

# TEST REPORT

**Applicant:** GN Audio A/S  
**Address:** Lautrupbjerg 7, 2750 Ballerup, Denmark  
**Equipment Type:** Jabra Perform 45  
**Model Name:** OTE980  
**Brand Name:** Jabra, BlueParrott  
**Test Standard:** ANSI/IEEE Std 149-1979  
**Test Date:** Jul. 05, 2022  
**Date of Issue:** Aug. 26, 2022

**ISSUED BY:**

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Mai Jintian

**Checked by:** Tolan Tu

**Approved by:** Wei Yanquan  
(Chief Engineer)

*Mai Jintian*

*Tolan Tu*

*Wei Yanquan*

<b>Revision History</b>		
<u>Version</u>	<u>Issue Date</u>	<u>Revisions</u>
<u>Rev. 01</u>	<u>Aug. 26, 2022</u>	<u>Initial Issue</u>

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# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

## 1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	<input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	<input type="checkbox"/> 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	GN Audio A/S
Address	Lautrupbjerg 7, 2750 Ballerup, Denmark

### 2.2 Manufacturer Information

Manufacturer	GN Audio A/S
Address	Lautrupbjerg 7, 2750 Ballerup, Denmark

### 2.3 Factory Information

Factory	WATA ELECTRONICS CO., LTD
Address	No.142, South Tanshen Road, Tanzhou Town, Zhongshan City, Guangdong province, China

### 2.4 General Description for Equipment under Test (EUT)

EUT Name	Jabra Perform 45
Model Name Under Test	OTE980
Antenna Type	Ceramic Antenna
Dimensions	3.5*2.0 mm

## 2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No.	HT371030
	Serial No.	N/A
	Capacity	85 mAh
	Rated Voltage	3.7 V
	Limited Voltage	4.2 V

## 2.6 Technical Information

Frequency Range	2400MHz ~ 2483.5MHz
Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2483.5MHz

### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

No.	Identity	Document Title
1	ANSI/IEEE Std 149-1979	IEEE Standard Test Procedures for Antennas

#### 3.2 Test Verdict

Report Section	Description	Remark
ANNEX A.1	Gain and Efficiency	--
ANNEX B	Radiation Pattern	--

#### 3.3 Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Item	Uncertainty
VSWR(S11)	$\pm 0.61$
Gain	$\pm 1.92\text{dB}$

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Condition

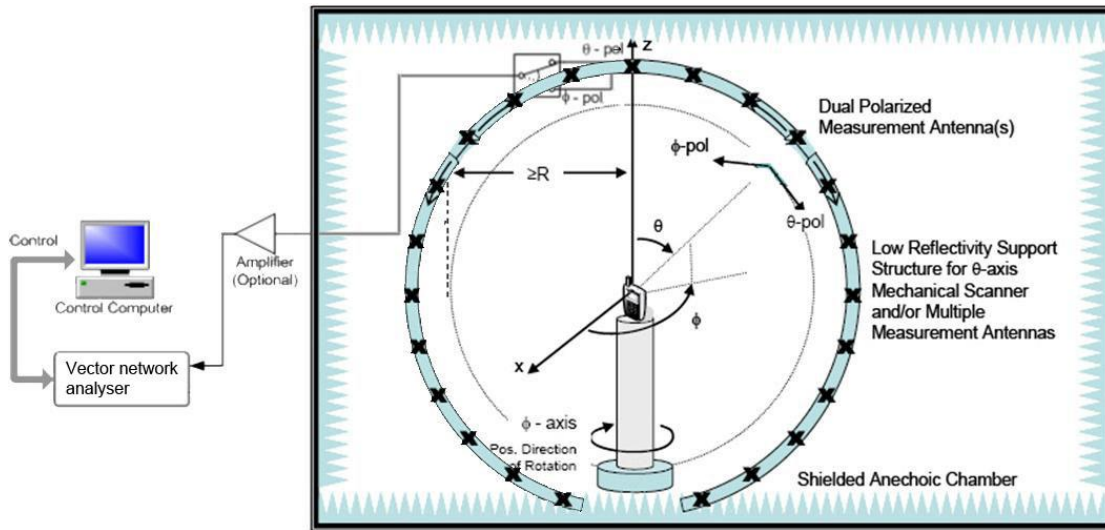
Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(°C)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	25	3.7 V	50

### 4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SG24 Multi-probe Antenna Measurement System	SATIMO	SG24-L	1101855-0001	2021.11.12	2024.11.11
Vector Network Analyzer	Agilent	E5071B	MY42404001	2022.04.02	2023.04.01
Description	Manufacturer	Name		Version	
Test Software	MVG	SPM		V 1.8	

### 4.3 Test Setup

#### 4.3.1 Antenna gain, efficiency and radiation pattern test setup





## ANNEX A TEST RESULTS

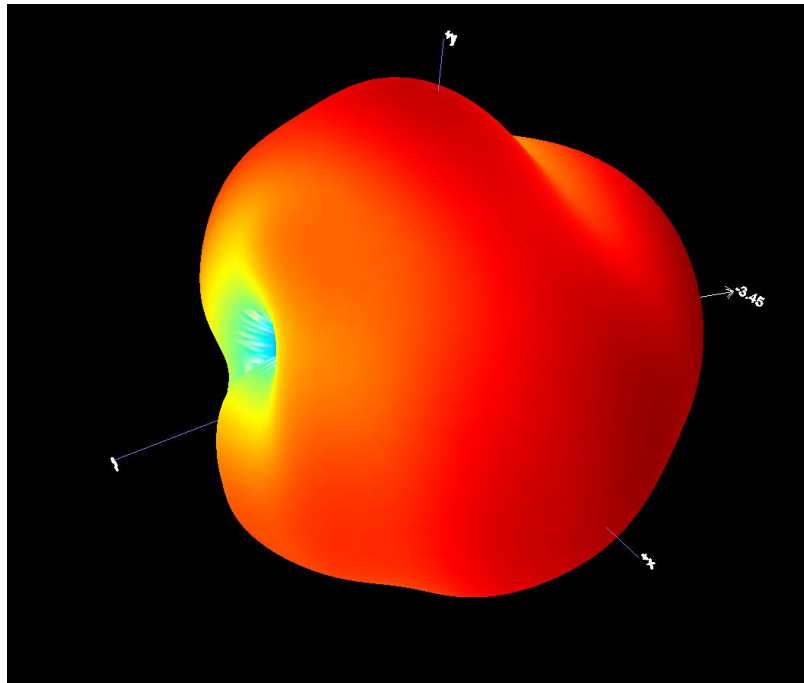
### A.1 Gain and Efficiency

Frequency	Gain (dBi)	Efficiency (%)
2400MHz	-3.45	16
2410MHz	-3.17	17
2420MHz	-3.11	17
2430MHz	-3.07	17
2440MHz	<b>-2.92</b>	<b>17</b>
2450MHz	-3.29	16
2460MHz	-3.74	15
2470MHz	-3.82	15
2480MHz	-4.03	14
2483.5MHz	-4.13	13

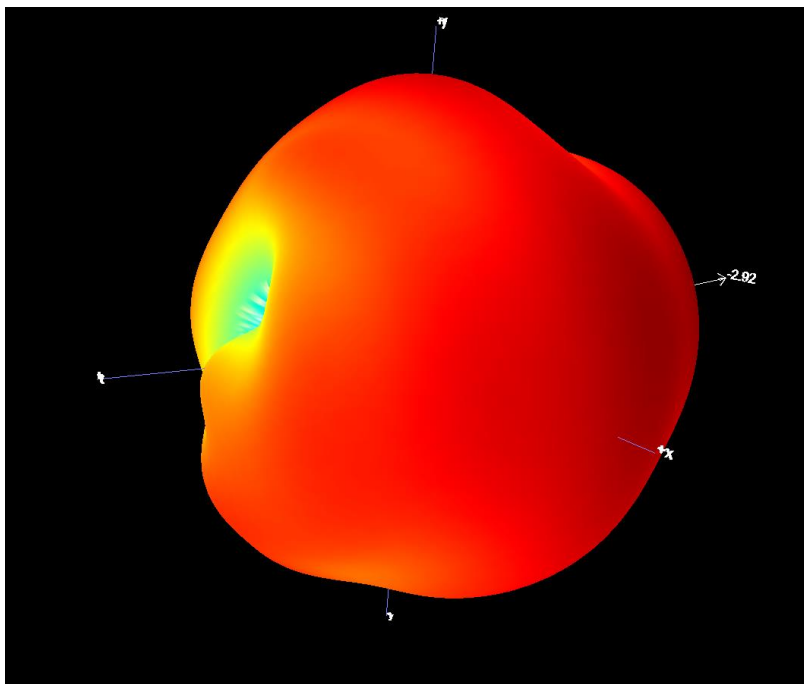
## ANNEX B RADIATION PATTERN

### B.1 3D Pattern

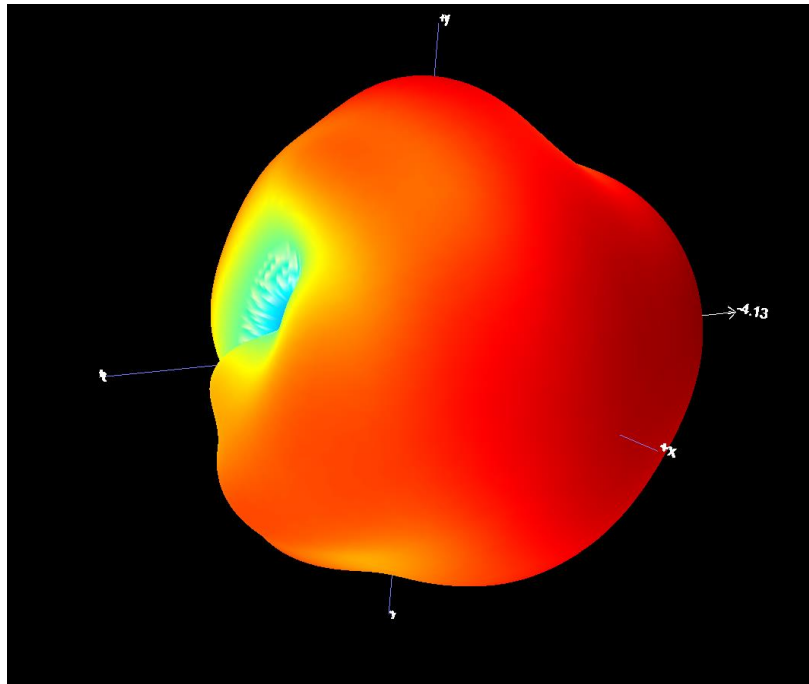
B1.1 3D Pattern for 2400MHz



B1.2 3D Pattern for 2440MHz

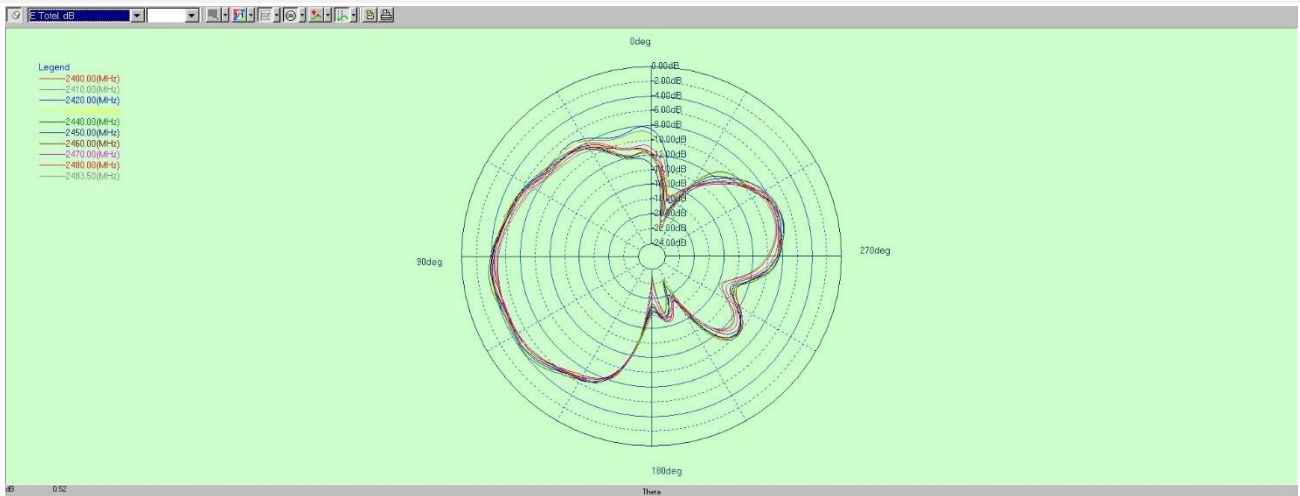


B1.3 3D Pattern for 2483.5MHz

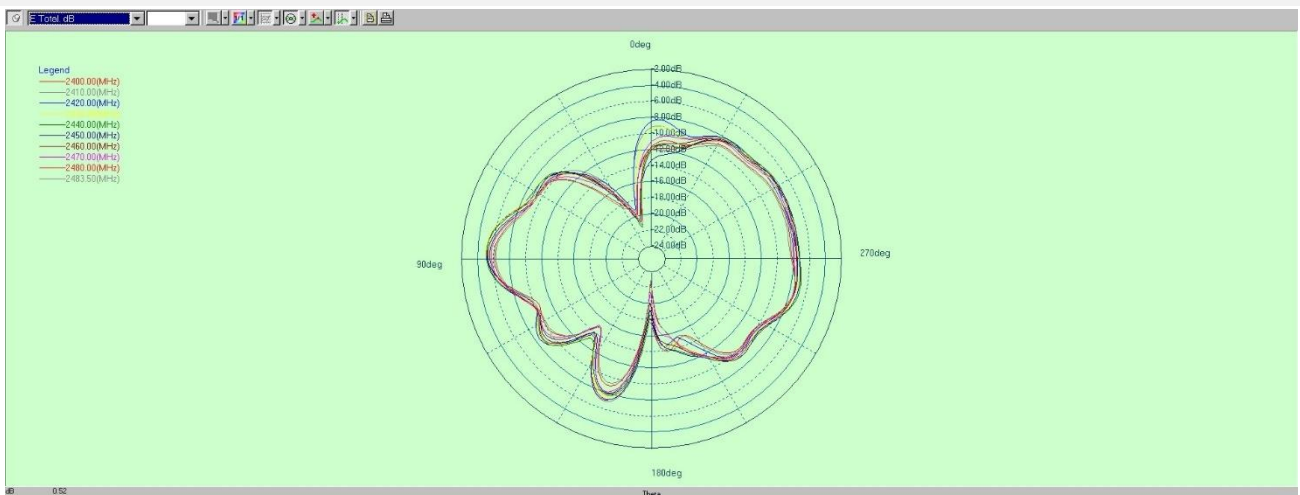


## B.2 1D Radiation Pattern

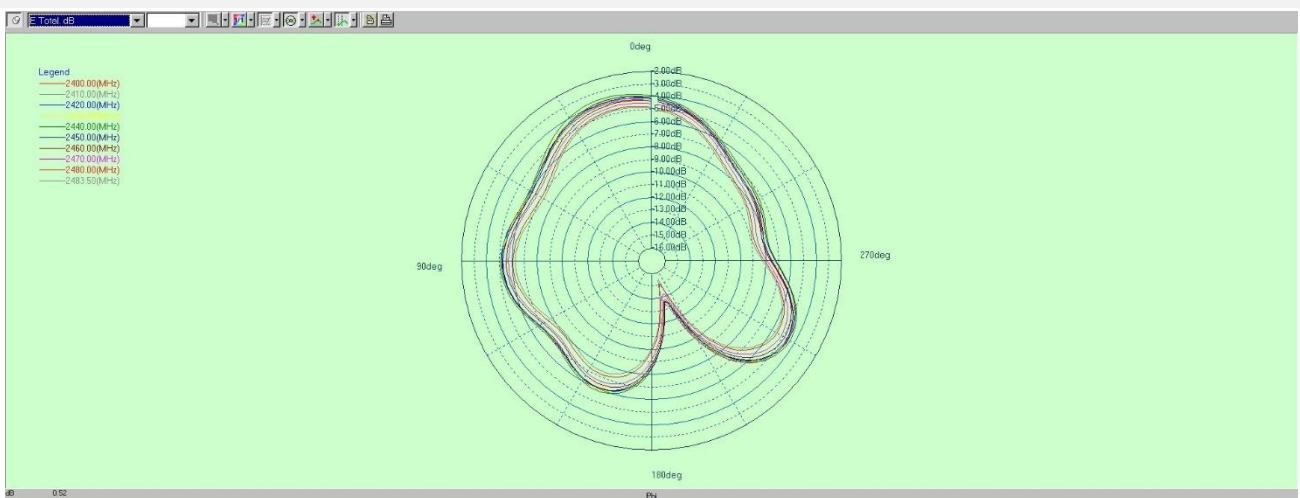
### B2.1 PHI=0



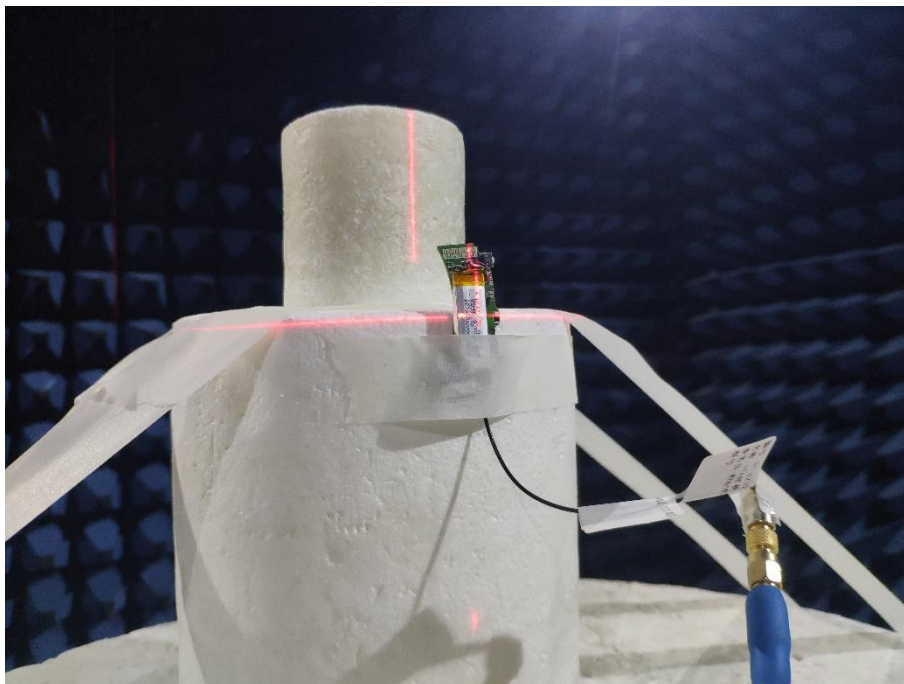
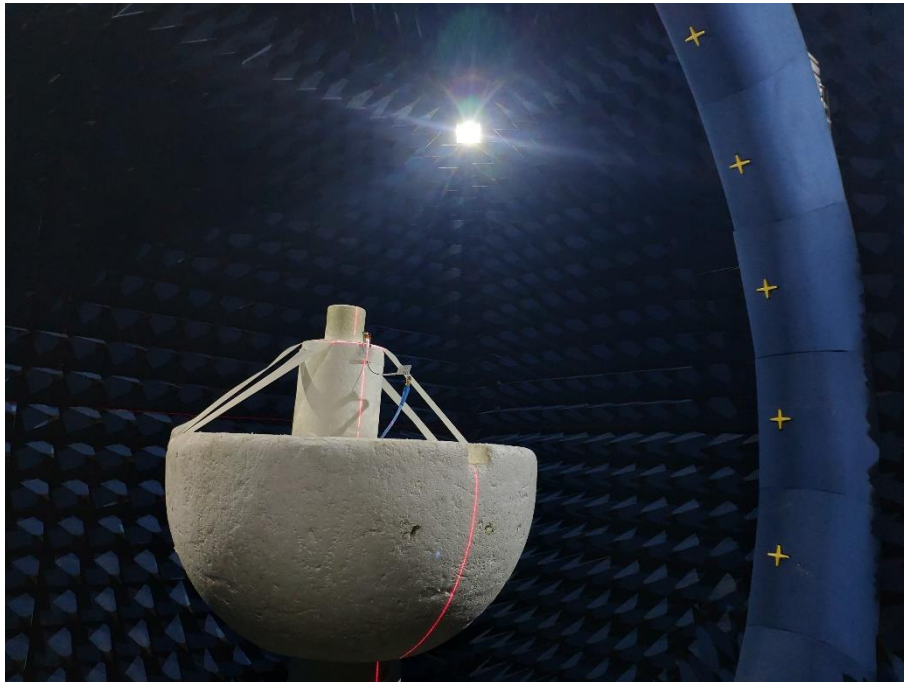
### B2.2 PHI=90



### B2.3 THETA=90

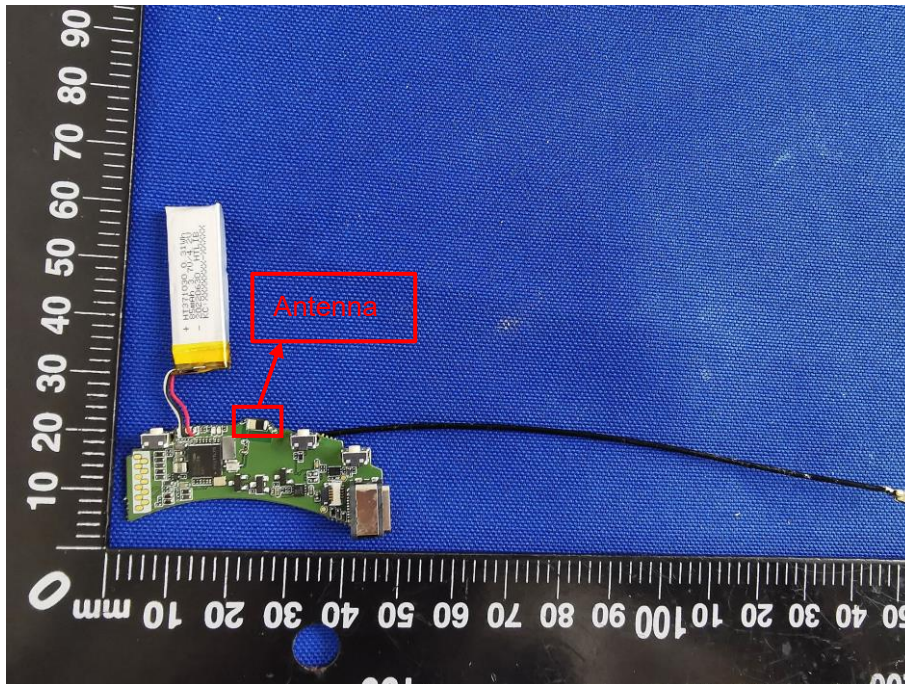


## ANNEX C TEST SETUP PHOTO





## ANNEX D EUT PHOTO



## Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
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--END OF REPORT--