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HAC T-COIL Test Report

Applicant Name: **SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677 Rep. of Korea	**Date of Issue:** Jul.03, 2020 **Test Report No.:** HCT-SR-2006-FC016-R1 **Test Site: HCT CO., LTD.**

FCC ID **A3LSMN981B**

Equipment Type:	**Mobile Phone**
Application Type	**Certification**
FCC Rule Part(s):	**CFR §20.19 , ANSI C63.19-2011**
Model Name:	**SM- N981B/DS**
Additional Model Name:	**SM-N981B**
Date of Test:	**05/20/2020 ~ 05/27/2020**

C63.19-2011 HAC Category **T3 (T-COIL CATEGORY)**

This wireless portable device has been shown to be hearing-aid compatible under the above rated category, specified in ANSI/IEEE Std. C63.19-2011 and had been tested in accordance with the specified measurement procedures. Hearing-Aid Compatibility is based on the assumption that all production units will be designed electrically identical to the device tested in this report.
I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Tested By

Yoon Ho Choi
Test Engineer
SAR Team
Certification Division

Reviewed By

Yun-jeang, Heo
Technical Manager
SAR Team
Certification Division

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Jun. 29, 2020	Initial Release
R1	Jul.03,2020	Revised page 5,7

This test results were applied only to the test methods required by the standard.

The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.

Table of Contents

1. Test Regulations

The tests were performed according to the following regulations:

Test Standard	FCC 47 CFR §20.19 ANSI C63.19-2011
Test Method	・ FCC CFR47 Part 20.19 ・ ANSI C63.19 2011-version ・ FCC KDB 285076 D01 HAC Guidance v05r01 FCC KDB 285076 D03 HAC FAQ v01r01 ・ FCC KDB 285076 D02 T-Coil Testing v03

2. ATTESTATION OF TEST RESULT OF DEVICE UNDER TEST

Test Laboratory	
Company Name:	HCT Co., LTD
Address:	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of Korea
Telephone:	+82 31 645 6300
Fax.:	+82 31 645 6401

Attestation of SAR test result	
Applicant Name:	SAMSUNG Electronics Co., Ltd.
Model:	SM-N981B/DS
Additional Model Name:	SM-N981B
EUT Type:	Mobile Phone
Application Type:	Certification

2.1 Test Methodology

The Tests document in this report were performed in accordance with ANSI C63.19-2011 method of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids, FCC published KDB 285076 D01 HAC Guidance v05r01, FCC Published KDB285076 D03 HAC FAQ v01r01 and TCB Workshop updates .

3. DEVICE UNDER TEST DESCRIPTION

3.1 DUT specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
GSM850	Voice / Data	824.2 ㎒ ~ 848.8 ㎒
GSM1900	Voice / Data	1 850.2 ㎒ ~ 1 909.8 ㎒
WCDMA 850	Voice / Data	826.4 ㎒ ~ 846.6 ㎒
WCDMA 1700	Voice / Data	1 712.4 ㎒ ~ 1 752.6 ㎒
WCDMA 1900	Voice / Data	1 852.4 ㎒ ~ 1 907.6 ㎒
LTE Band 2 (PCS)	Voice / Data	1 850.7 ㎒ ~ 1 909.3 ㎒
LTE Band 4 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 754.3 ㎒
LTE Band 5 (Cell)	Voice / Data	824.7 ㎒ ~ 848.3 ㎒
LTE Band 12	Voice / Data	699.7 ㎒ ~ 715.3 ㎒
LTE Band 13	Voice / Data	779.5 ㎒ ~ 784.5 ㎒
LTE Band 17	Voice / Data	706.5 ㎒ ~ 713.5 ㎒
LTE Band 25 (PCS)	Voice / Data	1 850.7 ㎒ ~ 1 914.3 ㎒
LTE Band 26 (Cell)	Voice / Data	814.7 ㎒ ~ 848.3 ㎒
LTE TDD Band 41	Voice / Data	2 498.5 ㎒ ~ 2 687.5 ㎒
LTE Band 66 (AWS)	Voice / Data	1 710.7 ㎒ ~ 1 779.3 ㎒
U-NII-1	Voice / Data	5 180 ㎒ ~ 5 240 ㎒
U-NII-2A	Voice / Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Voice / Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Voice / Data	5 745 ㎒ ~ 5 825 ㎒
2.4 ㎓ WLAN	Voice / Data	2 412 ㎒ ~ 2 472 ㎒
Bluetooth / LE 5.0	Data	2 402 ㎒ ~ 2 480 ㎒
NFC	Data	13.56 ㎒
Device Description		
Device Dimension	Overall (Length x Width): 161 ㎜ x 75.2㎜ Overall Diagonal: 175 ㎜ Display Diagonal: 166 ㎜	
Battery Information	Standard (Li-ion Polymer Battery)	
	Battery Model Name: EB-BN-980ABY (SAMSUNG SDI)	
Ear-jack	Model Name: YBD-19HS-026(블랙) (ALMUS)	
HW version	REV0.1	
SW version	N981B.001	

4. Test Methodology

The tests documented in this report were performed in accordance with ANSI C63.19-2011 Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids and FCC published procedure

FCC KDB 285076 D01 HAC Guidance v05r01

FCC KDB 285076 D03 HAC FAQ v01r01

TCB workshop updates

KDB 285076 D02 T-Coil testing for CMRS

5. Measuring Instrument Calibraion

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations and is traceable to recognized national standards.

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
ABM Probe	SPEAG	AM1DV3	3050	11/20/2020
Data Acquisition Electronics	SPEAG	DAE3	504	02/26/2021
ABM Probe	SPEAG	AM1DV2	1013	04/23/2021
Data Acquisition Electronics	SPEAG	DAE4	868	09/04/2020
DAC	Sound Devices	USBPre 2	HB11173410003	N/A
Radio Communication Tester	R & S	CMW 500	167916	10/23/2020
Radio Communication Tester	R & S	CMW 500	167918	04/17/2021
Radio Communication Tester	R & S	CMW 500	127521	05/15/2021

6. Measurement Uncertainty

Measurement Uncertainty for Audio Band Magnetic Measurement

Error Description	Uncertainty values (±%)	Probe Dist.	Div.	c_i ABM1	c_i ABM2	Std. Unc.	
						ABM1 (±%)	ABM2 (±%)
Probe Sensitivity							
ReFerence Level	3.00	N	1	1	1	3.00	3.00
AMCC Geometry	0.40	R	1.73	1	1	0.23	0.23
AMCC Current	1.00	R	1.73	1	1	0.58	0.58
Porbe Positioning during Calibr.	0.10	R	1.73	1	1	0.06	0.06
Noise Contribution	0.70	R	1.73	0.0143	1	0.01	0.40
Frequency Slope	5.90	R	1.73	0.1	1	0.34	3.41
Probe System							
Repeatability / Drift	1.00	R	1.73	1	1	0.58	0.58
Linearity / Dynamic Range	0.60	R	1.73	1	1	0.35	0.35
Acoustic Noise	1.00	R	1.73	0.1	1	0.06	0.58
Probe Angle	2.30	R	1.73	1	1	1.33	1.33
Spectral Processing	0.90	R	1.73	1	1	0.52	0.52
Integration Time	0.60	N	1.00	1	5	0.60	3.00
Field Disturbation	0.20	R	1.73	1	1	0.12	0.12
Test Signal							
Ref. Signal Spectral Response	0.60	R	1.73	0	1	0.00	0.35
Positioning							
Probe Positioning	1.90	R	1.73	1	1	1.10	1.10
Phantom Thickness	0.90	R	1.73	1	1	0.52	0.52
DUT Positioning	1.90	R	1.73	1	1	1.10	1.10
External Contributions							
RF Interference	0.00	R	1.73	1	0.3	0.00	0.00
Test Signal Variation	2.00	R	1.73	1	1	1.2	1.2
Combined Std. Uncertainty (ABM field)						4.1	6.1
Expanded Std. Uncertainty (%)						**8.1**	**12.3**

Notes for table
N - Nomal
R - Rectangular
Div. - Divisor used to obtain standard uncertainty

7. Test Procedures for all Technologies

7.1 General Procedures C63.19-2011, Section 7

ANSI C63.19-2011, Section 7
This document describes the procedures used to measure the ABM (T-Coil) performance of the WD. In addition to measuring the absolute signal levels, the A-weighted magnitude of the unintended signal shall also be determined. In order to assure that the required signal quality is measured, the measurement of the intended signal and the measurement of the unintended signal must be made at the same location for all measurement positions. In addition, the RF field strength at each measurement location must be at or below that required for the assigned category.
Measurements shall not include undesired properties from the WD's RF field; therefore, use of a coaxial connection to a base station simulator or non-radiating load may be necessary. However, even then with a coaxial connection to a base station simulator or non-radiating load there may still be RF leakage from the WD, which may interfere with the desired measurement. Pre-measurement checks should be made to avoid this possibility. All measurements shall be done with the WD operating on battery power with an appropriate normal speech audio signal input level given in Table 7.1. If the device display can be turned off during a phone call then that may be done during the measurement as well.
Measurements shall be performed at two locations specified in A.3, with the correct probe orientation for a particular location, in a multistage sequence by first measuring the field intensity of the desired T-Coil signal (ABM1) that is useful to a hearing aid T-Coil. The undesired magnetic components (ABM2) must be measured at the same location as the desired ABM or T-Coil signal (ABM1), and the ratio of desired to undesired ABM signals must be calculated. For the perpendicular field location, only the ABM1 frequency response shall be determined in a third measurement stage. The flow chart in Figure 7.3 illustrates this three-stage, two orientation process.
The following steps summarize the basic test flow for determining ABM1 and ABM2. These steps assume that a sine wave or narrowband 1/3 octave signal can be used for the measurement of ABM1.

A validation of the test setup and instrumentation may be performed using a TMFS or Helmholtz coil. Measure the emissions and confirm that they are within the specified tolerance.

Position the WD in the test setup and connect the WD RF connector to a base station simulator or a non-radiating load as shown in Figure 7.1 or Figure 7.2. Confirm that equipment that requires calibration has been calibrated, and that the noise level meets the requirements given in 7.3.1.

The drive level to the WD is set such that the reference input level specified in Table 7.1 is input to the base station simulator (or manufacturer's test mode equivalent) in the 1 ㎑, 1/3 octave band. This drive level shall be used for the T-Coil signal test (ABM1) at *f* = 1 ㎑. Either a sine wave at 1025 Hz or a voice- like signal, band-limited to the 1 ㎑ 1/3 octave, as defined in 7.4.2, shall be used for the reference audio signal. If interference is found at 1025 Hz an alternative nearby reference audio signal frequency may be used.46 The same drive level will be used for the ABM1 frequency response measurements at each 1/3 octave band center frequency. The WD volume control may be set at any level up to maximum, provided that a signal at any frequency at maximum modulation would not result in clipping or signal overload.

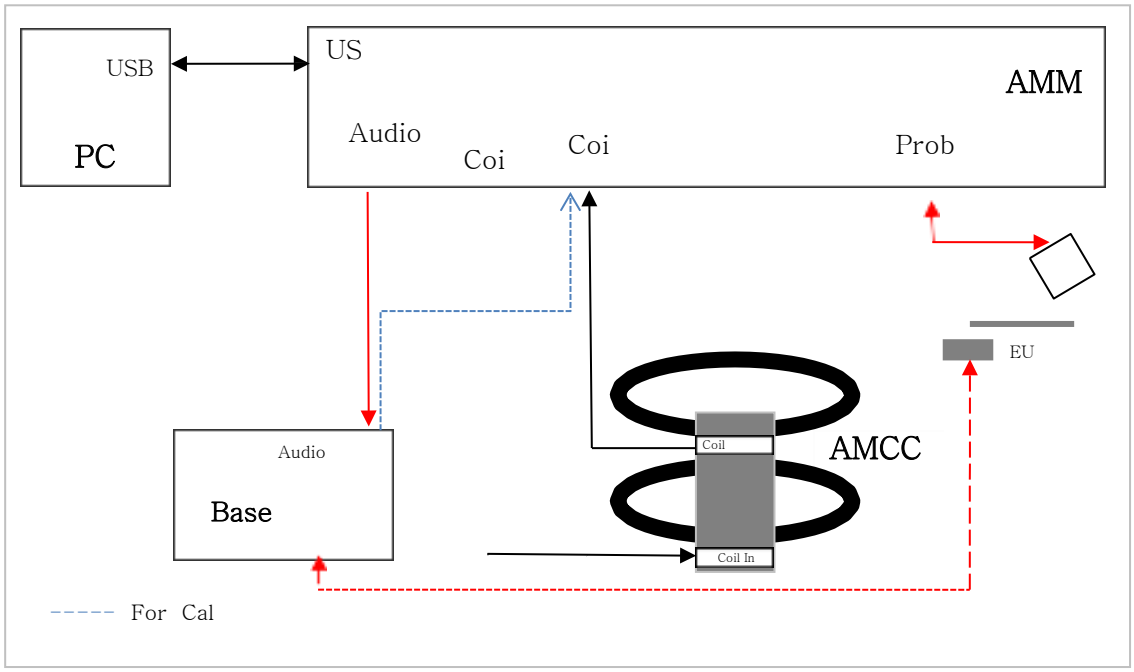
Determine the magnetic measurement locations for the WD device (A.3), if not already specified by the manufacturer, as described in 7.4.4.1.1 and 7.4.4.2.

At each measurement location, measure and record the desired T-Coil magnetic signals (ABM1 at *fi*) as described in 7.4.4.2 in each individual ISO 266-1975 R10 standard 1/3 octave band. The desired audio band input frequency (*fi*) shall be centered in each 1/3 octave band maintaining the same drive level as determined in item c) and the reading taken for that band.
Equivalent methods of determining the frequency response may also be employed, such as fast Fourier transform (FFT) analysis using noise excitation or input–output comparison using simulated speech. The full-band integrated or half-band integrated probe output, as specified in D.9, may be used, as long as the appropriate calibration curve is applied to the measured result, so as to yield an accurate measurement of the field magnitude. (The resulting measurement shall be an accurate measurement in dB A/m.)
All measurements of the desired signal shall be shown to be of the desired signal and not of an undesired signal. This may be shown by turning the desired signal ON and OFF with the probe measuring the same

location. If the scanning method is used the scans shall show that all measurement points selected for the ABM1 measurement meet the ambient and test system noise criteria in 7.3.1.

At the measurement location for each orientation, measure and record the undesired broadband audio magnetic signal (ABM2) as specified in 7.4.4.4 with no audio signal applied (or digital zero applied, if appropriate) using A-weighting and the half-band integrator. Calculate the ratio of the desired to undesired signal strength (i.e., signal quality).
Obtain the data from the postprocessor, SEMCAD, and determine the category that properly classifies the signal quality based on Table 8.5.

Test Setup Diagram



7.2 VoWiFi – For PAG REUSE

This device supports Wi-Fi calling (aka Voice over Wi-Fi or VoWiFi) which is an extended feature of the carriers CMRS service to offload VoLTE calls onto local area networks over WI-FI via the internet and subject to HAC assessment for phones with a HAC rating. HAC assessment for this feature is subject to Pre Approval Guidance.

The set up for VoWiFi uses the Base station as described in section **7.1** with the exception that the reference audio level is set at -20dBm0. The reference level is calibrated using the standard call box calibration procedures with the exception of the -20dBm0 reference level being used (refer to section 8.4).

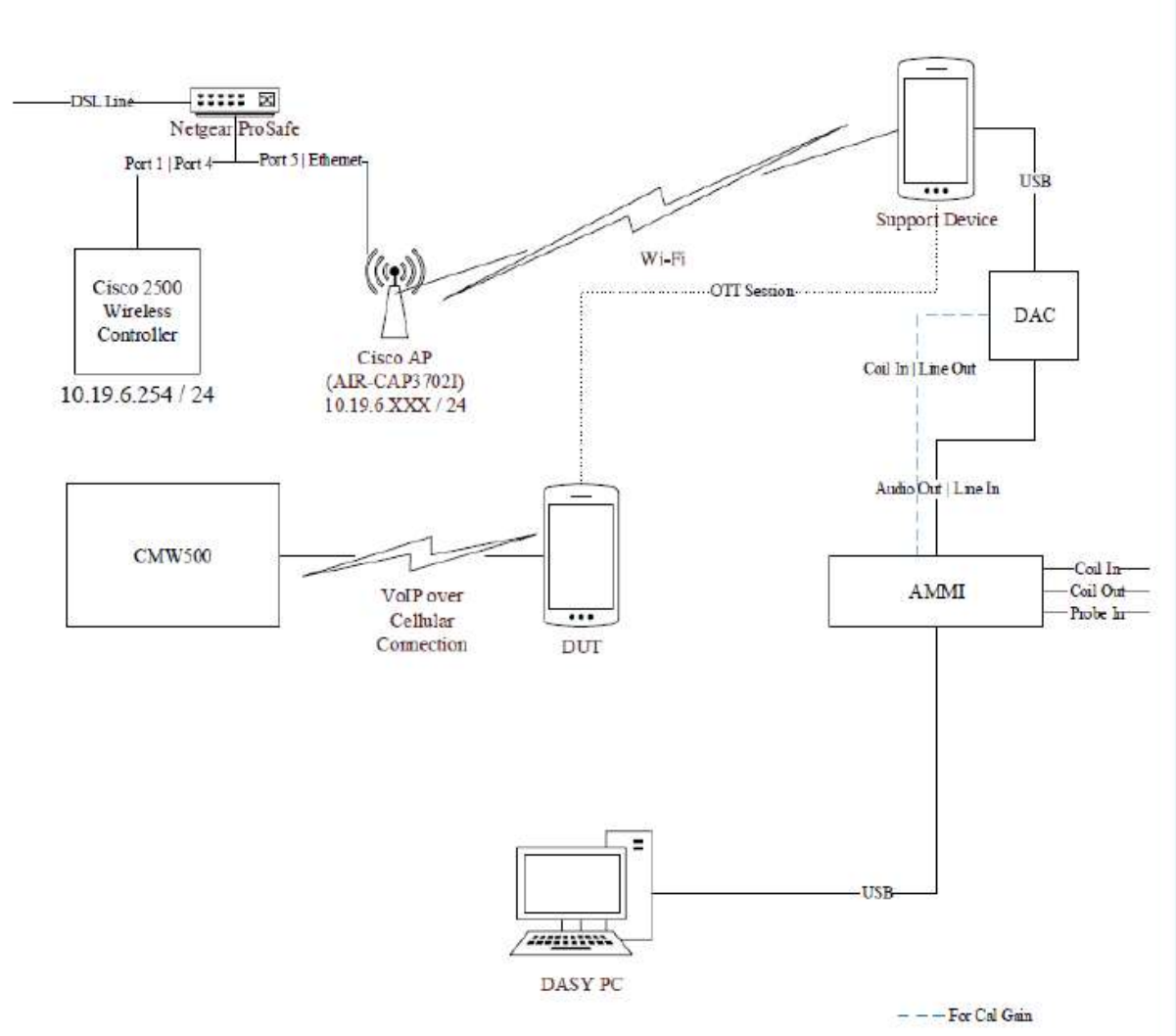
An investigation was performed to determine worst case codec, bit rate and air interface configuration (refer to sections 12.5 and 12.6).

7.3 Over the Top(OTT) – For PAG REUSE

This device supports VoIP via a preinstalled application that uses the **Google Duo** service, using **OPUS** as its only codec (refer to §11 for air interface details and §12.7 for codec bit rates). VoIP capabilities require HAC assessment when voice calls are supported over the cellular data connection via pre-installed VoIP applications and the assessment is subject to Pre-Approval Guidance procedures.

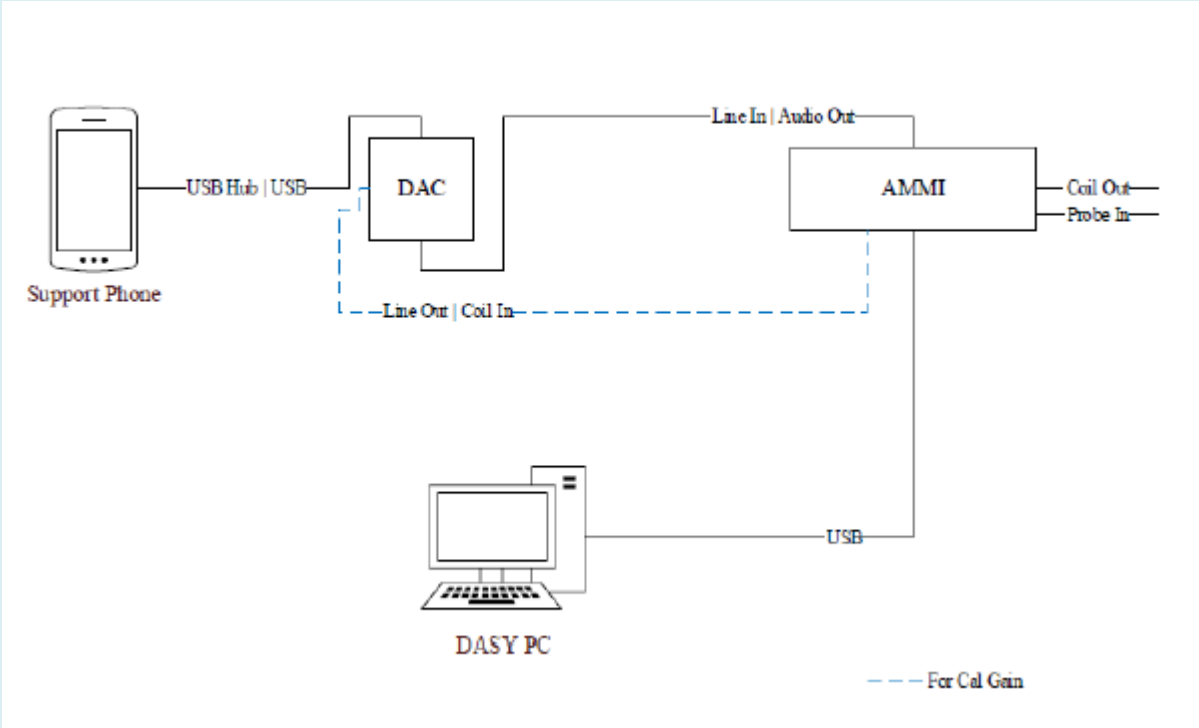
The equipment is set up as shown below with a support device used to originate the call using the IP transport. The support device connects to the cloud-based **Google Duo** service via Wi-Fi access point and router, or RJ45. The DUT connects to the VoIP service via a cellular/unlicensed air interface to the call box and an Ethernet connection from call box to Internet. The various codec bit rate and air interface configurations are evaluated to determine the worst-case configuration (refer to §12.7).

Test Setup configuration for OTT calls



For the OTT call, the calibrated audio card within the CMW500 cannot be used so the AMMI is connected to an external Digital-Analog Converter (DAC) and the DAC is connected to the Support Device via USB. The test signal is sent from the DASY PC to the AMMI, from the AMMI to the DAC, from the DAC to the Support Device, and, via the VoIP call, to the DUT.

As this test set up uses an external DAC between the AMMI's audio output and support device, the appropriate gain factor for the OTT call needs be determined. This is done by connecting the DAC between the AMMI Audio output and Coil input as shown below.



Using the metering function on the DAC, the DAC gain is adjusted until the volume reaches 0 dBFS (3.14 dBm0 based on TIA/EIA 810-A). SPEAG's "TN-LK-05042018-C-T-Coil_Levels" document (Appendix E) steps E through H are then followed to determine the adjusted gain values as detailed in §8.5 so that the reference level is set to 23.14dB below full scale, i.e. at -20dBm0. A verification of the DAC's output is performed prior to testing.

8. Audio Level and Gain Measurements

8.1 GSM

Refer to the below table for the gains used to measure GSM.

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-16.00	28.34	26.12
Voice 300 - 3 ㎑	-16.00	38.05	79.48

8.2 W-CDMA

Refer to the below table for the gains used to measure W-CDMA.

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-16.00	28.34	26.12
Voice 300 - 3 ㎑	-16.00	38.05	79.48

8.3 VOLTE

Refer to the below table for the gains used to measure VoLTE.
The following software/firmware was used to simulate the VoLTE server for testing:

Firmware	License Keys	Software Name
V3.7.30 for LTE	KS500	LTE FDD R8 SIG BASIC
	KS550	LTE TDD R8 SIG BASIC
V3.7.20 for Audio	KA100	IP APPL ENABLING IPv4
	KA150	IP APPL ENABLING IPv6
	KAA20	IP APPL IMS BASIC
	KM050	DATA APPL MEAS
	KS104	EVS SPEECH CODEC

 # TDD VoLTE #1 Chamber

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-16.00	28.34	26.12
Voice 300 - 3 ㎑	-16.00	38.05	79.48

 # FDD VoLTE #9 Chamber

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-16.00	28.03	25.20
Voice 300 - 3 ㎑	-16.00	37.74	76.5

8.4 VOWi-Fi

Refer to the below table for the gains used to measure VoWi-Fi.

Firmware	License Keys	Software Name
V3.7.40 for WLAN	KS650	WLAN A/B/G SIG BASIC
	KS651	WLAN N SIG BASIC
	KS656	WLAN IEEE 802.11ac
	KS657	WLAN IEEE 802.11ax
V3.7.20 for Audio	KA100	IP APPL ENABLING IPv4
	KA150	IP APPL ENABLING IPv4
	KAA20	IP APPL IMS BASIC
	KM050	DATA APPL MEAS
	KS104	EVS SPEECH CODEC

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-20.00	23.91	15.69
Voice 300 - 3 ㎑	-20.00	33.62	47.57

8.5 Over the Top(OTT) – For PAG REUSE

For EDGE, HSPA, LTE, and Wi-Fi, the linear gain levels listed below were used. The results below are based on a reference input level of -20 dBm0.

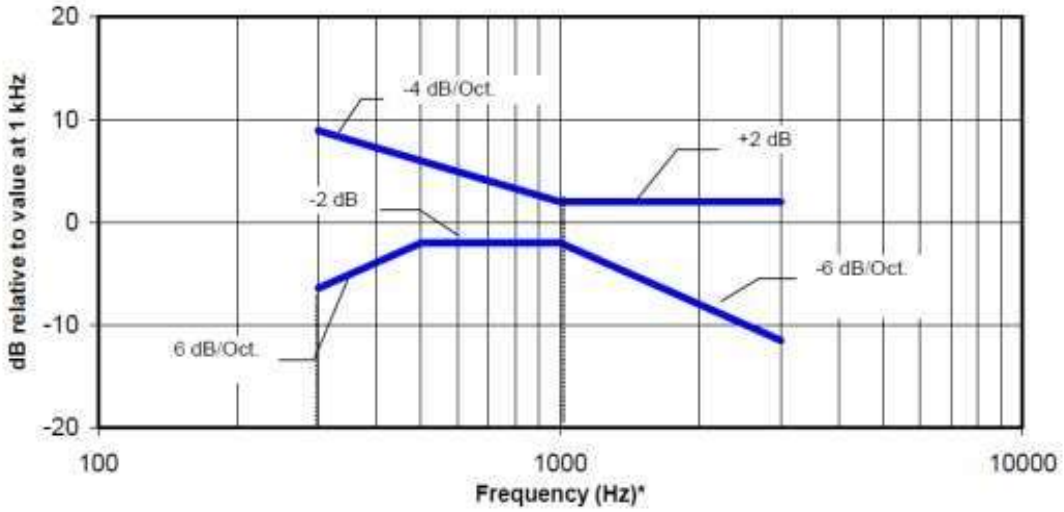
To calibrate the DAC (refer §7.3), three .wav audio files (sine wave, 1 kHz voice, and 300 to 3 kHz voice) are sent from the DASY5 PC to the AMMI, then to the DAC. The Helmholtz resonator measures the field strength, which represents the AMMI to DAC input sensitivity. After determining the input sensitivity, the adjusted linear gain values can then be calculated.

Signal Type	Audio Level [dBm0]	Gain [dB]	Gain [linear]
Voice 1 kHz	-20.00	25.71	19.30
Voice 300-3kHz	-20.00	35.42	58.85

9 T-coil Measurement Criteria

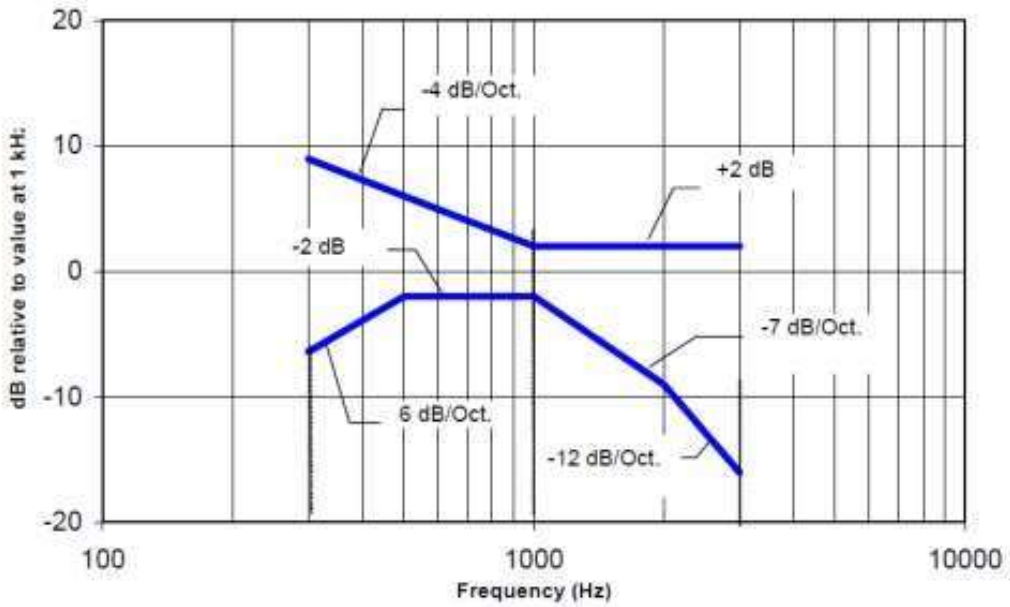
9.1 Frequency Respones

The frequency response of the axial component of the magnetic field, measured in 1/3 octave bands, shall follow the response curve, over the frequency range 300 Hz to 3000 Hz.
Figure 8.1 and Figure 8.2 provide the boundaries for the specified frequency. These response curves are for true field strength measurements of the T-Coil signal. Thus the 6 dB/octave probe response has been **corrected from the raw readings.**



NOTE—The frequency response is between 300 Hz and 3000 Hz.

Figure 8.1—Magnetic field frequency response for WDs with field strength ≤ –15 dB (A/m) at 1 kHz



NOTE—The frequency response is between 300 Hz and 3000 Hz.

Figure 8.2—Magnetic field frequency response for WDs with a field that exceeds –15 dB(A/m) at 1 kHz

9.2 Signal to Noise

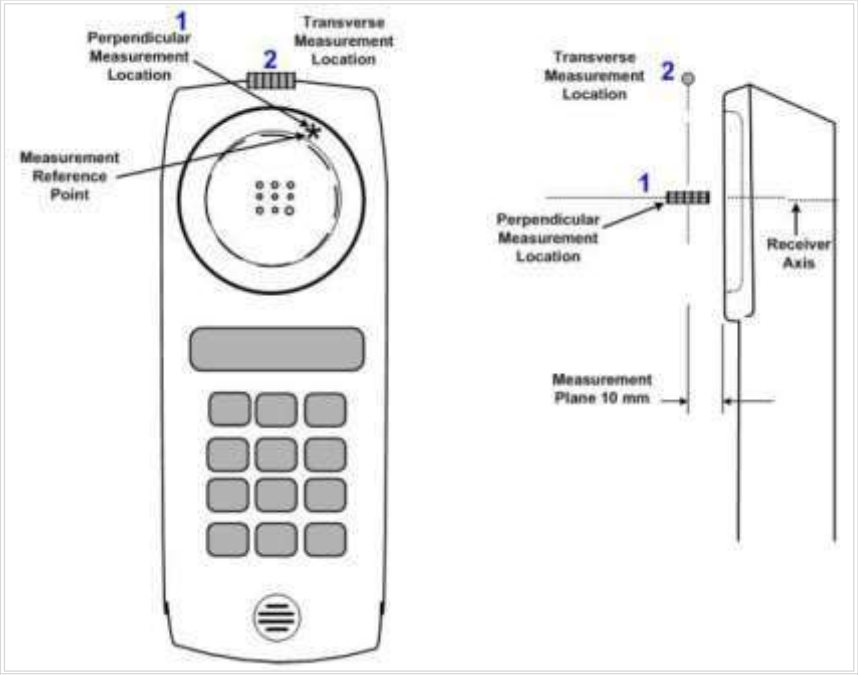
This specifies the signal-to-noise quality requirement for the intended T-Coil signal from a WD. The worst signal to noise of the two T-Coil signal measurements, as determined in Clause 7, shall be used to determine the T-Coil mode category per Table 8.5.

Only the RF immunity of the hearing aid is measured in T-Coil mode. It is assumed that a hearing aid can have no immunity to an interference signal in the audio band, which is the intended reception band for this mode. So, the only criterion that can be measured is the RF immunity in T-Coil Mode. This is measured using the same procedure as for the audio coupling mode and at the same levels as specified in 6.4.

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Table 8.5- T-Coil signal-to-noise categories

Measurement locations and reference plane to be used for the T-coil measurements.



10. Device Under Test

Normal operation	Held to head	
Back Cover	The Back Cover is not removable	
Test sample information	S/N	Notes
	TED0466M	T-coil Test
	TED0500M	T-coil Test
	SGF0051R	T-coil Test
	TEM0412M	T-coil Test

11. Air Interfaces and Operating Mode

Air Interface	Bands (MHz)	Type	C63.19 Tested	Simultaneous Transmitter	Audio Codecs Evaluated
GSM	850	VO	Yes	Wi-Fi, BT	EFR
	1900				
	GPRS/EDGE	DT	Yes[3]	Wi-Fi, BT	OPUS[2]
W-CDMA (UMTS)	850	VO	Yes	Wi-Fi, BT	AMR-NB & AMR-WB
	1700				
	1900				
	HSPA	VD	Yes[3]	Wi-Fi, BT	OPUS[2]
LTE - FDD	700 (B12/13/17)	VD	Yes[1,3]	Wi-Fi, BT	AMR-NB, AMR- WB, EVS-NB, EVS-WB, EVS-SWB & OPUS[2]
	850 (B5/26)				
	1700 (B4/66)				
	1900 (B2/25)				
LTE – TDD	2600 (B41)[2]	VD	Yes[1,3]	Wi-Fi, BT	AMR-NB, AMR- WB, EVS-NB, EVS-WB, EVS-SWB & OPUS[2]
Wi-Fi	2450	VD	Yes[3]	WWAN	AMR-NB, AMR- WB, EVS-NB, EVS-WB, EVS-SWB & OPUS[2]
	5200 (U-NII-1)				
	5300 (U-NII-2A)				
	5500 (U-NII-2C)				
	5800 (U-NII-3)				
BT	2450	DT	NA	WWAN	N/A

Type:
VO: Legacy Cellular Voice Service
DT: Digital Transport only (no voice)
CMRS: Commercial Mobile Radio Service
VD: IP Voice service over Digital Transport

Note:
1. Ref Lev in accordance with the July 2012 VoLTE interpretation
2. Ref Lev -20 dBm0
3. For PAG REUSE

12. HAC (T-coil) Test Results

12.1 Codec Investigation

An investigation between the various codec configurations (Low/High bit rates for Narrowband, Wideband) and specific parameters are documented (ABM1, ABM2, S+N/N, frequency response) to determine the worst-case bit rates for each voice service type. The table below compares the varying codec configurations. A codec investigation was performed on one band of each GSM, W-CDMA, LTE FDD/TDD.
The highlighted results below were determined to be the worst case codec configuration(s) for GSM, W- CDMA and LTE.

Codec Investigation				
Codec State	AMR-NB (kbit/s)		Orientation	Band/ Channel
	FR V1	HR V1		
ABM1 (dB/m)	16.22	12.69	z (Axial)	GSM 850 CH.190
ABM2 (dBA/m)	-16.05	-29.95		
S+N/N (dB)	**32.27**	42.65		
Freq. Resposne (dB)	2.00	1.93		
ABM1 (dB/m)	9.77	5.57	y (Transversal)	
ABM2 (dBA/m)	-32.92	-43.13		
S+N/N (dB)	42.69	48.70		

Codec Investigation								
Codec State	AMR-NB (kbit/s)			AMR-WB (kbit/s)			Orientation	Band/ Bandwidth/ Channel
	4.75	7.4	12.2	6.6	15.85	23.85		
ABM1 (dB/m)	12.63	12.73	12.89	8.43	8.46	9.39	z (Axial)	WCDMA Band IV Rel.99 CH.1412
ABM2 (dBA/m)	-45.17	-45.45	-45.29	-45.07	-46.54	-45.50		
S+N/N (dB)	57.80	58.17	58.18	53.49	55.00	54.89		
Freq. Resposne (dB)	2.00	2.00	1.72	2.00	1.90	1.87		
ABM1 (dB/m)	2.87	3.06	3.26	-1.42	-3.58	-0.89	y (Transversal)	
ABM2 (dBA/m)	-48.80	-48.88	-49.02	-48.77	-52.06	-49.40		
S+N/N (dB)	51.67	51.95	52.28	**47.35**	48.48	48.51		

Codec Investigation								
Codec State	AMR-NB (kbit/s)			AMR-WB (kbit/s)			Orientation	Band/ Bandwidth/ Channel
	4.75	**7.4**	**12.2**	**6.6**	**15.85**	**23.85**		
ABM1 (dB/m)	10.64	10.79	11.18	2.31	7.50	2.42	z (Axial)	LTE Band 25 CH.26365 20 ㎒ BW QPSK 100 RB
ABM2 (dBA/m)	-46.42	-44.08	-44.15	-49.34	-45.76	-49.73		
S+N/N (dB)	57.06	54.88	55.34	51.65	53.26	52.16		
Freq. Resposne(dB)	2.00	2.00	2.00	2.00	2.00	2.00		
ABM1 (dB/m)	0.28	0.61	0.83	-0.51	-3.04	-1.37	y (Transversal)	
ABM2 (dBA/m)	-49.98	-48.52	-48.46	-49.85	-51.05	-49.29		
S+N/N (dB)	50.26	49.13	49.29	49.33	48.01	47.91		

Codec Investigation											
Codec State	EVS-NB (kbit/s)			EVS-WB (kbit/s)			EVS-SWB (kbit/s)			Orientation	Band/ BandWidt/ Channel
	5.9	13.2	24.4	5.9	13.2	24.4	9.6	16.4	24.4		
ABM1 (dB/m)	8.94	6.37	5.96	3.60	2.86	2.62	0.93	0.64	2.85	z (Axial)	LTE Band 25 CH.26365 20 ㎒ BW QPSK 100 RB
ABM2 (dBA/m)	-45.00	-48.38	-48.85	-45.13	-48.41	-47.67	-47.97	-48.09	-44.87		
S+N/N (dB)	53.93	54.75	54.82	48.73	51.27	50.28	48.90	48.73	47.72		
Freq.Resposne(dB)	1.70	1.63	2.00	1.93	1.88	1.97	2.00	2.00	2.00		
ABM1 (dB/m)	0.60	2.68	1.11	-7.35	-2.61	-2.06	-3.07	-2.37	-7.14	y (Transversal)	
ABM2 (dBA/m)	-48.47	-47.04	-48.88	-50.65	-49.42	-48.60	-48.19	-46.07	-50.54		
S+N/N (dB)	49.07	49.71	49.99	**43.29**	46.81	46.55	45.12	43.70	43.40		

Codec Investigation								
Codec State	AMR-NB (kbit/s)			AMR-WB (kbit/s)			Orientation	Band/ Bandwidth/ Channel
	4.75	**7.4**	**12.2**	**6.6**	**15.85**	**23.85**		
ABM1 (dB/m)	12.38	12.43	12.80	8.56	9.16	9.12	z (Axial)	LTE Band 41 CH.40620 20 ㎒ BW QPSK 100 RB
ABM2 (dBA/m)	-27.73	-26.26	-27.36	-27.19	-26.68	-26.25		
S+N/N (dB)	40.11	38.69	40.15	35.75	35.84	35.37		
Freq. Resposne(dB)	2.00	2.00	2.00	2.00	1.97	1.90		
ABM1 (dB/m)	2.15	2.01	5.55	0.81	-1.20	-1.16	y (Transversal)	
ABM2 (dBA/m)	-45.24	-43.38	-40.37	-41.32	-44.31	-44.42		
S+N/N (dB)	47.39	45.39	45.92	42.13	43.12	43.26		

Codec Investigation											
Codec State	EVS-NB (kbit/s)			EVS-WB (kbit/s)			EVS-SWB (kbit/s)			Orientation	Band/ BandWidt/ Channel
	5.9	13.2	24.4	5.9	13.2	24.4	9.6	16.4	24.4		
ABM1 (dB/m)	9.34	12.76	12.82	9.58	9.80	12.08	8.65	8.59	8.86	z (Axial)	LTE Band 41 CH.40620 20 ㎒ BW QPSK 100 RB
ABM2 (dBA/m)	-26.26	-26.95	-25.23	-24.67	-25.16	-23.62	-27.21	-26.84	-25.93		
S+N/N (dB)	35.60	39.71	38.05	**34.24**	34.95	35.70	35.86	35.44	34.79		
Freq.Resposne(dB)	1.97	2.00	2.00	2.00	1.98	2.00	2.00	1.96	2.00		
ABM1 (dB/m)	4.66	2.21	2.88	-0.58	-0.58	5.18	0.88	1.55	1.20	y (Transversal)	
ABM2 (dBA/m)	-39.85	-40.20	-39.92	-41.87	-42.43	-34.89	-40.55	-39.86	-40.00		
S+N/N (dB)	44.51	42.41	42.80	41.29	41.85	40.07	41.43	41.41	41.20		

12.2 TDD Configuration

LTE TDD Uplink-Downlink Configuration Investigation for VoLTE over IMS

An investigation was performed to determine the worst-case Uplink-Downlink configuration for VoLTE over IMS T-Coil testing. The effects of UL-DL configuration were found to be independent of band and bandwidth; therefore, only one band and bandwidth were used for this investigation.
Per 3GPP TS 36.211, the total frame length for each TDD radio frame of length Tf = 307200 · Ts = 10 ms, where Ts is a number of time units equal to 1/(15000 x 2048) seconds. Additionally, each radio frame consists of 10 subframes, each of length 30720 · Ts = 1 ms, and subframes can be designated as uplink (U), downlink (D), or special subframe (S), depending on the Uplink-Downlink configuration as indicated in Table 4.2-2 of 3GPP TS 36.211. In the transmission duty factor calculation, the special subframe configuration with the shortest UpPTS duration within the special subframe is used and will be applied for measurement. From 3GPP TS 36.211 Table 4.2-1, the shortest UpPTS is 2192 · Ts which occurs in the normal cyclic prefix and special subframe configuration 4.
See table below outlining the calculated transmission duty cycles for each Uplink-Downlink configuration:

Uplink-Downlink Configurations for Type 2 Frame Structures

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number										Calculated Transmission Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	61.4%
1	5 ms	D	S	U	U	D	D	S	U	U	D	41.4%
2	5 ms	D	S	U	D	D	D	S	U	D	D	21.4%
3	10 ms	D	S	U	U	U	D	D	D	D	D	30.7%
4	10 ms	D	S	U	U	D	D	D	D	D	D	20.7%
5	10 ms	D	S	U	D	D	D	D	D	D	D	10.7%
6	5 ms	D	S	U	U	U	D	S	U	U	D	51.4%

Power Class 3 Uplink-Downlink Configuration Investigation

VoLTE over IMS was evaluated with the following rado configuration → channel 40620, 20MHz BW, QPSK, 100RB, 0 Offset. all configurations (0-6) are supported. The configuration which resulted in the worst z (Axial) SNR was used for full testing. Uplink-Downlink configuration 0 was used as the worst-case configuration for VoLTE over IMS T-Coil testing. See table below for the SNR comparison between each Uplink-Downlink configuration:

VoLTE over IMS SNNR by UL-DL Configuration

Frequency [MHz]	Channel	Bandwidth [MHz]	Modulation	RB Size	RB Offset	UL-DL Configuration	ABM1 [dB(A/m)]	ABM2 [dB(A/m)]	Orientation	Freq. Response (dB)	SNR [dB]
2593.0	40620	20	QPSK	100	0	0	9.58	-24.67	z (Axial)	2	**34.24**
2593.0	40620	20	QPSK	100	0	1	10.02	-26.48		2	36.5
2593.0	40620	20	QPSK	100	0	2	6.7	-27.76		2	34.47
2593.0	40620	20	QPSK	100	0	3	7.54	-27.5		1.97	35.04
2593.0	40620	20	QPSK	100	0	4	7.73	-29.88		2	37.61
2593.0	40620	20	QPSK	100	0	5	11.65	-27.08		2	38.73
2593.0	40620	20	QPSK	100	0	6	13.28	-23.51		1.97	36.79
2593.0	40620	20	QPSK	100	0	0	-0.58	-41.87	y (Transversal)		41.29
2593.0	40620	20	QPSK	100	0	1	2.94	-38.46			41.39
2593.0	40620	20	QPSK	100	0	2	-2.95	-42.18			39.23
2593.0	40620	20	QPSK	100	0	3	-1.37	-42.8			41.44
2593.0	40620	20	QPSK	100	0	4	-0.44	-40.94			40.49
2593.0	40620	20	QPSK	100	0	5	3	-40.58			43.58
2593.0	40620	20	QPSK	100	0	6	3.92	-36.06			39.98

Per the investigations above, UL-DL Configuration 0 was used to evaluate VoLTE over IMS

12.3 Air Interface Investigation

Use the worst-case codec test and document a limited set of bands/modulations/channels/bandwidth. Observe the effect of changing the band and bandwidth to ensure that there are no unexpected variations.

GSM / W-CDMA (UMTS)

Mode	Ch. Freq.	Orientation	ABM1 dB (A/m)	ABM2 dB (A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABMSNR (dB)	T-Rating	Plot No.
GSM 850 Voice Coder Speech Codec: FR V1	CH.128 824.2 ㎒	z(Axial)	16.09	-14.51	-57.79	2	30.60	T4	1/ 3
		y(Transversal)	9.56	-31.32	-57.25		40.88	T4	2
	CH.190 836.6 ㎒	z(Axial)	16.22	-16.05	-57.79	2	32.27	T4	
		y(Transversal)	9.77	-32.92	-57.25		42.69	T4	
	CH.251 848.8 ㎒	z(Axial)	15.97	-16.36	-57.79	2	32.33	T4	
		y(Transversal)	7.29	-35.60	-57.25		42.89	T4	
GSM 1900 Voice Coder Speech Codec: FR V1	CH.661 1880.0 ㎒	z(Axial)	12.40	-38.51	-57.79	2	50.91	T4	4/ 6
		y(Transversal)	2.50	-48.06	-57.25		50.56	T4	5
W-CDMA Band II Voice WB AMR Codec: 6.6 kbit/s	CH.9262 1852.4 ㎒	z(Axial)	8.38	-45.49	-57.75	2	53.87	T4	
		y(Transversal)	-4.03	-51.28	-56.64		47.25	T4	
	CH.9400 1880.0 ㎒	z(Axial)	7.69	-46.27	-57.75	2	53.96	T4	7/ 9
		y(Transversal)	-3.96	-51.03	-56.64		47.07	T4	8
	CH.9538 1907.6 ㎒	z(Axial)	8.86	-44.95	-57.75	2	53.81	T4	
		y(Transversal)	-1.19	-48.40	-56.64		47.21	T4	
W-CDMA Band IV Voice WB AMR Codec: 6.6 kbit/s	CH.1412 1732.4 ㎒	z(Axial)	8.43	-45.07	-57.75	2	53.49	T4	10/ 12
		y(Transversal)	-1.42	-48.77	-56.64		47.35	T4	11
W-CDMA Band V Voice WB AMR Codec:6.6 kbit/s	CH.4183 836.6 ㎒	z(Axial)	8.34	-45.96	-57.75	2	54.30	T4	13/15
		y(Transversal)	-1.99	-49.30	-56.64		47.31	T4	14

Air Interface Investigation(Contiued)

LTE-FDD

Mode:	Ch. Freq.	BW	BW/ Modulation	RB Config.	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
LTE Band 25 Voice EVS WB Codec: 5.9 kbit/s	CH.26365 1882.5 ㎒	20㎒	QPSK	1/0	z(Axial)	-2.06	-47.50	-55.70	1.98	45.44	T4	
					y(Transversal)	-0.85	-44.86	-55.96		44.02	T4	
				1/49	z(Axial)	0.03	-47.72	-55.70	1.14	47.75	T4	
					y(Transversal)	-4.66	-49.55	-55.96		44.89	T4	
				1/99	z(Axial)	-1.60	-47.59	-55.70	2.00	45.99	T4	
					y(Transversal)	-1.44	-45.24	-55.96		43.79	T4	
				50/0	z(Axial)	2.24	-44.68	-55.70	2.00	46.92	T4	
					y(Transversal)	-2.45	-46.59	-55.96		44.14	T4	
				50/25	z(Axial)	-0.49	-49.13	-55.70	2.00	48.65	T4	16/18
					y(Transversal)	-6.89	-50.00	-55.96		43.11	T4	17
				50/49	z(Axial)	0.38	-48.89	-55.70	2.00	49.27	T4	
					y(Transversal)	-4.90	-48.32	-55.96		43.42	T4	
				100/0	z(Axial)	3.60	-45.13	-55.70	1.93	48.73	T4	
					y(Transversal)	-7.35	-50.65	-55.96		43.29	T4	
			16QAM	50/25	z(Axial)	-0.34	-49.06	-55.70	2.00	48.72	T4	
					y(Transversal)	-2.32	-45.81	-55.96		43.49	T4	
			64QAM	50/25	z(Axial)	-0.35	-48.66	-55.70	2.00	48.31	T4	
					y(Transversal)	-4.70	-49.04	-55.96		44.34	T4	
			256QAM	50/25	z(Axial)	-1.04	-49.19	-55.70	2.00	48.15	T4	
					y(Transversal)	-3.15	-47.32	-55.96		44.17	T4	
		15 ㎒	QPSK	36/18	z(Axial)	-0.07	-49.16	-55.70	2.00	49.09	T4	
					y(Transversal)	-4.85	-49.29	-55.96		44.44	T4	
		10 ㎒		25/12	z(Axial)	-1.59	-49.29	-55.70	2.00	47.70	T4	
					y(Transversal)	-2.32	-46.69	-55.96		44.37	T4	
		5 ㎒		12/6	z(Axial)	3.58	-43.16	-55.70	1.98	46.73	T4	
					y(Transversal)	-2.90	-46.40	-55.96		43.50	T4	
		3 ㎒		8/3	z(Axial)	2.59	-45.61	-55.70	2.00	48.20	T4	
					y(Transversal)	-3.22	-47.26	-55.96		44.04	T4	
		1.4 ㎒		3/1	z(Axial)	-1.76	-49.86	-55.70	2.00	48.10	T4	
					y(Transversal)	-2.87	-47.18	-55.96		44.31	T4	

Air Interface Investigation(Contiued)

LTE-FDD

Mode	Ch. Freq.	Band width	BW/ Mode	RB Config.	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
LTE Band 12 Voice EVS-WB Codec:5.9 kbit/s	CH.23095 707.5 ㎒	10 ㎒	QPSK	25/12	z(Axial)	3.17	-46.05	-55.70	2.00	49.21	T4	19/21
					y(Transversal)	-3.86	-48.11	-55.96		44.25	T4	20
LTE Band 13 Voice EVS-WB Codec:5.9 kbit/s	CH.23230 782 ㎒	10 ㎒	QPSK	25/12	z(Axial)	3.30	-45.62	-55.70	2.00	48.92	T4	22/24
					y(Transversal)	-3.74	-48.12	-55.96		44.38	T4	23
LTE Band 26 Voice Voice EVS-WB Codec:5.9 kbit/s	CH.26865 831.5 ㎒	15 ㎒	QPSK	36/18	z(Axial)	-0.69	-49.07	-55.70	2.00	48.38	T4	25/27
					y(Transversal)	-5.43	-49.05	-55.96		43.62	T4	26
LTE Band 66 Voice Voice EVS-WB Codec:5.9 kbit/s	CH.132322 1745 ㎒	20 ㎒	QPSK	50/25	z(Axial)	1.28	-47.89	-55.70	2.00	49.17	T4	28/30
					y(Transversal)	0.37	-43.22	-55.96		43.59	T4	29
LTE Band 25 Voice Voice EVS-WB Codec:5.9 kbit/s	CH.26140 1860.0 ㎒	20 ㎒	QPSK	50/25	z(Axial)	2.63	-45.96	-55.70	2.00	48.59	T4	
					y(Transversal)	-2.67	-47.10	-55.96		44.44	T4	
	CH.26590 1905.0 ㎒	20 ㎒	QPSK	50/25	z(Axial)	0.13	-48.49	-55.70	2.00	48.62	T4	
					y(Transversal)	-4.92	-48.67	-55.96		43.74	T4	

Air Interface Investigation(Contiued)

LTE-TDD

Mode	Ch. Freq.	BW	BW/ Modulation	RB Config.	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
LTE Band 41 Voice EVS-WB Codec: 5.9 kbit/s	CH.40620 2593 ㎒	20 ㎒	QPSK	1/0	z(Axial)	10.00	-23.18	-57.84	2	33.18	T4	
					y(Transversal)	4.32	-34.04	-56.56		38.36	T4	
				1/49	z(Axial)	10.98	-22.98	-57.84	2	33.97	T4	
					y(Transversal)	-1.25	-38.51	-56.56		37.27	T4	
				1/99	z(Axial)	10.52	-21.37	-57.84	2	31.89	T4	
					y(Transversal)	1.05	-36.14	-56.56		37.19	T4	
				50/0	z(Axial)	12.22	-23.10	-57.84	2	35.32	T4	
					y(Transversal)	-5.75	-42.28	-56.56		36.53	T4	
				50/25	z(Axial)	11.01	-24.72	-57.84	2	35.74	T4	
					y(Transversal)	-0.66	-39.69	-56.56		39.03	T4	
				50/49	z(Axial)	9.64	-22.80	-57.84	2	32.44	T4	
					y(Transversal)	-3.79	-40.95	-56.56		37.16	T4	
				100/0	z(Axial)	9.58	-24.67	-57.84	2	34.24	T4	
					y(Transversal)	-0.58	-41.87	-56.56		41.29	T4	
			16QAM	1/99	z(Axial)	8.97	-24.08	-57.84	2	33.05	T4	
					y(Transversal)	5.04	-33.60	-56.56		38.63	T4	
			64QAM	1/99	z(Axial)	10.82	-23.46	-57.84	2	34.28	T4	
					y(Transversal)	2.29	-39.43	-56.56		41.72	T4	
			256QAM	1/99	z(Axial)	11.69	-24.66	-57.84	2	36.35	T4	
					y(Transversal)	0.19	-43.16	-56.56		43.35	T4	
		15 ㎒	QPSK	1/74	z(Axial)	11.19	-24.32	-57.84	1.90	35.50	T4	
					y(Transversal)	1.06	-40.86	-56.56		41.93	T4	
		10 ㎒		1/49	z(Axial)	4.75	-28.36	-57.84	2	33.11	T4	
					y(Transversal)	4.20	-36.98	-56.56		41.18	T4	
		5 ㎒		1/24	z(Axial)	6.75	-27.33	-57.84	2	34.07	T4	
					y(Transversal)	3.38	-38.16	-56.56		41.53	T4	

Mode	Ch. Freq.	BW	BW/ Modulation	RB Config.	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
LTE Band 41 Voice EVS-WB Codec: 5.9kbit/s	CH.39750 2506.0 MHz	20 MHz	QPSK	1/99	z(Axial)	11.50	-18.37	-57.84	2	29.87	T3	31/33
					y(Transversal)	-7.49	-45.10	-56.56		37.61	T4	32
	CH.40185 2549.5 MHz	20 MHz	QPSK	1/99	z(Axial)	11.82	-19.34	-57.84	2	31.16	T4	
					y(Transversal)	-0.26	-41.05	-56.56		40.78	T4	
	CH.41055 2636.5 MHz	20 MHz	QPSK	1/99	z(Axial)	11.56	-21.82	-57.84	2	33.38	T4	
					y(Transversal)	2.70	-39.95	-56.56		42.65	T4	
	CH.41490 2680.0 MHz	20 MHz	QPSK	1/99	z(Axial)	10.27	-21.49	-57.84	2	31.76	T4	
					y(Transversal)	0.11	-38.99	-56.56		39.10	T4	

12.4 VoWi-Fi Codec Investigation

An investigation between the various codec configurations (Low/High bit rates for Narrowband, Wideband) and specific parameters are documented (ABM1, ABM2, S+N/N, frequency response) to determine the worst-case bit rates for each voice service type. The table below compares the varying codec configurations. A codec investigation was performed for each Wi-Fi 2.4㎓ and 5㎓.
The highlighted results below were determined to be the worst case codec configuration(s) for Wi-Fi 2.4 ㎓ and 5 ㎓.

Codec Investigation								
Codec State	AMR-NB (kbit/s)			AMR-WB (kbit/s)			Orientation	Band/ Bandwidth/ Channel
	4.75	**7.4**	**12.2**	**6.6**	**15.85**	**23.85**		
ABM1 (dB/m)	13.23	13.38	13.71	7.14	8.46	8.82	z (Axial)	802.11b CH.6 2437 ㎒ DSSS 1 Mbps
ABM2 (dBA/m)	-36.51	-36.58	-36.26	-38.63	-38.04	-38.51		
S+N/N (dB)	49.73	49.96	49.98	45.77	46.50	47.33		
Freq. Resposne(dB)	1.62	1.25	1.56	2.00	1.92	1.95		
ABM1 (dB/m)	5.65	5.70	6.07	0.44	1.08	1.18	y (Transversal)	
ABM2 (dBA/m)	-49.97	-49.84	-49.71	-51.45	-51.24	-51.21		
S+N/N (dB)	55.62	55.54	55.78	51.89	52.32	52.39		

Codec Investigation											
Codec State	EVS-NB (kbit/s)			EVS-WB (kbit/s)			EVS-SWB (kbit/s)			Orientation	Band/ BandWidth/ Channel
	5.9	13.2	24.4	5.9	13.2	24.4	9.6	16.4	24.4		
ABM1 (dB/m)	13.22	13.64	13.85	-1.09	4.33	4.56	7.02	6.88	8.14	z (Axial)	802.11b CH.6 2437 ㎒ DSSS 1 Mbps
ABM2 (dBA/m)	-35.93	-36.30	-36.50	-43.23	-40.41	-40.36	-40.15	-40.99	-40.22		
S+N/N (dB)	49.15	49.94	50.35	**42.14**	44.74	44.93	47.17	47.88	48.36		
Freq.Resposne(dB)	1.47	1.68	1.48	1.46	1.69	1.83	1.96	2.00	2.00		
ABM1 (dB/m)	5.76	6.08	6.13	-2.88	-3.86	-3.72	-0.62	-0.62	-0.83	y (Transversal)	
ABM2 (dBA/m)	-49.86	-49.71	-49.93	-54.22	-52.58	-52.29	-52.50	-52.44	-52.15		
S+N/N (dB)	55.62	55.79	56.06	51.34	48.72	48.56	51.88	51.82	51.32		

Codec Investigation								
Codec State	AMR-NB (kbit/s)			AMR-WB (kbit/s)			Orientation	Band/ Bandwidth/ Channel
	4.75	**7.4**	**12.2**	**6.6**	**15.85**	**23.85**		
ABM1 (dB/m)	7.28	7.54	7.92	1.68	2.94	1.92	z (Axial)	802.11a CH.40 5200 ㎒ BPSK 6 Mbps
ABM2 (dBA/m)	-39.77	-39.75	-39.78	-46.69	-46.62	-44.95		
S+N/N (dB)	47.05	47.29	47.70	48.37	49.55	46.87		
Freq. Resposne(dB)	2.00	2.00	2.00	1.23	1.50	1.33		
ABM1 (dB/m)	0.95	1.03	1.58	-1.38	-0.58	-0.87	y (Transversal)	
ABM2 (dBA/m)	-48.56	-48.74	-48.75	-49.62	-49.68	-49.57		
S+N/N (dB)	49.51	49.77	50.33	48.23	49.10	48.70		

Codec Investigation											
Codec State	EVS-NB (kbit/s)			EVS-WB (kbit/s)			EVS-SWB (kbit/s)			Orientation	Band/ BandWidth/ Channel
	5.9	13.2	24.4	5.9	13.2	24.4	9.6	16.4	24.4		
ABM1 (dB/m)	2.72	6.99	6.30	2.79	3.54	3.27	7.20	6.95	7.38	z (Axial)	802.11a CH.40 5200 ㎒ BPSK 6 Mbps
ABM2 (dBA/m)	-43.33	-40.72	-41.11	-38.37	-46.37	-46.30	-45.94	-46.54	-45.88		
S+N/N (dB)	46.05	47.72	47.41	**41.15**	49.90	49.57	53.14	53.49	53.26		
Freq.Resposne(dB)	1.90	2.00	1.91	1.56	1.45	1.49	2.00	2.00	2.00		
ABM1 (dB/m)	-1.10	0.75	0.80	-3.98	0.14	-0.58	3.23	2.74	1.32	y (Transversal)	
ABM2 (dBA/m)	-49.21	-49.04	-49.07	-49.40	-49.54	-50.27	-49.50	-49.66	-51.70		
S+N/N (dB)	48.11	49.79	49.86	45.42	49.68	49.69	52.74	52.41	53.01		

12.5 VoWi-Fi Antennas Investigation

EVS-WB 5.9 kbit/s was the worst case bit-rates for 802.11b and 802.11a. The secondary antenna was investigated to determine which antennas yields a worse SNNR. The worst case codec and bit-rate from Antenna 1 was used to determine Antenna 2's exclusion. Since Antenna 2 yielded a better SNNR than Antenna 1, all subsequent measurements were measured using Antenna 1.

Antenna	Mode	Ch. Freq.	BW	BW /Modulation	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating
WiFi Ant 1	802.11a Voice EVS-WB Codec: 5.9 kbit/s	CH.40 5200 ㎒	20 ㎒	BPSK 6 Mbps	z(Axial)	2.79	-38.37	-55.52	1.56	41.15	T4
					y(Transversal)	-3.98	-49.4	-55.71		45.42	T4
WiFi Ant 2					z(Axial)	6.47	-43.66	-55.52	1.91	50.13	T4
					y(Transversal)	-2.56	-51.32	-55.71		48.77	T4

12.6 VoWi-Fi Air Interface Investigation

Using the data from §9.4, further testing was performed on the remaining 802.11 modes. The objective of these measurements is to ensure that changing the modulation, bandwidth, and data rate, whilst using the worst case codec configuration measured in §9.4, yields no unexpected variations.

Moe	Ch. Freq.	BW	BW/ Modeulation	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB (A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Ratin g	Plot No.
802.11b Voice EVS-WB Codec: 5.9 kbit/s	CH.6 2437 ㎒	20 ㎒	DSSS 1 Mbps	z(Axial)	-1.09	-43.23	-55.70	1.46	42.14	T4	
				y(Transversal)	-2.88	-54.22	-55.93		51.34	T4	
			CCK 5.5 Mbps	z(Axial)	0.81	-41.22	-55.70	2	42.04	T4	
				y(Transversal)	-3.08	-48.53	-55.93		45.45	T4	
			CCK 11 Mbps	z(Axial)	8.59	-34.67	-50.69	2	43.26	T4	
				y(Transversal)	-3.73	-49.12	-52.33		45.39	T4	
	CH.1 2412 ㎒		DSSS 5.5 Mbps	z(Axial)	6.04	-36.99	-50.69	2	43.03	T4	
				y(Transversal)	-4.26	-49.14	-52.33		44.89	T4	
	CH.11 2462 ㎒		DSSS 5.5 Mbps	z(Axial)	7.94	-33.76	-50.69	2	41.70	T4	34/36
				y(Transversal)	-5.67	-52.85	-52.33		47.18	T4	35
802.11g Voice EVS-WB Codec: 5.9 kbit/s	CH.6 2437 ㎒	20 ㎒	QPSK 6 Mbps	z(Axial)	5.13	-45.63	-50.69	2	50.76	T4	
				y(Transversal)	-0.67	-51.54	-52.33		50.86	T4	
802.11n HT20 Voice EVS-WB Codec: 5.9kbit/s	CH.6 2437 ㎒	20 ㎒	QPSK MCS 3	z(Axial)	7.77	-44.18	-50.69	1.95	51.95	T4	
				y(Transversal)	3.32	-47.08	-52.33		50.40	T4	
802.11ax HE20 Voice EVS-WB Codec: 6.6kbit/s	CH.6 2437 ㎒	20 ㎒	64QAM MCS 6	z(Axial)	3.16	-48.56	-50.69	1.89	51.72	T4	
				y(Transversal)	-2.59	-52.79	-52.33		50.20	T4	

VoWi-Fi Air Interface Investigation (Continued)

Mode	Ch. Freq.	BW	BW /Modulation	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
802.11a Voice EVS-WB Codec: 5.9 kbit/s	CH.40 5200 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	2.79	-38.37	-55.52	1.56	41.15	T4	37/39
				y(Transversal)	-3.98	-49.40	-55.71		45.42	T4	38
			QPSK 18 Mbps	z(Axial)	1.65	-48.68	-55.52	1.44	50.34	T4	
				y(Transversal)	-4.69	-52.12	-55.71		47.43	T4	
			64QAM 54 Mbps	z(Axial)	1.36	-49.27	-55.52	1.29	50.63	T4	
				y(Transversal)	-2.68	-51.16	-55.71		48.48	T4	
802.11n HT20 Voice EVS-WB Codec: 5.9 kbit/s	CH.40 5200 MHz	20 MHz	MCS 0 6.5 Mbps	z(Axial)	-0.94	-45.24	-55.52	1.49	44.30	T4	
				y(Transversal)	-1.71	-48.70	-55.71		46.98	T4	
			MCS 3 26 Mbps	z(Axial)	-1.52	-45.64	-55.52	1.39	44.11	T4	
				y(Transversal)	-5.46	-51.42	-55.71		45.95	T4	
			MCS 7 65 Mbps	z(Axial)	-2.41	-49.84	-55.52	1.38	47.43	T4	
				y(Transversal)	-4.45	-52.00	-55.71		47.54	T4	
802.11n HT40 Voice EVS-WB Codec: 5.9 kbit/s	CH.38 5190 MHz	40 MHz	MCS 0 13.5 Mbps	z(Axial)	-0.24	-46.85	-55.52	1.19	46.61	T4	
				y(Transversal)	-5.98	-51.59	-55.71		45.60	T4	
			MCS 3 54 Mbps	z(Axial)	-1.14	-49.72	-55.52	1.30	48.58	T4	
				y(Transversal)	-4.40	-51.62	-55.71		47.22	T4	
			MCS 7 135 Mbps	z(Axial)	-2.45	-50.03	-55.52	1.39	47.59	T4	
				y(Transversal)	-4.51	-50.46	-55.71		45.95	T4	
802.11ac VHT20 Voice EVS-WB Codec: 5.9 kbit/s	CH.40 5200 MHz	20 MHz	MCS 0 6.5 Mbps	z(Axial)	1.35	-44.34	-55.52	1.41	45.69	T4	
				y(Transversal)	-4.58	-48.33	-55.71		43.76	T4	
			MCS 4 39 Mbps	z(Axial)	2.06	-45.37	-55.52	1.20	47.43	T4	
				y(Transversal)	-3.41	-48.77	-55.71		45.36	T4	
			MCS 8 78 Mbps	z(Axial)	1.64	-45.66	-55.52	1.65	47.29	T4	
				y(Transversal)	-4.34	-48.97	-55.71		44.62	T4	
802.11ac VHT40 Voice EVS-WB Codec: 5.9 kbit/s	CH.38 5190 MHz	40 MHz	MCS 0 13.5 Mbps	z(Axial)	-1.87	-48.33	-54.28	1.66	46.47	T4	
				y(Transversal)	-0.74	-46.15	-50.18		45.41	T4	
			MCS 4 81 Mbps	z(Axial)	-0.30	-46.48	-54.28	1.26	46.18	T4	
				y(Transversal)	-5.49	-51.37	-50.18		45.88	T4	
			MCS 9 180 Mbps	z(Axial)	-0.46	-47.36	-54.28	1.37	46.90	T4	
				y(Transversal)	-3.62	-50.92	-50.18		47.30	T4	
802.11ac VHT80 Voice AMR-WB EVS-WB Codec: 5.9 kbit/s	CH.42 5210 MHz	80 MHz	MCS 0 29.3 Mbps	z(Axial)	-0.86	-46.13	-54.28	1.66	45.27	T4	
				y(Transversal)	-7.84	-52.80	-50.18		44.96	T4	
			MCS 4 175.5Mbps	z(Axial)	-0.23	-47.21	-54.28	1.60	46.97	T4	
				y(Transversal)	-2.07	-49.76	-50.18		47.69	T4	
			MCS 9 390 Mbps	z(Axial)	-0.63	-48.21	-54.28	1.51	47.58	T4	
				y(Transversal)	-4.26	-51.92	-50.18		47.66	T4	

Mode	Ch. Freq.	BW	BW /Mode	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
802.11ax HE20 Voice AMR-WB Codec: 5.9 kbit/s	CH.40 5200 MHz	20 MHz	MCS 0 8.6 Mbps	z (Axial)	2.36	-47.13	-54.28	1.52	49.49	T4	
				y (Transversal)	-2.31	-49.94	-50.18		47.63	T4	
			MCS 6 77.4 Mbps	z (Axial)	0.11	-46.50	-54.28	1.38	46.61	T4	
				y (Transversal)	-3.82	-51.92	-50.18		48.10	T4	
			MCS 11 143.4 Mbps	z (Axial)	1.93	-47.22	-54.28	1.48	49.16	T4	
				y (Transversal)	-2.93	-49.69	-50.18		46.76	T4	
802.11ax HE40 Voice AMR-WB Codec: 5.9 kbit/s	CH.38 5190 MHz	20 MHz	MCS 0 17.2 Mbps	z (Axial)	0.95	-45.94	-54.28	1.40	46.89	T4	
				y (Transversal)	-1.61	-47.28	-50.18		45.67	T4	
			MCS 6 154.9Mbps	z (Axial)	-2.06	-47.92	-54.28	1.05	45.86	T4	
				y (Transversal)	-0.75	-46.39	-50.18		45.64	T4	
			MCS11 286.8Mbps	z (Axial)	-1.37	-48.02	-54.28	1.56	46.65	T4	
				y (Transversal)	-3.10	-49.34	-50.18		46.24	T4	
802.11ax HE80 Voice AMR-WB Codec:5.9 kbit/s	CH.42 5210 MHz	80 MHz	MCS0 36 Mbps	z (Axial)	0.07	-46.73	-54.28	1.14	46.80	T4	
				y (Transversal)	-5.19	-49.97	-50.18		44.78	T4	
			MCS6 324.3Mbps	z (Axial)	2.12	-46.81	-54.28	1.13	48.93	T4	
				y (Transversal)	-3.54	-50.52	-50.18		46.98	T4	
			MCS11 600.5 Mbps	z (Axial)	3.05	-45.26	-54.28	1.60	48.31	T4	
				y (Transversal)	-4.40	-50.27	-50.18		45.87	T4	
802.11a Voice EVS -WB Codec: 5.9 kbit/s	CH.56 5280 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	0.48	-44.72	-54.28	1.16	45.21	T4	40/42
				y(Transversal)	-1.17	-45.99	-50.18		44.83	T4	41
802.11a Voice EVS -WB Codec: 5.9 kbit/s	CH.120 5600 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	1.29	-45.19	-54.28	1.42	46.48	T4	43/45
				y(Transversal)	-4.85	-51.26	-50.18		46.41	T4	44
802.11a Voice EVS -WB Codec: 5.9 kbit/s	CH.157 5785 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	1.05	-45.86	-54.28	1.48	46.91	T4	46/48
				y(Transversal)	-2.99	-47.14	-50.18		44.15	T4	47
802.11a Voice EVS -WB Codec: 5.9 kbit/s	CH.36 5180 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	-1.04	-45.18	-54.28	1.43	44.14	T4	49/51
				y(Transversal)	-5.03	-49.46	-50.18		44.43	T4	50
802.11a Voice EVS -WB Codec: 5.9 kbit/s	CH.48 5240 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	-0.16	-45.19	-54.28	1.44	45.03	T4	52/54
				y(Transversal)	-5.54	-49.68	-50.18		44.14	T4	53

12.7 OTT Codec Investigation

The DUT's nested OTT application supports range of codec bit rate 6 – 64 kbit/s, thus an investigation between the various codec configurations (6/64 as Low/High bit rates) and specific parameters are documented (ABM1, ABM2, S+N/N, frequency response) to determine the worst-case bit rates for each service type.

The table below compares the varying codec configurations.

Codec Investigation					
Codec State	codec bit rate (kbit/s)			Orientation	Band/ BandWidth/ Channel
	6	40	75		
ABM1 (dB/m)	9.72	6.71	2.72	z (Axial)	GSM 850 EDGE 2 slots CH.128 824.2 ㎒
ABM2 (dBA/m)	-21.77	-29.19	-32.63		
S+N/N (dB)	**31.49**	35.91	35.35		
Freq.Resposne (dB)	1.83	1.80	1.37		
ABM1 (dB/m)	-0.13	-2.98	0.41	y(Transversal)	
ABM2 (dBA/m)	-38.95	-43.36	-39.67		
S+N/N (dB)	38.82	40.38	40.08		
ABM1 (dB/m)	9.63	9.78	9.70	z (Axial)	WCDMA Band II HSUPA subtest 1 CH.9400 1880 ㎒
ABM2 (dBA/m)	-44.20	-43.95	-43.92		
S+N/N (dB)	53.83	53.73	53.62		
Freq.Resposne (dB)	1.94	2.00	2.00		
ABM1 (dB/m)	1.66	3.51	2.19	y(Transversal)	
ABM2 (dBA/m)	-50.24	-54.21	-49.88		
S+N/N (dB)	**51.90**	57.72	52.07		
ABM1 (dB/m)	6.76	6.47	6.06	z (Axial)	LTE Band 25 20 ㎒ QPSK 50RB 25offset CH.26365 1882.5 ㎒
ABM2 (dBA/m)	-44.73	-45.05	-46.62		
S+N/N (dB)	51.50	51.52	52.68		
Freq.Resposne (dB)	2.00	2.00	2.00		
ABM1 (dB/m)	3.20	2.95	3.08	y(Transversal)	
ABM2 (dBA/m)	-48.82	-48.38	-49.49		
S+N/N (dB)	52.02	**51.33**	52.57		

Codec Investigation					
Codec State	codec bit rate (kbit/s)			Orientation	Band/ BandWidth/ Channel
	6	40	75		
ABM1 (dB/m)	10.44	9.17	9.13	z (Axial)	LTE Band 41 20 ㎒ 20QAM 1RB99offset CH.39750 2506.0 ㎒
ABM2 (dBA/m)	-23.64	-24.03	-24.11		
S+N/N (dB)	34.08	**33.20**	33.24		
Freq.Resposne (dB)	2.00	1.96	2.00		
ABM1 (dB/m)	5.06	2.05	3.99	y(Transversal)	
ABM2 (dBA/m)	-35.95	-37.54	-35.93		
S+N/N (dB)	41.01	39.60	39.92		
ABM1 (dB/m)	6.58	10.11	10.05	z (Axial)	802.11b CH.11 2462 ㎒ 5.5Mbps
ABM2 (dBA/m)	-37.65	-34.40	-34.38		
S+N/N (dB)	**44.23**	44.51	44.43		
Freq.Resposne (dB)	1.89	1.83	1.95		
ABM1 (dB/m)	1.62	1.57	-2.22	y(Transversal)	
ABM2 (dBA/m)	-49.83	-49.93	-53.78		
S+N/N (dB)	51.45	51.50	51.57		
ABM1 (dB/m)	10.08	10.27	6.66	z (Axial)	802.11a HT20 CH.40 5200 ㎒ 6Mbps
ABM2 (dBA/m)	-41.48	-41.44	-40.77		
S+N/N (dB)	51.56	51.71	**47.43**		
Freq.Resposne (dB)	1.46	1.95	1.96		
ABM1 (dB/m)	4.49	4.93	4.16	y(Transversal)	
ABM2 (dBA/m)	-49.34	-49.19	-50.04		
S+N/N (dB)	53.83	54.12	54.20		

12.8 OTT Air Interface Investigation

Mode	Ch. Freq.	BW	BW/ Mode	RB Config.	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR (dB)	T-Rating	Plot No.
GSM850 EDGE 2 slots Duo Codec: 6 kbit/s	CH.128 824.2 MHz				z(Axial)	9.72	-21.77	-55.45	1.83	31.49	T4	
					y(Transversal)	-0.13	-38.95	-55.90		38.82	T4	
GSM1900 EDGE 2 slots Duo Codec: 6 kbit/s	CH.512 1850.2 MHz				z(Axial)	9.76	-26.61	-55.45	1.76	36.37	T4	55/57
					y(Transversal)	-2.89	-45.03	-55.90		42.14	T4	56
WCDMA Band II HSUPA subtest1 Duo Codec: 6 kbit/s	CH.9400 1880 MHz				z(Axial)	9.63	-44.20	-55.45	1.94	53.83	T4	58/60
					y(Transversal)	1.66	-50.24	-55.90		51.90	T4	59
WCDMA Band IV HSUPA subtest1 Duo Codec: 6 kbit/s	CH.1412 1732.4 MHz				z(Axial)	6.57	-40.27	-55.45	1.85	46.83	T4	61/63
					y(Transversal)	-8.45	-51.29	-55.90		42.84	T4	62
WCDMA Band V HSUPA subtest1 Duo Codec: 6 kbit/s	CH.4183 836.6 MHz				z(Axial)	6.36	-38.21	-55.45	1.76	44.57	T4	64/66
					y(Transversal)	-8.11	-49.92	-55.90		41.81	T4	65
LTE Band 12 Google Duo Codec: 40 kbit/s	CH.23095 707.5 MHz	10 MHz	QPSK	25/12	z(Axial)	6.70	-39.64	-55.45	1.77	46.34	T4	67/69
					y(Transversal)	-4.31	-47.34	-55.90		43.03	T4	68
LTE Band 13 Google Duo Codec: 40 kbit/s	CH.23230 782 MHz	10 MHz	QPSK	25/12	z(Axial)	10.53	-39.25	-55.45	2.00	49.78	T4	70/72
					y(Transversal)	-0.64	-47.76	-55.90		47.12	T4	71
LTE Band 25 Google Duo Codec: 40 kbit/s	CH.26365 1882.5 MHz	20 MHz	QPSK	50/25	z(Axial)	6.47	-45.05	-55.45	2.00	51.52	T4	73/75
					y(Transversal)	2.95	-48.38	-55.90		51.33	T4	74
LTE Band 26 Google Duo Codec: 40 kbit/s	CH.26865 831.5 MHz	15 MHz	QPSK	36/18	z(Axial)	6.64	-39.39	-55.45	1.59	46.03	T4	76/78
					y(Transversal)	-4.66	-47.23	-55.90		42.57	T4	77
LTE Band 41 Google Duo Codec: 40 kbit/s	CH.39750 2506.0 MHz	20 MHz	QPSK	1/99	z(Axial)	9.17	-24.03	-55.45	1.96	33.20	T4	79/81
					y(Transversal)	2.05	-37.54	-55.90		39.60	T4	80
LTE Band 66 Google Duo Codec: 40 kbit/s	CH.132322 1745 MHz	20 MHz	QPSK	50/25	z(Axial)	6.61	-38.59	-55.45	1.80	45.21	T4	82/84
					y(Transversal)	-4.27	-46.33	-55.90		42.05	T4	83

Mode:	Ch./ Freq.	BW/ Data Rate	BW/ Modulation	RB Config.	Orientation	ABM1 dB(A/m)	ABM2 dB(A/m)	Ambient Noise dB(A/m)	Freq. Response (dB)	ABM SNR(dB)	T-Rating	Plot No.
Wi-Fi 2.4 GHz 802.11b Google Duo Codec: 6 kbit/s	CH.11 2462 MHz	20 MHz	5.5 Mbps		z(Axial)	6.58	-37.65	-55.45	1.89	44.23	T4	85/87
					y(Transversal)	1.62	-49.83	-55.90		51.45	T4	86
U-NII 5.2 GHz 802.11a HT20 Google Duo Codec: 75 kbit/s	CH.40 5200 MHz	20MHz	6 Mbps		z(Axial)	6.66	-40.77	-55.45	1.96	47.43	T4	88/90
					y(Transversal)	4.16	-50.04	-55.90		54.20	T4	89
U-NII 5.3 GHz 802.11a HT20 Google Duo Codec: 75 kbit/s	CH.56 5280 MHz	20MHz	6 Mbps		z(Axial)	6.25	-41.25	-55.45	1.88	47.50	T4	91/93
					y(Transversal)	-1.08	-48.85	-55.90		47.77	T4	92
U-NII 5.6 GHz 802.11a HT20 Google Duo Codec: 75 kbit/s	CH.120 5600 MHz	20MHz	6 Mbps		z(Axial)	6.55	-40.54	-55.45	1.65	47.09	T4	94/96
					y(Transversal)	-3.56	-50.13	-55.90		46.57	T4	95
U-NII 5.8 GHz 802.11a HT20 Google Duo Codec: 75 kbit/s	CH.157 5785 MHz	20MHz	6 Mbps		z(Axial)	5.90	-41.44	-55.45	1.96	47.34	T4	97/99
					y(Transversal)	-0.93	-48.30	-55.90		47.37	T4	98
GSM850 EDGE 2 slots Duo Codec: 6 kbit/s	CH.190 836.6 MHz				z(Axial)	6.61	-25.31	-55.45	1.84	31.92	T4	100/102
					y(Transversal)	-0.33	-39.35	-55.90		39.02	T4	101
GSM850 EDGE 2 slots Duo Codec: 6 kbit/s	CH.251 848.8 MHz				z(Axial)	5.59	-25.73	-55.45	1.91	31.32	T4	103/105
					y(Transversal)	-1.26	-40.24	-55.90		38.97	T4	104

Attachment 1. HAC T-COIL Test Plots

Plot No.1

GSM850 AMR-NB FR V1 128ch z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, GSM 850 (0); Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

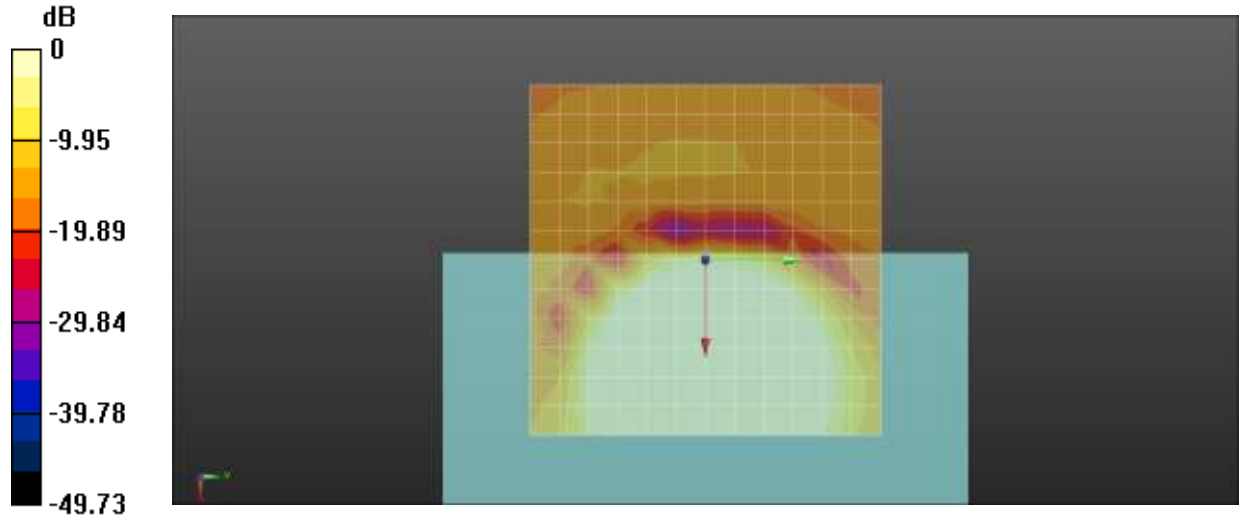
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 16.09 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -14.51 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 30.60 dB
ABM1 comp = 16.09 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No. 2

GSM850 AMR-NB FR V1 128ch y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, GSM 850 (0); Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

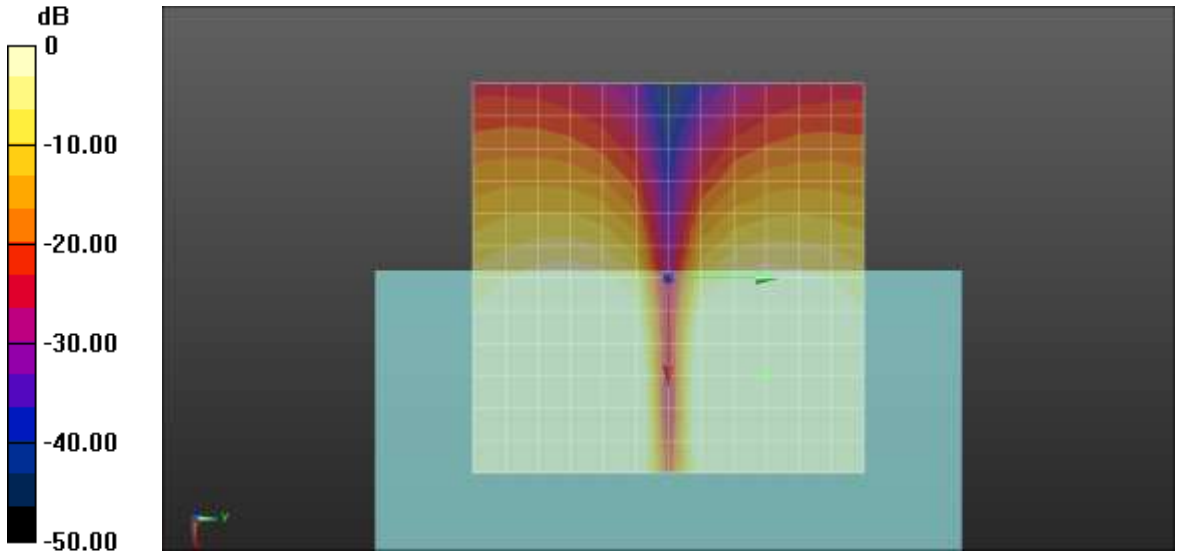
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 9.56 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 12.5, 3.7 mm

Cursor:
ABM2 = -31.32 dBA/m
Location: 12.5, 12.5, 3.7 mm

Cursor:
ABM1/ABM2 = 40.88 dB
ABM1 comp = 9.56 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 12.5, 3.7 mm



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

Plot No.3

GSM850 AMR-NB FR V1 128ch Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, GSM 850 (0); Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

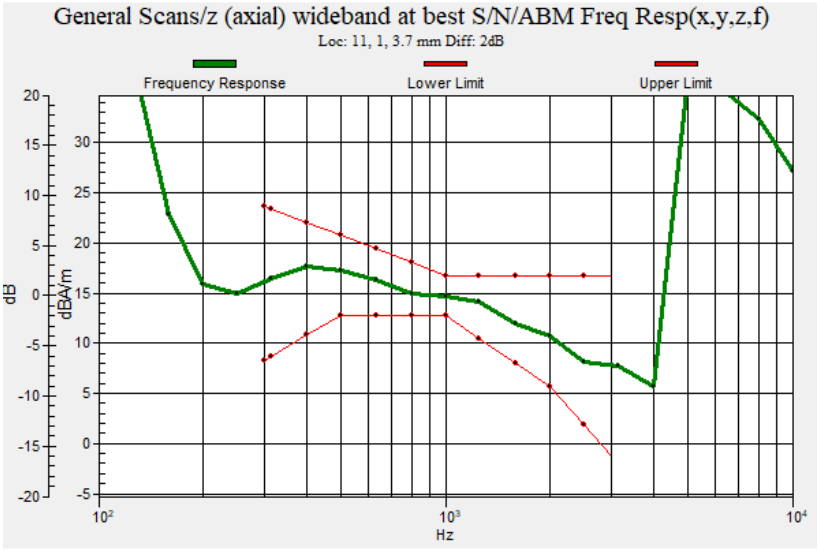
DASY Configuration:

- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 79.48
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.47 dB
Location: 11, 1, 3.7 mm



Plot No.4
GSM1900 AMR-NB FR V1 661ch z(axial)

Communication System: UID 0, GSM 1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

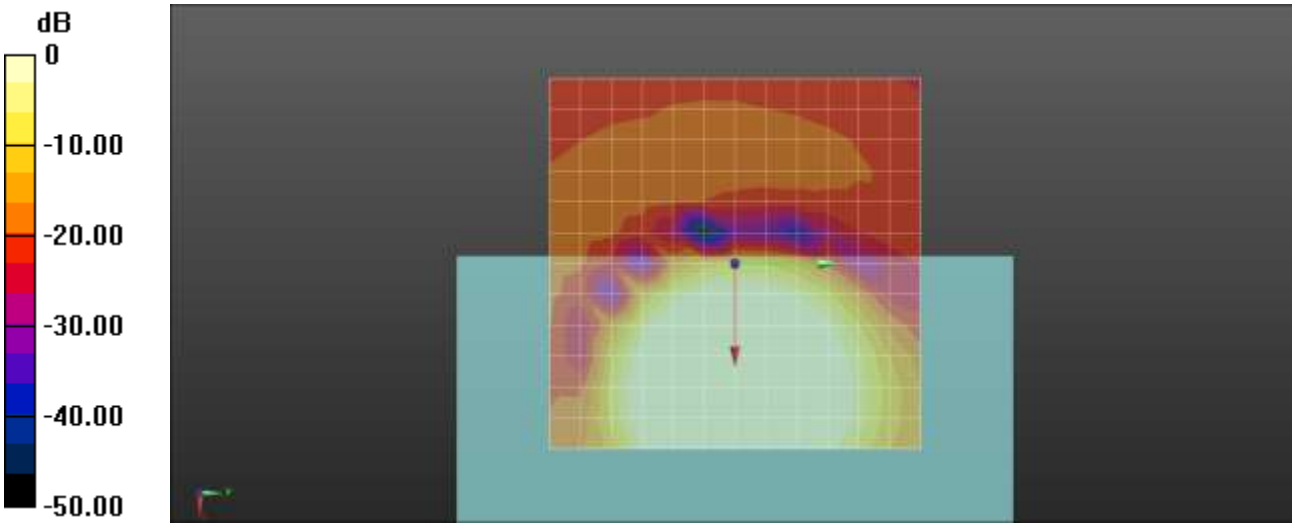
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 12.40 dBA/m
BWC Factor = 0.14 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -38.51 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 50.91 dB
ABM1 comp = 12.40 dBA/m
BWC Factor = 0.14 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.5

GSM1900 AMR-NB FR V1 661ch y(transversal)

Communication System: UID 0, GSM 1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

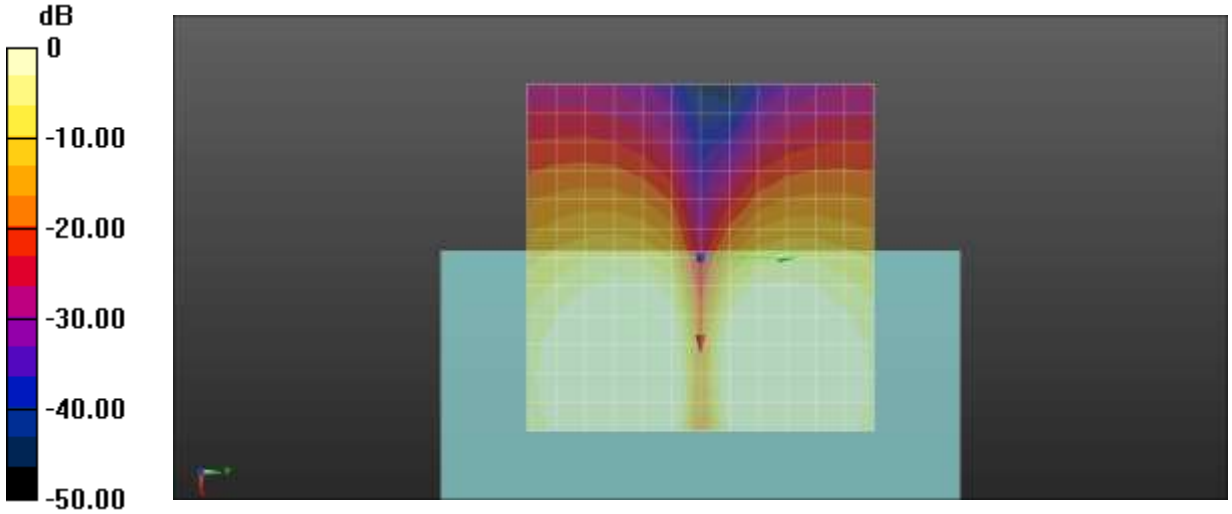
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 2.50 dBA/m
BWC Factor = 0.14 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -48.06 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 50.56 dB
ABM1 comp = 2.50 dBA/m
BWC Factor = 0.14 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.6

GSM1900 AMR-NB FR V1 661ch Freq. Response

Communication System: UID 0, GSM 1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

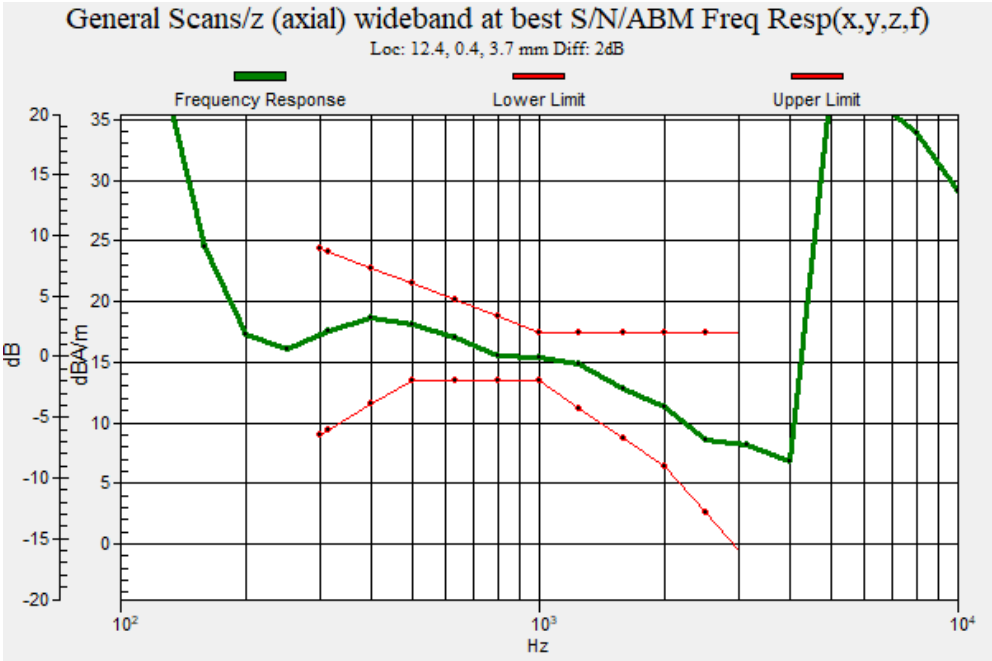
DASY Configuration:

- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 79.48
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.46 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.46 dB
Location: 12.4, 0.4, 3.7 mm



Plot No.7
WCDMA Band 2 AMR WB 6_6 9400ch z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

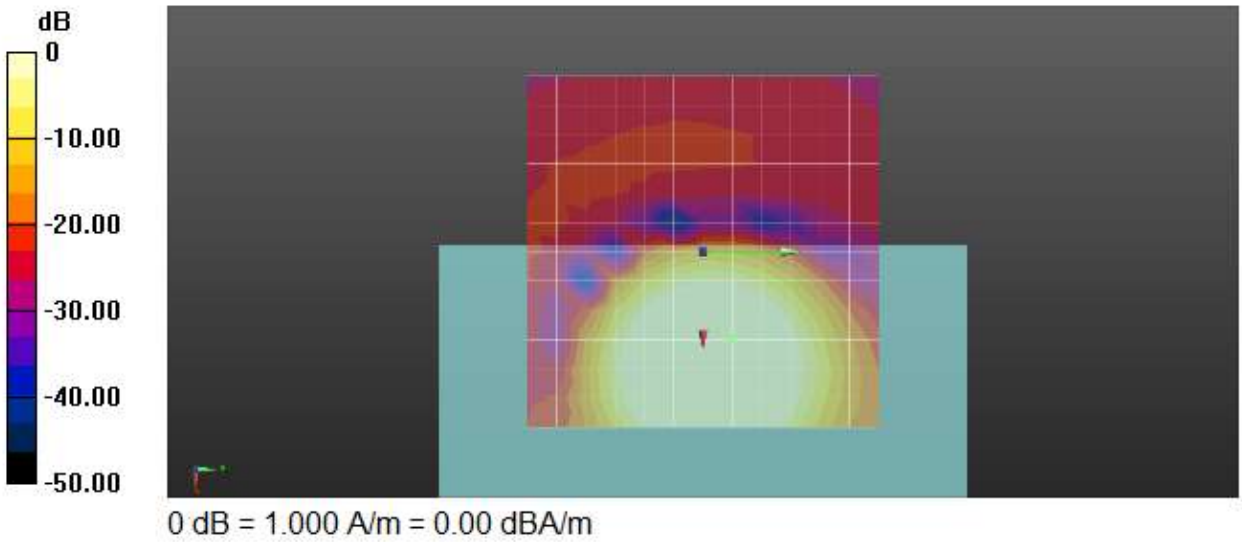
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 7.69 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM2 = -46.27 dBA/m
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 53.96 dB
ABM1 comp = 7.69 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 4.2, 3.7 mm



Plot No.8

WCDMA Band 2 AMR WB 6_6 9400ch y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

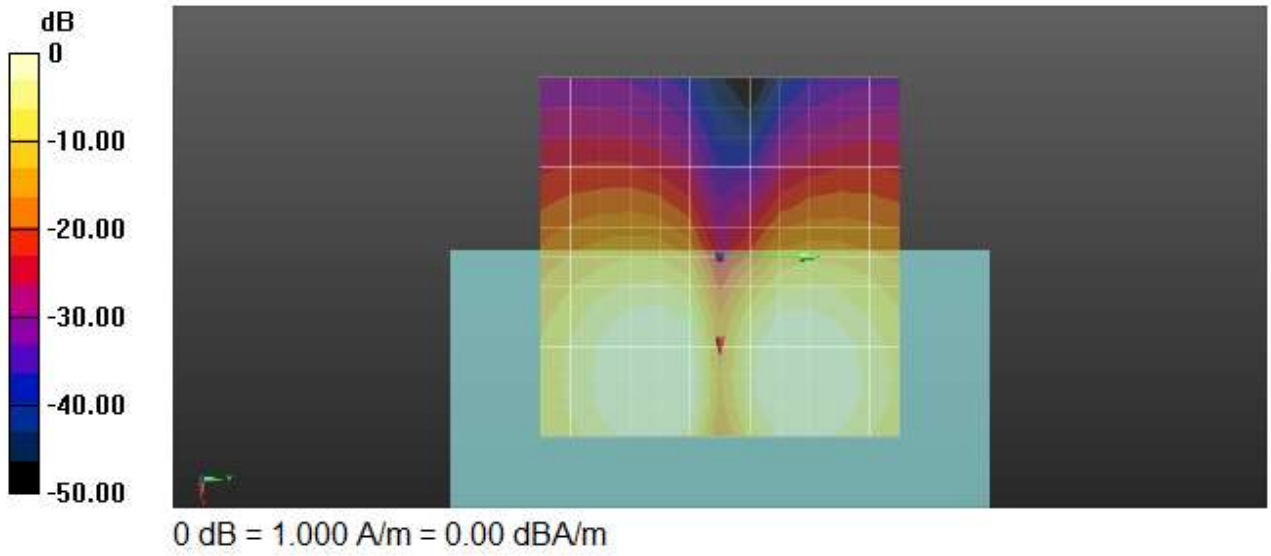
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.96 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -4.2, 3.7 mm

Cursor:
ABM2 = -51.03 dBA/m
Location: 8.3, -4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 47.07 dB
ABM1 comp = -3.96 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -4.2, 3.7 mm



Plot No.9

WCDMA Band 2 AMR WB 6_6 9400ch Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

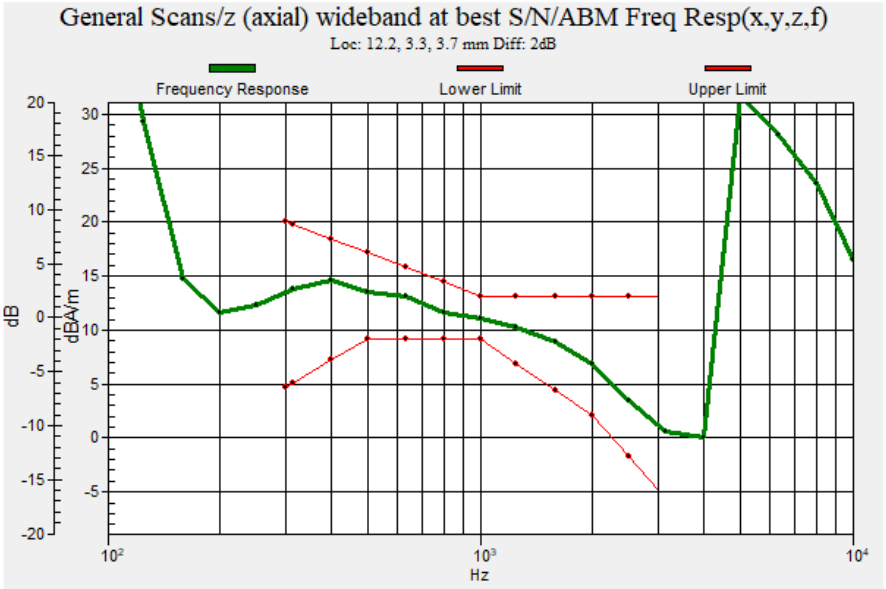
DASY Configuration:

- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 79.48
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.46 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.46 dB
Location: 12.2, 3.3, 3.7 mm



Plot No.10
WCDMA Band 4 AMR WB 6_6 1412ch z(axial)

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

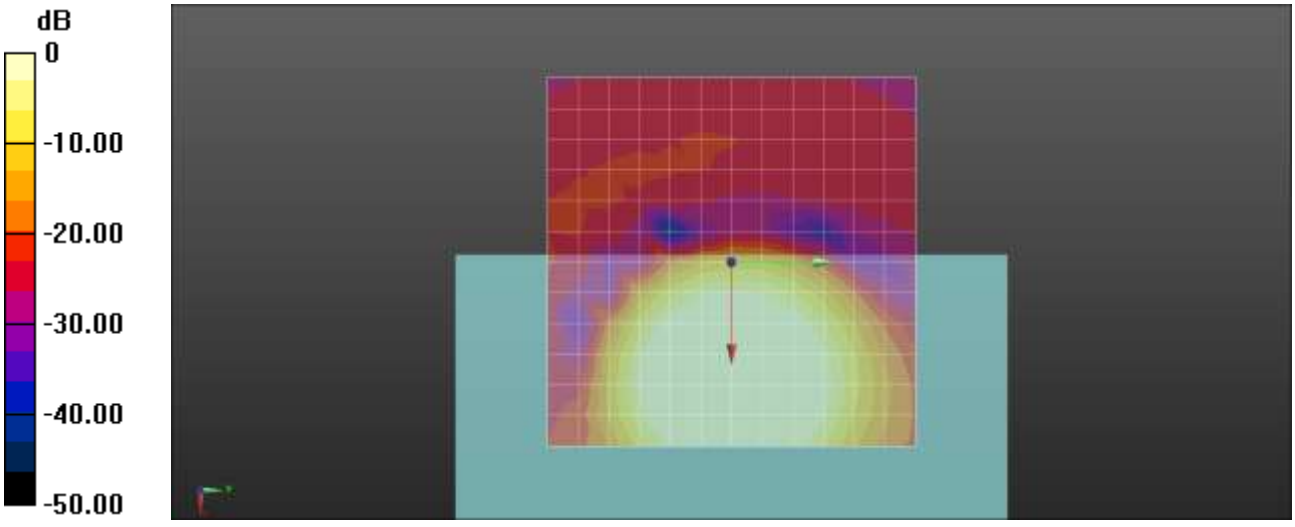
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.43 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -45.07 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 53.49 dB
ABM1 comp = 8.43 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.11
WCDMA Band 4 AMR WB 6_6 1412ch- y(transversal)

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

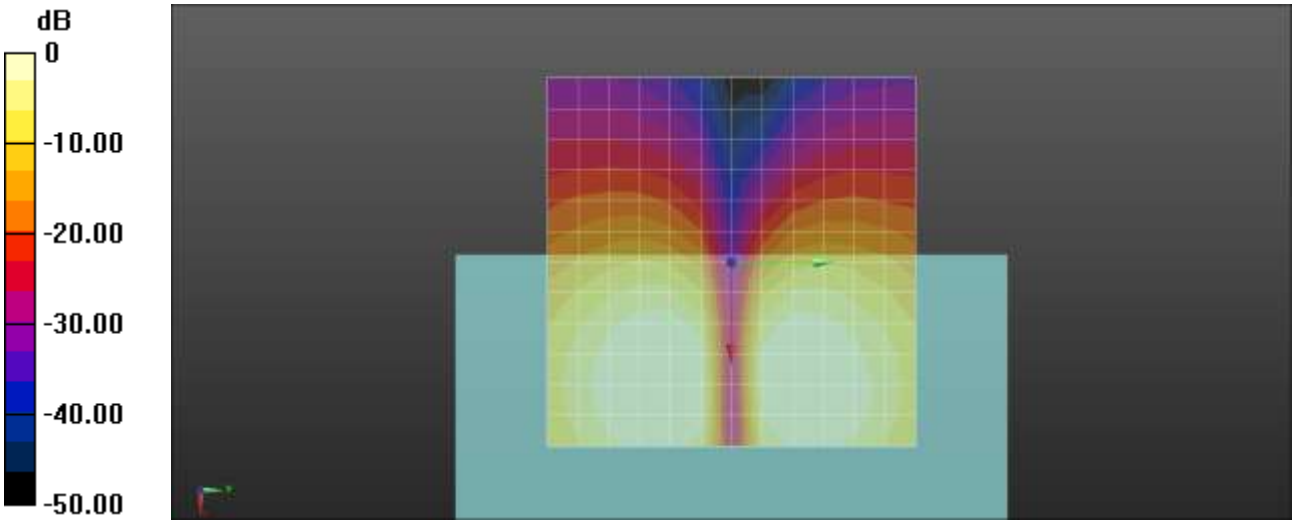
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.42 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -48.77 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 47.35 dB
ABM1 comp = -1.42 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.12

WCDMA Band 4 AMR WB 6_6 1412ch Freq. Response

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

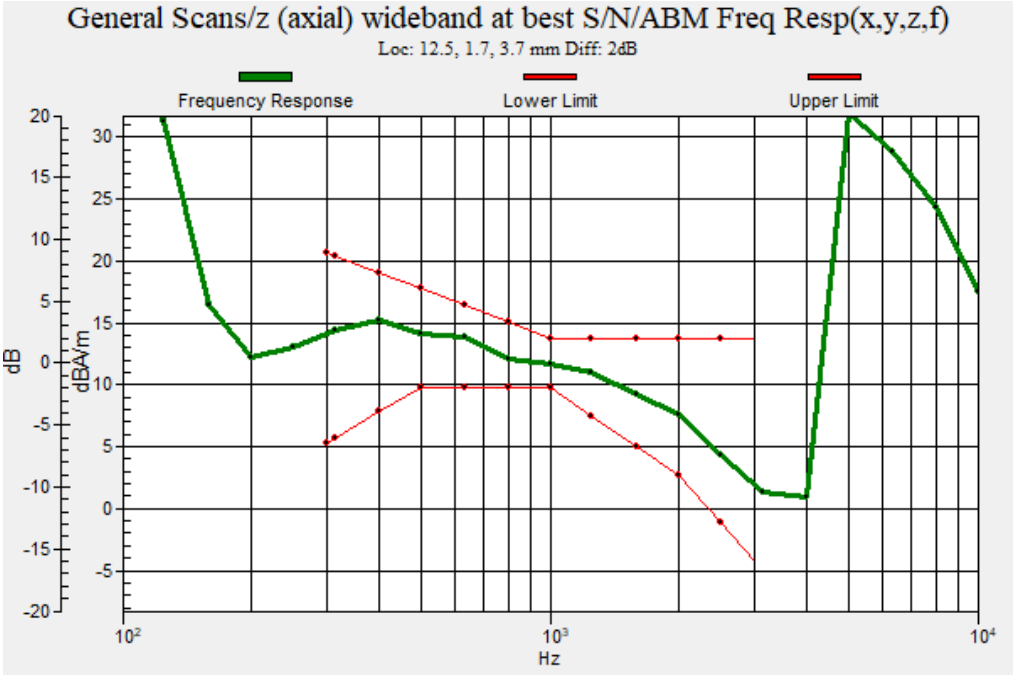
DASY Configuration:

- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 79.48
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.46 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.46 dB
Location: 12.5, 1.7, 3.7 mm



Plot No.13
WCDMA Band 5 AMR WB 6_6 4183ch_z(axial)

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

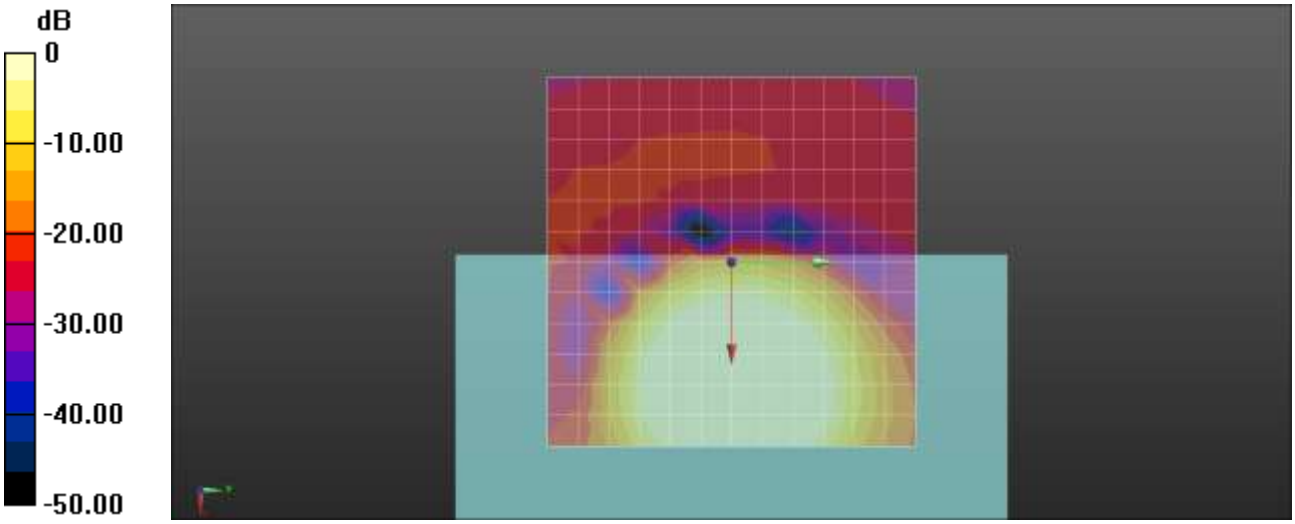
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.34 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -45.96 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 54.30 dB
ABM1 comp = 8.34 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.14
WCDMA Band 5 AMR WB 6_6 4183ch y(transversal)

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

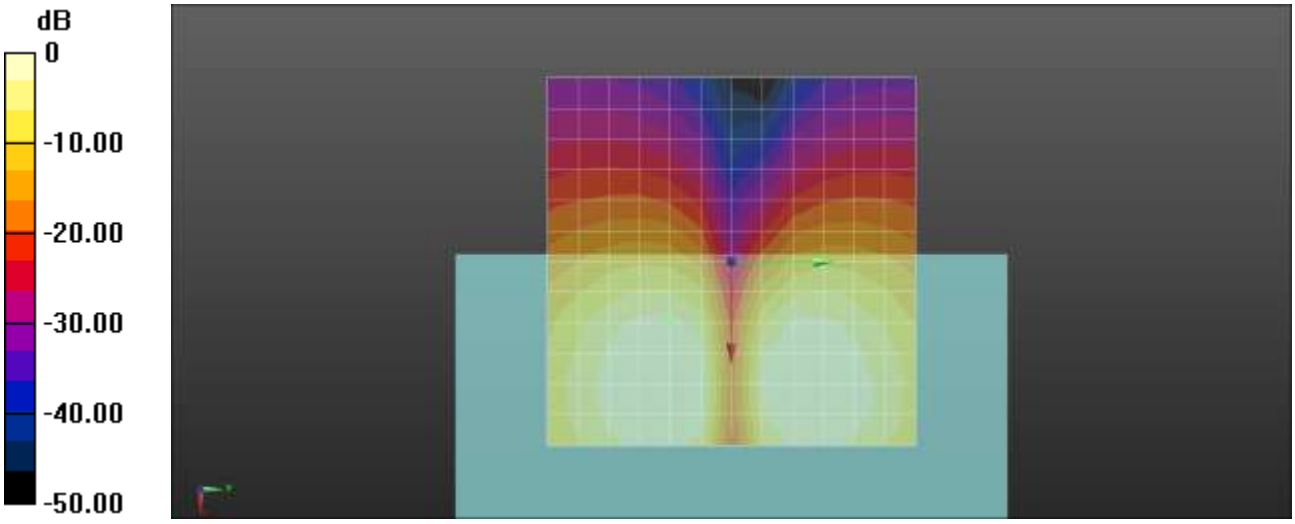
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.99 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -49.30 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 47.31 dB
ABM1 comp = -1.99 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.15
WCDMA Band 5 AMR WB 6_6 4183ch Freq. Response

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

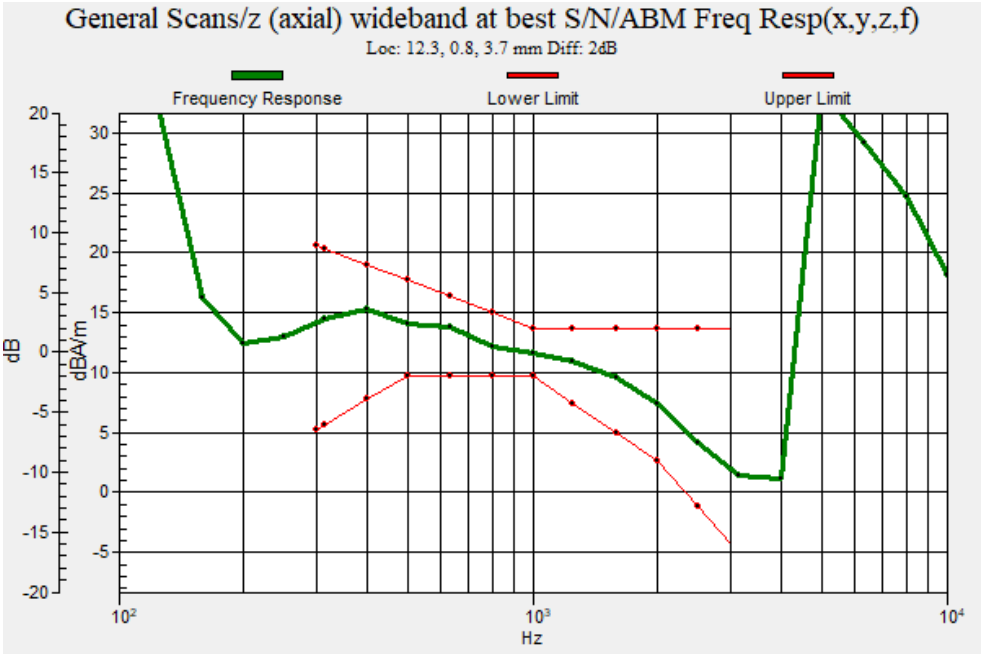
DASY Configuration:

- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 79.48
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.47 dB
Location: 12.3, 0.8, 3.7 mm



Plot No.16
LTE Band 25 EVS WB 5_9 QPSK 20MHz 50RB 25offset 26365ch z(axial)

Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

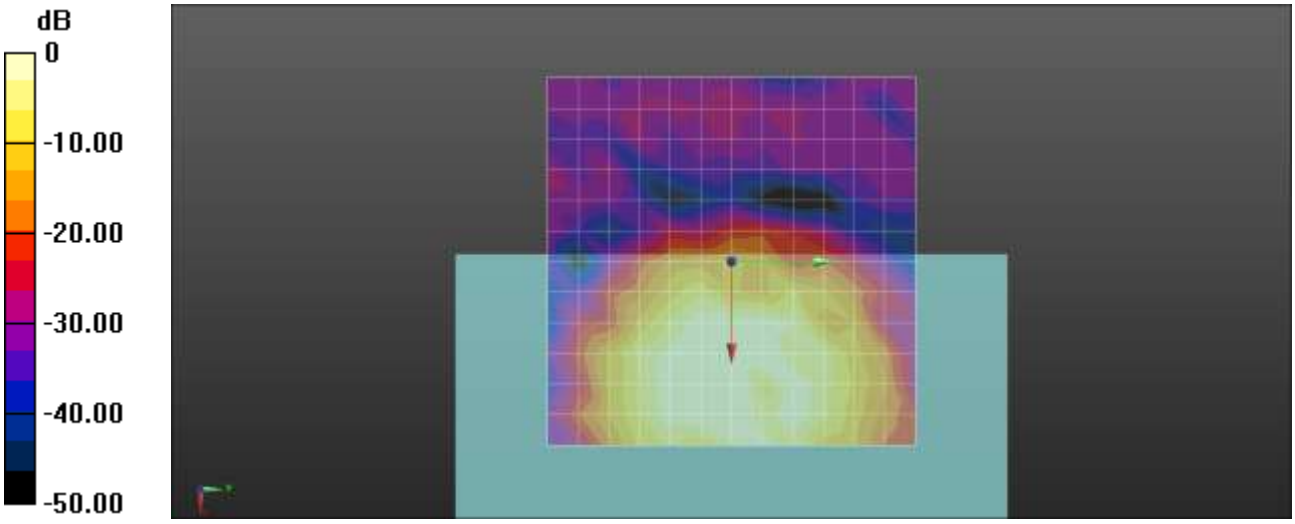
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.49 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 0, 3.7 mm

Cursor:
ABM2 = -49.13 dBA/m
Location: 8.3, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 48.65 dB
ABM1 comp = -0.49 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 0, 3.7 mm



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

Plot No.17

LTE Band 25 EVS WB 5_9 QPSK 20MHz 50RB 25offset 26365ch y(transversal)

Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

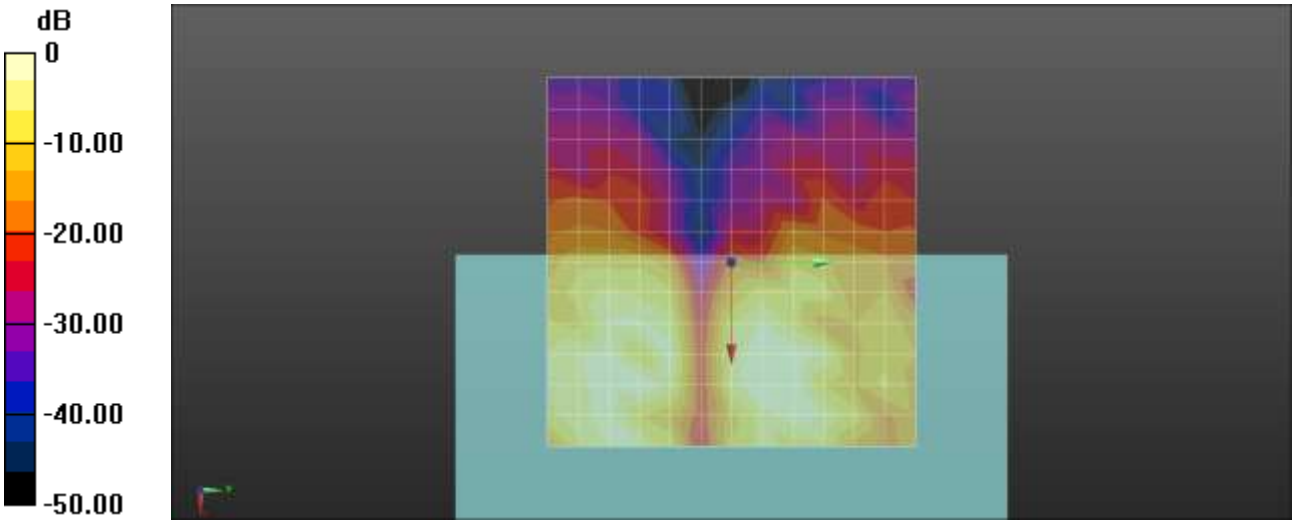
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -6.89 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 0, 3.7 mm

Cursor:
ABM2 = -50.00 dBA/m
Location: 8.3, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 43.11 dB
ABM1 comp = -6.89 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 0, 3.7 mm



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

Plot No.18
LTE Band 25 EVS WB 5_9 QPSK 20MHz 50RB 25offset 26365ch Freq. Response

Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

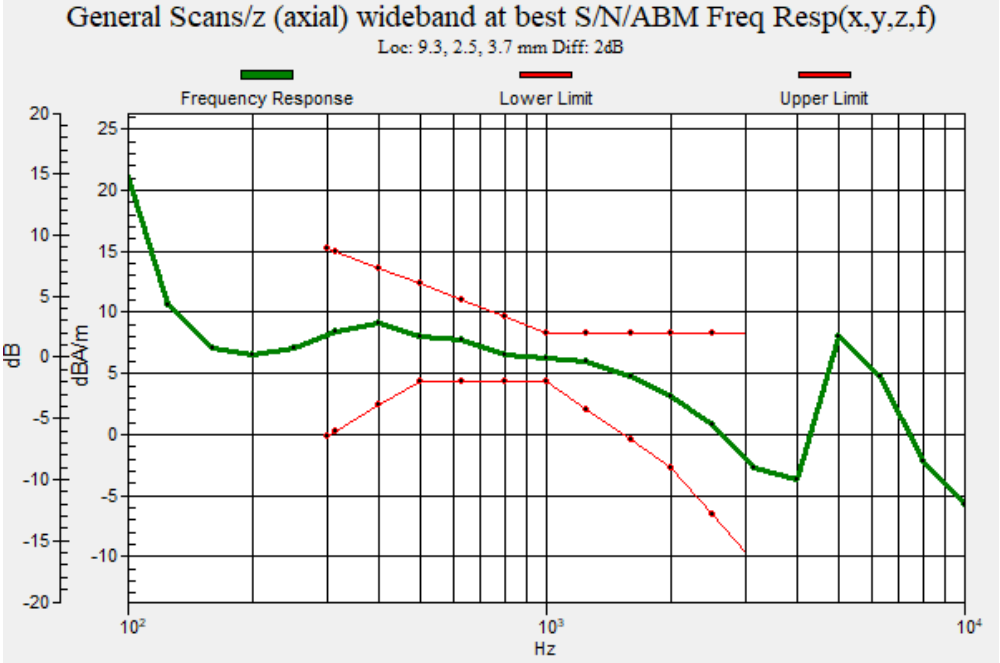
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 76.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.47 dB
Location: 9.3, 2.5, 3.7 mm



Plot No.19
LTE Band 12 EVS WB 5_9 QPSK 10MHz 25RB 12offset 23095ch z(axial)

Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

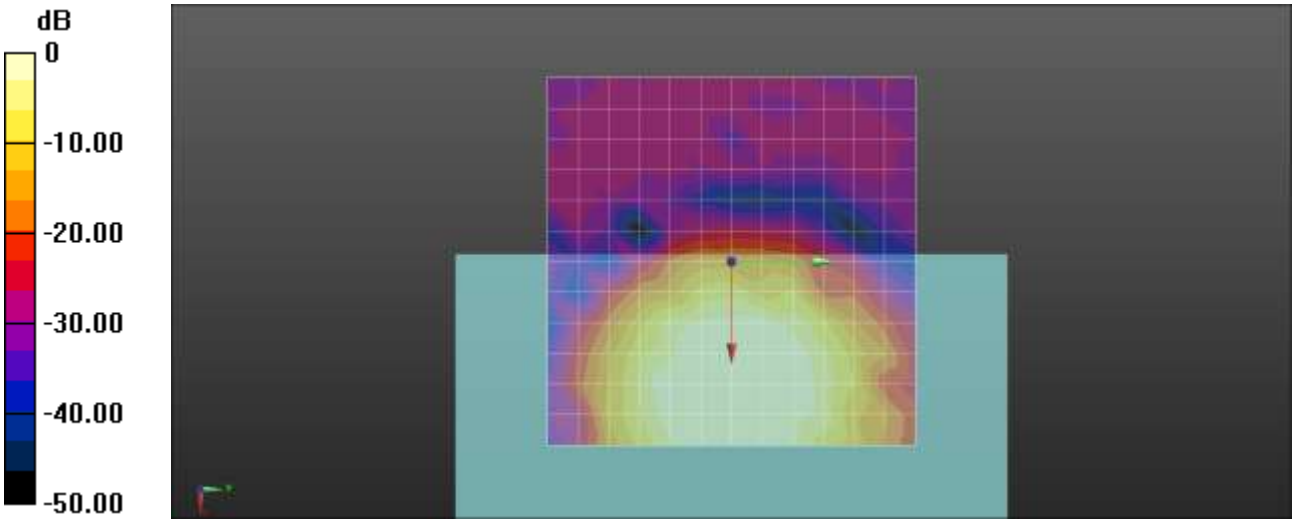
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 3.17 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -46.05 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 49.21 dB
ABM1 comp = 3.17 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.20
LTE Band 12 EVS WB 5_9 QPSK 10MHz 25RB 12offset 23095ch y(transversal)

Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

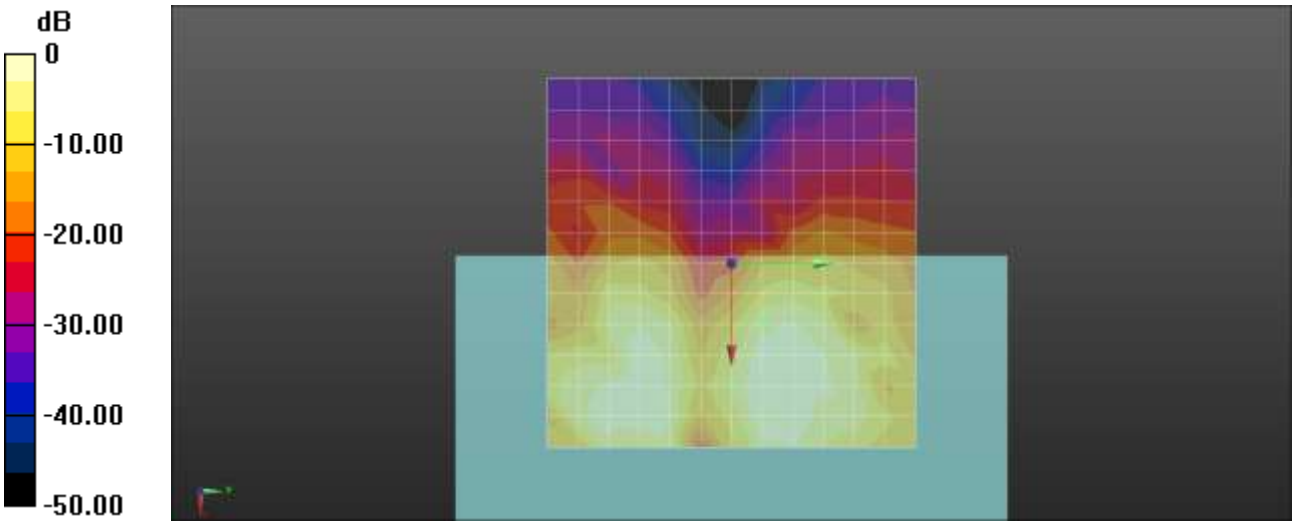
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.86 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 4.2, 3.7 mm

Cursor:
ABM2 = -48.11 dBA/m
Location: 8.3, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 44.25 dB
ABM1 comp = -3.86 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 4.2, 3.7 mm



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

Plot No.21

LTE Band 12 EVS WB 5_9 QPSK 10MHz 25RB 12offset 23095ch Freq. Response

Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

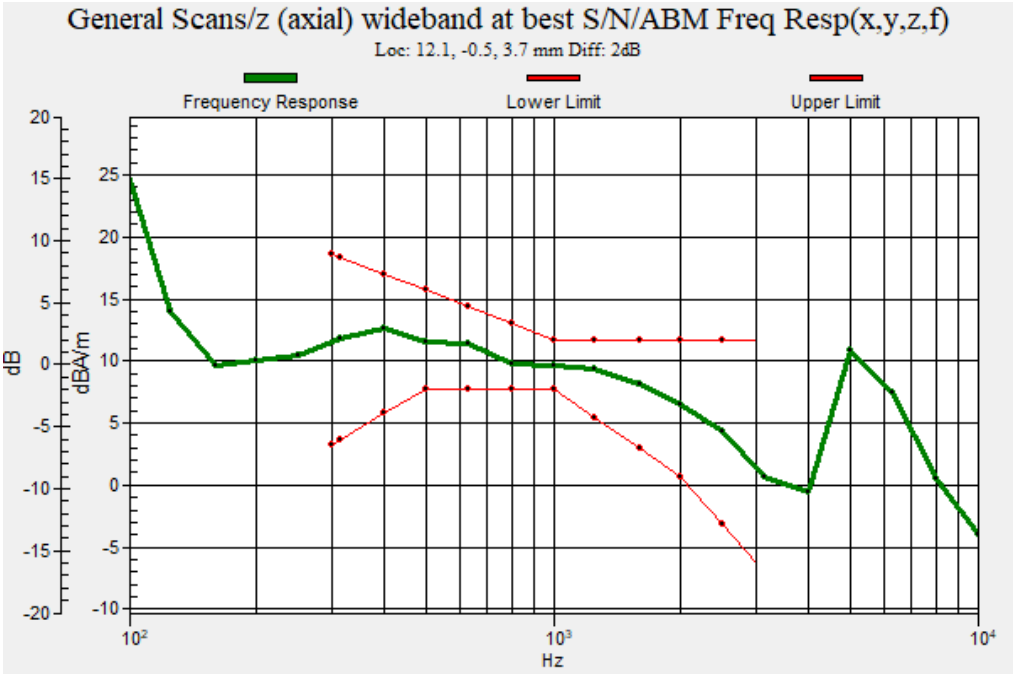
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 76.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.48 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.48 dB
Location: 12.1, -0.5, 3.7 mm



Plot No.22
LTE Band 13 EVS WB 5_9 QPSK 10MHz 25RB 12offset 23230ch z(axial)

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

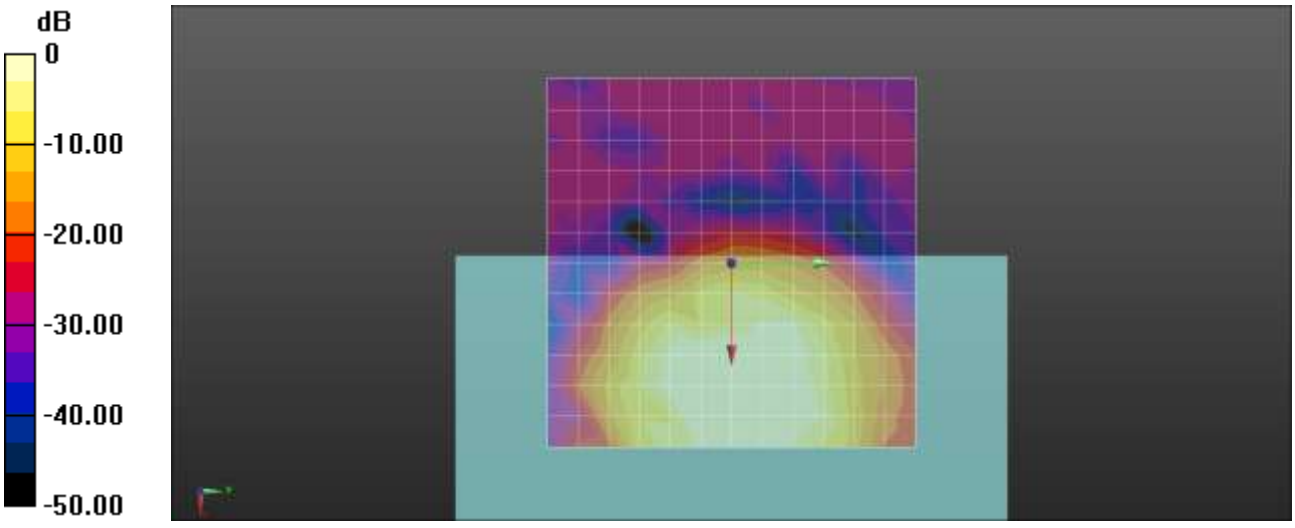
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 3.30 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -45.62 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 48.92 dB
ABM1 comp = 3.30 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.23

LTE Band 13 EVS WB 5_9 QPSK 10MHz 25RB 12offset 23230ch y(transversal)

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

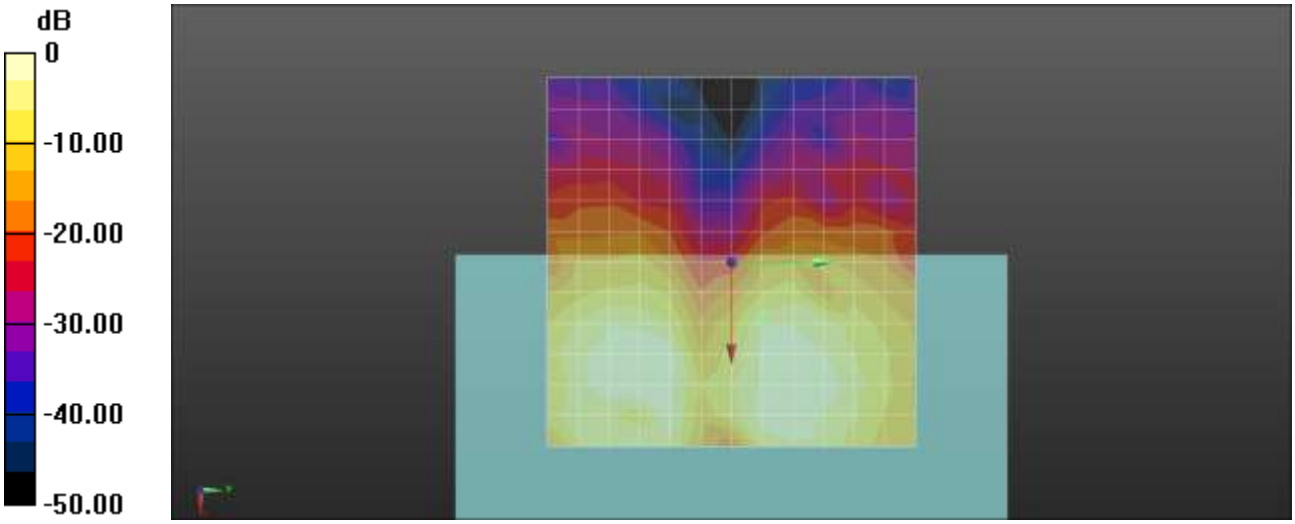
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.74 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 4.2, 3.7 mm

Cursor:
ABM2 = -48.12 dBA/m
Location: 8.3, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 44.38 dB
ABM1 comp = -3.74 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 4.2, 3.7 mm



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

Plot No.24

LTE Band 13 EVS WB 5_9 QPSK 10MHz 25RB 12offset 23230ch Freq. Response

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

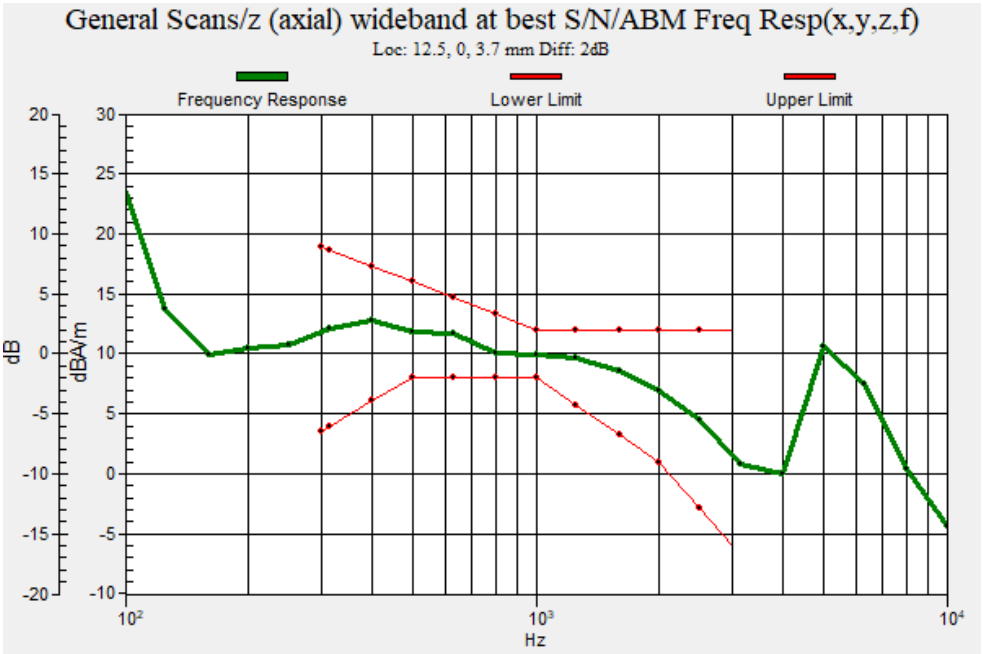
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 76.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.48 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.48 dB
Location: 12.5, 0, 3.7 mm



Plot No.25

LTE Band 26 EVS WB 5_9 QPSK 15MHz 36RB 18offset 26865ch z(axial)

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

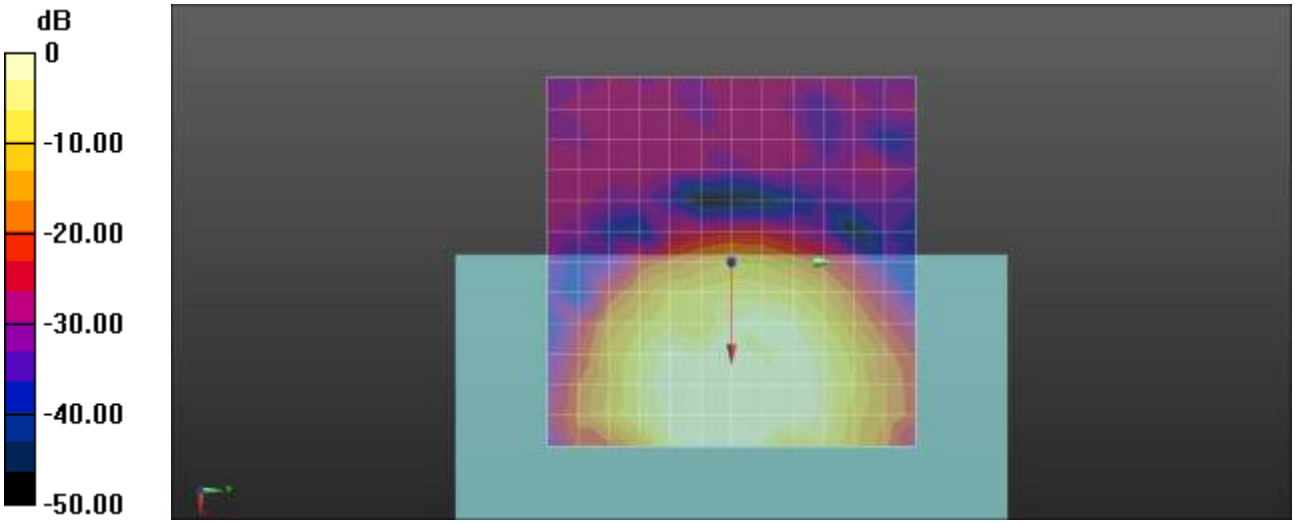
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.69 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 4.2, 3.7 mm

Cursor:
ABM2 = -49.07 dBA/m
Location: 8.3, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 48.38 dB
ABM1 comp = -0.69 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 4.2, 3.7 mm



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

Plot No.26

LTE Band 26 EVS WB 5_9 QPSK 15MHz 36RB 18offset 26865ch y(transversal)

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

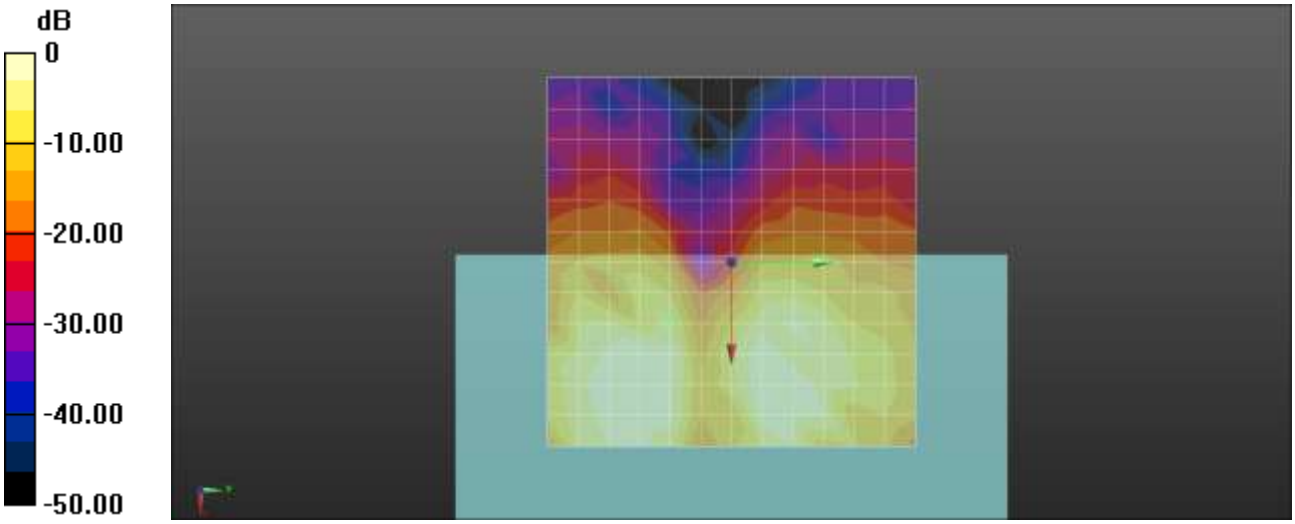
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.43 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -49.05 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 43.62 dB
ABM1 comp = -5.43 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.27

LTE Band 26 EVS WB 5_9 QPSK 15MHz 36RB 18offset 26865ch Freq. Response

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

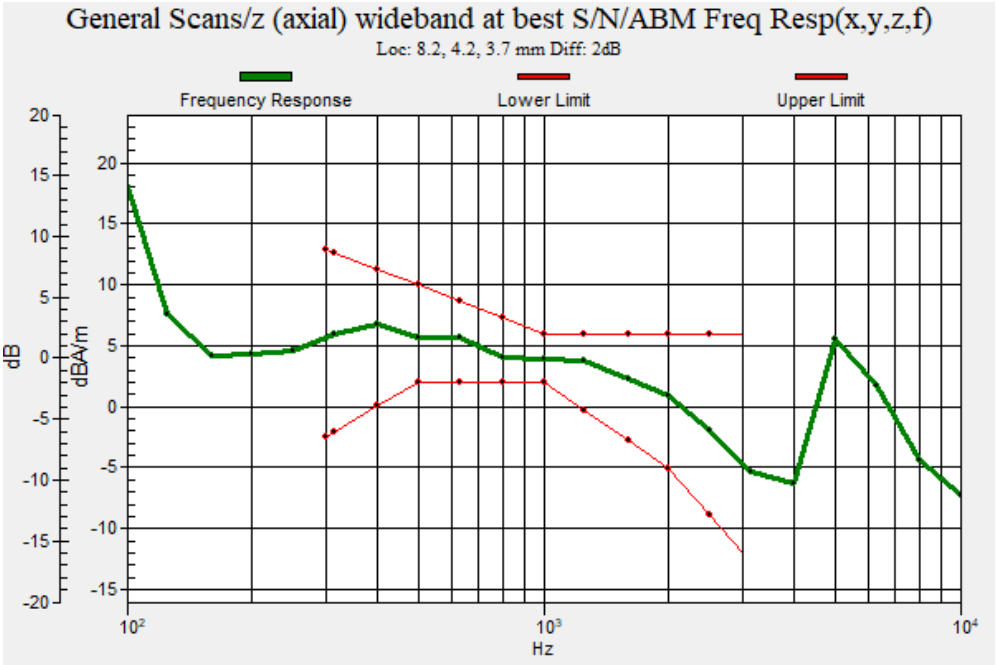
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 76.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.48 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.48 dB
Location: 8.2, 4.2, 3.7 mm



Plot No.28

LTE Band 66 EVS WB 5_9 QPSK 20MHz 50RB 25offset 132322ch z(axial)

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

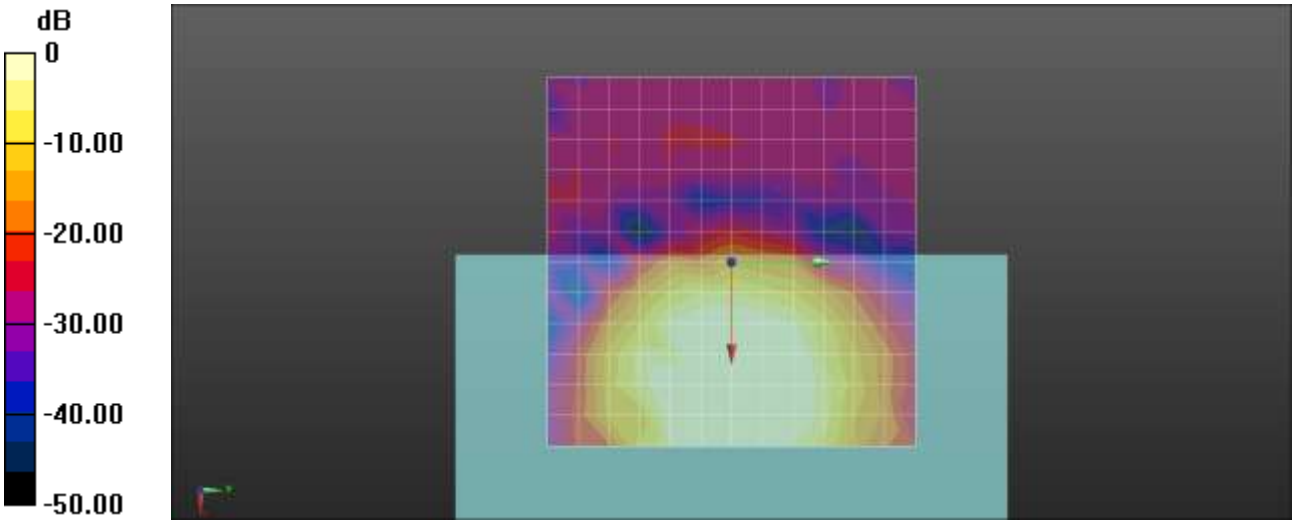
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.28 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 0, 3.7 mm

Cursor:
ABM2 = -47.89 dBA/m
Location: 8.3, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 49.17 dB
ABM1 comp = 1.28 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 0, 3.7 mm



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

Plot No.29

LTE Band 66 EVS WB 5_9 QPSK 20MHz 50RB 25offset 132322ch y(transversal)

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

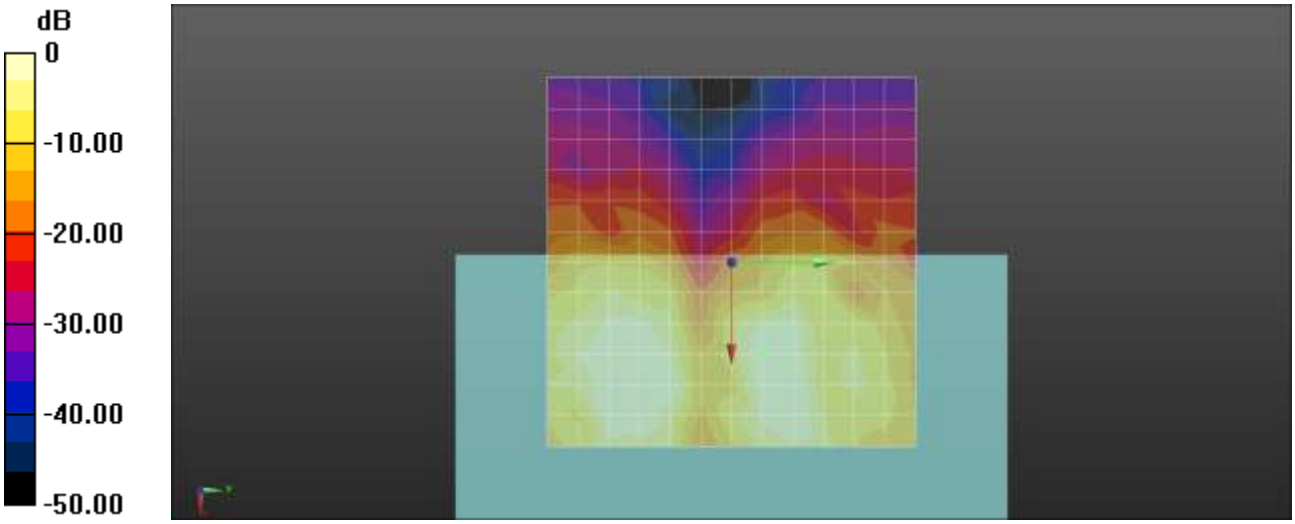
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 25.2
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 0.37 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM2 = -43.22 dBA/m
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 43.59 dB
ABM1 comp = 0.37 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 4.2, 3.7 mm



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

Plot No.30

LTE Band 66 EVS WB 5_9 QPSK 20MHz 50RB 25offset 132322ch Freq. Response

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

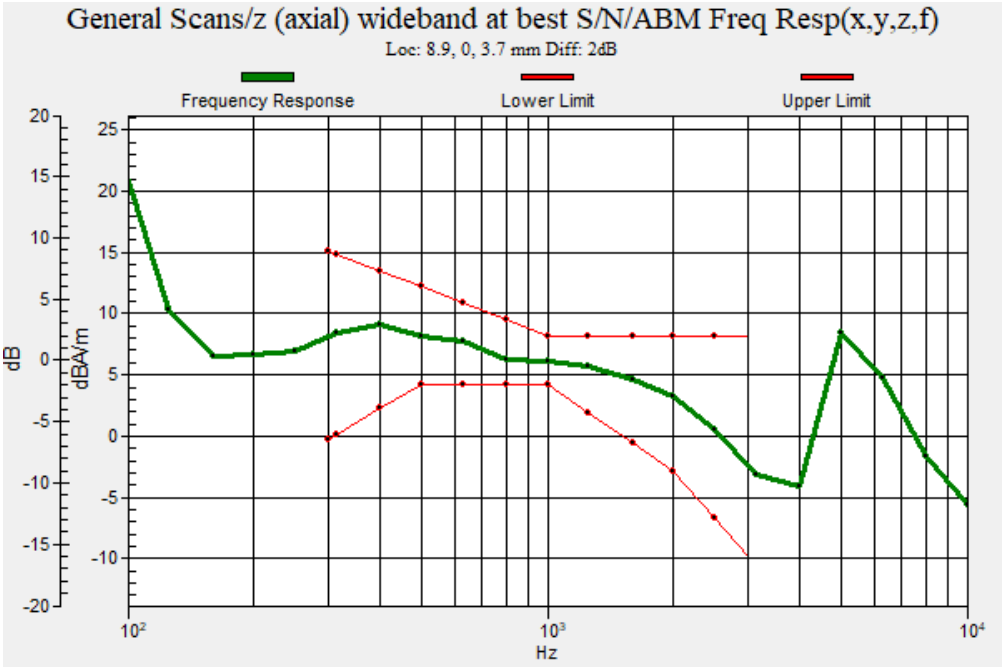
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 76.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.48 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.48 dB
Location: 8.9, 0, 3.7 mm



Plot No.31
LTE 41 EVS-WB 5_9 QPSK 20MHz 1RB 99offset 39750ch Configuration 0 6 z(axial)

Communication System: UID 0, LTE Band 41 (FCC) (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58016
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

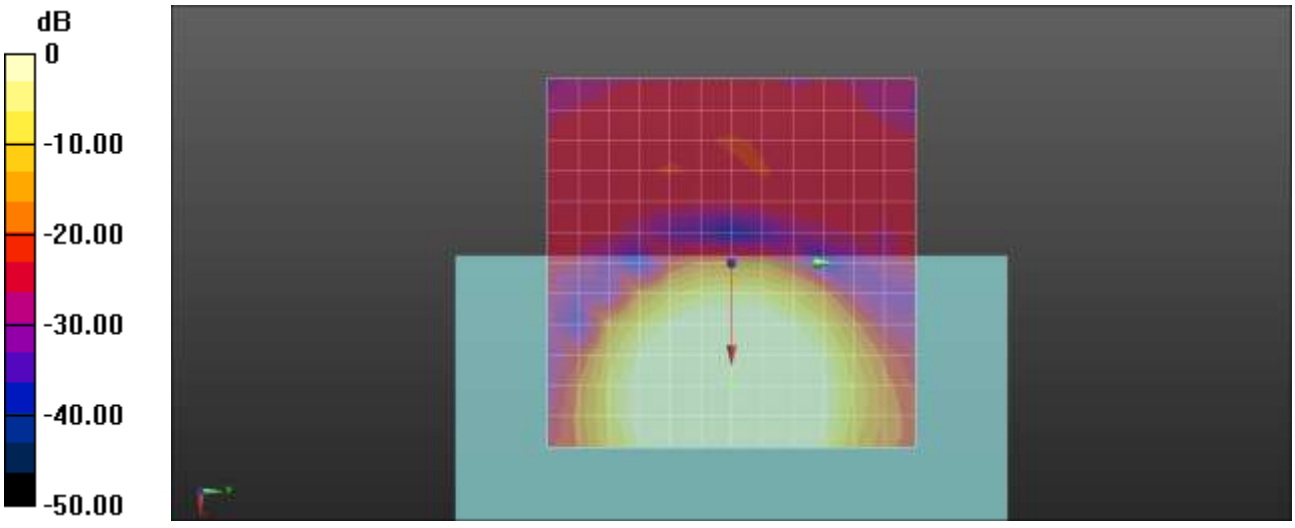
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 11.50 dBA/m
BWC Factor = 0.15 dB
Location: 16.7, 0, 3.7 mm

Cursor:
ABM2 = -18.37 dBA/m
Location: 16.7, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 29.87 dB
ABM1 comp = 11.50 dBA/m
BWC Factor = 0.15 dB
Location: 16.7, 0, 3.7 mm



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

Plot No.32

LTE 41 EVS-WB 5_9 QPSK 20MHz 1RB 99offset 39750ch Configuration 0 6 y(transversal)

Communication System: UID 0, LTE Band 41 (FCC) (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58016
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

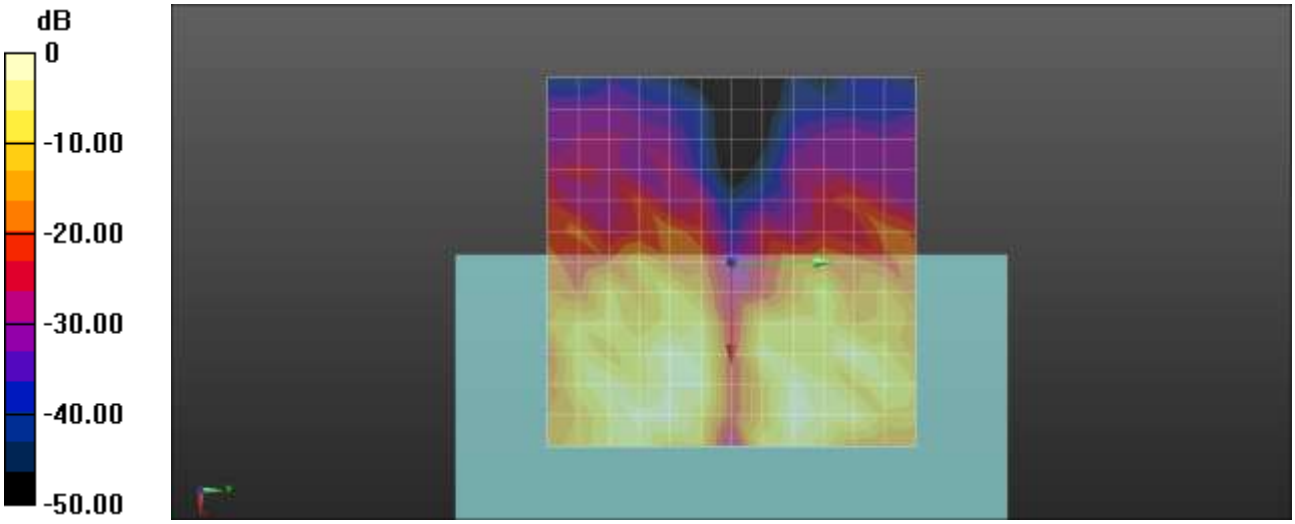
- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 26.12
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -7.49 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, 12.5, 3.7 mm

Cursor:
ABM2 = -45.10 dBA/m
Location: 4.2, 12.5, 3.7 mm

Cursor:
ABM1/ABM2 = 37.61 dB
ABM1 comp = -7.49 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, 12.5, 3.7 mm



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

Plot No.33

LTE 41 EVS-WB 5_9 QPSK 20MHz 1RB 99offset 39750ch Configuration 0 6 Freq. Response

Communication System: UID 0, LTE Band 41 (FCC) (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58016
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

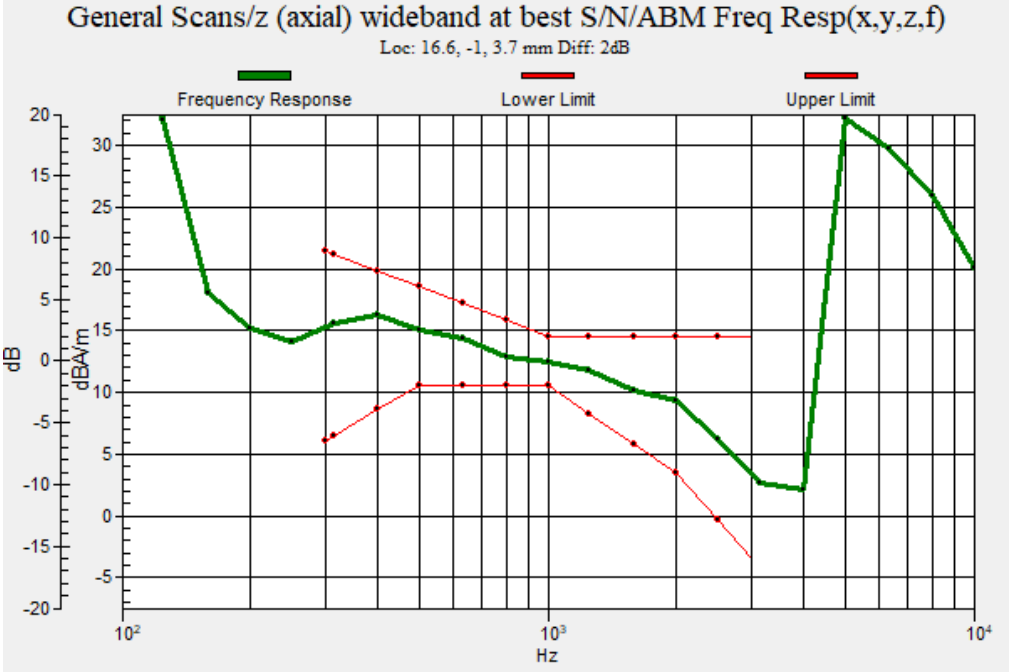
DASY Configuration:

- Probe: AM1DV2 - 1013; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn868; Calibrated: 2019-09-04
- Phantom: HAC Test Arch with AMCC TCOIL
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 79.48
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.46 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.46 dB
Location: 16.6, -1, 3.7 mm



Plot No.34
802_11b 5.5Mbps EVS wb 5_9 11ch z(axial)

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

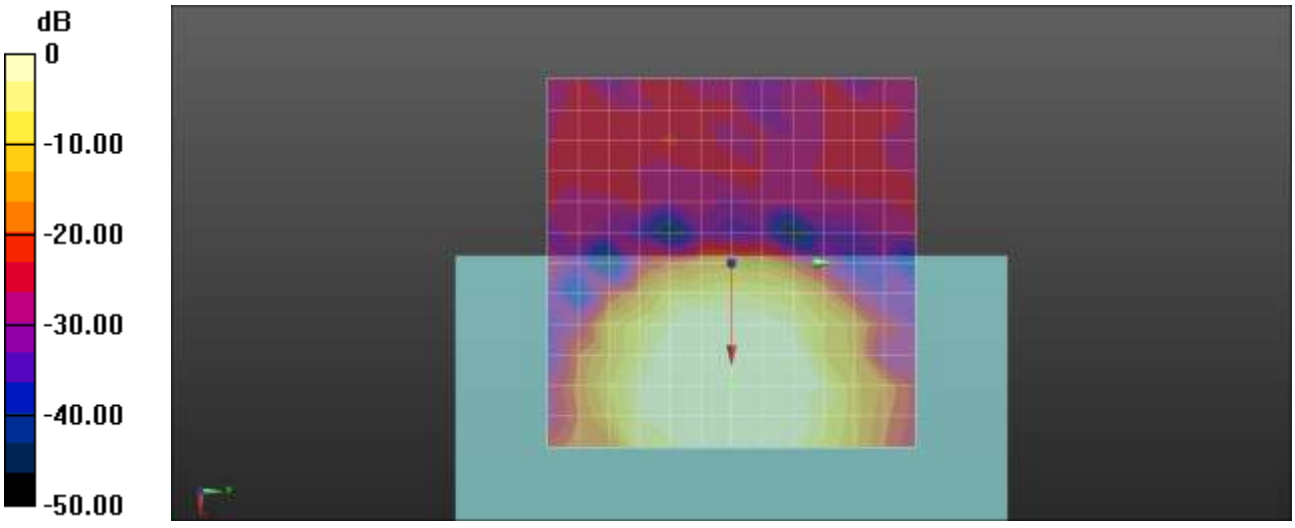
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 7.94 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 0, 3.7 mm

Cursor:
ABM2 = -33.76 dBA/m
Location: 16.7, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 41.70 dB
ABM1 comp = 7.94 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 0, 3.7 mm



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

Plot No.35

802_11b 5.5Mbps EVS wb 5_9 11ch y(transversal)

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

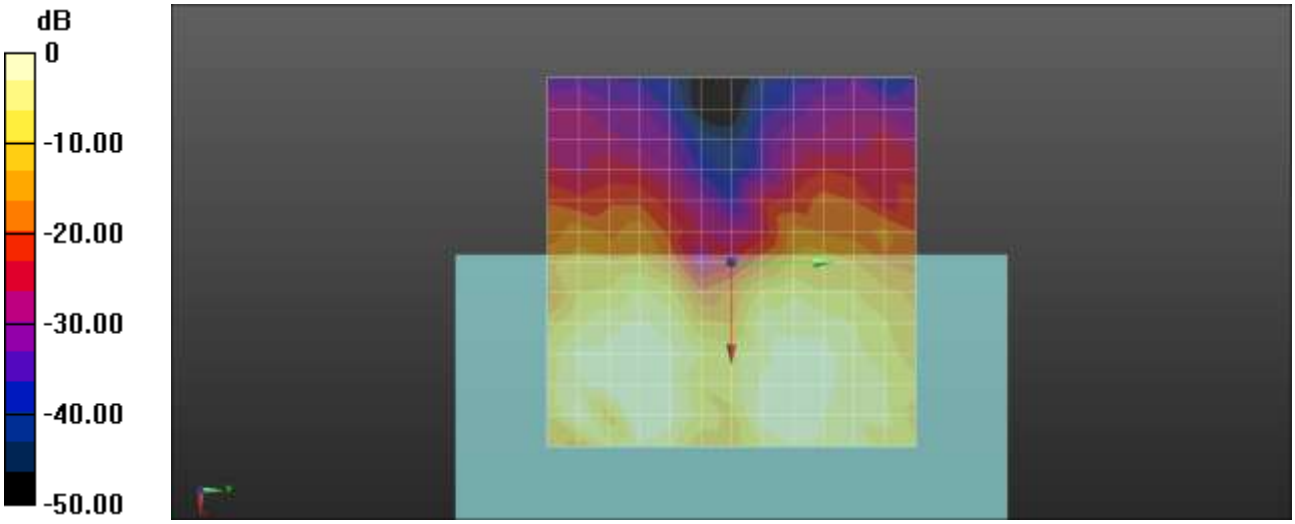
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.67 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -12.5, 3.7 mm

Cursor:
ABM2 = -52.85 dBA/m
Location: 4.2, -12.5, 3.7 mm

Cursor:
ABM1/ABM2 = 47.18 dB
ABM1 comp = -5.67 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -12.5, 3.7 mm



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

Plot No.36
802_11b 5.5Mbps EVS wb 5_9 11ch Freq. Response

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

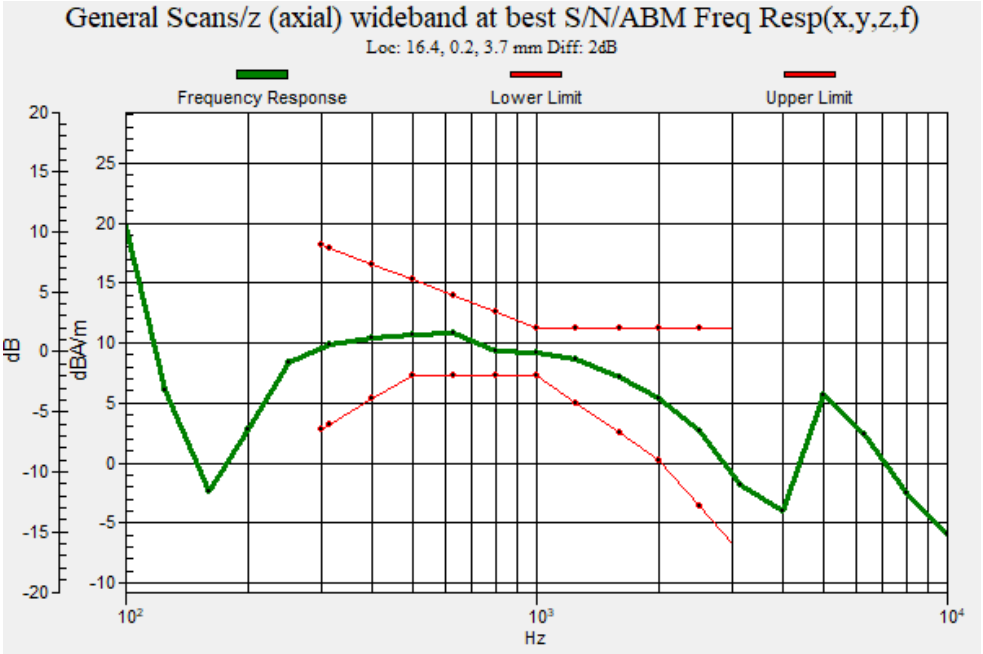
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.47 dB
Location: 16.4, 0.2, 3.7 mm



Plot No.37

802_11a 6Mbps EVS wb 5_9 40ch z(axial)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

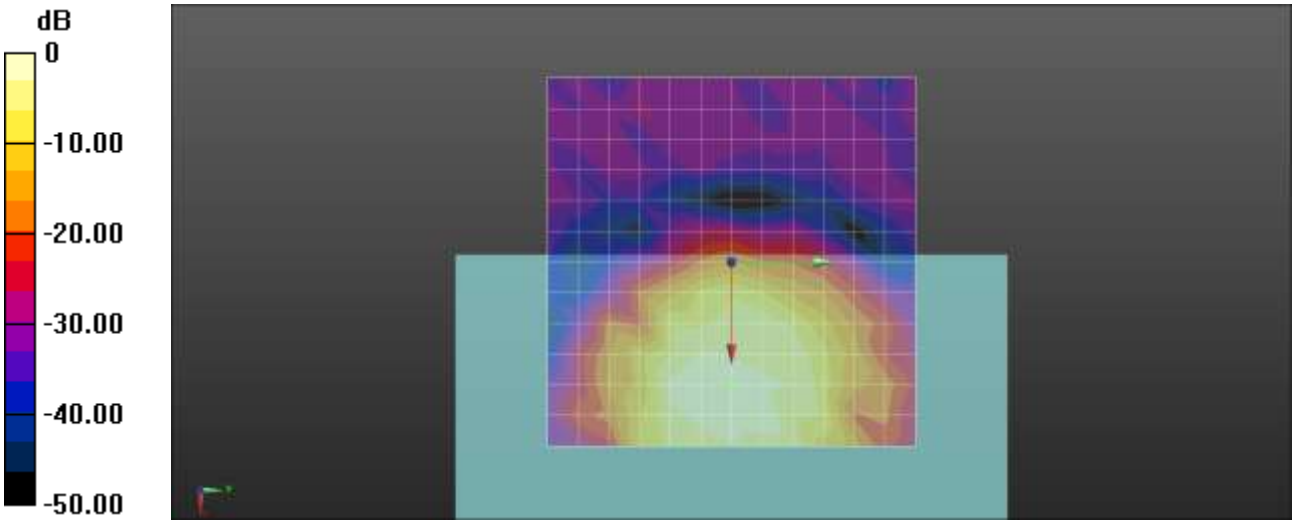
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 2.79 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 0, 3.7 mm

Cursor:
ABM2 = -38.37 dBA/m
Location: 16.7, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 41.15 dB
ABM1 comp = 2.79 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 0, 3.7 mm



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

Plot No.38

802_11a 6Mbps EVS wb 5_9 40ch y(transversal)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

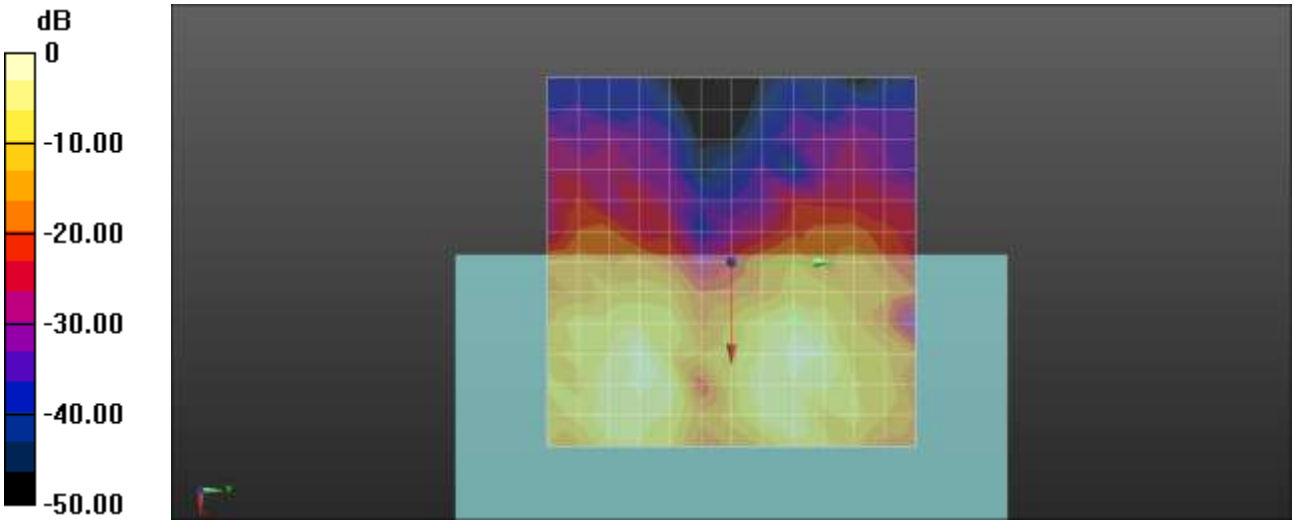
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.98 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM2 = -49.40 dBA/m
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 45.42 dB
ABM1 comp = -3.98 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm



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

Plot No.39

802_11a 6Mbps EVS wb 5_9 40ch Freq. Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

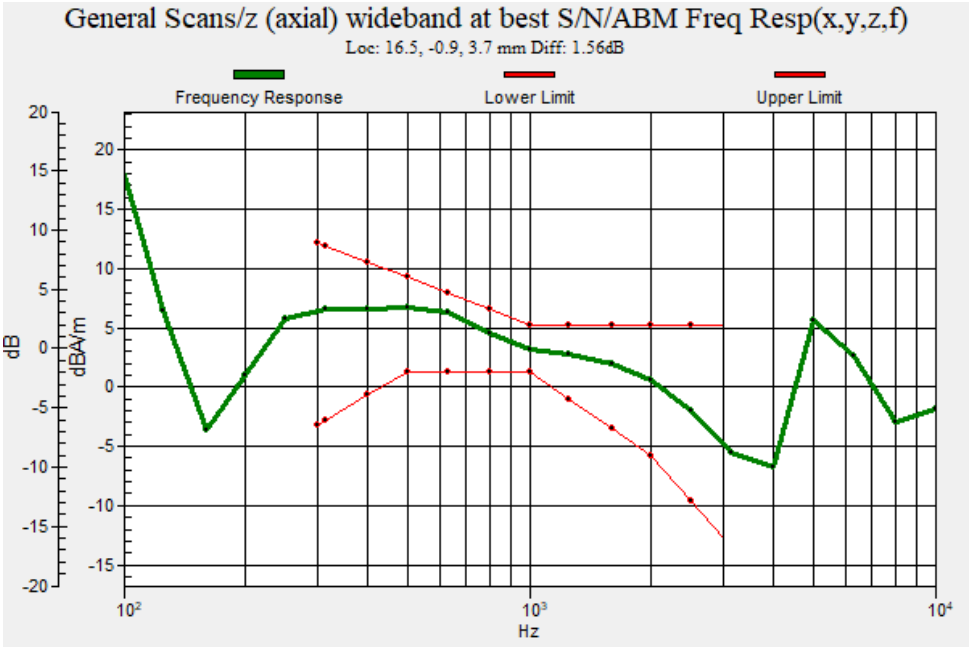
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.48 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.56 dB
BWC Factor = 9.48 dB
Location: 16.5, -0.9, 3.7 mm



Plot No.40

802_11a 6Mbps EVS wb 5_9 56ch z(axial)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

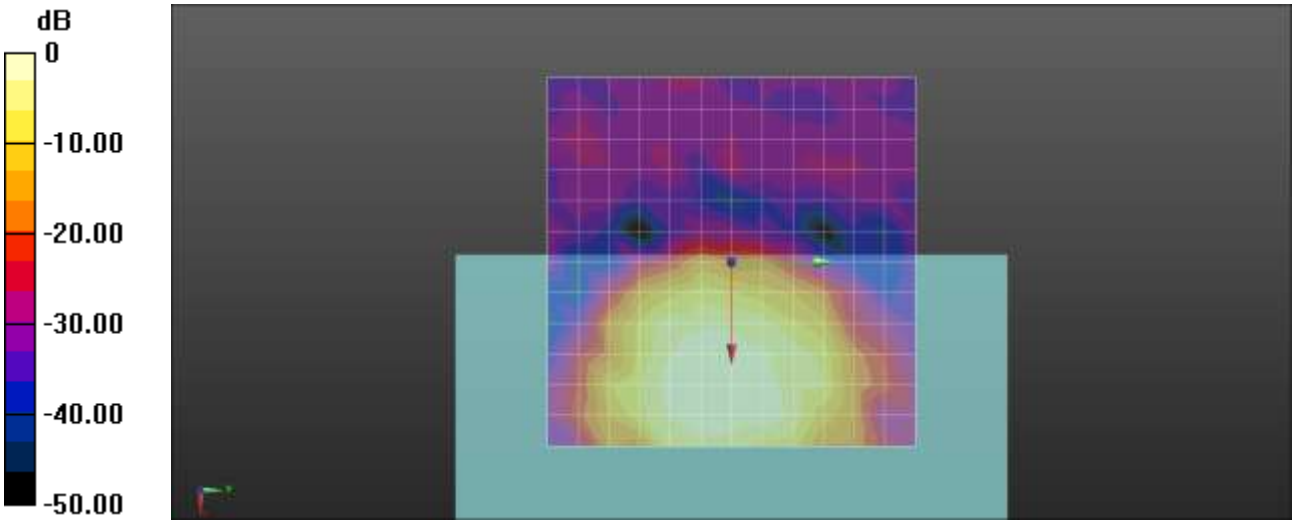
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 0.48 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -44.72 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 45.21 dB
ABM1 comp = 0.48 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.41
802_11a 6Mbps EVS wb 5_9 56ch y(transversal)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

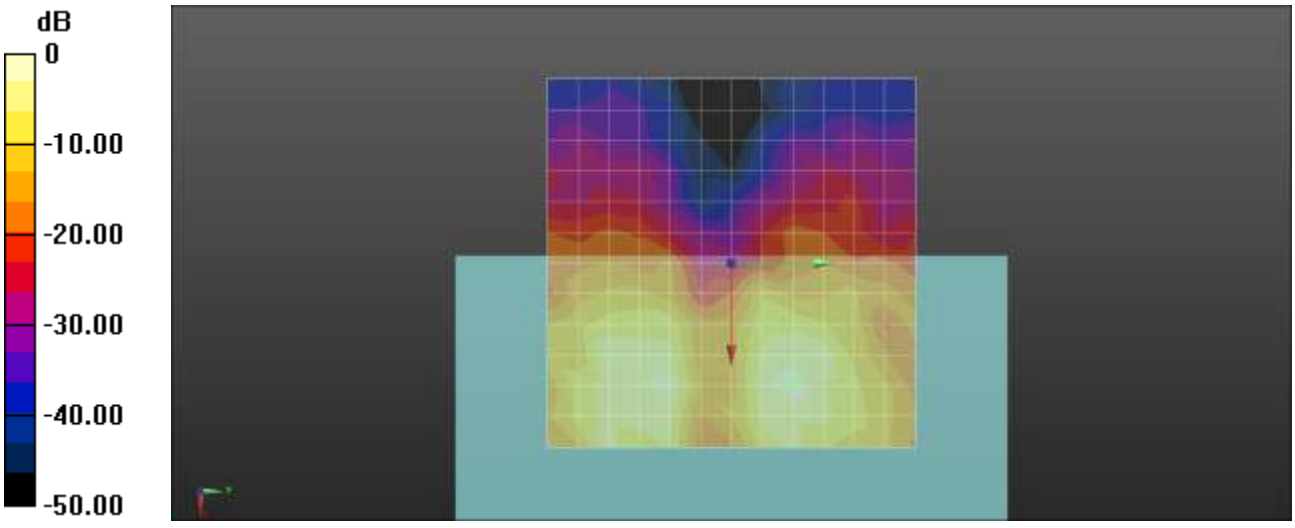
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.17 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 8.3, 3.7 mm

Cursor:
ABM2 = -45.99 dBA/m
Location: 16.7, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 44.83 dB
ABM1 comp = -1.17 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 8.3, 3.7 mm



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

Plot No.42
802_11a 6Mbps EVS wb 5_9 56ch Freq. Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

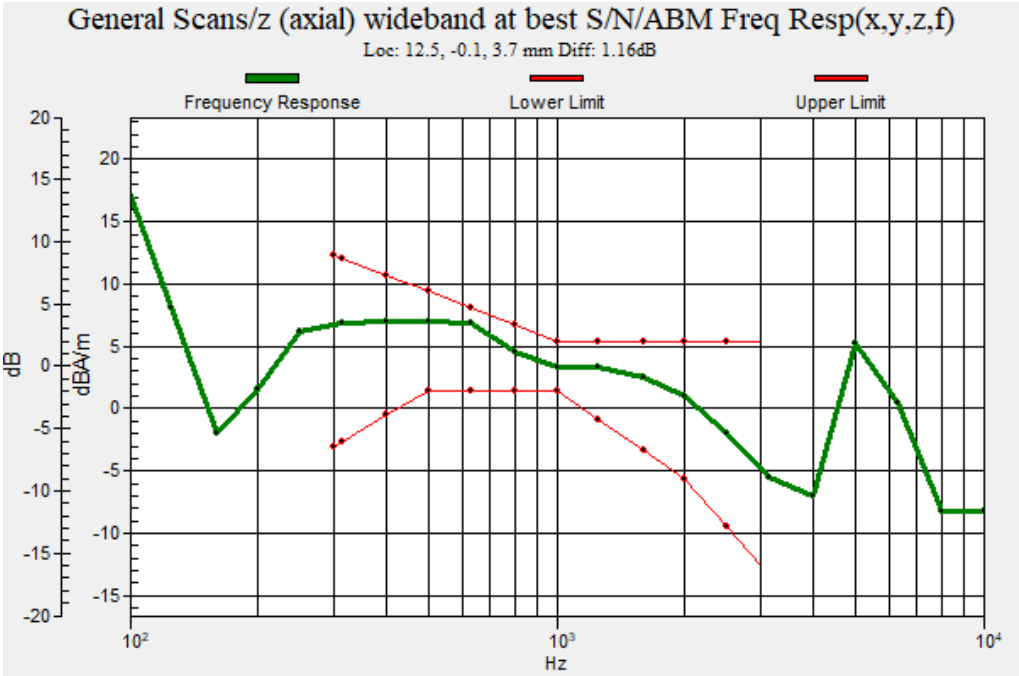
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.16 dB
BWC Factor = 9.47 dB
Location: 12.5, -0.1, 3.7 mm



Plot No.43
802_11a 6Mbps EVS wb 5_9 120ch z(axial)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

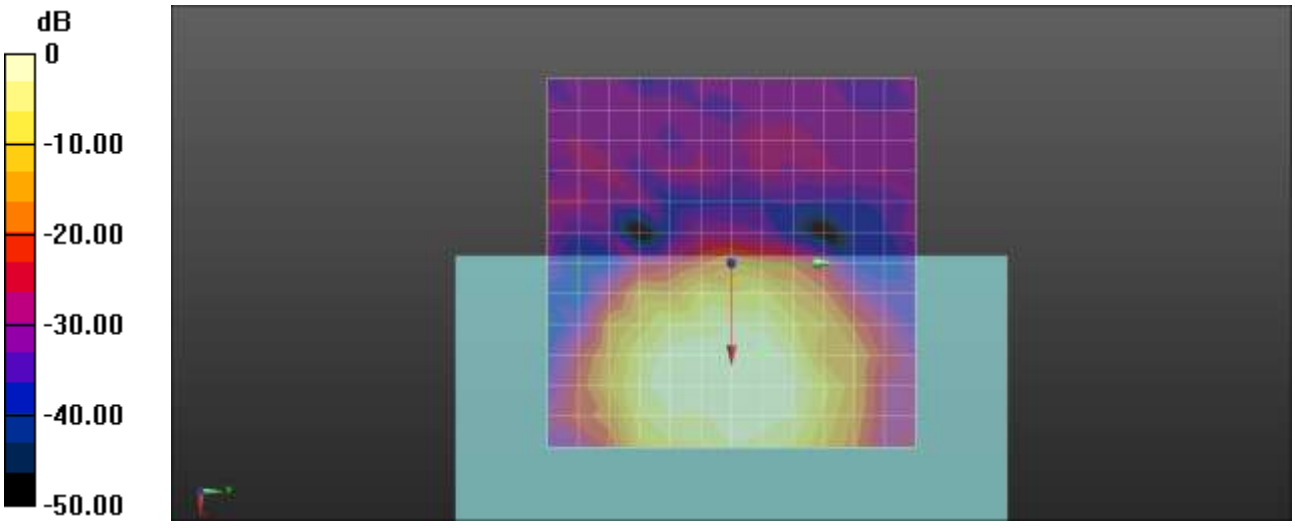
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.29 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM2 = -45.19 dBA/m
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 46.48 dB
ABM1 comp = 1.29 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 4.2, 3.7 mm



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

Plot No.44
802_11a 6Mbps EVS wb 5_9 120ch y(transversal)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

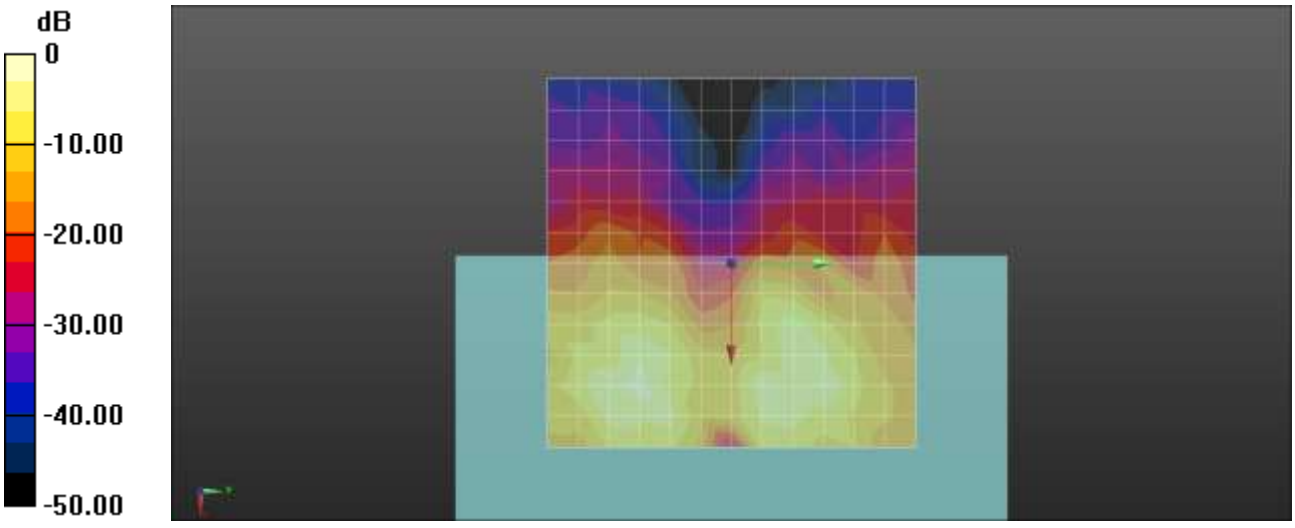
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -4.85 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM2 = -51.26 dBA/m
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 46.41 dB
ABM1 comp = -4.85 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm



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

Plot No.45
802_11a 6Mbps EVS wb 5_9 120ch Freq. Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

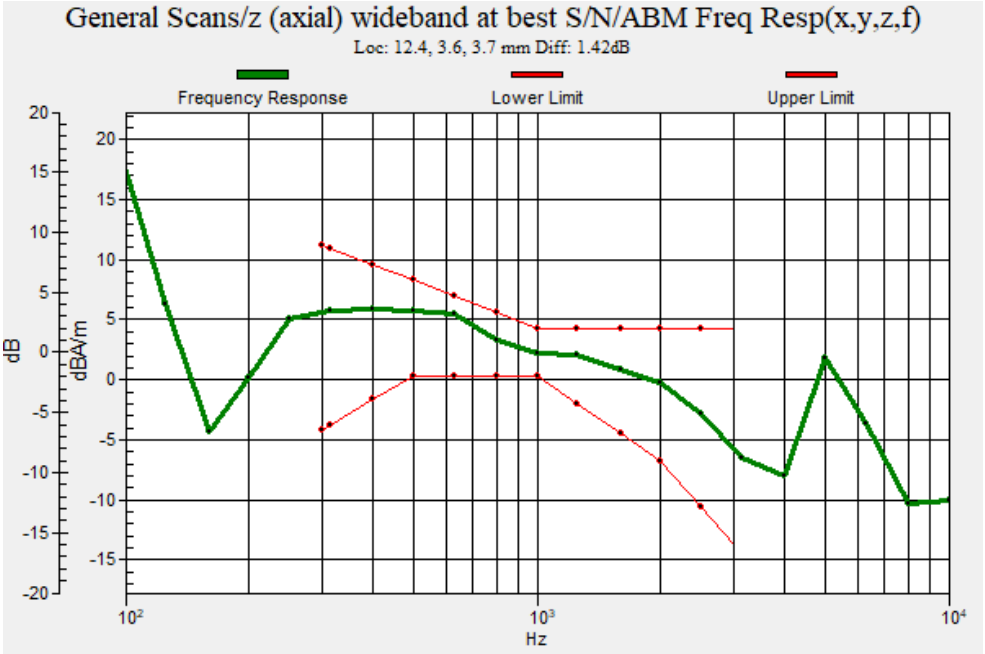
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.42 dB
BWC Factor = 9.47 dB
Location: 12.4, 3.6, 3.7 mm



Plot No.46
802_11a 6Mbps EVS wb 5_9 157ch z(axial)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

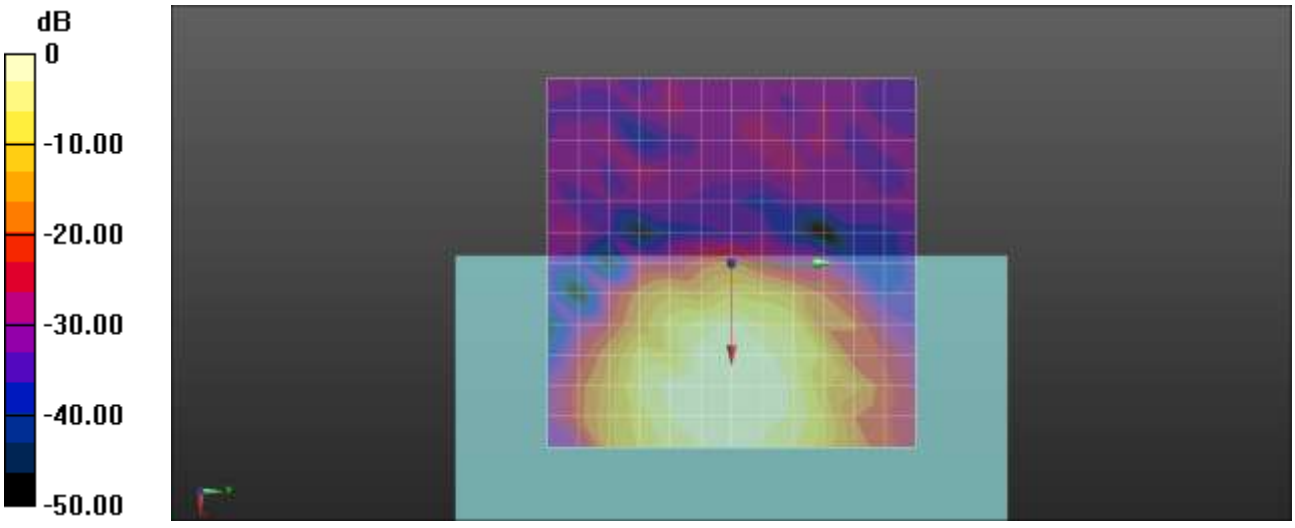
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.05 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -45.86 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 46.91 dB
ABM1 comp = 1.05 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.47
802_11a 6Mbps EVS wb 5_9 157ch y(transversal)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

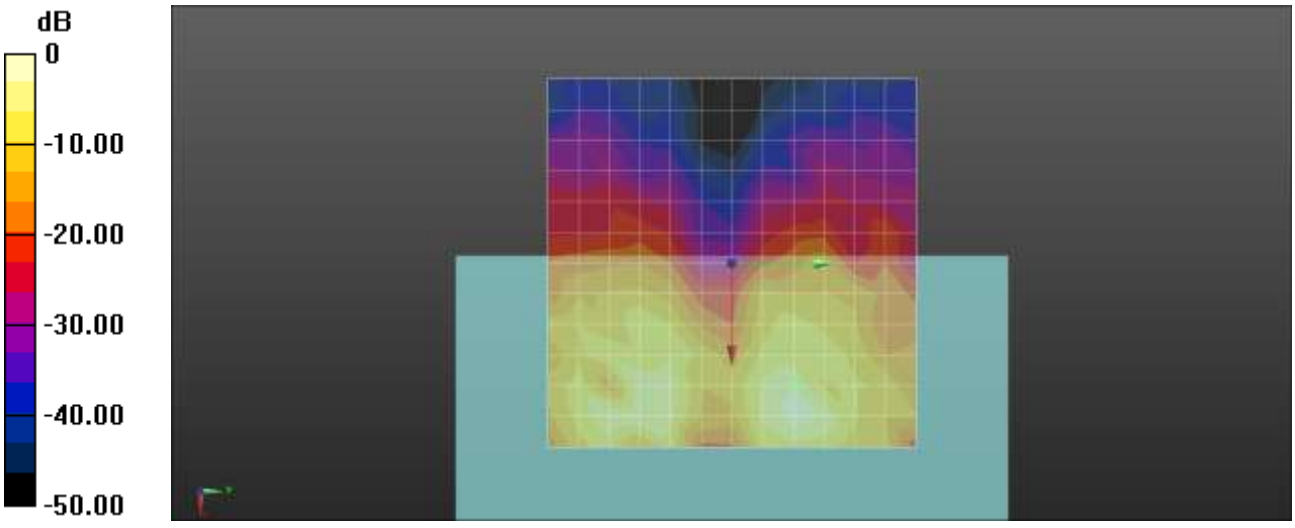
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.99 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 8.3, 3.7 mm

Cursor:
ABM2 = -47.14 dBA/m
Location: 16.7, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 44.15 dB
ABM1 comp = -2.99 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 8.3, 3.7 mm



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

Plot No.48
802_11a 6Mbps EVS wb 5_9 157ch Freq. Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

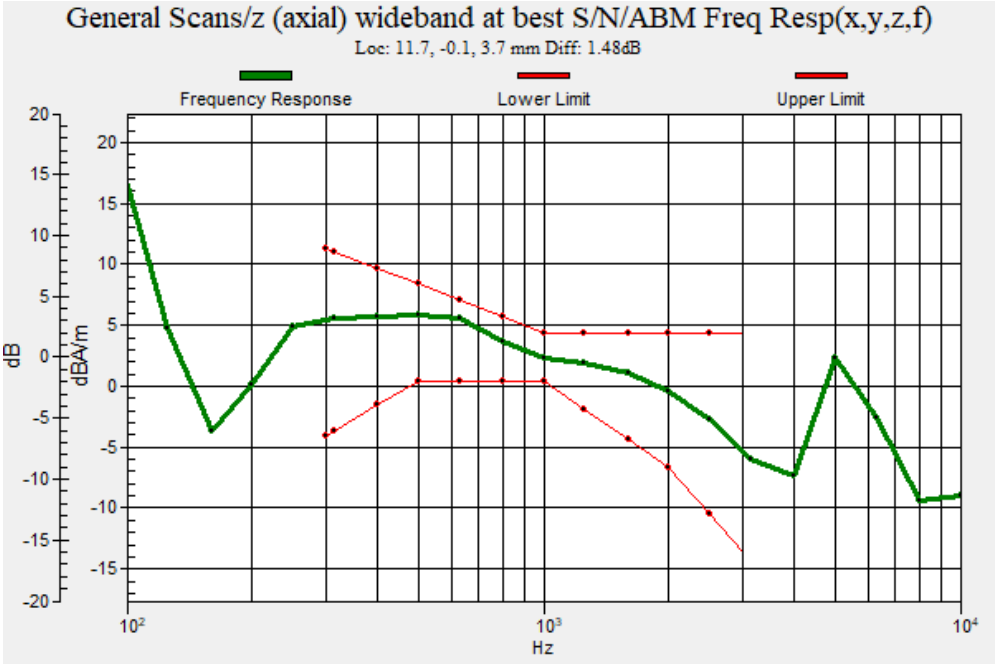
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.48 dB
BWC Factor = 9.47 dB
Location: 11.7, -0.1, 3.7 mm



Plot No.49
802_11a 6Mbps EVS wb 5_9 36ch z(axial)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

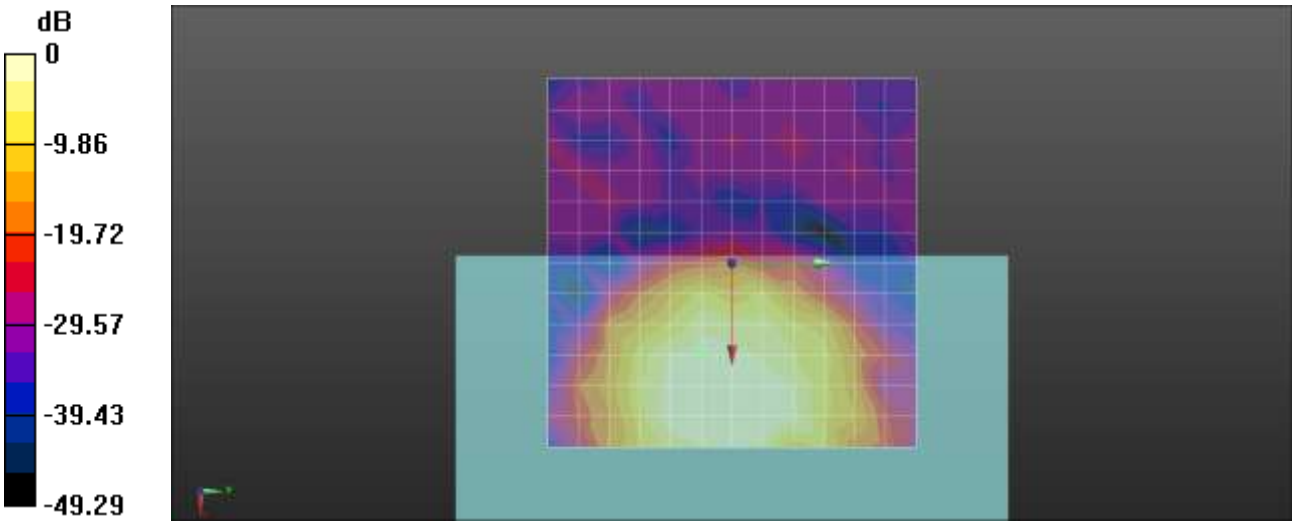
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.04 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, -4.2, 3.7 mm

Cursor:
ABM2 = -45.18 dBA/m
Location: 12.5, -4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 44.14 dB
ABM1 comp = -1.04 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, -4.2, 3.7 mm



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

Plot No.50
802_11a 6Mbps EVS wb 5_9 36ch y(transversal)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

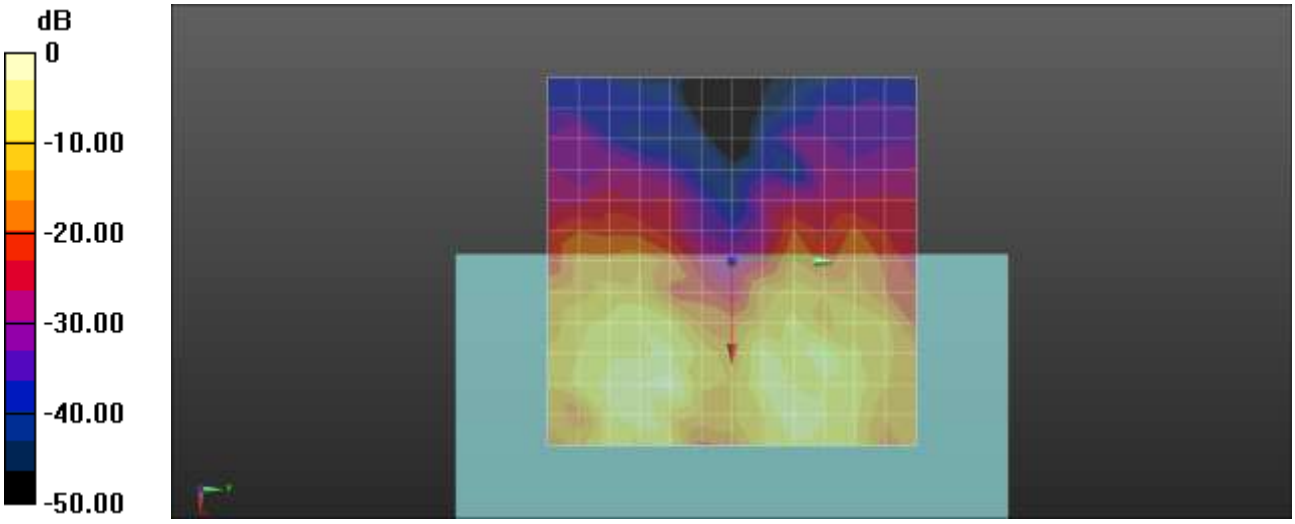
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.03 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 12.5, 3.7 mm

Cursor:
ABM2 = -49.46 dBA/m
Location: 12.5, 12.5, 3.7 mm

Cursor:
ABM1/ABM2 = 44.43 dB
ABM1 comp = -5.03 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 12.5, 3.7 mm



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

Plot No.51
802_11a 6Mbps EVS wb 5_9 36ch Freq. Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

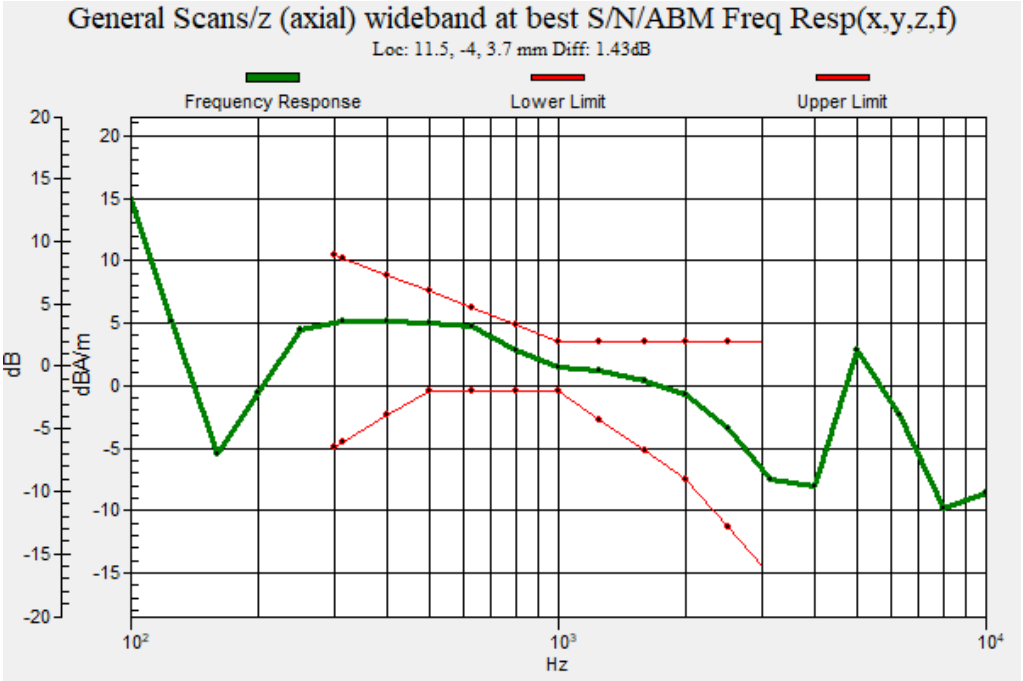
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.43 dB
BWC Factor = 9.47 dB
Location: 11.5, -4, 3.7 mm



Plot No.52
802_11a 6Mbps EVS wb 5_9 48ch z(axial)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

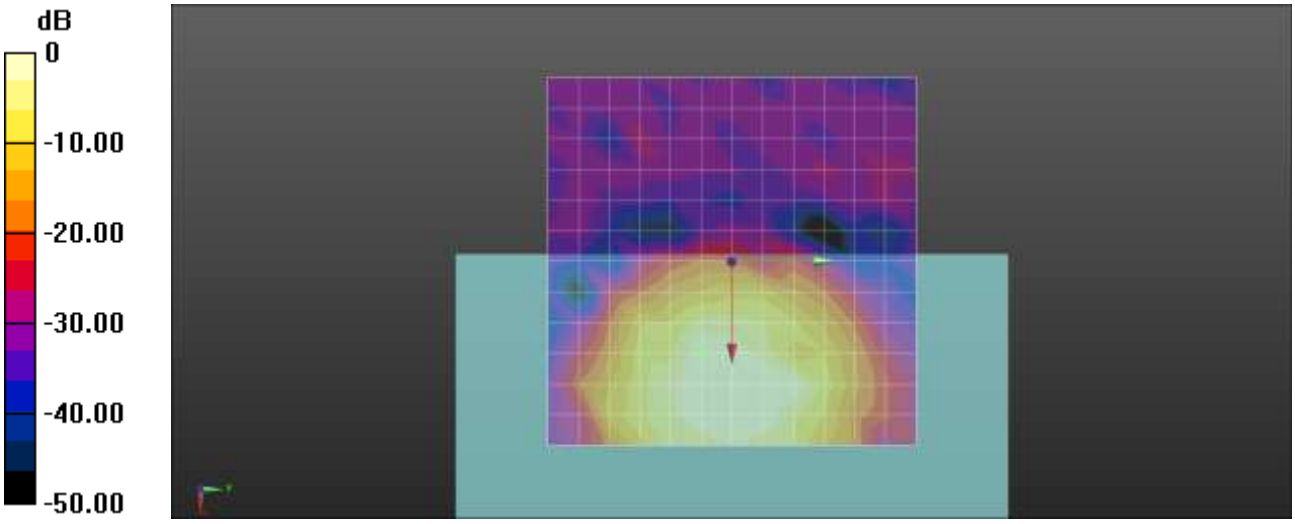
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.16 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, -4.2, 3.7 mm

Cursor:
ABM2 = -45.19 dBA/m
Location: 12.5, -4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 45.03 dB
ABM1 comp = -0.16 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, -4.2, 3.7 mm



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

Plot No.53
802_11a 6Mbps EVS wb 5_9 48ch y(transversal)

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

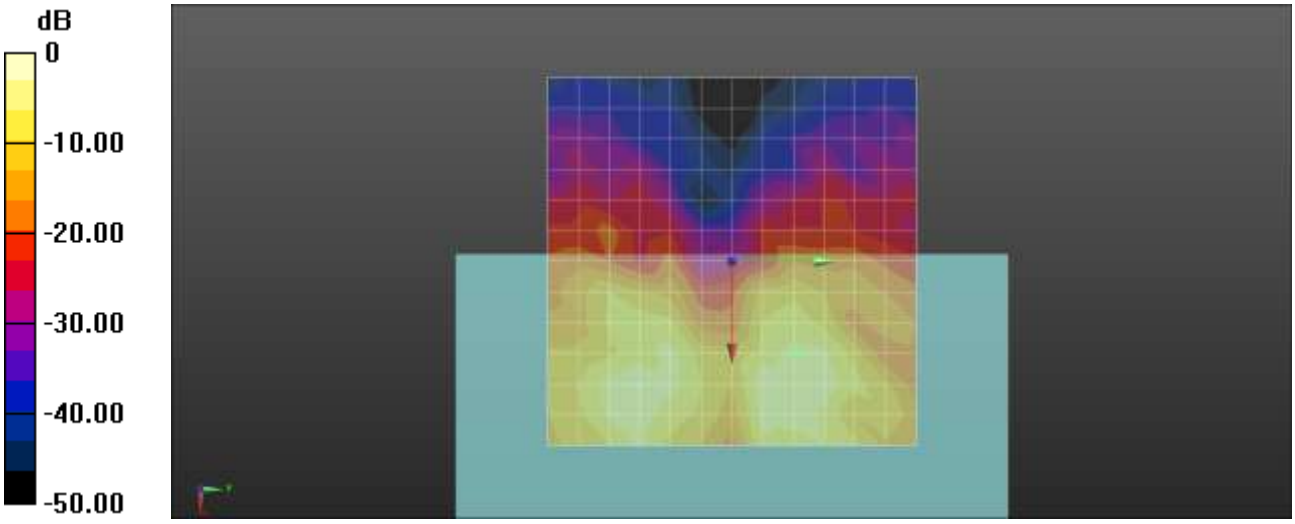
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 15.69
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.54 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM2 = -49.68 dBA/m
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 44.14 dB
ABM1 comp = -5.54 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 8.3, 3.7 mm



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

Plot No.54
802_11a 6Mbps EVS wb 5_9 48ch Freq. Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

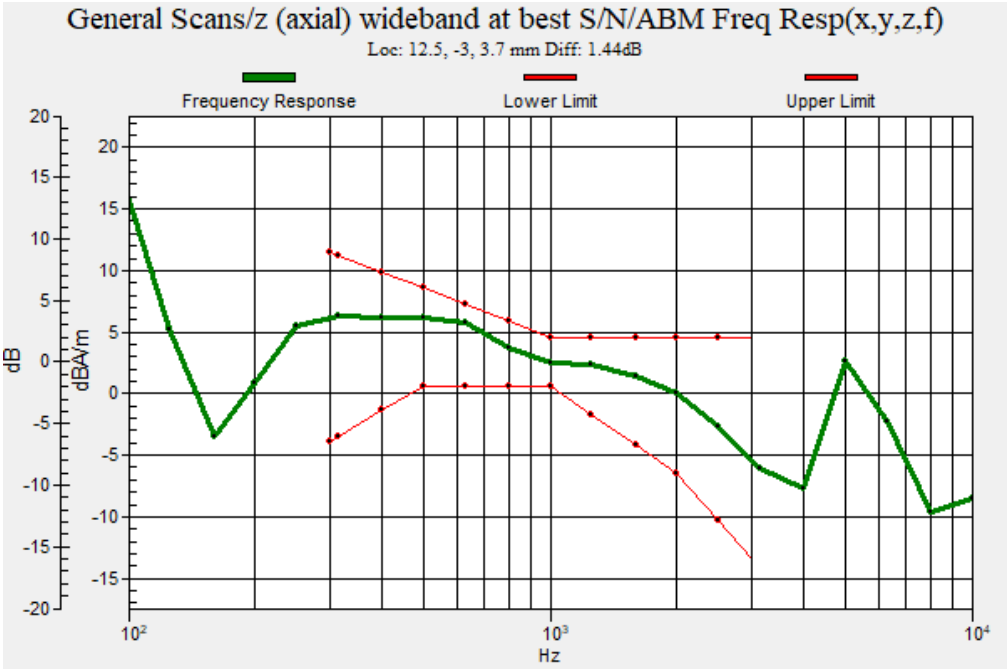
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 47.57
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.44 dB
BWC Factor = 9.47 dB
Location: 12.5, -3, 3.7 mm



Plot No.55
GSM1900 661ch bit rate 6 z(axial)

Communication System: UID 0, GSM 1900 2TX (0); Frequency: 1850.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

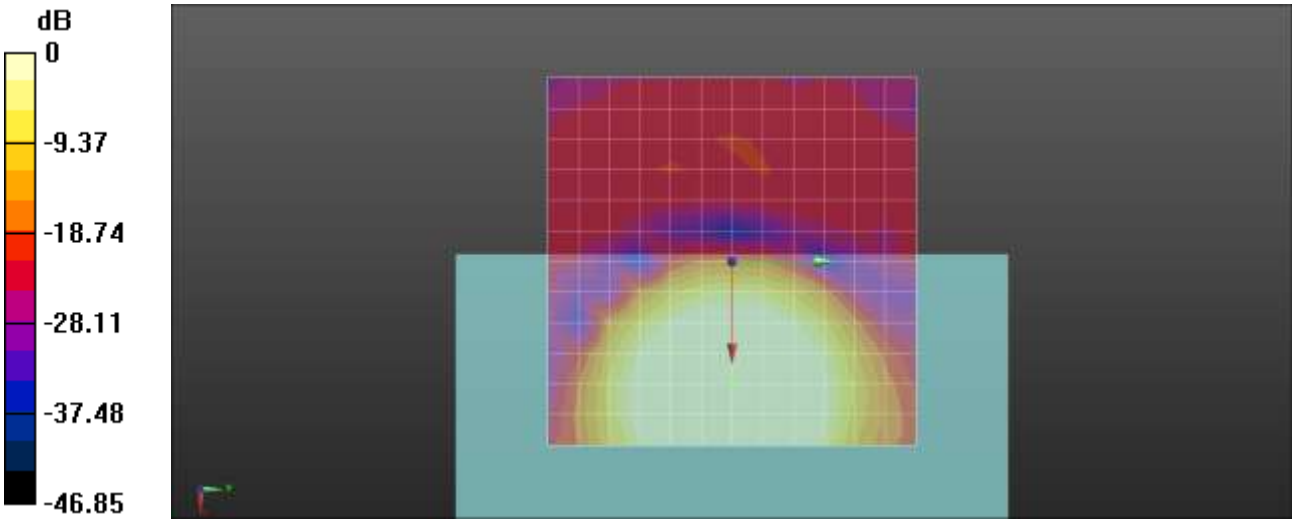
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 9.76 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 0, 3.7 mm

Cursor:
ABM2 = -26.61 dBA/m
Location: 16.7, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 36.37 dB
ABM1 comp = 9.76 dBA/m
BWC Factor = 0.16 dB
Location: 16.7, 0, 3.7 mm



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

Plot No.56
GSM1900 661ch bit rate 6 y(transversal)

Communication System: UID 0, GSM 1900 2TX (0); Frequency: 1850.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

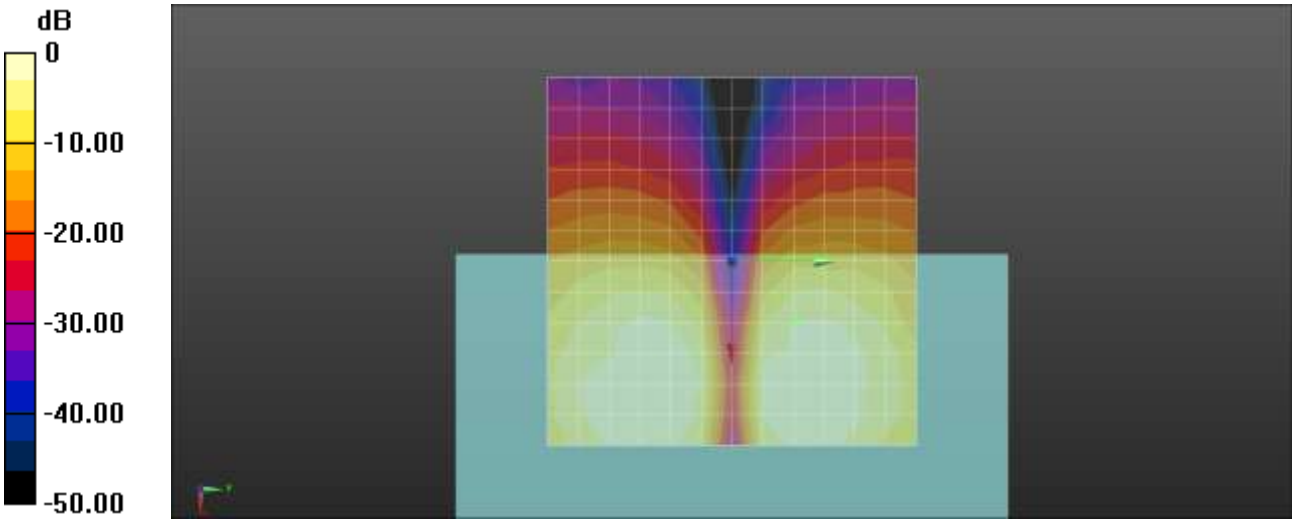
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.89 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM2 = -45.03 dBA/m
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 42.14 dB
ABM1 comp = -2.89 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm



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

Plot No.57
GSM1900 661ch bit rate 6 Freq. Response

Communication System: UID 0, GSM 1900 2TX (0); Frequency: 1850.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

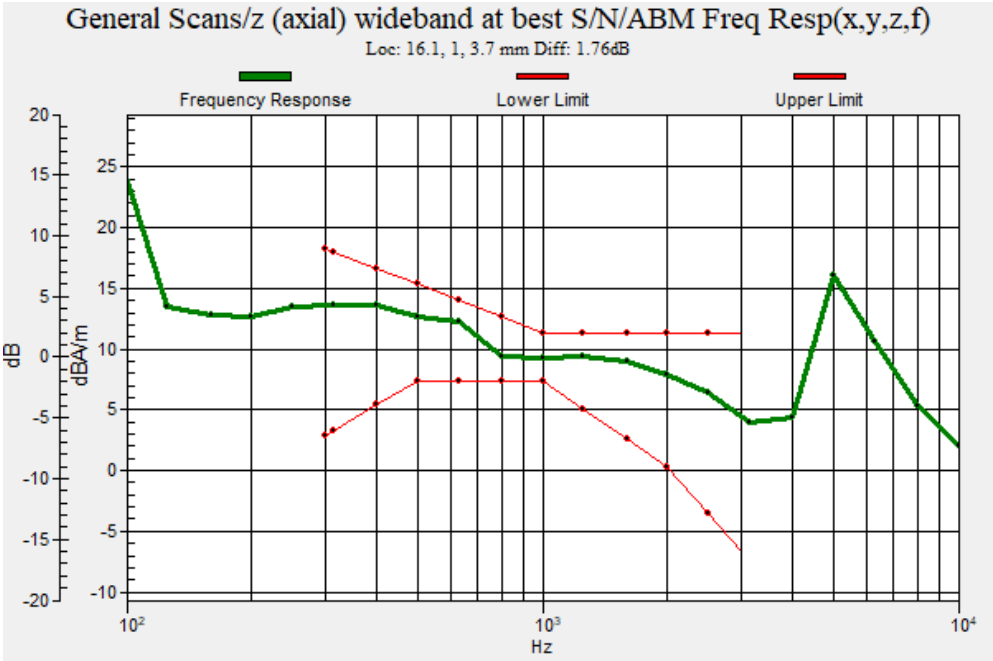
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.48 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.76 dB
BWC Factor = 9.48 dB
Location: 16.1, 1, 3.7 mm



Plot No.58
WCDMA 1900 9400ch bit rate 6 z(axial)

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

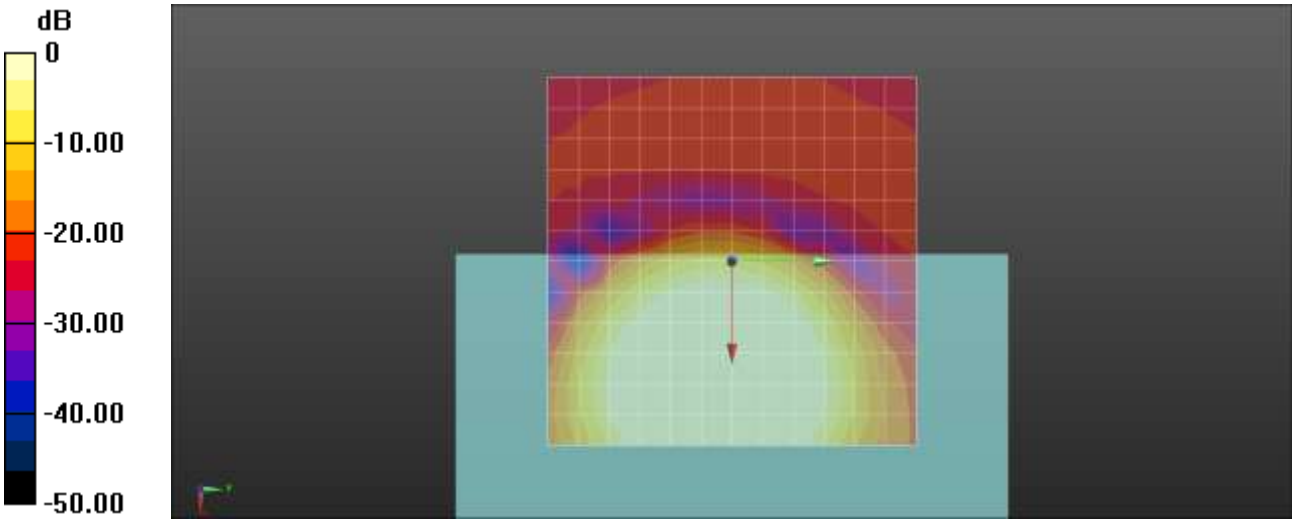
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.20 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 9.63 dBA/m
BWC Factor = 0.20 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -44.20 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 53.83 dB
ABM1 comp = 9.63 dBA/m
BWC Factor = 0.20 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.59
WCDMA 1900 9400ch bit rate 6 y(transversal)

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

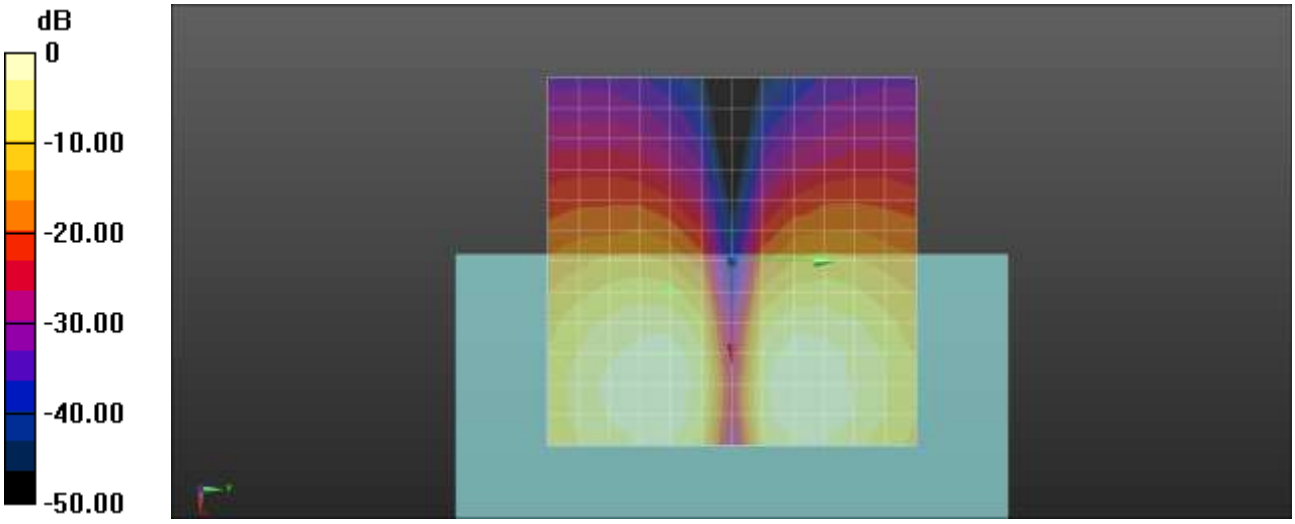
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.20 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.66 dBA/m
BWC Factor = 0.20 dB
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM2 = -50.24 dBA/m
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 51.90 dB
ABM1 comp = 1.66 dBA/m
BWC Factor = 0.20 dB
Location: 12.5, 4.2, 3.7 mm



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

Plot No.60
WCDMA 1900 9400ch bit rate 6 Freq. Response

Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

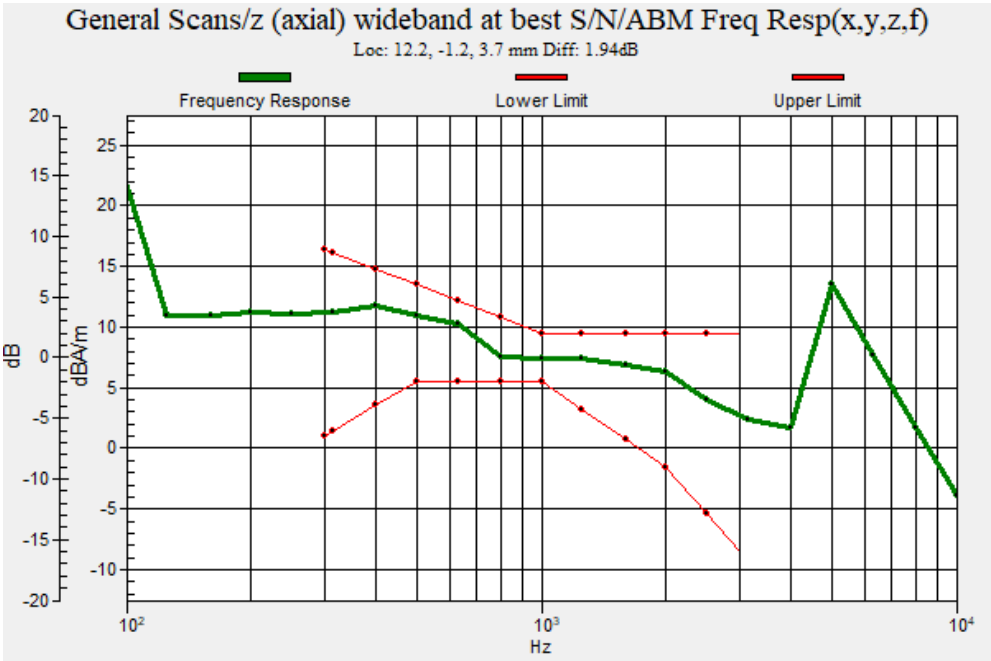
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.51 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.94 dB
BWC Factor = 9.51 dB
Location: 12.2, -1.2, 3.7 mm



Plot No.61
WCDMA 1700 1412ch bit rate 6 z(axial)

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

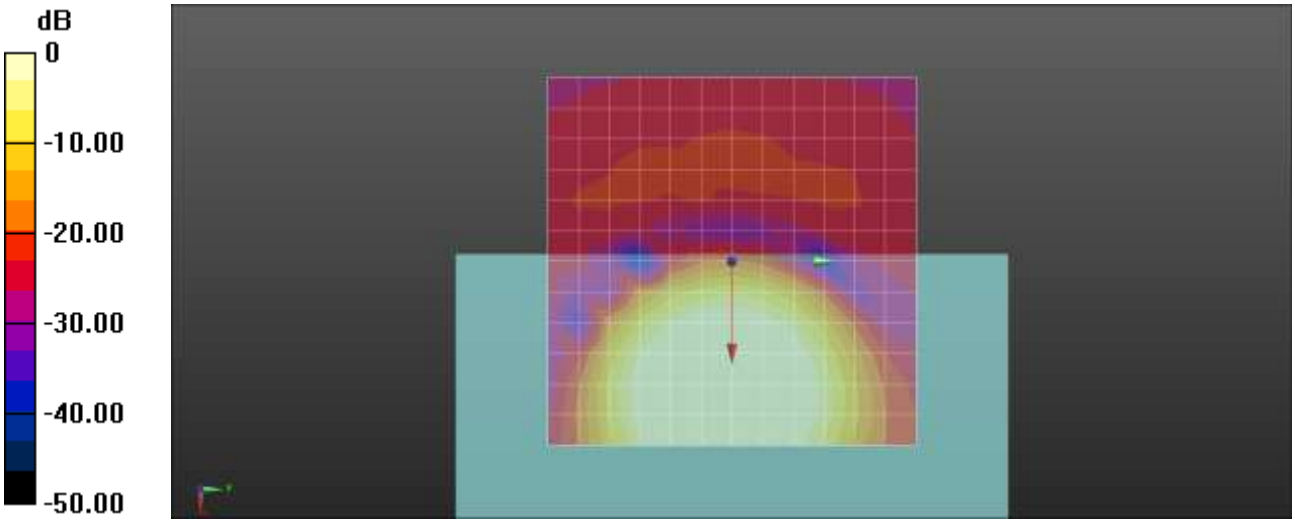
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.57 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -40.27 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 46.83 dB
ABM1 comp = 6.57 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.62
WCDMA 1700 1412ch bit rate 6 y(transversal)

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

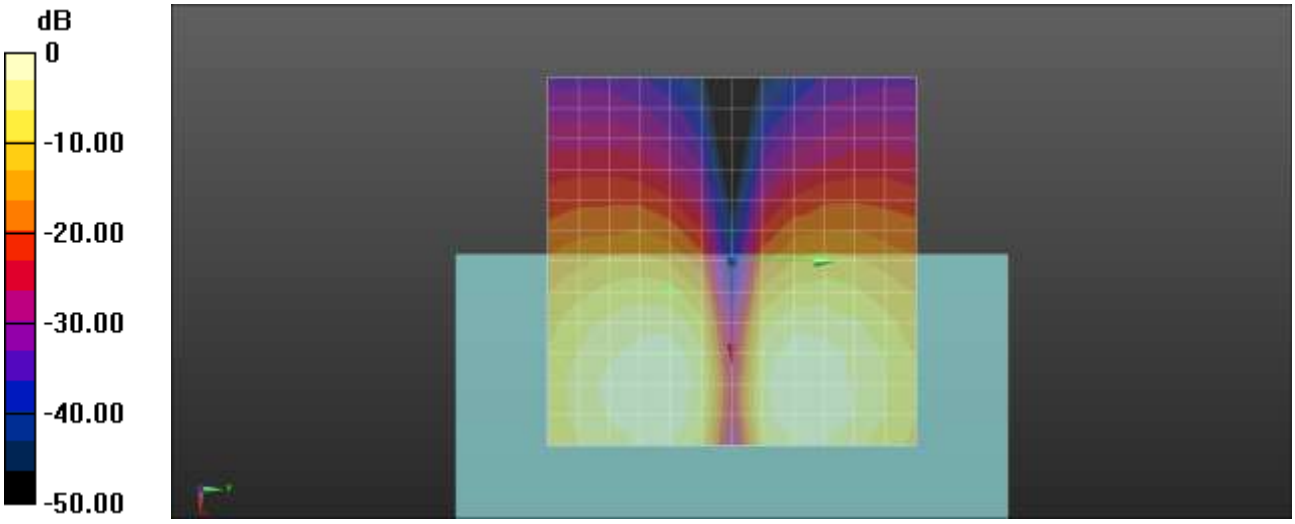
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -8.45 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -8.3, 3.7 mm

Cursor:
ABM2 = -51.29 dBA/m
Location: 4.2, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 42.84 dB
ABM1 comp = -8.45 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -8.3, 3.7 mm



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

Plot No.63
WCDMA 1700 1412ch bit rate 6 Freq. Response

Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

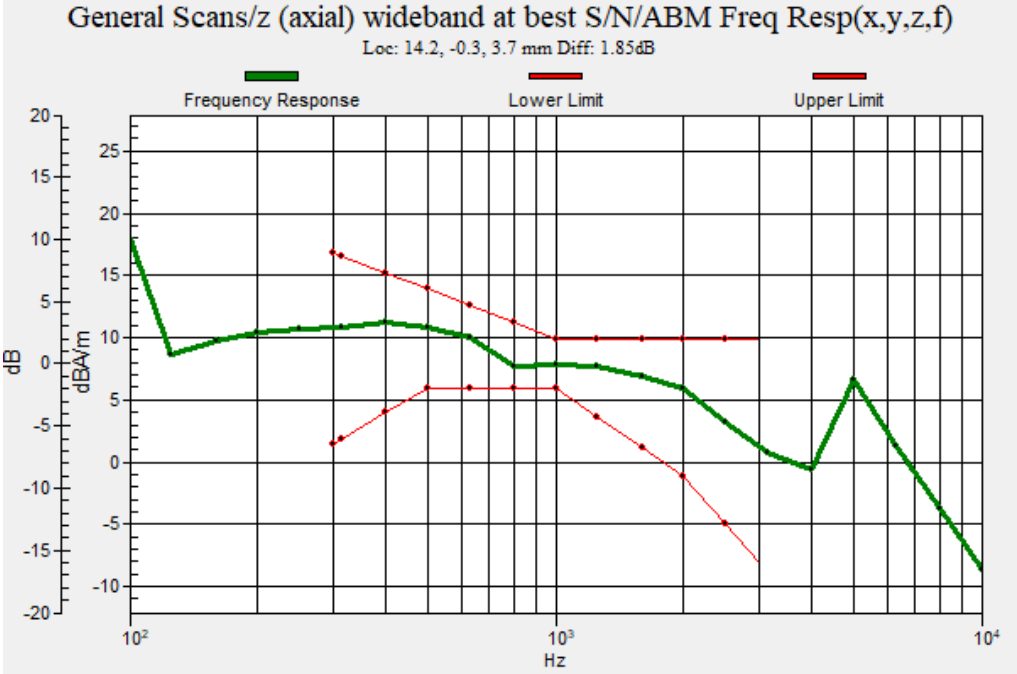
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.85 dB
BWC Factor = 9.47 dB
Location: 14.2, -0.3, 3.7 mm



Plot No.64
WCDMA 850 4183ch bit rate 6 z(axial)

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

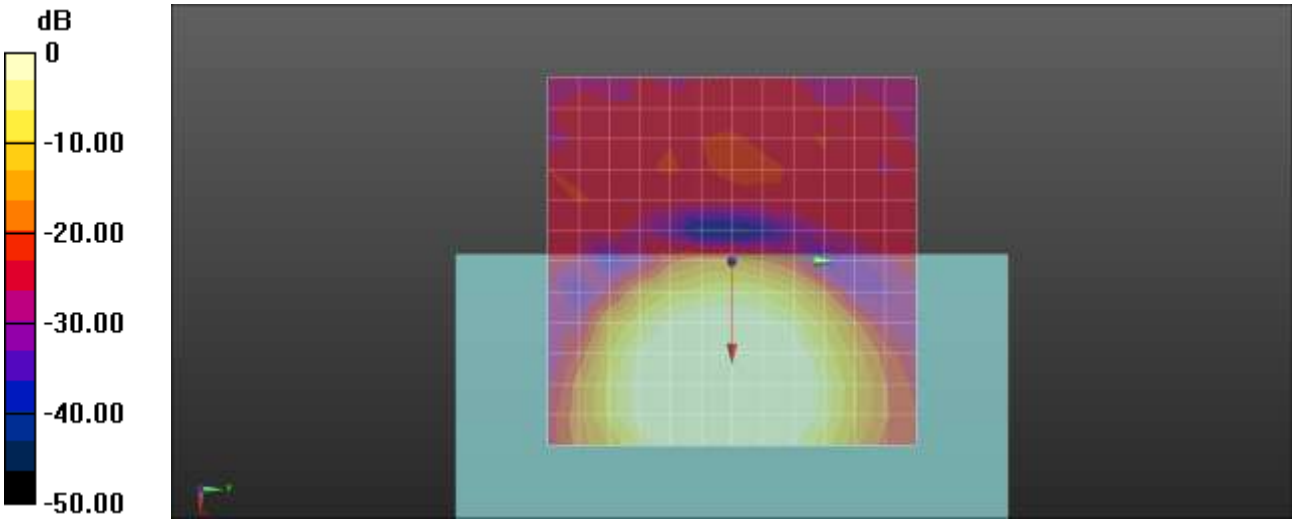
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.36 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -38.21 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 44.57 dB
ABM1 comp = 6.36 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.65
WCDMA 850 4183ch bit rate 6 y(transversal)

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

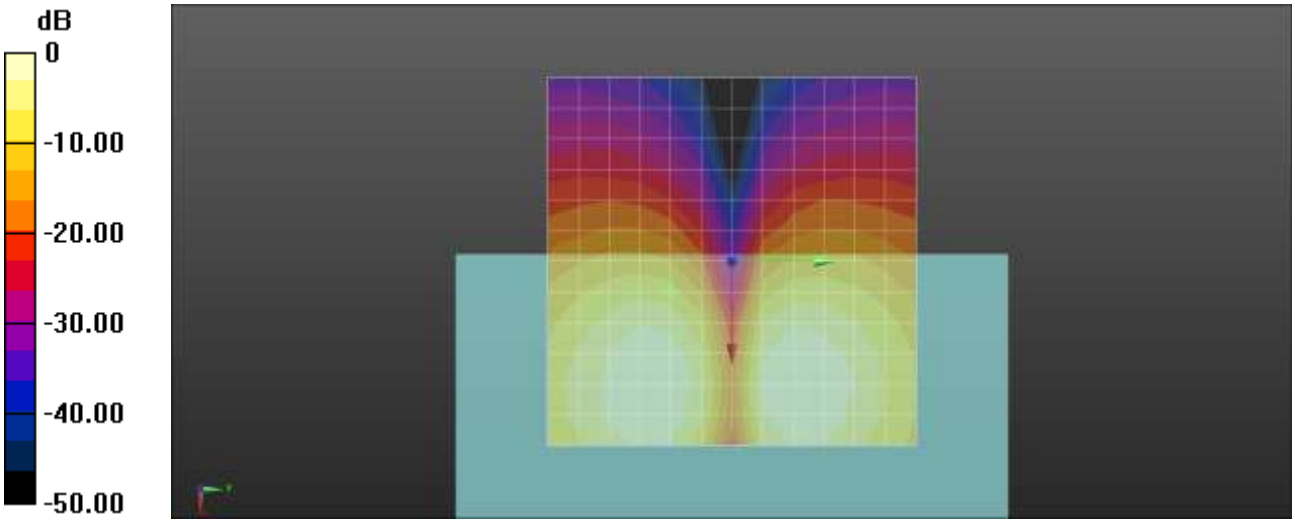
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -8.11 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -8.3, 3.7 mm

Cursor:
ABM2 = -49.92 dBA/m
Location: 4.2, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 41.81 dB
ABM1 comp = -8.11 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -8.3, 3.7 mm



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

Plot No.66
WCDMA 850 4183ch bit rate 6 Freq. Response

Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

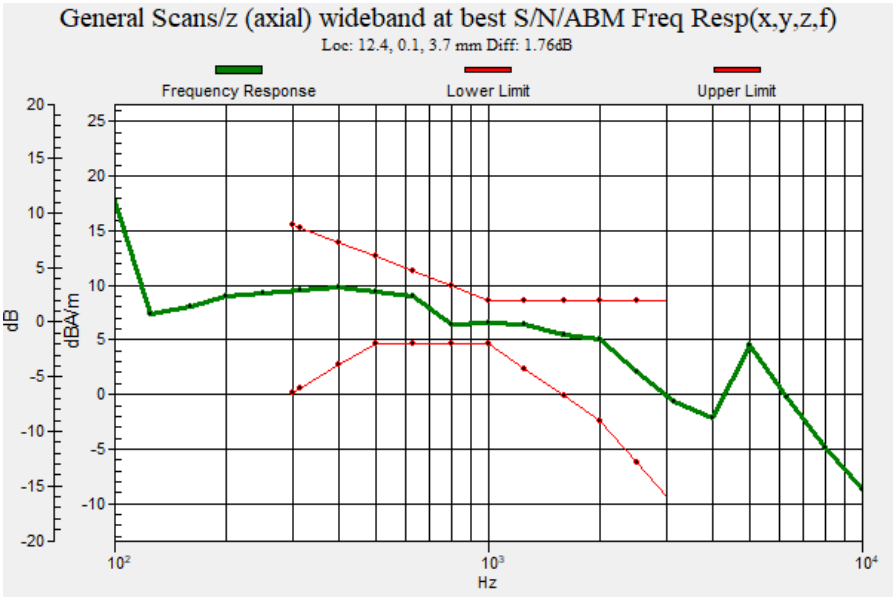
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.76 dB
BWC Factor = 9.47 dB
Location: 12.4, 0.1, 3.7 mm



Plot No.67
LTE Band 12 QPSK 10MHz 25RB 12offset 23095ch bit rate 40 z(axial)

Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

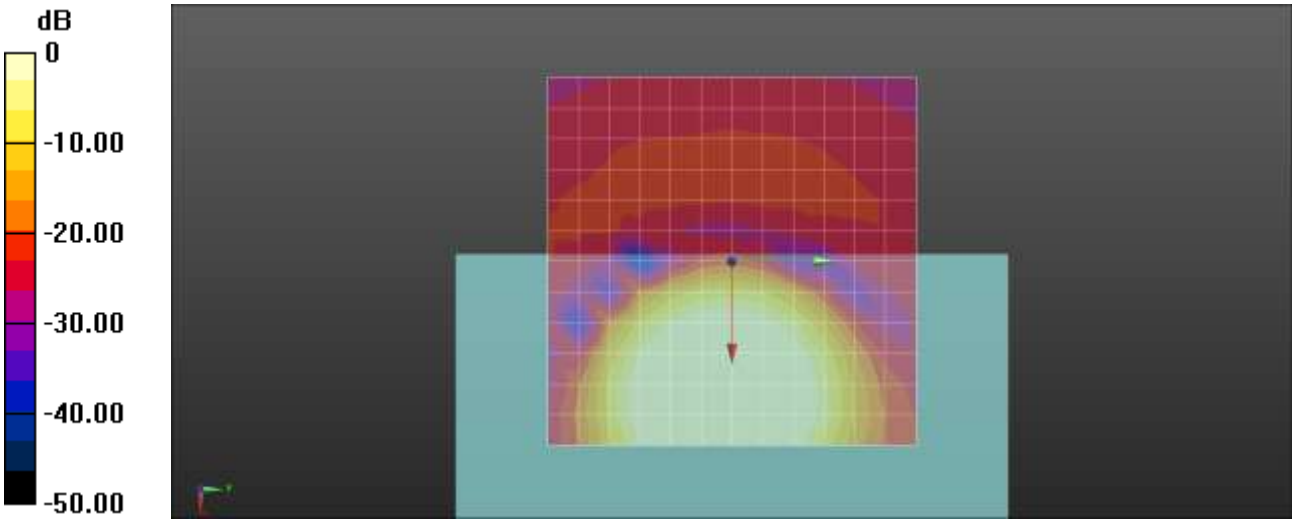
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.70 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -39.64 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 46.34 dB
ABM1 comp = 6.70 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.68
LTE Band 12 QPSK 10MHz 25RB 12offset 23095ch bit rate 40 y(transversal)

Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

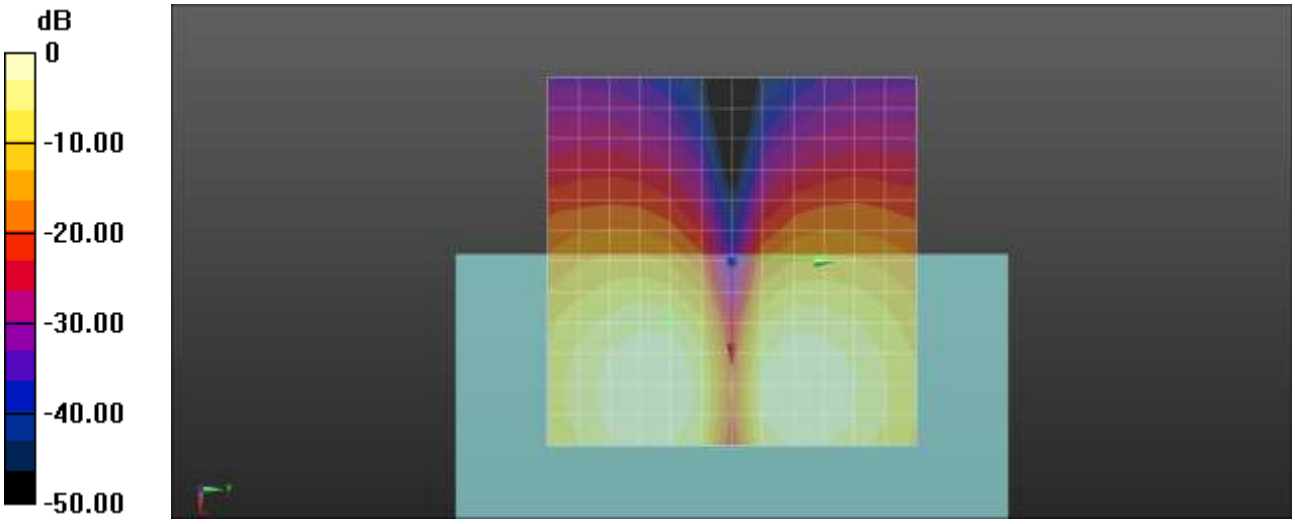
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -4.31 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -47.34 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 43.03 dB
ABM1 comp = -4.31 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.69
LTE Band 12 QPSK 10MHz 25RB 12offset 23095ch bit rate 40 Freq. Response

Communication System: UID 0, LTE Band12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

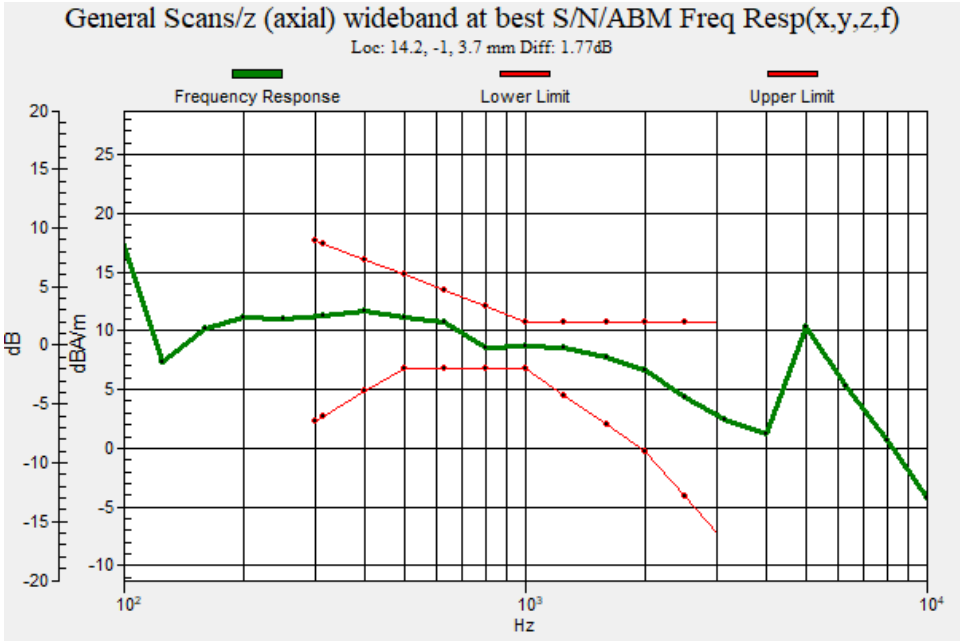
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.77 dB
BWC Factor = 9.47 dB
Location: 14.2, -1, 3.7 mm



Plot No.70
LTE Band 13 QPSK 10MHz 25RB 12offset 23230ch bit rate 40

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

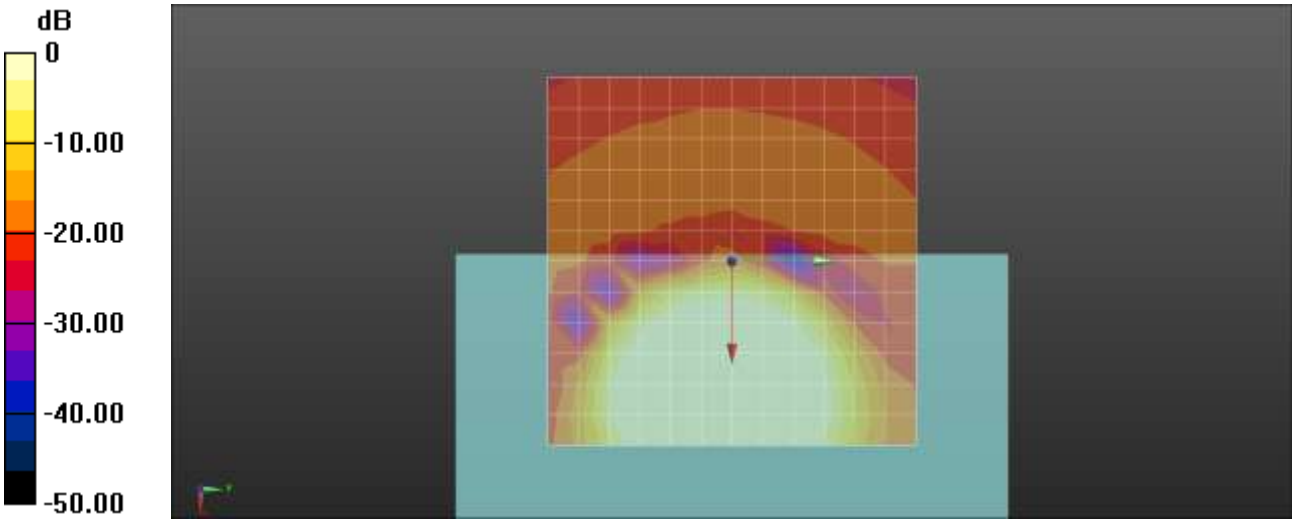
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 10.53 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -39.25 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 49.78 dB
ABM1 comp = 10.53 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.71
LTE Band 13 QPSK 10MHz 25RB 12offset 23230ch bit rate 40 y(transversal)

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

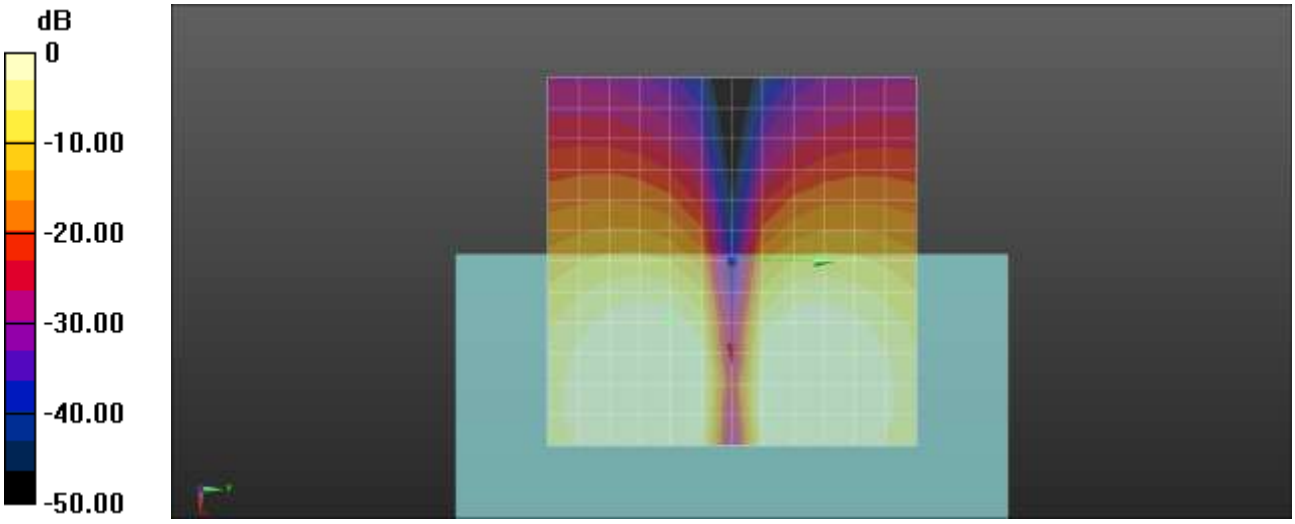
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.64 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -47.76 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 47.12 dB
ABM1 comp = -0.64 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.72
LTE Band 13 QPSK 10MHz 25RB 12offset 23230ch bit rate 40 Freq. Response

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

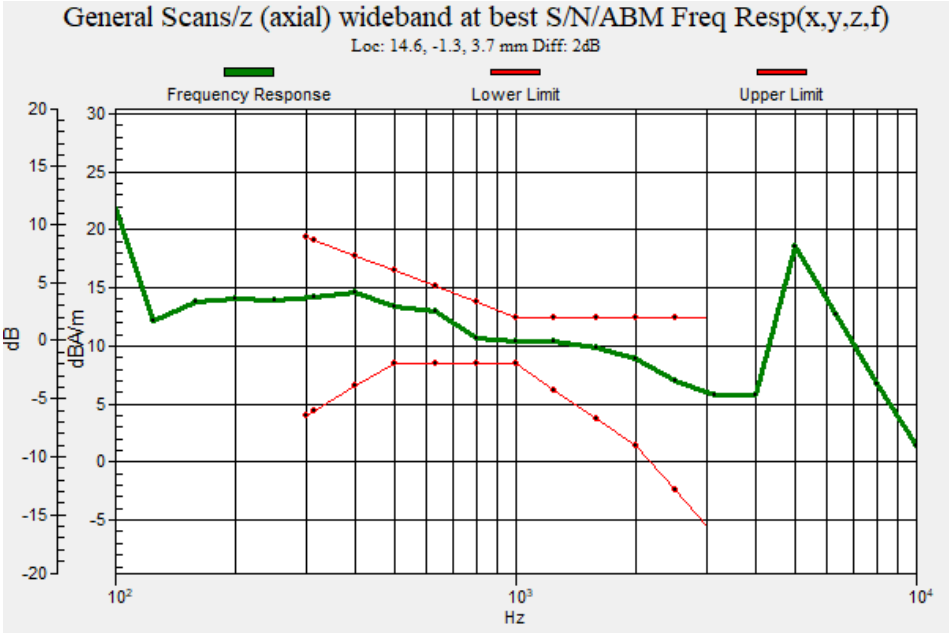
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.47 dB
Location: 14.6, -1.3, 3.7 mm



Plot No.73
LTE Band 25 QPSK 20MHz 50RB 25offset 26365ch bit rate 40 z(axial)

Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

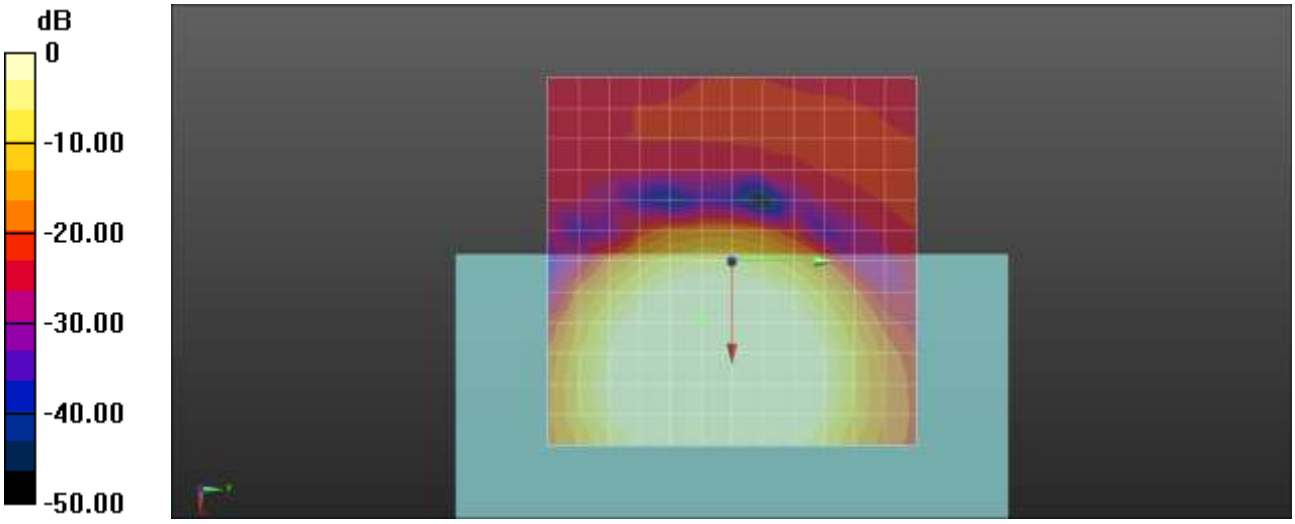
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.47 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, -4.2, 3.7 mm

Cursor:
ABM2 = -45.05 dBA/m
Location: 8.3, -4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 51.52 dB
ABM1 comp = 6.47 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, -4.2, 3.7 mm



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

Plot No.74
LTE Band 25 QPSK 20MHz 50RB 25offset 26365ch bit rate 40 y(transversal)

Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

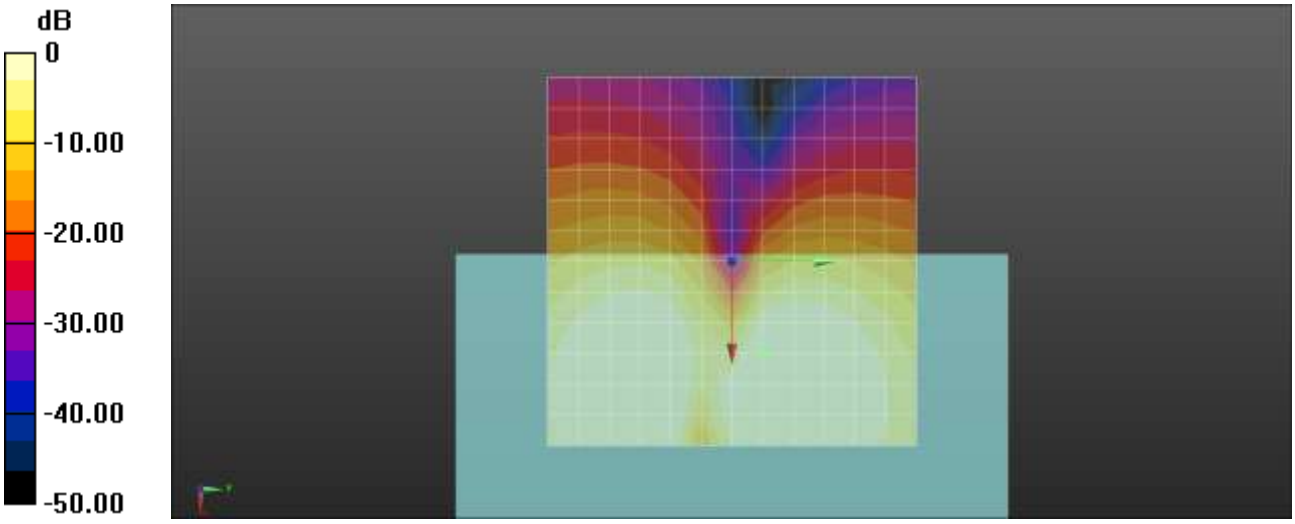
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 2.95 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM2 = -48.38 dBA/m
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 51.33 dB
ABM1 comp = 2.95 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 4.2, 3.7 mm



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

Plot No.75
LTE Band 25 QPSK 20MHz 50RB 25offset 26365ch bit rate 40 Freq. Response

Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

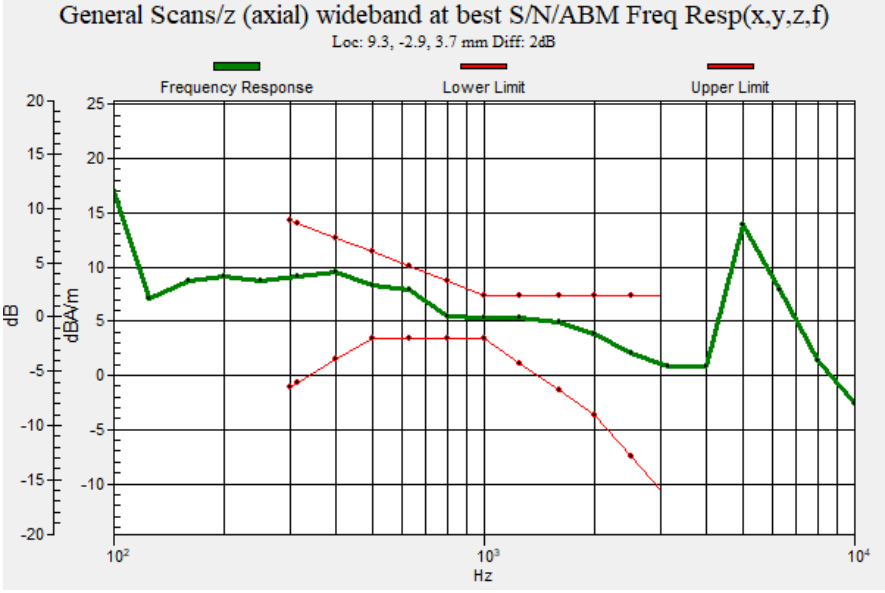
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.52 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 2.00 dB
BWC Factor = 9.52 dB
Location: 9.3, -2.9, 3.7 mm



Plot No.76
LTE Band 26 QPSK 15MHz 36RB 18offset 26865ch bit rate 40 z(axial)

Communication System: UID 0, LTE band 26(TELEC) (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

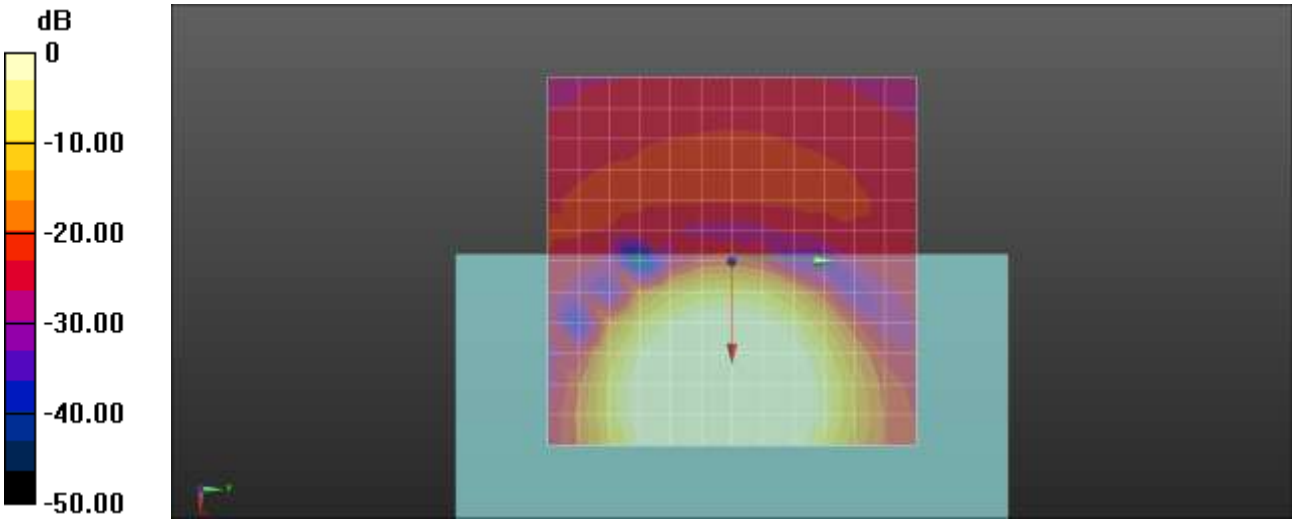
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.64 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -39.39 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 46.03 dB
ABM1 comp = 6.64 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.77
LTE Band 26 QPSK 15MHz 36RB 18offset 26865ch bit rate 40 y(transversal)

Communication System: UID 0, LTE band 26(TELEC) (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

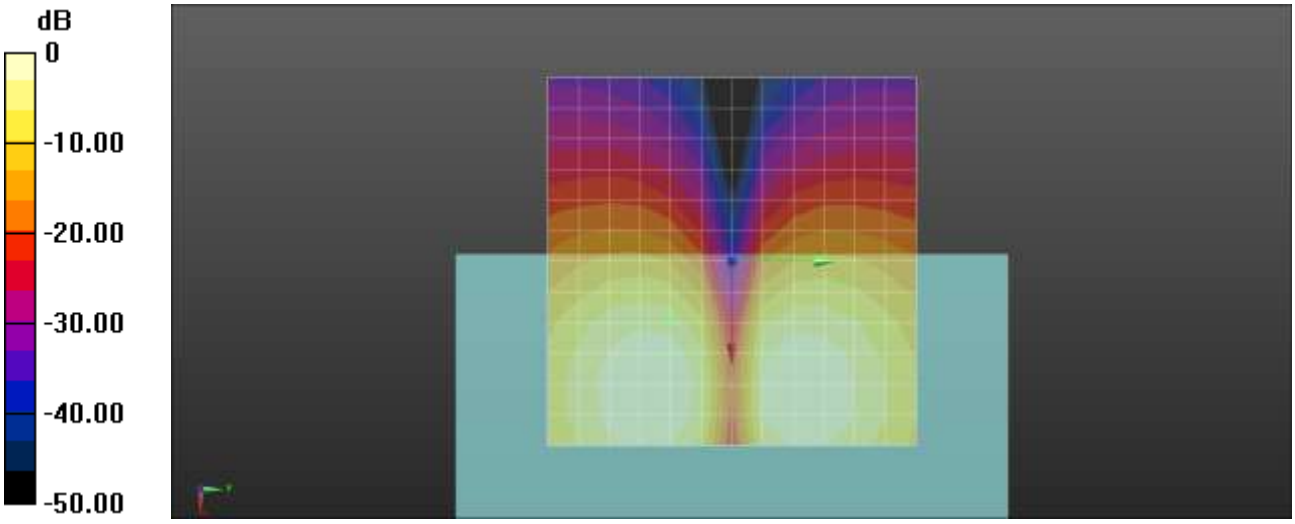
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -4.66 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -47.23 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 42.57 dB
ABM1 comp = -4.66 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.78
LTE Band 26 QPSK 15MHz 36RB 18offset 26865ch bit rate 40 Freq. Response

Communication System: UID 0, LTE band 26(TELEC) (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

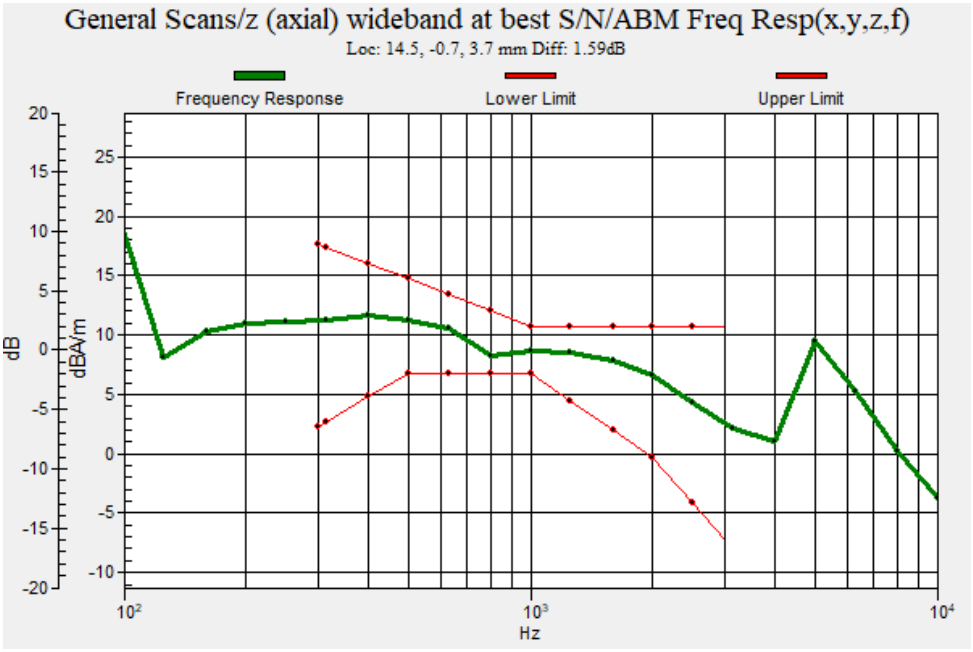
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.59 dB
BWC Factor = 9.47 dB
Location: 14.5, -0.7, 3.7 mm



Plot No.79
LTE Band 41 QPSK 20MHz 1RB 99offset 39750ch Bitrate 40

DUT: SM-B572B; Type: Bar

Communication System: UID 0, LTE Band 41 (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58016
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

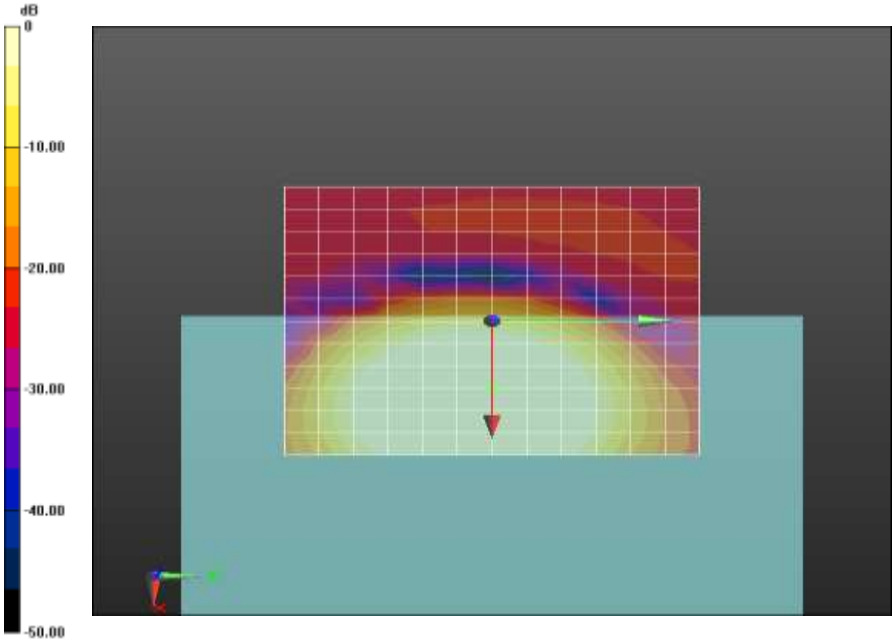
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 9.17 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -24.03 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 33.20 dB
ABM1 comp = 9.17 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.80
LTE Band 41 QPSK 20MHz 1RB 99offset 39750ch Bitrate 40

DUT: SM-B572B; Type: Bar

Communication System: UID 0, LTE Band 41 (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58016
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

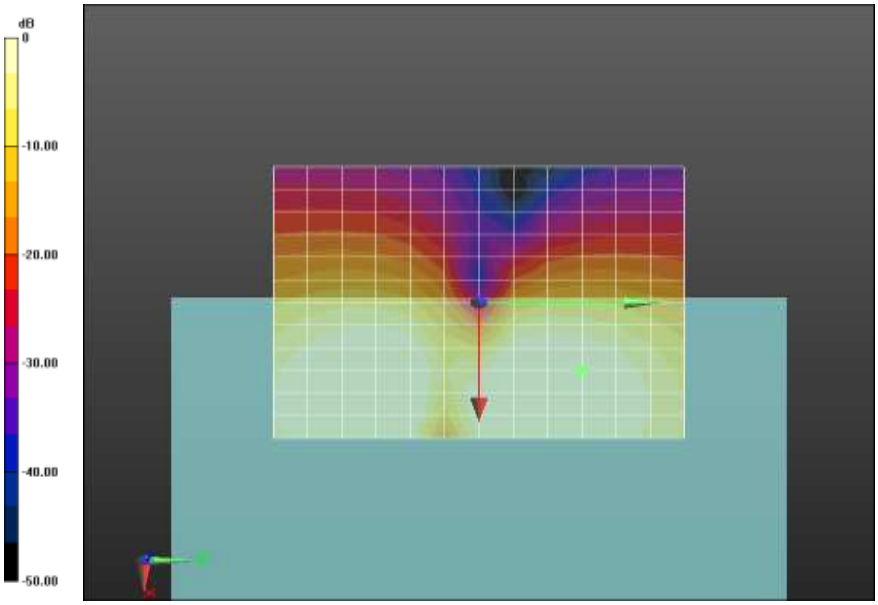
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 2.05 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 12.5, 3.7 mm

Cursor:
ABM2 = -37.54 dBA/m
Location: 12.5, 12.5, 3.7 mm

Cursor:
ABM1/ABM2 = 39.60 dB
ABM1 comp = 2.05 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 12.5, 3.7 mm



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

Plot No.81

LTE Band 41 QPSK 20MHz 1RB 99offset 39750ch Bitrate 40

DUT: SM-B572B; Type: Bar

Communication System: UID 0, LTE Band 41 (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58016
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

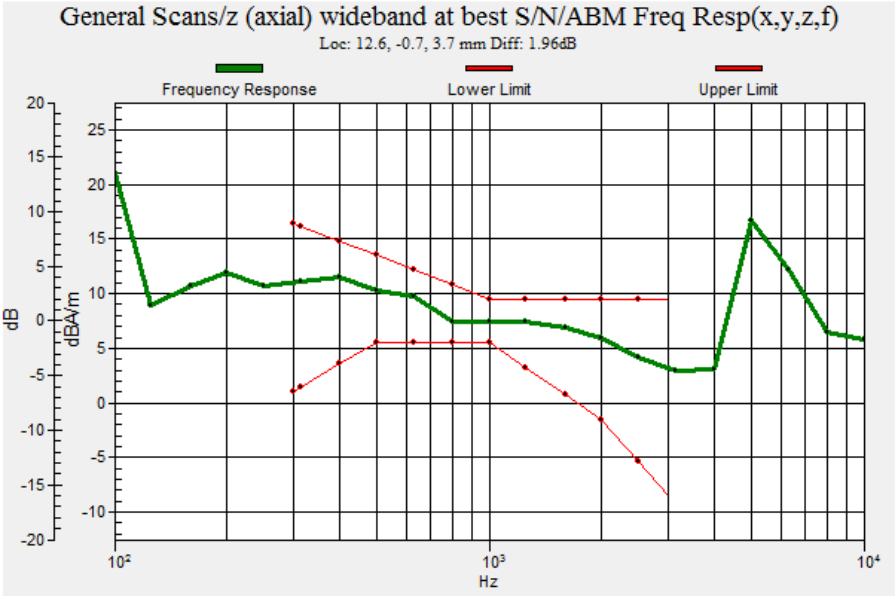
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.53 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.96 dB
BWC Factor = 9.53 dB
Location: 12.6, -0.7, 3.7 mm



Plot No.82
LTE Band 66 QPSK 20MHz 50RB 25offset 132322ch bit rate 40 z(axial)

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

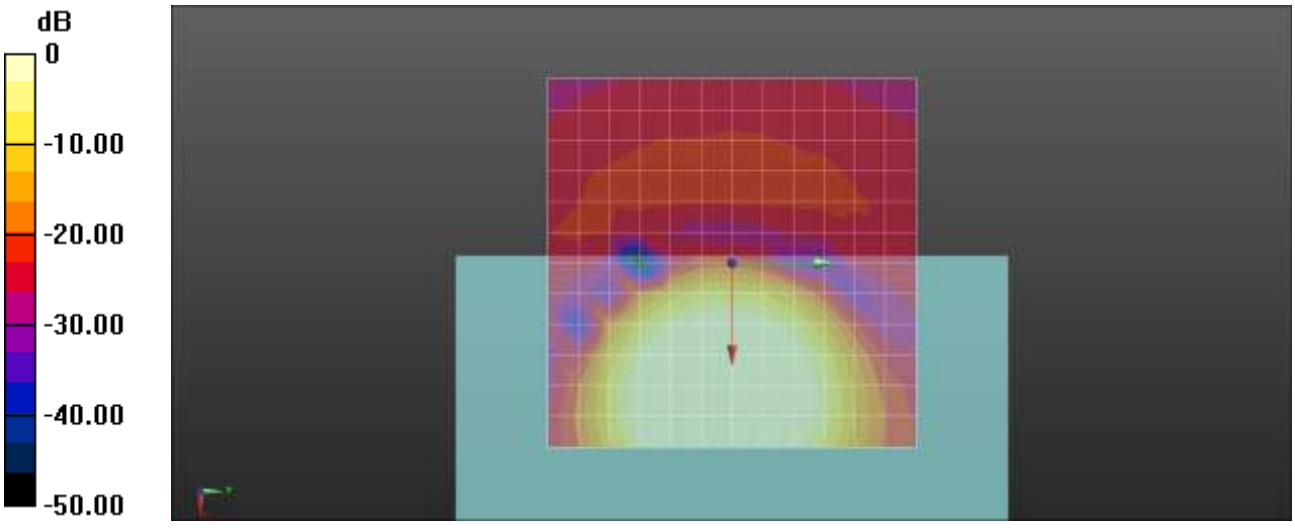
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.61 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -38.59 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 45.21 dB
ABM1 comp = 6.61 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.83
LTE Band 66 QPSK 20MHz 50RB 25offset 132322ch bit rate 40 y(transversal)

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

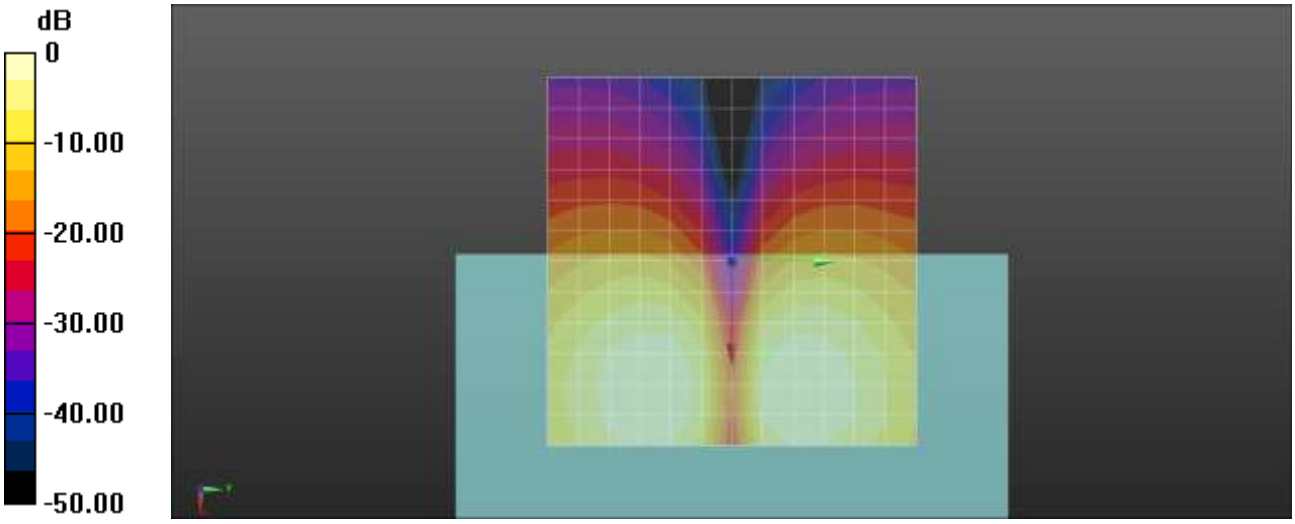
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -4.27 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM2 = -46.33 dBA/m
Location: 12.5, 4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 42.05 dB
ABM1 comp = -4.27 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 4.2, 3.7 mm



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

Plot No.84
LTE Band 66 QPSK 20MHz 50RB 25offset 132322ch bit rate 40 Freq. Response

Communication System: UID 0, LTE Band66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

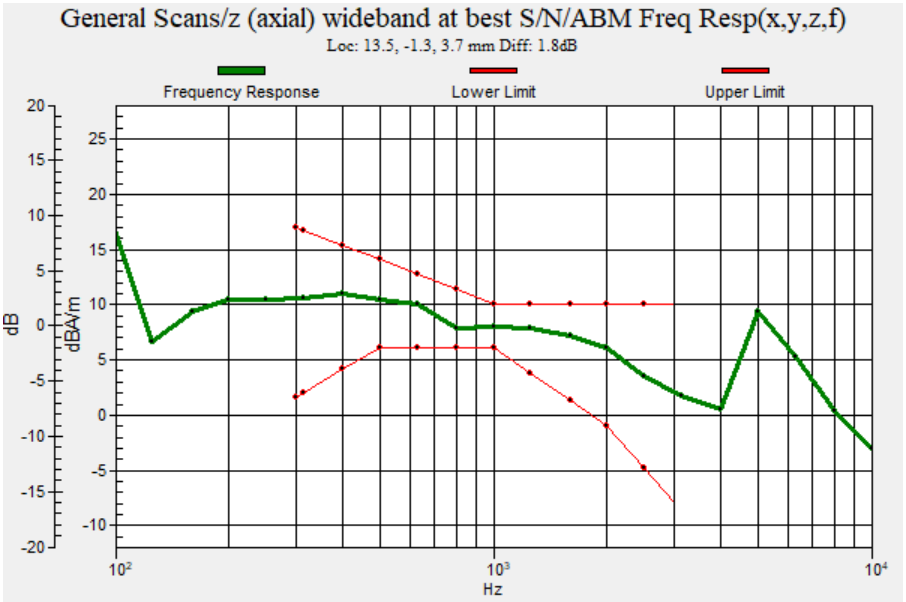
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.80 dB
BWC Factor = 9.47 dB
Location: 13.5, -1.3, 3.7 mm



Plot No.85
802.11b 5.5Mbps 11ch Bitrate 6 z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

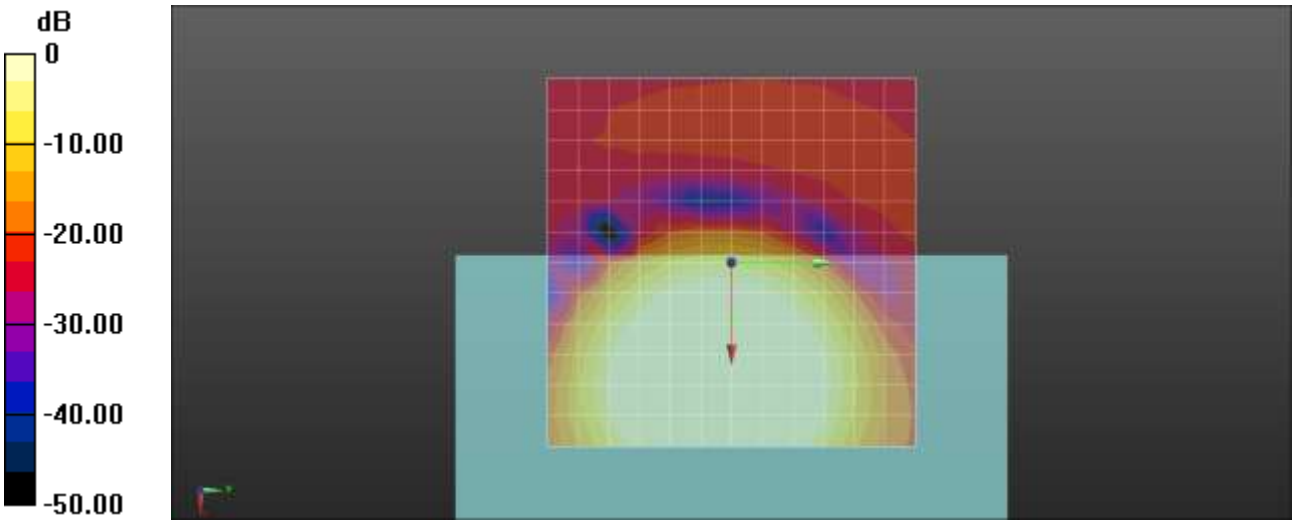
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.58 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, 0, 3.7 mm

Cursor:
ABM2 = -37.65 dBA/m
Location: 8.3, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 44.23 dB
ABM1 comp = 6.58 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, 0, 3.7 mm



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

Plot No.86
802.11b 5.5Mbps 11ch Bitrate 6 y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

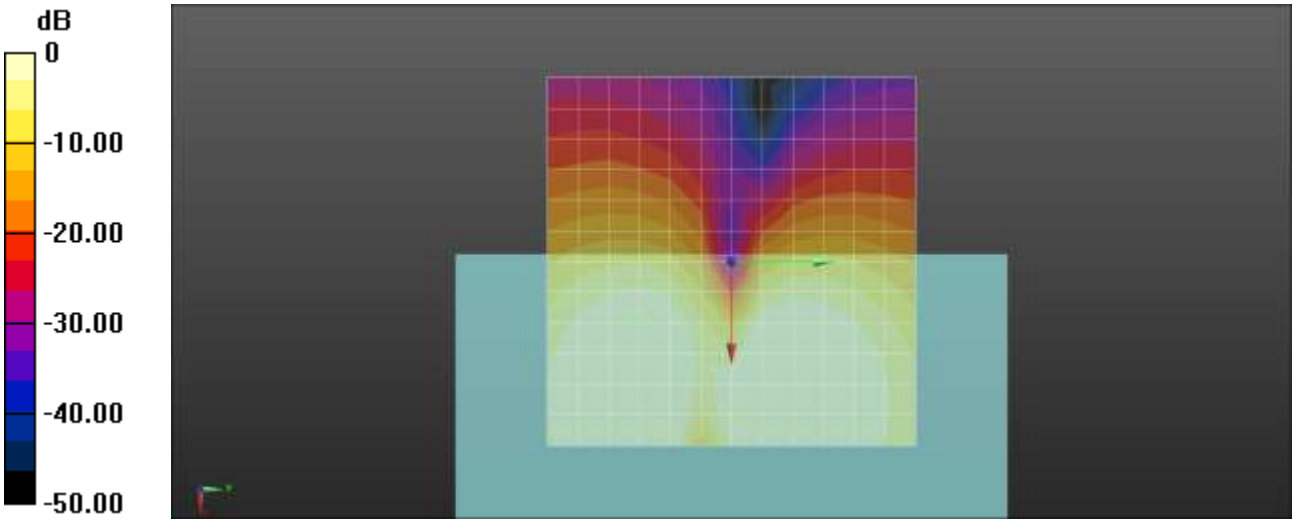
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.62 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, -12.5, 3.7 mm

Cursor:
ABM2 = -49.83 dBA/m
Location: 8.3, -12.5, 3.7 mm

Cursor:
ABM1/ABM2 = 51.45 dB
ABM1 comp = 1.62 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, -12.5, 3.7 mm



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

Plot No.87
802.11b 5.5Mbps 11ch Bitrate 6 Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

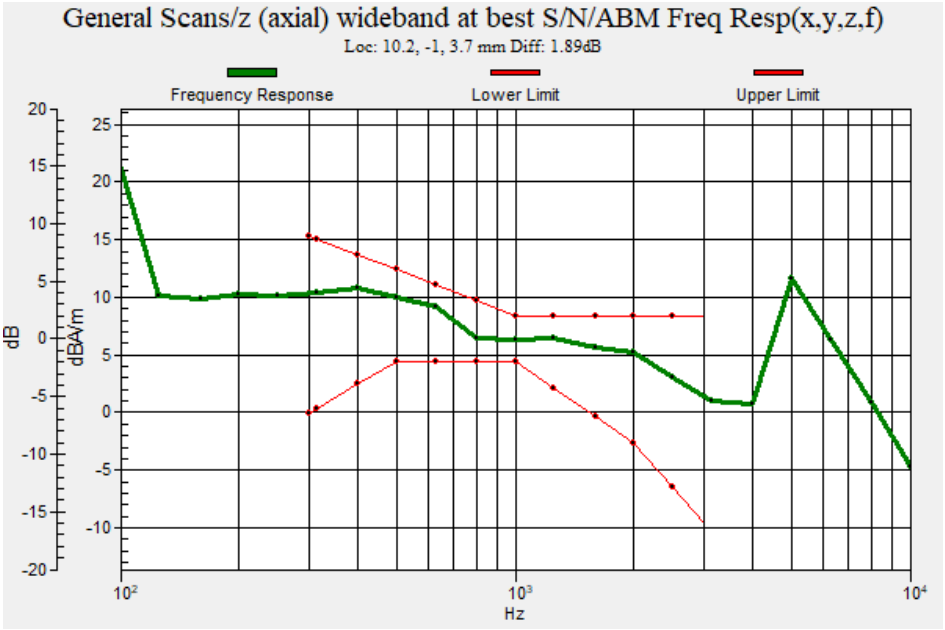
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.52 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+ noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.89 dB
BWC Factor = 9.52 dB
Location: 10.2, -1, 3.7 mm



Plot No.88

802.11a 6Mbps 40ch Bitrate 75 z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

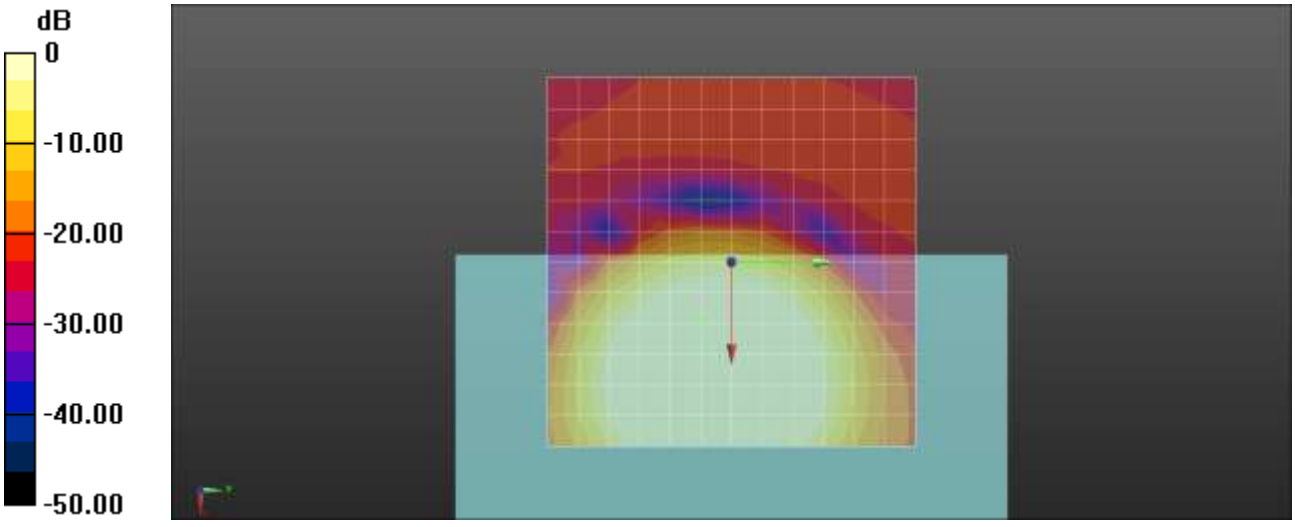
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.66 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, -4.2, 3.7 mm

Cursor:
ABM2 = -40.77 dBA/m
Location: 8.3, -4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 47.43 dB
ABM1 comp = 6.66 dBA/m
BWC Factor = 0.21 dB
Location: 8.3, -4.2, 3.7 mm



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

Plot No.89
802.11a 6Mbps 40ch Bitrate 75 y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

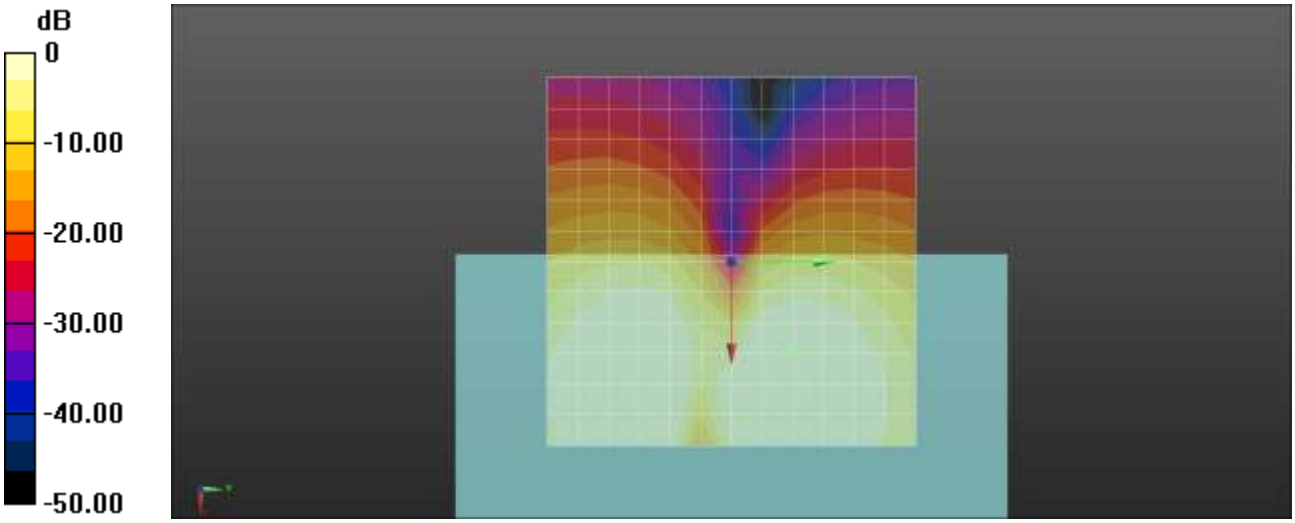
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.21 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 4.16 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM2 = -50.04 dBA/m
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 54.20 dB
ABM1 comp = 4.16 dBA/m
BWC Factor = 0.21 dB
Location: 12.5, 8.3, 3.7 mm



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

Plot No.90
802.11a 6Mbps 40ch Bitrate 75 Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

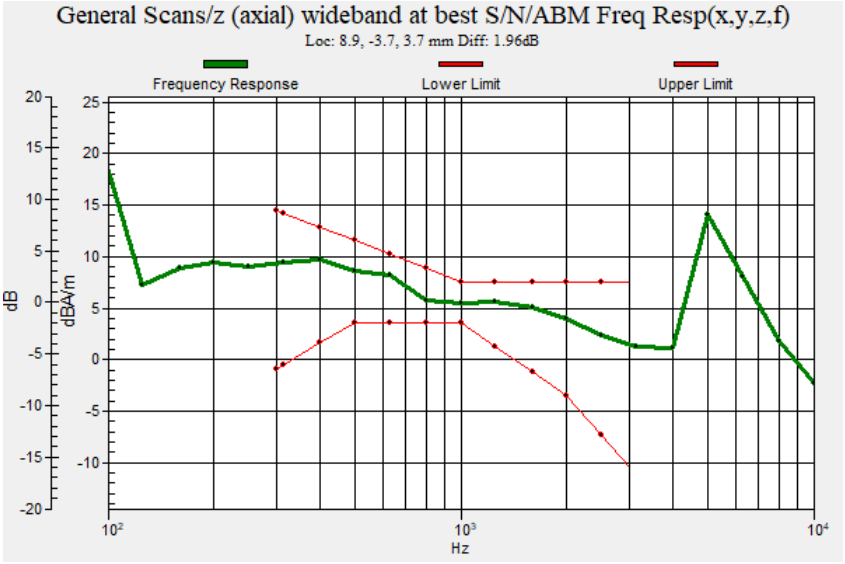
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.52 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.96 dB
BWC Factor = 9.52 dB
Location: 8.9, -3.7, 3.7 mm



Plot No.91
802.11a 6Mbps 56ch Bitrate 75 z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

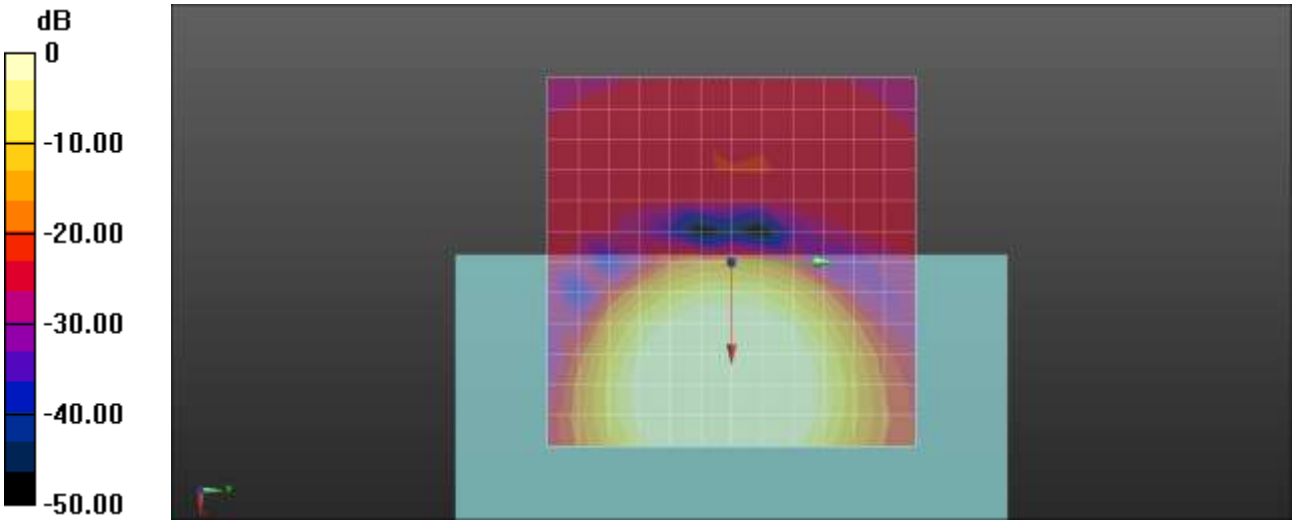
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.25 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -41.25 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 47.50 dB
ABM1 comp = 6.25 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.92
802.11a 6Mbps 56ch Bitrate 75 y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

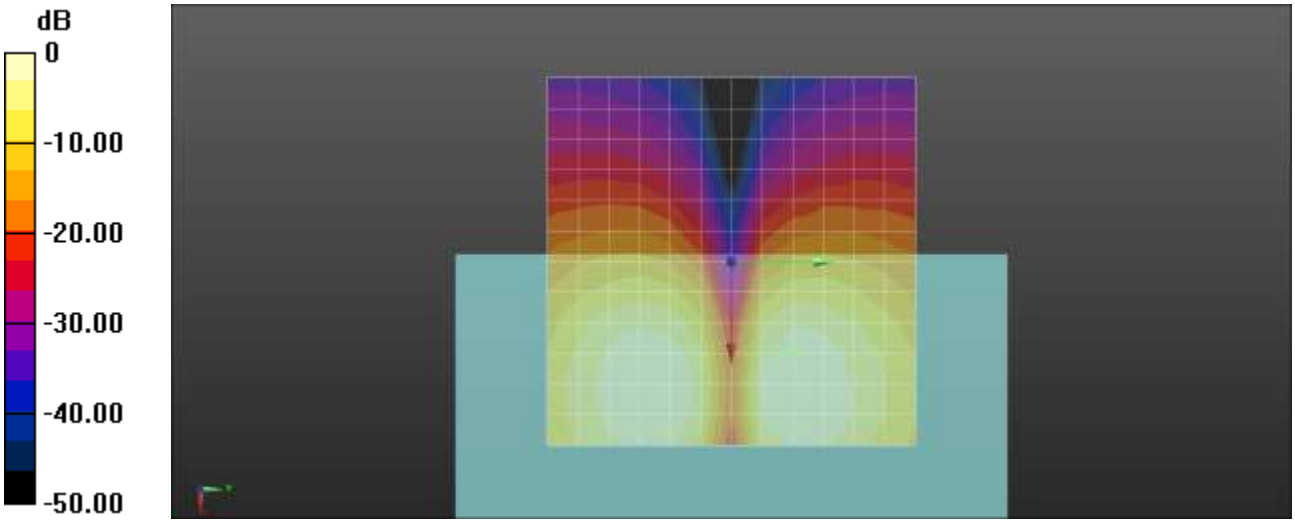
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.08 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM2 = -48.85 dBA/m
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 47.77 dB
ABM1 comp = -1.08 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 8.3, 3.7 mm



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

Plot No.93
802.11a 6Mbps 56ch Bitrate 75 Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5280 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

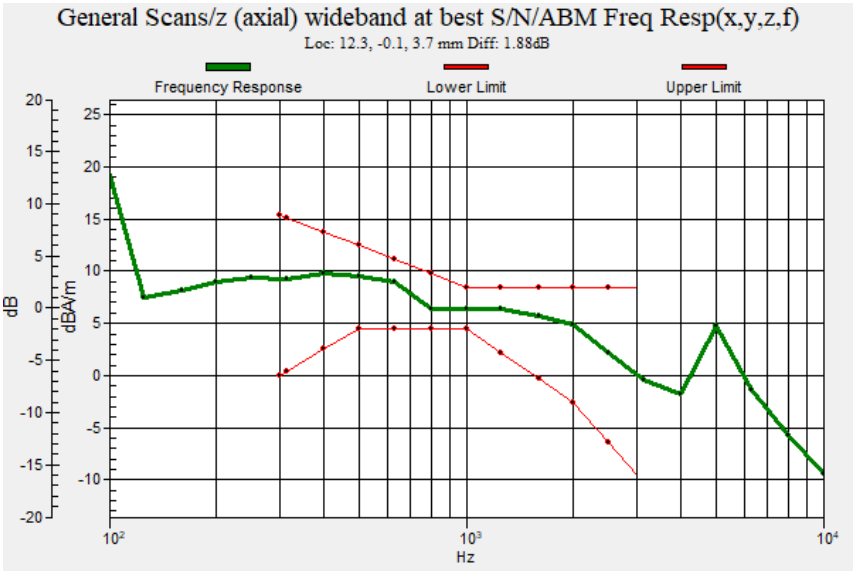
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.88 dB
BWC Factor = 9.47 dB
Location: 12.3, -0.1, 3.7 mm



Plot No.94
802.11a 6Mbps 120ch Bitrate 75 z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

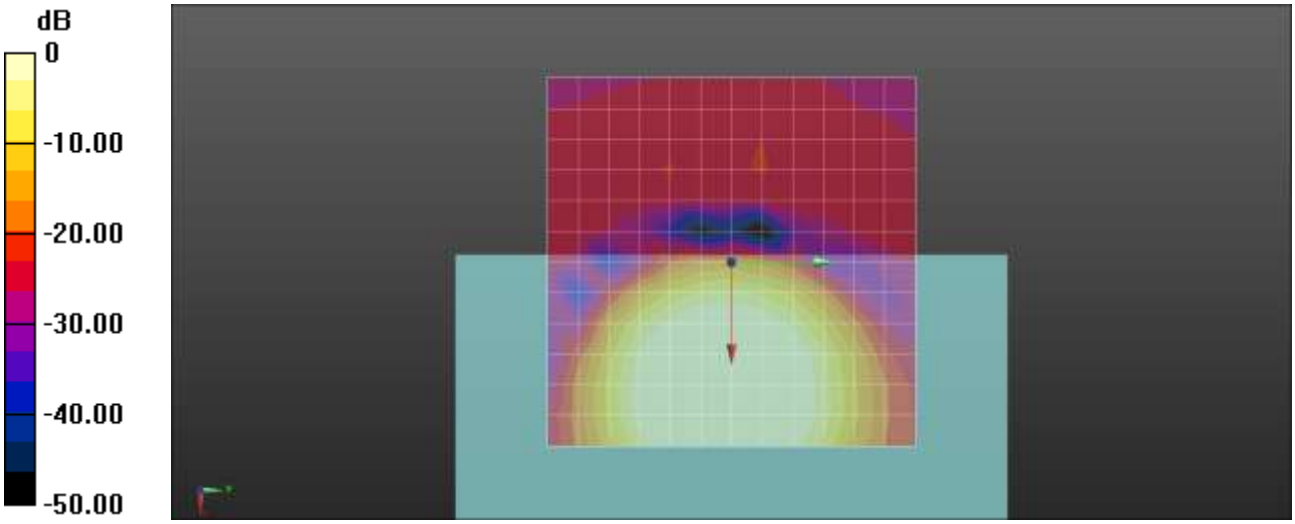
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.55 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -40.54 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 47.09 dB
ABM1 comp = 6.55 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.95
802.11a 6Mbps 120ch Bitrate 75 y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

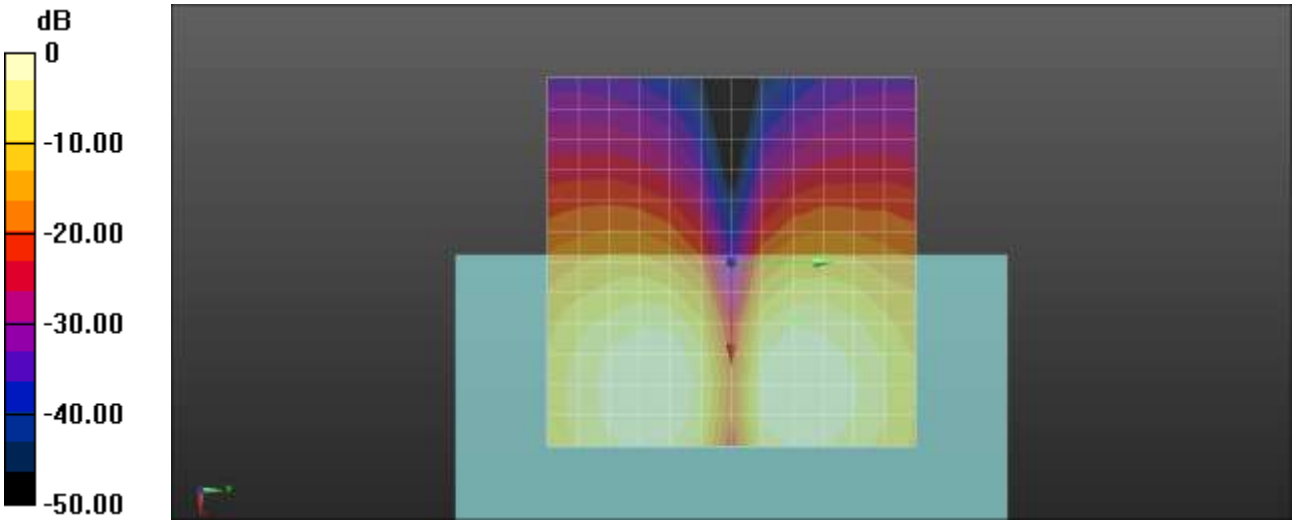
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.56 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM2 = -50.13 dBA/m
Location: 8.3, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 46.57 dB
ABM1 comp = -3.56 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, 8.3, 3.7 mm



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

Plot No.96
802.11a 6Mbps 120ch Bitrate 75 Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

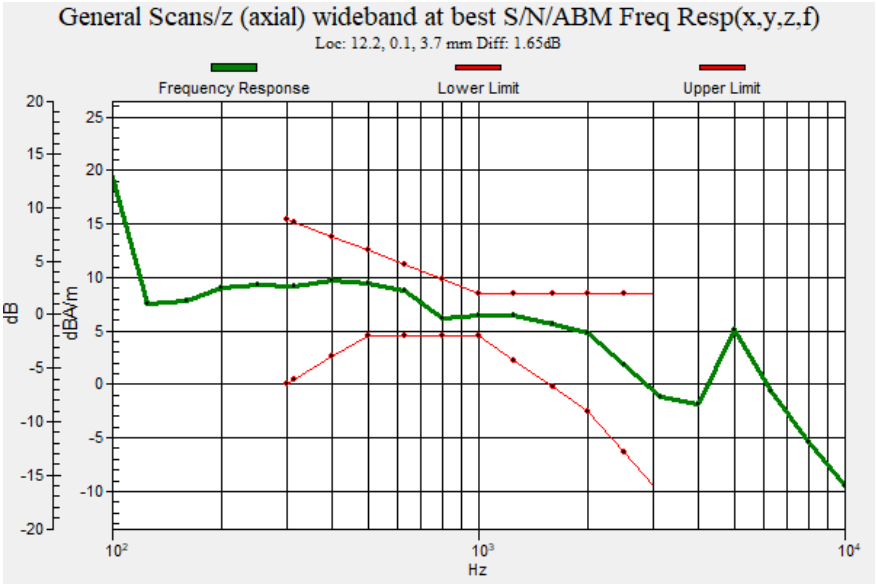
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.65 dB
BWC Factor = 9.47 dB
Location: 12.2, 0.1, 3.7 mm



Plot No.97
802.11a 6Mbps 157ch Bitrate 75 z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

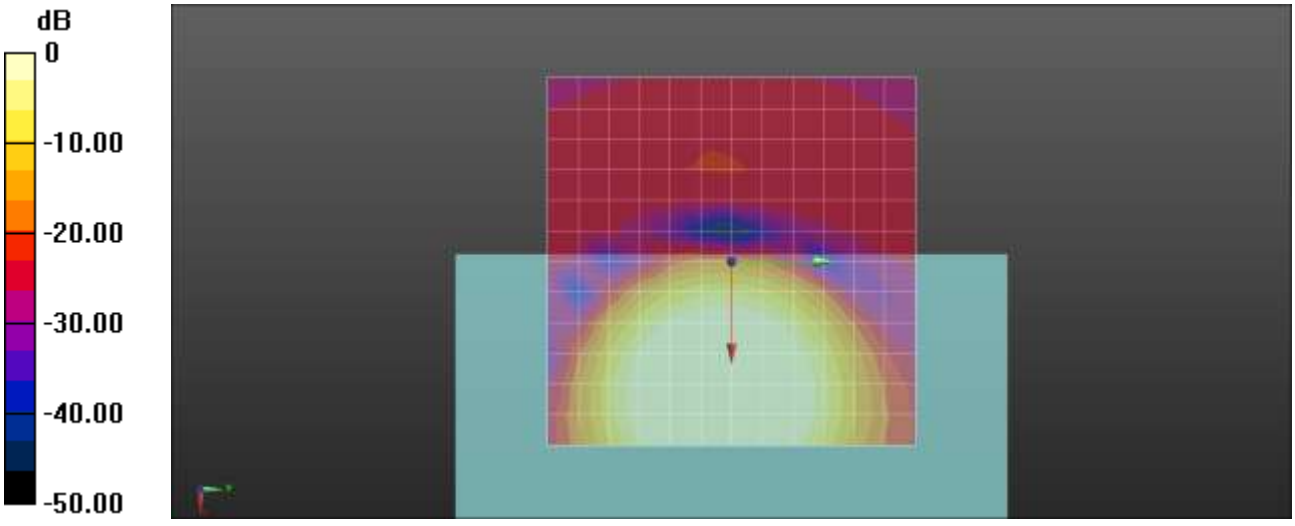
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.90 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -41.44 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 47.34 dB
ABM1 comp = 5.90 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.98
802.11a 6Mbps 157ch Bitrate 75 y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

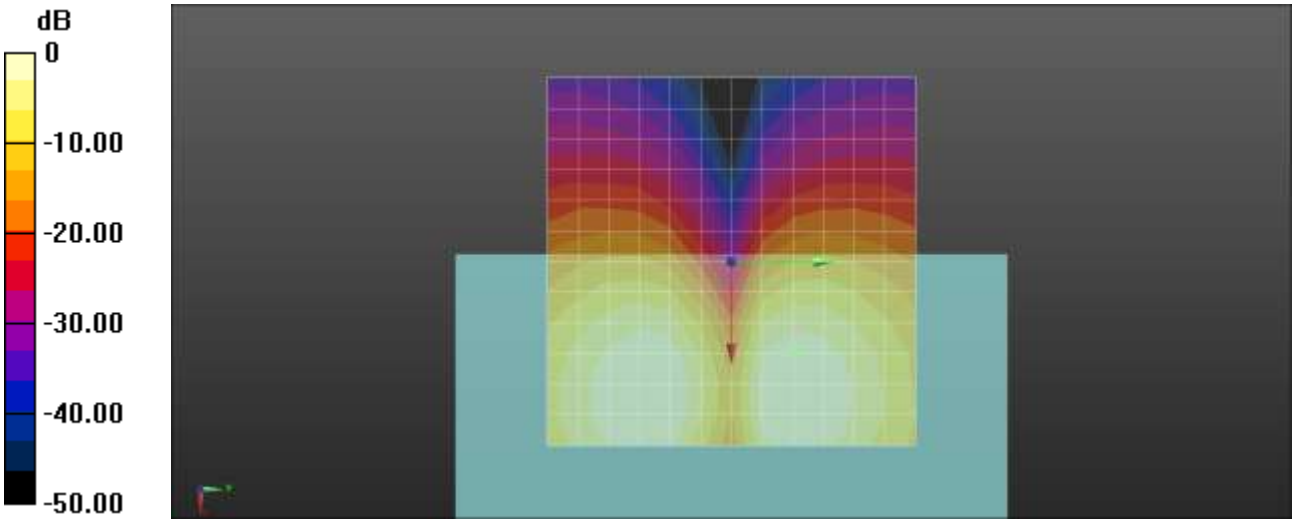
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.93 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM2 = -48.30 dBA/m
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 47.37 dB
ABM1 comp = -0.93 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 8.3, 3.7 mm



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

Plot No.99
802.11a 6Mbps 157ch Bitrate 75 Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

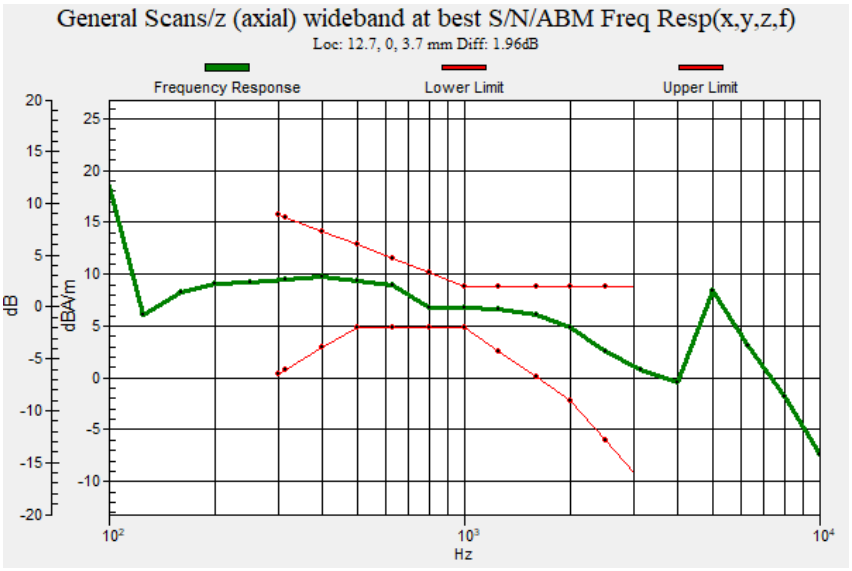
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)−to−noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.96 dB
BWC Factor = 9.47 dB
Location: 12.7, 0, 3.7 mm



Plot No.100
GSM850 190ch bit rate 6 z(axial)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

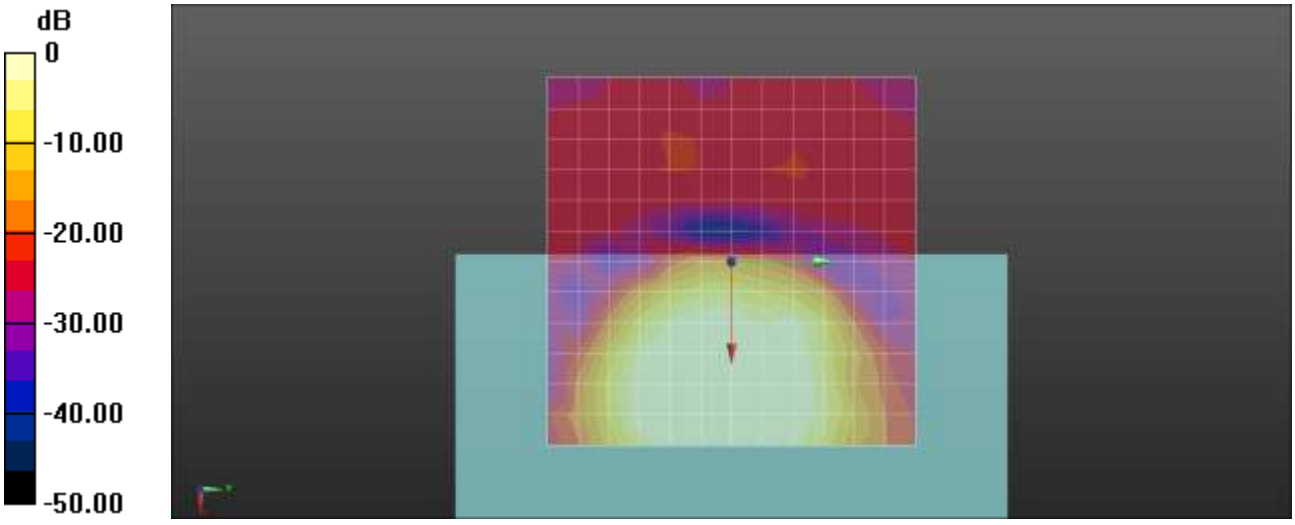
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.61 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -25.31 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 31.92 dB
ABM1 comp = 6.61 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.101
GSM850 190ch bit rate 6 y(transversal)

DUT: SM-B572B; Type: Bar

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

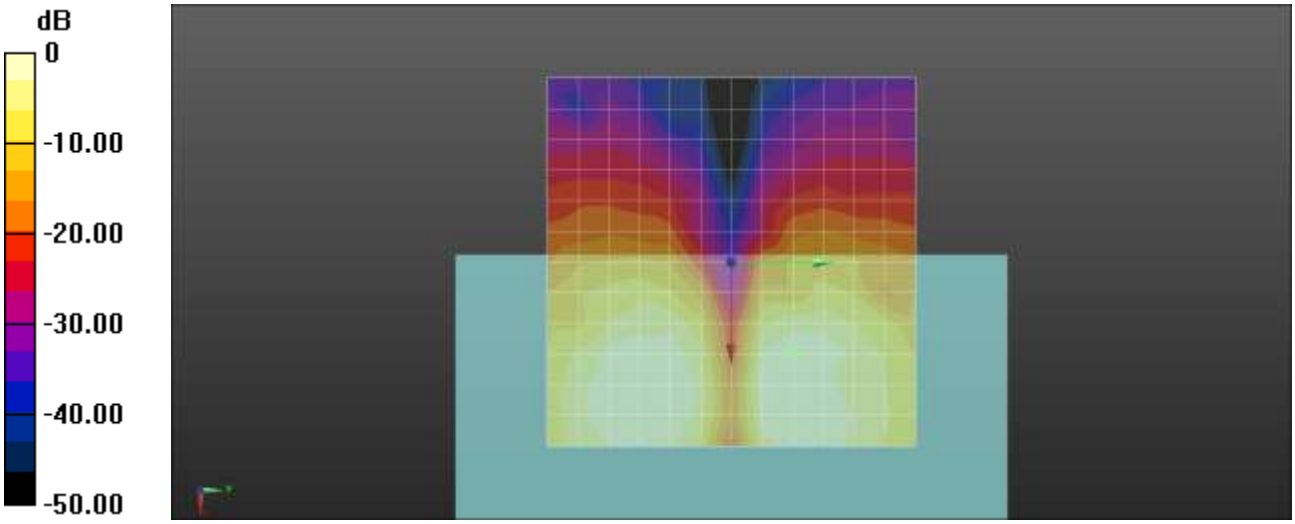
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.33 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM2 = -39.35 dBA/m
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 39.02 dB
ABM1 comp = -0.33 dBA/m
BWC Factor = 0.15 dB
Location: 12.5, 8.3, 3.7 mm



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

Plot No.102
GSM850 190ch bit rate 6 Freq. Response

DUT: SM-B572B; Type: Bar

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

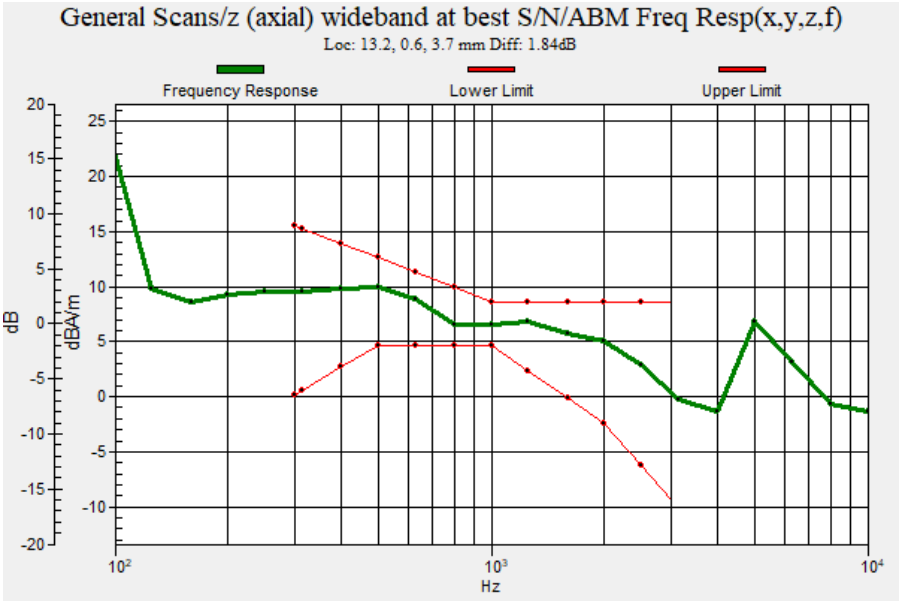
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.84 dB
BWC Factor = 9.47 dB
Location: 13.2, 0.6, 3.7 mm



Plot No.103
GSM850 251ch bit rate 6 z(axial)

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

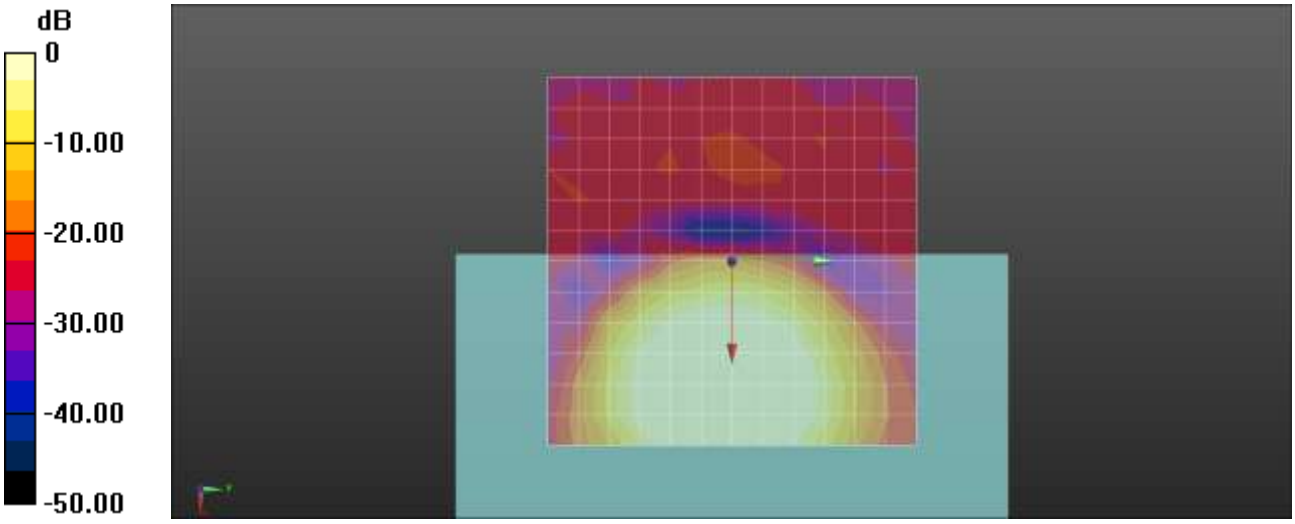
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.59 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm

Cursor:
ABM2 = -25.73 dBA/m
Location: 12.5, 0, 3.7 mm

Cursor:
ABM1/ABM2 = 31.32 dB
ABM1 comp = 5.59 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 0, 3.7 mm



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

Plot No.104
GSM850 251ch bit rate 6 y(transversal)

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m^3
Phantom section: TCoil Section

DASY Configuration:

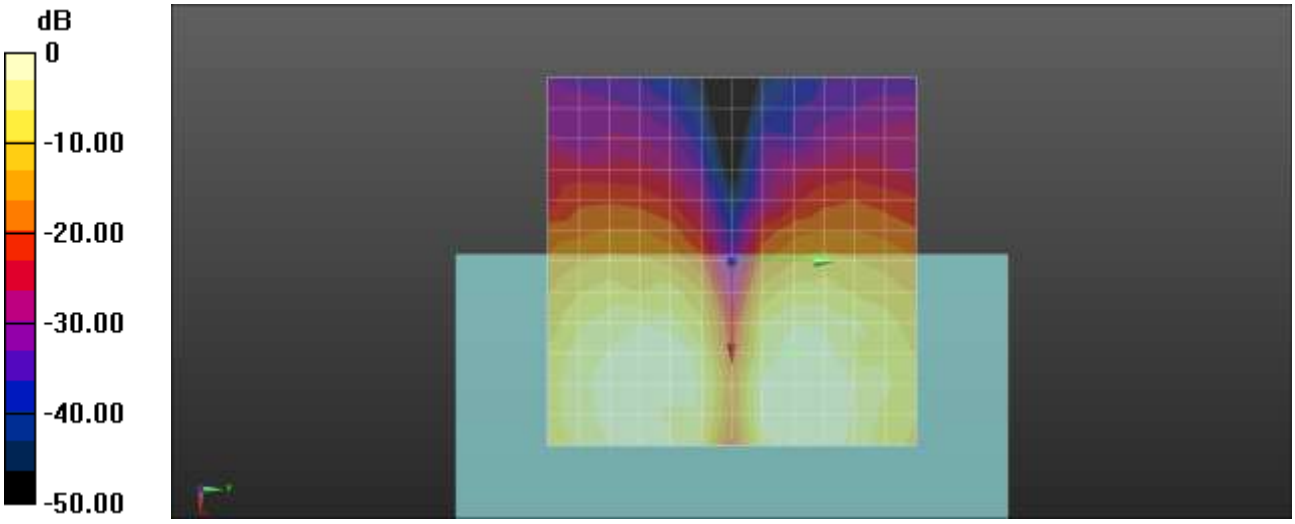
- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/y (transversal) 4.2mm 50 x 50/ABM Signal(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 19.3
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.26 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM2 = -40.24 dBA/m
Location: 12.5, 8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 38.97 dB
ABM1 comp = -1.26 dBA/m
BWC Factor = 0.16 dB
Location: 12.5, 8.3, 3.7 mm



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

Plot No.105
GSM850 251ch bit rate 6 Freq. Response

Communication System: UID 0, GSM850 GPRS 2TX (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

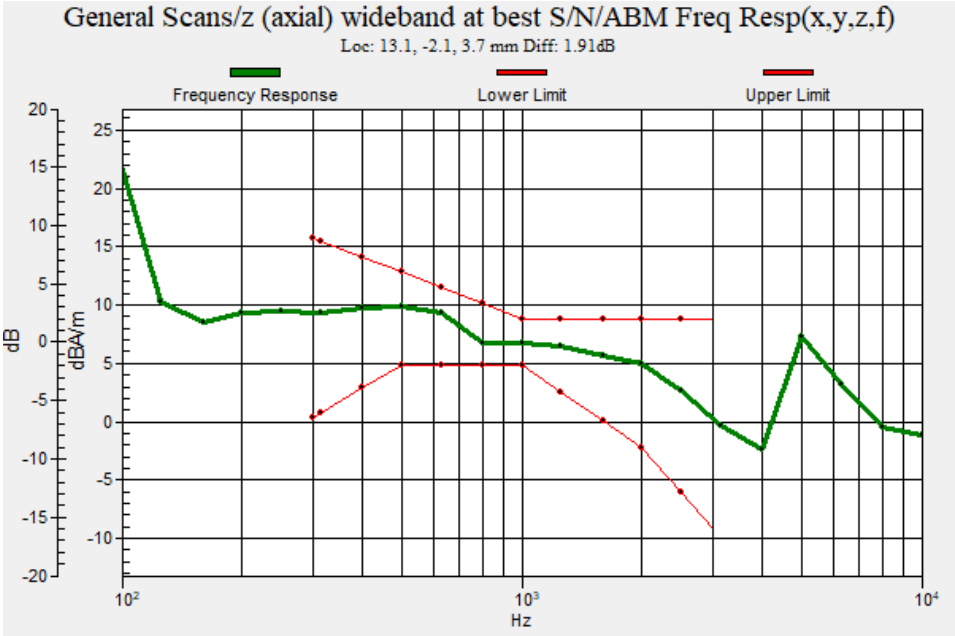
DASY Configuration:

- Probe: AM1DV3 - 3050; ;
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn504; Calibrated: 2020-02-26
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

T-Coil scan (scan for ANSI C63.19-2007 & 2011 compliance)/General Scans/z (axial) wideband at best S/N/ABM Freq Resp(x,y,z,f) (1x1x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_Normal_51s new.wav
Output Gain: 58.85
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.47 dB
Device Reference Point: 0, 0, -6.3 mm

Category	Telephone parameters WD signal quality [(signal+noise)-to-noise ratio in decibels]
Category T1	0 dB to 10 dB
Category T2	10 dB to 20 dB
Category T3	20 dB to 30 dB
Category T4	> 30 dB

Cursor:
Diff = 1.91 dB
BWC Factor = 9.47 dB
Location: 13.1, -2.1, 3.7 mm



Attachment 2. HAC T-Coil Probe Certificates