

	Siemens	GE	Philips	Toshiba	Hitachi
Basic Sequences					
Spin Echo	SE	SE	SE	SE	SE
Turbo Spin Echo/Fast Spin Echo	TSE (Turbo Spin Echo)	FSE (Fast Spin Echo)	TSE (Turbo Spin Echo)	FSE (Fast Spin Echo)	FSE (Fast Spin Echo)
Single-Shot TSE	HASTE	Single-Shot FSE	Single-Shot TSE	FASE	Single-Shot FSE
TSE with 90° Flip-Back Pulse	RESTORE	Fast Recovery FSE (FRFSE)	DRIVE	T2 Plus FSE	Driven Equilibrium
Hyper Echoes	Hyperecho				
3D TSE with variable Flip Angle	SPACE	CUBE	VISTA	mVox	
Reduced-FoV Imaging for 3D TSE	ZOOMit SPACE				
Number of Echoes in TSE	Turbo Factor	Echo Train Length (ETL)	Turbo Factor	Echo Train Length (ETL)	Echo Factor
Gradient Echo	GRE	GRE	Fast Field Echo (FFE)	Field Echo (FE)	GE
Spoiled Gradient Echo	FLASH	SPGR	T1-FFE	T1-FFE	RF Spoiled SARGE, RSSG
Coherent Gradient Echo	FISP	GRASS	FFE	SSFP	Rephased SARGE
Steady State Free Precession	PSIF	SSFP	T2-FFE		Time-Reversed SARGE, TRSG
True FISP	TrueFISP	FIESTA, COSMIC	Balanced FFE	True SSFP	Balanced SARGE, BASG

	Siemens	GE	Philips	Toshiba	Hitachi
True FISP/Dual Excitation	CISS	FIESTA-C			Phase Balanced SARGE, PBSG
Double Echo Steady State	DESS				
Multi-Echo Data Image Combination	MEDIC	MERGE	M-FFE		ADAGE
Ultrafast Gradient Echo 2D with preparation pulse	TurboFLASH	Fast GRE, Fast SPGR	TFE	T1-FFE	RGE
Ultrafast Gradient Echo 3D with preparation pulse	MPRAGE	3D FGRE, 3D Fast SPGR, BRAVO	3D TFE	3D FFE	MPRAGE
Ultrafast Gradient Echo 3D with dual echo train	MP2RAGE				
Volume-Interpolated 3D GRE	VIBE	LAVA-XV	THRIVE	3D Quick	TIGRE
Susceptibility-weighted Imaging	SWI	SWAN 2.0	SWIp		
Arterial Spin Labeling	ASL	ASL	ASL	ASL	
Pulsed, Continuous, Pseudo-Continuous ASL	PASL, CASL, PCASL	PASL, CASL, PCASL	PASL, CASL, PCASL		

	Siemens	GE	Philips	Toshiba	Hitachi
Inversion Recovery	IR, Turbo IR (TIR)	IR, MPR, FastIR	IR-TSE	IR	IR
Short-Tau IR	TIRM, STIR	STIR	STIR	FastSTIR	STIR
Long-Tau IR	TIRM, Dark Fluid	FLAIR	FLAIR	FastFLAIR	FLAIR
Dual Inversion Recovery	DIR SPACE	CUBE DIR	Dual IR-TSE		
True IR	TIR, True IR		Real IR	Real IR	Real-IR
Echo Planar Imaging, Diffusion	EPI	EPI	EPI	EPI	EPI
Number of Echoes in EPI	EPI Factor	ETL	EPI Factor	Echo Train Length (ETL)	Echo Factor
Diffusion-weighted Imaging	DWI	DWI	DWI	DWI	DWI
Apparent Diffusion Coefficient Map	ADC	ADC	ADC	ADC	ADC
Computed b-values	Computed b-values				
Diffusion Tensor Imaging	"MDDW (Multi-Directional Diffusion Imaging), DTI (Diffusion Tensor Imaging)"	DTI (Diffusion Tensor Imaging)	DTI (Diffusion Tensor Imaging)	DTI (Diffusion Tensor Imaging)	DTI (Diffusion Tensor Imaging)
DTI Tractography (Fiber Tracking)	DTI Tractography	FiberTrak	FiberTrak	DTT (Diffusion Tensor Tractography)	DTI Tractography
High-resolution Diffusion Imaging	RESOLVE	PROPELLER DWI	DWI with segmented EPI	FASE DWI	RADAR DWI
Reduced-FoV Imaging for Diffusion and BOLD EPI	ZOOMit EPI	FOCUS			
Turbo Gradient Spin Echo (GRASE)	TurboGSE, TGSE		GRASE	Hybrid EPI	

	Siemens	GE	Philips	Toshiba	Hitachi
Applications					
Body Imaging					
3D contrast-enhanced radial "stack of stars"	StarVIBE (FREEZEit)				
Dynamic contrast-enhanced 3D with k-space re-ordering	TWIST-VIBE (FREEZEit)	DISCO			
Body Diffusion	REVEAL	(DW-EPI)	DWIBS	Body Vision	(DWI)
Fat & Iron Evaluation	LiverLab	IDEAL-IQ	mDixon Quant		
MR Elastography	Elastography	MR-Touch	Elastography		
Women's Health, Men's Health					
High-resolution Bilateral Breast Imaging	VIEWS	VIBRANT-Flex	BLISS	RADIANCE	
Comprehensive Prostate Imaging	SEEit				
MR Angiography					
Time of Flight	ToF	ToF, Inhance Inflow	ToF	ToF	ToF
Phase Contrast	Phase Contrast (PC)	Phase Contrast, Inhance Velocity	Phase Contrast (PC)	Phase Shift (PS)	Phase Contrast (PC)
Dynamic MRA with k-space Sharing	TWIST	TRICKS-XV	Keyhole (4D-TRAK)	DRKS	(TRAQ)
Non-contrast MR Angio, TSE-based	NATIVE-SPACE	Inhance Deltaflow	TRANCE	FBI, CIA	
Non-contrast MR Angio, TrueFISP-based	NATIVE-TrueFISP	Inhance Inflow IR	B-TRANCE	Time-SLIP	VASC

	Siemens	GE	Philips	Toshiba	Hitachi
Non-contrast MR Angio, QISS	QISS**				
Magnetization Transfer Contrast	MTC	MTC	MTC	SORS-STC	MTC
Ramped RF Pulse	TONE	Ramped RF	TONE	ISCE	SSP
Multi-slab acquisition	Multi-Slab	MOTSA	Multi-Chunk	Multi-Slab	Multi-Slab
Contrast Bolus Timing/Visualization	CARE Bolus	Smart Prep; Fluoro Triggered MRA	BolusTrak	Visual Prep	FLUTE
Cardiac Imaging					
Comprehensive Cardiac Tool	BEAT (2D/3D)				
T1, T2, T2* Mapping	MyoMaps	StarMap (T2*)	T1 Mapping, StarQuant		
MSK Imaging					
Metal-Implant Imaging (2D correction)	WARP with VAT		O-MAR		
Metal-Implant Imaging (3D correction)	Advanced WARP with SEMAC	MAVRIC SL			
Parametric Mapping	MapIt	CartiGram (T2)			T2* Relax Map
Spectroscopy					
Prostate Spectroscopy	3D CSI	PROSE	(Prostate Spectroscopy)	(Prostate Spectroscopy)	
Breast Spectroscopy	GRACE	BREASE	(Breast Spectroscopy)		Breast Spect

**Under FDA Review/510(k) Pending

	Siemens	GE	Philips	Toshiba	Hitachi
Weighted Elliptical Excitation for CSI	WET				
Quiet Scanning					
"Inaudible" 3D sequence with half radials	PETRA	SILENZ			
Quiet scanning with optimized gradient waveforms	QuietX	Silent Scan	ComforTone	(rounded gradient shapes)	
Quiet scanning with reduced slew rates (longer scan times)	Whisper sequences	Acoustic Reduction Technology (ART)	SofTone		SoftSound
Motion Correction					
Flow Compensation with Gradient Moment Nulling	GMR/Flow Comp	Flow Comp	Flow Comp; Flag	FC	GR
Motion Correction with Radial Blades	BLADE	PROPELLER 3.0	MultiVane	JET	RADAR
1D Navigators for Cardiac Imaging	1D PACE	Navigators	Navigators	Echo-Navigator	
2D Navigators for Abdominal Imaging	2D PACE				
3D Prospective Motion Correction for fMRI	3D PACE		PMC		
3D Retrospective Motion Correction for fMRI	3D ART	(BrainWave)	MC		
Motion Correction for 3D TSE with spiral navigators		PROMO			

	Siemens	GE	Philips	Toshiba	Hitachi
Elastic 3D Motion Correction in Abdomen	DynaVIBE				
Soft-Tissue Motion Correction	BRACE				
Fat Suppression, Spatial Saturation					
Fat saturation – chemically	Fat Sat	Fat Sat/Chem Sat	SPIR	MSOFT	SINC, H-SINC
Fat saturation – chemically with adiabatic pulse	SPAIR	ASPIR	SPAIR		
Water Excitation	Water Excitation	Water Excitation	Proset	PASTA	Water Excitation
Dixon Fat-Water separation for TSE	Dixon TSE	IDEAL	mDixon XD, mDixon TSE		FatSep
Dixon Fat-Water separation for 3D GRE	Dixon VIBE	LAVA-Flex	mDixon	WFS	
Spatial saturation	Sat Region	SAT	REST	Presat	Presat
Moving Sat Pulse	Tracking Sat	Walking Sat	Travel REST	Moving Presat	Sequential Pre Sat
Parallel Acquisition Techniques	iPAT				
PAT: Image-based Algorithm	mSENSE	ASSET	SENSE	SPEEDER	RAPID
PAT: k-space-based Algorithm	GRAPPA	ARC			(k-RAPID)
CAIPIRINHA for 3D sequences	CAIPIRINHA				

	Siemens	GE	Philips	Toshiba	Hitachi
Integrated Calibration	Integrated, Auto-Calibration	Self-Calibration (with ARC)			
Separate Calibration	Separate Calibration	(Calibration for ASSET)	(Calibration for SENSE)/CLEAR	(Calibration for SPEEDER)	(Calibration for RAPID)
Multiple datasets calibrate each other	Self-Calibration, T-PAT				
Parallel Transmission					
B1 Shimming	TimTX TrueForm	MultiDrive	MultiTransmit	MultiPhase Transmit	(Quartet)
Platform for advanced pTX applications, e.g., with multi-dimensional RF pulses	TimTX TrueShape				
Scanning with Continuous Table Move	TimCT				
Fast 2D GRE Localizer	TimCT FastView				
Contrast-enhanced Angio, 3D Coronal	TimCT Angio				
Multiple Contrasts, 2D Axial	TimCT Onco				
Patient Orientation Sequence	Localizer, Scout	Localizer	Plan Scan	Locator	Scanogram
Automated Slice Positioning	AutoAlign	ReadyBrain	SmartExam	NeuroLine, SpineLine	

	Siemens	GE	Philips	Toshiba	Hitachi
Sequence Parameters					
Repetition Time, Echo Time (in msec)	TR, TE	TR, TE	TR, TE	TR, TE	TR, TE
Inversion Time (in msec)	TI	TI	TI	TI	TI
Inter-Echo Spacing (TSE, EPI)	Echo Spacing	Echo Spacing	Echo Spacing	Echo Spacing	Inter-Echo Time (IET)
Averages	Averages	NEX	NSA	NAQ	NSA
Scan Measurement Time	Acquisition Time, TA	Acquisition Time	Acquisition Time	Acquisition Time	Scan Time
Field of View (FoV)	FoV [mm]	FoV [cm]	FoV [mm]	FoV	FoV
Rectangular FoV	FoV Phase, Rectangular FoV	Asymmetric FoV	Rectangular FoV	Rectangular FoV	Rectangular FoV
Shifting Slices Off Center	Off-center Shift	Off center FoV	Off-center FoV	Phase & Frequency Shift	Off-center FoV
Distance Between Slices	Distance Factor (% of slice thickness)	Gap	Gap	Gap	Slice Interval
Simultaneous Excitation	Simultaneous Excitation	POMP(Phase Offset Multiplanar)	Multi-Slice	QuadScan	Dual Slice
RF Excitation Pulse in Gradient Echo	Flip Angle	Flip Angle	Flip Angle	Flip Angle	Flip Angle
Bandwidth	Bandwidth [Hz/Px]	Receive Bandwidth [kHz]	Fat/Water Shift [pixel]	Bandwidth	Bandwidth
Variable Bandwidth	Optimized bandwidth	Variable Bandwidth	Optimized bandwidth	Matched Bandwidth	Variable Bandwidth

	Siemens	GE	Philips	Toshiba	Hitachi
Half Fourier Imaging	Half Fourier, Phase Partial Fourier	Half NEX; fractional NEX	Half Scan	AFI	Half Scan
Partial Echo	Asymmetric Echo	Asymmetric Echo	Partial Echo	Matched Bandwidth	Half Echo
Frequency Oversampling	Oversampling	Anti-Aliasing	Frequency Oversampling	Frequency Wrap Suppression	Frequency Oversampling
Phase Oversampling	Phase Oversampling	No Phase Wrap	Fold-over Suppression	Phase wrap suppression	Anti-Wrap
Segmented k-Space	Lines/Segments	Views per segment	Views/Segment	Segments	Segments
Time Delay/Block k-Space	Time Delay	Intersegment Delay	TD	TD	
Scan Synchronization with ECG	ECG triggered	Cardiac Gated/ Triggering	ECG Triggered/ VCG	Cardiac Gated	ECG Triggered
Delay after R-Wave	Trigger Delay; TD	Trigger Delay; TD	Trigger Delay; TD	Trigger Delay; TD	Delay Time
Respiratory Gating	Respiratory Gated	Respiratory Comp	Trigger; PEAR	Respiratory Gated	MAR
Multi-channel RF coil sensitivity normalization	Prescan Normalize	PURE	CLEAR		NATURAL
Central K-space filling arterial visualization	Central Elliptical	Elliptic Centric	CENTRA		PEAKS

Competition product descriptions, comparison and specifications contained in this document are based on interpretation of available data at the time this material was being prepared (March 2015) and may require independent verification. Specifications have been obtained from competition brochures, websites, and other independent published sources.