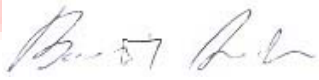
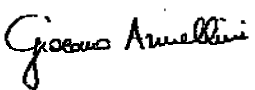


## RAPPORTO DI PROVA / TEST REPORT

|                                                          |                                                                                                                               |                                                                                       |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Rif./Ref.No. FCCTR_130037-1                              | Data / Date: 22/03/2013                                                                                                       | Pagine / Pages : 22                                                                   |
| Scopo delle prove / Test object :                        | Prove di tipo in accordo a / Type test according to<br><b>FCC Cfr 47 part 15 - §15.203 §15.205 § 15.207 § 15.209 § 15.231</b> |                                                                                       |
| Richiedente / Applicant :                                | Elpro Innotek S.p.a.<br>Via Piave, 23 – 31020 S.Pietro di Feletto – TV – ITALY<br>Tel. +39 0438 450879 Fax +39 0438 455628    |                                                                                       |
| Persona di riferimento / Applicant's referee :           | Ing. Dalle Carbonare (d.carbonare@erone.com)                                                                                  |                                                                                       |
| Marchio commerciale / Trade mark :                       |                                             |                                                                                       |
| Fabbricante / Manufacturer :                             | CDVI                                                                                                                          |                                                                                       |
| Prodotto / Product :                                     | Encoded radio keypad                                                                                                          |                                                                                       |
| Modello / Model :                                        | GALEOR                                                                                                                        |                                                                                       |
| Data ricevimento campioni / Date of test sample receipt: | 14/01/2013                                                                                                                    |                                                                                       |
| Campioni verificati / No. of tested samples              | 1                                                                                                                             |                                                                                       |
| Data verifiche / Testing date :                          | 14-16/01/2013                                                                                                                 |                                                                                       |
| Sito di prova / Testing site :                           | Prima Ricerca & Sviluppo Via Campagna - 92 I - 22020 FALOPPIO CO                                                              |                                                                                       |
| Esito delle valutazioni / Assessment results :           | <b>CONFORME / COMPLIANT</b>                                                                                                   |                                                                                       |
| Verifiche effettuate da / Verifications carried out by : | Andrea Bortolotti<br>Tecnico di laboratorio / Test Engineer                                                                   |  |
| Approvato / Approved by :                                | Giacomo ARMELLINI<br>Responsabile Laboratorio EMC e RADIO/<br>EMC and RADIO Laboratory Manager                                |  |

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## 0 RELEASE CONTROL RECORD

| TEST REPORT NUMBER | REASON OF CHANGE | DATE OF ISSUE |
|--------------------|------------------|---------------|
| FCCTR_130037-0     | Original release | 17/01/2013    |
| FCCTR_130037-1     | Added FCC ID     | 23/03/2013    |

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

### 1.1 EUT Identification

|                          |                                                                                               |
|--------------------------|-----------------------------------------------------------------------------------------------|
| DESCRIPTION :            | Encoded radio keypad                                                                          |
| TRADEMARK:               |  <b>CDVI</b> |
| MODEL:                   | GALEOR                                                                                        |
| S/N:                     | Not present                                                                                   |
| MANUFACTURER:            | CDVI                                                                                          |
| COUNTRY OF MANUFACTURER: | France                                                                                        |
| EUT DIMENSIONS :         | 145 x 78 x 32mm                                                                               |
| EUT STANDING:            | Mounting on wall                                                                              |

### 1.2 EUT Technical Data

|                                      |                                                                         |
|--------------------------------------|-------------------------------------------------------------------------|
| POWER SOURCE :                       | Internal Battery                                                        |
| POWER SUPPLY NOMINAL VOLTAGE:        | 3,6V lithium battery                                                    |
| NOMINAL POWER OR ABSORBING CURRENT : | Sleep mode: 0.1μA<br>Pre-stand-by: 0.88μA<br>Transmission: 28mA         |
| FCC CLASS:                           | 47 CFR FCC Part 15 Subpart C §15.203 §15.205 § 15.207 § 15.209 § 15.231 |
| FCC ID:                              | PWN1002000029                                                           |
| TYPICAL USAGE :                      | RADIO EQUIPMENT                                                         |
| TYPE:                                | INTENTIONAL RADIATOR                                                    |

### 1.3 EUT ports identification

This section contains descriptions of all 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      | Connector | Max cable length |
|------|-----------------------------|------------------|-----------|------------------|
| 1    | Enclosure                   | Metallic         | ---       | ---              |
| 2    | AC mains input/output ports | Port not present | ---       | ---              |
| 3    | DC mains input/output ports | Internal Battery | ---       | ---              |
| 4    | Signals / Control Ports     | Port not present | ---       | ---              |
| 5    | Telecommunication port      | Port not present | ---       | ---              |

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

### 1.4 Modifications incorporated in E.U.T.

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

- None

### 1.5 Auxiliary equipment

- None

## 2 REFERENCE STANDARD

| CODE OF FEDERAL REGULATIONS         |                                                                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title 47 Part 15 Subpart A          | Radio frequency devices - General                                                                                                                                |
| Title 47 Part 15 Subpart C § 15.203 | Antenna requirement.                                                                                                                                             |
| Title 47 Part 15 Subpart C § 15.205 | Restricted bands of operation.                                                                                                                                   |
| Title 47 Part 15 Subpart C § 15.207 | Conducted limits.                                                                                                                                                |
| Title 47 Part 15 Subpart C § 15.209 | Radiated emission limits; general requirements.                                                                                                                  |
| Title 47 Part 15 Subpart C § 15.231 | Periodic operation in the band 40.66-40.70 MHz and above 70 MHz.                                                                                                 |
| ANSI C63.4                          | 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 |

## 3 OPERATING TEST MODES AND CONDITIONS

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"

| OPERATING CONDITION | DESCRIPTION                  |
|---------------------|------------------------------|
| #1                  | Continuous data transmission |

### 3.1 Test overview

The appliance is classified as "*Intentional radiator*" in conformity to FCC Part 15 Sub. C §15.203, §15.205, §15.207, §15.209, §15.231.

The application is mainly used as radio keypad.

## 4 SUMMARY OF TEST RESULTS

| Requirements                        | CFR Section       | Test result                                  |
|-------------------------------------|-------------------|----------------------------------------------|
| Antenna Requirements                | 15.203            | Within the limit                             |
| Radiated Spurious Emission          | 15.209, 15.205(b) | Within the limit                             |
| Conducted Emission                  | 15.207            | Not applicable<br>The EUT is battery powered |
| Periodic Operation Characteristics  | 15.231(a)         | Within the limit                             |
| Field Strength Limits (Fundamental) | 15.231(b)         | Within the limit                             |
| 20 dB Bandwidth                     | 15.231(c)         | Within the limit                             |

## 5 TEST RESULTS

---

|                                           |    |
|-------------------------------------------|----|
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**TEST  
1.**

**ANTENNA REQUIREMENTS**

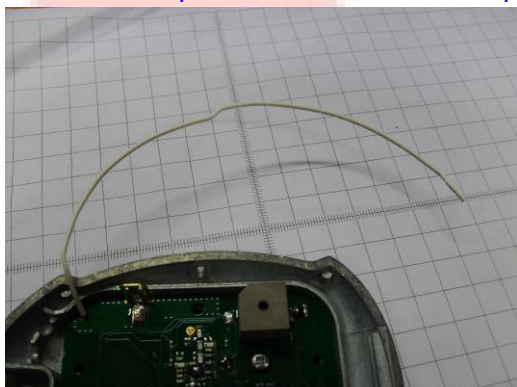
REFERENCE FCC47CFR Part 15 C §15.203  
DOCUMENT

• **REGULATION:**

15.203 an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

• **RESULT:**

*Antenna wire permanent connected to printed board.*



***The EUT is complied with this section.***

**TEST  
2.**

**RADIATED EMISSION 30 - 5000 MHz**

REFERENCE FCC CFR47,PART 15 subpart C §15.209, §15.205(b)  
DOCUMENT ANSI C 63.4

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU40  
Chase Antenna Mod. CBL 6111  
Rohde & Schwarz Antenna Mod. HBL050
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.231(b) , 15.205, 15.209
- **UNCERTAINTY OF MEASURE:** Combined uncertainty =  $\pm 1.75$  dB  
Total uncertainty = (k=2)  $\pm 3.5$  dB

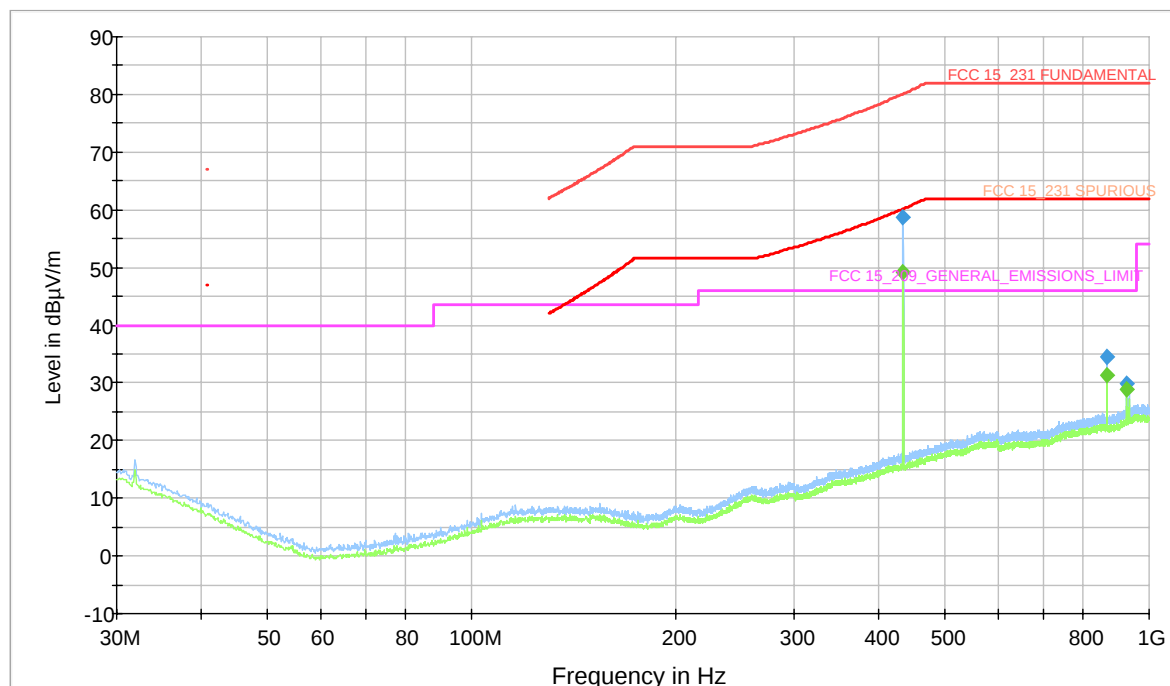
| TEST CONDITIONS:      |              |                        | MEASURED          |
|-----------------------|--------------|------------------------|-------------------|
| Ambient temperature : | 15 - 35 °C   |                        | 23,5 $\pm$ 3 °C   |
| Ambient humidity :    | 25 - 75 %rH  |                        | 39 $\pm$ 5 %rH    |
| Pressure :            | 85 - 106 kPa | (860 mbar - 1060 mbar) | 950 $\pm$ 50 mbar |
| Voltage :             |              |                        | 3,6Vdc            |

**OPERATING CONDITION (Rif. Section. 2) : #1**

**RESULT: WITHIN THE LIMIT**

## Vertical polarization 30MHz – 1GHz

FCC\_SWEEP\_SPURIUS



| Frequency (MHz) | MaxPeak-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|
| 433.908000      | 58.7                        | 100.0       | V            | 0.0           | 19.9       |
| 867.886000      | 34.4                        | 100.0       | V            | 180.0         | 27.1       |
| 927.638000      | 29.8                        | 250.0       | V            | 89.0          | 28.1       |

| Frequency (MHz) | Average-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|
| 433.908000      | 49.2                        | 100.0       | V            | 0.0           | 19.9       |
| 867.886000      | 31.3                        | 100.0       | V            | 180.0         | 27.1       |
| 927.638000      | 28.8                        | 250.0       | V            | 89.0          | 28.1       |

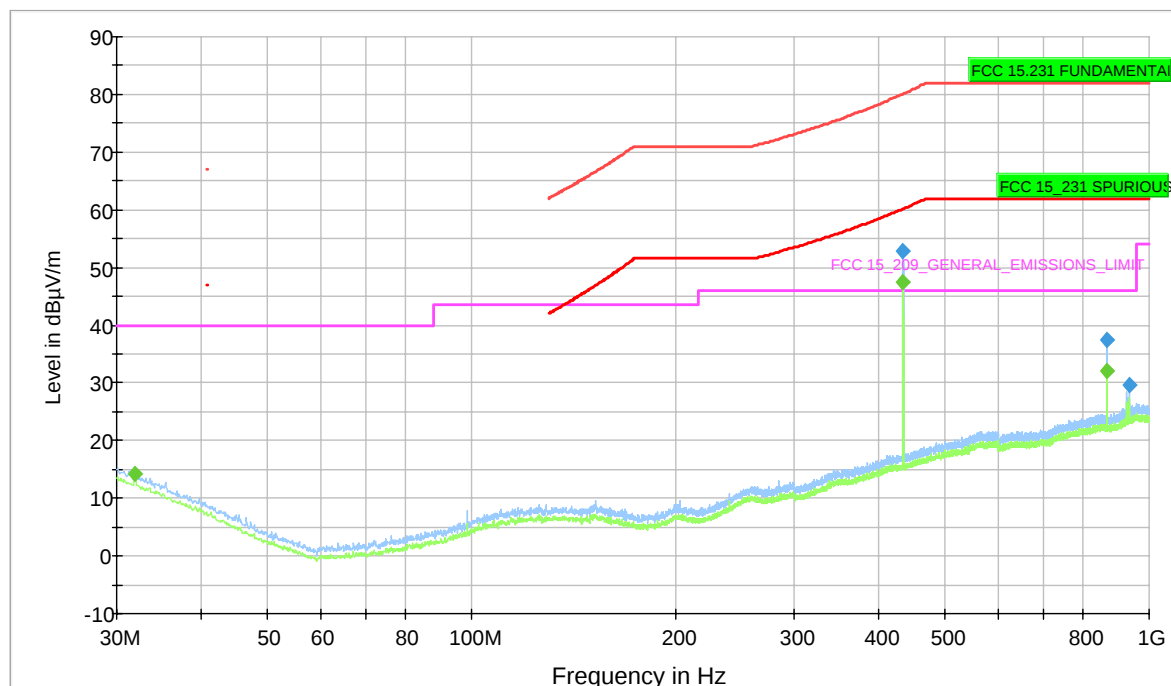
## Vertical polarization 1GHz – 5GHz

| Frequency (MHz) | MaxPeak-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|-------------|----------------|
| 1301.600000     | 52.7                        | 100.0       | V            | -1.0          | -8.4       | 1.30        | 52.7           |

| Frequency (MHz) | Average-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|-------------|----------------|
| 1301.200000     | 46.2                        | 100.0       | V            | 180.0         | -8.4       | 7.80        | 54.00          |

## Horizontal polarization 30MHz – 1GHz

FCC\_SWEEP\_SPURIUS



| Frequency (MHz) | MaxPeak-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|
| 433.811000      | 52.8                        | 100.0       | H            | 90.0          | 19.9       |
| 867.886000      | 37.5                        | 100.0       | H            | 1.0           | 27.1       |
| 935.204000      | 29.5                        | 100.0       | H            | 90.0          | 28.3       |

| Frequency (MHz) | Average-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|
| 31.940000       | 14.2                        | 250.0       | H            | 1.0           | 19.5       |
| 433.908000      | 47.5                        | 250.0       | H            | 90.0          | 19.9       |
| 867.789000      | 32.0                        | 100.0       | H            | 1.0           | 27.2       |

## Horizontal polarization 1GHz – 5GHz

| Frequency (MHz) | MaxPeak-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|-------------|----------------|
| 1301.600000     | 42.7                        | 100.0       | H            | 1.0           | -8.4       | 11.30       | 54.00          |

| Frequency (MHz) | Average-ClearWrite (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Corr. (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|-----------------------------|-------------|--------------|---------------|------------|-------------|----------------|
| 1301.600000     | 39.6                        | 250.0       | H            | 90.0          | -8.4       | 14.40       | 54.00          |

**TEST  
3.**

**CONDUCTED EMISSIONS TESTS**

REFERENCE FCC CFR47,PART 15 subpart C § 15.207  
DOCUMENT ANSI C 63.4

- **REGULATION:**

15.207(a) For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

15.207(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

- **RESULT:**

*Not applicable. EUT powered by internal battery*

**TEST  
4.**

**PERIODIC OPERATION CHARACTERISTICS**

REFERENCE FCC CFR47,PART 15 subpart C § 15.231 (a)  
DOCUMENT ANSI C 63.4

• **REGULATION:**

15.231(a)

The provisions of this Section are restricted to periodic operation within the band 40.66 - 40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this Section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. The prohibition against data transmission does not preclude the use of recognition codes. Those codes are used to identify the sensor that is activated or to identify the particular component as being part of the system.

• **RESULT:**

**The EUT is complied with this section.**

• **REGULATION:**

15.231(a)(1)

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

• **RESULT:**

Transmitter max duration: 2sec

**The EUT is complied with this section.**

- **REGULATION:**

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

- **RESULT:**

The EUT does not have automatic transmission.

***The EUT is complied with this section.***

---

- **REGULATION:**

15.231(a) (3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

- **RESULT:**

The EUT does not employ periodic transmission.

***The EUT is complied with this section.***

---

- **REGULATION:**

15.231(a) (4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

- **RESULT:**

***Not applicable to the EUT***

**TEST  
5.**

**FIELD STRENGTH LIMITS (FUNDAMENTAL)**

REFERENCE FCC CFR47,PART 15 subpart C §15.231 (b)  
DOCUMENT ANSI C 63.4

- **TEST LOCATION:** Semi-anechoic chamber
- **TEST EQUIPMENT USED FOR TEST:** EMI receiver Rohde & Schwarz Mod. ESU40  
Chase Antenna Mod. CBL 6111  
Rohde & Schwarz Antenna Mod. HBL050
- **TESTED PORT:** Enclosure
- **EMISSION LIMITS:** Acc. to Section 15.231(b) , 15.205, 15.209
- **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 :             |                                     | 3,6Vdc            |

**OPERATING CONDITION (Rif. Section. 2) : #1**

**RESULT: WITHIN THE LIMIT**

- REGULATION:**

in addition to the provisions of § 15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

| Fundamental frequency (MHz) | Field strength of fundamental (microvolts/meter) | Field strength of spurious emissions (microvolts/meter) |
|-----------------------------|--------------------------------------------------|---------------------------------------------------------|
| 40.66-40.70                 | 2,250                                            | 225                                                     |
| 70-130                      | 1,250                                            | 125                                                     |
| 130-174                     | <sup>1</sup> 1,250 to 3,750                      | <sup>1</sup> 125 to 375                                 |
| 174-260                     | 3,750                                            | 375                                                     |
| 260-470                     | <sup>1</sup> 3,750 to 12,500                     | <sup>1</sup> 375 to 1,250                               |
| Above 470                   | 12,500                                           | 1,250                                                   |

- RESULT:**

**Limits and measurement as show on test 2**  
**The EUT is complied with this section.**

**TEST  
6.**

**20dB BANDWIDTH**

REFERENCE FCC CFR47,PART 15 subpart C § 15.231 (c)  
DOCUMENT ANSI C63.4

- **TEST LOCATION:** Radio test area
- **TEST EQUIPMENT USED FOR TEST:**
  - Spectrum Analyzer Rohde&Schwarz mod. FSP40
  - Test Fixture Prima Ricerca&Sviluppo
- **TESTED PORT:** Enclosure

| TEST CONDITIONS:      |                                     | MEASURED      |
|-----------------------|-------------------------------------|---------------|
| Ambient temperature : | 15 - 35 °C                          | 24 ± 3 °C     |
| Ambient humidity :    | 25 - 75 %rH                         | 40 ± 5 %rH    |
| Pressure :            | 85 - 106 kPa (860 mbar - 1060 mbar) | 950 ± 50 mbar |
| Voltage :             | internal battery                    | 6Vdc          |

**OPERATING CONDITION (Rif. Section. 2) : #1**

**RESULT: WITHIN THE LIMIT**

- **REGULATION:**

15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

- **LIMITS:**

The 20 dB bandwidth limit =  $0.0025 \times 433.92 \text{ MHz} = 1084,8 \text{ kHz}$

- **RESULT:**

*The measured 20 dB bandwidth is : 434kHz*

***The EUT is complied with this section.***

## 6 LIST OF EQUIPMENT USED

| EQUIPMENT                          | IDENTIFICATION NUMBER | CAL. DUE | CERTIFICATE NUMBER         |
|------------------------------------|-----------------------|----------|----------------------------|
| EMI TEST RECEIVER 20HZ<br>40GHZ    | EMC.359               | AUG.2013 | INRIM 11-0490-05           |
| RF SEMI-ANECHOIC<br>CHAMBER (CSSA) | EMC.191               | AUG 2013 | PRS NSA-2010               |
| BILOG ANTENNA                      | EMC.023               | MAY 2014 | SAIBERSDORF EH-<br>A315/11 |
| LOG PERIODICA<br>ANTENNA           | EMC.391               | DEC 2013 | RHODE & S.                 |
| SPECTRUM ANALYZER                  | EMC.332               | APR.2013 | PRS EMC332_2011            |

## 7 PHOTOGRAPHIC DOCUMENTATION

PHOTO 1 – EUT IDENTIFICATON





**PHOTO N° 2 –RADIATED EMISSION SETUP**

