

PCTEST ENGINEERING LABORATORY, INC.

PCTEST Calibration Laboratory

6660-B Dobbin Road
Columbia, Maryland 21045
U.S.A.

Calibration File No.: PCT486C-0801

CERTIFICATE OF CALIBRATION

It is hereby certified that the identified equipment below has
been calibrated in
PCTEST Calibration Laboratory by qualified personnel following
recognized procedures and using transfer standards traceable
to US NIST.

EQUIPMENT: Miniature Isotropic RF Probe

MANUFACTURER: IDX Robotics Inc.

SERIAL NO.: PCT486C

Calibration Procedure: IEEE Std. 1528 (Draft 3 -
Aug. 2000)

Date of Calibration: 01 August 2001

Calibration Due Date: 01 August 2002

REMARKS: none

Calibrated By: Al Cirwithian

CALIBRATION RECORD

EQUIPMENT: Miniature Isotropic RF Probe
MANUFACTURER: IDX Robotics Inc.
SERIAL NO.: PCT486C

Calibration Procedure: IEEE Std. 1528 (Draft 3 - Aug. 2000)

Date of Calibration: 01 August 2001
Calibration Due Date: 01 August 2002

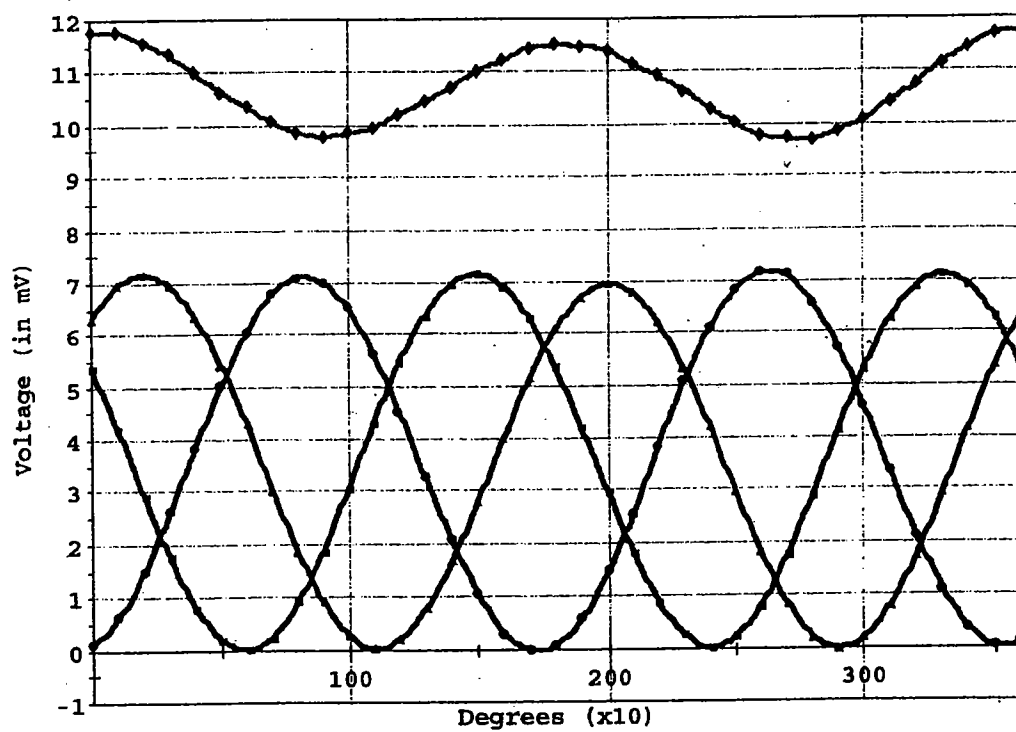
Environmental Conditions:
Temperature: 25 $\pm$ 2 $^{\circ}$ C
Humidity: 30-60 %

TEST EQUIPMENT:

1. RF Power Meter - HP 437B
2. RF Power Sensor - HP 8481H
3. Precision Dual-Channel Thermometer - Guildline Model 5150
S/N: 66145
4. Precision Thermistor Sensor - Guildline 51502
5. Near-Field Broadband Measuring System - IDX
6. Signal Generator - HP 8648D (9kHz-4 GHz)
7. RF Power Amplifier - Amplified Research 5SIG4 (800MHz-
4.2GHz) 5Watts
8. Dipole Validation Antennas 835MHz - SPEAG
9. Dipole Validation Antennas 1900MHz - SPEAG
10. Network Analyzer HP 8753E
11. TEM Cell - IFI CC-110
12. Directional Coupler - HP 767D

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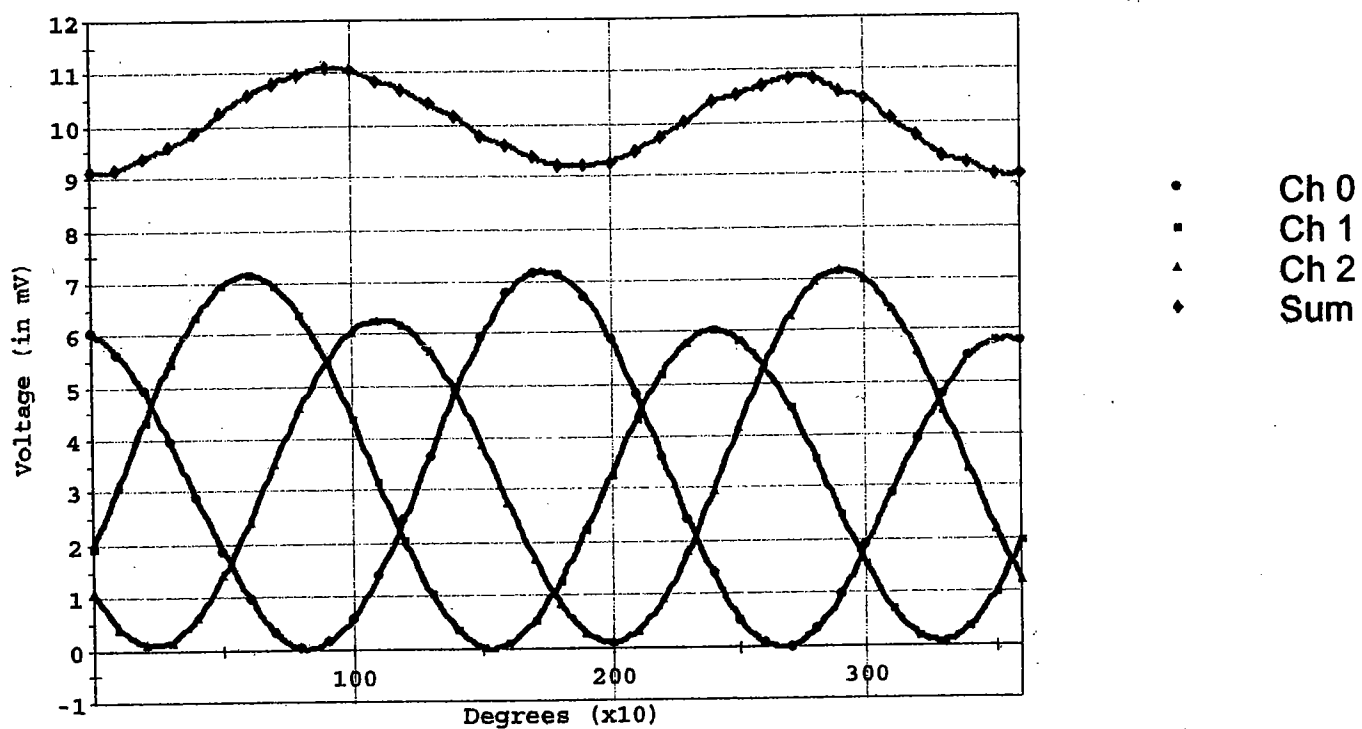
File: 010801 0835 MHz PCT486c.cal
Date: 01-August 2001 10:37:50 am
Probe: PCT486C
Freq: 835
Comment:
Amp 1 Setting: 0.239
Amp 2 Setting: 0.278
Amp 3 Setting: 0.294



• Ch 0
▪ Ch 1
▲ Ch 2
◆ Sum

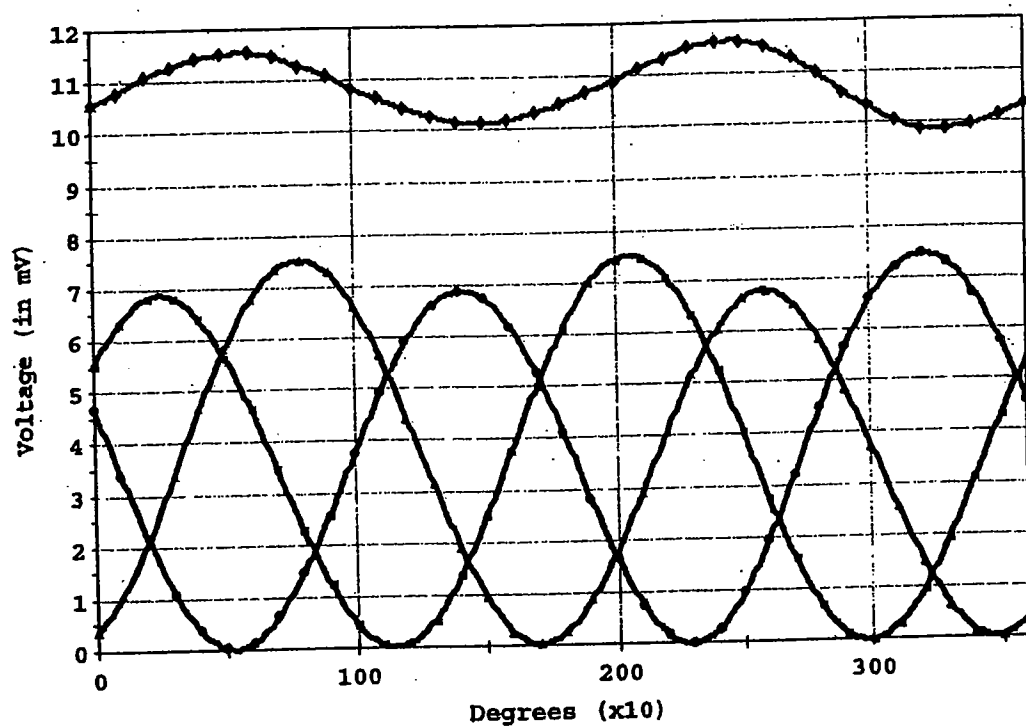
PCT Calibration Laboratory

File: 010801 1900 MHz PCT486c.cal
Date: 01-August 2001 11:07:57 am
Probe: PCT486C
Freq: 1900
Comment:
Amp 1 Setting: 0.309
Amp 2 Setting: 0.361
Amp 3 Setting: 0.421



PCT Calibration Laboratory

File: 010801 2450 MHz PCT486c.cal
Date: 01-August 2001 09:17:10 am
Probe: PCT486C
Freq: 2450
Comment:
Amp 1 Setting: 0.172
Amp 2 Setting: 0.187
Amp 3 Setting: 0.220



• Ch 0
■ Ch 1
▲ Ch 2
♦ Sum

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OFFSET	ANGLE
cm	deg
.20	54.72

Tissue Type	Freq. MHz	Dielectric Constant	Conductivity S/M	Conversion Factor
Brain	835	41.5	0.90	.325
Brain	1900	39.9	1.42	.550
Brain	2450	39.2	1.80	1.004
Muscle	835	56.1	0.95	.423
Muscle	1900	54.2	1.45	.496
Muscle	2450	52.7	1.95	.983

Frequency	Isotropy	dB
835	9.66	.40
1900	9.77	.405
2450	8.06	.336

Calibrated by ALG Date Aug 1, 2001