Independent Testing Laboratory
CMC Centro Misure Compatibilità S.r.l.
Via dell'Elettronica, 12/C
36016 Thiene (VI) – ITALY
Tel./Fax +39 0445 367702
www.cmclab.it - info@cmclab.it

Accredited by Ministry of Communications – Notified Body EMC Directive 2004/108/EC n° NB 2044

TEST REPORT nr. R09132102_rev30

This test report cancel and replace document nr. R09132102_rev20 date 06.04.10

Federal Communication Commission (FCC)

Test item

Description..... : REMOTE CONTROL

Trademark..... : SIT LA PRECISA

Model/Type..... : 0582013

Test Specification

Standard..... : FCC Rules & Regulations, Title 47 (2008)
Part 15 paragraph(s) : 203, 204,207, 209 and 231

Client's name..... : SIT LA PRECISA S.p.A.

Address..... : Viale dell'industria, 31/33 - 35129 Padova (PD) - ITALY

Manufacturer's name : Same as client

Address..... : --

Report

Tested by..... : A. Bertezzolo - *Technician*

Approved by..... : R. Beghetto - *Laboratory Manager*

Date of issue..... : 08.04.10

Contents..... : 19 pages

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1. Summary

Emission: FCC Rules & Regulations, Title 47 (2008)

Test specifications	Environmental Phenomena	Tests sequence	Result
Part 15.203 and 15.204	Antenna Requirement	1	Complies
Part 15.207	Conducted Emission	--	N.A. (+)
Part 15.209 and 15.231	Radiated Emission	2	Complies
Part 15.209 and 15.231	Bandwidth of emission	3	Complies

(+) Apparatus with 4,5Vdc of power supply from internal battery

The Test Report was given to the Client representatives for necessary documentation of ratification of the tested equipment and it is valid for the FCC certification.

2. Description of Equipment under test (EUT)

Power supply	:	4,5Vdc from internal battery (3 x 1,5Vdc)
Type of equipment	:	☑ Transmitter Unit ☐ Receiver Unit ☐ Fixed station ☑ Portable station ☐ Mobile station
Receiver class	:	--
Working Frequency	:	315 MHz
Number of channels	:	--
Channel separation	:	--
Modulation	:	--
Extreme conditions	:	--
Maximum transmitter output power	:	--
Information on antenna	:	☑ Integrated ☐ Extern ☐ Other:
Duty cycle	:	--
Mode of operation	:	☑ Simplex mode ☐ Duplex mode ☐ Other :

2.1 Test Site

Company	:	CMC Centro Misure Compatibilità S.r.l.
Address	:	Via dell'Elettronica, 12/C – 36016 Thiene (VI) – ITALY

3. Testing and sampling

Date of receipt of test item	:	15.10.09
Testing start date	:	27.10.09
Testing end date	:	01.02.10
Samples tested nr.	:	1
Sampling procedure.	:	Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion
Internal identification	:	Adhesive label with the product number P090893

4. Operative conditions

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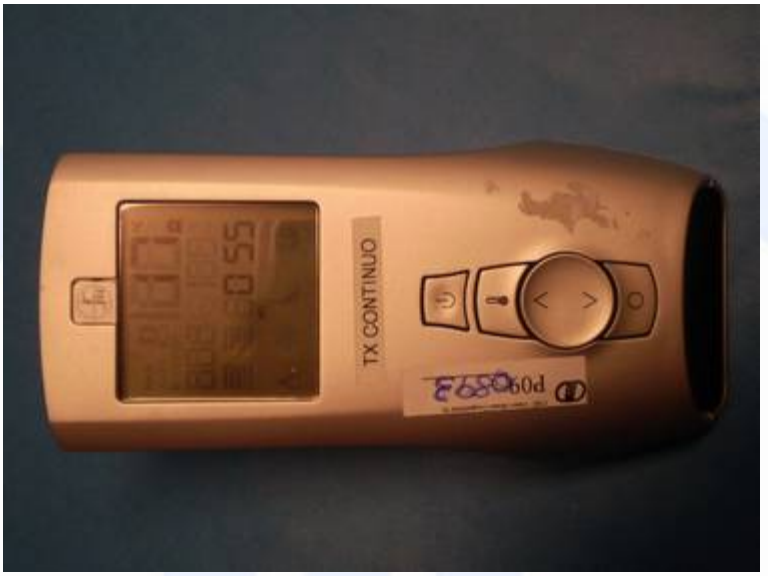
5. Photograph(s) of EUT



6. Equipment list

Id. number	*Manufacturer*	*Model*	*Description*	*Serial number*	*Last calibration*	*Due date calibration*
CMC S108	Emco	3115	Horn antenna	9811-5622	April '07	April '10
CMC S136	Schwarzbeck	VULB 9163	Broadband Antenna	9136-205	May '07	May '10
CMC S164	Rohde & Schwarz	ESU26	EMC interference receiver	100052	January '10	January '11
CMC S129	Rohde & Schwarz	ESPI7	Receiver	836.914/004	January '10	January '11

7. Measurement uncertainty

Test	Expanded Uncertainty	note
Conducted Emission		
(50Ω/50µH AMN) - (9 kHz – 150 kHz)	±3.8 dB	1
(50Ω/50µH AMN) - (150 kHz – 30 MHz)	±3.4 dB	1
(Voltage probe) - (150 kHz – 30 MHz)	±3.0 dB	1
(50Ω/5µH AMN) - (150 kHz – 108 MHz)	±3.2 dB	1
DiscontinuousConducted Emission		
Conducted Emission (50Ω/50µH AMN) - (9 kHz – 150 kHz)	±3.8 dB	1
Conducted Emission (50Ω/50µH AMN) - (150 kHz – 30 MHz)	±3.4 dB	1
Disturbance Power (30 MHz – 300 MHz)	±3.2 dB	1
Radiated Emission		
(0,150 MHz – 30 MHz)	±4.5 dB	1
(30 MHz – 1000 MHz)	±4.8 dB	1
(1 GHz – 6 GHz)	±4.4 dB	1
Electromagnetic field EMF	±18.8 dB	1
Harmonic current emissions test	±2.4 %	1
Voltage fluctuation and flicker test	±6.0 %	1
Insertion loss test	±2.6 %	1
Radiated electromagnetic disturbance test (loop antenna)	±2.5 %	1
Radiated electromagnetic field immunity test	0.9 V/m at 3V/m	1
Pulse modulated radiated electromagnetic field immunity test	0.9 V/m at 3V/m	1
Injected currents immunity test	0.6 V at 3V	1
Bulk current	9 mA at 60 mA	1
Power frequency magnetic field immunity test	0.3 A/m at 3 A/m	1
Electrostatic discharge immunity test		2
Electrical fast transients / burst immunity test		2
Surge immunity test		2
Short interruption immunity test		2
Voltage transient emission test	±5 %	1
Transient immunity test		2

Notes

Note 1:
The expanded uncertainty reported according to EN55016-4-2(2004-10) is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

Note 2:

It has been demostrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor k = 2.

8. eference documents

Reference no.	*Description*
FCC Rules and Regulation Title 47 part 15	--
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 9kHz – 40GHz
Internal Procedure PM001 rev. 2.0 (Quality Manual)	Measure Procedure
Internal procedure INC_M rev. 7.0 (Quality Manual)	Measurement uncertainty calculation

9. Deviation from test specification

In agreement with the client, emission tests were performed with peak detector .
At the frequencies where the measures exceed the limit or within 6dB from it, the test was repeated with quasi-peak detector and/or average detector.

10. Test case verdicts

Test case does not apply to the test object ..... : N / N.A.

Test item does meet the requirement ..... : P / Pass / Complies

Test item does not meet the requirement ..... : F / Fail / Does not comply

Test not performed ..... : NE / Not Executed

11. Results

In this clause tests results are reported.

All measurements are done in accordance with the Filling and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems DA-705

Measurement uncertainty is in accordance with document CMC INC_M rev. 7.0.

11.1 Antenna Requirements

Test configuration and test method

Test site	Laboratory
Auxiliary equipment	See clause 4 of this test report

Environmental conditions

Temperature	20	ºC	Atmospheric pressure	98	kPa	Relative humidity	52	%

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.203 and 15.204
- Internal Procedure PM001
- See clause 4 of this test report

Test Requirements

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 §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 § 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.

Test specification

Port: Antenna.

EUT exercising

See clause 4 of this test report

Result

Antenna Type	*External R.F. power amplifier*	*Remarks*	*Results*
Integral antenna	Not Present	--	Complies

Remarks

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Reference documents

See clause 8 of this test report

Result

The requirements are met

11.2 Radiated Emission 30-1000 MHz

Test configuration and test method

Test site: Laboratory
Auxiliary equipment: See clause 4 of this test report

Environmental conditions

Temperature 20 ºC Atmospheric pressure 98 kPa Relative humidity 50 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209 and 15.231e
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Encosure.

EUT exercising

See clause 4 of this test report

Result

Frequency (MHz)	*Pre-scan Graph(s)*	*Final Measurement QP level (dBµV/m)*	*Remark*	*Results*
314,974	G09132125	66,3	--	Complies
629,943	G09132125	44,3	--	Complies
944,920	G09132125	44,7	--	Complies

Remarks

EUT was tested in 3 orthogonal planes. In results table are reported the worst case.

Reference documents

See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S136, CMC S164
Measurement uncertainty: See clause 7 of this test report

Result

The requirements are met

11.3 Spurious Emission

Test configuration and test method

Test site: Laboratory
Auxiliary equipment: See clause 4 of this test report

Environmental conditions

Temperature 20 ºC Atmospheric pressure 98 kPa Relative humidity 50 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209 and Part 15.231e
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Antenna;

EUT exercising

See clause 4 of this test report

Result

Nr. *Harmonics*	*Final Measurement AV level (dBµV/m)*	*Final Measurement PK level (dBµV/m)*	*AV Limits* *(dBµV/m)*	*Pre-scan Graph(s)*
IV Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	G09132130
V Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	--
VI Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	--
VII Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	--
VIII Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	--
IX Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	--
X Harmonic	More than 10dB below limit	More than 20dB below limit	54,0	--
Measurement Uncertainty: ±4dB				

Remarks EUT was tested in 3 orthogonal planes. In results table are reported the worst case.

Reference documents See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S108, CMC S136, CMC S164

Result The requirements are met

11.4 Bandwidth of emission

Test configuration and test method

Test site: Laboratory
Auxiliary equipment: See clause 4 of this test report

Environmental conditions

Temperature 20 ºC Atmospheric pressure 99 kPa Relative humidity 50 %

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209 and 15.231c
- Internal Procedure PM001
- See clause 4 of this test report

Test specification

Port: Enclosure.

EUT exercising

See clause 4 of this test report

Acceptance limits

LIMITS
0.25% of the center frequency

Result

Port	*Bandwidth*	*Graphs*	*Results*
Enclosure	500 kHz	G09132122	Complies

Remarks ////////////////

Reference documents See clause 8 of this test report

Test equipment used (Id number – see clause 6 of this test report)

CMC S136, CMC S164

Result The requirements are met

11.5 Periodic Operation Characteristics

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.231
- Internal Procedure PM001
- See clause 4 of this test report

Test specification
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. Data us permitted to be sent with a control signal.

Result: The requirements are met

Test specification
15.231(a1) 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 ceases immediately after being released. The requirements are met

Test specification
15.231(a2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

Result: As declared in SIT LA PRECISA's document OD09113 (Operational Description), the transmission time is 420ms

Test specification
15.231(a3) 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: As declared in SIT LA PRECISA's document OD09113 (Operational Description), the transmission during is 407,2 ms every 20 minutes (graphs nr. G09132111)

Test specification
15.231(a4) 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: N.A.

Test specification
15.231 (a5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmissions are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.

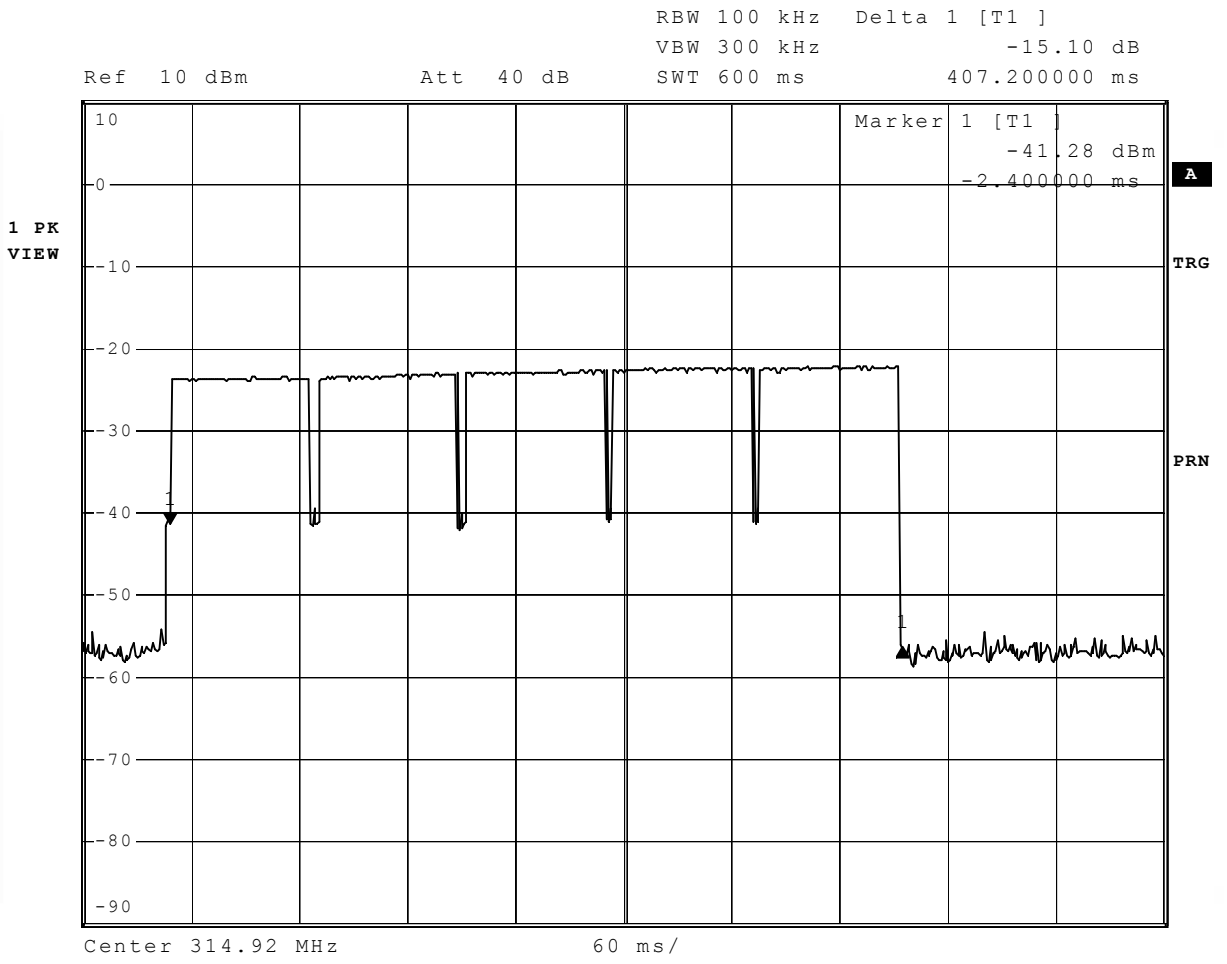
Result: N.A.

Test specification
15.231 (e) In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

Result: Complies. As declared in SIT LA PRECISA's document OD09113 (Operational Description), the transmission during is 407,2 ms every 20 minutes (graphs nr. G09132111)

12. Graphs and Tables

G09132111



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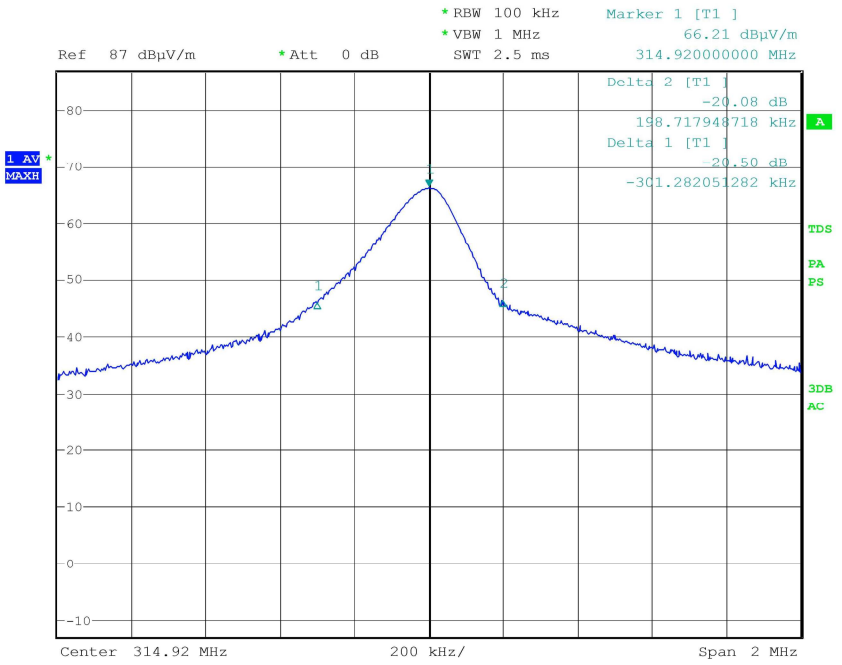
G09132122

Meas Type
Equipment under Test
Manufacturer
OP Condition TX continuo
Operator Bertezzolo 09132122
Test Spec



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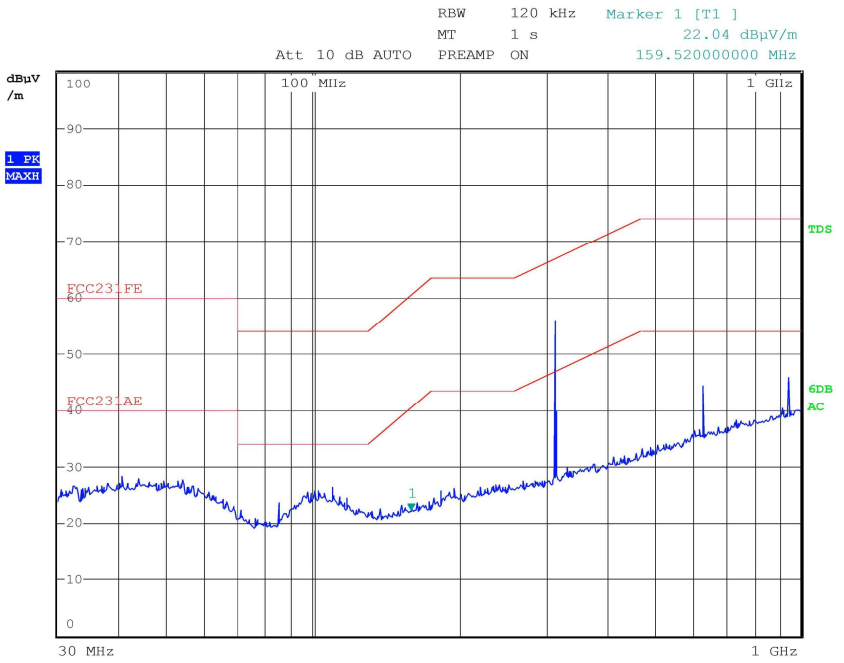
36016 Thiene (VI)

G09132125

Meas Type	Emissioni 30-1000MHz
Equipment under Test	
Manufacturer	
OP Condition	Tx continuo
Operator	Bertezzolo 09132125
Test Spec	



G09132130

Meas Type	Emissioni
Equipment under Test	
Manufacturer	
OP Condition	TX continuo
Operator	Bertezzolo 09132130
Test Spec