

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

**EQUIPMENT UNDER TEST :**

APPARECCHIO IN PROVA :

**USB KEY**

**DIGIPASS 860M**

**DERIVED MODEL :**

APPARECCHIO DERIVATI:

**Model FIPS**

**REFERENCE STANDARDS :**

NORME DI RIFERIMENTO :

**FCC 47 CFR Part 15**

**CUSTOMER:**

RICHIEDENTE:

- **Dept. / Firm :** VASCO DATA SECURITY NV/SA  
*Ente / Società:*
- **Mr.:** CHRISTO TSIGROS  
*Sig.:*
- **Address:** KONINGIN ASTRIDLAAN 164 – B-1780 – WEMMEL – BELGIUM  
*Indirizzo:*
- **Tel. :** ++32 26099700      • **Telefax** ++32 26099709      • **E-mail:** cts@vasco.com  
*Telefono :*      *Fax :*      *e-mail*

**Site of test execution:**

Località esecuzione prove:

Via Campagna, 92 - 22020 Gaggino Faloppio (CO) - Italy

**Date of test samples receipt:**

Data ricevimento campioni:

**27/09/06**

**Date of start test:**

Data inizio prove:

**27/09/06**

**Date of end test:**

Data fine prove:

**27/09/06**

**Witness to the test:**

Presenti alle prove:

**Signature of the engineers:**

Firma esecutore prove:

**Signature of the Laboratory Director:**

Firma Direttore Laboratori:

Mr. Gianluca Maffioli

  
Andrea Bortolotti



Roberto Furfari

The test results recorded in this Test Report are exclusively referred to the tested samples.

I risultati del presente rapporto di prova si riferiscono esclusivamente al campione sottoposto a prova.

Reproduction of this EMC-Test Report in whole or in part is prohibited without the written authorization of the Laboratory Director

La riproduzione di questo Rapporto in modo parziale o totale è PROIBITO senza l'autorizzazione scritta della Direzione del Laboratorio

## 0. CONTENTS

	Page	Rev	Date
0. CONTENTS .....	2	0	27/09/06
1. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT) .....	3	0	27/09/06
1.1 Identification .....	3	0	27/09/06
1.2 Technical data .....	3	0	27/09/06
1.3 Modifications incorporated in E.U.T. ....	3	0	27/09/06
1.4 Derived models .....	4	0	27/09/06
1.5 Auxiliary equipment .....	4	0	27/09/06
2. TEST CONDITIONS .....	5	0	27/09/06
2.1 Operating test modes and test conditions .....	5	0	27/09/06
2.2 Test overview .....	5	0	27/09/06
3. REFERENCE STANDARD FOR PERFORMED TESTS .....	6	0	27/09/06
4. Summary of test results .....	7	0	27/09/06
4.1 Emission tests .....	7	0	27/09/06
5. TEST RESULTS .....	8	0	27/09/06
6. EUT TECHNICAL DOCUMENTATION .....	16	0	27/09/06
6.1 Wiring diagrams .....	16	0	27/09/06
6.2 Technical manual .....	16	0	27/09/06
6.3 Photographic documentation .....	17	0	27/09/06

## **1. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)**

### **1.1 Identification**

Brand name: VASCO DATA SECURITY NV/SA  
Manufacturer: EUTRONSEC SPA  
Equipment : USB KEY  
Model name or No. : DIGIPASS 860M  
Derived models: mod. FIPS  
Serial number : Not present  
FCC ID : UZ4-AAB  
Country of manufacturer: ITALY

### **1.2 Technical data**

FCC class: Unintentional radiators, Class B  
Supply voltage: +5 V dc supplied by USB PC connector  
Input Power / Current : 30 mA max.  
Maximum internal frequency generated by EUT 12 MHz  
Typical usage : Document encrypting (One Time Password generator included)  
EUT single or system: Single  
EUT dimensions : 7,4 x 2,6 x 1,4 cm

### **1.3 Modifications incorporated in E.U.T.**

The following items are the modifications introduced in the equipment under test :

- None

#### 1.4 Ports identification

This section contains descriptions of all signal ports and AC/DC power input/output ports, the length and the type of the cable provided by manufacturer needed for the tests.

Moreover it is specified if the ports are ever or optionally connected.

Port		Description	Connection
1	Enclosure	Plastic case	*****
2	AC power input/output ports	Line not present	*****
3	DC power input/output ports	+5 V dc supplied by USB PC connector	USB PC connector (Pin 1,4)
4	Signals ports	USB Communication	USB PC connector (Pin 2,3)

*Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.*

#### 1.5 Auxiliary equipment

- Personal Computer Compaq EV0 N1020V

## 2. TEST CONDITIONS

### 2.1 Operating test modes and test conditions

The equipment has been tested according to the operative conditions described in the user/installation manual provided by the manufacturer and by following reference standards :

Reference Standard:

- FCC Part 15, Subpart B

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item “Operating condition of the equipment under test” of all technical sheets of the tests (see Section 4)

<b>Operating condition</b>	<b>Description</b>
<b>#1</b>	<i>Electronic key is connected directly by USB port to PC.</i> <i>One test program is available, as stimulus, to verify the encrypting properties.</i>

### 2.2 Test overview

The appliance is classified as “*unintentional radiator*” in conformity to FCC Part 15 Sub. B §15.109, §15.107 , and it is subject to “*Certification*” procedure.

The application is mainly used as document encrypting

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

---

### 3. REFERENCE STANDARD FOR PERFORMED TESTS

<i>Reference standard :</i>	<i>Title :</i>
<b>FCC Part 15 part A</b>	Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)
<b>FCC Part 15 part B</b>	Code of Regulations Part 15 (Radio Frequency Devices), Subpart B (Unintentional Radiators) of the Federal Communication Commission (FCC)
<b>ANSI C63.4</b>	American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

## 4. SUMMARY OF TEST RESULTS

### 4.1 Emission tests

Port		Phenomena	Basic standard	Operating condition <sup>1</sup>	Result
1	Enclosure	Radiated emission	FCC Part 15 § 15 109	#1	Within the limit
2	AC mains Input ports	RF Disturbance voltage: • continuous	FCC Part 15 § 15 107	#1	Within the limit
3	Antenna terminals	Antenna power conduction limits for receivers	FCC Part 15 §15 111	Not applicable <sup>2</sup>	

<sup>1</sup> Ref. Tab. of Section 2

<sup>2</sup> Applicable only to equipments which have an external antenna connector

## **5. TEST RESULTS**

RADIATED EMISSION 30 - 1000 MHZ .....	9
EMISSION OF MAINS TERMINAL DISTURBANCE VOLTAGE .....	13



Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

**TEST  
1.****RADIATED EMISSION 30 - 1000 MHZ****REFERENCE  
DOCUMENT**

FCC PART 15 subpart B

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESMI  
Chase Antenna Mod. CBL 6111 A
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.109 of reference document
- **UNCERTAINTY OF MEASURE:** Combined uncertainty =  $\pm 1.75$  dB  
Total uncertainty = (k=2)  $\pm 3.5$  dB

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	23,5 $\pm$ 3 °C
Ambient humidity :	25 - 75 %rH	39 $\pm$ 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	950 $\pm$ 50 mbar
Voltage :		+5 V dc USB

**OPERATING CONDITION (Rif. Section. 2) : #1****RESULT: WITHIN THE LIMIT**

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

## SCAN TABLE : “Radiated Emission”

Unit: dB $\mu$ V/m

Detector : Mode:

Curve1: MaxPeak ClearWrite

Curve2: -- ClearWrite

### Subrange1:

Start Frequency: 30.0 MHz

Step Size: 80 kHz

Stop Frequency: 1000.0 MHz

IF Bandwidth: 120 kHz

Measure Time: 0.01 sec.

Receiver: ESXI

Probe Transducer: CHASE\_6111\_PRC

Signal Path: Path 4

System Transducer: RFin2-CP1/X11

Scan Mode: Lin

Add. Transducer: W71.01

Tracking Gen.: Off

Input: 2 DC

Preamplifier: 10 dB

Demodulation: FM Broad

RF att.: Coupled

Volume: 0.0%

Ref. Level: -50 dBm

Squelch: --

Min. RF att.: 0 dBm

Option: None

Autorange: On

Curve 1: On

Repetition: Single

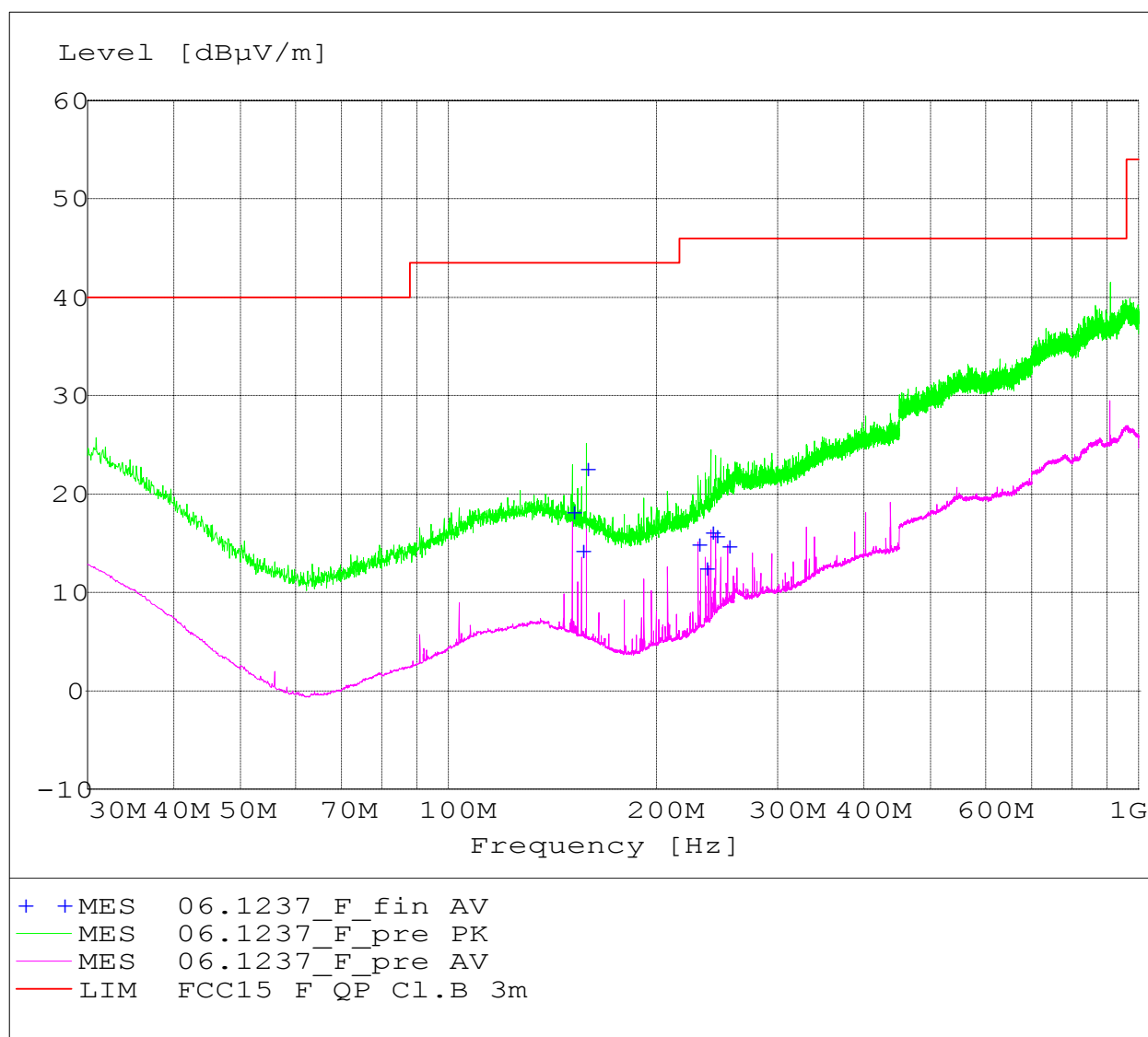
Curve 2: Off

Stop Mark: On

Stop Message: On

Text: Connect antenna

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309



Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

**Final measurement in AV detector**

Frequency MHz	Level dBµV/m	Transd dB	Height cm	Azimuth deg	Polarisation
151.200000	18.10	13.50	100.0	135.00	HORIZONTAL
155.920000	14.20	13.10	100.0	135.00	HORIZONTAL
158.400000	22.50	13.00	100.0	56.00	HORIZONTAL
230.000000	14.90	13.60	175.0	1.00	HORIZONTAL
235.760000	12.50	14.10	100.0	327.00	HORIZONTAL
240.000000	16.10	14.40	100.0	29.00	HORIZONTAL
243.840000	15.70	15.00	106.0	98.00	VERTICAL
253.760000	14.70	16.10	106.0	224.00	VERTICAL

**TEST  
2.****EMISSION OF MAINS TERMINAL DISTURBANCE VOLTAGE****REFERENCE  
DOCUMENT**

FCC PART 15 subpart B

- **TEST LOCATION:** Semianechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESMI  
Artificial Network Rohde & Schwarz Mod. ESH3-Z5

- **TESTED PORT:** AC mains
- **FREQUENCY RANGE:** 0.15 - 30 MHz
- **EMISSION LIMITS:** Acc. to reference document 15.107
- **MEASUREMENT UNCERTAINTY:** Total uncertainty (k=2)  $\pm 2.5$  dB

TEST CONDITIONS:		MEASURED
Ambient temperature :	15 - 35 °C	24 $\pm$ 3 °C
Ambient humidity :	25 - 75 %rH	40 $\pm$ 5 %rH
Pressure :	85 - 106 kPa (860 mbar - 1060 mbar)	950 $\pm$ 50 mbar
Voltage :	220Vac	98 Vac $\pm$ 3%

**OPERATING CONDITION (Rif. Section. 2) : #1****RESULT: Within the limits**

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

## SCAN TABLE : Voltage Mains

Unit : dBμV

Detector : Mode :

Curve 1: MaxPeak ClearWrite

Curve 2: Average ClearWrite

Start Frequency : 150.0 kHz

Stop Frequency : 30.0 MHz

Measure Time : 10.0 ms

IF Bandwidth : 9 kHz

Step size : 6 kHz

**Receiver :** ESMI

**Signal Path :** Path 3

**Meas. Mode :** Lin

**Tracking Generator :** Off

**Input :** 1AC

**Transducer :** ESH3-Z5\_PRC

**System Transducer :** Rfin1-CP2/X11

**Add. Transd. 1 :** W71.03

**Add. Transd. 2 :** None

**Add. Transd. 3 :** None

**Preamplifier :** 10 dB

**RF Att. :** Coupled

**Ref. Level :** -10 dBm

**Min. RF Att. :** 0 dB

**IF Att. :** 0 dB

**Autorange :** On

**Demodulation :** FM Broad

**Volume :** 0 %

**Squelch :** --

**Option :** None

**Curve 1 :** On

**Curve 2 :** On

**Repetition :** Single

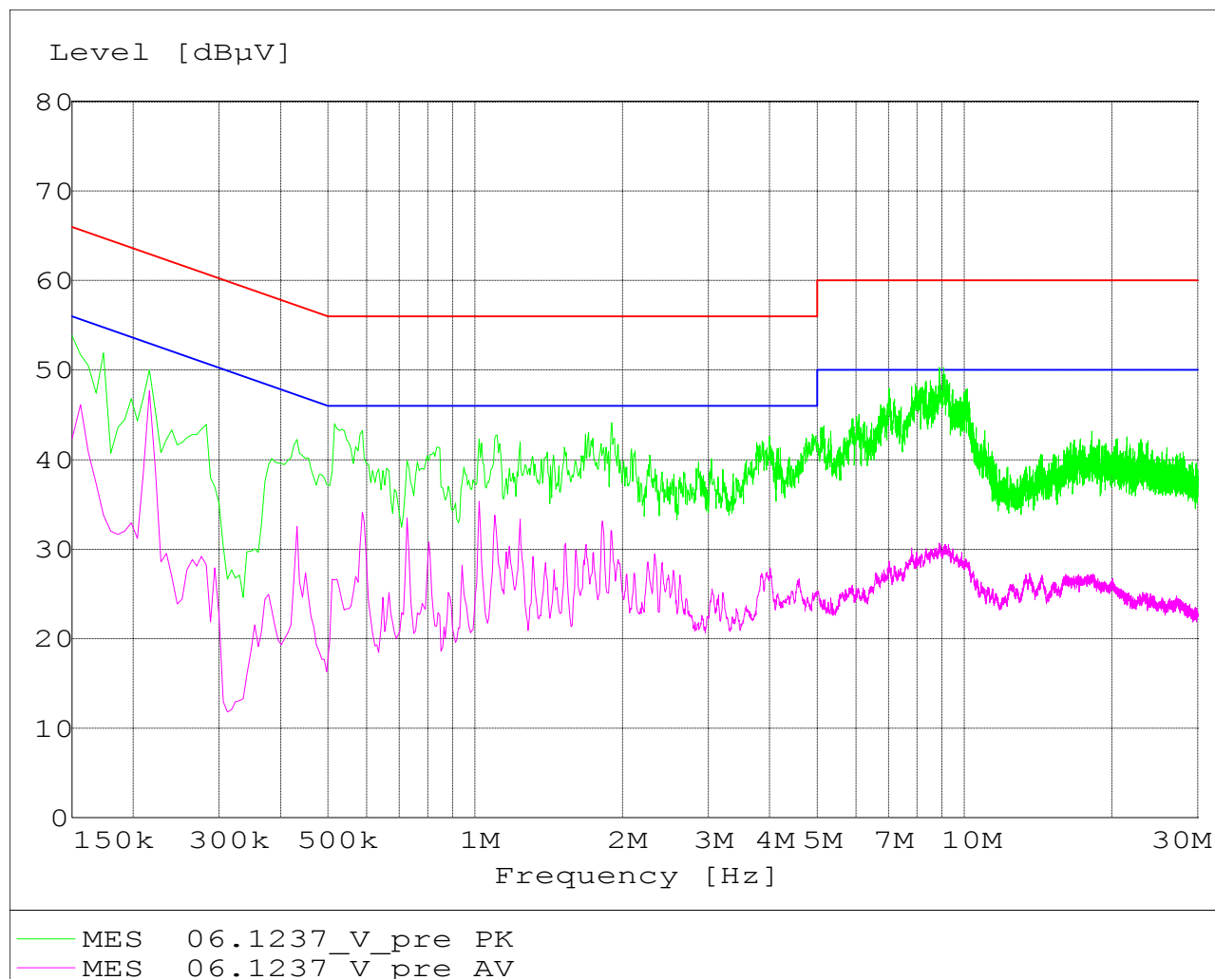
**Stop Mark :** On

**Stop Message :** On

**Stop Message :** Connect EUT

Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

- With EUT powered by a Personal Computer Compaq EV0 N1020V



## 6. EUT TECHNICAL DOCUMENTATION

### 6.1 Wiring diagrams

	<i>Document reference (n., edition, date, ...)</i>
<b>WIRING DIAGRAM</b>	Not applicable
<b>PART LIST</b>	1467-03-BOM-01R1.3 BOM_DP_OTP_v12

### 6.2 Technical manual

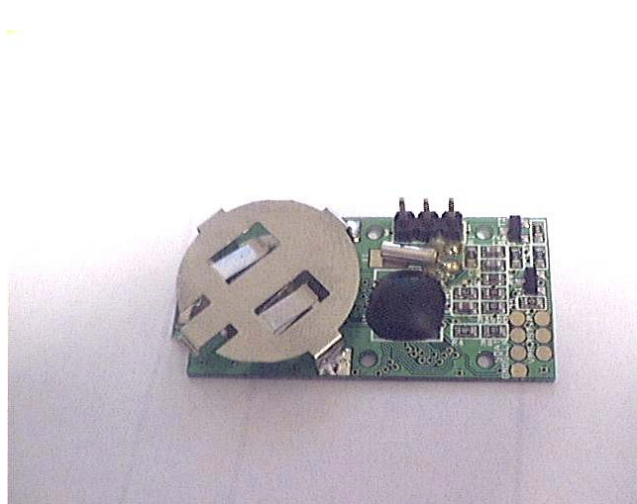
	<i>Document reference (n., edition, date, ...)</i>
<b>USER MANUAL</b>	OTP Sign Overview v.1.0
<b>TEST PLAN</b>	1467-00-SDT-08R1.1



Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

### 6.3 Photographic documentation

PHOTO No. 1 – EQUIPMENT UNDER TEST



Prima Ricerca & SviluppoSrl soggetta a direzione e coordinamento da parte della Giovanni Maspero & C. S.p.A. – C.I. 02634780130  
Sede legale : 22100 Tavernola (CO) Via Conciliazione, 1 Cod. FISC. e N. R.I. CO 02635860139  
Sede operativa : Laboratori Via Campagna, 92 22020 Faloppio fraz. Gaggino (CO) Tel. +39 03135000.11 Fax +39 031991309

**PHOTO No. 2 – SET-UP FOR EMISSION RADIATED TEST**

