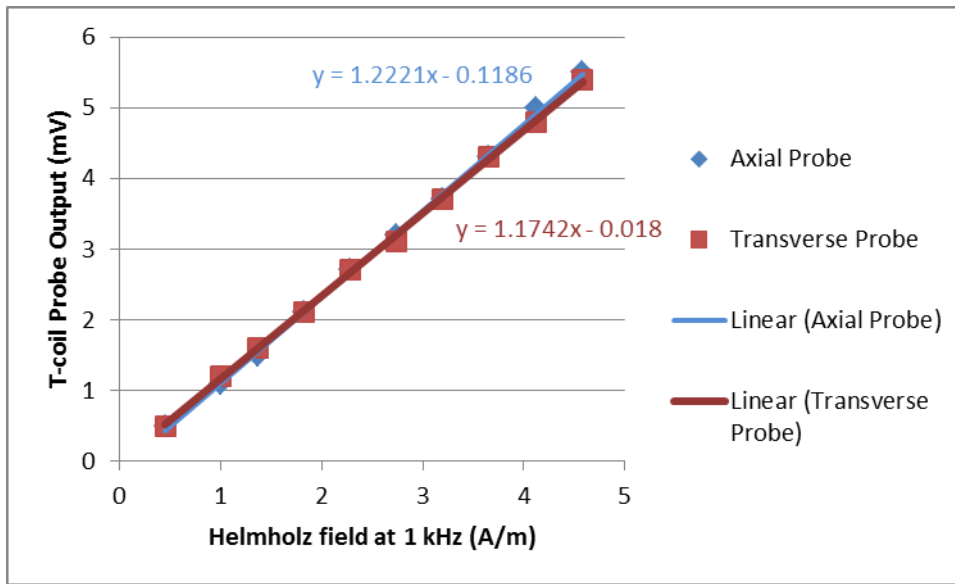


Probe Sensitivity / Linearity Check

According to the IndexSAR user manual the frequency response of the system, the sensitivity of the probe, and the linearity of the field measurements can all be assessed periodically using the same component setup as used for the routine system calibration. The probe sensitivity / linearity check was performed on March 20, 2013



Equipment Calibration Documents:

*Attached:
Probe Calibration Report*



Report No SN T0005/6
21st December 2005

INDEXSAR
Axial and Transverse T-coil probes
-
Calibration Report



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Calibration method

Two T-coil probes have been calibrated using a Helmholtz coil at a frequency of 1kHz. From these measurements, the sensitivity and linearity of response have been determined.

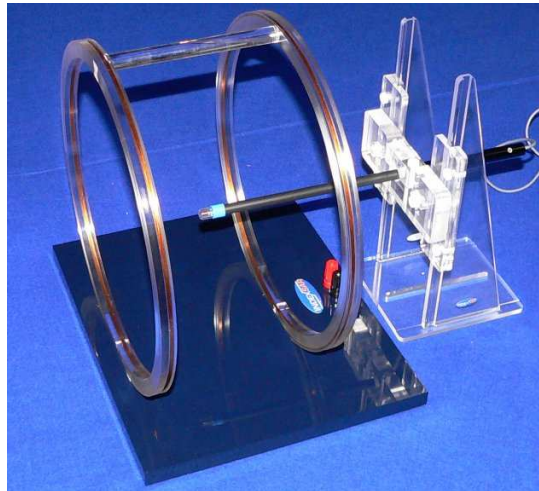


Figure 1. T-coil probe centred in Helmholtz coil

T-coil probe construction

The construction of the transverse T-coil is illustrated in Fig. 2. The distance between the tip and the nearest active element of the probe is 1.5mm. The same value applies for the axial probe.

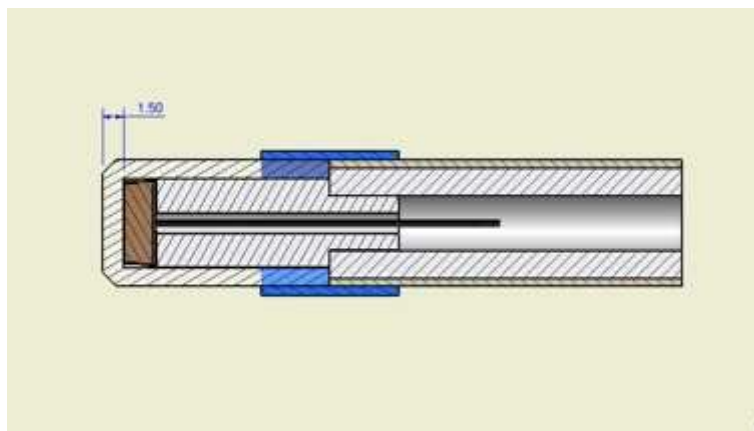


Figure 2. T-coil probe construction detail

Equipment used for calibration

The following equipment was used for the calibration measurements

Instrument description	Supplier / Manufacturer	Model	Serial No.
Helmholtz coil	Indexasar	IXT-020	S/N 0001
100 ohm resistor block	Indexasar	N/A	(measured at 99.8 ohms)
Function generator	Thurlby Thandar	TTi TG315	232010
Digital voltmeter	Wavetek	DM27	60506583

Sensitivity and linearity measurements

The output of each probe was measured in millivolts over a range of H-fields established by the Helmholtz coil at 1kHz. The results are shown below.

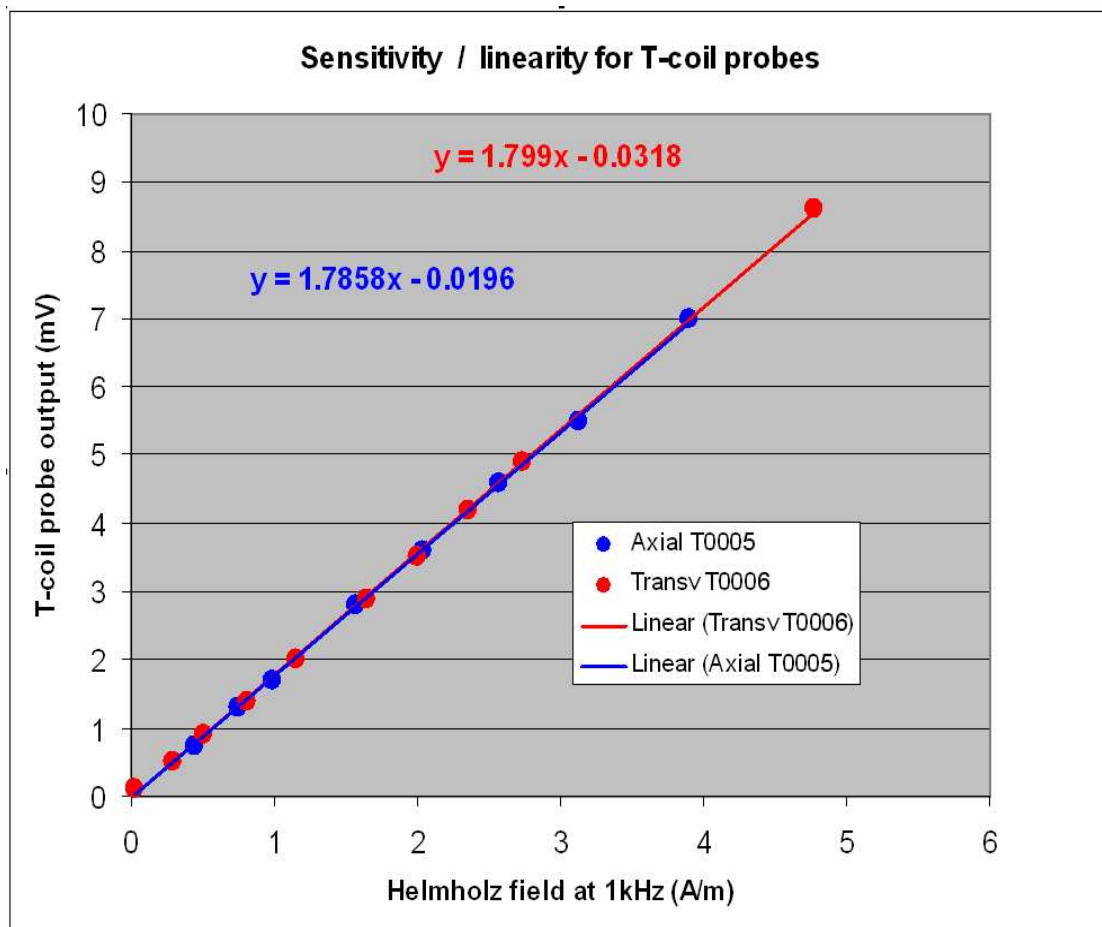


Figure 3. T-coil probe outputs versus H-field at 1kHz

Probe Characteristics

The following Table summarises the results of the probe characterizations

Parameter	Transverse probe (S/N T0006)	Axial probe (S/N T0005)	Units
Sensitivity at 1 kHz	1.799	1.786	mV per A/m
Sensitivity at 1 kHz	-57.45	-57.48	dBm/(A/m)
Tip offset to nearest part of coil	1.5	1.5	mm
Linearity versus field strength	See Figure 3	See Figure 3	-
DC resistance	3140	3120	ohms