
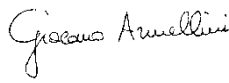
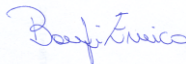


RAPPORTO DI PROVA / TEST REPORT

Rif./Ref.No. MPETR_161913-0	Data / Date:27/12/2016	Pagine / Pages : 5
Scopo delle prove / Test object :	Valutazione dell'esposizione ai campi RF in accordo a / Radio Frequency Radiation Exposure evaluation according to FCC Cfr 47 part 2 - §2.1093	
Richiedente / Applicant :	AV. VICENZO GRANGUELLI, 856 Bairro : Nassif, 13.820-000 Jaguariuna - São Paulo - Brasil	
Persona di riferimento / Applicant's referee :	Mr. Gianfranco Russo (gianfranco.russo@giobert.com)	
Marchio commerciale / Trade mark :		
Fabbricante / Manufacturer :	MAGNETI MARELLI S.P.A. Orbassano (TO) - ITALY	
Prodotto / Product :	REMOTE KEYLESS ENTRY	
Modello / Model :	RKE22601	
FCC ID	RX2RKEL9	
Data ricevimento campioni / Date of test samples receipt:	13/10/2016	
Campioni verificati / No. of tested samples	1	
Data verifiche / Testing date :	13/10/2016	
Sito di prova / Testing site :	Prima Ricerca & Sviluppo Via Campagna -92 I-22020 FALOPPIO CO	
Esito delle valutazioni / Assessment results :	CONFORME / COMPLIANT	
Verifiche effettuate da / Verifications carried out by :	Giacomo ARMELLINI Responsabile Laboratorio EMC e RADIO/ EMC and RADIO Laboratory Manager	
Approvato / Approved by :	Enrico BANFI Coordinatore Laboratori / Laboratory Manager	

I risultati delle prove riportati nel presente rapporto di prova si riferiscono solo ai campioni esaminati./
The test results reported in this test report shall refer only to the samples tested
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PRIMA RICERCA & SVILUPPO

Sede operativa e Laboratori di prova / Headquarter and Testing lab: Via Campagna, 92 – I-22020 FALOPPIO (CO)

Tel. +39 031 3500011 – Fax +39 031 991309 – info@primaricerca.it – www.primaricerca.it

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0 RELEASE CONTROL RECORD

TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
MPETR_161913-0	Original Release	27/12/2016

1 TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

1.1 EUT Identification

Trademark:	
Manufacturer:	MAGNETI MARELLI S.P.A.
Type of Equipment :	REMOTE KEYLESS ENTRY
Model name:	RKE22601
Serial number :	S41801S
FCC ID :	2ADPXRKE22601
Country of manufacturer:	ITALY

EUT technical information

Product type:	Radio Equipment
Radio type:	Intentional radiators
Product description / application	The EUT is a remote keyless entry using the 433MHz frequency for remote control of vehicle's door (i.e lock door, unlock door...)
Power supply requirements :	3V (CR2032 type)
Operating Frequency:	433.92MHz
Channel bandwidth (20dB)	51.28kHz
Channel spacing	NA
Number of Channel	1
Modulation Type	FSK
Frequency Deviation	2.4kHz
Baud Rate	4.8kbit/s
Antenna Type	Integral Antenna

1.2 EUT modification

- None

1.3 Auxiliary equipment

- None

2 REFERENCE STANDARDS

CODE OF FEDERAL REGULATIONS	
Title 47 Part 2 Subpart J § 2.1093	Radiofrequency radiation exposure evaluation: portable devices.
ANSI C63.4 2014	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 MEASUREMENTS AND CALCULATION RESULTS

3.1 SAR exemption

This device has been excluded from SAR testing based on source-based time-averaged radiated output power and KDB 447498 D01 section 4.3.1 1. This document serves as the RF exposure exhibit in the FCC Form 731 application in lieu of a SAR report.

3.2 Operational Description

The is a remote keyless entry using the 433MHz frequency for remote control of vehicle's door. The user's hand will touch the device when it is transmitting and there is nothing to stop him being within 20 cm therefore it is necessary a calculation for portable use demonstrating that the transmitter can be excluded from SAR testing.

3.3 RF Exposure Conditions:

The device is intended for use in the portable exposure condition and the General Population / Uncontrolled RF exposure environment.

3.4 RF Output Power:

Tx frequency: 433.92MHz

Maximum Output Power: = -18.28dBm (0.0149mW)

3.5 Calculation method and limits

SAR Test Exclusion Thresholds:

$$[(\text{max. power of channel, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ (for 1-g body SAR) or } 7.5 \text{ (for 10-g extremity SAR)}$$

where respectively

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

3.6 Calculation results

Maximum Output Power: 0.0149mW

Min Test separation distance: 5mm

f: 0.43392GHz (as worst case)

Exclusion Threshold: 7.5 (10-g extremity SAR)

$$\frac{0.0149\text{mW}}{5\text{mm}} \cdot \sqrt{0.43392} = 0.001963 \leq 7.5$$

RESULT: The device is excluded from SAR testing