



Test Report

FCC ID: 2A48S-M02A

Applicant: Shenzhenshi Weiduli Technology Co.,Ltd.
Address: 4h Floor, Building 4, Dejin Industrial Zone, No. 40, Fuyuan 1st Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer: Shenzhenshi Weiduli Technology Co.,Ltd.
Address: 4h Floor, Building 4, Dejin Industrial Zone, No. 40, Fuyuan 1st Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
EUT: power bank
Trade Mark: N/A
Model Number: M02A
M01A, M03A
Date of Receipt: Sep. 12, 2024
Test Date: Sep. 12, 2024 - Sep. 28, 2024
Date of Report: Sep. 28, 2024
Prepared By: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

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Reviewer (Supervisor): Jack Bu
Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



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Test Result Certification	
Applicant:	Shenzhenshi Weiduli Technology Co.,Ltd.
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Manufacturer:	Shenzhenshi Weiduli Technology Co.,Ltd.
Address:	4h Floor, Building 4, Dejin Industrial Zone, No. 40, Fuyuan 1st Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Product description	
Product name:	power bank
Trademark:	N/A
Model name:	M02A M01A, M03A
Series Model:	N/A
Standards:	FCC CFR 47 PART 1, § 1.1310 FCC CFR 47 PART 2, § 2.1093
Test method:	KDB 680106 D01 Wireless Power Transfer v04
Date of Test	
Date of test:	Sep. 12, 2024 - Sep. 28, 2024
Test result:	Pass



1 General Description

1.1 Description of the EUT

Product Name:	power bank
Trade Mark:	N/A
Model No.:	M02A M01A, M03A
Series Model:	N/A
Model difference:	The product's different for model number and appearance color.
Electrical rating:	Capacity:10000mAh 7.7V/38.5Wh Type-C 1/2 port output: 5V/3A 9V/3A 12V/2.92A 15V/2.33A 20V1.75A (Max) Type-C 1/2 port input: 5V/3A 9V/3A 12V/2.5A 15V/2A 20V/1.5A(Max) Wireless Output: 5W/7.5W/MPP15W(Max)
Accessories:	Cable: USB-C to USB-C Cable 100cm
RF specification:	
Operation frequency:	115-205kHz
Modulation type:	MSK
Antenna type:	Coil

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

No.	Emission test modes
Mode1	Wireless Output(15W)
Mode2	Charging+Wireless Output(15W)
Mode3	Standby

Note: All of the listed test mode were tested, only the data of the worst mode (Mode1) is recorded in the report



1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list			
Description	Model	Serial No.	Manufacturer
XIAOMI Laptop Portable adapter(65W)	AD65G	/	XIAOMI
Mobile phone (Provide by test lab)	Galaxy S21 5G	/	SAMSUNG

2 Measurement uncertainty

Parameter	Expanded Uncertainty
Magnetic field measurement (9kHz~30MHz)	$\pm 7.8\%$
Electric field measurements (9kHz~30MHz)	$\pm 7.8\%$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.



3 Test facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen DL Testing Technology Co., Ltd.
Test site location:	101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China
FCC Test Firm Registration Number:	854456
Designation Number:	CN1307
IC Registered No.:	27485
CAB ID.:	CN0118



4 List of test equipment

Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	June. 24, 2024	June. 25, 2025



5 Test result

5.1 Requirement

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1500			f/1500	<30
1500-100000			1.0	<30

f = frequency in MHz

* = Plane-wave equivalent power density

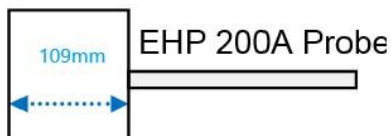
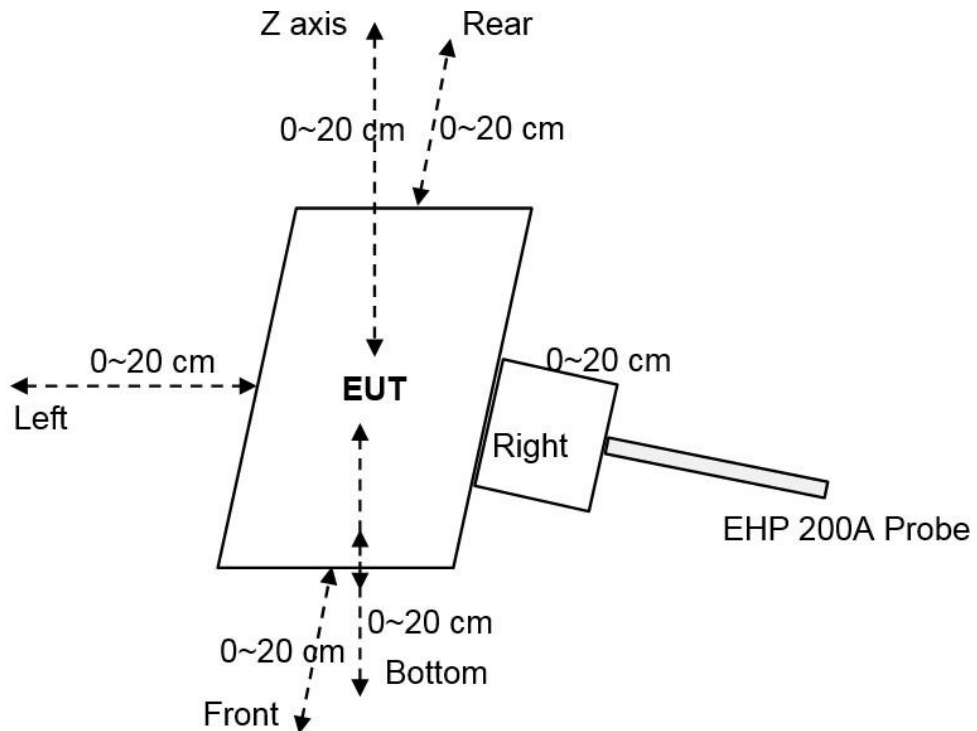
Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Note 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.



5.2 Test setup

For portable exposure conditions:



Notes: The EHP 200A Probe has a diameter of 10.9cm and a radius of 5.45cm.



5.3 Test Procedures

For portable exposure conditions:

- a. The RF exposure test was performed in anechoic chamber.
- b. Perform H-field measurements for each edge/top surface of the host/client pair at every 2 cm, starting from as close as possible out to 20 cm
- c. The highest emission level was recorded and compared with limit.

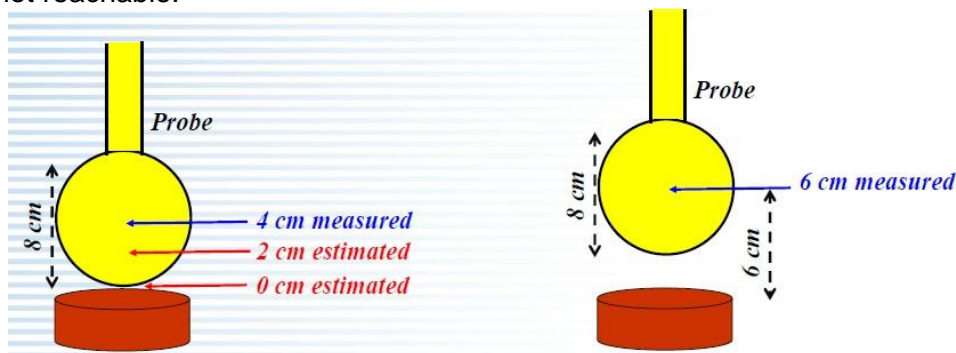
Notes: The EUT was setted to transmit continuously with the duty cycle of 100%.



5.4 Test results

For portable exposure condition: Note:

- (1). The portable test modes have covered the considerations of the mobile test, only record the test data of the portable conditions in this report.
- (2) Operating modes with client device (1 %, 50%, 99% battery status of client device) have been test, only show the data of worst case of 1% battery status of client device.
- (3) 20-2cm is the actual test value, and 0 cm is the estimated value.
- (4) Perform H-field/E-field measurements are taken along all three axes the device from 0cm~20cm in 2cm minimum increment for each edge surface of the host/client pair. If the center of the probe sensing element is more than 5mm from the probe outer edge, the field strengths need to be estimated for the positions that are not reachable.



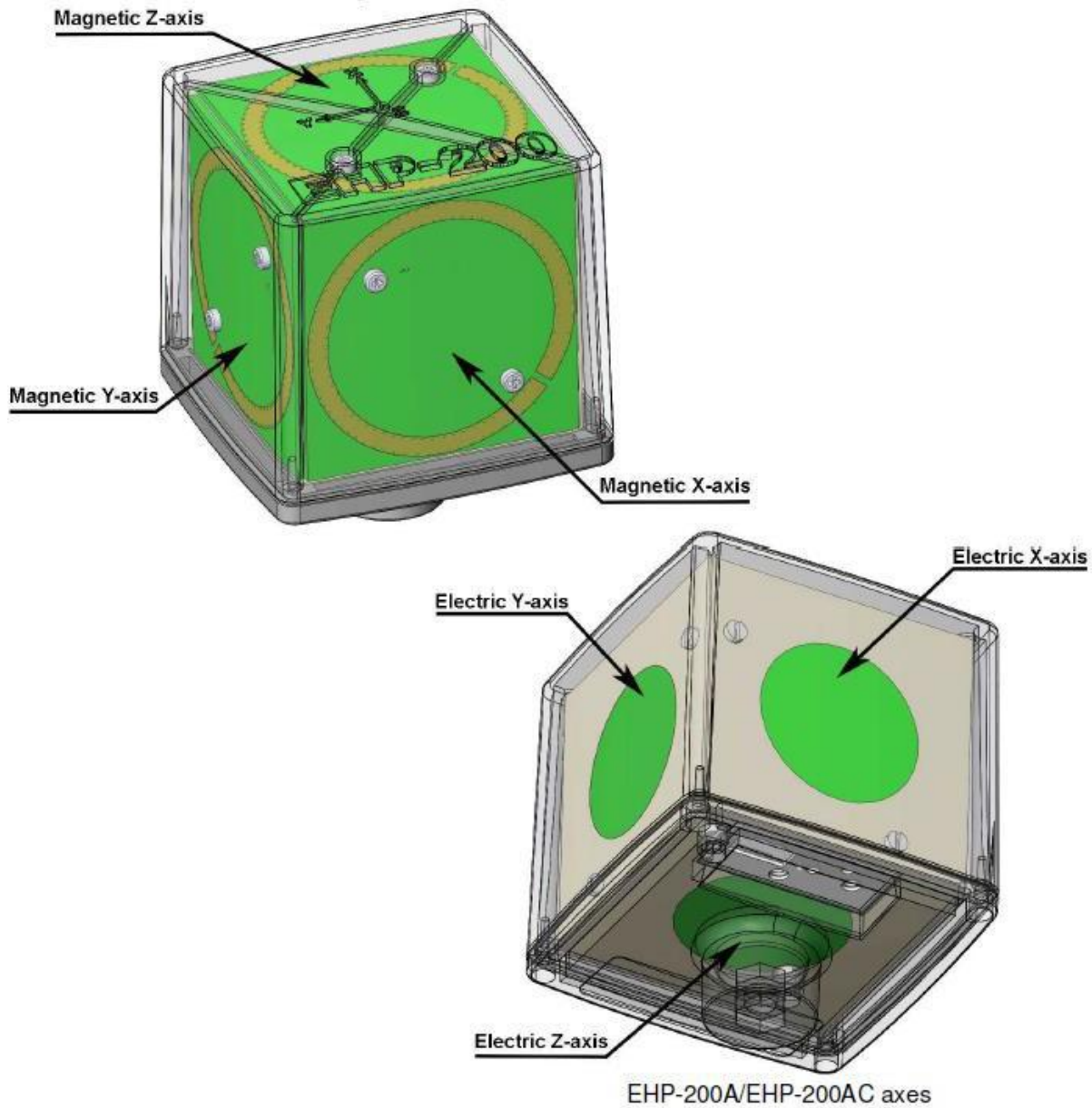
Example of probe measurements in points close to the device surface: estimates compared with measurements at 4 and 6 cm provide validation

According to Calibration information and specification about EHP-200A, The Probe EHP-200A's sensitive elements center are 8mm below the external surface, and the dimensions is 92x92x109mm. so the actual 0cm field strengths need to be estimated for the positions that are not reachable. The Extrapolated Value Calculation Method please below). And the result of test distance 2cm~20cm was measured value.

Probe	Length	Width	Height
	109mm	92mm	92mm



Note: EUT is a loop/coil emitting structure, so E-field not required. Just recorded the H-field value.

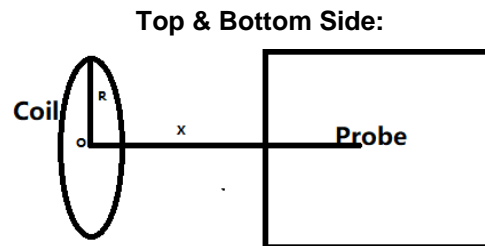


The sensitive elements are located approximately 8 mm below the external surface



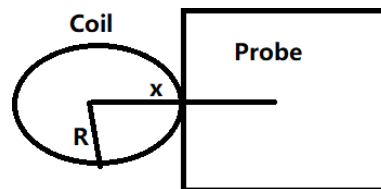
(5) Estimated method for portable RF Exposure condition:

We use Biot-Savart formula theory to estimate the strength of the magnetic field that the measuring instrument cannot measure. According to Biot-Savart formula:



$$B = \frac{\mu_0 * I * N * R^2}{2 * (R^2 + x^2)^{3/2}}$$

Front, left, right & rear Side:



$$B = \frac{\mu_0 * I * N}{2 * x}$$

B: means H-field value;

μ_0 is space permeability; $\mu_0=4\pi*10^{-7}$;

I: A current element passing through a coil;

R: means the Radius of coil(According to provided Antenna specification: We can get the minimum

$R=38/2=19\text{mm}=0.019\text{m}$);

Test Distance: The distance from the sensing element of the probe to the edge of the device surface.

x: means the center of the coil to the sensing elements of the probe. (For top & bottom side: x =test distance; For other side: x =test distance+ R)

N: Number of turns, according to providing "Antenna specification" files: $N=10$.

(6) For validation purposes: If the value to show a **30% agreement** between the mode and the (E- and/or H-field) probe measurements for the two closest points to the device surface, and with 2cm increments. Then this extrapolation method is reasonable.

Note: The percent ratio of agreement is the difference between the estimated and measured values divided by the average of the estimated and measured values.



Validation:

Magnetic Field Emissions							
Test Distance(cm)	Top	Left	Right	Rear	Front	Bottom	Conclusion
	Unit: Agreement (%); H-field (A/m)						
Agreement -2cm	16.32	24.52	28.24	23.28	15.66	13.47	Compliance (Within 30%)
2cm(estimated)	0.3652	0.1428	0.1478	0.1524	0.1532	0.3368	
2cm(measured)	0.3414	0.1563	0.1369	0.1485	0.1158	0.2528	

Magnetic Field Emissions							
Test Distance(cm)	Top	Left	Right	Rear	Front	Bottom	Conclusion
	Unit: Agreement (%); H-field (A/m)						
Agreement -2cm	16.25	17.25	22.58	12.14	26.25	27.22	Compliance (Within 30%)
4cm(estimated)	0.1425	0.0514	0.0358	0.0358	0.0428	0.1414	
4cm(measured)	0.1726	0.0529	0.0419	0.0463	0.0539	0.0528	



Test condition 1: Mode1 operating mode with client device (1 % battery status of client device)
-estimated value: 0cm

Estimated value for H-Filed Strength at 0 cm from the edges surrounding the EUT (A/m)

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	1.0369	1.63	73.11%
	Left	1.0528		
	Right	1.114		
	Front	1.0635		
	Rear	0.9741		
	Bottom	0.5369		

Test condition 2: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance: 2cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.3358	1.63	21.48%
	Left	0.1514		
	Right	0.1369		
	Front	0.1358		
	Rear	0.1547		
	Bottom	0.2638		



Test condition 3: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 4cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.1415	1.63	6.81%
	Left	0.0369		
	Right	0.0547		
	Front	0.0325		
	Rear	0.0148		
	Bottom	0.0536		

Test condition 4: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 6cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0385	1.63	6.27%
	Left	0.0412		
	Right	0.0514		
	Front	0.0426		
	Rear	0.0523		
	Bottom	0.0247		

Test condition 5: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 8cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0285	1.63	5.76%
	Left	0.0427		
	Right	0.0396		
	Front	0.0241		
	Rear	0.0523		
	Bottom	0.0417		



Test condition 6: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 10cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0405	1.63	5.17%
	Left	0.0438		
	Right	0.0296		
	Front	0.0415		
	Rear	0.0385		
	Bottom	0.0463		

Test condition 7: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 12cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0587	1.63	4.74%
	Left	0.0369		
	Right	0.0458		
	Front	0.0428		
	Rear	0.0439		
	Bottom	0.0563		

Test condition 8: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 14cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0485	1.63	4.50%
	Left	0.0569		
	Right	0.0415		
	Front	0.0385		
	Rear	0.0425		
	Bottom	0.0478		



Test condition 9: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 16cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0369	1.63	4.11%
	Left	0.0525		
	Right	0.0364		
	Front	0.0478		
	Rear	0.0236		
	Bottom	0.0496		

Test condition 10: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 18cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0425	1.63	4.07%
	Left	0.0429		
	Right	0.0521		
	Front	0.0536		
	Rear	0.0418		
	Bottom	0.0396		

Test condition 11: Mode1 operating mode with client device (1 % battery status of client device)
- Test distance 20cm

Antenna	Probe Position	H-field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0385	1.63	3.83%
	Left	0.0296		
	Right	0.0725		
	Front	0.0564		
	Rear	0.0352		
	Bottom	0.0259		



Photographs of the Test Setup

Portable exposure conditions(0cm)

Front



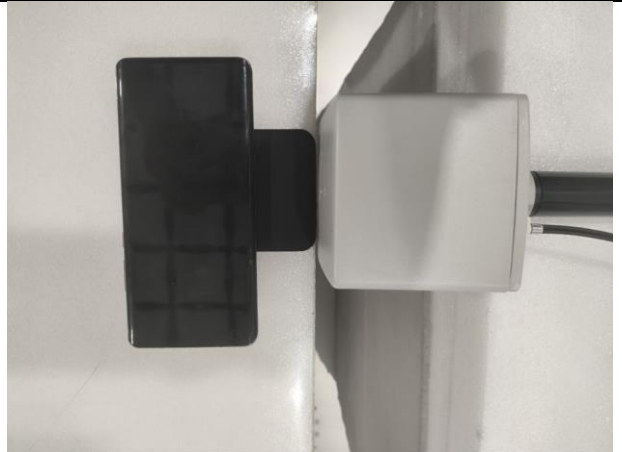
Left



Right



Rear



Top



Below





Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----