Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	199994.32	-1.11	-0.00
Channel X	+ Input	20004.21	2.27	0.01
Channel X	- Input	-19994.21	6.72	-0.03
Channel Y	+ Input	199991.01	-4.74	-0.00
Channel Y	+ Input	19999.15	-2.66	-0.01
Channel Y	- Input	-19999.37	1.70	-0.01
Channel Z	+ Input	199997.50	1.46	0.00
Channel Z	+ Input	19998.75	-3.06	-0.02
Channel Z	- Input	-20003.08	-1.96	0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.23	-0.12	-0.01
Channel X	+ Input	201.73	0.03	0.02
Channel X	- Input	-197.79	0.32	-0.16
Channel Y	+ Input	2001.22	0.00	0.00
Channel Y	+ Input	201.15	-0.62	-0.31
Channel Y	- Input	-198.47	-0.28	0.14
Channel Z	+ Input	2001.41	0.23	0.01
Channel Z	+ Input	200.99	-0.67	-0.33
Channel Z	- Input	-199.42	-1.11	0.56

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-10.02	-11.33
	- 200	12.53	10.76
Channel Y	200	10.66	10.40
	- 200	-12.33	-12.29
Channel Z	200	-2.18	-2.52
	- 200	0.20	-0.09

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	-0.85	-2.68
Channel Y	200	8.65	-	0.04
Channel Z	200	6.10	6.93	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15635	14959
Channel Y	15850	16040
Channel Z	16635	16604

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.40	-0.72	1.60	0.48
Channel Y	0.06	-0.99	1.84	0.46
Channel Z	-0.76	-2.17	0.18	0.48

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

ANNEX F SPOT CHECK

F.1 Test Results for 2/3G

Table F.1-1 Test results for 2/3G

Probe Position	Band	Ch.	Measurement Position (x mm, y mm)	ABM1 (dB A/m)	SNR (dB)	T category
transverse	**GSM 1900**	661	12.1,0	4.75	39.33	**T4**
	WCDMA850	4182	5.4,-4.2	4.36	55.10	**T4**
perpendicular	**GSM 1900**	661	5,-19.2	4.70	23.75	**T3**
	WCDMA850	4182	7.9,-16.3	11.40	45.42	**T4**

F.2 Test Results for LTE

Table F.2-1 Test results for LTE

Probe Position	Band	Ch.	Bandwidth	Measurement Position (x mm, y mm)	ABM1 (dB A/m)	SNR (dB)	T category
Transverse	**LTE B2**	18900	20M	0,-4.2	-0.99	47.39	**T4**
perpendicular	**LTE B2**	18900	20M	8.3,-16.7	11.17	40.70	**T4**

F.3 Test Results for WiFi

Table F.3-1 Test results for WiFi

Probe Position	Mode	Ch.	Bandwidth	Measurement Position (x mm, y mm)	ABM1 (dB A/m)	SNR (dB)	T category
Transverse	**802.11b**	6	20M	5.4,-4.6	4.12	45.09	**T4**
Perpendicular	**802.11b**	6	20M	7.5,-15.8	11.93	44.11	**T4**

F.4 MAIN TEST INSTRUMENTS

List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Audio Magnetic 1D Field Probe	AM1DV3	3128	January 15, 2019	NCR
02	Audio Magnetic Calibration Coil	AMCC	1064	NCR	NCR
03	Audio Measuring Instrument	AMMI	1044	NCR	NCR
04	HAC Test Arch	N/A	1014	NCR	NCR
05	DAE	DAE4	1555	August 20, 2018	One year
06	Software	DASY5 V5.0 Build 119.9	N/A	NCR	NCR
07	Software	SEMCAD V13.2 Build 87	N/A	NCR	NCR
08	Universal Radio Communication Tester	CMW 500	166370	August 23, 2018	One year

F.5 TEST PLOTS

T-Coil GSM 1900 Transverse

Date: 2019-7-24

Electronics: DAE4 Sn1555

Medium: Air

Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3

Ambient Temperature:22.5ºC

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Probe: AM1DV3 - 3128;

T-Coil/General Scans/y (transversal) 4.2mm 50 x 50/ABM Interpolated

Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

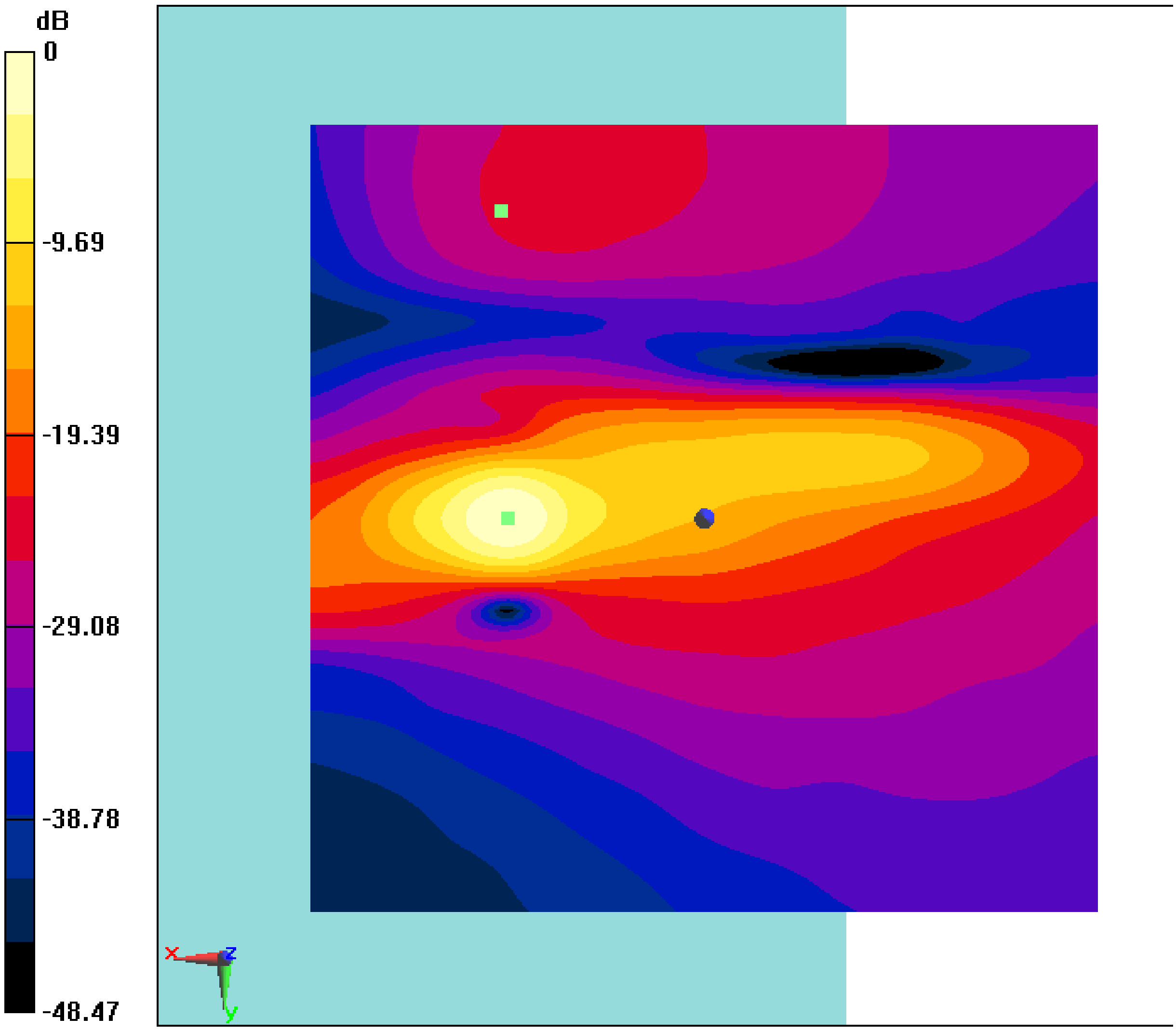
Cursor:
ABM1 = 5.53 dBA/m
BWC Factor = 0.16 dB
Location: 12.9, -19.6, 3.7 mm

T-Coil/General Scans/y (transversal) 4.2mm 50 x 50/ABM Interpolated

SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 39.14 dB
ABM1 comp = 3.95 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



0 dB = 1.890 A/m = 5.53 dBA/m

Fig F.5-1 T-Coil GSM 1900

T-Coil GSM 1900 Perpendicular
Date: 2019-7-24
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature:22.5ºC
Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Probe: AM1DV3 - 3128;

T-Coil/General Scans/z (axial) 4.2mm 50 x 50 FRV1/ABM Interpolated

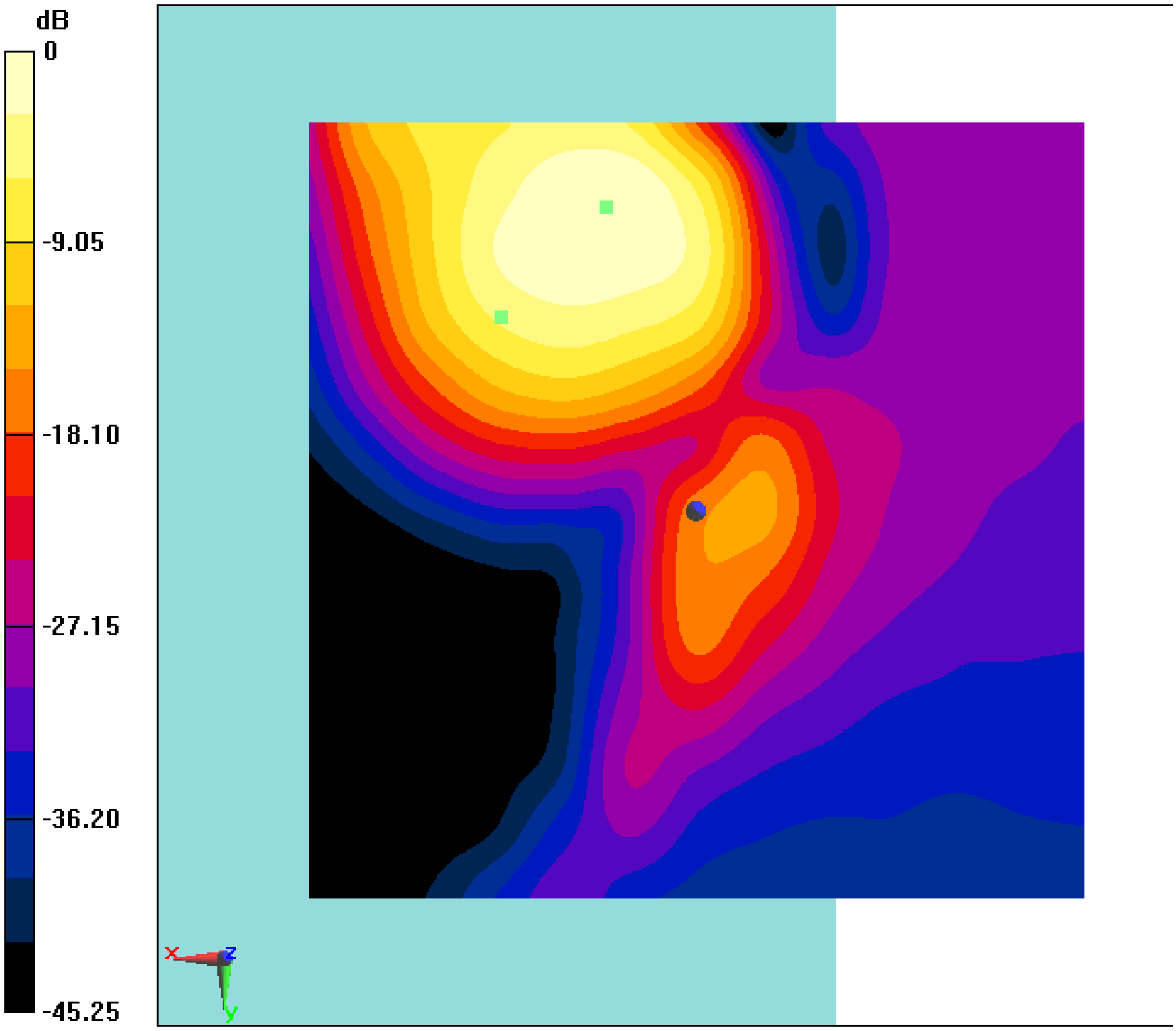
Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 = 12.98 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, -12.5, 3.7 mm

T-Coil/General Scans/z (axial) 4.2mm 50 x 50 FRV1/ABM Interpolated

SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 22.06 dB
ABM1 comp = 3.57 dBA/m
BWC Factor = 0.16 dB
Location: 5.8, -19.6, 3.7 mm



0 dB = 4.455 A/m = 12.98 dBA/m

Fig F.5-2 T-Coil GSM 1900

T-Coil WCDMA 850 Transverse
Date: 2019-7-24
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature:22.5ºC
Communication System: WCDMA 850; Frequency: 836.4 MHz; Duty Cycle: 1:1
Probe: AM1DV3 - 3128;

T-Coil/General Scans/y (transversal) 4.2mm 50 x 50 2/ABM Interpolated

Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

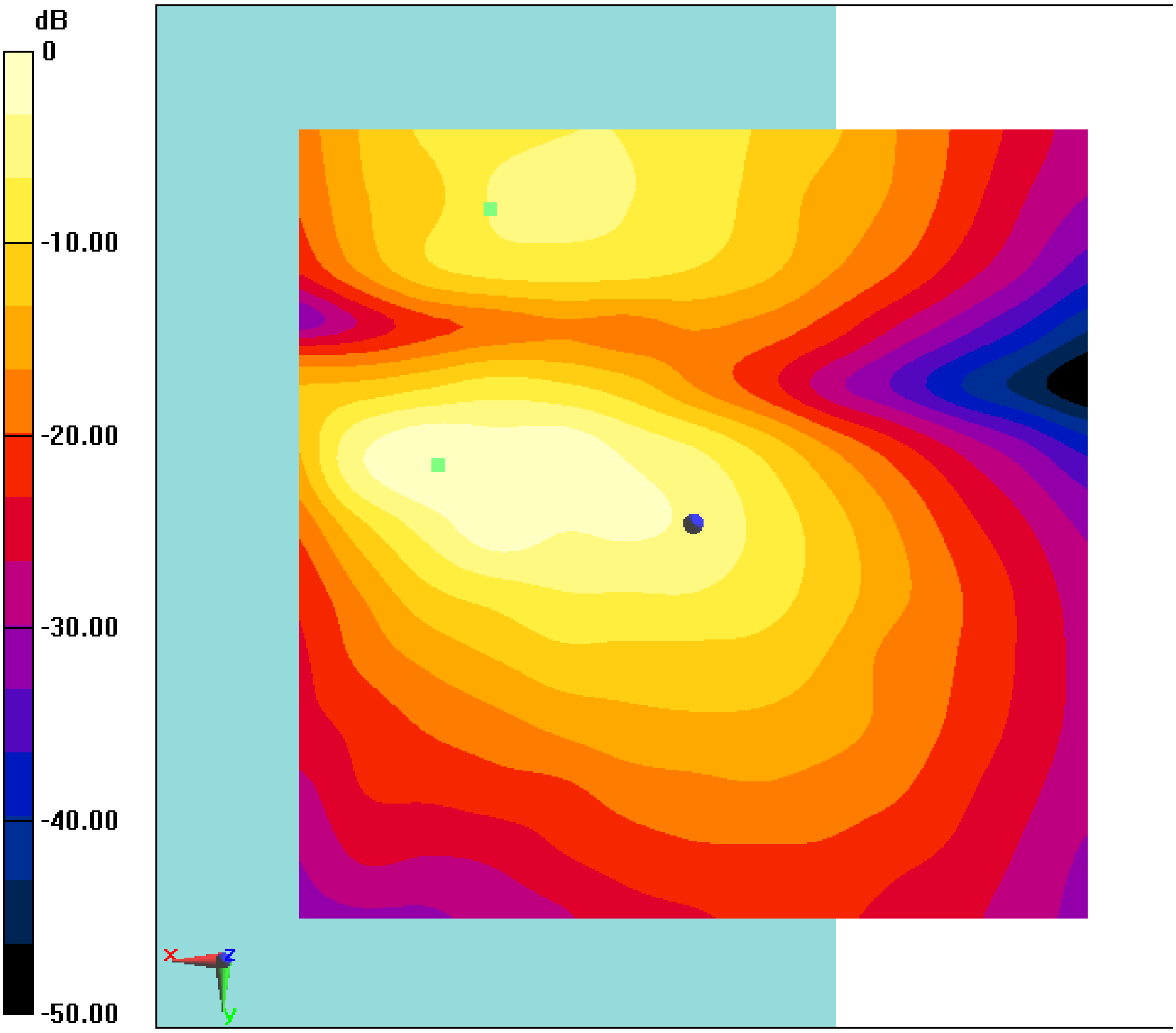
Cursor:
ABM1 = 4.98 dBA/m
BWC Factor = 0.16 dB
Location: 12.9, -20, 3.7 mm

T-Coil/General Scans/y (transversal) 4.2mm 50 x 50 2/ABM Interpolated

SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 42.78 dB
ABM1 comp = 4.11 dBA/m
BWC Factor = 0.16 dB
Location: 16.3, -3.8, 3.7 mm



0 dB = 1.775 A/m = 4.98 dBA/m

Fig F.5-3 T-Coil WCDMA 850

T-Coil WCDMA 850 Perpendicular
Date: 2019-7-24
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: σ = 0 mho/m, $\varepsilon_r = 1$; ρ = 1 kg/m^3
Ambient Temperature:22.5ºC
Communication System: WCDMA 850; Frequency: 836.4 MHz; Duty Cycle: 1:1
Probe: AM1DV3 - 3128;

T-Coil/General Scans/z (axial) 4.2mm 50 x 50/ABM Interpolated

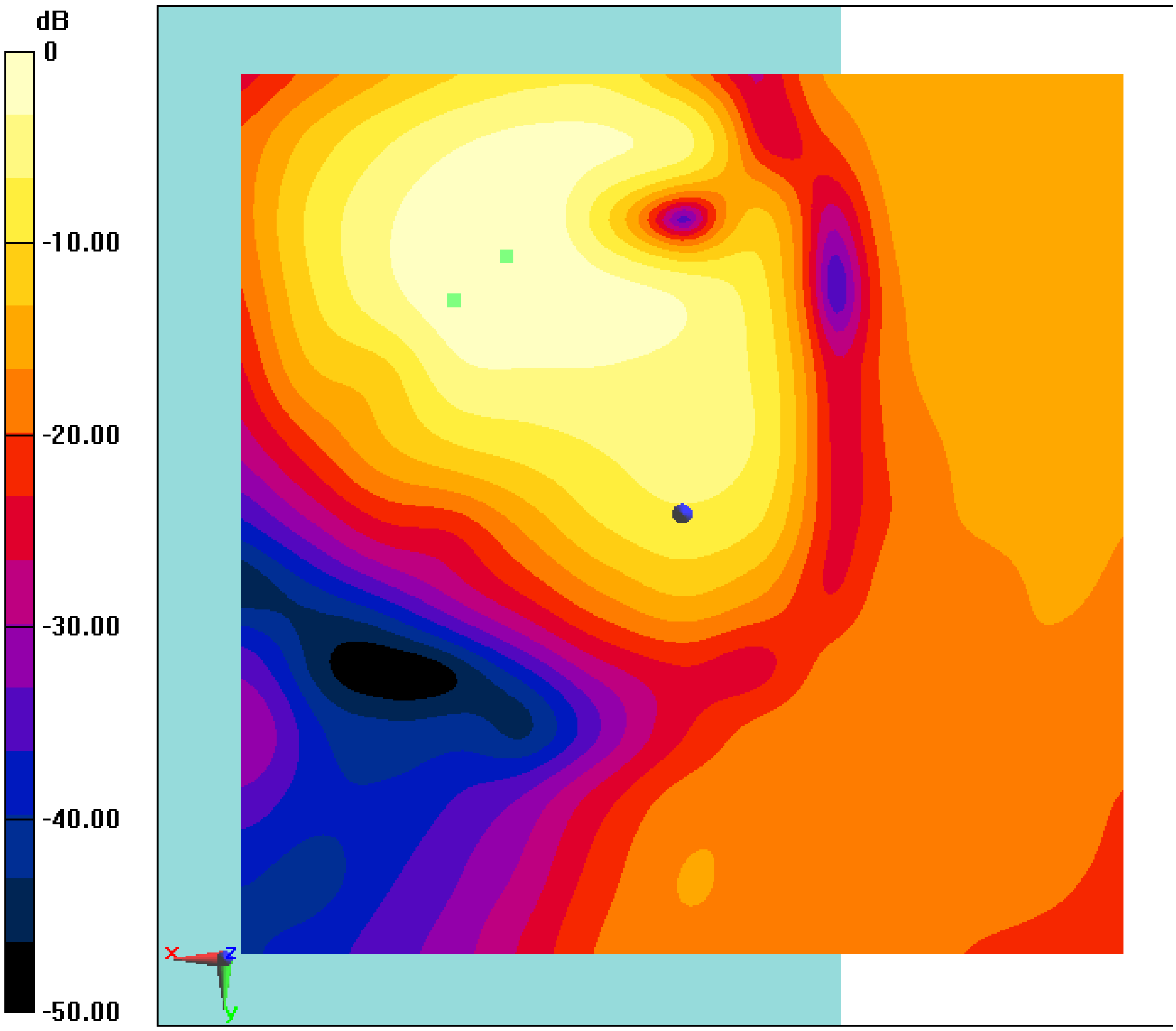
Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 = 12.99 dBA/m
BWC Factor = 0.16 dB
Location: 12.9, -12.1, 3.7 mm

T-Coil/General Scans/z (axial) 4.2mm 50 x 50/ABM Interpolated

SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 37.15
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 41.03 dB
ABM1 comp = 11.13 dBA/m
BWC Factor = 0.16 dB
Location: 10, -14.6, 3.7 mm



0 dB = 4.464 A/m = 12.99 dBA/m

Fig F.5-4 T-Coil WCDMA 850

T-Coil LTE B2 20M Transverse
Date: 2019-7-24
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: σ = 0 mho/m, $\varepsilon_r = 1$; ρ = 1 kg/m^3
Ambient Temperature:22.5ºC
Communication System: LTE B2; Frequency: 1880 MHz; Duty Cycle: 1:1
Probe: AM1DV3 - 3128;

T-Coil/General Scans/y (transversal) 4.2mm 50 x 50 20M/ABM

Interpolated Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

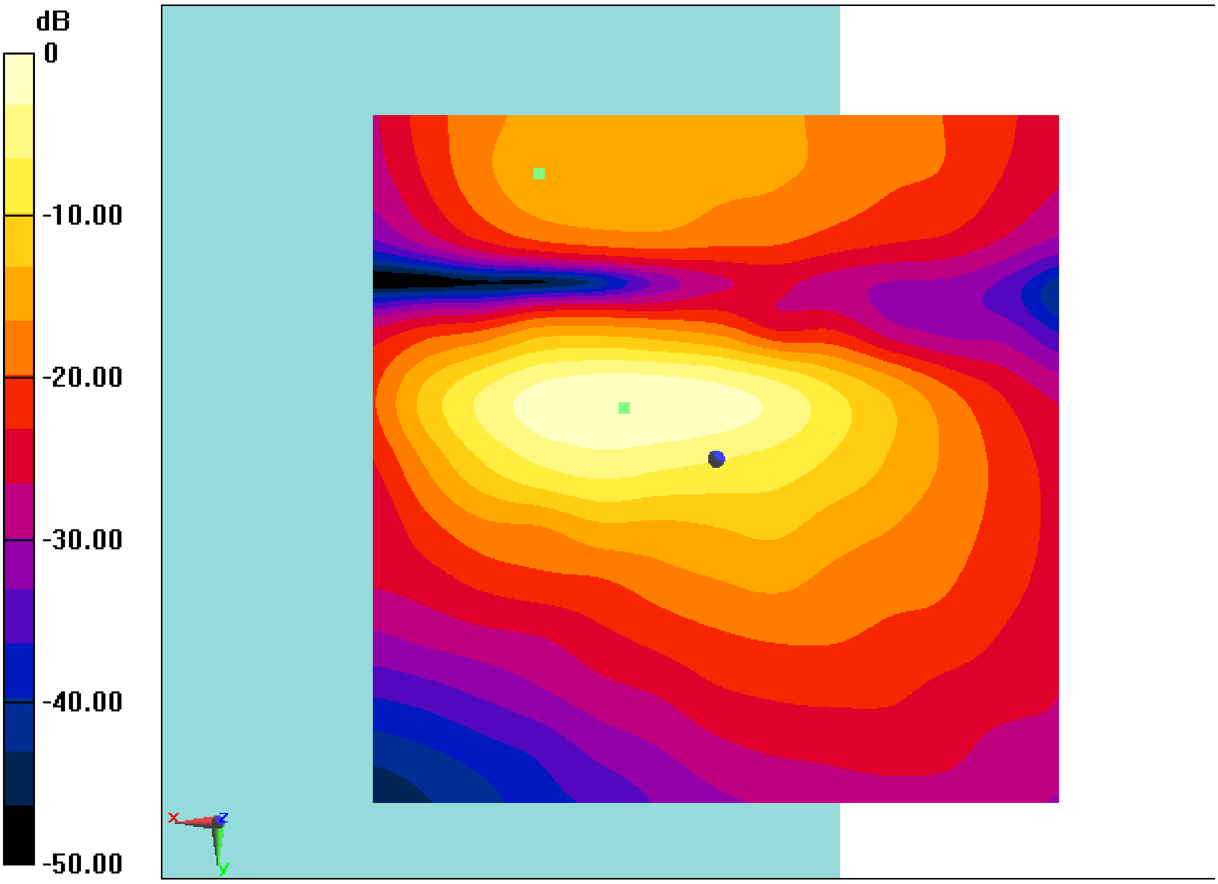
Cursor:
ABM1 = 5.96 dBA/m
BWC Factor = 0.16 dB
Location: 12.9, -20.8, 3.7 mm

T-Coil/General Scans/y (transversal) 4.2mm 50 x 50 20M/ABM

Interpolated SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 40.74 dB
ABM1 comp = 1.52 dBA/m

BWC Factor = 0.16 dB
Location: 6.7, -3.8, 3.7 mm



0 dB = 1.987 A/m = 5.96 dBA/m

Fig F.5-5 T-Coil LTE B2

T-Coil LTE B2 20M Perpendicular
Date: 2019-7-24
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature:22.5°C
Communication System: LTE B2; Frequency: 1880 MHz; Duty Cycle: 1:1
Probe: AM1DV3 - 3128;

T-Coil/General Scans/z (axial) 4.2mm 50 x 50 20M/ABM Interpolated

Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 = 13.92 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, -12.5, 3.7 mm

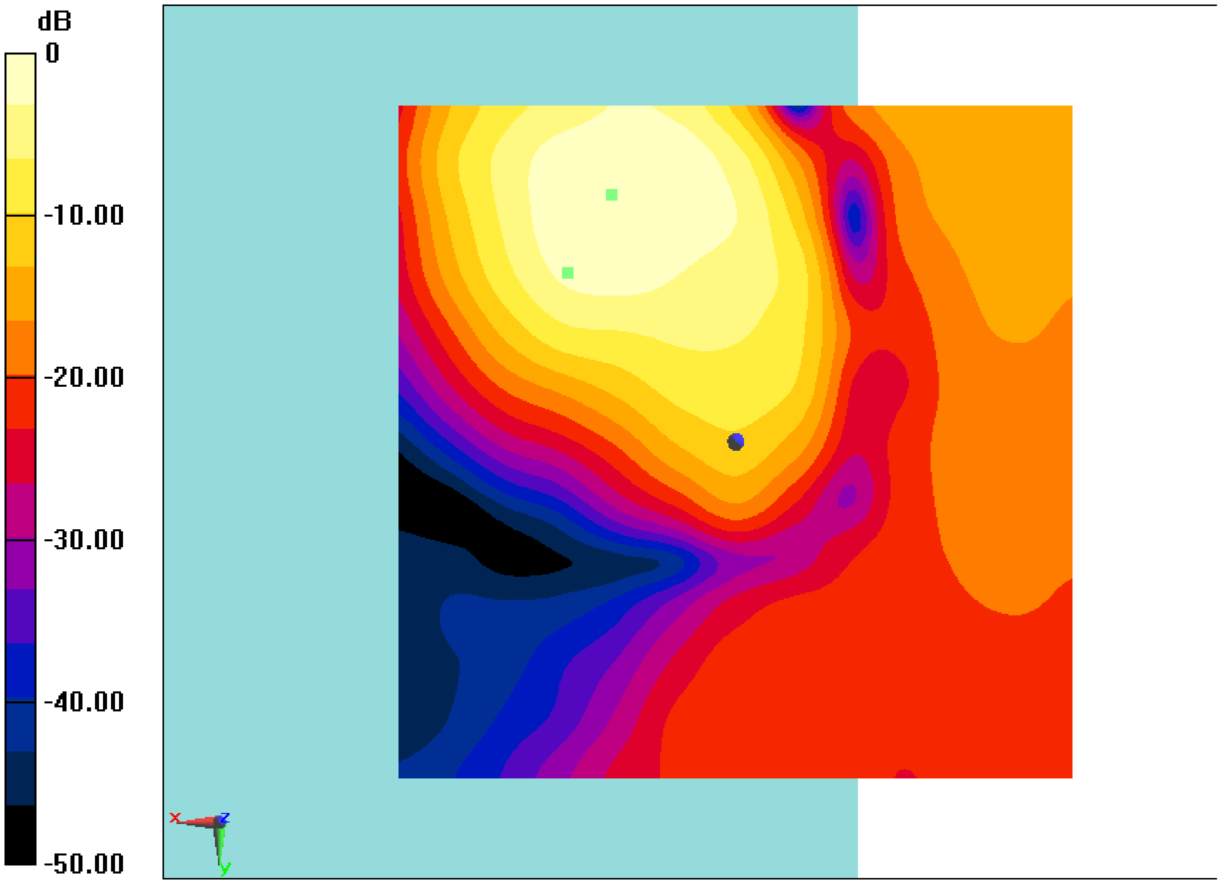
T-Coil/General Scans/z (axial) 4.2mm 50 x 50 20M/ABM Interpolated

SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 34.65 dB
ABM1 comp = 9.15 dBA/m

BWC Factor = 0.16 dB
Location: 9.2, -18.3, 3.7 mm



0 dB = 4.967 A/m = 13.92 dBA/m

Fig F.5-6 T-Coil LTE B2

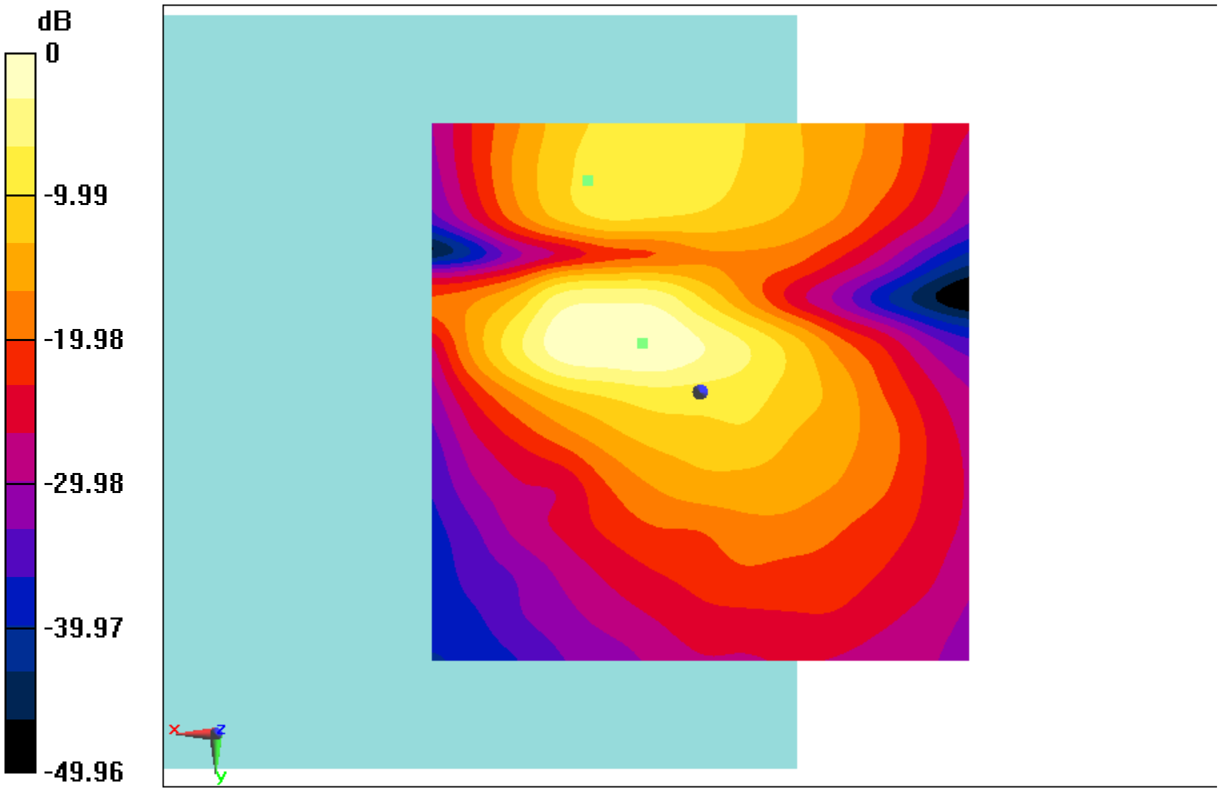
T-Coil WiFi-2.4G 11b Transverse
Date: 2019-7-26
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature:22.5°C
Communication System: WiFi-2.4G; Frequency: 2437 MHz; Duty Cycle: 1:1
Probe: AM1DV3 - 3128;

T-Coil/General Scans 11b ch6/y (transversal) 4.2mm 50 x 50 11b 1Mbps/ABM Interpolated Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 = 7.36 dBA/m
BWC Factor = 0.15 dB
Location: 10.4, -19.6, 3.7 mm

T-Coil/General Scans 11b ch6/y (transversal) 4.2mm 50 x 50 11b 1Mbps/ABM Interpolated SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 45.09 dB
ABM1 comp = 4.12 dBA/m
BWC Factor = 0.15 dB
Location: 5.4, -4.6, 3.7 mm



0 dB = 1.000 A/m = 0.00 dBA/m

Fig F.5-7 T-Coil WiFi-2.4G

T-Coil WiFi-2.4G 11b Perpendicular
Date: 2019-7-26
Electronics: DAE4 Sn1555
Medium: Air
Medium parameters used: $\sigma = 0$ mho/m, $\varepsilon_r = 1$; $\rho = 1$ kg/m^3
Ambient Temperature:22.5ºC
Communication System: WiFi-2.4G; Frequency: 2437 MHz; Duty Cycle: 1:1
Probe: AM1DV3 - 3128;

T-Coil/General Scans 11b ch6/z (axial) 4.2mm 50 x 50 11b 1Mbps/ABM

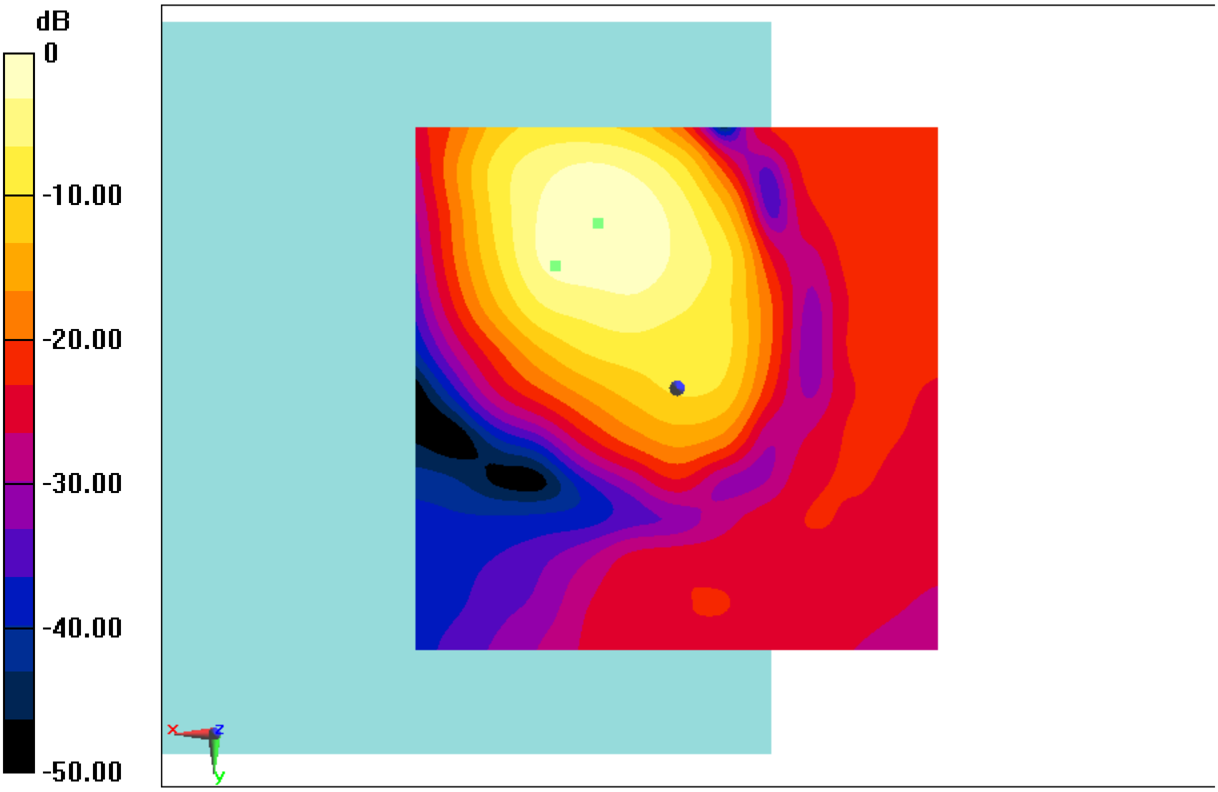
Interpolated Signal(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 = 15.18 dBA/m
BWC Factor = 0.15 dB
Location: 11.7, -11.7, 3.7 mm

T-Coil/General Scans 11b ch6/z (axial) 4.2mm 50 x 50 11b 1Mbps/ABM

Interpolated SNR(x,y,z) (121x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 100
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1/ABM2 = 44.11 dB
ABM1 comp = 11.93 dBA/m
BWC Factor = 0.15 dB
Location: 7.5, -15.8, 3.7 mm



0 dB = 1.000 A/m = 0.00 dBA/m

Fig F.5-8 T-Coil WiFi-2.4G

F.6 FREQUENCY REPONSE CURVES

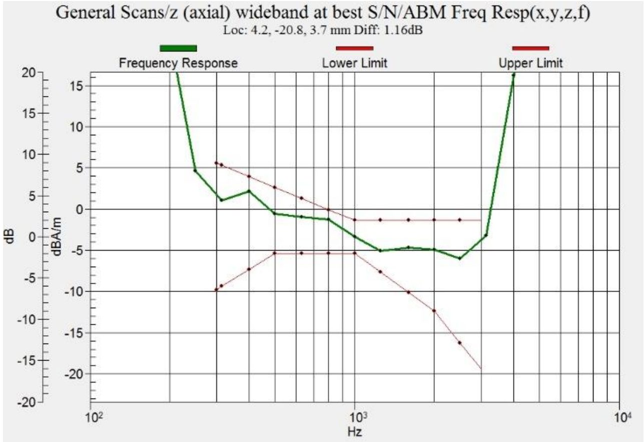


Figure F.6-1 Frequency Response of GSM 1900

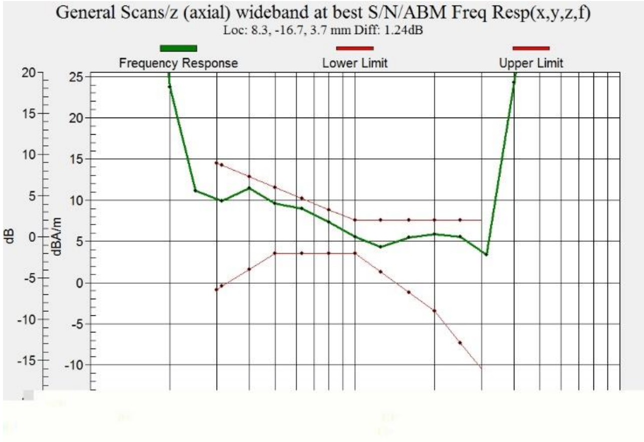


Figure F.6-2 Frequency Response of WCDMA 850

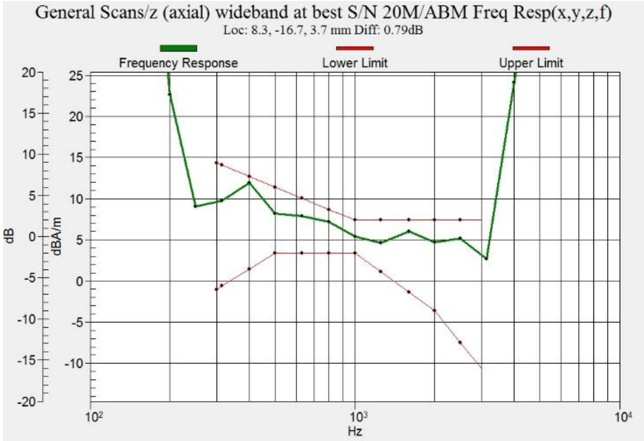


Figure F.6-3 Frequency Response of LTE B2

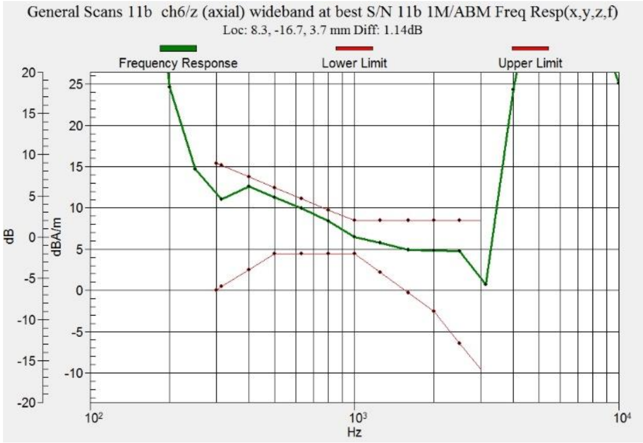


Figure F.6-4 Frequency Response of WiFi-2.4G

F.7 PROBE CALIBRATION CERTIFICATE

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
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 0108

Client Auden

Certificate No: AM1DV3-3128_Jan19

CALIBRATION CERTIFICATE

Object	AM1DV3 - SN: 3128
Calibration procedure(s)	QA CAL-24.v4 Calibration procedure for AM1D magnetic field probes and TMFS in the audio range
Calibration date:	January 15, 2019

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	03-Sep-18 (No. 23488)	Sep-19
Reference Probe AM1DV2	SN: 1008	20-Dec-18 (No. AM1DV2-1008_Dec18)	Dec-19
DAE4	SN: 781	09-Jan-19 (No. DAE4-781_Jan19)	Jan-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
AMCC	SN: 1050	01-Oct-13 (in house check Oct-17)	Oct-19
AMMI Audio Measuring Instrument	SN: 1062	26-Sep-12 (in house check Oct-17)	Oct-19

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	[signature]
Approved by:	Katja Pokovic	Technical Manager	[signature]

Issued: January 16, 2019

[**References**

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

[2] ANSI-C63.19-2011
American National Standard, Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

[3] 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+2]. 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+2] 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 [3], 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	**3128**

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, Zurich, Switzerland

Calibration data

Connector rotation angle	(in DASY system)	**155.9°**	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	**1.49 °**	+/- 0.5 ° (k=2)
Sensitivity at 1 kHz	(in DASY system)	**0.00780 V / (A/m)**	+/- 2.2 % (k=2)

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%.

The photos of HAC test are presented in the additional document:

Appendix to test report no. I19Z61056-SEM02/03

The photos of HAC test