

Probe ET3DV6

SN:1604

Manufactured: July 30, 2001
Last calibrated: March 18, 2005
Recalibrated: May 2, 2006

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

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DASY - Parameters of Probe: ET3DV6 SN:1604**Sensitivity in Free Space^A**

NormX	1.87 \pm 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$
NormY	1.80 \pm 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	1.91 \pm 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression^B

DCP X	93 mV
DCP Y	93 mV
DCP Z	93 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance	3.7 mm	4.7 mm
SAR _{be} [%] Without Correction Algorithm	7.9	4.1
SAR _{be} [%] With Correction Algorithm	0.1	0.2

TSL 1810 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance	3.7 mm	4.7 mm
SAR _{be} [%] Without Correction Algorithm	7.0	4.1
SAR _{be} [%] With Correction Algorithm	0.1	0.3

Sensor OffsetProbe Tip to Sensor Center **2.7** mm

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

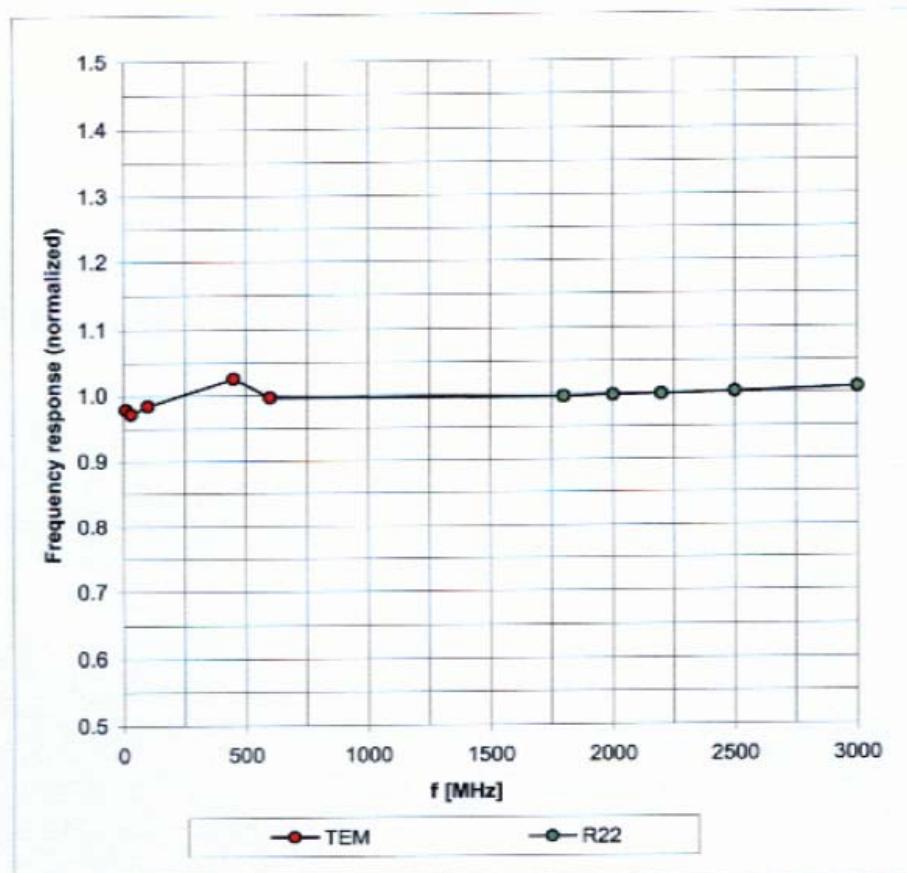
^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).^B Numerical linearization parameter: uncertainty not required.

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Frequency Response of E-Field

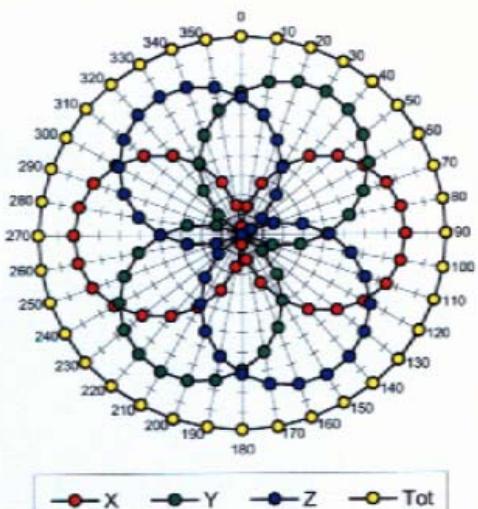
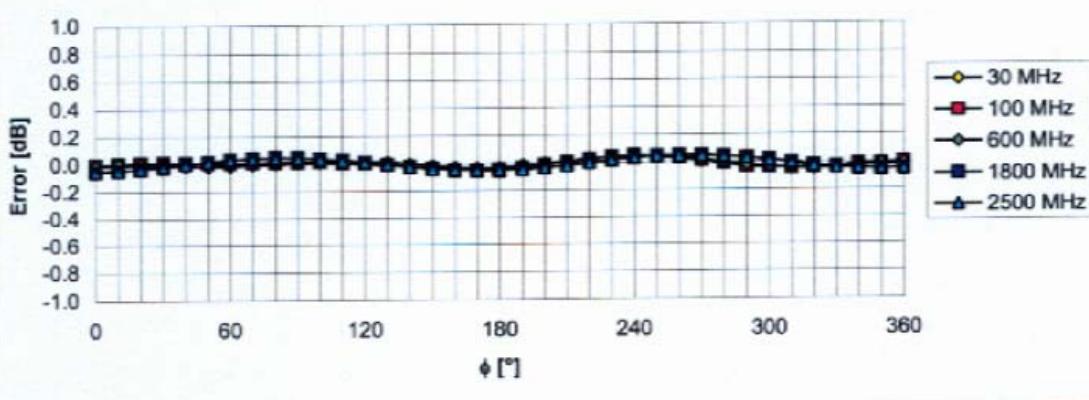
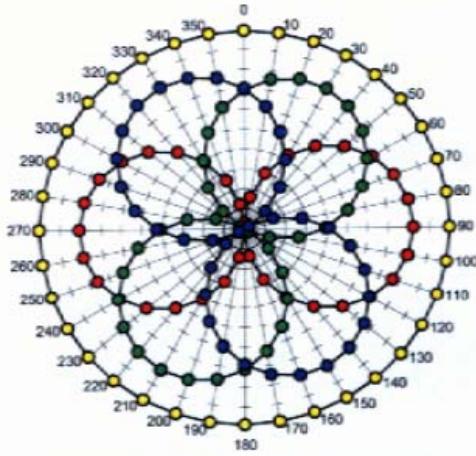
(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

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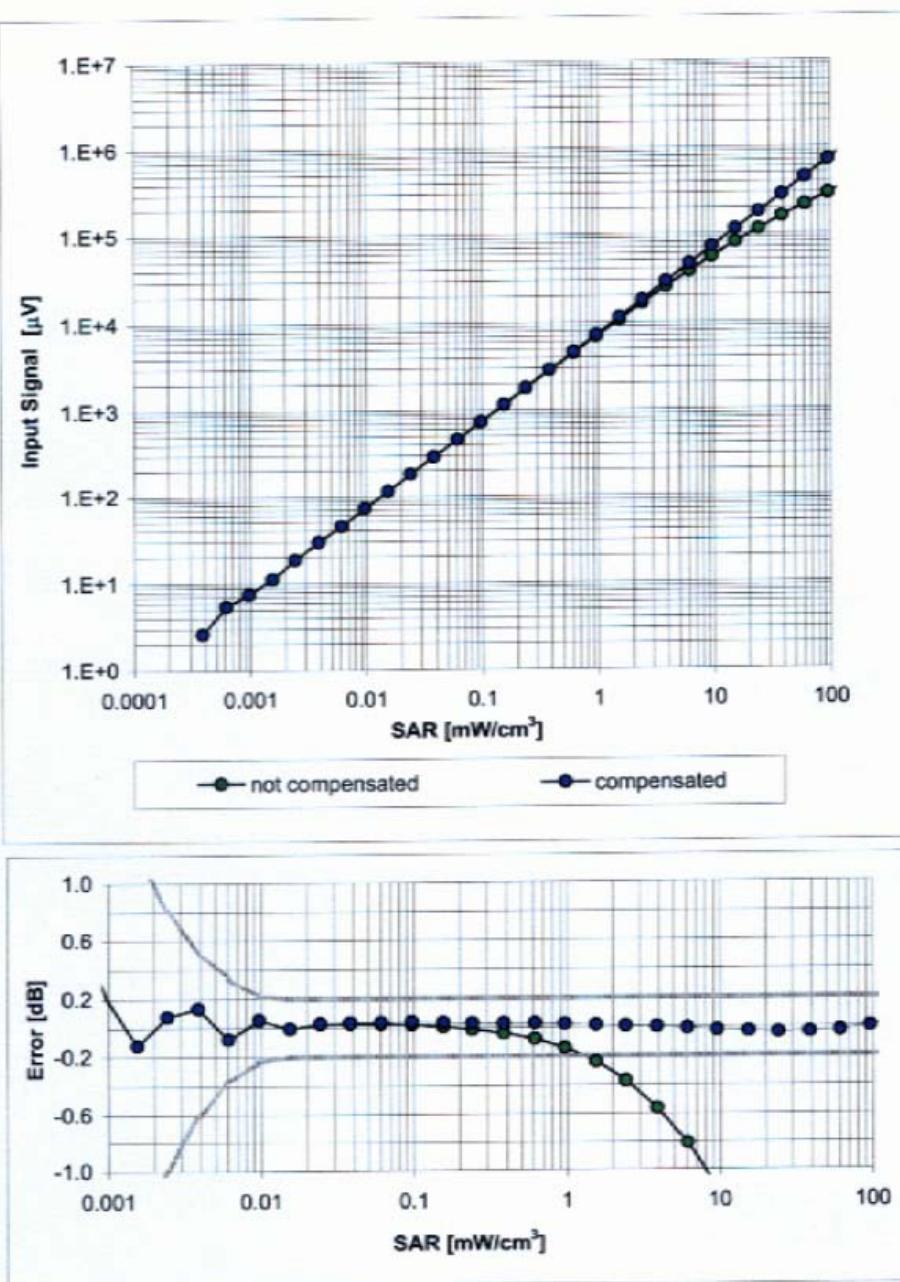
Receiving Pattern (ϕ), $\theta = 0^\circ$ $f = 600 \text{ MHz, TEM ifi110EXX}$  $f = 1800 \text{ MHz, WG R22}$ Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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Dynamic Range f(SAR_{head})

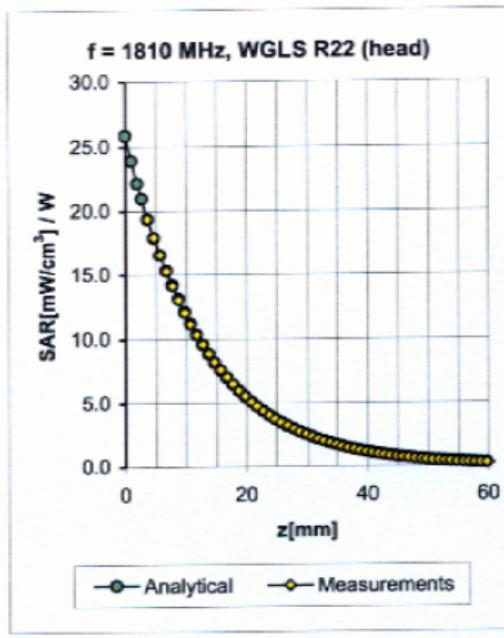
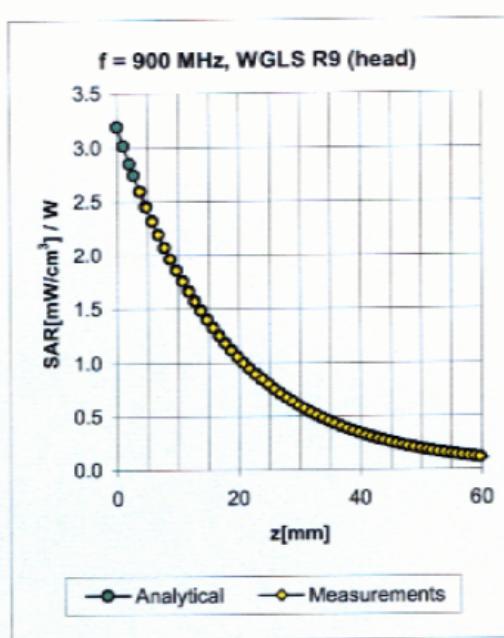
(Waveguide R22, f = 1800 MHz)

Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

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Conversion Factor Assessment



f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
450	$\pm 50 / \pm 100$	Head	$43.5 \pm 5\%$	$0.87 \pm 5\%$	0.26	2.94	$7.14 \pm 13.3\% \text{ (k=2)}$
900	$\pm 50 / \pm 100$	Head	$41.5 \pm 5\%$	$0.97 \pm 5\%$	0.56	1.81	$6.60 \pm 11.0\% \text{ (k=2)}$
1810	$\pm 50 / \pm 100$	Head	$40.0 \pm 5\%$	$1.40 \pm 5\%$	0.50	2.59	$5.29 \pm 11.0\% \text{ (k=2)}$
2450	$\pm 50 / \pm 100$	Head	$39.2 \pm 5\%$	$1.80 \pm 5\%$	0.68	1.85	$4.60 \pm 11.8\% \text{ (k=2)}$

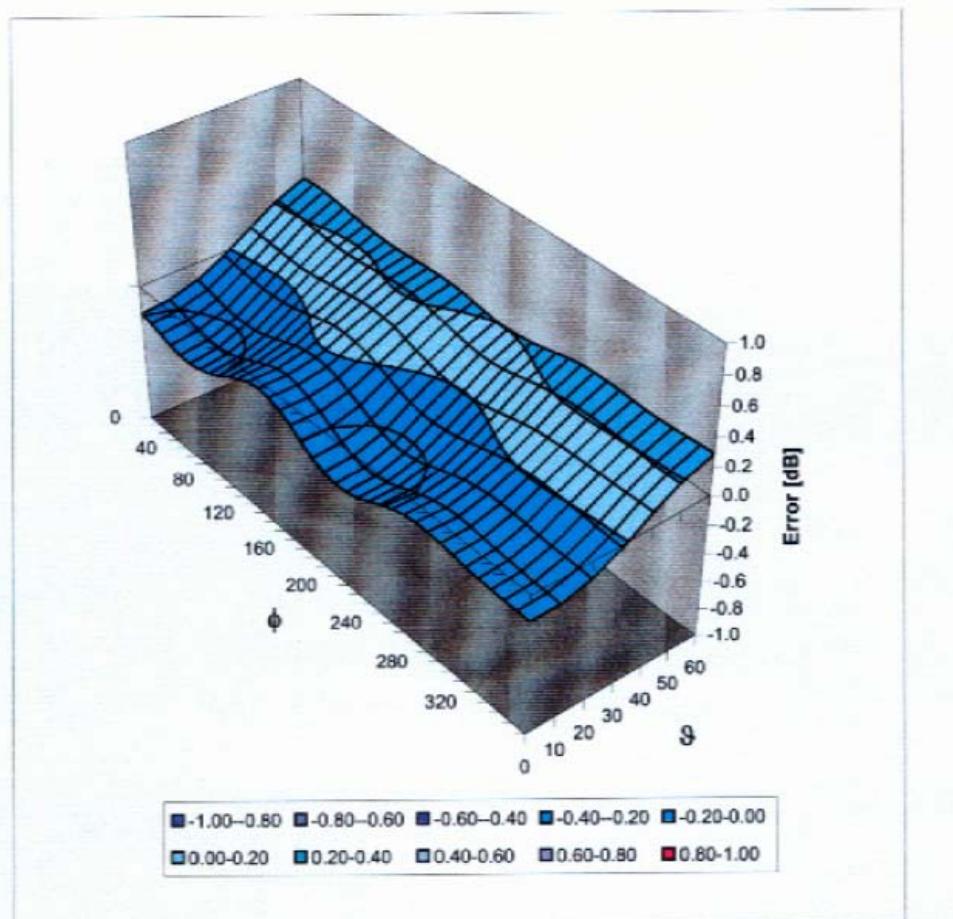
450	$\pm 50 / \pm 100$	Body	$56.7 \pm 5\%$	$0.94 \pm 5\%$	0.25	4.44	$7.42 \pm 13.3\% \text{ (k=2)}$
900	$\pm 50 / \pm 100$	Body	$55.0 \pm 5\%$	$1.05 \pm 5\%$	0.47	2.08	$6.27 \pm 11.0\% \text{ (k=2)}$
1810	$\pm 50 / \pm 100$	Body	$53.3 \pm 5\%$	$1.52 \pm 5\%$	0.56	2.66	$4.88 \pm 11.0\% \text{ (k=2)}$
2450	$\pm 50 / \pm 100$	Body	$52.7 \pm 5\%$	$1.95 \pm 5\%$	0.66	1.95	$4.27 \pm 11.8\% \text{ (k=2)}$

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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Deviation from Isotropy in HSL

Error (ϕ, θ), $f = 900$ MHzUncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

APPENDIX C – DIPOLE CALIBRATION CERTIFICATES**NCL CALIBRATION LABORATORIES**

Calibration File No: DC-713
Project Number: BACL-CAL-D-2450-5249

CERTIFICATE OF CALIBRATION

It is certified that the equipment identified below has been calibrated in the
NCL CALIBRATION LABORATORIES by qualified personnel following recognized
procedures and using transfer standards traceable to NRC/NIST.

BACL Validation Dipole

Manufacturer: APREL Laboratories

Part number: D-2450-S-1

Frequency: 2450 MHz

Serial No: BCL-141

Customer: Bay Area Compliance Laboratory

Calibrated: 28th August 2006
Released on: 28th August 2006

Released By: _____

NCL CALIBRATION LABORATORIES

51 SPECTRUM WAY
NEPEAN, ONTARIO
CANADA K2R 1E6

Division of APREL Lab.
TEL: (613) 820-4988
FAX: (613) 820-4162

NCL Calibration Laboratories

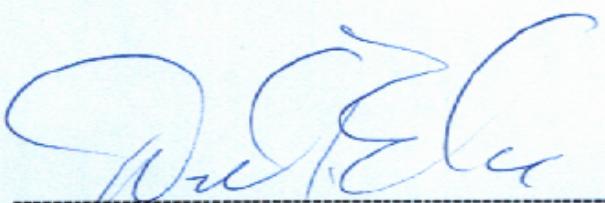
Division of APREL Laboratories.

Conditions

Dipole BCL-141 was received from customer in good condition for re-calibration
SMA connector required cleaning prior to calibration.

Ambient Temperature of the Laboratory: 22 °C +/- 0.5°C
Temperature of the Tissue: 21 °C +/- 0.5°C

We the undersigned attest that to the best of our knowledge the calibration of this device has been accurately conducted and that all information contained within this report has been reviewed for accuracy.



D. Brooks
Member of Engineering Staff
(Calibration Engineer)

This page has been reviewed for content and attested to by signature within this document.

NCL Calibration Laboratories

Division of APREL Laboratories.

Calibration Results Summary

The following results relate the Calibrated Dipole and should be used as a quick reference for the user.

Mechanical Dimensions

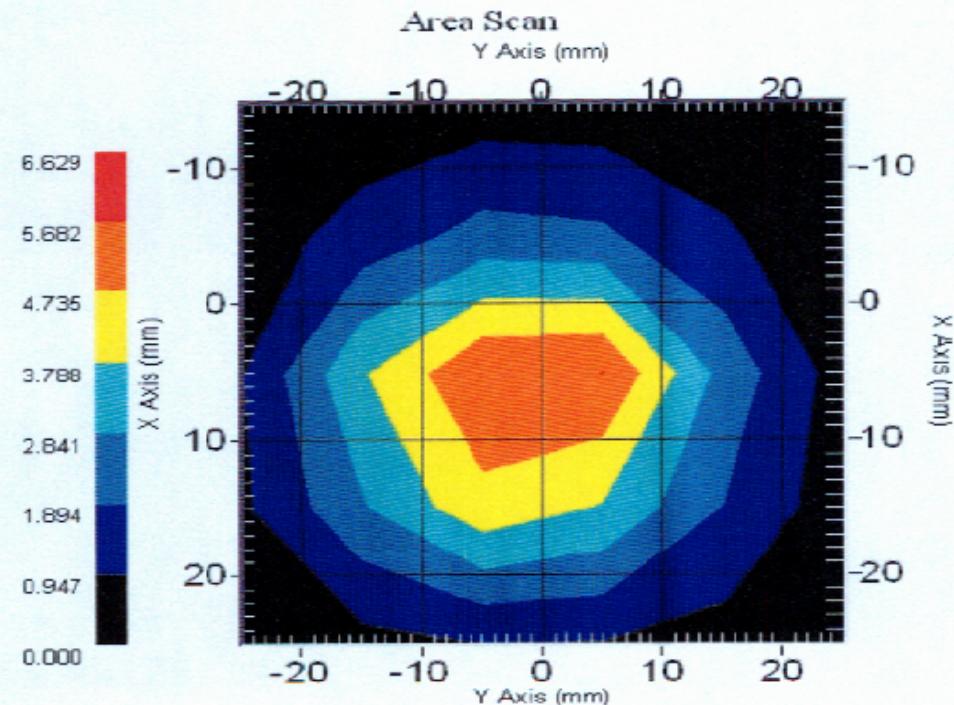
Length: 51.5 mm
Height: 30.4 mm

Electrical Specification

SWR: 1.095 U to 1.397 U
Return Loss: -26.77 dB to -15.52 dB
Impedance: 47.81 Ω to 63.37 Ω

System Validation Results

Frequency	1 Gram	10 Gram	Peak
2450 MHz	5.31	2.44	10.18



This page has been reviewed for content and attested to by signature within this document.