

Report on the FCC and IC Testing of the
Siemens AG
SIMATIC RF615R
In accordance with FCC 47 CFR Part 1.1310 and
Industry Canada RSS-102

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IC: 267X-RF615R



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ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 1.1310 and Industry Canada RSS-102, Issue 5, (4), Table 6. The sample tested was found to comply with the requirements defined in the applied rules.

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Laboratory Accreditation DAkkS Reg. No. D-PL-11321-11-02 Laboratory recognition Registration No. BNetzA-CAB-16/21-15 ISED Canada test site registration 3050A-2

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 1.1310 and Industry Canada RSS-102, Issue 5, (4), Table 6.

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Contents

1	Report Summary	2
1.1	Report Modification Record.....	2
1.2	Introduction.....	2
1.3	Technical Description	2
1.4	Brief Summary of Results	3
2	Test Details	4

1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	2020-04-09

Table 1

1.2 Introduction

Applicant	Siemens AG
Manufacturer	Siemens AG
Model Number(s)	SIMATIC RF615R
Serial Number(s)	Prototype
Hardware Version(s)	FS 02
Software Version(s)	---
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 1.1310 Industry Canada RSS-102, Issue 5, (4), Table 6
Test Plan/Issue/Date	---
Order Number	9704939264
Date	2019-07-30
Date of Receipt of EUT	---
Start of Test	---
Finish of Test	---
Name of Engineer(s)	Alex Fink
Related Document(s)	KDB 447498 D01 General RF Exposure Guidance v06 ANSI C63.10 (2013)

1.3 Technical Description

The SIMATIC RF 615 are suitable for reading and writing tasks in the UHF range and very long ranges up to 8m.

The readers are especially well-suited for use in production environments where a high protection class and integration into SIMATIC controllers are required. These readers also come with an extensive toolset for commissioning and diagnostics.



1.4 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 1.1310 and RSS-102 is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: Continuously transmitting				
2.1	1.1310 RSS-102	RF Exposure Evaluation	Pass	---

Table 2



2 Test Details

2.1 RF Exposure Assessment

2.1.1 Specification Reference

CFR 47 § 1.1310, Table 1 (B) and RSS-102, Issue 5, (4) Table 4

2.1.2 Equipment Under Test and Modification State

SIMATIC RF615R, S/N: Prototype - Modification State 0

2.1.3 Test Method

RF Exposure calculation is based on the measurements in the test report "28111932_009" and test report "28111932_010" of TÜV Rheinland Italia S.r.l.

$$S = \frac{P * G}{4 * \pi * r^2}$$

with P = Conducted Power (mW)
G = Numeric Gain (10(dBi/10))
r = distance (cm) = 20 cm



2.1.4 Test Results

In accordance with § 1.1310, Table 1 (B):

Operating frequency [MHz]	Conducted output power [dBm]	Conducted output power (P) [mW]	Numeric gain (G) [dB]	Power Density (S) [mW/cm ²]	Limits (f/1500) [mw/cm ²]
902.75	+ 27.42	552.077	2.239	0.24588	0.602
915.25	+ 27.47	558.470	2.239	0.24873	0.610
927.25	+ 26.72	469.894	2.239	0.20928	0.618

Table 3 – RF Exposure calculation for antenna with 3.5 dBi gain

Operating frequency [MHz]	Conducted output power [dBm]	Conducted output power (P) [mW]	Numeric gain (G) [dB]	Power Density (S) [mW/cm ²]	Limits (f/1500) [mw/cm ²]
902.75	+ 27.42	552.077	3.981	0.43725	0.602
915.25	+ 27.47	558.470	3.981	0.44231	0.610
927.25	+ 26.72	469.894	3.981	0.37216	0.618

Table 4 – RF Exposure calculation for antenna with 6.0 dBi gain

Operating frequency [MHz]	Conducted output power [dBm]	Conducted output power (P) [mW]	Numeric gain (G) [dB]	Power Density (S) [mW/cm ²]	Limits (f/1500) [mw/cm ²]
902.75	+ 27.42	552.077	5.012	0.55047	0.602
915.25	+ 27.47	558.470	5.012	0.55684	0.610
927.25	+ 26.72	469.894	5.012	0.46852	0.618

Table 5 – RF Exposure calculation for antenna with 7.0 dBi gain

The EUT Radiated Power density complies with the Limits for General Population/Uncontrolled Exposure in § 1.1310, Table 1 (B).



In accordance with RSS-102, Issue 5, (4), Table 6:

Operating frequency [MHz]	Conducted output power [dBm]	Conducted output power (P) [mW]	Numeric gain (G) [dB]	Power Density (S) [mW/cm ²]	Limits controlled environment [mw/cm ²]
902.75	+ 27.42	552.077	2.239	0.24588	1.939
915.25	+ 27.47	558.470	2.239	0.24873	1.952
927.25	+ 26.72	469.894	2.239	0.20928	1.965

Table 6 – RF Exposure calculation for antenna with 3.5 dBi gain

Operating frequency [MHz]	Conducted output power [dBm]	Conducted output power (P) [mW]	Numeric gain (G) [dB]	Power Density (S) [mW/cm ²]	Limits controlled environment [mw/cm ²]
902.75	+ 27.42	552.077	3.981	0.43725	1.939
915.25	+ 27.47	558.470	3.981	0.44231	1.952
927.25	+ 26.72	469.894	3.981	0.37216	1.965

Table 7 – RF Exposure calculation for antenna with 6.0 dBi gain

Operating frequency [MHz]	Conducted output power [dBm]	Conducted output power (P) [mW]	Numeric gain (G) [dB]	Power Density (S) [mW/cm ²]	Limits controlled environment [mw/cm ²]
902.75	+ 27.42	552.077	5.012	0.55047	1.939
915.25	+ 27.47	558.470	5.012	0.55684	1.952
927.25	+ 26.72	469.894	5.012	0.46852	1.965

Table 8 – RF Exposure calculation for antenna with 7.0 dBi gain

The EUT Radiated Power density complies with the RF Field Strength Limits for Controlled Use Devices (Controlled Environment) in RSS-102, Issue 5, (4) Table 6.