HAC (RF Emission) TEST REPORT

Summary Result: M-Rating Category = M4

REPORT NO.: SA120117C24-2

MODEL NO.: PJ75100

FCC ID: NM8PJ75100

RECEIVED: Jan. 17, 2012

TESTED: Feb. 20, 2012 ~ Feb. 23, 2012

ISSUED: Feb. 23, 2012

APPLICANT: HTC Corporation

ADDRESS: 23, Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Dist., New Taipei City 244, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Feb. 23, 2012

1. CERTIFICATION

PRODUCT : Smartphone
MODEL NO. : PJ75100
BRAND : HTC
APPLICANT : HTC Corporation
TESTED : Feb. 20, 2012 ~ Feb. 23, 2012
STANDARDS : FCC 47 CFR Part 20.19
ANSI C63.19-2007
TEST ITEM: RF emissions

The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's characteristics under the conditions specified in this report.

PREPARED BY : _____ , DATE: Feb. 23, 2012
Pettie Chen / Specialist

APPROVED BY : _____ , DATE: Feb. 23, 2012
Roy Wu / Manager

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	Smartphone
MODEL NO.	PJ75100
CLASSIFICATION	Production Unit
MODULATION TYPE	QPSK, OQPSK, HPSK
TX FREQUENCY RANGE (MHz)	CDMA2000 BC0 : 824.7 ~ 848.31 CDMA2000 BC1 : 1851.25 ~ 1908.75 CDMA2000 BC10 : 817.9 ~ 822.75
ANTENNA TYPE	Fixed internal antenna
ACCESSORY DEVICES	Refer to Note as below

Air Interfaces/Bands List						
Air Interface	**Band**	**Type**	**C63.19 Tested**	**Simultaneous Transmissions**	**Reduced Power**	**VOIP**
CDMA2000 1xRTT	BC0	Voice	Yes	1xEVDO + WLAN/BT LTE + WLAN/BT	N/A	N/A
	BC1	Voice	Yes	1xEVDO + WLAN/BT LTE + WLAN/BT	N/A	N/A
	BC10	Voice	Yes	1xEVDO + WLAN/BT LTE + WLAN/BT	N/A	N/A
CDMA2000 1xEVDO	BC0	Data	N/A	1xRTT + WLAN/BT	N/A	Yes
	BC1	Data	N/A	1xRTT + WLAN/BT	N/A	Yes
	BC10	Data	N/A	1xRTT + WLAN/BT	N/A	Yes
LTE	25	Data	N/A	1xRTT + WLAN/BT	N/A	Yes
WLAN	2.4G	Data	N/A	1xRTT + 1xEVDO+BT 1xRTT + LTE+BT	N/A	Yes
	5G	Data	N/A	1xRTT + 1xEVDO+BT 1xRTT + LTE+BT	N/A	Yes
BT	2.4G	Data	N/A	1xRTT + 1xEVDO + WLAN 1xRTT + LTE + WLAN	N/A	N/A

Note: The HAC rating was evaluated for voice mode only.

NOTE:

1. The EUT's accessories list refers to Ext Pho_NM8PJ75100.pdf.

2. Conducted power list as below:

Mode	RC	SO	Type	Data Rate	CDMA2000 BC0			CDMA2000 BC1		
					Low Ch (1013)	Mid Ch (384)	High Ch (777)	Low Ch (25)	Mid Ch (600)	High Ch (1175)
CDMA 1XRTT	1	2	Loop	Full	24.08	24.18	23.97	23.94	23.83	23.97
				Eighth	24.13	24.11	23.96	23.96	23.89	24.03
	1	3	Voice	-	24.15	24.09	23.98	23.91	23.86	24.08
	1	55	Loop	Full	24.62	24.89	24.42	24.79	24.82	24.79
				Eighth	24.19	24.12	23.98	23.91	23.86	24.07
	2	17	Voice	-	24.15	24.16	23.96	23.91	23.87	24.03
	2	32768	Voice	-	24.18	24.09	23.98	23.92	23.87	24.06
	3	2	Loop	Full	24.04	24.12	23.94	23.87	23.76	23.89
				Eighth	24.09	24.15	23.91	23.88	23.78	23.86
	3	3	Voice	-	24.02	24.12	23.91	23.94	23.77	23.87
	3	55	Loop	Full	24.55	24.9	24.13	24.83	24.75	24.67
				Eighth	24.02	24.14	23.92	23.88	23.75	23.89
	4	3	Voice	-	24.01	24.17	23.94	23.88	23.78	23.82
	5	17	Voice	-	24.04	24.15	23.93	23.87	23.76	23.86
	5	32768	Voice	-	24.01	24.15	23.87	23.86	23.75	23.85

Mode	RC	SO	Type	Data Rate	CDMA2000 BC10		
					Low Ch (476)	Mid Ch (573)	High Ch (670)
CDMA 1XRTT	1	2	Loop	Full	24.04	24.17	24.12
				Eighth	23.96	24.09	24.13
	1	3	Voice	-	23.97	24.06	24.08
	1	55	Loop	Full	25.03	25.02	24.76
				Eighth	23.96	24.04	24.07
	2	17	Voice	-	23.97	24.01	24.08
	2	32768	Voice	-	23.98	24.01	24.04
	3	2	Loop	Full	23.95	24.11	24.04
				Eighth	23.97	24.13	24.1
	3	3	Voice	-	23.96	24.17	24.12
	3	55	Loop	Full	25.04	25.03	24.71
				Eighth	23.97	24.13	24.04
	4	3	Voice	-	23.98	24.15	24.07
	5	17	Voice	-	24.06	24.15	24.07
	5	32768	Voice	-	24.04	24.17	24.09

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

2.2 DESCRIPTIONOF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.
1	Universal Radio Communication Tester	R&S	CMU200	104484

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE: All power cords of the above support units are non shielded (1.8m).

2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to the specifications of the manufacturer, this product must comply with the requirements of the following standards:

FCC 47 CFR Part 20.19

ANSI C63.19 – 2007

All test items have been performed and recorded as per the above standards.

3. GENERAL INFORMATION OF THE DASY5 SYSTEM

3.1. GENERAL INFORMATION OF TEST EQUIPMENT

DASY5 consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY5 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

ER3DV6 E-FIELD PROBE

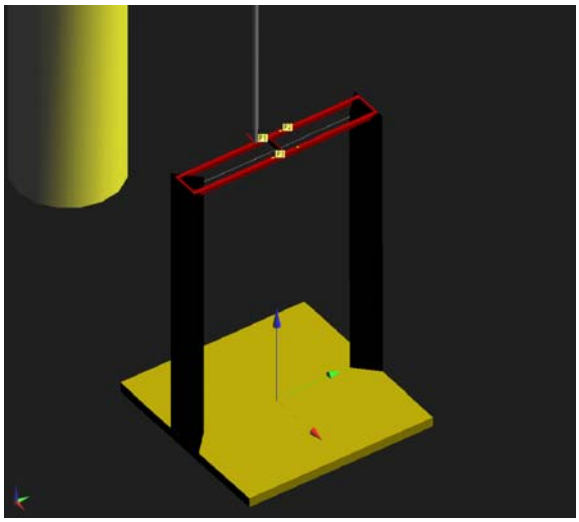
CONSTRUCTION	One dipole parallel, two dipoles normal to probe axis Built-in shielding against static charges
CALIBRATION	In air from 100MHz to 3.0GHz (absolute accuracy ± 6.0%, k = 2)
FREQUENCY	100MHz to > 6GHz; Linearity: ± 0.2dB (100MHz to 3GHz)
DIRECTIVITY	± 0.2dB in air (rotation around probe axis) ± 0.4dB in air (rotation normal to probe axis)
DYNAMIC RANGE	2V/m to > 1000V/m (M3 or better device readings fall well below diode compression point) Linearity: ± 0.2dB
DIMENSIONS	Overall length: 330mm (Tip: 16mm) Tip diameter: 8mm (Body: 12mm) Distance from probe tip to dipole centers: 2.5mm

H3DV6 H-FIELD PROBE

CONSTRUCTION	Three concentric loop sensors with 3.8mm loop diameters Resistively loaded detector diodes for linear response Built-in shielding against static charges
FREQUENCY	200MHz to 3GHz (absolute accuracy ± 6.0%, k = 2); Output linearized
DIRECTIVITY	± 0.25dB (spherical isotropy error)
DYNAMIC RANGE	10mA/m to 2A/m at 1GHz (M3 or better device readings fall well below diode compression point)
DIMENSIONS	Overall length: 330mm (Tip: 40mm) Tip diameter: 6mm (Body: 12mm) Distance from probe tip to dipole centers: 3mm
E-FIELD INTERFERENCE	< 10% at 3GHz (for plane wave)

NOTE: The Probe parameters have been calibrated by the SPEAG. Please reference “APPENDIX D” for the Calibration Certification Report.

HAC ARCH



DIMENSIONS 370 x 370 x 370mm

SYSTEM VALIDATION KITS:

CD835V3

Frequency Band: 800 ~ 960MHz (free space)
Return Loss: > 15dB
Calibrated at: 835MHz
Power Capability: 50W continuous
Length & Height: 166 x 330mm

CD1880V3

Frequency Band: 1710 ~ 2000MHz (free space)
Return Loss: > 18dB
Calibrated at: 1880MHz
Power Capability: 50W continuous
Length & Height: 80.8 x 330mm

DEVICE HOLDER

CONSTRUCTION Supports accurate and reliable positioning of any phone effect on near field <+/- 0.5dB

DATA ACQUISITION ELECTRONICS (DAE)

CONSTRUCTION The data acquisition electronics (DAE3) consists of a highly sensitive electrometer grade preamplifier with auto-zeroing, a channel and gain-switching multiplex, a fast 16 bit AD converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe is mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.

3.2. TEST EQUIPMENT LIST

NAME	BRAND	TYPE	SERIES NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
E-Field Probe	SPEAG	ER3DV6	2480	Jan. 04, 2012	Jan. 03, 2013
H-Field Probe	SPEAG	H3DV6	6305	Jan. 04, 2012	Jan. 03, 2013
DAE	SPEAG	DAE4	1277	Jul. 29, 2011	Jul. 28, 2012
Validation Dipole	SPEAG	CD835V3	1041	Mar. 15, 2011	Mar. 14, 2012
Validation Dipole	SPEAG	CD1880V3	1032	Apr. 12, 2011	Apr. 11, 2012

NOTE: Before starting the measurement, all test equipment shall be warmed up for 30min.

3.3. MEASUREMENT UNCERTAINTY

HAC UNCERTAINTY BUDGET ACCORDING TO ANSI C63.19[1]							
ERROR DESCRIPTION	**UNCERTAINTY VALUE**	**PROBABILITY DISTRIBUTION**	**DIVISOR**	**(Ci) E**	**(Ci) H**	**STD. UNC. E (%)**	**STD. UNC. H (%)**
MEASUREMENT SYSTEM							
Probe calibration	5.1	Normal	1	1	1	5.1	5.1
Axial isotropy	0.5	Rectangular	√3	1	1	0.3	0.3
Sensor Displacement	16.5	Rectangular	√3	1	0.145	9.5	1.4
Boundary Effects	2.4	Rectangular	√3	1	1	1.4	1.4
Linearity	0.6	Rectangular	√3	1	1	0.3	0.3
Scaling to Peak Envelope Power	2.0	Rectangular	√3	1	1	1.2	1.2
System Detection Limit	1.0	Rectangular	√3	1	1	0.6	0.6
Readout Electronics	0.3	Rectangular	√3	1	1	0.2	0.2
Response Time	0.8	Rectangular	√3	1	1	0.5	0.5
Integration Time	2.6	Rectangular	√3	1	1	1.5	1.5
RF Ambient Condition	3.0	Rectangular	√3	1	1	1.7	1.7
RF Reflections	12.0	Rectangular	√3	1	1	6.9	6.9
Probe Positioner	1.2	Rectangular	√3	1	0.67	0.7	0.5
Probe Positioning	4.7	Rectangular	√3	1	0.67	2.7	1.8
Extrap. And Interpolation	1.0	Rectangular	√3	1	1	0.6	0.6
TEST SAMPLE RELATED							
Device Positioning Vertical	2.6	Normal	1	1	1	2.6	2.6
Device Positioning Lateral	2.6	Normal	1	1	1	2.6	2.6
Device Holder and Phantom	2.4	Rectangular	√3	1	1	1.4	1.4
Power Drift	5.0	Rectangular	√3	1	1	2.9	2.9
PHANTOM AND SETUP RELATED							
Phantom Thickness	2.4	Rectangular	√3	1	0.67	1.4	0.9
COMBINED STD. UNCERTAINTY						14.4	10.7
EXPANDED STD. UNCERTAINTY ON POWER						28.8	21.3
EXPANDED STD. UNCERTAINTY ON FIELD						14.4	10.7

NOTE: Worst-case uncertainty budget for HAC free field assessment according to ANSI C63.19 [1]. The budget is valid for the frequency range 800MHz ~ 3GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerably smaller.

3.4. GENERAL DESCRIPTION OF THE HAC EVALUATION

The DASY5 post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the micro-volt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	F
	- Crest factor	Cf

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \bullet \frac{cf}{dcp_i}$$

V_i	= compensated signal of channel i	(i = x, y, z)
U_i	= input signal of channel I	(i = x, y, z)
Cf	= crest factor of exciting field	(DASY parameter)
dcp_i	= diode compression point	(DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

$$\textbf{\textit{E-field probes:}}\quad E_i = \sqrt{\frac{V_1}{Norm_i \cdot ConvF}}$$

$$\textbf{\textit{H-field probes:}}\quad H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}$$

V_i = compensated signal of channel I (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i μV/(V/m)2 for E-field Probes (i = x, y, z)

ConvF = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

F = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

E = field strength in V/m

E_{tot} = total field strength in V/m

NOTE: The signal response time is evaluated as the time required by the system to reach 90% of the expected final value after an on/off switch of the power source with an integration time of 500ms and a probe response time of < 5ms. In the current implementation, DASY5waits longer than 100ms after having reached the grid point before starting a measurement, i.e., the response time uncertainty is negligible.

4. PERFORMANCE CATEGORIES

The ANSI Standard presents performance requirements for acceptable interoperability of hearing aids with wireless communications devices. When these parameters are met, a hearing aid operates acceptably in close proximity to a wireless communications device.

CATEGORY NEAR FIELD	TELEPHONE RF PARAMETERS < 960MHz				
	AWF	E-FIELD EMISSION CW (dBV/m)	E-FIELD EMISSION CW (V/m)	H-FIELD EMISSION CW (dBA/m)	H-FIELD EMISSION CW (A/m)
M1	0	56.0 to 61.0	631.0 to 1122.0	5.6 to 10.6	1.91 to 3.39
	-5	53.5 to 58.5	473.2 to 841.4	3.1 to 8.1	1.43 to 2.54
M2	0	51.0 to 56.0	354.8 to 631.0	0.6 to 5.6	1.07 to 1.91
	-5	48.5 to 53.5	266.1 to 473.2	-1.9 to 3.1	0.80 to 1.43
M3	0	46.0 to 51.0	199.5 to 354.8	-4.4 to 0.6	0.60 to 1.07
	-5	43.5 to 48.5	149.6 to 266.1	-6.9 to -1.9	0.45 to 0.80
M4	0	< 46.0	< 199.5	< -4.4	< 0.60
	-5	< 43.5	< 149.6	< -6.9	< 0.45

CATEGORY NEAR FIELD	TELEPHONE RF PARAMETERS > 960MHz				
	AWF	E-FIELD EMISSION CW (dBV/m)	E-FIELD EMISSION CW (V/m)	H-FIELD EMISSION CW (dBA/m)	H-FIELD EMISSION CW (A/m)
M1	0	46.0 to 51.0	199.5 to 354.8	-4.4 to 0.6	0.60 to 1.07
	-5	43.5 to 48.5	149.6 to 266.1	-6.9 to -1.9	0.45 to 0.80
M2	0	41.0 to 46.0	112.2 to 199.5	-9.4 to -4.4	0.34 to 0.60
	-5	48.5 to 53.5	84.1 to 149.6	-11.9 to -6.9	0.25 to 0.45
M3	0	36.0 to 41.0	63.1 to 112.2	-14.4 to -9.4	0.19 to 0.34
	-5	33.5 to 38.5	47.3 to 84.1	-16.9 to -11.9	0.14 to 0.25
M4	0	< 36.0	< 63.1	< -14.4	< 0.19
	-5	< 33.5	< 47.3	< -16.9	< 0.14

ARTICULATION WEIGHING FACTOR (AWF)

The following AWF factors shall be used for the standard transmission protocols:

STANDARD	TECHNOLOGY	AWF (dB)
TIA/EIA/IS-2000	CDMA	0
TIA/EIA-136	TDMA (50Hz)	0
iDENTM	TDMA (22 and 11Hz)	0
J-STD-007	GSM (217)	-5
T1/T1P1/3GPP	UMTS (WCDMA)	0

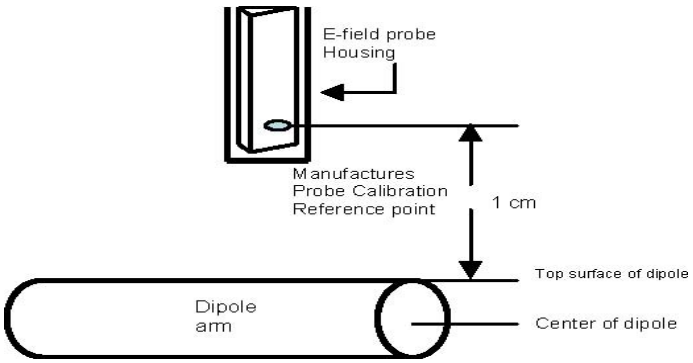
5. SYSTEM CHECK

The measured values (E-field and H-field) were compared with the values provided by the probe manufacturer and must within the allowed tolerance of **25%**.

5.1. VALIDATION STRUCTURE

The input signal was an un-modulated continuous wave. The following points were taken into consideration in performing this check:

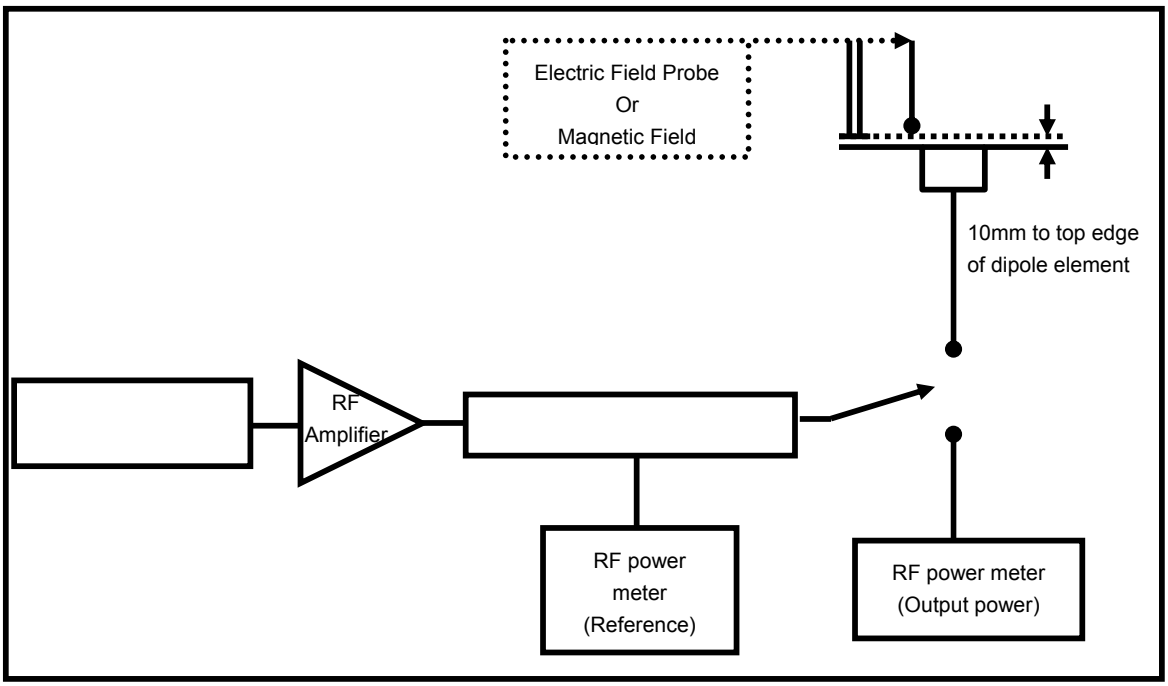
- Average Input Power P = 100mW RMS (20dBm RMS) after adjustment for return loss
- The test fixture must meet the 2 wavelength separation criterion
- The proper measurement of the 1cm probe to dipole separation, which is measured from top surface of the dipole to the calibration reference point of the sensor, defined by the probe manufacturer is shown in the following diagram:



5.2. SYSTEM CHECK PROCEDURE

1. Before you start the system performance check, need only to tell the system with which components (probe type, validation dipole and HAC arch) are performing the system performance check; the system will take care of all parameters.

The system check configuration is shown in the following figure:



2. The dipole was energized with a 20dBm un-modulated continuous-wave signal.
3. The length of the dipole was scanned with both E-field and H-field probes and the maximum values for each were recorded.

5.3. VALIDATION RESULTS

Frequency (MHz)	Input Power (dBm)	Target Value (V/m)	E-Field 1 (V/m)	E-Field 2 (V/m)	Average Value (V/m)	Deviation (%)	Date
835	20	168.0	141.0	137.5	139.25	-17.11	Feb. 20, 2012
835	20	168.0	140.0	136.7	138.35	-17.65	Feb. 23, 2012
1880	20	142.1	122.4	123.7	123.05	-13.41	Feb. 20, 2012
1880	20	142.1	121.0	122.2	121.6	-14.43	Feb. 23, 2012
Frequency (MHz)	**Input Power (dBm)**	**Target Value (A/m)**	**H-Field (A/m)**			**Deviation (%)**	**Date**
835	20	0.471	0.431			-8.49	Feb. 20, 2012
835	20	0.471	0.468			-0.64	Feb. 23, 2012
1880	20	0.471	0.457			-2.97	Feb. 20, 2012
1880	20	0.471	0.459			-2.55	Feb. 23, 2012

NOTE: Please see Appendix for the system validation test data.

6. MODULATION FACTOR

A calibration was made of the modulation response of the probe and its instrumentation chain. This calibration was performed with the field probe, attached to its instrumentation. The response of the probe system to a CW field at the frequency of interest is compared to its response to a modulated signal with equal peak amplitude to that of a CW signal. The field level of the test signals are ensured to be more than 10dB above the ambient level and the noise floor of the instrumentation being used. The ratio of the CW reading to that taken with a modulated reading was applied to the DUT measurements.

This was done using the following procedure:

1. Fixing the probe in a set location relative to a field generating device, such as a reference dipole antenna, as illustrated in the system check procedure.
2. Illuminate the probe using the wireless device connected to the reference dipole with a test signal at the intended measurement frequency, Ensure there is sufficient field coupling between the probe and the antenna so the resulting reading is greater than 10dB above the probe system noise floor but within the systems operating range.
3. Record the amplitude applied to the antenna during transmission and the field strength measured by the E-field probe located near the tip of the dipole antenna.
4. Replace the wireless device with an RF signal generator producing an unmodulated CW signal and set to the wireless device operating frequency.
5. Set the amplitude of the unmodulated signal to equal that recorded from the wireless device.
6. Record the reading of the probe measurement system of the unmodulated signal.
7. The RF signal generator producing an 80%AM signal and set to the wireless device operating frequency. Set the amplitude of the signal to equal that recorded from the wireless device.
8. Record the reading of the probe measurement system of the 80%AM signal.
9. The ratio, in linear units, of the probe reading in Step 3) or 8) to the reading in Step 6) is the E-field modulation factor.
10. Steps 1-9 were repeated at all frequency bands and for both E and H field probes.

NOTE: The ratio of the CW to modulated signal reading is the modulation factor. The modulation factors obtained were applied to readings taken of the actual wireless device, in order to obtain an accurate peak field reading using the formula:

$$\mathbf{Peak = 20 \cdot log(Raw \cdot ProbeModulationFactor)}$$

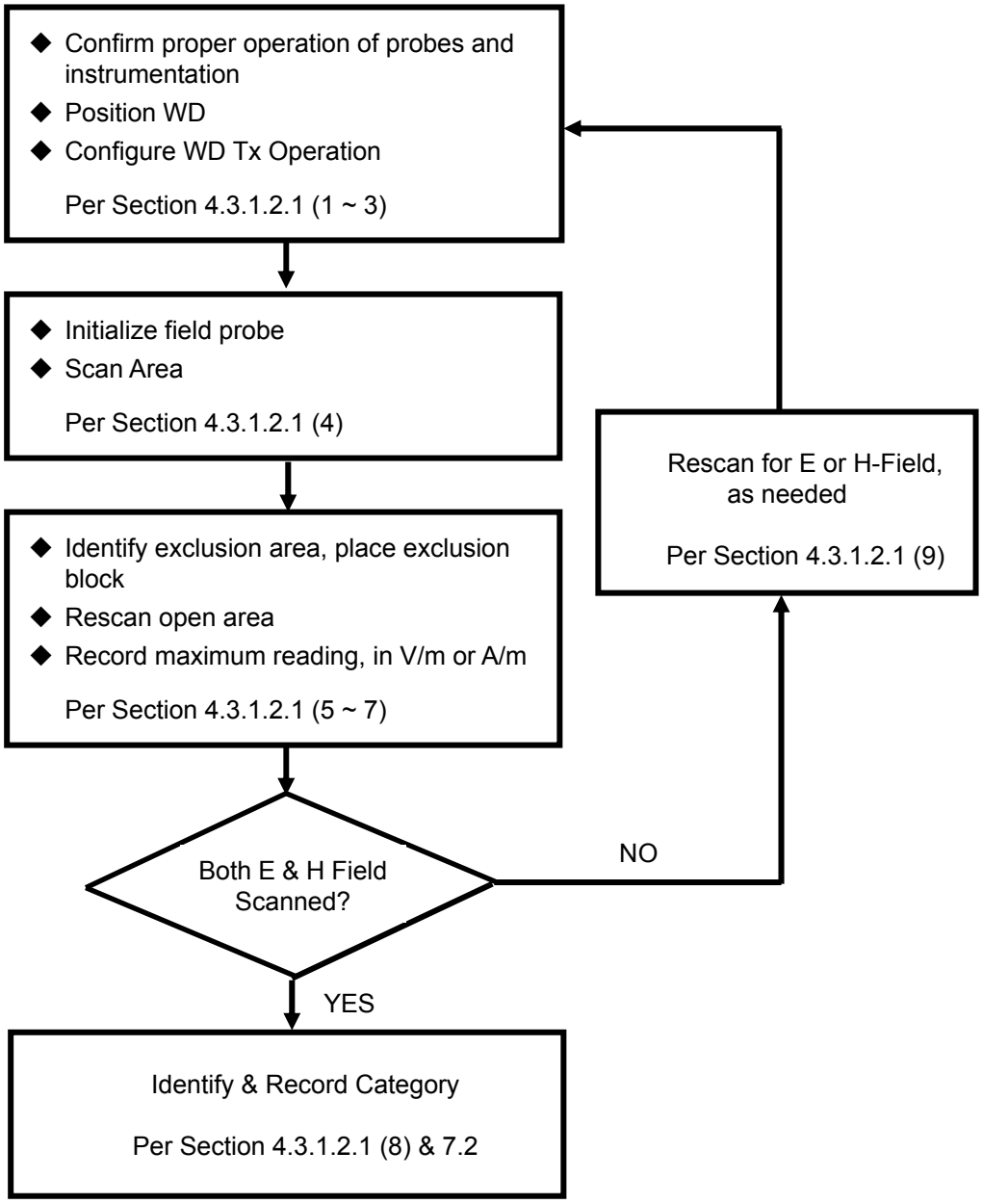
6.1 MODULATION FACTOR TEST RESULTS

TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL (dBm)	MEASURED E-FILED (V/m)	E-FILED MODULATION FACTOR
835	CW	24.0	277.9	NA
	AM80%		170.5	1.63
	CDMA		287.2	0.97
	CDMA 1/8		94.4	2.94
TEST FREQUENCY (MHz)	**PROTOCOL**	**REFERENCE LEVEL (dBm)**	**MEASURED H-FILED (A/m)**	**H-FILED MODULATION FACTOR**
835	CW	24.0	0.790	NA
	AM80%		0.519	1.52
	CDMA		0.854	0.93
	CDMA 1/8		0.292	2.71

TEST FREQUENCY (MHz)	PROTOCOL	REFERENCE LEVEL (dBm)	MEASURED E-FILED (V/m)	E-FILED MODULATION FACTOR
1880	CW	24.0	320.9	NA
	AM80%		194.1	1.65
	CDMA		326.2	0.98
	CDMA 1/8		100.8	3.18
TEST FREQUENCY (MHz)	**PROTOCOL**	**REFERENCE LEVEL (dBm)**	**MEASURED H-FILED (A/m)**	**H-FILED MODULATION FACTOR**
1880	CW	24.0	1.063	NA
	AM80%		0.802	1.33
	CDMA		1.315	0.81
	CDMA 1/8		0.398	2.67

7. RF EMISSION TEST PROCEDURES

7.1. TEST INSTRUCTION



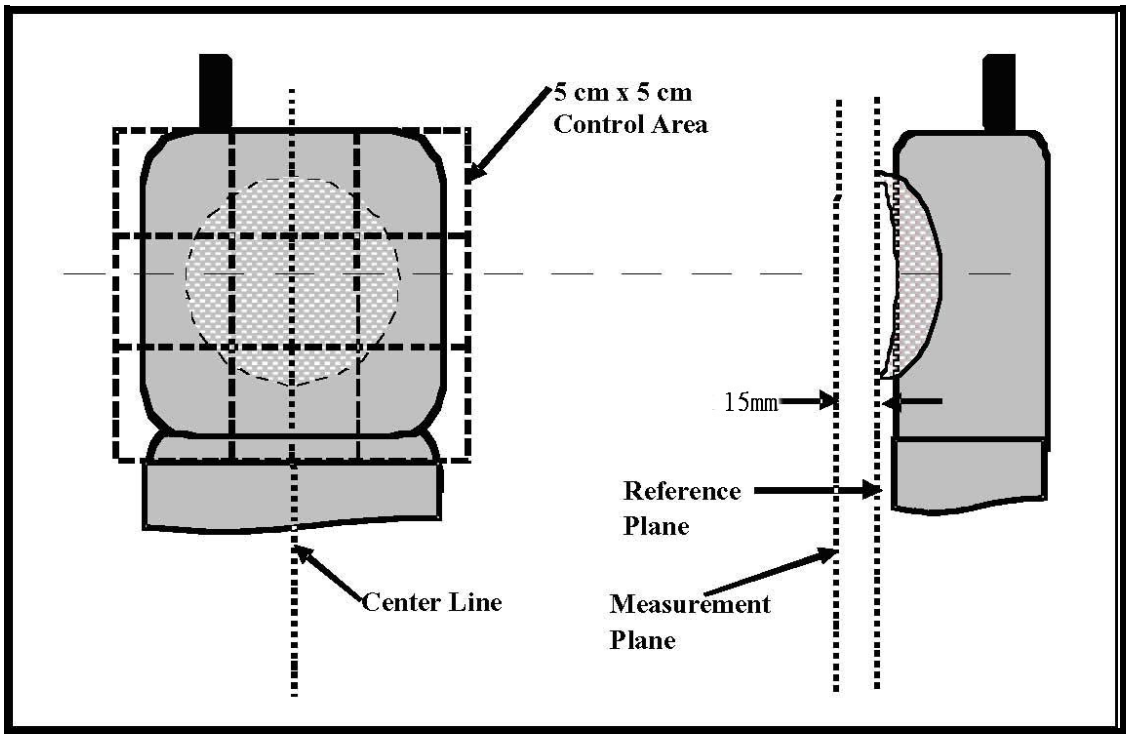
7.2. TEST PROCEDURES

The EUT makes a phone call to the GSM base station. Establish the simulation communication configuration rather the actual communication. Then the EUT could continuous the transmission mode. Adjust the PCL of the base station could controlled the EUT to transmitted the maximum output power. The base station also could control the transmission channel.

The recommended procedure for assessing the RF emission value consists of the following steps:

1. Proper operation of the field probe, probe measurement system, other instrumentation, and the positioning system was confirmed.
2. WD is positioned in its intended test position, acoustic output point of the device perpendicular to the field probe.
3. The center sub-grid was centered over the center of the acoustic output (also audio band magnetic output, if applicable). The WD audio output was positioned tangent (as physically possible) to the measurement plane.
4. A surface calibration was performed before each setup change to ensure repeatable spacing and proper maintenance of the measurement plane using the HAC arch.
5. The measurement system measured the field strength at the reference location.
6. Measurements at 2mm increments in the 5 x 5cm region were performed and recorded. A 360^{o} rotation about the azimuth axis at the maximum interpolated position was measured. For the worst-case condition, the peak reading from this rotation was used in re-evaluating the HAC category.
7. Steps 1-6 were done for both the E and H-Field measurements.

7.3. DESCRIPTION OF TEST POSITION AND CONFIGURATIONS



7.4. SUMMARY OF MEASURED HAC RESULTS

Plot No.	Band	Mode	Channel	Battery	Peak E-Field (V/m)
1	CDMA2000 BC0	RC1+SO2_Full	384	1	62.6
2	CDMA2000 BC0	RC1+SO2_Eighth	384	1	65.6
3	CDMA2000 BC0	RC1+SO3_Voice	384	1	66.2
4	CDMA2000 BC0	RC1+SO55_Full	384	1	61.9
5	CDMA2000 BC0	RC1+SO55_Eighth	384	1	65.7
6	CDMA2000 BC0	RC2+SO17_Voice	384	1	65.7
7	**CDMA2000 BC0**	**RC2+SO32768_Voice**	**384**	**1**	**69.5**
8	CDMA2000 BC0	RC3+SO2_Full	384	1	61.9
9	CDMA2000 BC0	RC3+SO2_Eighth	384	1	62.1
10	CDMA2000 BC0	RC3+SO3_Voice	384	1	61.1
11	CDMA2000 BC0	RC3+SO55_Full	384	1	61.7
12	CDMA2000 BC0	RC3+SO55_Eighth	384	1	61.9
13	CDMA2000 BC0	RC4+SO3_Voice	384	1	61.9
14	CDMA2000 BC0	RC5+SO17_Voice	384	1	62.2
15	CDMA2000 BC0	RC5+SO32768_Voice	384	1	55.4

Note:

Per above pretest the worst mode is RC2+SO32768 which will be performed complete E and H field testing as follow.

E-FIELD EMISSION

Plot No.	Band	Mode	Channel	Battery	Peak E-Field (V/m)	E-Field M Rating
7	CDMA2000 BC0	RC2+SO32768_Voice	384	1	**69.5**	**M4**
16	CDMA2000 BC0	RC2+SO32768_Voice	1013	1	62.4	M4
17	CDMA2000 BC0	RC2+SO32768_Voice	777	1	64.2	M4
18	CDMA2000 BC0	RC2+SO32768_Voice	384	2	66.4	M4
23	CDMA2000 BC1	RC2+SO32768_Voice	600	1	**38.7**	**M4**
24	CDMA2000 BC1	RC2+SO32768_Voice	25	1	38.1	M4
25	CDMA2000 BC1	RC2+SO32768_Voice	1175	1	36.2	M4
26	CDMA2000 BC1	RC2+SO32768_Voice	600	2	37.0	M4
19	CDMA2000 BC10	RC2+SO32768_Voice	573	1	**60.4**	**M4**
20	CDMA2000 BC10	RC2+SO32768_Voice	476	1	59.7	M4
21	CDMA2000 BC10	RC2+SO32768_Voice	670	1	57.3	M4
22	CDMA2000 BC10	RC2+SO32768_Voice	573	2	58.1	M4

NOTE: Please see the Appendix A for the measured data and test plots.

H-FIELD EMISSION

Plot No.	Band	Mode	Channel	Battery	Peak H-Field (A/m)	H-Field M Rating
27	CDMA2000 BC0	RC2+SO32768_Voice	384	1	**0.104**	**M4**
28	CDMA2000 BC0	RC2+SO32768_Voice	1013	1	0.092	M4
29	CDMA2000 BC0	RC2+SO32768_Voice	777	1	0.098	M4
30	CDMA2000 BC0	RC2+SO32768_Voice	384	2	0.102	M4
35	CDMA2000 BC1	RC2+SO32768_Voice	600	1	**0.104**	**M4**
36	CDMA2000 BC1	RC2+SO32768_Voice	25	1	0.095	M4
37	CDMA2000 BC1	RC2+SO32768_Voice	1175	1	0.103	M4
38	CDMA2000 BC1	RC2+SO32768_Voice	600	2	0.097	M4
31	CDMA2000 BC10	RC2+SO32768_Voice	573	1	0.097	M4
32	CDMA2000 BC10	RC2+SO32768_Voice	476	1	**0.099**	**M4**
33	CDMA2000 BC10	RC2+SO32768_Voice	670	1	0.091	M4
34	CDMA2000 BC10	RC2+SO32768_Voice	476	2	0.09	M4

NOTE: Please see the Appendix A for the measured data and test plots.

8. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5.phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

---END---

P01 T-Coil_CDMA2000 BC0_RC1+SO3_Ch1013_Sample1_Axial (Z)

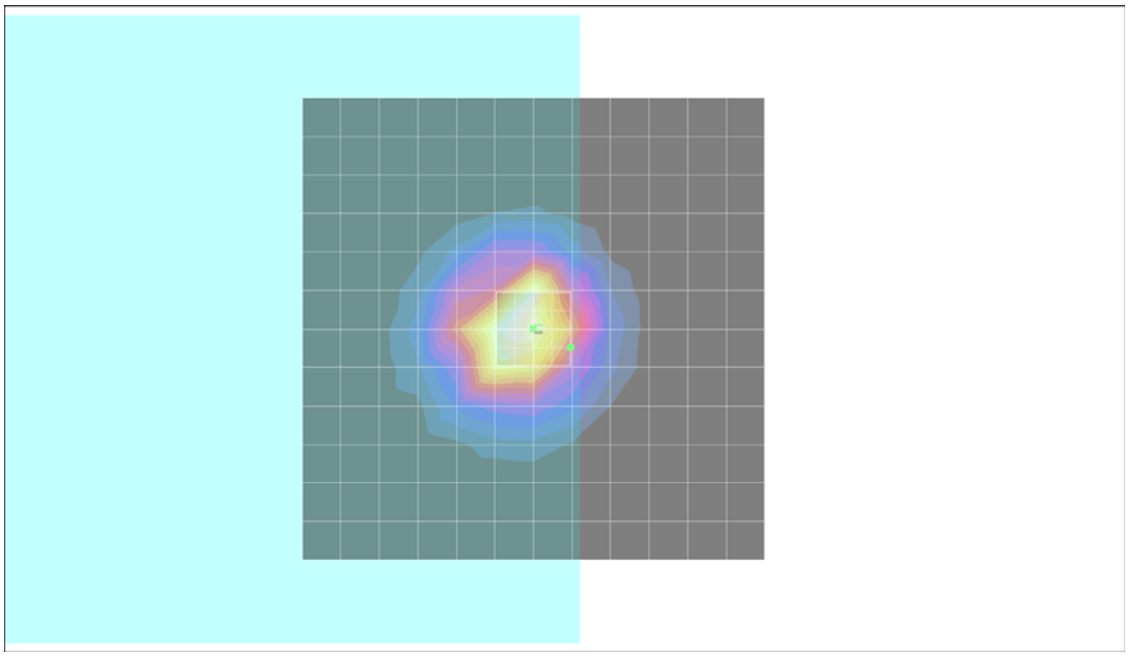
DUT: 120117C24

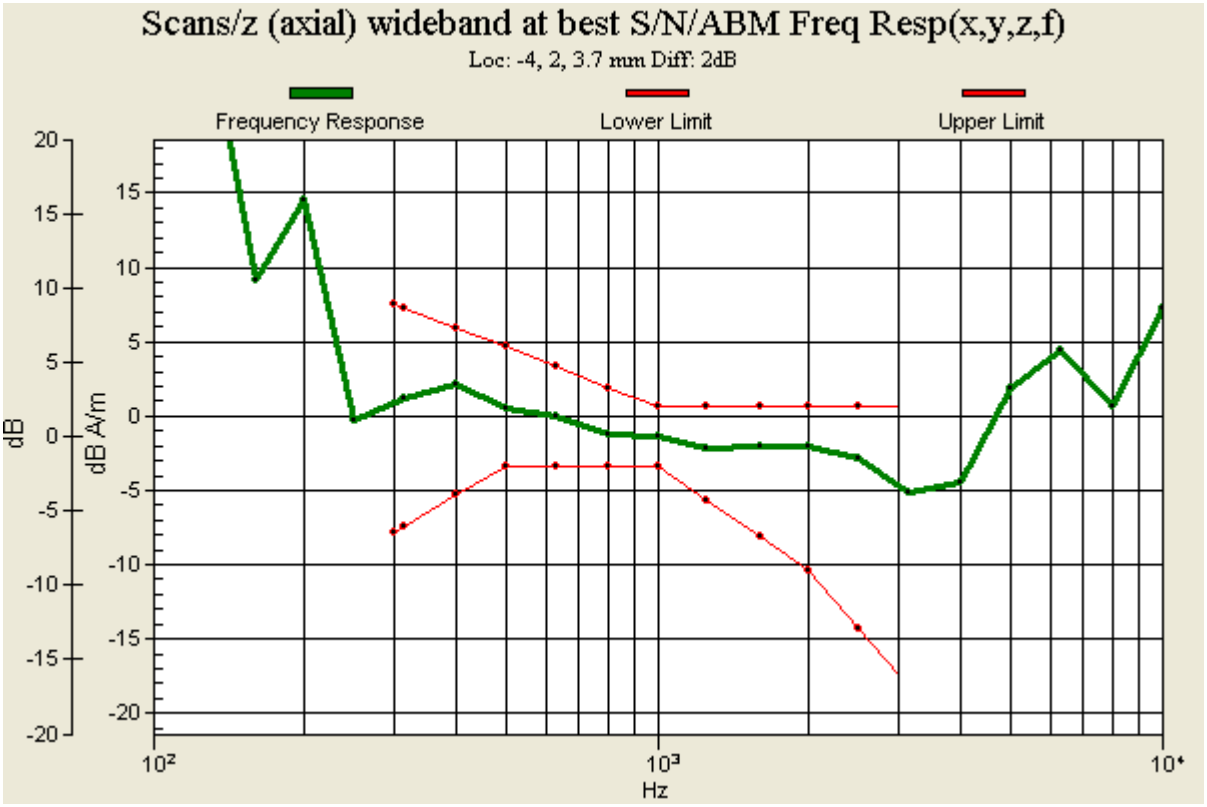
Communication System: CDMA2000 BC0; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.9 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 38.5 dB
ABM1 comp = -4.79 dB A/m
Location: -4, 2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: -4, 2, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10^2
10^3
10^4

P01 T-Coil_CDMA2000 BC0_RC1+SO3_Ch1013_Sample1_Radial 1 (X)

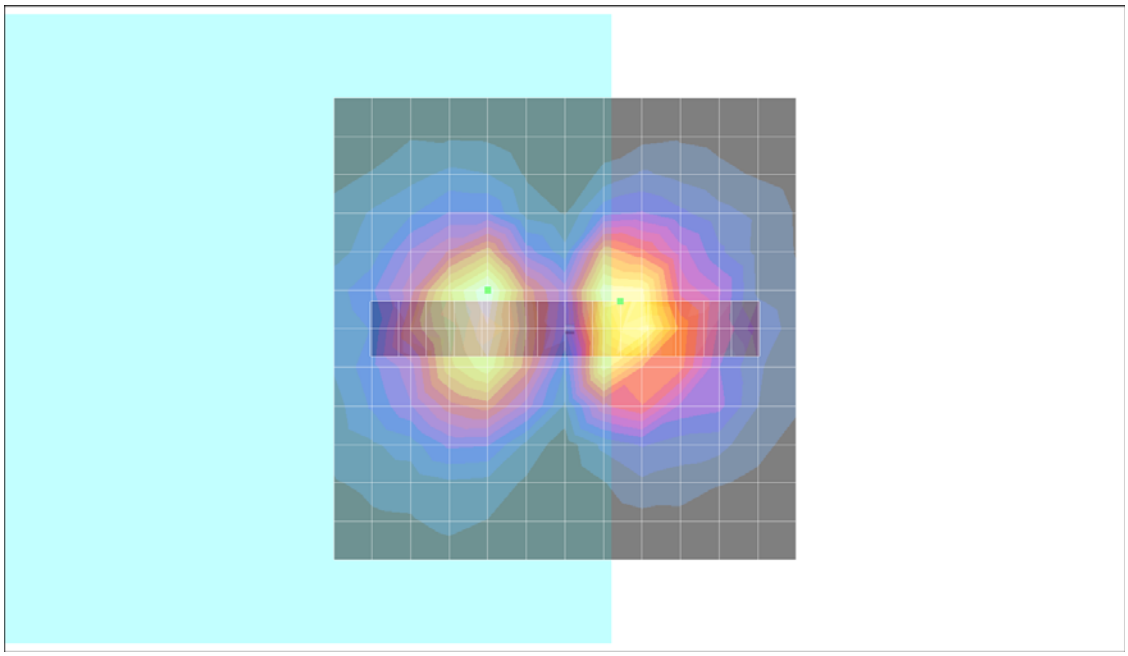
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.9 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 24.3 dB
ABM1 comp = -7.33 dB A/m
Location: -6, -3, 3.7 mm



P01 T-Coil_CDMA2000 BC0_RC1+SO3_Ch1013_Sample1_Radial 2 (Y)

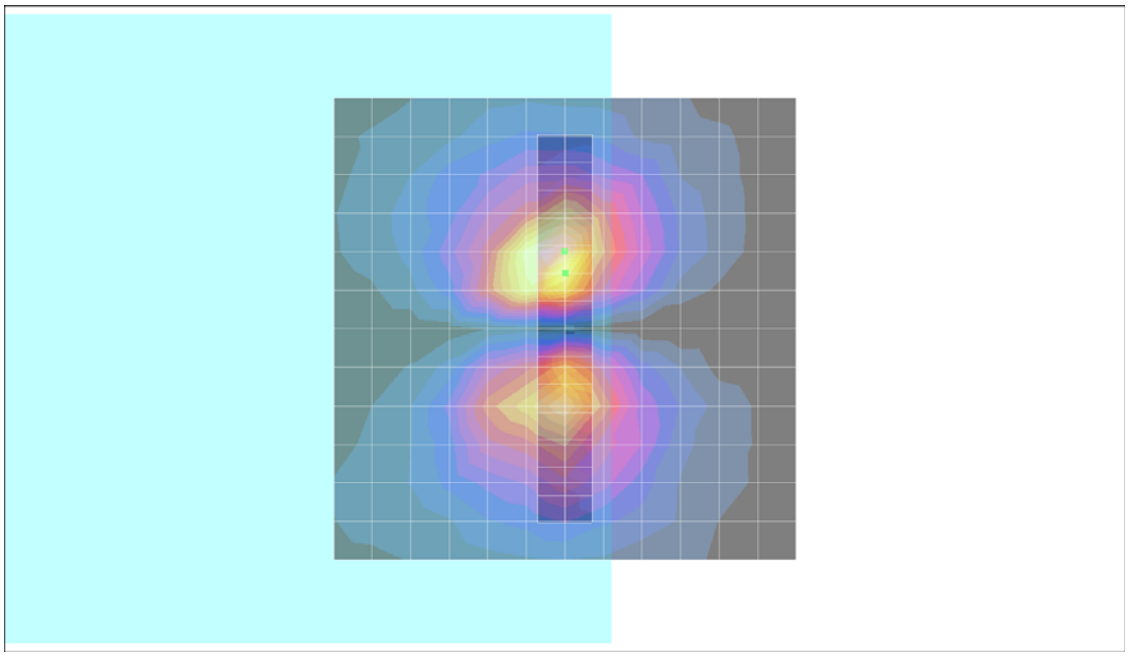
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.9 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.6 dB
ABM1 comp = -8.20 dB A/m
Location: 0, -6, 3.7 mm



P02 T-Coil_CDMA2000 BC0_RC1+SO3_Ch384_Sample1_Axial (Z)

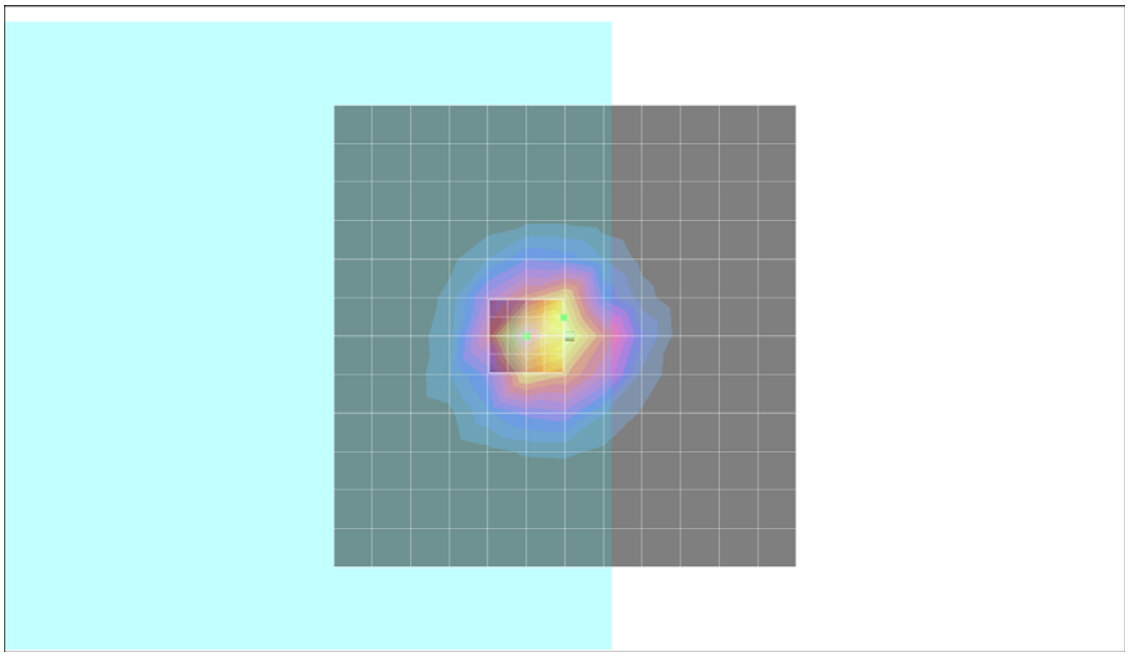
DUT: 120117C24

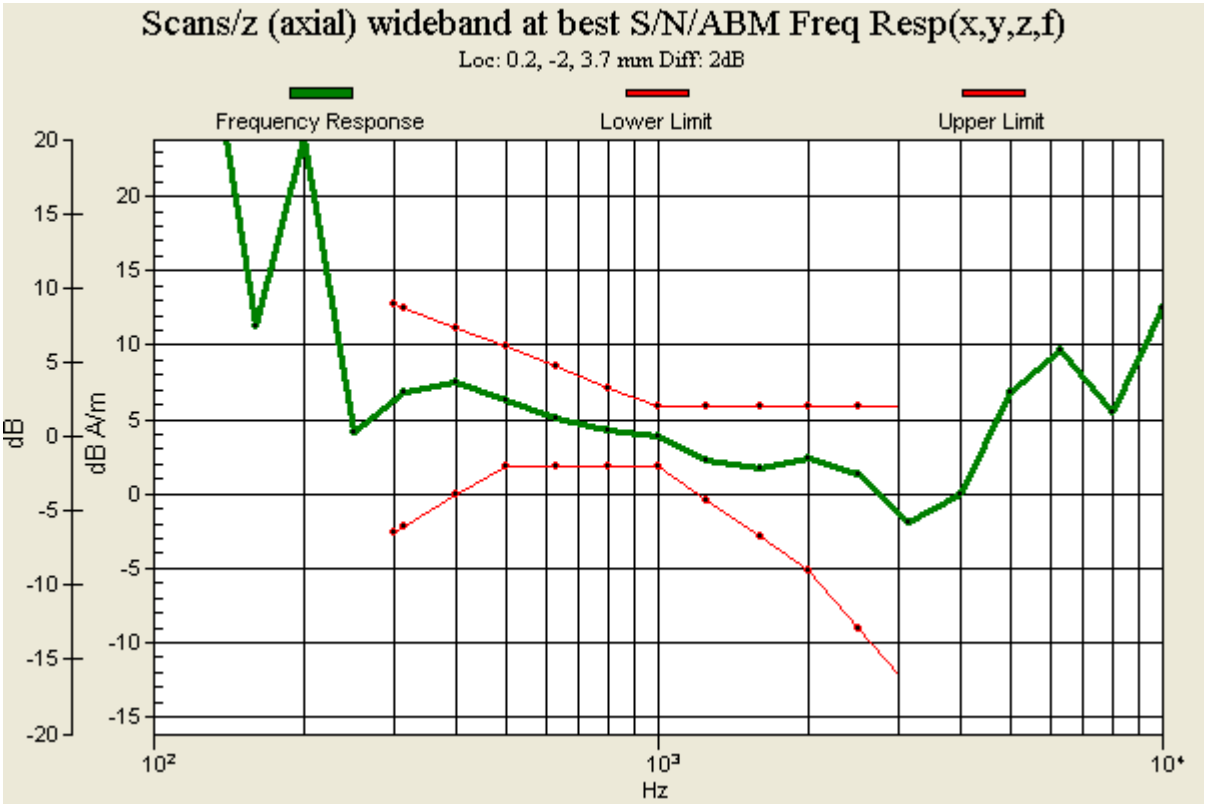
Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 36.1 dB
ABM1 comp = 0.153 dB A/m
Location: 0.2, -2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: 0.2, -2, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10²
10³
10⁴

P02 T-Coil_CDMA2000 BC0_RC1+SO3_Ch384_Sample1_Radial 1 (X)

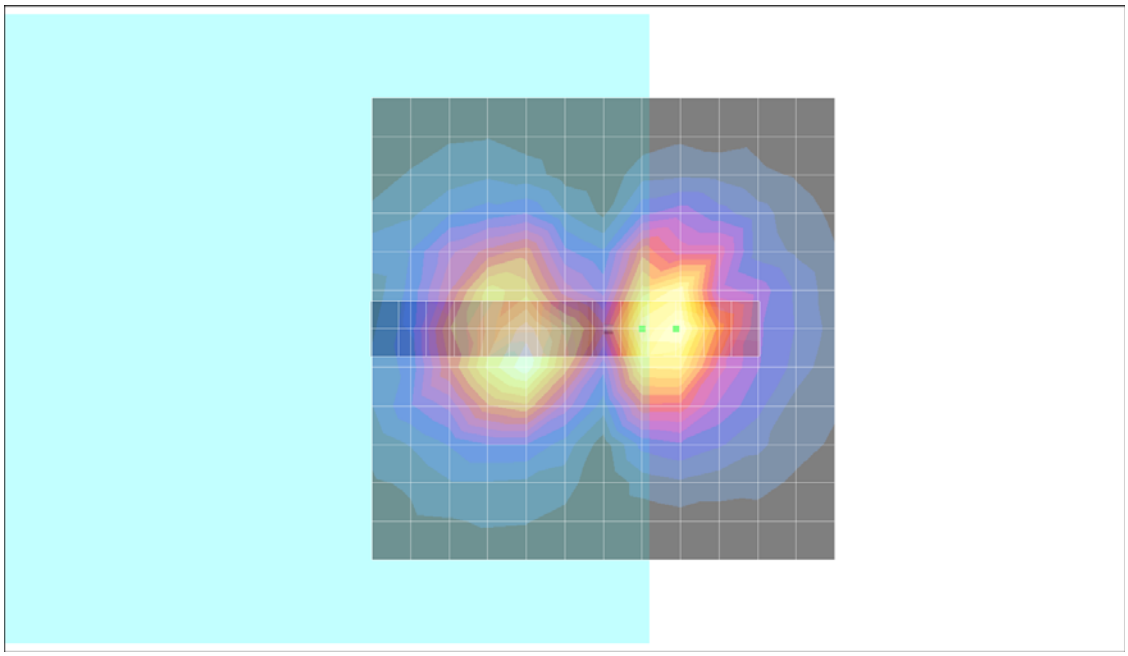
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 24.2 dB
ABM1 comp = -7.67 dB A/m
Location: -7.8, 0, 3.7 mm



P02 T-Coil_CDMA2000 BC0_RC1+SO3_Ch384_Sample1_Radial 2 (Y)

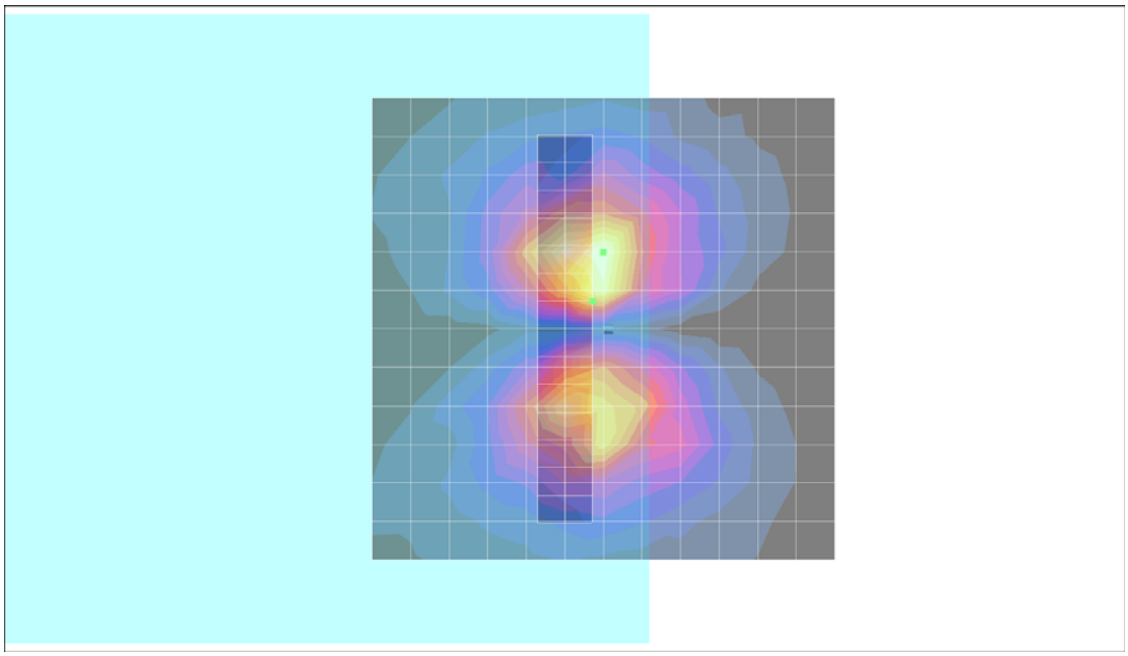
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 31.6 dB
ABM1 comp = -9.62 dB A/m
Location: 1.2, -3, 3.7 mm



P03 T-Coil_CDMA2000 BC0_RC1+SO3_Ch777_Sample1_Axial (Z)

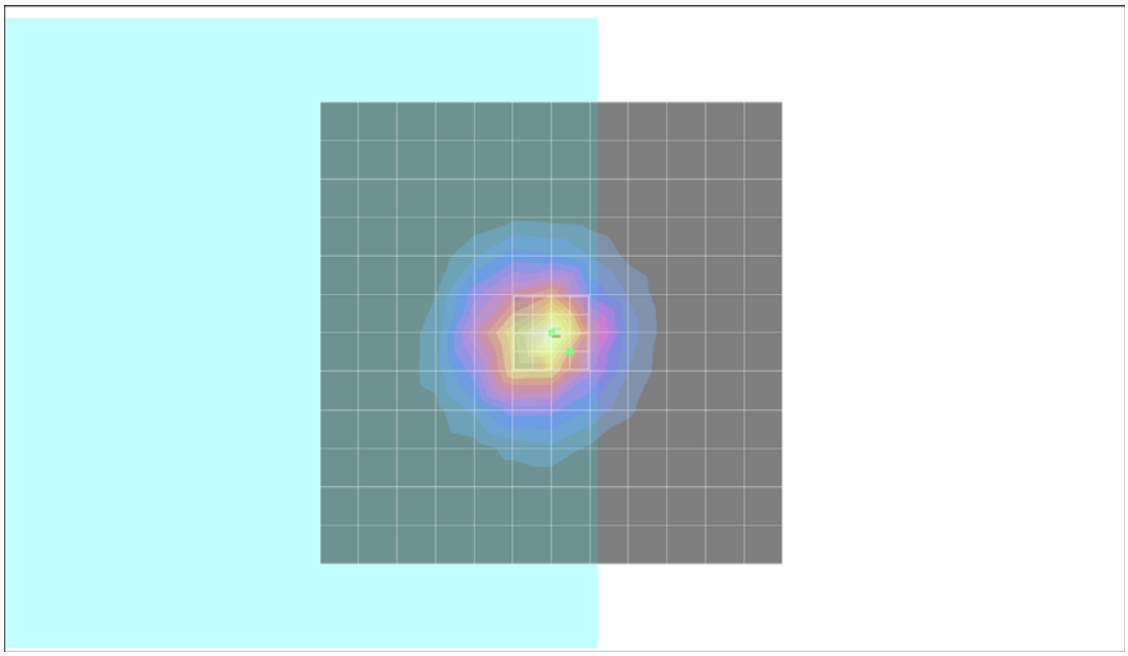
DUT: 120117C24

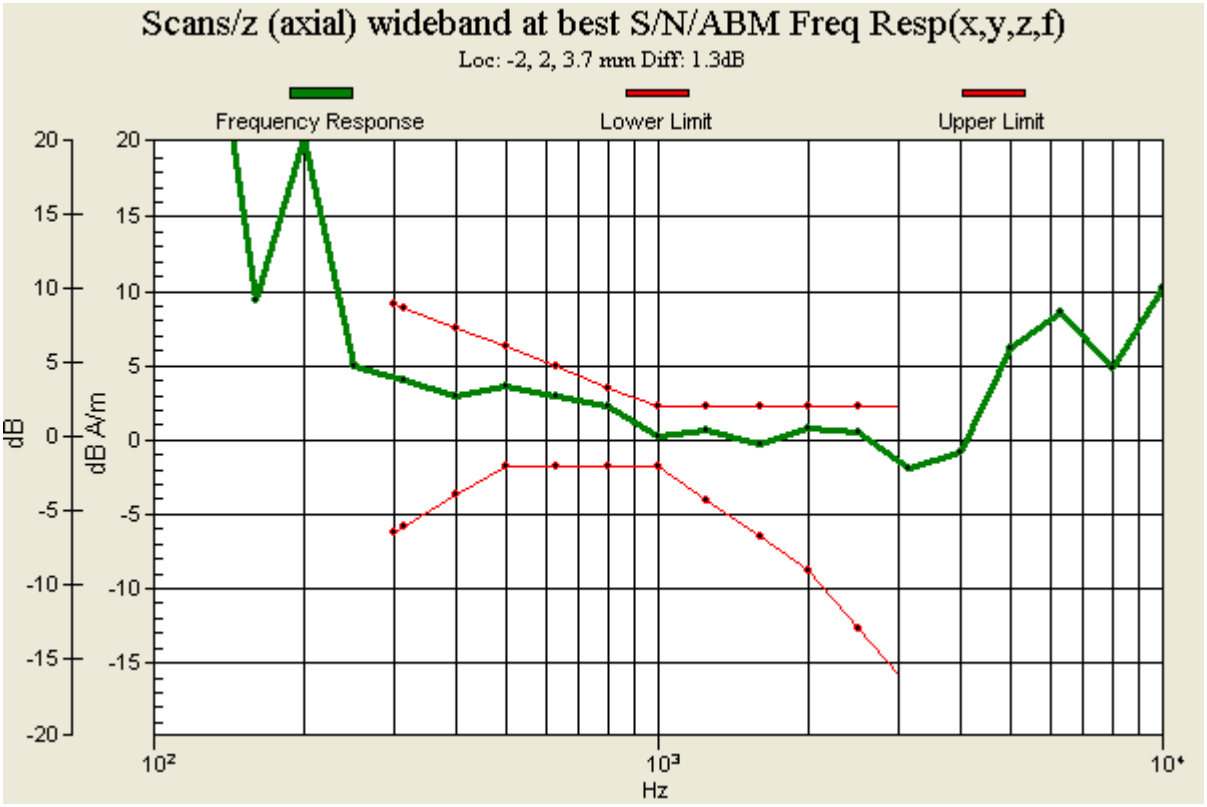
Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 39.7 dB
ABM1 comp = -1.63 dB A/m
Location: -2, 2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: -2, 2, 3.7 mm Diff: 1.3dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
20
15
10
5
0
-5
-10
-15
-20
10^2
10^3
10^4
Hz

P03 T-Coil_CDMA2000 BC0_RC1+SO3_Ch777_Sample1_Radial 1 (X)

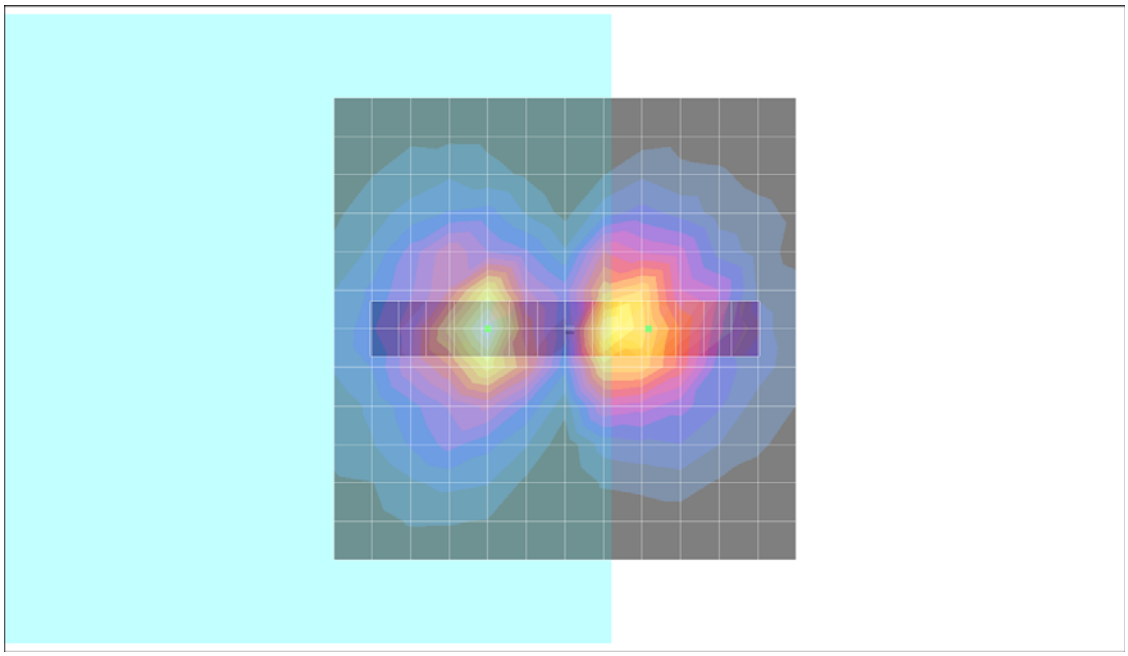
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 24.7 dB
ABM1 comp = -8.89 dB A/m
Location: -9, 0, 3.7 mm



P03 T-Coil_CDMA2000 BC0_RC1+SO3_Ch777_Sample1_Radial 2 (Y)

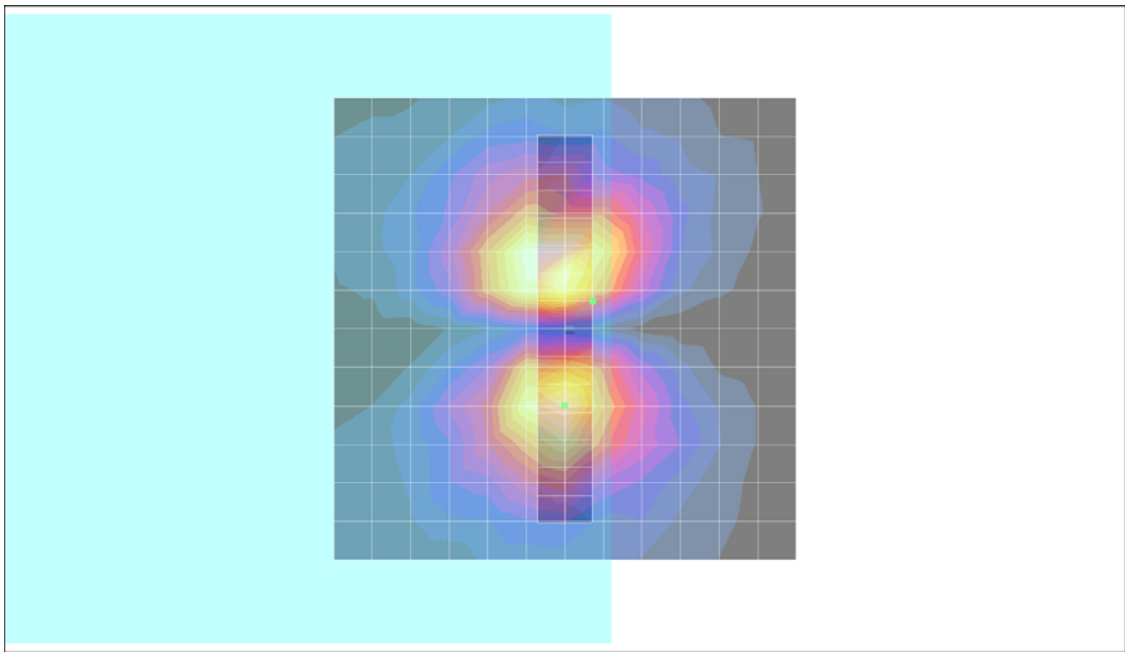
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 32.3 dB
ABM1 comp = -11.3 dB A/m
Location: -3, -3, 3.7 mm



P04 T-Coil_CDMA2000 BC0_RC1+SO3_Ch384_Sample2_Axial (Z)

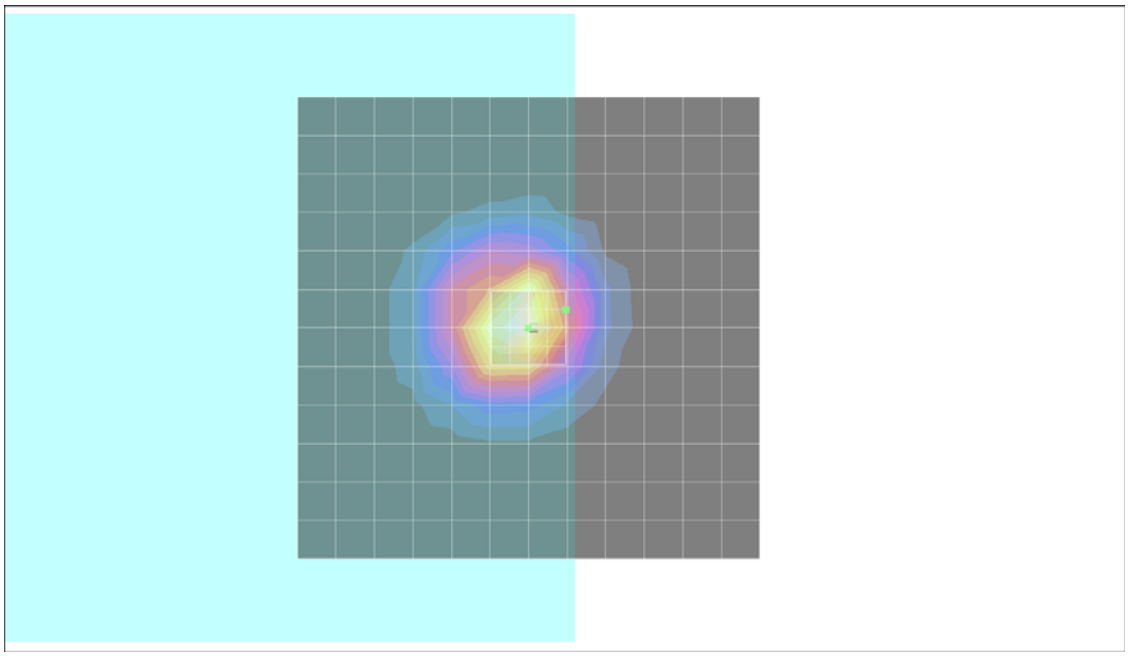
DUT: 120117C24

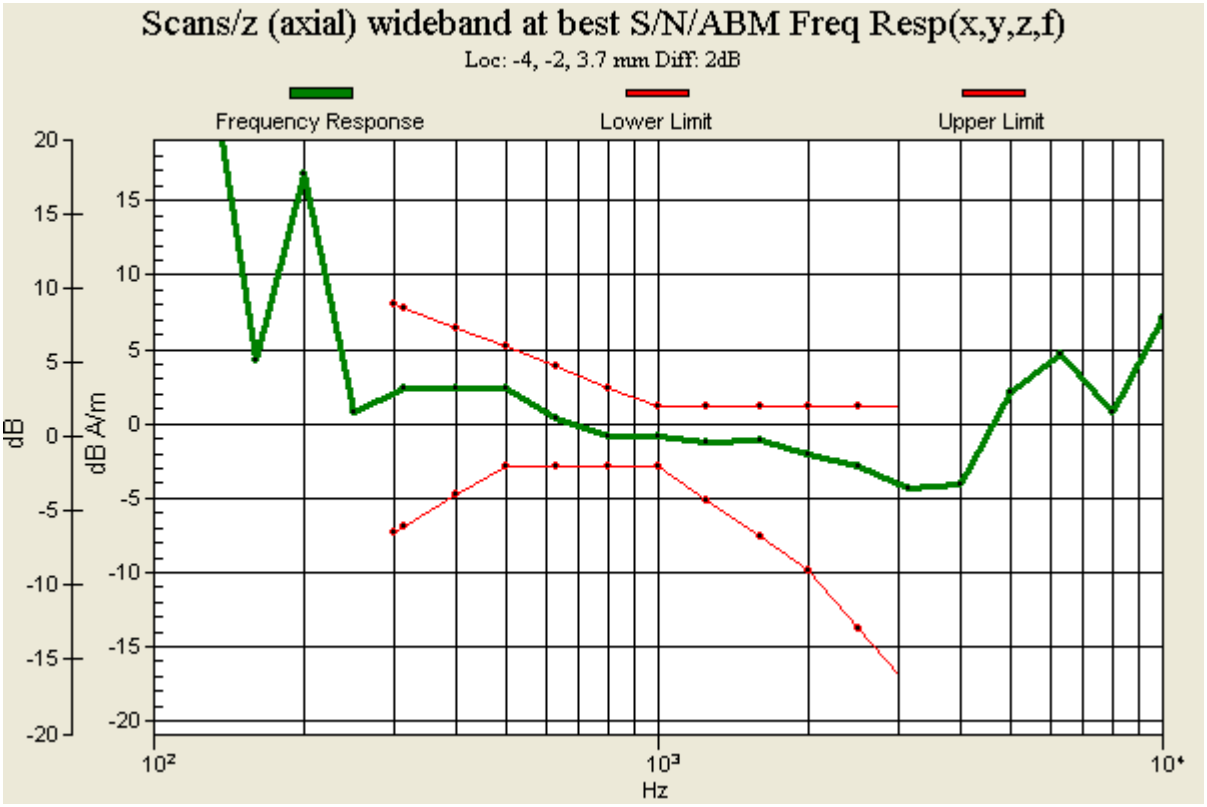
Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 40.8 dB
ABM1 comp = -3.41 dB A/m
Location: -4, -2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: -4, -2, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10^2
10^3
10^4

P04 T-Coil_CDMA2000 BC0_RC1+SO3_Ch384_Sample2_Radial 1 (X)

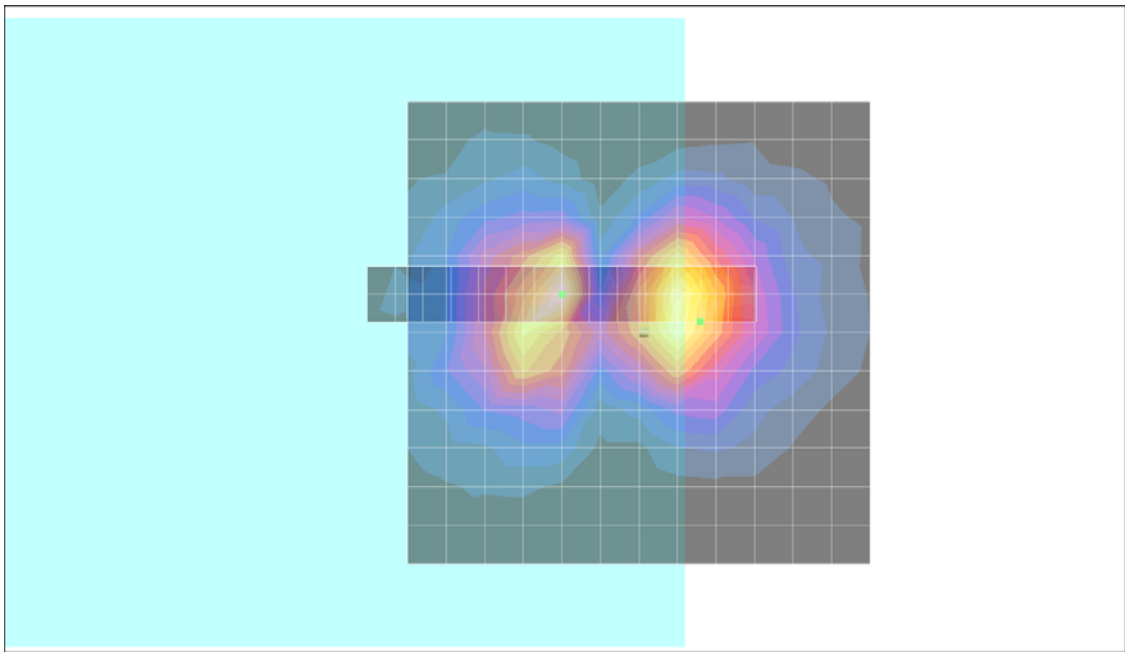
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 25.0 dB
ABM1 comp = -7.65 dB A/m
Location: -6.7, -1.2, 3.7 mm



P04 T-Coil_CDMA2000 BC0_RC1+SO3_Ch384_Sample2_Radial 2 (Y)

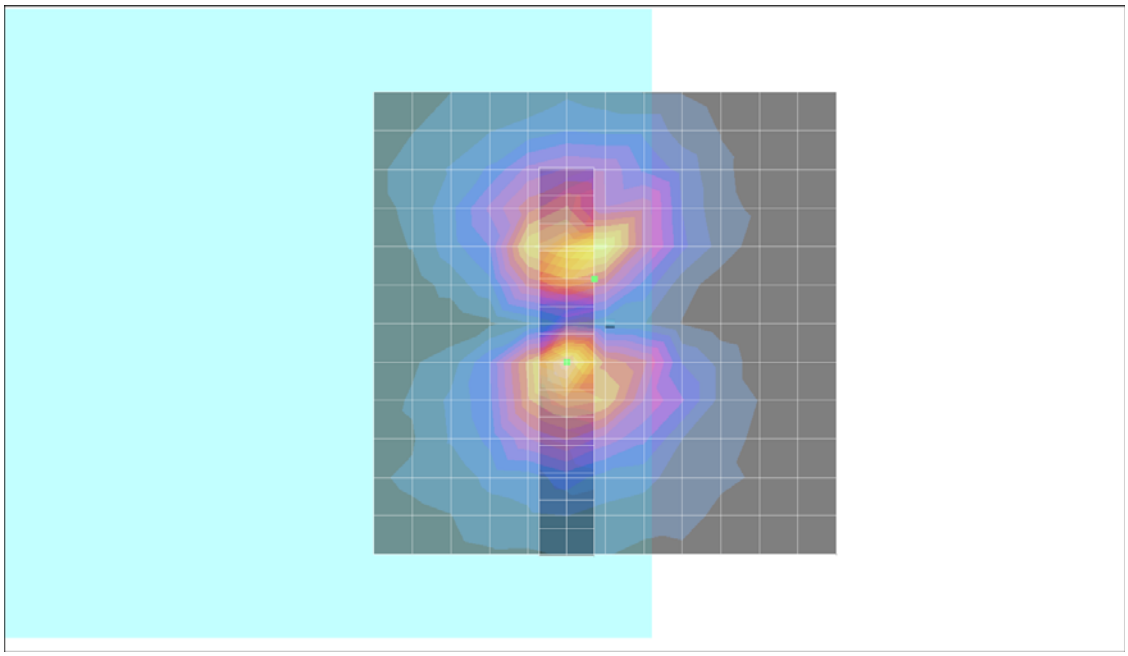
DUT: 120117C24

Communication System: CDMA2000 BC0; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 35.7 dB
ABM1 comp = -6.99 dB A/m
Location: 1.2, -4.8, 3.7 mm



P10 T-Coil_CDMA2000 BC10_RC1+SO3_Ch476_Sample1_Axial (Z)

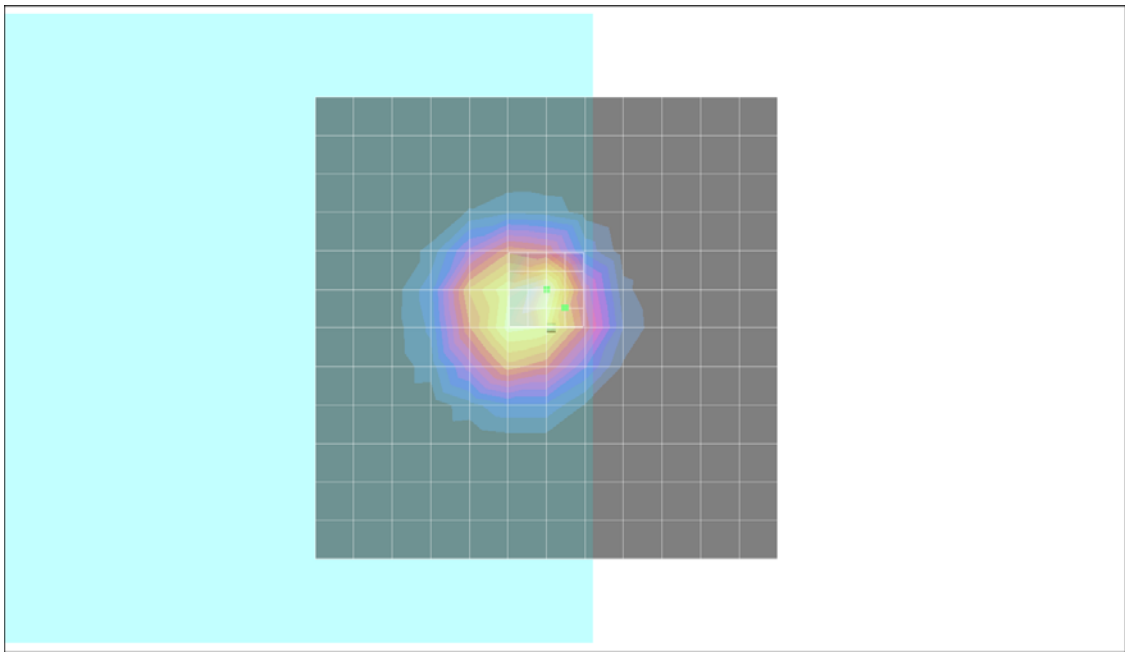
DUT: 120117C24

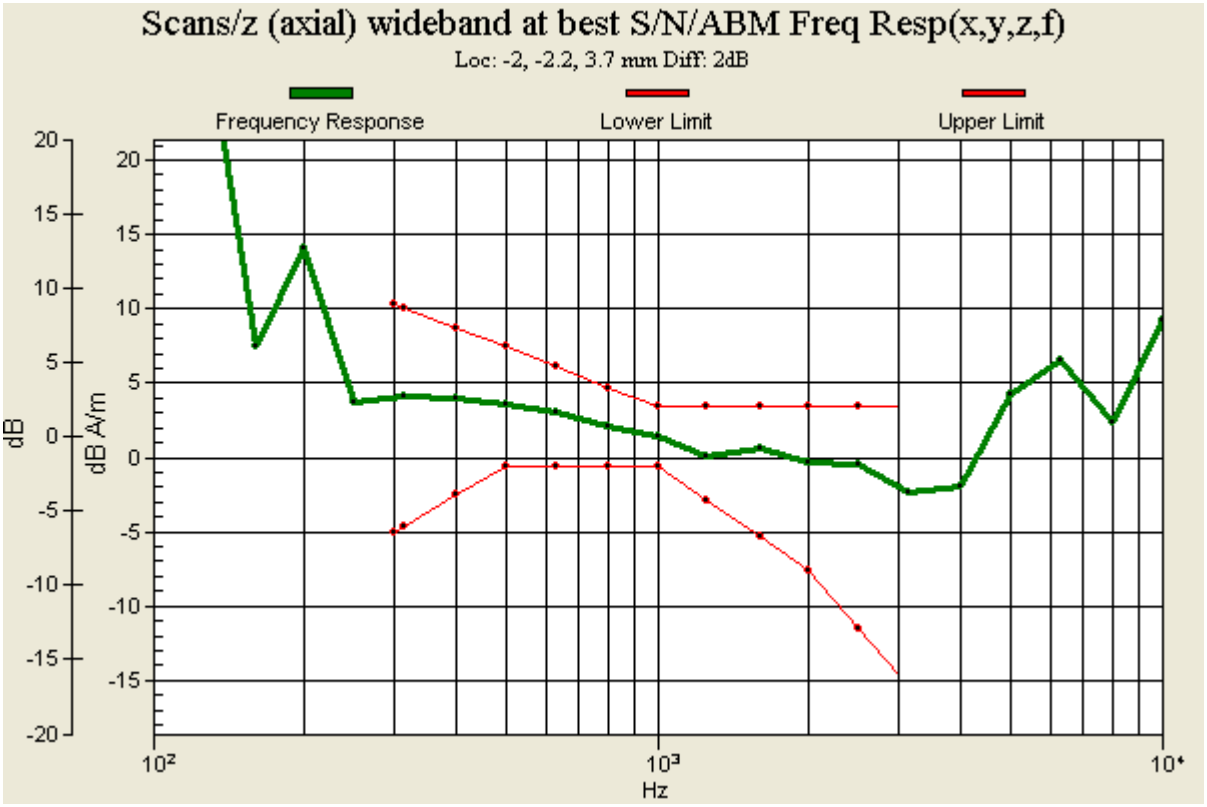
Communication System: CDMA2000 BC10; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 40.5 dB
ABM1 comp = -0.601 dB A/m
Location: -2, -2.2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: -2, -2.2, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10²
10³
10⁴

P10 T-Coil_CDMA2000 BC10_RC1+SO3_Ch476_Sample1_Radial 1 (X)

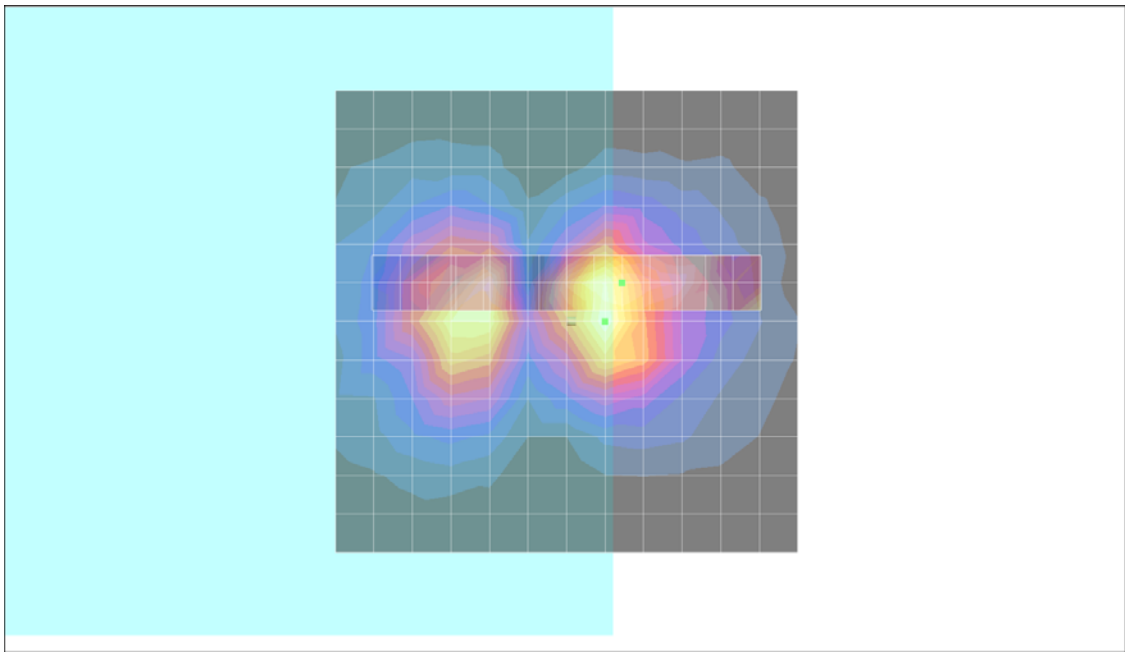
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 23.7 dB
ABM1 comp = -6.75 dB A/m
Location: -6, -4.2, 3.7 mm



P10 T-Coil_CDMA2000 BC10_RC1+SO3_Ch476_Sample1_Radial 2 (Y)

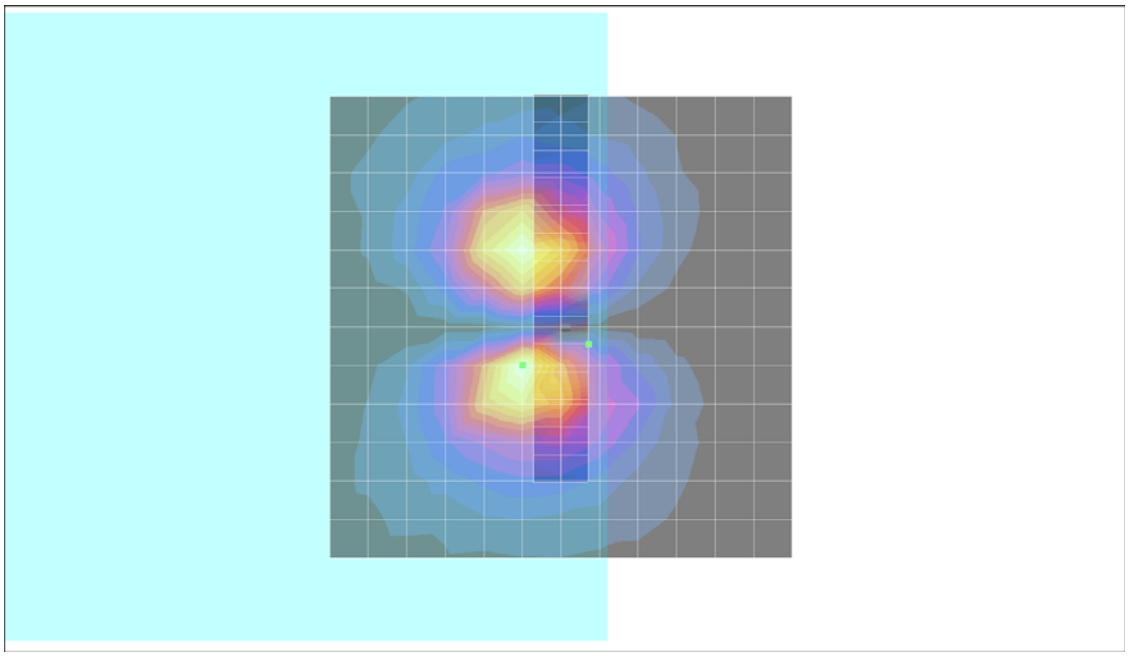
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.6 dB
ABM1 comp = -12.9 dB A/m
Location: -3, 1.8, 3.7 mm



P11 T-Coil_CDMA2000 BC10_RC1+SO3_Ch573_Sample1_Axial (Z)

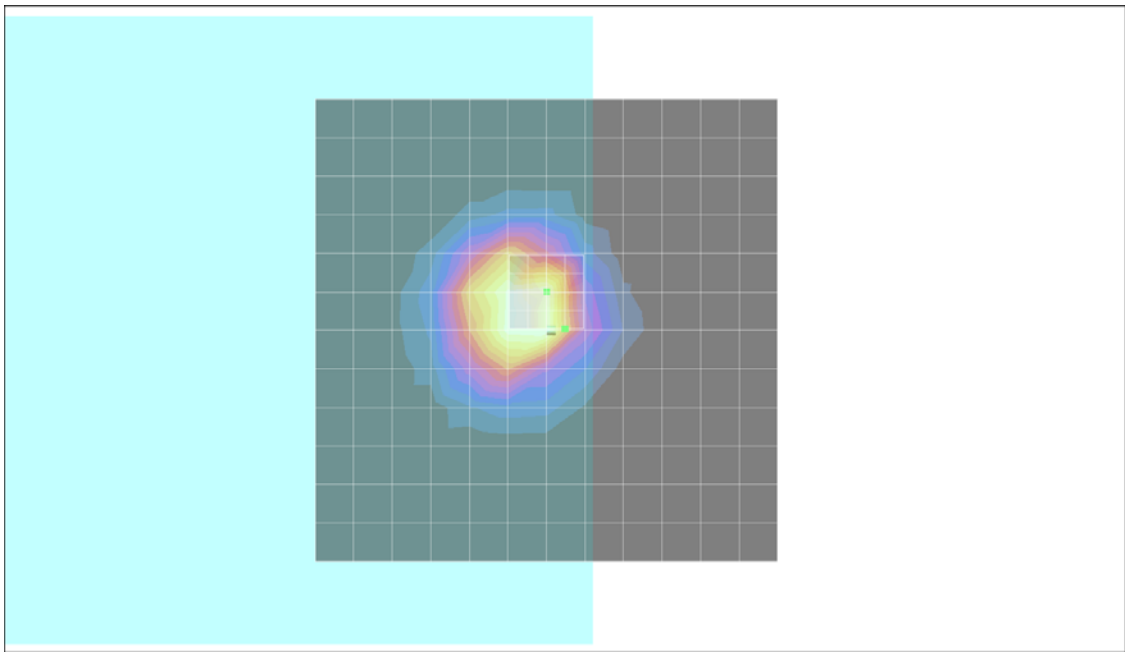
DUT: 120117C24

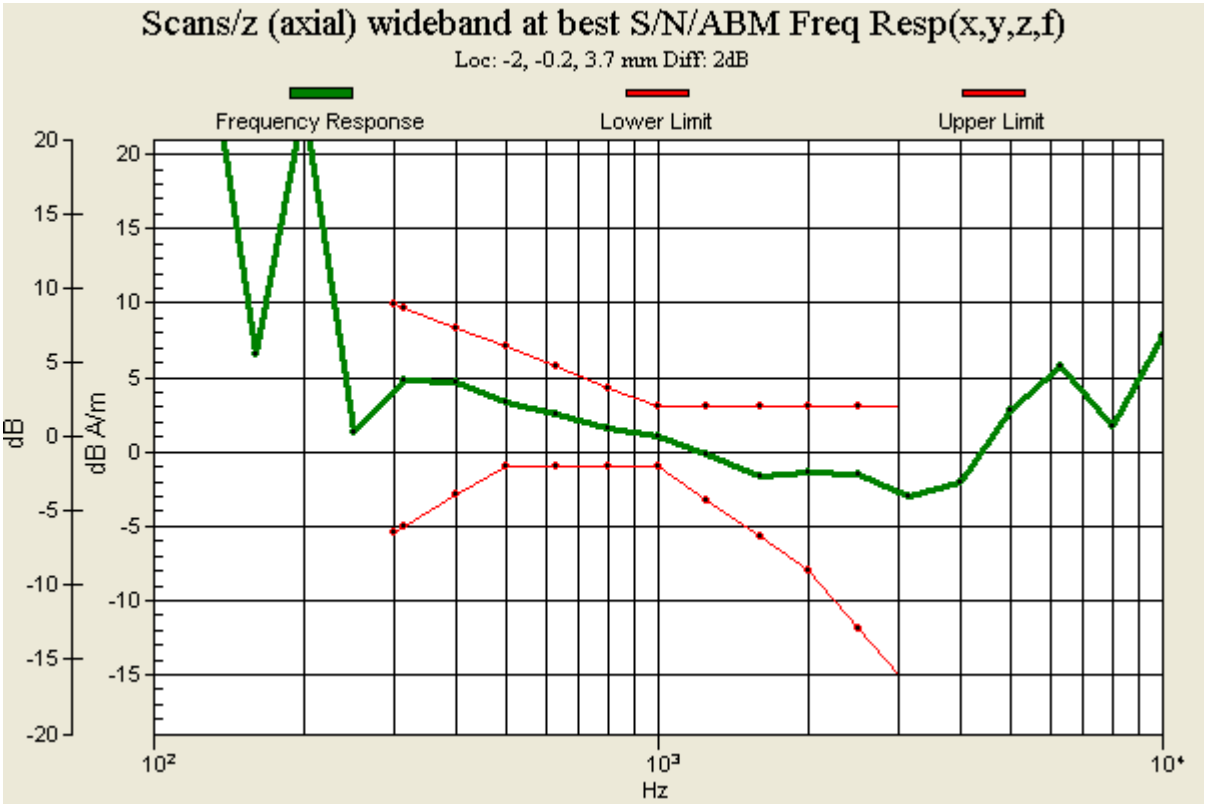
Communication System: CDMA2000 BC10; Frequency: 820.325 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 40.7 dB
ABM1 comp = -1.69 dB A/m
Location: -2, -0.2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: -2, -0.2, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10²
10³
10⁴

P11 T-Coil_CDMA2000 BC10_RC1+SO3_Ch573_Sample1_Radial 1 (X)

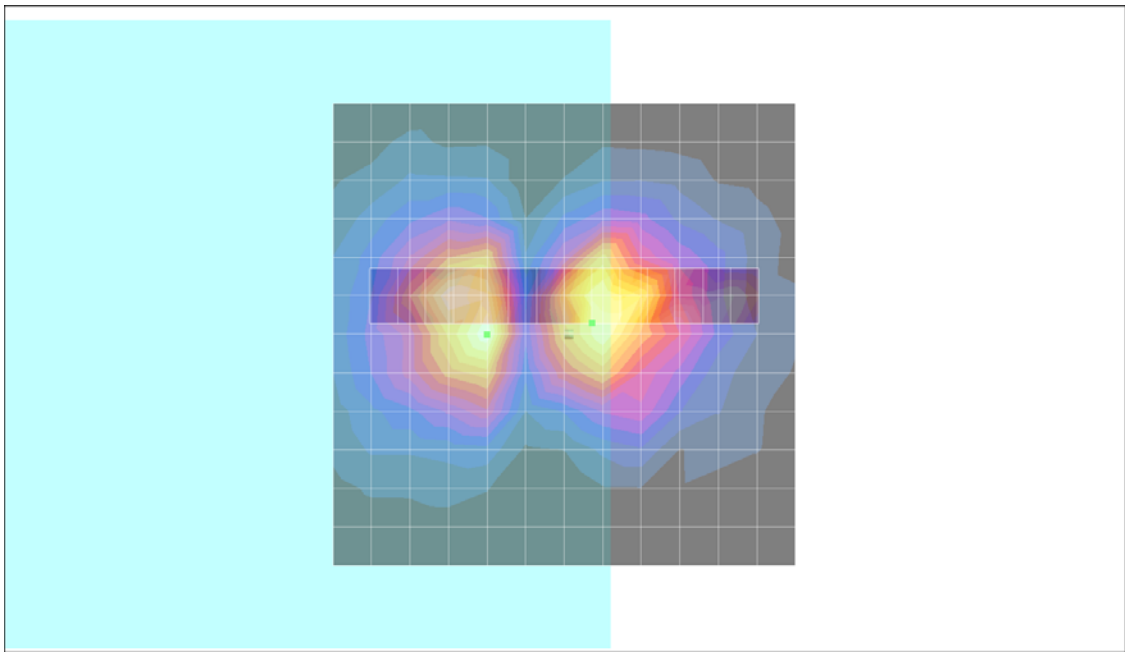
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 820.325 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 24.5 dB
ABM1 comp = -5.37 dB A/m
Location: -3, -1.2, 3.7 mm



P11 T-Coil_CDMA2000 BC10_RC1+SO3_Ch573_Sample1_Radial 2 (Y)

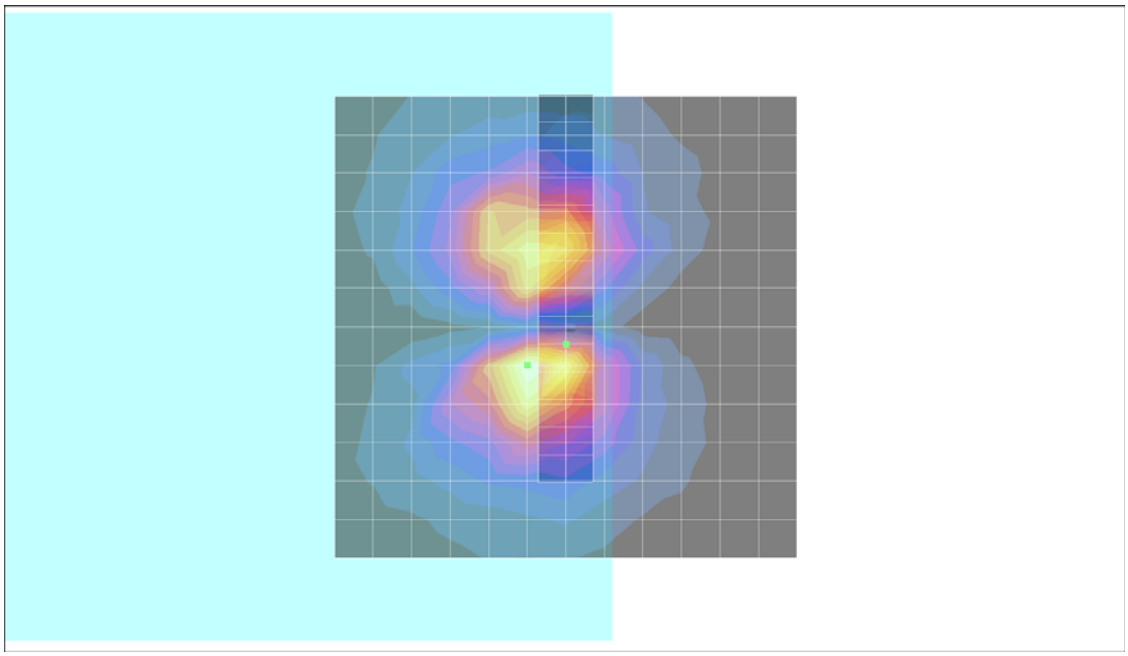
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 820.325 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.8 dB
ABM1 comp = -8.70 dB A/m
Location: 0, 1.8, 3.7 mm



P12 T-Coil_CDMA2000 BC10_RC1+SO3_Ch670_Sample1_Axial (Z)

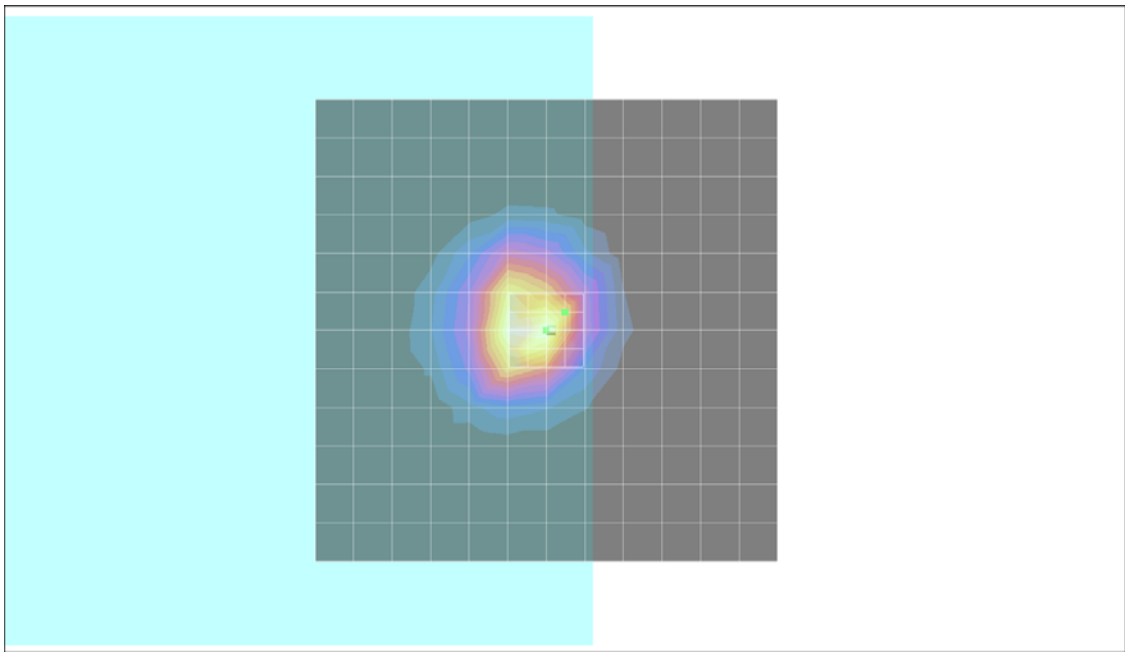
DUT: 120117C24

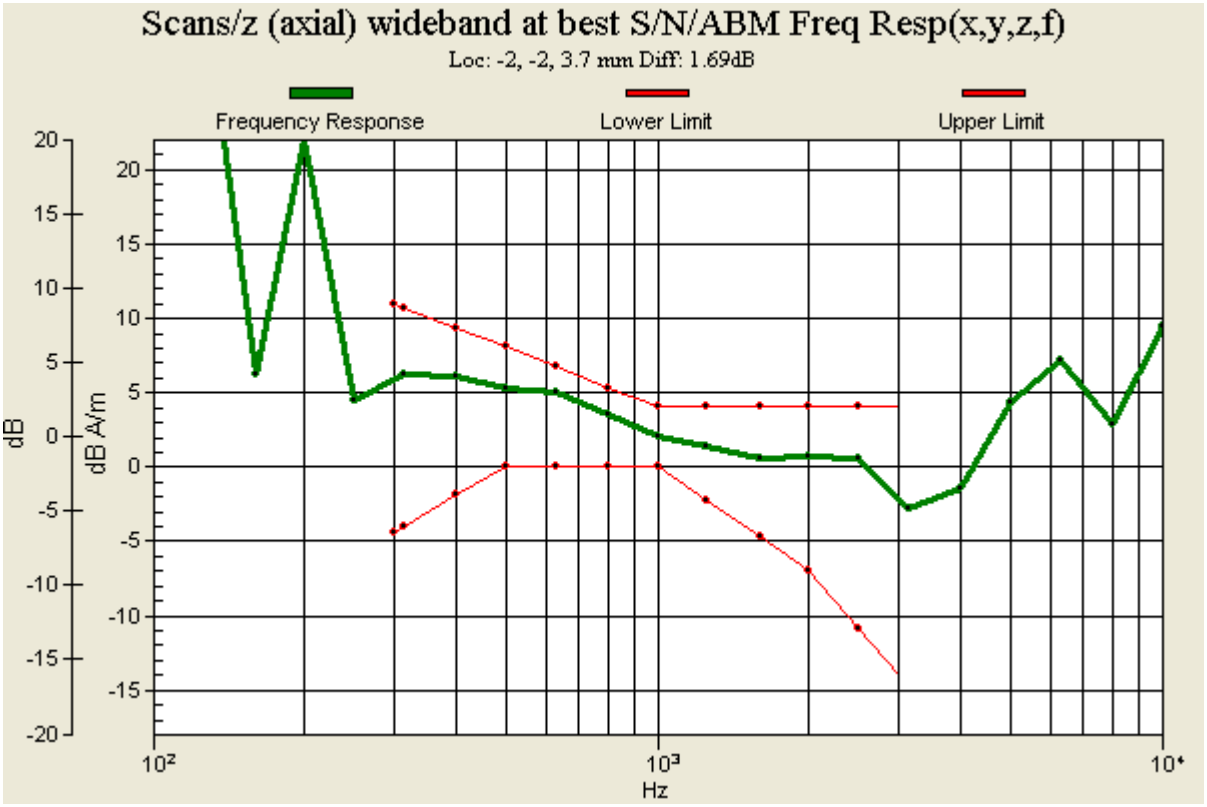
Communication System: CDMA2000 BC10; Frequency: 822.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 42.2 dB
ABM1 comp = -0.542 dB A/m
Location: -2, -2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: -2, -2, 3.7 mm Diff: 1.69dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
20
15
10
5
0
-5
-10
-15
-20
10^2
10^3
10^4
Hz

P12 T-Coil_CDMA2000 BC10_RC1+SO3_Ch670_Sample1_Radial 1 (X)

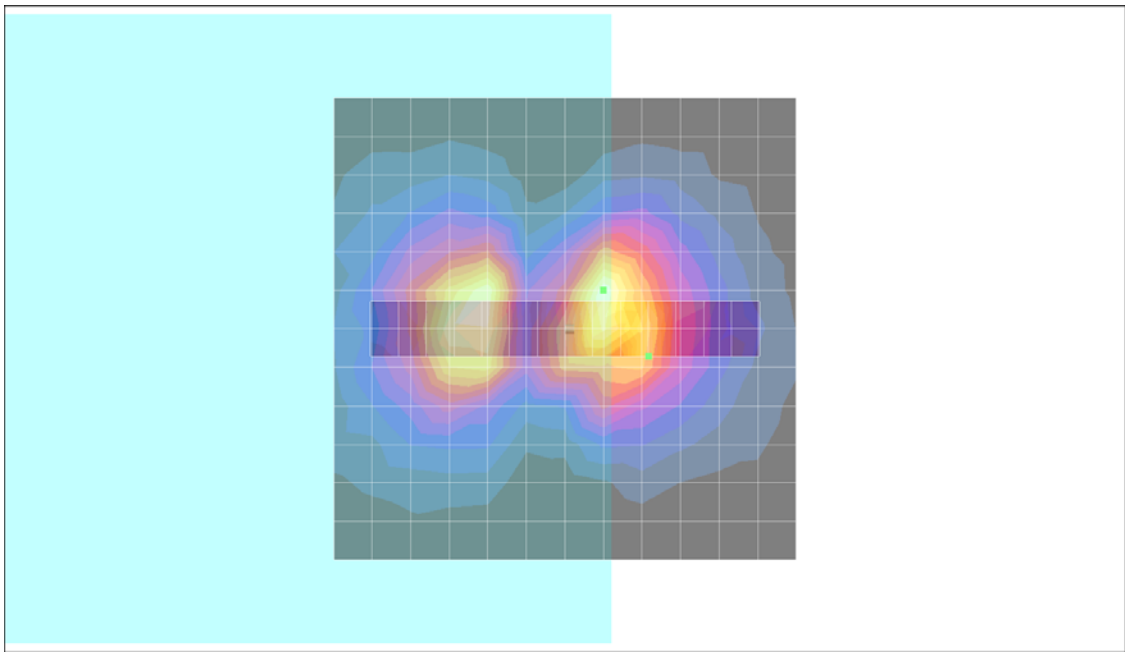
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 822.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 27.8 dB
ABM1 comp = -8.67 dB A/m
Location: -9, 3, 3.7 mm



P12 T-Coil_CDMA2000 BC10_RC1+SO3_Ch670_Sample1_Radial 2 (Y)

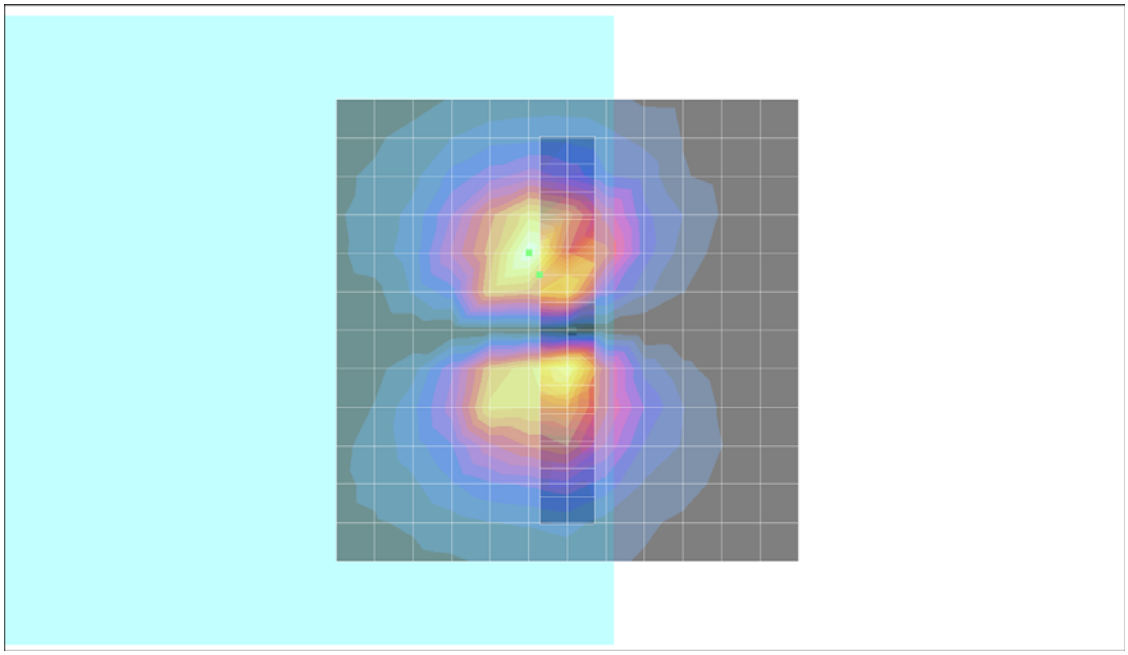
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 822.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 36.4 dB
ABM1 comp = -2.13 dB A/m
BWC Factor = 0.155979 dB
Location: 3, -6, 3.7 mm



P13 T-Coil_CDMA2000 BC10_RC1+SO3_Ch476_Sample2_Axial (Z)

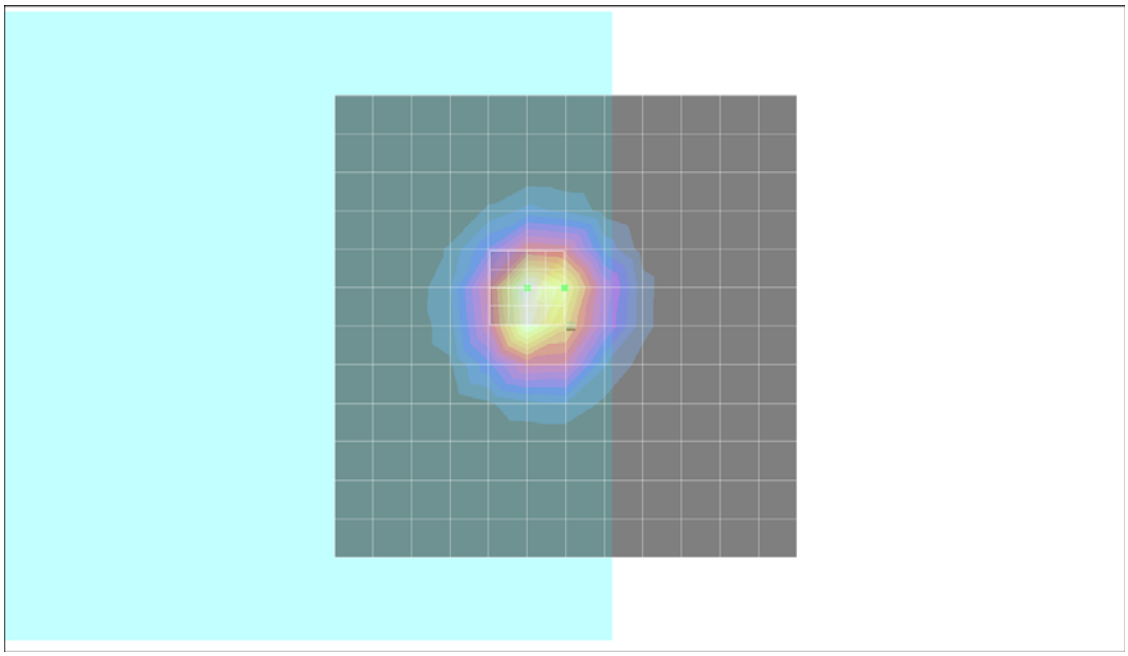
DUT: 120117C24

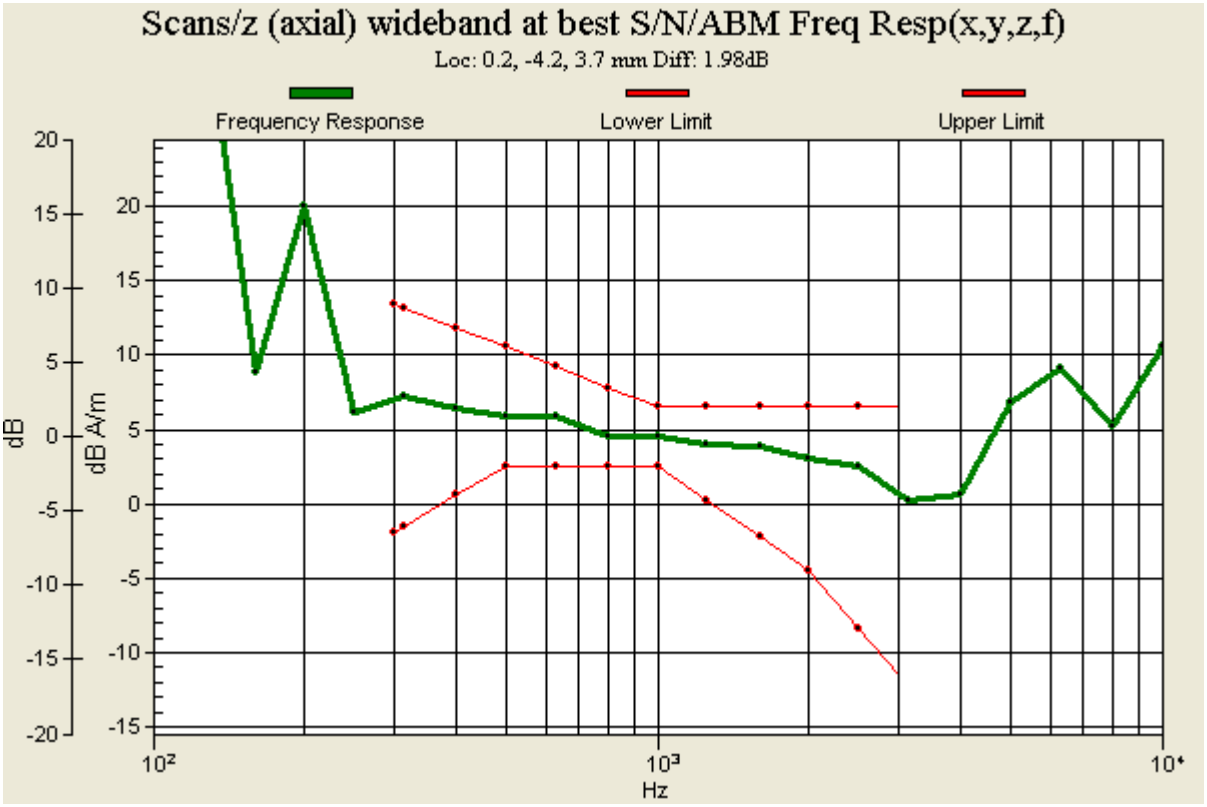
Communication System: CDMA2000 BC10; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 38.3 dB
ABM1 comp = 0.927 dB A/m
Location: 0.2, -4.2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: 0.2, -4.2, 3.7 mm Diff: 1.98dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
10²
10³
10⁴

P13 T-Coil_CDMA2000 BC10_RC1+SO3_Ch476_Sample2_Radial 1 (X)

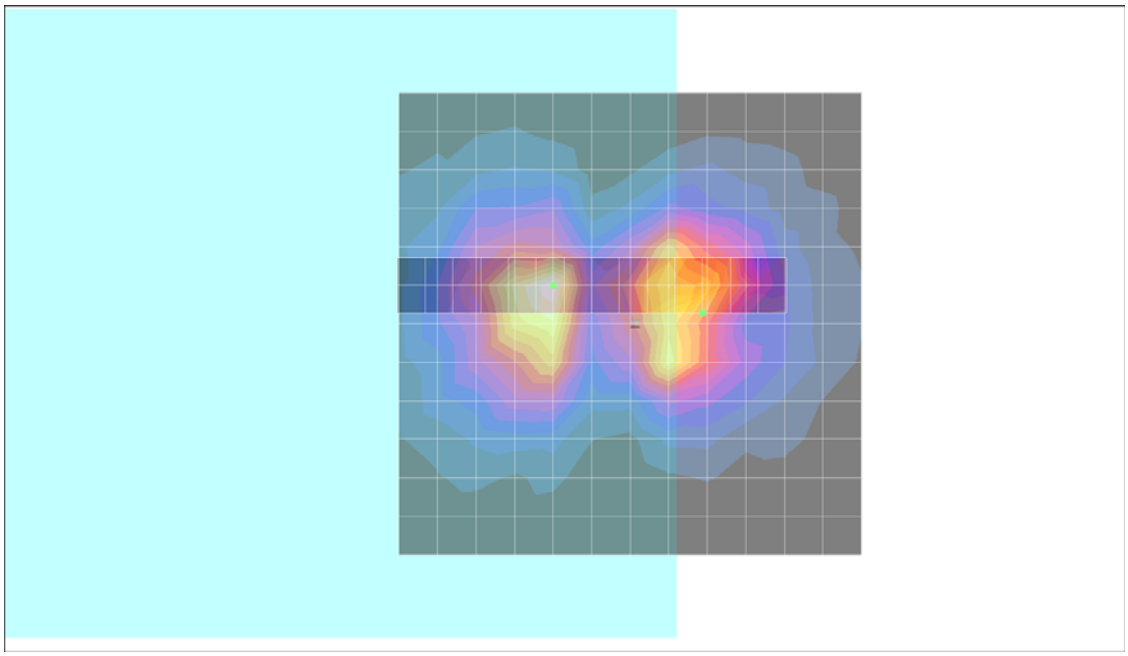
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 25.4 dB
ABM1 comp = -7.11 dB A/m
Location: -7.8, -1.2, 3.7 mm



P13 T-Coil_CDMA2000 BC10_RC1+SO3_Ch476_Sample2_Radial 2 (Y)

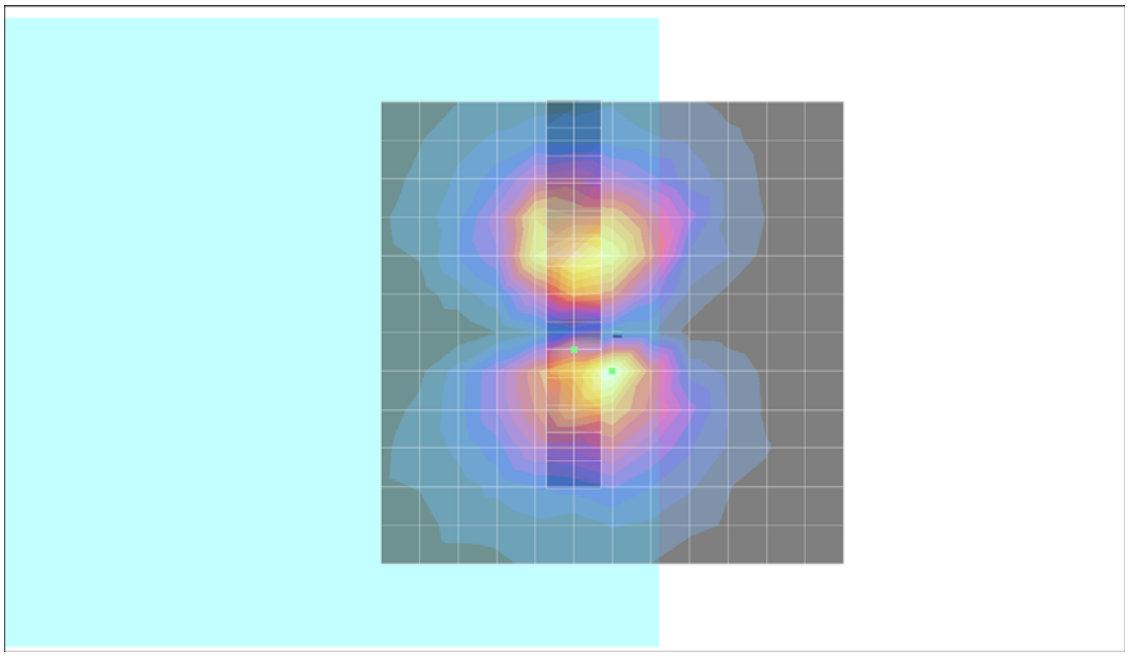
DUT: 120117C24

Communication System: CDMA2000 BC10; Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.4 dB
ABM1 comp = -5.78 dB A/m
Location: 4.2, 1.8, 3.7 mm



P14 T-Coil_CDMA2000 BC1_RC1+SO3_Ch25_Sample1_Axial (Z)

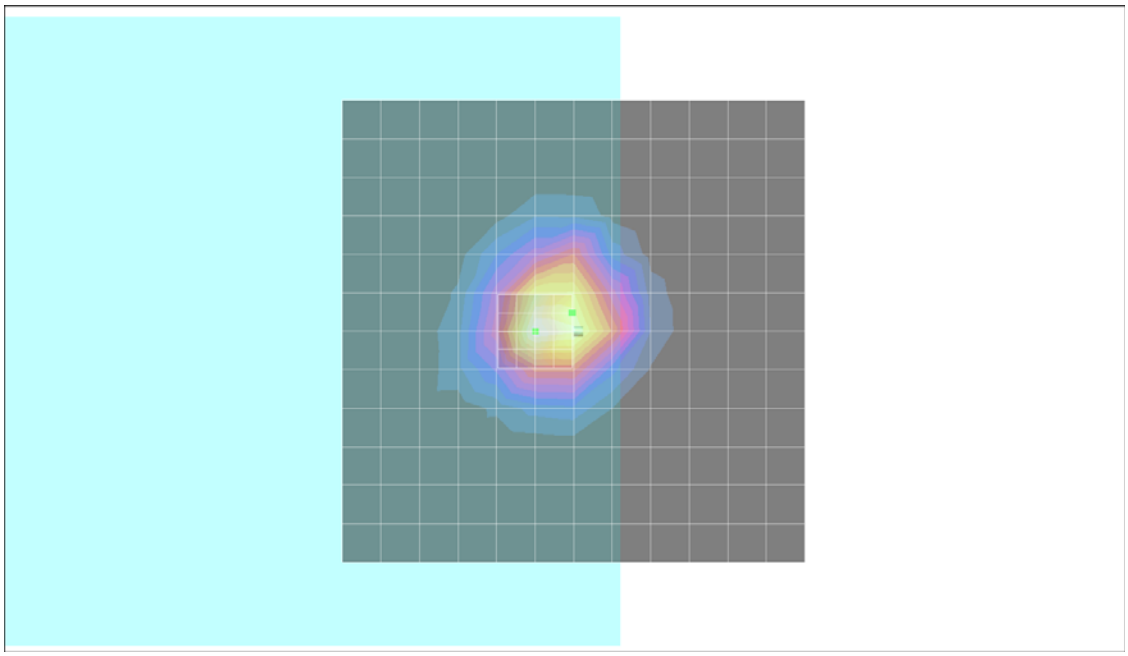
DUT: 120117C24

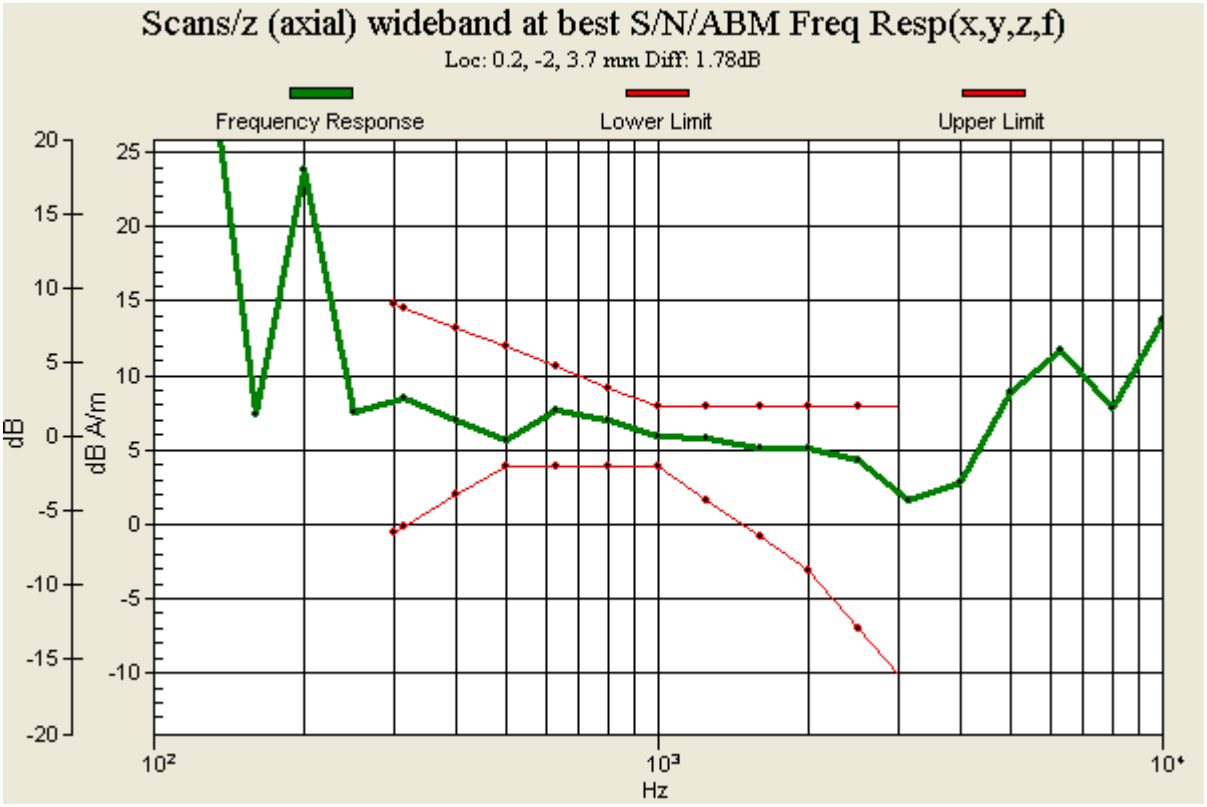
Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.5 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 42.2 dB
ABM1 comp = 3.50 dB A/m
Location: 0.2, -2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: 0.2, -2, 3.7 mm Diff: 1.78dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
10²
10³
10⁴

P06 T-Coil_CDMA2000 BC1_RC1+SO3_Ch25_Sample1_Radial 1 (X)

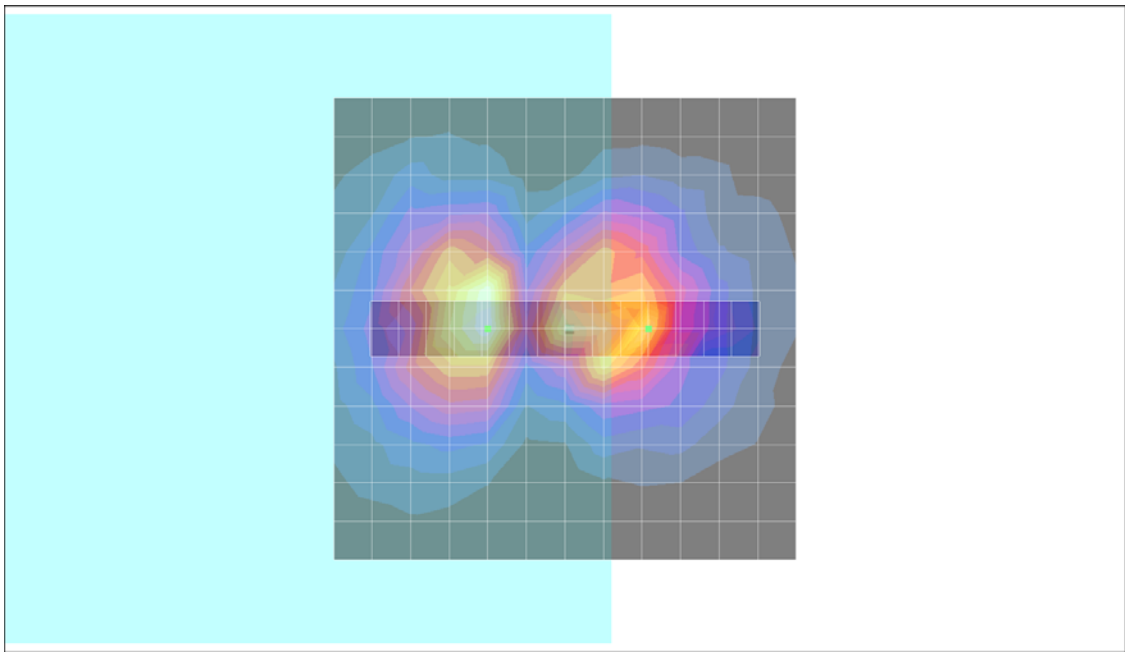
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.8 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 29.3 dB
ABM1 comp = -8.79 dB A/m
Location: -9, 0, 3.7 mm



P06 T-Coil_CDMA2000 BC1_RC1+SO3_Ch25_Sample1_Radial 2 (Y)

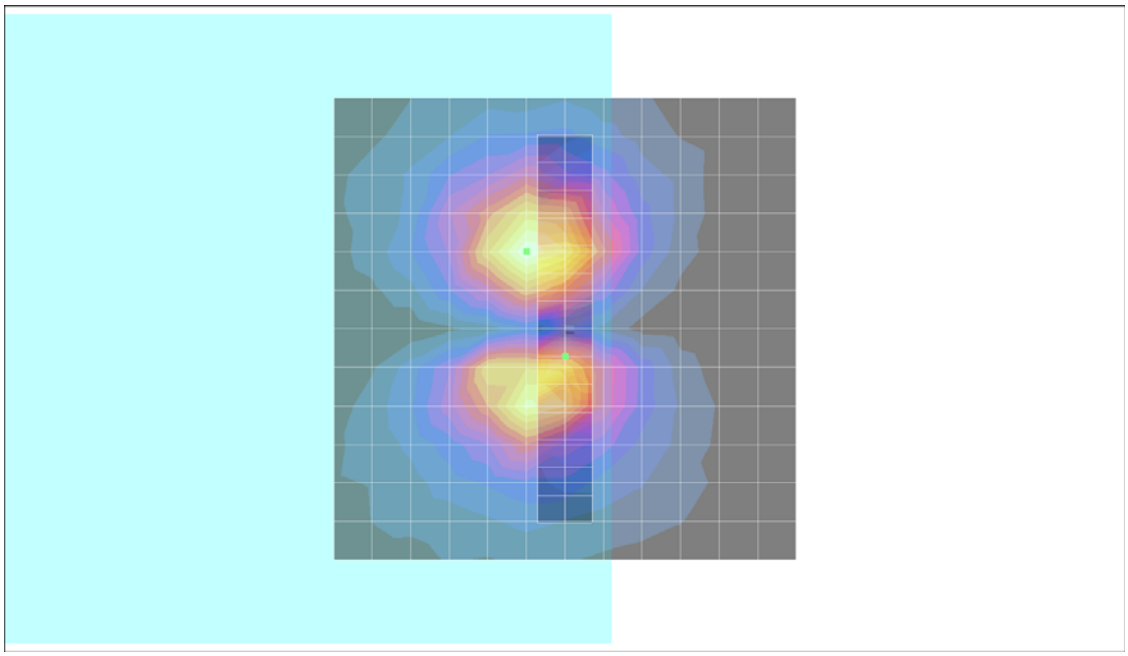
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1851.25 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.8 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 35.0 dB
ABM1 comp = -6.89 dB A/m
Location: 0, 3, 3.7 mm



P07 T-Coil_CDMA2000 BC1_RC1+SO3_Ch600_Sample1_Axial (Z)

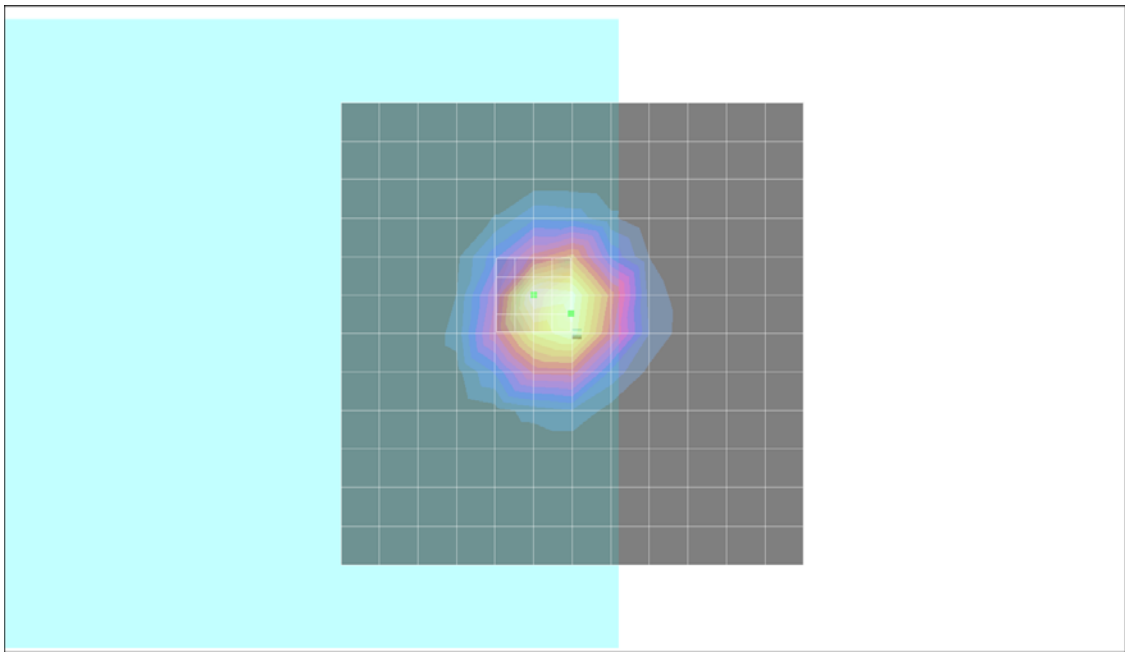
DUT: 120117C24

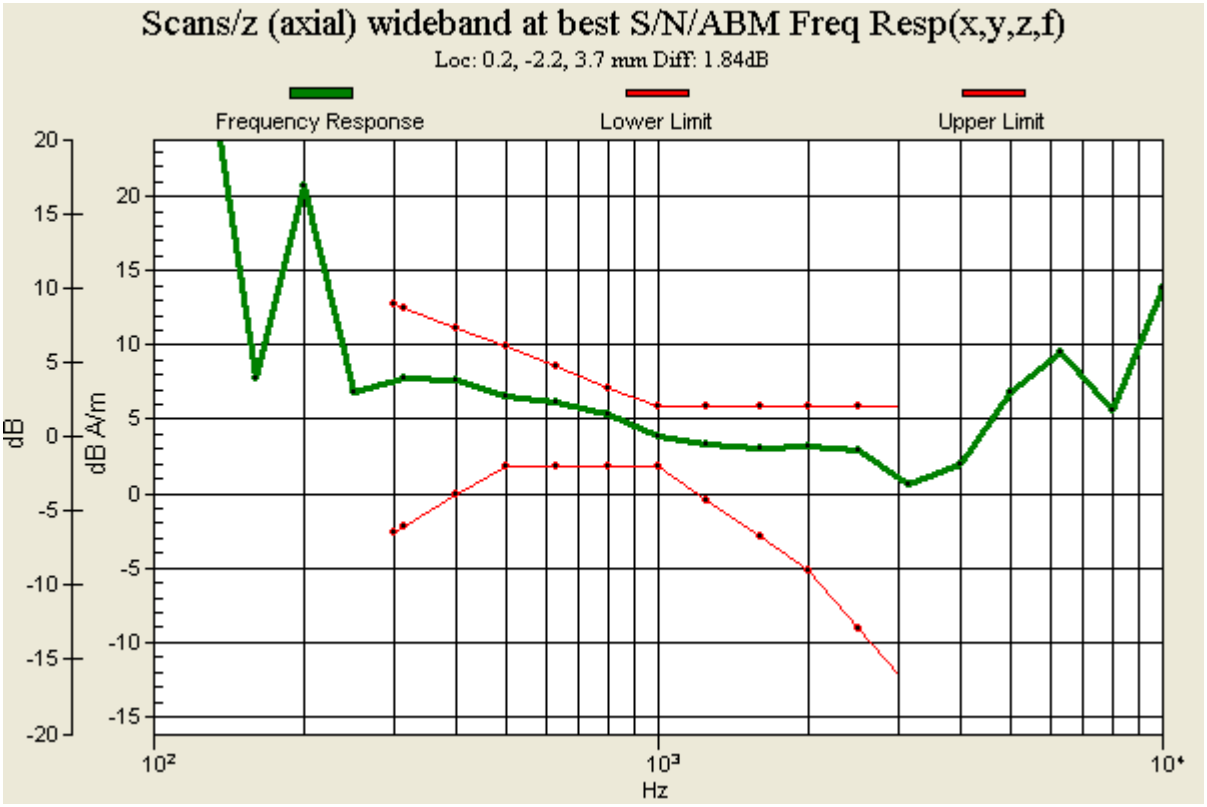
Communication System: CDMA2000 BC1; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 42.5 dB
ABM1 comp = 1.57 dB A/m
Location: 0.2, -2.2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: 0.2, -2.2, 3.7 mm Diff: 1.84dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10^2
10^3
10^4

P07 T-Coil_CDMA2000 BC1_RC1+SO3_Ch600_Sample1_Radial 1 (X)

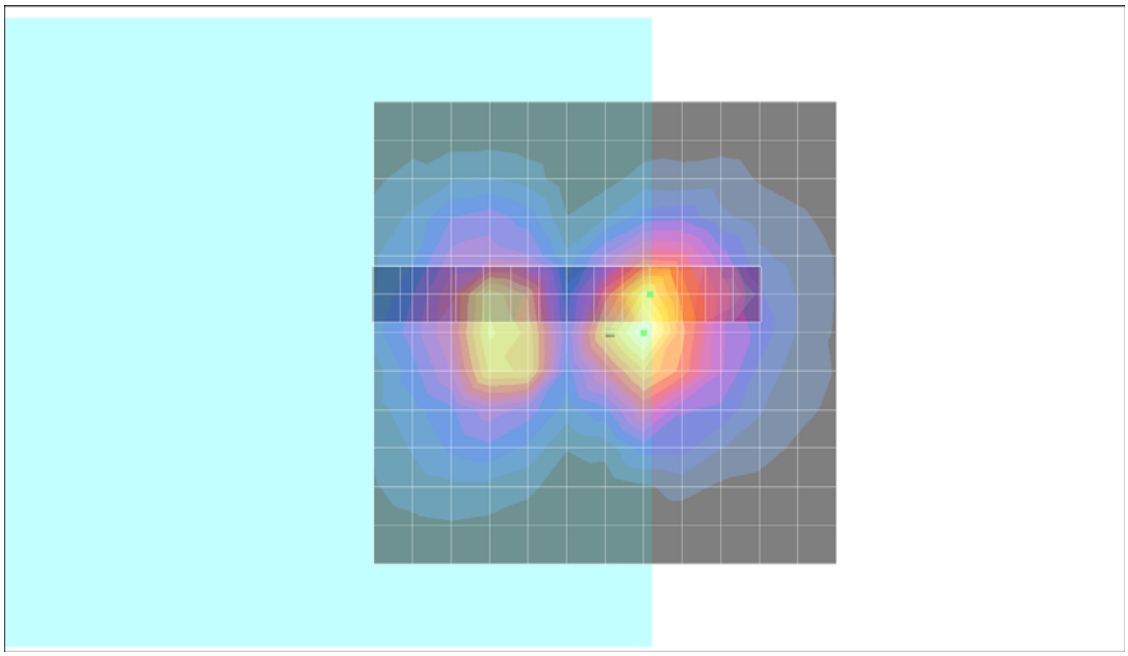
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 26.7 dB
ABM1 comp = -5.41 dB A/m
Location: -4.8, -4.2, 3.7 mm



P07 T-Coil_CDMA2000 BC1_RC1+SO3_Ch600_Sample1_Radial 2 (Y)

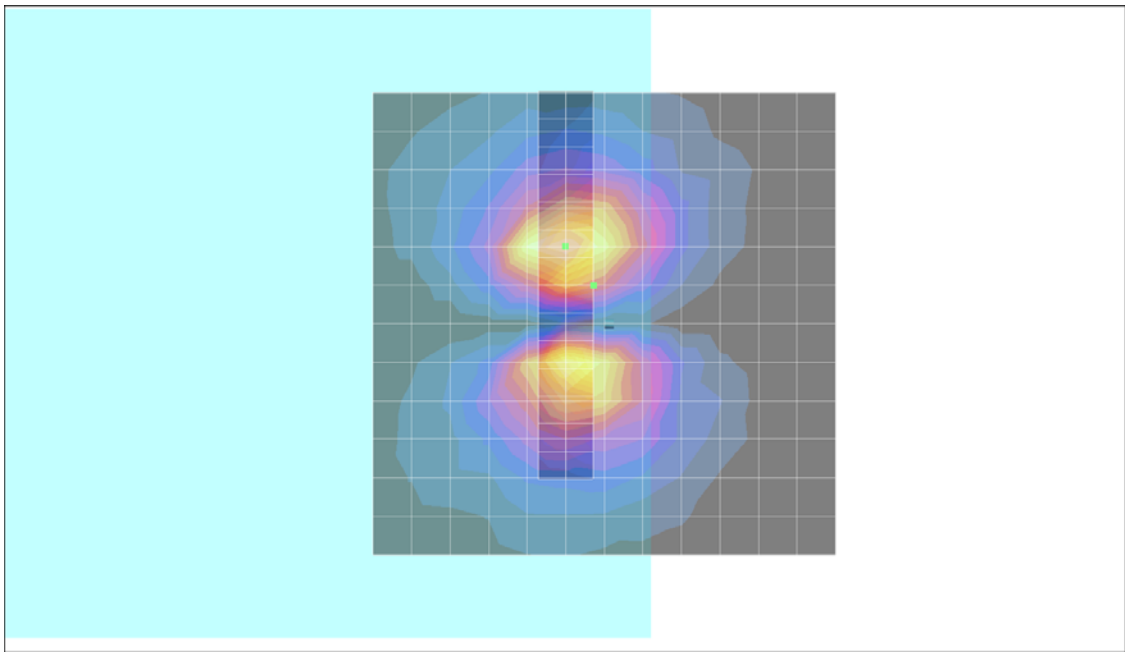
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.8 dB
ABM1 comp = -7.28 dB A/m
Location: 1.2, -4.2, 3.7 mm



P08 T-Coil_CDMA2000 BC1_RC1+SO3_Ch1175_Sample1_Axial (Z)

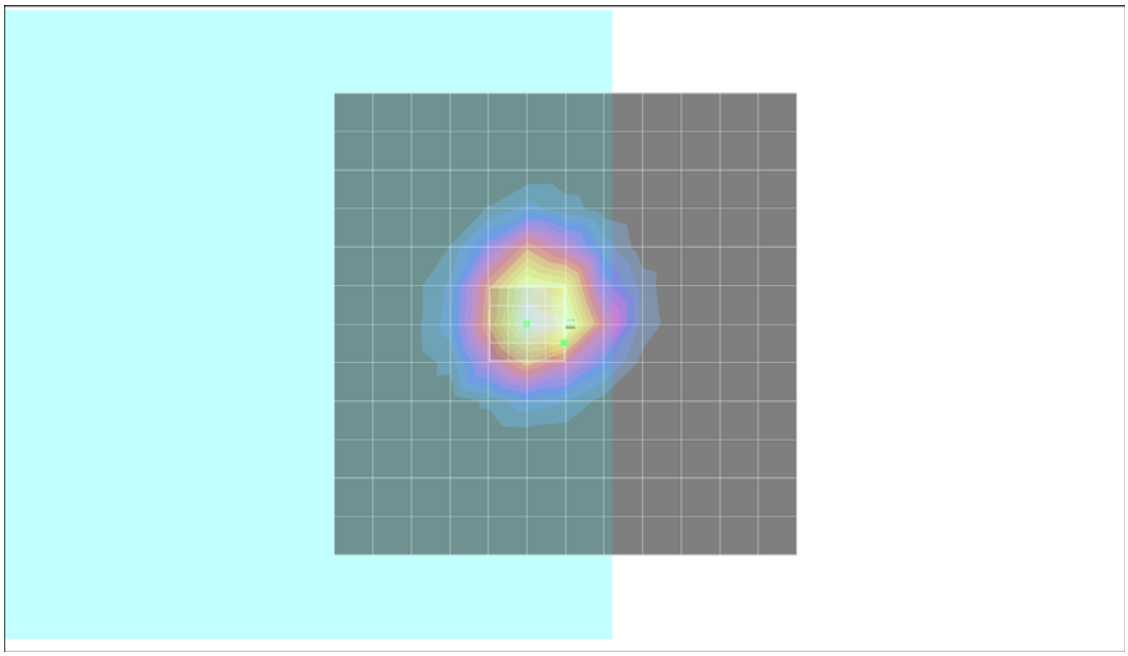
DUT: 120117C24

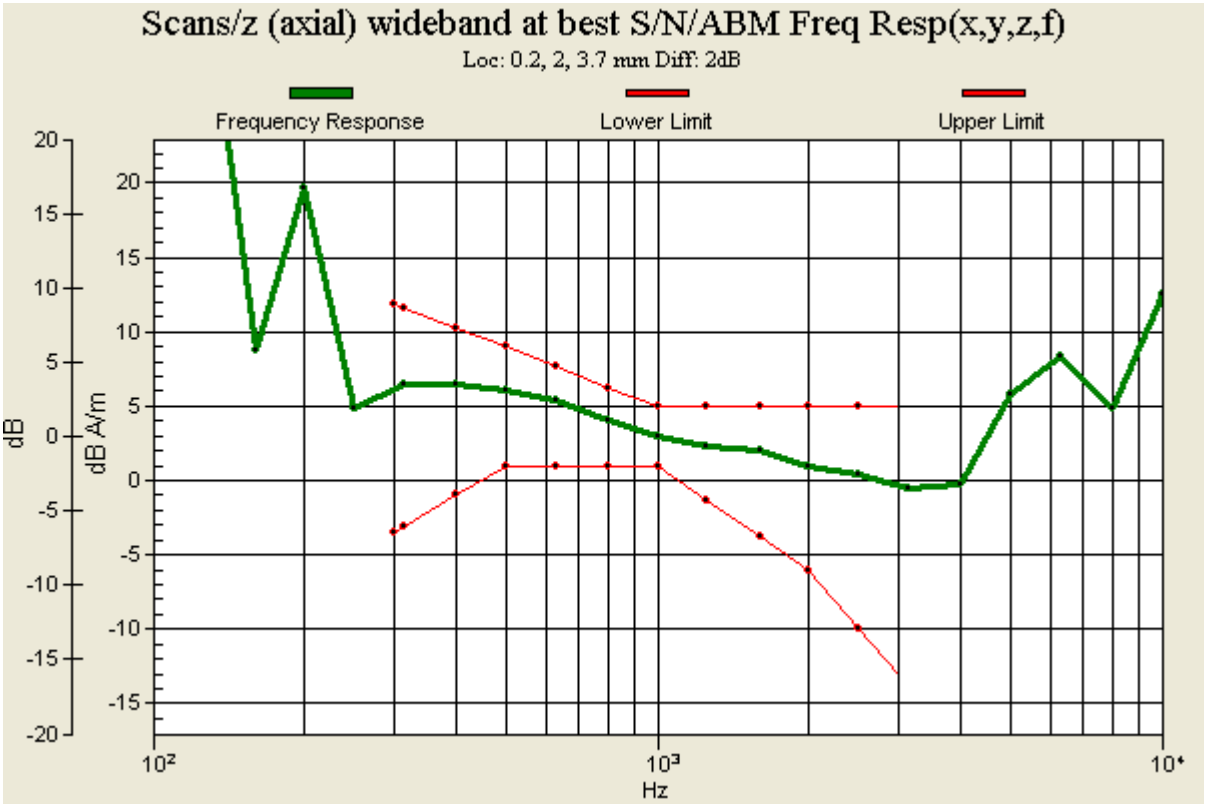
Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.6 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 40.1 dB
ABM1 comp = 1.63 dB A/m
Location: 0.2, 2, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: 0.2, 2, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
20
15
10
5
0
-5
-10
-15
-20
10^2
10^3
10^4
Hz

P08 T-Coil_CDMA2000 BC1_RC1+SO3_Ch1175_Sample1_Radial 1 (X)

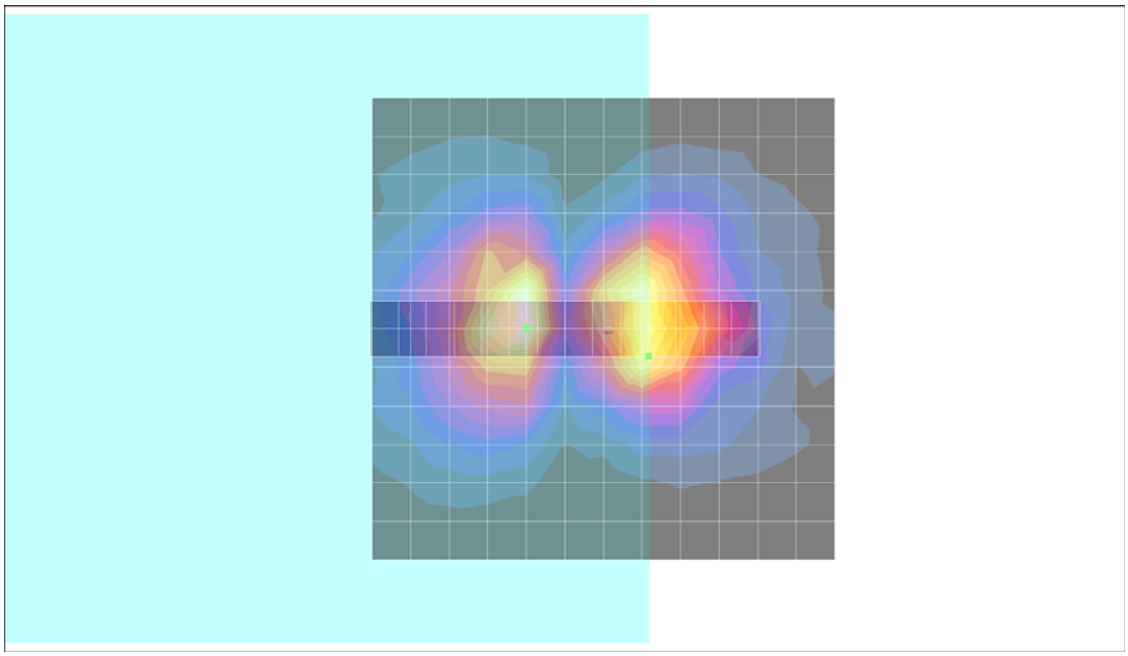
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.6 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 24.5 dB
ABM1 comp = -7.46 dB A/m
Location: -4.8, 3, 3.7 mm



P08 T-Coil_CDMA2000 BC1_RC1+SO3_Ch1175_Sample1_Radial 2 (Y)

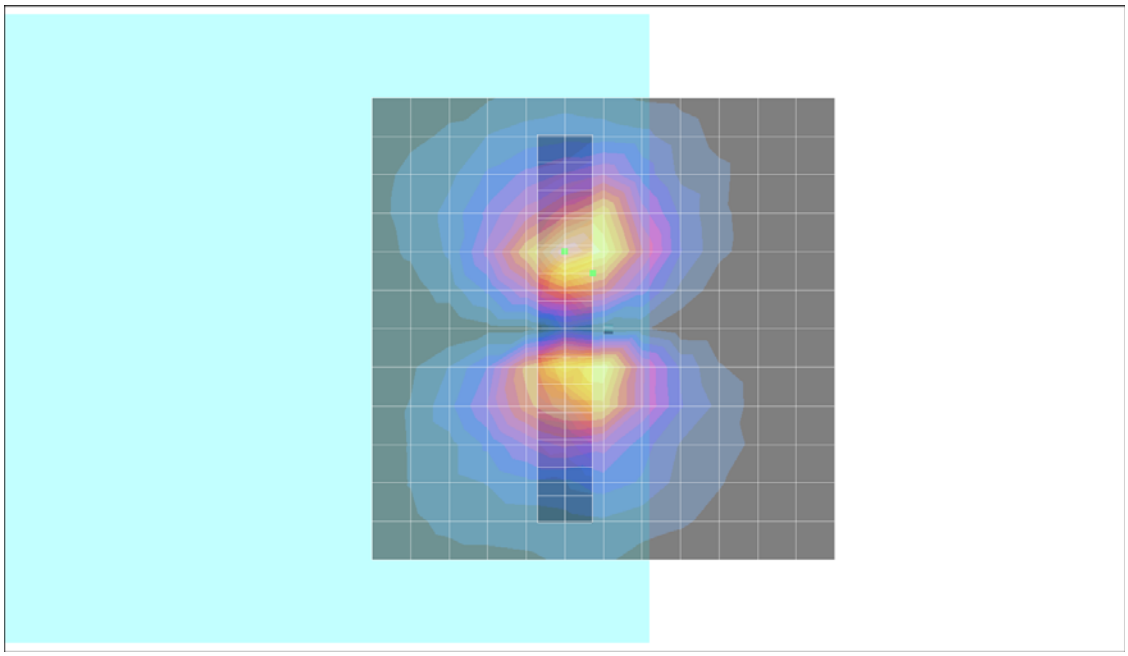
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.6 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.2 dB
ABM1 comp = -3.77 dB A/m
Location: 1.2, -6, 3.7 mm



P09 T-Coil_CDMA2000 BC1_RC1+SO3_Ch1175_Sample2_Axial (Z)

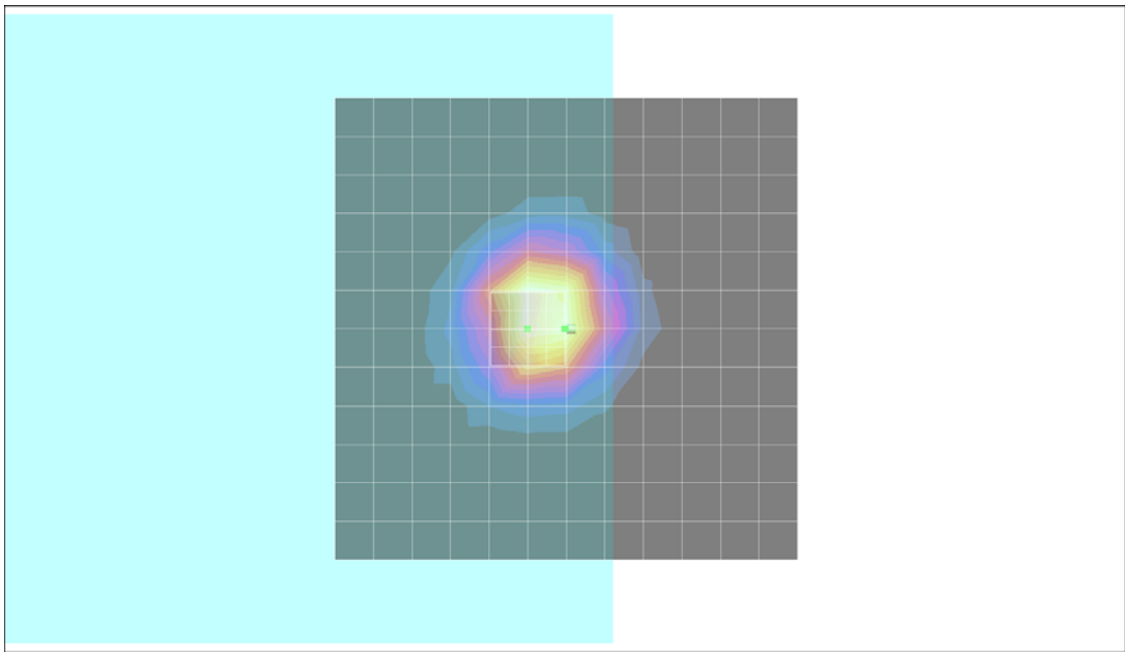
DUT: 120117C24

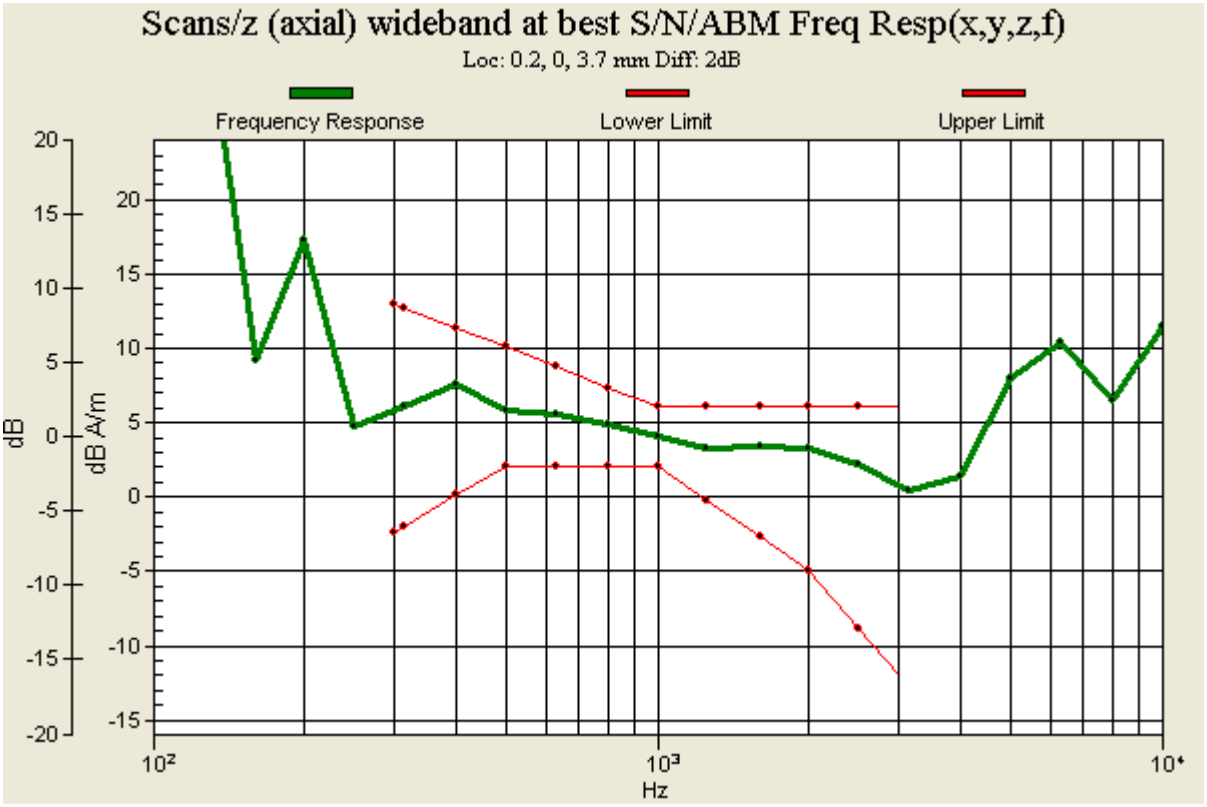
Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/z (axial) fine 2mm 8 x 8/ABM SNR(x,y,z) (5x5x1):

ABM1/ABM2 = 41.9 dB
ABM1 comp = 1.43 dB A/m
Location: 0.2, 0, 3.7 mm




Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f)
Loc: 0.2, 0, 3.7 mm Diff: 2dB
Frequency Response
Lower Limit
Upper Limit
dB
dB A/m
Hz
20
15
10
5
0
-5
-10
-15
-20
10²
10³
10⁴

P09 T-Coil_CDMA2000 BC1_RC1+SO3_Ch1175_Sample2_Radial 1 (X)

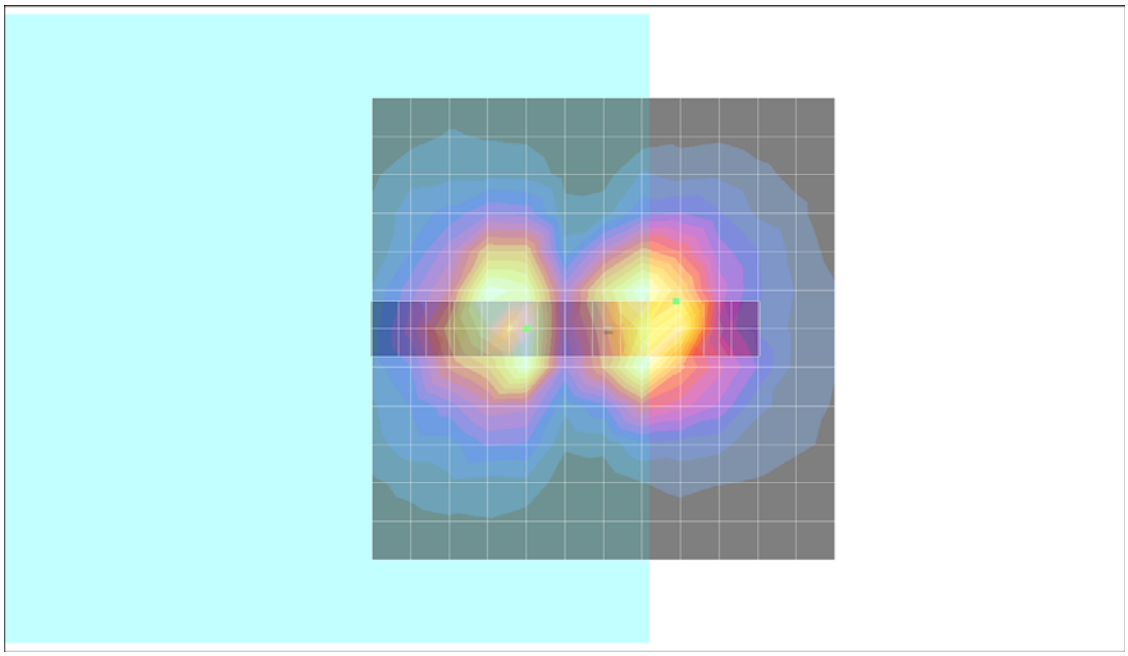
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/x (longitudinal) fine 3mm 42 x 6/ABM SNR(x,y,z) (15x3x1):

ABM1/ABM2 = 26.1 dB
ABM1 comp = -7.74 dB A/m
Location: -7.8, -3, 3.7 mm



P09 T-Coil_CDMA2000 BC1_RC1+SO3_Ch1175_Sample2_Radial 2 (Y)

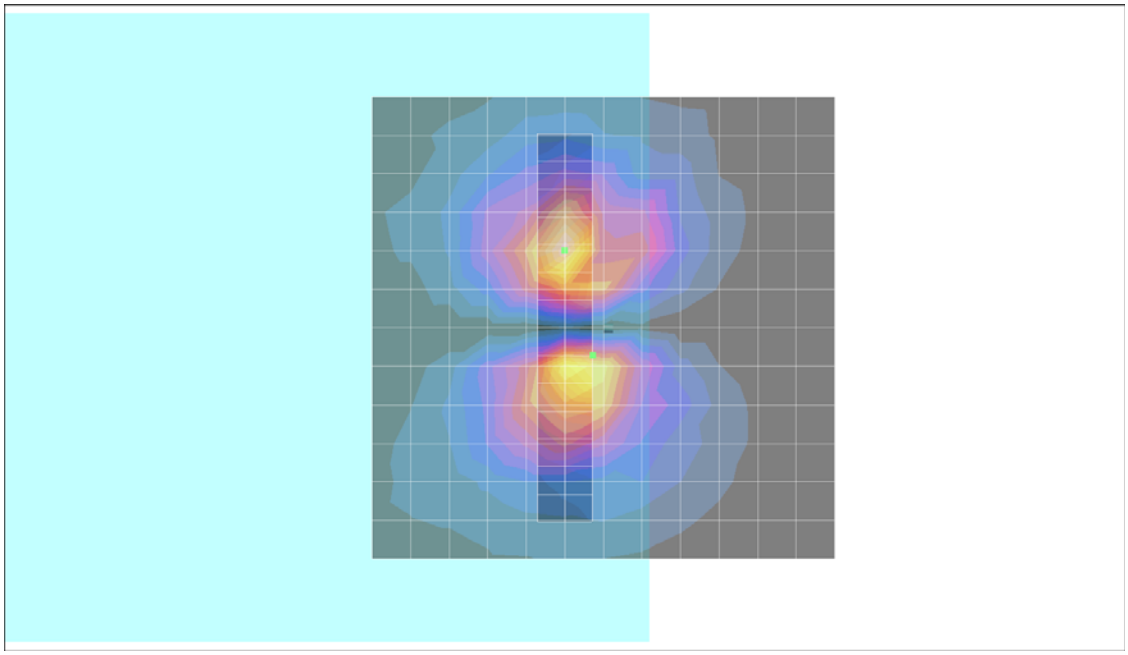
DUT: 120117C24

Communication System: CDMA2000 BC1; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: Air Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature：21.7 ℃

DASY4 Configuration:
- Probe: AM1DV3 - 3060; ; Calibrated: 2012/01/23
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1277; Calibrated: 2011/07/29
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Scans/y (transversal) fine 3mm 6 x 42/ABM SNR(x,y,z) (3x15x1):

ABM1/ABM2 = 34.9 dB
ABM1 comp = -6.94 dB A/m
BWC Factor = 0.155979 dB
Location: 1.2, 3, 3.7 mm



Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **B.V. ADT (Auden)**

Certificate No: **AM1DV3-3060_Jan12**

CALIBRATION CERTIFICATE

Object: AM1DV3 - SN: 3060

Calibration procedure(s): QA CAL-24.v3
Calibration procedure for AM1D magnetic field probes and TMFS in the audio range

Calibration date: January 23, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	28-Sep-11 (No:11450)	Sep-12
Reference Probe AM1DV3	SN: 3000	17-Aug-11 (No. AM1D-3000_Aug11)	Aug-12
DAE4	SN: 781	20-Apr-11 (No. DAE4-781_Apr11)	Apr-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
AMCC	1050	12-Oct-11 (in house check Oct-11)	Oct-13

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	D. Iliev
Approved by:	Fin Bomholt	R&D Director	F. Bomholt

Issued: January 24, 2012

References

[1] ANSI C63.19-2007
American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

[2] DASY5 manual, Chapter: Hearing Aid Compatibility (HAC) T-Coil Extension

Description of the AM1D probe

The AM1D Audio Magnetic Field Probe is a fully shielded magnetic field probe for the frequency range from 100 Hz to 20 kHz. The pickup coil is compliant with the dimensional requirements of [1]. The probe includes a symmetric low noise amplifier for the signal available at the shielded 3 pin connector at the side. Power is supplied via the same connector (phantom power supply) and monitored via the LED near the connector. The 7 pin connector at the end of the probe does not carry any signals, but determines the angle of the sensor when mounted on the DAE. The probe supports mechanical detection of the surface.
The single sensor in the probe is arranged in a tilt angle allowing measurement of 3 orthogonal field components when rotating the probe by 120° around its axis. It is aligned with the perpendicular component of the field, if the probe axis is tilted nominally 35.3° above the measurement plane, using the connector rotation and sensor angle stated below.
The probe is fully RF shielded when operated with the matching signal cable (shielded) and allows measurement of audio magnetic fields in the close vicinity of RF emitting wireless devices according to [1] without additional shielding.

Handling of the item

The probe is manufactured from stainless steel. In order to maintain the performance and calibration of the probe, it must not be opened. The probe is designed for operation in air and shall not be exposed to humidity or liquids. For proper operation of the surface detection and emergency stop functions in a DASY system, the probe must be operated with the special probe cup provided (larger diameter).

Methods Applied and Interpretation of Parameters

- *Coordinate System:* The AM1D probe is mounted in the DASY system for operation with a HAC Test Arch phantom with AMCC Helmholtz calibration coil according to [2], with the tip pointing to "southwest" orientation.
- *Functional Test:* The functional test preceding calibration includes test of
  Noise level
  RF immunity (1kHz AM modulated signal). The shield of the probe cable must be well connected.
  Frequency response verification from 100 Hz to 10 kHz.
- *Connector Rotation:* The connector at the end of the probe does not carry any signals and is used for fixation to the DAE only. The probe is operated in the center of the AMCC Helmholtz coil using a 1 kHz magnetic field signal. Its angle is determined from the two minima at nominally +120° and –120° rotation, so the sensor in the tip of the probe is aligned to the vertical plane in z-direction, corresponding to the field maximum in the AMCC Helmholtz calibration coil.
- *Sensor Angle:* The sensor tilting in the vertical plane from the ideal vertical direction is determined from the two minima at nominally +120° and –120°. DASY system uses this angle to align the sensor for radial measurements to the x and y axis in the horizontal plane.
- *Sensitivity:* With the probe sensor aligned to the z-field in the AMCC, the output of the probe is compared to the magnetic field in the AMCC at 1 kHz. The field in the AMCC Helmholtz coil is given by the geometry and the current through the coil, which is monitored on the precision shunt resistor of the coil.

AM1D probe identification and configuration data

Item	**AM1DV3** Audio Magnetic 1D Field Probe
Type No	SP AM1 001 BA
Serial No	**3083**

Overall length	296 mm
Tip diameter	6.0 mm (at the tip)
Sensor offset	3.0 mm (centre of sensor from tip)
Internal Amplifier	20 dB

Manufacturer / Origin	Schmid & Partner Engineering AG, Zürich, Switzerland
Manufacturing date	Oct-2008
Last calibration date	January 18, 2011

Calibration data

Connector rotation angle	(in DASY system)	**52.6** °	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	**0.58** °	+/- 0.5 ° (k=2)
Sensitivity at 1 kHz	(in DASY system)	**0.00732 V / (A/m)**	+/- 2.2 % (k=2)