1 Overview

The CUWB Manager API is a REST API that is automatically runs as a systemd unit following the installation of the CUWB Manager package. This API configures all of the resource units required to facilitate the creation, configuration, and deletion of CUWB Configurations within the CUWB RTLS platform. This is the vessel through which the CUWB Manager's web-based frontend requests adjustments through HTTP to the CUWB Configuration's .cuwb saved state files.

Users have the option of creating their own control mechanisms utilizing this API by issuing the following requests over any of the host machine's network interfaces on port 5000. The expected response formats are also provided for success, failure, and error scenarios.

> Unless otherwise listed in the tables: the parameters, data body schemes, and responses are all required when using the API call.

1.1 JSON Format

This information can also be queried through the API itself via `GET /api.json`

Files produced:

- `application/json`
- `text/html`

1.2 Swagger API Access

Additionally, the API is available on the Host PC where the CUWB Manager Package is installed. This can be accessed by either going to `localhost:5000/api` or `{hostpc_ipaddress}:5000/api`. The swagger API access also has the ability to run api call examples in the interface.

2 Shared Schema

2.1 Classification Level

The classification level indicates the classification of each response. This is applied to every API response.

The following are the meanings behind each of the integer values for the classification portion of the Response Body.

Value	Description
1	Error
2	Warning
3	Information
4	Debug

> Classification Level has been shortened to Level in this documentation for ease of reading. The JSON format in the Swagger Access will shorten Classification Level to Classification.

2.2 Messages

Every API response will always include a message in a string format.

3 Cache Manager

This section outlines the API commands that can interact with cached data. These commands can be run regardless of whether a CUWB Configuration is active.

3.1 GET

The GET API command can be used to retrieve cached data for a particular CUWB Configuration.

```
GET /cache-manager/{cuwb_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration

Responses

HTTP Code	Name	Schema	Level	Description
200	**cached_devices**	string	4	Cached Device List

3.2 DELETE

3.2.1 DELETE cached data for a Device in a CUWB Configuration

```
DELETE /cache-manager/{cuwb_name}/{device_key}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration
device_key	Path	string	Either a Ciholas serial number or an integer ID.

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item Deleted
500	**message**	string	1	Error

3.2.2 DELETE cached data for a CUWB Configuration

```
DELETE /cache-manager/{cuwb_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item Deleted
500	**message**	string	1	Error

4 Calculate Maximum Tags

This section outlines API commands that can generate maximum tag calculations. These can be run regardless if whether a CUWB Configuration is active.

4.1 Data Body Schemes

4.1.1 Calculate Maximum Tags Parameterized Body

Name	Schema
number_of_seeders	integer
seeder_period	integer
tag_period	integer
maximum_tag_period	integer
accelerometer_period *optional*	integer
gyroscope_period *optional*	integer
magnetometer_period *optional*	integer
quaternion_period *optional*	integer
pressure_period *optional*	integer
temperature_period *optional*	integer
payload_overhead_size *optional*	integer
user_data_period *optional*	integer
user_data_size *optional*	integer
settings *optional*	string

4.1.2 Calculate Maximum Tags Body

Name	Schema
role_id	integer

4.2 Calculate Maximum Tags via Parameters

This API command allows users to calculate the maximum number of tags allowed based on given parameters.

```
POST /calculate_maximum_tags
```

Parameters

Name	Type
calculate_maximum_tags_parameterized_body	Body

Schema	Description
calculate_maximum_tags_parameterized_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**maximum_tags_calculation**	string	3	Calculate maximum tags
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

4.3 Calculate Maximum Tags via Configured Role

This API command allows users to calculate the maximum number of tags allowed based on a given role in a CUWB Configuration.

```
POST /cuwbnets/{cuwb_name}/calculate_maximum_tags
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
calculate_maximum_tags_body	Body	calculate_maximum_tags_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**maximum_tags_calculation**	string	3	Calculate maximum tags
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

5 CDP Streams

This section outlines the available API commands to create, modify, or delete CDP streams in a particular CUWB Configuration.

> The API allows for the use of either `cdp-streams` or `cdp_streams` within the API call

5.1 Data Body Schemes

5.1.1 CDP Stream Body

Name	Schema
destination_ip	string
destination_port	integer
interface	string
interface_port	integer
name	string
time_to_live	integer

5.2 POST

The following API call creates a new CDP stream for a particular CUWB Configuration.

```
POST /cuwbnets/{cuwb_name}/cdp-streams
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
cdp_stream_body	Body	cdp_stream_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
201	**cdp_stream**	string	3	CDP Stream
400	**message**	string	1	Invalid Request
409	**message**	string	1	Conflict
500	**message**	string	1	Internal Error

5.3 GET

The GET API command can be used for individual CPD streams or for a list of all the CDP streams in a particular CUWB Configuration.

5.3.1 GET Individual Stream

The following API call queries if an individual CPD stream exists in a particular CUWB Configuration.

```
GET /cuwbnets/{cuwb_name}/cdp-streams/{id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
id	Path	integer	The id of the CDP stream to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**cdp-stream**	string	4	CDP Stream
404	**message**	string	1	Not found

5.3.2 GET List of All Streams

The following API call gets a list of all the CDP streams in a particular CUWB Configuration.

```
GET /cuwbnets/{cuwb_name}/cdp-streams
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**cdp-streams**	< object > array	4	CDP Stream List

5.3.3 GET List of Default Stream

The following API call gets a list of the default CDP Streams.

```
GET /default-cdp-streams
```

Responses

HTTP Code	Name	Schema	Level	Description
200	**cdp-streams**	< object > array	4	CDP Stream List

5.4 PATCH

The following API call can adjust a single existing CDP stream in a CUWB Configuration.

```
PATCH /cuwbnets/{cuwb_name}/cdp-streams/{id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
id	Path	integer	The id of the CDP stream to use
cdp_stream_body	Body	cdp_stream_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**cdp-stream**	string	3	CDP Stream
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

5.5 DELETE

The following API command removes an existing CDP Stream from a particular CUWB Configuration.

```
DELETE /cuwbnets/{cuwb_name}/cdp-streams/{id}
```

> Config, Anchor, and User CDP Streams cannot be removed.

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
id	Path	integer	The id of the CDP stream to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item Deleted or Reset (if a default stream)
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found
409	**message**	string	1	Conflict

6 Commands

6.1 Data Body Schemas

6.1.1 Device Command Body

Name	Schema
action	string

6.1.2 Multi-Device Command Body

Name	Schema
action	string
serial_numbers	list < string >

6.1.3 Valid Actions

Name	Description
soft_reset	Reset the device's CUWBNet state without rebooting.
hard_reset	Reboots the device.
set_led	Sets a temporary LED behavior on a device. See LED Identification for additional details.
clear_device_error	Clears any LED behavior related to errors. See individual device datasheets for detailed error information.
ship_mode	Readies a device for Ship Mode.
get_property_list	Retrieves a list of all Persistent Properties ID a device contains.
get_property	Retrieves a value of a specific Persistent Property ID.
set_property	Sets a value for a specific Persistent Property ID.
get_device_attributes	Retrieves a list of device attributes and associated values.

6.2 POST

6.2.1 Post a Device Action for Individual Device

This API call posts an action to a device. Must be a valid action.

```
POST /cuwbnets/{cuwb_name}/devices/{device_key}/action
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID
device_command_body	Body	device_command_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**status**	string	3	Device Command
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found

6.2.2 Post a Device Action for Multiple Devices

This API call posts an action to multiple devices. Must be a valid action.

```
POST /cuwbnets/{cuwb_name}/devices/action
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
multi_device_command_body	Body	multi_device_command_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**status**	string	3	Device Command
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found

7 CUWB Configurations

This section outlines the available API commands to create, modify, or delete CUWB Configurations/CUWBNets.

7.1 Data Body Schemes

7.1.1 CUWB Network Body

Name	Schema
instance	string
name	string

7.1.2 Action Body

Name	Schema
action	enum
name	string

7.1.3 Valid Actions

These are the valid actions available for the CUWB Configuration Action Body:

Name	Description
copy	Duplicate the CUWB Configuration to a new CUWB Configuration
delete	Delete a CUWB Configuration
start	Start the CUWBNet
stop	Stop the CUWBNet

7.2 POST

The POST API command can create a new CUWB Configuration, upload an existing CUWB Configuration, or send an action to a CUWB Configuration.

7.2.1 POST Create New

Create a new CUWB Configuration.

```
POST /cuwbnets
```

Parameters

Name	Type	Schema	Description
cuwb_network_body	Body	cuwb_network_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
201	**cuwbnets**	string	3	CUWB Configuration
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict

7.2.2 POST Upload Existing

Upload an existing CUWB Configuration to the CUWB Manager.

```
POST /cuwbnets/upload
```

Parameters

Name	Type	Schema	Description
cuwb_file	FormData	file	A CUWB Configuration file to upload

Responses

HTTP Code	Name	Schema	Level	Description
201	**cuwbnets**	string	3	CUWB Configuration
400	**message**	string	1	Invalid request
409	**message**	string	1	CUWB Configuration already exists

Consumes

- `multipart/form-data`

7.2.3 POST an Action

POST an action to a CUWB Configuration. Must be a valid action.

```
POST /cuwbnets/{cuwb_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration
action_body	Body	action_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**status**	string	3	Action succeeded
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found

7.3 GET

The GET API command can be used to query if an individual CUWB Configuration exists, get a list of all CUWB Configurations on a single Host PC, or download an existing CUWB Configuration to a local PC.

7.3.1 GET Individual CUWB Configuration

The following API command queries if an individual CUWB Configuration exists on a particular Host PC.

```
GET /cuwbnets/{cuwb_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration

Responses

HTTP Code	Name	Schema	Level	Description
200	**cuwbnets**	string	4	CUWB Configuration
404	**message**	string	1	Not found

7.3.2 GET List of All CUWB Configurations

The following API call gets a list of all the CUWB Configurations available on a particular Host PC.

```
GET /cuwbnets
```

Responses

HTTP Code	Name	Schema	Level	Description
200	**cuwbnets**	< object > array	4	CUWB Configuration List

7.3.3 GET Download existing CUWB Configuration

The following API calls downloads a copy of the specified CUWB Configuration.

```
GET /cuwbnets/{cuwb_name}/download
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration

Responses

HTTP Code	Name	Schema	Level	Description
200	**file**	string	3	CUWB Configuration File
404	**message**	string	1	Not found

7.4 PATCH

The following API command can be used to update a CUWB Configuration.

```
PATCH /cuwbnets/{cuwb_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration
cuwb_network_body	Body	cuwb_network_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**cuwbnets**	string	3	CUWB Configuration
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found

7.5 DELETE

Delete a CUWB Configuration

```
DELETE /cuwbnets/{cuwb_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of a CUWB Configuration

Responses

HTTP Code	Name	Schema	Level	Description
204	**message**	string	3	Item deleted

8 Devices

8.1 Data Body Schemes

8.1.1 Device Body

Name	Schema
serial_number	string
interfaces	string
disabled	boolean
name *optional*	string
id *optional*	string

8.1.2 Multiple Device Patch Body

Name	Schema
serial_number	string
interfaces	string
disabled	boolean
name *optional*	string

8.1.3 Multiple Device Delete Body

Name	Schema
delete	string

8.2 POST

The POST method for adding a new device.

```
POST /cuwbnets/{cuwb_name}/devices
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_body	Body	device_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
201	**device**	string	3	Device
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

8.3 GET

8.3.1 GET Individual Device

```
GET /cuwbnets/{cuwb_name}/devices/{device_key}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID

Responses

HTTP Code	Name	Schema	Level	Description
200	**device**	string	4	Device
404	**message**	string	1	Not found

8.3.2 GET List of All Devices

The GET method for a list of all devices.

```
GET /cuwbnets/{cuwb_name}/devices
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**devices**	string	4	Device List

8.3.3 GET Unconfigured Devices by CUWBNet

```
GET /cuwbnets/{cuwb_name}/unconfigured_devices
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**devices**	string	4	Unconfigured Device List

8.3.4 GET All Unconfigured Devices

```
GET /unconfigured_devices
```

Responses

HTTP Code	Name	Schema	Level	Description
200	**devices**	string	4	Unconfigured Device List

8.4 PATCH

8.4.1 Patch Individual Device

The PATCH method for a single device.

```
PATCH /cuwbnets/{cuwb_name}/devices/{device_key}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID
device_body	Body	device_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**device**	string	3	Device
400	**message**	string	1	Invalid request
404	**message**	string	1	Not Found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

8.4.2 PATCH Multiple Devices

The PATCH method for multiple devices.

```
PATCH /cuwbnets/{cuwb_name}/devices
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_body	Body	device_body, object	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**device**	string	3	Device
400	**message**	string	1	Invalid request
404	**message**	string	1	Not Found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

8.5 DELETE

8.5.1 DELETE Single Device

The DELETE method for a single device.

```
DELETE /cuwbnets/{cuwb_name}/devices/{device_key}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item deleted

8.5.2 DELETE Multiple Devices

The DELETE method for multiple devices.

```
DELETE /cuwbnets/{cuwb_name}/devices
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
multiple_device_delete_body	Body	multiple_device_delete_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Devices deleted

9 Device Pairs

9.1 Data Body Schemes

9.1.1 Device Pairs Body

Name	Schema
pairs	array

9.1.2 Pair Body

Name	Schema
serial_number_1	string
serial_number_2	string
type	string

9.2 POST

The POST method for adding new device pairs.

```
POST /cuwbnets/{cuwb_name}/device_pairs
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_body	Body	device_pairs_body	The request body: an array of pair_body

Responses

HTTP Code	Name	Schema	Level	Description
201	**message**	string	3	Successfully created pairs
206	**message**	string	2	Successfully created some pairs
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict
417	**message**	string	1	Expected behavior failed
500	**message**	string	1	Internal error

9.3 GET

9.3.1 GET All Pairs for one Device

The GET method for getting all device pairs for one device in a CUWB Configuration.

```
GET /cuwbnets/{cuwb_name}/device_pairs/{serial_number}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
serial_number	Path	string	The Ciholas Serial Number of the device

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	4	A list of device pairs

9.3.2 GET All Pairs for CUWB Configuration

The GET method for getting all device pairs.

```
GET /cuwbnets/{cuwb_name}/device_pairs
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	4	A list of device pairs

9.4 DELETE

The DELETE method for deleting device pairs.

```
DELETE /cuwbnets/{cuwb_name}/device_pairs
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_body	Body	device_pairs_body	The request body: an array of pair_body

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Successfully deleted pairs
206	**message**	string	2	Successfully deleted some pairs
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict
417	**message**	string	1	Expected behavior failed
500	**message**	string	1	Internal error

10 Group Images

10.1 Data Body Schemes

10.1.1 Group Image Patch Body

Name	Schema
path	string

10.2 GET

The GET method for group images.

```
GET /cuwbnets/{cuwb_name}/group_image
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**group_images**	string	3	Group Images
404	**message**	string	1	Not found

10.3 PATCH

The PATCH method for group images.

```
PATCH /cuwbnets/{cuwb_name}/group_image
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
group_image_patch_body	Body	group_image_patch_body	The PATCH body - must include at least one field

Responses

HTTP Code	Name	Schema	Level	Description
200	**group_images**	string	3	Group Images
404	**message**	string	1	Not found
500	**message**	string	1	Internal error

11 Interfaces

> The API allows the use of either `{device_key}-{interface_identifier}` or `{device_key}/interfaces/{interface_identifier}` within the API call.

11.1 GET

11.1.1 GET Individual Interface

The GET method for a single interface.

```
GET /cuwbnets/{cuwb_name}/devices/{device_key}-{interface_identifier}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID
interface_identifier	Path	integer	An identifier for interfaces

Responses

HTTP Code	Name	Schema	Level	Description
200	**interface**	string	4	Device interface
404	**message**	string	1	Not found

11.1.2 GET All Interfaces

The GET method for a list of all interfaces.

```
GET /cuwbnets/{cuwb_name}/devices/{device_key}/interfaces
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID

Responses

HTTP Code	Name	Schema	Level	Description
200	**interface**	string	3	Device interface
404	**message**	string	1	Not found

11.2 DELETE

The DELETE method for a single interface.

```
DELETE /cuwbnets/{cuwb_name}/devices/{device_key}-{interface_identifier}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID
interface_identifier	Path	integer	An identifier for interfaces

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item deleted

12 Logs

12.1 GET

12.1.1 GET Log Messages

The GET method for a list of all log messages.

```
GET /cuwbnets/{cuwb_name}/log_messages
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**log_messages**	< string > array	4	Log Message List

12.1.2 GET List of Logs

The GET method for a list of the filenames of all the logs.

```
GET /cuwbnets/{cuwb_name}/logs
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**log_messages**	< string > array	4	Log Filenames List

12.1.3 GET Download a Log

The GET method for downloading a specific log.

```
GET /cuwbnets/{cuwb_name}/logs/{log_file_name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
log_file_name	Path	string	The name of the log file to download

Responses

HTTP Code	Name	Schema	Level	Description
200	**log_file**	file	4	The log file to download
404	**message**	string	1	Not Found

13 Magnetometer Calibration

13.1 Data Body Schemes

13.1.1 Magnetometer Calibration Body

Name	Schema
x_offset	integer
y_offset	integer
z_offset	integer

13.2 POST

Create a new magnetometer calibration.

```
POST /cuwbnets/{cuwb_name}/devices/{device_key}/set_magnetometer_calibration
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
device_key	Path	string	Either a Ciholas serial number or an integer ID
magnetometer_calibration_body	Body	magnetometer_calibration_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
201	**magnetometer_calibration**	string	3	Magnetometer Calibration
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

14 Network Information

14.1 GET

The GET method for system network interfaces.

```
GET /network-info
```

14.1.1 Responses

HTTP Code	Name	Schema	Level	Description
200	**network_interfaces**	string	3	System Network Interface List

15 Notifications

15.1 Data Body Schemes

15.1.1 Notification Patch Body

Name	Schema
read	boolean

15.2 GET Notifications

15.2.1 GET Individual Notification

The GET method for a single notification.

```
GET /cuwbnets/{cuwb_name}/notifications/{identifier}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
identifier	Path	integer	The identifier of the notification

Responses

HTTP Code	Name	Schema	Level	Description
200	**notification**	string	4	Notifications
404	**message**	string	1	Not Found

15.2.2 GET All Notifications

The GET method for notifications.

```
GET /cuwbnets/{cuwb_name}/notifications
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**notification**	string	4	Notifications

15.2.3 GET Count of Unread Notifications

The GET method for the number of unread notifications.

```
GET /cuwbnets/{cuwb_name}/notifications_count
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**count**	integer	4	Number of Unread Notifications

15.3 PATCH

15.3.1 PATCH Individual Notification

The PATCH method to toggle a notification's read status.

```
PATCH /cuwbnets/{cuwb_name}/notifications/{identifier}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
identifier	Path	integer	The identifier of the notification
notification_patch_body	Body	notification_patch_body	The PATCH body

Responses

HTTP Code	Name	Schema	Level	Description
200	**notification**	string	3	Notification
404	**message**	string	1	Not Found

15.3.2 PATCH All Notifications

The PATCH method to mark all notifications as read or unread.

```
PATCH /cuwbnets/{cuwb_name}/notifications
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
notification_patch_body	Body	notification_patch_body	The PATCH body

Responses

HTTP Code	Name	Schema	Level	Description
200	**notification**	string	3	Notifications

16 Operating Modes

16.1 Data Body Schemes

16.1.1 Operating Mode Patch Body

Name	Schema
network_mode	string

16.2 GET

The GET method for a list of all operational modes.

```
GET /network_modes
```

Responses

HTTP Code	Name	Schema	Level	Description
200	**network_modes**	string	4	Operating Mode List

16.3 PATCH

The PATCH method for the operational mode.

```
PATCH /cuwbnets/{cuwb_name}/network_mode
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
operating_mode_patch_body	Body	operating_mode_patch_body	The PATCH body - must include at least one field

Responses

HTTP Code	Name	Schema	Level	Description
200	**network_mode**	string	3	Operating Mode
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

17 Packages

17.1 GET

The GET method for PPA packages.

```
GET /packages
```

Responses

HTTP Code	Name	Schema	Level	Description
200	**ppa_status**	string	4	Packages
404	**ppa_status**	string	1	Not found

18 Position Limits

The Position Limits are used to describe a Bounding Box for a CUWBNet. As a result, the term Bounding Box may be used in some of the endpoints.

18.1 Data Body Schemes

18.1.1 Position Limits Post Body

Name	Schema
max_x	integer
max_y	integer
max_z	integer
min_x	integer
min_y	integer
min_z	integer
name	string

18.1.2 Position Limits Patch Body

Name	Schema
max_x	integer
max_y	integer
max_z	integer
min_x	integer
min_y	integer
min_z	integer

18.2 POST

Create a new Position Limit object

```
POST /cuwbnets/{cuwb_name}/position_limits
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
position_limits_post_body	Body	position_limits_post_body	The POST body

Responses

HTTP Code	Name	Schema	Level	Description
200	**position_limits**	string	3	Position Limit
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict

18.3 GET

18.3.1 GET Individual Position Limit

The GET method for a single position limit.

```
GET /cuwbnets/{cuwb_name}/position_limits/{id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
id	Path	integer	The id of the position limit to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**position_limits**	string	4	Position Limit
404	**message**	string	1	Not Found

18.3.2 GET List of All Limits

The GET method for a list of all position limits.

```
GET /cuwbnets/{cuwb_name}/position_limits
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**position_limits**	string	4	Position Limit List

18.4 PATCH

The PATCH method for a single position limit.

```
PATCH /cuwbnets/{cuwb_name}/position_limits/{id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
id	Path	integer	The id of the position limit to use
position_limits_patch_body	Body	position_limits_patch_body	The PATCH body - must include at least one field

Responses

HTTP Code	Name	Schema	Level	Description
200	**position_limits**	string	3	Position Limit List
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

18.5 DELETE

The DELETE method for a single position limit.

```
DELETE /cuwbnets/{cuwb_name}/position_limits/{id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
id	Path	integer	The id of the position limit to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item Deleted

19 RF Settings

19.1 Data Body Schemes

19.1.1 RF Settings Post Body

Name	Schema
bit_rate	integer
channel	integer
name	string
preamble_code	integer
preamble_length	integer
prf	integer

19.1.2 RF Settings Patch Body

Name	Schema
bit_rate	integer
channel	integer
preamble_code	integer
preamble_length	integer
prf	integer

19.2 POST

Create a new RF Settings object.

```
POST /cuwbnets/{cuwb_name}/rf_settings
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the CUWB Configuration to use
rf_settings_post_body	Body	rf_settings_post_body	The POST body

Responses

HTTP Code	Name	Schema	Level	Description
200	**rf_settings**	string	3	RF Setting
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict

19.3 PATCH

The PATCH method for a single RF Settings.

```
PATCH /cuwbnets/{cuwb_name}/rf_settings/{name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
name	Path	string	The name of the RF Settings to use
rf_settings_patch_body	Body	rf_settings_patch_body	The PATCH body - must include at least one field

Responses

HTTP Code	Name	Schema	Level	Description
200	**rf_settings**	string	3	RF Setting
404	**message**	string	1	Not Found
409	*message**	string	1	Conflict
500	**message**	string	1	Internal Error

19.4 GET

19.4.1 GET Single RF Setting

The GET method for a single RF Setting.

```
GET /cuwbnets/{cuwb_name}/rf_settings/{name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
name	Path	string	The name of the RF Settings to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**rf_settings**	string	4	RF Setting
404	**message**	string	1	Not Found

19.4.2 GET List of all RF Settings

The GET method for a list of all RF Settings.

```
GET /cuwbnets/{cuwb_name}/rf_settings
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**rf_settings**	string	4	RF Setting

19.5 DELETE

The DELETE method for a single RF Setting.

```
DELETE /cuwbnets/{cuwb_name}/rf_settings/{name}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
name	Path	string	The name of the RF Settings to use

Responses

HTTP Code	Name	Schema	Level	Description
204	**message**	string	3	Item Deleted
409	**message**	string	1	Conflict

20 Roles

20.1 Data Body Schemes

20.1.1 Role Post Body

Name	Schema
name	string
network_period	integer
window_duration *optional*	integer
device_count *optional*	integer
accelerometer_period *optional*	integer
gyroscope_period *optional*	integer
quaternion_period *optional*	integer
magnetometer_period *optional*	integer
pressure_period *optional*	integer
temperature_period *optional*	integer
led_brightness *optional*	string

20.1.2 Role Patch Body

Name	Schema
name	string
network_period	integer
window_duration	integer
device_count	integer
accelerometer_period	integer
gyroscope_period	integer
quaternion_period	integer
magnetometer_period	integer
pressure_period	integer
temperature_period	integer
led_brightness	string

20.2 POST

The POST method for adding a new role.

```
POST /cuwbnets/{cuwb_name}/roles
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
role_body	Body	role_body	The request body

Responses

HTTP Code	Name	Schema	Level	Description
201	**role**	string	3	Device Role
400	**message**	string	1	Invalid request
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

20.3 GET

20.3.1 GET Individual Role

The GET method for a single role

```
GET /cuwbnets/{cuwb_name}/roles/{role_id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
role_id	Path	integer	An id for roles

Responses

HTTP Code	Name	Schema	Level	Description
200	**role**	string	4	Device Role
404	**message**	string	1	Not found

20.3.2 GET a List of All Roles

The GET method for a list of all roles.

```
GET /cuwbnets/{cuwb_name}/roles
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**role**	string	4	Device Role

20.4 PATCH

The PATCH method for a single role.

```
PATCH /cuwbnets/{cuwb_name}/roles/{role_id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
role_id	Path	integer	An id for roles
role_body	Body	role_body	The request body - must use at least one body field

Responses

HTTP Code	Name	Schema	Level	Description
200	**role**	string	3	Role
400	**message**	string	1	Invalid request
404	**message**	string	1	Not found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

20.5 DELETE

The DELETE method for a single role.

```
DELETE /cuwbnets/{cuwb_name}/roles/{role_id}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
role_id	Path	integer	An id for roles

Responses

HTTP Code	Name	Schema	Level	Description
204	**message**	string	3	Item Deleted
409	**message**	string	1	Conflict

21 System Settings Keys

These API calls are under the Special Settings in the Swagger UI.

The API allows the use of either `/settings` or `/settings/{setting_class}/{setting_id}` within the API call.

21.1 Data Body Schemes

21.1.1 Settings Body

Name	Schema
setting_key	string

21.2 POST

The POST method to create a new setting.

```
POST /cuwbnets/{cuwb_name}/settings
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
setting_class *optional*	Path	string	The setting class of the setting to use
setting_id *optional*	Path	integer	The setting id of the setting to use
settings_body	Body	settings_body, object	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**setting**	string	3	Setting
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

21.3 GET

21.3.1 GET Individual Setting

The GET method for a single setting.

```
GET /cuwbnets/{cuwb_name}/settings/{key}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
key	Path	string	The key of the setting to use
setting_class *optional*	Path	string	The setting class of the setting to use
setting_id *optional*	Path	integer	The setting id of the setting to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**setting**	string	4	Setting
404	**message**	string	4	Not found
409	**message**	string	4	Conflict

21.3.2 GET a List of All Settings

The GET method for a list of all settings.

```
GET /cuwbnets/{cuwb_name}/settings
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
setting_class *optional*	Path	string	The setting class of the setting to use
setting_id *optional*	Path	integer	The setting id of the setting to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**setting**	string	4	Setting List
409	**message**	string	1	Conflict

21.4 PUT

The PUT method for a single setting.

```
PUT /cuwbnets/{cuwb_name}/settings
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
setting_class *optional*	Path	string	The setting class of the setting to use
setting_id *optional*	Path	integer	The setting id of the setting to use
settings_body	Body	settings_body, object	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**setting**	string	3	Setting List
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

21.5 PATCH

The PATCH method for a single setting.

```
PATCH /cuwbnets/{cuwb_name}/settings
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
setting_class *optional*	Path	string	The setting class of the setting to use
setting_id *optional*	Path	integer	The setting id of the setting to use
settings_body	Body	settings_body, object	The request body

Responses

HTTP Code	Name	Schema	Level	Description
200	**setting**	string	3	Setting List
404	**message**	string	1	Not Found
409	**message**	string	1	Conflict
500	**message**	string	1	Internal error

21.6 DELETE

The DELETE method for a single setting.

```
DELETE /cuwbnets/{cuwb_name}/settings/{key}
```

Parameters

Name	Type	Schema	Description
cuwb_name	Path	string	The name of the cuwbnet to use
key	Path	string	The key of the setting to use
setting_class *optional*	Path	string	The setting class of the setting to use
setting_id *optional*	Path	integer	The setting id of the setting to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**message**	string	3	Item Deleted
409	**message**	string	1	Conflict

22 System Settings Keys Defaults

These API commands retrieve the available system setting keys that a CUWB Configuration could use and their default values. These are not the system setting keys that have been applied to a CUWB Configuration.

> The API allows for the use of either `default-settings` or `default_settings` within the API call.

22.1 GET

22.1.1 GET Individual setting

This API call provides the default value for a single system setting key.

```
GET /default-settings/{key}
```

Parameters

Name	Type	Schema	Description
key	Path	string	The key of the setting to use

Responses

HTTP Code	Name	Schema	Level	Description
200	**default_setting**	string	4	Setting
404	**message**	string	1	Not found

22.1.2 GET List of all settings

This API call provides a list of the available system settings keys that could be applied to a CUWB Configuration and their default values.

```
GET /default-settings
```

Responses

HTTP Code	Name	Schema	Level	Description
200	**default_setting**	string	4	Setting List

23 Revision

Version	Date	Change Description
5.1.0	2026-05-01	Updating Response tables with classification level for logging. Adding Cache Manager API control. Revisions to Logs, Network Information, and Notifications sections.
5.0.1	2025-11-11	Removing Device Settings, Reformatting tables, Adding callouts for optional parameters
5.0.0	2025-10-31	Initial Release, Compatible with 300 series devices