



PRIMA

RICERCA & SVILUPPO

RAPPORTO DI PROVA / TEST REPORT

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Scopo delle prove / Test object :	Prove di tipo in accordo a / Type test according to FCC Cfr 47 part 2 - §2.1091, part 1 - §1.1310	
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Marchio commerciale / Trade mark :		
Fabbricante / Manufacturer :	C.O.B.O. S.p.a.	
Prodotto / Product :	Radio transmitter WED	
Modello / Model :	WED (45.B0.0400A0.01)	
Data ricevimento campioni / Date of test samples receipt.	30/11/2012	
Campioni verificati / No. of tested samples	1	
Data verifiche / Testing date :	30/03/2012	
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 :	Andrea Bortolotti Tecnico di laboratorio / Test Engineer	
Approvato / Approved by :	Giacomo ARMELLINI Responsabile Laboratorio EMC e RADIO/ EMC and RADIO Laboratory Manager	

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0 RELEASE CONTROL RECORD

TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
MPETR_121459FCC-0	Original Release	04/12/2012
MPETR_121459FCC-1	Added code in model name, added serial number	14/12/2012

1 TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

1.1 EUT Identification

DESCRIPTION :	Radio transmitter
TRADEMARK:	
MODEL:	WED (45.B0.0400A0.01)
S/N:	
MANUFACTURER:	C.O.B.O. S.p.a.
COUNTRY OF MANUFACTURER:	Italy
COMPOSED BY:	Single
EUT DIMENSIONS :	See photographic documentation
EUT STANDING:	Installed on tool

1.2 EUT Technical Data

POWER SOURCE :	Internal Battery
POWER SUPPLY VOLTAGE:	3V battery
NOMINAL ABSORBED POWER	data not provided by the customer
FCC CLASS:	47 CFR FCC Part 15 Subpart C § 15.249
TYPICAL USAGE :	RADIO EQUIPMENT
TYPE:	INTENTIONAL RADIATOR
OPERATING FREQUENCY BAND	2400-2483.5MHz
FUNDAMENTAL FREQUENCY	2480.3MHz
RADIATED OUTPUT POWER	91,1dB μ V/m @ 2480.00MHz
FCC ID	
ANTENNA	INTEGRAL ANTENNA

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	Plastic	---
2	AC mains input/output ports	Port not present	---
3	DC mains input/output ports	Port not present	---
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 EUT modification

- None

1.5 Auxiliary equipment

- None

2 REFERENCE STANDARDS

CODE OF FEDERAL REGULATIONS	
Title 47 Part 1 Subpart I § 1.1310	Procedures Implementing the National Environmental Policy Act of 1969. Radiofrequency radiation exposure limits.
Title 47 Part 2 Subpart J § 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.
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 MEASUREMENTS AND CALCULATION RESULTS

3.1 Calculation Method

Far Field Power flux Calculation model.

This model is applicable in the far-field region and over-estimates in the radiating near-field region. The far-field calculations are accurate when the distance, r , from an antenna of length D to a point of investigation is greater than

$$r = \frac{2D^2}{\lambda}$$

The Power Flux is

$$S = \frac{PG}{4\pi r^2} \quad \text{or equivalent} \quad S = \frac{EIRP}{4\pi r^2}$$

where

P = input power of the antenna

G = antenna gain relative to an isotropic antenna

r = distance from the antenna to the point of investigation.

EIRP = Effective Isotropic Radiated Power

3.2 Limits

Tab. 1 of CFR Title 47 Part 1 Subpart I § 1.1310

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 Exposures				
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
300-1500			f/300	6
1500-100,000			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
300-1500			f/1500	30
1500-100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

3.3 Measurements and Calculation Results

MEASUREMENTS			
TX Frequency (MHz)	Radiated Power (dBm)	Radiated Power (W)	Antenna Gain (dBi)
2480	-6.28	0.000236	NA
Duty cycle factor (declared) 100,00%			
CALCULATION RESULTS			
Distance to the Area of Interest	0.2 feet 0.061 m		
Are Ground Reflections Calculated?	Yes		
Estimated RF Power Density	0.0013 mW/cm ²		
	Controlled Environment	Uncontrolled Environment	
Maximum Permissible Exposure (MPE)	5.005 mW/cm ²	1.005 mW/cm ²	
Distance to Compliance From Centre of Antenna	0.0532 feet 0.0162 m	0.0572 feet 0.0174 m	
Does the Area of Interest Appear to be in Compliance?	yes	yes	

4 PHOTOGRAPHIC DOCUMENTATION

PHOTO 1 - EUT IDENTIFICATON

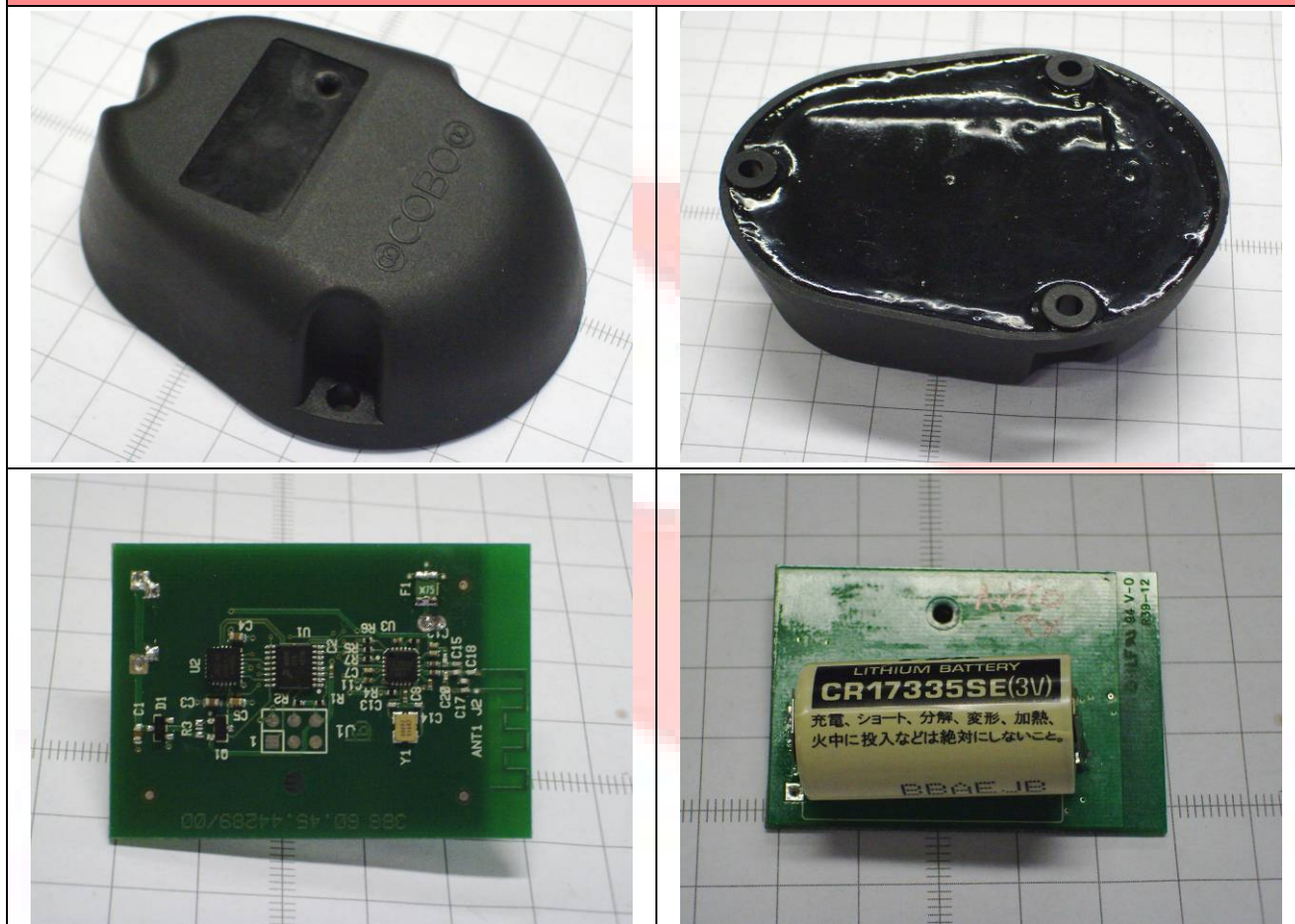


PHOTO 2 – MEASUREMENT SETUP

