

COMOSAR E-Field probe Calibration Report



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Date: 2010/05/11

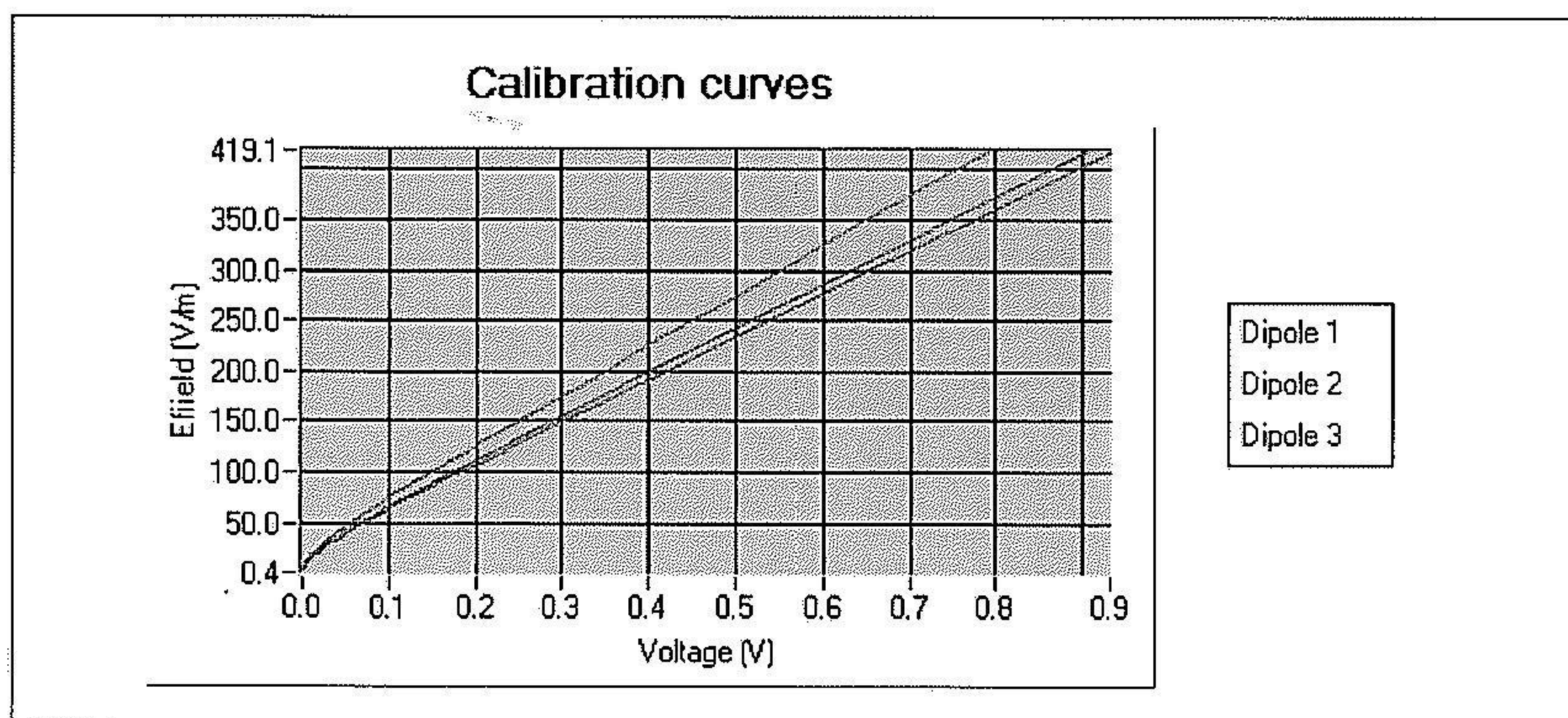
2. Calibration at 897.00 MHz

A. Calibration parameters.

Label	900
Epsilon	41.22
Sigma	0.91 S/m
Temperature	21°C
Cable loss	0.11 dB
Coupler loss	20.27 dB
Waveguide S11	-16.71 dB
Low limit detection	0.795 V/m (0.59 mW/kg)

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



The following tables represent the calibration curves linearization by curve segment in CW signal.

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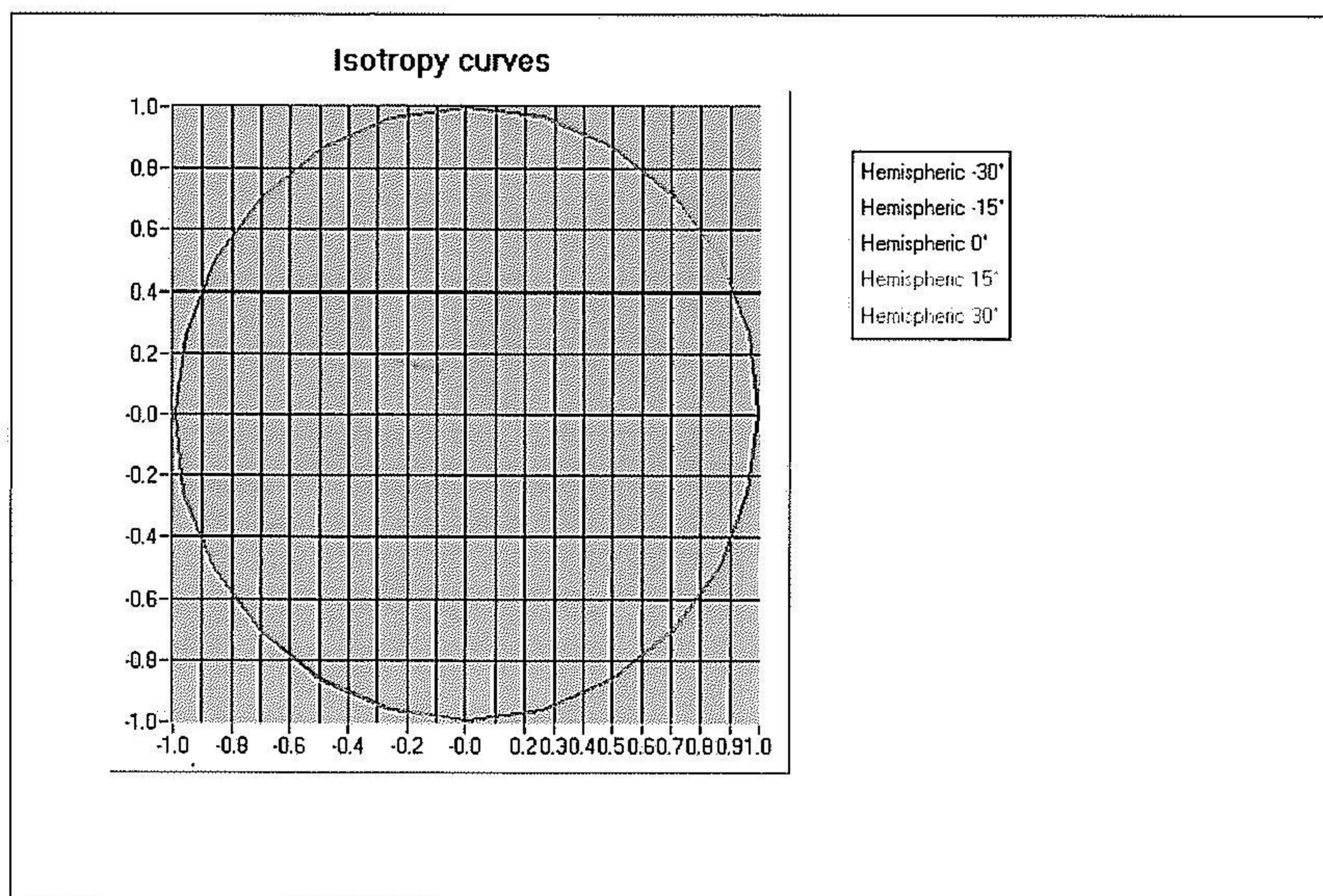
Calibration coefficients for the three dipoles in CW:

Sensitivity in liquid:

Liquid	Epsilon	Sigma (S/m)	CF dipole 1 (W.kg-1 (mV)-1)	CF dipole 2 (W.kg-1 (mV)-1)	CF dipole 3 (W.kg-1 (mV)-1)
Head	41.24	0.94	22.06	22.01	30.16
Body	55.69	1.00	21.56	21.36	29.10

B. Isotropy.

- Axial isotropy: 0.029 dB
- Hemispherical isotropy: 0.030 dB



C. Linearity.

- Linearity: 0.04 dB

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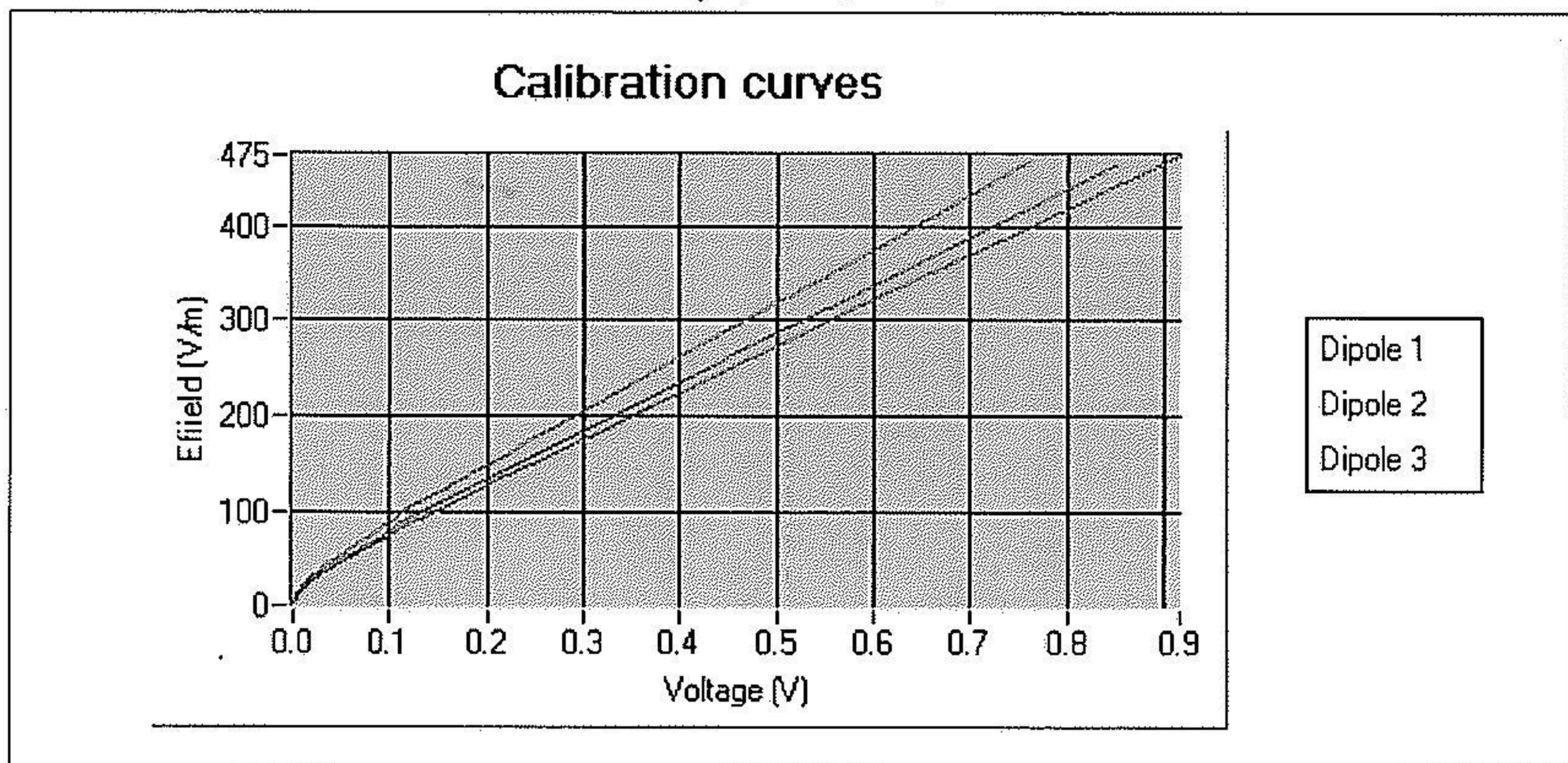
3. Calibration at 1747.00 MHz

A. Calibration parameters.

Label	1800
Epsilon	38.58
Sigma	1.33 S/m
Temperature	21°C
Cable loss	0.18 dB
Coupler loss	20.22 dB
Waveguide S11	-13.13 dB
Low limit detection	0.833 V/m (0.92 mW/kg)

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



The following tables represent the calibration curves linearization by curve segment in CW signal.

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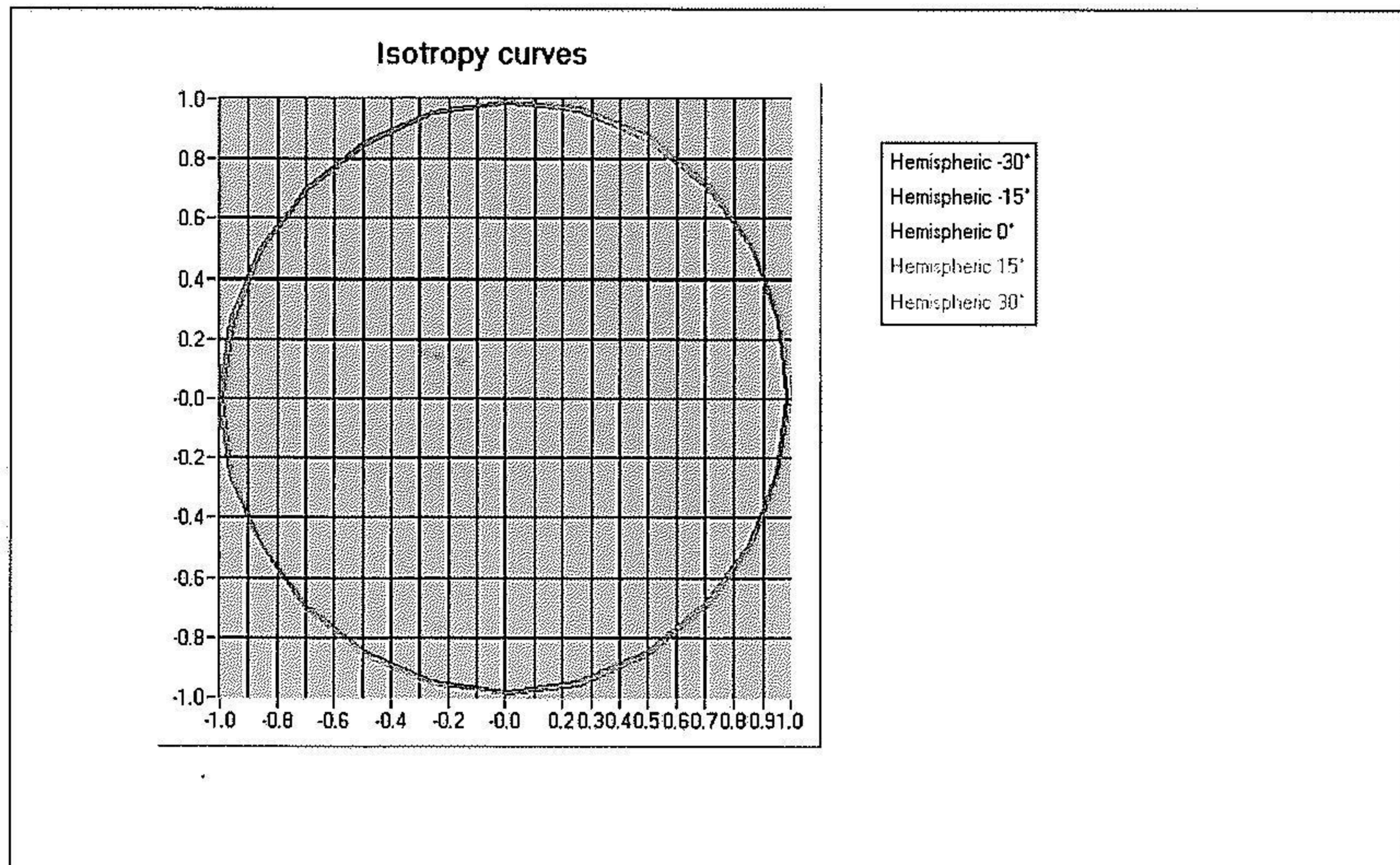
Calibration coefficients for the three dipoles in CW:

Sensitivity in liquid:

Liquid	Epsilon	Sigma (S/m)	CF dipole 1 (W.kg-1 (mV)-1)	CF dipole 2 (W.kg-1 (mV)-1)	CF dipole 3 (W.kg-1 (mV)-1)
Head	38.56	1.33	37.12	38.56	50.42
Body	51.99	1.49	36.66	37.99	49.66

B. Isotropy.

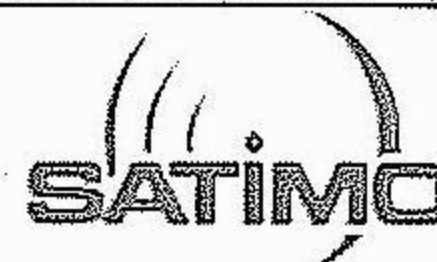
- Axial isotropy: 0.050 dB
- Hemispherical isotropy: 0.076 dB



C. Linearity.

- Linearity: 0.03 dB

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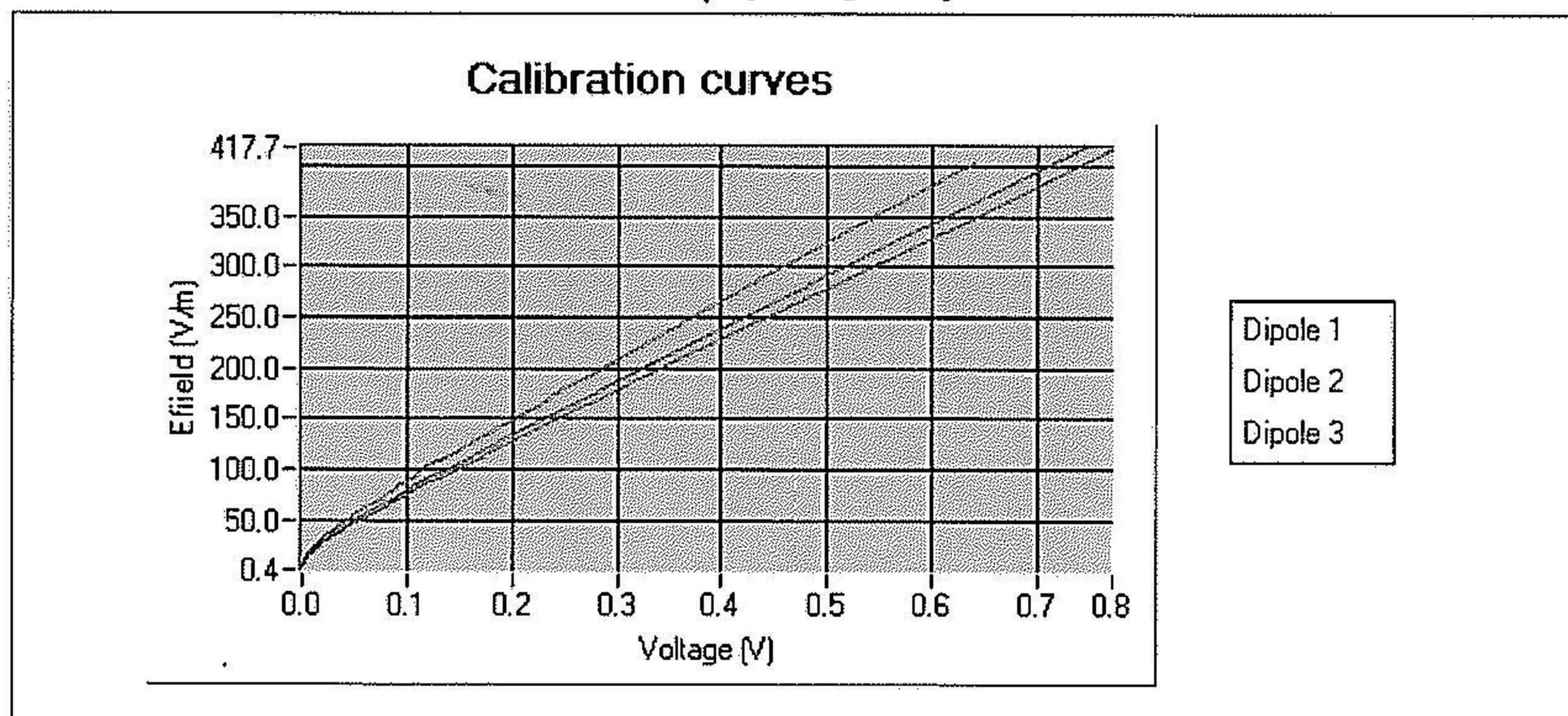
4. Calibration at 1880.00 MHz

A. Calibration parameters.

Label	1900
Epsilon	38.33
Sigma	1.44 S/m
Temperature	21°C
Cable loss	0.19 dB
Coupler loss	21.14 dB
Waveguide S11	-26.91 dB
Low limit detection	0.797 V/m (0.91 mW/kg)

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



The following tables represent the calibration curves linearization by curve segment in CW signal.

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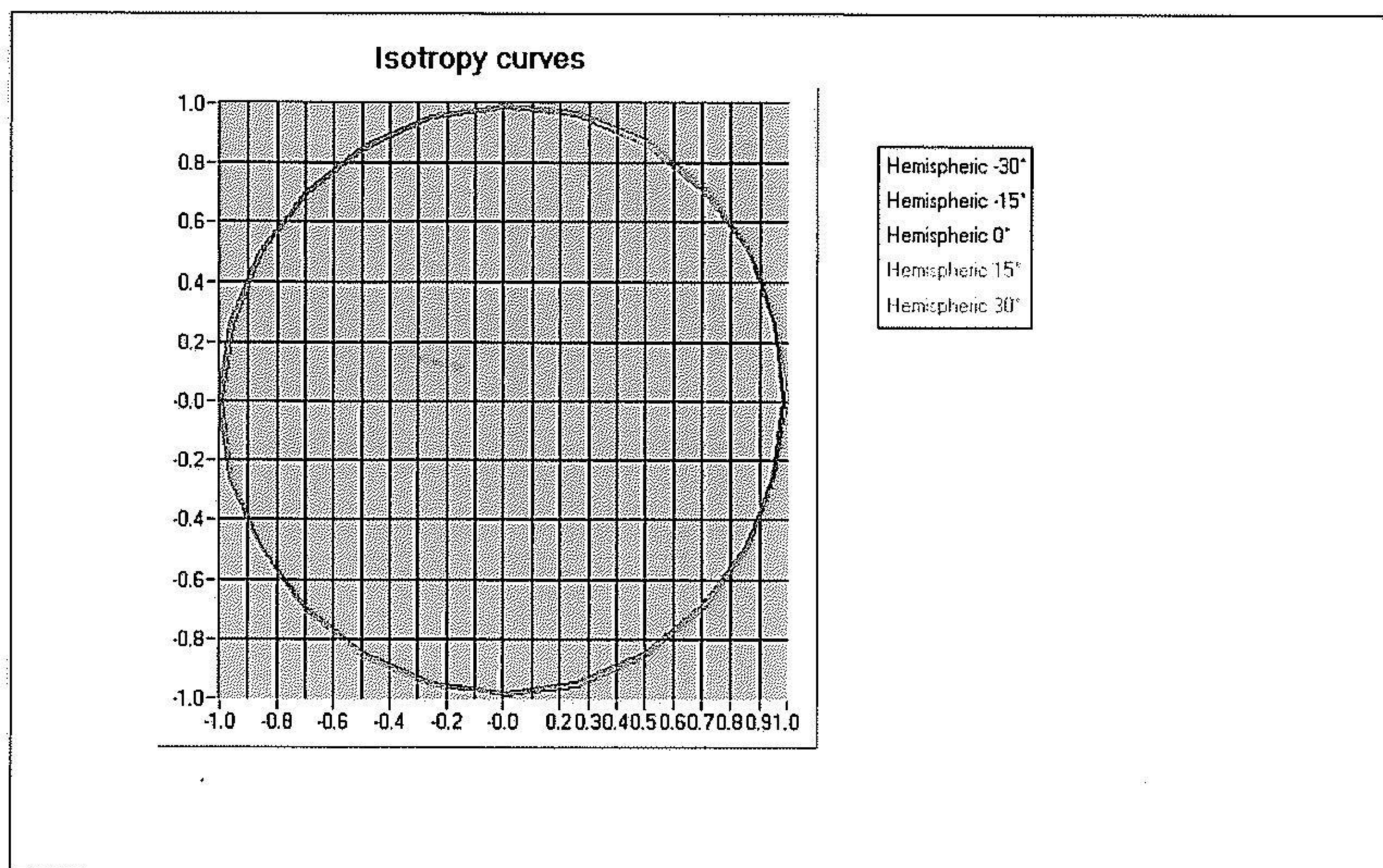
Calibration coefficients for the three dipoles in CW:

Sensitivity in liquid:

Liquid	Epsilon	Sigma (S/m)	CF dipole 1 (W.kg-1 (mV)-1)	CF dipole 2 (W.kg-1 (mV)-1)	CF dipole 3 (W.kg-1 (mV)-1)
Head	38.35	1.45	41.05	42.35	55.45
Body	52.12	1.52	40.42	41.12	54.75

B. Isotropy.

- Axial isotropy: 0.050 dB
- Hemispherical isotropy: 0.076 dB



C. Linearity.

- Linearity: 0.03 dB

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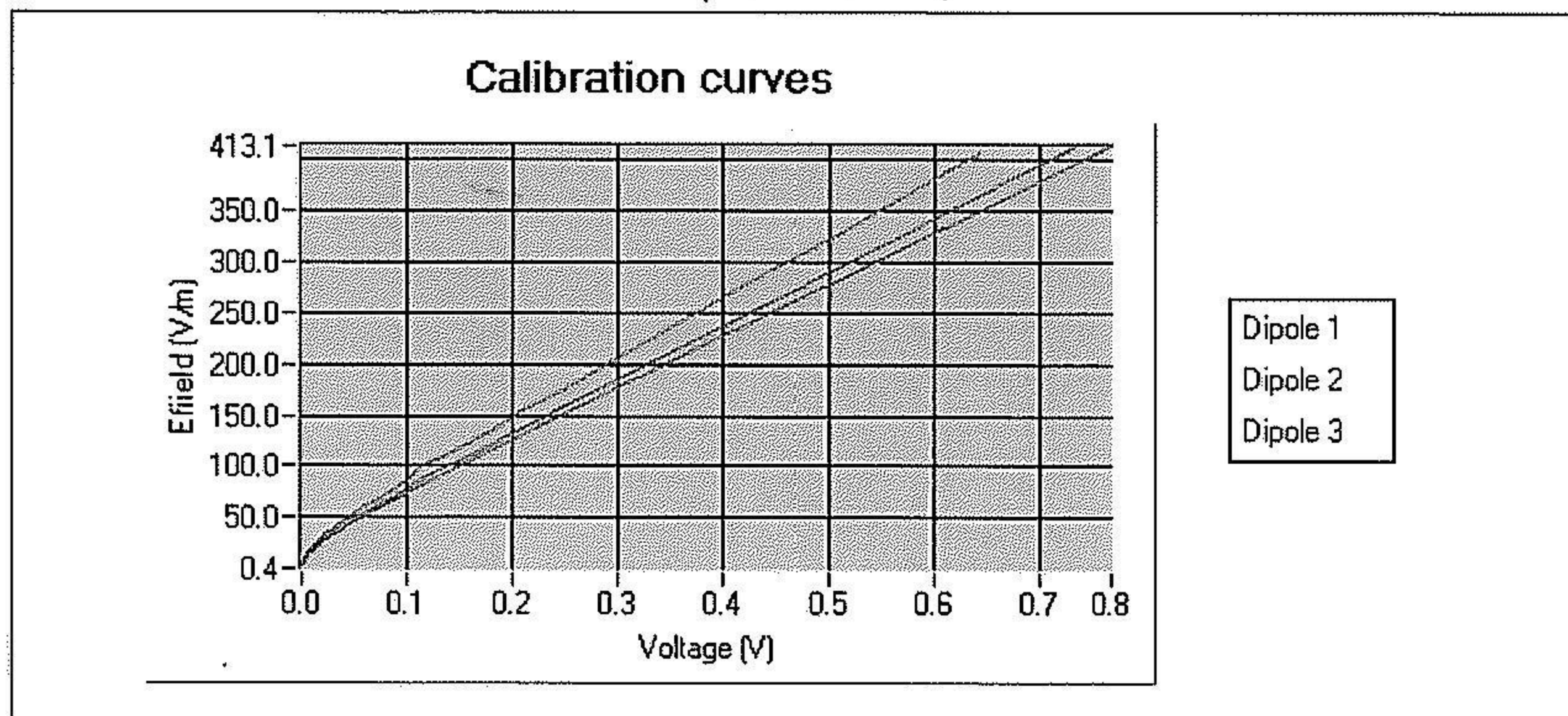
5. Calibration at 1950.00 MHz

A. Calibration parameters.

Label	2000
Epsilon	38.18
Sigma	1.48 S/m
Temperature	21°C
Cable loss	0.18 dB
Coupler loss	20.09 dB
Waveguide S11	-30.09 dB
Low limit detection	0.788 V/m (0.93 mW/kg)

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



The following tables represent the calibration curves linearization by curve segment in CW signal.

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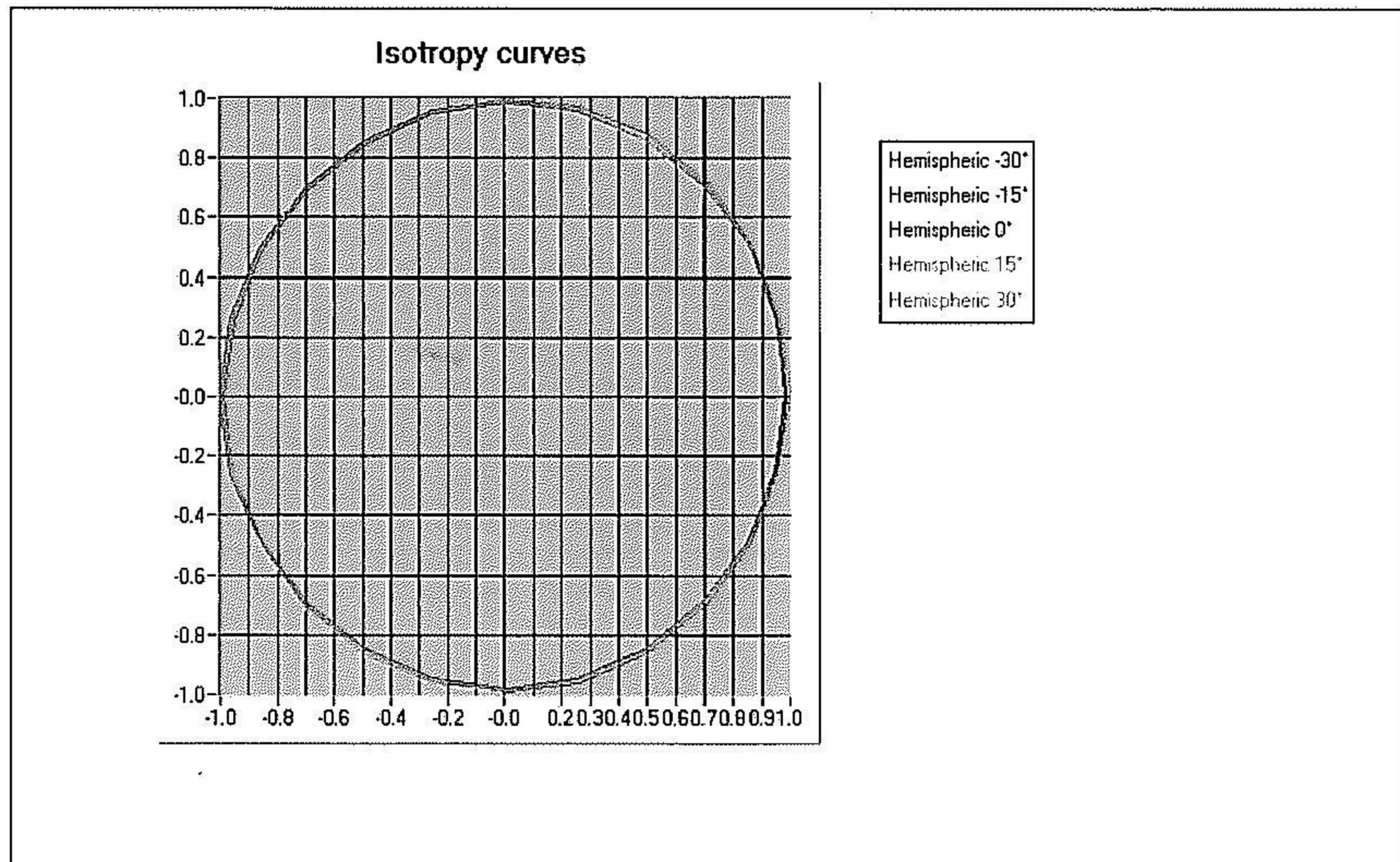
Calibration coefficients for the three dipoles in CW:

Sensitivity in liquid:

Liquid	Epsilon	Sigma (S/m)	CF dipole 1 (W.kg-1 (mV)-1)	CF dipole 2 (W.kg-1 (mV)-1)	CF dipole 3 (W.kg-1 (mV)-1)
Head	38.18	1.45	41.91	43.15	56.44
Body	54.05	1.52	41.01	42.41	55.65

B. Isotropy.

- Axial isotropy: 0.050 dB
- Hemispherical isotropy: 0.076 dB



C. Linearity.

- Linearity:

0.03 dB

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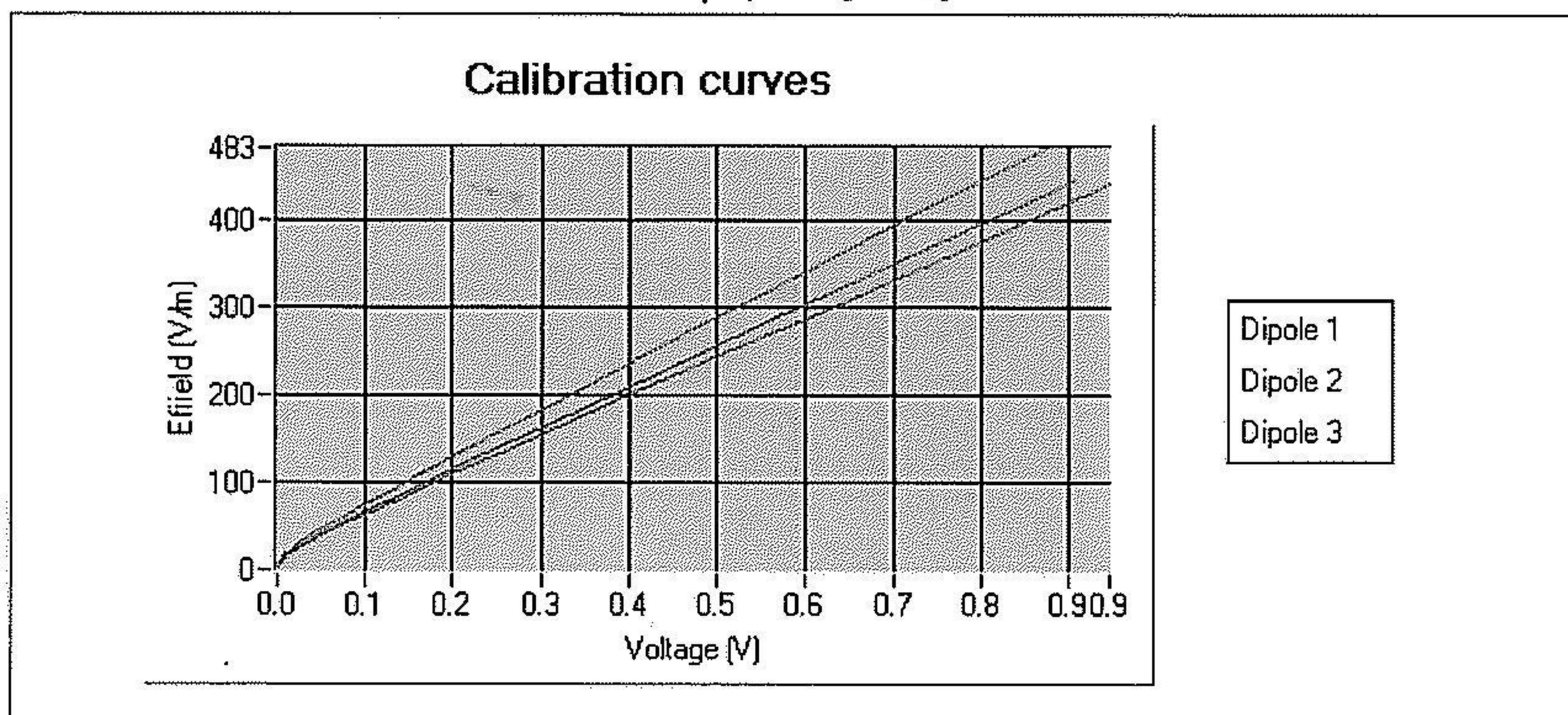
6. Calibration at 2450.00 MHz

A. Calibration parameters.

Label	2450
Epsilon	37.45
Sigma	1.75 S/m
Temperature	21°C
Cable loss	0.22 dB
Coupler loss	21.52 dB
Waveguide S11	-13.66 dB
Low limit detection	0.794 V/m (1.07 mW/kg)

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



The following tables represent the calibration curves linearization by curve segment in CW signal.

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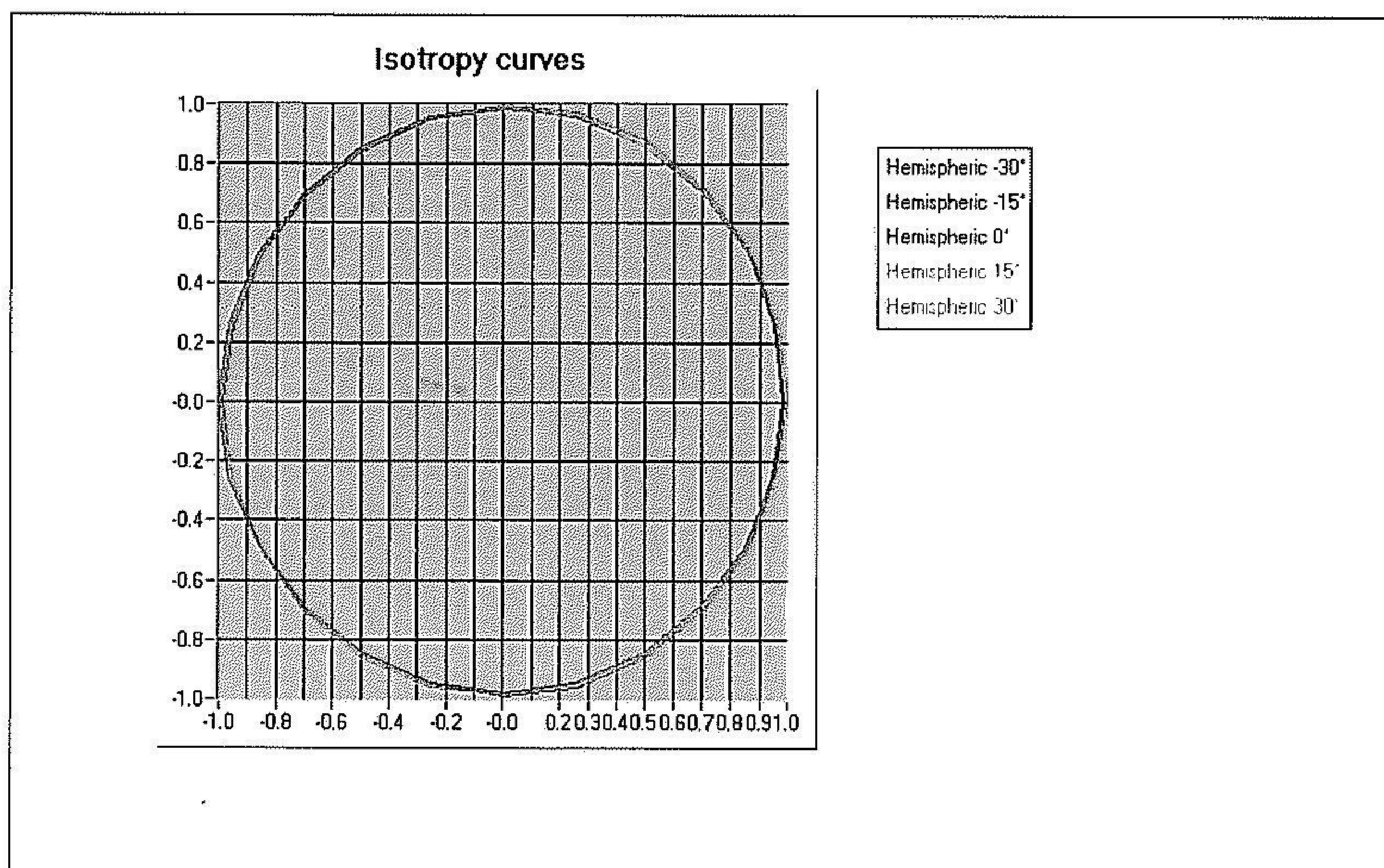
Calibration coefficients for the three dipoles in CW:

Sensitivity in liquid:

Liquid	Epsilon	Sigma (S/m)	CF dipole 1 (W.kg-1 (mV)-1)	CF dipole 2 (W.kg-1 (mV)-1)	CF dipole 3 (W.kg-1 (mV)-1)
Head	37.45	1.75	51.18	53.87	70.48
Body	53.70	1.95	50.35	52.98	69.78

B. Isotropy.

- Axial isotropy: 0.050 dB
- Hemispherical isotropy: 0.076 dB



C. Linearity.

- Linearity:

0.03 dB