



OŚRODEK BADAWCZO-ROZWOJOWY  
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**SPÓŁKA AKCYJNA**

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**TEST REPORT**  
**No. BL/014/342/12**

**SAFETY TESTS**

**RPD/C System Access Point**  
**(Standard Version)**

**1. Employer's name and address:** PLATAN Sp. z o.o., sp.k. ul. Platanowa 2, 81-855 Sopot, Poland

**2. Testing facility:** Testing facility of Laboratorium Kompatybilności Elektromagnetycznej OBR Centrum Techniki Morskiej S.A. [EMC Lab of R&D Department of the Marine Technology Centre], ul. Dickmana 62, 81-109 Gdynia, Poland.

### 3. Characteristics and identification of tested object

**3.1 Identification of tested object:** RPD/C System Access Point (Standard Version).



**3.2 Numbers of tested object:** 072/2012.

**3.3 Manufacturer:** PLATAN Sp. z o.o. sp. k., ul. Platanowa 2, 81-855 Sopot, Poland.

**3.4 Specifications of accessories:**

See Table 1.

**Table 1**

Item	Equipment	Pcs	Type
1	Kenwood VHF/UHF Digital & FM Mobile Radio	1	NX-700/800
2	PC	1	Amilo

**4. Date of reception of tested object:** 01 October 2012.

## 5. Dates of tests:

03 October 2012 – measurement of insulation resistance, testing of electric insulation strength in normal environmental conditions and testing of immunity to ingress of dangerous parts and foreign objects;

16 October 2012 – measurement of insulation resistance and testing of electric insulation strength in increased humidity.

## 6. Test standard and procedure

PN-EN 60065 :2004 Audio, video and similar electronic apparatus. Safety requirements

## 7. Scope of tests

### 7.1 Tests of electric insulation

See Table 2.

**Table 2 - Scope of electric insulation tests in normal climatic conditions and in wet test**

Item	Test	Signal characteristics, time and electrical parameters	Testing method as per
1	Measurement of insulation resistance	Test voltage 500 VDC Measurement duration 60 sec	PN-EN 60065:2004 par. 10.3
2	Electric insulation strength	Voltage level 2.12 kVAC Exposure duration 60 sec	

### 7.2 Tests of electrical shock hazard in normal operating conditions

See Table 3.

**Table 3 Scope of tests**

Item	Test	Testing method as per	Notes
1	Tests of immunity to ingress of dangerous parts and foreign objects	PN-EN 60065:2004 par. 9.1.1.2	Tests were performed using following testing instruments: - test finger 12 mm Dia.

## 8. List of instruments

See Table 4.

**Table 4 - List of testing instruments**

Item	Name, type	Serial number
1	Insulation strength and resistance testing instrument, type T0S9201	KB002859
2	PMM Field Strength Meter Type 8053B with EP 183 probe	262WL71011 000WJ60311
3	TESTO 623 Ambient Conditions Monitor	39600775/912
4	VCS <sup>3</sup> 7170-5 Environmental chamber	59566156980010
5	Ingress probe – TFP-01 test finger 12 <sup>+0,2</sup> mm Dia.	L07420378
7	LUTRON FG-5000A Force Gauge	C.95547

## 9. Test results

### 9.1 Results of tests of electric insulation in normal environmental conditions

#### 9.1.1 Measurement of insulation resistance

Prior to testing electric insulation of the RPD/C System Access Point (Standard Version), the unit was activated and its functionality checked.

*Normal operation of the RPD/C System Access Point (Standard Version) was stated.*

Insulation resistance between shorted cables L and N and PE cable as well as between shorted cables L and N and the earth pin on the power supply cable was measured in normal environmental conditions with the unit deactivated. For the results, see Table 5.

**Table 5 – Measurement of insulation resistance**

Item	Test parameters	Point of exposure		Result
		(+)	(-)	
1	500VDC, 60sec	L+N	PE	<b>8.62 GΩ</b>
2		L+N	earth pin	<b>8.60 GΩ</b>

*Insulation resistance values for the RPD/C System Access Point (Standard Version) meet requirement of PN-EN 60065, Table 5.*

#### 9.1.2 Testing of electric insulation strength

Insulation resistance between shorted cables L and N and PE cable as well as between shorted cables L and N and the earth pin on the power supply cable was measured in normal environmental conditions with the unit deactivated. For the results, see Table 6.

**Table 6 – Measurement of electric insulation strength**

Item	Test parameters	Point of exposure		Result
		(+)	(-)	
1	2.12 kVAC, 60sec	L+N	PE	<b>No insulation breakdown found</b>
2		L+N	earth pin	<b>No insulation breakdown found</b>

*Insulation strength of the RPD/C System Access Point (Standard Version) meets requirement of PN-EN 60065, par. 10.3*

Then, the RPD/C System Access Point (Standard Version) was reactivated and its functionality tested.

*Normal operation of the RPD/C System Access Point (Standard Version) was stated.*

### 9.2 Results of wet tests of electric insulation

The deactivated unit was exposed to increased humidity conditions for 24 hours acc. to PN-EN 60068-2-30, Variant 2. For the diagram of environmental conditions throughout testing, see Fig. 1.

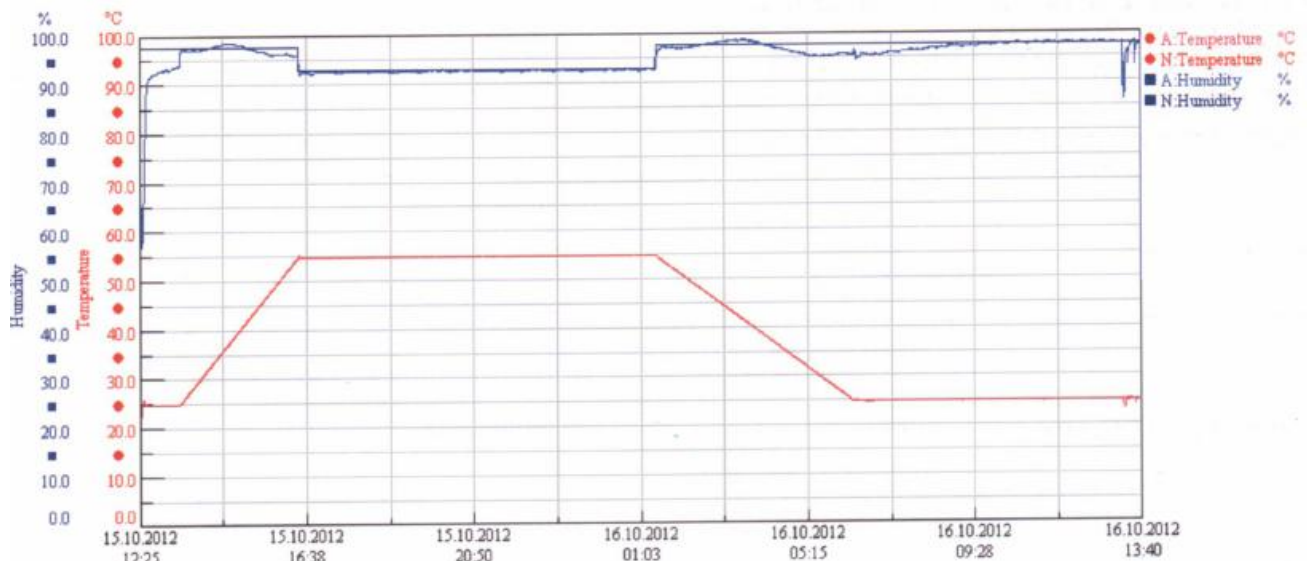


Fig. 1 – Diagram of environmental conditions inside the chamber during exposure to increased humidity

### 9.2.1 Measurement of insulation resistance

After completion of the cycle, the RPD/C System Access Point (Standard Version) was left in the increased humidity conditions and insulation resistance between shorted L and N cables and PE cable as well as between shorted L and N cables and earth pin on the power supply cable was measured. For the results, see Table 7.

**Table 7 – Measurement of insulation resistance**

Item	Test parameters	Point of exposure		Result
		(+)	(-)	
1	500VDC, 60sec	L+N	PE	<b>511.00 MΩ</b>
2		L+N	earth pin	<b>534.00 MΩ</b>

*Insulation resistance values for the RPD/C System Access Point (Standard Version) meet requirement of PN-EN 60065, Table 5.*

### 9.2.2 Testing of electric insulation strength

Insulation resistance between shorted cables L and N and PE cable as well as between shorted cables L and N and the earth pin on the power supply cable was measured in increased humidity. For the results, see Table 8.

**Table 6 – Measurement of electric insulation strength**

Item	Test parameters	Point of exposure		Result
		(+)	(-)	
1	2.12 kVAC, 60sec	L+N	PE	<b>No insulation breakdown found</b>
2		L+N	earth pin	<b>No insulation breakdown found</b>

*Insulation strength of the RPD/C System Access Point (Standard Version) meets requirement of PN-EN 60065, par. 10.3*

Then, the RPD/C System Access Point (Standard Version) was reactivated and its functionality tested.

*Normal operation of the RPD/C System Access Point (Standard Version) was stated.*

### 9.3 Results of tests of electrical shock hazard in normal operating conditions

See Table 9.

**Table 9 Results of tests of electrical shock hazard in normal operating conditions**

Item	Exposure type	Test results
1	Tests of immunity to ingress of dangerous parts and foreign objects	- <i>no penetration of ingress probe into the housing was observed</i>

Tests were performed for the RPD/C System Access Point (Standard Version) with closed cabinet. Only the trained and authorized manufacturer's service personnel has access to the cabinet.

*The RPD/C System Access Point (Standard Version) meets requirement of PN-EN 60065 par. 9.1.1.2.*

### 10. Statements on measurement uncertainty

Table 10 specifies the measurement uncertainty vales, which are uncertainties extended at the approx. level of confidence 95 % and extension coefficient k=2.

**Table 10 - Measurement uncertainty**

Item	Test	Measurement uncertainty
1	Measurement of insulation resistance	1.7 %
2	Testing of insulation strength	5.9 %

### 11. Other information on tests

11.1 Tests were carried out under the following environmental conditions:

- ambient temperature, variable in the range from 20.54 °C to 21.54 °C
- relative humidity, variable in the range from 48.25 % to 54.44 %
- intensity of electromagnetic field less or equal to 1 V/m.

11.2 Normal environmental conditions for checking correct functioning of the unit in accordance with PN-EN60068-1 :1994, par. 5.3.1.

- ambient temperature within the range from 15 °C to 35 °C
- relative humidity within the range from 25 % to 75 %

11.3 *Correct functioning of the RPD/C System Access Point (Standard Version) means that:*

- the manipulator display is highlighted green (no communication errors)
- functions from the keys 1 to 4 of the manipulator panel can be called, and
- the unit communicates with the external PC, i.e. it responds correctly to the 192.168.1.65 address ping (LAN1 connector)

**Notes:**

- *The Report can be duplicated only as a whole, subject to written consent by Laboratorium Kompatybilności Elektromagnetycznej OBR CTM S.A..*
- *Test results refer exclusively to RPD/C System Access Point (Standard Version), serial number 072/2012.*

**Test carried out by****Test Leader:**

Maciej STĘPNIAK

3.1 PAŹ 2012 Stępniale

(date and signature)

**Test personnel:**

Mateusz BECKER

3.1 PAŹ 2012 Bede

(date and signature)

Andrzej KACZMAREK

3.1 PAŹ 2012 Kaczmarek

(date and signature)

**Person responsible for authorization  
of Test Report**

Kierownik Laboratoriów Badawczych

Namiotko

dr inż. Rafał Namiotko

3.1 PAŹ 2012

(name stamp or legible name, surname, function, date and signature)