

Localization systems SIMATIC RTL5201T

Operating Instructions

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.

 WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.

 CAUTION
indicates that minor personal injury can result if proper precautions are not taken.

NOTICE
indicates that property damage can result if proper precautions are not taken.


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

 WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

Purpose of the operating instructions

These operating instructions support you when installing and connecting the SIMATIC RTLS5201T transponder.

The configuration and the integration of the transponders in a network are not described in these operating instructions.

Scope of validity of the operating instructions

These operating instructions apply to the following transponder:

- RTLS5201T (Article number: 6GT2752-0TS01)

Further documentation

You can find the complete documentation for all SIMATIC RTLS products at the following address:
Link: (<https://support.industry.siemens.com/cs/us/en/ps/25277/man>)

Trademarks

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SIMATIC RTLS

Industry Online Support

In addition to the product documentation, the comprehensive online information platform of Siemens Industry Online Support offers support at the following Internet address: (<https://support.industry.siemens.com/cs/start?lc=en-US>)

Apart from news, there you will also find:

- Project information: Manuals, FAQs, downloads, application examples etc.
- Contacts, Technical Forum
- The option submitting a support query: (<https://support.industry.siemens.com/My/us/en/>)
- Our service offer:
Right across our products and systems, we provide numerous services that support you in every phase of the life of your machine or system - from planning and implementation to commissioning, through to maintenance and modernization.

You will find contact information on the Internet at the following address: (https://www.automation.siemens.com/aspa_app/?ci=yes&lang=en)

SITRAIN - Training for Industry

The training offer includes more than 300 courses on basic topics, extended knowledge and special knowledge as well as advanced training for individual sectors - available at more than 130 locations. Courses can also be organized individually and held locally at your location.

You will find detailed information on the training curriculum and how to contact our customer consultants at the following Internet address: (<https://new.siemens.com/global/en/products/services/industry/sitrain/personal.html>)

RTLS Technology and Practice (ID-RTLS-TP)

Training and certification

After completing the RTLS certification training, you will be able to plan and implement small and medium-sized RTLS projects and provide efficient and multifaceted support in large projects. Your RTLS basics will be strengthened and, building upon them, you will receive new tools of the trade in order to offer customers the optimal solution for them. The complete project sequence is taken as a reference and important steps, resources and work results for each phase are presented. Comprehensive practical exercises in connection with troubleshooting techniques and a great deal of input from industrial projects allow you to internalize a confident approach to working with different types of localization projects. With the training documents, you also receive extensive reference material for your daily work.

Link: (<https://www.sitrain-learning.siemens.com/EN/en/rw35251/Industrielle-Identifikation-RTLS-Technologie-und-Praxis>)

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines, and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions form one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. These systems, machines and components should only be connected to the enterprise network or the Internet if and only to the extent necessary and with appropriate security measures (firewalls and/or network segmentation) in place.

You can find more information on protective measures in the area of industrial security by visiting:

<https://www.siemens.com/industrialsecurity> (<https://www.siemens.com/industrialsecurity>).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends performing product updates as soon as they are available and using only the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To ensure that you are always informed about product updates, subscribe to the Siemens Industrial Security RSS feed at:

<https://www.siemens.com/cert> (<https://www.siemens.com/cert>)

Note on firmware/software support

Check regularly for new firmware/software versions or security updates and apply them. After the release of a new version, previous versions are no longer supported and are not maintained.

Security recommendations

General

Note the following security recommendations to prevent unauthorized access:

- Keep the firmware up to date. Check regularly for security updates for the device. You can find information on this at the Industrial Security (<https://new.siemens.com/global/en/company/topic-areas/future-of-manufacturing/industrial-security.html>) website.
- Inform yourself regularly about security recommendations published by Siemens ProductCERT (<https://new.siemens.com/global/en/products/services/cert.html>).
- Evaluate your plant as a whole in terms of security. Use a cell protection concept with suitable products.
- This product requires an additional security concept to prevent unauthorized access.
- Transponder and infrastructure can be configured for radio channels according to IEEE 802.15.4-2015. You will find details in the section "Technical specifications".
- Ensure that the radio frequencies are not used for other purposes and are not affected by other interfering signals. This should be ensured within the operating range of the localization system.
- Interference in the frequency band used can impair the system and, in extreme cases, lead to localization failure.

Physical access

- Restrict physical access to the device to qualified personnel.
- Disable unused physical interfaces of the device. Unused interfaces could be used to gain access to the operating site.

Recycling and disposal



The products are low in harmful substances, can be recycled and meet the requirements of the Directive 2012/19/EU for disposal of waste electrical and electronic equipment (WEEE).

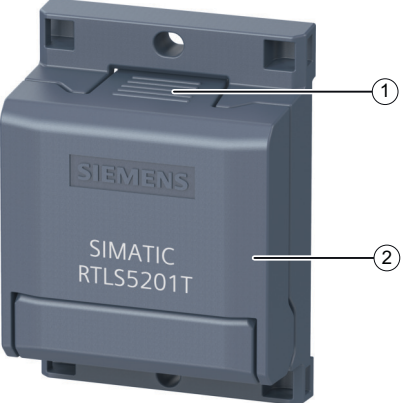
Do not dispose of the products at public disposal sites.

For environmentally compliant recycling and disposal of your electronic waste, please contact a company certified for the disposal of electronic waste or your Siemens representative.

Note the different national regulations.

Device description

2.1 Characteristics

SIMATIC RTLS5201T	Characteristics	
	Design	<ul style="list-style-type: none"> ① Ribbed surface for unlocking the battery lid ② Battery compartment (press ribbed surface and open battery cover to the front)
	General	<p>The transponder is the mobile device for localization in the RTLS localization system. It sends position data to gateways which transmit the data to the Locating Manager server.</p>

2.2 Order data for RTLS5201T and accessories

Table 2-1 RTLS5201T order data


	Article number
SIMATIC RTLS5201T Packaging unit: Pack of 1	6GT2752-0TS01

Table 2-2 Order data for accessories (not included in product package)

	Article number
Batteries 1/2AA Packaging unit: Pack of 20	6GT2792-0BB41

2.3 Transponder identification

The following unique identifiers are printed on the enclosure of the transponder for identification:

Identifier	Example	Description
1P	6GTxxx-xxxx	Specifies the article number of the transponder.
S	VPJM123456	Specifies the serial number of the transponder.
Addr	1:22:33:44	Specifies the radio address of the transponder in the Locating Manager.
FS	01	Specifies the hardware function version of the transponder and serves to identify different versions.
<Data Matrix Code>		Specifies the data matrix code with article number, serial number and radio address of the transponder. Example: 1P6GT2xxxxxxx+S VPJM123456+3S1223344

2.4 Dimension drawing

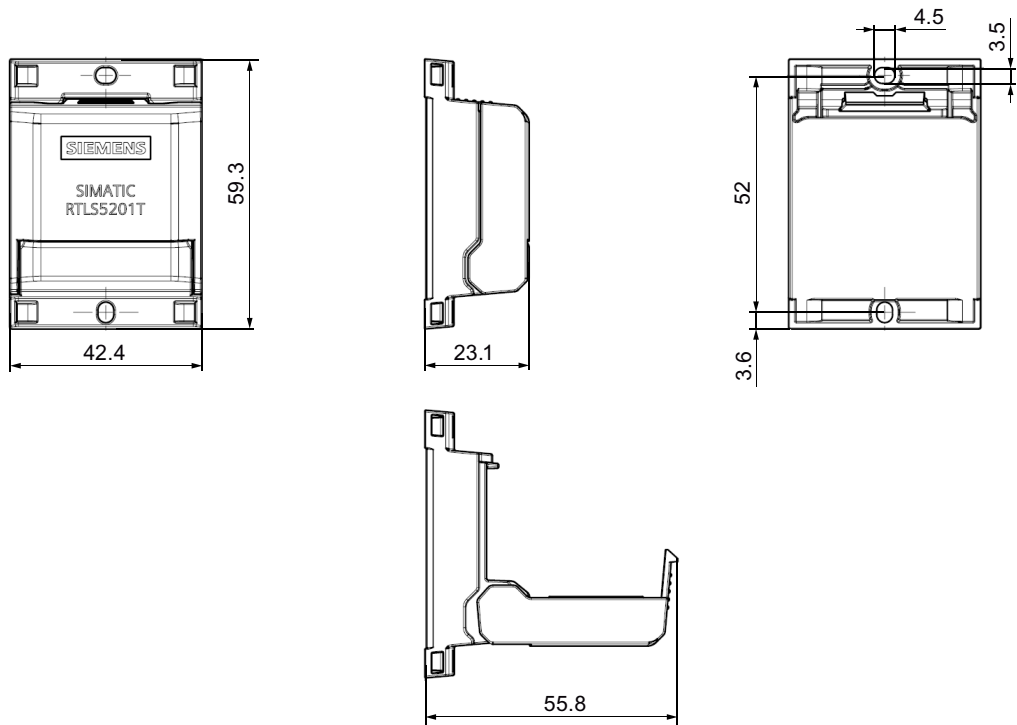


Figure 2-1 Dimension drawing SIMATIC RTL5201T - All dimensions are specified in millimeters

Installation and operation

3.1 Notes on installation

Note

Before you install the transponders, read this section carefully to ensure problem-free installation and commissioning.


The transponders can only be used in conjunction with the RTLS localization system. You can obtain the radio address of the RTLS5201T via the data matrix code printed on the transponder or via the identifier "Addr".

You can secure the transponder with two M3 screws (torque 0.8 to 1.0 Nm) or with cable ties (maximum width 3.5 mm) in the four side lugs. Alternatively, you can also attach the transponder with an adhesive pad. When using an adhesive pad for fastening, ensure that the opening on the back (1 mm hole) is not closed and thereby allows pressure equalization.

Install the transponder in such a way that it has a direct line-of-sight connection to the gateways (360° panorama view). Any type of material can impact wireless localization. Wireless localization through metal is not possible. In this case, localization via wireless reflections can occur, which results in inaccurate determination of the location. You can find additional information on this in the "Reflections and interference" section.

Check the transponder for damage before installation. The specified operating temperature ranges must be observed.

The transponder is powered by a lithium battery (not included in the scope of delivery).


 CAUTION
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Fires and burns

Improper handling of batteries can lead result in fires and burns.
--

The enclosure of the transponder must not be squashed, punctured or exposed to other mechanical influences. It may only be opened to change batteries.

Never expose the transponder to fire, temperatures above 65 °C or permanent direct sunlight.

 CAUTION
--

Inserting or replacing batteries

The transponder batteries can only be replaced in dry environments. Make sure that the battery is inserted with the poles in the correct direction.

Reflections and interferences

The antenna fields are weakened by absorbing materials and reflected by conducting materials. When electromagnetic fields are reflected or there are other radio sources, this will result in interferences. These circumstances will result in incorrect measurements; however, these can be largely detected and corrected with the appropriate software (e.g. SIMATIC RTLS Locating Manager). We still recommend that you prevent these influences. Especially objects that cannot be penetrated by radio waves can cause localization errors.

Note

Metal surfaces reflect radio waves more than any other types of surfaces. Water, on the other hand, attenuates radio waves. You should therefore evaluate your working environment and integration for these influences.

During installation, pay attention to sufficient distance from such reflective surfaces so that localization is not impaired.

Coexistence and de-sensing

To prevent interfering with each other, radio applications will use different frequency bands. Use of these frequency bands is subject to state regulation. Because a frequency range is considered a finite good, technologies were developed over the years that enable a coexistence of different radio applications in the same frequency band. These technologies are also used by SIMATIC RTLS. However, interferences can still be caused by other radio devices. Arrangements are being made here, too, so that these interferences do not impact the operation of the RTLS localization system. To keep interferences to a minimum, the RTLS infrastructure components must not be installed in the close vicinity of other radio applications. Strong senders in close vicinity can interfere with the reception, even when they are located in neighboring frequency bands (de-sensing). This is true, for example, for the 2.4 GHz ISM band and PULSE in the UWB channel 5.

Use of integrated antennas 1 and 2

The transponder has two integrated antennas. Which of the two internal antennas is used can be configured as a parameter in the Locating Manager by a trained commissioning engineer. Antenna 1 is configured by default and is used when the transponder is attached to a vertical surface on the side of the object to be located. The transponder must be attached in such a way that the Siemens lettering of the battery cover points upwards. Antenna 2 is configured when the transponder is attached to a horizontal surface. Misconfiguration can lead to a reduction of the range.

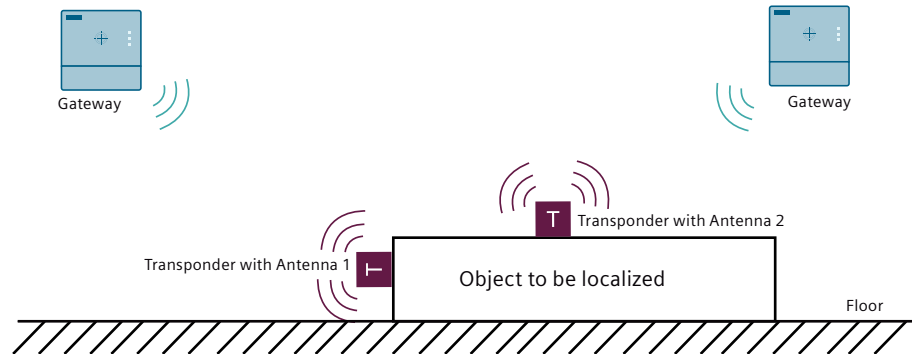


Figure 3-1 Use of antenna 1 and antenna 2

Battery change

	CAUTION
Use approved batteries	
Insertion of non-approved or damaged batteries may result in damage to the transponder or its surroundings. Only use batteries approved by the manufacturer, see section "Technical specifications (Page 23)". Before inserting a battery, make sure that it is not damaged. The transponder batteries can only be replaced in dry environments.	

Proceed as follows to replace the battery in the transponder:

1. Open the cover by pressing the latch (ribbed surface).
2. Remove the battery to be replaced and wait 30 seconds before inserting the new battery while maintaining the polarity direction.
3. Close the enclosure again so that it is latched.

3.2 Operation

Battery life

The battery life of the batteries used in the transponder depends on various factors and settings.

Note

To achieve optimal battery life, you must make appropriate adjustments to the delivery state since it was designed to allow fast commissioning.

Factors that reduce the battery life:

- Continuous use at temperatures below 0°C

Parameter assignment that reduces the battery life:

- Short sign-of-life cycle times < 60 seconds
- Short node search cycle times < 60 seconds

Operations that reduce the battery life:

- Reconfiguration of the transponder via the Locating Manager
- Firmware update (recommendation: change the battery after firmware updates)

With the setting 1 Hz TDOA blinking and 10 minutes sign-of-life interval, the transponder battery lasts for up to one year at room temperature. The use of motion detection allows the transponder to switch to an energy-saving mode on standstill. This increases the battery life to up to five years.

Battery voltage status

The battery voltage status is transferred to the Locating Manager. The following three statuses are possible. Be sure to only use approved batteries, see section "Technical specifications (Page 23)". At 2.8 V, a low power warning is sent to the Locating Manager. If the battery has the status "empty", the transponder switches off autonomously. The values in the following table are for a room temperature of 20 °C.

Battery voltage status	Displayed battery voltage in the Locating Manager
Full to 10% remaining capacity	3.3 V
~5% remaining capacity	3.0 V
Empty	2.4 V

Communication with the Locating Manager

After sending a heartbeat to the Locating Manager, the transponder is ready to receive for a defined period of time. During this time, data such as configuration changes or firmware update data can be initiated on the transponder. Applications that require the transponder to transmit, such as TDOA blinking or distance measurements, are paused after the heartbeat for this period and only continued afterwards. TDOA or distance measurements also take place during the actual transmission of configuration and firmware update data.

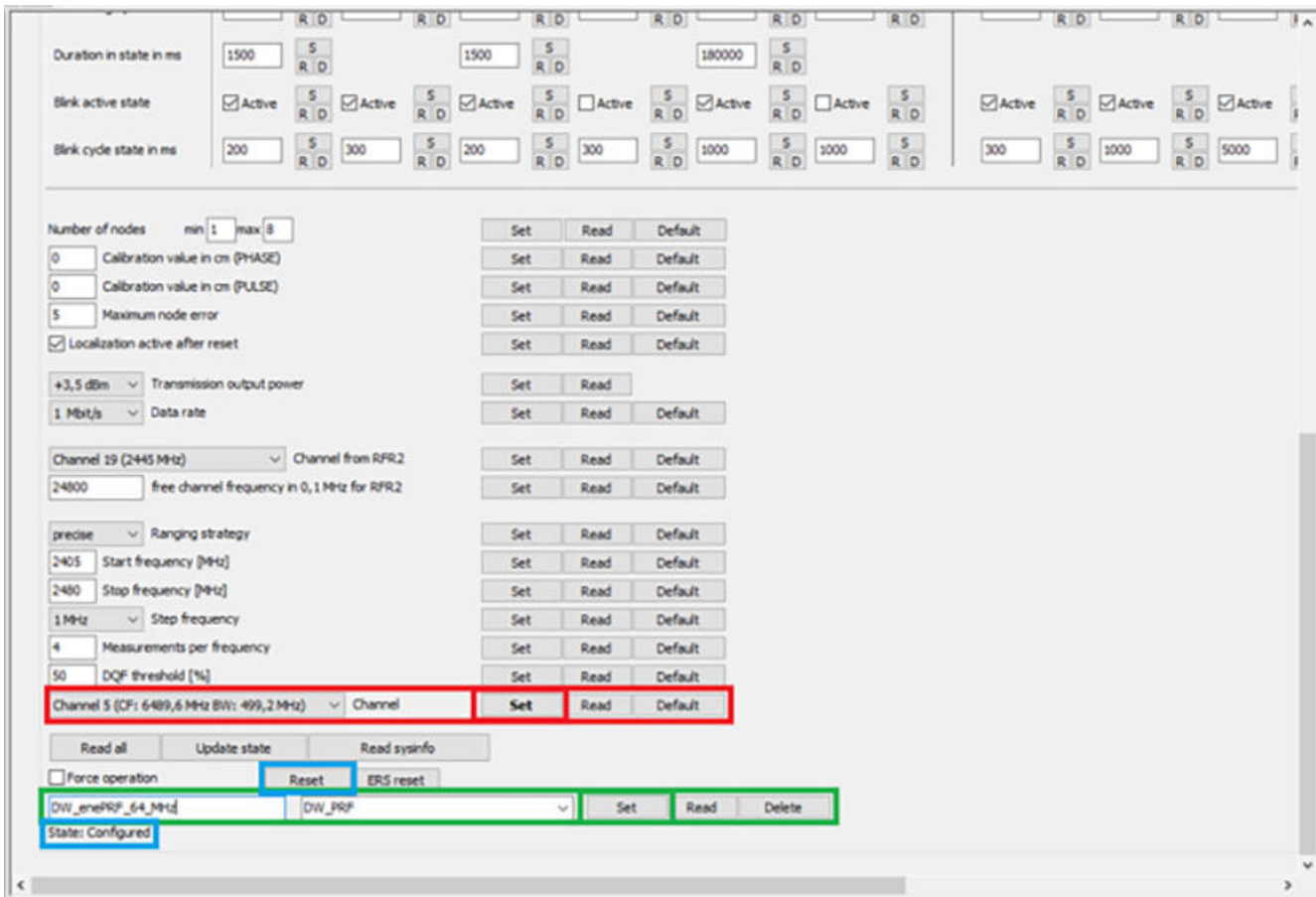
Mixed operation of the transponders/gateways of the RTLS4000 product family and transponders of the RTLS5000 product family

The SIMATIC RTLS5201T transponder is compatible with the transponders and gateways of the RTLS4000 product family. Unlike the transponders of the RTLS4000 product family, it exclusively uses the UWB channel 5 for localization and communication. Therefore, the configurations must be adapted both for an existing RTLS system and for a newly commissioned system. Below is a more detailed description of these two applications and an explanation of what you must configure in the Locating Manager in order for the mixed operation of the two product families to function properly.

Initial situation	Target situation
<ul style="list-style-type: none"> • Locating Manager V2.13.0.3 or higher • Gateways with Timesync on UWB channel 5 and localization on UWB channel 2 (blinks) • Transponders with blinks on UWB channel 2 • Any PHASE channels 	<ul style="list-style-type: none"> • Gateways with Timesync on UWB channel 2 and localization on UWB channel 5 (blinks) • Transponders with blinks on UWB channel 5
Preamble length = 256 PRF = UWB channel 2: PRF16, UWB channel 5: PRF 64	Preamble length = 256 PRF = No reconfiguration of the PRF is necessary if the "Blink" function and time synchronization of the radio interface are swapped.

Step 1: Adapt transponders of the RTLS4000 product family

- In the "Localization configuration" client, change UWB channel 2 to UWB channel 5.
- Change the "PRF" parameter (parameter name and parameter value) as follows:
 - PRF: DW_PRF = DW_enePRF_64_MHz
 - Code: DW_PreamblCode = DW_enePreamblCode_10
- Restart the transponder or reset it via "Reset" as follows:
The parameters can be configured via a trained commissioning engineer in the Locating Manger.
 - Red frame: Change the UWB channel to UWB channel 5 and then click the "Set" button.
 - Green frame: For the "DW_PRF" parameter, enter the value "DW_enePRF_64Mhz" and then click the "Set" button.
 - Green frame: For the "DW_PreamblCode" parameter, enter the value "DW_enePreamblCode_10" and then click the "Set" button.
 - Blue frame: Click the "Reset" button and ensure that the "State" has the "Configured" value.



Step 2: Adapt gateways of the RTL54000 product family (2 possible variants)

Variant 1 (recommended):

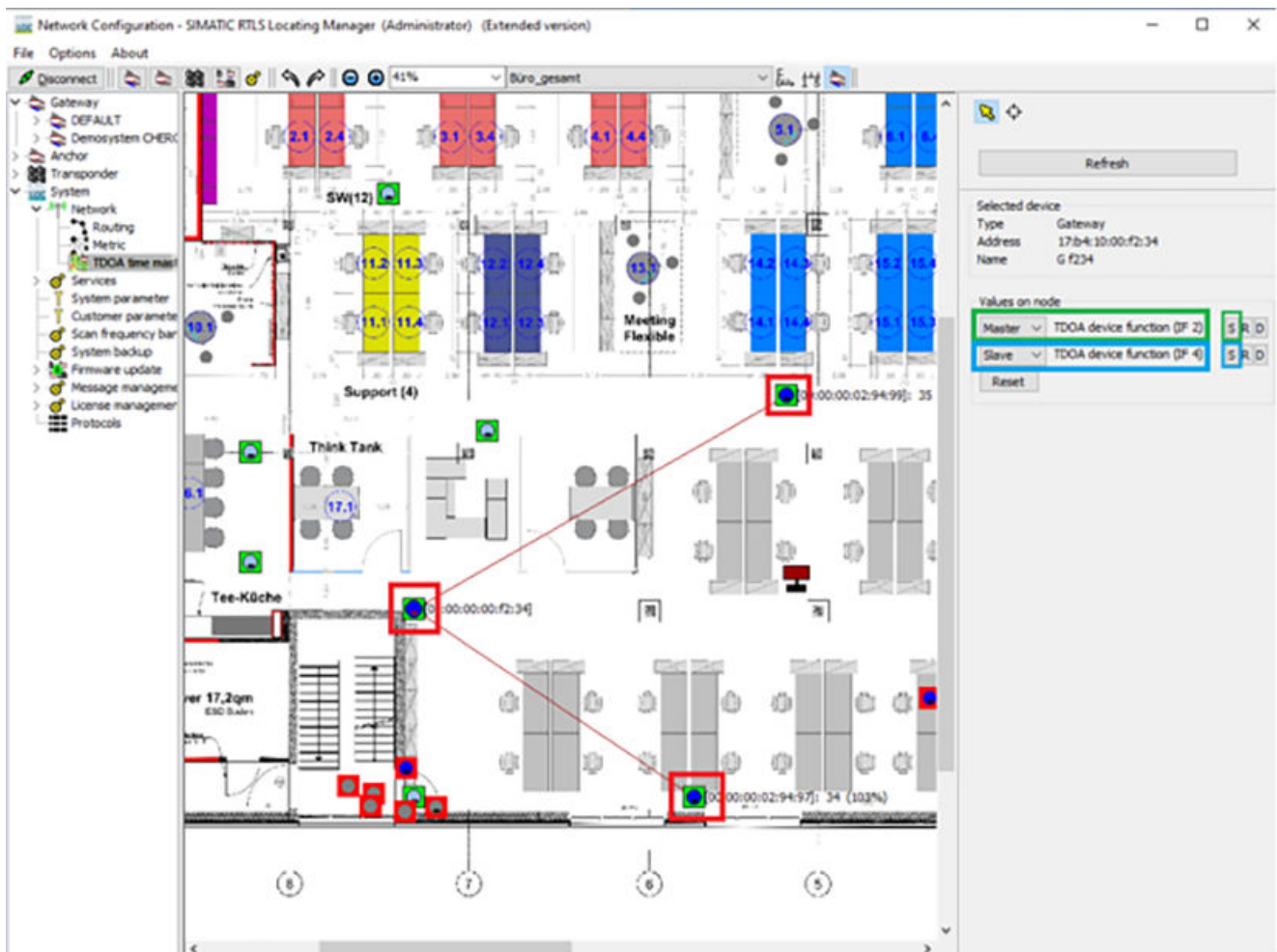
The functions of the radio interfaces "IF2" and "IF4" are swapped.

Advantages: No reconfiguration of the UWB channels, preambles and PRF is required and the optimum antenna configuration of the gateways is retained.

Disadvantages: Error-prone with very many gateways and cannot be performed via mass configuration.

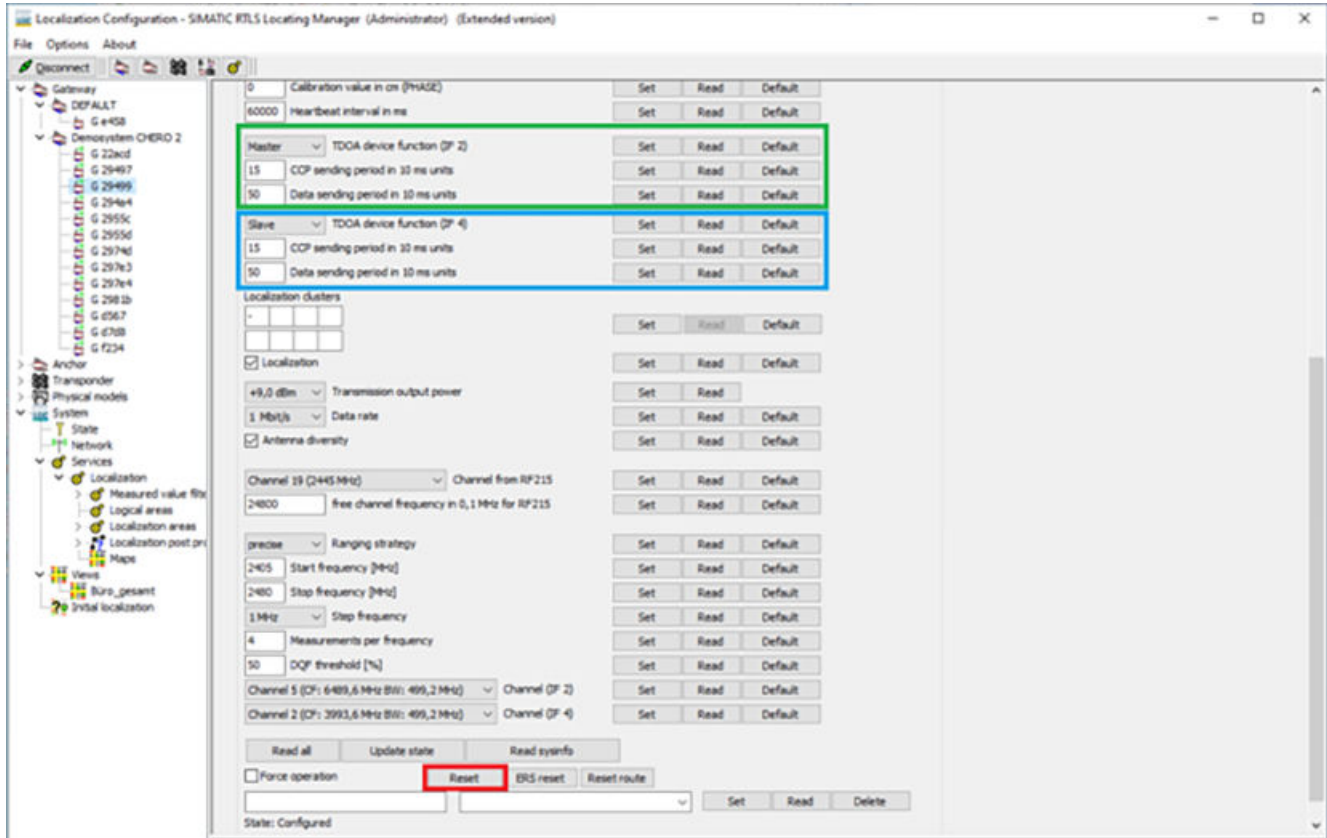
The parameters can be configured in the Locating Manager by a trained commissioning engineer.

- Open the client "Network configuration and navigate to "System > Network > TDoA time master".
- Select the TDoA time master (blue highlighted infrastructure devices, see red frame)
- Exchange the values "TDoA device function IF 2" (green frame) and "TDoA device function IF4" (blue frame) (change from IF2 master to IF2 slave and change IF4 slave to IF4 master) and set both buttons to "S".



3.2 Operation

- Check in the "Localization Configuration" client whether the "CCP" and "Data Sending Period" parameters are configured the same on both interfaces (green frame, blue frame).
- Restart the gateway via the "Reset" button (red frame).



Variant 2:

The functions of the radio interfaces are retained, but the radio parameters are changed to match the transponders.

Advantages: Can be done via mass configuration for all devices at the same time.

Disadvantages: Various radio interface conversions, non-ideal antenna configuration in gateway.

The parameters can be configured in the Locating Manager by a trained commissioning engineer.

- In the "Localization configuration" client, change UWB channel 5 to UWB channel 2 at "TDoA timesync (channel IF2)".
- Then change UWB channel 2 to UWB channel 5 in "Localization (channel IF4)".
- Adapt PRF and preamble on both interfaces so that interface 4 (IF4) is configured identically to the transponder.
- Red frame: Set the UWB channel for interface 2 (IF2) to channel 2 and then click the "Set" button.

- Red frame: Set the UWB channel for interface 4 (IF4) to channel 5 and then click the "Set" button.
- Green frame: For the "IF2_DW_PRF" parameter, enter the value "DW_enePRF_16Mhz" and then click the "Set" button.
- Green frame: For the "IF2_DW_PreamblCode" parameter, enter the value "DW_enePreamblCode_3" and then click the "Set" button.
- Green frame: For the "IF4_DW_PRF" parameter, enter the value "DW_enePRF_64Mhz" and then click the "Set" button.
- Green frame: For the "IF4_DW_PreamblCode" parameter, enter the value "DW_enePreamblCode_10" and then click the "Set" button.
- Blue frame: Click the "Reset" button and ensure that the "State" has the "Configured" value. All configurations have thereby been adopted.

The screenshot displays the configuration interface for the RTL5000 product family. It includes the following sections and parameters:

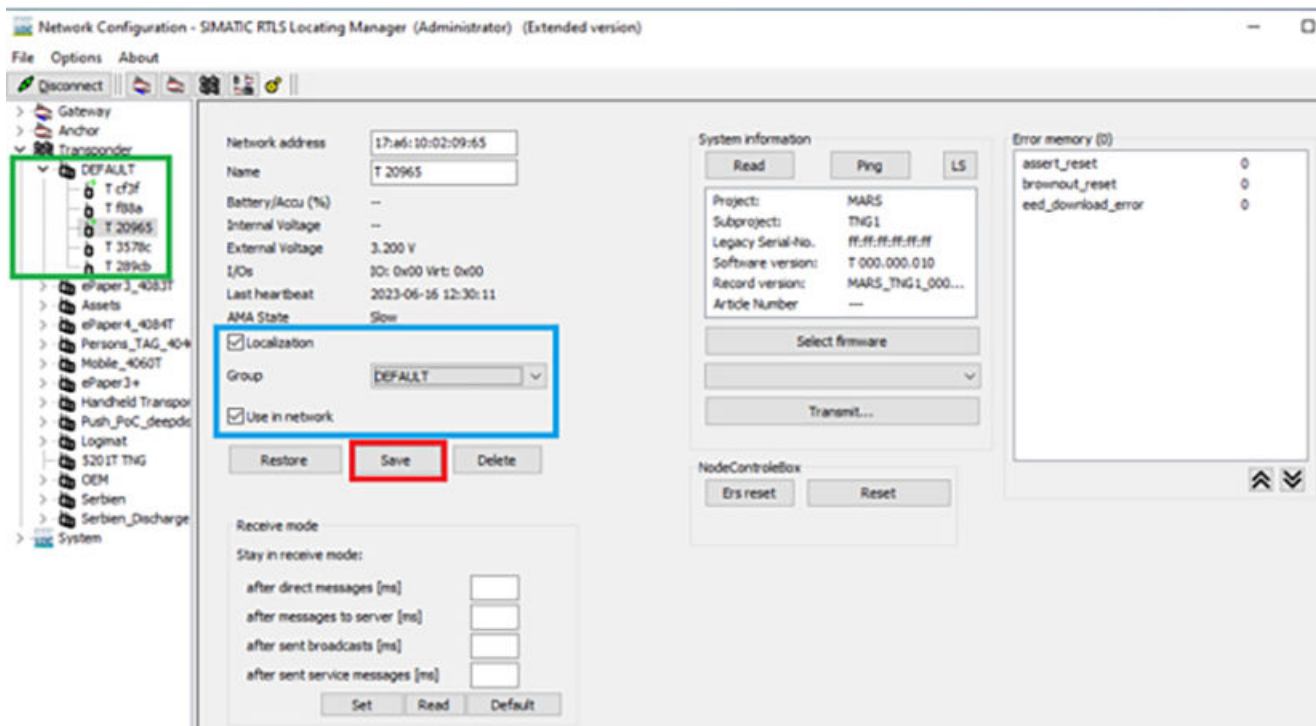
- Master TDOA device function (IF 2):** Heartbeat interval in ms (60000), CCP sending period in 10 ms units (15), Data sending period in 10 ms units (50).
- Slave TDOA device function (IF 4):** CCP sending period in 10 ms units (15), Data sending period in 10 ms units (50).
- Localization clusters:** A grid of input fields for cluster identification.
- Localization:** A checked checkbox.
- Transmission output power:** +9,0 dBm.
- Data rate:** 1 Mbit/s.
- Antenna diversity:** A checked checkbox.
- Channel 19 (2445 MHz):** Channel from RF215, free channel frequency in 0,1 MHz for RF215 (24800).
- Ranging strategy:** precise, Start frequency [MHz] (2405), Stop frequency [MHz] (2480), Step frequency (1 MHz), Measurements per frequency (4), DQF threshold [%] (50).
- Channel 2 (CF: 3993,6 MHz BW: 499,2 MHz):** Channel (IF 2).
- Channel 5 (CF: 6489,6 MHz BW: 499,2 MHz):** Channel (IF 4).
- Buttons:** Read all, Update state, Read sysinfo, Force operation, Reset, ERS reset, Reset route.
- IF2_DW_enePreamblCode_3:** IF2_DW_PreamblCode, Set, Read, Delete.
- State:** Configured.

Step 3: Adapt transponder of the RTL5000 product family

- Download the firmware "MARS V1.0": (<https://support.industry.siemens.com/cs/us/en/ps/25277/dl>)
- Add the cagl file in the RTL5 subdirectory "...\\Server\\Firmware".

Step 4: Commission transponder of the RTL55000 product family

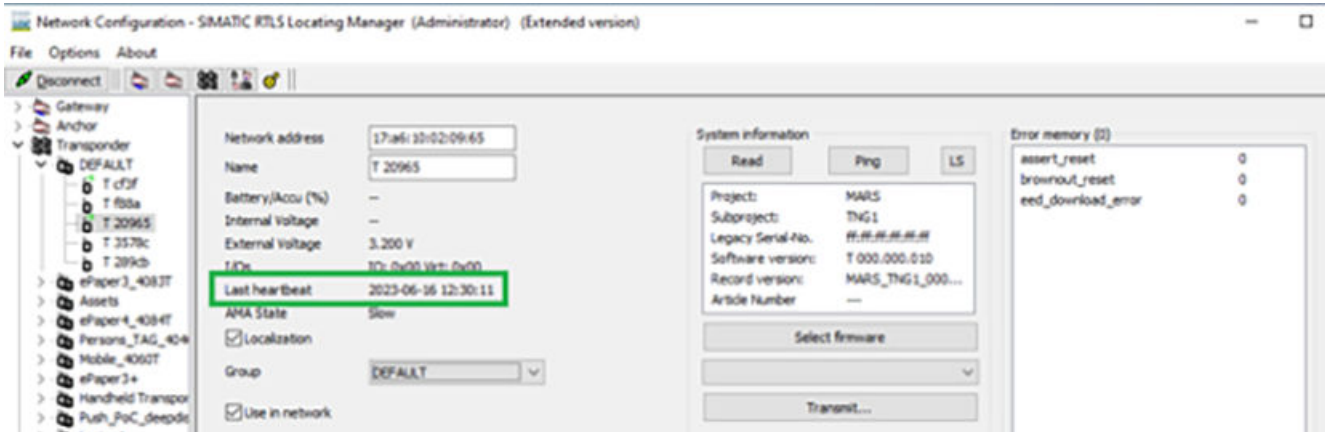
- Insert a battery into the RTL55201T transponder, since it is shipped without a battery.
- In the "Network configuration" client, check whether the transponder is in the default group and whether the valid firmware is present. If not, return to step 3.



- In the "Network configuration" client, move the RTL55201T transponder from the default group to an individual transponder group.
- Activate the "Use in network" and "Localization" options.
- Assign the localization area to the individual transponder group.

Step 5: Check changes

- In the "Network Configuration" client, check whether the RTLS5201T transponder is sending a valid sign of life.



- In the "Visualization 2D view" client, check the localization results.
- Check the localization results of all transponders and use cases as an overall system check.

Note

General notes

- If AMA configurations are performed on the RTLS5201T transponder, the transponder must be reset to ensure that the changes are successfully applied to the transponder.
- The configuration on UWB channel 5 can lead to a range reduction of the TDOA links on the transponder of the RTLS4000 product family.
- The accuracy of the distance measurements (TWR) may be reduced because the transponder of the RTLS4000 product family is not configured on the delivery channel.

3.3 Cleaning and maintenance

The enclosure may only be opened to change batteries.

The transponder may only be repaired or opened for other types of work by an authorized maintenance company.

Improper opening or repair of the transponder may result in serious risks for the user. Opening the transponder without permission renders the warranty of the Siemens AG null and void.

Do not clean the enclosure with liquids or abrasive, caustic or flammable cleaning products.

Technical specifications

Table 4-1 Technical specifications of the RTL55201T transponder






		6GT2752-0TS01
Product name	SIMATIC RTL55201T	
PULSE wireless frequencies (communication and localization)		
Wireless method	IEEE 802.15.4-2015 UWB HRP PHY	
Supported localization technologies	<ul style="list-style-type: none"> • TWR • TDOA 	
Transmission speed	850 Kbps	
Operating frequency rated value	6489.6 MHz (UWB channel 5)	
Bandwidth	499.2 MHz	
Frequency range	6000 MHz ... 7000 MHz	
Transmit power	0.037 mW (-41.3 dBm/MHz)	
Accuracy of the localization (typical)	0.1 m	
Antennas	Two built-in UWB antennas	
Supply voltage		
Supply voltage	Battery 1/2AA: 3.6 V lithium battery Brand: SAFT LS14250 (1200 mAh)	
Service life (at 20 °C)	Standby: 5 years Operation: 100% UWB TDOA localization with 1 second: 1 year Battery life, see section "Operation (Page 14)"	
Permitted ambient conditions		
Ambient temperature	<ul style="list-style-type: none"> • During operation and storage • -20 ... +65 °C 	
Design, dimensions, weights and connectors		
Dimensions (L x W x H)	59.3 x 42.4 x 23.1 mm	
Weight	29 g (without battery) 38 g (including battery)	
Degree of protection	IP67	
Fastening method	2 M3 screws or cable ties with maximum width 3.5 mm	
Enclosure	Plastic enclosure	
Color	Titanium gray	





Approvals

Country-specific approvals

All the latest radio approvals for RTLS devices are available on the Internet (https://cache.industry.siemens.com/dl/files/340/109784340/att_1082212/v1/SIMATIC-RTLS-Approvals.pdf).

If a device has one of the following marks, the corresponding approval has been obtained.

Labeling	Description
	Australia/New Zealand
	South Africa (ICASA) Independent Communications Authority of South Africa, Sandton Radio Equipment Type Approval Certificate
	United Arab Emirates TRA
	EAC (Eurasian Conformity) Eurasian Economic Union of Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation Declaration of conformity according to the technical regulations of the customs union (TR CU)
 Alternative: FCC ID: XXXXYZZZZ	USA (FCC) This device complies with part 15 of the FCC rules.
IC: XXXXYZZZZ	Canada (ISED) This device complies with Industry Canada licence-exempt RSS standard(s).

Labeling	Description
 <p>Alternative: ANATEL: XXXXYZZZZ</p>	<p>Brazil (ANATEL) Certificado de Homologação REPÚBLICA FEDERATIVA DO BRASILAGÊNCIA NACIONAL DE TELECOMUNICAÇÕES Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores informações, consulte o site da ANATEL (www.anatel.gov.br).</p>
	<p>Importer UK: Siemens plc, Sir William Siemens House, Princess Road, Manchester M20 2UR</p>
	<p>Mexico (NOM) La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.</p>
<p>CMIIT ID: XXXXYZZZZ</p>	<p>China (CMIIT) Radio Transmission Equipment Type Approval Certificate In accordance with the provisions on the Radio Regulations of the People's Republic of China, the following radio transmission equipment, after examination, conforms to the provisions with its CMIIT ID.</p>
	<p>South Korea (KCC) Korea Communications Commission Certificate of Broadcasting and Communication Equipments Republic of Korea</p>

Note

The specified approvals apply only when the corresponding mark is printed on the product. You can check which of the following approvals have been granted for your product by the markings on the type plate.

You can find the current EU Declaration of Conformity for these products on the Internet at Siemens Industry Online Support.

Link: (<https://support.industry.siemens.com/cs/products?dtp=Certificate&mf=ps&pnid=14970&lc=en-US>)

The products described in this document meet the requirements of the following EU directives:

- RoHS Directive 2011/65/EU
Directive of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, official journal of the EU L174, 1 July 2011, pages 88-110
- Radio Equipment Directive 2014/53/EU (RED)
Directive of the European Parliament and of the Council of 16 April 2014 on the harmonization of the laws of the member states relating to placing radio equipment on the market; official journal of the EU L153, 22 May 2014, pages 62-106

UK Declaration of Conformity

The UK declaration of conformity is available to all responsible authorities at:

Siemens Aktiengesellschaft
Process Industries and Drives Division,
Process Automation
DE-76181 Karlsruhe
Germany

Importer UK:

Siemens plc,
Manchester M20 2UR

You can find the current UK Declaration of Conformity for these products on the Internet pages under Siemens Industry Online Support (<https://support.industry.siemens.com/cs/en/en/view/109801531>).

The SIMATIC RTLS products described in this document meet the requirements of the following directives/regulation:

- Radio Equipment Regulations:
SI 2017/1206 Radio Equipment Regulations 2017, and related amendments
- RoHS Regulations:
SI 2012/3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012, and related amendments

RoHS directive (restriction of the use of certain hazardous substances)

The products described in these operating instructions meet the requirements of the EU directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Applied standard:

- IEC 63000
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

The products described in this document meet the requirements of the applied standards:

Article 3 (1) a) Protection of health and safety

- EN 62368-1
Equipment for audio/video, information and communication technology – Part 1: Safety requirements
- EN 62311
Assessment of electronic and electrical equipment related to human exposure restrictions in electromagnetic fields (0 Hz - 300 GHz)

The products described in these operating instructions meet the requirements of EU directive 2014/30/EU "Electromagnetic Compatibility" according to the designated standards for the following areas of application.

Article 3 (1) b) EMC

- ETSI EN 301 489-1
Electromagnetic compatibility and radio spectrum matters (ERM) - Electromagnetic compatibility for radio equipment and services - Part 1: Common technical requirements
- ETSI EN 301 489-33
Electromagnetic compatibility and radio spectrum matters (ERM) - Electromagnetic compatibility for radio equipment and services - Part 33: Special conditions for ultra-wideband (UWB) devices
- EN 55011
Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics – Limits and methods of measurement
- EN 55032 Class A, Class B
Electromagnetic compatibility of multimedia equipment – Emission requirements
- EN 55035
Electromagnetic compatibility of multimedia equipment - Immunity requirements
- EN 61000-6-1
Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
- EN 61000-6-2
Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
- EN 61000-6-3
Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
- EN 61000-6-4
Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

Article 3 (2) Efficient use of the radio spectrum

- ETSI EN 302 065-2
Short Range Devices (SRD) using ultra-wideband technology (UWB); Harmonized standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 2: Requirements for UWB location tracking

FCC information

Siemens SIMATIC RTLS5201T (MLFB 6GT2752-0TS01); FCC ID: SCF5201T01

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC RF radiation exposure statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 5 mm between the radiator and your body.

ISED information

Siemens SIMATIC RTLS5201T (MLFB 6GT2752-0TS01); IC: 267X-5201T01

NOTICE (RSS-Gen Issue 5)

This device complies with license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et

(2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiation exposure statement (RSS-102)

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 5 mm between the radiator and your body.

Déclaration d'exposition aux radiations

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 5 mm entre le radiateur et votre corps.