ilac-MRA ENAC ENSAYOS Nº 51/LE147

Test report No:

**NIE: 53101RAN.001A1**

# Test report (Modification 1)
# REFERENCE STANDARDS:
# FCC 47CFR Part 2.1093

| | |
|---|---|
| **Identification of item tested.....:** | Digital Handheld Terminal |
| **Trade mark .....:** | PowerTrunk |
| **Model and /or type reference .....:** | HTT-500-2 |
| **Other identification of the product .....:** | FCC ID: WT7PTHTT500760D |
| **Final HW version .....:** | B model |
| **Final SW version .....:** | 173402509091 |
| **Manufacturer.....:** | TELTRONIC, S.A.U.<br>Polígono Malpica, Calle F-Oeste (50016). Zaragoza. (SPAIN). |
| **Test method requested, standard.....:** | FCC 47 CFR Part 2.1093. (10-1-14 Edition) Radiofrequency radiation exposure evaluation: portable devices. |
| **Summary .....:** | Considering the results of the performed test according to FCC 47CFR Part 2.1093, the item under test is IN COMPLIANCE with the requested specifications specified in the standards.<br><br>The maximum 1g volume averaged SAR found during this test has been 7.01 W/kg, into the 799 - 805 MHz frequency band, for P25 mode and body-worn exposure condition.<br><br>The maximum 1g volume averaged SAR for multiband transmission found during this test has been 7.29 W/kg, for body-worn exposure condition.<br><br>NOTE: The results presented in this Test Report apply only to the particular item under test established in page 1 of this document, as presented for test on the date(s) shown in section, "USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS". |
| **Approved by (name / position & signature) .....:** | Rafael López<br>EMC Lab. Manager<br>RAFAEL LÓPEZ MARTÍN<br>Firmado digitalmente por RAFAEL LÓPEZ MARTÍN<br>Fecha: 2017.05.24 11:39:26 +02'00' |
| **Date of issue .....:** | 2017-05-24 |
| **Report template No.....:** | FDT11_19 |

# Index

Competences and guarantees ..... 3
General conditions ..... 3
Uncertainty ..... 3
Usage of samples ..... 4
Test sample description ..... 4
Identification of the client ..... 4
Testing period ..... 5
Environmental conditions ..... 5
Modifications to the reference test report ..... 5
References ..... 5
Remarks and comments ..... 5
Testing verdicts ..... 7
Appendix A – Test configuration ..... 8
Appendix B – Test results ..... 23
Appendix C – Measurement report ..... 44
Appendix D – System Validation Reports ..... 74
Appendix E – Calibration data ..... 79
Appendix F – Photographs ..... 139

# Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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# General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA and the Accreditation Bodies.

# Uncertainty

Uncertainty (factor k=2) was calculated according to the following documents:

1. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).

# Usage of samples

Samples undergoing test have been selected by: the client

Sample M/01 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 52844/14 | Portable terminal | HTT-500-2 | NYPB-48 | 2017-03-09 |
| 52844/18 | Battery | 300-01175 | --- | 2017-03-09 |

Sample M/02 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 52844/14 | Portable terminal | HTT-500-2 | NYPB-48 | 2017-03-09 |
| 52844/26 | Antenna | 300-01938 | --- | 2017-03-09 |
| 52844/17/18/19 | Battery | 300-01175 | --- | 2017-03-09 |
| 52844/22/32 | Audio Accessory 1 | 300-00733/300-00564 | --- | 2017-03-09 |
| 52844/33 | Audio Accessory 2 | 300-01628 | --- | 2017-03-09 |
| 52844/29/30/31 | Audio Accessory 3 | 300-00301/300-00929/300-00735 | --- | 2017-03-09 |
| 52844/41 | Carry accessory 1 | 300-00250 | --- | 2017-03-09 |
| 52844/35 | Carry accessory 2 | 300-01387 | --- | 2017-03-09 |
| 52844/36 | Carry accessory 3 | 300-01589 | --- | 2017-03-09 |
| 52844/38 | Carry accessory 4 | 300-01385 | --- | 2017-03-09 |
| 52844/39 | Carry accessory 5 | 300-01386 | --- | 2017-03-09 |
| 52844/34 | Carry accessory 6 | 300-00912 | --- | 2017-03-09 |
| 52844/37 | Carry accessory 7 | 300-00323 | --- | 2017-03-09 |

1. Sample M/01 has undergone the test(s) specified in subclause “Test method requested”: Conducted average output power.
2. Sample M/02 has undergone the test(s) specified in subclause “Test method requested”: SAR evaluation for TETRA mode.

# Test sample description

The test sample consists of a Digital handheld terminal for TETRA, TI D-LMR and P25 with external antenna, keypad and display. It can also include a Bluetooth module and a GPS receiver inside.

# Identification of the client

TELTRONIC, S.A.U.

Polígono Malpica, Calle F-Oeste (50016). Zaragoza. (SPAIN).

# Testing period

The performed test started on 2017-03-29 and finished on 2017-04-19.

The tests have been performed at DEKRA.

# Environmental conditions

In the laboratory for measurements, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 20.1 ºC<br>Max. = 24.1 ºC |
| **Relative humidity** | Min. = 33.9 %<br>Max. = 63.5 % |

# Modifications to the reference test report

It was introduced the following modifications in respect to the test report number 53101RAN.001 related with the same samples, in the next clauses and sub-clauses:

| Clauses / Sub-clauses | Modification | Justification |
|---|---|---|
| Usage of samples | Accesory models updated | Client request. |
| Appendix B | Editorial changes | Client request. |

This modification test report cancels and replaces the test report 53101RAN.001

# References

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093 and the following FCC Published RF exposure KDB procedures:

1. FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015)
2. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).
3. FCC OET KDB 865664 D02 RF Exposure Reporting v01r02 (October 2015)
4. FCC OET KDB 648474 D04 Handset SAR v01r03 (October 2015)
5. FCC OET KDB 643646 D01 v01r03 SAR Test for PTT Radios (October 2015).

# Remarks and comments

1: Only the plots of the highest reported SAR for each test configuration and mode/band are included in appendix C.

2: Zoom scan for this position is not required according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06, paragraph “4.4.2. Area scan based 1-g estimation”

3: Testing of other required channels is not required when the measured SAR is ≤ 3.5 W/kg, according to FCC OET KDB 613646 D01 SAR Test for PTT Radios v01r03.

4: SAR for “additional” audio accessories without transmitting antenna is required only when the highest body-worn SAR combination (antenna, battery and body-worn accessory) and channel configuration applicable to the audio accessory is > 4.0 W/kg, according to FCC OET KDB 613646 D01 SAR Test for PTT Radios v01r03.

# Used instrumentation

1. Dosimetric E-field probe SPEAG EX3DV4
2. Data acquisition device SPEAG DAE4
3. Electro-optical converter SPEAG EOC3
4. 750 MHz dipole validation kit SPEAG D750V3
5. 900 MHz dipole validation kit SPEAG D900V2
6. Robot Stäubli RX60BL
7. Robot controller Stäubli CM7MB
8. SAR measurement software SPEAG DASY52 V52.8.8.1222
9. SAR post processing software SPEAG SEMCAD X
10. Measurement server SPEAG DASY5 SE UMS 011 BS
11. SAM head-body simulator SPEAG Twin SAM V4.0
12. Oval flat phantom SPEAG ELI 4
13. Head and Body Tissue Equivalent Liquids for 750 MHz and 900 MHz bands
14. Vector network analyzer Agilent FieldFox N9923A
15. Dielectric probe kit SPEAG DAK-3.5
16. Power sensor DC 50 MHz to 18 GHz R&S model NRP-Z91
17. Power meter Agilent E4419B
18. RF Generator R&S SMU200A
19. DC Power supply Agilent U8002A
20. Dual directional coupler HP 778D and NARDA.
21. Power amplifier MITEQ AMF-4D-00400600-50-30P
22. 6 dB attenuator Weinschel 75 A-6-11
23. 20 dB attenuator Weinschel 75 A-20-11
24. SPEAG Mounting Device for Hand-Held Transmitters.
25. Digital thermometer LKM Electronics model DTM300-Spezial
26. Temperature and humidity probe HUMIDIROBE Pico Technology.

# Testing verdicts

| | |
|---|---|
| **Not applicable .....:** | N/A |
| **Pass .....:** | P |
| **Fail .....:** | F |
| **Not measured .....:** | N/M |

| FCC 47CFR Part 2.1093 Paragraph | VERDICT | | | |
|---|---|---|---|---|
| | NA | P | F | NM |
| (d)(1) TETRA 769-775 MHz | | P | | |
| (d)(1) TETRA 799-805 MHz | | P | | |
| (d)(1) TETRA 809-824 MHz | | P | | |
| (d)(1) TETRA 854-869 MHz | | P | | |
| (d)(1) TI D-LMR 769-775 MHz | | P | | |
| (d)(1) TI D-LMR 799-805 MHz | | P | | |
| (d)(1) TI D-LMR 809-824 MHz | | P | | |
| (d)(1) TI D-LMR 854-869 MHz | | P | | |
| (d)(1) P25 769-775 MHz | | P | | |
| (d)(1) P25 799-805 MHz | | P | | |
| (d)(1) Bluetooth 2450 MHz | | P | | |

# **Appendix A –** Test configuration

# INDEX

1. GENERAL INTRODUCTION ..... 10
1.1. Application Standard ..... 10
1.2. General requirements ..... 10
1.3. Measurement system requirements ..... 10
1.4. Phantom requirements ..... 10
1.5. Measurement Liquids requirements. ..... 11

2. MEASUREMENT SYSTEM ..... 12
2.1. Measurement System ..... 12
2.2. Test positions of device relative to head ..... 16
2.3. Test positions of device relative to body. ..... 17
2.4. Test to be performed ..... 17
2.5. Description of interpolation/extrapolation scheme ..... 18
2.6. Determination of the largest peak spatial-average SAR ..... 18
2.7. System Validation ..... 18

3. UNCERTAINTY ..... 19

4. SAR LIMIT ..... 21

5. DEVICE UNDER TEST ..... 21
5.1. Dimensions ..... 21
5.2. Wireless Technology ..... 21
5.3. Antenna Location ..... 21
5.4. Accessories ..... 22

# 1. GENERAL INTRODUCTION

## 1.1. Application Standard

The Federal Communications Commission (FCC) sets the limits for occupational/controlled exposure to radio frequency electromagnetic fields for transmitting devices designed to be used within 20 centimetres of the body of the user under FCC 47 CFR Part 2.1093 - "Radiofrequency radiation exposure evaluation: portable devices", paragraph (d)(1).

## 1.2. General requirements

The SAR measurement has been performed continuing the following considerations and environment conditions:

- The ambient temperature shall be in the range of 18ºC to 25ºC and the variation shall not exceed +/- 2ºC during the test.
- The ambient humidity shall be in the range of and 30% - 70%.
- The device battery shall be fully charged before each measurement.

## 1.3. Measurement system requirements

The measurement system used for SAR tests fulfils the procedural and technical requirements described at the reference standards used.

## 1.4. Phantom requirements

The phantom for head worn is a simplified representation of the human anatomy and comprised of material with electrical properties similar to the corresponding tissues in human body. The human model has the following proportions:

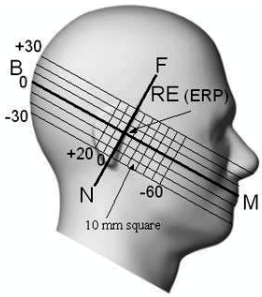



**Figure 1:** Proportions of Phantom

The shell model is a shaped container and it has the representation shown in the following figure:

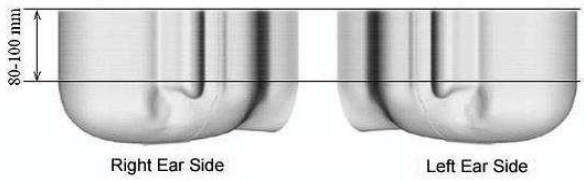



**Figure 2:** Proportions and shape of Phantom shell

The phantom model for body measurements is an elliptical open-top container with a flat bottom, with the following shape and dimensions:

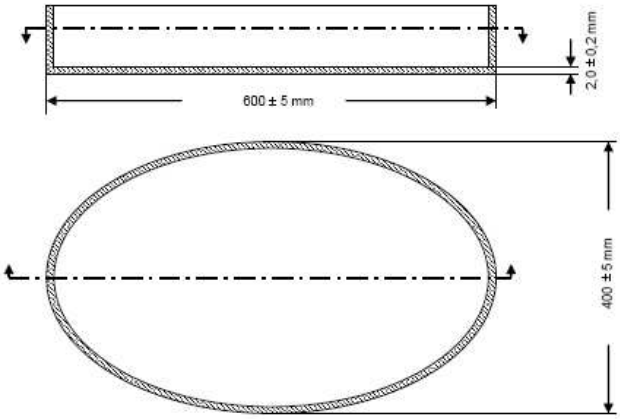



**Figure 3:** Proportions and shape of Phantom shell

## 1.5. Measurement Liquids requirements.

The liquids used to simulate the human tissues, must fulfils the requirements of the dielectric properties required. These target dielectric properties per FCC OET KDB 865664 D01 instructions come from the dipole and probe calibration data which are included in Appendix B, Section 3, of this document.

To minimize the effect of reflections on peak spatial-average SAR values, from the upper surface of the tissue-equivalent liquid, the depth of the liquid should be at least 15 cm.

# 2. MEASUREMENT SYSTEM

## 2.1. Measurement System

The DASY5 system for performing compliance tests consists of the following items:

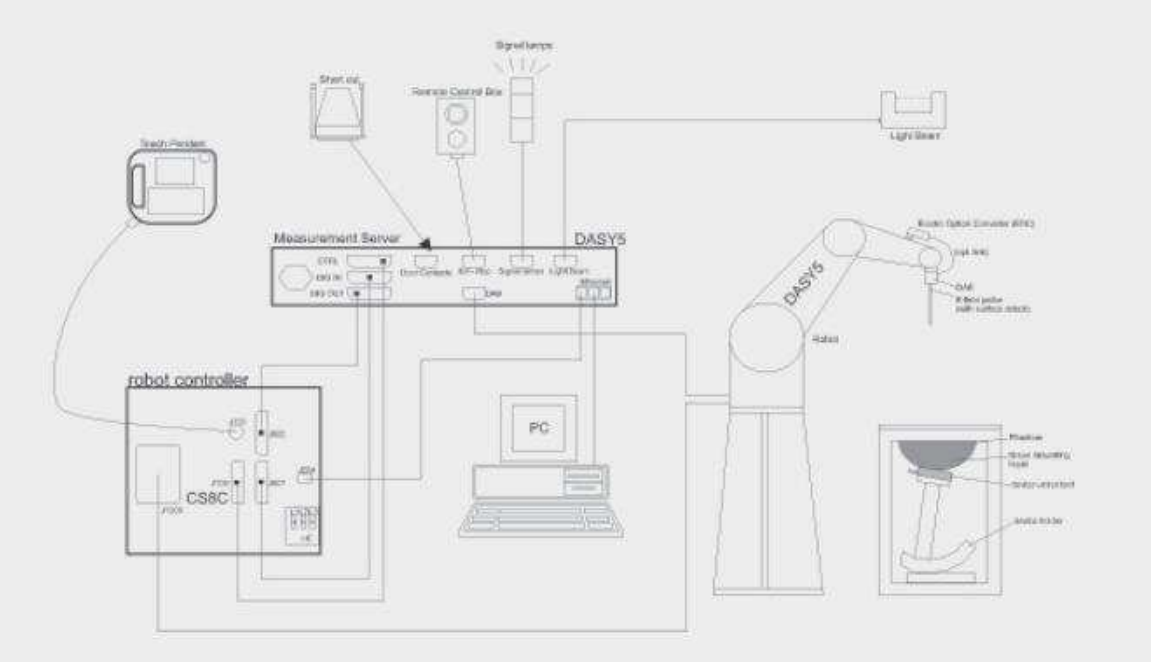



**Figure 4:** SAR Measurement system

- A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

| Manufacturer | Device | Type |
|---|---|---|
| Schmid & Partner Engineering AG | Dosimetric E-Field Probe | EX3DV4 |
| Schmid & Partner Engineering AG | Data Acquisition Electronics | DAE4 |
| Schmid & Partner Engineering AG | Electro-Optical Converter | EOC3 |
| Stäubli | Robot | RX60BL |
| Stäubli | Robot controller | CS7MB |
| Schmid & Partner Engineering AG | Measurement Server | DASY5 SE UMS 011 BS |
| Schmid & Partner Engineering AG | SAM head-body simulator | TWIN SAM V4.0 |
| Schmid & Partner Engineering AG | Oval flat phantom | SPEAG ELI 4 |
| Schmid & Partner Engineering AG | Mounting Device for Hand-Held Transmitters | SD000 HD1HA |
| Schmid & Partner Engineering AG | Measurement Software | DASY52 V52.8.8.1222 |
| Schmid & Partner Engineering AG | Postprocessing Software | SEMCAD X |
| Schmid & Partner Engineering AG | 750 MHz System Validation Dipole | D750V3 |
| Schmid & Partner Engineering AG | 900 MHz System Validation Dipole | D900V2 |
| Agilent | Vector Network Analyser | FieldFox N9923A |
| Schmid & Partner Engineering AG | Dielectric Probe Kit | DAK-3.5 |

**Table 1:** Measurement Equipment

| | Model | EX3DV4 |
|---|---|---|
| | **Construction** | Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). |
| | **Frequency** | 10 MHz to > 6 GHz;<br>Linearity: ± 0.2 dB (30 MHz to 6 GHz) |
| | **Directivity** | ± 0.3 dB in TSL (rotation around probe axis)<br>± 0.5 dB in TSL (rotation normal to probe axis) |
| | **Dynamic Range** | 10 µW/g to > 100 mW/g<br>Linearity: ± 0.2 dB (noise: typically < 1 µW/g) |
| | **Dimensions** | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1.0 mm |

| | Model | DAE4 |
|---|---|---|
| | **Construction** | Signal amplifier, multiplexer, A/D converter, and control logic. Serial optical link communication with DASY4/5 embedded system (fully remote controlled). Two-step probe touch detector for mechanical surface detection and emergency robot stop. |
| | **Measurement Range** | -100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV) |
| | **Input Offset Voltage** | < 5 µV (with auto zero) |
| | **Input Resistance** | 200 MOhm |
| | **Input Blas Current** | < 50 fA |

| | Model | Twin SAM |
|---|---|---|
| | **Construction** | The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot. |
| | **Material** | Vinylester, glass fiber reinforced (VE-GF) |
| | **Liquid Compatibility** | Compatible with all SPEAG tissue simulating liquids (incl. DGBE type) |
| | **Shell Thickness** | 2 ± 0.2 mm (6 ± 0.2 mm at ear point) |
| | **Dimensions** | Length: 1000 mm<br>Width: 500 mm<br>Height: adjustable feet |
| | **Filling Volume** | Approx. 25 liters |
| | **Wooden Support** | SPEAG standard phantom table |

| Model | ELI |
|---|---|
| Construction | Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles. |
| Material | Vinylester, glass fiber reinforced (VE-GF) |
| Liquid Compatibility | Compatible with all SPEAG tissue simulating liquids (incl. DGBE type) |
| Shell Thickness | 2 ± 0.2 mm (bottom plate) |
| Dimensions | Major axis: 600 mm<br>Minor axis: 400 mm |
| Filling Volume | Approx. 30 liters |
| Wooden Support | SPEAG standard phantom table |

| Model | Mounting Device for Hand-Held Transmitters |
|---|---|
| Construction | In combination with the Twin SAM V5.0/V5.0c or ELI Phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). |
| Material | Polyoxymethylene (POM) |

| Model | System Validations Kits 450 MHz – 6 GHz | | |
|---|---|---|---|
| Construction | Symmetrical dipole with I/4 balun. Enables measurement of feedpoint impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions. | | |
| Frequency | 450 MHz to 5800 MHz | | |
| Return Loss | 20 dB at specified validation position | | |
| Dimensions (length and overall height in mm) | **Product** | **Dipole length** | **Overall height** |
| | D450V3 | 290.0 | 330.0 |
| | D750V3 | 179.0 | 330.0 |
| | D900V2 | 148.5 | 340.0 |
| | D1800V2 | 72.5 | 300.0 |
| | D2000V2 | 65.0 | 300.0 |
| | D2450V2 | 52.0 | 290.0 |
| | D2600V2 | 49.2 | 290.0 |
| | D5GHzV2 | 20.6 | 300.0 |

## 2.2. Test positions of device relative to head

The standard requires two test positions for the handset in the head. These positions are the "cheek" position and the "tilted" position. The tests positions used are described below. The handset should be tested in both positions (left and right sides) in the SAM phantom.

The DUT shall be placed in the Phantom in such way that the main point of the mobile terminal (acoustic output) coincides with the reference point located at the Phantom's ear.

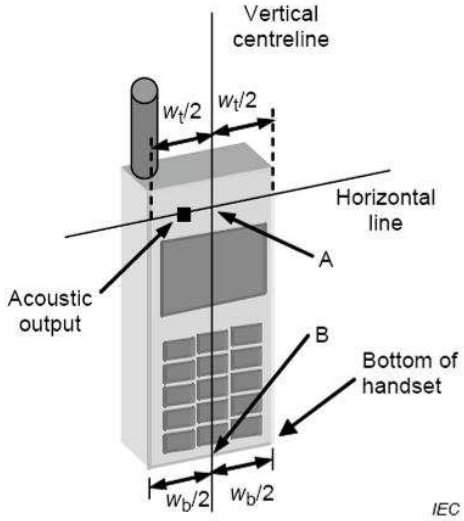



**Figure 5:** DUT's basic scheme

SAR measurements will be performed for the following configurations as indicated in the reference standard:

- Right side of Phantom, Cheek position.
- Right side of Phantom, 15º Tilted position.
- Left side of Phantom, Cheek position.
- Left side of Phantom, 15º Tilted position.

**Definition of the "cheek" position**

The "cheek" position relative to Phantom is described as follows:

1. - Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagital plane of the Phantom. While maintaining the device in this plane, align the centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE).

2. - Translate the mobile phone box towards the Phantom until the ear-piece touches the ear reference point (RE or LE). While maintaining the device in the reference plane, move the bottom of the box until any point of the front side is in contact with the cheek of the Phantom.

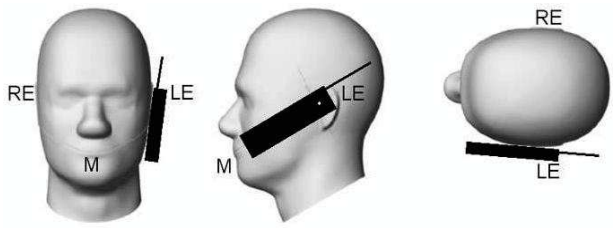



**Figure 6:** "Cheek" position of DUT

**Definition of the tilted position:**

The "15º tilted" position relative to Phantom is described as follows:

1. - Position the device in the "cheek" position described above.

2. - While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees.

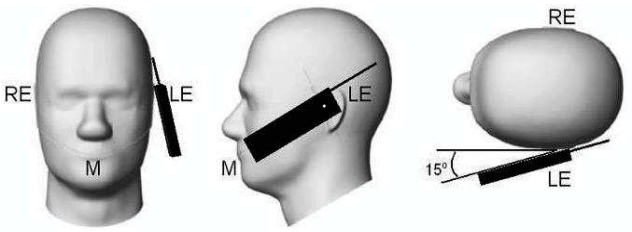



**Figure 7:** "Tilted" position of DUT

As the device under test is a Handheld PTT two-ways radio, Head SAR in-front-of the face exposure conditions is also required according to KDB 643646 D01.

Head SAR has been measured with the front face of the radio positioned at 2.5 cm parallel to the flat phantom.

## 2.3. Test positions of device relative to body.

Handheld PTT two-ways radios shall be tested for body-worn accessory exposure conditions according to KDB 643646 D01.

SAR measurements for body exposure have been performed at 0 mm distance for the worst cases of body-worn accessories, placing the device with the body-worn accessories facing the flat phantom in the applicable use position.

## 2.4. Test to be performed

For Head SAR test shall be performed at both DUT positions previously described, on each side of the SAM Head-Body Simulator Phantom using the centre frequency of each operating band.

Additionally, the configuration giving to the maximum mass averaged SAR shall be used to test the low-end and the high-end frequencies of each transmitting band. Thus, the tests to be performed are as follows:

- Measurements at Central Channel of application band:
  1. SAR measurement at the left side of Phantom and the cheek position of the DUT.
  2. SAR measurement at the left side of Phantom and the tilted 15º position of the DUT.
  3. SAR measurement at the right side of Phantom and the cheek position of the DUT.
  4. SAR measurement at the right side of Phantom and the tilted 15º position of the DUT.
  5. SAR measurement at the flat side of the Phantom with the front face DUT at 2.5cm parallel to the flat Phantom.
- Measurements at Low Channel of application band: SAR measurement at the side and position where the maximum SAR level, measured at Central channel, was found.
- Measurements at High Channel of application band: SAR measurement at the side and position where the maximum SAR level, measured at Central channel, was found.

For body SAR, test shall be performed with the radio placed in a body-worn accessory, positioned against the flat phantom, representative of the normal operating conditions expected by users, using the centre frequency of each operating band. Low and high channels for each band should be tested at this position.

## 2.5. Description of interpolation/extrapolation scheme

The local SAR inside the Phantom is measured using small dipole sensing elements inside a probe element. The probe tip must not be in contact with the Phantoms surface in order to minimise measurement errors, but the highest local SAR is obtained from measurements at a certain distances from the shell trough extrapolation. The accurate assessment of the maximum SAR averaged over 1 gr. requires a very fine resolution in the three dimensional scanned data array. Since the measurements have to be performed over a limited time, the measured data have to be interpolated to provide an array of sufficient resolution.

The interpolation of 2D area scan is used after the initial area scan, at a fixed distance from the Phantom shell wall. The initial scan data is collected with approx. 10 mm spatial resolution and this interpolation is used to find the location of the local maximum for positioning the subsequent 3D scanning within a 1mm resolution.

For the 3D scan, data is collected on a spatially regular 3D grid having 5 mm steps in both directions. After the data collection by the SAR probe, the data are extrapolated in the depth direction to assign values to points in the 3D array closer to the shell wall. A notional extrapolation value is also assigned to the first point outside the shell wall so that subsequent interpolation schemes will be applicable right up to the shell wall boundary.

## 2.6. Determination of the largest peak spatial-average SAR

To determine the maximum value of the peak spatial-average SAR of a DUT, all device positions, configurations and operational modes should be tested for each frequency band.

The averaging volume shall be chosen as 1gr. of contiguous tissue. The cubic volumes, over which the SAR measurements are averaged after extrapolation and interpolation, are chosen in order to include the highest values of local SAR.

The maximum SAR level for the DUT will be the maximum level obtained of the performed measurements, and indicated in the previous points.

## 2.7. System Validation

Prior to the SAR measurements, system verification is done daily to verify the system accuracy. A complete SAR evaluation is done using a half-wavelength dipole as source with the frequency of the mid-band channel of the operating band, or within 10% of this channel.

The measured one-gram SAR should be within 10% of the expected target values specified in the calibration certificate of the dipole, for the specific tissue and frequency used.

# 3. UNCERTAINTY

## Uncertainty for 300 MHz – 6 GHz

| ERROR SOURCES | Uncertainty value (± %) | Probability distribution | Divisor | ($c_i$) 1g | ($c_i$) 10g | Standard uncertainty (1g) (± %) | Standard uncertainty (10g) (± %) |
|---|---|---|---|---|---|---|---|
| **Measurement Equipment** | | | | | | | |
| Probe Calibration | 6.550 | N | 1 | 1 | 1 | 6.550 | 6.550 |
| Axial Isotropy | 4.700 | R | √3 | 0.7 | 0.7 | 1.899 | 1.899 |
| Hemisfericall Isotropy | 9.600 | R | √3 | 0.7 | 0.7 | 3.880 | 3.880 |
| Boundary effect | 2.000 | R | √3 | 1 | 1 | 1.155 | 1.155 |
| Linearity | 4.700 | R | √3 | 1 | 1 | 2.714 | 2.714 |
| System Detection limits | 1.000 | R | √3 | 1 | 1 | 0.577 | 0.577 |
| Probe modulation response | 6.100 | R | √3 | 1 | 1 | 3.522 | 3.522 |
| Readout electronics | 0.300 | N | 1 | 1 | 1 | 0.300 | 0.300 |
| Response time | 0.800 | R | √3 | 1 | 1 | 0.462 | 0.462 |
| Integration time | 2.600 | R | √3 | 1 | 1 | 1.501 | 1.501 |
| RF Ambient noise | 3.000 | R | √3 | 1 | 1 | 1.732 | 1.732 |
| RF Ambient reflections | 3.000 | R | √3 | 1 | 1 | 1.732 | 1.732 |
| Probe positioner mech. restrictions | 0.800 | R | √3 | 1 | 1 | 0.462 | 0.462 |
| Probe positioning with respect to phantom shell | 6.700 | R | √3 | 1 | 1 | 3.868 | 3.868 |
| Max. SAR Eval. | 4.000 | R | √3 | 1 | 1 | 2.309 | 2.309 |
| **Test Sample Related** | | | | | | | |
| Device holder uncertainty | 2.900 | N | 1 | 1 | 1 | 2.900 | 2.900 |
| Test sample positioning | 3.600 | N | 1 | 1 | 1 | 3.600 | 3.600 |
| Drift of output power | 5.000 | R | √3 | 1 | 1 | 2.887 | 2.887 |
| **Phantom and Setup** | | | | | | | |
| Phantom uncertainty (shape and thickness tolerances) | 6.600 | R | √3 | 1 | 1 | 3.811 | 3.811 |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | 1.900 | R | √3 | 1 | 0.84 | 1.097 | 0.921 |
| Liquid conductivity (meas.) | 2.454 | N | 1 | 0.78 | 0.71 | 1.914 | 1.742 |
| Liquid permittivity (meas.) | 2.454 | N | 1 | 0.26 | 0.26 | 0.6.38 | 0.638 |
| Liquid conductivity – temperature uncertainty | 3.400 | R | √3 | 0.78 | 0.71 | 1.531 | 1.394 |
| Liquid permittivity – temperature uncertainty | 0.400 | R | √3 | 0.23 | 0.26 | 0.053 | 0.060 |
| **Combined standard uncertainty** | $u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$ | | | | | **12.82** | **12.76** |
| **Expanded uncertainty** (confidence interval of 95%) | *ue =2.00 uc* | | | | | **25.64** | **25.53** |

**Table 2:** Uncertainty Assessment for 300 MHz - 6 GHz

## Uncertainty for Fast SAR measurement 300 MHz – 6 GHz

| ERROR SOURCES | Uncertainty value (± %) | Probability distribution | Divisor | ($c_i$) 1g | ($c_i$) 10g | Standard uncertainty (1g) (± %) | Standard uncertainty (10g) (± %) |
|---|---|---|---|---|---|---|---|
| **Measurement Equipment** | | | | | | | |
| Probe Calibration | 6,550 | N | 1 | 0 | 0 | 0,000 | 0,000 |
| Axial Isotropy | 4,700 | R | √3 | 0,7 | 0,7 | 1,899 | 1,899 |
| Hemisfericall Isotropy | 9,600 | R | √3 | 0,7 | 0,7 | 3,880 | 3,880 |
| Boundary effect | 2,000 | R | √3 | 1 | 1 | 1,155 | 1,155 |
| Linearity | 4,700 | R | √3 | 1 | 1 | 2,714 | 2,714 |
| System Detection limits | 1,000 | R | √3 | 1 | 1 | 0,577 | 0,577 |
| Probe modulation response | 2,400 | R | √3 | 1 | 1 | 1,386 | 1,386 |
| Readout electronics | 0,300 | N | 1 | 0 | 0 | 0,000 | 0,000 |
| Response time | 0,800 | R | √3 | 0 | 0 | 0,000 | 0,000 |
| Integration time | 2,600 | R | √3 | 1 | 1 | 1,501 | 1,501 |
| RF Ambient noise | 3,000 | R | √3 | 1 | 1 | 1,732 | 1,732 |
| RF Ambient reflections | 3,000 | R | √3 | 0 | 0 | 0,000 | 0,000 |
| Probe positioner mech. restrictions | 0,800 | R | √3 | 1 | 1 | 0,462 | 0,462 |
| Probe positioning with respect to phantom shell | 6,700 | R | √3 | 1 | 1 | 3,868 | 3,868 |
| Spatial x-y-Resolution | 10,000 | R | √3 | 1 | 1 | 5,774 | 5,774 |
| Fast SAR z-Approximation | 14,000 | R | √3 | 1 | 1 | 8,083 | 8,083 |
| **Test Sample Related** | | | | | | | |
| Device holder uncertainty | 2.900 | N | 1 | 1 | 1 | 2.900 | 2.900 |
| Test sample positioning | 3.600 | N | 1 | 1 | 1 | 3.600 | 3.600 |
| Drift of output power | 5.000 | R | √3 | 1 | 1 | 2.887 | 2.887 |
| Power Scaling | 0,000 | R | √3 | 0 | 0 | 0,000 | 0,000 |
| **Phantom and Setup** | | | | | | | |
| Phantom uncertainty (shape and thickness tolerances) | 7.600 | R | √3 | 1 | 1 | 4.388 | 4.388 |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | 1.900 | R | √3 | 1 | 0.84 | 1.097 | 0.921 |
| Liquid conductivity (meas.) | 1.500 | N | √3 | 0.78 | 0.71 | 0.675 | 0.615 |
| Liquid permittivity (meas.) | 1.200 | N | √3 | 0.26 | 0.26 | 0.180 | 0.180 |
| Liquid conductivity – temperature uncertainty | 3.400 | N | √3 | 0.78 | 0.71 | 1.531 | 1.394 |
| Liquid permittivity – temperature uncertainty | 0.400 | N | √3 | 0.23 | 0.26 | 0.053 | 0.060 |
| **Combined standard uncertainty** | $u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$ | | | | | **14.34** | **14.29** |
| **Expanded uncertainty** (confidence interval of 95%) | *ue =2.00 uc* | | | | | **28.68** | **28.59** |

**Table 3:** Fast SAR Uncertainty Assessment for 300 MHz - 6 GHz

# 4. SAR LIMIT

The SAR values have to be averaged over a mass of 1 gr. (SAR 1 gr.) with the shape of a cube. This level couldn't exceed the values indicated in the application Standard:

| Standard | Exposure | SAR | SAR Limit (W/kg) |
|---|---|---|---|
| FCC 47 CFR Part 2.1093 Paragraph (d)(1) | Ocupational/controlled | $SAR_{1\ gr.}$ | 8 |

**Table 4:** SAR limit

Having a worst case measurement, the SAR limit is valid for Ocupational/controlled exposure.

# 5. DEVICE UNDER TEST

## 5.1. Dimensions

| Dimensions | Millimetres |
|---|---|
| Height x Width x Depth | 130.0 x 60.0 x 35.0 |
| Overall Diagonal: | 150.0 |
| Display Diagonal: | 65.0 |
| Antenna: | 195.0 x 5.0 |

**Table 5:** Dimensions

## 5.2. Wireless Technology

| Wireless Technology | SAR Testing | Frequency Bands |
|---|---|---|
| TETRA | Required | 769 – 775 MHz, 799 – 805 MHz<br>809 – 824 MHz, 854 – 869 MHz |
| TI D-LMR | Required | 769 – 775 MHz, 799 – 805 MHz<br>809 – 824 MHz, 854 – 869 MHz |
| P25 | Required | 769 – 775 MHz, 799 – 805 MHz |
| Bluetooth | Not required | 2402-2480 MHz |

**Table 6:** Supported modes

## 5.3. Antenna Location

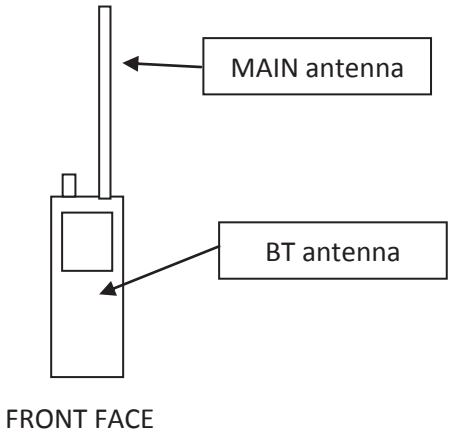



**Figure 8:** Antenna location sketch

## 5.4. Accessories.

- Battery

There is only one battery type. See "Appendix A - Test results", Section 1.1 of this document for further information.

- Audio Accesories (AA)

| Carrying Accessory | Type | Comments |
|---|---|---|
| 1 | Remote speaker + Earpiece (Default Audio Accessory) | Without radiating antenna |
| 2 | Handsfree kit + Earpiece | Without radiating antenna |
| 3 | Remote control + Microphone | Without radiating antenna |

**Table 7:** List of audio accessories

- Carrying Accessories (CA)

| Carrying Accessory | Type | Metalic Parts | Test Distance | Distance Antenna – Phantom | Comments | Used for SAR testing |
|---|---|---|---|---|---|---|
| CA 1 | Shoulder harness | No | 0 mm | 23 mm | None | Yes |
| CA 2 | Lightweight Case | Yes | 0 mm | 18 mm | Needs shoulder strap | Yes |
| CA 3 | Plastic Belt Clip | No | 0 mm | 29 mm | None | Yes |
| CA 4 | Leather Case (with belt clip) | Yes | 0 mm | 30 mm | None | No* |
| CA 5 | Leather Case | Yes | 0 mm | 42 mm | Needs CA6 or CA7 | No* |
| CA 6 | Leather Belt Accessory | Yes | 0 mm | 46 mm | Needs adapter | No* |
| CA 7 | Plastic Belt Accessory | No | 0 mm | 37 mm | Needs adapter | No* |

**Table 8:** List of carry accessories

*Note: For body-worn accessories with similar construction and operating configurations only the body-worn accessory withing the group that is expected to result in the highest SAR (smallest antenna separation distance) has been used for SAR testing, according to 643646 D01 SAR Test for PTT Radios v01r03, paragraph "A2. Body SAR Test Considerations for Body-worn Accessories"

- Antennas

There is only one type of antenna that works in all transmitting frequencies and technologies.

See "Appendix F – Photographs" of this document for further information.

# **Appendix B –** Test results

# INDEX

1. TEST CONDITIONS ..... 25
1.1. Power supply (V): ..... 25
1.2. Temperature (ºC): ..... 25
1.3. Test signal, Output Power and Frequencies ..... 25
1.4. DUT and test-site configurations ..... 25

2. CONDUCTED AVERAGE POWER MEASUREMENTS ..... 26
2.1. TETRA Bands ..... 26
2.2. TI D-LMR Bands ..... 26
2.3. P25 Bands ..... 26
2.4. Bluetooth ..... 27

3. TISSUE PARAMETERS MEASUREMENTS ..... 28

4. SYSTEM CHECK MEASUREMENTS ..... 29
4.1. Validation results for Head TSL ..... 29
4.2. Validation results for Body TSL ..... 29

5. MEASUREMENT RESULTS FOR SAR (SPECIFIC ABSORPTION RATE) ..... 30
5.1. Summary maximum results for head measurements. ..... 31
5.2. Summary maximum results for front of face measurements. ..... 31
5.3. Summary maximum results for body measurements ..... 31
5.4. Maximum results for head simultaneous multi-band transmission ..... 32
5.5. Maximum results for front of face simultaneous multi-band transmission ..... 32
5.6. Maximum results for body simultaneous multi-band transmission ..... 32
5.7. Results for TETRA 769 – 775 MHz band. ..... 33
5.8. Results for TETRA 799 – 805 MHz band. ..... 34
5.9. Results for TETRA 809 – 824 MHz band. ..... 35
5.10. Results for TETRA 854 – 869 MHz band. ..... 36
5.11. Results for TI D-LMR 769 – 775 MHz band. ..... 37
5.12. Results for TI D-LMR 799 – 805 MHz band. ..... 38
5.13. Results for TI D-LMR 809 – 824 MHz band. ..... 39
5.14. Results for TI D-LMR 854 – 869 MHz band. ..... 40
5.15. Results for P25 769 – 775 MHz band. ..... 41
5.16. Results for P25 799 – 805 MHz band. ..... 42
5.17. Variability results. ..... 43

# 1. TEST CONDITIONS

## 1.1. Power supply (V):

$V_n$ = 7.4 Li-polymer rechargeable battery

Type of power supply = DC Voltage from rechargeable Li-Ion 7.4 V battery.

## 1.2. Temperature (ºC):

$T_n$ = +20.00 to +25.00

The subscript n indicates normal test conditions.

## 1.3. Test signal, Output Power and Frequencies

The actual DUT supports TETRA, TI D-LMR, P25 and Bluetooth transmitting modes. To perform testing in all supported bands, the sample **(S/N: NYPB48)** was put into operation by using a software provided by the manufacturer.

A fully charged battery was used for every test sequence. In all operating bands and test position, the measurements were performed on middle channels. In each band, for those positions where the maximum averaged SAR was found, measurements were performed on lowest and highest channels except those with applicable test reductions.

The maximum time-average conducted power of the device for each mode was measured with a power sensor R&S NRP-Z91.

The maximum output power declared by the manufacturer for each supported technology is:

| Protocol | Output Power (dBm) | Tune-up tolerance (dBm) | Max. Output Power (dBm) | Max. Average Output Power (dBm) |
|---|---|---|---|---|
| TETRA | 32.5 | ±0.25 | 32.75 | 26.73 |
| TI D-LMR | 32.5 | ±0.25 | 32.75 | 26.73 |
| P25 | 34.5 | ±0.5 | 35.0 | 35.00 |
| Bluetooth | 8.16 | - | 8.16 | 8.16 |

## 1.4. DUT and test-site configurations

The DUT was tested over head and body exposure conditions:

- For head tests, the DUT was placed in cheek and tilt position on the right/left side of the SAM phantom.

- For in-front-of face test, the DUT was placed with the front face against the flat side of the SAM phantom, with a testing distance of 25 mm.

- For body tests, the DUT was placed at 0 mm distance of the flat phantom surface, using the worst combination of each type of carrying accessories.

# 2. CONDUCTED AVERAGE POWER MEASUREMENTS

## 2.1. TETRA Bands

| Mode | Band | Frequency (MHz) | Burst mode Avg. Output Power (dBm) |
|---|---|---|---|
| TETRA | 769-775 MHz | 769.0125 | 25.54 |
| TETRA | 769-775 MHz | 772.0125 | 25.58 |
| TETRA | 769-775 MHz | 774.9875 | 25.56 |
| TETRA | 799-805 MHz | 799.0125 | 25.57 |
| TETRA | 799-805 MHz | 802.0125 | 25.61 |
| TETRA | 799-805 MHz | 804.9875 | 25.59 |
| TETRA | 809-824 MHz | 809.0125 | 25.56 |
| TETRA | 809-824 MHz | 816.5 | 25.57 |
| TETRA | 809-824 MHz | 823.9875 | 25.56 |
| TETRA | 854-869 MHz | 854.0125 | 25.61 |
| TETRA | 854-869 MHz | 861.5 | 25.63 |
| TETRA | 854-869 MHz | 868.9875 | 25.63 |

## 2.2. TI D-LMR Bands

| Mode | Band | Frequency (MHz) | Burst mode Avg. Output Power (dBm) |
|---|---|---|---|
| TI D-LMR | 769-775 MHz | 769.0125 | 25.48 |
| TI D-LMR | 769-775 MHz | 772.0125 | 25.51 |
| TI D-LMR | 769-775 MHz | 774.9875 | 25.48 |
| TI D-LMR | 799-805 MHz | 799.0125 | 25.50 |
| TI D-LMR | 799-805 MHz | 802.0125 | 25.52 |
| TI D-LMR | 799-805 MHz | 804.9875 | 25.49 |
| TI D-LMR | 809-824 MHz | 809.0125 | 25.52 |
| TI D-LMR | 809-824 MHz | 816.5 | 25.54 |
| TI D-LMR | 809-824 MHz | 823.9875 | 25.54 |
| TI D-LMR | 854-869 MHz | 854.0125 | 25.59 |
| TI D-LMR | 854-869 MHz | 861.5 | 25.62 |
| TI D-LMR | 854-869 MHz | 868.9875 | 25.61 |

## 2.3. P25 Bands

| Mode | Band | Frequency (MHz) | Standard Tx mode Avg. Output Power (dBm) |
|---|---|---|---|
| P25 | 769-775 MHz | 769.0125 | 33.95 |
| P25 | 769-775 MHz | 772.0125 | 33.93 |
| P25 | 769-775 MHz | 774.9875 | 33.91 |
| P25 | 799-805 MHz | 799.0125 | 33.92 |
| P25 | 799-805 MHz | 802.0125 | 33.94 |
| P25 | 799-805 MHz | 804.9875 | 33.95 |

## 2.4. Bluetooth

The manufacturer declares a maximum conducted output power of 8.16 dBm, which corresponds to 6.55 mW, for the 2402-2480MHz frequency range.

Based on paragraph "4.3.1 Standalone SAR test exclusion considerations" of the KDB 447498 D01 - General RF Exposure Guidance:

**[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] · [√f(GHz)]**

**≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR**

| Protocol | Max. Conducted Output Power | | Min. Test Distance (mm) | Freq. (GHz) | Result | Test Exclusion |
|---|---|---|---|---|---|---|
| | (dBm) | (mW) | | | | |
| Bluetooth | 8.16 | 6.55 | 5 | 2.480 | 2.06 | √ |

The computed value for Bluetooth is < 3.0, so Bluetooth mode qualifies for Standalone SAR test exclusion for 1-g SAR and 10-g SAR.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

**(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR and x= 18,75 for 10-g extremity SAR,.**

When the min. test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

| Estimated SAR | | | | | | |
|---|---|---|---|---|---|---|
| Protocol | Max. Output Power | | Min. Test separation distance (mm) | Frequency (GHz) | Estimated 1-g SAR | Estimated 10-g SAR |
| | (dBm) | (mW) | | | | |
| Bluetooth | 8.16 | 6.55 | 5 | 2.480 | 0.28 | 0.11 |

# 3. TISSUE PARAMETERS MEASUREMENTS

| Frequency (MHz) | Target Head Tissue | | Measured Head Tissue | | Deviation % | | Measured Date |
|---|---|---|---|---|---|---|---|
| | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | |
| 750 | 41.94 | 0.87 | 42.84 | 0.89 | 2.13 | -0.71 | 2017-04-03 |

| Frequency (MHz) | Target Body Tissue | | Measured Body Tissue | | Deviation % | | Measured Date |
|---|---|---|---|---|---|---|---|
| | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | |
| 750 | 55.53 | 0.96 | 55.90 | 0.98 | 0.66 | 1.23 | 2017-04-17 |

| Frequency (MHz) | Target Head Tissue | | Measured Head Tissue | | Deviation % | | Measured Date |
|---|---|---|---|---|---|---|---|
| | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | |
| 835 | 41.50 | 0.90 | 41.02 | 0.88 | -1.16 | -2.36 | 2017-03-29 |
| 900 | 41.50 | 0.97 | 40.10 | 0.95 | -3.38 | -1.97 | |

| Frequency (MHz) | Target Body Tissue | | Measured Body Tissue | | Deviation % | | Measured Date |
|---|---|---|---|---|---|---|---|
| | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | Permittivity ε | Conductivity σ [S/m] | |
| 835 | 55.20 | 0.97 | 53.50 | 1.01 | -3.07 | 3.99 | 2017-04-10 |
| 900 | 55.00 | 1.05 | 52.62 | 1.08 | -4.32 | 2.94 | |

Note: The dielectric properties have been measured by the contact probe method at 22° C.

## - Composition / Information on ingredients

### Head and Muscle Tissue Simulation Liquids HSL750V2/MSL750V2

| | |
|---|---|
| H2O | Water, 35 – 58% |
| Sucrose | Sugar, white, refined, 40 – 60% |
| NaCl | Sodium Chloride, 0 – 6% |
| Hydroxyethyl-cellulose | Medium Viscosity (CAS# 9004-62-0), <0.3% |
| Preventol-D7 | Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1 – 0.7% |

### Head and Muscle Tissue Simulation Liquids HSL900/MSL900

| | |
|---|---|
| H2O | Water, 35 – 58% |
| Sucrose | Sugar, white, refined, 40 – 60% |
| NaCl | Sodium Chloride, 0 – 6% |
| Hydroxyethyl-cellulose | Medium Viscosity (CAS# 9004-62-0), <0.3% |
| Preventol-D7 | Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1 – 0.7% |

# 4. SYSTEM CHECK MEASUREMENTS

## 4.1. Validation results for Head TSL

| Date | Frequency (MHz) | SAR over | Fast SAR (W/kg) | SAR (W/kg) | Δ SAR - Fast SAR | 1 W Target SAR (W/kg) | 1 W Norm. SAR (W/kg) | Drift (%) |
|---|---|---|---|---|---|---|---|---|
| 2017-04-03 | 750 | 1 gr. | 2.08 | 2.05 | < ±3% | 8.07 | 8.17 | 1.26 |
| | | 10 gr. | 1.41 | 1.34 | < ±7% | 5.29 | 5.34 | 0.97 |
| 2017-03-29 | 900 | 1 gr. | 2.72 | 2.67 | < ±3% | 10.6 | 10.74 | 1.34 |
| | | 10 gr. | 1.83 | 1.72 | < ±7% | 6.82 | 6.92 | 1.46 |

## 4.2. Validation results for Body TSL

| Date | Frequency (MHz) | SAR over | Fast SAR (W/kg) | SAR (W/kg) | Δ SAR - Fast SAR | 1 W Target SAR (W/kg) | 1 W Norm. SAR (W/kg) | Drift (%) |
|---|---|---|---|---|---|---|---|---|
| 2017-04-17 | 750 | 1 gr. | 2.26 | 2.21 | < ±3% | 8.45 | 8.76 | 3.66 |
| | | 10 gr | 1.54 | 1.47 | < ±7% | 5.60 | 5.83 | 4.04 |
| 2017-04-10 | 900 | 1 gr. | 2.84 | 2.81 | < ±3% | 10.5 | 11.19 | 6.55 |
| | | 10 gr. | 1.90 | 1.83 | < ±7% | 6.79 | 7.29 | 7.31 |

# 5. MEASUREMENT RESULTS FOR SAR (SPECIFIC ABSORPTION RATE)

SAR measurements have been performed using software provided by the manufacturer, using TETRA Burst mode and TI D-LMR Burst mode for transmission, with a duty factor of 25%, adjusted to the maximum output power rate, and the normal P25 mode, with a duty factor of 100%, adjusted to the maximum output rate.

All measured results have been scaled to a duty factor of 50% as indicated in KDB 447498 D01.

Measured SAR 1g values in the tables of section 5 have been calculated from the 1g SAR value, using the following formula:

$$\text{Measured SAR_1-g} = \text{SAR 1-g} \cdot 10^{\frac{-\text{Drift}}{10}} \cdot T_{\text{duty-factor}}$$

Where:
SAR 1-g = 1g Averaged SAR (W/kg)
Drift = DASY drift results (dB)
$T_{\text{duty-factor}}$ = Duty cycle scale factor of 50% is applied to the transmission mode.

Only the highest SAR 1-g values have been adjusted for tune-up tolerance according to KDB 643646 D01, section "A5. General Reporting Procedures". Reported SAR 1-g values in the maximum result tables of this section have been calculated using the following formula:

$$\text{Reported_SAR_1-g} = \textit{Measured}_\text{SAR_1-g} \cdot \left( \frac{P_{\text{OUT-MAX}}}{P_{\text{conducted}}} \right)^{*}$$

* Note: Only positive power scale is applied, if $P_{conducted} > P_{OUT\text{-}MAX} \rightarrow (P_{OUT\text{-}MAX} / P_{conducted}) = 1$

Where:
Measured SAR $_{1\text{-}g}$= SAR value calculated as previously described.
$P_{OUT\text{-}MAX}$ = Declared Target Power including tuning tolerance (W)
$P_{conducted}$ = Measured Conducted Output Power (W)

## 5.1. Summary maximum results for head measurements.

| Band | Mode | Side/Position | Frequency (MHz) | Measured SAR 1-g (W/kg) | Scale Factor | Reported SAR 1-g (W/kg) | Limit SAR 1-g (W/kg) |
|---|---|---|---|---|---|---|---|
| 769 – 775 MHz | TETRA | Left /Tilted | 772.0125 | 1.676 | 1.303 | 2.18 | 8.0 |
| 799 – 805 MHz | TETRA | Left /Tilted | 802.0125 | 2.125 | 1.294 | 2.75 | 8.0 |
| 809– 824 MHz | TETRA | Left /Tilted | 816.5 | 2.120 | 1.306 | 2.77 | 8.0 |
| 854 – 869 MHz | TETRA | Left /Tilted | 861.5 | 2.220 | 1.288 | 2.86 | 8.0 |
| 769 – 775 MHz | TI D-LMR | Left /Tilted | 772.0125 | 1.863 | 1.324 | 2.48 | 8.0 |
| 799 – 805 MHz | TI D-LMR | Left /Tilted | 802.0125 | 2.174 | 1.321 | 2.87 | 8.0 |
| 809 – 824 MHz | TI D-LMR | Left /Tilted | 816.5 | 2.157 | 1.315 | 2.84 | 8.0 |
| 854 – 869 MHz | TI D-LMR | Left /Tilted | 861.5 | 2.774 | 1.291 | 3.58 | 8.0 |
| 769 – 775 MHz | P25 | Next to the ear configuration is not supported by P25 mode. | | | | | |
| 799 – 805 MHz | P25 | Next to the ear configuration is not supported by P25 mode. | | | | | |

## 5.2. Summary maximum results for front of face measurements.

| Band | Mode | Side/Position | Frequency (MHz) | Measured SAR 1-g (W/kg) | Scale Factor | Reported SAR 1-g (W/kg) | Limit SAR 1-g (W/kg) |
|---|---|---|---|---|---|---|---|
| 769 – 775 MHz | TETRA | Front of face | 772.0125 | 1.024 | 1.303 | 1.33 | 8.0 |
| 799 – 805 MHz | TETRA | Front of face | 802.0125 | 1.284 | 1.294 | 1.66 | 8.0 |
| 809– 824 MHz | TETRA | Front of face | 816.5 | 1.219 | 1.306 | 1.59 | 8.0 |
| 854 – 869 MHz | TETRA | Front of face | 861.5 | 0.906 | 1.288 | 1.17 | 8.0 |
| 769 – 775 MHz | TI D-LMR | Front of face | 772.0125 | 1.195 | 1.324 | 1.58 | 8.0 |
| 799 – 805 MHz | TI D-LMR | Front of face | 802.0125 | 1.438 | 1.321 | 1.90 | 8.0 |
| 809 – 824 MHz | TI D-LMR | Front of face | 816.5 | 1.404 | 1.315 | 1.85 | 8.0 |
| 854 – 869 MHz | TI D-LMR | Front of face | 861.5 | 0.848 | 1.291 | 1.10 | 8.0 |
| 769 – 775 MHz | P25 | Front of face | 772.0125 | 1.827 | 1.279 | 2.34 | 8.0 |
| 799 – 805 MHz | P25 | Front of face | 802.0125 | 2.112 | 1.276 | 2.70 | 8.0 |

## 5.3. Summary maximum results for body measurements

| Band | Mode | Side/Accesory | Frequency (MHz) | Measured SAR 1-g (W/kg) | Scale Factor | Reported SAR 1-g (W/kg) | Limit SAR 1-g (W/kg) |
|---|---|---|---|---|---|---|---|
| 769 – 775 MHz | TETRA | Back Face/CA2+AA1 | 772.0125 | 2.560 | 1.303 | 3.37 | 8.0 |
| 799 – 805 MHz | TETRA | Back Face/CA2+AA1 | 802.0125 | 3.455 | 1.294 | 4.47 | 8.0 |
| 809– 824 MHz | TETRA | Back Face/CA2+AA1 | 816.5 | 2.644 | 1.306 | 3.45 | 8.0 |
| 854 – 869 MHz | TETRA | Back Face/CA2+AA1 | 861.5 | 2.020 | 1.288 | 2.60 | 8.0 |
| 769 – 775 MHz | TI D-LMR | Back Face/CA2+AA1 | 772.0125 | 2.739 | 1.324 | 3.63 | 8.0 |
| 799 – 805 MHz | TI D-LMR | Back Face/CA2+AA1 | 802.0125 | 3.334 | 1.321 | 4.41 | 8.0 |
| 809 – 824 MHz | TI D-LMR | Back Face/CA2+AA1 | 816.5 | 3.478 | 1.315 | 4.58 | 8.0 |
| 854 – 869 MHz | TI D-LMR | Back Face/CA2+AA1 | 861.5 | 2.217 | 1.291 | 2.86 | 8.0 |
| 769 – 775 MHz | P25 | Back Face/CA2+AA1 | 772.0125 | 4.843 | 1.279 | 6.20 | 8.0 |
| 799 – 805 MHz | P25 (Var) | Back Face/CA2+AA1 | 802.0125 | 5.488 | 1.276 | 7.01 | 8.0 |

## 5.4. Maximum results for head simultaneous multi-band transmission

| Transmission Mode | Band | Max Reported SAR 1-g (W/kg) | Σ SARi (W/kg) | Limit SAR 1-g (W/kg) | Verdict |
|---|---|---|---|---|---|
| TETRA | 854– 869 MHz | 2.86 | 3.14 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |
| | | | | | |
| TI D-LMR | 854– 869 MHz | 3.58 | 3.86 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |

## 5.5. Maximum results for front of face simultaneous multi-band transmission

| Transmission Mode | Band | Max Reported SAR 1-g (W/kg) | Σ SARi (W/kg) | Limit SAR 1-g (W/kg) | Verdict |
|---|---|---|---|---|---|
| TETRA | 799 – 805 MHz | 1.66 | 1.94 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |
| | | | | | |
| TI D-LMR | 799 – 805 MHz | 1.90 | 2.18 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |
| | | | | | |
| P25 | 799 – 805 MHz | 2.70 | 2.98 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |

## 5.6. Maximum results for body simultaneous multi-band transmission

| Transmission Mode | Band | Max Reported SAR 1-g (W/kg) | Σ SARi (W/kg) | Limit SAR 1-g (W/kg) | Verdict |
|---|---|---|---|---|---|
| TETRA | 799 – 805 MHz | 4.47 | 4.75 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |
| | | | | | |
| TI D-LMR | 809 – 824 MHz | 4.58 | 4.86 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |
| | | | | | |
| P25 | 799 – 805 MHz | 7.01 | 7.29 | 8.0 | Pass |
| Bluetooth | 2.45GHz | 0.28 | | | |

## 5.7. Results for TETRA 769 – 775 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 772.0125 | 0.356 | NM[2] | 0.12 | 0.712 | |
| Left / 15º Tilted | 0 | 772.0125 | 0.842 | 0.838 | 1.98 | 1.676 | 1 |
| Right / Cheek | 0 | 772.0125 | 0.273 | NM[2] | 1.27 | 0.546 | |
| Right / 15º Tilted | 0 | 772.0125 | 0.485 | NM[2] | 3.28 | 0.970 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 769.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 774.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 772.0125 | 0.0765 | 0.0765 | 3.51 | 0.153 | |
| Front of Face (Antenna) | 25 | 772.0125 | 0.512 | 0.512 | 0.23 | 1.024 | 2 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 772.0125 | 1.01 | 1.04 | -1.83 | 2.158 | |
| Back face (CA 2+AA1) | 0 | 18 | 772.0125 | 1.27 | 1.28 | 2.80 | 2.560 | 3 |
| Back face (CA 3+AA1) | 0 | 29 | 772.0125 | 0.412 | 0.427 | 0.69 | 0.854 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 769.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 774.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 772.0125 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 772.0125 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.8. Results for TETRA 799 – 805 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 802.0125 | 0.506 | NM[2] | -3.06 | 1.077 | |
| Left / 15º Tilted | 0 | 802.0125 | 1.01 | 1.06 | -0.12 | 2.125 | 4 |
| Right / Cheek | 0 | 802.0125 | 0.372 | NM[2] | 0.58 | 0.744 | |
| Right / 15º Tilted | 0 | 802.0125 | 0.659 | NM[2] | 0.58 | 1.318 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 799.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 804.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 802.0125 | 0.107 | 0.107 | -0.92 | 0.218 | |
| Front of Face (Antenna) | 25 | 802.0125 | 0.631 | 0.642 | 2.92 | 1.284 | 5 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 802.0125 | 1.13 | 1.14 | -0.92 | 2.322 | |
| Back face (CA 2+AA1) | 0 | 18 | 802.0125 | 1.69 | 1.7 | -0.80 | 3.455 | 6 |
| Back face (CA 3+AA1) | 0 | 29 | 802.0125 | 0.444 | 0.459 | -2.16 | 0.959 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 799.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 804.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 802.0125 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 802.0125 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.9. Results for TETRA 809 – 824 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 816.5 | 0.503 | NM[2] | -0.69 | 1.020 | |
| Left / 15º Tilted | 0 | 816.5 | 1.02 | 1.06 | 0.46 | 2.120 | 7 |
| Right / Cheek | 0 | 816.5 | 0.452 | NM[2] | 0.35 | 0.904 | |
| Right / 15º Tilted | 0 | 816.5 | 0.809 | NM[2] | 1.62 | 1.618 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 809.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 823.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 816.5 | 0.115 | 0.113 | -0.12 | 0.227 | |
| Front of Face (Antenna) | 25 | 816.5 | 0.597 | 0.604 | -0.46 | 1.219 | 8 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 816.5 | 0.773 | 0.775 | 1.86 | 1.550 | |
| Back face (CA 2+AA1) | 0 | 18 | 816.5 | 1.3 | 1.31 | -0.46 | 2.644 | 9 |
| Back face (CA 3+AA1) | 0 | 29 | 816.5 | 0.397 | 0.405 | -0.57 | 0.819 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 809.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 823.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 816.5 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 816.5 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.10. Results for TETRA 854 – 869 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 861.5 | 0.722 | NM[2] | -0.92 | 1.471 | |
| Left / 15º Tilted | 0 | 861.5 | 1.07 | 1.11 | 0.00 | 2.220 | 10 |
| Right / Cheek | 0 | 861.5 | 0.723 | NM[2] | 0.69 | 1.446 | |
| Right / 15º Tilted | 0 | 861.5 | 1.01 | NM[2] | 1.62 | 2.020 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 854.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 868.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 861.5 | 0.128 | 0.123 | 0.69 | 0.246 | |
| Front of Face (Antenna) | 25 | 861.5 | 0.445 | 0.453 | 1.16 | 0.906 | 11 |

2 and 3: See remarks and comments

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 861.5 | 0.773 | 0.775 | 1.86 | 1.550 | |
| Back face (CA 2+AA1) | 0 | 18 | 861.5 | 0.953 | 1.01 | 3.04 | 2.020 | 12 |
| Back face (CA 3+AA1) | 0 | 29 | 861.5 | 0.397 | 0.405 | -0.57 | 0.819 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 854.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 868.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 861.5 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 861.5 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.11. Results for TI D-LMR 769 – 775 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 772.0125 | 0.365 | NM[2] | 1.27 | 0.793 | |
| Left / 15º Tilted | 0 | 772.0125 | 0.834 | 0.857 | 0.35 | 1.863 | 13 |
| Right / Cheek | 0 | 772.0125 | 0.266 | NM[2] | 1.86 | 0.578 | |
| Right / 15º Tilted | 0 | 772.0125 | 0.484 | NM[2] | 1.74 | 1.052 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 769.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 774.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 772.0125 | 0.0802 | 0.0802 | 2.21 | 0.174 | |
| Front of Face (Antenna) | 25 | 772.0125 | 0.521 | 0.53 | -1.83 | 1.195 | 14 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 772.0125 | 1.02 | 1.01 | 1.39 | 2.196 | |
| Back face (CA 2+AA1) | 0 | 18 | 772.0125 | 1.22 | 1.26 | 0.81 | 2.739 | 15 |
| Back face (CA 3+AA1) | 0 | 29 | 772.0125 | 0.4 | 0.418 | 0.00 | 0.909 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 769.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 774.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 772.0125 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 772.0125 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.12. Results for TI D-LMR 799 – 805 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 802.0125 | 0.498 | NM[2] | -0.92 | 1.103 | |
| Left / 15º Tilted | 0 | 802.0125 | 1.01 | 1.00 | 0.12 | 2.174 | 16 |
| Right / Cheek | 0 | 802.0125 | 0.36 | NM[2] | 1.04 | 0.783 | |
| Right / 15º Tilted | 0 | 802.0125 | 0.65 | NM[2] | 0.35 | 1.413 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 799.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 804.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 802.0125 | 0.104 | 0.104 | -1.71 | 0.234 | |
| Front of Face (Antenna) | 25 | 802.0125 | 0.645 | 0.654 | -0.57 | 1.438 | 17 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 802.0125 | 1.13 | 1.18 | 0.69 | 2.565 | |
| Back face (CA 2+AA1) | 0 | 18 | 802.0125 | 1.51 | 1.53 | -0.12 | 3.334 | 18 |
| Back face (CA 3+AA1) | 0 | 29 | 802.0125 | 0.436 | 0.448 | 0.46 | 0.974 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 799.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 804.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 802.0125 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 802.0125 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.13. Results for TI D-LMR 809 – 824 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 816.5 | 0.487 | NM[2] | 0.12 | 1.059 | |
| Left / 15º Tilted | 0 | 816.5 | 0.968 | 0.992 | 0.58 | 2.157 | 19 |
| Right / Cheek | 0 | 816.5 | 0.395 | NM[2] | -0.57 | 0.869 | |
| Right / 15º Tilted | 0 | 816.5 | 0.716 | NM[2] | 0.35 | 1.557 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 809.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 823.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 816.5 | 0.115 | 0.117 | -0.23 | 0.256 | |
| Front of Face (Antenna) | 25 | 816.5 | 0.638 | 0.64 | -0.46 | 1.404 | 20 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 816.5 | 1.06 | 1.07 | -0.46 | 2.348 | |
| Back face (CA 2+AA1) | 0 | 18 | 816.5 | 1.58 | 1.6 | 0.46 | 3.478 | 21 |
| Back face (CA 3+AA1) | 0 | 29 | 816.5 | 0.39 | 0.39 | -0.80 | 0.862 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 809.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 823.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 816.5 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 816.5 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.14. Results for TI D-LMR 854 – 869 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Left / Cheek | 0 | 861.5 | 0.849 | NM[2] | 1.98 | 1.846 | |
| Left / 15º Tilted | 0 | 861.5 | 1.27 | 1.27 | -0.23 | 2.774 | 22 |
| Right / Cheek | 0 | 861.5 | 0.666 | NM[2] | -2.73 | 1.530 | |
| Right / 15º Tilted | 0 | 861.5 | 0.79 | NM[2] | 2.68 | 1.670 | |
| | | | | | | | |
| Left / 15º Tilted | 0 | 854.0125 | NM[3] | | | | |
| Left / 15º Tilted | 0 | 868.9875 | NM[3] | | | | |
| | | | | | | | |
| Front of Face (device) | 25 | 861.5 | 0.255 | 0.256 | -0.34 | 0.560 | |
| Front of Face (Antenna) | 25 | 861.5 | 0.407 | 0.39 | 1.27 | 0.848 | 23 |

2 and 3: See remarks and comments.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 861.5 | 0.824 | 0.823 | -3.39 | 1.917 | |
| Back face (CA 2+AA1) | 0 | 18 | 861.5 | 0.958 | 1.02 | 1.62 | 2.217 | 24 |
| Back face (CA 3+AA1) | 0 | 29 | 861.5 | 0.336 | 0.339 | 0.46 | 0.737 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 854.0125 | NM[3] | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 868.9875 | NM[3] | | | | |
| | | | | | | | | |
| Back face (CA 2+AA2) | 0 | 18 | 861.5 | NM[4] | | | | |
| Back face (CA 2+AA3) | 0 | 18 | 861.5 | NM[4] | | | | |

3 and 4: See remarks and comments.

## 5.15. Results for P25 769 – 775 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Front of Face (device) | 25 | 772.0125 | 0.503 | 0.503 | 0.81 | 0.252 | |
| Front of Face (Antenna) | 25 | 772.0125 | 3.5 | 3.58 | -1.03 | 1.827 | 25 |

* Note: Next to the ear configuration is not supported by P25 mode.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 772.0125 | 6.45 | 6.62 | 0.00 | 3.310 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 772.0125 | 9.66 | 9.51 | -0.92 | 4.843 | 26 |
| Back face (CA 2+AA1) | 0 | 18 | 769.0125 | 9.60 | 9.44 | -0.23 | 4.742 | |
| Back face (CA 2+AA1) | 0 | 18 | 774.9875 | 9.63 | 9.41 | 2.45 | 4.705 | |
| Back face (CA 2+AA2) | 0 | 18 | 772.0125 | 9.65 | 9.49 | -0.12 | 4.756 | |
| Back face (CA 2+AA3) | 0 | 18 | 772.0125 | 9.56 | 9.34 | -1.37 | 4.801 | |
| | | | | | | | | |
| Back face (CA 3+AA1) | 0 | 29 | 772.0125 | 2.53 | 2.51 | 0.23 | 1.255 | |

## 5.16. Results for P25 799 – 805 MHz band.

- **Head measurements**

| Side / Position | Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|
| Front of Face (device) | 25 | 802.0125 | 0.606 | 0.604 | -1.14 | 0.309 | |
| Front of Face (Antenna) | 25 | 802.0125 | 4.1 | 4.09 | -1.60 | 2.112 | 27 |

* Note: Next to the ear configuration is not supported by P25 mode.

- **Body measurements**

| Position | Dist (mm) | Antenna Dist (mm) | Frequency (MHz) | FAST SAR 1-g (W/kg) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Plot No. |
|---|---|---|---|---|---|---|---|---|
| Back face (CA 1+AA1) | 0 | 23 | 802.0125 | 7.52 | 7.14 | -2.28 | 3.738 | |
| Back face (CA 1+AA1) | 0 | 23 | 799.0125 | 7.14 | 6.96 | -0.57 | 3.520 | |
| Back face (CA 1+AA1) | 0 | 23 | 804.9875 | 7.34 | 7.31 | -0.34 | 3.680 | |
| | | | | | | | | |
| Back face (CA 2+AA1) | 0 | 18 | 802.0125 | 10.7 | 10.7 | 0.23 | 5.350 | 28 |
| Back face (CA 2+AA1) | 0 | 18 | 799.0125 | 9.91 | 9.96 | -0.34 | 5.015 | |
| Back face (CA 2+AA1) | 0 | 18 | 804.9875 | 10.2 | 10.2 | -1.71 | 5.279 | |
| Back face (CA 2+AA2) | 0 | 18 | 802.0125 | 10.5 | 10.5 | -0.46 | 5.299 | |
| Back face (CA 2+AA3) | 0 | 18 | 802.0125 | 10 | 10.1 | -0.12 | 5.062 | |
| | | | | | | | | |
| Back face (CA 3+AA1) | 0 | 29 | 802.0125 | 2.6 | 2.53 | -0.12 | 1.268 | |

## 5.17. Variability results.

According to KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, paragraph "2.8.1. SAR measurement variability", repeated measurements are required for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used, only when the measured SAR, without been scaled to the maximum tune-up tolerance, is > 4 W/kg for occupational/controlled exposure.

| Band | Mode | Side / Position | Frequency (MHz) | SAR 1-g (W/kg) | Power Drift (%) | Measured SAR 1-g (W/kg) | Variation < 20 % | Plot No |
|---|---|---|---|---|---|---|---|---|
| 799 – 805 MHz | P25 | Back face (CA 2+AA1) | 802.0125 | 10.9 | -0.34 | 5.488 | √ | 29 |

# **Appendix C –** Measurement report

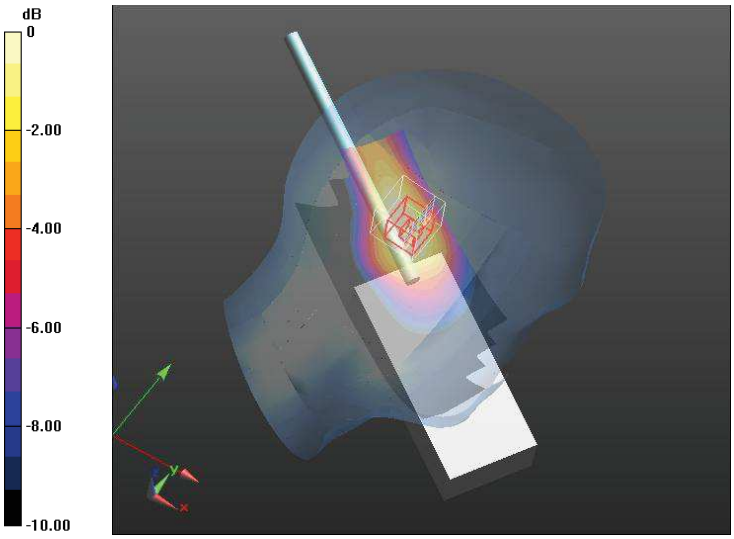
## TETRA 769-775 MHz – Left hand side – Tilted position – Plot Nº 1

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-03**

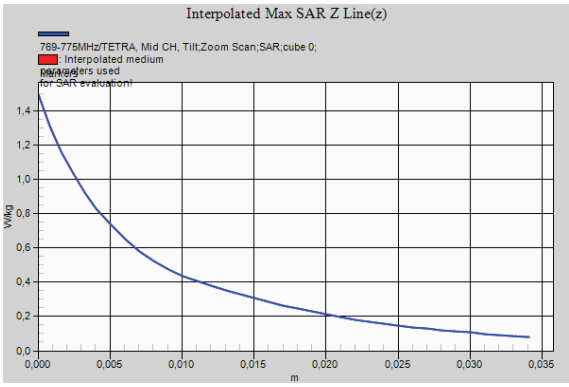
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 772.013 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.904 S/m; $\varepsilon_r$ = 42.532; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/769-775MHz/TETRA, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.01 W/kg

**Left Hand Side/769-775MHz/TETRA, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.01 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.50 W/kg
**SAR(1 g) = 0.838 W/kg; SAR(10 g) = 0.523 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.912 W/kg




0 dB = 0.912 W/kg = -0.40 dBW/kg



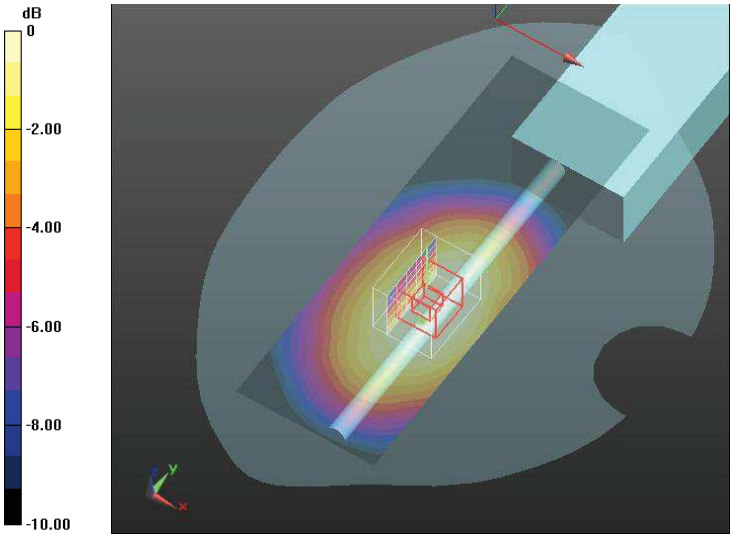
## TETRA 769-775 MHz – Front of face (Antenna side) 25 mm – Plot Nº 2

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-04**

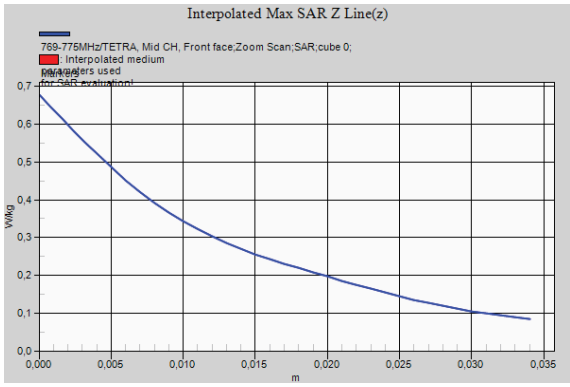
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 772.013 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.904 S/m; $\varepsilon_r$ = 42.532; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face, d=25mm, Antenna side/769-775MHz/TETRA, Mid CH, Front face/Area Scan (51x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.583 W/kg

**Flat Phantom, Face, d=25mm, Antenna side/769-775MHz/TETRA, Mid CH, Front face/Zoom Scan (5x6x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.39 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.678 W/kg
**SAR(1 g) = 0.512 W/kg; SAR(10 g) = 0.376 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.532 W/kg




0 dB = 0.532 W/kg = -2.74 dBW/kg



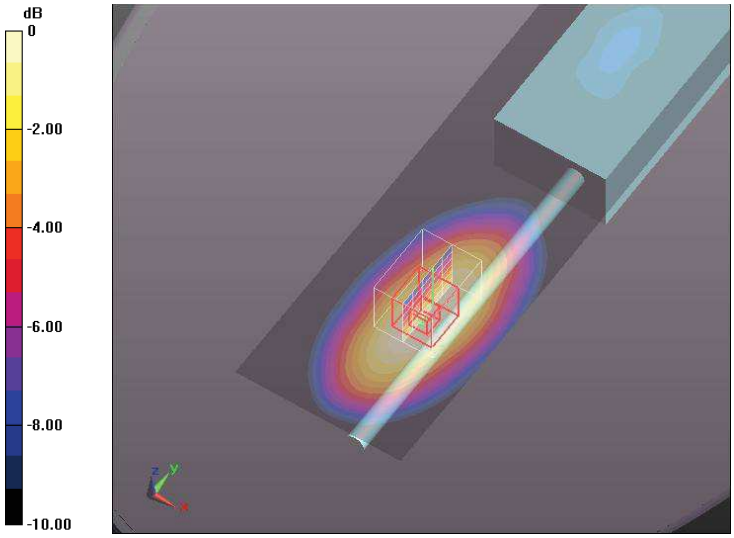
## TETRA 769-775 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 3

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-17**

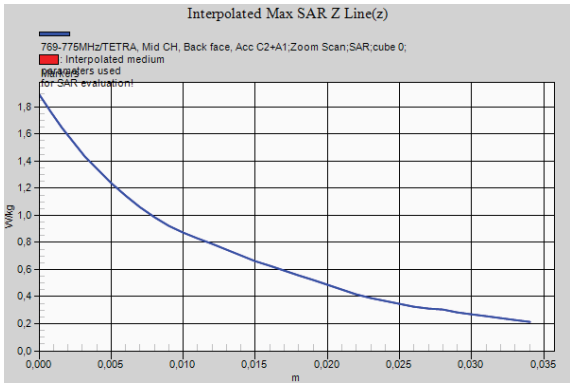
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 772.013 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.994 S/m; $\varepsilon_r$ = 55.764; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/769-775MHz/TETRA, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.47 W/kg

**Flat Phantom, Body, d=0mm,/769-775MHz/TETRA, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x6x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.613 V/m; Power Drift = 0.24 dB
Peak SAR (extrapolated) = 1.89 W/kg
**SAR(1 g) = 1.28 W/kg; SAR(10 g) = 0.887 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.37 W/kg




0 dB = 1.37 W/kg = 1.37 dBW/kg



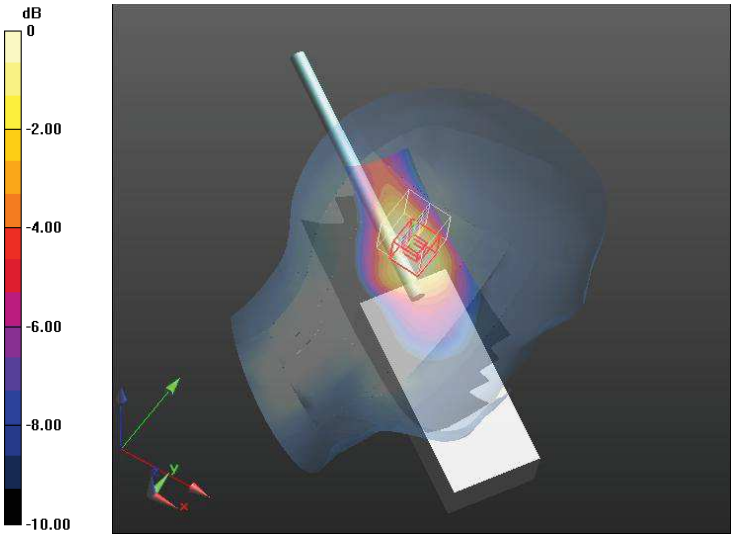
## TETRA 799-805 MHz – Left hand side – Tilted position – Plot Nº 4

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-03**

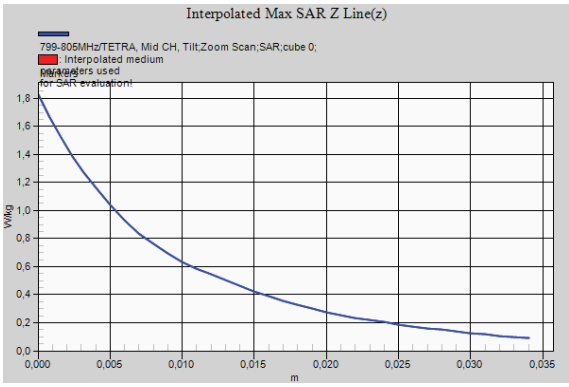
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 802.013 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 0.934 S/m; $\varepsilon_r$ = 42.154; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/799-805MHz/TETRA, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.21 W/kg

**Left Hand Side/799-805MHz/TETRA, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.18 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.83 W/kg
**SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.647 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.15 W/kg




0 dB = 1.15 W/kg = 0.61 dBW/kg



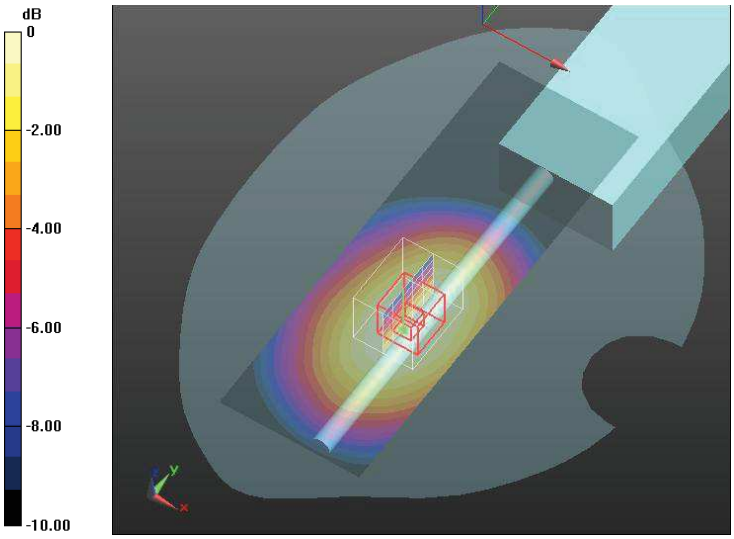
## TETRA 799-805 MHz – Front of face (Antenna side) 25 mm – Plot Nº 5

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-04**

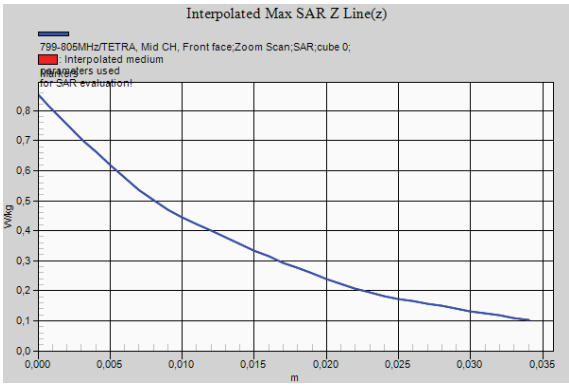
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 802.013 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 0.934 S/m; $\varepsilon_r$ = 42.154; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face, d=25mm, Antenna side/799-805MHz/TETRA, Mid CH, Front face/Area Scan (51x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.719 W/kg

**Flat Phantom, Face, d=25mm, Antenna side/799-805MHz/TETRA, Mid CH, Front face/Zoom Scan (5x6x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.72 V/m; Power Drift = 0.25 dB
Peak SAR (extrapolated) = 0.853 W/kg
**SAR(1 g) = 0.642 W/kg; SAR(10 g) = 0.458 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.691 W/kg




0 dB = 0.691 W/kg = -1.61 dBW/kg



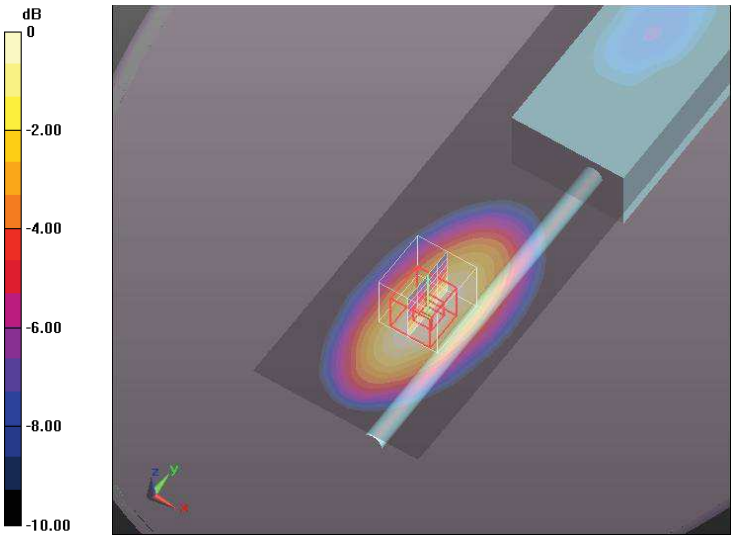
## TETRA 799-805 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 6

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-17**

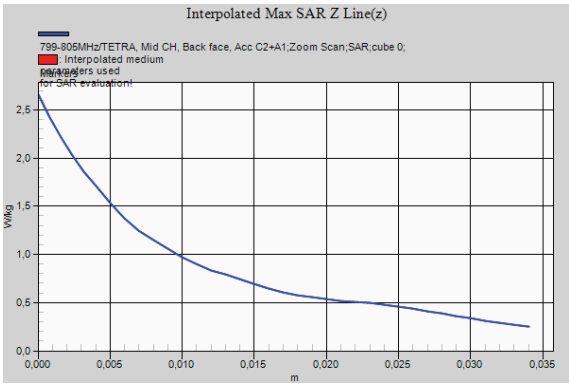
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 802.013 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 1.01 S/m; $\varepsilon_r$ = 55.394; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/799-805MHz/TETRA, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.96 W/kg

**Flat Phantom, Body, d=0mm,/799-805MHz/TETRA, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.25 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 2.66 W/kg
**SAR(1 g) = 1.7 W/kg; SAR(10 g) = 1.13 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.85 W/kg




0 dB = 1.85 W/kg = 2.67 dBW/kg



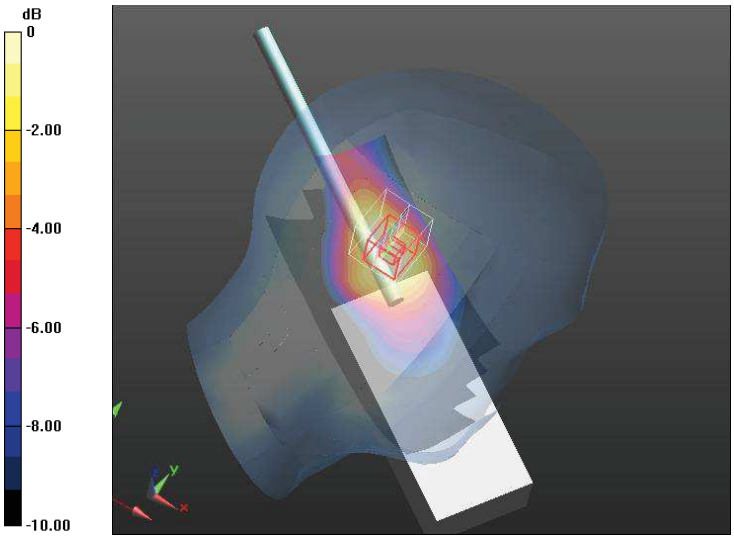
## TETRA 809-824 MHz – Left hand side – Tilted position – Plot Nº 7

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-30**

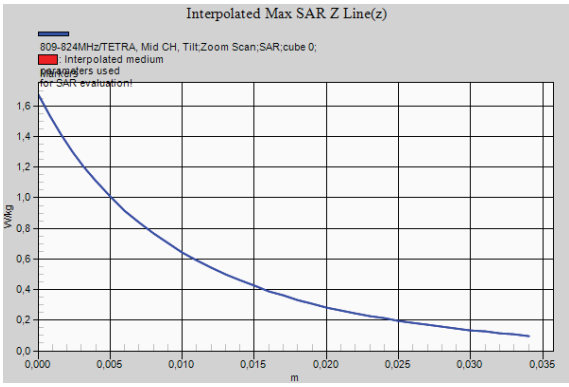
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 816.5 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 816.5 MHz; $\sigma$ = 0.863 S/m; $\varepsilon_r$ = 41.303; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side,/809-824MHz/TETRA, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.16 W/kg

**Left Hand Side,/809-824MHz/TETRA, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.93 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.67 W/kg
**SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.656 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.08 W/kg




0 dB = 1.08 W/kg = 0.33 dBW/kg



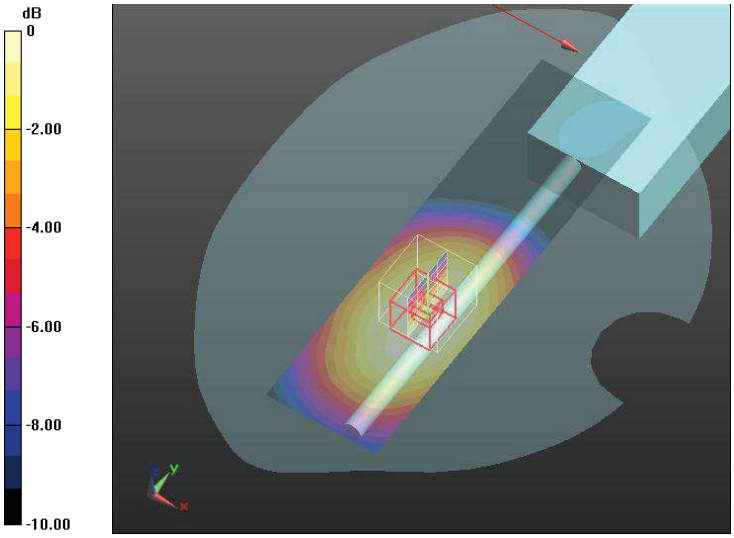
## TETRA 809-824 MHz – Front of face (Antenna side) 25 mm – Plot Nº 8

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-30**

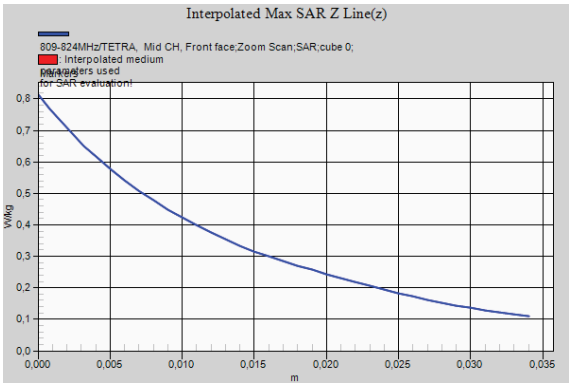
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 816.5 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 816.5 MHz; $\sigma$ = 0.863 S/m; $\varepsilon_r$ = 41.303; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face (Antenna), d=25mm/809-824MHz/TETRA, Mid CH, Front face/Area Scan (41x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.660 W/kg

**Flat Phantom, Face (Antenna), d=25mm/809-824MHz/TETRA, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.95 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.813 W/kg
**SAR(1 g) = 0.604 W/kg; SAR(10 g) = 0.437 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.623 W/kg




0 dB = 0.623 W/kg = -2.06 dBW/kg



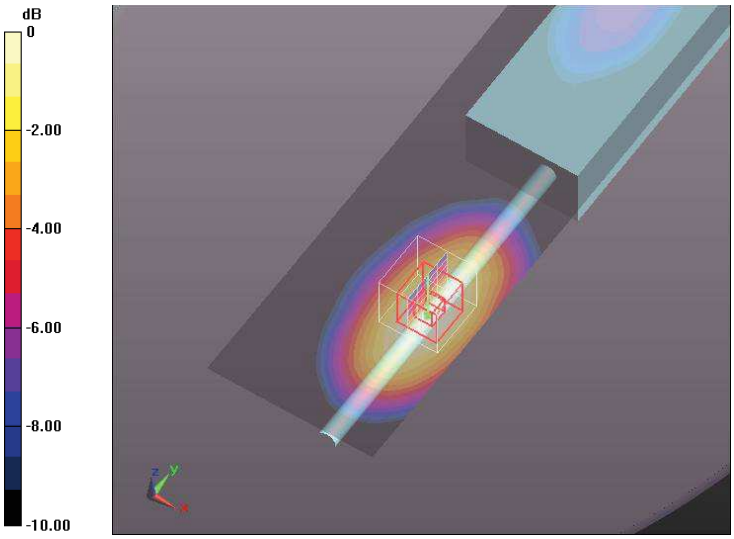
## TETRA 799-805 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 9

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-10**

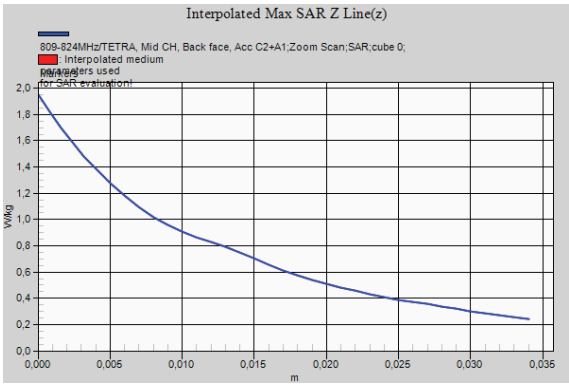
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 816.5 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 816.5 MHz; $\sigma$ = 0.99 S/m; $\varepsilon_r$ = 53.749; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm/809-824MHz/TETRA, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.49 W/kg

**Flat Phantom, Body, d=0mm/809-824MHz/TETRA, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.997 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.95 W/kg
**SAR(1 g) = 1.31 W/kg; SAR(10 g) = 0.912 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.41 W/kg




0 dB = 1.41 W/kg = 1.49 dBW/kg



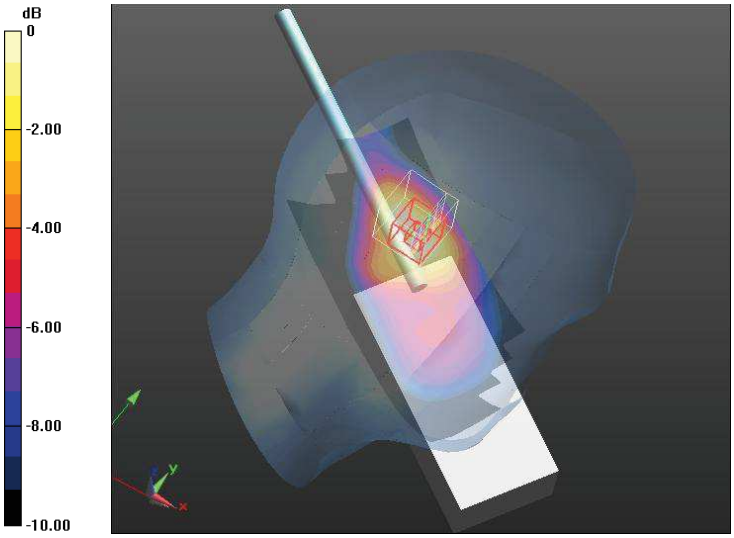
## TETRA 854-869 MHz – Left hand side – Tilted position – Plot Nº 10

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-30**

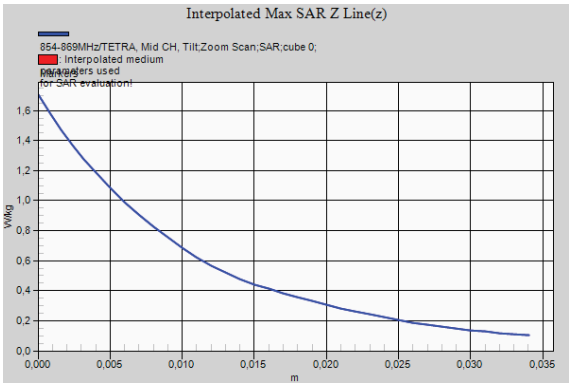
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 861.5 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 861.5 MHz; $\sigma$ = 0.903 S/m; $\varepsilon_r$ = 40.63; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.25, 8.25, 8.25); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side,/854-869MHz/TETRA, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.27 W/kg

**Left Hand Side,/854-869MHz/TETRA, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.71 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.71 W/kg
**SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.680 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.17 W/kg




0 dB = 1.17 W/kg = 0.68 dBW/kg



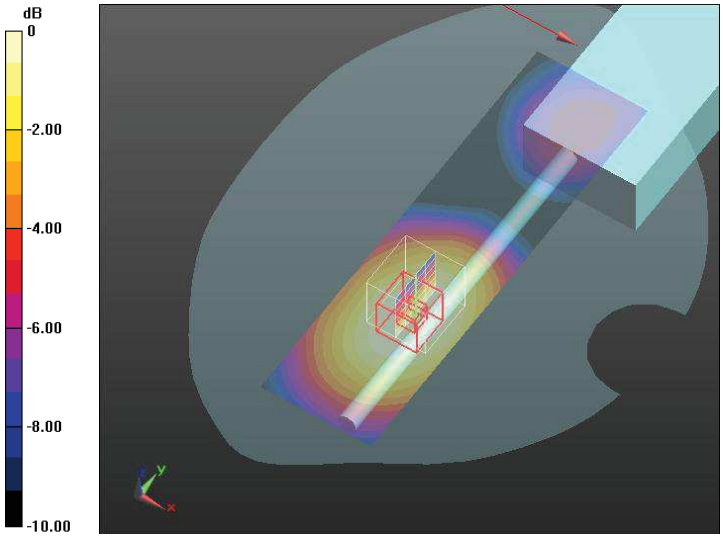
## TETRA 854-869 MHz – Front of face (Antenna side) 25 mm – Plot Nº 11

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-30**

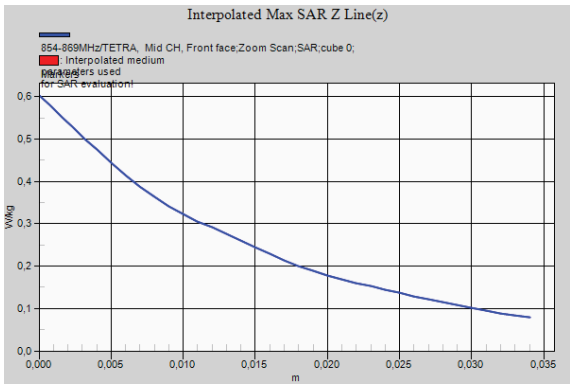
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 861.5 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 861.5 MHz; $\sigma$ = 0.903 S/m; $\varepsilon_r$ = 40.63; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.25, 8.25, 8.25); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face (Antenna), d=25mm/854-869MHz/TETRA, Mid CH, Front face/Area Scan (41x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.499 W/kg

**Flat Phantom, Face (Antenna), d=25mm/854-869MHz/TETRA, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.73 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.603 W/kg
**SAR(1 g) = 0.453 W/kg; SAR(10 g) = 0.327 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.484 W/kg




0 dB = 0.484 W/kg = -3.15 dBW/kg



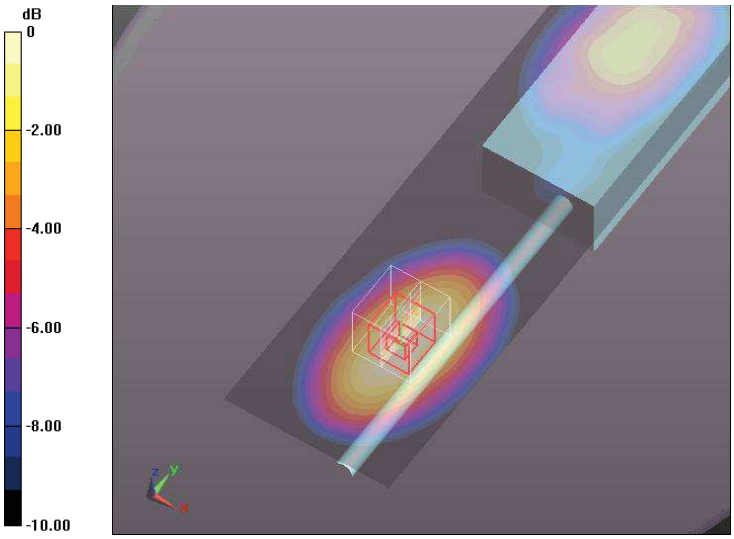
## TETRA 854-869 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 12

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-11**

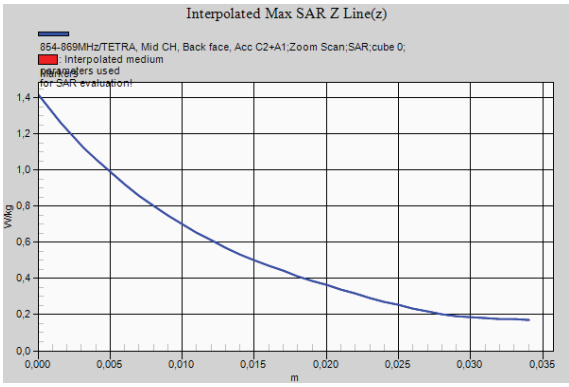
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TETRA (0); Frequency: 861.5 MHz; Duty Cycle: 1:4.00037
Medium parameters used (interpolated): f = 861.5 MHz; $\sigma$ = 1.04 S/m; $\varepsilon_r$ = 53.185; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.49, 8.49, 8.49); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm/854-869MHz/TETRA, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.09 W/kg

**Flat Phantom, Body, d=0mm/854-869MHz/TETRA, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.01 V/m; Power Drift = 0.27 dB
Peak SAR (extrapolated) = 1.42 W/kg
**SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.698 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.10 W/kg




0 dB = 1.10 W/kg = 0.41 dBW/kg



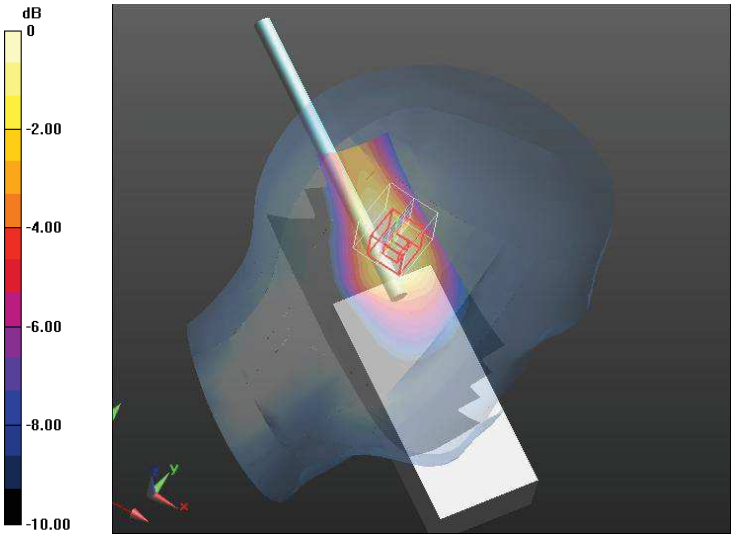
## TI D-LMR 769-775 MHz – Left hand side – Tilted position – Plot Nº 13

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-03**

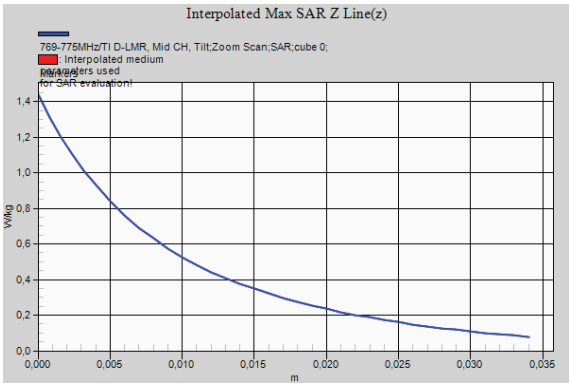
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 772.013 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.904 S/m; $\varepsilon_r$ = 42.532; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/769-775MHz/TI D-LMR, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.00 W/kg

**Left Hand Side/769-775MHz/TI D-LMR, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.76 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.44 W/kg
**SAR(1 g) = 0.857 W/kg; SAR(10 g) = 0.527 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.926 W/kg




0 dB = 0.926 W/kg = -0.33 dBW/kg



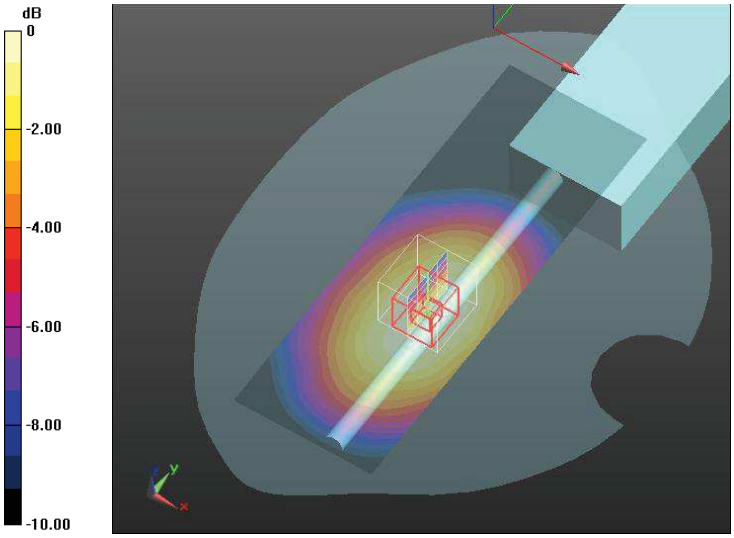
## TI D-LMR 769-775 MHz – Front of face (Antenna side) 25 mm – Plot Nº 14

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-04**

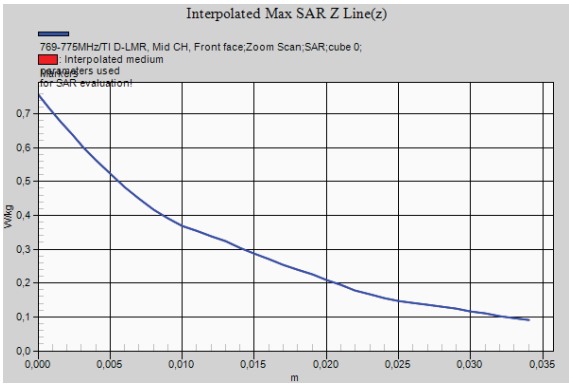
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 772.013 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.904 S/m; $\varepsilon_r$ = 42.532; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face, d=25mm, Antenna side/769-775MHz/TI D-LMR, Mid CH, Front face/Area Scan (51x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.594 W/kg

**Flat Phantom, Face, d=25mm, Antenna side/769-775MHz/TI D-LMR, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.28 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.756 W/kg
**SAR(1 g) = 0.530 W/kg; SAR(10 g) = 0.379 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.564 W/kg




0 dB = 0.564 W/kg = -2.49 dBW/kg

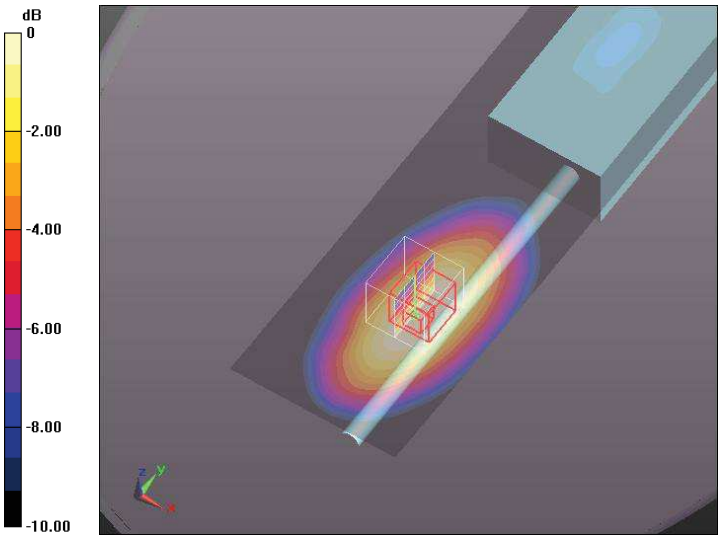


## TI D-LMR 769-775 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 15

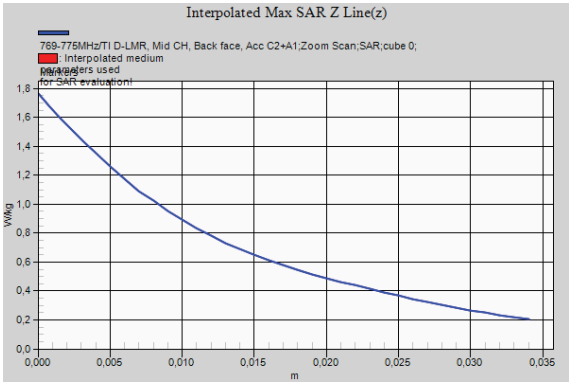
**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-17**

**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 772.013 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.994 S/m; $\varepsilon_r$ = 55.764; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/769-775MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.39 W/kg
**Flat Phantom, Body, d=0mm,/769-775MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.768 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.77 W/kg
**SAR(1 g) = 1.26 W/kg; SAR(10 g) = 0.874 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.36 W/kg




0 dB = 1.36 W/kg = 1.34 dBW/kg



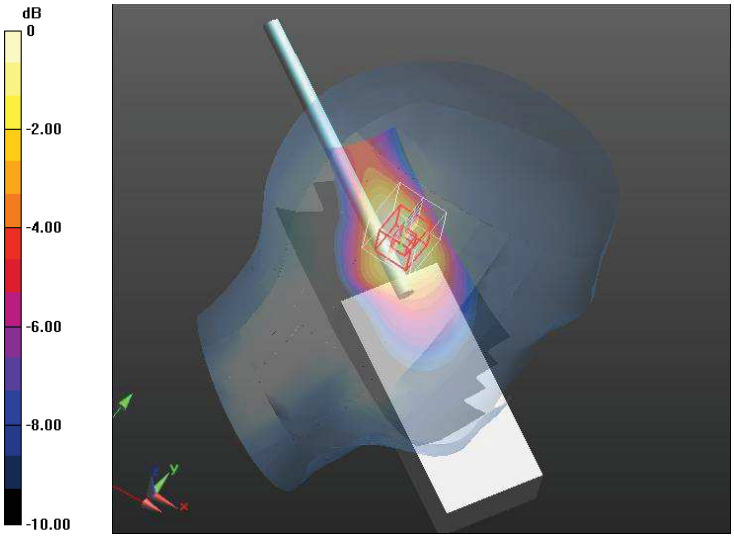
## TI D-LMR 799-805 MHz – Left hand side – Tilted position – Plot Nº 16

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-03**

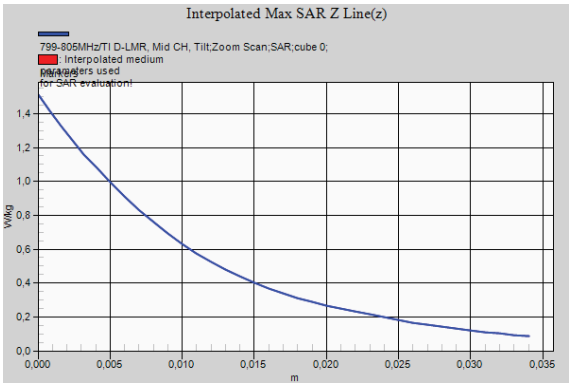
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 802.013 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 0.934 S/m; $\varepsilon_r$ = 42.154; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side/799-805MHz/TI D-LMR, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.21 W/kg

**Left Hand Side/799-805MHz/TI D-LMR, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.84 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.51 W/kg
**SAR(1 g) = 1 W/kg; SAR(10 g) = 0.626 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.06 W/kg




0 dB = 1.06 W/kg = 0.25 dBW/kg



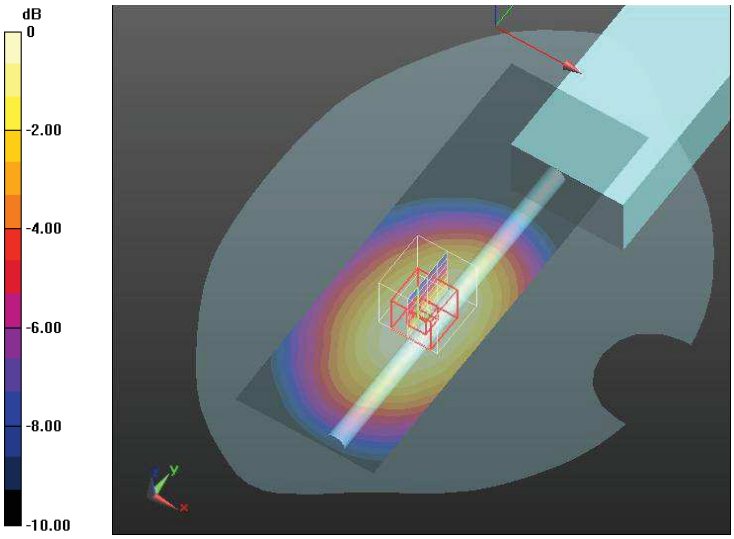
## TI D-LMR 799-805 MHz – Front of face (Antenna side) 25 mm – Plot Nº 17

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-04**

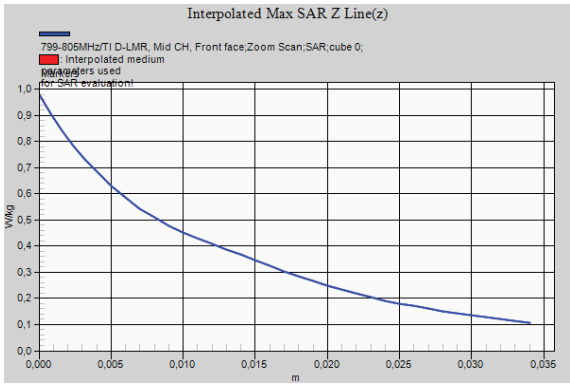
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 802.013 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 0.934 S/m; $\varepsilon_r$ = 42.154; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face, d=25mm, Antenna side/799-805MHz/TI D-LMR, Mid CH, Front face/Area Scan (51x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.739 W/kg
**Flat Phantom, Face, d=25mm, Antenna side/799-805MHz/TI D-LMR, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.43 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.979 W/kg
**SAR(1 g) = 0.654 W/kg; SAR(10 g) = 0.464 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.692 W/kg




0 dB = 0.692 W/kg = -1.60 dBW/kg



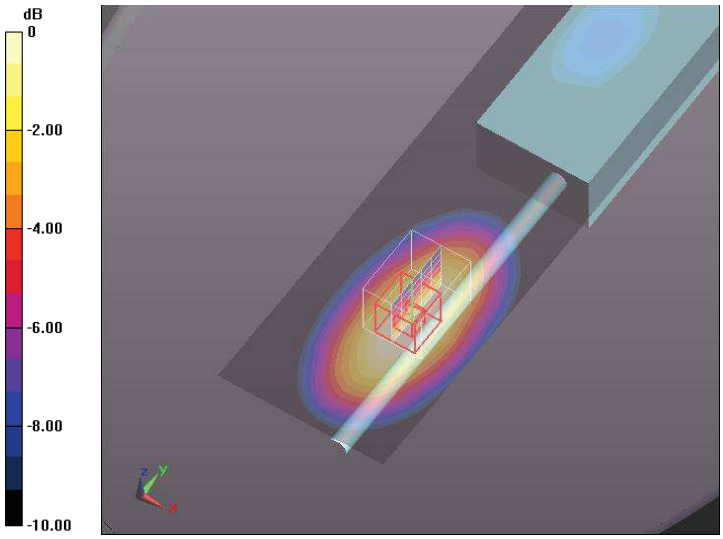
## TI D-LMR 799-805 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 18

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-18**

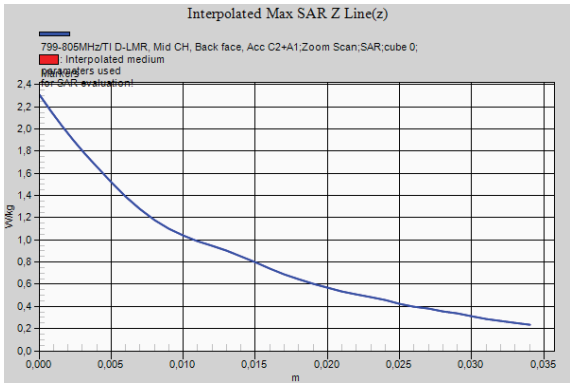
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 802.013 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 1.01 S/m; $\varepsilon_r$ = 55.394; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/799-805MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.73 W/kg

**Flat Phantom, Body, d=0mm,/799-805MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x6x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.51 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.31 W/kg
**SAR(1 g) = 1.53 W/kg; SAR(10 g) = 1.04 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.66 W/kg




0 dB = 1.66 W/kg = 2.20 dBW/kg



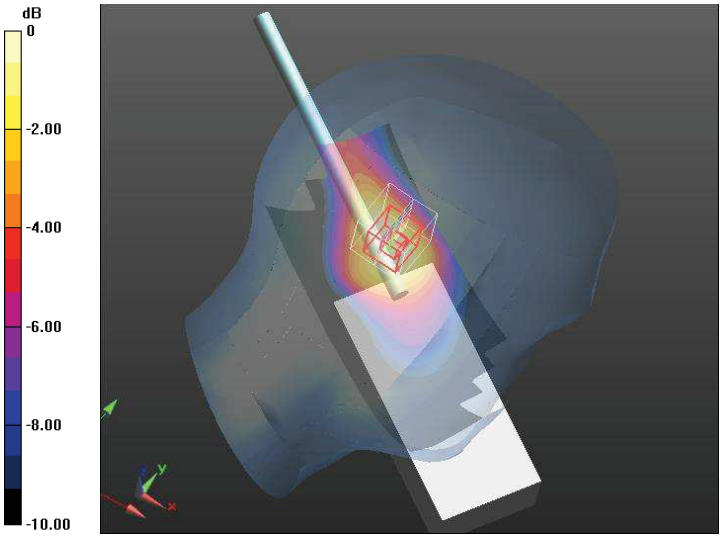
## TI D-LMR 809-824 MHz – Left hand side – Tilted position – Plot Nº 19

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-29**

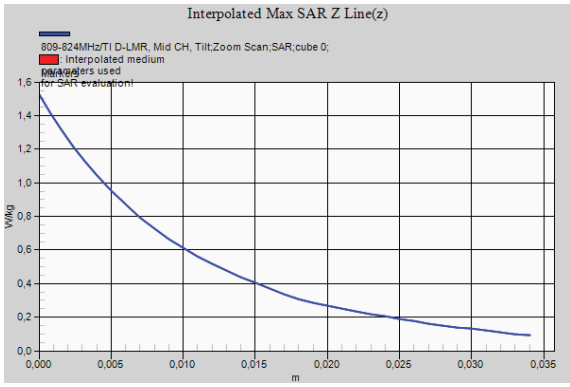
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 816.5 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 816.5 MHz; $\sigma$ = 0.863 S/m; $\varepsilon_r$ = 41.303; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side,/809-824MHz/TI D-LMR, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.10 W/kg

**Left Hand Side,/809-824MHz/TI D-LMR, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.33 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.53 W/kg
**SAR(1 g) = 0.992 W/kg; SAR(10 g) = 0.616 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.04 W/kg




0 dB = 1.04 W/kg = 0.17 dBW/kg



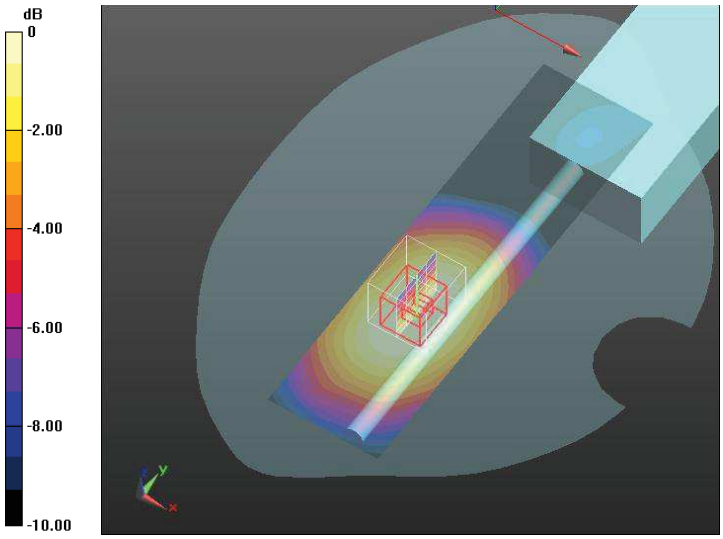
## TI D-LMR 809-824 MHz – Front of face (Antenna side) 25 mm – Plot Nº 20

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-30**

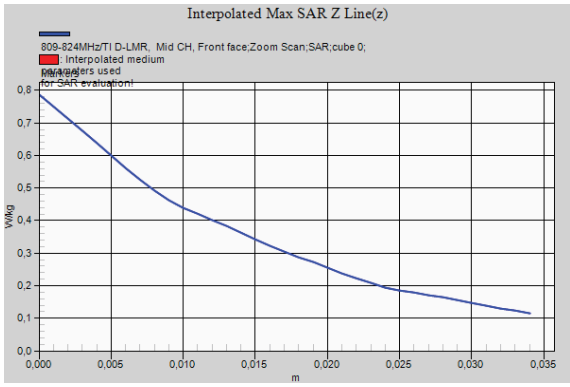
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 816.5 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 816.5 MHz; $\sigma$ = 0.863 S/m; $\varepsilon_r$ = 41.303; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face (Antenna), d=25mm/809-824MHz/TI D-LMR, Mid CH, Front face/Area Scan (41x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.705 W/kg

**Flat Phantom, Face (Antenna), d=25mm/809-824MHz/TI D-LMR, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.77 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.787 W/kg
**SAR(1 g) = 0.640 W/kg; SAR(10 g) = 0.464 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.658 W/kg




0 dB = 0.658 W/kg = -1.82 dBW/kg



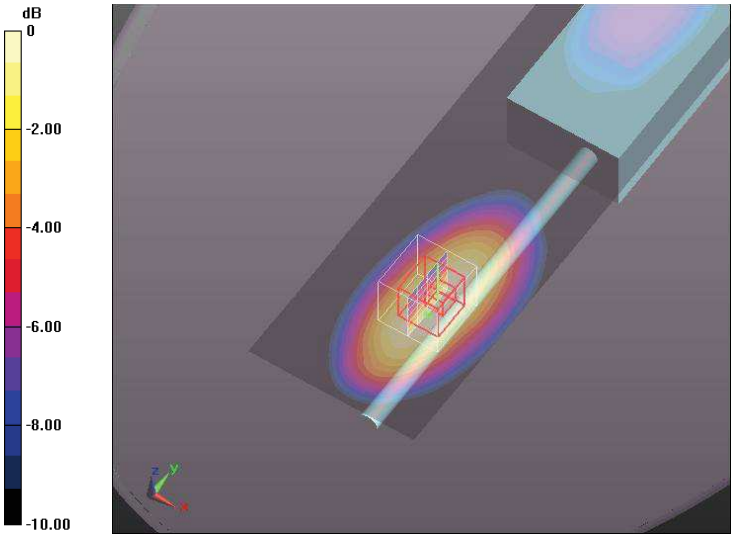
## TI D-LMR 809-824 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 21

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-11**

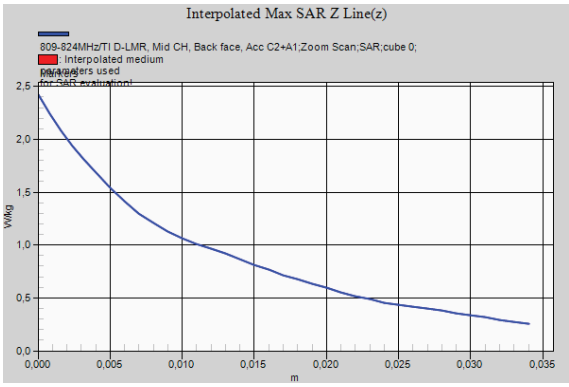
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 816.5 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 816.5 MHz; $\sigma$ = 0.99 S/m; $\varepsilon_r$ = 53.749; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.59, 8.59, 8.59); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm/809-824MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.84 W/kg

**Flat Phantom, Body, d=0mm/809-824MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.33 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.42 W/kg
**SAR(1 g) = 1.6 W/kg; SAR(10 g) = 1.1 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.77 W/kg




0 dB = 1.77 W/kg = 2.48 dBW/kg



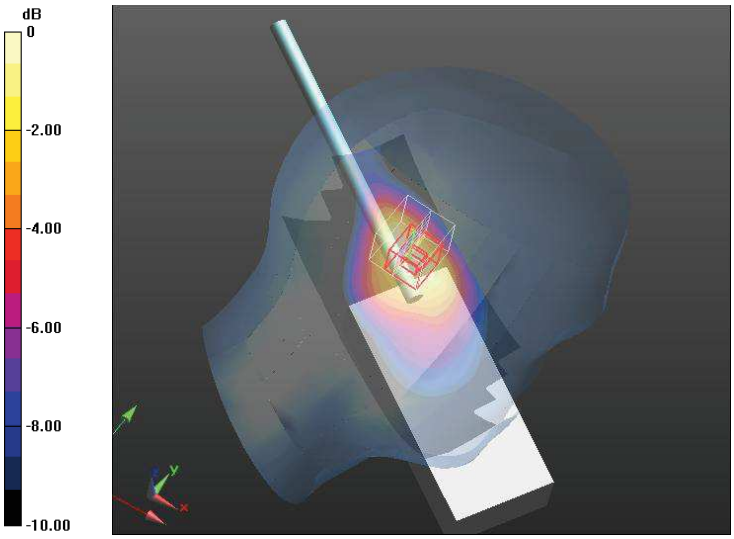
## TI D-LMR 854-869 MHz – Left hand side – Tilted position – Plot Nº 22

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-29**

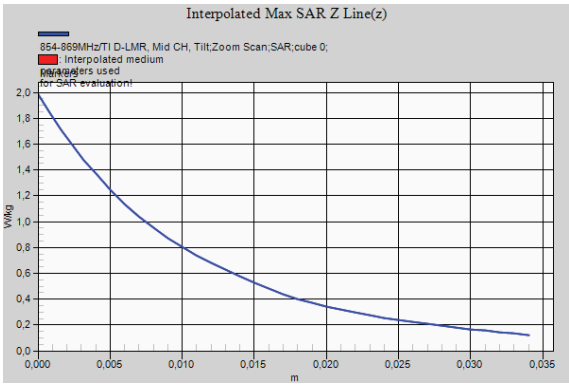
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 861.5 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 861.5 MHz; $\sigma$ = 0.903 S/m; $\varepsilon_r$ = 40.63; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.25, 8.25, 8.25); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Left Hand Side,/854-869MHz/TI D-LMR, Mid CH, Tilt/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.53 W/kg

**Left Hand Side,/854-869MHz/TI D-LMR, Mid CH, Tilt/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.64 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.98 W/kg
**SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.779 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.39 W/kg




0 dB = 1.39 W/kg = 1.43 dBW/kg



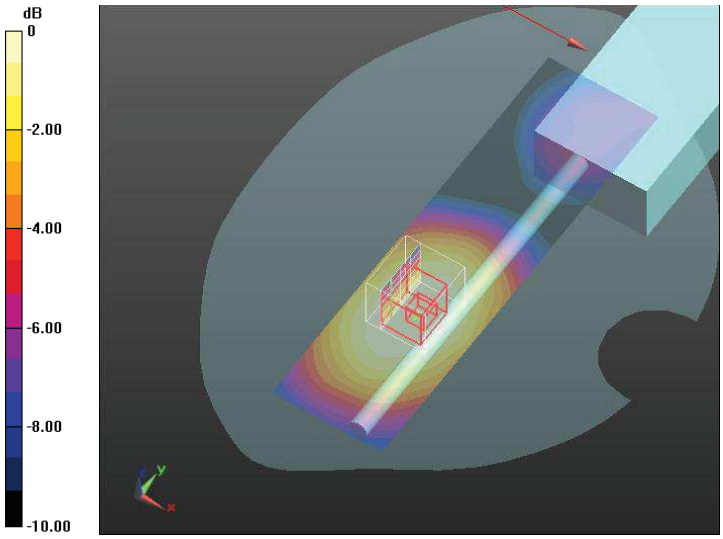
## TI D-LMR 854-869 MHz – Front of face (Antenna side) 25 mm – Plot Nº 23

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-30**

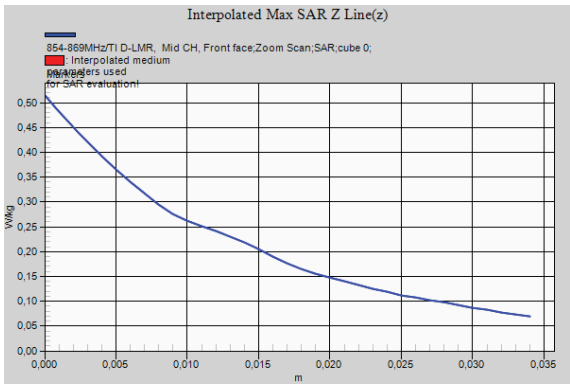
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 861.5 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 861.5 MHz; $\sigma$ = 0.903 S/m; $\varepsilon_r$ = 40.63; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.25, 8.25, 8.25); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face (Antenna), d=25mm/854-869MHz/TI D-LMR, Mid CH, Front face/Area Scan (41x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.460 W/kg

**Flat Phantom, Face (Antenna), d=25mm/854-869MHz/TI D-LMR, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.10 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.515 W/kg
**SAR(1 g) = 0.390 W/kg; SAR(10 g) = 0.287 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.407 W/kg




0 dB = 0.407 W/kg = -3.90 dBW/kg



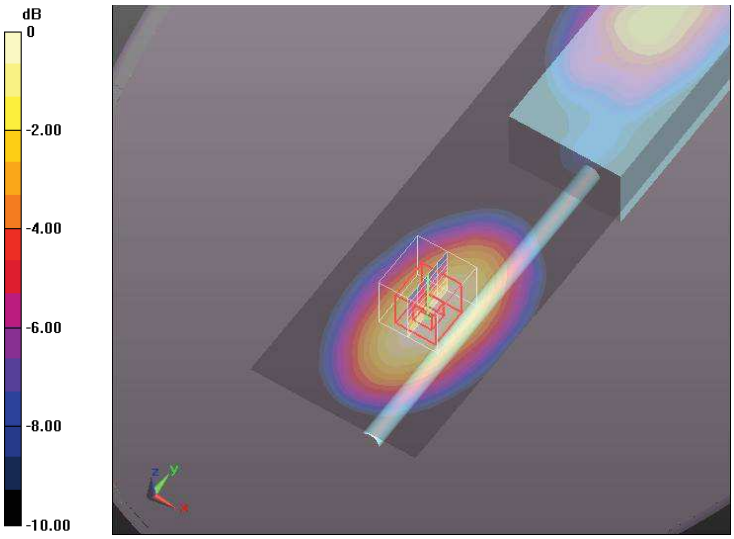
## TI D-LMR 854-869 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 24

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-11**

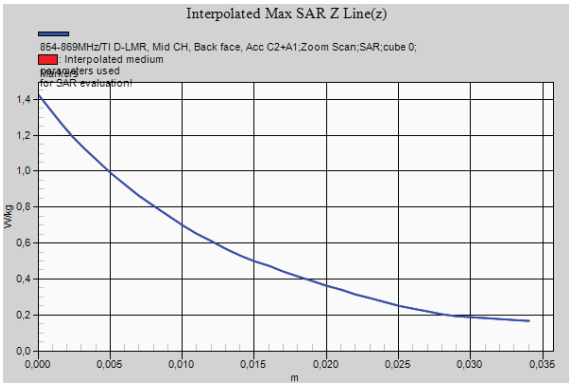
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, TI D-LMR (0); Frequency: 861.5 MHz; Duty Cycle: 1:4.30031
Medium parameters used (interpolated): f = 861.5 MHz; $\sigma$ = 1.04 S/m; $\varepsilon_r$ = 53.185; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.49, 8.49, 8.49); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm/854-869MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.10 W/kg

**Flat Phantom, Body, d=0mm/854-869MHz/TI D-LMR, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.18 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.43 W/kg
**SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.700 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.10 W/kg




0 dB = 1.10 W/kg = 0.41 dBW/kg



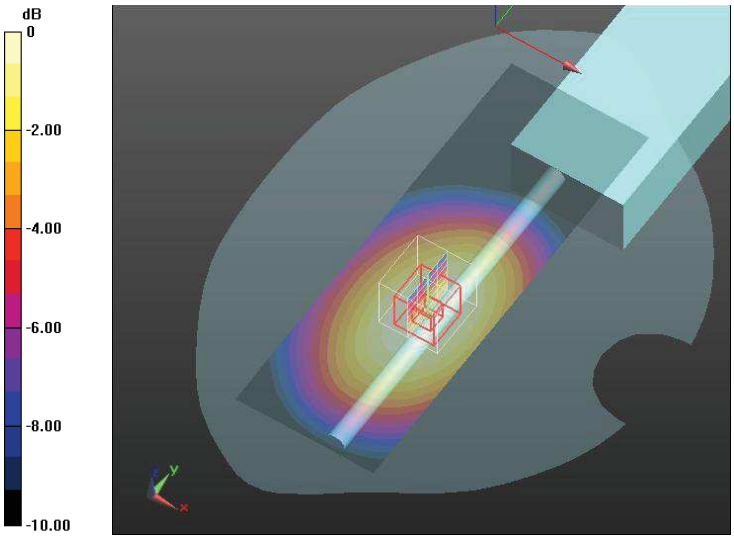
## P25 769-775 MHz – Front of face (Antenna side) 25 mm – Plot Nº 25

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-04**

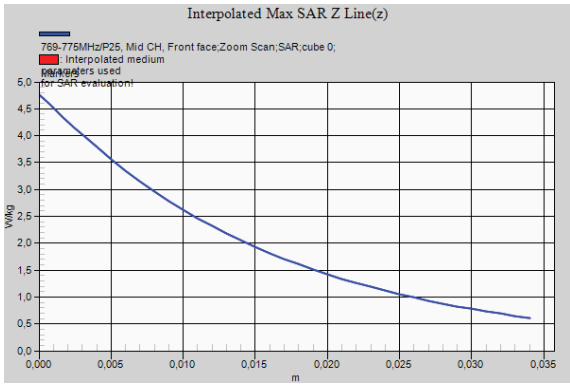
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, P25 (0); Frequency: 772.013 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.904 S/m; $\varepsilon_r$ = 42.532; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face, d=25mm, Antenna side/769-775MHz/P25, Mid CH, Front face/Area Scan (51x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 3.97 W/kg

**Flat Phantom, Face, d=25mm, Antenna side/769-775MHz/P25, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.31 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 4.76 W/kg
**SAR(1 g) = 3.58 W/kg; SAR(10 g) = 2.58 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 3.79 W/kg




0 dB = 3.79 W/kg = 5.79 dBW/kg



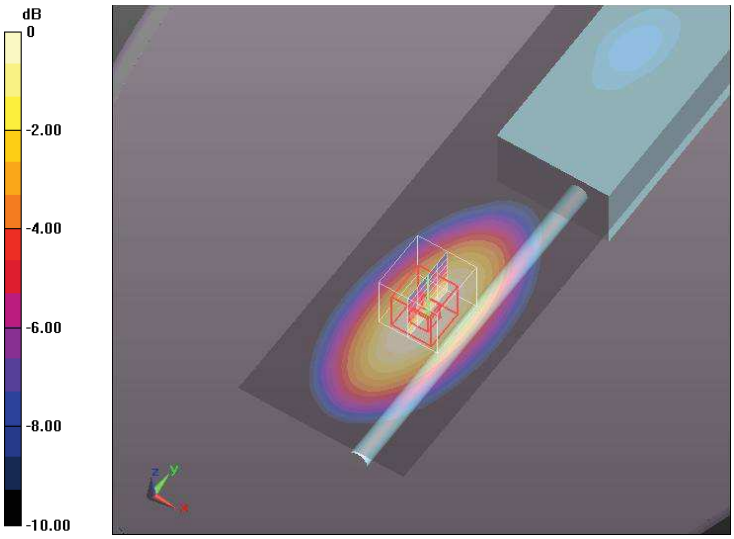
## P25 769-775 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 26

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-18**

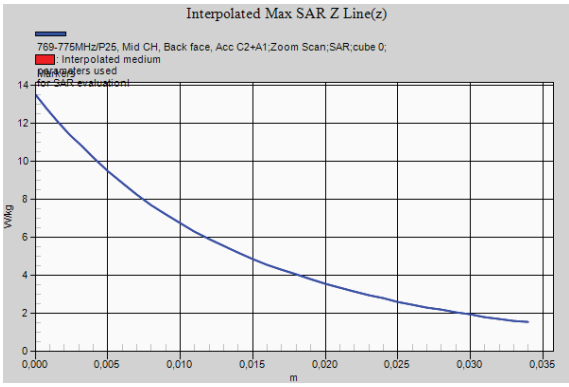
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, P25 (0); Frequency: 772.013 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 772.013 MHz; $\sigma$ = 0.994 S/m; $\varepsilon_r$ = 55.764; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/769-775MHz/P25, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 11.1 W/kg

**Flat Phantom, Body, d=0mm,/769-775MHz/P25, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.09 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 13.5 W/kg
**SAR(1 g) = 9.51 W/kg; SAR(10 g) = 6.48 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 10.2 W/kg




0 dB = 10.2 W/kg = 10.09 dBW/kg



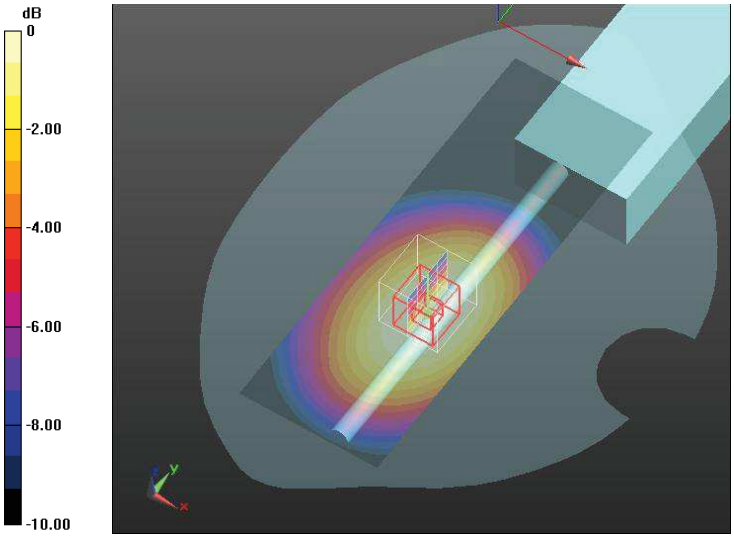
## P25 799-805 MHz – Front of face (Antenna side) 25 mm – Plot Nº 27

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-04**

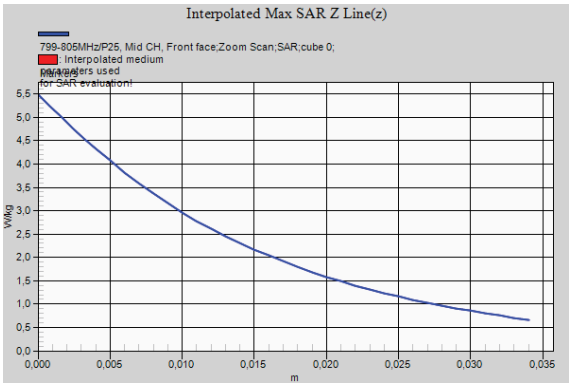
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, P25 (0); Frequency: 802.013 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 0.934 S/m; $\varepsilon_r$ = 42.154; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Face, d=25mm, Antenna side/799-805MHz/P25, Mid CH, Front face/Area Scan (51x151x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 4.65 W/kg

**Flat Phantom, Face, d=25mm, Antenna side/799-805MHz/P25, Mid CH, Front face/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.91 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 5.49 W/kg
**SAR(1 g) = 4.09 W/kg; SAR(10 g) = 2.92 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 4.33 W/kg




0 dB = 4.33 W/kg = 6.36 dBW/kg



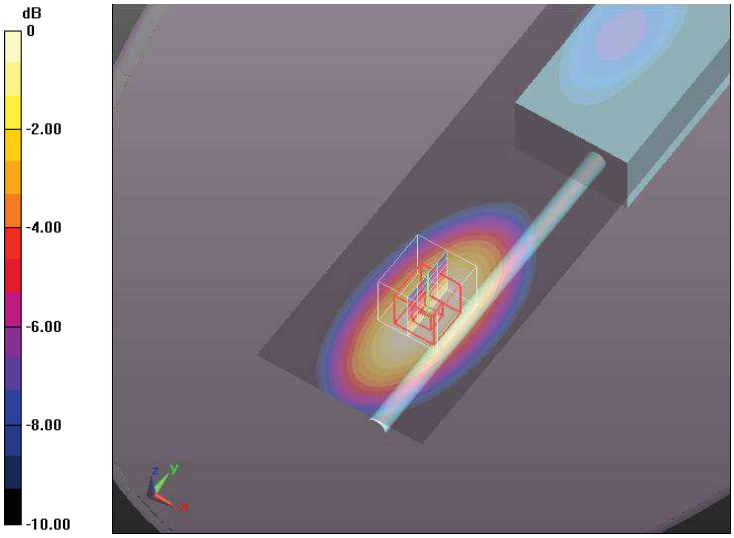
## P25 799-805 MHz – Body – Carry 2+Audio 1 Accesories – Plot Nº 28

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-19**

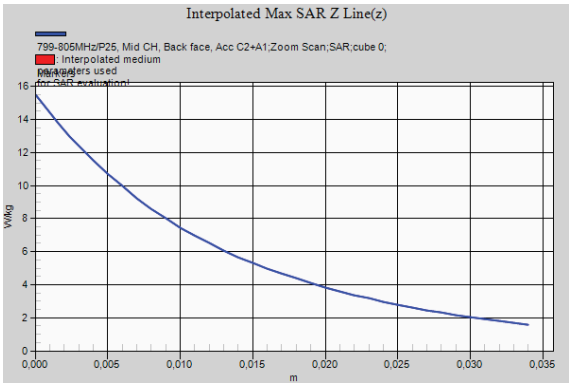
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, P25 (0); Frequency: 802.013 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 1.01 S/m; $\varepsilon_r$ = 55.394; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/799-805MHz/P25, Mid CH, Back face, Acc C2+A1/Area Scan (61x231x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 12.3 W/kg

**Flat Phantom, Body, d=0mm,/799-805MHz/P25, Mid CH, Back face, Acc C2+A1/Zoom Scan (5x5x7)/Cube 0:**
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.46 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 15.5 W/kg
**SAR(1 g) = 10.7 W/kg; SAR(10 g) = 7.19 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 11.5 W/kg




0 dB = 11.5 W/kg = 10.61 dBW/kg



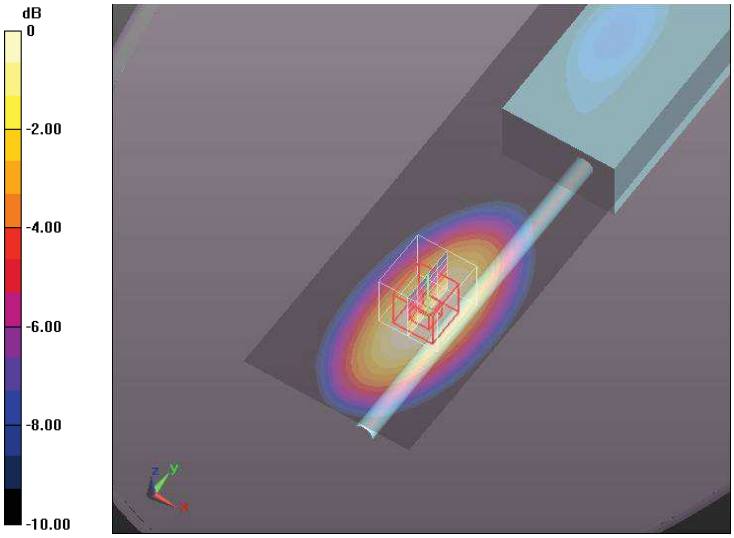
## P25 799-805 MHz – Body Variability – Carry 2+Audio 1 Accesories – Plot Nº 29

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-19**

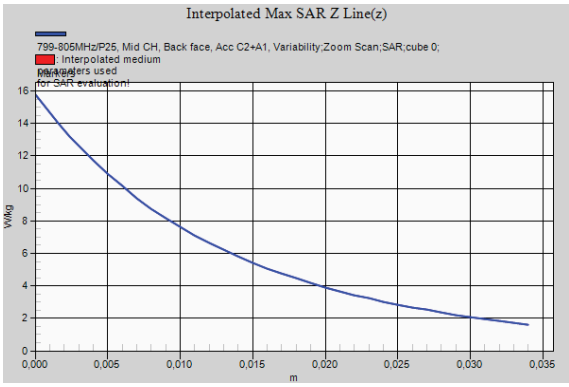
**DUT: HTT500-2+1/2 Ant; Type: PTT Radio; Serial: NYPB-48**
Communication System: UID 0, P25 (0); Frequency: 802.013 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 802.013 MHz; $\sigma$ = 1.01 S/m; $\varepsilon_r$ = 55.394; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Flat Phantom, Body, d=0mm,/799-805MHz/P25, Mid CH, Back face, Acc C2+A1, Variability/Area Scan (61x231x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 12.4 W/kg

**Flat Phantom, Body, d=0mm,/799-805MHz/P25, Mid CH, Back face, Acc C2+A1, Variability/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.05 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 15.8 W/kg
**SAR(1 g) = 10.9 W/kg; SAR(10 g) = 7.29 W/kg** (SAR corrected for target medium)
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 11.7 W/kg




0 dB = 11.7 W/kg = 10.68 dBW/kg



# **Appendix D –** System Validation Reports

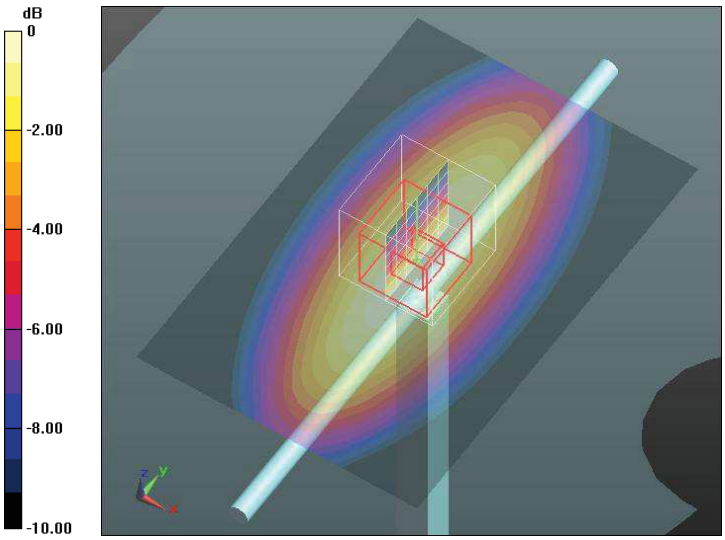
## Validation results in 750 MHz Band for Head TSL

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-03**

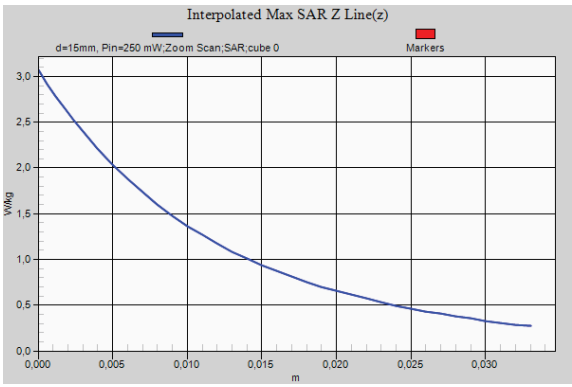
**DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1036**
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.89 S/m; $\varepsilon_r$ = 42.84; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.82, 8.82, 8.82); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Configuration 750MHz_2017-04-03/d=15mm, Pin=250 mW/Area Scan (61x91x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.37 W/kg

**Configuration 750MHz_2017-04-03/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.61 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.07 W/kg
**SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.34 W/kg** (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.40 W/kg




0 dB = 2.40 W/kg = 3.80 dBW/kg



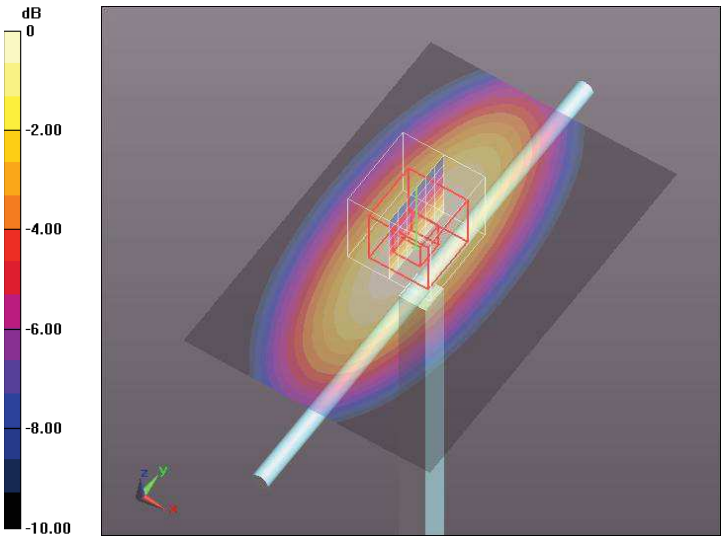
## Validation results in 750 MHz Band for Body TSL

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-17**

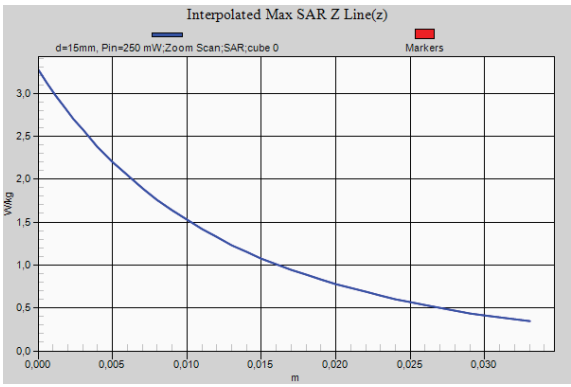
**DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1036**
Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.98 S/m; $\varepsilon_r$ = 55.9; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.61, 8.61, 8.61); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Configuration 750MHz, 2017-04-17/d=15mm, Pin=250 mW/Area Scan (61x91x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.59 W/kg

**Configuration 750MHz, 2017-04-17/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.05 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 3.27 W/kg
**SAR(1 g) = 2.21 W/kg; SAR(10 g) = 1.47 W/kg** (SAR corrected for target medium)
Maximum value of SAR (measured) = 2.57 W/kg




0 dB = 2.57 W/kg = 4.10 dBW/kg



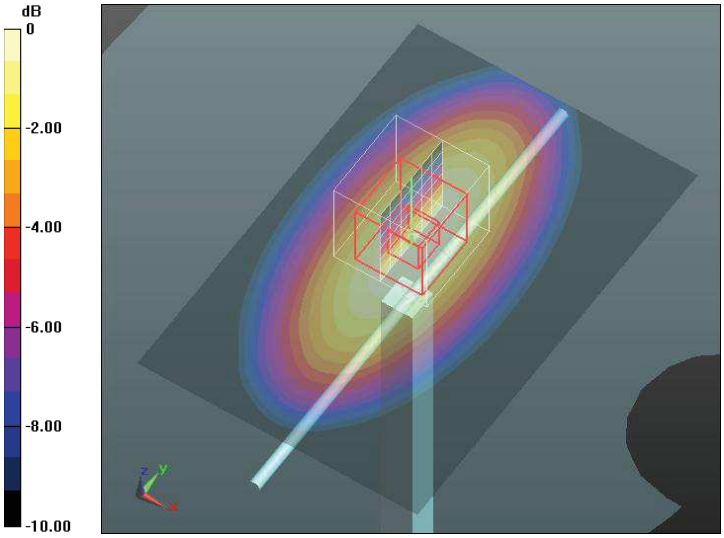
## Validation results in 900 MHz Band for Head TSL

**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-03-29**

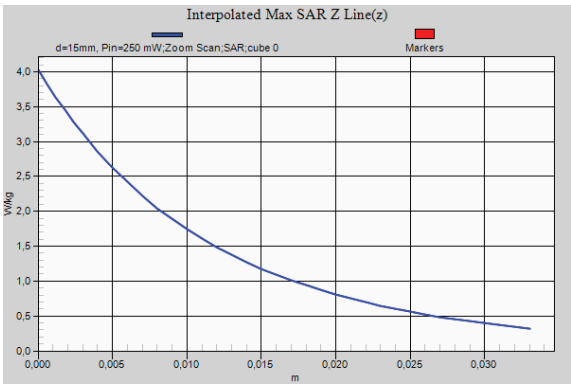
**DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007**
Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; $\sigma$ = 0.95 S/m; $\varepsilon_r$ = 40.1; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.25, 8.25, 8.25); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Configuration 900MHz_2017-03-29/d=15mm, Pin=250 mW/Area Scan (61x91x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.11 W/kg

**Configuration 900MHz_2017-03-29/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.39 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 4.02 W/kg
**SAR(1 g) = 2.67 W/kg; SAR(10 g) = 1.72 W/kg** (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.11 W/kg




0 dB = 3.11 W/kg = 4.93 dBW/kg



## Validation results in 900 MHz Band for Body TSL

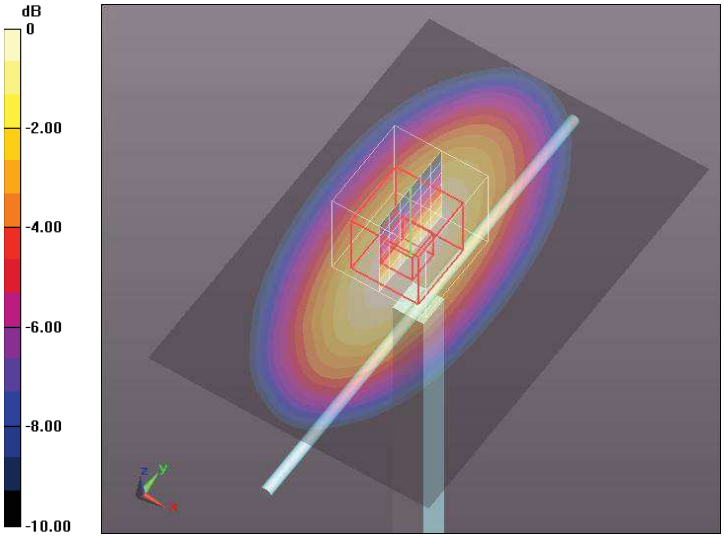
**Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 2017-04-10**

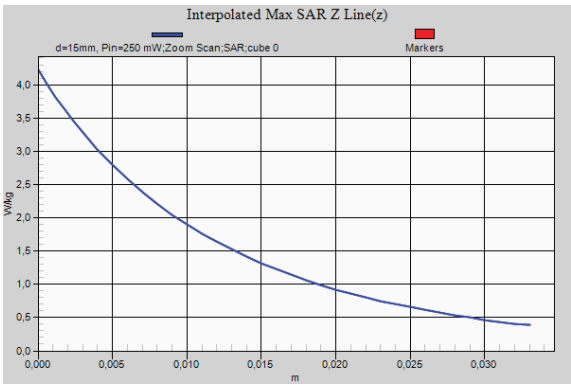
**DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007**
Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; $\sigma$ = 1.08 S/m; $\varepsilon_r$ = 52.62; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:
- Probe: EX3DV4 - SN3687; ConvF(8.49, 8.49, 8.49); Calibrated: 2016-07-26;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 2016-07-18
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

**Configuration 900MHz, 2017-04-10/d=15mm, Pin=250 mW/Area Scan (61x91x1):**
Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.28 W/kg

**Configuration 900MHz, 2017-04-10/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:**
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.35 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 4.22 W/kg
**SAR(1 g) = 2.81 W/kg; SAR(10 g) = 1.83 W/kg** (SAR corrected for target medium)
Maximum value of SAR (measured) = 3.28 W/kg




0 dB = 3.28 W/kg = 5.16 dBW/kg