

TEST REPORT

Reference No..... : WTD24X09217632W002
FCC ID..... : 2ALCV-PBW1010X
Applicant..... : Emerson Radio Corp.
Address..... : 959 Route 46 East, Suite 210, 2nd Floor, Parsippany, NJ 07054, USA
Manufacturer..... : Shenzhen Blue Times Technology Co., Ltd.
Address..... : B Block, Taixinglong Technology Zone, Hezhou, Xixiang, Bao'an, Shenzhen, Guangdong, China
Product Name..... : POWER BANK 10,000mAh WITH 15W WIRELESS CHARGING AND WIRED OUTPUT 22.5W
Model No..... : PBW1010W
Standards..... : KDB 680106 D01 V04
Date of Receipt sample..... : 2024-09-18
Date of Test..... : 2024-09-18 to 2024-10-09
Date of Issue..... : 2024-10-09
Test Report Form No..... : WTX_KDB 680106 D01 V04W
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

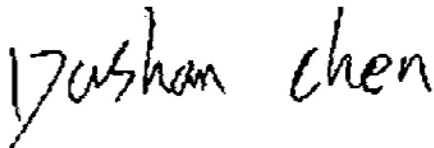
Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

Tested by:



Dashan Chen

Approved by:



Jason Su

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Report version

Version No.	Date of issue	Description
Rev.00	2024-10-09	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	POWER BANK 10,000mAh WITH 15W WIRELESS CHARGING AND WIRED OUTPUT 22.5W
Trade Name:	/
Model No.:	PBW1010W
Adding Model(s):	PBW1010P, PBW1010U, PBW1010B
<p><i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model PBW1010W, but the circuit and the electronic construction do not change, declared by the manufacturer.</i></p>	

Technical Characteristics of EUT	
Frequency Range:	100~205kHz@5W/10W 128kHz@7.5W 360kHz@15W
Modulation Type:	FSK
Antenna Type:	Coil Antenna
Input:	DC5V2.4A, DC9V2A,DC12V1.5A
Wireless output:	5W, 7.5W, 10W, 15W
<p><i>Note The Antenna Gain is provided by the customer and can affect the validity of results.</i></p>	

1.2 Auxiliary Equipment List and Details

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Adapter	Xiaomi	MDY-08-ES	/
iPhone	Apple Inc	A3104	/
Wireless charging tester	YBZ	YBZ wireless charging tester	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.0	shielded	With Ferrite

1.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
ELECTRIC AND MAGNETIC FIELD ANALYZER	Narda	EHP-200AC	180ZX10226	2024-03-05	2025-03-04

2. RF Exposure Test Report

2.1 Standard Applicable

According to §1.1310 system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

TABLE 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)
(A) 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
300-1,500			f/300	6
1,500-100,000			5	6
(B) 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

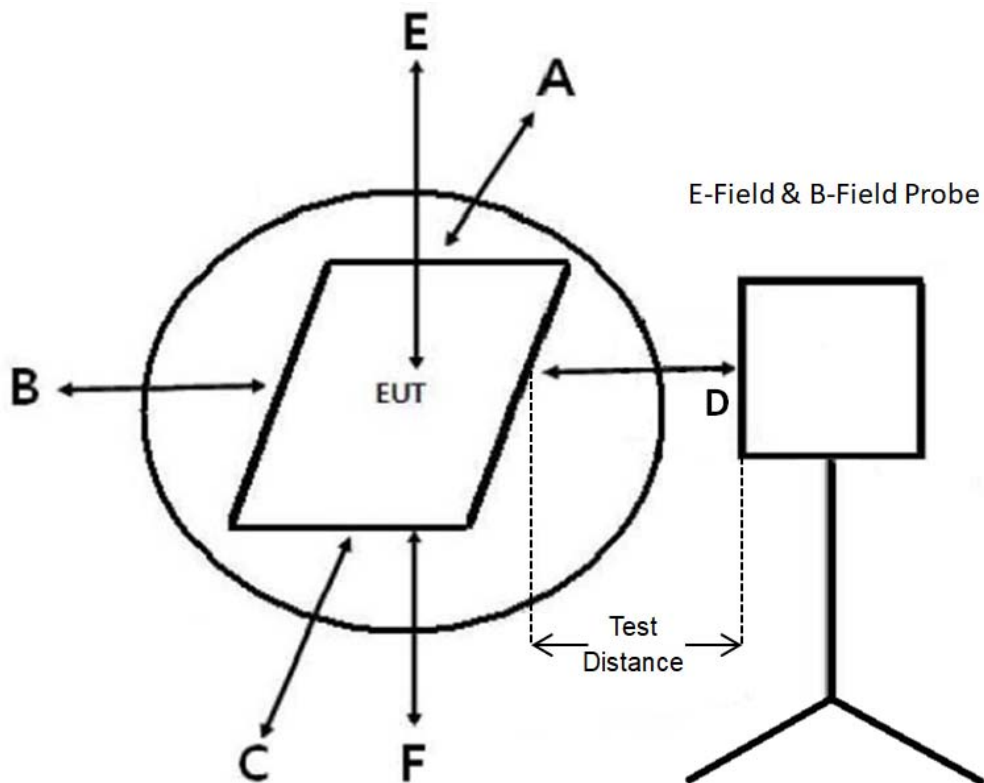
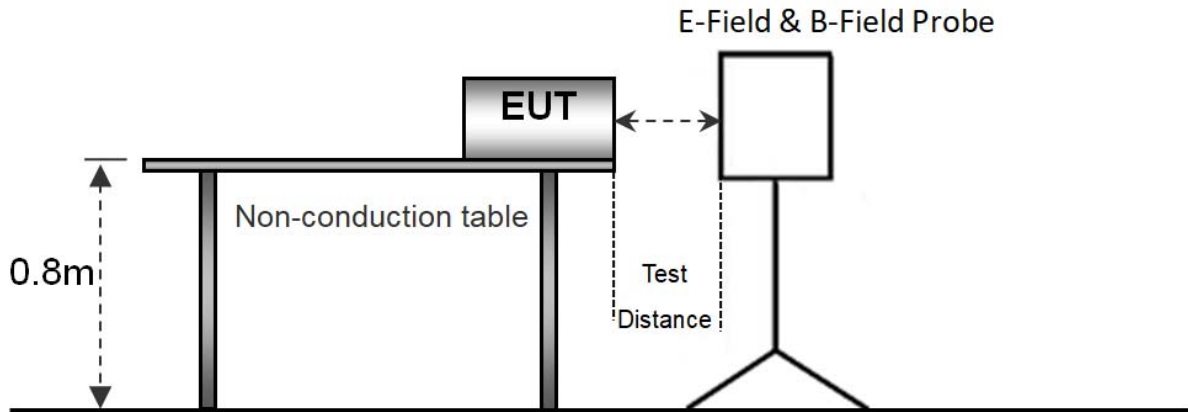
f = frequency in MHz * = Plane-wave equivalent power density

2.2 Test Conditions

Test Mode	Description	Remark
AC adapter Mode:		
TM1	Wireless Charging	Input : 5V/2.4A, 9V2A,12V1.5A Wireless Output : 5W
Battery Mode(2cm):		
TM2	Wireless Charging	Wireless Output : 5W
TM3	Wireless Charging	Wireless Output : 10W
TM4	Wireless Charging	Wireless Output : 15W
Battery Mode(4cm):		
TM5	Wireless Charging	Wireless Output : 5W
TM6	Wireless Charging	Wireless Output : 10W
TM7	Wireless Charging	Wireless Output : 15W
Battery Mode(6cm):		
TM8	Wireless Charging	Wireless Output : 5W
TM9	Wireless Charging	Wireless Output : 10W

TM10	Wireless Charging	Wireless Output : 15W
Battery Mode(8cm):		
TM11	Wireless Charging	Wireless Output : 5W
TM12	Wireless Charging	Wireless Output : 10W
TM13	Wireless Charging	Wireless Output : 15W
Battery Mode(10cm):		
TM14	Wireless Charging	Wireless Output : 5W
TM15	Wireless Charging	Wireless Output : 10W
TM16	Wireless Charging	Wireless Output : 15W
Battery Mode(12cm):		
TM17	Wireless Charging	Wireless Output : 5W
TM18	Wireless Charging	Wireless Output : 10W
TM19	Wireless Charging	Wireless Output : 15W
Battery Mode(14cm):		
TM20	Wireless Charging	Wireless Output : 5W
TM21	Wireless Charging	Wireless Output : 10W
TM22	Wireless Charging	Wireless Output : 15W
Battery Mode(16cm):		
TM23	Wireless Charging	Wireless Output : 5W
TM24	Wireless Charging	Wireless Output : 10W
TM25	Wireless Charging	Wireless Output : 15W
Battery Mode(18cm):		
TM26	Wireless Charging	Wireless Output : 5W
TM27	Wireless Charging	Wireless Output : 10W
TM28	Wireless Charging	Wireless Output : 15W
Battery Mode(20cm):		
TM29	Wireless Charging	Wireless Output : 5W
TM30	Wireless Charging	Wireless Output : 10W
TM31	Wireless Charging	Wireless Output : 15W
<p>Note:</p> <p>For test AC Adapter, the device is designed for desktop, the test should be performed on each points (only A, B, C, D, E) at test distance (15 cm).</p> <p>For test by Battery, the device is designed for portable, the test should be performed on each points (A, B, C, D, E, F) at test distance (2 ~20cm).</p> <p>The EUT was tested with empty load, half load, and full load, and recorded the worst mode (full load) data in the report.).</p>		
Measurement Distance:	0~20 cm	

2.3 Test Procedure



- Probe Model: EHP-200AC; The probe sensor is 8 mm below the surface
- The measurement probe was placed at test distance, which is between the edge of the charger and the edge of probe.
- E- and H-field data are taken along all three axes the device, from 0 cm to 20 cm, in 2 cm minimum increment measured from the edge of the device, with one axis coincident with the axis of the main coil.
- The highest emission level was recorded at the measurement points (A, B, C, D, E, F).
- The EUT was measured according to the distance of KDB 680106 D01 v04.

2.4 Test Result

The EUT complies with item 5.2 of KDB 680106 D01V04

- (1) The power transfer frequency is below 1 MHz.

Yes, the device operate in the frequency range from 100kHz to 205kHz and 360kHz.

- (2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.

Yes, the maximum output power of the primary coil is equal to 15W.

- (3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)

Yes, the surfaces of the transmitter and client device enclosures has be in physical contact.

- (4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).

No, it also supports portable exposure conditions.

- (5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

Yes, The EUT field strength levels are less than 50% of the MPE limit, refer to test TM1, TM2, TM3 list.

- (6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.

Yes, The EUT field strength levels are less than 50% of the MPE limit, refer to test list; and the coils can't transmitted simultaneous.

Test Mode: TM1

Test distance: 15 cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0473	614	307
Point F	0.0567	614	307
Point A	0.0452	614	307
Point B	0.0374	614	307
Point C	0.0385	614	307
Point D	0.0356	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0361	1.63	0.815
Point F	0.0359	1.63	0.815
Point A	0.0375	1.63	0.815
Point B	0.0426	1.63	0.815
Point C	0.0437	1.63	0.815
Point D	0.0475	1.63	0.815

Test Mode: TM2

Test distance: 2cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.4579	614	307
Point F	0.3876	614	307
Point A	0.2183	614	307
Point B	0.1875	614	307
Point C	0.1752	614	307
Point D	0.1951	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.1757	1.63	0.815
Point F	0.0955	1.63	0.815
Point A	0.0819	1.63	0.815
Point B	0.0864	1.63	0.815
Point C	0.0876	1.63	0.815
Point D	0.1013	1.63	0.815

Test Mode: TM5

Test distance: 4cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.1262	614	307
Point F	0.0596	614	307
Point A	0.0655	614	307
Point B	0.0573	614	307
Point C	0.0571	614	307
Point D	0.1120	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0587	1.63	0.815
Point F	0.0225	1.63	0.815
Point A	0.0282	1.63	0.815
Point B	0.0276	1.63	0.815
Point C	0.0253	1.63	0.815
Point D	0.0518	1.63	0.815

Test Mode: TM8

Test distance: 6cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0578	614	307
Point F	0.0216	614	307
Point A	0.0294	614	307
Point B	0.0265	614	307
Point C	0.0273	614	307
Point D	0.0462	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0259	1.63	0.815
Point F	0.0351	1.63	0.815
Point A	0.0346	1.63	0.815
Point B	0.0314	1.63	0.815
Point C	0.0399	1.63	0.815
Point D	0.0355	1.63	0.815

Test Mode: TM11

Test distance: 8cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0327	614	307
Point F	0.0312	614	307
Point A	0.0376	614	307
Point B	0.0353	614	307
Point C	0.0331	614	307
Point D	0.0386	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0275	1.63	0.815
Point F	0.0383	1.63	0.815
Point A	0.0374	1.63	0.815
Point B	0.0369	1.63	0.815
Point C	0.0413	1.63	0.815
Point D	0.0385	1.63	0.815

Test Mode: TM14

Test distance: 10cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0170	614	307
Point F	0.0185	614	307
Point A	0.0186	614	307
Point B	0.0178	614	307
Point C	0.0181	614	307
Point D	0.0192	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0257	1.63	0.815
Point F	0.0399	1.63	0.815
Point A	0.0365	1.63	0.815
Point B	0.0383	1.63	0.815
Point C	0.0424	1.63	0.815
Point D	0.0412	1.63	0.815

Test Mode: TM17

Test distance: 12cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0156	614	307
Point F	0.0193	614	307
Point A	0.0174	614	307
Point B	0.0159	614	307
Point C	0.0145	614	307
Point D	0.0172	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0292	1.63	0.815
Point F	0.0416	1.63	0.815
Point A	0.0381	1.63	0.815
Point B	0.0416	1.63	0.815
Point C	0.0457	1.63	0.815
Point D	0.0422	1.63	0.815

Test Mode: TM20

Test distance: 14cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0169	614	307
Point F	0.0205	614	307
Point A	0.0163	614	307
Point B	0.0171	614	307
Point C	0.0156	614	307
Point D	0.0191	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0319	1.63	0.815
Point F	0.0421	1.63	0.815
Point A	0.0393	1.63	0.815
Point B	0.0417	1.63	0.815
Point C	0.0482	1.63	0.815
Point D	0.0395	1.63	0.815

Test Mode: TM23

Test distance: 16cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0183	614	307
Point F	0.0219	614	307
Point A	0.0182	614	307
Point B	0.0196	614	307
Point C	0.0162	614	307
Point D	0.0224	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0345	1.63	0.815
Point F	0.0401	1.63	0.815
Point A	0.0412	1.63	0.815
Point B	0.0439	1.63	0.815
Point C	0.0494	1.63	0.815
Point D	0.0386	1.63	0.815

Test Mode: TM26

Test distance: 18cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0191	614	307
Point F	0.0186	614	307
Point A	0.0194	614	307
Point B	0.0205	614	307
Point C	0.0188	614	307
Point D	0.0247	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0301	1.63	0.815
Point F	0.0386	1.63	0.815
Point A	0.0372	1.63	0.815
Point B	0.0415	1.63	0.815
Point C	0.0454	1.63	0.815
Point D	0.0323	1.63	0.815

Test Mode: TM29

Test distance: 20cm

Electric Field Emissions			
Test Position	Measure Value (V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.0219	614	307
Point F	0.0194	614	307
Point A	0.0223	614	307
Point B	0.0247	614	307
Point C	0.0181	614	307
Point D	0.0266	614	307
Magnetic Field Emissions			
Test Position	Measure Value (A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.0262	1.63	0.815
Point F	0.0355	1.63	0.815
Point A	0.0326	1.63	0.815
Point B	0.0383	1.63	0.815
Point C	0.0394	1.63	0.815
Point D	0.0287	1.63	0.815

Using Biot-Savart Law, the value of 0cm can be estimated through the test results of 2cm:

Distance: 0cm

Electric Field Emissions			
Test Position	Valuation(V/m)	Limit(V/m)	50% Limit (V/m)
Point E	1.9197	614	307
Point F	1.6250	614	307
Point A	1.7464	614	307
Point B	1.5000	614	307
Point C	1.4016	614	307
Point D	1.5608	614	307
Magnetic Field Emissions			
Test Position	Valuation(A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.7366	1.63	0.815
Point F	0.4004	1.63	0.815
Point A	0.6552	1.63	0.815
Point B	0.6912	1.63	0.815
Point C	0.7008	1.63	0.815
Point D	0.8104	1.63	0.815

Using Biot-Savart Law, the value of 2cm can be estimated through the test results of 4cm:

Distance: 2cm

Electric Field Emissions			
Test Position	Valuation(V/m)	Limit(V/m)	50% Limit (V/m)
Point E	0.5378	614	307
Point F	0.4734	614	307
Point A	0.2759	614	307
Point B	0.2496	614	307
Point C	0.2235	614	307
Point D	0.2483	614	307
Magnetic Field Emissions			
Test Position	Valuation(A/m)	Limit(A/m)	50% Limit (A/m)
Point E	0.2315	1.63	0.815
Point F	0.1128	1.63	0.815
Point A	0.1057	1.63	0.815
Point B	0.1034	1.63	0.815
Point C	0.1104	1.63	0.815
Point D	0.1327	1.63	0.815

$$B = \frac{\mu_0 IR^2}{2(R^2+x^2)^{\frac{3}{2}}}$$

Biot-Savart Law :

Agreement Ratio

Distance: 2cm

Electric Field Emissions				
Test Position	Measure Value (V/m)	Valuation(V/m)	Agreement ratio	Limit
Point E	0.4579	0.5378	16.05%	30%
Point F	0.3876	0.4734	19.93%	30%
Point A	0.2183	0.2759	23.31%	30%
Point B	0.1875	0.2496	28.41%	30%
Point C	0.1752	0.2235	24.23%	30%
Point D	0.1951	0.2483	24.00%	30%
Magnetic Field Emissions				
Test Position	Measure Value (A/m)	Valuation(A/m)	Agreement ratio	Limit
Point E	0.1757	0.2315	27.41%	30%
Point F	0.0955	0.1128	16.61%	30%
Point A	0.0819	0.1057	25.37%	30%
Point B	0.0864	0.1034	17.91%	30%
Point C	0.0876	0.1104	23.03%	30%
Point D	0.1013	0.1327	26.84%	30%

Measure Value: MV

Valuation: V

Agreement Ratio: AR

$$AR = (V - MV) / ((V + MV) / 2) * 100$$

2.5 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Electric Field Emissions	Radiated	± 1.56 (V/m)
Magnetic Field Emissions	Radiated	± 0.08 (A/m)

2.6 Test Photos



APPENDIX PHOTOGRAPHS

Please refer to "ANNEX"

**** END OF REPORT ****