

**SERIES 1. 3 Plane Localizer**

| Patient (RF)                 |          | Imaging         |               | Acquisition Timing     |        |
|------------------------------|----------|-----------------|---------------|------------------------|--------|
| Coil                         | 8HRBRAIN | Scan plane      | 3-PLANE       | Frequency              | 256    |
| <b>Scan Timing</b>           |          | Mode            | 2D            | Phase                  | 128    |
|                              |          | Pulse sequence  | Gradient Echo | NEX                    | 1.00   |
|                              |          | Imaging Options | Seq, Fast     | phase field of view    | 1.00   |
| <b>Additional Parameters</b> |          |                 |               | phase correct          | No     |
|                              |          |                 |               | swap phase & frequency | Unswap |
|                              |          |                 |               | autoshim               | Auto   |
| <b>Range / Prescription</b>  |          |                 |               |                        |        |
|                              |          |                 |               | field of view          | 26.0   |
|                              |          |                 |               | slice thickness        | 5.0    |
|                              |          |                 |               | slice spacing          | 0.0    |

**SERIES 2. Sag IR-FSPGR**

| Patient (RF)       |          | Imaging                      |                | Acquisition Timing          |      |
|--------------------|----------|------------------------------|----------------|-----------------------------|------|
| Coil               | 8HRBRAIN | Scan plane                   | SAGITTAL       | Frequency                   | 256  |
| <b>Scan Timing</b> |          | Mode                         | 3D             | Phase                       | 256  |
| TE                 | Min Full | Pulse sequence               | SPGR           | NEX                         | 1.00 |
| TI                 | 400      | Imaging Options              | EDR, Fast, IrP | phase field of view         | 1.00 |
| Flip angle         | 11       | <b>Additional Parameters</b> |                |                             |      |
| BW1                | 31.25    | <b>User CVs</b>              |                | phase correct               | No   |
|                    |          | CV4                          | 0.00           | swap phase & frequency      | S/I  |
|                    |          | CV5                          | 0.00           | autoshim                    | On   |
|                    |          | CV6                          | 1.00           | <b>Range / Prescription</b> |      |
|                    |          | CV23                         | 100.00         | slices per slab             | 200  |
|                    |          |                              |                | field of view               | 26.0 |
|                    |          |                              |                | slice thickness             | 1.2  |
|                    |          |                              |                | number of slices            | 1    |



Comments Please do not oblique. Please do not reduce the number of slices.  
Please do not adjust protocol values.

**SERIES 3. Calibration Scan**

| Patient (RF)                 |          | Imaging         |               | Acquisition Timing          |      |
|------------------------------|----------|-----------------|---------------|-----------------------------|------|
| Coil                         | 8HRBRAIN | Scan plane      | AXIAL         | phase correct               | No   |
| <b>Scan Timing</b>           |          | Mode            | 2D            | swap phase & frequency      | R/L  |
|                              |          | Pulse sequence  | Gradient Echo | autoshim                    | Auto |
|                              |          | Imaging Options | Fast, Calib   | <b>Range / Prescription</b> |      |
| <b>Additional Parameters</b> |          |                 |               | field of view               | 30.0 |
|                              |          |                 |               | slice thickness             | 5.0  |
|                              |          |                 |               | slice spacing               | 0.0  |
|                              |          |                 |               | number of slices            | 60   |


Comments Please do not oblique. Please do not reduce the number of slices.  
Please do not adjust protocol values.

**SERIES 4. Accelerated Sag IR-FSPGR**

| Patient (RF)       |          | Imaging   |   | Acquisition Timing          |      |
|--------------------|----------|---|---|-----------------------------|------|
| Coil               | 8HRBRAIN | Scan plane  | SAGITTAL  | Frequency                   | 256  |
| <b>Scan Timing</b> |          | Mode  | 3D  | Phase                       | 256  |
| TE                 | Min Full | Pulse sequence  | SPGR  | NEX                         | 1.00 |
| TI                 | 400      | Imaging Options   | EDR, Fast, IrP, Asset  | phase field of view         | 1.00 |
| Flip angle         | 11       | <b>Additional Parameters</b>  |   | phase correct               | No   |
| BW1                | 31.25    | <b>User CVs</b>   |   | swap phase & frequency      | S/I  |
|                    |          | CV4   | 0.00  | autoshim                    | On   |
|                    |          | CV5   | 0.00  | <b>Range / Prescription</b> |      |
|                    |          | CV6   | 1.00  | slices per slab             | 200  |
|                    |          | CV23  | 100.00  | field of view               | 27.0 |
|                    |          |  |   | slice thickness             | 1.2  |
|                    |          |   |   | number of slices            | 1    |

Comments Please do not oblique. Please do not reduce the number of slices.  
Please do not adjust protocol values.

**SERIES 5. Axial FLAIR**

| Patient (RF)       |          | Imaging                      |         | Acquisition Timing   |      |
|--------------------|----------|------------------------------|---------|--|------|
| Coil               | 8HRBRAIN | Scan plane                   | AXIAL   | Frequency  | 256  |
| <b>Scan Timing</b> |          | Mode                         | 2D      | Phase  | 256  |
| TE                 | 147.0    | Pulse sequence               | T2flair | NEX  | 1.00 |
| TR                 | 11000.0  | Imaging Options              | Fast    | phase correct  | No   |
| TI                 | 2250     | <b>Additional Parameters</b> |         | swap phase & frequency   | A/P  |
| BW1                | 31.25    | <b>User CVs</b>              |         | autoshim   | Auto |
|                    |          | CV3                          | 3.00    | <b>Range / Prescription</b>  |      |
|                    |          | CV8                          | 0.00    | field of view  | 22.0 |
|                    |          | CV9                          | 0.00    | slice thickness  | 5.0  |
|                    |          | CV11                         | 0.00    | slice spacing  | 0.0  |
|                    |          | CV14                         | 0.00    | number of slices   | 42   |
|                    |          | CV21                         | 0.00    |  |      |
|                    |          | CV22                         | 0.00    |  |      |

Comments Please do not oblique. Please do not reduce the number of slices.  
Please do not adjust protocol values.

**SERIES 6. Axial T2 Star**

**Patient (RF)**

|                    |          |
|--------------------|----------|
| Coil               | 8HRBRAIN |
| <b>Scan Timing</b> |          |
| Number of echoes   | 1        |
| TE                 | 20.0     |
| TR                 | 650.0    |
| Flip angle         | 20       |
| BW1                | 25.00    |

**Imaging**

|                 |               |
|-----------------|---------------|
| Scan plane      | AXIAL         |
| Mode            | 2D            |
| Pulse sequence  | Gradient Echo |
| Imaging Options | FC, EDR       |

**Acquisition Timing**

|                        |      |
|------------------------|------|
| Frequency              | 256  |
| Phase                  | 192  |
| NEX                    | 1.00 |
| phase field of view    | 1.00 |
| phase correct          | No   |
| swap phase & frequency | A/P  |
| autoshim               | Auto |

**Additional Parameters**

**Range / Prescription**

|                  |      |
|------------------|------|
| field of view    | 20.0 |
| slice thickness  | 4.0  |
| slice spacing    | 0.0  |
| number of slices | 50   |



Comments Please do not oblique. Please do not reduce the number of slices.  
Please do not adjust protocol values.

**SERIES 7. Axial DTI**

**Patient (RF)**

|                    |          |
|--------------------|----------|
| Coil               | 8HRBRAIN |
| <b>Scan Timing</b> |          |
| TE                 | Minimum  |
| TR                 | 9050.0   |

**Imaging**

|                 |  |
|-----------------|--|
| Scan plane      | AXIAL  |
| Mode            | 2D   |
| Pulse sequence  | Spin Echo         |
| Imaging Options | EPI, DIFF, Asset  |

**Acquisition Timing**

|                        |      |
|------------------------|------|
| Frequency              | 128  |
| Phase                  | 128  |
| phase field of view    | 0.66 |
| phase correct          | Yes  |
| swap phase & frequency | R/L  |
| autoshim               | Auto |

**Additional Parameters**



**User CVs**

|      |      |
|------|------|
| CV5  | 1.00 |
| CV9  | 0.00 |
| CV18 | 0.00 |



**Range / Prescription**

|                  |      |
|------------------|------|
| field of view    | 35.0 |
| slice thickness  | 2.7  |
| slice spacing    | 0.0  |
| number of slices | 59   |

Comments Please do not oblique. Please do not reduce the number of slices.  
Please do not adjust protocol values.  
If you notice that the slice thickness is changed from 2.7 to 2.9 you  
can fix this bug by turning fat sat off then turning it back on again.



**SERIES 8. Ax T2 FSE with Fat Sat**

| Patient (RF)     |          | Imaging               |                   | Acquisition Timing     |          |
|------------------|----------|-----------------------|-------------------|------------------------|----------|
| Coil             | 8HRBRAIN | Scan plane            | AXIAL             | Frequency              | 256      |
| Scan Timing      |          | Mode                  | 2D                | Phase                  | 256      |
| Number of echoes | 1        | Pulse sequence        | FRFSE-XL          | NEX                    | 1.00     |
| TE               | 80.0     | Imaging Options       | FC, TRF, Fast, FR | phase field of view    | 1.00     |
| TR               | 4000.0   | Additional Parameters |                   | phase correct          | Yes      |
| ETL              | 12       | User CVs              |                   | Flow comp direction    | Slice    |
| BW1              | 19.23    | CV7                   | 0.00              | swap phase & frequency | A/P      |
|                  |          | CV8                   | 0.00              | autoshim               | Auto     |
|                  |          | CV14                  | 0.00              | Range / Prescription   |          |
|                  |          | CV19                  | 1.00              | field of view          | 24.0     |
|                  |          | CV21                  | 1.00              | slice thickness        | 4.0      |
|                  |          | CV22                  | 1.00              | slice spacing          | Intleave |
|                  |          |                       |                   | number of slices       | 44       |

Comments Please do not oblique. Please do not reduce the number of slices. Please do not adjust protocol values.

**SERIES 9. Enhanced Axial DTI**

| Patient (RF) |          | Imaging               |                  | Acquisition Timing     |      |
|--------------|----------|-----------------------|------------------|------------------------|------|
| Coil         | 8HRBRAIN | Scan plane            | AXIAL            | Frequency              | 128  |
| Scan Timing  |          | Mode                  | 2D               | Phase                  | 128  |
| TE           | Minimum  | Pulse sequence        | Spin Echo        | phase field of view    | 0.66 |
| TR           | 9050.0   | Imaging Options       | EPI, DIFF, Asset | phase correct          | Yes  |
|              |          | Additional Parameters |                  | swap phase & frequency | R/L  |
|              |          | User CVs              |                  | autoshim               | Auto |
|              |          | CV5                   | 1.00             | Range / Prescription   |      |
|              |          | CV9                   | 0.00             | field of view          | 35.0 |
|              |          | CV18                  | 0.00             | slice thickness        | 2.7  |
|              |          |                       |                  | slice spacing          | 0.0  |
|              |          |                       |                  | number of slices       | 59   |

Comments Please do not oblique. Please do not reduce the number of slices. Please do not adjust protocol values. If you notice that the slice thickness is changed from 2.7 to 2.9 you can fix this bug by turning fat sat off then turning it back on again.