1	
Multiple series	Each measurement	Angio	
Walipie Series	Edon medsurement	Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
	····	Phase images	On
PAT mode	GRAPPA	i ilase ililayes	
Accel. factor PE	2	Subtract	Off
Ref. lines PE	_ 24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
·····		Std-Dev-Time	Off
Image Filter	Off		Off
Distortion Corr.	Off	MIP-Sag	
Prescan Normalize	Off	MIP-Cor	Off
Normalize	Off	MIP-Tra	Off
B1 filter	Off	MIP-Time	Off
Raw filter	Off	Save original images	On
		Sogueses	
Elliptical filter	Off	Sequence	0.5
		Introduction	
•		Introduction	On O"
Geometry	Sequential	Asymmetric echo	Off
•	Sequential Interleaved		

Flow comp		No
RF pulse ty Gradient m RF spoiling	ode	Normal Fast On
MB Number FOV Shift Distance22		6 2 32
Distalled		JZ

Voxel size: 0.8x0.8x4.0 mm Rel. SNR: 1.00

USER: fl\_fq\_mb

TA: 0:34

Properties		HEP	On
Prio Recon	Off	—— HEA	On
Before measurement	Oll	Positioning mode	FIX
After measurement		Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
	On		8 -> L
Auto store images	Off	Sagittal Coronal	A >> P
Load to stamp segments	Off	Transversal	A >> P F >> H
Load images to graphic	Oli		
segments	0#	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	D-fIt
Start measurement without	On	Auto Coil Select	Default
further preparation	0#	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	6	Adjustment Tolerance	Auto
Dist. factor	700 %	Adjust volume	
Position	L0.0 A31.4 H13.9	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %		000 111111
Slice thickness	4.0 mm	Physio	
TR	19.10 ms	1st Signal/Mode	None
TE	5.77 ms	Segments	1
Averages	1	Angio	
Concatenations	6	Angio Flow mode	Cinalo dir
Filter	None		Single dir.
Coil elements	HEA;HEP	Encodings	1
Con elements	пса,псе	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
A	Ch aut tauma	Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
		MIP-Time	Off
PAT mode	None	Save original images	On
Matrix Coil Mode	Auto (CP)		311
Image Filter	Off	Sequence	
Distortion Corr.	Off	Introduction	On
Prescan Normalize	Off	Asymmetric echo	Off
Normalize	Off	Contrasts	1
Normalize B1 filter		Bandwidth	260 Hz/Px
Raw filter	Off	Flow comp.	No
	Off	DE pulso time	Normal
Elliptical filter	Off	RF pulse type	Normal
Geometry		Gradient mode	Fast
Multi-slice mode	Sequential	RF spoiling	On
	Interleaved	MB Number	1
Series			
Series		···· FOV Shift	1
Series Special sat.	None	FOV Shift Distance22	
	None	FOV Shift Distance22	1 32

roperties		Special sat.	None
Prio Recon	Off	System	
Before measurement	-	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Davidsonia a sala	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	H
Load images to graphic	Off	Table position MSMA	0 mm S - C - T
segments		Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation		Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Coutine			
Slice group 1		—— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 F66.1	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	_
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Contrast		Acquisition window	650 ms
Flip angle	15 deg	—— Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
	CD A DD A	···· Phase images	On
PAT mode	GRAPPA		O#
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor Std-Dev-Tra	Off Off
Reference scan mode	Integrated	Std-Dev-Tra Std-Dev-Time	-
Image Filter	Off		Off
Distortion Corr.	Off	MIP-Sag MIP-Cor	Off Off
Prescan Normalize	Off	MIP-Cor MIP-Tra	Off
Normalize	Off	MIP-Tra MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	Jave original irriages	Oil
Elliptical filter	Off	Sequence	
Seometry		Introduction	On
Multi-slice mode	Sequential	Asymmetric echo	Off
Series	Interleaved	Contrasts	1
OGUGO	IIILGIIGAVEU	Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	4 2
Distance22	16

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb4\_venc90\_res256\_closer\_nav

TA: 0:23 PA	AT: Off Voxel size: 0.8×0.8×4	J.0 mm Rel. SNR: 1.00 l	JSER: fl_fq_mb
Properties		HEP HEA	On On
Prio Recon	Off		
Before measurement		Positioning mode	FIX
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation		Obias as a da	T
Wait for user to start	Off	Shim mode	Tune up
Start measurements	single	Adjust with body coil	Off
Desidies -		Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	4	Adjustment Tolerance	Auto
Dist. factor	300 %	Adjust volume	
Position	L0.0 A31.4 F42.1	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	To the state of th	
Slice thickness	4.0 mm	Physio	
TR	19.10 ms	1st Signal/Mode	None
TE	5.77 ms	Segments	1
Averages	1	Angio	
Concatenations	4	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
1	,	Direction	Through plane
Contrast		Rephased images	On
Flip angle	15 deg	Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude		
Measurements	1	Subtract	Off
Multiple series	Each measurement	Std-Dev-Sag	Off
1		Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
PAT mode	None	MIP-Time	Off
Matrix Coil Mode	Auto (CP)	Save original images	On
	Auto (Ci )	Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Asymmetric echo	Off
Prescan Normalize	Off	Contrasts	1
Normalize	Off	Bandwidth	•
B1 filter	Off		260 Hz/Px
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
		Gradient mode	Fast
Geometry	Oppose	RF spoiling	On
Multi-slice mode	Sequential		
Series	Interleaved	MB Number	1
Special sat.	None	FOV Shift	1
		Distance22	32
System			

Off

Body

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb1f1p2\_venc90\_res256\_bottom

TA: 1:33 PA	AT: 2 Voxel size: 0.8×0	.8×4.0 mm Rel. SNR: 1.00 L	JSER: fl_fq_mb
Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off		<u>-</u>
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S - C - T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation		Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	Sirigio	Auto Coil Select	Default
outine		Chim mada	Tung un
Slice group 1		Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 F66.1	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
		F >> H	350 mm
TE A	5.77 ms	n i	
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
ontrast		Acquisition window	650 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1	Annia	
Multiple series	Each measurement	Angio	0. 1.
		Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
PAT mode	GRAPPA	Phase images	On
Accel. factor PE		Subtract	Off
	2		Off Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Distortion Corr.	Off	MIP-Sag	Off
Prescan Normalize	Off	MIP-Cor	Off
Normalize	Off	MIP-Tra	Off
B1 filter	Off	MIP-Time	Off
		Save original images	On
Raw filter	Off	1	
Elliptical filter	Off	Sequence	
eometry		Introduction	On
Multi-slice mode	Sequential	Asymmetric echo	Off
Series	Interleaved	Contrasts	1
OCHES	IIICIICAVCU	Bandwidth	260 Hz/Px

Flow comp.	No	
RF pulse type Gradient mode RF spoiling	Normal Fast On	
MB Number FOV Shift	1 1	
Distance22	32	

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb1f1p2\_venc90\_res256\_bottom\_up1
TA: 1:33 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	<b>5</b> 11	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	11LA	
		Positioning mode	FIX
Auto store images	On O#	Table position	Н
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments	0"	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0.11	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine		— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1		Off
Dist. factor	700 %	Confirm freq. adjustment Assume Silicone	Off
Position	L0.0 A31.4 F34.1		
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None		
Coil elements	HEA;HEP	Average cycle	No Signal ms
Con elements	HEM,HEF	Captured cycle	-not set-
Contrast		Acquisition window	650 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1 .	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	_		On
i ileipoialion	( )ff	I Madritude images	
	Off	Magnitude images	
PAT mode	GRAPPA	··· Phase images	On
PAT mode Accel. factor PE			
	GRAPPA	Phase images	On
Accel. factor PE	GRAPPA 2 24	Phase images Subtract	On Off
Accel. factor PE Ref. lines PE	GRAPPA 2 24 Auto (Triple)	Phase images Subtract Std-Dev-Sag	On Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode	GRAPPA 2 24 Auto (Triple) Integrated	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor	On Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	GRAPPA 2 24 Auto (Triple) Integrated Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time	On Off Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr.	GRAPPA 2 24 Auto (Triple) Integrated  Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag	On Off Off Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	On Off Off Off Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off Off O	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction	On Off Off Off Off Off Off Off Off Off O

Flow comp.	No	
RF pulse type Gradient mode RF spoiling	Normal Fast On	
MB Number FOV Shift	1	
Distance22	32	

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb1f1p2\_venc90\_res256\_bottom\_up3
TA: 1:33 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Describes		Special sat.	None
Properties	0"		
Prio Recon	Off	System	0"
Before measurement		Body	Off
After measurement	_	HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Positioning mode	FIX
Auto store images	On	Table position	H
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments			R >> L
Auto open inline display	Off	Sagittal	
Start measurement without	On	Coronal	A >> P
further preparation		Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	 D ( )
Routine	· ·	Auto Coil Select	Default
Slice group 1		—— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 F2.1	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation		Adjust volume	
	0.00 deg	Position	Isocenter
Phase oversampling FoV read	0 % 192 mm	Orientation	Transversal
		Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.10 ms	F >> H	350 mm
TE	5.77 ms	ļ	300
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Contrast		Acquisition window	650 ms
	15 deg	—— Trigger pulse	1
Flip angle	15 deg	Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	1	l	
Multiple series	Each measurement	Angio	
1		Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
DAT mode	CDADDA	···· Phase images	On
PAT mode	GRAPPA	Culhirant	O#
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Image Filter	Off	Std-Dev-Time	Off
Distortion Corr.	Off	MIP-Sag	Off
Prescan Normalize	Off	MIP-Cor	Off
Normalize	Off	MIP-Tra	Off
B1 filter	Off	MIP-Time	Off
		Save original images	On
Raw filter	Off	1	
Elliptical filter	Off	Sequence	On
Geometry		Introduction	On Off
Multi-slice mode	Sequential	Asymmetric echo	Off
Series	Interleaved	Contrasts	1
		Bandwidth	260 Hz/Px
		100/	

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb1f1p2\_venc90\_res256\_bottom\_up4
TA: 1:33 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	<b>J</b> II	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	TILA	
		Positioning mode	FIX
Auto store images	On O#	Table position	Н
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments		Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation		Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	Adaptive Combine
Start measurements	single	Auto Coil Select	Default
Routine			
Slice group 1		— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 H29.9	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
	A >> P	Adjustment Tolerance	Auto
Phase enc. dir.		Adjust volume	
Rotation	0.00 deg	Position	Isocenter
Phase oversampling	0 %	Orientation	Transversal
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.10 ms	F>> H	
TE	5.77 ms	r>>n	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Con ciomonio	11274,1121	Acquisition window	650 ms
Contrast		Trigger pulse	1
Flip angle	15 deg		0 ms
Avaraging made	Chart tarm	Trigger delay	1
Averaging mode	Short term	Segments	-
Reconstruction	Magnitude	Phases	34
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
interpolation	OII		
PAT mode	GRAPPA	Phase images	On
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode			_
Reference scan mode		Std-Dev-Cor	( )ff
	Auto (Triple)	Std-Dev-Cor Std-Dev-Tra	Off Off
		Std-Dev-Tra	Off
Image Filter	Auto (Triple)	Std-Dev-Tra Std-Dev-Time	Off Off
Image Filter Distortion Corr.	Auto (Triple) Integrated	Std-Dev-Tra Std-Dev-Time MIP-Sag	Off Off Off
	Auto (Triple) Integrated Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	Off Off Off Off
Distortion Corr.	Auto (Triple) Integrated  Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Off Off Off Off Off
Distortion Corr. Prescan Normalize Normalize	Auto (Triple) Integrated  Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off Off Off Off Off Off Off
Distortion Corr. Prescan Normalize Normalize B1 filter	Auto (Triple) Integrated  Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Off Off Off Off Off
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off Off Off Off Off
Distortion Corr. Prescan Normalize Normalize B1 filter	Auto (Triple) Integrated  Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images Sequence	Off
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction	Off Off Off Off Off Off Off Off Off On
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction Asymmetric echo	Off Off Off Off Off Off Off Off On Off
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry	Auto (Triple) Integrated  Off Off Off Off Off Off Off Off Off O	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction	Off Off Off Off Off Off Off Off Off On

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb1f1p2\_venc90\_res256\_bottom\_up\_half TA: 1:33 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	<b>5</b> 11	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	11LA	
		Positioning mode	FIX
Auto store images	On O#	Table position	Н
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments	0"	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0"	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine		— Shim mode	Tune up
Slice group 1			Off
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment Assume Silicone	Off
Position	L0.0 A31.4 F50.1		
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None		
Coil elements	HEA;HEP	Average cycle	No Signal ms
Con elements	ПЕА,ПЕР	Captured cycle	-not set-
Contrast		Acquisition window	650 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	34
Measurements	<u>1</u> .	Angio	
Multiple series	Each measurement	Flow mode	Cinalo dir
<b>—</b>			Single oil.
Resolution		Encodinas	Single dir. 1
Resolution  Base resolution	256	Encodings Velocity enc	1
Base resolution	256 100 %	Velocity enc.	1 90 cm/s
Base resolution Phase resolution	100 %	Velocity enc. Direction	1 90 cm/s Through plane
Base resolution Phase resolution Phase partial Fourier	100 % Off	Velocity enc. Direction Rephased images	1 90 cm/s Through plane On
Base resolution Phase resolution	100 %	Velocity enc. Direction Rephased images Magnitude images	1 90 cm/s Through plane On On
Base resolution Phase resolution Phase partial Fourier	100 % Off	Velocity enc. Direction Rephased images	1 90 cm/s Through plane On
Base resolution Phase resolution Phase partial Fourier Interpolation	100 % Off Off	Velocity enc. Direction Rephased images Magnitude images	1 90 cm/s Through plane On On
Base resolution Phase resolution Phase partial Fourier Interpolation PAT mode	100 % Off Off GRAPPA	Velocity enc. Direction Rephased images Magnitude images Phase images	1 90 cm/s Through plane On On
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE	100 % Off Off GRAPPA 2 24	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract	1 90 cm/s Through plane On On On
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE	100 % Off Off GRAPPA 2 24 Auto (Triple)	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag	1 90 cm/s Through plane On On On Off
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor	1 90 cm/s Through plane On On On Off Off
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time	1 90 cm/s Through plane On On On Off Off Off Off Off Off
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr.	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize	100 % Off Off  GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize	100 % Off Off GRAPPA 2 24 Auto (Triple) Integrated Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize	100 % Off Off  GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter	100 % Off Off Off  GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Tra	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	100 % Off Off Off  GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter  Geometry	100 % Off Off Off GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off Off O	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images Sequence Introduction	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of
Base resolution Phase resolution Phase partial Fourier Interpolation  PAT mode Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	100 % Off Off Off  GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off Off	Velocity enc. Direction Rephased images Magnitude images Phase images Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images Sequence	1 90 cm/s Through plane On On On Off Off Off Off Off Off Off Of

Flow comp.	No
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
MB Number	1
FOV Shift	1
Distance22	32
	RF pulse type Gradient mode RF spoiling MB Number FOV Shift

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb1f1p2\_venc90\_res256\_bottom\_up\_1andhalf TA: 1:33 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	<b>5</b> 11	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	11EA	
		Positioning mode	FIX
Auto store images	On O#	Table position	Н
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments		Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation		Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	Adaptive Combine
Start measurements	single	Auto Coil Select	Default
Routine			
Slice group 1		—— Shim mode	Tune up
Slices	1	Adjust with body coil	Off
Dist. factor	700 %	Confirm freq. adjustment	Off
Position	L0.0 A31.4 F18.1	Assume Silicone	Off
Orientation	Transversal	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Phase enc. dir.	A >> P	Adjust volume	
Rotation	0.00 deg	Position	Isocenter
Phase oversampling	0 %	Orientation	Transversal
FoV read	192 mm	Rotation	0.00 deg
FoV phase	100.0 %	R >> L	350 mm
Slice thickness	4.0 mm	A >> P	263 mm
TR	19.10 ms	F>> H	
TE	5.77 ms	г>>п	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Con ciomonio	11273,1121	Acquisition window	650 ms
Contrast		Trigger pulse	1
Flip angle	15 deg		0 ms
Averaging mode	Chart tarm	Trigger delay	1
Averaging mode	Short term	Segments	-
Reconstruction	Magnitude	Phases	34
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
milerpolation	OII		
PAT mode	GRAPPA	Phase images	On
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode		Std-Dev-Cor	Off
Reference scan mode	AUIO (TIIOIE)		Jii
	Auto (Triple)		Off
Image Filter	Integrated	Std-Dev-Tra	Off Off
inage inter		Std-Dev-Tra Std-Dev-Time	Off
Distortion Corr.	Integrated	Std-Dev-Tra Std-Dev-Time MIP-Sag	Off Off
	Integrated Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	Off Off Off
Distortion Corr.	Integrated Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Off Off Off Off
Distortion Corr. Prescan Normalize Normalize	Integrated  Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off Off Off Off Off
Distortion Corr. Prescan Normalize Normalize B1 filter	Integrated  Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	Off Off Off Off
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	Integrated  Off Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	Off Off Off Off Off
Distortion Corr. Prescan Normalize Normalize B1 filter	Integrated  Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images Sequence	Off Off Off Off Off Off Off On
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter	Integrated  Off Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction	Off Off Off Off Off Off On
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	Integrated  Off Off Off Off Off Off Off Off	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction Asymmetric echo	Off Off Off Off Off Off On Off
Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter Geometry	Integrated  Off Off Off Off Off Off Off Off Off O	Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction	Off Off Off Off Off Off On

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	1
Distance22	32

\\USER	\AMRIT\Liyong\20150420	0\fl_fq_mb3_venc90_res256_r	nav_extra
TA: 0:18 PA	AT: Off Voxel size: 0.8×0	.8×4.0 mm Rel. SNR: 1.00	USER: fl_fq_mb
Properties		HEP	On
Prio Recon	Off	—— HEA	On
Before measurement	Oil	Positioning mode	FIX
After measurement		Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments	3.1	Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation			
Wait for user to start	Off	Shim mode	Tune up
Start measurements	single	Adjust with body coil	Off
	59.0	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	3	Adjustment Tolerance	Auto
Dist. factor	800 %	Adjust volume	
Position	L0.0 A21.8 H49.6	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	None
TR	19.10 ms	Segments	1
TE	5.77 ms		•
Averages	1	Angio	
Concatenations	3	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude	Subtract	Off
Measurements	1	Std-Dev-Sag	Off
Multiple series	Each measurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
· [ · · · ·		MIP-Time	Off

Prio Recon	Off		
Before measurement		Positioning mode	FIX
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments	Oli	Coil Combine Mode	Adaptive Combine
	Off		
Auto open inline display		AutoAlign	
Start measurement without	On	Auto Coil Select	Default
further preparation	- ·	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
			0.000 V
Slice group 1	0	? Ref. amplitude 1H	
Slices	3	Adjustment Tolerance	Auto
Dist. factor	800 %	Adjust volume	
Position	L0.0 A21.8 H49.6	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	I .	
Slice thickness	4.0 mm	Physio	
TR	19.10 ms	1st Signal/Mode	None
TE	5.77 ms	Segments	1
		A ::	
Averages	1	Angio	
Concatenations	3	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
	15 deg	Rephased images	On
Flip angle		Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction	Magnitude		
Measurements	1	Subtract	Off
Multiple series	Each measurement	Std-Dev-Sag	Off
Wattiple Series	Eddi Medadrement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
		MIP-Time	Off
PAT mode	None		On
Matrix Coil Mode	Auto (CP)	Save original images	Oli
		Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Asymmetric echo	Off
Prescan Normalize	Off	Contrasts	1
Normalize	Off	Bandwidth	260 Hz/Px
B1 filter	Off		
Raw filter	Off	Flow comp.	No
Elliptical filter	Off	RF pulse type	Normal
•	<del>-</del>	Gradient mode	Fast
Geometry		— RF spoiling	On
Multi-slice mode	Sequential	IXI Spoiling	
Series	Interleaved	MB Number	1
		FOV Shift	1
Special sat.	None	Distance22	32
System		5.00.0022	<del>-</del>
	0#	<u></u>	
Body	Off	4441.	

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement		Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	Destinates and	FIV
Auto store images	On	Positioning mode	FIX
Load to stamp segments	Off	Table position	H
Load images to graphic	Off	Table position	0 mm
segments		MSMA	S-C-T
Auto open inline display	Off	Sagittal	R >> L
Start measurement without	On	Coronal	A >> P
further preparation		Transversal	F >> H
Wait for user to start	Off	Coil Combine Mode	Adaptive Combine
Start measurements	single	AutoAlign	
	5.1.g.5	Auto Coil Select	Default
outine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A21.8 H13.6	? Ref. amplitude 1H	0.000 V
Orientation	Transversal	Adjustment Tolerance	Auto
Phase enc. dir.	A >> P		Auto
Rotation	0.00 deg	Adjust volume	Incometan
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None	Average cycle	No Signal ms
Coil elements	HEA;HEP	Captured cycle	-not set-
Con ciements	11273,1121	Acquisition window	750 ms
Contrast			150 1115
Flip angle	15 deg	Trigger pulse	0 ms
Averaging made	Chart tarm	Trigger delay	
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	39
Measurements	1	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
esolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
Phase partial Fourier	Off	Rephased images	On
Interpolation	Off	Magnitude images	On
		Phase images	On
PAT mode	GRAPPA	·······································	— — — — — — — — — — — — — — — — — — —
Accel. factor PE	2	Subtract	Off
Ref. lines PE	24	Std-Dev-Sag	Off
Matrix Coil Mode	Auto (Triple)	Std-Dev-Cor	Off
Reference scan mode	Integrated	Std-Dev-Tra	Off
Income Filter		Std-Dev-Time	Off
Image Filter	Off	MIP-Sag	Off
Distortion Corr.	Off	MIP-Cor	Off
Prescan Normalize	Off	MIP-Tra	Off
Normalize	Off	MIP-Time	Off
B1 filter	Off	Save original images	On
Raw filter	Off	1	<b>3</b>
Elliptical filter	Off	Sequence	
seometry		Introduction	On
•	Cognostial	Asymmetric echo	Off
Multi-slice mode	Sequential	Contrasts	1
Series	Interleaved	Bandwidth	260 Hz/Px

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift	3 3
Distance22	36

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb4\_venc90\_res256\_closer\_nav\_extra
TA: 0:23 PAT: Off Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Properties		HEP HEA	On On
Prio Recon	Off		
Before measurement		Positioning mode	FIX
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	MSMA	S - C - T
Auto store images	On	Sagittal	R >> L
Load to stamp segments	Off	Coronal	A >> P
Load images to graphic	Off	Transversal	F >> H
segments		Coil Combine Mode	Adaptive Combine
Auto open inline display	Off	AutoAlign	 
Start measurement without	On	Auto Coil Select	Default
further preparation	0"	Shim mode	Tune up
Wait for user to start	Off	Adjust with body coil	Off
Start measurements	single	Confirm freq. adjustment	Off
Routine		Assume Silicone	Off
Slice group 1		? Ref. amplitude 1H	0.000 V
Slices	4	Adjustment Tolerance	Auto
Dist. factor	350 %	Adjust volume	
Position	L0.0 A21.8 H58.6	Position	Isocenter
Orientation	Transversal	Orientation	Transversal
Phase enc. dir.	A >> P	Rotation	0.00 deg
Rotation	0.00 deg	R >> L	350 mm
Phase oversampling	0 %	A >> P	263 mm
FoV read	192 mm	F >> H	350 mm
FoV phase	100.0 %	Physio	
Slice thickness	4.0 mm	1st Signal/Mode	None
TR	19.10 ms	Segments	1
TE	5.77 ms	1 -	1
Averages	1	Angio	
Concatenations	4	Flow mode	Single dir.
Filter	None	Encodings	1
Coil elements	HEA;HEP	Velocity enc.	90 cm/s
Contrast		Direction	Through plane
Flip angle	15 deg	Rephased images	On
A veneral en en en el e	Ch ant tanna	Magnitude images	On
Averaging mode	Short term	Phase images	On
Reconstruction Measurements	Magnitude 1	Subtract	Off
Multiple series	Each measurement	Std-Dev-Sag	Off
Multiple selles	Lacifilleasurement	Std-Dev-Cor	Off
Resolution		Std-Dev-Tra	Off
Base resolution	256	Std-Dev-Time	Off
Phase resolution	100 %	MIP-Sag	Off
Phase partial Fourier	Off	MIP-Cor	Off
Interpolation	Off	MIP-Tra	Off
PAT mode	None	MIP-Time	Off
Matrix Coil Mode	Auto (CP)	Save original images	On
		Sequence	
Image Filter	Off	Introduction	On
Distortion Corr.	Off	Asymmetric echo	Off
Prescan Normalize	Off	Contrasts	1
Normalize	Off	Bandwidth	260 Hz/Px
B1 filter	Off Off	Flow comp.	No
Raw filter	Off		Nama
Elliptical filter	Off	RF pulse type	Normal Fact
Geometry		Gradient mode RF spoiling	Fast On
Multi-slice mode	Sequential	NE Spoiling	OII
Series	Interleaved	MB Number	1
Special cet	None	FOV Shift	1
Special sat.	None	Distance22	32
System			
Body	Off		
		111/4	

\\USER\AMRIT\Liyong\20150420\fl\_fq\_mb4f2p2\_venc90\_closer\_res256\_extra
TA: 1:47 PAT: 2 Voxel size: 0.8×0.8×4.0 mm Rel. SNR: 1.00 USER: fl\_fq\_mb

Properties		Special sat.	None
Prio Recon	Off	System	
Before measurement	<b>5</b> 11	Body	Off
After measurement		HEP	On
Load to viewer	On	HEA	On
Inline movie	Off	IILA	
		Positioning mode	FIX
Auto store images	On O#	Table position	Н
Load to stamp segments	Off	Table position	0 mm
Load images to graphic	Off	MSMA	S - C - T
segments	0"	Sagittal	R >> L
Auto open inline display	Off	Coronal	A >> P
Start measurement without	On	Transversal	F >> H
further preparation	0"	Coil Combine Mode	Adaptive Combine
Wait for user to start	Off	AutoAlign	
Start measurements	single	Auto Coil Select	Default
Routine		—— Shim mode	Tune up
Slice group 1		Adjust with body coil	Off
Slices	1	Confirm freq. adjustment	Off
Dist. factor	700 %	Assume Silicone	Off
Position	L0.0 A21.8 H31.6	? Ref. amplitude 1H	0.000 V
Orientation	Transversal		
Phase enc. dir.	A >> P	Adjustment Tolerance	Auto
Rotation	0.00 deg	Adjust volume	laasantan
Phase oversampling	0 %	Position	Isocenter
FoV read	192 mm	Orientation	Transversal
FoV phase	100.0 %	Rotation	0.00 deg
Slice thickness	4.0 mm	R >> L	350 mm
TR	19.10 ms	A >> P	263 mm
TE	5.77 ms	F >> H	350 mm
Averages	1	Physio	
Concatenations	1	1st Signal/Mode	Pulse/Trigger
Filter	None		
Coil elements	HEA;HEP	Average cycle	No Signal ms
Con elements	пен,пер	Captured cycle	-not set-
Contrast		Acquisition window	750 ms
Flip angle	15 deg	Trigger pulse	1
		Trigger delay	0 ms
Averaging mode	Short term	Segments	1
Reconstruction	Magnitude	Phases	39
Measurements	<u>1</u> .	Angio	
Multiple series	Each measurement	Flow mode	Single dir.
Resolution		Encodings	1
Base resolution	256	Velocity enc.	90 cm/s
Phase resolution	100 %	Direction	Through plane
	Off	Rephased images	On
Phase partial Fourier Interpolation	Off	Magnitude images	On On
IIIIeipoialioii			. 711
	OII		
PAT mode	GRAPPA	Phase images	On
PAT mode Accel. factor PE			
	GRAPPA	Phase images Subtract	On
Accel. factor PE	GRAPPA 2 24	Phase images	On Off
Accel. factor PE Ref. lines PE	GRAPPA 2 24 Auto (Triple)	Phase images Subtract Std-Dev-Sag	On Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode	GRAPPA 2 24 Auto (Triple) Integrated	Phase images Subtract Std-Dev-Sag Std-Dev-Cor	On Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	GRAPPA 2 24 Auto (Triple) Integrated Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time	On Off Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter Distortion Corr.	GRAPPA 2 24 Auto (Triple) Integrated  Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag	On Off Off Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode Image Filter	GRAPPA 2 24 Auto (Triple) Integrated Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor	On Off Off Off Off Off Off Off Off Off
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter Geometry	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off Off O	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence	On Off Off Off Off Off Off Off Off Off O
Accel. factor PE Ref. lines PE Matrix Coil Mode Reference scan mode  Image Filter Distortion Corr. Prescan Normalize Normalize B1 filter Raw filter Elliptical filter	GRAPPA 2 24 Auto (Triple) Integrated  Off Off Off Off Off Off Off Off	Phase images  Subtract Std-Dev-Sag Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time Save original images  Sequence Introduction	On Off Off Off Off Off Off Off Off Off O

Flow comp.	No
RF pulse type Gradient mode RF spoiling	Normal Fast On
MB Number FOV Shift Distance22	4 2 18

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#### TA: 0:11 PAT: 2 Voxel size: 0.8×0.8×5.0 mm Rel. SNR: 1.00 USER: ep2d\_bold\_OVS\_flash\_test Properties Sat. region 1 Prio Recon Off **Thickness** 50 mm Before measurement Position Isocenter After measurement Orientation Transversal On Load to viewer Sat. region 2 Inline movie Off **Thickness** 50 mm Auto store images On Position L0.0 P0.0 H60.0 Load to stamp segments Transversal Off Orientation Load images to graphic Off Special sat. None segments System Auto open inline display Off Body Off Start measurement without On HEP On further preparation HEA On Off Wait for user to start Start measurements single Positioning mode **REF** Table position Routine Table position 0 mm Slice group 1 MSMA S-C-T Slices 12 Sagittal R >> L Dist. factor 300 % Coronal A >> P Position Isocenter Transversal F >> H Orientation Transversal Coil Combine Mode Sum of Squares Phase enc. dir. A >> P AutoAlign 0.00 deg Rotation Auto Coil Select Default Phase oversampling 0 % 200 mm FoV read Shim mode Standard FoV phase 50.0 % Adjust with body coil Off Slice thickness 5.00 mm Confirm freq. adjustment Off TR 1000 ms Assume Silicone Off ΤE 31 ms ? Ref. amplitude 1H 0.000 V **Averages** Adjustment Tolerance Auto Concatenations Adjust volume Position Filter None Isocenter Coil elements HEA;HEP Orientation Transversal Rotation 0.00 deg Contrast R >> L 200 mm MTC Off A >> P 100 mm Flip angle 90 deg F >> H 225 mm Fat suppr. Fat sat. Physio Averaging mode Long term 1st Signal/Mode None Reconstruction Magnitude Measurements **BOLD** Delay in TR 0 ms **GLM Statistics** Off Multiple series Off Dynamic t-maps Off Starting ignore meas 0 Resolution Ignore after transition 0 256 Base resolution Model transition states On 100 % Phase resolution Temp. highpass filter On 6/8 Phase partial Fourier Threshold 4.00 Interpolation Off Paradigm size 20 PAT mode **GRAPPA** Meas[1] Baseline Accel. factor PE Meas[2] Baseline Ref. lines PE 24 Meas[3] Baseline Matrix Coil Mode Auto (Triple) Meas[4] Baseline Meas[5] Reference scan mode Separate Baseline Meas[6] Baseline Distortion Corr. Off Meas[7] Baseline Prescan Normalize Off Meas[8] Baseline Raw filter On Meas[9] Baseline Elliptical filter Off Meas[10] Baseline Hamming Off Meas[11] Active Geometry Meas[12] Active Meas[13] Active Multi-slice mode Interleaved Meas[14] Active

Ascending

Series

Meas[15]	Active
Meas[16]	Active
Meas[17]	Active
Meas[18]	Active
Meas[19]	Active
Meas[20]	Active
Motion correction	On
Interpolation	3D-K-space
Spatial filter	Off

#### Sequence

Sequence	
Introduction	Off
Asymmetric echo	Off
Bandwidth	814 Hz/Px
Free echo spacing	Off
Echo spacing	1.35 ms
EPI factor	128
RF pulse type	Normal
Gradient mode	Fast
RF spoiling	On
RF90 duration	5120
MB Number	3
DummyScan Number	1
FOV Shift Number	3
SkewType(1ff)	0
OVS flash(1on)	1
SER Number	1
Spoil factor	5
Skew Direction	0
Sat RF90 duration	5120
Dual On(1)	3
Echo Distance	1.00
MB Measurements	4
Ramp On	On