



# RF - TEST REPORT

- Human Exposure -

**Type / Model Name** : G7104A

**Product Description** : Flexible Pump

**Applicant** : Agilent Technologies Deutschland GmbH

**Address** : Hewlett-Packard-Strasse 8

76337 Waldbronn, Baden-Württemberg

GERMANY

**Manufacturer** : Agilent Technologies Singapore (International) Pte. Ltd.

**Address** : No. 1 Yishun Ave 7

SINGAPORE 768923

SINGAPORE

|   |                        |
|---|------------------------|
| <p><b>Test Result</b> according to the standards listed in clause 1 test standards:</p> | <p><b>POSITIVE</b></p> |
|---|------------------------|

|   |   |
|---|---|
| <p><b>Test Report No. :</b>      <b>80192409-02 Rev_1</b></p> | <p>15. October 2024<br/>Date of issue</p> |
|---|---|



Deutsche  
Akkreditierungsstelle  
D-PL-12030-01-03  
D-PL-12030-01-04

FCC ID: 2BGE529G7104X

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ATTACHMENT A and ATTACHMENT B as separate supplement

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

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## 1 TEST STANDARDS

The tests were performed according to following standards:

### **FCC Rules and Regulations Part 1, Subpart I - Procedures Implementing the National Environmental Policy Act of 1969**

|                                   |   |
|-----------------------------------|---|
| Part 1, Subpart I, Section 1.307  | Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.   |
| Part 1, Subpart I, Section 1.1310 | Radiofrequency radiation exposure limits  |
| Part 1, Subpart 2, Section 2.1093 | Radiofrequency radiation exposure evaluation: portable devices.   |
| KDB 447498 D04 v01                | RF Exposure procedures and equipment authorisation policies for mobile and portable devices, November 29, 2021.   |
| IEEE C951: 2019 / Cor.2: 2020     | IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz<br>Corrigenda 2   |
| IEEE C95.3: 2021                  | IEEE Recommended Practice for Measurements and Co IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz<br>Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz |

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## **2 EQUIPMENT UNDER TEST**

### **2.1 Information provided by the Client**

Please note, we do not take any responsibility for information provided by the client or his representative which may have an influence on the validity of the test results.

### **2.2 Sampling**

The customer is responsible for the choice of sample. Sample configuration, start-up and operation is carried out by the customer or according his/her instructions.

### **2.3 Photo documentation of the EUT**

Detailed photos see ATTACHMENT A and ATTACHMENT B

ATTACHMENT A: External views

ATTACHMENT B: Internal views



### **2.4 Equipment type, category**

125 kHz RFID-Reader device.

Portable equipment.

### **2.5 Short description of the equipment under test (EUT)**

The EUT is a low-pressure mixing UHPLC pump.

Several internal 125 kHz antennas are located in the device. The TAG reader reads sequentially each antenna.

Number of tested samples: 1  
 Serial number: DEBAX05417

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**2.6 Variants of the EUT**

According to the customer, there are other variants of this device.  
 It is expressly pointed out here, that no measurements have been carried out on these devices!

- G7104C Flexible Pump up to 800bar
- G7131A Bio Flexible Pump up to 1300bar and flow rates up to 5ml/min
- G7131C Bio Flexible Pump up to 800bar and flow rates up to 5ml/min

**2.7 EUT operation mode**

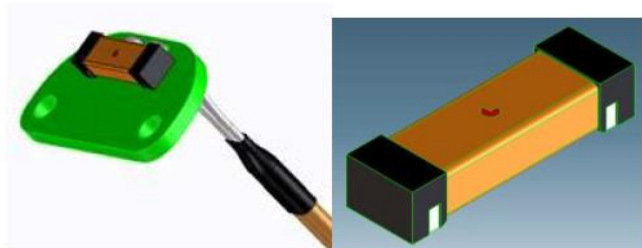
The equipment under test was operated during the measurement under the following conditions:

- Cont. TAG reading at 125 kHz (all antennas are read sequentially)
- 
- 

**2.8 Antenna**

Antenna: 125KHz

Agilent PN 9140-5210: PCB Mountable Part • IND-FXD 900uH 5% 10mA 3.6X11.8mm SMT  
 Manufacturer: Premo, SDTR1103-0090J



**2.9 Power supply system utilised**

Power supply voltage : 100 – 240 V AC, 50 or 60 Hz

All tests were carried out with a supply voltage of 120 V, 60 Hz unless otherwise stated. Exceptions are described in the detailed test conditions.

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### 3 TEST RESULT SUMMARY

RFID device using digital modulation, wich is not collocated to another transmitter.

| Rule Part                            | Description                                   | Result |
|--------------------------------------|---|--------|
| IEEE Std C95.1 – 2019 / Cor.2 – 2020 | Whole-body exposure ERLs (100 kHz to 300 GHz) | passed |

#### 3.1 Revision history of test report

| Test report No | Rev. | Issue Date      | Changes                                    |
|----------------|------|-----------------|--|
| 80192409-02    | 0    | 30 July 2024    | Initial test report                        |
| 80192409-02    | 1    | 15 October 2024 | Changes in point 2.6 (Variants of the EUT) |

The test report with the highest revision number replaces the previous test reports.

#### 3.2 Final assessment

The equipment under test fulfills the requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 10 January 2024

Testing concluded on : 02 February 2024

Checked by:

Tested by:

\_\_\_\_\_  
Klaus Gegenfurtner  
Teamleader Radio

\_\_\_\_\_  
Josef Knab  
Radio Team

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## 4 TEST ENVIRONMENT

### 4.1 Address of the test laboratory

**CSA Group Bayern GmbH  
Ohmstrasse 1-4  
94342 STRASSKIRCHEN  
GERMANY**

### 4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15 - 35 °C

Humidity: 30 - 60 %

Atmospheric pressure: 86 - 106 kPa

### 4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor  $k = 2$ . The true value is located in the corresponding interval with a probability of 95 %. The measurement uncertainty was calculated for all measurements listed in this test report on basis of the ETSI Technical Report TR 100 028 Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1 and Part 2. The results are documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

### 4.4 Conformity Decision Rule

The applied conformity decision rule is based on ILAC G8:09/2019 clause 4.2.1 Binary Statement for Simple Acceptance Rule ( $w = 0$ ).

Details can be found in the procedure CSA\_B\_V50\_29.

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## 5 HUMAN EXPOSURE

### 5.1 Whole-body exposure ERLs (100 kHz to 300 GHz)

For test instruments and accessories used see section 6 Part HE.

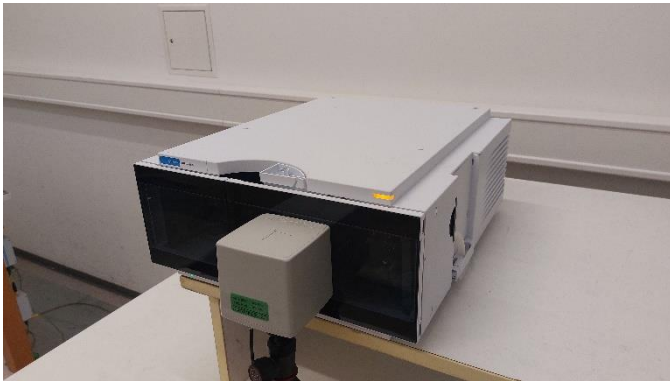
#### 5.1.1 Applicable standard

IEEE Std C95.1 – 2019 / Cor.2 – 2020

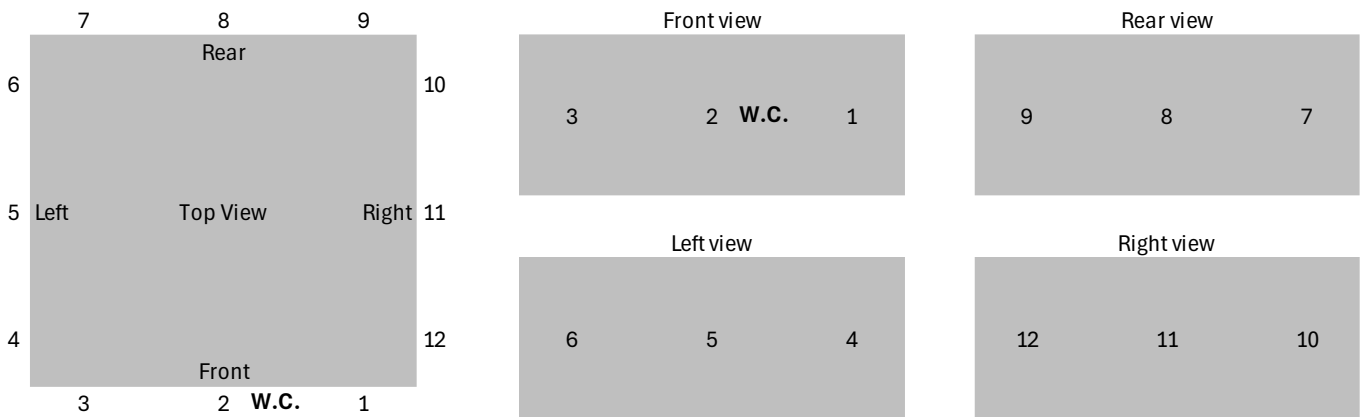
#### 5.1.2 Description of the test location

Test location: Shielded Room S5

#### 5.1.3 Location of measurement points



**Note:** The picture shows the worst case (W.C.) position.



Measurement points:

- Positon 1 to position 12
  - Worst case position (W.C.)
- Each position was measured in a distance of 0 cm & 10 cm

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Dimensions of the EuT:

- Depth = 43.6 cm, Width = 39.6 cm, Height = 18.0 cm

Test configuration

- E-field Probe: EHP-200AC
- Measurement uncertainty: ±15 %

**5.1.4 Test results - Electric Field**

| Frequency [kHz] | Distance   | 0 cm [V/m] | 10 cm [V/m] | limit [V/m] | % Limit | Result |
|-----------------|------------|------------|-------------|-------------|---------|--------|
|                 | Position   |            |             |             |         |        |
| 125             | 1          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 2          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 3          | 0.07       | 0.07        | 614         | 0.01    | PASS   |
| 125             | 4          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 5          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 6          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 7          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 8          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 9          | 0.06       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 10         | 0.07       | 0.06        | 614         | 0.01    | PASS   |
| 125             | 11         | 0.69       | 0.06        | 614         | 0.11    | PASS   |
| 125             | 12         | 0.09       | 0.07        | 614         | 0.01    | PASS   |
| 125             | Worst case | 0.10       | 0.06        | 614         | 0.02    | PASS   |

**5.1.5 Test results - Magnetic Field**

| Frequency [kHz] | Distance   | 0 cm [A/m] | 10 cm [A/m] | limit [A/m] | % Limit | Result |
|-----------------|------------|------------|-------------|-------------|---------|--------|
|                 | Position   |            |             |             |         |        |
| 125             | 1          | 0.03       | 0.01        | 130.4       | 0.03    | PASS   |
| 125             | 2          | 0.02       | 0.01        | 130.4       | 0.01    | PASS   |
| 125             | 3          | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 4          | 0.01       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 5          | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 6          | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 7          | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 8          | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 9          | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 10         | 0.00       | 0.00        | 130.4       | 0.00    | PASS   |
| 125             | 11         | 0.03       | 0.01        | 130.4       | 0.02    | PASS   |
| 125             | 12         | 0.03       | 0.01        | 130.4       | 0.02    | PASS   |
| 125             | Worst case | 0.13       | 0.02        | 130.4       | 0.10    | PASS   |

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5.1.6 Limit

| Frequency range (MHz) | Electric field strength (E) <sup>a,b,c</sup> (V/m) | Magnetic field strength (H) <sup>a,b,c</sup> (A/m) | Power density (s) <sup>a,b,c</sup> (W/m <sup>2</sup> ) |                             | Averaging time (min) |
|-----------------------|--|--|--|-----------------------------|----------------------|
|                       |  |  | S <sub>E</sub>   | S <sub>H</sub>              |                      |
| 0.1 to 1.34           | 614  | 16.3 / fM  | 1000   | 100 000 / fM <sup>2</sup>   | 30                   |
| 1.34 to 30            | 823.8 / fM   | 16.3 / fM  | 1800 / fM  | 100 000 / fM <sup>2</sup>   | 30                   |
| 30 to 100             | 27.5   | 158.3 / fM <sup>1.668</sup>                        | 2  | 9 400 000 / fM <sup>2</sup> | 30                   |
| 100 to 400            | 27.5   | 0.0729   | 2  |                             | 30                   |
| 400 to 2000           | --   | --   | fM / 200   |                             | 30                   |
| 2000 to 300000        | --   | --   | 10   |                             | 30                   |

NOTE—S<sub>E</sub> and S<sub>H</sub> are plane-wave-equivalent power density values, based on electric or magnetic field strength respectively, and are commonly used as a convenient comparison with ERLs at higher frequencies and are sometimes displayed on commonly used instruments.

<sup>a</sup> For exposures that are uniform over the dimensions of the body, such as certain far-field plane-wave exposures, the exposure field strengths and power densities are compared with the ERLs in Table 7. For more typical nonuniform exposures, the mean values of the exposure fields, as obtained by spatially averaging the plane-wave-equivalent power densities or the squares of the field strengths, are compared with the ERLs in Table 7. (See notes to Table 7 through Table 11 in 4.3.5.)

<sup>b</sup> fM is the frequency in MHz.

<sup>c</sup> The E, H, and S values are those rms values unperturbed by the presence of the body.

Remarks: None.

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## 6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used are calibrated and verified regularly. The calibration history is available on request.  
All listed measuring devices were calibrated at the time of use.

| Test ID | Model Type | Equipment No.   | Next Calib. | Last Calib. | Next Verif. | Last Verif. |
|---------|------------|-----------------|-------------|-------------|-------------|-------------|
| HE      | EHP-200AC  | 09-16/24-24-001 | 19/02/2025  | 19/02/2024  |             |             |

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