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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:** Sep. 26, 2023 **Test Report No.:** HCT-SR-2309-FC003 **Test Site: HCT CO., LTD.**

FCC ID	**A3LSMA256U**
Equipment Type:	**Mobile Phone**
Application Type	**Certification**
FCC Rule Part(s):	**FCC 47 CFR §20.19 , ANSI C63.19-2011**
Model Name:	**SM-A256U**
Additional Model Name:	**SM-A256U1/DS, SM-S256VL**
Date of Test:	**May. 31, 2023 ~ Sept. 05, 2023**

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	**Reviewed By**
Jee-ill Lee **Test Engineer** **SAR Team** **Certification Division**	**Yun-jeang, Heo** **Technical Manager** **SAR Team** **Certification Division**

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REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	Sep. 26, 2023	Initial Release

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.

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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 v06r03 · FCC KDB 285076 D02 T Coil testing v04 · FCC KDB 285076 D03 HAC FAQ v01r06

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 Name:	SM-A256U
Additional Model Name:	SM-A256U1/DS, SM-S256VL
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 v06r03, FCC published KDB 285076 D02 HAC T-Coil Testing v04, FCC Published KDB285076 D03 HAC FAQ v01r06 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 MHz ~ 848.8 MHz
GSM1900	Voice / Data	1 850.2 MHz ~ 1 909.8 MHz
UMTS Band 5	Voice / Data	826.4 MHz ~ 846.6 MHz
UMTS Band 4	Voice / Data	1 712.4 MHz ~ 1 752.6 MHz
UMTS Band 2	Voice / Data	1 852.4 MHz ~ 1 907.6 MHz
LTE Band 2 (PCS) (Lower)	Voice / Data	1 850.7 MHz ~ 1 909.3 MHz
LTE Band 2 (PCS) (Uppper)	Voice / Data	1 850.7 MHz ~ 1 909.3 MHz
LTE Band 4 (AWS)	Voice / Data	1 710.7 MHz ~ 1 754.3 MHz
LTE Band 5 (Cell)	Voice / Data	824.7 MHz ~ 848.3 MHz
LTE Band 7	Voice / Data	2 502.5 MHz ~ 2 567.5 MHz
LTE Band 12	Voice / Data	699.7 MHz ~ 715.3 MHz
LTE Band 13	Voice / Data	779.5 MHz ~ 784.5 MHz
LTE Band 14	Voice / Data	790.5 MHz ~ 795.5 MHz
LTE Band 25(PCS)	Voice / Data	1 850.7 MHz ~ 1 914.3 MHz
LTE Band 26(Cell)	Voice / Data	814.7 MHz ~ 848.3 MHz
LTE Band 30	Voice / Data	2 307.5 MHz ~ 2 312.5 MHz
LTE TDD Band 38	Voice / Data	2 572.5 MHz ~ 2 617.5 MHz
LTE TDD Band 41	Voice / Data	2 498.5 MHz ~ 2 687.5 MHz
LTE TDD Band 48	Voice / Data	3 552.5 MHz ~ 3 697.5 MHz
LTE Band 66 (AWS) (Lower)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
LTE Band 66 (AWS) (Upper)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
LTE Band 71	Voice / Data	665.5 MHz ~ 695.5 MHz
NR Band n2	Voice / Data	1 852.5 MHz ~ 1 907.5 MHz
NR Band n5	Voice / Data	826.5 MHz ~ 846.5 MHz
NR Band n25	Voice / Data	1 852.5 MHz ~ 1 912.5 MHz
NR Band n30	Voice / Data	2 307.5 MHz ~ 2 312.5 MHz
NR Band n41	Voice / Data	2 506.02 MHz ~ 2 679.99 MHz
NR Band n48	Voice / Data	3 555 MHz ~ 3 694.98 MHz
NR Band n66	Voice / Data	1 712.5 MHz ~ 1 777.5 MHz
NR Band n70	Voice / Data	1 695 MHz ~ 1 710 MHz
NR Band n71	Voice / Data	665.5 MHz ~ 695.5 MHz
NR Band n77	Voice / Data	3 705 MHz ~ 3 975 MHz
NR Band n77(DoD)	Voice / Data	3 455.04 MHz ~ 3 544.98 MHz
802.11b	Voice / Data	2 412 MHz ~ 2 472 MHz
U-NII-1	Voice / Data	5 180 MHz ~ 5 240 MHz
U-NII-2A	Voice / Data	5 260 MHz ~ 5 320 MHz
U-NII-2C	Voice / Data	5 500 MHz ~ 5 720 MHz
U-NII-3	Voice / Data	5 745 MHz ~ 5 825 MHz
Bluetooth	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz
Device Description		
H/W Version:	REV1.0	
S/W Version:	A256U.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

KDB 285076 D01 HAC Guidance v06r03

KDB 285076 D03 HAC FAQ v01r06

TCB workshop updates

KDB 285076 D02 T-Coil testing v04

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	11/24/2023
ABM Probe	SPEAG	AM1DV3	3153	04/19/2024
Data Acquisition Electronics	SPEAG	DAE4	1720	04/24/2024
Data Acquisition Electronics	SPEAG	DAE4	648	04/25/2024
DAC	Sound Devices	USBPre 2	HB1319212059	N/A
Radio Communication Tester	R & S	CMW 500	167916	09/28/2023
Radio Communication Tester	R & S	CMW 500	167918	03/23/2024
Radio Communication Tester	R & S	CMW 500	127521	04/25/2024
USB Audio Module	KEYSIGHT	U8903B-UAM	101006	N/A
UXM 5G Wireless Test Set	KEYSIGHT	E7515B	MY58460166	08/01/2024

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 (±%)	Std. Unc. ABM2 (±%)
Probe Sensitivity							
ReFerence Level	3.0	N	1	1	1	3.0	3.0
AMCC Geometry	0.4	R	1.73	1	1	0.2	0.2
AMCC Current	1.0	R	1.73	1	1	0.6	0.6
Porbe Positioning during Calibr.	0.1	R	1.73	1	1	0.1	0.1
Noise Contribution	0.7	R	1.73	0.0143	1	0.0	0.4
Frequency Slope	5.9	R	1.73	0.1	1.0	0.3	3.5
Probe System							
Repeatability / Drift	1.0	R	1.73	1	1	0.6	0.6
Linearity / Dynamic Range	0.6	R	1.73	1	1	0.4	0.4
Acoustic Noise	1.0	R	1.73	0.1	1	0.1	0.6
Probe Angle	2.3	R	1.73	1	1	1.4	1.4
Spectral Processing	0.9	R	1.73	1	1	0.5	0.5
Integration Time	0.6	N	1.00	1	5	0.6	3.0
Field Disturbation	0.2	R	1.73	1	1	0.1	0.1
Test Signal							
Ref. Signal Spectral Response	0.6	R	1.73	0	1	0.0	0.4
Positioning							
Probe Positioning	1.9	R	1.73	1	1	1.1	1.1
Phantom Thickness	0.9	R	1.73	1	1	0.5	0.5
DUT Positioning	1.9	R	1.73	1	1	1.1	1.1
External Contributions							
RF Interference	0.0	R	1.73	1	0.3	0.0	0.0
Test Signal Variation	2.0	R	1.73	1	1	1.1	1.2
Combined Std. Uncertainty (ABM field)	*(k=1)*					4.1	6.1
Expanded Std. Uncertainty (%)	*(Coverage factor for 95%, k=2)*					**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.

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 f_i) 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 (f_i) 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.

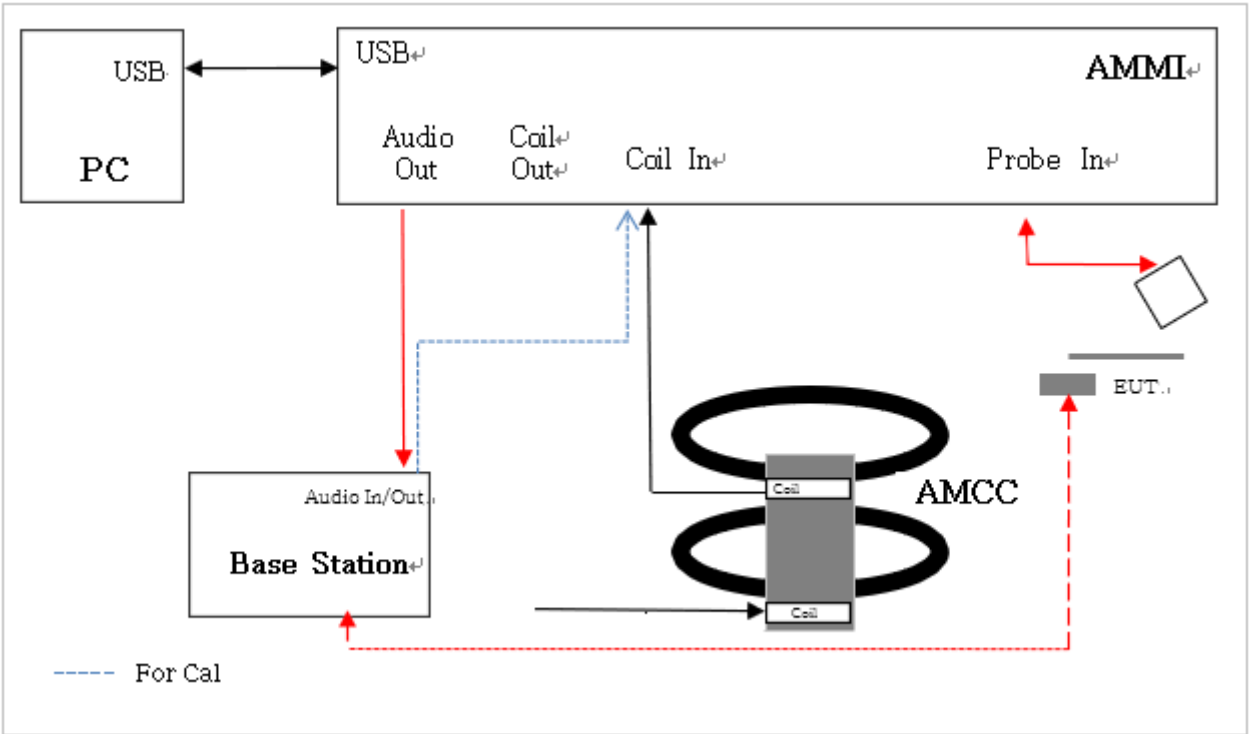
Equivalent methods of determining the frequency response may also be employed, such as fast Fourier transform (FFT) analysis using noise excitation or input–output comparison using simulated speech.

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

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.

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).

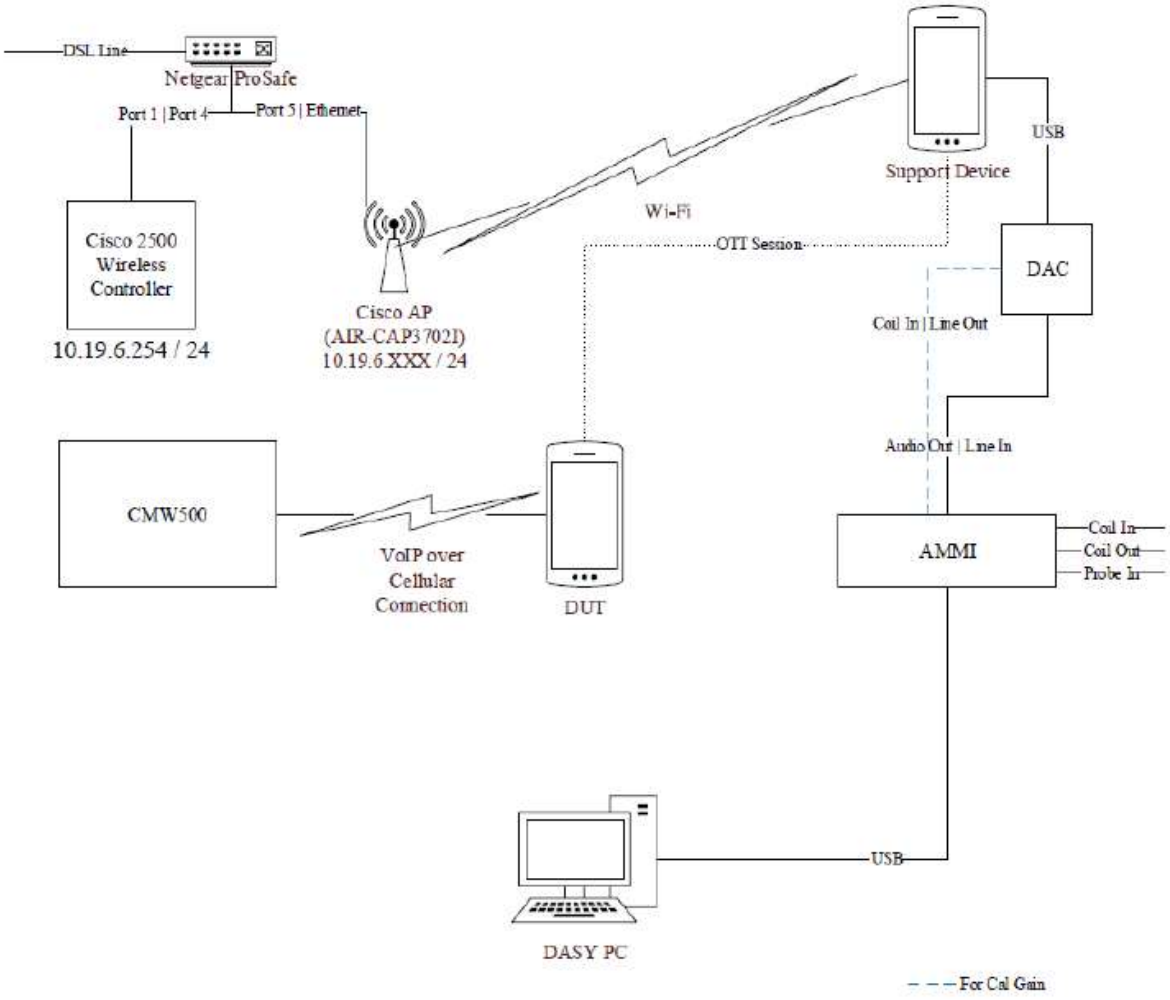
An investigation was performed to determine worst case codec, bit rate and air interface configuration (refer to sections 12.5 and 12.6).

7.3 Over the Top(OTT)

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.

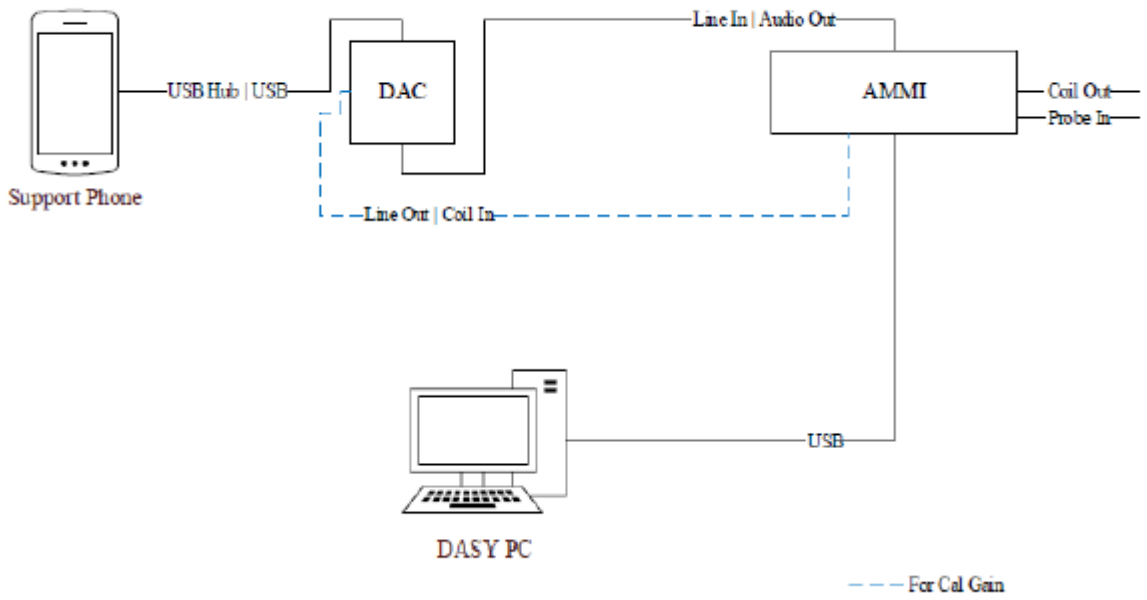
The equipment is set up as shown below with a support device used to originate the call using the IP transport. The support device connects to the cloud-based Google Duo service via Wi-Fi access point and router, or RJ45. The DUT connects to the VoIP service via a cellular/unlicensed air interface to 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	27.59	23.53
Normal Voice	-16	37.30	72.35

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	27.59	23.53
Normal Voice	-16	37.30	72.35

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

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-16	27.91	24.43
Normal Voice	-16	37.62	74.25

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	23.80	15.21
Normal Voice	-20	33.51	46.15

8.5 VoNR

Refer to the below table for the gains used to measure VoNR of Call Box(E7515B)

The following software/firmware was used to simulate the VoNR server for testing:

Firmware	License Model	Software Name
5G NR	C8700200A	Test Applicaton Framework
Audio	C8700201A	IMS-SIP Emulation
	C87300P1A	LTE IP data
	C87350P1A	5G NR IP data

5G NR FDD

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-20	29.66	28.0
Normal Voice	-20	39.37	84.15

5G NR TDD

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-20	29.63	27.42
Normal Voice	-20	39.34	82.50

8.6 Over the Top(OTT)

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

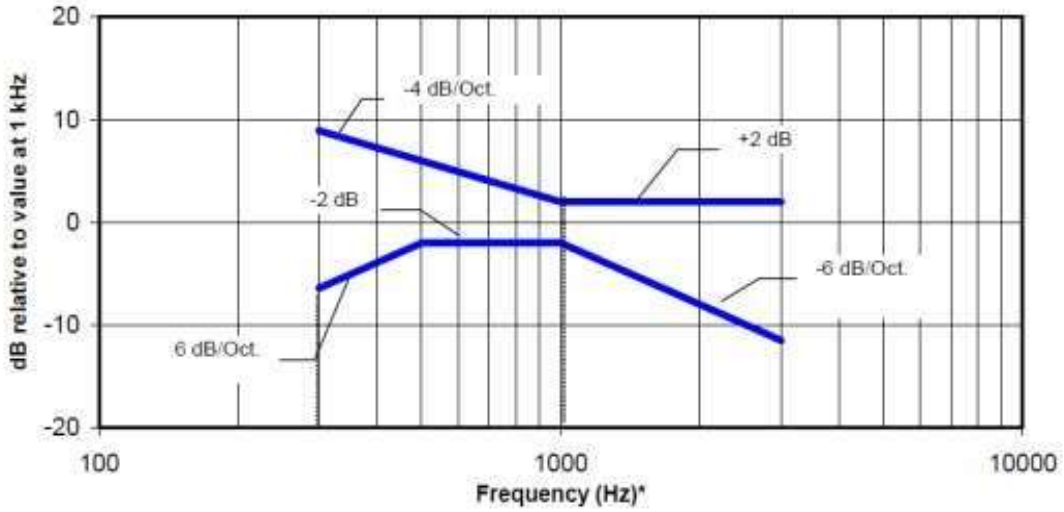
To calibrate the DAC (refer §7.3), three. Way audio files (sine wave, 1 ㎑ voice, and 300 to 3 ㎑ voice) are sent from the DASY5 PC to the AMMI, then to the DAC. The Helmholtz resonator measures the field strength, which represents the AMMI to DAC input sensitivity. After determining the input sensitivity,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

Signal Type	Audio Level [dBm]	Gain [dB]	Gain [linear]
Voice 1 ㎑	-20	25.58	19.0
Normal Voice	-20	35.29	57.85

9 T-coil Measurement Criteria

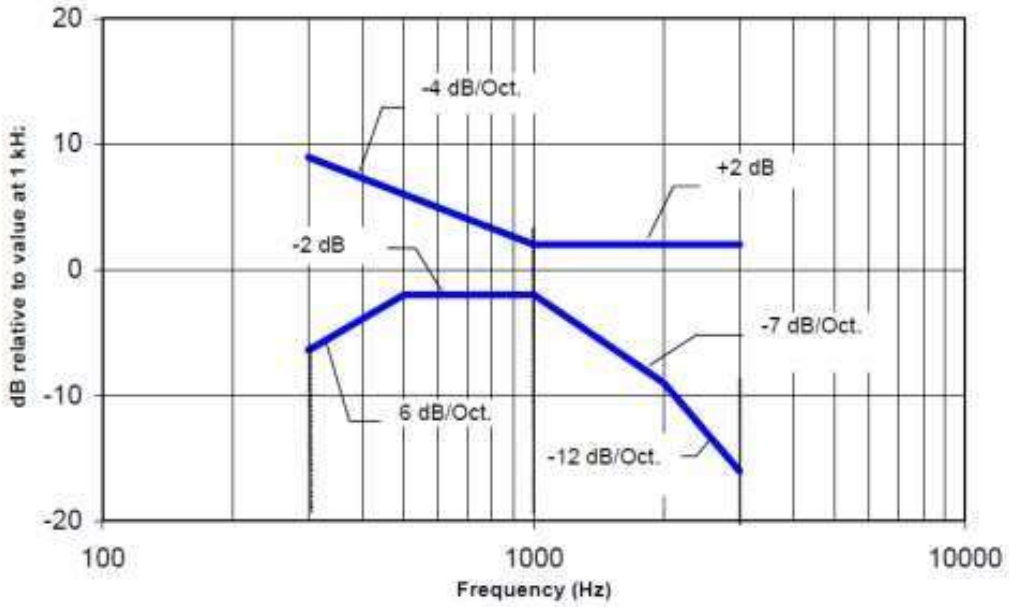
9.1 Frequency Respones

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

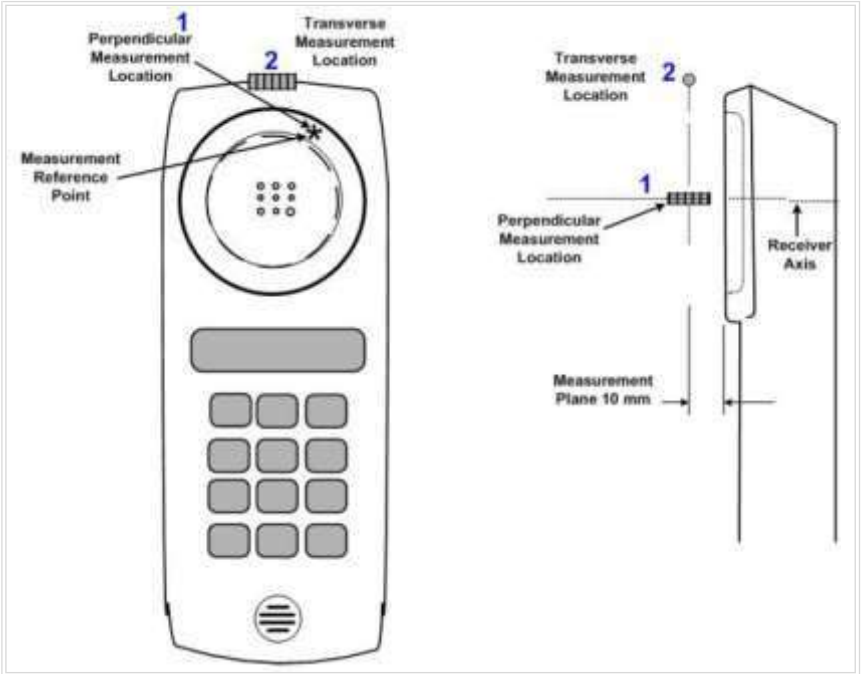
This specifies the signal-to-noise quality requirement for the intended T-Coil signal from a WD. The worst signal to noise of the two T-Coil signal measurements, as determined in Clause 7, shall be used to determine the T-Coil mode category per Table 8.5.

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
	WEJ1198M	T-coil Test
	WEJ1166M	T-coil Test
	WI42574M	T-coil Test
	WI42575M	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	VD	Yes	Wi-Fi, BT	OPUS[2]
WCDMA (UMTS)	850	VO	Yes	Wi-Fi, BT	AMR-NB & AMR-WB
	1700				
	1900				
	HSPA	VD	Yes	Wi-Fi, BT	OPUS[2]
LTE - FDD	680 (B71)	VD	Yes	NR,Wi-Fi, BT	(AMR-NB, AMR- WB, EVS-NB, EVS-WB) [1] & OPUS[2]
	700 (B12/13/14)				
	850 (B5/26)				
	1700 (B4/66)				
	1900 (B2/25)				
	2300 (B30)				
	2500 (B7)				
LTE – TDD	2300 (B40)	VD	Yes	NR,Wi-Fi, BT	(AMR-NB, AMR- WB, EVS-NB, EVS-WB) [1] & OPUS[2]
	2600 (B41(B38))				
	3600 (B48)				
NR -FDD	680(B71)	VD	Yes	LTE,Wi-Fi, BT	(AMR-NB, AMR- WB, EVS-NB, EVS-WB) [2]& OPUS[2]
	700(B12)				
	850(B5)				
	1700(B66)				
	1900(B2/25)				
	2300(B30)				
NR -TDD	2600(B41)	VD	Yes	LTE,Wi-Fi, BT	(AMR-NB, AMR- WB, EVS-NB, EVS-WB) [2] & OPUS[2]
	3800(B77)		Yes		
Wi-Fi	2450	VD	Yes	WWAN	(AMR-NB, AMR- WB, EVS-NB, EVS-WB) [2] & OPUS[2]
	5200 (U-NII-1)			WWAN and BT	
	5300 (U-NII-2A)				
	5500 (U-NII-2C)				
	5800 (U-NII-3)				
BT	2450	DT	NA	WWAN and Wifi 5GHz	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

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, NR FDD/TDD.

The highlighted results below were determined to be the worst case codec configuration(s) for GSM, WCDMA and LTE, NR.

Codec Investigation				
Codec State	AMR-NB (kbit/s)		Orientation	Band/ Channel
	FR V1	HR V1		
ABM1 (dB/m)	5.03	5.85	z (Axial)	GSM 850 CH.190
ABM2 (dBA/m)	-38.83	-41.38		
S+N/N (dB)	43.87	47.27		
Freq. Resposne (dB)	2	2		
ABM1 (dB/m)	-5.12	-4.62	y (Transversal)	
ABM2 (dBA/m)	-41.00	-43.29		
S+N/N (dB)	35.88	38.67		

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)	5.97	5.98	6.21	5.23	3.83	3.69	z (Axial)	UMTS Band II Rel.99 CH.9400
ABM2 (dBA/m)	-47.17	-46.93	-47.30	-42.94	-45.89	-46.54		
S+N/N (dB)	53.15	52.90	53.51	48.17	49.72	50.23		
Freq. Resposne (dB)	1.86	1.96	2	1.62	2	2		
ABM1 (dB/m)	-1.9	-1.94	-0.67	-6.44	-3.06	-2.94	y (Transversal)	
ABM2 (dBA/m)	-51.44	-51.27	-50.40	-52.27	-50.32	-50.90		
S+N/N (dB)	49.54	49.33	49.73	45.84	47.26	47.96		

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)	11.91	12.18	11.98	12.94	13.38	13.41	z (Axial)	LTE Band 25 CH.26365 20 ㎒ BW QPSK 1RB 0offset
ABM2 (dBA/m)	-45.86	-45.88	-46.66	-45.44	-45.66	-45.71		
S+N/N (dB)	57.77	58.06	58.64	58.38	59.04	59.12		
Freq. Resposne(dB)	1.92	2	2	1.68	2	2		
ABM1 (dB/m)	5.13	5.23	5.33	6.2	6.52	6.66	y (Transversal)	
ABM2 (dBA/m)	-46.5	-47.39	-47.63	-46.92	-47.36	-46.58		
S+N/N (dB)	51.64	52.61	52.96	53.12	53.88	53.24		

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)	5.98	12.11	12.8	10.48	14.25	13.41	7	14.01	7.99	z (Axial)	LTE Band 25 CH.26365 20 ㎒ BW QPSK 1RB 0offset
ABM2 (dBA/m)	-45.44	-44.93	-42.09	-43.08	-43.9	-44.75	-45.54	-44.69	-44.81		
S+N/N (dB)	51.41	57.04	54.89	53.56	58.15	58.16	52.54	58.70	52.81		
Freq.Resposne(dB)	2	2	2	1.78	2	2	1.37	1.52	1.57		
ABM1 (dB/m)	5.16	5.51	5.24	2.82	7.54	3.49	-0.77	7.27	1.18	y (Transversal)	
ABM2 (dBA/m)	-44.13	-46.11	-47.56	-45.99	-48.29	-50.44	-47.92	-47.06	-46.09		
S+N/N (dB)	49.28	51.62	52.80	48.81	55.83	53.93	47.14	54.33	47.27		

NR FDD

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)	9.07	9.13	9.33	9.18	10.77	10.97	z (Axial)	NR Band 25 CH.376500 DFT-s OFDM QPSK 40 ㎒ BW 1 RB/ 1 Offset
ABM2 (dBA/m)	-42.85	-42.55	-42.56	-42.44	-42.26	-42.85		
S+N/N (dB)	51.93	51.68	51.89	51.62	53.03	53.82		
Freq. Response(dB)	1.77	2	2	1.7	1.86	1.87		
ABM1 (dB/m)	1.77	-1.53	-1.47	-1.55	3.27	-0.04	y (Transversal)	
ABM2 (dBA/m)	-44.65	-47.47	-48.01	-48.44	-45.01	-47.56		
S+N/N (dB)	46.42	45.94	46.54	46.89	48.28	47.52		

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)	9.53	9.74	9.63	6.45	11.26	11.77	5.62	5.59	5.3	z (Axial)	NR Band 25 CH.376500 DFT-s OFDM QPSK 40 ㎒ BW 1 RB/ 1 Offset
ABM2 (dBA/m)	-43.28	-43.17	-43.34	-44.65	-42.81	-43.17	-43.25	-43.12	-43.28		
S+N/N (dB)	50.54	52.91	52.97	51.10	54.07	54.94	48.87	48.70	48.58		
Freq.Response(dB)	1.97	2	2	1.46	1.67	1.59	1.58	1.6	1.56		
ABM1 (dB/m)	-1.51	2.77	2.09	-1.87	0.46	4.08	-5.18	-5.1	-1.75	y (Transversal)	
ABM2 (dBA/m)	-46.12	-44.54	-44.58	-48.02	-48.05	-44.56	-48.14	-47.77	-44.47		
S+N/N (dB)	44.61	47.3	46.67	46.15	48.51	48.64	42.96	42.67	42.73		

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)	11.78	11.46	11.57	12.49	13.23	13.23	z (Axial)	LTE Band 41 CH.40620 20 MHz BW QPSK 1RB 0offset
ABM2 (dBA/m)	-28.1	-29.06	-29.11	-28.30	-28.5	-28.35		
S+N/N (dB)	39.88	40.53	40.68	40.79	41.73	41.58		
Freq. Resposne(dB)	2	2	2	1.13	2	2		
ABM1 (dB/m)	4.26	5.40	4.76	2.31	2.88	2.94	y (Transversal)	
ABM2 (dBA/m)	-45.87	-37.92	-38.84	-42.00	-41.65	-41.56		
S+N/N (dB)	50.12	43.32	43.6	44.31	44.53	44.5		

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)	13.3	12.49	12.26	11.57	13.81	14.18	7.99	8.19	7.75	z (Axial)	LTE Band 41 CH.40620 20 MHz BW QPSK 1RB 0offset
ABM2 (dBA/m)	-23.28	-28.27	-28.61	-27.55	-28.23	-28.41	-28.12	-28.06	-28.11		
S+N/N (dB)	36.58	40.76	40.87	39.11	42.04	42.59	36.11	36.25	35.85		
Freq.Resposne(dB)	2	2	2	2	2	2	1.44	1.54	1.49		
ABM1 (dB/m)	3.18	2.52	1.98	5.00	3.53	3.59	-2.63	-2.28	-2.52	y (Transversal)	
ABM2 (dBA/m)	-45.31	-40.77	-41.47	-37.70	-41.38	-41.22	-41.87	-41.86	-41.85		
S+N/N (dB)	48.49	43.28	43.45	42.70	44.91	44.81	39.23	39.58	39.33		

NR TDD

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)	9.6	9.23	9.31	9.02	11.08	11.17	z (Axial)	NR Band 77 CH.656000 DFT-s OFDM QPSK 100 MHz BW 1 RB/ 1 Offset
ABM2 (dBA/m)	-19.7	-19.66	-19.65	-19.68	-18.49	-18.53		
S+N/N (dB)	29.30	28.89	28.96	28.71	29.57	29.70		
Freq. Response(dB)	1.95	2	2	2	1.28	1.18		
ABM1 (dB/m)	1.02	-2.08	1.42	1.02	2.62	2.59	y (Transversal)	
ABM2 (dBA/m)	-35.14	-38.63	-35.44	-35.13	-31.44	-31.44		
S+N/N (dB)	36.16	36.55	36.86	36.15	34.06	34.03		

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)	6.15	9.91	9.47	6.89	11.1	11.92	5.69	5.97	5.91	z (Axial)	NR Band 77 CH.656000 DFT-s OFDM QPSK 100 MHz BW 1 RB/ 1 Offset
ABM2 (dBA/m)	-19.67	-19.64	-19.65	-20.14	-20.12	-19.63	-18.72	-18.72	-18.74		
S+N/N (dB)	25.81	29.54	29.12	27.03	31.22	31.55	24.41	24.69	24.65		
Freq.Response(dB)	1.82	1.73	1.8	1.48	1.52	1.59	1.23	1.26	1.33		
ABM1 (dB/m)	-2.25	1.56	1.87	-3.74	3.16	-0.16	-2.66	-3.48	-4.89	y (Transversal)	
ABM2 (dBA/m)	-35.17	-35.35	-35.39	-37.96	-35.44	-38.51	-32.01	-32.00	-32.37		
S+N/N (dB)	32.92	36.92	37.26	34.23	38.60	38.35	29.35	28.53	27.48		

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, 1RB, 0Offset. all configurations (0-6) are supported. The configuration which resulted in the worst z (Axial), y(Transversal) SNR was used for full testing. Uplink-Downlink configuration 2 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	40620	20	QPSK	1	0	0	7.75	-28.11	z (Axial)	1.49	35.85
2593	40620	20	QPSK	1	0	1	7.73	-27.21		1.23	34.94
2593	40620	20	QPSK	1	0	2	7.74	-27.00		1.26	34.74
2593	40620	20	QPSK	1	0	3	7.79	-30.07		1.35	37.87
2593	40620	20	QPSK	1	0	4	7.80	-30.45		1.21	38.25
2593	40620	20	QPSK	1	0	5	8.18	-30.77		1.13	38.95
2593	40620	20	QPSK	1	0	6	7.71	-28.53		1.40	36.24
2593	40620	20	QPSK	1	0	0	-2.52	-41.85	y (Transversal)		39.33
2593	40620	20	QPSK	1	0	1	-2.46	-41.09			38.63
2593	40620	20	QPSK	1	0	2	-2.49	-41.23			38.74
2593	40620	20	QPSK	1	0	3	1.20	-40.02			41.23
2593	40620	20	QPSK	1	0	4	-2.48	-43.84			41.37
2593	40620	20	QPSK	1	0	5	-2.42	-44.18			41.75
2593	40620	20	QPSK	1	0	6	1.19	-38.59			39.78

Per the investigations above, UL-DL Configuration 2 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)	ABM SNR (dB)	T-Rating	Plot No.
GSM 850 Voice Coder Speech Codec: FR V1	CH.190 836.5 MHz	z(Axial)	5.03	-38.83	-55.75	2	43.87	T4	1/ 2
		y(Transversal)	-5.12	-41.00	-55.81		35.88	T4	3
GSM 1900 Voice Coder Speech Codec: FR V1	CH.512 1850.2 MHz	z(Axial)	5.14	-27.28	-55.75	2	32.41	T4	
		y(Transversal)	-1.96	-39.19	-55.81		37.22	T4	
	CH.661 1880.0 MHz	z(Axial)	4.97	-27.19	-55.75	2	32.16	T4	
		y(Transversal)	-1.91	-39.22	-55.81		37.31	T4	
	CH.810 1908.8 MHz	z(Axial)	5.00	-26.67	-55.75	2	31.67	T4	4/ 5
		y(Transversal)	-2.22	-38.52	-55.81		36.30	T4	6
W-CDMA Band II Voice AMR WB Codec: 6.6 kbit/s	CH.9262 1852.4 MHz	z(Axial)	4.11	-44.88	-55.56	1.68	48.99	T4	
		y(Transversal)	-3.19	-50.67	-55.74		47.48	T4	
	CH.9400 1880.0 MHz	z(Axial)	5.23	-42.94	-55.56	1.62	48.17	T4	7/ 8
		y(Transversal)	-6.44	-52.27	-55.74		45.84	T4	9
	CH.9538 1907.6 MHz	z(Axial)	3.19	-45.41	-55.56	1.52	48.60	T4	
		y(Transversal)	-3.92	-50.55	-55.74		46.63	T4	
W-CDMA Band IV Voice AMR WB Codec: 6.6 kbit/s	CH.1412 1732.4 MHz	z(Axial)	4.39	-45.13	-55.56	1.52	49.53	T4	10/11
		y(Transversal)	-3.63	-51.41	-55.74		47.78	T4	12
W-CDMA Band V Voice AMR WB Codec: 6.6 kbit/s	CH.4183 836.6 MHz	z(Axial)	3.01	-47.34	-55.56	1.69	50.35	T4	13/14
		y(Transversal)	-2.96	-51.53	-55.74		48.57	T4	15

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-SWB Codec: 9.6 kbit/s	CH.26365 1882.5 MHz	20 MHz	QPSK	1/0	z(Axial)	7.00	-45.54	-53.47	1.37	52.54	T4	
					y(Transversal)	-0.77	-47.92	-53.26		47.14	T4	
				1/49	z(Axial)	8.24	-43.27	-53.51	1.55	51.52	T4	
					y(Transversal)	1.14	-45.98	-53.39		47.12	T4	
				1/99	z(Axial)	8.87	-44.50	-53.51	1.39	53.38	T4	
					y(Transversal)	1.69	-48.02	-53.39		49.72	T4	
				50/0	z(Axial)	7.80	-47.96	-53.51	1.41	55.76	T4	
					y(Transversal)	1.71	-48.25	-53.39		49.95	T4	
				50/25	z(Axial)	8.80	-47.60	-53.51	1.49	56.40	T4	
					y(Transversal)	1.72	-48.83	-53.39		50.55	T4	
				50/49	z(Axial)	9.14	-47.75	-53.51	1.49	56.88	T4	
					y(Transversal)	1.38	-48.94	-53.39		50.32	T4	
				100/0	z(Axial)	8.43	-47.45	-53.51	1.54	55.88	T4	
					y(Transversal)	1.19	-48.43	-53.39		49.63	T4	
			16QAM	1/49	z(Axial)	8.82	-37.96	-53.51	1.41	46.78	T4	
					y(Transversal)	1.59	-45.48	-53.39		47.07	T4	
			64QAM	1/49	z(Axial)	8.84	-39.37	-53.51	1.49	48.21	T4	
					y(Transversal)	1.58	-45.97	-53.39		47.56	T4	
			256QAM	1/49	z(Axial)	7.91	-39.25	-53.51	1.49	47.16	T4	
					y(Transversal)	1.38	-46.14	-53.39		47.52	T4	
		15 MHz	16QAM	1/36	z(Axial)	8.58	-43.63	-53.51	1.42	52.22	T4	
					y(Transversal)	1.14	-46.07	-53.39		47.20	T4	
		10 MHz		1/24	z(Axial)	8.36	-38.69	-53.51	1.52	47.05	T4	
					y(Transversal)	0.99	-45.54	-53.39		46.53	T4	
		5 MHz		1/12	z(Axial)	7.40	-38.49	-53.51	1.43	45.89	T4	16/17
					y(Transversal)	1.07	-46.34	-53.39		47.41	T4	18
		3 MHz		1/7	z(Axial)	8.20	-40.47	-53.51	1.38	47.34	T4	
					y(Transversal)	0.84	-46.22	-53.39		47.06	T4	
		1.4 MHz		1/3	z(Axial)	7.96	-38.56	-53.51	1.38	46.52	T4	
					y(Transversal)	0.83	-45.19	-53.39		46.02	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 7 Voice EVS SWB Codec: 9.6 kbit/s	CH.21100 2535 MHz	5 MHz	16QAM	1/12	z(Axial)	7.98	-39.42	-53.51	1.41	47.41	T4	19/20
					y(Transversal)	0.78	-46.85	-53.39		47.63	T4	21
LTE Band 12 Voice EVS SWB Codec: 9.6 kbit/s	CH.23095 707.5 MHz	5 MHz	16QAM	1/12	z(Axial)	8.18	-44.06	-53.47	1.62	52.24	T4	22/23
					y(Transversal)	0.76	-45.96	-53.19		46.72	T4	24
LTE Band 13 Voice EVS SWB Codec: 9.6 kbit/s	CH.23230 782 MHz	5 MHz	16QAM	1/12	z(Axial)	11.45	-38.46	-53.47	1.45	49.92	T4	25/ 26
					y(Transversal)	1.76	-45.32	-53.19		47.08	T4	27
LTE Band 14 Voice EVS SWB Codec: 9.6 kbit/s	CH.23330 793 MHz	5 MHz	16QAM	1/12	z(Axial)	8.82	-40.08	-53.47	1.41	48.89	T4	28/ 29
					y(Transversal)	-1.68	-48.80	-53.19		47.12	T4	30
LTE Band 26 Voice EVS SWB Codec: 9.6 kbit/s	CH.26865 831.5 MHz	5 MHz	16QAM	1/12	z(Axial)	8.46	-44.31	-53.47	1.43	52.78	T4	31/ 32
					y(Transversal)	1.46	-45.76	-53.19		47.21	T4	33
LTE Band 30 Voice EVS SWB Codec: 9.6 kbit/s	CH.27710 2310 MHz	5 MHz	16QAM	1/12	z(Axial)	12.13	-36.71	-53.47	1.36	48.84	T4	34/ 35
					y(Transversal)	-2.10	-49.13	-53.19		47.03	T4	36
LTE Band 66 Voice EVS SWB Codec: 9.6 kbit/s	CH.132322 1745 MHz	5 MHz	16QAM	1/12	z(Axial)	8.62	-38.75	-53.47	1.42	47.37	T4	37/ 38
					y(Transversal)	-2.16	-48.72	-53.19		46.55	T4	39
LTE Band 71 Voice EVS SWB Codec: 9.6 kbit/s	CH.133297 680.5 MHz	5 MHz	16QAM	1/12	z(Axial)	10.97	-41.52	-53.47	1.23	52.49	T4	40/ 41
					y(Transversal)	1.76	-46.29	-53.19		48.05	T4	42
LTE Band 2 (Upper) Voice EVS SWB Codec: 9.6 kbit/s	CH.18900 1880 MHz	5 MHz	16QAM	1/12	z(Axial)	7.7	-34.69	-53.47	1.5	42.39	T4	
					y(Transversal)	0.26	-46.5	-53.19		46.76	T4	
LTE Band 66 (Upper) Voice EVS SWB Codec: 9.6 kbit/s	CH.132322 1745 MHz	5 MHz	16QAM	1/12	z(Axial)	8.01	-38.16	-53.47	1.24	46.17	T4	43/ 44
					y(Transversal)	0.46	-47.29	-53.19		47.76	T4	45
LTE Band 2 (Upper) Voice EVS SWB Codec: 9.6 kbit/s	CH.18625 1852.5 MHz	5 MHz	16QAM	1/12	z(Axial)	8.41	-33.12	-53.47	1.34	41.53	T4	
					y(Transversal)	1.18	-43.25	-53.19		44.42	T4	
	CH.19175 1907.5 MHz	5 MHz	16QAM	1/12	z(Axial)	8.09	-33.33	-53.47	1.32	41.42	T4	46/ 47
					y(Transversal)	0.28	-42.94	-53.19		43.21	T4	48

NR-FDD RB/ Modulation configuration

Mode	Ch. Freq.	BW	Waceform	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.
NR Band 25 Voice EVS-SWB Codec: 16.4 kbit/s	CH.376500 1882.5 MHz	40 MHz	CP-OFDM	QPSK	1/1	z(Axial)	5.26	-39.43	-53.45	1.54	44.70	T4	
						y(Transversal)	-5.31	-47.11	-53.35		41.80	T4	
					1/108	z(Axial)	5.12	-36.35	-53.45	1.57	41.48	T4	
						y(Transversal)	-5.60	-46.89	-53.35		41.29	T4	
					1/214	z(Axial)	5.64	-40.36	-53.45	1.55	46.00	T4	
						y(Transversal)	-1.72	-44.2	-53.35		42.48	T4	
					108/0	z(Axial)	5.60	-45.71	-53.45	1.54	51.31	T4	
						y(Transversal)	-1.69	-44.99	-53.35		43.3	T4	
					108/54	z(Axial)	5.13	-45.43	-53.45	1.61	50.56	T4	
						y(Transversal)	-1.68	-44.17	-53.35		42.49	T4	
					108/108	z(Axial)	5.27	-44.78	-53.45	1.62	50.04	T4	
						y(Transversal)	-2.03	-45.05	-53.35		43.02	T4	
					216/0	z(Axial)	5.34	-45.37	-53.45	1.56	50.71	T4	
						y(Transversal)	-1.51	-44.69	-53.35		43.18	T4	
				16QAM	1/108	z(Axial)	5.19	-33.88	-53.45	1.60	39.07	T4	
						y(Transversal)	-1.73	-43.6	-53.35		41.87	T4	
				64QAM	1/108	z(Axial)	7.76	-32.53	-53.45	1.49	40.29	T4	
						y(Transversal)	-1.69	-43.16	-53.35		41.47	T4	
				256QAM	1/108	z(Axial)	5.13	-38.43	-53.45	1.46	43.56	T4	
						y(Transversal)	-1.63	-43.79	-53.35		42.15	T4	
			DFTs-OFDM	QPSK	1/1	z(Axial)	5.59	-43.12	-53.47	1.60	48.7	T4	
						y(Transversal)	-5.10	-47.77	-53.12		42.67	T4	
					1/108	z(Axial)	2.63	-43.91	-53.47	1.6	46.55	T4	
						y(Transversal)	-2.67	-45.28	-53.27		42.61	T4	
					1/214	z(Axial)	5.17	-44.5	-53.47	1.53	49.67	T4	
						y(Transversal)	-6.01	-49.13	-53.27		43.12	T4	
					108/0	z(Axial)	4.77	-46.42	-53.47	1.55	51.19	T4	
						y(Transversal)	-5.52	-48.6	-53.27		43.08	T4	
					108/54	z(Axial)	5.21	-45.83	-53.47	1.54	51.04	T4	
						y(Transversal)	-5.57	-49.02	-53.27		43.45	T4	
					108/108	z(Axial)	8.10	-42.89	-53.47	1.65	50.99	T4	
						y(Transversal)	-1.57	-45.08	-53.27		43.51	T4	
					216/0	z(Axial)	7.99	-42.81	-53.47	1.59	50.80	T4	
						y(Transversal)	-1.74	-45.25	-53.27		43.51	T4	
				BPSK	1/108	z(Axial)	5.18	-41.13	-53.47	1.64	46.3	T4	
						y(Transversal)	-1.94	-43.98	-53.27		42.04	T4	
				16QAM	1/108	z(Axial)	5.18	-34.53	-53.47	1.67	39.71	T4	
						y(Transversal)	-2.12	-43.06	-53.27		40.93	T4	
				64QAM	1/108	z(Axial)	4.76	-35.08	-53.47	1.65	39.84	T4	
						y(Transversal)	-2.36	-43.62	-53.27		41.26	T4	
				256QAM	1/108	z(Axial)	5.31	-36.97	-53.47	1.57	42.28	T4	
						y(Transversal)	-2.34	-43.88	-53.27		41.53	T4	

Mode	Ch. Freq.	BW	Waceform	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.
NR Band 25 Voice EVS-SWB Codec: 16.4 kbit/s	CH.376500 1882.5 MHz	30 MHz	CP-OFDM	16QAM	1/80	z(Axial)	5.53	-34.72	-53.45	1.63	40.25	T4	
						y(Transversal)	-5.52	-46.49	-53.35		40.97	T4	
		25 MHz			1/67	z(Axial)	8.53	-33.14	-53.45	1.61	41.67	T4	
						y(Transversal)	-2.19	-44.37	-53.35		42.19	T4	
		20 MHz			1/53	z(Axial)	5.23	-34.70	-53.45	1.61	39.93	T4	
						y(Transversal)	-2.17	-43.18	-53.35		41.01	T4	
		15 MHz			1/39	z(Axial)	5.34	-34.6	-53.45	1.62	39.94	T4	
						y(Transversal)	-2.04	-43.70	-53.35		41.66	T4	
		10 MHz			1/26	z(Axial)	4.81	-34.24	-53.45	1.5	39.04	T4	
						y(Transversal)	-2.16	-43.59	-53.35		41.42	T4	
		5 MHz			1/13	z(Axial)	5.05	-34.7	-53.45	1.54	39.75	T4	
						y(Transversal)	-1.98	-42.91	-53.35		40.93	T4	
NR Band n5 Voice EVS-SWB Codec: 16.4 kbit/s	CH.167300 836.5 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.00	-43.14	-53.51	1.57	48.14	T4	49/ 50
						y(Transversal)	-5.38	-47.50	-53.27		42.12	T4	51
NR Band n30 Voice EVS-SWB Codec: 16.4 kbit/s	CH.462000 2310 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.28	-40.35	-53.51	1.62	45.63	T4	52/ 53
						y(Transversal)	-5.83	-47.52	-53.27		41.69	T4	54
NR Band n66 Voice EVS-SWB Codec: 16.4 kbit/s	CH.349000 1745 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.41	-38.27	-53.51	1.53	43.68	T4	55/ 56
						y(Transversal)	-1.91	-43.64	-53.27		41.73	T4	57
NR Band n70 Voice EVS-SWB Codec: 16.4 kbit/s	CH.340500 1702.5 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.35	-35.93	-53.51	1.60	41.28	T4	58/ 59
						y(Transversal)	-2.16	-43.47	-53.27		41.31	T4	60
NR Band n71 Voice EVS-SWB Codec: 16.4 kbit/s	CH.136100 680.5 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.40	-43.24	-53.51	1.52	48.64	T4	61/ 62
						y(Transversal)	-5.42	-47.41	-53.27		42.00	T4	63
NR Band n25 Voice EVS-SWB Codec: 16.4 kbit/s	CH.371000 1855 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.28	-34.14	-53.51	1.61	39.42	T4	
						y(Transversal)	-2.19	-43.36	-53.27		41.17	T4	
NR Band n25 Voice EVS-SWB Codec: 16.4 kbit/s	CH.382000 1910 MHz	10 MHz	CP-OFDM	16QAM	1/26	z(Axial)	5.32	-33.57	-53.51	1.59	38.89	T4	64/65
						y(Transversal)	-2.56	-43.30	-53.27		40.75	T4	66

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-SWB Codec: 24.4 kbit/s	CH.40620 2593 MHz	20 MHz	QPSK	1/0	z(Axial)	7.74	-27.00	-53.45	1.26	34.74	T4	
					y(Transversal)	-2.49	-41.23	-53.46		38.74	T4	
				1/49	z(Axial)	7.93	-27.43	-53.59	1.28	35.36	T4	
					y(Transversal)	-2.35	-41.43	-53.5		39.08	T4	
				1/99	z(Axial)	7.95	-27.37	-53.59	1.34	35.32	T4	
					y(Transversal)	-2.37	-41.22	-53.500		38.85	T4	
				50/0	z(Axial)	8.04	-28.17	-53.59	1.4	36.21	T4	
					y(Transversal)	-2.29	-41.59	-53.50		39.30	T4	
				50/25	z(Axial)	8.05	-28.41	-53.59	1.39	36.46	T3	
					y(Transversal)	-2.29	-41.76	-53.50		39.47	T4	
				50/49	z(Axial)	8.10	-28.14	-53.59	1.29	36.24	T4	
					y(Transversal)	-2.26	-41.56	-53.50		39.30	T4	
				100/0	z(Axial)	8.09	-28.24	-53.59	1.37	36.33	T4	
					y(Transversal)	-2.31	-41.75	-53.50		39.44	T4	
			16QAM	1/0	z(Axial)	8.00	-28.2	-53.59	1.31	36.21	T4	
					y(Transversal)	-2.39	-42.14	-53.50		39.75	T4	
			64QAM	1/0	z(Axial)	7.91	-29.24	-53.59	1.3	37.15	T4	
					y(Transversal)	-2.40	-42.66	-53.50		40.26	T4	
			256QAM	1/0	z(Axial)	7.95	-31.63	-53.59	1.36	39.58	T4	
					y(Transversal)	1.21	-42.17	-53.50		43.38	T4	
		15 MHz	QPSK	1/0	z(Axial)	7.90	-27.12	-53.59	1.35	35.03	T4	
					y(Transversal)	-2.41	-40.9	-53.50		38.49	T4	
		10 MHz		1/0	z(Axial)	7.74	-26.87	-53.59	1.33	34.60	T4	
					y(Transversal)	-2.43	-41.03	-53.50		38.61	T4	
		5 MHz		1/0	z(Axial)	7.78	-26.78	-53.59	1.34	34.55	T4	67/68
					y(Transversal)	-2.44	-40.75	-53.50		38.31	T4	69
LTE Band 48 Voice EVS-SWB Codec: 24.4 kbit/s	CH.55990 3625 MHz	5 MHz	QPSK	1/0	z(Axial)	7.92	-24.85	-53.59	1.31	32.77	T4	
					y(Transversal)	2.61	-37.87	-53.50		40.48	T4	
LTE Band 48 Voice EVS-SWB Codec: 24.4 kbit/s	CH.55265 3552.5 MHz	5 MHz	QPSK	1/0	z(Axial)	8.06	-25.66	-53.59	1.45	33.73	T4	
					y(Transversal)	0.77	-40.89	-53.50		41.66	T4	
	CH.55748 3600.8 MHz				z(Axial)	7.83	-25.10	-53.59	1.36	32.93	T4	
					y(Transversal)	0.49	-40.80	-53.50		41.28	T4	
	CH.56232 3649.2 MHz				z(Axial)	7.77	-25.02	-53.59	1.21	32.79	T4	
					y(Transversal)	1.85	-38.81	-53.50		40.66	T4	
	CH.56715 3697.5 MHz				z(Axial)	7.78	-24.63	-53.59	1.39	32.40	T4	70/71
					y(Transversal)	2.50	-38.57	-53.50		41.07	T4	72

NR-TDD RB/ Modulation configuration

Mode	Ch. Freq.	BW	Waceform	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.
NR Band 77 Voice EVS-WB Codec: 5.9 kbit/s	CH.656000 3840 MHz	100 MHz	CP-OFDM	QPSK	1/1	z(Axial)	5.59	-24.67	-55.83	1.12	30.26	T4	
						y(Transversal)	-2.65	-40.56	-55.75		37.91	T4	
					1/137	z(Axial)	4.91	-20.40	-55.83	1.21	25.31	T3	
						y(Transversal)	-3.95	-33.78	-55.75		29.83	T3	
					1/271	z(Axial)	6.09	-19.96	-55.83	1.3	26.05	T3	
						y(Transversal)	-3.80	-33.73	-55.75		29.93	T3	
					137/0	z(Axial)	6.08	-20.06	-55.83	1.27	26.14	T3	
						y(Transversal)	-6.24	-36.27	-55.75		30.03	T4	
					137/68	z(Axial)	5.08	-20.15	-55.83	1.11	25.23	T3	
						y(Transversal)	-3.34	-32.64	-55.75		29.30	T3	
					137/136	z(Axial)	5.97	-19.64	-55.83	1.25	25.61	T3	
						y(Transversal)	-3.32	-33.72	-55.75		30.40	T4	
					273/0	z(Axial)	6.46	-19.61	-55.83	1.3	26.07	T3	
						y(Transversal)	-3.62	-33.56	-55.75		29.94	T3	
				16QAM	1/137	z(Axial)	5.38	-19.36	-55.83	1.22	24.75	T3	
						y(Transversal)	3.48	-28.65	-55.75		32.13	T4	
				64QAM	1/137	z(Axial)	5.12	-20.45	-55.83	1.32	25.57	T3	
						y(Transversal)	-3.47	-34.06	-55.75		30.59	T4	
				256QAM	1/137	z(Axial)	5.19	-23.32	-55.83	1.23	28.50	T3	
						y(Transversal)	-3.74	-36.79	-55.75		33.05	T4	
			DFTs-OFDM	QPSK	1/1	z(Axial)	5.69	-18.72	-55.94	1.23	24.41	T3	
						y(Transversal)	-2.66	-32.01	-55.85		29.35	T3	
					1/137	z(Axial)	5.99	-18.71	-55.94	1.33	24.70	T3	
						y(Transversal)	-2.66	-32.08	-55.85		29.42	T3	
					1/271	z(Axial)	5.75	-18.77	-55.94	1.35	24.52	T3	
						y(Transversal)	-9.83	-38.87	-55.85		29.04	T3	
					135/0	z(Axial)	5.77	-19.18	-55.94	1.32	24.95	T3	
						y(Transversal)	-2.74	-32.83	-55.85		30.09	T4	
					135/69	z(Axial)	6.01	-18.75	-55.94	1.49	24.76	T3	
						y(Transversal)	-2.72	-32.26	-55.85		29.54	T3	
					135/138	z(Axial)	6.31	-18.9	-55.94	1.31	25.21	T3	
						y(Transversal)	-2.71	-32.54	-55.85		29.83	T3	
					270/0	z(Axial)	5.76	-18.82	-55.94	1.42	24.58	T3	
						y(Transversal)	-2.80	-32.51	-55.85		29.70	T3	
				BPSK	1/1	z(Axial)	5.82	-18.82	-55.94	1.45	24.64	T3	
						y(Transversal)	-2.88	-32.59	-55.85		29.71	T3	
				16QAM	1/1	z(Axial)	6.16	-19.39	-55.94	1.4	25.55	T3	
						y(Transversal)	-3.33	-33.29	-55.85		29.96	T3	
				64QAM	1/1	z(Axial)	5.27	-19.44	-55.94	1.17	24.71	T3	
						y(Transversal)	-2.90	-33.39	-55.85		30.49	T4	
				256QAM	1/1	z(Axial)	6.12	-19.46	-55.94	1.37	25.58	T3	
						y(Transversal)	-2.68	-33.34	-55.85		30.66	T4	

Mode	Ch. Freq.	BW	Waceform	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.
NR Band 77 Voice EVS-SWB Codec: 9.6 kbit/s	CH.656000 3840 MHz	90 MHz	DFTs-OFDM	QPSK	1/1	z(Axial)	5.15	-21.66	-55.61	1.52	26.81	T3	
						y(Transversal)	-3.58	-32.46	-55.64		28.88	T3	
		80 MHz			1/1	z(Axial)	5.54	-18.09	-55.61	1.36	23.64	T3	73/74
						y(Transversal)	-3.00	-32.97	-55.64		29.97	T3	75
		70 MHz			1/1	z(Axial)	6.95	-17.79	-55.61	1.21	24.74	T3	
						y(Transversal)	-3.68	-32.27	-55.64		28.59	T3	
		60 MHz			1/1	z(Axial)	5.64	-18.79	-55.61	1.31	24.43	T3	
						y(Transversal)	-3.07	-32.10	-55.64		29.03	T3	
		50 MHz			1/1	z(Axial)	5.77	-18.82	-55.61	1.4	24.59	T3	
						y(Transversal)	-3.76	-32.28	-55.64		28.52	T3	
		40 MHz			1/1	z(Axial)	6.24	-18.37	-55.61	1.35	24.61	T3	
						y(Transversal)	-5.71	-34.25	-55.64		28.53	T3	
		30 MHz			1/1	z(Axial)	7.34	-17.36	-55.61	1.57	24.70	T3	
						y(Transversal)	-5.35	-33.95	-55.64		28.61	T3	
		25 MHz			1/1	z(Axial)	5.67	-18.62	-55.61	1.5	24.29	T3	
						y(Transversal)	-1.72	-30.97	-55.64		29.26	T3	
		20 MHz			1/1	z(Axial)	7.09	-17.77	-55.61	1.62	24.86	T3	
						y(Transversal)	-2.22	-31.66	-55.64		29.43	T3	
		15 MHz			1/1	z(Axial)	4.29	-19.62	-55.61	1.49	23.92	T3	
						y(Transversal)	-2.93	-31.39	-55.64		28.46	T3	
		10 MHz			1/1	z(Axial)	4.83	-19.61	-55.61	1.36	24.44	T3	
						y(Transversal)	-3.94	-32.90	-55.64		28.96	T3	
NR Band 48 Voice EVS-SWB Codec:9.6 kbit/s	CH.641666 3624.99 MHz	40 MHz	DFTs-OFDM	QPSK	1/1	z(Axial)	5.62	-23.20	-55.61	1.57	28.82	T3	76/77
						y(Transversal)	-3.23	-36.61	-55.64		33.38	T4	78
NR Band 41 Voice EVS-SWB Codec:9.6 kbit/s	CH.518598 2592.99 MHz	80 MHz	DFTs-OFDM	QPSK	1/1	z(Axial)	6.37	-25.97	-55.61	1.36	32.34	T4	79/ 80
						y(Transversal)	-5.77	-40.50	-55.64		34.73	T4	81
NR Band 77 DoD Voice EVS-SWB Codec:9.6 kbit/s	CH.633334 3500.01 MHz	80 MHz	DFTs-OFDM	QPSK	1/1	z(Axial)	6.34	-20.00	-55.61	1.35	26.34	T3	
						y(Transversal)	-2.63	-33.72	-55.64		31.09	T4	
NR Band 77 Voice EVS-SWB Codec: 9.6 kbit/s	CH.649334 3740.01 MHz	80 MHz	DFTs-OFDM	QPSK	1/1	z(Axial)	5.67	-18.62	-55.61	1.51	24.29	T3	
						y(Transversal)	-1.72	-30.97	-55.64		29.26	T3	
	CH.662666 3939.99 MHz					z(Axial)	6.05	-18.09	-55.61	1.39	24.14	T3	
						y(Transversal)	-2.69	-31.48	-55.64		28.79	T3	

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 GHz and 5 GHz.

The highlighted results below were determined to be the worst case codec configuration(s) for Wi-Fi 2.4 GHz and 5 GHz.

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)	9.02	9.66	10.04	9.41	10.86	10.8	z (Axial)	802.11b CH.6 2437 MHz DSSS 1 Mbps
ABM2 (dBA/m)	-30.92	-29.38	-29.19	-30.91	-29.41	-29.08		
S+N/N (dB)	39.94	39.04	39.23	40.32	40.27	39.87		
Freq. Resposne(dB)	1.99	2	2	1.98	2	2		
ABM1 (dB/m)	3.26	-0.8	3.48	0.06	0.49	4.34	y (Transversal)	
ABM2 (dBA/m)	-34.91	-39.94	-36.19	-38.45	-39.93	-36.43		
S+N/N (dB)	38.18	39.13	39.67	38.51	40.42	40.78		

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	24.4	128	9.6	16.4	24.4		
ABM1 (dB/m)	5.12	9.35	9.14	4.49	10.68	11.1	2.15	4.88	4.76	z (Axial)	802.11b CH.6 2437 MHz DSSS 1 Mbps
ABM2 (dBA/m)	-32.15	-32.86	-32.87	-31.94	-32.81	-32.43	-31.81	-32.37	-32.38		
S+N/N (dB)	37.27	42.21	42.01	36.43	43.5	43.53	33.96	37.26	37.15		
Freq.Resposne(dB)	1.94	2	2	1.95	1.98	1.99	1.36	1.43	1.27		
ABM1 (dB/m)	0.89	0.25	0.53	2.09	4.18	1.98	-3.16	-4.13	-3.79	y (Transversal)	
ABM2 (dBA/m)	-36.13	-40.59	-40.16	-36.16	-36.73	-40.14	-35.78	-40.14	-39.84		
S+N/N (dB)	37.02	40.84	40.68	38.25	40.92	42.12	32.62	36.01	36.06		

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)	7.18	10.46	9.44	7.51	10.45	10.5	z (Axial)	802.11a CH.40 5200 MHz BPSK 6 Mbps
ABM2 (dBA/m)	-37.34	-34.77	-33.82	-36.2	-33.84	-33.14		
S+N/N (dB)	44.52	45.22	43.26	43.71	44.3	43.64		
Freq. Resposne(dB)	2	2	2	1.78	2	2		
ABM1 (dB/m)	-4.03	3.68	3.4	-0.41	4.45	5.47	y (Transversal)	
ABM2 (dBA/m)	-46.65	-40.47	-39.99	-43.1	-40.03	-39.92		
S+N/N (dB)	42.62	44.15	43.38	42.69	44.47	44.48		

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	24.4	128	9.6	16.4	24.4		
ABM1 (dB/m)	3.59	10.08	10.65	5.14	9.18	9.3	3.21	3.73	3.2	z (Axial)	802.11a CH.40 5200 MHz BPSK 6 Mbps
ABM2 (dBA/m)	-36.47	-35.23	-35.06	-36.24	-36.57	-35.59	-35.88	-36.17	-36.33		
S+N/N (dB)	40.06	45.31	45.71	41.38	45.75	44.89	39.09	39.9	39.53		
Freq.Resposne(dB)	1.95	2	2	1.3	2	1.95	1.43	1.2	1.32		
ABM1 (dB/m)	-1.06	0.56	3.86	-3.1	-1.68	0.23	-8.25	-4.2	-4.48	y (Transversal)	
ABM2 (dBA/m)	-43.39	-43.79	-40.36	-44.24	-46.8	-52.89	-46.25	-43.71	-43.97		
S+N/N (dB)	42.33	44.36	44.22	41.15	45.12	53.12	38	39.5	39.48		

12.5 VoWi-Fi Air Interface Investigation

Using the data from §12.4, 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 §12.4, 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-Rating	Plot No.
802.11b Voice EVS-SWB Codec: 9.6 kbit/s	CH.6 2437 MHz	20 MHz	DSSS 1 Mbps	z(Axial)	2.15	-31.81	-53.36	1.36	33.96	T4	82/ 83
				y(Transversal)	-3.16	-35.78	-53.44		32.62	T4	84
			CCK 5.5 Mbps	z(Axial)	5.41	-34.71	-53.36	1.51	40.12	T4	
				y(Transversal)	-1.38	-41.31	-53.44		39.93	T4	
			CCK 11 Mbps	z(Axial)	5.21	-34.88	-53.36	1.48	40.09	T4	
				y(Transversal)	-5.08	-44.61	-53.44		39.52	T4	
	CH.1 2412 MHz		DSSS 1 Mbps	z(Axial)	5.7	-36.23	-53.36	1.23	41.93	T4	
				y(Transversal)	-0.97	-42.72	-53.44		41.75	T4	
	CH.11 2462 MHz		DSSS 1 Mbps	z(Axial)	4.9	-37.18	-53.36	1.4	42.07	T4	
				y(Transversal)	-0.99	-42.87	-53.44		41.88	T4	
802.11g Voice EVS-SWB Codec: 9.6 kbit/s	CH.6 2437 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	6.08	-32.43	-53.36	1.47	38.51	T4	
				y(Transversal)	-1.1	-39.14	-53.44		38.04	T4	
802.11n HT20 Voice EVS-SWB Codec: 9.6 kbit/s	CH.6 2437 MHz	20 MHz	MCS 3 26 Mbps	z(Axial)	5.61	-41.43	-53.36	1.42	47.04	T4	
				y(Transversal)	-0.58	-46.15	-53.44		45.57	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-SWB Codec: 9.6 kbit/s	CH.40 5200 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	3.21	-35.88	-53.41	1.43	39.09	T4	85/ 86
				y(Transversal)	-8.25	-46.25	-53.49		38	T4	87
			QPSK 18 Mbps	z(Axial)	4.91	-37.21	-53.41	1.46	42.13	T4	
				y(Transversal)	-4.44	-44.12	-53.49		39.68	T4	
			64QAM 54 Mbps	z(Axial)	4.51	-35.24	-53.41	1.23	39.75	T4	
				y(Transversal)	-4.15	-43.93	-53.49		39.78	T4	
802.11n HT20 Voice EVS-SWB Codec: 9.6 kbit/s	CH.40 5200 MHz	20 MHz	MCS 0 6.5 Mbps	z(Axial)	5.14	-35.68	-53.41	1.56	40.82	T4	
				y(Transversal)	-4.33	-44.77	-53.49		40.44	T4	
			MCS 3 26 Mbps	z(Axial)	5.53	-36.97	-53.41	1.42	42.49	T4	
				y(Transversal)	-0.92	-41.19	-53.49		40.27	T4	
			MCS 7 65 Mbps	z(Axial)	4.38	-37.98	-53.41	1.31	42.35	T4	
				y(Transversal)	-1.15	-42.69	-53.49		41.53	T4	
802.11n HT40 Voice EVS-SWB Codec: 9.6 kbit/s	CH.38 5190 MHz	40 MHz	MCS 0 13.5 Mbps	z(Axial)	5.01	-38.77	-53.37	1.57	43.78	T4	
				y(Transversal)	-1.65	-43.02	-53.5		41.37	T4	
			MCS 3 54 Mbps	z(Axial)	6.65	-39.03	-53.37	1.49	45.68	T4	
				y(Transversal)	0.66	-43.11	-53.5		43.77	T4	
			MCS 7 135 Mbps	z(Axial)	4.99	-39.26	-53.37	1.38	44.25	T4	
				y(Transversal)	-0.71	-43.17	-53.5		42.47	T4	
802.11ac VHT20 Voice EVS-SWB Codec: 9.6 kbit/s	CH.40 5200 MHz	20 MHz	MCS 0 6.5 Mbps	z(Axial)	4.93	-38.89	-53.37	1.28	43.82	T4	
				y(Transversal)	-0.99	-42.92	-53.5		41.93	T4	
			MCS 4 39 Mbps	z(Axial)	4.82	-38.45	-53.37	1.44	43.27	T4	
				y(Transversal)	-0.8	-42.55	-53.5		41.75	T4	
			MCS 8 78 Mbps	z(Axial)	7.6	-38.46	-53.37	1.49	46.05	T4	
				y(Transversal)	-4.76	-46.55	-53.5		41.79	T4	
802.11ac VHT40 Voice EVS-SWB Codec: 9.6 kbit/s	CH.38 5190 MHz	40 MHz	MCS 0 13.5 Mbps	z(Axial)	3.93	-38.11	-53.37	1.23	42.04	T4	
				y(Transversal)	-4.48	-45.28	-53.5		40.8	T4	
			MCS 4 81 Mbps	z(Axial)	4.69	-38.59	-53.37	1.32	43.27	T4	
				y(Transversal)	-0.71	-43.03	-53.5		42.32	T4	
			MCS 9 180 Mbps	z(Axial)	4.99	-37.78	-53.37	1.41	42.77	T4	
				y(Transversal)	-0.53	-42.77	-53.5		42.24	T4	
802.11ac VHT80 Voice EVS-SWB Codec: 9.6 kbit/s	CH.42 5210 MHz	80 MHz	MCS 0 29.3 Mbps	z(Axial)	5.13	-37.73	-53.37	1.38	42.86	T4	
				y(Transversal)	-4.4	-46.01	-53.5		41.61	T4	
			MCS 4 175.5Mbps	z(Axial)	5.33	-35.53	-53.37	1.41	40.86	T4	
				y(Transversal)	-0.53	-40.77	-53.5		40.24	T4	
			MCS 9 390 Mbps	z(Axial)	5.47	-38.3	-53.37	1.49	43.77	T4	
				y(Transversal)	-4.08	-45.67	-53.5		41.59	T4	
802.11a Voice EVS-SWB Codec: 9.6 kbit/s	CH.60 5300 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	4.01	-35.3	-53.33	1.28	39.31	T4	88/ 89
				y(Transversal)	-5.38	-44.35	-53.47		38.97	T4	90
	CH.120 5600 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	4.94	-36.99	-53.33	1.27	41.93	T4	91/ 92
				y(Transversal)	0.73	-42.23	-53.47		41.5	T4	93
	CH.157 5785 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	5.46	-37.18	-53.33	1.49	42.64	T4	94/ 95
				y(Transversal)	-0.66	-42.66	-53.47		42	T4	96
802.11a Voice EVS-SWB Codec: 9.6 kbit/s	CH.36 5180 MHz	20 MHz	BPSK 6 Mbps	z(Axial)	5.26	-37.38	-53.33	1.54	42.64	T4	
				y(Transversal)	-0.4	-41.83	-53.47		41.43	T4	
	CH.48 5240 MHz			z(Axial)	5.2	-36.22	-53.33	1.46	41.42	T4	
				y(Transversal)	-0.1	-41.68	-53.47		41.58	T4	

12.6 OTT Codec Investigation

The DUT's nested OTT application supports range of codec bit rate 6 – 75 kbit/s, thus an investigation between the various codec configurations (6/75 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)	5.46	-0.25	-6.04	z (Axial)	GSM 1900 EDGE 2 slots CH.810 1909.8 MHz
ABM2 (dBA/m)	-22.42	-32.17	-35.54		
S+N/N (dB)	27.88	31.93	29.51		
Freq.Resposne (dB)	1.25	1.17	1.45		
ABM1 (dB/m)	-0.96	-7.34	-8.95	y(Transversal)	
ABM2 (dBA/m)	-36.16	-43.28	-45.48		
S+N/N (dB)	35.19	35.94	36.53		
ABM1 (dB/m)	-1.57	-1.66	-1.73	z (Axial)	WCDMA Band II HSUPA subtest 1 CH.9400 1852.4 MHz
ABM2 (dBA/m)	-45.47	-45.63	-45.81		
S+N/N (dB)	43.9	43.97	44.08		
Freq.Resposne (dB)	1.11	1.05	1.26		
ABM1 (dB/m)	-9.1	-9.14	-8.55	y(Transversal)	
ABM2 (dBA/m)	-48.13	-49.24	-48.57		
S+N/N (dB)	39.03	40.1	40.02		
ABM1 (dB/m)	-3.63	-2.84	-2.84	z (Axial)	LTE Band 2 Upper ANT 5 MHz 16QAM 1RB 12offset CH.19175 1907.5 MHz
ABM2 (dBA/m)	-34.84	-35.02	-35.04		
S+N/N (dB)	31.21	32.18	32.2		
Freq.Resposne (dB)	1.52	1.16	1.22		
ABM1 (dB/m)	-10.68	-10.21	-6.3	y(Transversal)	
ABM2 (dBA/m)	-45.44	-45.75	-41.17		
S+N/N (dB)	34.76	35.55	34.87		
ABM1 (dB/m)	4.04	4.58	4.65	z (Axial)	LTE Band 48 5 MHz QPSK 1B 0offset CH.56715 3697.5 MHz
ABM2 (dBA/m)	-21.48	-21.45	-21.52		
S+N/N (dB)	25.52	26.03	26.16		
Freq.Resposne (dB)	1.35	1.26	1.41		
ABM1 (dB/m)	-6.55	-10.21	-9.13	y(Transversal)	
ABM2 (dBA/m)	-36.07	-43.06	-42.48		
S+N/N (dB)	29.52	32.85	33.35		

Codec Investigation					
Codec State	codec bit rate (kbit/s)			Orientation	Band/ BandWidth/ Channel
	6	40	75		
ABM1 (dB/m)	-8.65	-8.32	-8.34	z (Axial)	802.11b 2.4GHz 1Mbps CH.6 2437 ㎒
ABM2 (dBA/m)	-39.32	-41.11	-41.21		
S+N/N (dB)	30.67	32.79	32.87		
Freq.Resposne (dB)	1.21	1.51	1.5		
ABM1 (dB/m)	-9.04	-9.09	-8.59	y(Transversal)	
ABM2 (dBA/m)	-38.21	-38.28	-38.61		
S+N/N (dB)	29.17	29.2	30.02		
ABM1 (dB/m)	-2.72	-1.19	-2.15	z (Axial)	802.11a 5GHz 6Mbps CH40 5200 ㎒
ABM2 (dBA/m)	-29.25	-27.19	-28.97		
S+N/N (dB)	26.54	26.01	26.82		
Freq.Resposne (dB)	1.33	1.25	1.16		
ABM1 (dB/m)	-7.34	-6.3	-9.52	y(Transversal)	
ABM2 (dBA/m)	-36	-34.74	-38.3		
S+N/N (dB)	28.66	28.44	28.78		
ABM1 (dB/m)	-3.13	-2.52	-2.15	z (Axial)	NR Band 25 10 ㎒ CP 16QAM 1RB 26offset CH.382000 1865 ㎒
ABM2 (dBA/m)	-32.92	-32.94	-33.04		
S+N/N (dB)	29.79	30.42	30.9		
Freq.Resposne (dB)	1.52	1.44	1.36		
ABM1 (dB/m)	-12.93	-9.28	-9.22	y(Transversal)	
ABM2 (dBA/m)	-45.34	-41.87	-42.46		
S+N/N (dB)	32.41	32.59	33.24		
ABM1 (dB/m)	-2.76	-2.24	-1.93	z (Axial)	NR Band 77 80 ㎒ DFT-s QPSK 1RB 1offset CH.656000 3840 ㎒
ABM2 (dBA/m)	-30.92	-30.94	-30.88		
S+N/N (dB)	28.16	28.7	28.96		
Freq.Resposne (dB)	1.13	1.32	1.22		
ABM1 (dB/m)	-9.64	-9.45	-13.24	y(Transversal)	
ABM2 (dBA/m)	-40.97	-40.88	-44.92		
S+N/N (dB)	31.33	31.43	31.69		

12.7 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: 40 kbit/s	CH.190 836.5 MHz				z(Axial)	-1.6	-39.69	-53.5	1.27	38.09	T4	
					y(Transversal)	-12.19	-39.44	-53.24		27.26	T3	
GSM1900 EDGE 2 slots Duo Codec: 40 kbit/s	CH.810 1909.8 MHz				z(Axial)	5.46	-22.42	-53.5	1.25	27.88	T3	
					y(Transversal)	-0.96	-36.16	-53.24		35.19	T4	
UMTS Band II HSUPA subtest1 Duo Codec: 6 kbit/s	CH.9400 1880.0 MHz				z(Axial)	-1.57	-45.47	-53.5	1.11	43.9	T4	
					y(Transversal)	-9.1	-48.13	-53.24		39.03	T4	
UMTS Band IV HSUPA subtest1 Duo Codec: 6 kbit/s	CH.1412 1732.4 MHz				z(Axial)	0.38	-42.6	-53.5	1.29	42.99	T4	
					y(Transversal)	-9.3	-48.55	-53.24		39.25	T4	
UMTS Band V HSUPA subtest1 Duo Codec: 6 kbit/s	CH.4183 836.6 MHz				z(Axial)	-1.92	-47.83	-53.5	1.03	45.91	T4	
					y(Transversal)	-9.1	-48.86	-53.24		39.75	T4	
LTE Band 7 Google Duo Codec: 6 kbit/s	CH.21100 2535 MHz	5 MHz	16QAM	1/12	z(Axial)	1.23	-36.79	-54.27	1.38	38.02	T4	
					y(Transversal)	-5.51	-45.72	-54.47		37.21	T4	
LTE Band 12 Google Duo Codec: 6 kbit/s	CH.23095 707.5 MHz	5 MHz	16QAM	1/12	z(Axial)	5.96	-40.38	-54.27	1.28	46.35	T4	
					y(Transversal)	-6.03	-42.58	-54.47		36.55	T4	
LTE Band 13 Google Duo Codec: 6 kbit/s	CH.23230 782.0 MHz	5 MHz	16QAM	1/12	z(Axial)	1.98	-39.17	-54.27	1.03	41.16	T4	
					y(Transversal)	-5.75	-41.16	-54.47		35.41	T4	
LTE Band 14 Google Duo Codec: 6 kbit/s	CH.23330 793 MHz	5 MHz	16QAM	1/12	z(Axial)	1.51	-38.04	-54.27	1.04	39.55	T4	
					y(Transversal)	-11.12	-45.94	-54.47		34.81	T4	
LTE Band 25 Google Duo Codec: 6 kbit/s	CH.26365 1882.5 MHz	5 MHz	16QAM	1/12	z(Axial)	0.5	-36.01	-54.27	1.19	36.51	T4	
					y(Transversal)	-9.43	-46.26	-54.47		36.82	T4	
LTE Band 26 Google Duo Codec: 6 kbit/s	CH.26865 831.5 MHz	5 MHz	16QAM	1/12	z(Axial)	2.11	-40.88	-54.27	1.12	42.99	T4	
					y(Transversal)	-8.81	-46.19	-54.47		37.38	T4	
LTE Band 30 Google Duo Codec: 6 kbit/s	CH.27710 2310 MHz	5 MHz	16QAM	1/12	z(Axial)	1.34	-37.34	-54.27	1.28	38.68	T4	
					y(Transversal)	-6.53	-43.36	-54.47		36.83	T4	
LTE Band 66 Google Duo Codec: 6 kbit/s	CH.132322 1745 MHz	5 MHz	16QAM	1/12	z(Axial)	-3.7	-40.58	-54.27	1.23	36.88	T4	
					y(Transversal)	-9.22	-46.56	-54.47		37.33	T4	
LTE Band 71 Google Duo Codec: 6 kbit/s	CH.133297 680.5 MHz	5 MHz	16QAM	1/12	z(Axial)	-3.3	-45.7	-54.27	1.3	42.4	T4	
					y(Transversal)	-10.52	-47.8	-54.47		37.27	T4	
LTE Band 2(Upper) Google Duo Codec: 6 kbit/s	CH.19175 1907.5 MHz	5 MHz	16QAM	1/12	z(Axial)	-3.63	-34.84	-54.27	1.52	31.21	T4	
					y(Transversal)	-10.68	-45.44	-54.47		34.76	T4	
LTE Band 66(Upper) Google Duo Codec: 6 kbit/s	CH.132322 1745 MHz	5 MHz	16QAM	1/12	z(Axial)	-2.34	-36.56	-54.27	1.12	34.22	T4	
					y(Transversal)	-9.66	-45.14	-54.47		35.48	T4	
LTE Band 41 Google Duo Codec: 6 kbit/s	CH.40620 2593 MHz	5 MHz	QPSK	1/0	z(Axial)	-0.61	-30.15	-53.5	1.18	29.54	T3	
					y(Transversal)	-11.15	-40.56	-53.32		29.4	T3	
LTE Band 48 Google Duo Codec: 6 kbit/s	CH.56715 3697.5 MHz	5 MHz	QPSK	1/0	z(Axial)	4.04	-21.48	-53.5	1.35	25.52	T3	
					y(Transversal)	-6.55	-36.07	-53.32		29.52	T3	

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.6 2437 MHz	20 MHz	1 Mbps		z(Axial)	-8.65	-39.32	-53.5	1.21	30.67	T4	
					y(Transversal)	-9.04	-38.21	-53.32		29.17	T3	
U-NII 5.2 GHz 802.11a Google Duo Codec: 40 kbit/s	CH.40 5200 MHz	20 MHz	6 Mbps		z(Axial)	-1.19	-27.19	-53.5	1.25	26.01	T3	
					y(Transversal)	-6.3	-34.74	-53.32		28.44	T3	
U-NII 5.3 802.11a Google Duo Codec: 40 kbit/s	CH.60 5600 MHz	20 MHz	6 Mbps		z(Axial)	-0.53	-27.28	-53.5	1.17	27.82	T3	
					y(Transversal)	-9.2	-40.47	-53.32		31.27	T4	
U-NII 5.6 GHz 802.11a Google Duo Codec: 40 kbit/s	CH.120 5600 MHz	20 MHz	6 Mbps		z(Axial)	-1.8	-33.05	-53.5	1.21	31.24	T4	
					y(Transversal)	-5.31	-38.18	-53.32		32.86	T4	
U-NII 5.8 GHz 802.11a Google Duo Codec: 40 kbit/s	CH.157 5785 MHz	20 MHz	6 Mbps		z(Axial)	-1.88	-32.89	-53.5	1.13	31.01	T4	
					y(Transversal)	-6.56	-39.24	-53.32		32.67	T4	

Mode	Ch. Freq.	BW	Waceform	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.
NR Band n5 Google Duo Codec: 6 kbit/s	CH.167300 836.5 MHz	10 MHz	CP	16QAM	1/26	z(Axial)	-2.18	-38.45	-53.58	1.17	36.27	T4	
						y(Transversal)	-12.79	-45.16	-53.27		32.37	T4	
NR Band n25 Google Duo Codec: 6 kbit/s	CH.382000 1865 MHz	10 MHz	CP	16QAM	1/26	z(Axial)	-3.13	-32.92	-53.58	1.52	29.79	T4	
						y(Transversal)	-12.93	-45.34	-53.27		32.41	T4	
NR Band n30 Google Duo Codec: 6 kbit/s	CH.462000 2310 MHz	10 MHz	CP	16QAM	1/26	z(Axial)	-2.49	-35.17	-53.58	1.32	32.68	T4	
						y(Transversal)	-13.06	-46.38	-53.27		33.32	T4	
NR Band n66 Google Duo Codec: 6 kbit/s	CH.349000 1745 MHz	10 MHz	CP	16QAM	1/26	z(Axial)	-2.14	-34.7	-53.58	1.4	32.57	T4	
						y(Transversal)	-9.74	-42.9	-53.27		33.16	T4	
NR Band n70 Google Duo Codec: 6 kbit/s	CH.340500 1702.5 MHz	10 MHz	CP	16QAM	1/26	z(Axial)	-2.49	-31.34	-53.58	1.25	28.85	T4	
						y(Transversal)	-9.38	-42.01	-53.27		32.64	T4	
NR Band n71 Google Duo Codec: 6 kbit/s	CH.136100 680.5 MHz	10 MHz	CP	16QAM	1/26	z(Axial)	-2.23	-38.49	-53.58	1.2	36.26	T4	
						y(Transversal)	-14.42	-47.27	-53.27		32.85	T4	
NR Band n41 Google Duo Codec: 6 kbit/s	CH. 518598 2592.99 MHz	80 MHz	DFTs	QPSK	1/1	z(Axial)	-2.01	-34.13	-53.58	1.07	32.12	T4	
						y(Transversal)	-13.05	-46.36	-53.27		33.31	T4	
NR Band n48 Google Duo Codec: 6 kbit/s	CH. 641666 3624.99 MHz	80 MHz	DFTs	QPSK	1/1	z(Axial)	-2.27	-30.89	-53.58	1.28	28.61	T3	
						y(Transversal)	-9.35	-41.18	-53.27		31.83	T4	
NR Band n77 Google Duo Codec: 6 kbit/s	CH. 656000 3840 MHz	80 MHz	DFTs	QPSK	1/1	z(Axial)	-2.76	-30.92	-53.58	1.13	28.16	T3	
						y(Transversal)	-9.64	-40.97	-53.27		31.33	T4	
NR Band n77 DoD Google Duo Codec: 6 kbit/s	CH. 633334 3500.01 MHz	80 MHz	DFTs	QPSK	1/1	z(Axial)	-2.35	-30.68	-53.58	1.31	28.33	T3	
						y(Transversal)	-9.46	-40.98	-53.27		31.52	T4	
LTE Band 48 Google Duo Codec: 6 kbit/s	CH.55265 3552.5 MHz	5 MHz		QPSK	1/0	z(Axial)	-0.18	-23.86	-53.5	1.11	23.68	T3	
						y(Transversal)	-9.83	-37.79	-53.32		27.96	T3	
LTE Band 48 Google Duo Codec: 6 kbit/s	CH.55748 3600.8 MHz	5 MHz		QPSK	1/0	z(Axial)	4.67	-19.01	-53.5	1.12	23.68	T3	97/98
						y(Transversal)	-6.15	-33.32	-53.32		27.17	T3	99
LTE Band 48 Google Duo Codec: 6 kbit/s	CH.55990 3625 MHz	5 MHz		QPSK	1/0	z(Axial)	4.78	-19.21	-53.5	1.21	23.99	T3	
						y(Transversal)	-0.81	-34.09	-53.32		27.28	T3	
LTE Band 48 Google Duo Codec: 6 kbit/s	CH.56232 3649.2 MHz	5 MHz		QPSK	1/0	z(Axial)	-0.65	-24.44	-53.5	1.1	25.08	T3	
						y(Transversal)	-8.37	-37.33	-53.32		28.96	T3	

Attachment 1. HAC T-COIL Test Plots

Plot No.1
GSM850 FR V1 190ch z(axial)

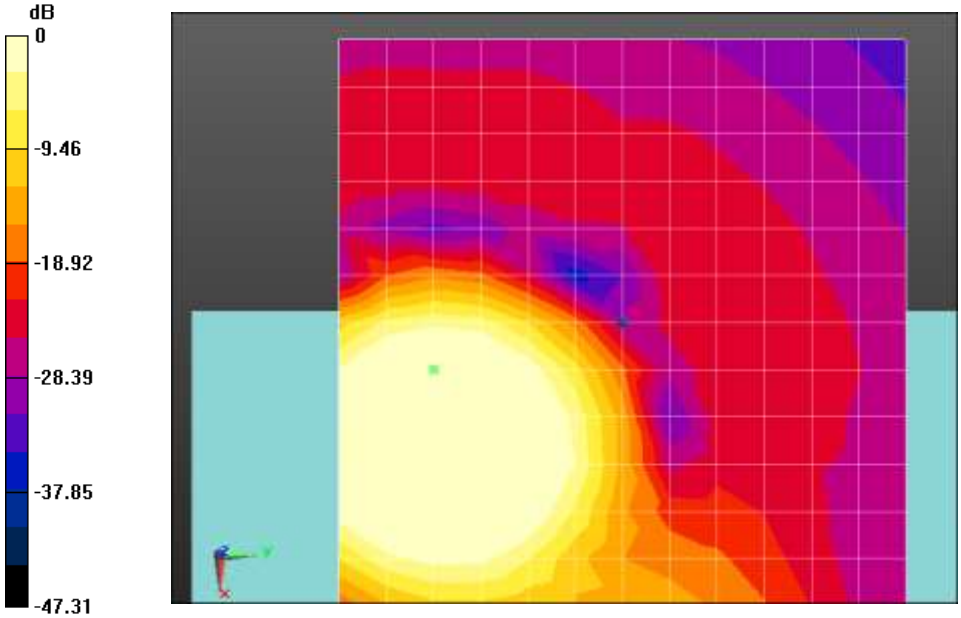
Communication System: UID 0, GSM 850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.03 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -38.83 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 43.87 dB
ABM1 comp = 5.03 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.2
GSM850 190ch FR V1 190ch Freq. Response

Communication System: UID 0, GSM 850 (0); Frequency: 836.6 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

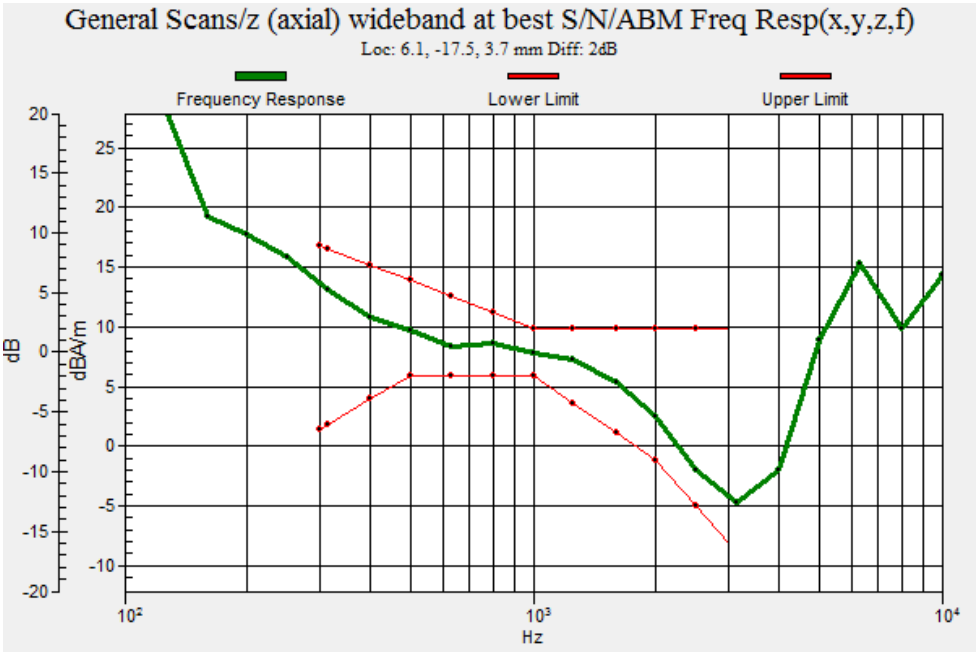
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 72.35
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: 6.1, -17.5, 3.7 mm



Plot No.3
GSM850 190ch FR V1 190ch y(transversal)

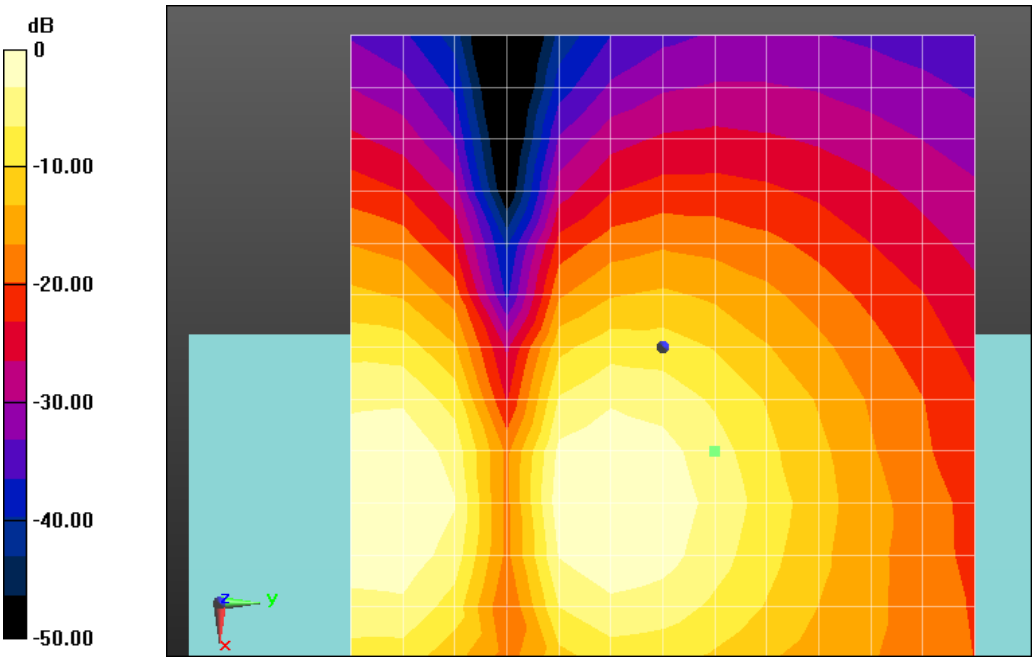
Communication System: UID 0, GSM 850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.12 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 4.2, 3.7 mm
Cursor:
ABM2 = -41.00 dBA/m
Location: 8.3, 4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 35.88 dB
ABM1 comp = -5.12 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 4.2, 3.7 mm



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

Plot No.4
GSM1900 FR V1 810ch z(axial)

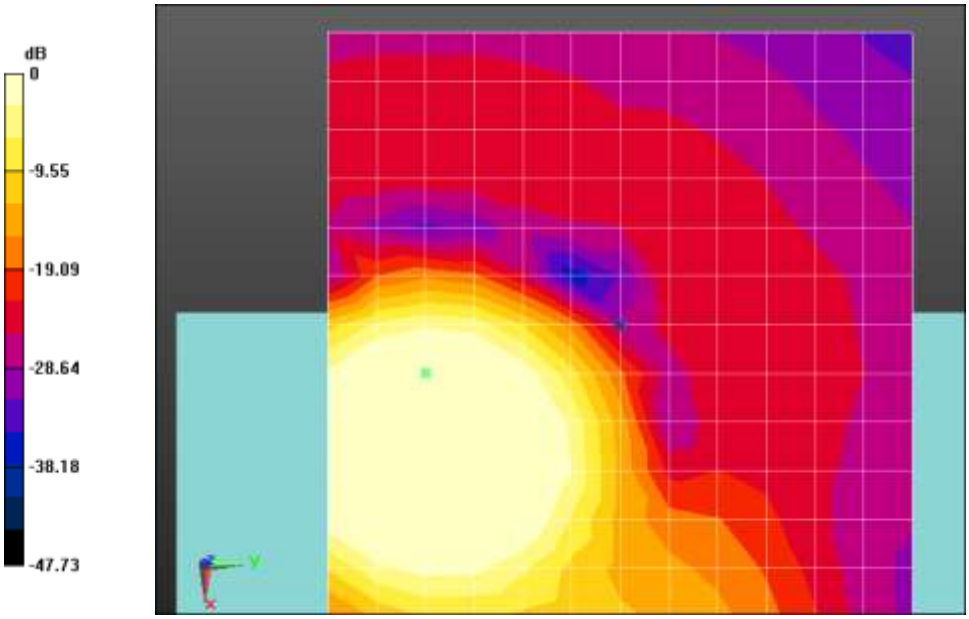
Communication System: UID 0, GSM 1900 (0); Frequency: 1909.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.00 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -26.67 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 31.67 dB
ABM1 comp = 5.00 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.5
GSM1900 FR V1 810ch Freq. Response

Communication System: UID 0, GSM 1900 (0); Frequency: 1909.8 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

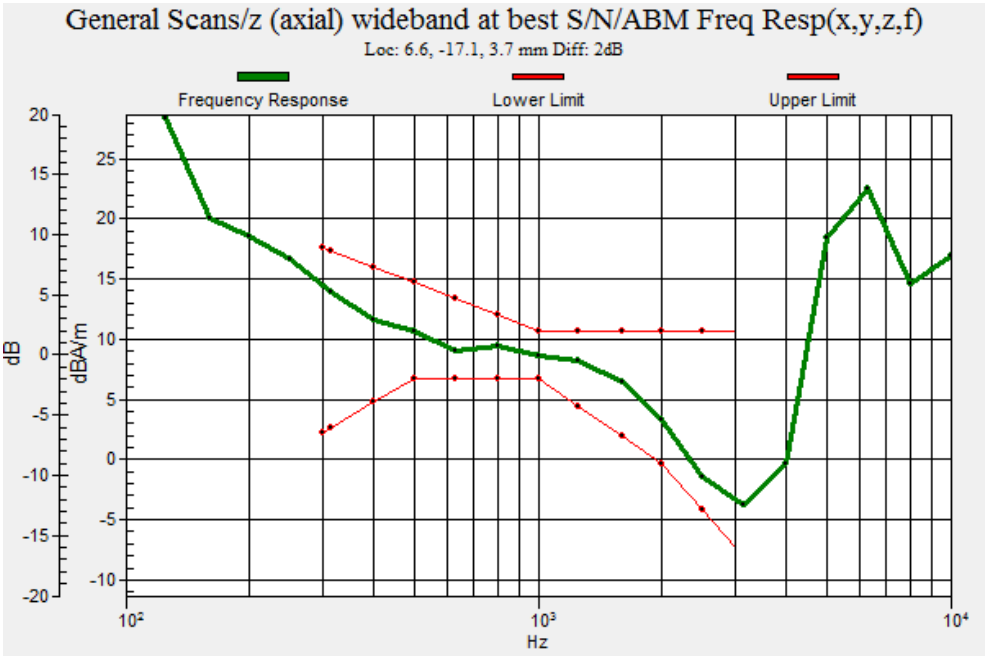
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 72.35
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: 6.6, -17.1, 3.7 mm



Plot No.6
GSM1900 FR V1 810ch y(transversal)

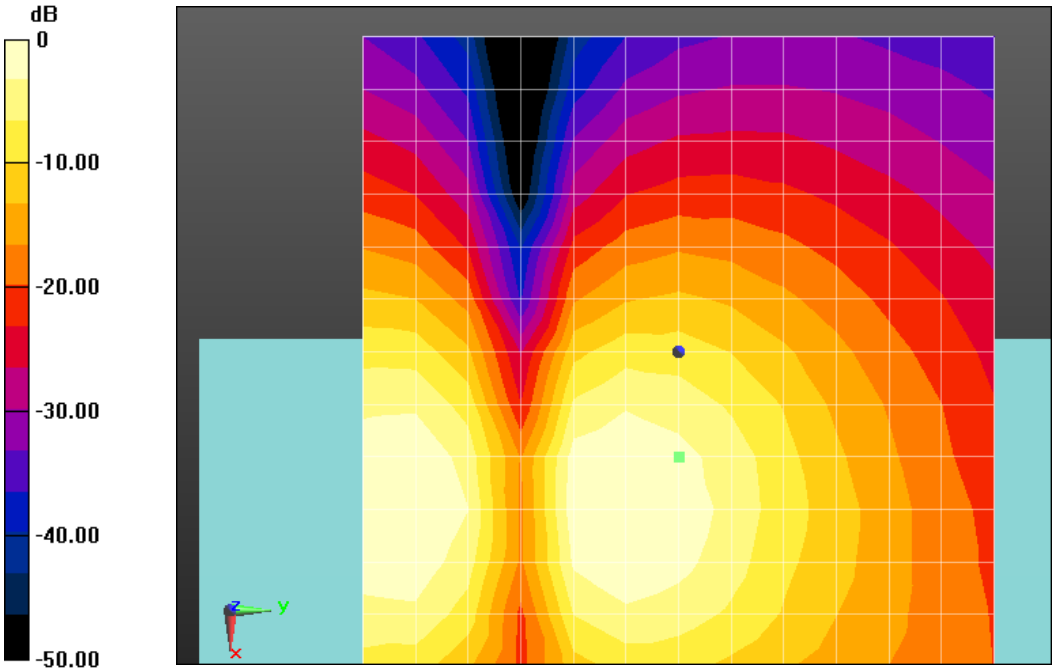
Communication System: UID 0, GSM 1900 (0); Frequency: 1909.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.22 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, 0, 3.7 mm
Cursor:
ABM2 = -38.52 dBA/m
Location: 8.3, 0, 3.7 mm
Cursor:
ABM1/ABM2 = 36.30 dB
ABM1 comp = -2.22 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.7
UMTS Band 2 9400ch AMR WB 6.6 z(axial)

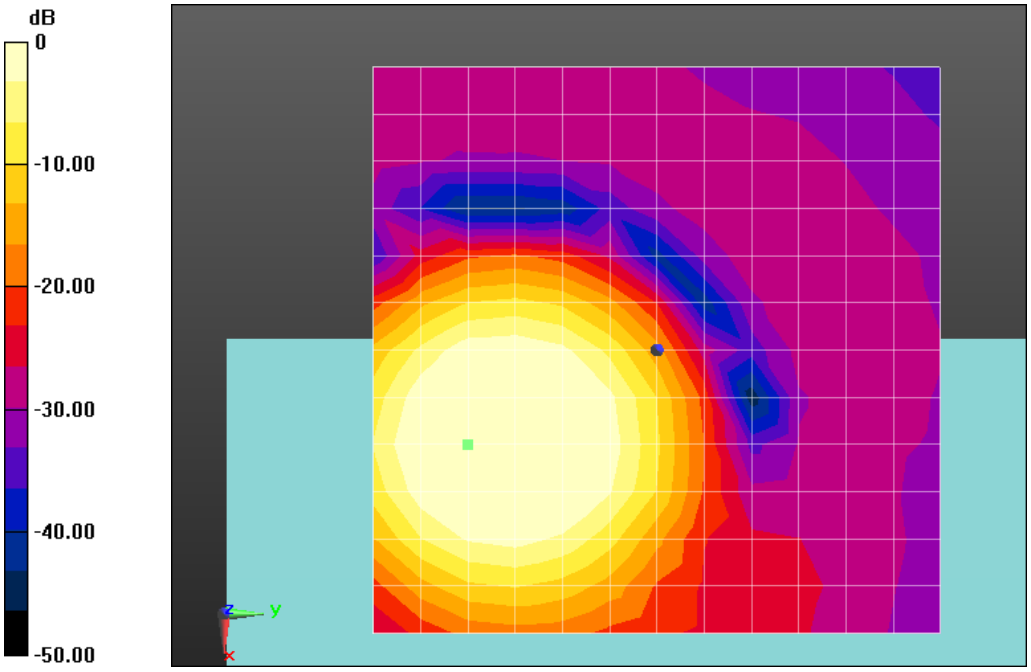
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.23 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM2 = -42.94 dBA/m
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 48.17 dB
ABM1 comp = 5.23 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -16.7, 3.7 mm



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

Plot No.8
UMTS Band 2 9400ch AMR WB 6.6 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

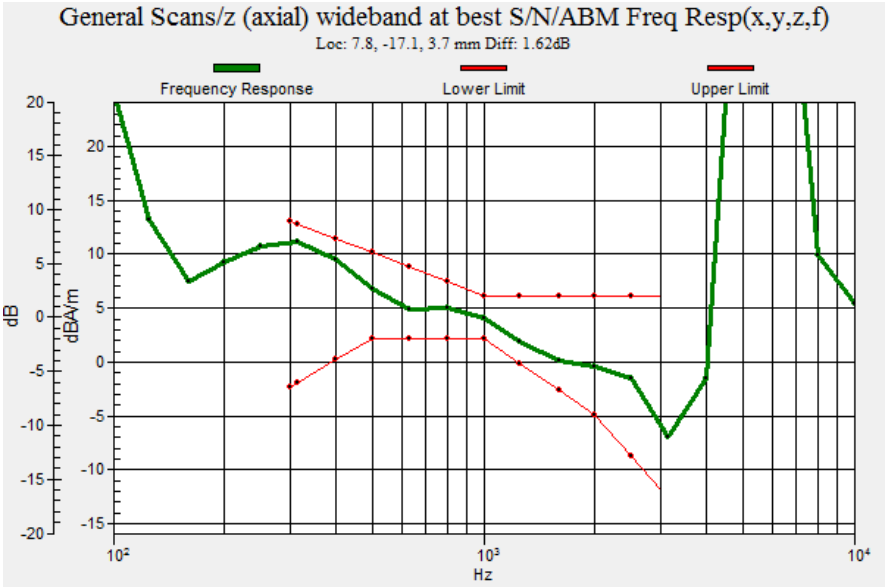
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 72.35
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 = 1.62 dB
BWC Factor = 9.46 dB
Location: 7.8, -17.1, 3.7 mm



Plot No.9
UMTS Band 2 9400ch AMR WB 6.6 (transversal)

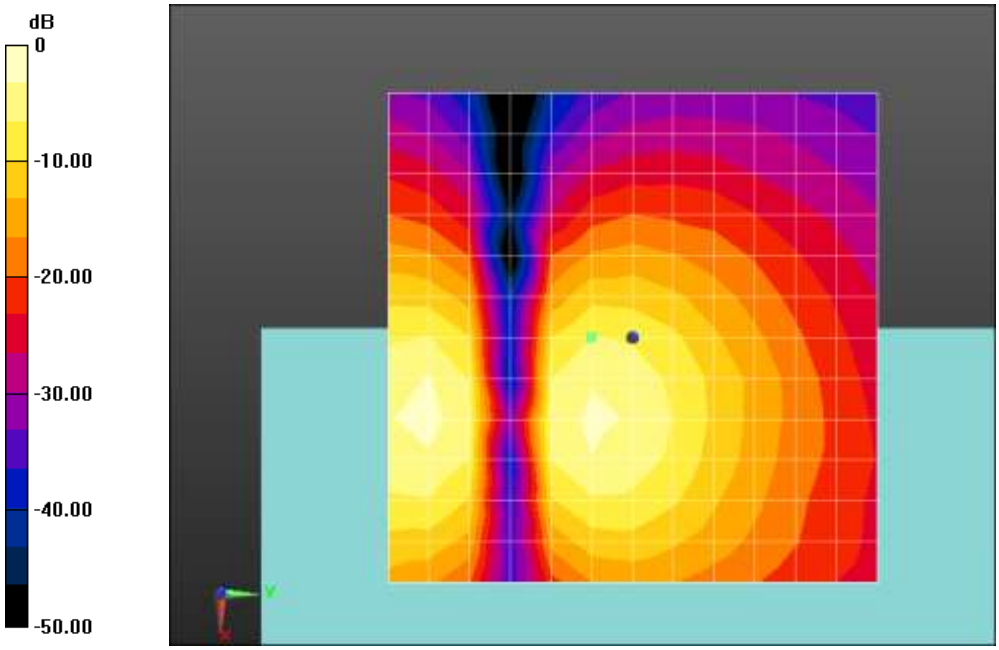
Communication System: UID 0, WCDMA1900 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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 SNR(x,y,z) (13x13x1): Measurement grid: dx=10mm, dy=10mm
Signal Type: Audio File (.wav) 48k_voice_1kHz_1s.wav
Output Gain: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -6.44 dBA/m
BWC Factor = 0.15 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -52.27 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 45.84 dB
ABM1 comp = -6.44 dBA/m
BWC Factor = 0.15 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.10
UMTS Band 4 1412ch AMR WB 6.6 z(axial)

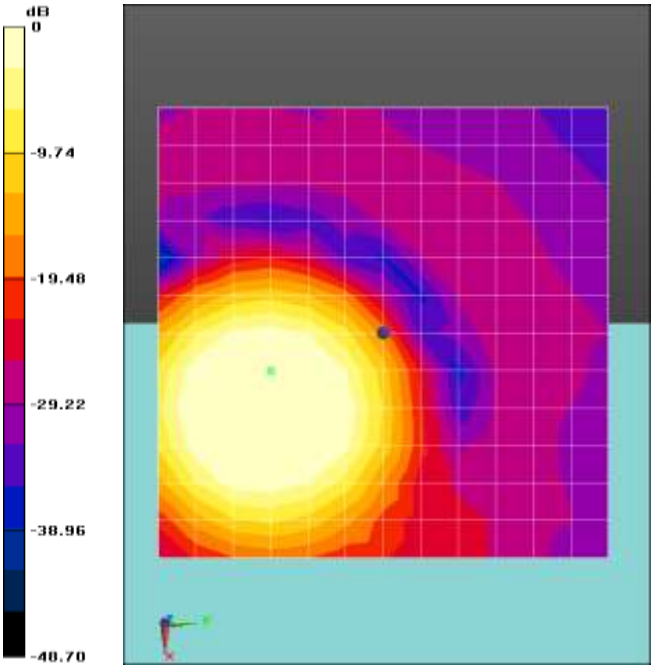
Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 4.39 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM2 = -45.13 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 49.53 dB
ABM1 comp = 4.39 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.11
UMTS Band 4 1412ch AMR WB 6.6 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

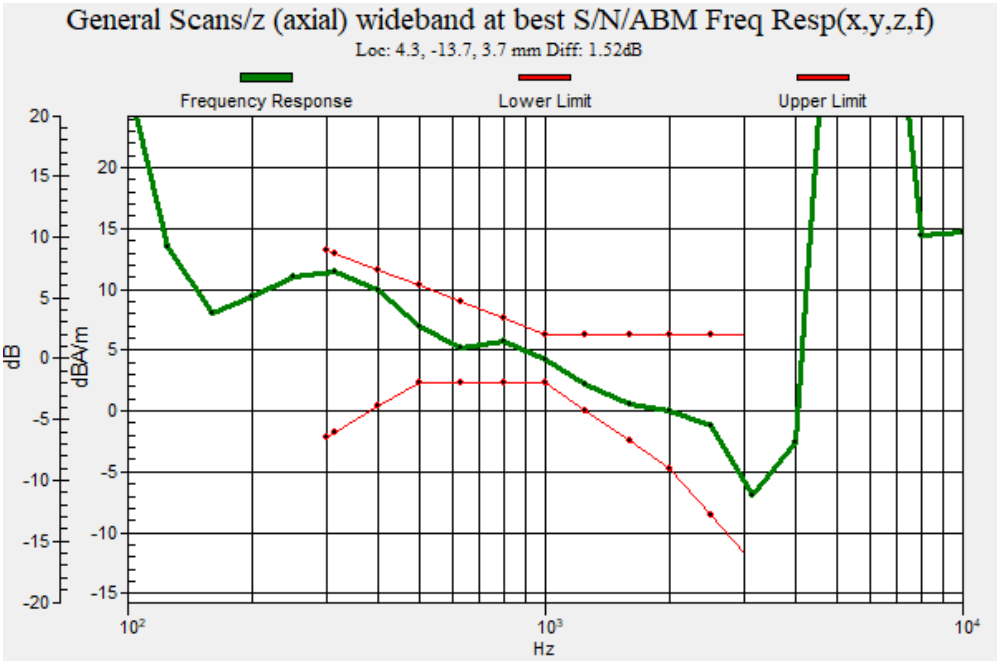
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023 Calibrated: 2023-04-19
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 72.35
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 = 1.52 dB
BWC Factor = 9.46 dB
Location: 4.3, -13.7, 3.7 mm



Plot No.12
UMTS Band 4 1412ch AMR WB 6.6 y(transversal)

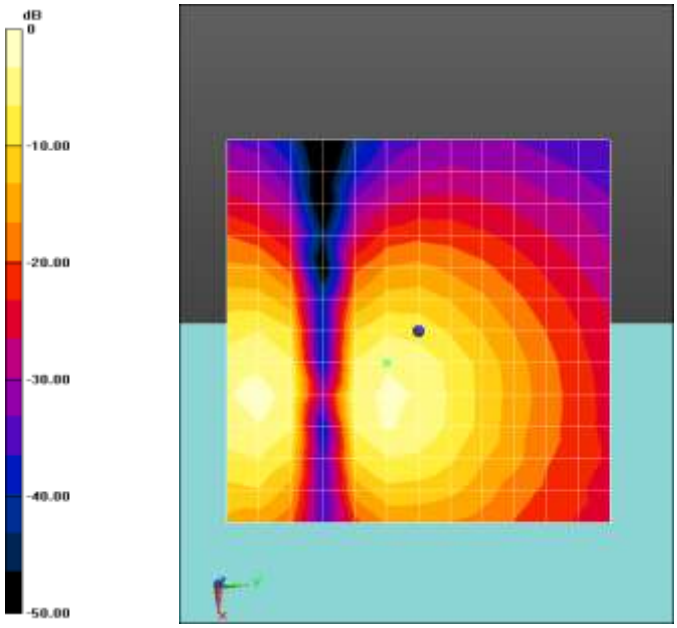
Communication System: UID 0, WCDMA IV (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.63 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -51.41 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 47.78 dB
ABM1 comp = -3.63 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.13
UMTS Band 5 4183ch AMR WB 6.6 z(axial)

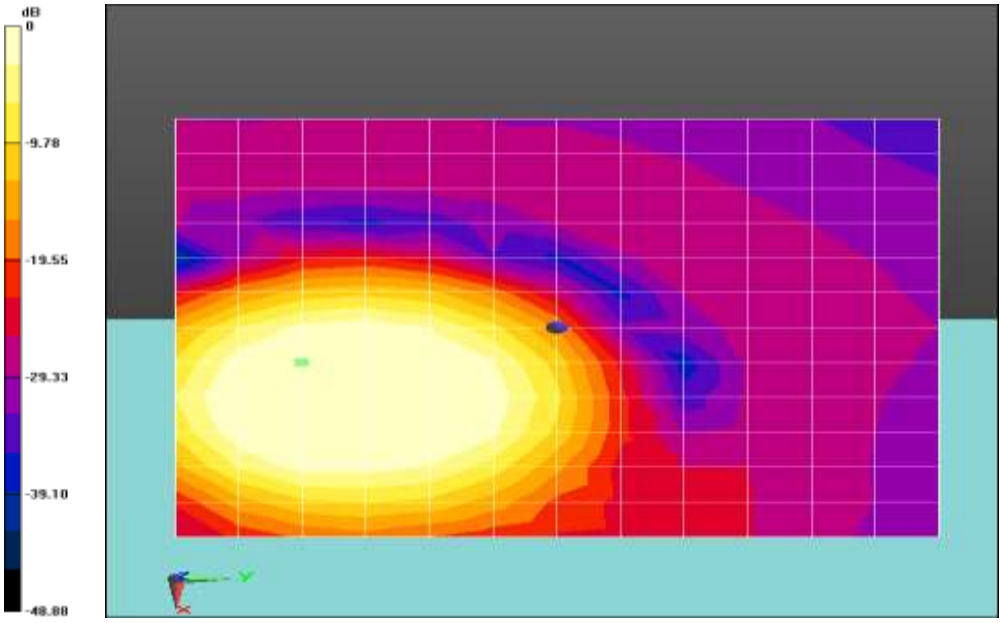
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 3.01 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -47.34 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 50.35 dB
ABM1 comp = 3.01 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.14
UMTS Band 5 4183ch AMR WB 6.6 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

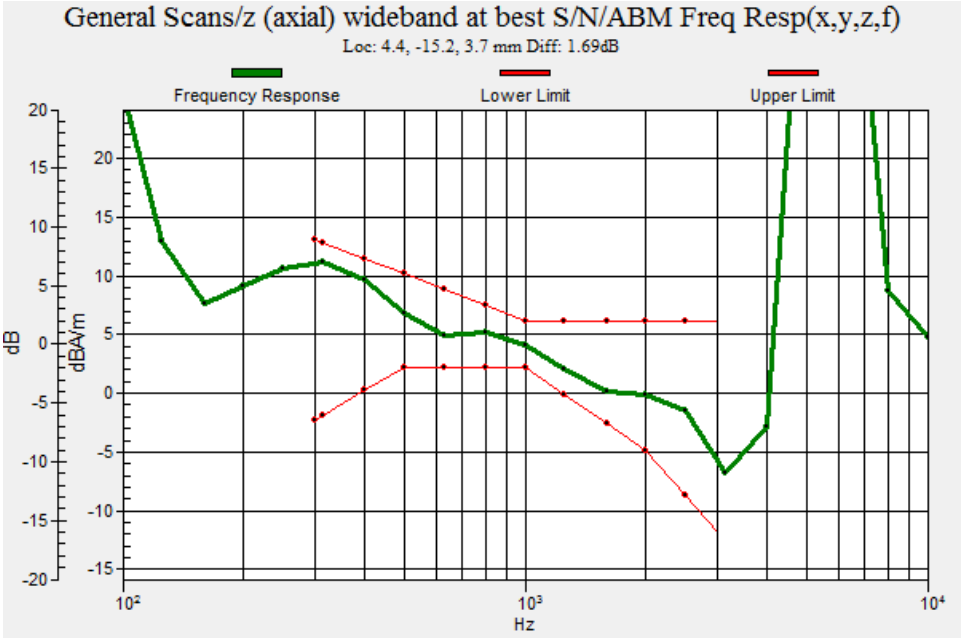
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 72.35
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 = 1.69 dB
BWC Factor = 9.46 dB
Location: 4.4, -15.2, 3.7 mm



Plot No.15

UMTS Band 5 4183ch AMR WB 6.6 y(transversal)

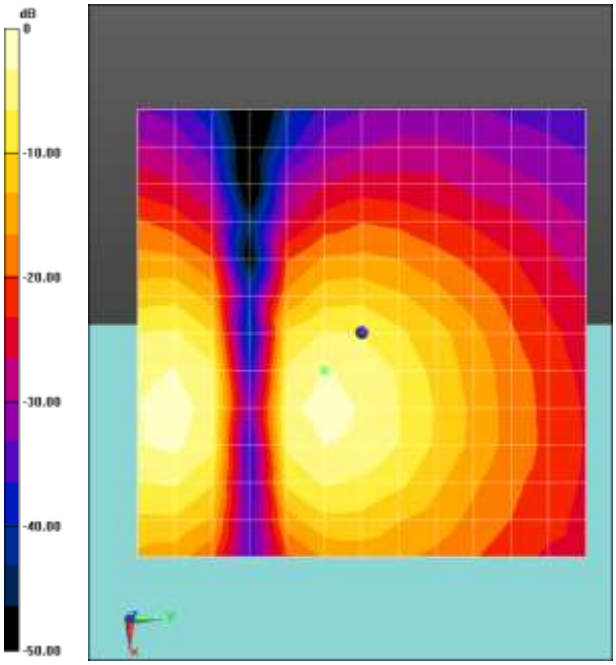
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 23.53
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.96 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -51.53 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 48.57 dB
ABM1 comp = -2.96 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.16

LTE 25 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 26365ch z(axial)

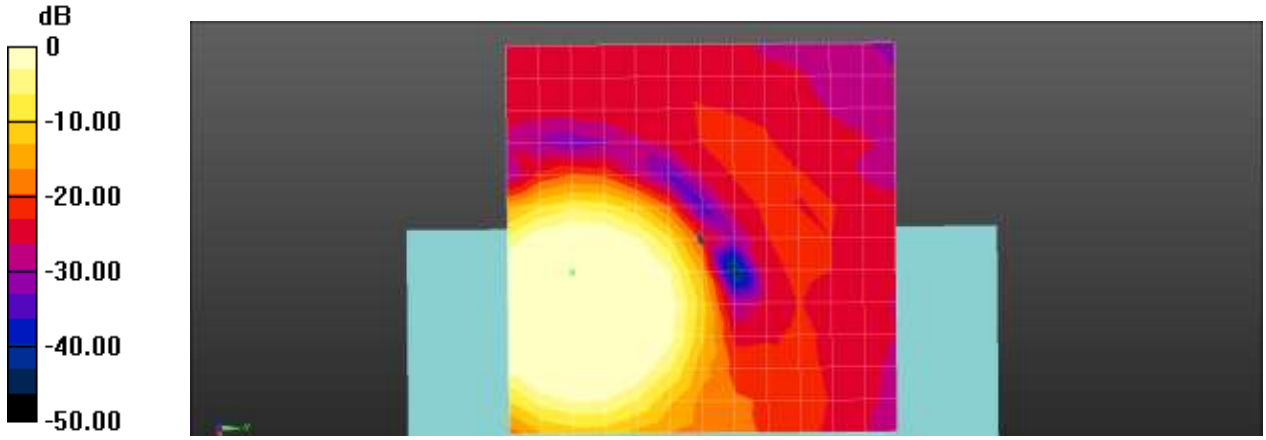
Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.17 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 7.40 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -38.49 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 45.89 dB
ABM1 comp = 7.40 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.17
LTE 25 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 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

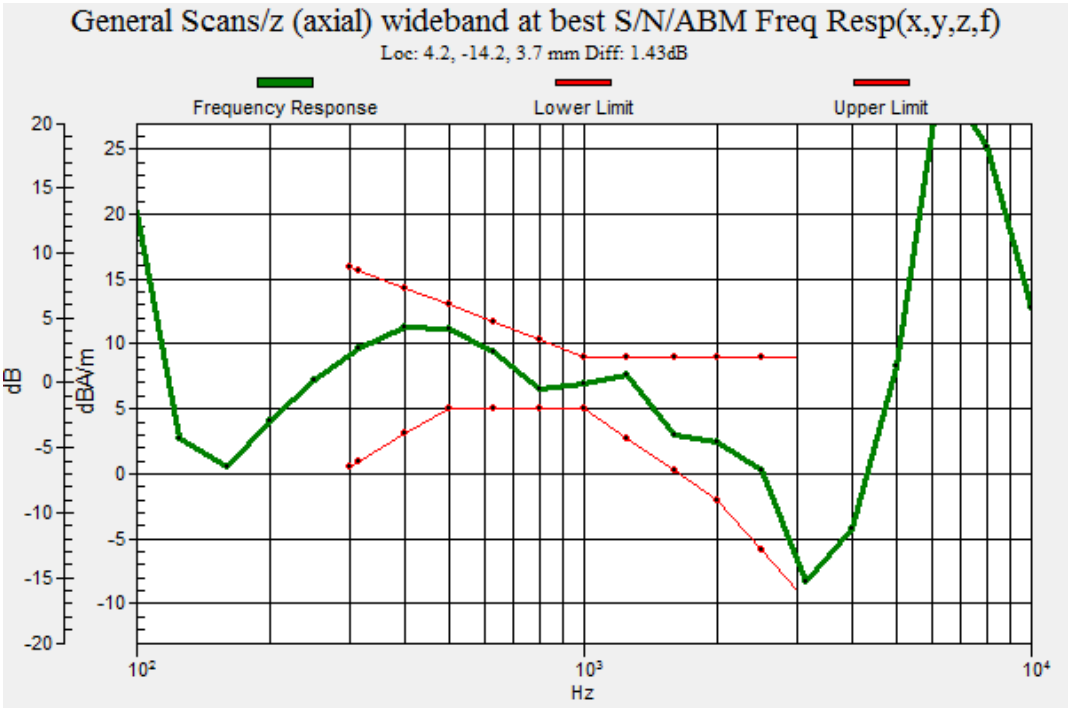
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.49 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 = 9.49 dB
Location: 4.2, -14.2, 3.7 mm



Plot No.18
LTE 25 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 26365ch y(tranversal)

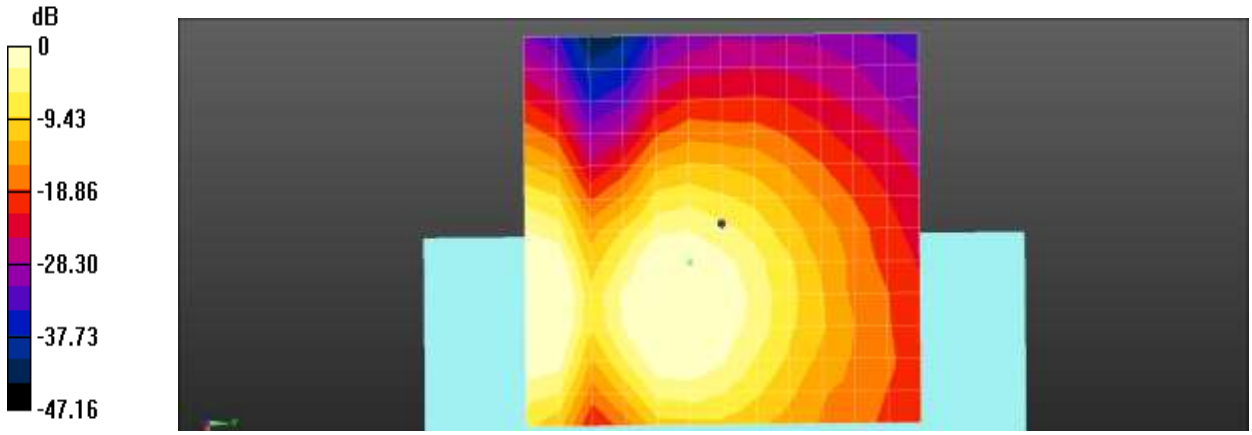
Communication System: UID 0, LTE Band 25 (0); Frequency: 1882.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.17 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.07 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -46.34 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 47.41 dB
ABM1 comp = 1.07 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.19
LTE 7 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 21100ch z(axial)

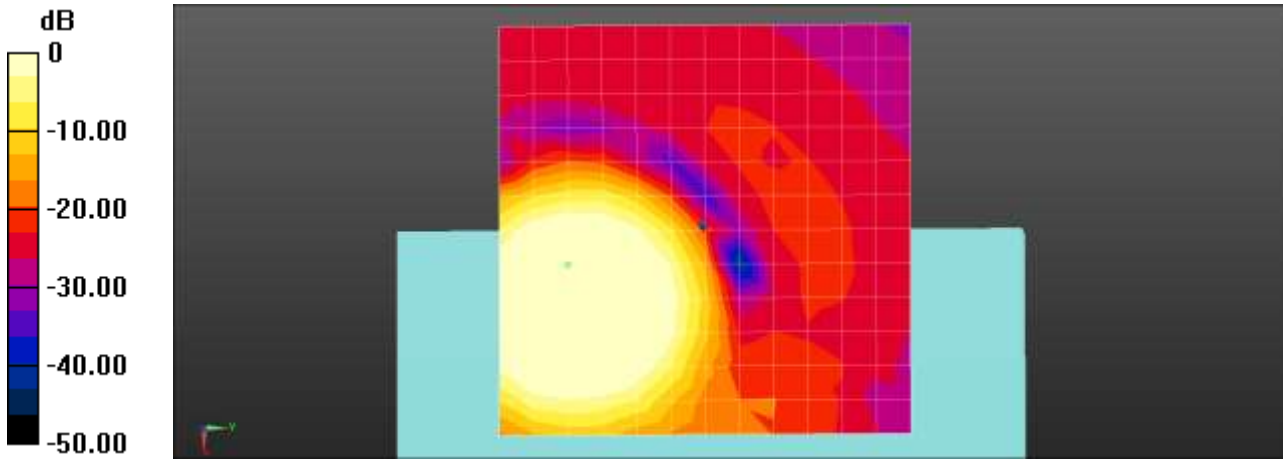
Communication System: UID 0, LTE Band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 7.98 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -39.42 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 47.41 dB
ABM1 comp = 7.98 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.20
LTE 7 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 21100ch Freq.Response

Communication System: UID 0, LTE Band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

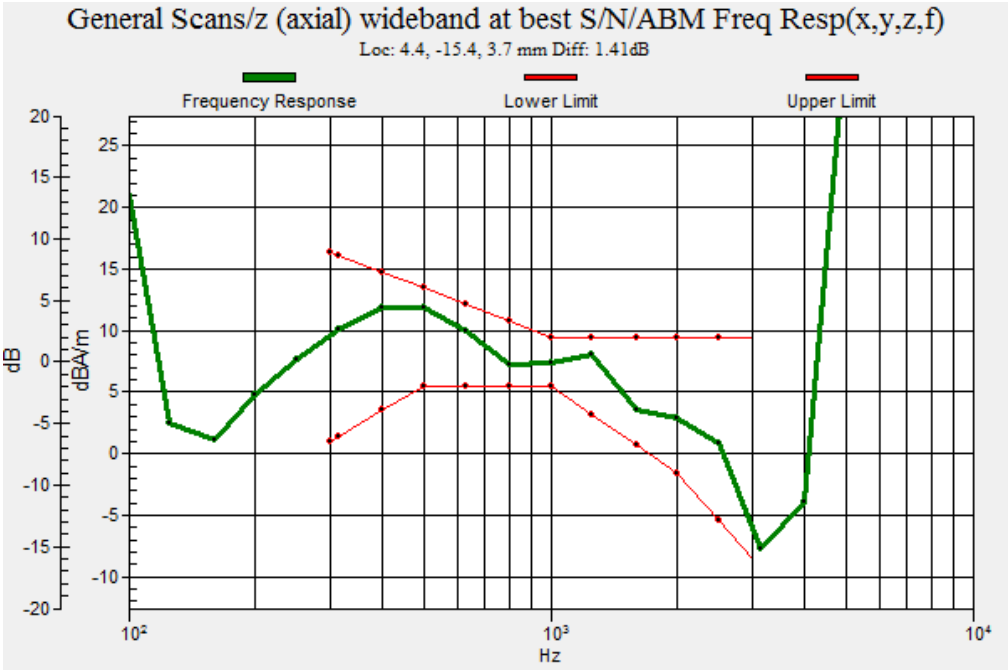
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.49 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 = 1.41 dB
BWC Factor = 9.49 dB
Location: 4.4, -15.4, 3.7 mm



Plot No.21
LTE 7 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 21100ch y(tranversal)

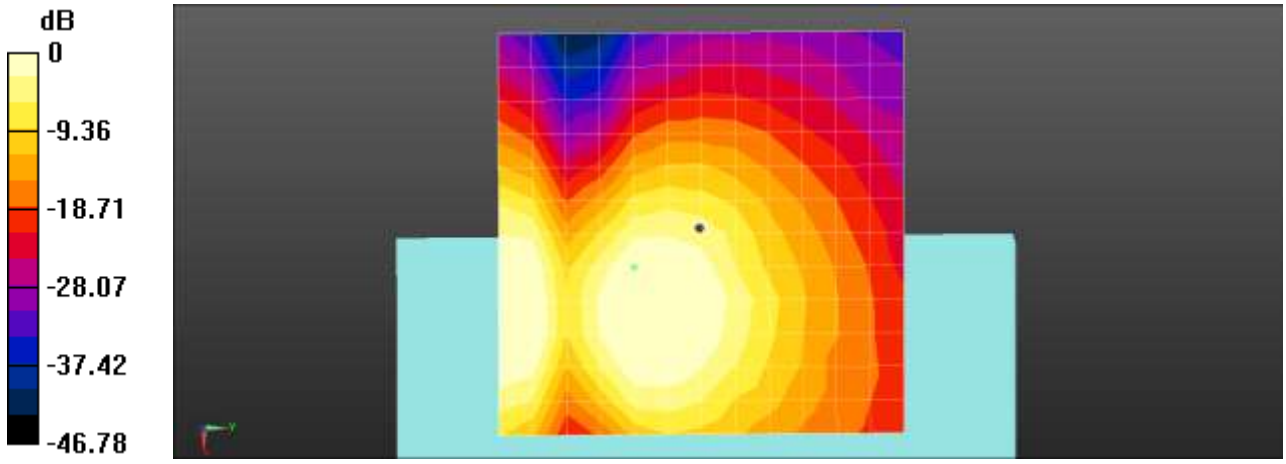
Communication System: UID 0, LTE Band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 0.78 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -46.85 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 47.63 dB
ABM1 comp = 0.78 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -8.3, 3.7 mm



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

Plot No.22
LTE 12 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23095ch z(axial)

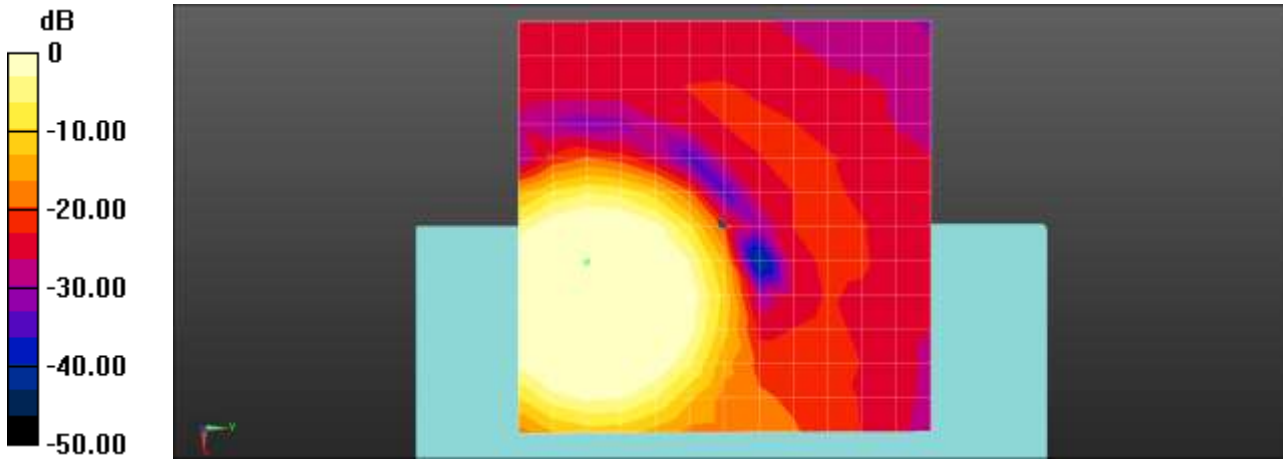
Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.18 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -44.06 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 52.24 dB
ABM1 comp = 8.18 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.23
LTE 12 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23095ch Freq.Response

Communication System: UID 0, LTE Band 12 (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

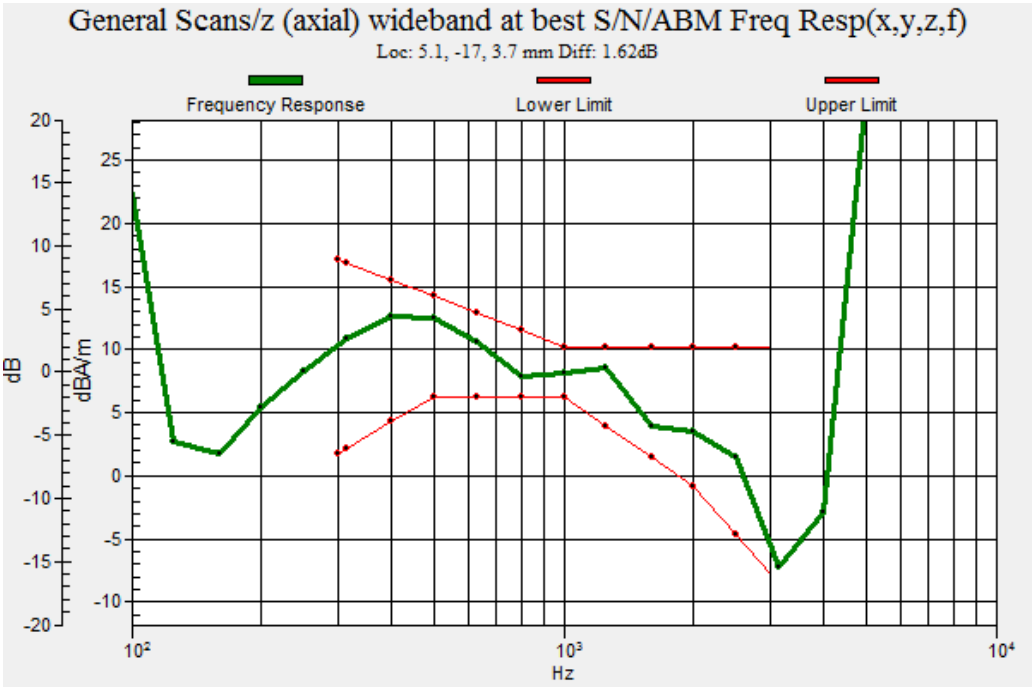
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.50 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 = 1.62 dB
BWC Factor = 9.50 dB
Location: 5.1, -17, 3.7 mm



Plot No.24
LTE 12 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23095ch y(transversal)

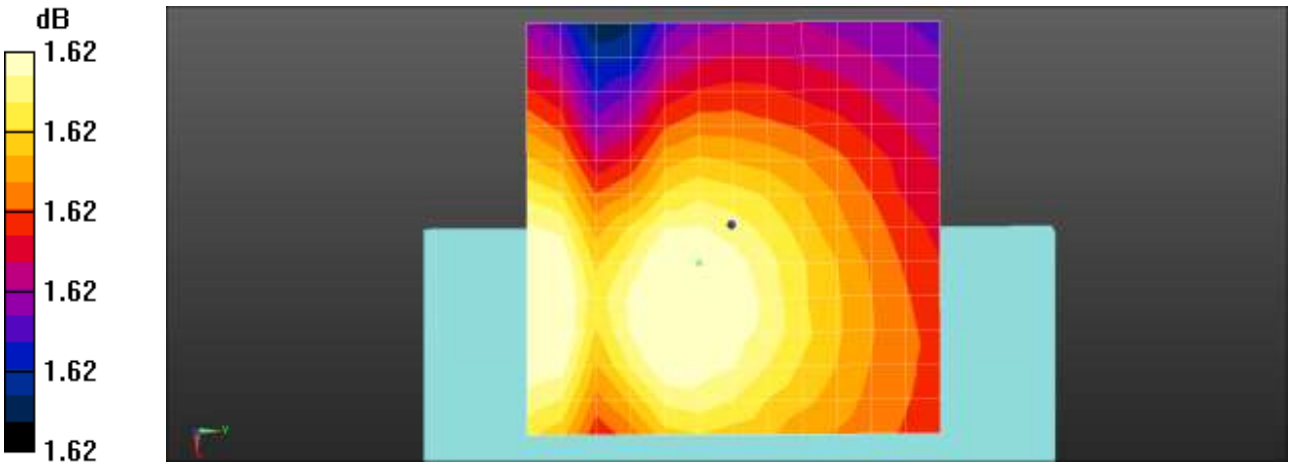
Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 0.76 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -45.96 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 46.72 dB
ABM1 comp = 0.76 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.25
LTE 13 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23230ch z(axial)

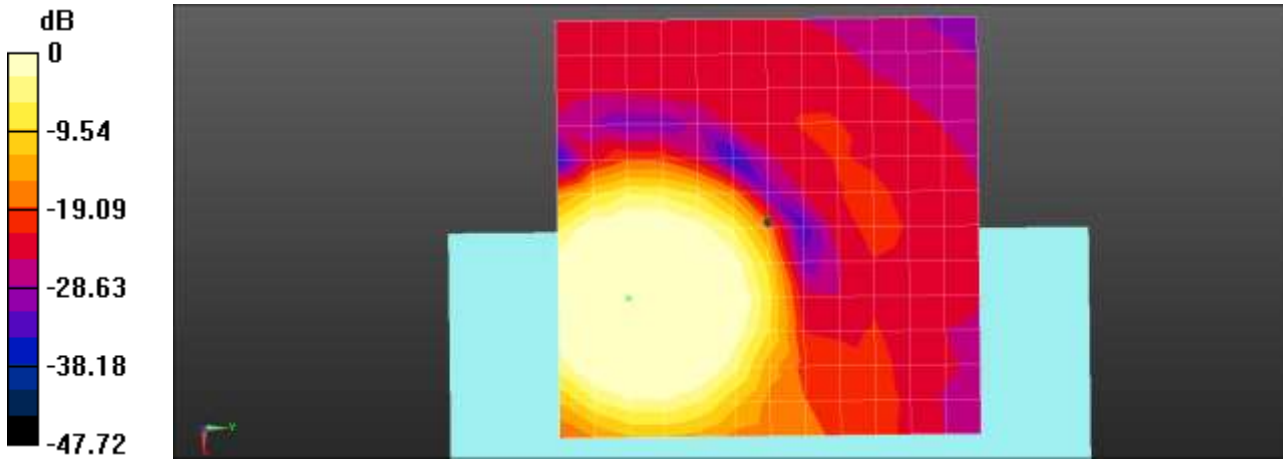
Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 11.45 dBA/m
BWC Factor = 0.18 dB
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM2 = -38.46 dBA/m
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 49.92 dB
ABM1 comp = 11.45 dBA/m
BWC Factor = 0.18 dB
Location: 8.3, -16.7, 3.7 mm



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

Plot No.26
LTE 13 16QAM EVS SWB 9.6bitrate 5MHz 1RB 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

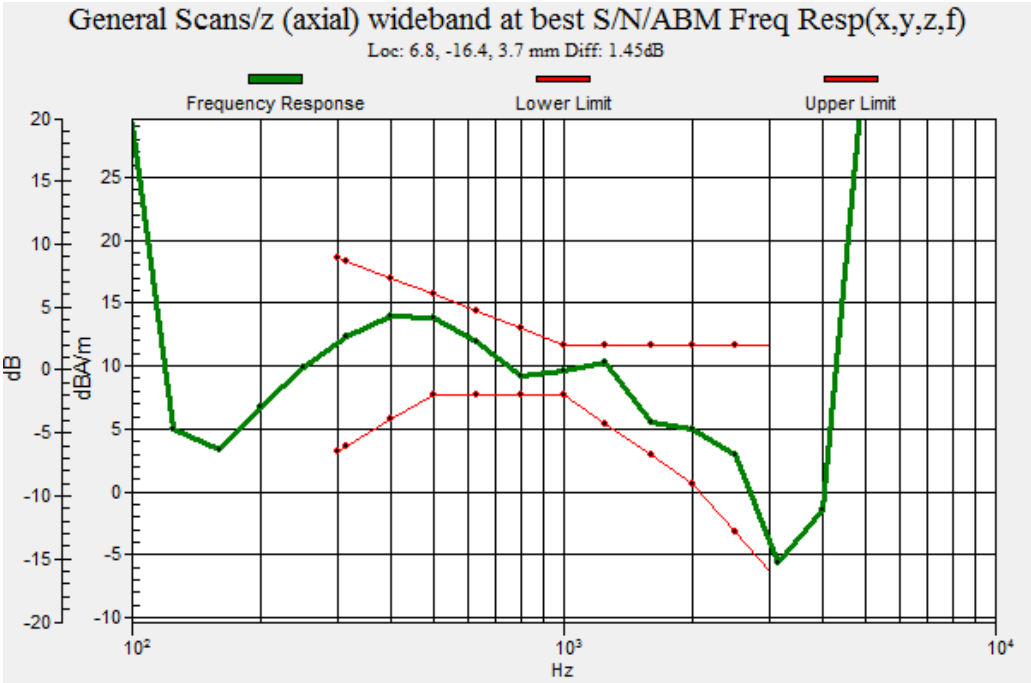
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.49 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 = 1.45 dB
BWC Factor = 9.49 dB
Location: 6.8, -16.4, 3.7 mm



Plot No.27
LTE 13 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23230ch y(transversal)

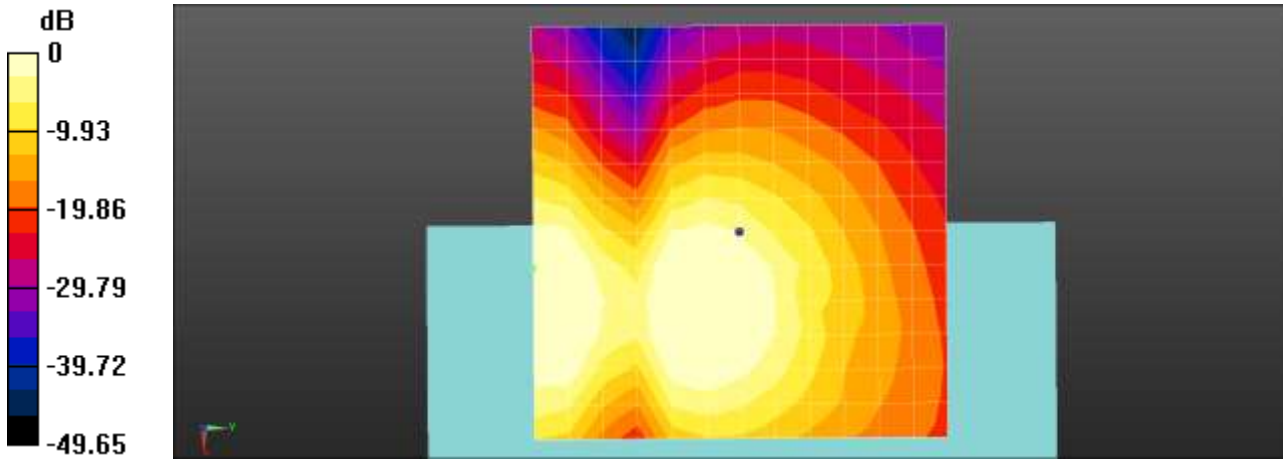
Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.76 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -25, 3.7 mm
Cursor:
ABM2 = -45.32 dBA/m
Location: 4.2, -25, 3.7 mm
Cursor:
ABM1/ABM2 = 47.08 dB
ABM1 comp = 1.76 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -25, 3.7 mm



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

Plot No.28
LTE 14 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23330ch z(axial)

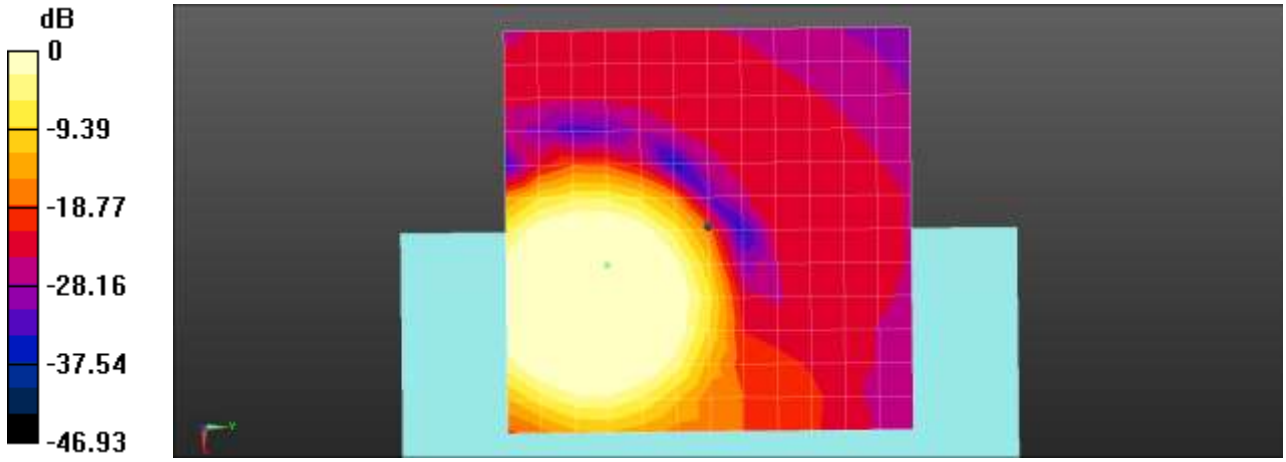
Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.82 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM2 = -40.08 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 48.89 dB
ABM1 comp = 8.82 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.29

LTE 14 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23330ch Freq.Response

Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

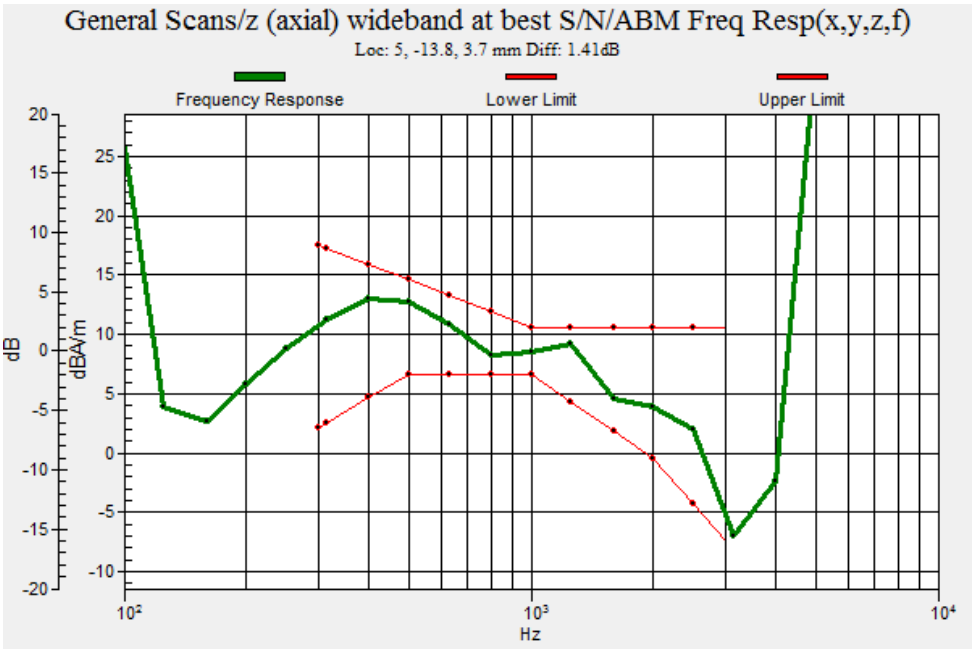
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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 = 1.41 dB
BWC Factor = 9.47 dB
Location: 5, -13.8, 3.7 mm



Plot No.30

LTE 14 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 23330ch y(transversal)

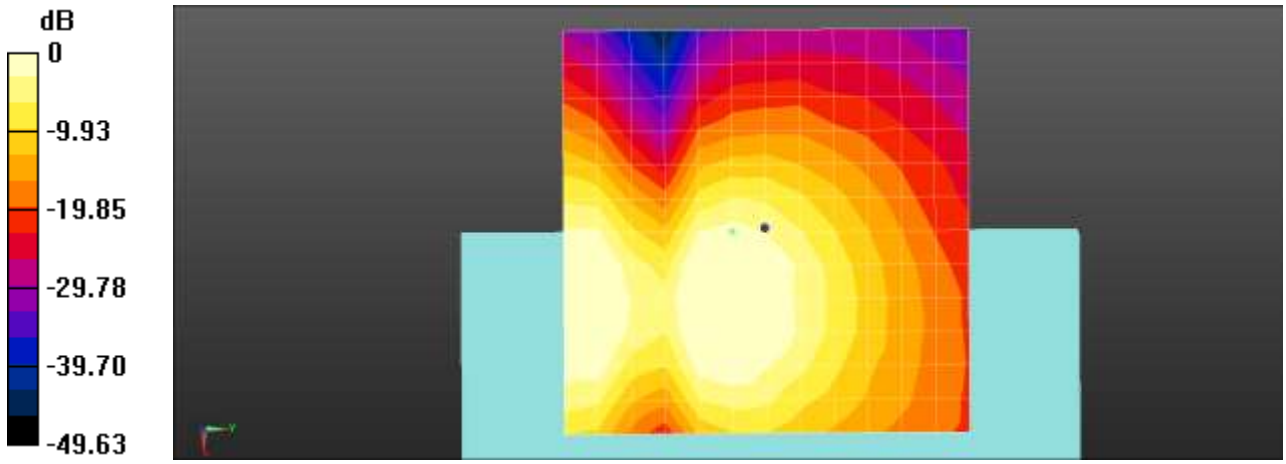
Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.68 dBA/m
BWC Factor = 0.16 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -48.80 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 47.12 dB
ABM1 comp = -1.68 dBA/m
BWC Factor = 0.16 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.31

LTE 26 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 26865ch z(axial)

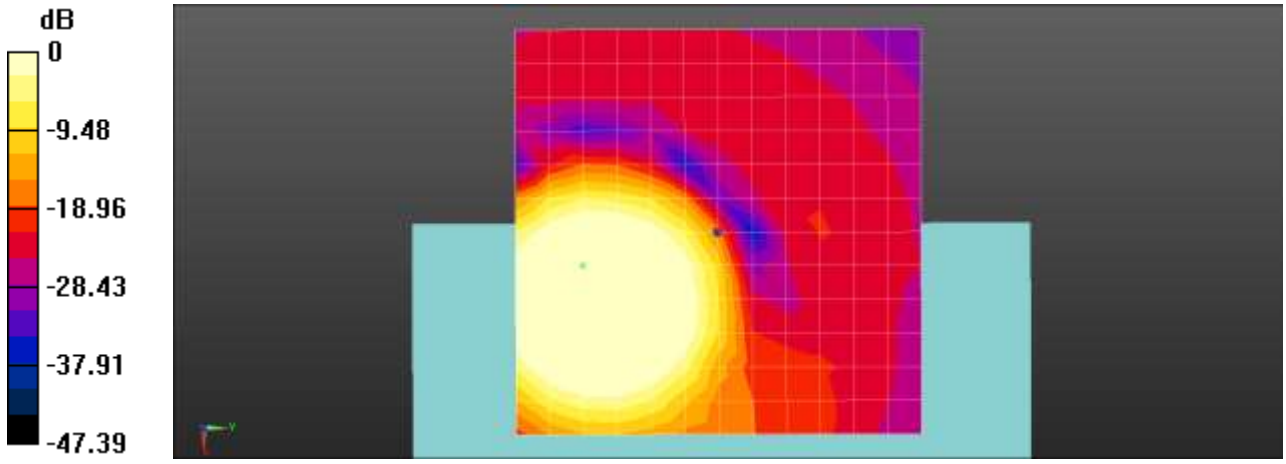
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.46 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -44.31 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 52.78 dB
ABM1 comp = 8.46 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.32
LTE 26 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 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

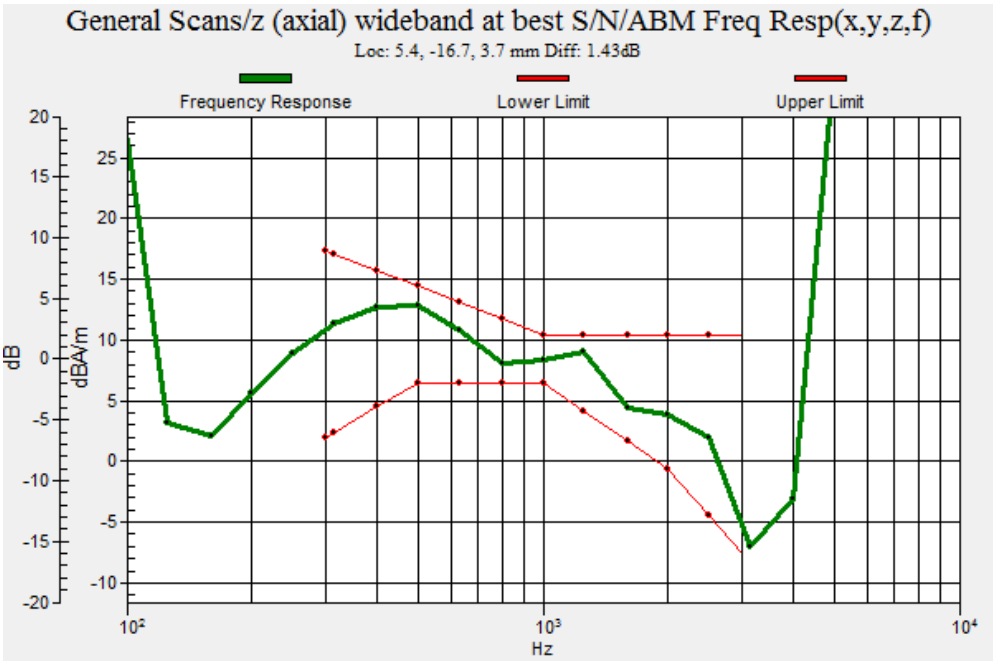
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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: 5.4, -16.7, 3.7 mm



Plot No.33

LTE 26 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 26865ch y(transversal)

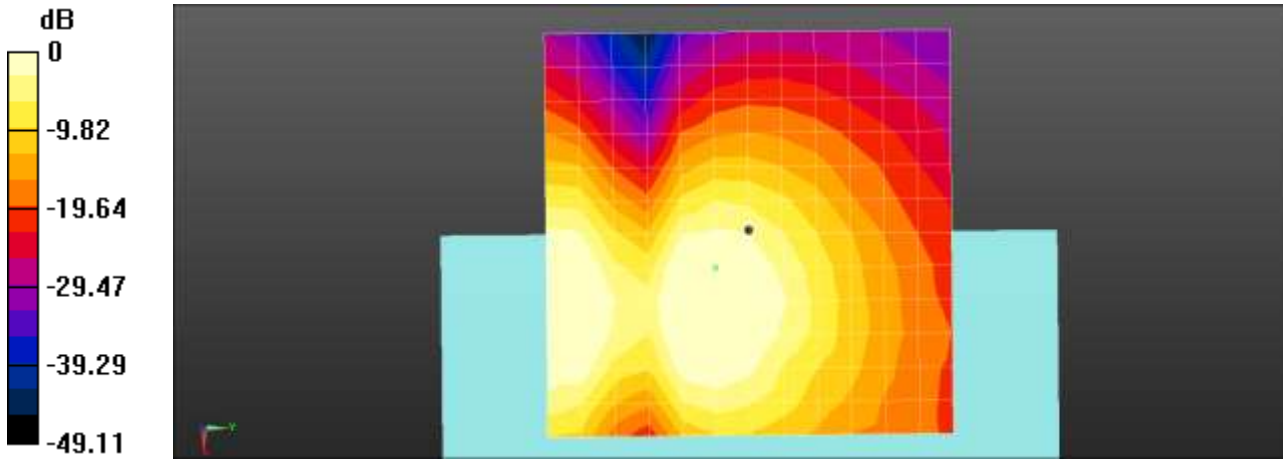
Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.46 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -45.76 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 47.21 dB
ABM1 comp = 1.46 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.34
LTE 30 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 27710ch z(axial)

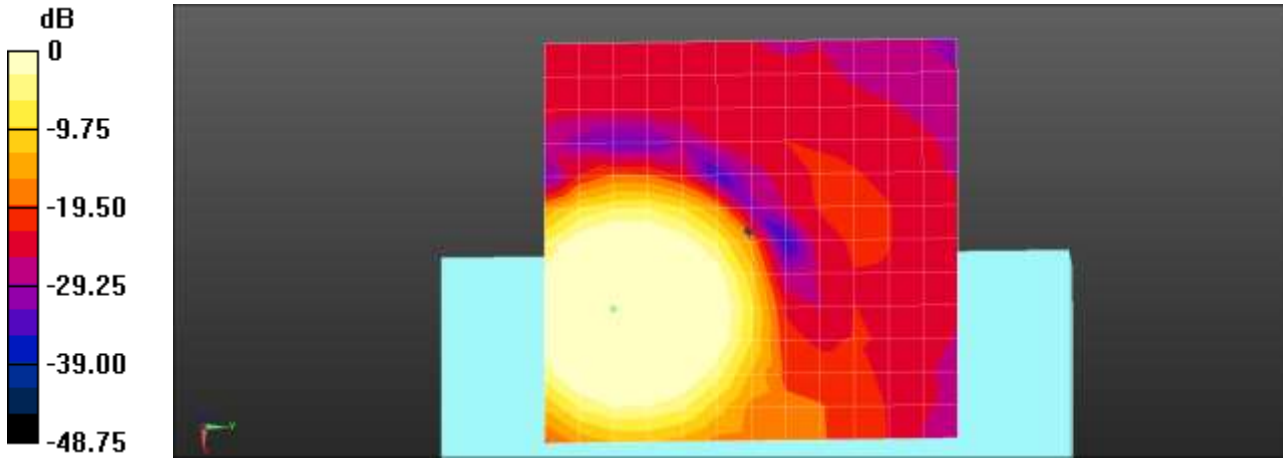
Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 12.13 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM2 = -36.71 dBA/m
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 48.84 dB
ABM1 comp = 12.13 dBA/m
BWC Factor = 0.16 dB
Location: 8.3, -16.7, 3.7 mm



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

Plot No.35
LTE 30 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 27710ch Freq.Response

Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

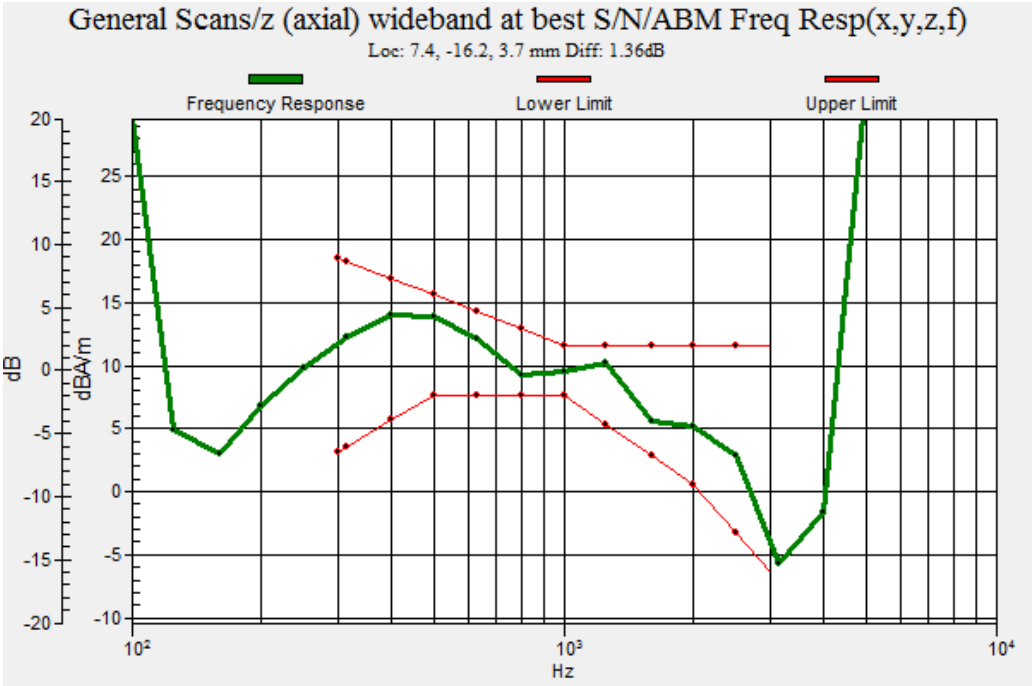
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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 = 1.36 dB
BWC Factor = 9.47 dB
Location: 7.4, -16.2, 3.7 mm



Plot No.36
LTE 30 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 27710ch y(transversal)

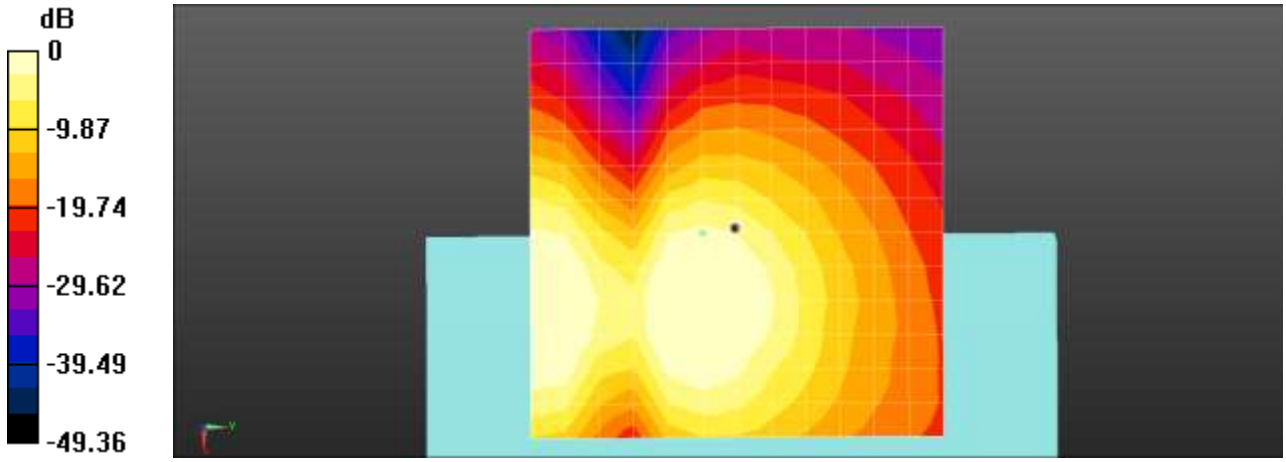
Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.10 dBA/m
BWC Factor = 0.16 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -49.13 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 47.03 dB
ABM1 comp = -2.10 dBA/m
BWC Factor = 0.16 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.37
LTE 66 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 132322ch z(axial)

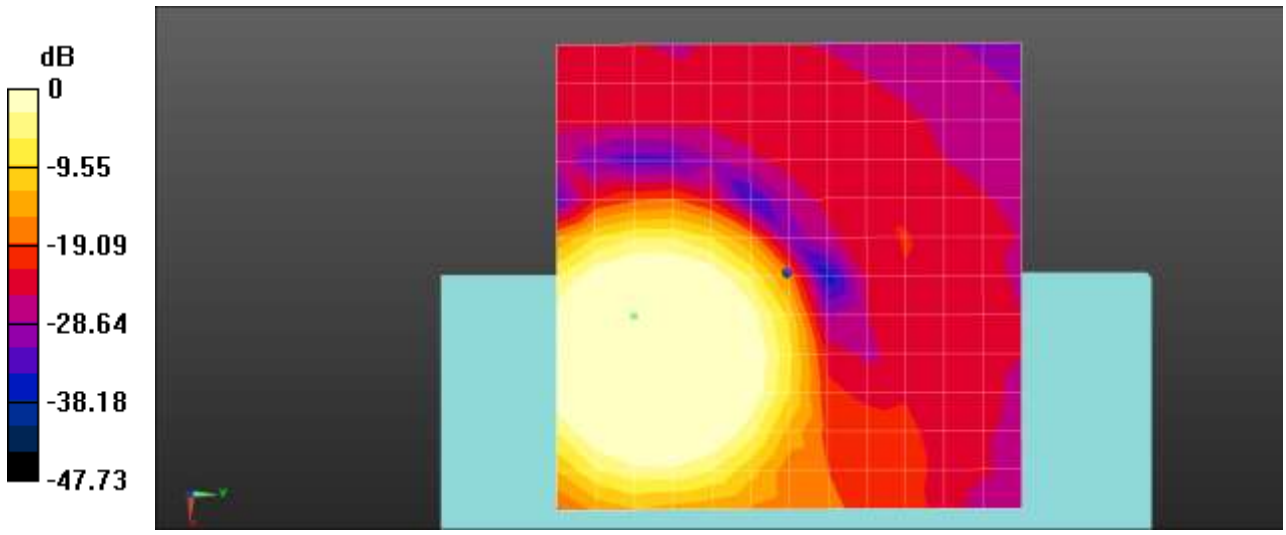
Communication System: UID 0, LTE 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.17 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.62 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -38.75 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 47.37 dB
ABM1 comp = 8.62 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.38
LTE 66 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 132322ch Freq.Response

Communication System: UID 0, LTE 66 (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

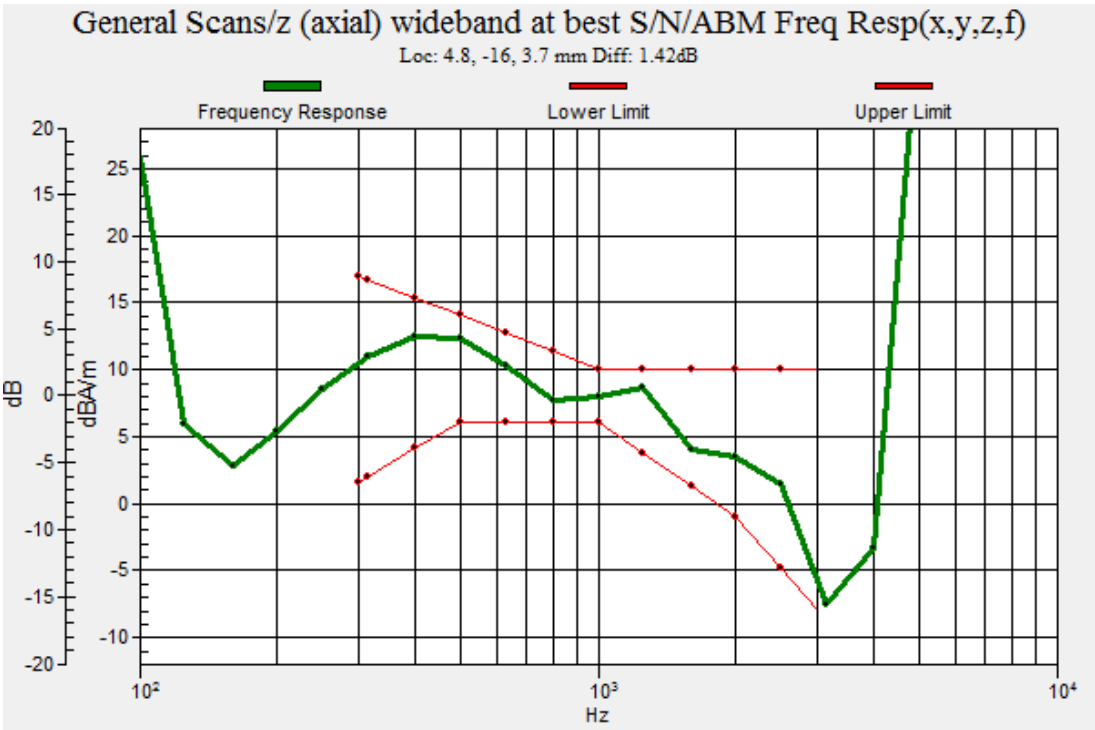
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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 = 1.42 dB
BWC Factor = 9.48 dB
Location: 4.8, -16, 3.7 mm



Plot No.39
LTE 66 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 132322ch y(transversal)

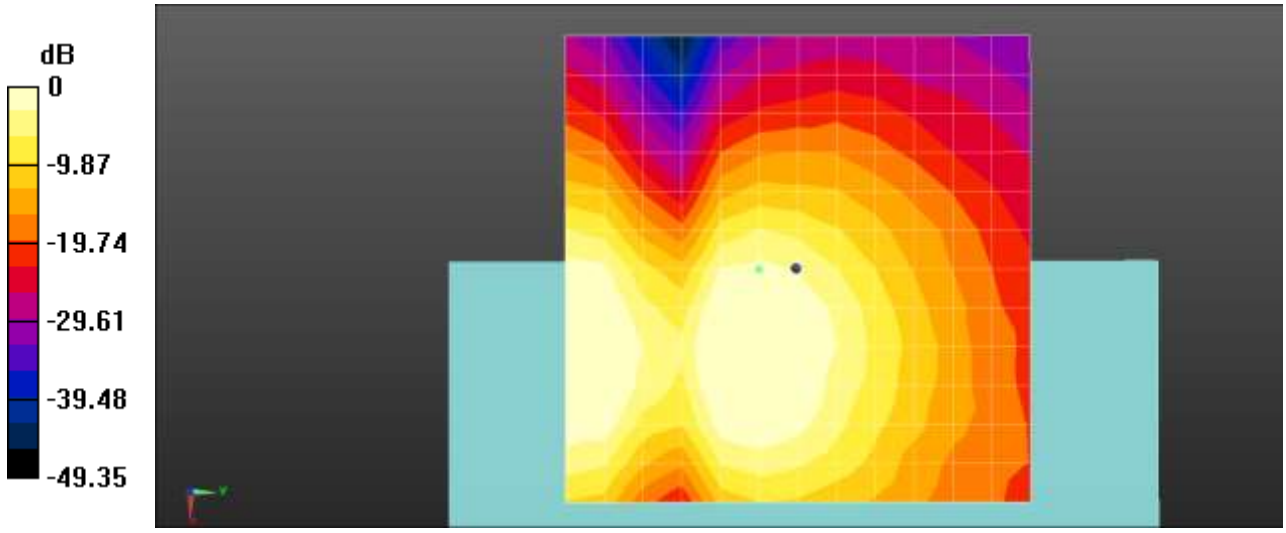
Communication System: UID 0, LTE 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.17 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.16 dBA/m
BWC Factor = 0.17 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -48.72 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 46.55 dB
ABM1 comp = -2.16 dBA/m
BWC Factor = 0.17 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.40
LTE 71 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 133297ch z(axial)

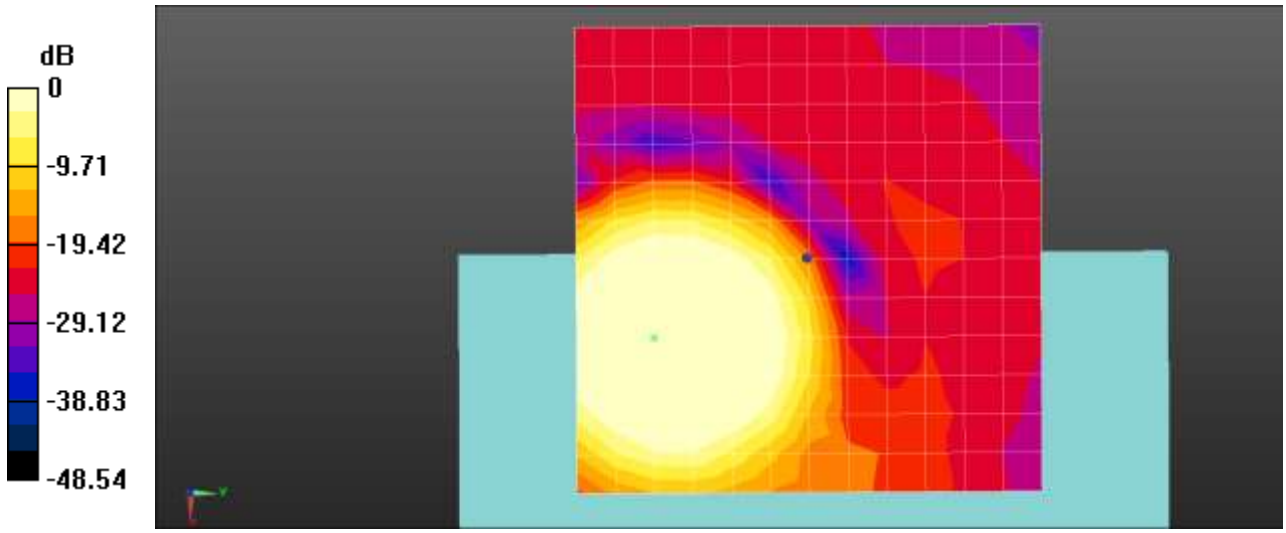
Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.17 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 10.97 dBA/m
BWC Factor = 0.17 dB
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM2 = -41.52 dBA/m
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 52.49 dB
ABM1 comp = 10.97 dBA/m
BWC Factor = 0.17 dB
Location: 8.3, -16.7, 3.7 mm



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

Plot No.41
LTE 71 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 133297ch Freq.Response

Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

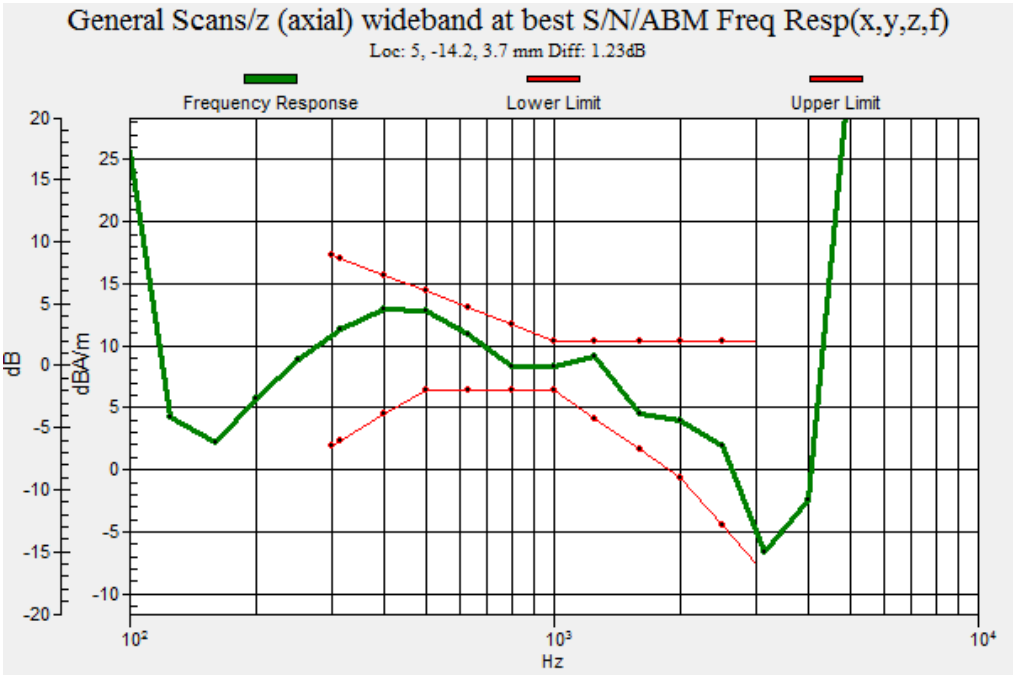
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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 = 1.23 dB
BWC Factor = 9.48 dB
Location: 5, -14.2, 3.7 mm



Plot No.42
LTE 71 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 133297ch y(transversal)

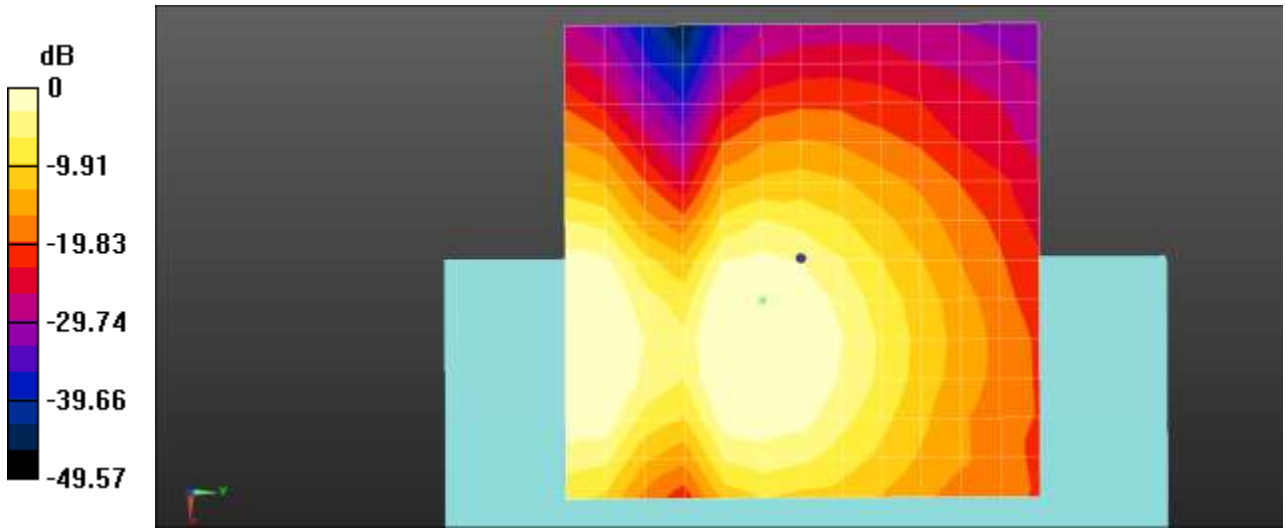
Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.17 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 1.76 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -46.29 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 48.05 dB
ABM1 comp = 1.76 dBA/m
BWC Factor = 0.17 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.43
LTE 66 (Upper ANT) 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 132322ch z(axial)

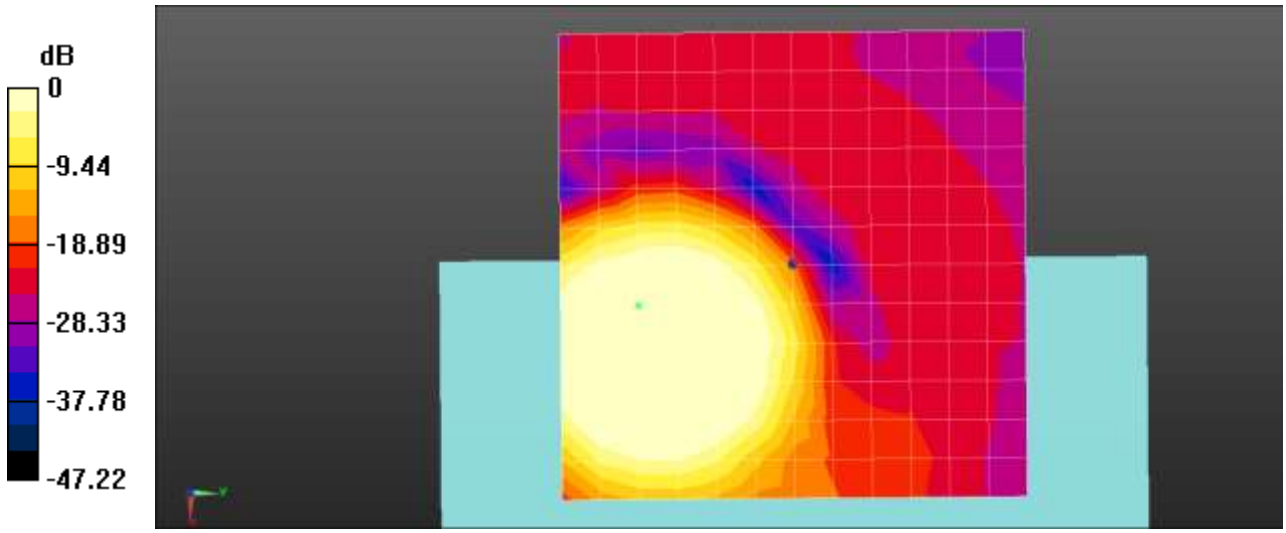
Communication System: UID 0, LTE 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.01 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -38.16 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 46.17 dB
ABM1 comp = 8.01 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.44
LTE 66 (Upper ANT) 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 132322ch Freq.Response

Communication System: UID 0, LTE 66 (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

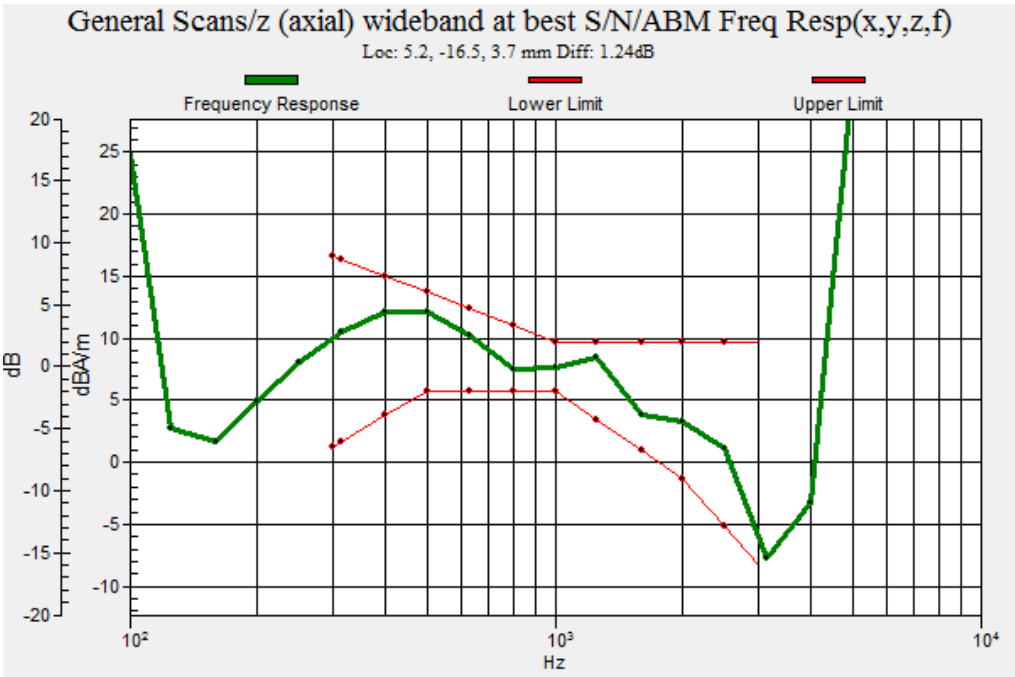
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.49 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 = 1.24 dB
BWC Factor = 9.49 dB
Location: 5.2, -16.5, 3.7 mm



Plot No.45
LTE 66 (Upper ANT) 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 132322ch y(transversal)

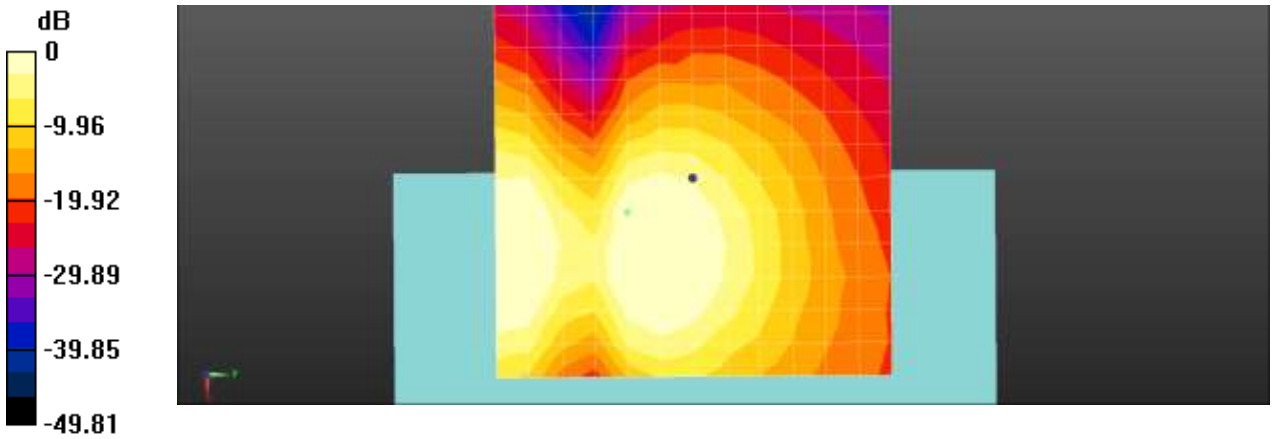
Communication System: UID 0, LTE 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.18 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 0.46 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -47.29 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 47.76 dB
ABM1 comp = 0.46 dBA/m
BWC Factor = 0.18 dB
Location: 4.2, -8.3, 3.7 mm



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

Plot No.46
LTE 2 (Upper ANT) 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 19175ch z(axial)

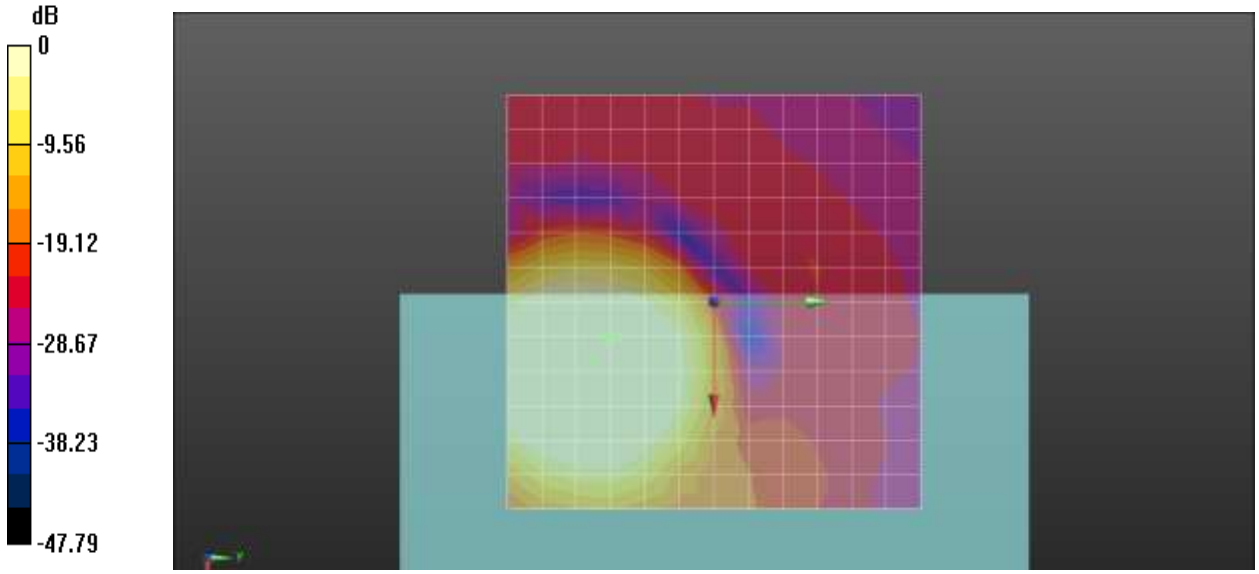
Communication System: UID 0, LTE Band 2 (0); Frequency: 1907.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (3)

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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 8.09 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM2 = -33.33 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 41.42 dB
ABM1 comp = 8.09 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.47
LTE 2 (Upper ANT) 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 19175ch Freq.Response

Communication System: UID 0, LTE Band 2 (0); Frequency: 1907.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

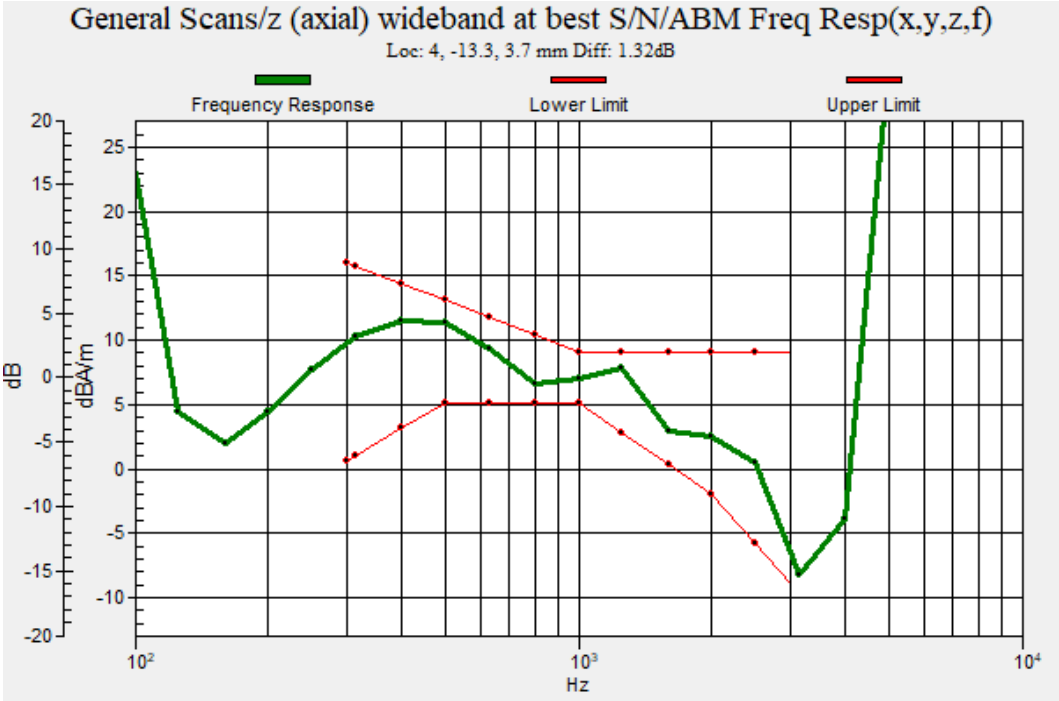
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (3)

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: 74.25
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 = 1.32 dB
BWC Factor = 9.47 dB
Location: 4, -13.3, 3.7 mm



Plot No.48
LTE 2 (Upper ANT) 16QAM EVS SWB 9.6bitrate 5MHz 1RB 12offset 19175ch y(transversal)

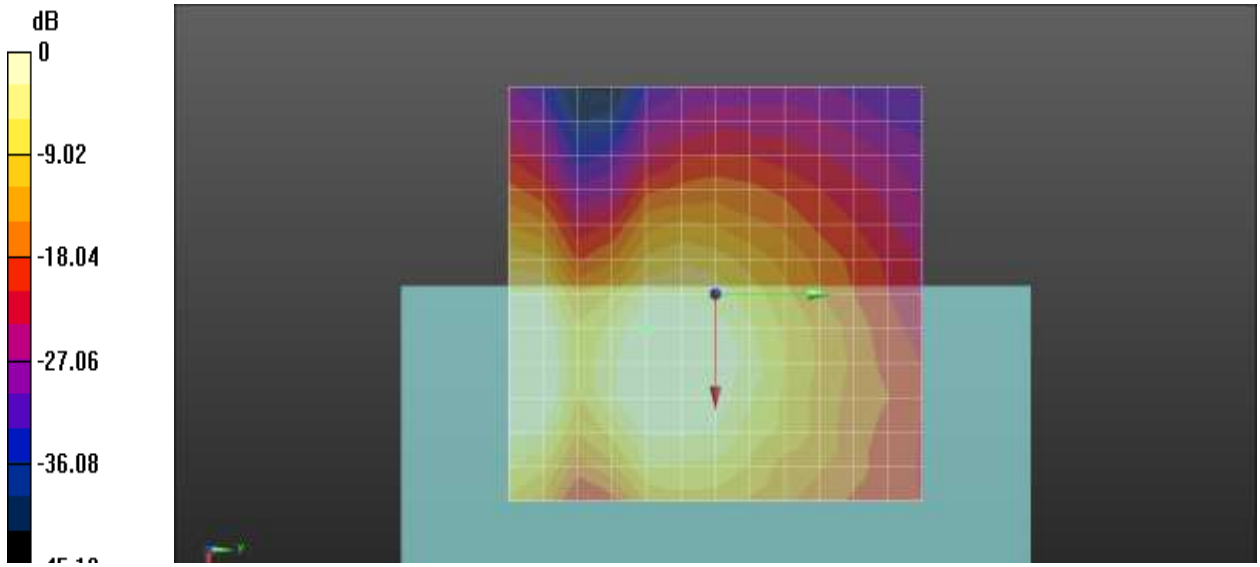
Communication System: UID 0, LTE Band 2 (0); Frequency: 1907.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (3)

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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 0.28 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -42.94 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 43.21 dB
ABM1 comp = 0.28 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.49
NR Band n5 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 167300ch z(axial)

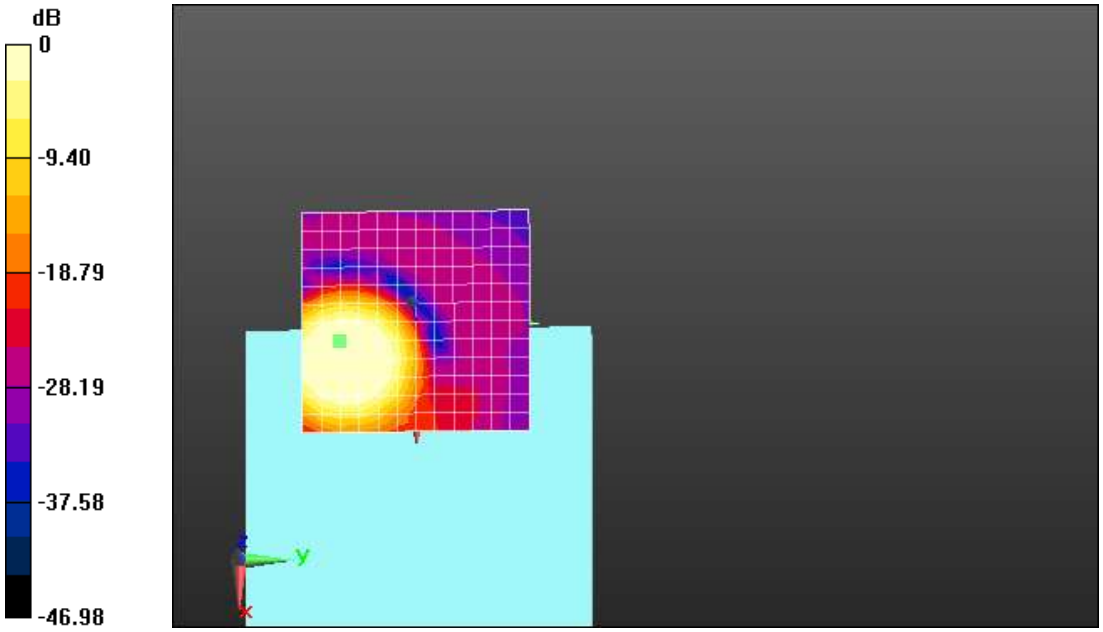
Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.00 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -43.14 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 48.14 dB
ABM1 comp = 5.00 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.50
NR Band n5 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 167300ch Freq.Response

Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

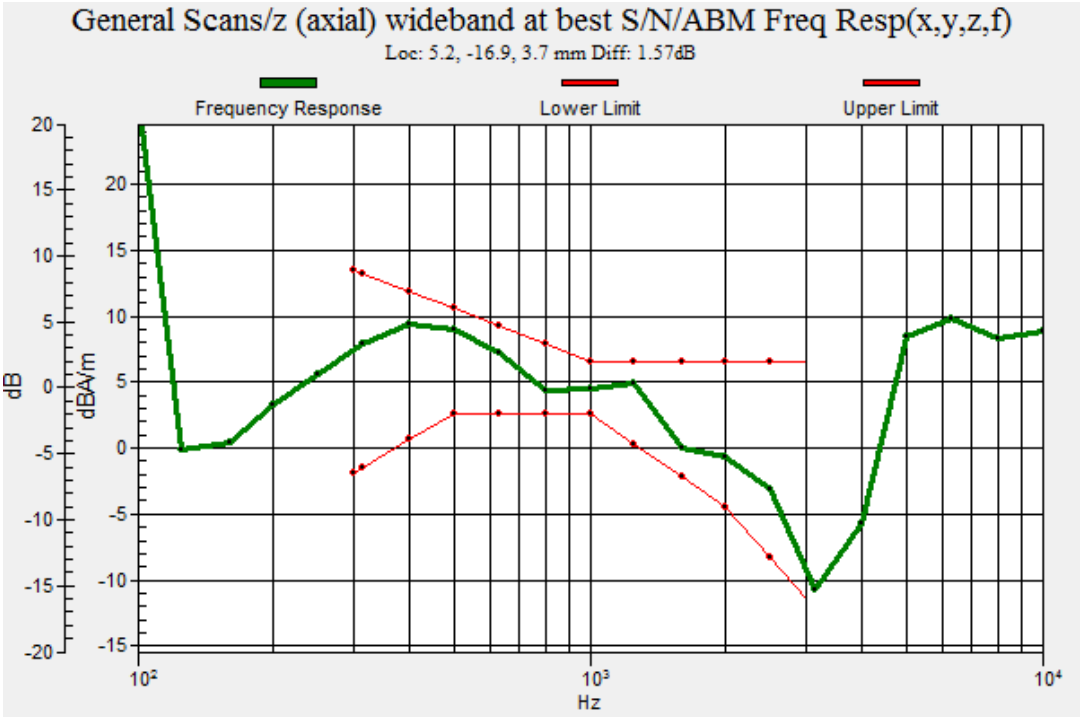
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 84.15
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 = 1.57 dB
BWC Factor = 9.46 dB
Location: 5.2, -16.9, 3.7 mm



Plot No.51
NR Band n5 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 167300ch y(transversal)

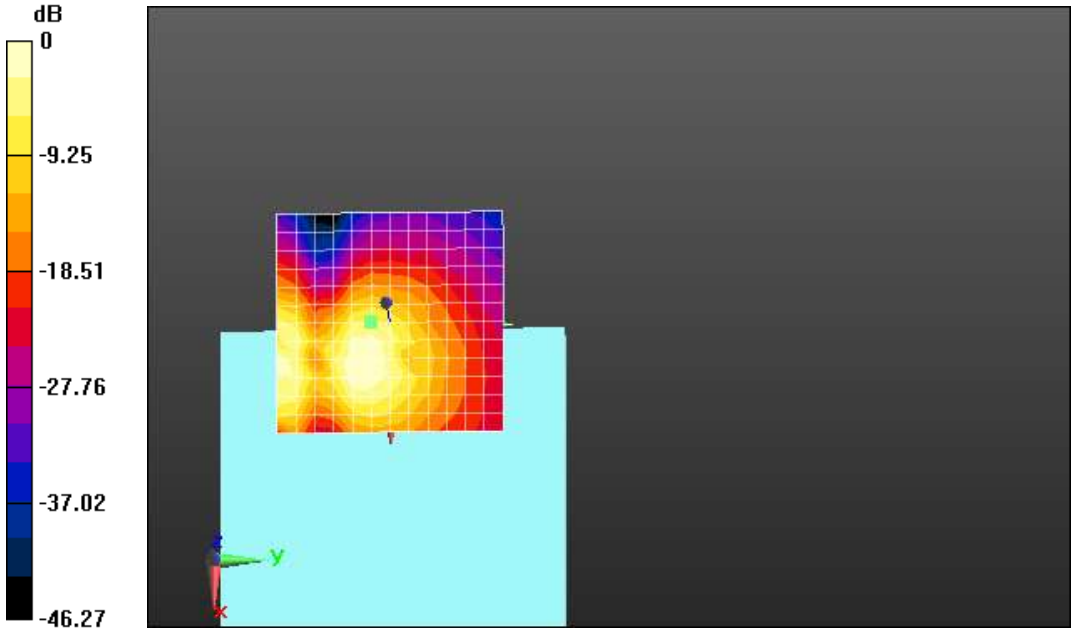
Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.38 dBA/m
BWC Factor = 0.15 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -47.50 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 42.12 dB
ABM1 comp = -5.38 dBA/m
BWC Factor = 0.15 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.52

NR Band n30 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 462000ch z(axial)

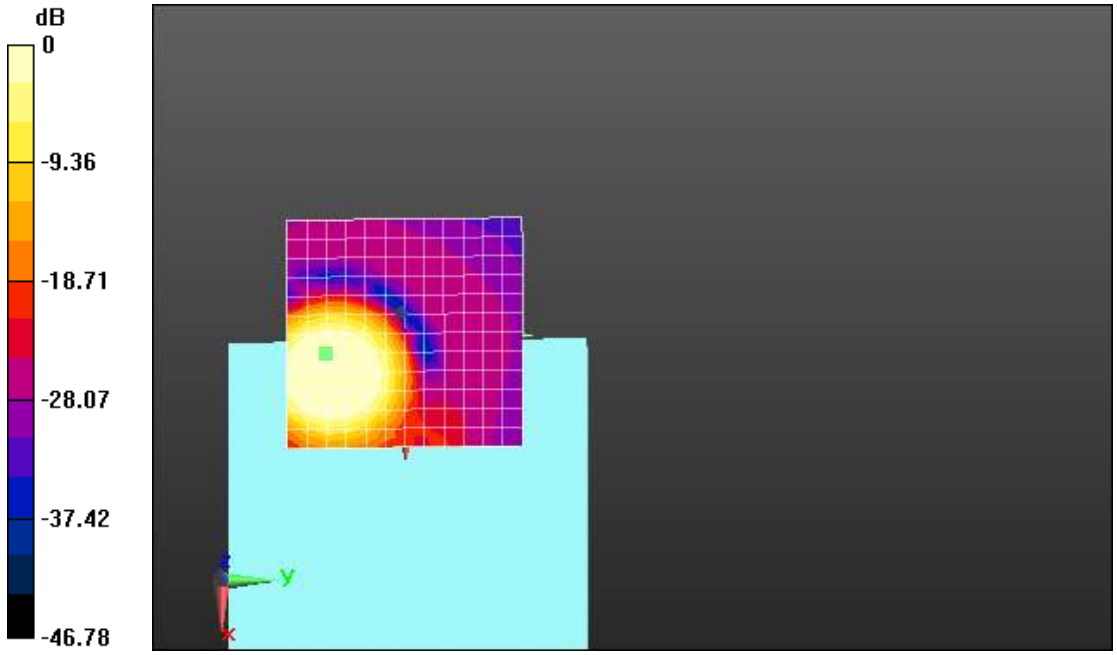
Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.28 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -40.35 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 45.63 dB
ABM1 comp = 5.28 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.53
NR Band n30 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 462000ch Freq.Response

Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

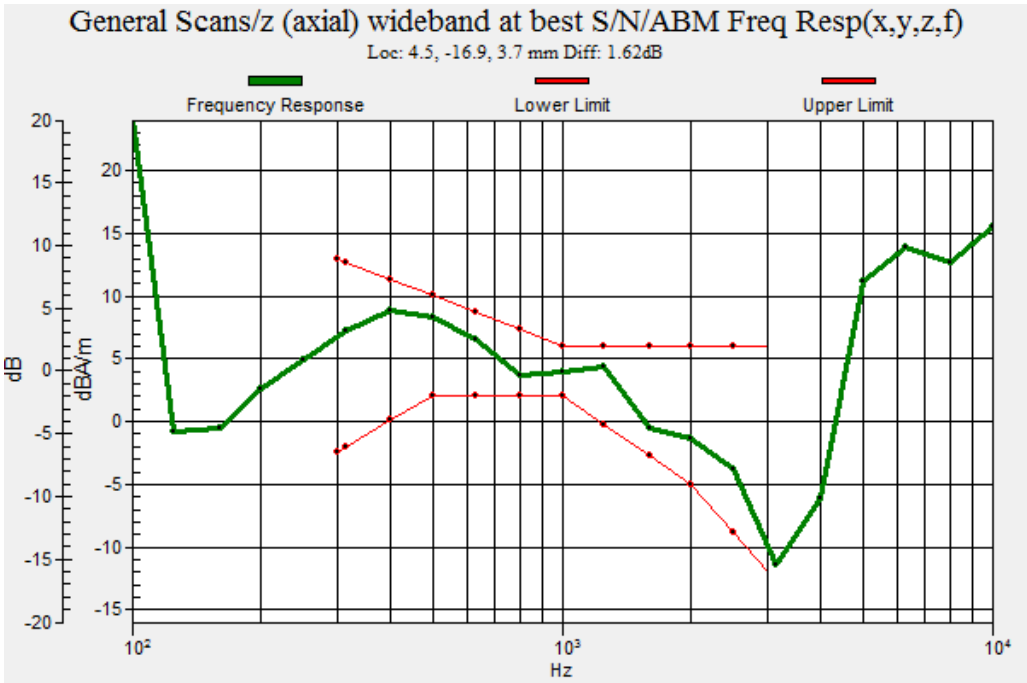
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 84.15
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 = 1.62 dB
BWC Factor = 9.46 dB
Location: 4.5, -16.9, 3.7 mm



Plot No.54
NR Band n30 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 462000ch y(transversal)

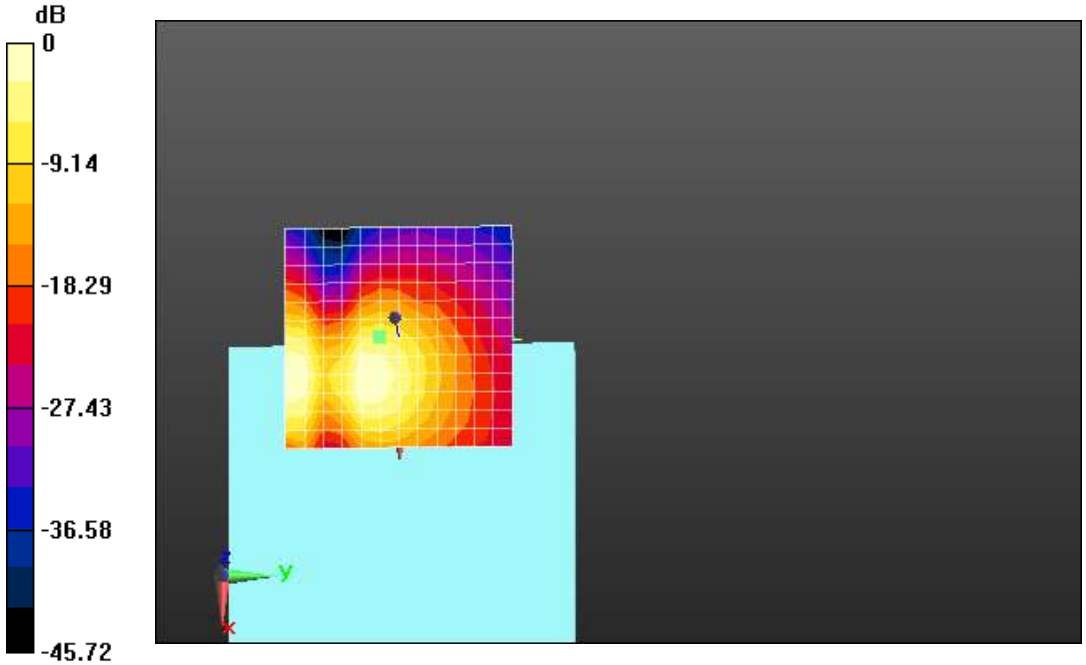
Communication System: UID 0, NR n5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.83 dBA/m
BWC Factor = 0.14 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -47.52 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 41.69 dB
ABM1 comp = -5.83 dBA/m
BWC Factor = 0.14 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.55
NR Band n66 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 349000ch z(axial)

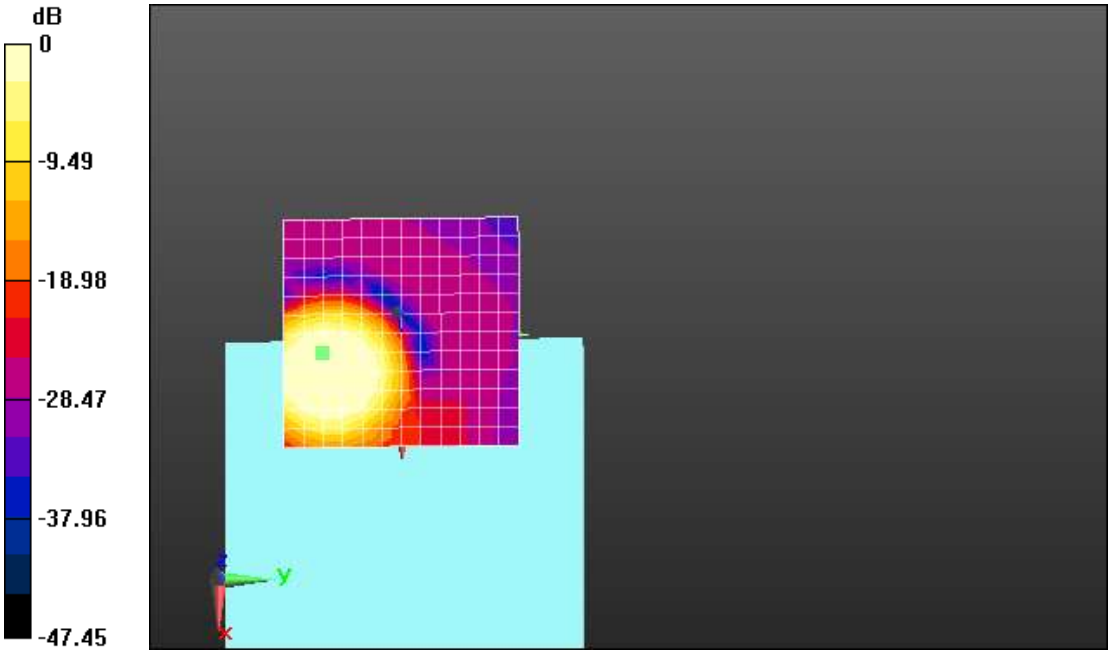
Communication System: UID 0, n66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.41 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -38.27 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 43.68 dB
ABM1 comp = 5.41 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.56
NR Band n66 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 349000ch Freq.Response

Communication System: UID 0, n66 (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

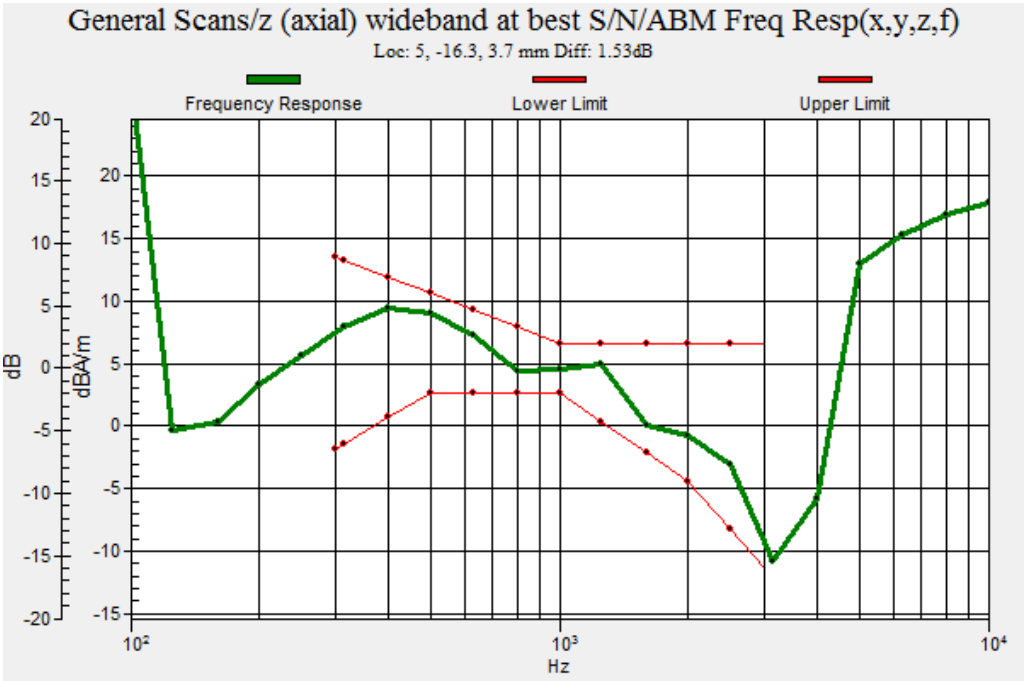
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 84.15
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 = 1.53 dB
BWC Factor = 9.46 dB
Location: 5, -16.3, 3.7 mm



Plot No.57
NR Band n66 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 349000ch y(transversal)

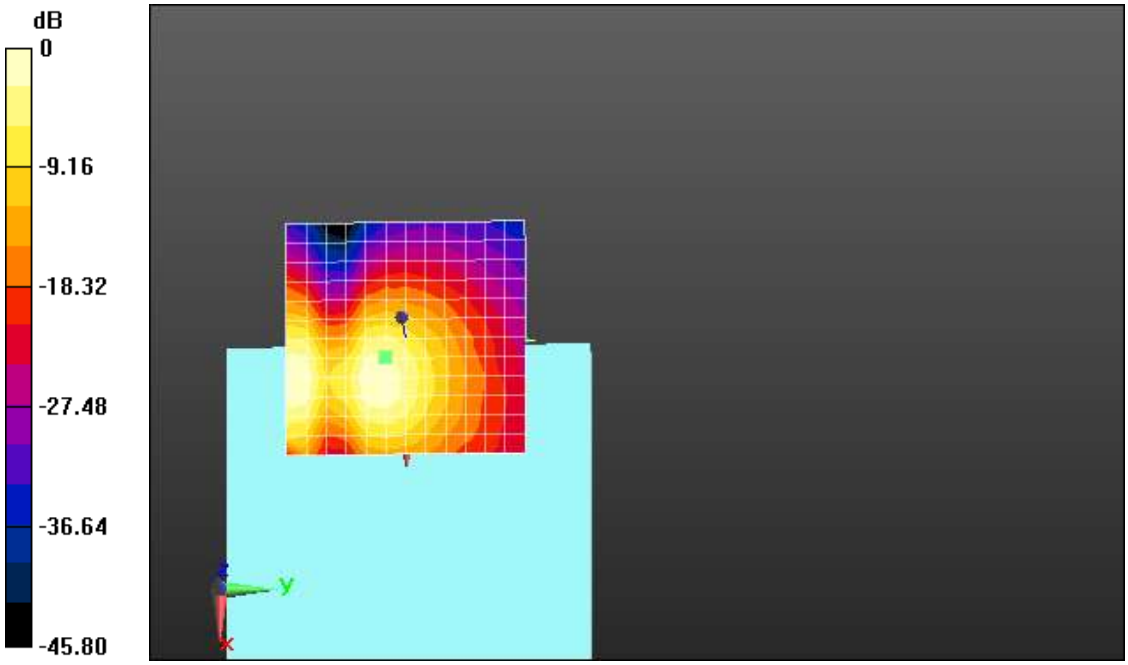
Communication System: UID 0, n66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -1.91 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -43.64 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 41.73 dB
ABM1 comp = -1.91 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.58

NR Band n70 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 340500ch z(axial)

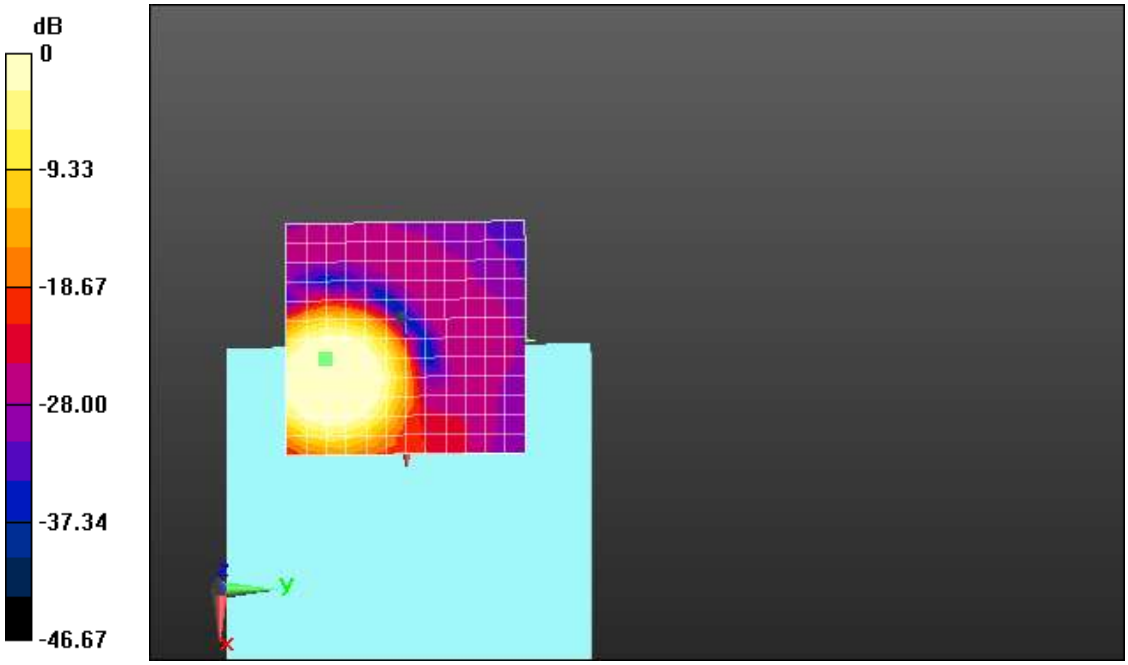
Communication System: UID 0, nr70 (0); Frequency: 1702.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.35 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -35.93 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 41.28 dB
ABM1 comp = 5.35 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.59
NR Band n70 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 340500ch Freq.Response

Communication System: UID 0, nr70 (0); Frequency: 1702.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

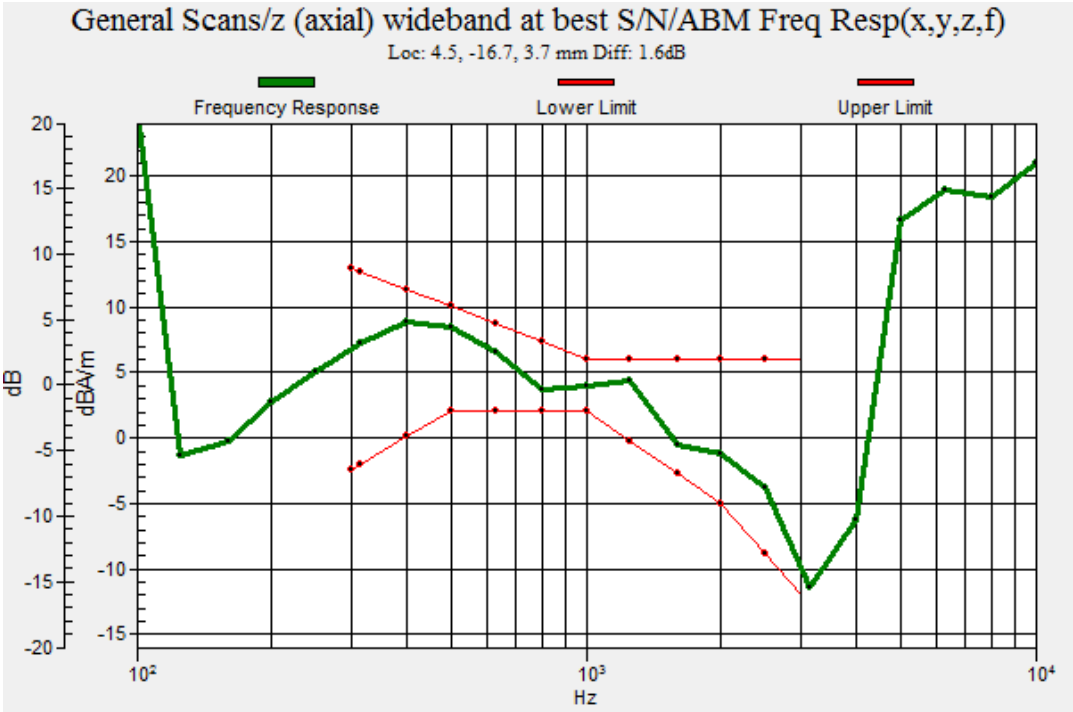
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 84.15
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 = 1.60 dB
BWC Factor = 9.47 dB
Location: 4.5, -16.7, 3.7 mm



Plot No.60
NR Band n70 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 340500ch y(transversal)

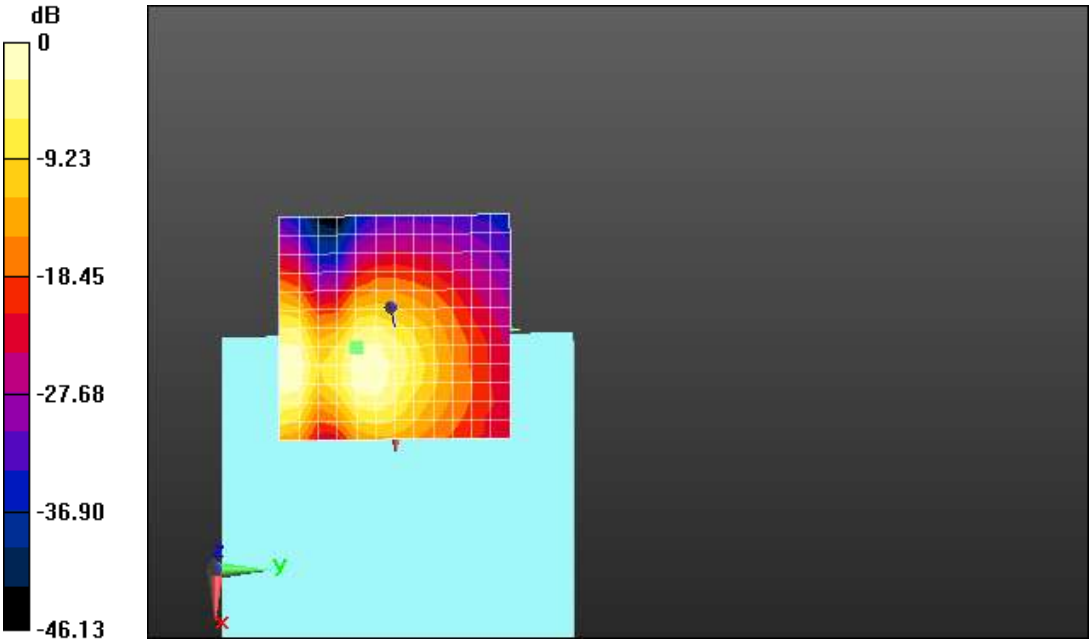
Communication System: UID 0, nr70 (0); Frequency: 1702.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.16 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -43.47 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 41.31 dB
ABM1 comp = -2.16 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.61

NR Band n71 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 136100ch z(axial)

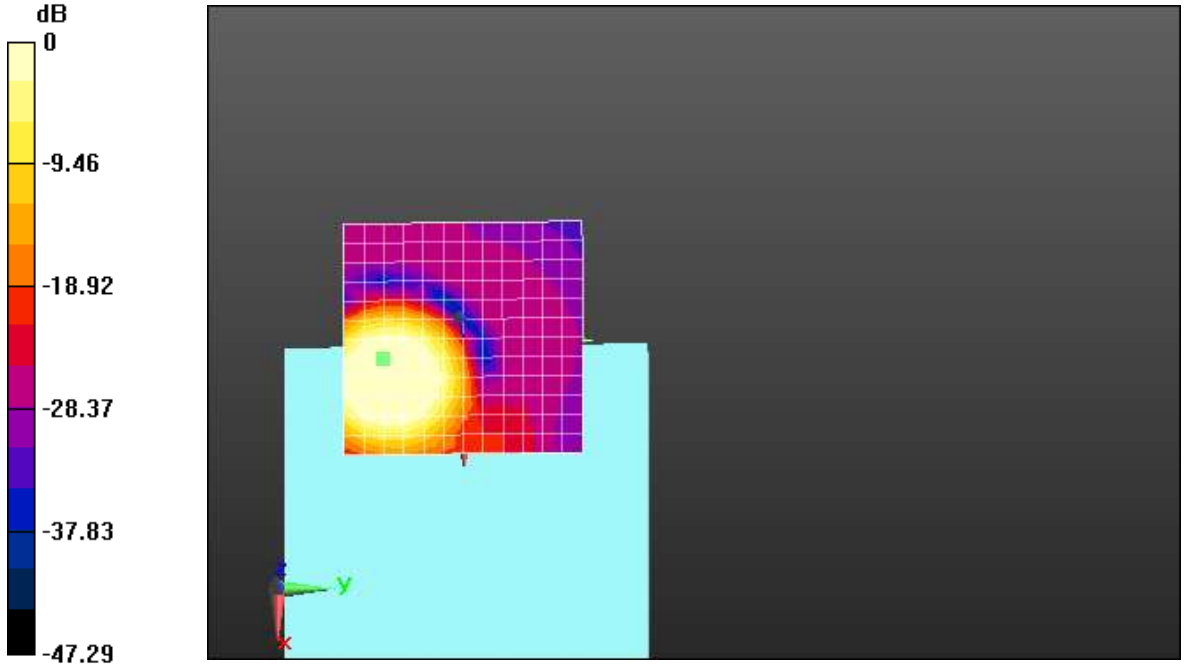
Communication System: UID 0, NR n71 (0); Frequency: 680.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.40 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -43.24 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 48.64 dB
ABM1 comp = 5.40 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.62
NR Band n71 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 136100ch Freq.Response

Communication System: UID 0, NR n71 (0); Frequency: 680.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

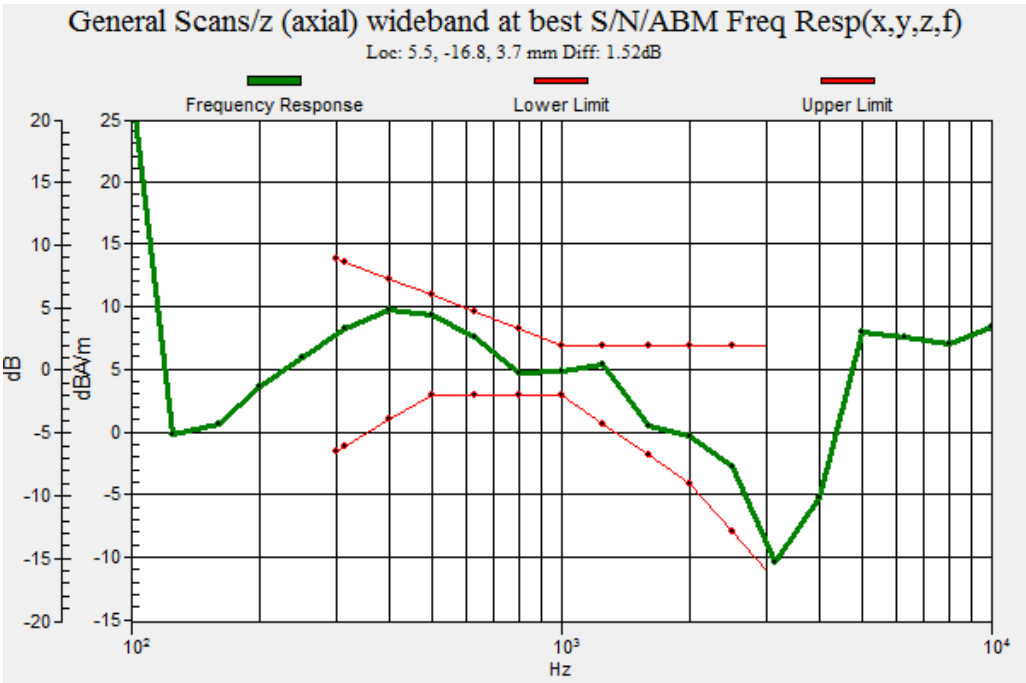
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 84.15
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 = 1.52 dB
BWC Factor = 9.46 dB
Location: 5.5, -16.8, 3.7 mm



Plot No.63
NR Band n71 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 136100ch y(transversal)

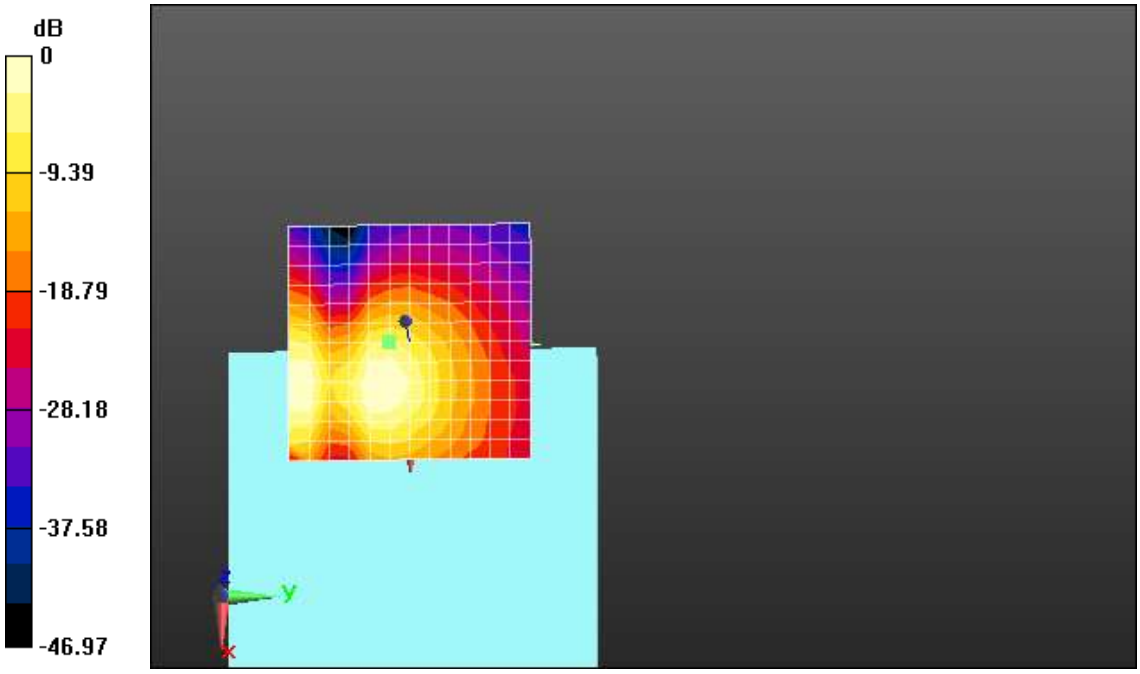
Communication System: UID 0, NR n71 (0); Frequency: 680.5 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.42 dBA/m
BWC Factor = 0.15 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -47.41 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 42.00 dB
ABM1 comp = -5.42 dBA/m
BWC Factor = 0.15 dB
Location: 0, -4.2, 3.7 mm



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

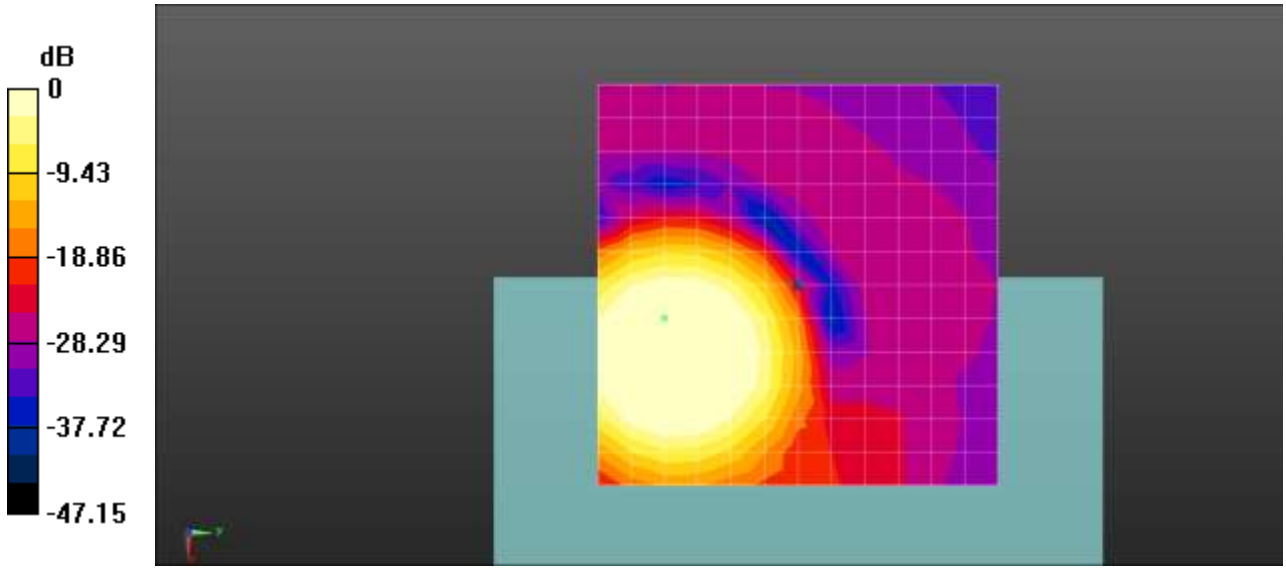
Plot No.64
NR Band n25 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 382000ch z(axial)
Communication System: UID 0, n25 (0); Frequency: 1910 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (3)

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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.32 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -33.57 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 38.89 dB
ABM1 comp = 5.32 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.65

NR Band n25 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 382000ch Freq.Response
Communication System: UID 0, n25 (0); Frequency: 1910 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

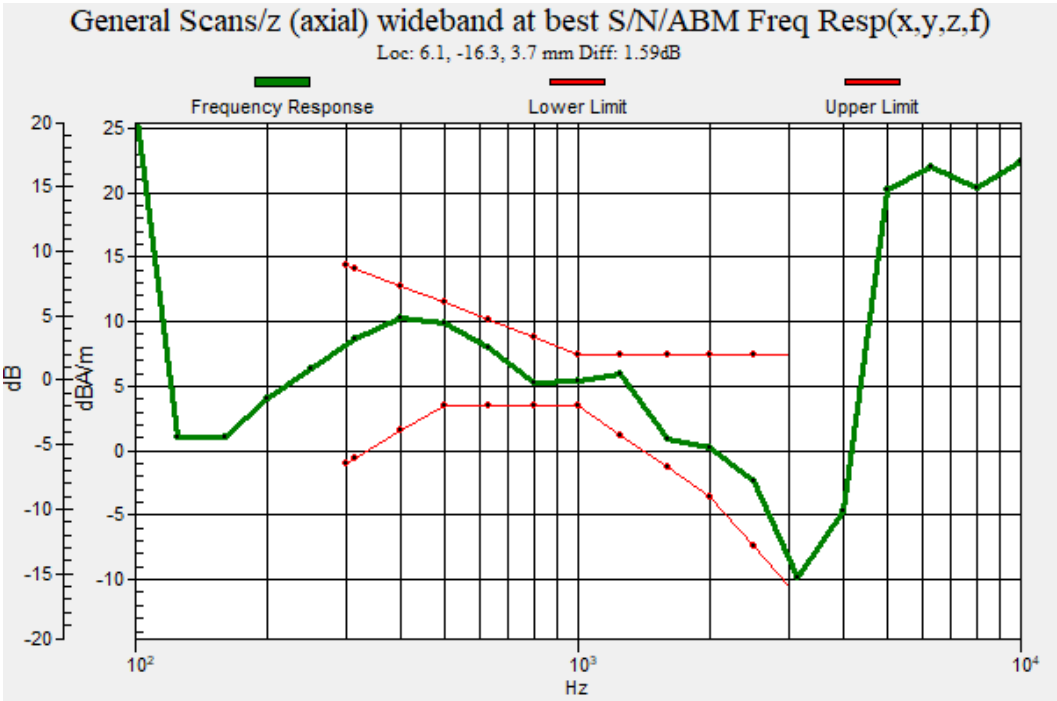
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (3)

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: 84.15
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: 6.1, -16.3, 3.7 mm



Plot No.66
NR Band n25 CP-OFDM 16QAM EVS SWB 16.4bitrate 10MHz 1RB 26offset 382000ch y(transversal)

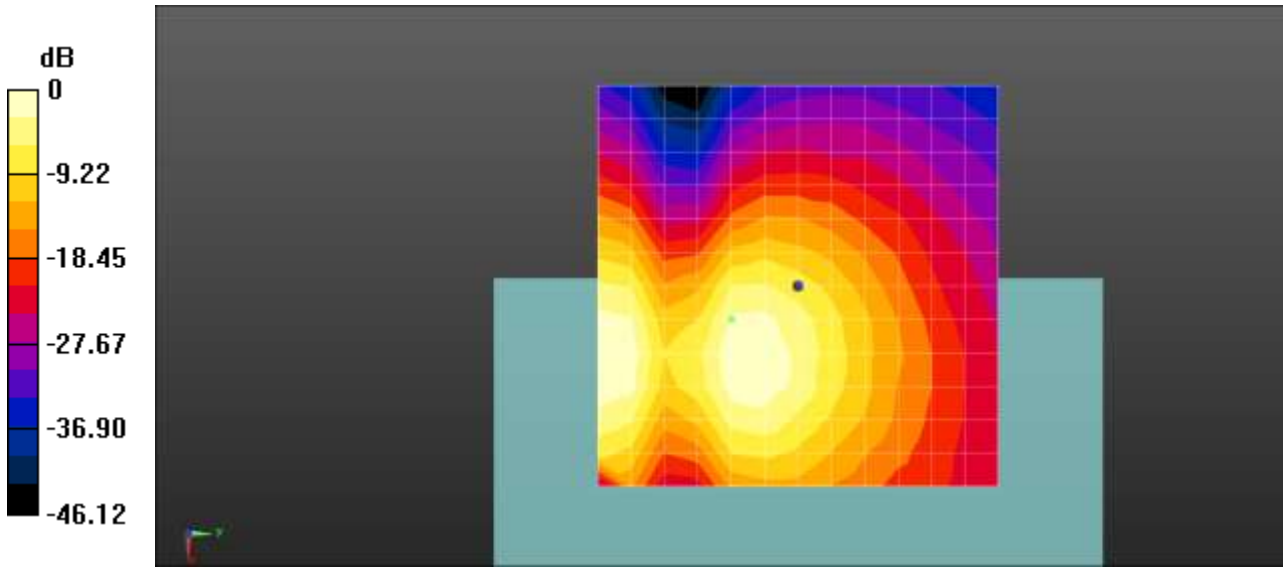
Communication System: UID 0, n25 (0); Frequency: 1910 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (3)

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: 28
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.56 dBA/m
BWC Factor = 0.16 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -43.30 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 40.75 dB
ABM1 comp = -2.56 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.67
LTE 41 QPSK EVS SWB 24.4bitrate 5MHz 1RB 0offset 40620ch z(axial)

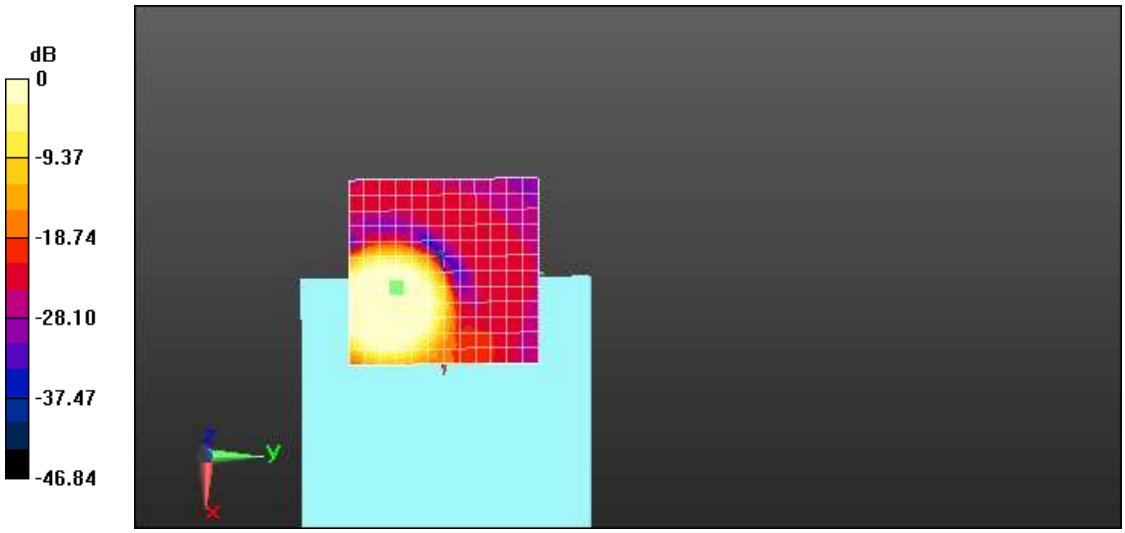
Communication System: UID 0, LTE Band 41 (FCC) (0); Frequency: 2593 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 7.78 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM2 = -26.78 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 34.55 dB
ABM1 comp = 7.78 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm



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

Plot No.68
LTE 41 QPSK EVS SWB 24.4bitrate 5MHz 1RB 0offset 40620ch Freq.Response

Communication System: UID 0, LTE Band 41 (FCC) (0); Frequency: 2593 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

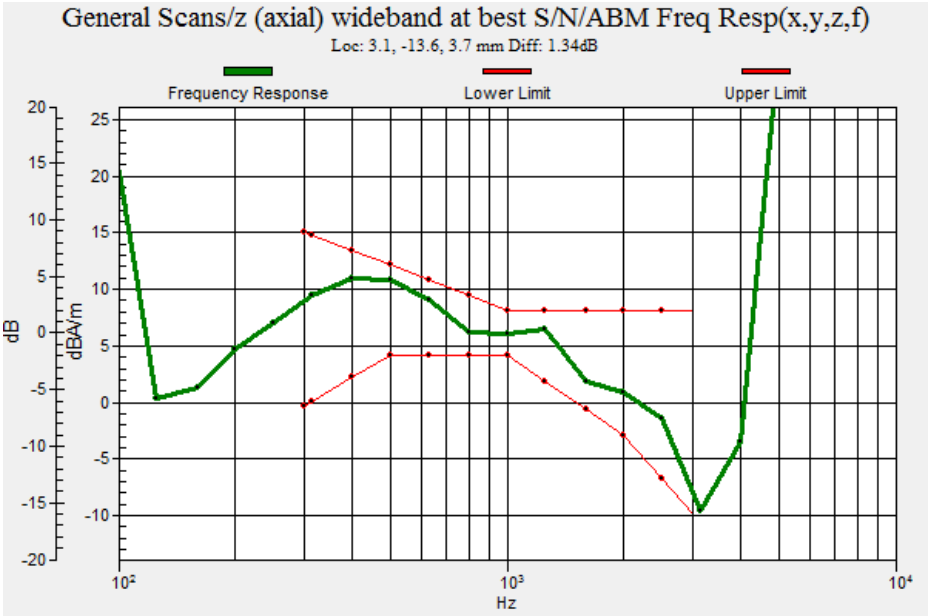
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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 = 1.34 dB
BWC Factor = 9.46 dB
Location: 3.1, -13.6, 3.7 mm



Plot No.69
LTE 41 QPSK EVS SWB 24.4bitrate 5MHz 1RB 0offset 40620ch y(transversal)

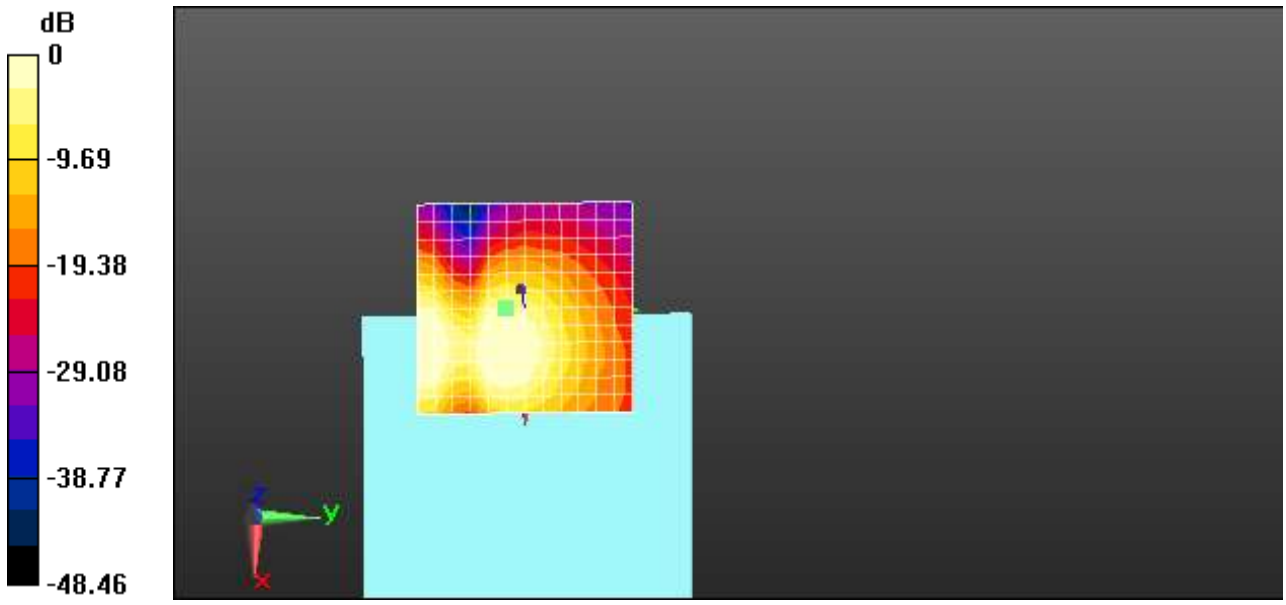
Communication System: UID 0, LTE Band 41 (FCC) (0); Frequency: 2593 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -2.44 dBA/m
BWC Factor = 0.14 dB
Location: 0, -4.2, 3.7 mm
Cursor:
ABM2 = -40.75 dBA/m
Location: 0, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 38.31 dB
ABM1 comp = -2.44 dBA/m
BWC Factor = 0.14 dB
Location: 0, -4.2, 3.7 mm



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

Plot No.70
LTE 48 QPSK EVS SWB 24.4bitrate 5MHz 1RB 0offset 56715ch z(axial)

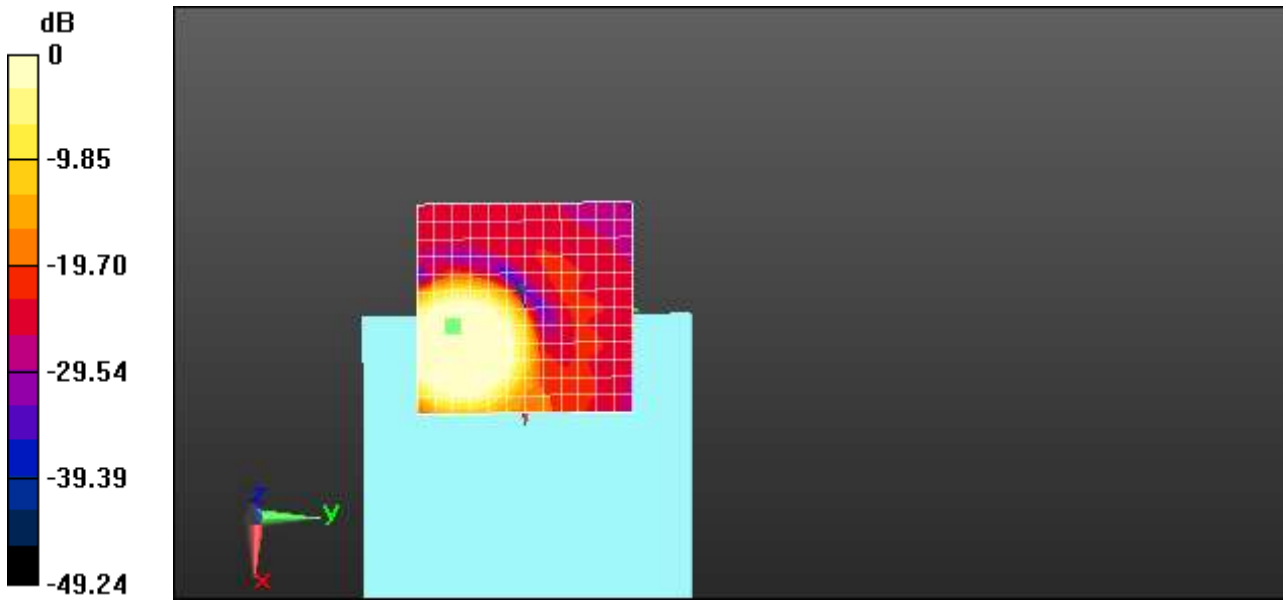
Communication System: UID 0, LTE Band 48 (0); Frequency: 3697.5 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 7.78 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM2 = -24.63 dBA/m
Location: 4.2, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 32.40 dB
ABM1 comp = 7.78 dBA/m
BWC Factor = 0.15 dB
Location: 4.2, -16.7, 3.7 mm



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

Plot No.71
LTE 48 QPSK EVS SWB 24.4bitrate 5MHz 1RB 0offset Freq.Response

Communication System: UID 0, LTE Band 48 (0); Frequency: 3697.5 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

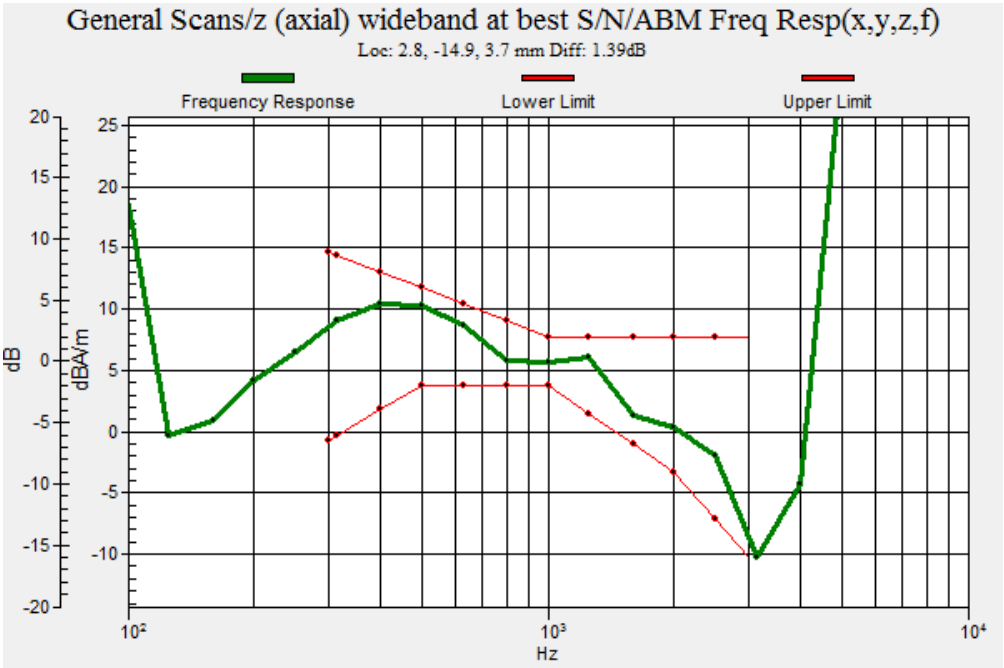
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 74.25
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 = 1.39 dB
BWC Factor = 9.46 dB
Location: 2.8, -14.9, 3.7 mm



Plot No.72
LTE 48 QPSK EVS SWB 24.4bitrate 5MHz 1RB 0offset y(transversal)

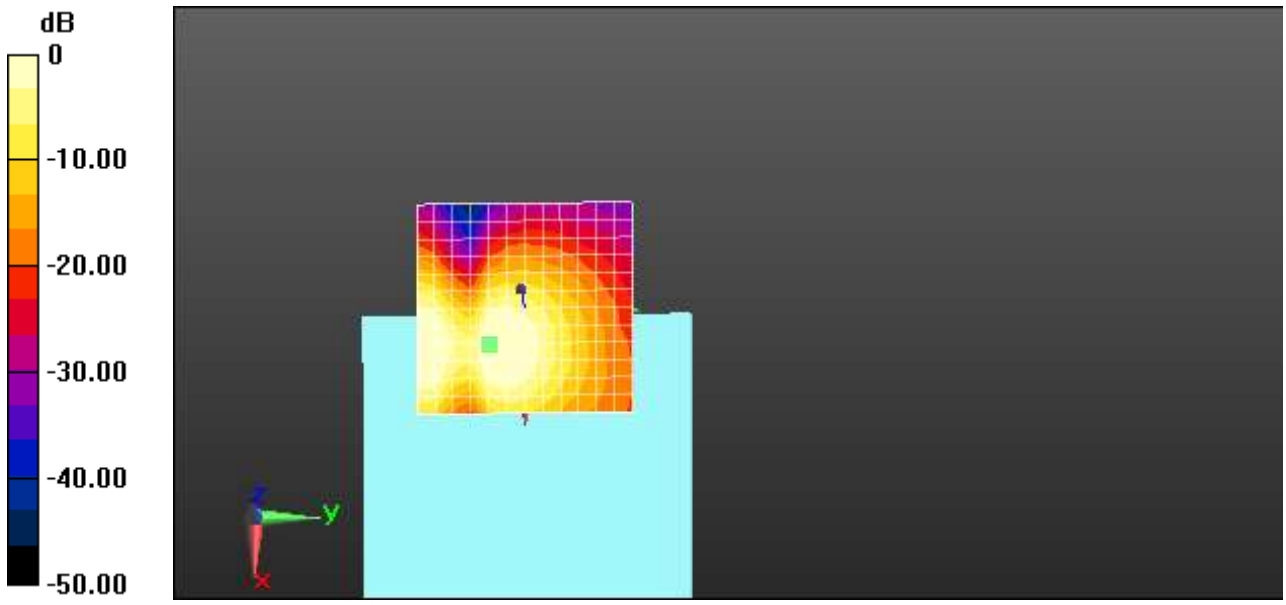
Communication System: UID 0, LTE Band 48 (0); Frequency: 3697.5 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 24.43
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.15 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 2.50 dBA/m
BWC Factor = 0.15 dB
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM2 = -38.57 dBA/m
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 41.07 dB
ABM1 comp = 2.50 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.73

NR Band n77 DFTs-OFDM QPSK EVS SWB 9.6bitrate 80MHz 1RB 1offset 656000ch z(axial)

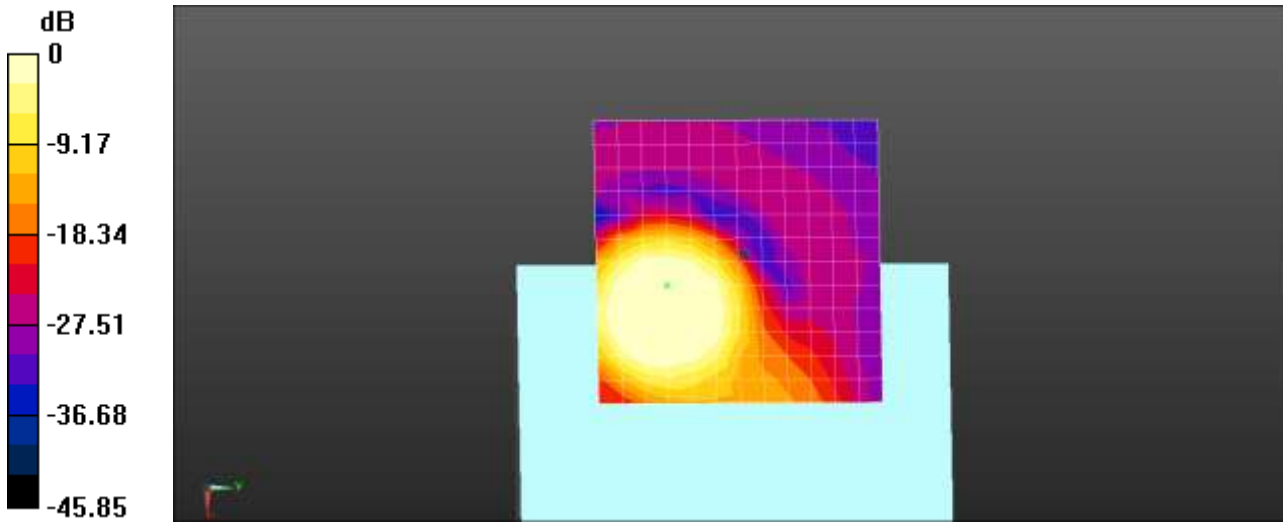
Communication System: UID 0, NR Band 77; Frequency: 3840 MHz;Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 27.42
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.54 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM2 = -18.09 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 23.64 dB
ABM1 comp = 5.54 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm



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

Plot No.74

NR Band n77 DFTs-OFDM QPSK EVS SWB 9.6bitrate 80MHz 1RB 1offset 656000ch Freq.Response

Communication System: UID 0, NR Band 77; Frequency: 3840 MHz;Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

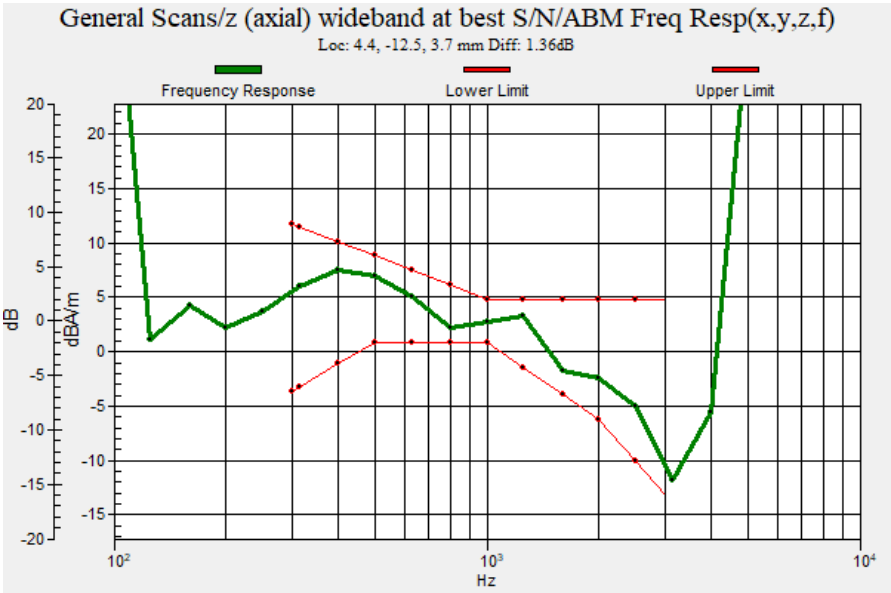
DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 82.5
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 = 1.36 dB
BWC Factor = 9.46 dB
Location: 4.4, -12.5, 3.7 mm



Plot No.75
NR Band n77 DFTs-OFDM QPSK EVS SWB 9.6bitrate 80MHz 1RB 1offset 656000ch y(transversal)

Communication System: UID 0, NR Band 77; Frequency: 3840 MHz;Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

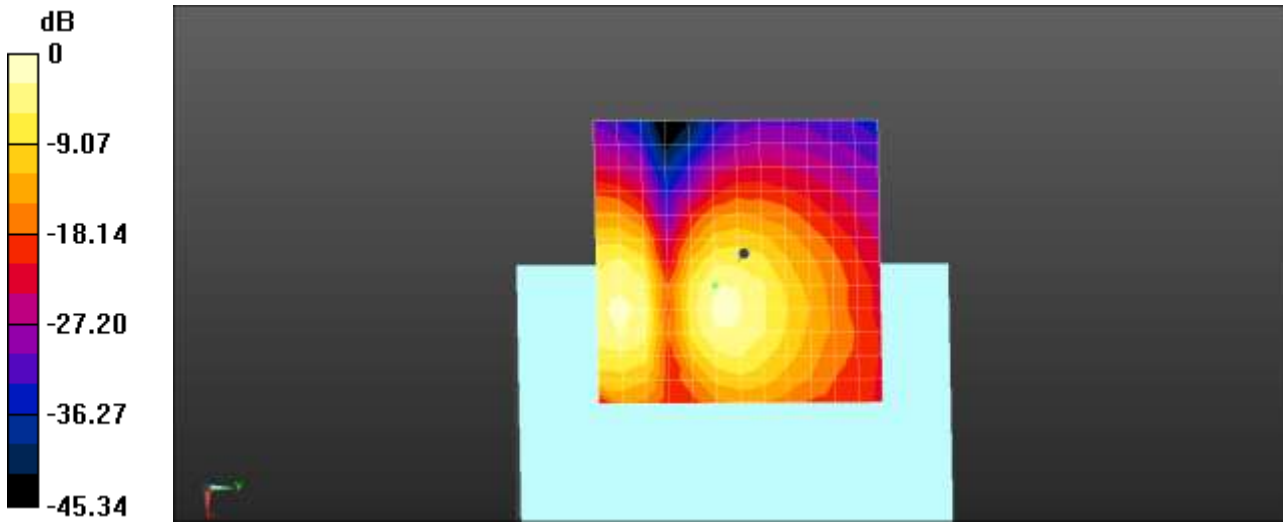
- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4);

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: 27.42
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.00 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -4.2, 3.7 mm

Cursor:
ABM2 = -32.97 dBA/m
Location: 4.2, -4.2, 3.7 mm

Cursor:
ABM1/ABM2 = 29.97 dB
ABM1 comp = -3.00 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.76

NR Band n48 DFTs-OFDM QPSK EVS SWB 9.6bitrate 40MHz 1RB 1offset 641666ch z(axial)

Communication System: UID UID 0, NR Band 48 Frequency: 3624.99 MHz;Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

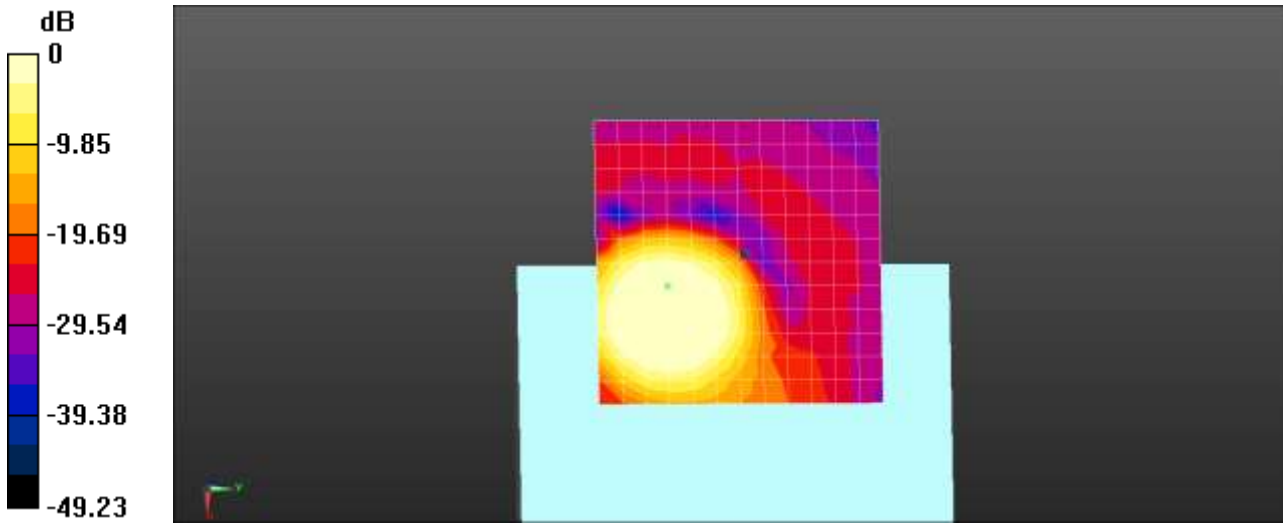
DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 27.42
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.62 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm

Cursor:
ABM2 = -23.20 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 28.82 dB
ABM1 comp = 5.62 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm



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

Plot No.77

NR Band n48 DFTs-OFDM QPSK EVS SWB 9.6bitrate 40MHz 1RB 1offset 641666ch Freq.Response

Communication System: UID UID 0, NR Band 48 Frequency: 3624.99 MHz;Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

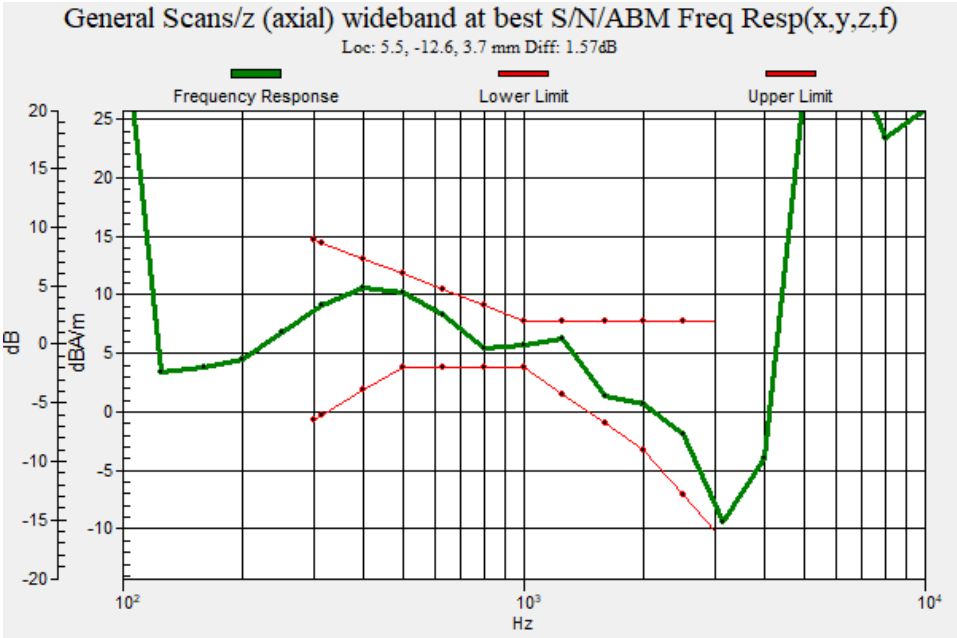
DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 82.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.45 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 = 1.57 dB
BWC Factor = 9.45 dB
Location: 5.5, -12.6, 3.7 mm



Plot No.78

NR Band n48 DFTs-OFDM QPSK EVS SWB 9.6bitrate 40MHz 1RB 1offset 641666ch y(transversal)

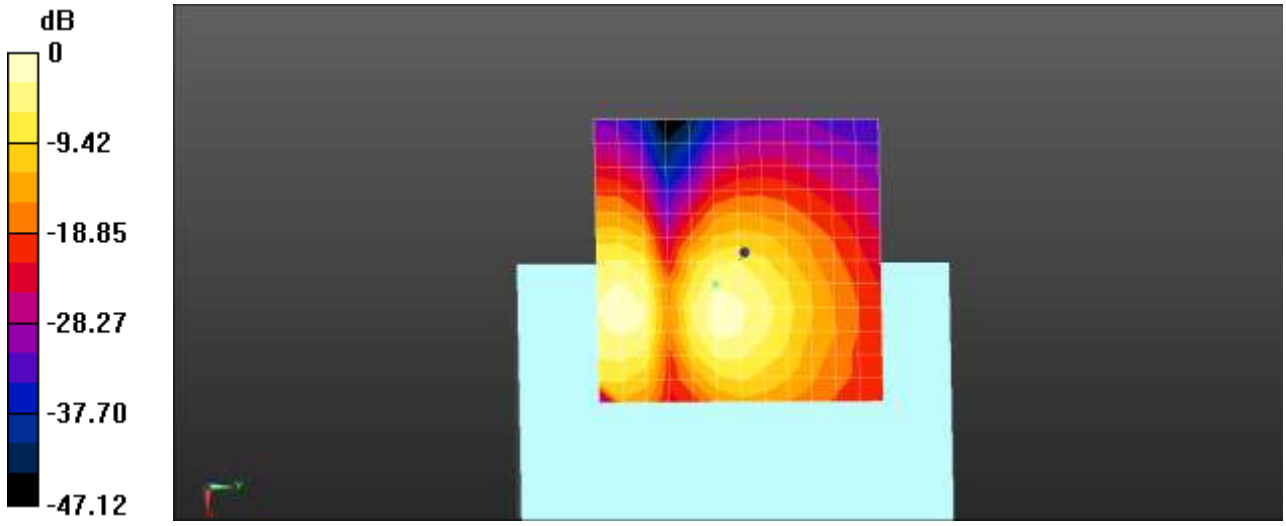
Communication System: UID UID 0, NR Band 48 Frequency: 3624.99 MHz;Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 27.42
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.23 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM2 = -36.61 dBA/m
Location: 4.2, -4.2, 3.7 mm
Cursor:
ABM1/ABM2 = 33.38 dB
ABM1 comp = -3.23 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -4.2, 3.7 mm



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

Plot No.79

NR Band n41 DFTs-OFDM QPSK EVS SWB 9.6bitrate 80MHz 1RB 1offset 518598ch z(axial)

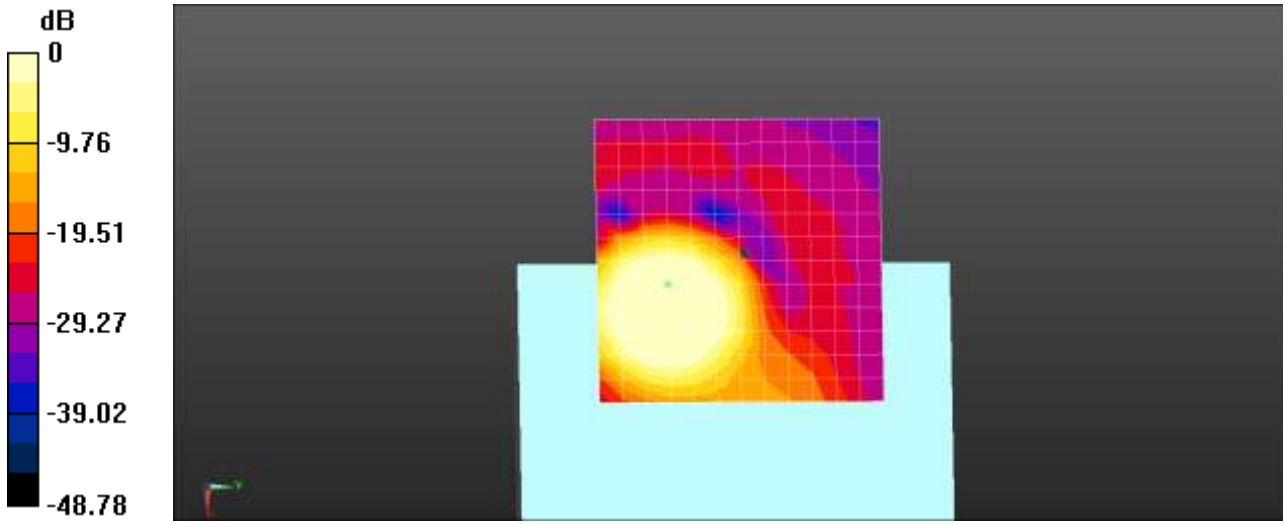
Communication System: UID UID 0, NR Band 41 ; Frequency: 2592.99 MHz; Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 27.42
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 6.37 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM2 = -25.97 dBA/m
Location: 4.2, -12.5, 3.7 mm
Cursor:
ABM1/ABM2 = 32.34 dB
ABM1 comp = 6.37 dBA/m
BWC Factor = 0.14 dB
Location: 4.2, -12.5, 3.7 mm



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

Plot No.80

NR Band n41 DFTs-OFDM QPSK EVS SWB 9.6bitrate 80MHz 1RB 1offset 518598ch z(axial) Freq.Response

Communication System: UID UID 0, NR Band 41 ; Frequency: 2592.99 MHz; Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

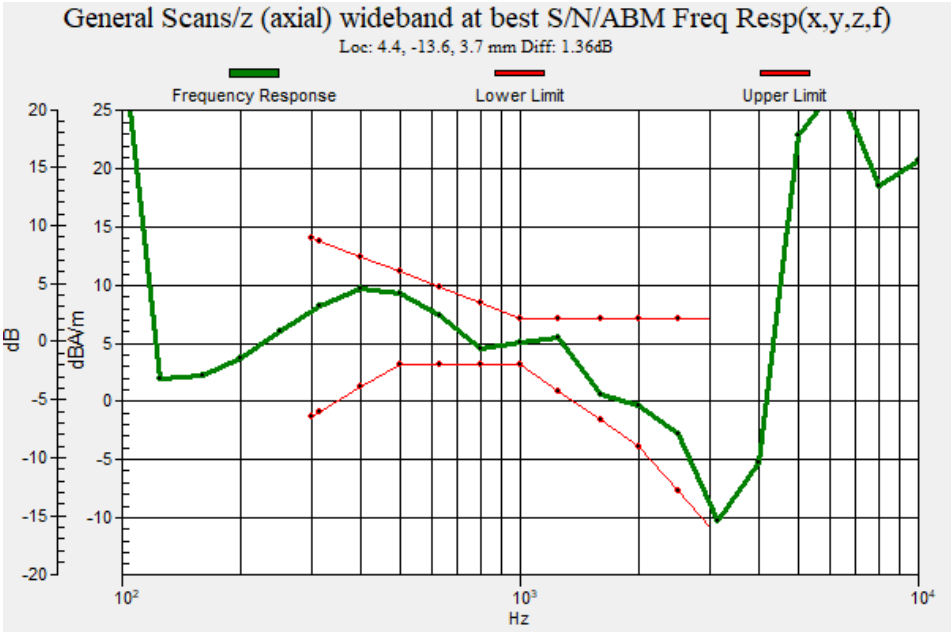
DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 82.5
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.45 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 = 1.36 dB
BWC Factor = 9.45 dB
Location: 4.4, -13.6, 3.7 mm



Plot No.81
NR Band n41 DFTs-OFDM QPSK EVS SWB 9.6bitrate 80MHz 1RB 1offset 518598ch y(transversal)

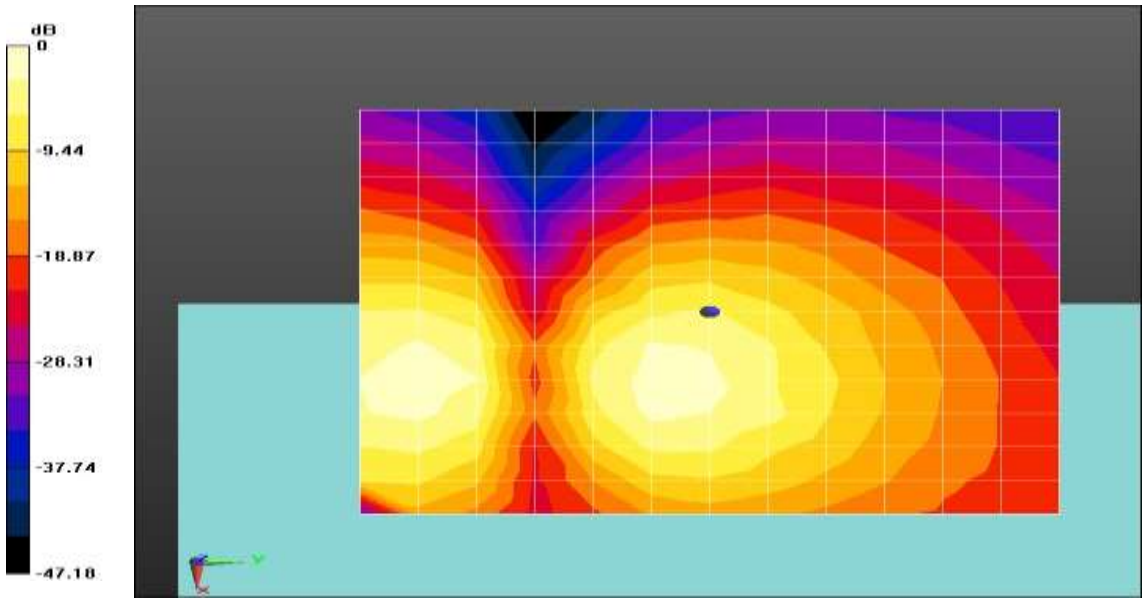
Communication System: UID UID 0, NR Band 41 ; Frequency: 2592.99 MHz; Duty Cycle: 1:4.00037
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 2023-04-25
- 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: 27.42
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.14 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.77 dBA/m
BWC Factor = 0.14 dB
Location: 0, 0, 3.7 mm
Cursor:
ABM2 = -40.50 dBA/m
Location: 0, 0, 3.7 mm
Cursor:
ABM1/ABM2 = 34.73 dB
ABM1 comp = -5.77 dBA/m
BWC Factor = 0.14 dB
Location: 0, 0, 3.7 mm



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

Plot No.82
802_11b 1Mbps 1ch EVS SWB 9_6.z(axial)

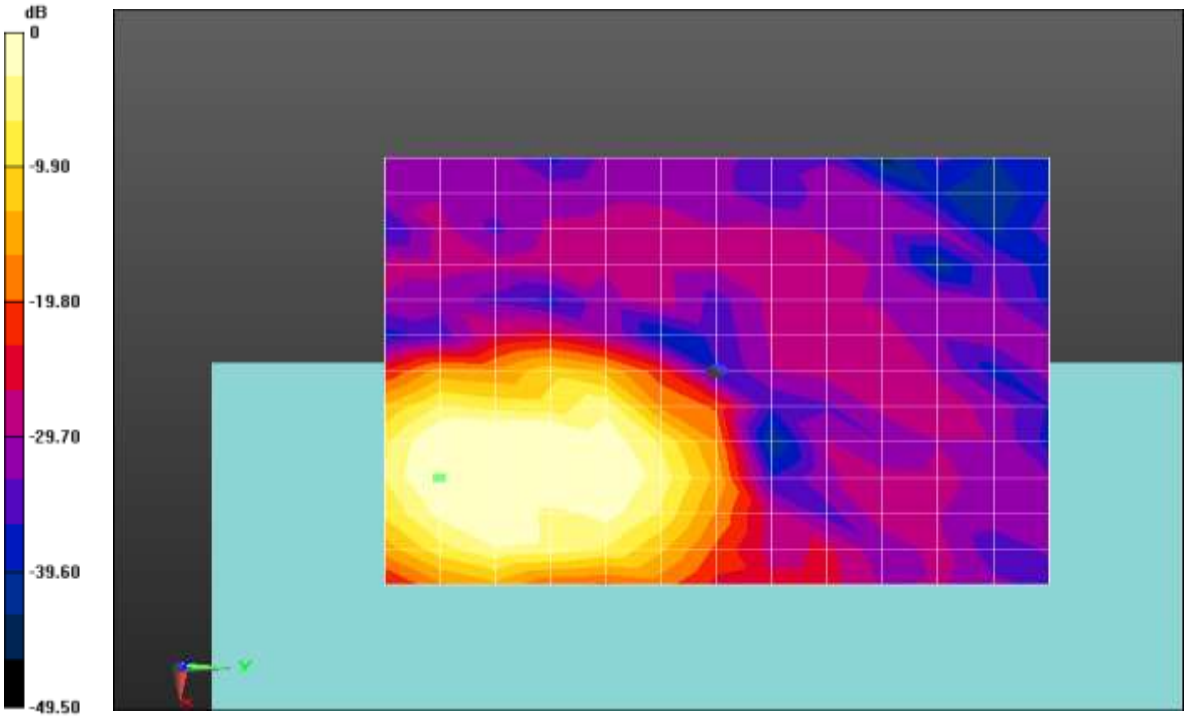
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.11 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 2.15 dBA/m
BWC Factor = 0.11 dB
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM2 = -31.81 dBA/m
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM1/ABM2 = 33.96 dB
ABM1 comp = 2.15 dBA/m
BWC Factor = 0.11 dB
Location: 12.5, -20.8, 3.7 mm



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

Plot No.83
802_11b 1Mbps 1ch EVS SWB 9_6. Freq.Response
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

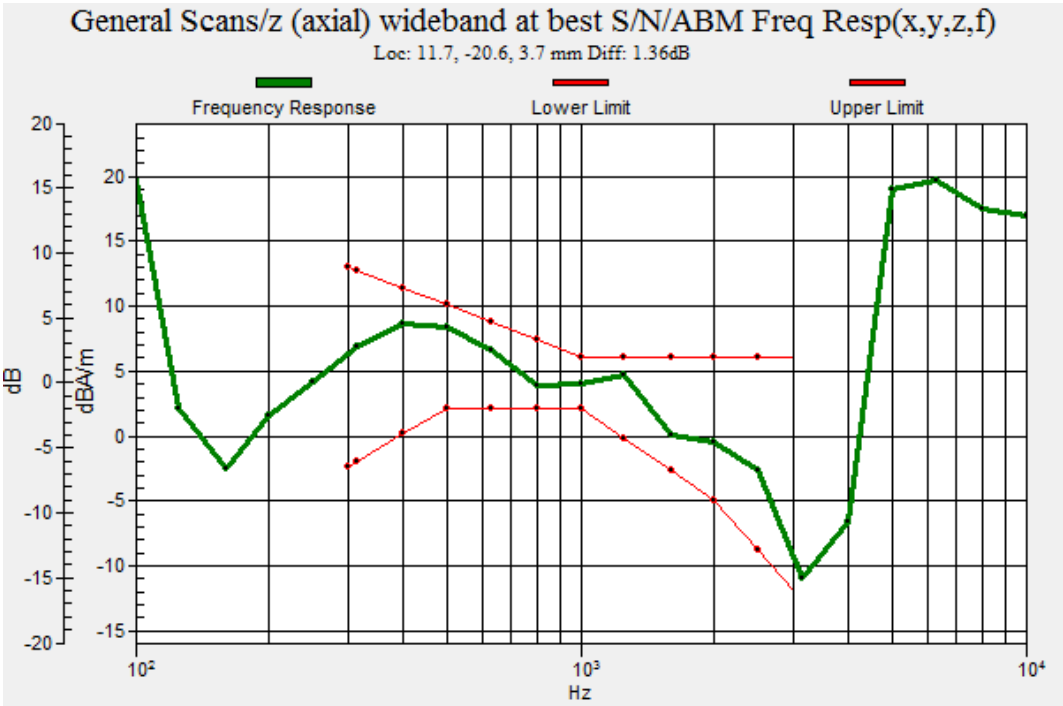
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 46.15
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.42 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 = 1.36 dB
BWC Factor = 9.42 dB
Location: 11.7, -20.6, 3.7 mm



Plot No.84
802_11b 1Mbps 1ch EVS SWB 9_6.y(transversal)

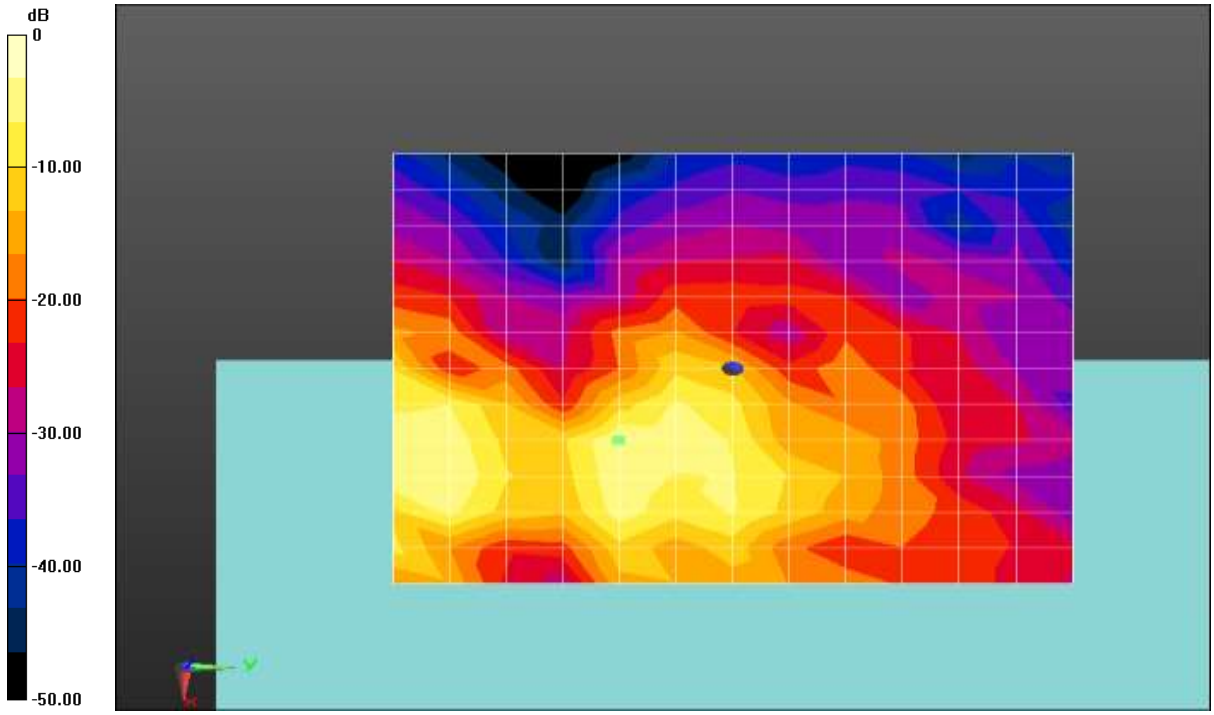
Communication System: UID 0, 2450MHz FCC (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.11 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -3.16 dBA/m
BWC Factor = 0.11 dB
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM2 = -35.78 dBA/m
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 32.62 dB
ABM1 comp = -3.16 dBA/m
BWC Factor = 0.11 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.85
802_11a 6Mbps 40ch EVS SWB 9_6 z(axial)

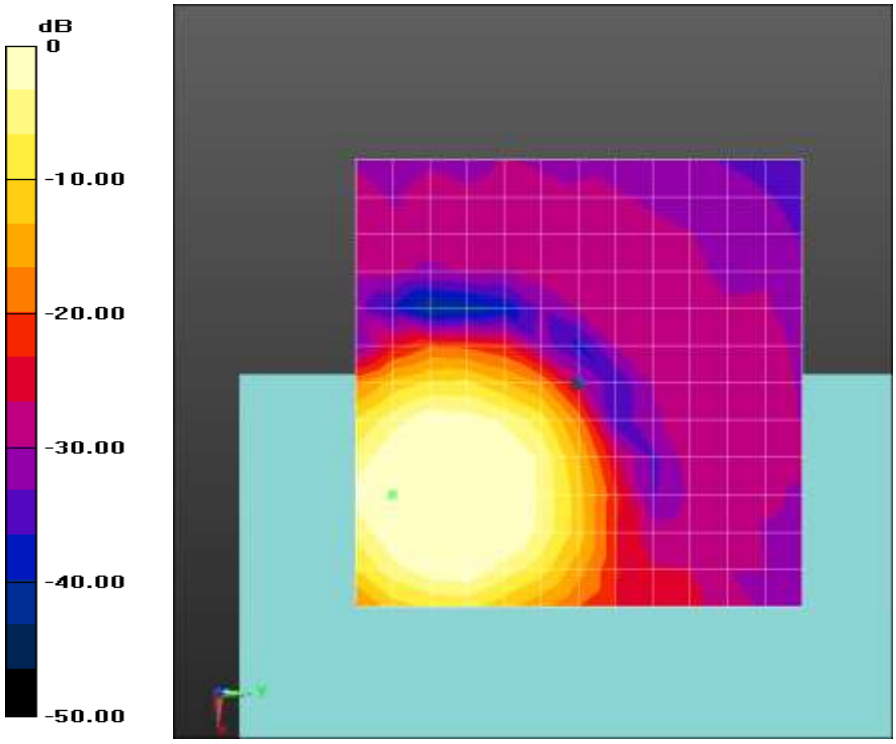
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.12 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 3.21 dBA/m
BWC Factor = 0.12 dB
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM2 = -35.88 dBA/m
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM1/ABM2 = 39.09 dB
ABM1 comp = 3.21 dBA/m
BWC Factor = 0.12 dB
Location: 12.5, -20.8, 3.7 mm



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

Plot No.86
802_11a 6Mbps 40ch EVS SWB 9_6 Freq.Response

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

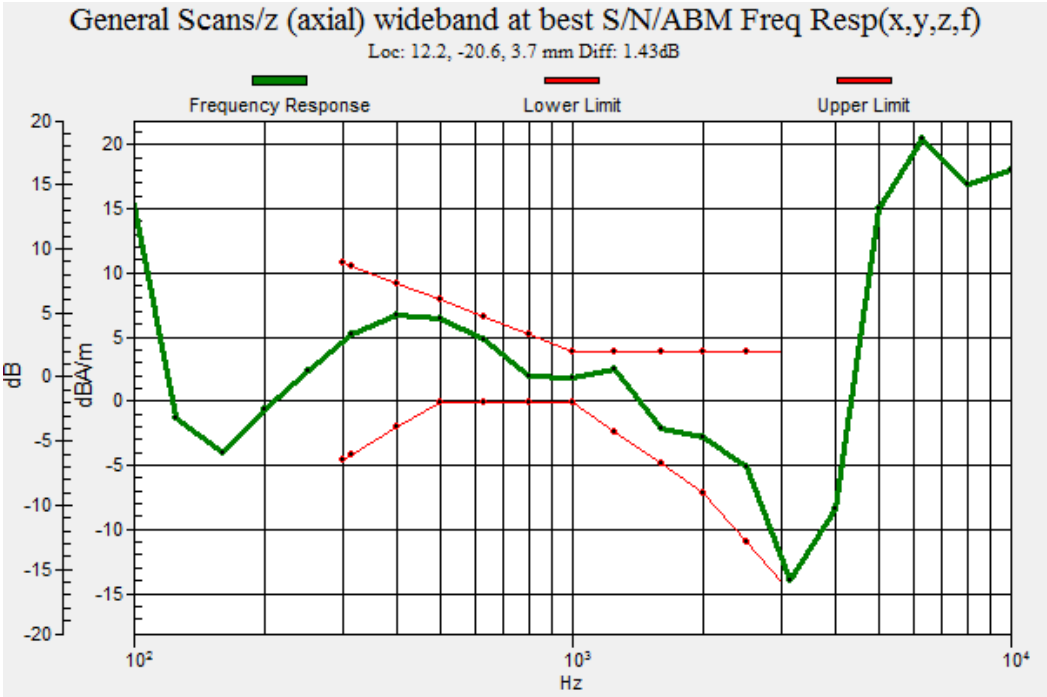
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 46.15
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.44 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 = 9.44 dB
Location: 12.2, -20.6, 3.7 mm



Plot No.87
802_11a 6Mbps 40ch EVS SWB 9_6 y(transversal)

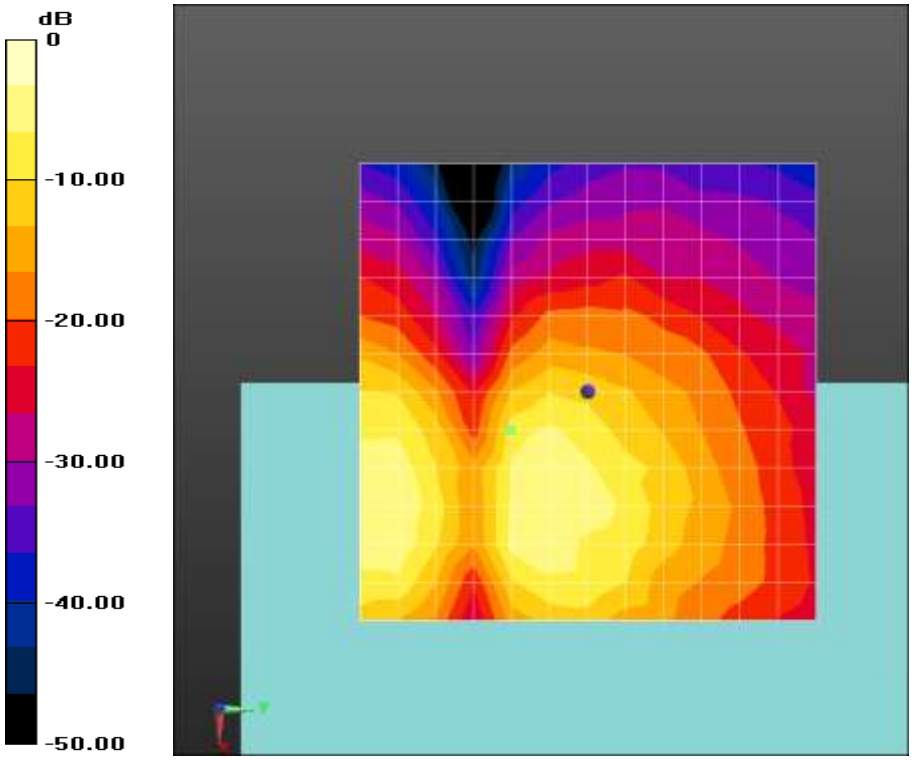
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.12 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -8.25 dBA/m
BWC Factor = 0.12 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -46.25 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 38.00 dB
ABM1 comp = -8.25 dBA/m
BWC Factor = 0.12 dB
Location: 4.2, -8.3, 3.7 mm



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

Plot No.88
802_11a 6Mbps 60ch EVS SWB 9_6 z(axial)

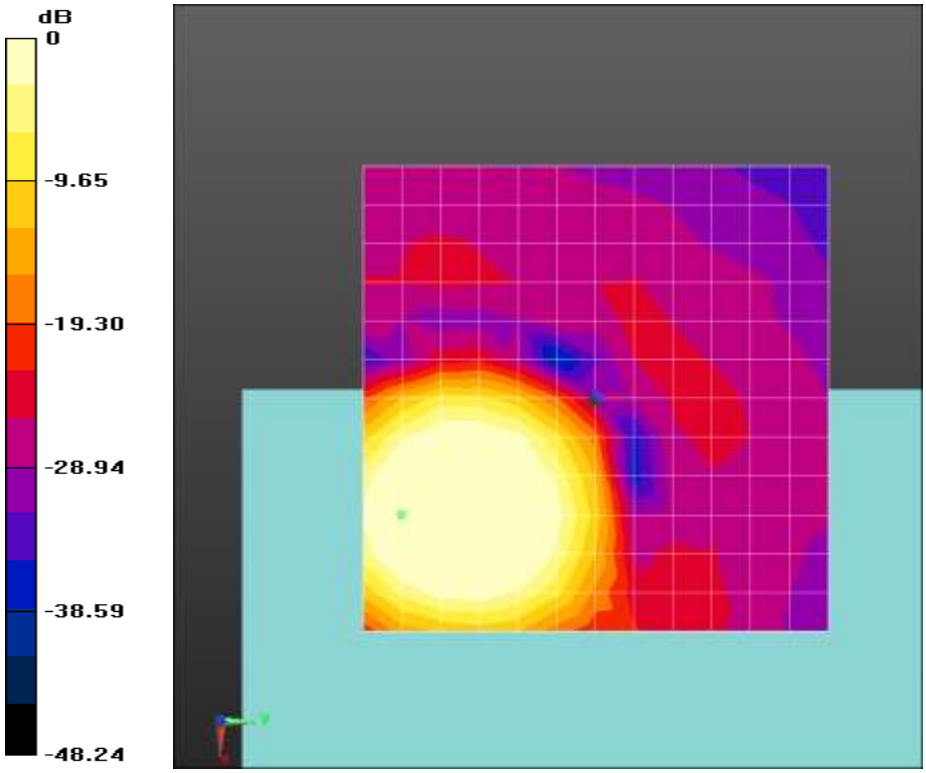
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5300 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.13 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 4.01 dBA/m
BWC Factor = 0.13 dB
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM2 = -35.30 dBA/m
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM1/ABM2 = 39.31 dB
ABM1 comp = 4.01 dBA/m
BWC Factor = 0.13 dB
Location: 12.5, -20.8, 3.7 mm



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

Plot No.89
802_11a 6Mbps 60ch EVS SWB 9_6 Freq.Response

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5300 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

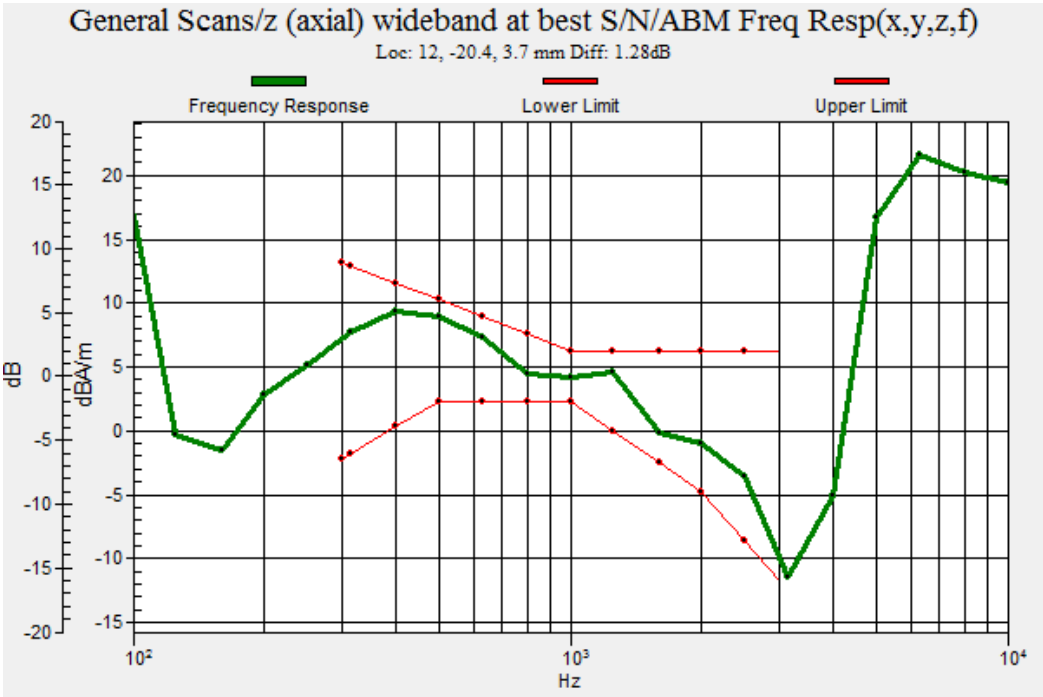
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 46.15
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.44 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 = 1.28 dB
BWC Factor = 9.44 dB
Location: 12, -20.4, 3.7 mm



Plot No.90
802_11a 6Mbps 60ch EVS SWB 9_6 y(transversal)

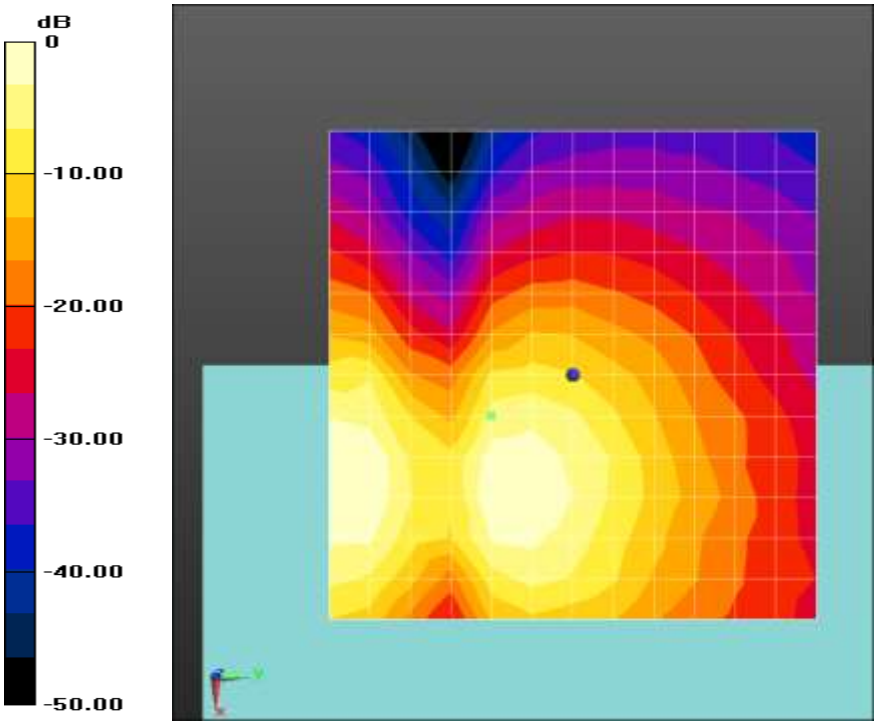
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5300 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.13 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -5.38 dBA/m
BWC Factor = 0.13 dB
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM2 = -44.35 dBA/m
Location: 4.2, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 38.97 dB
ABM1 comp = -5.38 dBA/m
BWC Factor = 0.13 dB
Location: 4.2, -8.3, 3.7 mm



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

Plot No.91

802_11a 6Mbps 120ch EVS SWB 9_6 z(axial)

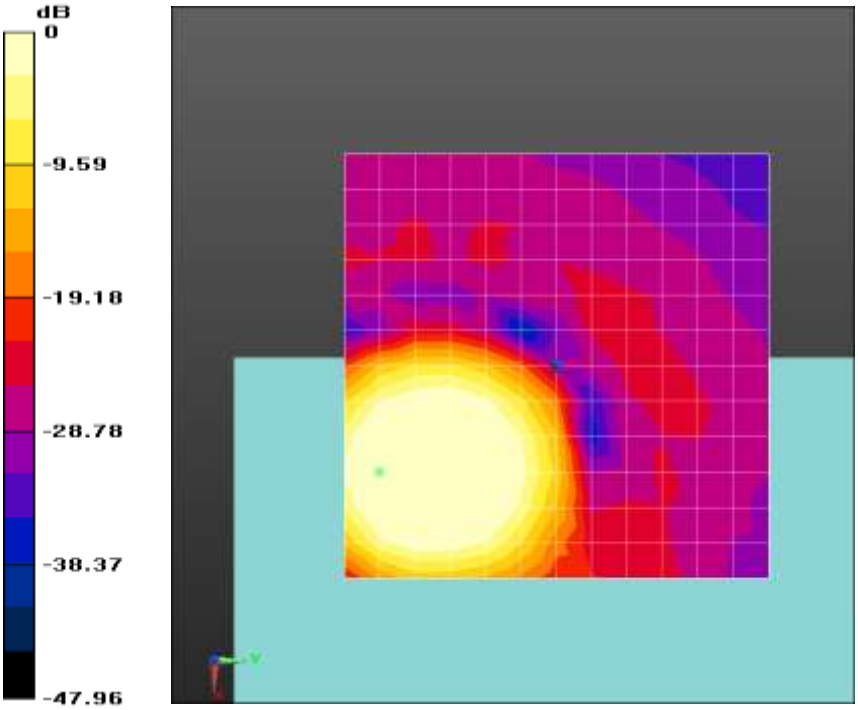
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.11 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 4.94 dBA/m
BWC Factor = 0.11 dB
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM2 = -36.99 dBA/m
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM1/ABM2 = 41.93 dB
ABM1 comp = 4.94 dBA/m
BWC Factor = 0.11 dB
Location: 12.5, -20.8, 3.7 mm



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

Plot No.92
802_11a 6Mbps 120ch EVS SWB 9_6 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

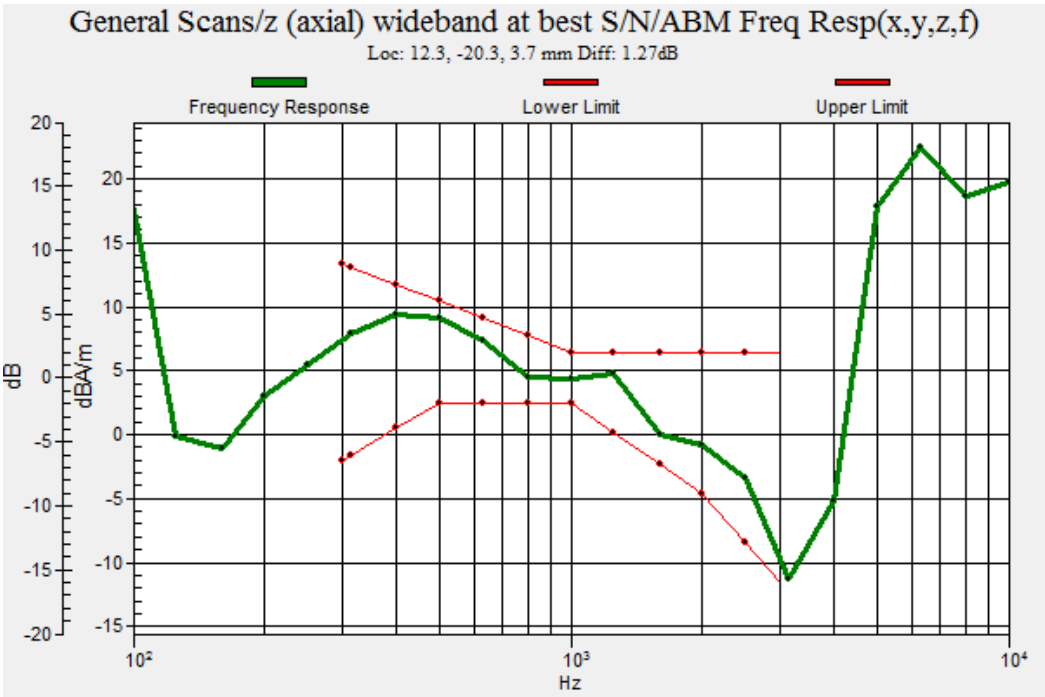
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 46.15
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.43 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 = 1.27 dB
BWC Factor = 9.43 dB
Location: 12.3, -20.3, 3.7 mm



Plot No.93
802_11a 6Mbps 120ch EVS SWB 9_6 y(transversal)

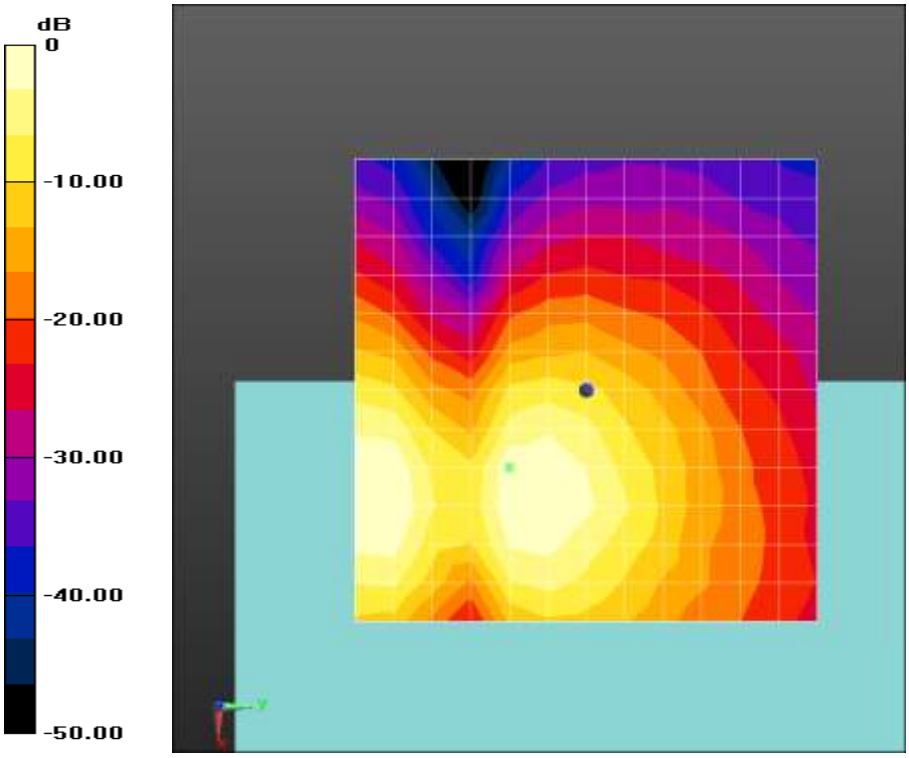
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.11 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.73 dBA/m
BWC Factor = 0.11 dB
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM2 = -42.23 dBA/m
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 41.50 dB
ABM1 comp = -0.73 dBA/m
BWC Factor = 0.11 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.94
802_11a 6Mbps 157ch EVS SWB 9_6 z(axial)

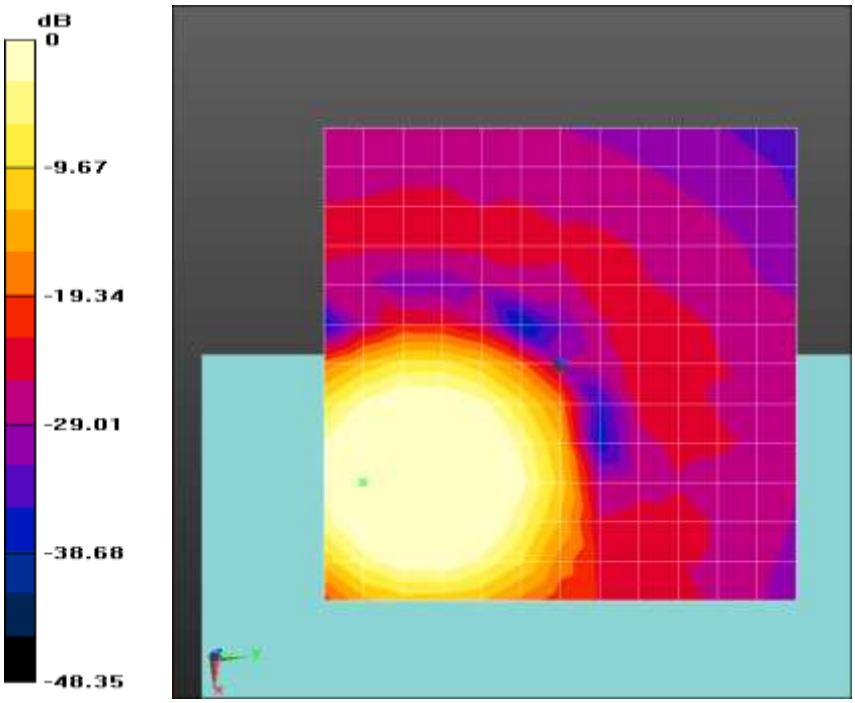
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.12 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 5.46 dBA/m
BWC Factor = 0.12 dB
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM2 = -37.18 dBA/m
Location: 12.5, -20.8, 3.7 mm
Cursor:
ABM1/ABM2 = 42.64 dB
ABM1 comp = 5.46 dBA/m
BWC Factor = 0.12 dB
Location: 12.5, -20.8, 3.7 mm



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

Plot No.95
802_11a 6Mbps 157ch EVS SWB 9_6 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

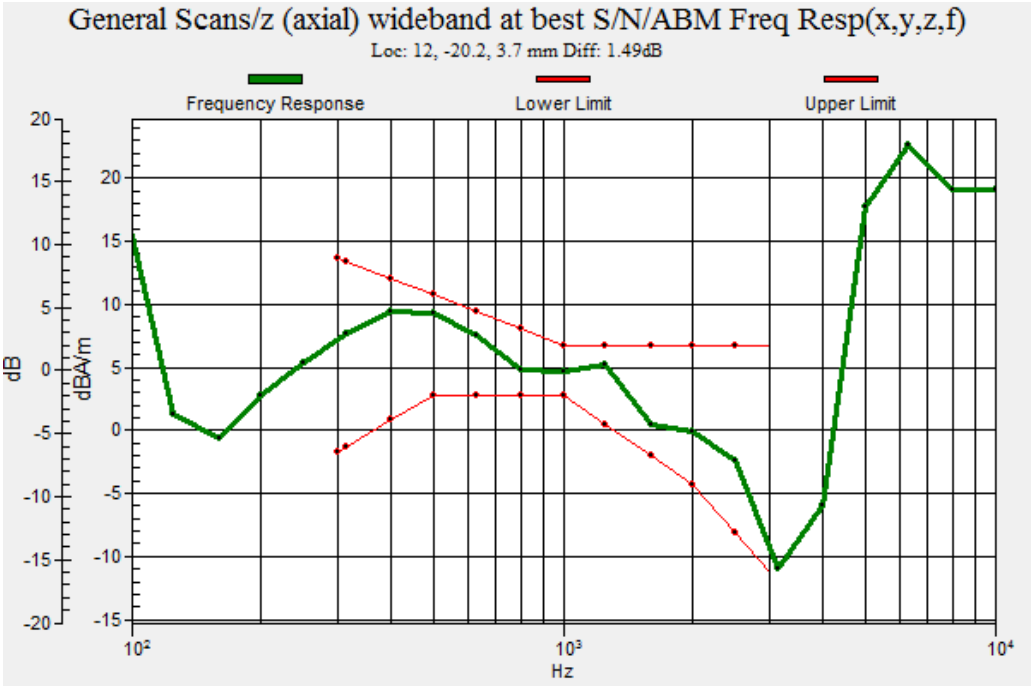
DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 46.15
Measure Window Start: 300ms
Measure Window Length: 51000ms
BWC applied: 9.44 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 = 1.49 dB
BWC Factor = 9.44 dB
Location: 12, -20.2, 3.7 mm



Plot No.96
802_11a 6Mbps 157ch EVS SWB 9_6 y(transversal)

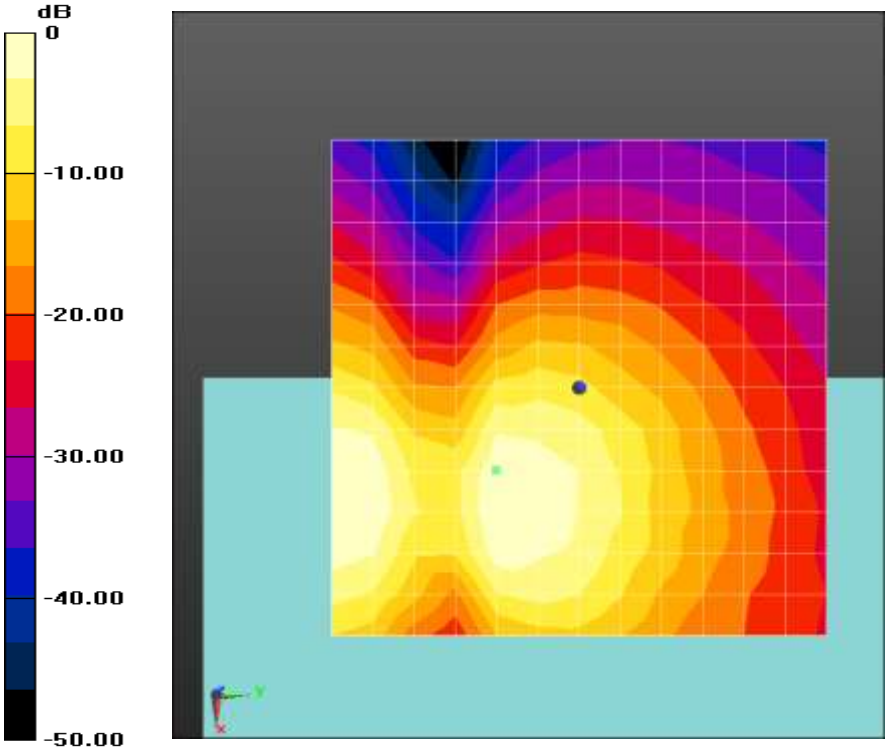
Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3153; ; Calibrated: 4/19/2023
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn648; Calibrated: 4/25/2023
- 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: 15.21
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: 0.12 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -0.66 dBA/m
BWC Factor = 0.12 dB
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM2 = -42.66 dBA/m
Location: 8.3, -8.3, 3.7 mm
Cursor:
ABM1/ABM2 = 42.00 dB
ABM1 comp = -0.66 dBA/m
BWC Factor = 0.12 dB
Location: 8.3, -8.3, 3.7 mm



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

Plot No.97
LTE Band 48 QPSK 5MHz 1RB 0offset 55748ch configuration 2 6 kbitrates z(axial)

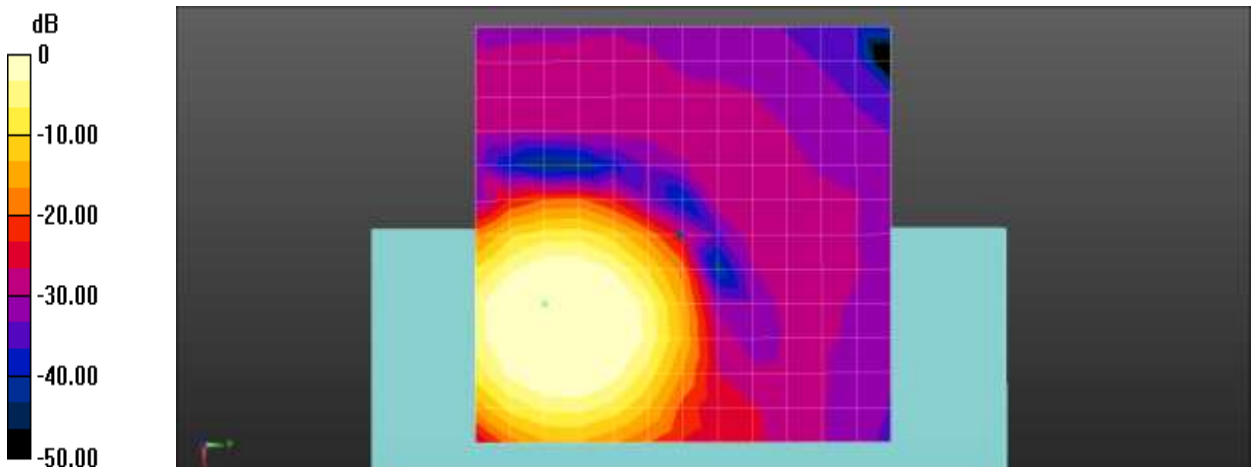
Communication System: UID 0, LTE Band 48 (0); Frequency: 3600.8 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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
Measure Window Start: 300ms
Measure Window Length: 3000ms
BWC applied: -0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = 4.67 dBA/m
BWC Factor = -0.16 dB
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM2 = -19.01 dBA/m
Location: 8.3, -16.7, 3.7 mm
Cursor:
ABM1/ABM2 = 23.68 dB
ABM1 comp = 4.67 dBA/m
BWC Factor = -0.16 dB
Location: 8.3, -16.7, 3.7 mm



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

Plot No.98
LTE Band 48 QPSK 5MHz 1RB 0offset 55748ch configuration 2 6 kbitrate Freq.Response

Communication System: UID 0, LTE Band 48 (0); Frequency: 3600.8 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

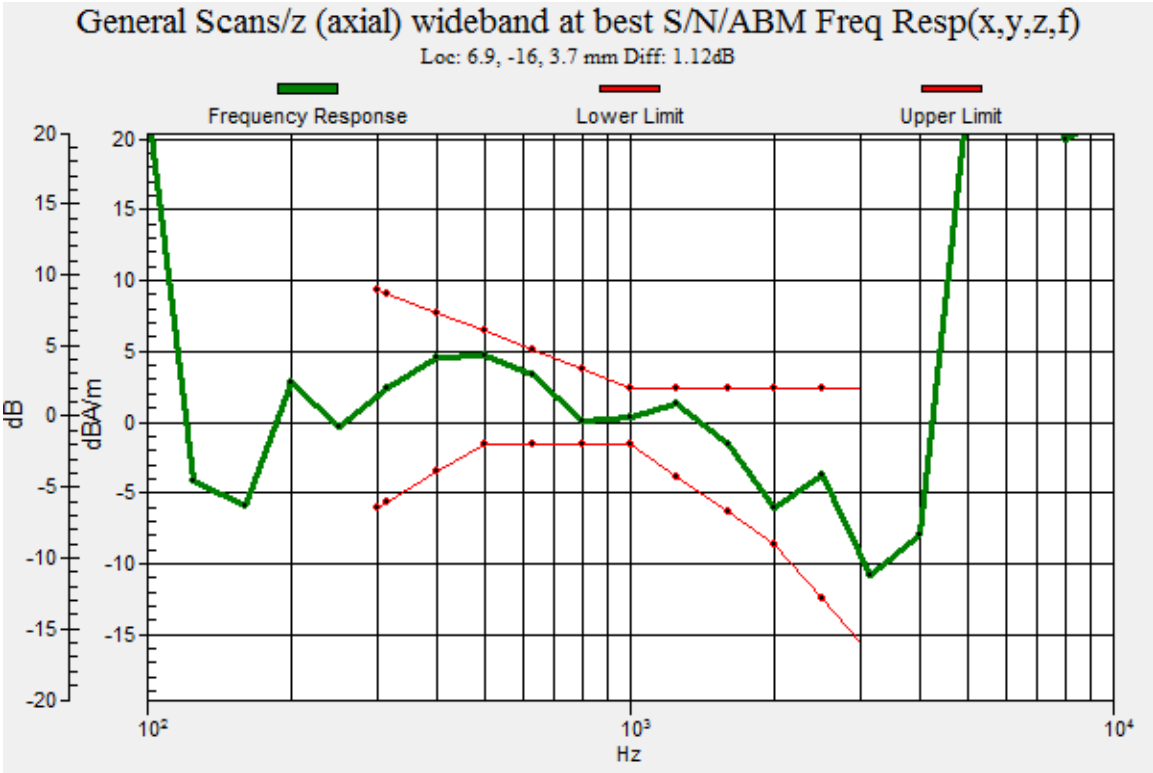
DASY5 Configuration:

- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- 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: 57.85
Measure Window Start: 30000ms
Measure Window Length: 50000ms
BWC applied: 9.16 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 = 1.12 dB
BWC Factor = 9.16 dB
Location: 6.9, -16, 3.7 mm



Plot No.99
LTE Band 48 QPSK 5MHz 1RB 0offset 55748ch configuration 2 6 kbitrate y(transversal)

Communication System: UID 0, LTE Band 48 (0); Frequency: 3600.8 MHz;Duty Cycle: 1:4.28549
Medium parameters used: σ = 0 S/m, ε_r = 1; ρ = 0 kg/m^3
Phantom section: TCoil Section

DASY5 Configuration:

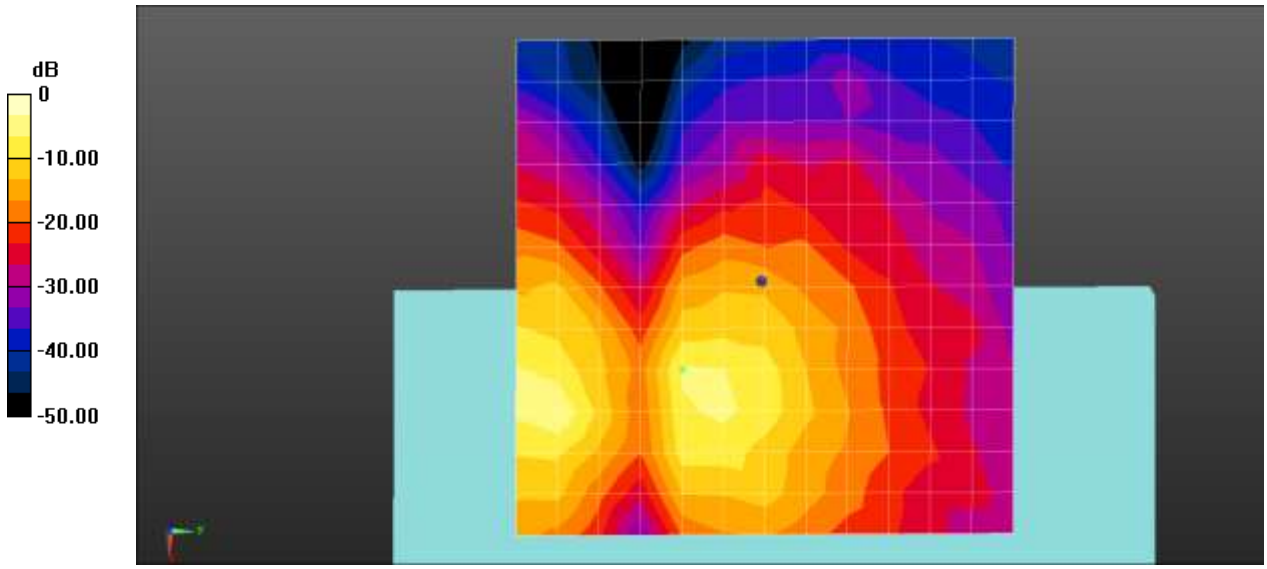
- Probe: AM1DV3 - 3050; ; Calibrated: 2022-11-24
- Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE4 Sn1720; Calibrated: 2023-04-24
- Phantom: HAC Test Arch with AMCC
- Measurement SW: DASY52, Version 52.10 (4)

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
Measure Window Start: 300ms
Measure Window Length: 1000ms
BWC applied: -0.16 dB
Device Reference Point: 0, 0, -6.3 mm

Cursor:
ABM1 comp = -6.15 dBA/m
BWC Factor = -0.16 dB
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM2 = -33.32 dBA/m
Location: 8.3, -8.3, 3.7 mm

Cursor:
ABM1/ABM2 = 27.17 dB
ABM1 comp = -6.15 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

Attachment 2. HAC T-Coil Probe Certificates

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

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

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

Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)**

Certificate No: **AM1DV3-3050_Nov22**

CALIBRATION CERTIFICATE

Object	AM1DV3 - SN: 3050
Calibration procedure(s)	QA CAL-24.v4 Calibration procedure for AM1D magnetic field probes and TMFS in the audio range
Calibration date:	November 24, 2022

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	29-Aug-22 (No. 34389)	Aug-23
Reference Probe AM1DV2	SN: 1008	28-Dec-21 (No. AM1DV2-1008_Dec21)	Dec-22
DAE4	SN: 781	22-Dec-21 (No. DAE4-781_Dec21)	Dec-22

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
AMCC	SN: 1050	01-Oct-13 (in house check Oct-20)	Oct-23
AMMI Audio Measuring Instrument	SN: 1062	26-Sep-12 (in house check Oct-20)	Oct-23

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: November 24, 2022

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

결재	담당자	최인자
	2022.12.05	2022.12.05

References

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

[2] ANSI-C63.19-2019 (ANSI-C63.19-2011)
American National Standard, Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

[3] DASY System Handbook

Description of the AM1D probe

The AM1D Audio Magnetic Field Probe is a fully shielded magnetic field probe for the frequency range from 100 Hz to 20 kHz. The pickup coil is compliant with the dimensional requirements of [1+2]. The probe includes a symmetric low noise amplifier for the signal available at the shielded 3 pin connector at the side. Power is supplied via the same connector (phantom power supply) and monitored via the LED near the connector. The 7 pin connector at the end of the probe does not carry any signals, but determines the angle of the sensor when mounted on the DAE. The probe supports mechanical detection of the surface.
The single sensor in the probe is arranged in a tilt angle allowing measurement of 3 orthogonal field components when rotating the probe by 120° around its axis. It is aligned with the perpendicular component of the field, if the probe axis is tilted nominally 35.3° above the measurement plane, using the connector rotation and sensor angle stated below.
The probe is fully RF shielded when operated with the matching signal cable (shielded) and allows measurement of audio magnetic fields in the close vicinity of RF emitting wireless devices according to [1+2] without additional shielding.

Handling of the item

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

Methods Applied and Interpretation of Parameters

- *Coordinate System:* The AM1D probe is mounted in the DASY system for operation with a HAC Test Arch phantom with AMCC Helmholtz calibration coil according to [3], with the tip pointing to "southwest" orientation.
- *Functional Test:* The functional test preceding calibration includes test of Noise level RF immunity (1kHz AM modulated signal). The shield of the probe cable must be well connected. Frequency response verification from 100 Hz to 10 kHz.
- *Connector Rotation:* The connector at the end of the probe does not carry any signals and is used for fixation to the DAE only. The probe is operated in the center of the AMCC Helmholtz coil using a 1 kHz magnetic field signal. Its angle is determined from the two minima at nominally +120° and –120° rotation, so the sensor in the tip of the probe is aligned to the vertical plane in z-direction, corresponding to the field maximum in the AMCC Helmholtz calibration coil.
- *Sensor Angle:* The sensor tilting in the vertical plane from the ideal vertical direction is determined from the two minima at nominally +120° and –120°. DASY system uses this angle to align the sensor for radial measurements to the x and y axis in the horizontal plane.
- *Sensitivity:* With the probe sensor aligned to the z-field in the AMCC, the output of the probe is compared to the magnetic field in the AMCC at 1 kHz. The field in the AMCC Helmholtz coil is given by the geometry and the current through the coil, which is monitored on the precision shunt resistor of the coil.

AM1D probe identification and configuration data

Item	**AM1DV3** Audio Magnetic 1D Field Probe
Type No	SP AM1 001 BA
Serial No	**3050**

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

Manufacturer / Origin	Schmid & Partner Engineering AG, Zurich, Switzerland

Calibration data

Connector rotation angle	(in DASY system)	**214.3 °**	+/- 3.6 ° (k=2)
Sensor angle	(in DASY system)	**0.08 °**	+/- 0.5 ° (k=2)
Sensitivity at 1 kHz	(in DASY system)	**0.00752 V/(A/m)**	+/- 2.2 % (k=2)

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