



# RF - TEST REPORT

- Human Exposure -

**Type / Model Name** : G7116B

**Product Description** : Multicolumn Thermostat

**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

<b>Test Result</b> according to the standards listed in clause 1 test standards:	<b>POSITIVE</b>
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<b>Test Report No. :</b> <b>80192406-02 Rev_1</b>	15. October 2024 <small>Date of issue</small>
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Deutsche  
Akkreditierungsstelle  
D-PL-12030-01-00

FCC ID: 2BGE529G7116X

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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 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 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.

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

The EUT is a UHPLC column oven that provides precise temperature control over a broad temperature range with cooling to 20 degrees below ambient and heating up to 110 °C.

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

Number of tested samples: 1  
 Serial number: DEBA412667

**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!

G7116A MultiColumn Thermostat temperature up to 85°C

**2.7 EUT operation mode**

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

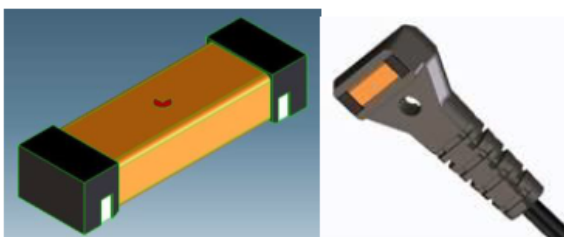
- Cont. TAG reading at 125 kHz (all antennas are read sequentially)
- 
- 
- 

**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	05 August 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 : 13 March 2024

Testing concluded on : 13 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

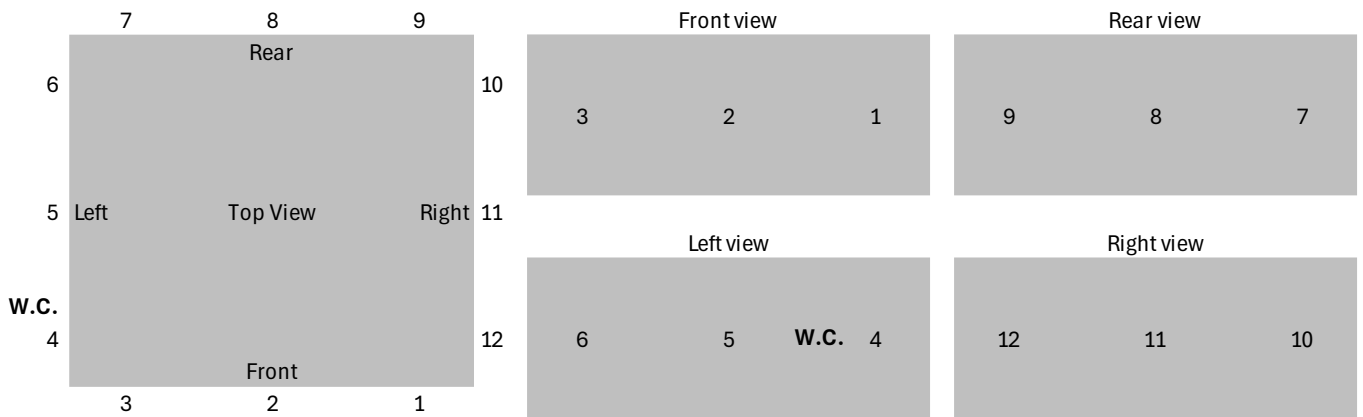
#### 5.1.2 Description of the test location

Test location: Shielded Room S5

#### 5.1.3 Location of measurement points



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



#### Measurement points:

- Position 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 = 43.5 cm, Height = 16.0 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	0.12	0.07	614	0.02	PASS
125	2	0.07	0.06	614	0.01	PASS
125	3	0.23	0.08	614	0.04	PASS
125	4	2.44	0.27	614	0.40	PASS
125	5	0.15	0.11	614	0.03	PASS
125	6	0.07	0.06	614	0.01	PASS
125	7	0.07	0.07	614	0.01	PASS
125	8	0.07	0.07	614	0.01	PASS
125	9	0.07	0.06	614	0.01	PASS
125	10	0.06	0.06	614	0.01	PASS
125	11	0.31	0.15	614	0.05	PASS
125	12	0.36	0.20	614	0.06	PASS
125	Worst case	1.94	0.25	614	0.32	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	0.05	0.01	130.4	0.04	PASS
125	2	0.01	0.00	130.4	0.01	PASS
125	3	0.05	0.01	130.4	0.04	PASS
125	4	0.08	0.04	130.4	0.06	PASS
125	5	0.07	0.01	130.4	0.05	PASS
125	6	0.01	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	0.17	0.01	130.4	0.13	PASS
125	12	0.25	0.04	130.4	0.19	PASS
125	Worst case	1.39	0.02	130.4	1.07	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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