



Qualcomm Technologies, Inc.

Qualcomm Aware™ Positioning Service Reverse Geocoding API

Reference Manual

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Revision history

Revision	Date	Change reason
AC	October 2024	Updated the product name from Qualcomm Terrestrial Positioning Service (TPS) to Qualcomm Aware™ Positioning Service in the entire document.
AB	October 2023	Updated the document to conform to current documentation standards. No technical content was changed in this revision.
AA	June 2022	Initial release

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1 Introduction to reverse geocoding API

Qualcomm Aware™ Positioning Service API, formerly known as Skyhook Precision Location API, provides access to positioning information derived from analyzing positioning anchors such as Wi-Fi access points and cell IDs in known locations.

The positioning service reverse geocoding (RGeo) JSON API provides access to positioning information derived from openly available data services and the access point density indications of metropolitan areas. Street level accuracy and language are dictated by available sources and inputs by region.

The positioning service RGeo JSON API takes latitude and longitude as request parameters and returns RGeo results as accurate as the street number, if available.

Scope

This document describes the implementation of the positioning service RGeo JSON API to determine civic and address information.

Technical assistance

For assistance or clarification, go to support.tps@qti.qualcomm.com.

2 Positioning service RGeo JSON API implementation

An evaluation license agreement is required to obtain an API key for the positioning service. For more information on the license agreement, contact the Qualcomm Aware™ Positioning Service team at sales.tps@qti.qualcomm.com.

Unique device ID

With each unique location request, it is recommended to submit a unique device ID or `user` for the end-user device. This device ID enables more accurate location results and impacts the redundancy of how location data is processed and weighted for optimization. If `user` is not provided, reporting and API performance may be impacted.

NOTE Individual device IDs are not stored permanently in Qualcomm's system, but are stored with a rotating hash in accordance with Qualcomm user and commercial privacy policies.

Endpoint URL

The positioning service RGeo API endpoint URL of JSON-formatted requests is <https://global.skyhook.com/wps2/json/reverse-geo>.

HTTP authentication methods

The positioning service RGeo API request can be authenticated using:

- **HTTP headers:** Provide the authorized key in the `Skyhook-Auth-Key` header and the username associated with the key in `Skyhook-Auth-User`.
- **HTTP URL parameters:** Provide the authorized key and username associated with the key at the end of the RGeo JSON endpoint URL. `https://global.skyhook.com/wps2/json/reverse-geo?key="<API KEY>&user=<USERNAME>"`.

2.1 Positioning service RGeo JSON API request

Description

Requests latitude and longitude parameters to determine civic and address information.

Endpoint URL

The positioning service RGeo API endpoint URL of JSON-formatted requests is <https://global.skyhook.com/wps2/json/reverse-geo>.

HTTP method

POST

Syntax

```
{
  "streetAddressLookupType": "full",
  "point": {
    "latitude": 42.352016034746725,
    "longitude": -71.04838734367
  }
}
```

Parameters

Parameter	Values	Description
streetAddressLookupType	<ul style="list-style-type: none"> ▪ Full ▪ Limited (default) 	<ul style="list-style-type: none"> ▪ Set to <code>full</code> to return all address attributes. ▪ Set to <code>limited</code> to return only city and state attributes.
point	–	JSON object with latitude and longitude attributes.
	latitude	Calculated physical geographic location, expressed in decimal degrees using floating point values, using the WGS84 datum.
	longitude	

2.2 Positioning service RGeo JSON API response

Description

Returns civic and address information.

Syntax

```
{
  "distanceToPoint": 28.27771331,
  "streetNumber": 64,
  "addressLine": "Farnsworth St",
  "city": "Boston",
  "postalCode": 02210,
  "county": "Suffolk",
  "stateCode": "MA",
  "stateName": "Massachusetts".
  "countryCode": "US",
  "countryName": "United States"
}
```

Parameters

Parameter	Description
distanceToPoint	Distance from the location of the returned address.
streetNumber	Street number of the returned address. <code>streetAddressLookupType</code> should be set to full in the request.
addressLine	Contains street name and other details of the returned address such as apartment number, if applicable. <code>streetAddressLookupType</code> should be set to full in the request.
city	City of the returned address.
postalCode	Postal code associated with the address.
country	Name of the country in which the returned address is located.
stateCode	State code associated with the address.
stateName	Name of the state in which the returned address is located.
countryCode	Country code associated with the address.
countryName	Name of the country in which the returned address is located.

Error responses

In case of an error, the response is sent in the following format:

```
{
  "error": "Unauthorized"
  "error": "Unable to locate an address"
}
```

2.3 Test sample positioning service RGeo JSON API

To issue a positioning service RGeo JSON API request or to test, perform the following steps:

1. Create a file named `location_rq.json` with the following sample JSON request body:

```
{
  "streetAddressLookupType": "full",
  "point": {
    "latitude": 42.352016034746725,
    "longitude": -71.04838734367
  }
}
```

2. Submit the file using a cURL command-line tool with the following syntax (all in one line):

```
curl -i -v -H "Content-Type: application/json" -d@location_rq.json
https://global.skyhookwireless.com/wps2/json/reverse-geo?key="<API
KEY>&user=<USERNAME>"
```

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