

For PRC use only	
Date of approval:	Signature of Chair:

Siemens Vision 1.5T Sequence Description

Sequence name: Double-echo field mapping sequence.

Developer: Jan Hrabe

Date: 12/8/2004

Filename: fldmap_v10.ykc

Location: /usr/appl/sequence/local

Other files: fldmap_spl.sph in /usr/appl/ext/local

Brief description: This sequence is based on a standard Siemens double-echo GE. It has flow compensation in the slice direction, better slice profile, and shorter minimum TE1. Bandwidth is higher, 521 Hz/pixel. Gradient and RF spoiling are implemented. Phase-encode gradient is fully rewound. It collects both magnitude and phase images. Fat saturation is optional.

Parent sequence: fl2d_15rb130_35rb65.wkc

RF safety: The SAR does not exceed maximum admissible limits.

Gradient safety: Gradient switching rate does not exceed the one in standard Siemens sequences.

Parameter meanings, limits and defaults:

- Matrix default 128x128, FOV 256 mm, slice thickness 2 mm, 40 interleaved slices.
- Alpha should be set to satisfy Ernst steady state condition (~70 degrees at TR 800 ms).
- TE1 defaults to a minimum of 8.8 ms. TE2 (min. 12 ms) should be 4-5 ms longer.

Usage notes: Magnitude images are ordered slice by slice within the first echo, then second echo. Phase images follow in the same order. For a good field map, choose TE2 - TE1 short enough to accommodate all expected field inhomogeneities. E.g., for about 125 Hz frequency spread, do not exceed 4 ms. If slices are to be co-registered with EPI slices, make sure the slice horizontal offsets are set to zero because EPI cannot employ non-zero horizontal offsets.

Appendices: 1. Complete sequence code listing. 2. Listing of all changes in the sequence SPL code.