

EMF ASSESSMENT REPORT

No. AR22-0085840-02

performed in accordance with
FCC Rules: Code of Federal Regulations (CFR) no. 47
§§ 2.1091(b) and 1.1310(e)(1)
RF Exposure

PRODUCT	Wireless indoor video door phone
MODEL(s) TESTED	1760/31
FCC ID	REA176032
TRADE MARK(s)	URMET

APPLICANT	URMET S.p.A. ~ Via Bologna, 188/c ~ I-10154 TORINO
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Assessed by	Robertino Torri <i>[Laboratory technician]</i>	
Approved by	Roberto Colombo <i>[Laboratory manager]</i>	

Revision Sheet

Release No.	Date of Issue	Revision Description
Rev. 0	2023-01-26	First edition Digital signed - AR22-0085840-02_TR_FCC RF Exposure _ URMET 1760-3x

The results of tests and checks reported in this Test Report refer exclusively to the samples tested and described in the Report itself.
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1. GENERAL DATA

SAMPLE		
Samples received on	2022-07-21	(Item(s) sampled and sent by applicant)
IMQ reference samples	BEM	109750
Samples tested No.	1	
Object under analysis recognition	Not carried out	
Date of acceptance of test item	2022-09-13	
TEST LOCATION		
Assessment date	2023-01-24	
Assessment laboratory.	IMQ S.p.A. - Via Quintiliano, 43 – IT-20138 Milano	
Assessment site	Viale Lombardia, 20 – IT-20021 Bollate (MI)	
ENVIRONMENTAL CONDITIONING		
Parameter	Measured	
Ambient Temperature	23.6 °C	
Relative Humidity	49 %	
Atmospheric Pressure	1001 mbar	
<p>The laboratory is monitored by a continuous environmental conditions measurements system. Temperature, humidity and pressure data are recorded on a weekly basis and stored in local archive.</p>		
REMARKS		
<p>Throughout this report a point is used as the decimal separator.</p> <p>The ability or reliability of this product to perform its intended function in a particular application has not been investigated.</p> <p>The test results apply to the sample as received.</p> <p>All information relating to the details of the equipment under test at the § 3 of this document was provided by the applicant.</p> <p>IMQ declines any responsibility derived from missing or wrong information provided aside by the applicant.</p>		

2. REFERENCE DOCUMENT

	DOCUMENT	DATE	TITLE
<input checked="" type="checkbox"/>	47 CFR Part 15	2015	Radio Frequency Device

3. EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL DATA

MODEL (basic)	Description		
1760/32	Indoor video door phone with Wi-Fi radio modules		
FCC ID	REA176032		
MANUFACTURER	URMET S.p.A. ~ Via Bologna, 188/c ~ I-10154 TORINO		
EUT type	Indoor monitor for door phone system		
EUT use	<input checked="" type="checkbox"/> Fixed <input type="checkbox"/> Vehicular <input type="checkbox"/> Portable		
EUT single or system	<input checked="" type="checkbox"/> Single <input type="checkbox"/> System		
EUT standing	Wall		
Supply voltage	24 V AC/DC		
Frequency	/		
Radio Data (radio 1)			
Radio module(s) model	Wi-Fi: BL-R8188EU1(EUS)		
Number of channels	13/9	Channel bandwidth	20/40 MHz
Operating frequency	2400 ÷ 2483.5 MHz		
Antenna	Gain:	/	
	Model:	/	
	Type:	<input checked="" type="checkbox"/> Integral <input type="checkbox"/> Dedicated <input type="checkbox"/> External	
Transmission protocol	802.11 b/g/n		
Radio Data (radio 2)			
Radio module(s) model	MFRC63002		
SRD class equipment	/		
Modulation	/		
Number of channels	/	Channel bandwidth	/
Operating frequency	13.553-13.567 MHz		
Antenna	Gain:	/	
	Model:	/	
	Type:	<input checked="" type="checkbox"/> Integral <input type="checkbox"/> Dedicated <input type="checkbox"/> External	
Transmission protocol	/		

4. SUMMARY OF EMF ASSESSMENT RESULTS

POSSIBLE TEST CASE VERDICTS:	
Test object meets the requirement	PASS
Test object does not meet the requirement	FAIL
Test case does not apply to the test object	N.A.
Test not performed	N.P.

CFR47 Part 15	TITLE	RESULT
§ 15.247(i), § 47CFR 1.1307(b)(1)	RF humane exposure	PASS

5. RESULTS OF RF EXPOSURE EVALUATION

TEST REQUIREMENT	
Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines § 1.1310.	
EUT classification (fixed, mobile or portable devices)	Fixed according to § 2.1091(b) of this Chapter
LIMITS	According to Table 1 to §1.1310(e)(1) — Limits for Maximum Permissible Exposure (MPE)
Testing dates	2023-01-18

TABLE 1 TO §1.1310(E)(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)
(i) Limits for Occupational/Controlled Exposure				
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
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) 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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

The power density at any given distance in any direction can be calculated in the far field using the following equation:

$$S = PG_i / (4\pi r^2)$$

where:

S: power density (W/m²) in a given direction.

P: power (W) supplied to the radiation source, assuming a lossless system;

G_i: gain factor of the radiation source in the relevant direction, relative to an isotropic radiator;

r: distance (m) from the radiation source.

The product **PG_i** in equation is known as the e.i.r.p. which represents the power that a fictitious isotropic radiator would have to emit in order to produce the same field intensity at the receiving point.

CALCULATION FOR SINGLE TRASMISSION

Modulation 802.11b								
Channel MHz.	Conducted power (dBm)	Tune-up (dB)	Antenna gain (dBi)	Max EIRP Power (dBm)	Max EIRP Power (mW)	Min distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
1 (2.412GHz)	15.3	1.55	2	18.85	76.74	20	0.0153	1
6 (2.437GHz)	15.9	1.55	2	19.45	88.10	20	0.0175	
11 (2.462GHz)	16.9	1.55	2	20.45	110.92	20	0.0221	

Modulation 802.11g								
Channel No.	Conducted power (dBm)	Tune-up (dB)	Antenna gain (dBi)	Max EIRP Power (dBm)	Max EIRP Power (mW)	Min distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
(2.412GHz)	10.5	2.00	2	14.50	28.18	20	0.0056	1
6 (2.437GHz)	10.9	2.00	2	14.90	30.90	20	0.0062	
11 (2.462GHz)	11.4	2.00	2	15.40	34.67	20	0.0069	

Modulation 802.11n HT20								
Channel No.	Conducted power (dBm)	Tune-up (dB)	Antenna gain (dBi)	Max EIRP Power (dBm)	Max EIRP Power (mW)	Min distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
1 (2.412GHz)	10.1	2.40	2	14.50	28.18	20	0.0056	1
6 (2.437GHz)	10.6	2.40	2	15.00	31.62	20	0.0063	
11 (2.462GHz)	11.4	2.40	2	15.80	38.02	20	0.0076	

Modulation 802.11n HT40								
Channel No.	Conducted power (dBm)	Tune-up (dB)	Antenna gain (dBi)	Max EIRP Power (dBm)	Max EIRP Power (mW)	Min distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
3 (2.422GHz)	9.7	3.20	2	14.90	30.90	20	0.0062	1
6 (2.437GHz)	10.1	3.20	2	15.30	33.88	20	0.0067	
9 (2.452GHz)	10.4	3.20	2	15.60	36.31	20	0.0072	

NFC				
Operating band (MHz)	Max power at 3m (dBμV/m)	Max E.I.R.P. (mW)	Equivalent plane wave power density @ 20 cm S (mW/cm ²)	Limits (mW/cm ²)
13.56 MHz	67.41	0.00165	3.29 x 10 ⁻⁷	0.98

CALCULATION FOR SIMULTANEOUS TRASMISSION

Operating band	Max E.I.R.P.	Max E.I.R.P. (mW)	Equivalent plane wave power density @ 20 cm S (mW/cm ²)
2462 MHz (Wi-Fi)	20.45 dBm	110.92	0.0221
13.56 MHz (NFC)	67.41 dB μ V/m a 3m	0.00165	negligible value
Simultaneous transmission (Σ S/ Limit)			0.0221
Limit			1

TEST RESULT

This value is less than the low threshold limit. No SAR test is required.

Maximum radiated power was taken into consideration to establish the worst case aggregate maximum output power.

END OF ASSESSMENT REPORT