

Report on the FCC and IC Testing of the Siemens AG

Model: SIMATIC RTLS4460T

In accordance with FCC 47 CFR and ISED
RSS-GEN and ISED RSS-102

Prepared for: Siemens AG
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Germany

FCC ID: SCFNANOPAN5375V5
IC: 267X-MN5375V5



Product Service

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COMMERCIAL-IN-CONFIDENCE

Date: 2026-03-02

Document Number: TR-713367492-01 | Revision 4

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
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Authorised Signatory	Alex Fink	2026-03-02	 SIGN-ID 1112049

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

Engineering Statement:

This measurement shown in this report was 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 and ISED RSS-102 and RSS-GEN.

The sample tested was found to comply with the requirements in the tested parts

Laboratory Accreditation	Laboratory recognition	Industry Canada test site registration
DAkKS Reg. No. D-PL-11321-11-03	Registration No. BNetzA-CAB-16/21-15	3050A-2
DAkKS Reg. No. D-PL-11321-11-04		

Executive Statement:

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 1:2023 and ISED RSS-102 Issue 6 and ISED RSS-Gen:2018 + A1:2019 + A2:2021 in the tested parts



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Trade Register Munich
HRB 85742
VAT ID No. DE129484267
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1 Report Summary

1.1 Modification Report

Alternations and additions to this report will be issued to the holders of each copy in the form of a complete document. Current version replaces all previous versions.

<i>Revision</i>	<i>Description of changes</i>	<i>Date of Issue</i>
0	First Issue	2025-09-03
1	FCC ID corrected.	2026-01-12
2	Test distance lowered, section 2.1.	2026-02-02
3	Value for exemption calculation updated. Test distance changed to 10 cm.	2026-02-24
4	Test distance corrected to 20 cm, section 2.1.	2026-03-02

Table 1: Report of Modifications

1.2 Introduction

Applicant	Siemens AG
Manufacturer	Siemens AG
Model Number(s)	SIMATIC RTLS4460T
MLFB Number(s)	6GT2700-6CE02
Serial Number(s)	17:85:10:02:CA:9C, VPN5428201
Hardware Version(s)	FS:02
Software Version(s)	---
Number of Samples Tested	1
Test Specification(s) / Issue / Date	FCC 47 CFR, Part 1, § 1.1307: 2023 and ISED RSS-102, Issue 6: 2023
Test Plan/Issue/Date	---
Order Number	9708960787
Date	2025-01-31
Date of Receipt of EUT	2025-01-23
Start of Test	2025-03-15
Finish of Test	2026-02-16
Name of Engineer(s)	Alexander Deese
Related Document(s)	ANSI C63.10:2013 KDB 447498 D04 v01



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 1.1310, Part 2.1093 and RSS-102 is shown below.

<i>Section</i>	<i>Specification Clause</i>	<i>Test Description</i>	<i>Result</i>
2.1	1.1310	RF Exposure Exemption	Pass

Table 2: Results according to FCC 47 CFR, Part 1, § 1.1310

<i>Section</i>	<i>Specification Clause</i>	<i>Test Description</i>	<i>Result</i>
2.1	5.3.2	RF Exposure Exemption	Pass

Table 3: Results according to ISED RSS-102



1.4 Product Information

1.4.1 Technical Description

RTLS Transponder

Frequency Band 2400 MHz to 2483.5 MHz
Number of frequency channels: 1

Supply Voltage: 24 V (10 V to 30 V)
Supply Frequency: DC

1.4.2 List of Antennas

<i>Manufacturer</i>	<i>Model</i>	<i>Antenna im- pedance</i>	<i>Antenna Type</i>	<i>Antenna gain</i>
Huber+Suhner	SWA-0825/360/5/30/V	50 Ω	Railway rooftop antenna	5 dBi
Siemens (PROCOM)	6GT2706-0CA00	50 Ω	Rod antenna	0 dBi

Table 4: List of antennas

1.5 Test Configuration

24 V DC power supplied.

1.6 Modes of Operation

Test Case 1:

Antenna: Huber + Suhner

Continuously transmitting at 2440 MHz with a Bandwidth of 80 MHz.

Test Case 2:

Antenna: Procom

Continuously transmitting at 2440 MHz with a Bandwidth of 80 MHz.

1.7 Deviations from Standard



1.8 EUT Modifications Record

The table below details modifications made to the EUT during the test program.
The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
0	As supplied by the customer	Not Applicable	Not Applicable

Table 5

1.9 Test Location

TÜV SÜD Product Service conducted the following tests at our Straubing test laboratory:

Test Name	Name of Engineer(s)
RF Exposure	Alexander Deese

Office Address:

Äußere Frühlingstraße 45
94315 Straubing
Germany



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2 Test Details

2.1 RF Exposure Exemption

2.1.1 Specification Reference

47 CFR, Part 1, § 1.1310
RSS-102, Issue 6 (2023-12-15)

2.1.2 Equipment under Test and Modification State

SIMATIC RTLS4460T; S/N 17:85:10:02:CA:9C; Modification state 0

2.1.3 Date of Test

2026-02-16

2.1.4 Environmental Conditions

Ambient Temperature	21 °C
Relative Humidity	32 %



2.1.5 Specification Limits

47 CFR, Part 1, § 1.1310(e)(1)

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.



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RSS-102, section 5.3.2

Table 7: RF field strength and power density limits for devices used by the general public (uncontrolled environment)

Frequency range (MHz)	Electric field (V _{RMS} /m)	Magnetic field (A _{RMS} /m)	Power density (W/m ²)	Reference period (minutes)
10-20	27.46	0.0728	2	6
20-48	58.07 / $f^{0.25}$	0.1540 / $f^{0.25}$	8.944 / $f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 $f^{0.3417}$	0.008335 $f^{0.3417}$	0.02619 $f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000 / $f^{1.2}$
150000-300000	0.158 $f^{0.5}$	4.21×10 ⁻⁴ $f^{0.5}$	6.67×10 ⁻⁵ f	616000 / $f^{1.2}$



2.1.6 Test Method

Test distance of 20 cm. Maximum output power of 22.60 dBm taken from test report TR-713367492-00 (FCC 4460T). The maximum antenna gain of 5 dBi was applied.

2.1.7 Test Results

47 CFR

Evaluation according to 47 CFR, Part 1, § 1.1310(e)(1).

Evaluation:

<i>Frequency [MHz]</i>	<i>Output Power EIRP [dBm]</i>	<i>Output Power EIRP [mW]</i>	<i>Power Spectral Density at 20 cm [mW/cm²]</i>	<i>Limit [mW/cm²]</i>	<i>Margin</i>
2440	27.60	575.4	0.1145	1.0	0.8855

RSS-102

Evaluation according to RSS 102 section 5.3.2.

Evaluation:

<i>Frequency [MHz]</i>	<i>Output Power EIRP [dBm]</i>	<i>Output Power EIRP [mW]</i>	<i>Power Spectral Density at 20 cm [mW/cm²]</i>	<i>Limit [mW/cm²]</i>	<i>Margin</i>
2440	27.60	575.4	0.1145	0.5408	0.4263



2.1.8 Test Location and Test Equipment

The test was carried out in the test laboratory:

Instrument	Manufacturer	Type No	TE No	Calibra- tion Pe- riod (months)	Calibration Due
Signal and Spectrum Analysator	Rohde & Schwarz	FSV40	20219	24	2026-03-31
Switching device	Rohde & Schwarz	OSP120	20248	36	2026-07-31
Switching device	Rohde & Schwarz	OSP120	38807	36	2026-08-31
Climatic test chamber	ESPEC	PL-4J	38958	18	2026-09-06

Table 5



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3 Photographs of Test Setups





4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

The measurement uncertainty in the laboratory is less than or equal to the maximum measurement uncertainty according to IEC/IEEE 62209-1528 and CISPR16-4-2: 2011 + A1 + A2 + Cor1 (U_{CISPR}). This normative regulation means that the measured value is also the value to be assessed in relation to the limit value.

<i>Radio Interference Emission Testing</i>		
<i>Test Name</i>	<i>kp</i>	<i>Expanded Uncertainty</i>
Conducted Voltage Emission		
9 kHz to 150 kHz (50Ω/50μH AMN)	2	± 3.8 dB
150 kHz to 30 MHz (50Ω/50μH AMN)	2	± 3.4 dB
100 kHz to 200 MHz (50Ω/5μH AMN)	2	± 3.6 dB
Discontinuous Conducted Emission		
9 kHz to 150 kHz (50Ω/50μH AMN)	2	± 3.8 dB
150 kHz to 30 MHz (50Ω/50μH AMN)	2	± 3.4 dB
Conducted Current Emission		
9 kHz to 200 MHz	2	± 3.5 dB
Magnetic Field strength		
9 kHz to 30 MHz (with loop antenna)	2	± 3.9 dB
9 kHz to 30 MHz (large-loop antenna 2 m)	2	± 3.5 dB
Radiated Emission		
30 MHz to 300 MHz	2	± 4.9 dB
300 MHz to 1 GHz	2	± 5.0 dB
1 GHz to 6 GHz	2	± 4.6 dB
Test distance 10 m		
30 MHz to 300 MHz	2	± 4.9 dB
300 MHz to 1 GHz	2	± 4.9 dB
The expanded uncertainty reported according to CISPR16-4-2: 2011 + A1 + A2 + Cor1 is based on a standard uncertainty multiplied by a coverage factor of $k_p = 2$, providing a level of confidence of $p = 95.45\%$		

Table 6 Measurement uncertainty based on CISPR 16-4-2



<i>Radio Interference Emission Testing</i>		
<i>Test Name</i>	<i>kp</i>	<i>Expanded Uncertainty</i>
Occupied Bandwidth	2	± 5 %
Conducted Power		
9 kHz ≤ f < 30 MHz	2	± 1.0 dB
30 MHz ≤ f < 1 GHz	2	± 1.5 dB
1 GHz ≤ f ≤ 40 GHz	2	± 2.5 dB
1 MS/s power sensor (TS8997)	2	± 1.5 dB
Occupied Bandwidth	2	± 5 %
Power Spectral Density	2	± 3.0 dB
Radiated Power		
9 kHz ≤ f < 26.5 GHz	2	± 5.6 dB
26.5 GHz ≤ f < 60 GHz	2	± 8.0 dB
60 GHz ≤ f < 325 GHz	2	± 10 dB
Conducted Spurious Emissions	2	± 3.0 dB
Radiated Spurious Emissions	2	± 6.0 dB
Voltage		
DC	2	± 1.0 %
AC	2	± 2.0 %
Time (automatic)	2	± 5 %
Frequency	2	± 10 ⁻⁷
The expanded uncertainty reported according to to ETSI TR 100 028:2001 is based on a standard uncertainty multiplied by a coverage factor of kp = 2, providing a level of confidence of p = 95.45%		

Table 7 Measurement uncertainty based on ETSI TR 100 028

END OF TEST REPORT