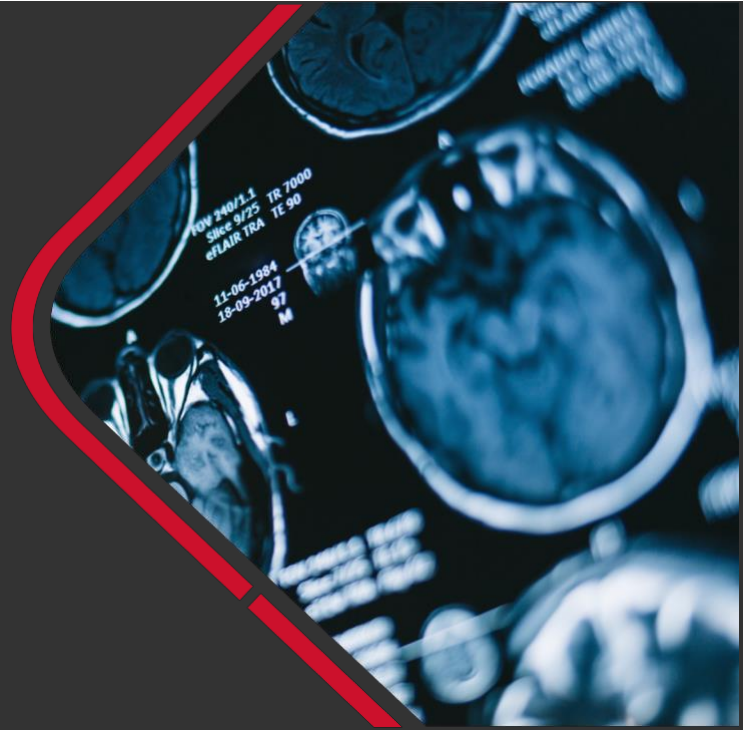


NeuroQuant 3.0

Scanner Parameters



Attention NeuroQuant Users:

1. NeuroQuant software requires the use of image series acquired with specified protocols as listed below.
2. Deviation from recommended protocols can result in reduced quality of NeuroQuant output.
3. Noisy scan, motion and other imaging artifact may affect results.
4. NeuroQuant requires all scan data to use the DICOM format. The software provides a data filtering mechanism, which filters scans based on scanning parameters prior to initiating processing. DICOM data must not be compressed in any way (e.g. no JPEG compression).

NeuroQuant / GE T1 Settings

FIELD STRENGTH	1.5T	3T	3T
<i>Mode</i>	3D	3D	3D Parallel Imaging
<i>Plane</i>	Sagittal	Sagittal	Sagittal
<i>Pulse Sequence</i>	SPGR	SPGR	SPGR
<i>Gradient Mode</i>	Zoom	Zoom	Zoom
<i>Imaging Options</i>	EDR, IrP	EDR, IrP	EDR, IrP, ACC
<i>Frequency</i>	192	192	192
<i>Phase</i>	192	192	192
<i>Frequency Direction</i>	S/I	S/I	S/I
<i>FOV</i>	24 – 25.6 cm	24 – 25.6 cm	24 – 25.6 cm
<i>Phase FOV</i>	100%	100%	100%
<i>Slice Thickness</i>	1.2 mm	1.2 mm	1.2 mm
<i>Spacing Between Slices</i>	1.2 mm	1.2 mm	1.2 mm
<i>Locs/Slab (Number of slices)</i>	160-170	160-170	160-170
<i>NEX</i>	1	1	1
<i>TE</i>	M in Full	M in Full	M in Full
<i>Prep Time (TI)</i>	500 ms	600 ms	600 ms
<i>Flip Angle</i>	10°	8°	8°
<i>Shim</i>	Auto	Auto	Auto
<i>Bandwidth</i>	~ 16 KHz	~ 31 HHz	~ 31 KHz
<i>ASSET* Parallel Imaging Factor</i>	N/A	N/A	1.8

Notes

1. *ASSET (ACC_GEMS) Parallel imaging compatible with Discovery 750 3T, Signa 3T, and Signa HDxt 3T scanners. NeuroQuant 2.0 or greater required
2. Ensure Surface Coil Intensity Correction (SCIC) is off
3. CUBE sequence is incompatible with NeuroQuant 3D T1 sequence
4. Do not add post processing filters
5. Do not use Zip 512

NeuroQuant / Philips T1 Settings

FIELD STRENGTH	*1.5T	3T	3T
<i>Mode</i>	3D	3D	3D Parallel Imaging
<i>Plane</i>	Sagittal	Sagittal	Sagittal
<i>Technique</i>	FFE	FFE	FFE
<i>Contrast Enhancement</i>	T1	T1	T1
<i>Fast Imaging Mode</i>	TFE	TFE	TFE
<i>FOV</i>	240-256 mm	240-256 mm	240-256 mm
<i>RFOV</i>	100%	100%	100%
<i>Matrix Scan</i>	192	192	192
<i>Stacks</i>	1	1	1
<i>Scan Percentage</i>	100%	100%	100%
<i>Slices</i>	160-170	160-170	160-170
<i>Slice Thickness</i>	1.2 mm	1.2 mm	1.2 mm
<i>Spacing Between Slices</i>	1.2 mm	1.2 mm	1.2 mm
<i>TFE Shot Interval</i>	2300 ms	2500 ms	2500 ms
<i>Echoes</i>	1	1	1
<i>TE</i>	4 ms	Shortest	Shortest
<i>TR</i>	Shortest	Shortest	Shortest
<i>Flip Angle</i>	8°	9°	9°
<i>TFE Prepulse Delay / T1</i>	1000 mss	900 ms	900 ms
<i>Water Fat shift</i>	Maximum	Maximum	Maximum
<i>Gradient Mode</i>	Default	Maximum	Maximum
<i>*SENSE Parallel</i>	N/A	N/A	1.8
<i>Acceleration Factor</i>			

Notes

1. *1.5T scan protocol is based on Philips Acheiva scanner with software version 3.2.2
2. **SENSE Parallel imaging compatible with Acheiva, Ingenia, and Intera 3T scanners
3. CLEAR (Homogeneity Correction) must be **ON**
4. DICOM connection must be Classic
5. Do not add post processing filters

NeuroQuant / Siemens T1 Settings

FIELD STRENGTH	1.5T	3T	3T
<i>Mode</i>	3D	3D	3D Parallel Imaging
<i>Plane</i>	Sagittal	Sagittal	Sagittal
<i>Sequence</i>	MPRAGE	MPRAGE	MPRAGE
<i>FOV Phase</i>	100%	100%	100%
<i>FOV Read</i>	240-256 mm	240-256 mm	240-256 mm
<i>Base Resolution</i>	192	192	192
<i>Slice Thickness</i>	1.2 mm	1.2 mm	1.2 mm
<i>Phase Oversampling</i>	0%	0%	0%
<i>Slice Oversampling</i>	0%	0%	0%
<i>Slices per Slab</i>	160-170	160-170	160-170
<i>Averages</i>	1	1	1
<i>Concentrations</i>	1	1	1
<i>Gradient Mode</i>	Fast	Fast	Fast
<i>Mag. Preparation</i>	Non-Sel. IR	Non-Sel. IR	Non-Sel. IR
<i>RF Pulse Type</i>	Fast	Fast	Fast
<i>Excitation</i>	Non-Sel. IR	Non-Sel. IR	Non-Sel. IR
<i>TR</i>	2400 ms	2300 ms	2300 ms
<i>TE</i>	Minimum	Minimum	Minimum
<i>TI</i>	1000 ms	900 ms	900 ms
<i>Flip Angle</i>	8°	9°	9°
<i>Bandwidth</i>	180 HZ/Px	240 HZ/Px	240 HZ/Px
<i>Filter</i>	Non	Non	Non
<i>Parallel Technique iPAT</i>	Off	Off	On
<i>Max Parallel Acceleration Factor</i>	N/A	N/A	GRAPPA 2

Notes

1. GRAPPA parallel imaging compatible with Verio, Trio Tim and Skyra 3T scanners only
2. Pre-scan Normalize must be **ON**
3. Do not add post processing filters

NeuroQuant / Canon (Toshiba) T1 Settings

FIELD STRENGTH	*1.5T	**3T
Mode	3D	3D
Plane	Sagittal	Sagittal
Sequence	FFE3D	FFE3D
Sequence Option	Basic	Default
Matrix	192 x 192	192 x 192
FOV	24 cm	24 cm
Slice Thickness	1.2 mm	1.2 mm
Spacing Between Slices	1.2 mm	1.2 mm
RF Type	Fine	Normal
Gradient Type	Normal	Normal
TE	2.9 ms	3.2 ms
TR	7.1 ms	7.3 ms
IR Pulse	Non – Sel.	Non – Sel.
TI	800 ms	900 ms
Flip Angle	9°	9°
Bandwidth	217 HZ/pix	244HZ/pix
No Wrap	1	1
Speeder	PE 1	PE 1
Number of Segments/ Type Shot Interval	2 / Sequential	1
IDC (Gradient Correction)	1600 ms	2300 ms
NAQ	VMC	
	1	

Notes

1. Settings are for Toshiba Titan MRI scanners
2. Do not add post processing filters

*1.5T settings only to be used with MPower v3.6 software or later. NeuroQuant 2.1 or greater required.

**3T settings only to be used with Mpower v3.5 software or later. NeuroQuant 2.0 or greater required.

NeuroQuant / Hitachi T1 Settings

FIELD STRENGTH	1.2T	1.5T	3T
<i>Acquisition Type</i>	3D	3D	2D
<i>Plane</i>	Sagittal	Sagittal	Sagittal
<i>Mode</i>	GEIR	GEIR	GEIR
<i>Sequence</i>	RSSG	RSSG	RSSG
<i>FOV</i>	240 – 256 mm	240 – 256 mm	240 – 256 mm
<i>Acquisition Matrix</i>	192 x 192	192 x 192	192 x 192
<i>Slice Thickness</i>	1.2 mm	1.2 mm	1.2 mm
<i>Spacing Between Slices</i>	1.2 mm	1.2 mm	1.2 mm
<i>NSA</i>	1	1	1
<i>Slices Per Slab (# of Slices)</i>	160 - 170	160 - 170	160 - 170
<i>TR</i>	8.7 ms	8.6 ms	7.2 ms
<i>TE</i>	4 ms	4 ms	2.9 ms
<i>TI</i>	550 ms	550 ms	900 ms
<i>Flip Angle</i>	12°	12°	10°
<i>Bandwidth</i>	53.2 KHz	58.2 KHz	92.6 KHz
<i>Parallel Imaging RAPID Phase & Slice</i>	1, 1	1, 1	1, 1
<i>Filter Option VIVID</i>	3	1	1

Notes

1. Gradient Correction should be **ON** for all magnetic field strengths & modes
2. Do not use post processing filters other than Vivid