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TEST REPORT

Report Reference No. : CTC20201046E01
FCC ID : 2AO8O-COMARK-6
Applicant's name : Comark LLC
Address : 440 FORTUNE BLVD MILFORD, MA01757, USA
Manufacturer : Comark LLC
Address : 440 FORTUNE BLVD MILFORD, MA01757, USA
Test item description : 6" Rugged PDA
Trade Mark : COMARK
Model/Type reference : COMARK-6
Listed Model(s) : COMARK-6W, COMARK-6A, COMARK-6Q
Standard : FCC 47 CFR Part2.1093
IEEE 1528: 2013
ANSI/IEEE C95.1: 2005
Date of receipt of test sample : Jul. 06, 2020
Date of testing : Jul. 15, 2020 to Jul.17, 2020
Date of issue : Jul. 20, 2020
Result : PASS

Compiled by
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Testing Laboratory Name : CTC Laboratories, Inc.

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Any objections must be raised to CTC within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. The test report merely correspond to the test sample.

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1. Test Standards and Report version

1.1. Test Standards

The tests were performed according to following standards:

FCC 47 Part 2.1093: Radiofrequency Radiation Exposure Evaluation:Portable Devices

IEEE Std C95.1:2005: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz.

IEEE Std 1528™-2013: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz

KDB 865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations

KDB 447498 D01 General RF Exposure Guidance v06: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies

KDB 248227 D01 802.11 Wi-Fi SAR v02r02: SAR Guidance for IEEE 802.11(Wi-Fi)Transmitters.

KDB 941225 D07 UMPC Mini Tablet v01r02: SAR Evaluation Procedures for UMPC Mini-tablet Devices.

| Revision No. | Date of issue | Description |
|--------------|---------------|-------------|
| N/A | 2020-07-20 | Original |
| | | |
| | | |
| | | |
| | | |

2. Summary

2.1. Client Information

| | |
|---------------|--|
| Applicant: | Comark LLC |
| Address: | 440 FORTUNE BLVD MILFORD, MA01757, USA |
| Manufacturer: | Comark LLC |
| Address: | 440 FORTUNE BLVD MILFORD, MA01757, USA |

2.2. Product Description

| | |
|--------------------------|-----------------------------------|
| Name of EUT: | 6" Rugged PDA |
| Trade Mark: | COMARK |
| Model No.: | COMARK-6 |
| Listed Model(s): | COMARK-6W,COMARK-6A,COMARK-6Q |
| Power supply: | DC 3.7V |
| Device Category: | Portable |
| RF Exposure Environment: | General Population / Uncontrolled |
| Hardware version: | EM_I62H_MB_PCB_V14R4 |
| Software version: | 10.0.17763.1 |

Maximum SAR Value

| | |
|----------------------------|------------------------------------|
| Separation Distance: | Body: 5mm |
| Max Report SAR Value (1g): | WIFI 2.4G: 0.278 W/Kg |
| | WIFI 5G: 0.272 W/Kg |
| | Simultaneous TX: 0.800 W/Kg |

WIFI 2.4G

| | |
|----------------------|---|
| Supported type: | 802.11b/802.11g/802.11n HT20/802.11n HT40 |
| Modulation Type: | BPSK /QPSK /16QAM /64QAM |
| Operation frequency: | 2412MHz~2462MHz |
| Channel separation: | 5MHz |
| Antenna type: | FPCB Antenna |

WIFI 5G

| | |
|----------------------|---|
| Supported type: | 802.11a/802.11n HT20/802.11n HT40/802.11ac VHT20/802.11ac VHT40 /802.11ac VHT80 |
| Modulation Type: | BPSK /QPSK /16QAM /64QAM/128QAM/256QAM |
| Operation frequency: | U-NII-1:5.150GHz~5.250GHz U-NII-3:5.725GHz~5.825GHz |
| Channel Bandwidth | 802.11a/n H20/ac VHT20:20MHz 802.11n H40/ac VHT40:40MHz 802.11ac(VHT80):80MHz |
| Antenna type: | FPCB Antenna |

| Bluetooth | |
|----------------------|----------------------------|
| Version: | Supported BT4.2+EDR |
| Modulation: | GFSK, $\pi/4$ DQPSK, 8DPSK |
| Operation frequency: | 2402MHz~2480MHz |
| Channel number: | 79 |
| Channel separation: | 1MHz |
| Antenna type: | FPCB Antenna |
| Bluetooth-BLE | |
| Version: | Bluetooth-BLE |
| Modulation: | GFSK |
| Operation frequency: | 2402MHz~2480MHz |
| Channel number: | 40 |
| Channel separation: | 2MHz |
| Antenna type: | FPCB Antenna |

Remark:

1. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power

3. Test Environment

3.1. Test laboratory

CTC Laboratories, Inc.

Add: 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

3.2. Test Facility

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5365

CTC Laboratories, Inc. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation. Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number: CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.

4. Equipments Used during the Test

| Test Equipment | Manufacturer | Type/Model | Serial Number | Calibration | |
|-----------------------------------|---------------|---------------|---------------|-------------|------------|
| | | | | Last Cal. | Due Date |
| Data Acquisition Electronics DAEx | SPEAG | DAE4 | 1423 | 2020/05/19 | 2021/05/18 |
| E-field Probe | SPEAG | EX3DV4 | 3974 | 2020/05/14 | 2021/05/13 |
| System Validation Dipole | SPEAG | D2450V2 | 928 | 2018/10/12 | 2021/10/11 |
| System Validation Dipole | SPEAG | D5GHzV2 | 1171 | 2018/10/13 | 2021/10/12 |
| Network analyzer | Agilent | E5071C | MY46520333 | 2019/08/13 | 2020/08/12 |
| Signal Generator | Agilent | N5182A | MY47420864 | 2019/12/28 | 2020/12/27 |
| Power sensor | Mini-Circuits | PWR-8GHS | 11609010017 | 2019/08/13 | 2020/08/12 |
| Power sensor | Mini-Circuits | PWR-8GHS | 11607130056 | 2019/08/13 | 2020/08/12 |
| Power Amplifier | Mini-Circuits | ZVE-8G+ | 103201624 | 2019/08/13 | 2020/08/12 |
| Power Amplifier | Mini-Circuits | ZHL-42W+ | 051701624 | 2019/08/13 | 2020/08/12 |
| BI-DIRECTIONAL COUPLER | Mini-Circuits | ZGBDC20-33HP+ | 996201615 | 2019/08/13 | 2020/08/12 |
| BI-DIRECTIONAL COUPLER | Mini-Circuits | ZGBDC35-93HP+ | 415101623 | 2019/08/13 | 2020/08/12 |
| Attenuator | MCL | BW-N20W5+ | 1552 | 2019/08/13 | 2020/08/12 |
| Attenuator | MCL | BW-N3W5+ | 1608 | 2019/08/13 | 2020/08/12 |
| Attenuator | MCL | / | / | 2019/08/13 | 2020/08/12 |

Note:

1. The Probe, Dipole and DAE calibration reference to the Appendix A.



5. Measurement Uncertainty

| Measurement Uncertainty | | | | | | | | | | |
|--|---|--|-------------------|-----------------------|------------|---------|----------|----------------|-----------------|-------------------|
| No. | Error Description | Type | Uncertainty Value | Probably Distribution | Div. | (Ci) 1g | (Ci) 10g | Std. Unc. (1g) | Std. Unc. (10g) | Degree of freedom |
| Measurement System | | | | | | | | | | |
| 1 | Probe calibration | B | 6.0% | N | 1 | 1 | 1 | 6.0% | 6.0% | ∞ |
| 2 | Axial isotropy | B | 4.70% | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.90% | 1.90% | ∞ |
| 3 | Hemispherical isotropy | B | 9.60% | R | $\sqrt{3}$ | 0.7 | 0.7 | 3.90% | 3.90% | ∞ |
| 4 | Boundary Effects | B | 1.00% | R | $\sqrt{3}$ | 1 | 1 | 0.60% | 0.60% | ∞ |
| 5 | Probe Linearity | B | 4.70% | R | $\sqrt{3}$ | 1 | 1 | 2.70% | 2.70% | ∞ |
| 6 | Detection limit | B | 1.00% | R | $\sqrt{3}$ | 1 | 1 | 0.60% | 0.60% | ∞ |
| 7 | RF ambient conditions-noise | B | 0.00% | R | $\sqrt{3}$ | 1 | 1 | 0.00% | 0.00% | ∞ |
| 8 | RF ambient conditions-reflection | B | 0.00% | R | $\sqrt{3}$ | 1 | 1 | 0.00% | 0.00% | ∞ |
| 9 | Response time | B | 0.80% | R | $\sqrt{3}$ | 1 | 1 | 0.50% | 0.50% | ∞ |
| 10 | Integration time | B | 5.00% | R | $\sqrt{3}$ | 1 | 1 | 2.90% | 2.90% | ∞ |
| 11 | RF ambient | B | 3.00% | R | $\sqrt{3}$ | 1 | 1 | 1.70% | 1.70% | ∞ |
| 12 | Probe positioned mech. restrictions | B | 0.40% | R | $\sqrt{3}$ | 1 | 1 | 0.20% | 0.20% | ∞ |
| 13 | Probe positioning with respect to phantom shell | B | 2.90% | R | $\sqrt{3}$ | 1 | 1 | 1.70% | 1.70% | ∞ |
| 14 | Max.SAR evalation | B | 3.90% | R | $\sqrt{3}$ | 1 | 1 | 2.30% | 2.30% | ∞ |
| Test Sample Related | | | | | | | | | | |
| 15 | Test sample positioning | A | 1.86% | N | 1 | 1 | 1 | 1.86% | 1.86% | ∞ |
| 16 | Device holder uncertainty | A | 1.70% | N | 1 | 1 | 1 | 1.70% | 1.70% | ∞ |
| 17 | Drift of output power | B | 5.00% | R | $\sqrt{3}$ | 1 | 1 | 2.90% | 2.90% | ∞ |
| Phantom and Set-up | | | | | | | | | | |
| 18 | Phantom uncertainty | B | 4.00% | R | $\sqrt{3}$ | 1 | 1 | 2.30% | 2.30% | ∞ |
| 19 | Liquid conductivity (target) | B | 5.00% | R | $\sqrt{3}$ | 0.64 | 0.43 | 1.80% | 1.20% | ∞ |
| 20 | Liquid conductivity (meas.) | A | 0.50% | N | 1 | 0.64 | 0.43 | 0.32% | 0.26% | ∞ |
| 21 | Liquid permittivity (target) | B | 5.00% | R | $\sqrt{3}$ | 0.64 | 0.43 | 1.80% | 1.20% | ∞ |
| 22 | Liquid cpermittivity (meas.) | A | 0.16% | N | 1 | 0.64 | 0.43 | 0.10% | 0.07% | ∞ |
| Combined standard uncertainty | | $u_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$ | | / | / | / | / | 9.79% | 9.67% | ∞ |
| Expanded uncertainty (confidence interval of 95 %) | | $u_e = 2u_c$ | | R | K=2 | / | / | 19.57% | 19.34% | ∞ |

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| System Check Uncertainty | | | | | | | | | | |
|--|--|--|-------------------|-----------------------|------------|---------|----------|----------------|-----------------|-------------------|
| No. | Error Description | Type | Uncertainty Value | Probably Distribution | Div. | (Ci) 1g | (Ci) 10g | Std. Unc. (1g) | Std. Unc. (10g) | Degree of freedom |
| Measurement System | | | | | | | | | | |
| 1 | Probe calibration | B | 6.0% | N | 1 | 1 | 1 | 6.0% | 6.0% | ∞ |
| 2 | Axial isotropy | B | 4.70% | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.90% | 1.90% | ∞ |
| 3 | Hemispherical isotropy | B | 9.60% | R | $\sqrt{3}$ | 0.7 | 0.7 | 3.90% | 3.90% | ∞ |
| 4 | Boundary Effects | B | 1.00% | R | $\sqrt{3}$ | 1 | 1 | 0.60% | 0.60% | ∞ |
| 5 | Probe Linearity | B | 4.70% | R | $\sqrt{3}$ | 1 | 1 | 2.70% | 2.70% | ∞ |
| 6 | Detection limit | B | 1.00% | R | $\sqrt{3}$ | 1 | 1 | 0.60% | 0.60% | ∞ |
| 7 | RF ambient conditions-noise | B | 0.00% | R | $\sqrt{3}$ | 1 | 1 | 0.00% | 0.00% | ∞ |
| 8 | RF ambient conditions-reflection | B | 0.00% | R | $\sqrt{3}$ | 1 | 1 | 0.00% | 0.00% | ∞ |
| 9 | Response time | B | 0.80% | R | $\sqrt{3}$ | 1 | 1 | 0.50% | 0.50% | ∞ |
| 10 | Integration time | B | 5.00% | R | $\sqrt{3}$ | 1 | 1 | 2.90% | 2.90% | ∞ |
| 11 | RF ambient | B | 3.00% | R | $\sqrt{3}$ | 1 | 1 | 1.70% | 1.70% | ∞ |
| 12 | Probe positioned mech. restrictions | B | 0.40% | R | $\sqrt{3}$ | 1 | 1 | 0.20% | 0.20% | ∞ |
| 13 | Probe positioning with respect to phantom shell | B | 2.90% | R | $\sqrt{3}$ | 1 | 1 | 1.70% | 1.70% | ∞ |
| 14 | Max.SAR evalution | B | 3.90% | R | $\sqrt{3}$ | 1 | 1 | 2.30% | 2.30% | ∞ |
| System validation source-dipole | | | | | | | | | | |
| 15 | Deviation of experimental dipole from numerical dipole | A | 1.58% | N | 1 | 1 | 1 | 1.58% | 1.58% | ∞ |
| 16 | Dipole axis to liquid distance | A | 1.35% | N | 1 | 1 | 1 | 1.35% | 1.35% | ∞ |
| 17 | Input power and SAR drift | B | 4.00% | R | $\sqrt{3}$ | 1 | 1 | 2.30% | 2.30% | ∞ |
| Phantom and Set-up | | | | | | | | | | |
| 18 | Phantom uncertainty | B | 4.00% | R | $\sqrt{3}$ | 1 | 1 | 2.30% | 2.30% | ∞ |
| 20 | Liquid conductivity (meas.) | A | 0.50% | N | 1 | 0.64 | 0.43 | 0.32% | 0.26% | ∞ |
| 22 | Liquid cpermittivity (meas.) | A | 0.16% | N | 1 | 0.64 | 0.43 | 0.10% | 0.07% | ∞ |
| Combined standard uncertainty | | $u_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$ | | / | / | / | / | 8.80% | 8.79% | ∞ |
| Expanded uncertainty (confidence interval of 95 %) | | $u_e = 2u_c$ | | R | K=2 | / | / | 17.59% | 17.58% | ∞ |

6. SAR Measurements System Configuration

6.1. SAR Measurement Set-up

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

A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

A data acquisition electronic (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.

A unit to operate the optical surface detector which is connected to the EOC.

The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.

The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003.

DASY5 software and SEMCAD data evaluation software.

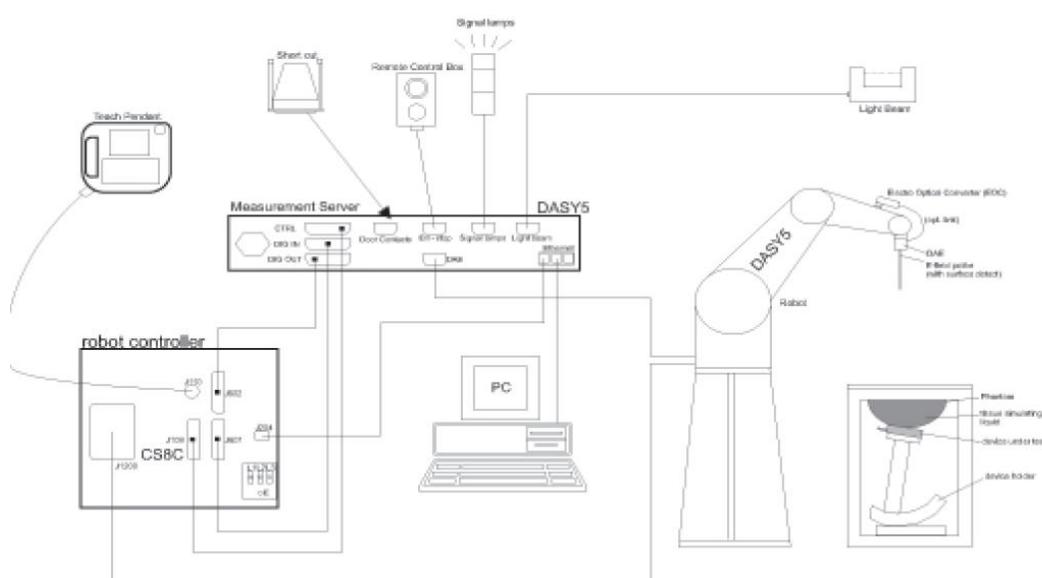
Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

The generic twin phantom enabling the testing of left-hand and right-hand usage.

The device holder for handheld Mobile Phones.

Tissue simulating liquid mixed according to the given recipes.

System validation dipoles allowing to validate the proper functioning of the system.



6.2. DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

● Probe Specification

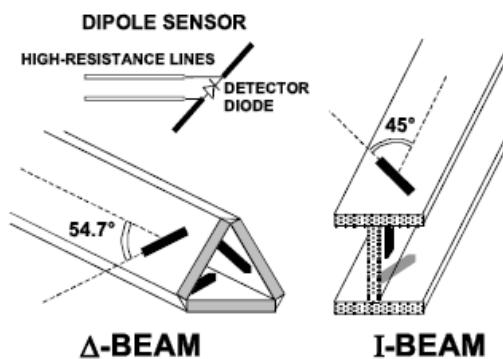
| | |
|---------------|--|
| Construction | Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |
| Calibration | ISO/IEC 17025 calibration service available. |
| Frequency | 4 MHz to 10 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz) |
| Directivity | ± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis) |
| Dynamic Range | 10 μ W/g to > 100 W/kg; Linearity: ± 0.2 dB |
| Dimensions | Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1.0 mm |
| Application | General dosimetry up to 6 GHz Dosimetry in strong gradient fields Compliance tests of Mobile Phones |
| Compatibility | DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI |



● Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



6.3. Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SPEAG. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).

System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.



SAM Twin Phantom

6.4. Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SPEAG as an integral part of the DASY system.

The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.



Device holder supplied by SPEAG

7. SAR Test Procedure

7.1. Scanning Procedure

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. $\pm 5\%$.

The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above $\pm 0.1\text{mm}$). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe (It does not depend on the surface reflectivity or the probe angle to the surface within $\pm 30^\circ$.)

Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged. After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

Zoom Scan

After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm.

Spatial Peak Detection

The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses. The DASY5 system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard’s method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space.

They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard’s method for extrapolation.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

Table 1: Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v04

| | | ≤ 3 GHz | > 3 GHz |
|---|---|--|--|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | | $5 \text{ mm} \pm 1 \text{ mm}$ | $\frac{1}{2} \cdot \delta \cdot \ln(2) \text{ mm} \pm 0.5 \text{ mm}$ |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | | $30^\circ \pm 1^\circ$ | $20^\circ \pm 1^\circ$ |
| | | $\leq 2 \text{ GHz: } \leq 15 \text{ mm}$ $2 - 3 \text{ GHz: } \leq 12 \text{ mm}$ | $3 - 4 \text{ GHz: } \leq 12 \text{ mm}$ $4 - 6 \text{ GHz: } \leq 10 \text{ mm}$ |
| Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$ | | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be \leq the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |
| Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$ | | $\leq 2 \text{ GHz: } \leq 8 \text{ mm}$ $2 - 3 \text{ GHz: } \leq 5 \text{ mm}^*$ | $3 - 4 \text{ GHz: } \leq 5 \text{ mm}^*$ $4 - 6 \text{ GHz: } \leq 4 \text{ mm}^*$ |
| Maximum zoom scan spatial resolution, normal to phantom surface | uniform grid: $\Delta z_{\text{Zoom}}(n)$ | | $3 - 4 \text{ GHz: } \leq 4 \text{ mm}$ $4 - 5 \text{ GHz: } \leq 3 \text{ mm}$ $5 - 6 \text{ GHz: } \leq 2 \text{ mm}$ |
| | graded grid | $\Delta z_{\text{Zoom}}(1):$ between 1 st two points closest to phantom surface | $\leq 4 \text{ mm}$ |
| | | $\Delta z_{\text{Zoom}}(n>1):$ between subsequent points | $\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1) \text{ mm}$ |
| Minimum zoom scan volume | x, y, z | $\geq 30 \text{ mm}$ | $3 - 4 \text{ GHz: } \geq 28 \text{ mm}$ $4 - 5 \text{ GHz: } \geq 25 \text{ mm}$ $5 - 6 \text{ GHz: } \geq 22 \text{ mm}$ |
| Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details. | | | |
| * When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB Publication 447498 is $\leq 1.4 \text{ W/kg}$, $\leq 8 \text{ mm}$, $\leq 7 \text{ mm}$ and $\leq 5 \text{ mm}$ zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. | | | |

7.2. Data Storage and Evaluation

Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [W/kg], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

Data Evaluation

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

| | | |
|--------------------|--------------------------|----------------------|
| Probe parameters: | Sensitivity: | Normi, ai0, ai1, ai2 |
| | Conversion factor: | ConvFi |
| | Diode compression point: | Dcpi |
| Device parameters: | Frequency: | f |
| | Crest factor: | cf |
| Media parameters: | Conductivity: | σ |
| | Density: | ρ |

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcpi}$$

Vi: compensated signal of channel (i = x, y, z)

Ui: input signal of channel (i = x, y, z)

cf: crest factor of exciting field (DASY parameter)

dcpi: diode compression point (DASY parameter)

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

$$E - \text{fieldprobes} : \quad E_i = \sqrt{\frac{V_i}{Normi \cdot ConvF}}$$

$$H - \text{fieldprobes} : \quad H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

Vi: compensated signal of channel (i = x, y, z)

Normi: sensor sensitivity of channel (i = x, y, z),
[mV/(V/m)²] for E-field Probes

ConvF: sensitivity enhancement in solution

aij: sensor sensitivity factors for H-field probes

f: carrier frequency [GHz]

Ei: electric field strength of channel i in V/m

Hi: magnetic field strength of channel i in A/m

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

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

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

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1'000}$$

SAR: local specific absorption rate in W/kg

Etot: total field strength in V/m

σ : conductivity in [mho/m] or [Siemens/m]

ρ : equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

8. Position of the wireless device in relation to the phantom

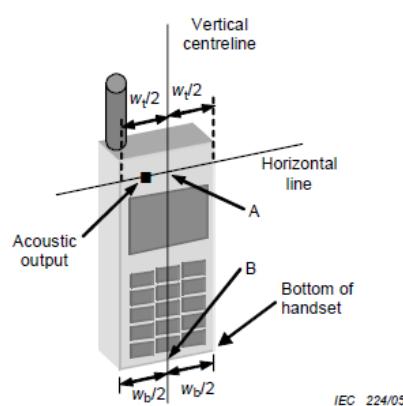
8.1. Head Position

The wireless device define two imaginary lines on the handset, the vertical centreline and the horizontal line, for the handset in vertical orientation as shown in Figures 5a and 5b.

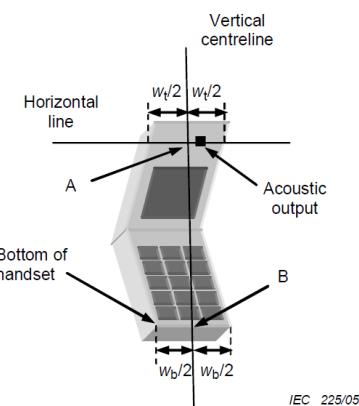
The vertical centreline passes through two points on the front side of the handset: the midpoint of the width W_t of the handset at the level of the acoustic output (point A in Figures 5a and 5b), and the midpoint of the width W_b of the bottom of the handset (point B).

The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output (see Figures 5a and 5b). The two lines intersect at point A.

Note that for many handsets, point A coincides with the centre of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centreline is not necessarily parallel to the front face of the handset (see Figure 5b), especially for clam-shell handsets, handsets with flip cover pieces, and other irregularly shaped handsets.



Figures 5a



Figures 5b

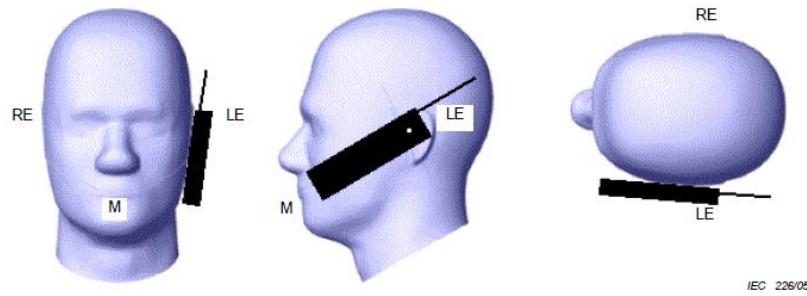
W_t Width of the handset at the level of the acoustic

W_b Width of the bottom of the handset

A Midpoint of the width W_t of the handset at the level of the acoustic output

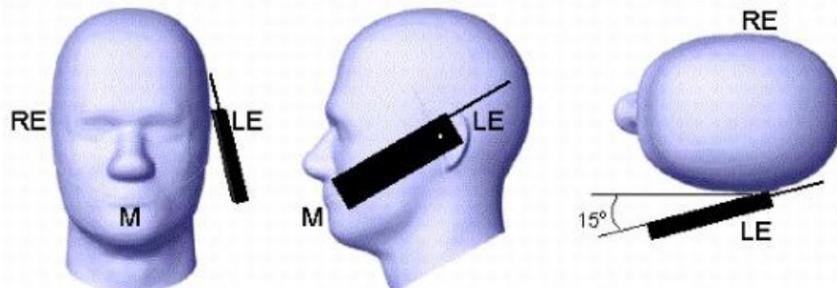
B Midpoint of the width W_b of the bottom of the handset

Cheek position



Picture 2 Cheek position of the wireless device on the left side of SAM

Tilt position

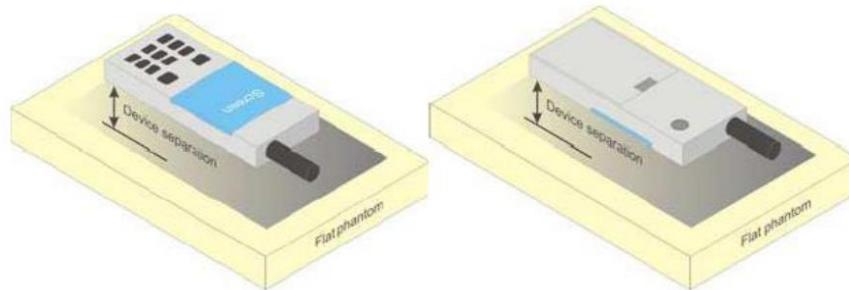


Picture 3 Tilt position of the wireless device on the left side of SAM

8.2. Body Position

Devices that support transmission while used with body-worn accessories must be tested for body-worn accessory SAR compliance, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics.

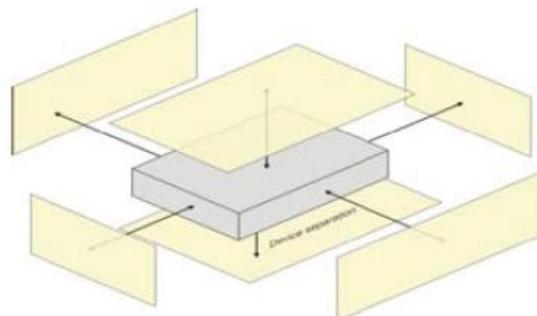
Devices that are designed to operate on the body of users using lanyards and straps or without requiring additional body-worn accessories must be tested for SAR compliance using a conservative minimum test separation distance ≤ 10 mm to support compliance.



Picture 4 Test positions for body-worn devices

8.3. Body-worn Exposure conditions

body-worn accessory SAR test configurations may overlap for handsets. When the same wireless mode transmission configurations for voice and data are required for SAR measurements, the more conservative configuration with a smaller separation distance should be tested for the overlapping SAR configurations. This typically applies to the back and front surfaces of a handset when SAR is required for body-worn accessory exposure conditions. Depending on the form factor and dimensions of a device, the test separation distance used for hotspot mode SAR measurement is either 10 mm or that used in the body-worn accessory configuration, whichever is less for devices with dimension > 9 cm x 5 cm. For smaller devices with dimensions ≤ 9 cm x 5 cm because of a greater potential for next to body use a test separation of ≤ 5 mm must be used.



Picture 5 Test positions for Hotspot Mode

9. System Check

9.1. Tissue Dielectric Parameters

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose. The liquid has previously been proven to be suited for worst-case. It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB865664.

| Tissue dielectric parameters for body phantoms | | |
|--|--------------|----------------|
| Target Frequency (MHz) | Body | |
| | ϵ_r | σ (s/m) |
| 2450 | 52.7 | 1.95 |
| 5250 | 48.95 | 5.36 |
| 5600 | 48.47 | 5.77 |
| 5750 | 48.27 | 5.94 |

Check Result:

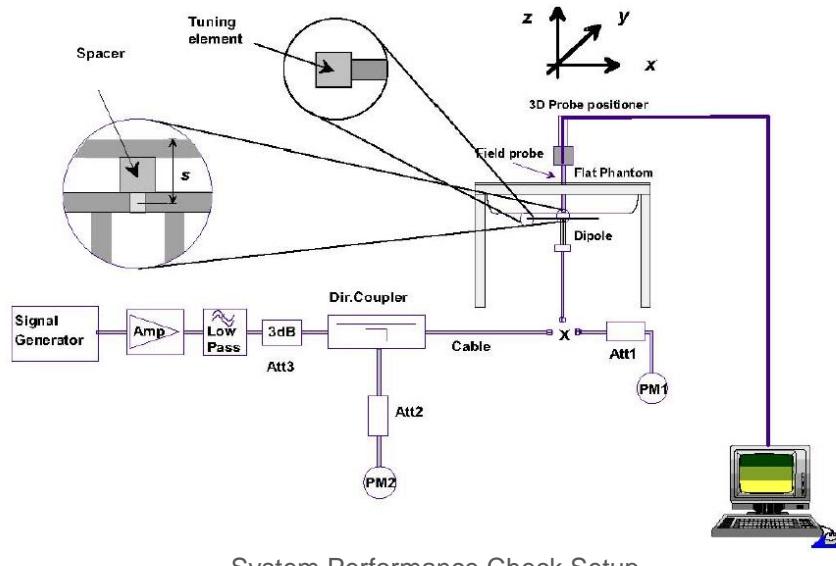
| Dielectric performance of Body tissue simulating liquid | | | | | | | | | |
|---|--------------|----------|----------------|----------|---------------------------|-----------------------|-------|--------------|------------|
| Frequency (MHz) | ϵ_r | | σ (s/m) | | Delta (ϵ_r) | Delta (σ) | Limit | Temp (°C) | Date |
| | Target | Measured | Target | Measured | | | | | |
| 2450 | 52.70 | 53.03 | 1.95 | 2.00 | 0.63% | 2.62% | ±5% | 22 | 2020-07-15 |
| 5250 | 48.95 | 47.94 | 5.36 | 5.52 | -2.07% | 2.89% | ±5% | 22 | 2020-07-16 |
| 5750 | 48.27 | 46.94 | 5.94 | 6.20 | -2.75% | 4.44% | ±5% | 22 | 2020-07-17 |

9.2. SAR System Check

The purpose of the system check is to verify that the system operates within its specifications at the device test frequency. The system check is simple check of repeatability to make sure that the system works correctly at the time of the compliance test;

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system ($\pm 10\%$).

System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.



System Performance Check Setup

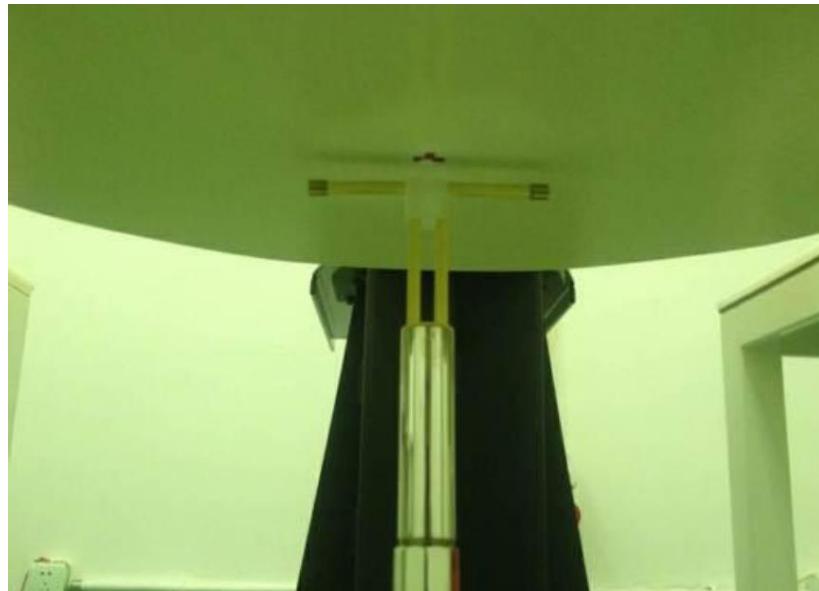


Photo of Dipole Setup

**Check Result:**

| Body | | | | | | | | | |
|--------------------|--------|----------|---------|----------|---------------|----------------|-------|--------------|------------|
| Frequency (MHz) | 1g SAR | | 10g SAR | | Delta (1g) | Delta (10g) | Limit | Temp (°C) | Date |
| | Target | Measured | Target | Measured | | | | | |
| 2450 | 12.60 | 12.50 | 5.96 | 5.83 | -0.79% | -2.18% | ±10% | 22 | 2020-07-15 |
| 5250 | 7.58 | 7.37 | 2.14 | 2.07 | -2.77% | -3.27% | ±10% | 22 | 2020-07-16 |
| 5750 | 7.47 | 7.28 | 2.10 | 2.02 | -2.54% | -3.81% | ±10% | 22 | 2020-07-17 |

Note:

- the graph results see follow.

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中国国家认证认可监督管理委员会
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Accreditation Administration of the People's Republic of China : yz.cnca.cn

System Performance Check at 2450 MHz Body

DUT: D2450V2; Type: D2450V2; Serial: 928

Date: 2020-07-15

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.001$ S/m; $\epsilon_r = 53.03$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8.01, 8.01, 8.01); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

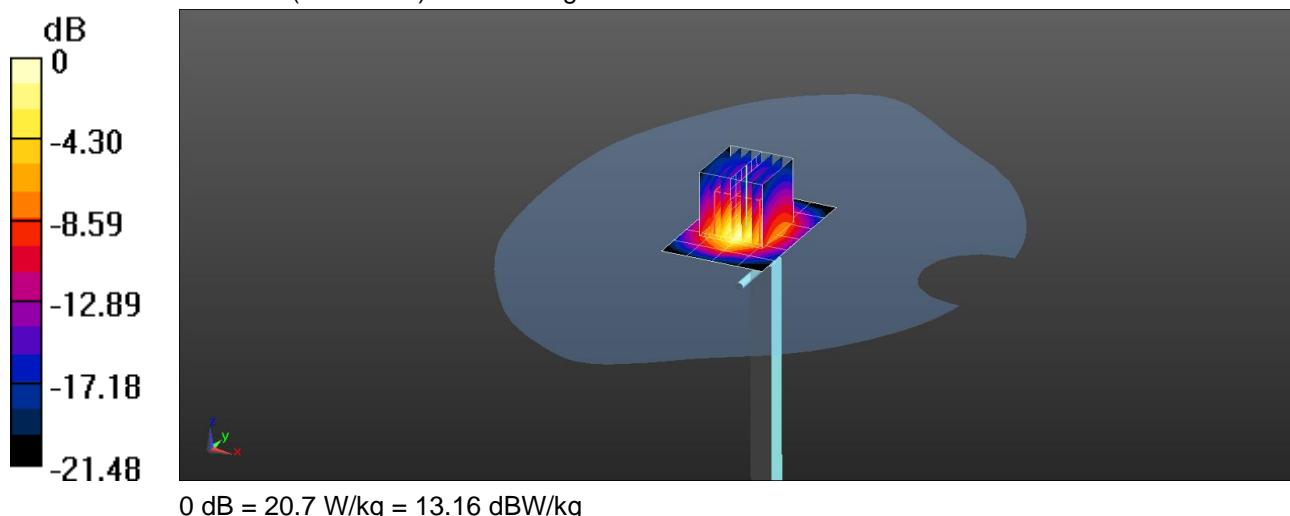
Body/d=10mm,Pin=250mW/Area Scan (5x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 21.1 W/kg**Body/d=10mm,Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 105.6 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 25.7 W/kg

SAR(1 g) = 12.5 W/kg; SAR(10 g) = 5.83 W/kg

Maximum value of SAR (measured) = 20.7 W/kg



System Performance Check at 5250 MHz Body

DUT: D5GHzV2; Type: D5GHzV2; Serial: 1171

Date: 2020-07-16

Communication System: UID 0, A-CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5250$ MHz; $\sigma = 5.515$ S/m; $\epsilon_r = 47.936$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(5.72, 5.72, 5.72); Calibrated: 2020/05/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection),
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/d=10mm, Pin=100mW/Area Scan (10x10x1): Measurement grid: dx=10mm,

dy=10mm

Maximum value of SAR (measured) = 11.1 W/kg

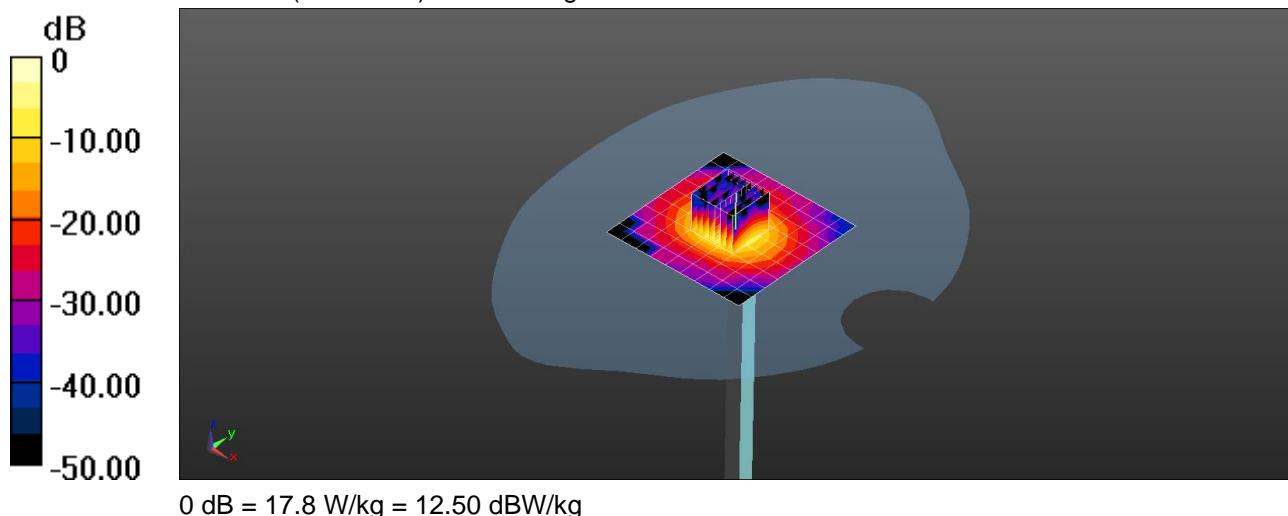
Body/d=10mm, Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 65.132 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 31.6 W/kg

SAR(1 g) = 7.37 W/kg; SAR(10 g) = 2.07 W/kg

Maximum value of SAR (measured) = 17.8 W/kg



System Performance Check at 5750 MHz Body

DUT: D5GHzV2; Type: D5GHzV2; Serial: 1171

Date: 2020-07-17

Communication System: UID 0, A-CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5725$ MHz; $\sigma = 6.20$ S/m; $\epsilon_r = 46.943$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(5.01, 5.01, 5.01); Calibrated: 2020/05/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection),
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head/d=10mm, Pin=100mW/Area Scan (10x10x1): Measurement grid: dx=10mm,

dy=10mm

Maximum value of SAR (measured) = 12.1 W/kg

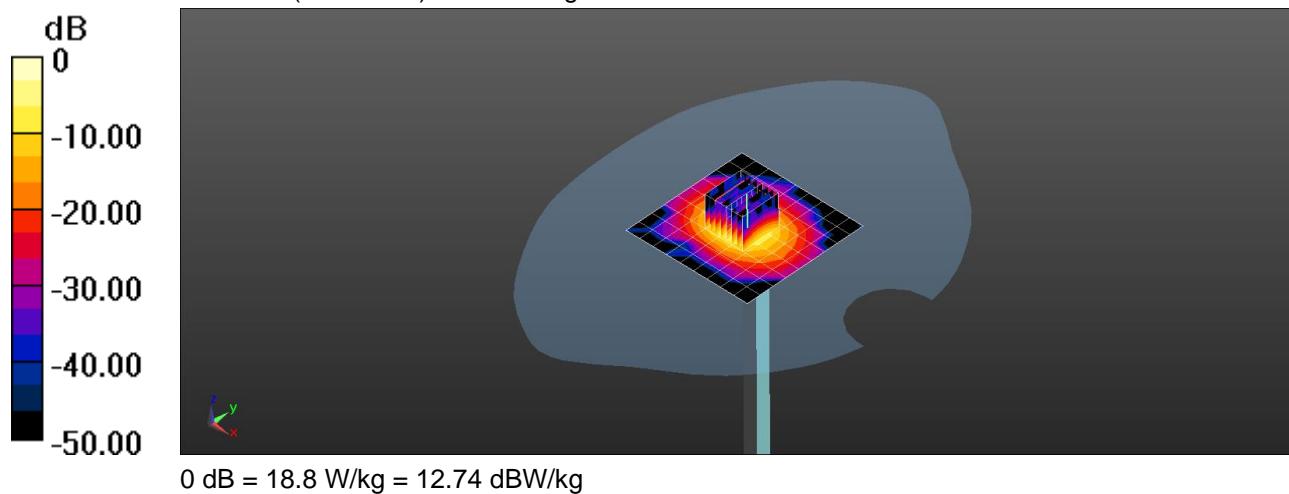
Head/d=10mm, Pin=100mW/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 62.072 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 36.2 W/kg

SAR(1 g) = 7.28 W/kg; SAR(10 g) = 2.02 W/kg

Maximum value of SAR (measured) = 18.8 W/kg



10. SAR Exposure Limits

SAR assessments have been made in line with the requirements of ANSI/IEEE C95.1-1992

| Type Exposure | Limit (W/kg) | |
|--|--|--|
| | General Population / Uncontrolled Exposure Environment | Occupational / Controlled Exposure Environment |
| Spatial Average SAR (whole body) | 0.08 | 0.4 |
| Spatial Peak SAR (1g cube tissue for head and trunk) | 1.6 | 8.0 |
| Spatial Peak SAR (10g for limb) | 4.0 | 20.0 |

Population/Uncontrolled Environments: are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments: are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

11. Conducted Power Measurement Results

WLAN Conducted Power

For 2.4GHz WLAN SAR testing, highest average RF output power channel for the lowest data rate for 802.11b were for SAR evaluation. 802.11g/n were not investigated since the average output powers over all channels and data rates were not more than 0.25dB higher than the tested channel in the lowest data rate of 802.11b mode.

| WIFI 2.4G | | | | |
|--------------|---------|-----------------|-------------------------------|--------------|
| Mode | Channel | Frequency (MHz) | Conducted Average Power (dBm) | |
| | | | ANT A | ANT B |
| 802.11b | 01 | 2412 | 14.41 | 14.39 |
| | 06 | 2437 | 14.42 | 14.40 |
| | 11 | 2462 | 14.92 | 14.89 |
| 802.11g | 01 | 2412 | 13.76 | 13.74 |
| | 06 | 2437 | 13.75 | 13.73 |
| | 11 | 2462 | 14.09 | 14.05 |
| 802.11n HT20 | 01 | 2412 | 13.35 | 13.33 |
| | 06 | 2437 | 13.85 | 13.82 |
| | 11 | 2462 | 14.02 | 14.00 |
| 802.11n HT40 | 03 | 2422 | 12.74 | 12.71 |
| | 06 | 2437 | 12.85 | 12.82 |
| | 09 | 2452 | 13.06 | 13.03 |

| U-NII-1 (WIFI 5G) | | | | |
|-------------------|---------|-----------------|-------------------------------|--------------|
| Mode | Channel | Frequency (MHz) | Conducted Average Power (dBm) | |
| | | | ANT A | ANT B |
| 802.11a | 36 | 5180 | 15.05 | 15.02 |
| | 44 | 5220 | 14.95 | 14.94 |
| | 48 | 5240 | 14.58 | 14.56 |
| 802.11n HT20 | 36 | 5180 | 14.59 | 14.54 |
| | 44 | 5220 | 14.36 | 14.32 |
| | 48 | 5240 | 14.19 | 14.14 |
| 802.11n HT40 | 38 | 5190 | 13.66 | 13.62 |
| | 46 | 5230 | 13.23 | 13.19 |
| 802.11ac VHT20 | 36 | 5180 | 14.55 | 14.53 |
| | 44 | 5220 | 14.34 | 14.30 |
| | 48 | 5240 | 14.18 | 14.14 |
| 802.11ac VHT40 | 38 | 5190 | 13.63 | 13.60 |
| | 46 | 5230 | 13.20 | 13.16 |
| 802.11ac VHT80 | 42 | 5210 | 12.15 | 12.13 |

| U-NII-3 (WIFI 5G) | | | | |
|-------------------|---------|-----------------|-------------------------------|--------------|
| Mode | Channel | Frequency (MHz) | Conducted Average Power (dBm) | |
| | | | ANT A | ANT B |
| 802.11a | 149 | 5745 | 10.07 | 10.05 |
| | 157 | 5785 | 10.01 | 9.99 |
| | 165 | 5825 | 11.11 | 11.07 |
| 802.11n HT20 | 149 | 5745 | 9.56 | 9.53 |
| | 157 | 5785 | 10.18 | 10.15 |
| | 165 | 5825 | 10.98 | 10.94 |
| 802.11n HT40 | 151 | 5755 | 9.78 | 9.52 |
| | 159 | 5795 | 10.20 | 10.13 |
| 802.11ac VHT20 | 149 | 5745 | 9.55 | 10.91 |
| | 157 | 5785 | 10.16 | 9.73 |
| | 165 | 5825 | 10.95 | 10.15 |
| 802.11ac VHT40 | 151 | 5755 | 9.75 | 9.72 |
| | 159 | 5795 | 10.17 | 10.14 |
| 802.11ac VHT80 | 155 | 5775 | 9.75 | 9.70 |

Note

1. :The output power was test all data rate and recorded worst case at recorded data rate.

Bluetooth Conducted Power

| Bluetooth | | | |
|-----------|---------|-----------------|-----------------------|
| Mode | Channel | Frequency (MHz) | Conducted power (dBm) |
| GFSK | 0 | 2402 | 2.44 |
| | 39 | 2441 | 2.60 |
| | 78 | 2480 | 2.41 |
| π/4QPSK | 0 | 2402 | 0.10 |
| | 39 | 2441 | 0.11 |
| | 78 | 2480 | 0.18 |
| 8DPSK | 0 | 2402 | -1.00 |
| | 39 | 2441 | -1.05 |
| | 78 | 2480 | -1.04 |
| BLE | 0 | 2402 | 1.43 |
| | 19 | 2440 | 1.57 |
| | 39 | 2480 | 1.22 |

12. Maximum Tune-up Limit

WIFI 2.4G

| Mode | Maximum Tune-up (dBm) Burst Average Power | |
|---------------|--|-------|
| | ANT A | ANT B |
| 802.11b | 15.00 | 15.00 |
| 802.11g | 14.50 | 14.50 |
| 802.11n(HT20) | 14.50 | 14.00 |
| 802.11n(HT40) | 13.50 | 13.50 |

WIFI 5G

| Band | Mode | Maximum Tune-up (dBm) Burst Average Power | |
|---------|-------------------|--|-------|
| | | ANT A | ANT B |
| U-NII-1 | 802.11a | 15.50 | 15.50 |
| U-NII-3 | | 11.50 | 11.50 |
| U-NII-1 | 802.11n HT20 | 15.00 | 15.00 |
| U-NII-3 | | 11.00 | 11.00 |
| U-NII-1 | 802.11n HT40 | 14.00 | 14.00 |
| U-NII-3 | | 10.50 | 10.50 |
| U-NII-1 | 802.11ac VHT20 | 15.00 | 15.00 |
| U-NII-3 | | 11.00 | 11.00 |
| U-NII-1 | 802.11ac VHT40 | 14.00 | 14.00 |
| U-NII-3 | | 10.50 | 10.50 |
| U-NII-1 | 802.11ac VHT80 | 12.50 | 12.50 |
| U-NII-3 | | 10.00 | 10.00 |

| Bluetooth | |
|--------------|-----------------------|
| Mode | Maximum Tune-up (dBm) |
| GFSK | 3.00 |
| $\pi/4$ QPSK | 0.20 |
| 8DPSK | -1.00 |
| BLE | 2.00 |

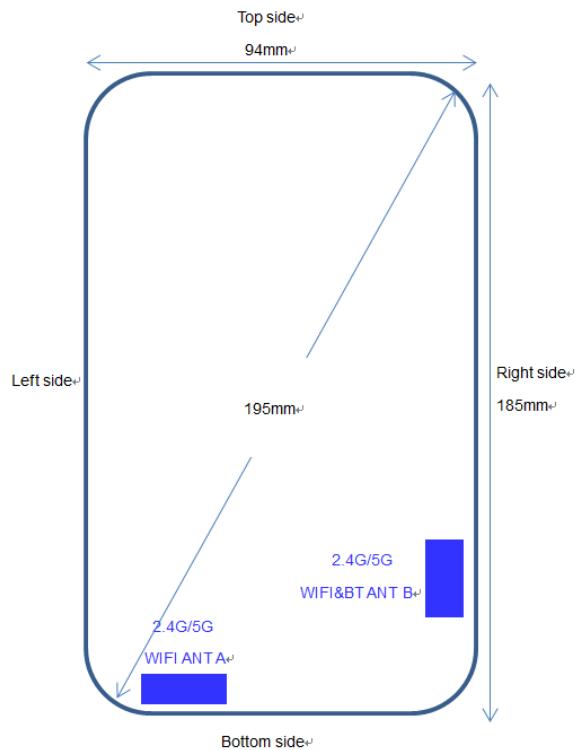
Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances \leq 50mm are determined by:

$[(\text{max. Power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})]^*$
 $[\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR

| Band/Mode | F(GHz) | Position | SAR test exclusion threshold (mW) | RF output power | | SAR test exclusion |
|-----------|--------|----------|-----------------------------------|-----------------|------|--------------------|
| | | | | dBm | mW | |
| Bluetooth | 2.45 | Body | 10 | 3.00 | 2.00 | Yes |

13. RF Exposure Conditions (Test Configurations)

13.1. Antenna Location



FRONT VIEW

| Distance of the Antenna to the EUT surface/edge(mm) | | | | | | |
|---|------------|-----------|-----------|------------|----------|-------------|
| Antenna | Front side | Back side | Left side | Right side | Top side | Bottom side |
| ANT A | <25 | <25 | <25 | 50< | 50< | <25 |
| SAR Testing for ANT A | Yes | Yes | Yes | No | No | Yes |
| ANT B | <25 | <25 | 50< | <25 | 50< | <25 |
| SAR Testing for ANT B | Yes | Yes | No | Yes | No | Yes |

note:

1. Referring to KDB941225 D07, SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

13.2. Estimated SAR

Bluetooth SAR is estimated per KDB 447498 D01 based on the formula below:

- a) $[(\text{max. Power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})/x}] \text{W/kg}$ for test separation distances $\leq 50\text{mm}$; when $x=7.5$ for 1-g SAR, and $x=18.75$ for 10-g SAR.
- b) When the minimum separation distance is $< 5\text{mm}$, the distance is used 5mm to determine SAR test exclusion
- c) 0.4 W/kg for 1-g SAR and 1.0W/kg for 10-g SAR, when the test separation distances is $> 50\text{mm}$.

| Estimated SAR(W/kg) | | | | | | | |
|---------------------|---------------------|------------|-----------|-----------|------------|----------|-------------|
| Antenna | Test Configurations | Front side | Back side | Left side | Right side | Top side | Bottom side |
| ANT A | WIFI 2.4G | - | - | - | 0.400 | 0.400 | - |
| | U-NII-1 | - | - | - | 0.400 | 0.400 | - |
| | U-NII-3 | - | - | - | 0.400 | 0.400 | - |
| ANT B | WIFI 2.4G | - | - | 0.400 | - | 0.400 | - |
| | U-NII-1 | - | - | 0.400 | - | 0.400 | - |
| | U-NII-3 | - | - | 0.400 | - | 0.400 | - |
| | Bluetooth | 0.083 | 0.083 | 0.400 | 0.083 | 0.400 | 0.083 |

CTC Laboratories,Inc..

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中国国家认证认可监督管理委员会
Certification and Accreditation Administration of the People's Republic of China

For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn

14. SAR Measurement Results

| ANT A WIFI 2.4G | | | | | | | | | | |
|------------------|----------------------|-----------|------|-----------------------|---------------------|------------------------|-----------------|-------------------------|-----------------------|-----------|
| Mode | Test Position (side) | Frequency | | Conducted Power (dBm) | Tune up limit (dBm) | Tune up scaling factor | Power Drift(dB) | Measured SAR(1g) (W/kg) | Report SAR(1g) (W/kg) | Test Plot |
| | | CH | MHz | | | | | | | |
| 802.11b 1Mbps | Front | 1 | 2412 | 14.41 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.42 | 15.00 | 1.14 | - | - | - | - |
| | | 11 | 2462 | 14.92 | 15.00 | 1.02 | 0.17 | 0.273 | 0.278 | AB1 |
| | Back | 1 | 2412 | 14.41 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.42 | 15.00 | 1.14 | - | - | - | - |
| | | 11 | 2462 | 14.92 | 15.00 | 1.02 | 0.13 | 0.104 | 0.106 | - |
| | Left | 1 | 2412 | 14.41 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.42 | 15.00 | 1.14 | - | - | - | - |
| | | 11 | 2462 | 14.92 | 15.00 | 1.02 | -0.07 | 0.110 | 0.112 | |
| | Bottom | 1 | 2412 | 14.41 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.42 | 15.00 | 1.14 | - | - | - | - |
| | | 11 | 2462 | 14.92 | 15.00 | 1.02 | -0.18 | 0.091 | 0.093 | - |

| ANT A U-NII-1 (WIFI 5G) | | | | | | | | | | |
|-------------------------|----------------------|-----------|------|-----------------------|---------------------|------------------------|-----------------|-------------------------|-----------------------|-----------|
| Mode | Test Position (side) | Frequency | | Conducted Power (dBm) | Tune up limit (dBm) | Tune up scaling factor | Power Drift(dB) | Measured SAR(1g) (W/kg) | Report SAR(1g) (W/kg) | Test Plot |
| | | CH | MHz | | | | | | | |
| 802.11a 6Mbps | Front | 36 | 5180 | 15.05 | 15.50 | 1.11 | 0.04 | 0.194 | 0.215 | - |
| | | 44 | 5220 | 14.95 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.58 | 15.50 | 1.24 | - | - | - | - |
| | Back | 36 | 5180 | 15.05 | 15.50 | 1.11 | -0.07 | 0.211 | 0.234 | AB2 |
| | | 40 | 5200 | 14.95 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.58 | 15.50 | 1.24 | - | - | - | - |
| | Left | 36 | 5180 | 15.05 | 15.50 | 1.11 | 0.01 | 0.182 | 0.202 | |
| | | 40 | 5200 | 14.95 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.58 | 15.50 | 1.24 | - | - | - | - |
| | Bottom | 36 | 5180 | 15.05 | 15.50 | 1.11 | 0.12 | 0.114 | 0.127 | - |
| | | 40 | 5200 | 14.95 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.58 | 15.50 | 1.24 | - | - | - | - |

Note:

1. If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

| ANT A U-NII-3 (WIFI 5G) | | | | | | | | | | |
|-------------------------|----------------------|-----------|------|-----------------------|---------------------|------------------------|-----------------|-------------------------|-----------------------|-----------|
| Mode | Test Position (side) | Frequency | | Conducted Power (dBm) | Tune up limit (dBm) | Tune up scaling factor | Power Drift(dB) | Measured SAR(1g) (W/kg) | Report SAR(1g) (W/kg) | Test Plot |
| | | CH | MHz | | | | | | | |
| 802.11a 6Mbps | Front | 149 | 5745 | 10.07 | 11.50 | 1.39 | - | - | - | - |
| | | 157 | 5785 | 10.01 | 11.50 | 1.41 | - | - | - | - |
| | | 165 | 5825 | 11.11 | 11.50 | 1.09 | -0.17 | 0.113 | 0.123 | - |
| | Back | 149 | 5745 | 10.07 | 11.50 | 1.39 | - | - | - | - |
| | | 157 | 5785 | 10.01 | 11.50 | 1.41 | - | - | - | - |
| | | 165 | 5825 | 11.11 | 11.50 | 1.09 | -0.10 | 0.248 | 0.270 | AB3 |
| | Left | 149 | 5745 | 10.07 | 11.50 | 1.39 | - | - | - | - |
| | | 157 | 5785 | 10.01 | 11.50 | 1.41 | - | - | - | - |
| | | 165 | 5825 | 11.11 | 11.50 | 1.09 | 0.17 | 0.156 | 0.170 | |
| | Bottom | 149 | 5745 | 10.07 | 11.50 | 1.39 | - | - | - | - |
| | | 157 | 5785 | 10.01 | 11.50 | 1.41 | - | - | - | - |
| | | 165 | 5825 | 11.11 | 11.50 | 1.09 | 0.20 | 0.105 | 0.114 | - |

Note:

1. If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

ANT B WIFI 2.4G

| Mode | Test Position (side) | Frequency | | Conducted Power (dBm) | Tune up limit (dBm) | Tune up scaling factor | Power Drift(dB) | Measured SAR(1g) (W/kg) | Report SAR(1g) (W/kg) | Test Plot |
|------------------|----------------------|-----------|------|-----------------------|---------------------|------------------------|-----------------|-------------------------|-----------------------|-----------|
| | | CH | MHz | | | | | | | |
| 802.11b 1Mbps | Front | 1 | 2412 | 14.39 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.40 | 15.00 | 1.15 | - | - | - | - |
| | | 11 | 2462 | 14.89 | 15.00 | 1.03 | -0.20 | 0.106 | 0.109 | - |
| | Back | 1 | 2412 | 14.39 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.40 | 15.00 | 1.15 | - | - | - | - |
| | | 11 | 2462 | 14.89 | 15.00 | 1.03 | 0.15 | 0.152 | 0.157 | BB1 |
| | Right | 1 | 2412 | 14.39 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.40 | 15.00 | 1.15 | - | - | - | - |
| | | 11 | 2462 | 14.89 | 15.00 | 1.03 | 0.16 | 0.113 | 0.116 | |
| | Bottom | 1 | 2412 | 14.39 | 15.00 | 1.15 | - | - | - | - |
| | | 6 | 2437 | 14.40 | 15.00 | 1.15 | - | - | - | - |
| | | 11 | 2462 | 14.89 | 15.00 | 1.03 | -0.03 | 0.085 | 0.088 | - |

ANT B U-NII-1 (WIFI 5G)

| Mode | Test Position (side) | Frequency | | Conducted Power (dBm) | Tune up limit (dBm) | Tune up scaling factor | Power Drift(dB) | Measured SAR(1g) (W/kg) | Report SAR(1g) (W/kg) | Test Plot |
|------------------|----------------------|-----------|------|-----------------------|---------------------|------------------------|-----------------|-------------------------|-----------------------|-----------|
| | | CH | MHz | | | | | | | |
| 802.11a 6Mbps | Front | 36 | 5180 | 15.02 | 15.50 | 1.12 | 0.04 | 0.243 | 0.272 | BB2 |
| | | 44 | 5220 | 14.94 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.56 | 15.50 | 1.24 | - | - | - | - |
| | Back | 36 | 5180 | 15.02 | 15.50 | 1.12 | 0.05 | 0.183 | 0.205 | - |
| | | 44 | 5220 | 14.94 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.56 | 15.50 | 1.24 | - | - | - | - |
| | Right | 36 | 5180 | 15.02 | 15.50 | 1.12 | -0.04 | 0.141 | 0.158 | |
| | | 44 | 5220 | 14.94 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.56 | 15.50 | 1.24 | - | - | - | - |
| | Bottom | 36 | 5180 | 15.02 | 15.50 | 1.12 | 0.15 | 0.115 | 0.129 | - |
| | | 44 | 5220 | 14.94 | 15.50 | 1.14 | - | - | - | - |
| | | 48 | 5240 | 14.56 | 15.50 | 1.24 | - | - | - | - |

Note:

1. If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

| ANT B U-NII-3 (WIFI 5G) | | | | | | | | | | |
|-------------------------|----------------------|-----------|------|-----------------------|---------------------|------------------------|-----------------|-------------------------|-----------------------|-----------|
| Mode | Test Position (side) | Frequency | | Conducted Power (dBm) | Tune up limit (dBm) | Tune up scaling factor | Power Drift(dB) | Measured SAR(1g) (W/kg) | Report SAR(1g) (W/kg) | Test Plot |
| | | CH | MHz | | | | | | | |
| 802.11a 6Mbps | Front | 149 | 5745 | 10.05 | 11.50 | 1.40 | - | - | - | - |
| | | 157 | 5785 | 9.99 | 11.50 | 1.42 | - | - | - | - |
| | | 165 | 5825 | 11.07 | 11.50 | 1.10 | -0.13 | 0.231 | 0.254 | BB3 |
| | Back | 149 | 5745 | 10.05 | 11.50 | 1.40 | - | - | - | - |
| | | 157 | 5785 | 9.99 | 11.50 | 1.42 | - | - | - | - |
| | | 165 | 5825 | 11.07 | 11.50 | 1.10 | -0.09 | 0.163 | 0.179 | - |
| | Right | 149 | 5745 | 10.05 | 11.50 | 1.40 | - | - | - | - |
| | | 157 | 5785 | 9.99 | 11.50 | 1.42 | - | - | - | - |
| | | 165 | 5825 | 11.07 | 11.50 | 1.10 | -0.14 | 0.102 | 0.112 | - |
| | Bottom | 149 | 5745 | 10.05 | 11.50 | 1.40 | - | - | - | - |
| | | 157 | 5785 | 9.99 | 11.50 | 1.42 | - | - | - | - |
| | | 165 | 5825 | 11.07 | 11.50 | 1.10 | 0.15 | 0.099 | 0.109 | - |

Note:

1. If the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

SAR Test Data Plots

| | | | | | |
|------------|-----------------|----------------|------------|------------|-----|
| Test band: | ANT A WIFI 2.4G | Test Position: | Front side | Test Plot: | AB1 |
|------------|-----------------|----------------|------------|------------|-----|

Date:2020-07-15

Communication System: UID 0, WI-FI(2412-2462) (0); Frequency: 2462 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.012$ S/m; $\epsilon_r = 52.998$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8, 8, 8); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.291 W/kg

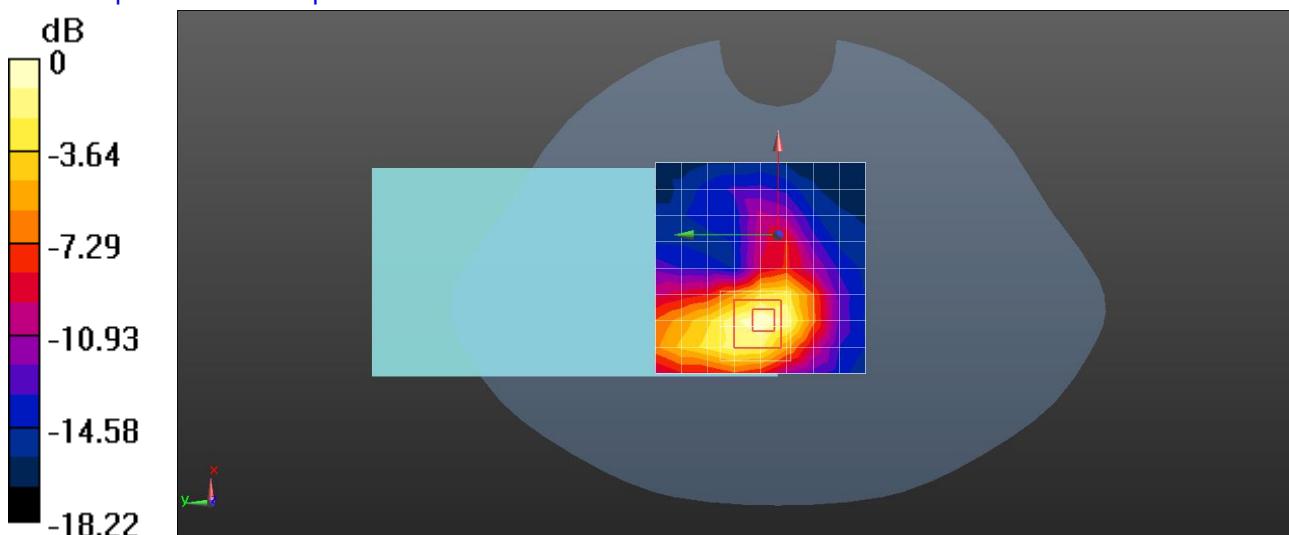
Body/Front side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.424 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.632 W/kg

SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.130 W/kg

Info: Interpolated medium parameters used for SAR evaluation



Date:2020-07-16

Communication System: UID 0, WI-FI(U-NII-1) (0); Frequency: 5180 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5180$ MHz; $\sigma = 5.351$ S/m; $\epsilon_r = 48.176$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(5.24, 5.24, 5.24); Calibrated: 2020/05/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM2; Type: Twin SAM V5.0; Serial: 1811
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Back side/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.198 W/kg

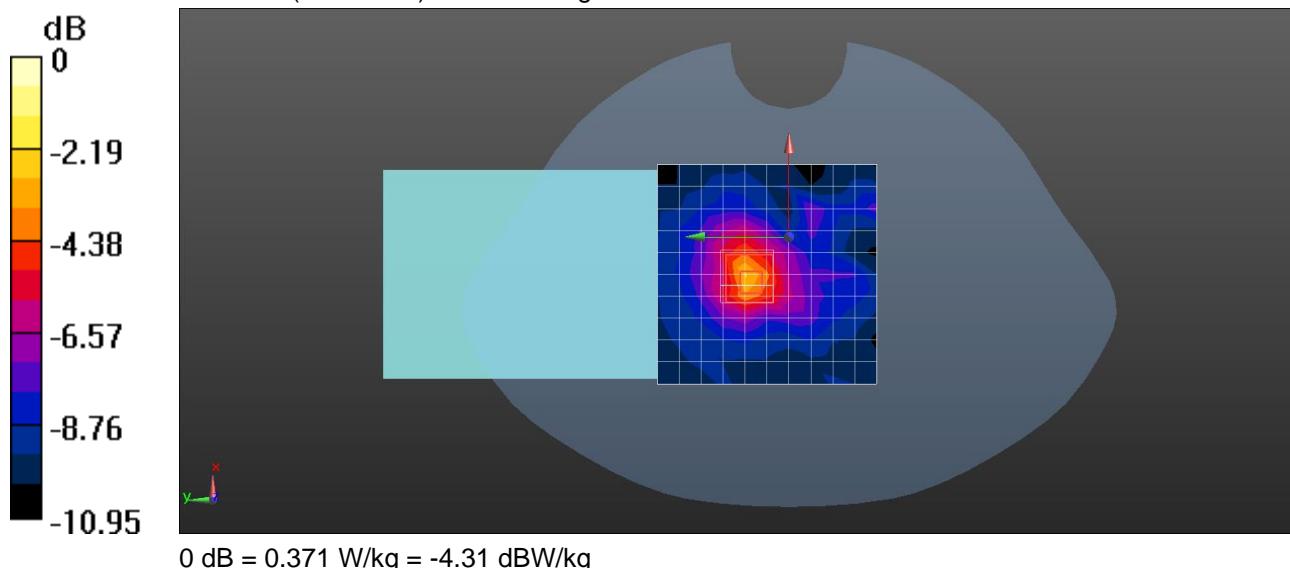
Body/Back side/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.297 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.097 W/kg

Maximum value of SAR (measured) = 0.371 W/kg



Date:2020-07-17

Communication System: UID 0, WI-FI(U-NII-3) (0); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5825$ MHz; $\sigma = 6.319$ S/m; $\epsilon_r = 46.88$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(4.58, 4.58, 4.58); Calibrated: 2020/05/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM2; Type: Twin SAM V5.0; Serial: 1811
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Back side/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.237 W/kg

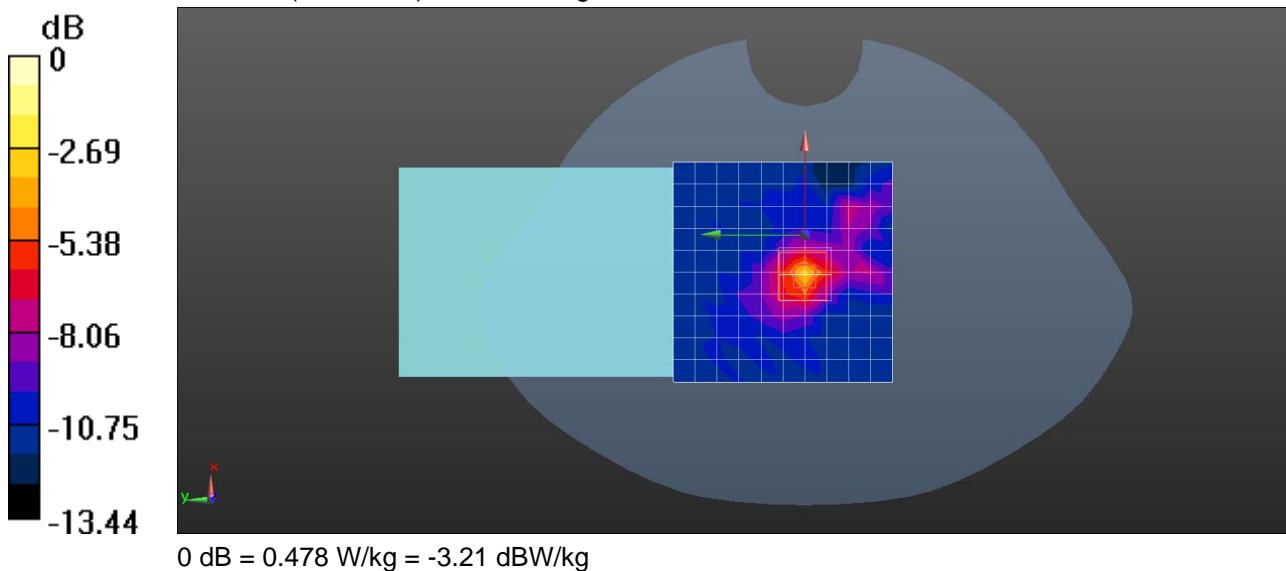
Body/Back side/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.262 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.248 W/kg; SAR(10 g) = 0.077 W/kg

Maximum value of SAR (measured) = 0.478 W/kg



Date:2020-07-15

Communication System: UID 0, WI-FI(2412-2462) (0); Frequency: 2462 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2462$ MHz; $\sigma = 2.012$ S/m; $\epsilon_r = 52.998$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(8, 8, 8); Calibrated: 2020/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM1; Type: Twin SAM V5.0; Serial: 1812
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Back side/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm**Info:** Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.154 W/kg

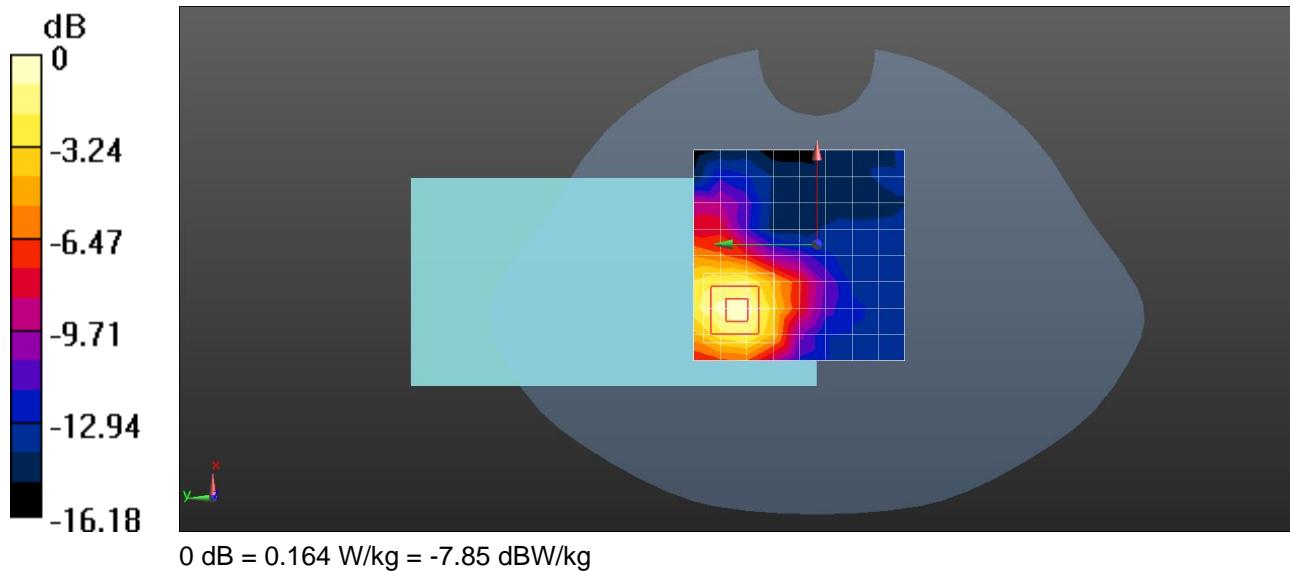
Body/Back side/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.936 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.332 W/kg

SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.076 W/kg**Info:** Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.164 W/kg



Date:2020-07-16

Communication System: UID 0, WI-FI(U-NII-1) (0); Frequency: 5180 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5180$ MHz; $\sigma = 5.351$ S/m; $\epsilon_r = 48.176$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(5.24, 5.24, 5.24); Calibrated: 2020/05/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM2; Type: Twin SAM V5.0; Serial: 1811
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.225 W/kg

Body/Front side/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

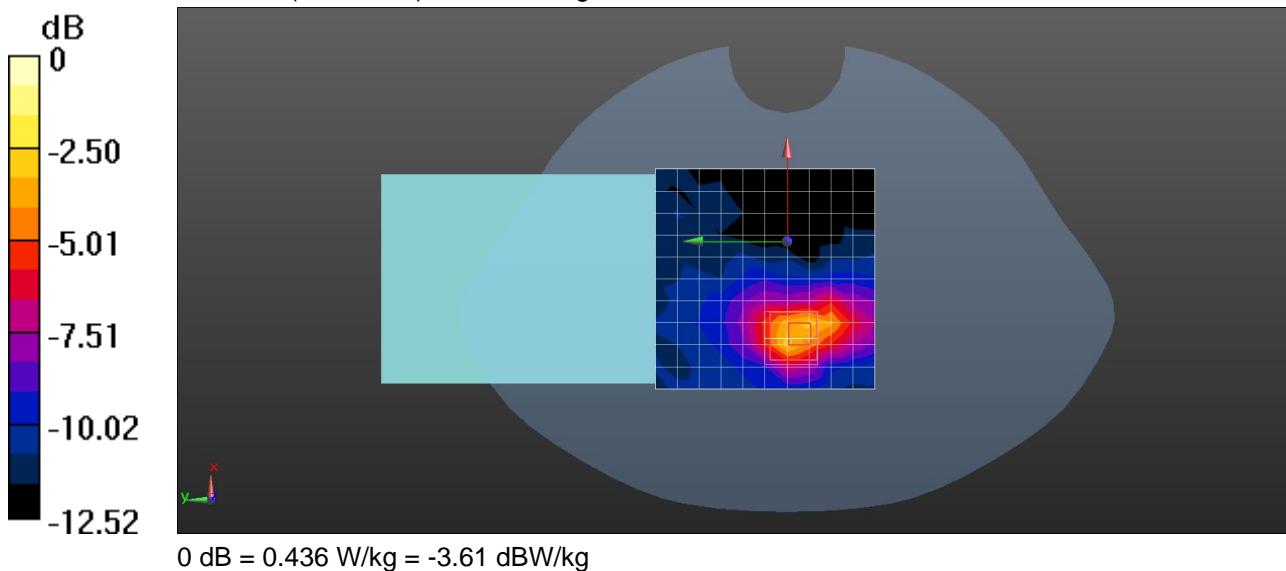
dz=2mm

Reference Value = 2.923 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.889 W/kg

SAR(1 g) = 0.243 W/kg; SAR(10 g) = 0.102 W/kg

Maximum value of SAR (measured) = 0.436 W/kg



Date:2020-07-17

Communication System: UID 0, WI-FI(U-NII-3) (0); Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5825$ MHz; $\sigma = 6.319$ S/m; $\epsilon_r = 46.88$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3974; ConvF(4.58, 4.58, 4.58); Calibrated: 2020/05/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1423; Calibrated: 2020/05/19
- Phantom: SAM2; Type: Twin SAM V5.0; Serial: 1811
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Body/Front side/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.185 W/kg

Body/Front side/Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm,

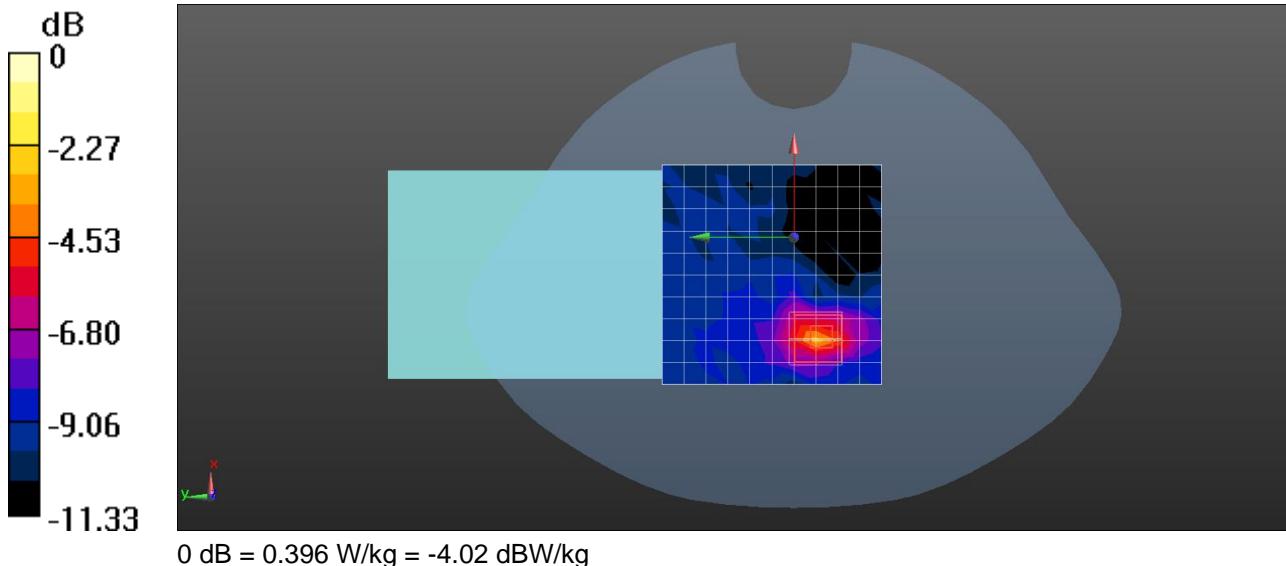
dz=2mm

Reference Value = 3.025 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.231 W/kg; SAR(10 g) = 0.093 W/kg

Maximum value of SAR (measured) = 0.396 W/kg



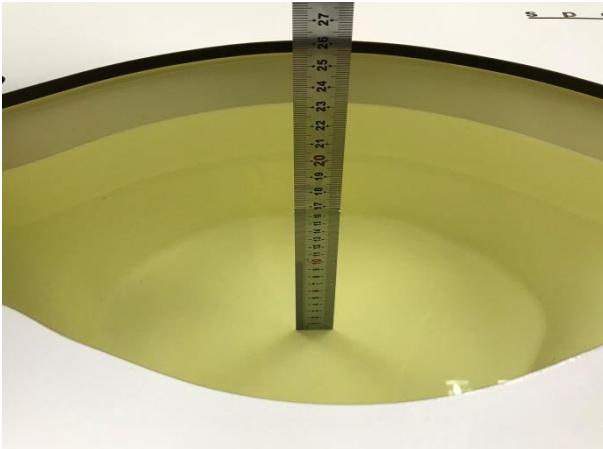
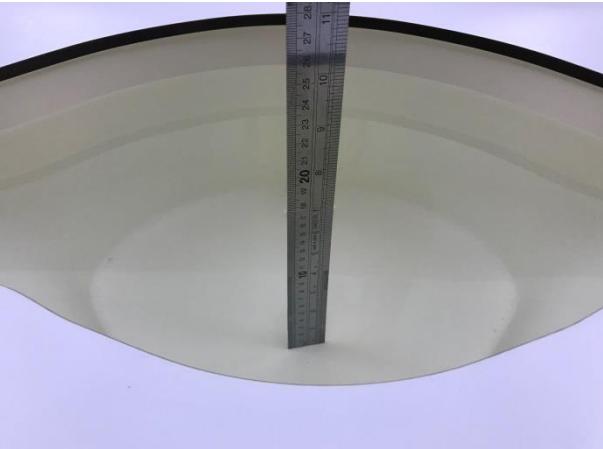
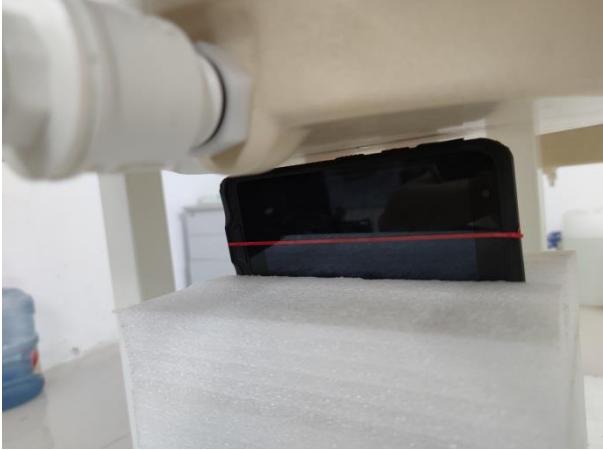
15. Simultaneous Transmission analysis

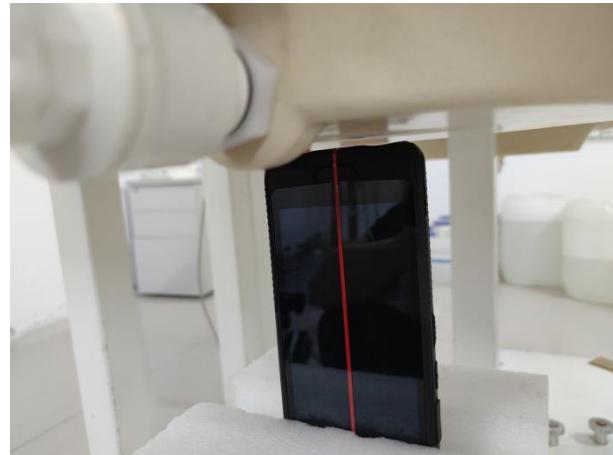
| No. | Simultaneous Transmission Configurations | Body | Note |
|-----|--|------|------|
| 1 | WIFI 2.4G(ANT A)+ WIFI 2.4G(ANT B) | Yes | - |
| 2 | WIFI 5G(ANT A)+ WIFI 5G(ANT B) | Yes | - |
| 3 | BT(ANT B)+ WIFI 5G(ANT A) | Yes | - |

Maximum reported SAR value for Body

| Band | Exposure Position | Max SAR (W/kg) | | | Summed SAR | |
|-----------|-------------------|----------------|--------------|------------------|------------|-------|
| | | ① ANT A | ② ANT B | ③ ANT B BT | ①+② | ①+③ |
| WIFI 2.4G | Front side | 0.278 | 0.109 | 0.083 | 0.387 | 0.361 |
| | Back side | 0.106 | 0.157 | 0.083 | 0.263 | 0.189 |
| | Left side | 0.112 | 0.400 | 0.400 | 0.512 | 0.512 |
| | Right side | 0.400 | 0.116 | 0.083 | 0.516 | 0.483 |
| | Top side | 0.400 | 0.400 | 0.400 | 0.800 | 0.800 |
| | Bottom side | 0.093 | 0.088 | 0.083 | 0.181 | 0.176 |
| U-NII-1 | Front side | 0.215 | 0.272 | 0.083 | 0.487 | 0.298 |
| | Back side | 0.234 | 0.205 | 0.083 | 0.439 | 0.317 |
| | Left side | 0.202 | 0.400 | 0.400 | 0.602 | 0.602 |
| | Right side | 0.400 | 0.158 | 0.083 | 0.558 | 0.483 |
| | Top side | 0.400 | 0.400 | 0.400 | 0.800 | 0.800 |
| | Bottom side | 0.127 | 0.129 | 0.083 | 0.256 | 0.210 |
| U-NII-3 | Front side | 0.123 | 0.254 | 0.083 | 0.377 | 0.206 |
| | Back side | 0.270 | 0.179 | 0.083 | 0.449 | 0.353 |
| | Left side | 0.170 | 0.400 | 0.400 | 0.570 | 0.570 |
| | Right side | 0.400 | 0.112 | 0.083 | 0.512 | 0.483 |
| | Top side | 0.400 | 0.400 | 0.400 | 0.800 | 0.800 |
| | Bottom side | 0.114 | 0.109 | 0.083 | 0.223 | 0.197 |

16. TestSetup Photos

| | |
|---|--|
|  |  |
| Liquid depth in the Flat of SAM1 phantom | Liquid depth in the Flat of SAM2 phantom |
|  |  |
| Front side (5mm) | Back side (5mm) |
|  |  |
| Left side (5mm) | Right side (5mm) |



Bottom side(5mm)

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17. External and Internal Photos of the EUT

Photo 1



Photo 2



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Photo 3

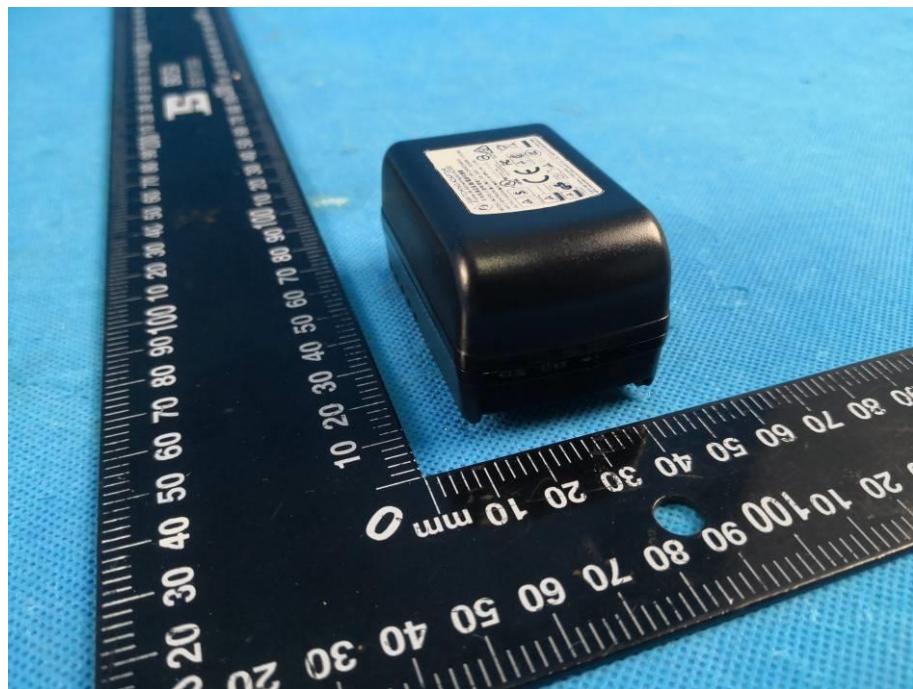


Photo 4



Photo 5



Photo 6



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Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



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Photo 13



Photo 14



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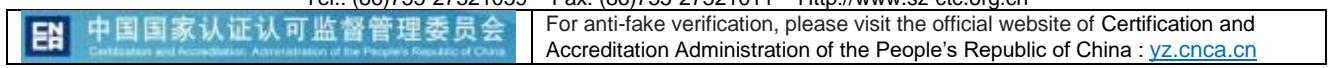


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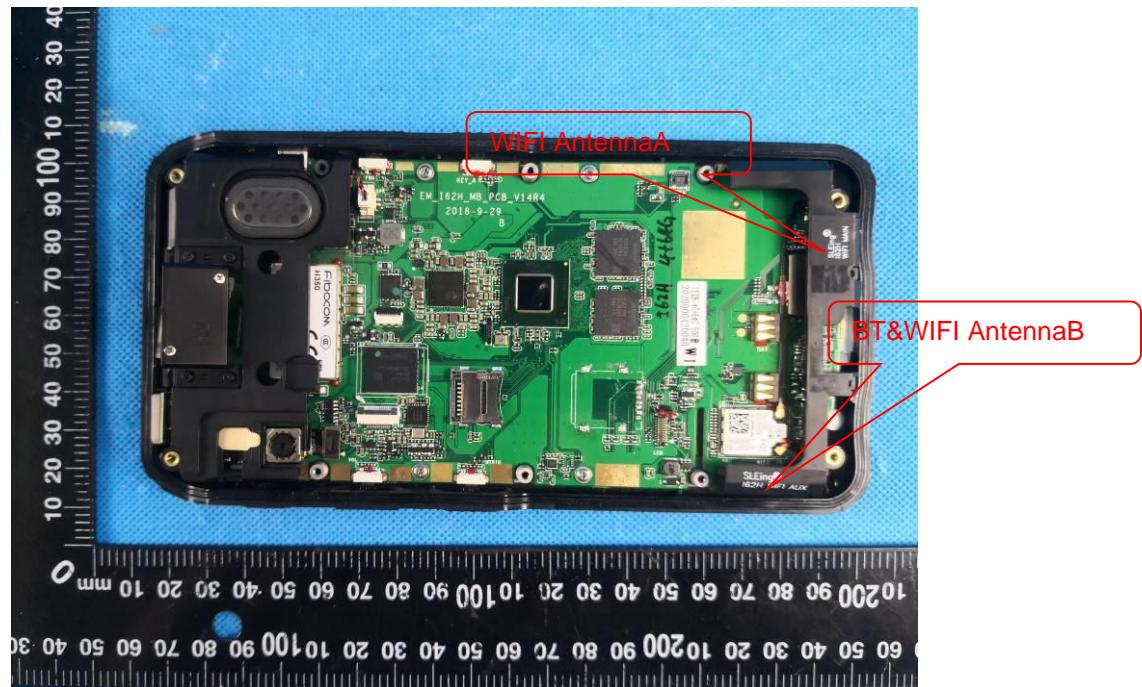


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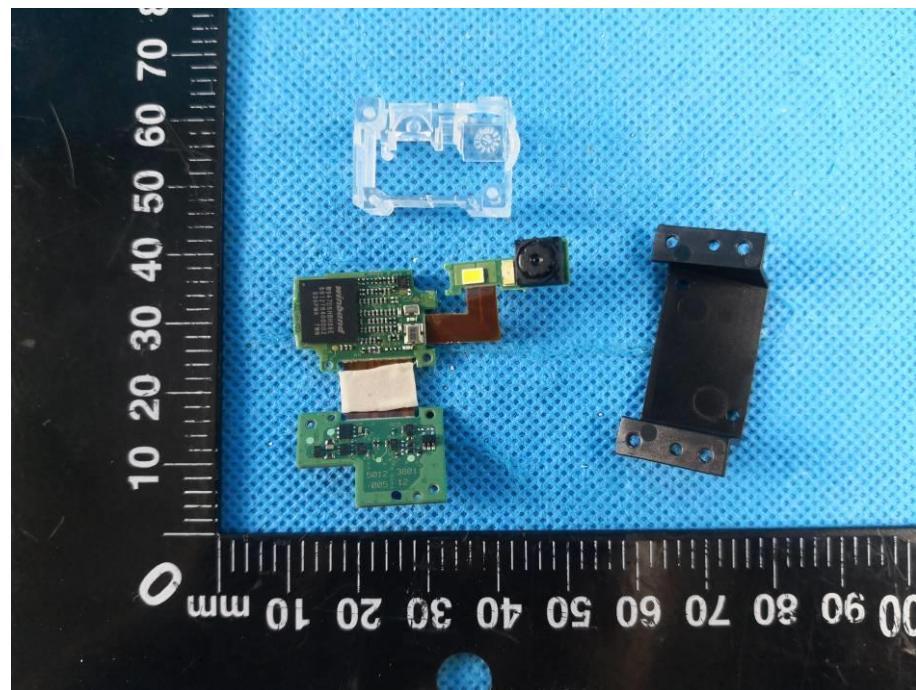


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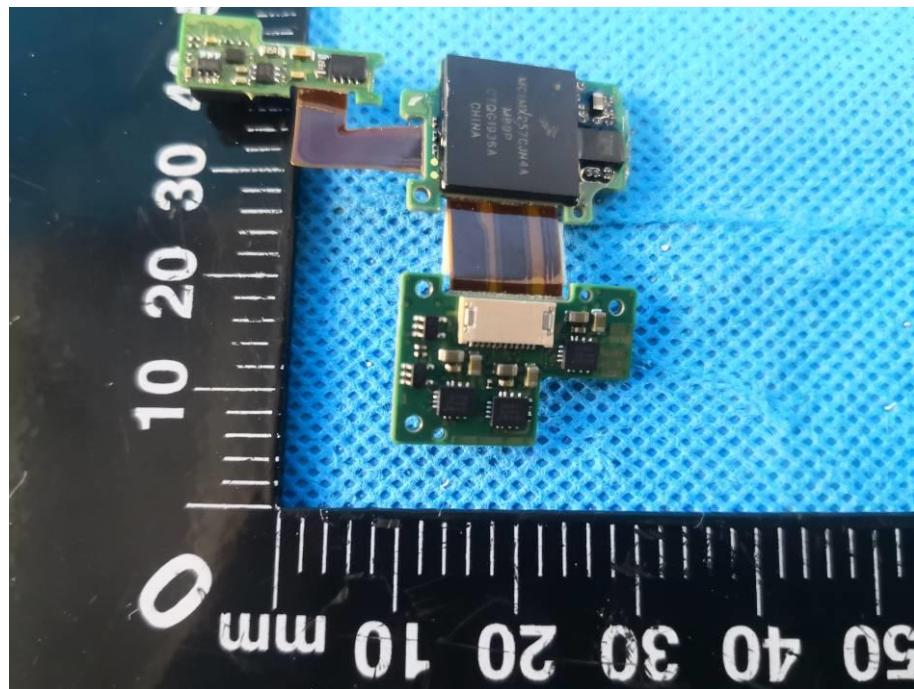


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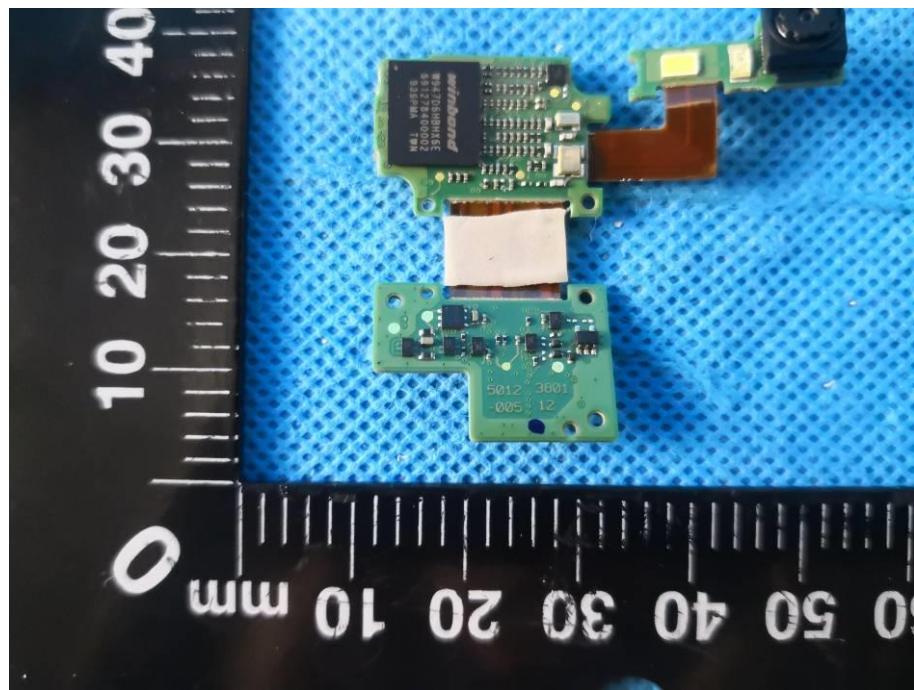


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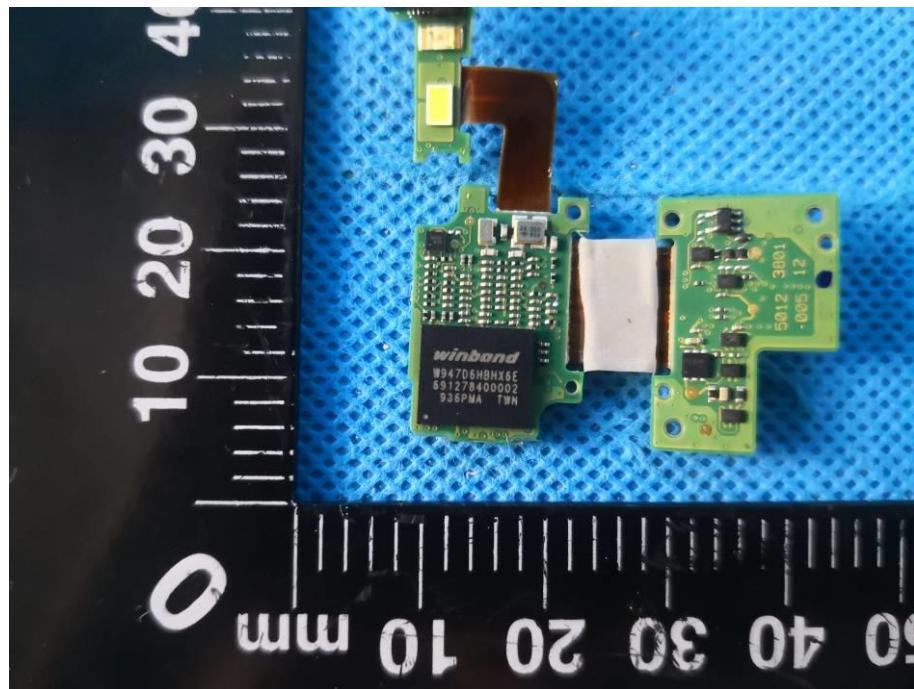


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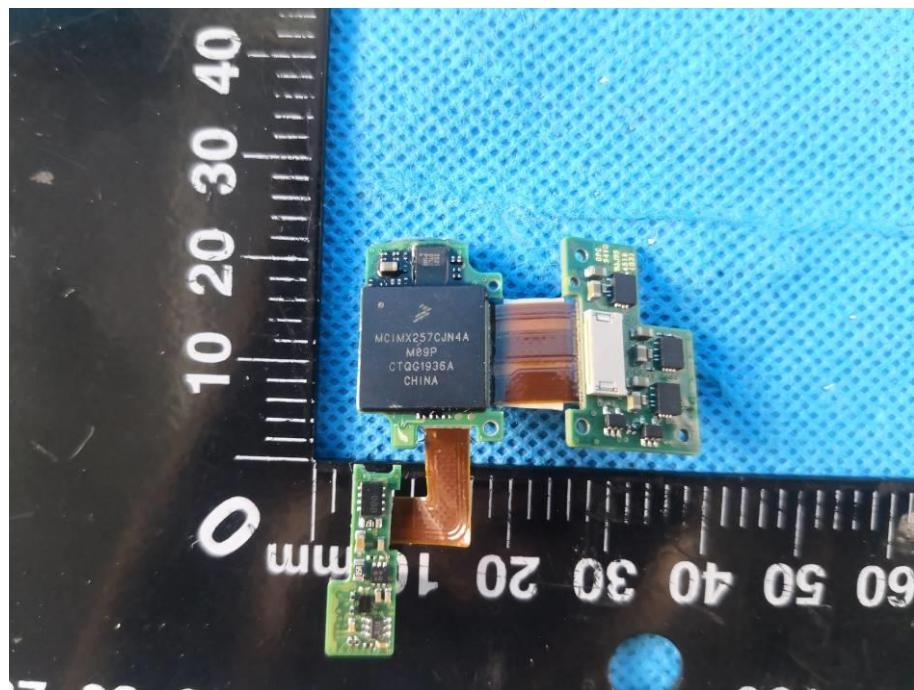


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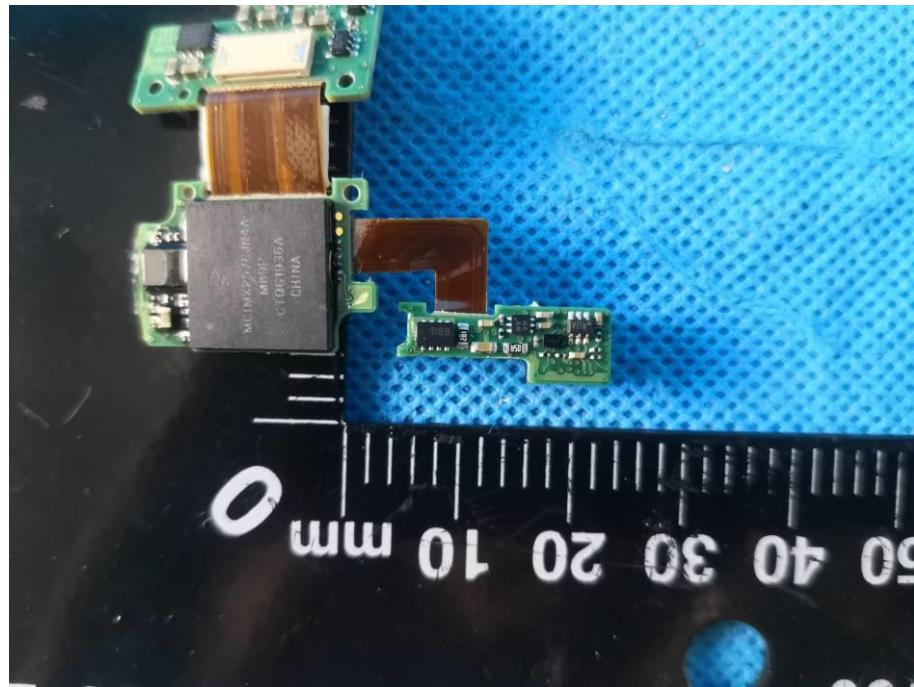


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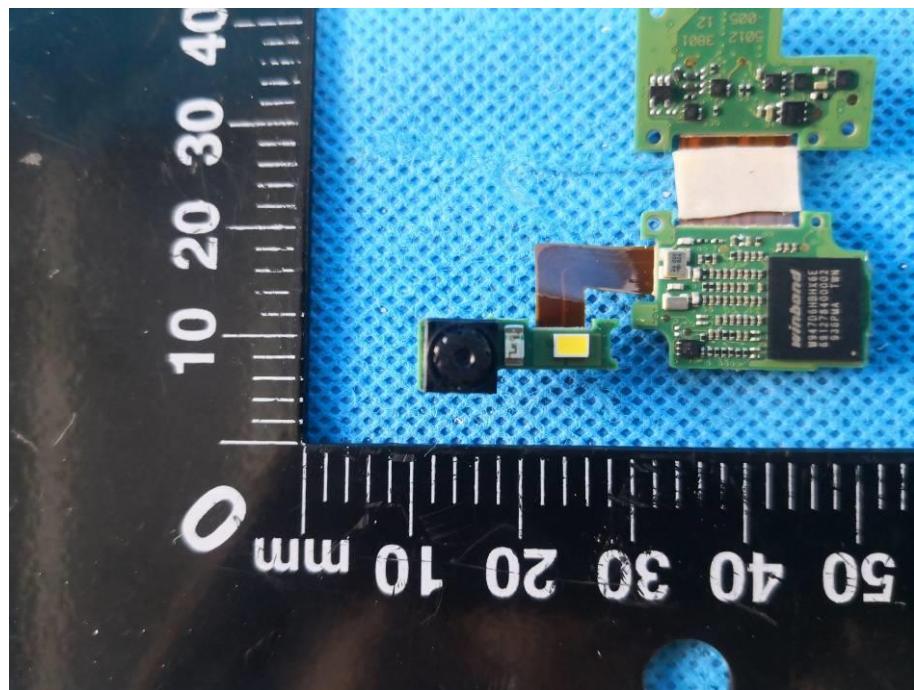


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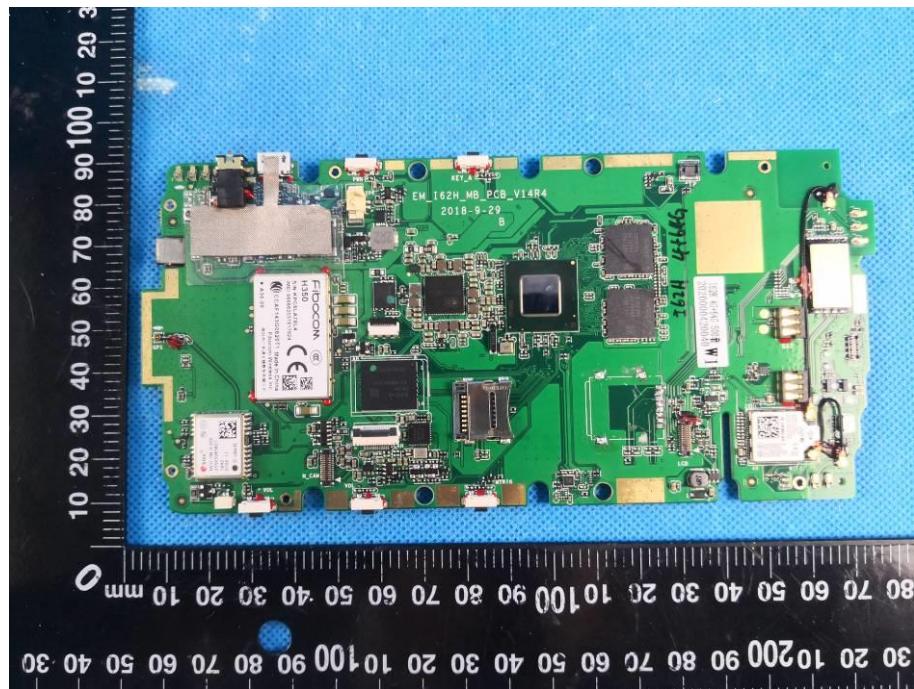


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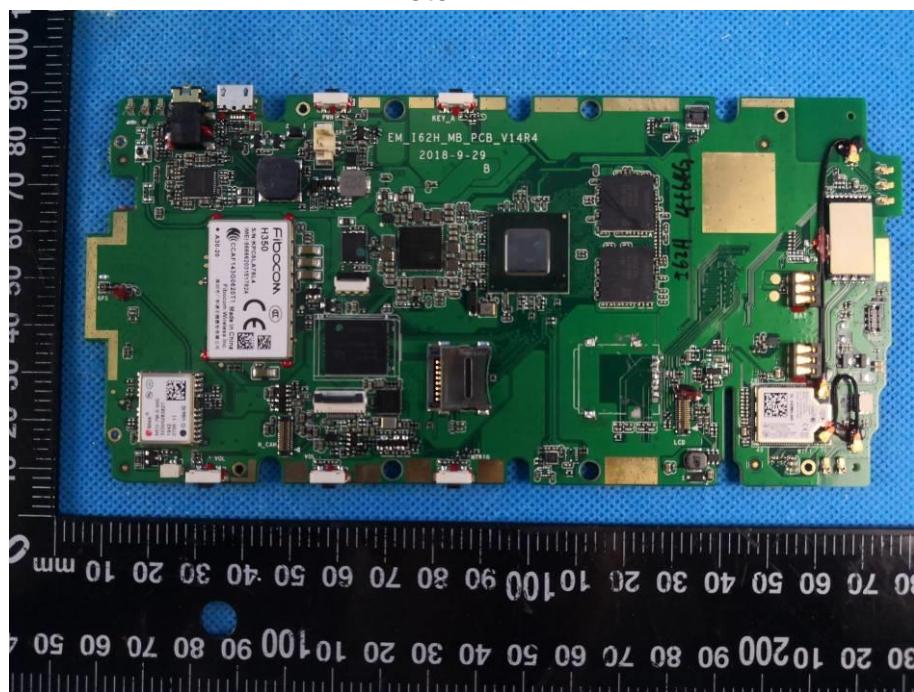


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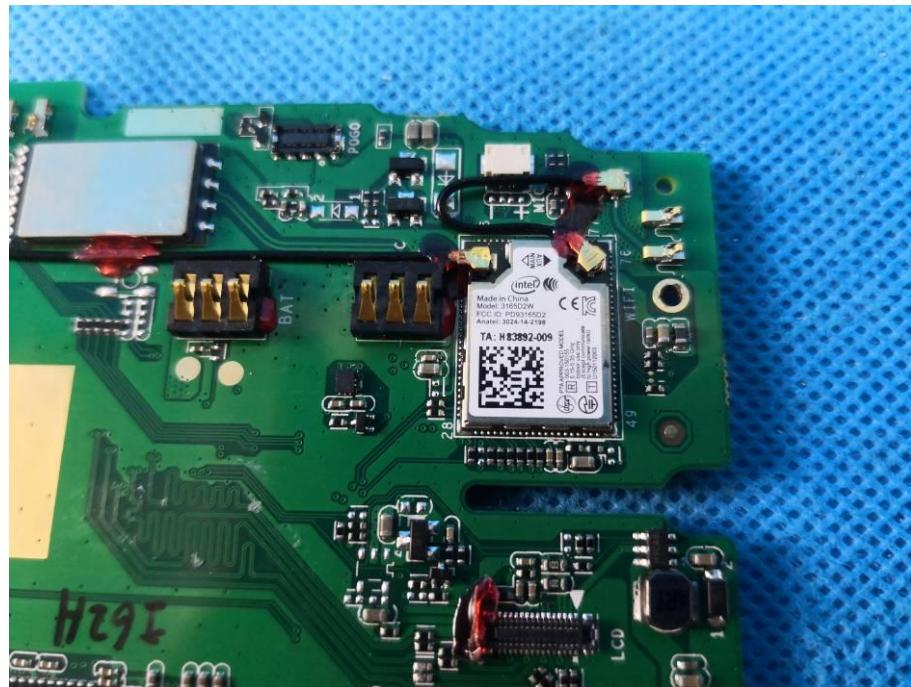


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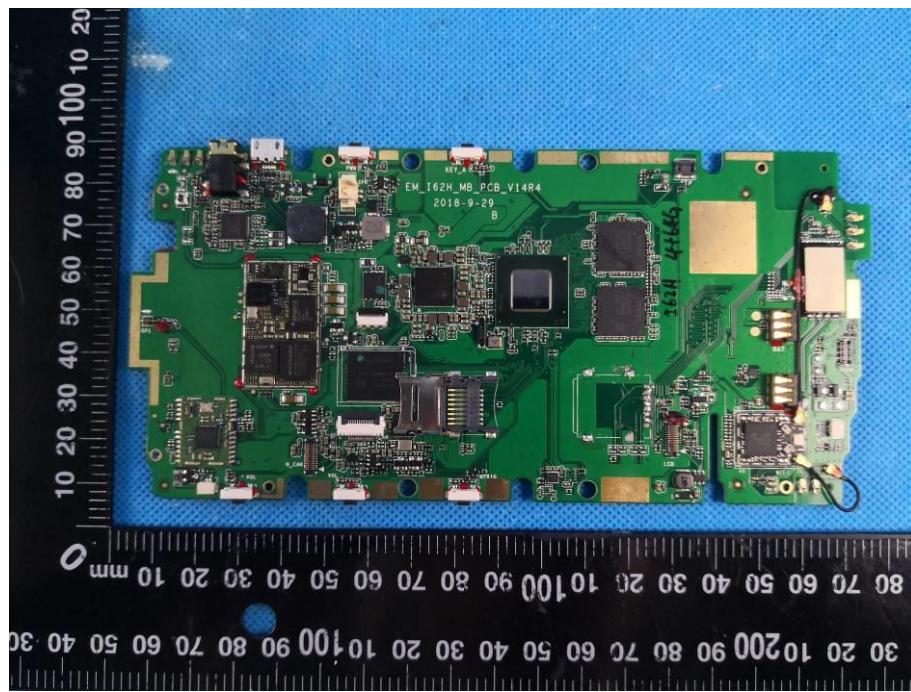


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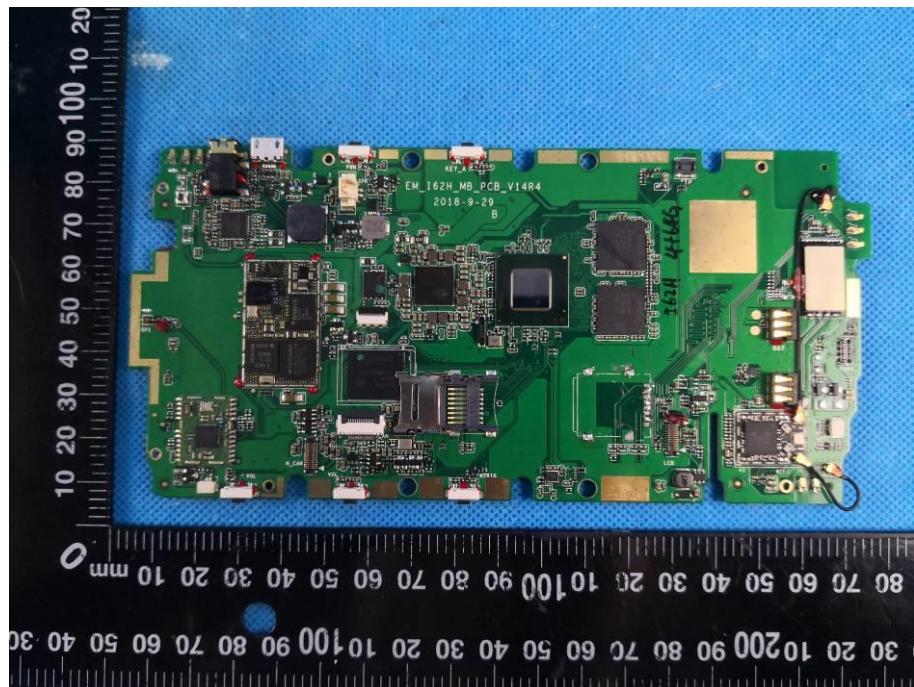


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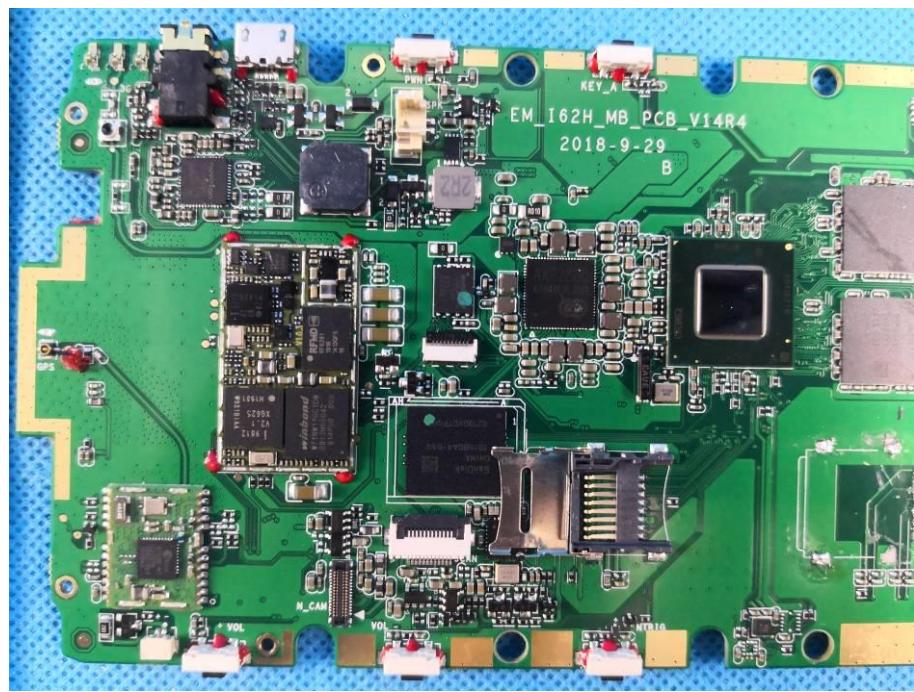


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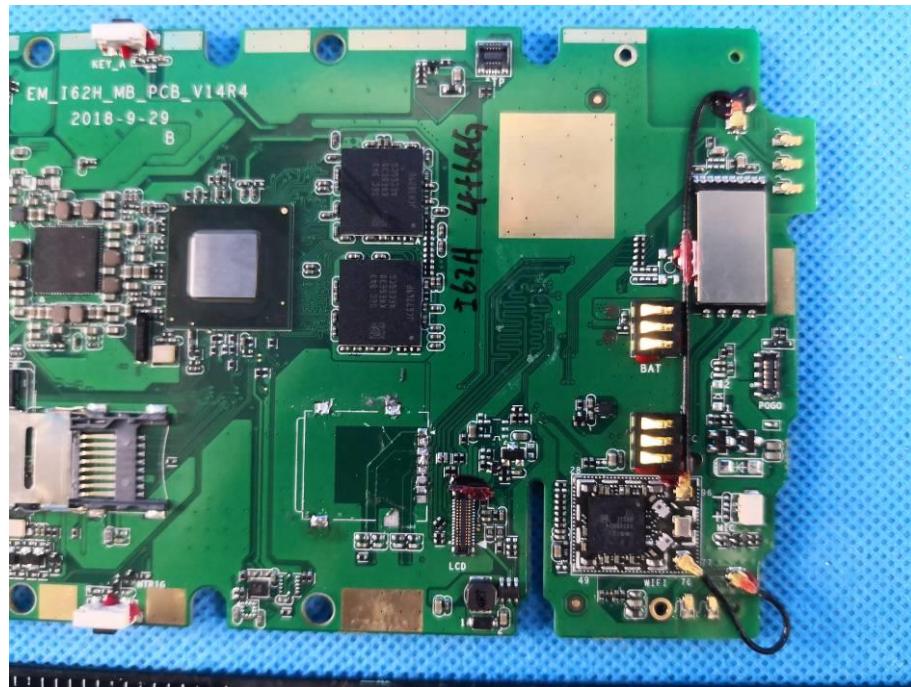


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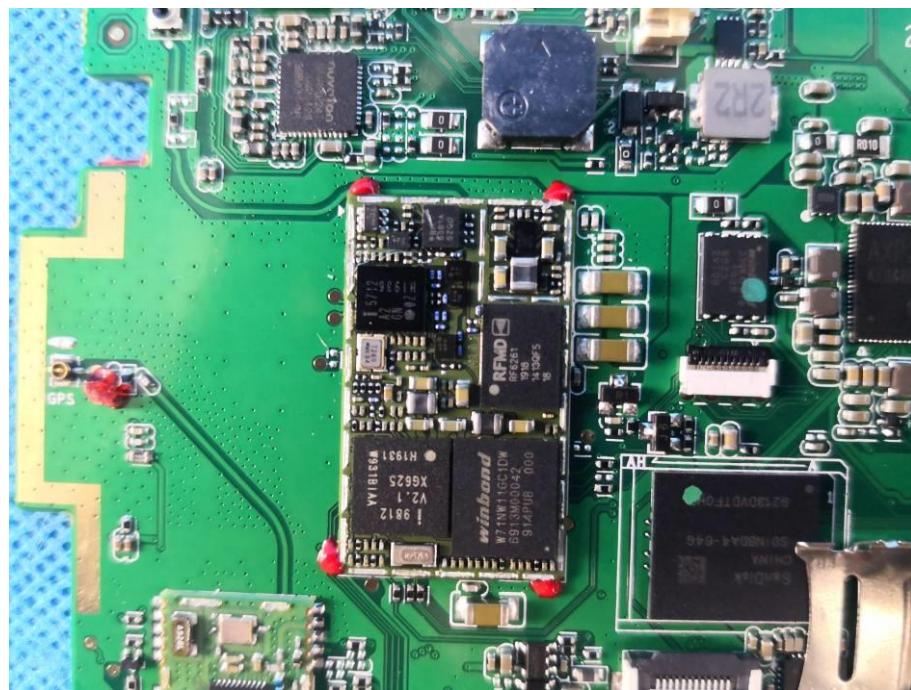


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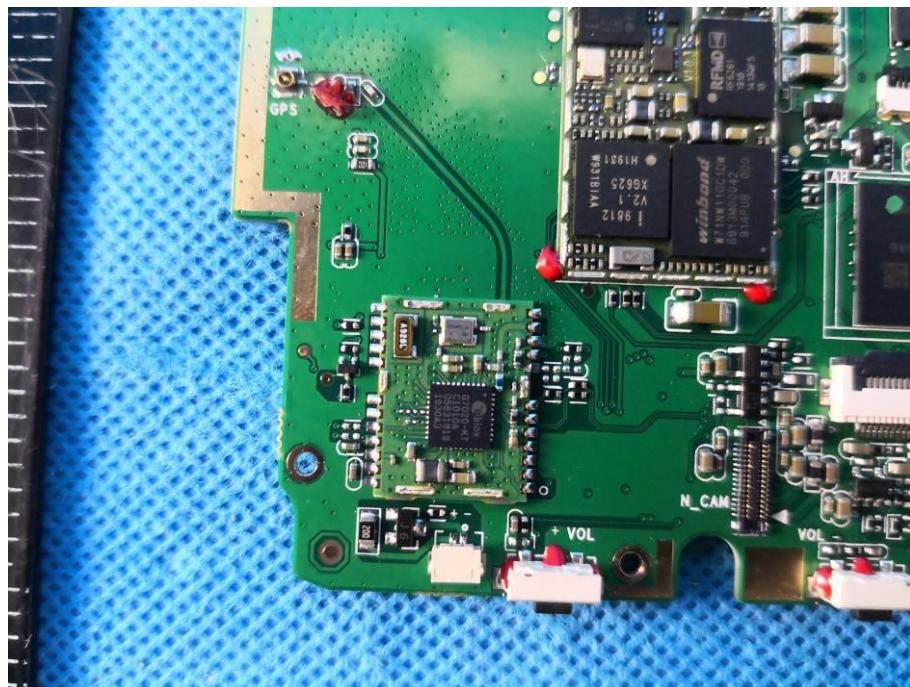
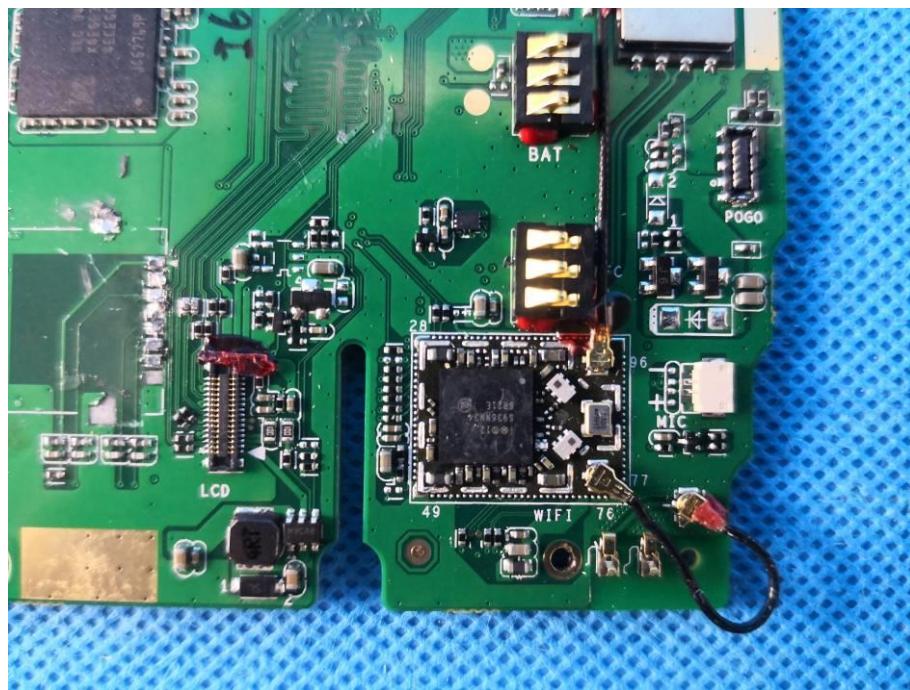


Photo 32



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Photo 33

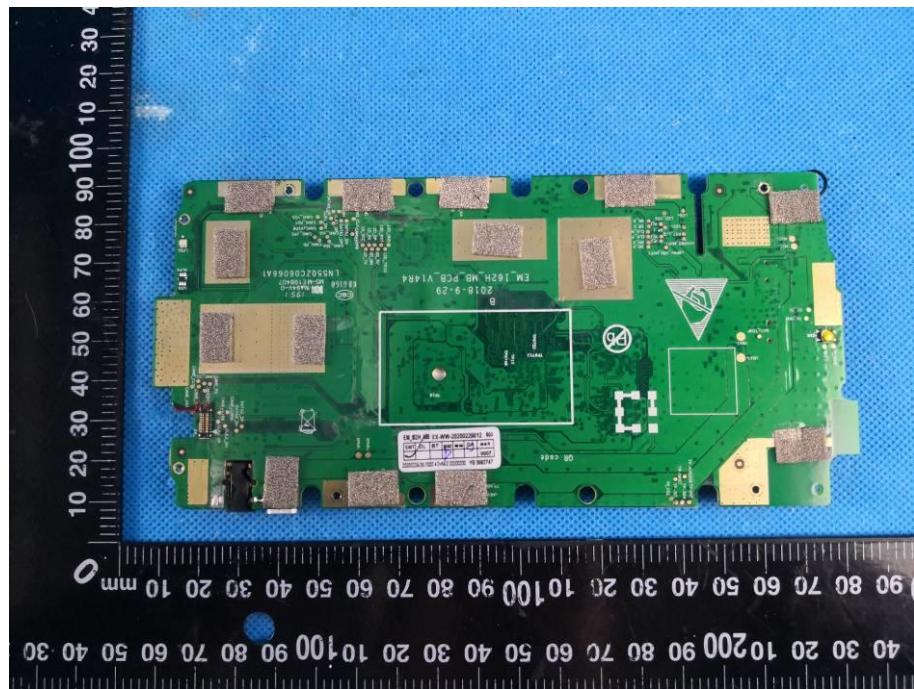


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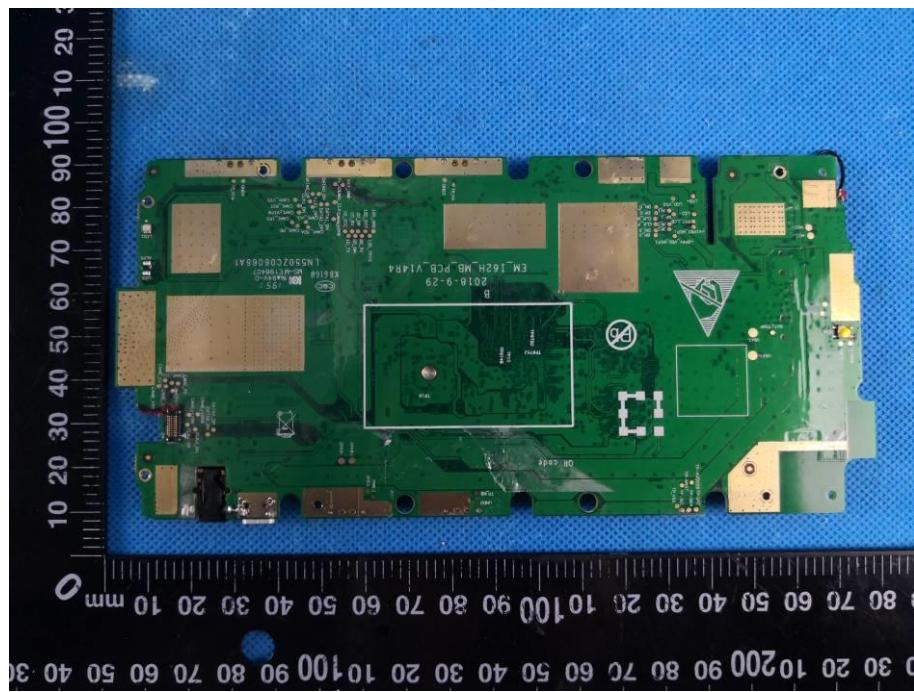


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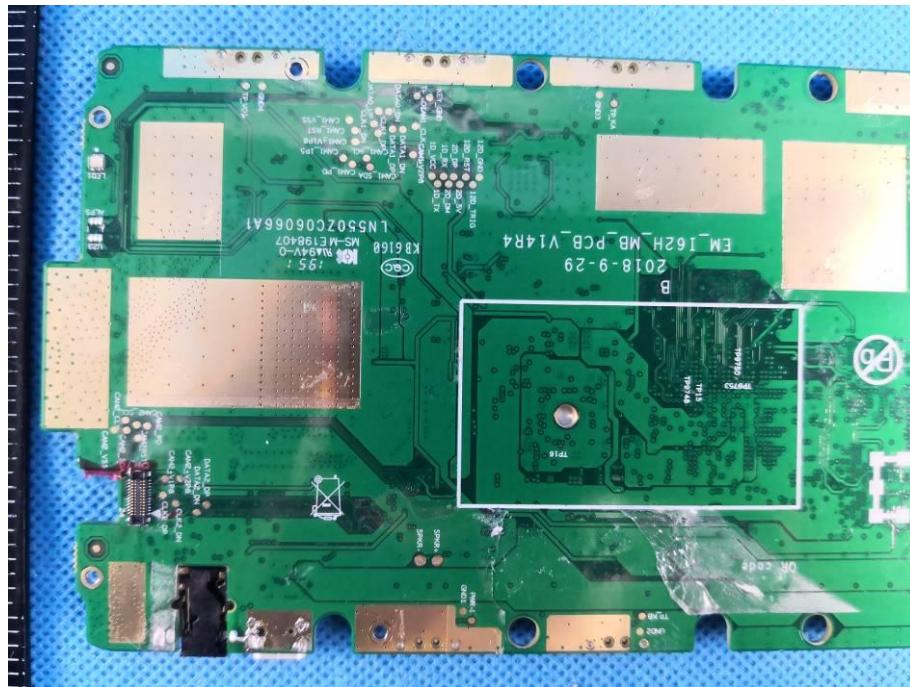


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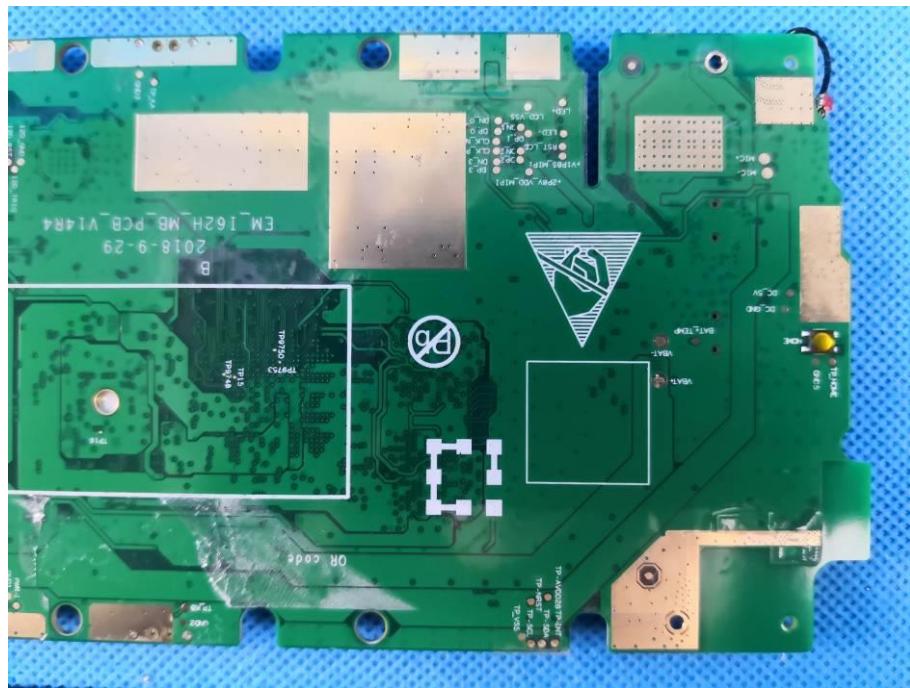


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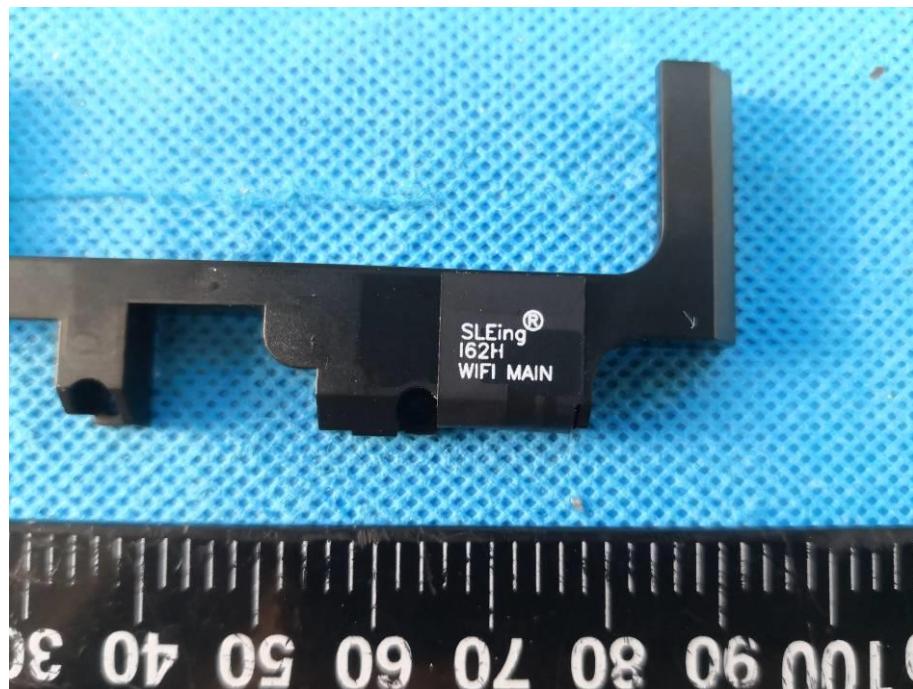


Photo 38



Photo 39

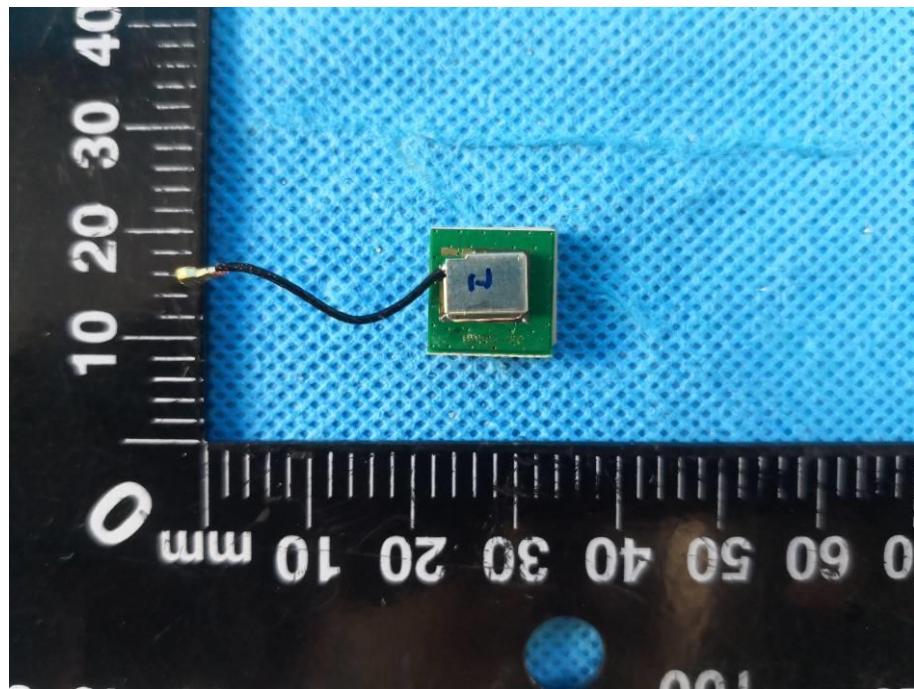


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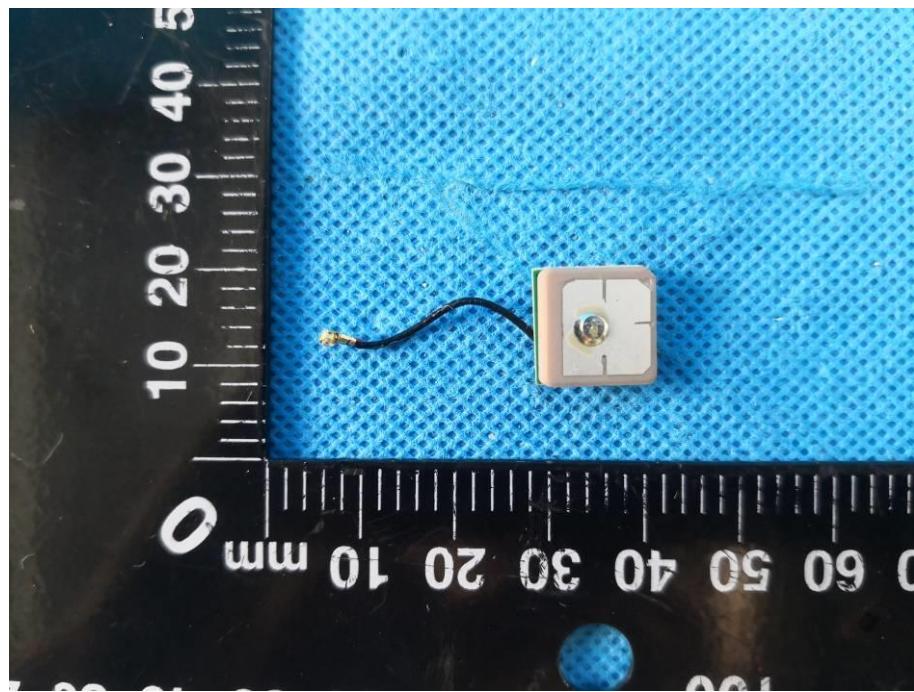


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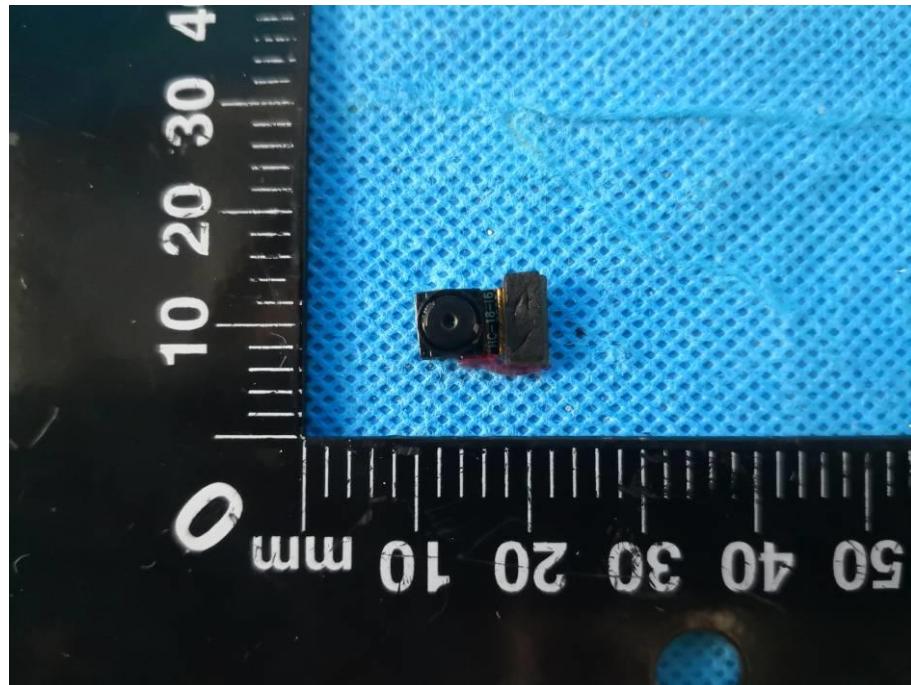
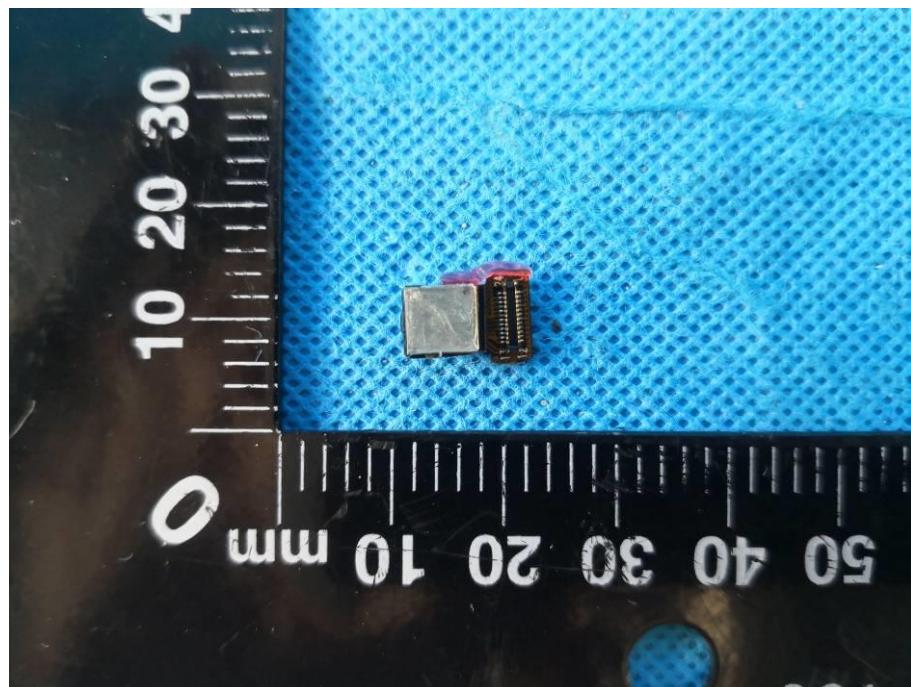


Photo 42



-----***End of Report***-----

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