Supplementary Table S1 - Capacitor value (C2) for the built and simulated 8TxRx dipole coil array. Configurations 1 and 2 are given.

Capacitor C2 (pF)	Built coil	Configuration 1	Configuration 2
Dipole 1	18	18	18
Dipole 2	18	18	18.1
Dipole 3	20	25	24.9
Dipole 4	18	18.2	18.1
Dipole 5	20	24.9	25
Dipole 6	20	24.9	18
Dipole 7	20	22.6	18.1
Dipole 8	20	22.5	23.9

Supplementary Table S2 - Resistors values for the simulated 8TxRx dipole coil array in configuration 1

Resistors (Ohms)	R1	R2
Dipole 1	3	2.89
Dipole 2	2	2
Dipole 3	3	3
Dipole 4	0.20	1.06
Dipole 5	4.5	4.5
Dipole 6	0.63	2.89
Dipole 7	3.49	3.4
Dipole 8	3	2.99

Supplementary Figure S1. In configuration 2 - (**a**) Experimental and simulated B_1^+-field maps, normalized to 1kW total input power, shown for individual dipoles. (**c**) Experimental and simulated individual phase maps, computed relative to the shimmed mode. (**b**) and (**d**) Difference maps calculated for the individual B_1^+-field maps with different scale than (**a**). In (**b**) and (**d**) a contour line was drawn (in black) to represent the experimental individual B_1^+-field distribution patterns.